THE LINE SHOWN ABOVE IS ONE INCH LONG ON ORIGINAL PLANS SHEETS ORIGINAL PAGE SIZE

## EL MONTE HIGH SCHOOL UNIFIED DISTRICT

# ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING

4921 CEDAR AVENUE
EL MONTE, CALIFORNIA 91732



Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
3/30/2025 10:47:28 PM

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

## PROJECT TEAM

**OWNER**
**EL MONTE UNION HS DISTRICT**
3537 JOHNSON AVE. EL MONTE, CA 91731
626 444 9005

**ARCHITECT**
**HMC ARCHITECTS**
533 W. 5TH ST. THIRD FLR, LOS ANGELES, CA 90071
213 542 8300

**CIVIL**
**VCA Engineers**
1041 S. GARFIELD AVE, SUITE 210, ALHAMBRA, CA 91801
323 729 6098

**LANDSCAPE**
**HKLA**
714 W. OLYMPIC BLVD. UNIT 700, LOS ANGELES, CA 90015
213 293 3474

**STRUCTURAL**
**SAIFUL BOUQUET**
225 BROADWAY, SUITE 1300, SAN DIEGO, CA 92101
619-630-9199

**MECHANICAL / PLUMBING / ELECTRICAL / TECHNOLOGY**
**GLUMAC**
707 WILSHIRE BLVD. 23RD FLR. LOS ANGELES, CA 90017
213-239-8866

**FIRE ALARM / FIRE SPRINKLER**
**TERP CONSULTING**
255 AVE I, SUITE 202, REDONDO BEACH, CA 90277
213-459-5781

**THEATRICAL**
**RUZIKA**
2 EXECUTIVE CIR. SUITE 290, IRVINE CA 9214
949-253-3479

**ACOUSTICAL**
**Waveguide LLC**
6060 Center Dr. Suite 870, Los Angeles, CA 90045
470-231-5771

**THEATER AV**
**VENEKLASEN ASSOCIATES**
1711 SIXTEENTH STREET, SANTA MONICA, CA 90404
310-450-1733

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**COVER SHEET**

## DSA SUBMITTAL

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# G0.10

THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON THIS SHEET'S ORIGINAL PAGE SIZE

# GENERAL NOTES

1. CONSTRUCTION DOCUMENTS DESCRIBE THE PRODUCTS, SYSTEMS, QUANTITIES, CONFIGURATION, AND PERFORMANCE SPECIFICATIONS THAT DELIVER THE OVERALL DESIGN INTENT OF THE PROJECT.
2. THE CONSTRUCTION DOCUMENT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY BOTH.
3. PERFORMANCE BY THE CONSTRUCTION TEAM SHALL BE CONSISTENT WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS AS NECESSARY TO DELIVER THE INDICATED RESULTS OF THE DESIGN INTENT.
4. VERIFY ALL DIMENSIONS, LOCATIONS OF EXISTING UTILITIES, AND CONDITIONS ON THE JOB SITE PRIOR TO THE START OF WORK OR PORTIONS OF THE WORK. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE ACTUAL FIELD CONDITIONS AND THE CONSTRUCTION DOCUMENTS. EXISTING CONDITIONS ARE INDICATED AS A RESULT OF FIELD OBSERVATIONS, INFORMATION SHOWN ON AVAILABLE DOCUMENTS AND FIELD CONDITIONS AT THE TIME OF PREPARATION.
5. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL GOVERNING CODES, ORDINANCES, REGULATIONS AND LAWS.
6. THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS AND SCAFFOLDING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. WHERE ANY CONFLICT OCCURS BETWEEN THE REQUIREMENTS OF LAWS, CODES, ORDINANCES, RULES AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.
8. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS OR DETAILS ON THE DRAWINGS.
9. DETAILS MARKED 'TYPICAL' SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY NOTED OTHERWISE.
10. ENACT ALL MEASURES TO PROTECT AND SAFEGUARD ALL EXISTING ELEMENTS TO REMAIN FROM BEING DAMAGED. REPLACE OR REPAIR EXISTING ELEMENTS DAMAGED BY THE EXECUTION OF THIS CONTRACT TO EQUAL OR BETTER CONDITION.
11. PRIOR TO THE START OF WORK THE CONTRACTOR SHALL COORDINATE BETWEEN THE REQUIREMENTS OF ALL DISCIPLINES HEREIN AND BETWEEN THE REQUIREMENTS OF ALL DRAWINGS AND SPECIFICATIONS IN ORDER THAT ALL ITEMS SATISFACTORILY RELATE TO ONE ANOTHER. NOTIFY ARCHITECT IMMEDIATELY REGARDING ANY ITEMS THAT CANNOT BE COORDINATED.
12. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, CONDUIT, ETC. AND TO PREVENT HAZARD TO PERSONNEL AND/OR TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
13. CHANGES TO THE APPROVED DRAWINGS AND/OR SPECIFICATIONS SHALL BE MADE BY ADDENDA OR A CHANGE ORDER.
14. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE EXISTING OR NEW STRUCTURAL ELEMENTS SHALL NOT TO BE STARTED UNTIL THE DETAILS HAVE BEEN REVIEWED AND APPROVED BY THE ARCHITECT, AND STRUCTURAL ENGINEER OF RECORD.
15. ALL WORK SHALL CONFORM TO 2022 EDITION TITLE 24, CALIFORNIA CODE OF REGULATION (CCR)
16. THE LIMIT OF WORK LINE SHOWS THESE DRAWINGS IS AN APPROXIMATE LIMIT OF WORK ONLY. REFER TO CONSULTANT DRAWINGS FOR ADDITIONAL WORK, INCLUDING BUT NOT LIMITED TO INSTALLATION OF CONDUIT, MANHOLES, PULLBOXES, ETC WHICH ARE TO BE PART OF THIS WORK, ALTHOUGH OCCURING OUTSIDE OF SHOWN LIMIT OF WORK LINES.
17. FABRICATION AND INSTALLATION OF DEFERRED SUBMITTAL ITEMS SHALL NOT BE STARTED UNTIL CONTRACTOR'S DRAWINGS, SPECIFICATIONS, AND ENGINEERING CALCULATIONS FOR THE ACTUAL SYSTEMS TO BE INSTALLED HAVE BEEN ACCEPTED AND SIGNED BY THE ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE DSA. LIST DEFERRED SUBMITTAL ITEMS FOR THIS PROJECT.
18. CHANGE TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY DSA, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24 CCR.
19. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. INSPECTOR TO BE CLASS 1.
20. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT. THE REPORTS SHALL BE SUBMITTED TO ARCHITECT OF RECORD, STRUCTURAL ENGINEER OF RECORD, OWNER, INSPECTOR OR RECORD, AND THE DSA FIELD ENGINEER. THE REPORTS OF ANY FAILURES OF TESTS AND INSPECTIONS ARE TO BE SUBMITTED TO DSA DISTRICT STRUCTURAL ENGINEER.
21. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
22. SAFETY DURING CONSTRUCTION SHALL COMPLY WITH CFC CHAPTER 33.
23. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION, OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR., A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR)
24. CONTRACTOR IS TO REVIEW AND COMPLY WITH ALL REQUIREMENTS AND MITIGATION MEASURES SET FORTH IN BOTH THE ENVIRONMENTAL IMPACT REPORT (ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT | SCH NO. 2002071120) INCLUDING ATTACHED BIOLOGICAL RESOURCES TECHNICAL REPORT.
25. NO DUMPING OR PLACING OF ANY DIRT OR DEBRIS SHALL BE ALLOWED OUTSIDE OF THE CONTRACTORS LIMIT OF WORK AREA.
26. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.

  LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).

  MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.

  ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OF RECORD OR THE OWNER'S AGENT.

  A LISTING OF CERTIFIED ATT CAN BE FOUND AT: HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION- PROVIDER-PROGRAM/ACCEPTANCE.

  THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.

  PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

# CODES

**PARTIAL LIST OF APPLICABLE CODES**

| | | |
|---|---|---|
| 2022 | CALIFORNIA ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R. | |
| 2022 | CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2021 INTERNATIONAL BUILDING CODE VOLUMES 1 & 2 AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2020 NATIONAL ELECTRICAL CODE AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 C.C.R. (2021 UNIFORM MECHANICAL CODE AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2021 UNIFORM PLUMBING CODE AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R. | |
| 2022 | CALIFORNIA HISTORICAL BUILDING CODE (CHBC), PART 8, TITLE 24 C.C.R. | |
| 2022 | CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2021 INTERNATIONAL FIRE CODE AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 C.C.R. (2021 INTERNATIONAL EXISTING CODE AND 2022 CALIFORNIA AMENDMENTS) | |
| 2022 | CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 C.C.R. | |
| 2022 | CALIFORNIA REFERENCED STANDARDS, PART 12,TITLE 24 C.C.R. | |
| TITLE 19 | C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS. | |
| 2019 | ASME A17.1/B44-19 SAFETY CODE FOR ELEVATORS AND ESCALATORS | |
| 2020 | ASME 18.1 - SAFETY STANDARD FOR PLATFORM LIFTS AND STAIRWAY CHAIR LIFTS | |

**PARTIAL LIST OF APPLICABLE STANDARDS**

| | | |
|---|---|---|
| NFPA 13 | STANDARD FOR AUTOMATIC FIRE SPRINKLER SYSTEMS (CA AMENDED) | 2022 ED. |
| NFPA 14 | STANDARD FOR STANDPIPE AND HOSE SYSTEMS (CA AMENDED) | 2019 ED. |
| NFPA 17 | STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS | 2021 ED. |
| NFPA 17A | STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS | 2021 ED. |
| NFPA 20 | STANDARD FOR STATIONARY PUMPS FOR FIRE PROTECTION | 2019 ED. |
| NFPA 22 | STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION | 2013 ED. |
| NFPA 24 | STANDARD FOR THE INSTALLATION OF PRIVATE FIRE MAINS AND THEIR APPURTENANCES (CA AMENDED) | 2019 ED. |
| NFPA 72 | NATIONAL FIRE ALARM & SIGNALING CODE (CA AMENDED) | 2022 ED. |
| NFPA 80 | STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES | 2019 ED. |
| NFPA 2001 | STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (CA AMENDED) | 2018 ED. |
| UL 300 | STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT | 2005 (R2014) |
| UL 464 | AUDIBLE SIGNAL APPLIANCES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES | 2003 ED. |
| UL 521 | STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS | 1999 ED. (R2005) |
| UL 1971 | STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED | 2002 ED. (R2018) |
| ICC 300 | STANDARD FOR BLEACHERS, FOLDING AND TELESCOPING SEATING AND GRANDSTANDS | 2017 ED. |

FOR A COMPLETE LIST OF APPLICABLE NFPA STANDARDS REFER TO 2022 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80.
SEE CALIFORNIA BUILDING CODE, CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO NFPA STANDARDS.

# STATEMENT OF GENERAL CONFORMANCE

APPLICATION #: 03-123641
FILE #: 19-H10

THE DRAWINGS IDENTIFIED AS FOLLOWS:
(X) ALL DRAWING SHEETS INCLUDED IN THIS SET NOT BEARING MY STAMP AND SIGNATURE.

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND AUTHORIZED TO PREPARE SUCH DRAWINGS (PLANS) IN THIS STATE. THEY HAVE BEEN EXAMINED BY ME FOR:

1. DESIGN INTENT AND APPEAR TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
2. COORDINATION WITH MY DRAWINGS (PLANS) AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

PER TITLE 24, PART 1, SECTION 4-316(b): THIS STATEMENT OF GENERAL CONFORMANCE SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART 1.

SIGNATURE — 09/29/2023 DATE
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE
VIRGINIA ELAINE MARQUARDT
PRINT NAME
C-33423 — 06-30-25
LICENSE NUMBER — EXPIRATION DATE

LICENSED ARCHITECT — VIRGINIA ELAINE MARQUARDT — No. C-33423 — 06/30/2025 — RENEWAL DATE — STATE OF CALIFORNIA

# PROJECT DESCRIPTION

- DEMOLITION OF EXISTING ADMINISTRATION OFFICE, THEATER AND SURROUNDING LANDSCAPE.
- CONSTRUCTION OF NEW PERFORMANCE ART BUILDING, ADMINISTRATION BUILDING, LANDSCAPE AND SITE IMPROVEMENTS

# DEFERRED APPROVALS

- ORCHESTRA PIT STAGE EXTENSION ("TR" SHEETS & SPEC SECTION 11 61 23 STAGE EXTENSION PLATFORMS)
- STAGE RIGGING ("TR" SHEETS & SPEC SECTION 11 61 33 THEATRICAL RIGGING)

# PROJECT DATA

TOTAL BUILDING AREA: 34,754 SF

ADMINISTRATIVE BUILDING: 8,218 SF
THEATER & MUSIC BUILDING: 26,536 SF

OCCUPANCIES TYPES:
A-1, B, E & S-1

BLDG CLASSIFIED AS:
A-1
(MOST STRINGENT, NON-SEPARATED OCCUPANCY)

CONSTRUCTION TYPE:
TYPE II-B, FULLY SPRINKLERED

# DSA CERTIFICATION

THIS PROJECT A#03-123641 CANNOT BE CERTIFIED UNTIL THE FOLLOWING PROJECT CONTAINING REQUIRED ACCESSIBLE COMPONENTS IS CERTIFIED:

- A#03-123169 (ACCESSIBLE ROUTE OF TRAVEL & ACCESSIBLE PARKING)

# BUILDING VITALS & AIA 2020 COMMITMENT REPORTING

**OVERVIEW**
CONDITIONED AREA (sqft): **35,219 SF**

UNCONDITIONED AREA (sqft): **0**

**ENERGY**
ENERGY MODELING TOOL:
**CBECC 2022.3.0**

DESIGN ENERGY CODE:
**TITLE 24 2022**

ENERGY START TARGET FINDER EUI (kBtu/sf/yr):
**72.2**

PROJECT TEAM BASELINE EUI (kBtu/sf/yr):
**75**

PROJECT TEAM GOAL EUI (kBtu/sf/yr):
**22**

PROJECT TEAM PREDICTED EUI @ SD (kBtu/sf/yr):
**FROM CBECC 29.42**

PROJECT TEAM PREDICTED EUI @ DD (kBtu/sf/yr):
**FROM CBECC 29.42**

PROJECT TEAM PREDICTED EUI @ CD (kBtu/sf/yr):
**FROM CBECC 29.42**

LIGHTING POWER DENSITY (watts/sf):
**FROM CBECC 06**

WINDOW TO WALL RATIO:
**FROM CBECC 13.64%**

ASHRAE 90.1 APPENDIX G - BASELINE ENGERY MODEL (kBtu/sf/yr):
**N/A**

**WATER**
REDUCTION IN POTABLE WATER PER LEED 2009 P1: **N/A**

**ATMOSPHERE**
CO2 OFFSET: **N/A**

# EIFS LETTERS

HMC Architects

September 17, 2026

Re: Virginia Marquardt
Principal in Charge
633 W. 5th St., 32nd Floor
Los Angeles, CA 90071

I, Virginia Marquardt, Principal in Charge at HMC, hereby approve the use of the Outlookbloc Masonry Veneer System (OMVS) by Dryvit, as follows. The approved system must be installed in strict accordance with the OMVS application instructions (DS978), as outlined in the attached letter from Dryvit, and the requirements of the Contract Documents.

Any deviation from these requirements will not be accepted by the Architect during construction. Please refer to the attached Dryvit letter for further information and confirmation that the system complies with the documentation required by DSA.

Sincerely,

Virginia E. Marquardt, AIA
Principal-in-Charge
License No.C-33423
C 213.542.2690
virginia.marquardt@hmcarchitects.com

633 W. 5th Street, Third Floor, Los Angeles, CA 90071 / www.hmcarchitects.com

Dryvit — Texture Office Inc. 1 Energy Way West Warwick, RI 02893 800.556.5625 www.dryvit.com

August 19, 2025

Armory Highschool Project
4921 Cedar Rd.
El Monte, CA 91732

To Whom It May Concern:

This letter is to verify the Outlookbloc Masonry Veneer System (OMVS), when installed per OMVS Application Instructions DS978 and OMVS Specifications DS977, does not require expansion joints other than those detailed on designed and tested, is effectively attached to the Backstop NTX Air and Moisture Barrier which has been applied over an approved substrate. Reference OMVS Detail # 1.

Please let us know if you have any questions.

Best Regards,

Kathy Alven
Sr. Technical Communications Specialist

cc. Zack Bright, Dryvit Sales Representative

Attachments: DS978, DS977, and DS978

TREMCO — www.tremco.com

# KEYNOTES

# SYMBOL LEGEND

**NORTH ARROW**
TICK INDICATES PLAN NORTH
ARROW INDICATES TRUE NORTH

**ELEVATION CALLOUT** (TYPICAL FOR EXTERIOR)
LOCATION ON SHEET
SHEET WHERE ELEVATION IS DRAWN

**ELEVATION CALLOUT** (TYPICAL FOR INTERIOR)
LOCATION ON SHEET
SHEET WHERE ELEVATION IS DRAWN

**ELEVATION CALLOUT - ALT.** (FOR EXTERIOR AND INTERIOR)
LOCATION & SHEET WHERE ELEVATION IS DRAWN

**SECTION CALLOUT**
INDICATES A SIMILAR CONDITION
LOCATION ON SHEET
SHEET WHERE SECTION IS DRAWN

**DETAIL CALLOUT**
INDICATES A SIMILAR CONDITION
LOCATION ON SHEET
SHEET WHERE SECTION IS DRAWN

**CONTROL OR DATUM POINT**
NAME OF ELEVATION (IF APPLICABLE)
ELEVATION ABOVE FINISHED FLOOR

**GRID BUBBLE**
EXISTING BUILDING GRID SYMBOL
GRID NUMBER
NEW BUILDING GRID SYMBOL

**DOOR CALLOUT**
DOOR NUMBER

**INTERIOR FINISH CALLOUT**
MATERIAL FINISH TYPE
(SEE FINISH SCHEDULE)

**WINDOW CALLOUT**
WINDOW NUMBER
(SEE WINDOW SCHEDULE)

**WALL TYPE CALLOUT**
WALL TYPE MARK - SEE A10.11
WALL STC RATING
WALL FIRE RATING TYPE

**MATCHLINE REFERENCE**
LOCATION ON SHEET
SHEET WHERE PLAN IS DRAWN

**KEYNOTE**
KEYNOTE NUMBER (SEE LEGEND ON SHEET)

**ROOM EXITING INFORMATION**
ROOM NUMBER
AREA (SQ FT)
OCCUPANT LOAD (AREA DIVIDED BY LOAD FACTOR)
OCCUPANT LOAD FACTOR (REFER TO TABLE 1004.1.1)

**WIC CASEWORK TAG**
MANUFACTURER REFERENCE AND MODEL NUMBER
LOCK
CABINET DEPTH
CABINET HEIGHT
CABINET WIDTH

**DISCIPLINE**

| | |
|---|---|
| G | GENERAL |
| C | CIVIL |
| L | LANDSCAPE |
| A | ARCHITECTURE |
| I | INTERIORS |
| Q | EQUIPMENT |
| S | STRUCTURAL |
| P | PLUMBING |
| M | MECHANICAL |
| E | ELECTRICAL |
| FA | FIRE ALARM |
| T | TELECOM |
| AV | AV EQUIPMENT |
| K | KITCHEN |
| FP | FIRE PROTECTION |

**SHEET TYPE**

| | |
|---|---|
| 0 | CODE ANALYSIS, NOTES |
| 1 | SITE PLAN |
| 2 | FLOOR PLAN |
| 3 | CEILING PLAN |
| 4 | ROOF PLAN |
| 5 | EXTERIOR ELEVATIONS |
| 6 | SECTIONS |
| 7 | ENLARGED PLANS |
| 8 | INTERIOR ELEVATIONS |
| 9 | SCHEDULES |
| 10 | DETAILS |

**BUILDING LETTER, SEGMENT, (USER DEFINED)**
USED ONLY IF REQUIRED. IF NOT, COLUMN IS OMITTED.

DISCIPLINE | SHEET TYPE | SERIES / ORDER | USER DEFINED (IF APPLICABLE)
A A 1 . 1 1 A . A
BUILDING LETTER (IF APPLICABLE) | FLOOR LEVEL OR SEQUENTIAL ORDER | SEGMENT (IF APPLICABLE)

# ABBREVIATIONS

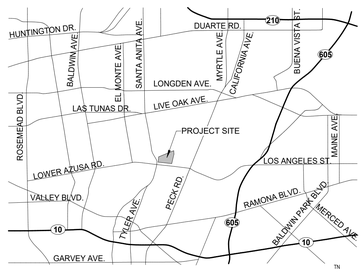
| | |
|---|---|
| (E) | EXISTING |
| AB | ANCHOR BOLT |
| AC PAVING | ASPHALTIC CONCRETE PAVING |
| ACC | ACCESS/ACCESSIBLE |
| ACP | ACOUSTICAL CEILING PANEL |
| ACT | ACOUSTICAL CEILING TILE |
| ADJ | ADJACENT/ADJUSTABLE |
| AFF | ABOVE FINISH FLOOR |
| AGG | AGGREGATE |
| AHU | AIR HANDLING UNIT |
| ARCH | ARCHITECTURAL |
| ATT | ATTENUATION |
| AUTO | AUTOMATIC |
| BD | BOARD |
| BLCG | BLOCKING |
| BUR | BUILT UP ROOFING |
| CABT | CABINET |
| CF | CUBIC FEET |
| CFCI | CONTRACTOR FURNISHED, CONTRACTOR INSTALLED |
| CFOI | CONTRACTOR FURNISHED, OWNER INSTALLED |
| CG | CORNER GUARD |
| CJ | CONTROL JOINT |
| CL | CENTER LINE |
| CLF | CHAIN LINK FENCE |
| CLR | CLEAR |
| CMU | CONCRETE MASONRY UNIT |
| CO | CLEANOUT |
| COL | COLUMN |
| COMP | COMPRESSION / COMPOSITE |
| CF | CUBIC FEET |
| COORD | COORDINATE |
| CORR | CORRUGATED |
| CT | CERAMIC TILE |
| CTSK | COUNTER SKUNK |
| CW | CURTAINWALL |
| DEPR | DEPRESSED / DEPRESSION |
| DF | DRINKING FOUNTAIN |
| DIM | DIMENSION |
| DISP | DISPENSER |
| DS | DOWNSPOUT |
| DTL | DETAIL |
| DW | DISHWASHER |
| E/W | EACH WAY |
| EIFS | EXTERIOR INSULATION FINISH SYSTEM |
| EJ | EXPANSION JOINT |
| ELEC | ELECTRICAL |
| ELEV | ELEVATION / ELEVATOR |
| ENCL | ENCLOSE / ENCLOSURE |
| EOS | EDGE OF SLAB |
| EP | ELECTRICAL PANEL |
| EQ | EQUAL |
| ESC | EXCUTCHEON |
| EWC | ELECTRIC WATER COOLER |
| EXP | EXPOSED |
| FA | FIRE ALARM |
| FD | FLOOR DRAIN |
| FDC | FIRE DEPARTMENT CONNECTION |
| FE | FIRE EXTINGUISHER |
| FEC | FIRE EXTINGUISHER W/ CABINET |
| FF | FINISH FLOOR |
| FG | FINISH GRADE |
| FH | FIRE HYDRANT |
| FHC | FIRE HOSE CABINET |
| FSH | FLAT HEAD SCREW |
| FIN | FINISH |
| FLR | FLOOR |
| FOC | FACE OF CONCRETE |
| FOF | FACE OF FINISH |
| FOM | FACE OF MASONRY |
| FOS | FACE OF STUD |
| FP | FIREPROOFING |
| FR | FIRE RATED |
| FRG | FIRE RATED GLASS |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FRT | FIRE RETARDANT TREATED |
| FS | FINISH SURFACE |
| FTG | FOOTING |
| GB | GRAB BAR |
| GFRC | GLASS FIBER REINFORCED CONCRETE |
| GL | GLASS TYPE |
| GLB | GLUE LAMINATED BEAM |
| GYP BD | GYPSUM BOARD |
| GYP PLAS | GYPSUM PLASTIC |
| HB | HOSE BIBB |
| HD | HEAVY DUTY |
| HDR | HEADER |
| HDWR | HARDWARE |
| HGT | HEIGHT |
| HM | HOLLOW METAL |
| HP | HIGH POINT |
| HSS | HOLLOW STEEL SECTION |
| ID | INSIDE DIAMTER |
| INT | INTERIOR |
| INV | INVERT |
| LANDS | LANDSCAPE |
| LAV | LAVATORY |
| LLH | LONG LEG HORIZONTAL |
| LLV | LONG LEG VERTICAL |
| LP | LOW POINT |
| LT WT | LIGHT WEIGHT |
| LVR | LOUVER |
| MACH | MACHINE |
| MB | MACHINE BOLT |
| MDF | MEDIUM DENSITY FIBERBOARD |
| MDO | MEDIUM DENSITY OVERLAY |
| MECH | MECHANICAL |
| MED | MEDIUM |
| MEMB | MEMBRANE |
| MFR | MANUFACTURER |
| MH | MANHOLE |
| MO | MASONRY OPENING |
| MTD | MOUNTED |
| MTL | METAL |
| NIC | NOT IN CONTRACT |
| NR | NON RATED |
| NRC | NOISE REDUCTION COEFFICIENT |
| NTS | NOT TO SCALE |
| O/ | OVER |
| O/A | OVERALL |
| OC | ON CENTER |
| OD | OUTSIDE DIAMTER |
| OFCI | OWNER FURNISHED, CONTRACTOR INSTALLED |
| OFOI | OWNER FURNISHED, OWNER INSTALLED |
| OFVI | OWNER FURNISHED, VENDOR INSTALLED |
| OH | OPPOSITE HAND |
| OPER | OPERABLE |
| OPNG | OPENING |
| ORD | OVERFLOW ROOF DRAIN |
| P/L | PROPERTY LINE |
| PA | PUBLIC ADDRESS |
| PAF | POWDER ACTUATED FASTENER |
| PCC | PORTLAND CEMENT CONCRETE PAVING |
| PED | PEDESTRIAN |
| PERF | PERFORATED |
| PERIM | PERIMETER |
| PERP | PERPENDICULAR |
| PH | PANIC HARDWARE |
| PIV | POST INDICATOR VALVE |
| PL | PLATE |
| PLAM | PLASTIC LAMINATE |
| PLAS | PLASTER |
| PLUMB | PLUMBING |
| PNL | PANEL |
| PNT | PAINT / PAINTED |
| POC | POINT OF CONNECTION |
| POLY ISO | POLYISOCYANURATE |
| PREFIN | PREFINISHED |
| PREP | PREP / PREPARATION |
| PTC | POST TENSIONED CONCRETE |
| PTD | PAPER TOWEL DISPENSER |
| PTN | PARTITION |
| PTS | PNEUMATIC TUBE STATION / SYSTEM |
| PVC | POLYVINYL CHLORIDE |
| PVMT | PAVEMENT |
| QT | QUARRY TILE |
| R | RADIUS, RISER |
| RB | RESILIENT BASE |
| RD | ROOF DRAIN |
| RECEPT | ECEPTACLE |
| REF | REFERENCE |
| REFL | REFLECT(ED), (IVE) |
| REFL | REFLECT(ED), (IVE) |
| REFR | REFRIGERATOR |
| REINF | REINFORCE/REINFORCED/ REINFORCEMENT |
| REM | REMOVE |
| RH | ROUND HEAD |
| RHS | ROUND HEAD SCREW |
| RO | ROUGH OPENING |
| ROW | RIGHT OF WAY |
| SCH | SCHEDULE (FOR PIPE) |
| SCHED | SCHEDULE / SCHEDULING |
| SD | STORM DRAIN / SOAP DISPENSER |
| SECT | SECTION |
| SG | SAFETY GLASS |
| SHT | SHEET |
| SHTG | SHEATHING |
| SMS | SHEET METAL SCREW |
| SND | SANITARY NAPKIN DISPOSAL |
| SOV | SHUT OFF VALVE |
| SPEC | SPECIFICATIONS |
| SS | STAINLESS STEEL |
| STC | SOUND TRAMISSION CLASS |
| STL | STEEL |
| STSMS | SELF TAPPING SHEET METAL SCREW |
| SUSP | SUSPENDED |
| SV | SHEET VINYL |
| SYM | SYMMETRICAL |
| T | TREAD |
| T&B | TOP AND BOTTOM |
| TO | TOP OF |
| TOC | TOP OF CURB / CONCRETE |
| TOP | TOP OF PARAPET |
| TOS | TOP OF STEEL |
| TOW | TOP OF WALL |
| TPD | TOILET PAPER DISPENSER |
| TS | TACKABLE SURFACE |
| U/C | UNDER CABINET (OR COUNTER |
| UNO | UNLESS NOTED OTHERWISE |
| UR | URINAL |
| VAC | VACUUM |
| VB | VAPOR BARRIER |
| VCT | VINYL COMPOSITION TILE |
| VIF | VERIFY IN FIELD |
| VTR | VENT THROUGH ROOF |
| VWC | VINYL WALL COVERING |
| W/ | WITH |
| W/O | WITHOUT |
| WB | WOOD BASE |
| WC | WATER CLOSET |
| WD | WOOD |
| WDW | WINDOW |
| WGT | WEIGHT |
| WH | WATER HEATER |
| WP | WATERPROOFING/WALL PROTECTION |
| WR | WATER RESISTANT |
| WRGB | WATER RESISTANT GYPSUM BOARD |
| WS | WOOD SCREW |
| WSCT | WAINSCOT |
| WWF | WELDED WIRE FABRIC |

NOTE:
OTHER ABBREVIATIONS USED ON THESE DRAWINGS ARE CONSIDERED STANDARDS IN THE BUILDING INDUSTRY. CONTACT ARCHITECT FOR NECESSARY CLARIFICATION.

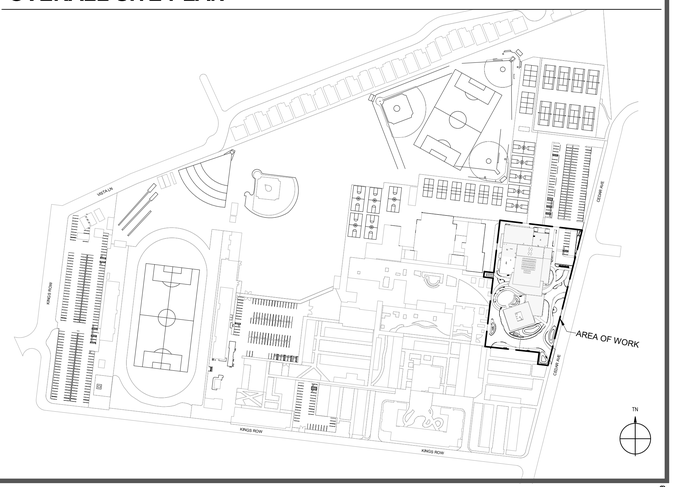
# STATE MAP




# VICINITY MAP




# OVERALL SITE PLAN




# NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PROJECT DATA SHEET**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

**G0.11**

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

COMMITTED TO COLLEGE AND CAREER — ESTABLISHED 1991 — EL MONTE UNION HIGH SCHOOL DISTRICT


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LICENSED ARCHITECT — VIRGINIA ELAINE MARQUARDT — No. C-33423 — 06/30/2025 — RENEWAL DATE — STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE

THE LINE SHOWN ABOVE IS 1" LONG WHEN PRINTED ON SHEETS ORIGINAL PAGE SIZE

# DRAWING LIST- VOLUME 1

| NUMBER | NAME |
|---|---|
| GENERAL SHEET | |
| G0.10 | COVER SHEET |
| G0.11 | PROJECT DATA SHEET |
| G0.12 | SHEET INDEX |
| G1.11 | CODE SITE PLAN - PATH OF TRAVEL |
| G1.21 | CODE & OCCUPANCY ANALYSIS |
| G1.31 | EXITING ANALYSIS |
| G1.51 | LOCAL FIRE AUTHORITY SITE ACCESS PLAN |
| 7 | |
| CIVIL | |
| C-1.0 | GENERAL NOTES, LEGENDS, AND ABBREVIATIONS |
| CD-1.0 | SITE DEMOLITION PLAN |
| C-2.0 | SITE CONTROL PLAN |
| C-3.0 | SITE GRADING PLAN |
| C-4.0 | SITE UTILITY PLAN |
| C-4.1 | SITE LID PLAN |
| C-5.0 | MISCELLANEOUS DETAILS |
| C-5.1 | MISCELLANEOUS DETAILS |
| C-5.2 | MISCELLANEOUS DETAILS |
| C-6.0 | EROSION CONTROL PLAN |
| C-6.1 | EROSION CONTROL DETAILS |
| 11 | |
| LANDSCAPE | |
| L0.00 | LANDSCAPE CONSTRUCTION NOTES & SCHEDULE |
| L1.00 | TREE REMOVAL AND TREE PROTECTION PLAN |
| L2.01 | LANDSCAPE CONSTRUCTION PLAN |
| L6.00 | CONSTRUCTION DETAILS |
| L6.01 | CONSTRUCTION DETAILS |
| L7.00 | MASTER IRRIGATION LEGEND AND CALCS |
| L7.01 | IRRIGATION PLAN |
| L7.02 | IRRIGATION DETAILS |
| L7.03 | IRRIGATION DETAILS |
| L7.51 | HYDROZONE PLAN |
| L8.00 | PLANTING NOTES & SCHEDULE |
| L8.01 | PLANTING PLAN |
| L8.10 | PLANTING DETAILS |
| 13 | |
| ARCHITECTURE | |
| A1.01 | SITE DEMOLITION PLAN |
| A1.11 | CAMPUS SITE PLAN |
| A1.21 | PROJECT SITE PLAN |
| A2.11 | 1ST FLOOR - FLOOR PLAN |
| A2.11A | 1ST FLOOR - SEGMENT A - FLOOR PLAN |
| A2.11B | 1ST FLOOR - SEGMENT B - FLOOR PLAN |
| A2.11C | 1ST FLOOR - SEGMENT B - CONTROL ROOM & ORCHESTRA PIT LEVEL |
| A2.11D | 1ST FLOOR - CATWALK LEVEL - SEGMENT B - FLOOR PLAN |
| A2.12 | 1ST FLOOR - DIMENSION PLAN |
| A2.12A | 1ST FLOOR - SEGMENT A - DIMENSION PLAN & WALL TYPES |
| A2.12B | 1ST FLOOR - SEGMENT B - DIMENSION PLAN & WALL TYPES |
| A2.13 | 1ST FLOOR - SLAB EDGE PLAN |
| A2.13A | 1ST FLOOR - SEGMENT A - SLAB EDGE PLAN |
| A2.13B | 1ST FLOOR - SEGMENT B - SLAB EDGE PLAN |
| A2.13C | ORCHESTRA PIT LEVEL - SEGMENT B - SLAB EDGE PLAN |
| A2.15 | 1ST FLOOR - FINISH PLAN |
| A2.15A | 1ST FLOOR - SEGMENT A - FINISH PLAN |
| A2.15B | 1ST FLOOR - SEGMENT B - FINISH PLAN |
| A2.16 | 1ST FLOOR - SIGNAGE PLAN |
| A2.17 | 1ST FLOOR - THEATER SEATING PLAN |
| A2.21 | 2ND FLOOR - FLOOR PLAN |
| A2.21B | 2ND FLOOR - SEGMENT B - FLOOR PLAN |
| A2.22B | 2ND FLOOR - SEGMENT B - DIMENSION PLAN |
| A2.23B | CONTROL LEVEL - SEGMENT B - SLAB EDGE PLAN |
| A2.25 | 1ST FLOOR - UNDERGROUND DUCT PLAN |
| A3.11 | 1ST FLOOR - REFLECTED CEILING PLAN |
| A3.11A | 1ST FLOOR - SEGMENT A - REFLECTED CEILING PLAN |
| A3.11B | 1ST FLOOR - SEGMENT B - REFLECTED CEILING PLAN |
| A3.21B | 2ND FLOOR - SEGMENT B - REFLECTED CEILING PLAN |
| A4.11 | ROOF PLAN |
| A4.11A | ROOF PLAN - SEGMENT A |
| A4.11B | ROOF PLAN - SEGMENT B |
| A5.11 | EXTERIOR ELEVATIONS |
| A5.12 | EXTERIOR ELEVATIONS |
| A5.13 | PARTIAL EXTERIOR ELEVATIONS |
| A5.14 | PARTIAL EXTERIOR ELEVATIONS |
| A5.15 | PARTIAL EXTERIOR ELEVATIONS |
| A5.16 | PARTIAL EXTERIOR ELEVATIONS |
| A6.11 | BUILDING SECTIONS |
| A6.12 | BUILDING SECTIONS |
| A6.13 | BUILDING SECTIONS |
| A6.21 | WALL SECTIONS |
| A6.22 | WALL SECTIONS |
| A6.23 | WALL SECTIONS |
| A6.24 | WALL SECTIONS |
| A6.25 | WALL SECTIONS |
| A6.26 | WALL SECTIONS |
| A6.27 | WALL SECTIONS |
| A6.28 | WALL SECTIONS |
| A6.29 | WALL SECTIONS |
| A7.11 | ENLARGED FLOOR PLANS AND ELEVATIONS - TOILET |
| A7.12 | ENLARGED FLOOR PLANS AND ELEVATIONS - TOILET |
| A7.21 | ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS |
| A7.22 | ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS |
| A7.23 | ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS |
| A7.31 | ENLARGED LIFT PLANS, ELEVATIONS, AND SECTIONS |
| A7.41 | ENLARGED FLOOR PLANS AND ELEVATIONS - CASEWORK |
| A7.53 | ENLARGED FLOOR PLAN - BAND ROOM |
| A7.54 | ENLARGED ELEVATIONS - BAND ROOM |
| A7.55 | ENLARGED FLOOR PLAN AND ELEVATIONS - SCENE SHOP |
| A7.56 | ENLARGED FLOOR PLAN AND ELEVATIONS - CHOIR ROOM |
| A7.57 | ENLARGED FLOOR PLAN AND ELEVATIONS - DRESSING ROOM AND FIRE RISER ROOM |
| A7.58 | ENLARGED FLOOR PLAN AND ELEVATIONS - DRAMA CLASSROOM |
| A8.11 | 1ST FLOOR - INTERIOR ELEVATIONS - ADMIN |
| A8.12 | 1ST FLOOR - INTERIOR ELEVATIONS - ADMIN |
| A8.13 | 1ST FLOOR - INTERIOR ELEVATIONS - THEATRE |
| A8.14 | 1ST FLOOR - INTERIOR ELEVATIONS - THEATRE & MUSIC |
| A8.15 | 1ST FLOOR - INTERIOR ELEVATIONS - MUSIC |
| A9.11 | DOOR SCHEDULE |
| A9.21 | WINDOW SCHEDULE |
| A9.22 | WINDOW SCHEDULE |
| A9.23 | WINDOW SCHEDULE |
| A9.24 | WINDOW SCHEDULE |
| A9.31 | FINISH SCHEDULE |
| A10.01 | SITE AND GATE DETAILS |
| A10.02 | SITE AND GATE DETAILS |
| A10.11A | WALL TYPES |
| A10.11B | WALL TYPES |
| A10.12 | WALL TYPES |
| A10.12B | WALL DETAILS |
| A10.13 | EXTERIOR ASSEMBLIES |
| A10.14 | PLASTER DETAILS |
| A10.15 | FIBER CEMENT DETAILS |
| A10.16 | BRICK VENEER DETAILS |
| A10.21 | WALL OPENING DETAILS |
| A10.22 | WALL DETAILS |
| A10.23 | CONTROL JOINT DETAILS |
| A10.31 | CEILING DETAILS |
| A10.32 | CEILING DETAILS |
| A10.34 | CEILING DETAILS |
| A10.35 | CEILING DETAILS |
| A10.41 | ROOF DETAILS |
| A10.42 | ROOF DETAILS |
| A10.43 | ROOF DETAILS |
| A10.44 | ROOF DETAILS |
| A10.51 | STAIR DETAILS |
| A10.52 | STAIR DETAILS |
| A10.61 | CASEWORK DETAILS |
| A10.62 | CASEWORK DETAILS |
| A10.63 | FINISH DETAILS |
| A10.72 | ACCESSIBILITY DETAILS |
| A10.81 | SIGNAGE DETAILS |
| A10.82 | SIGNAGE DETAILS |
| A10.91 | MISCELLANEOUS DETAILS |
| A10.92 | EQUIPMENT AND MISCELLANEOUS INTERIOR DETAILS |
| 105 | |
| CURTAIN WALL | |
| CW0.01 | COVER SHEET |
| CW0.02 | GENERAL NOTES |
| CW0.03 | SECTION PROPERTIES |
| CW0.04 | SECTION PROPERTIES |
| CW0.05 | SECTION PROPERTIES |
| CW1.01 | FLOOR PLAN |
| CW1.02 | FLOOR PLAN |
| CW2.01 | BUILDING ELEVATIONS |
| CW2.02 | BUILDING ELEVATIONS |
| CW2.03 | BUILDING ELEVATIONS |
| CW3.01 | ELEVATIONS - AFG601T |
| CW3.02 | ELEVATIONS - AFG601T |
| CW3.03 | ELEVATIONS - AFG601T |
| CW3.11 | ELEVATIONS - OPG3000 |
| CW3.12 | ELEVATIONS - OPG3000 |
| CW3.13 | ELEVATIONS - OPG3000 |
| CW3.21 | ELEVATIONS - OPG1900 |
| CW3.31 | ELEVATIONS - T200 |
| CW3.32 | ELEVATIONS - T200 |
| CW3.41 | ELEVATIONS - OPG6000 |
| CW3.42 | ELEVATIONS - OPG6000 |
| CW4.01 | SECTION DETAILS - AFG601T |
| CW4.02 | SECTION DETAILS - AFG601T |
| CW4.11 | SECTION DETAILS - OPG3000 |
| CW4.12 | SECTION DETAILS - OPG3000 |
| CW4.12A | SECTION DETAILS - OPG3000 |
| CW4.13 | SECTION DETAILS - OPG3000 |
| CW4.14 | SECTION DETAILS - OPG3000 |
| CW4.15 | SECTION DETAILS - OPG3000 |
| CW4.16 | SECTION DETAILS - OPG3000 |
| CW4.21 | SECTION DETAILS - OPG1900 |
| CW4.22 | SECTION DETAILS - OPG1900 |
| CW4.23 | SECTION DETAILS - OPG1900 |
| CW4.31 | SECTION DETAILS - T200 |
| CW4.41 | SECTION DETAILS - OPG6000 |
| CW4.42 | SECTION DETAILS - OPG6000 |
| CW4.43 | SECTION DETAILS - OPG6000 |
| CW4.44 | SECTION DETAILS - OPG6000 |
| CW5.01 | PLAN DETAILS - AFG601T |
| CW5.02 | PLAN DETAILS - AFG601T |
| CW5.11 | PLAN DETAILS - OPG3000 |
| CW5.12 | PLAN DETAILS - OPG3000 |
| CW5.13 | PLAN DETAILS - OPG3000 |
| CW5.13A | PLAN DETAILS - OPG3000 |
| CW5.14 | PLAN DETAILS - OPG3000 |
| CW5.15 | PLAN DETAILS - OPG3000 |
| CW5.21 | PLAN DETAILS - OPG1900 |
| CW5.22 | PLAN DETAILS - OPG1900 |
| CW5.23 | PLAN DETAILS - OPG1900 |
| CW5.31 | PLAN DETAILS - T200 |
| CW5.41 | PLAN DETAILS - OPG6000 |
| 51 | |
| STRUCTURAL | |
| S0.00 | COVER SHEET AND SHEET LIST |
| S0.01 | GENERAL NOTES |
| S0.02 | GENERAL NOTES |
| S0.03 | GENERAL NOTES |
| S0.04 | GENERAL NOTES |
| S0.05 | ABBREVIATIONS |
| S0.11 | TYPICAL CONCRETE DETAILS |
| S0.12 | TYPICAL CONCRETE DETAILS |
| S0.13 | TYPICAL CONCRETE DETAILS |
| S0.15 | TYPICAL CONCRETE & EXCAVATION DETAILS |
| S0.20 | TYPICAL STEEL DETAILS |
| S0.21 | TYPICAL STEEL DETAILS |
| S0.22 | TYPICAL STEEL DETAILS |
| S0.23 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.24 | TYPICAL STEEL DETAILS |
| S0.25 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.26 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.27 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.28 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.29 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.31 | TYPICAL INTERIOR METAL STUD DETAILS |
| S0.32 | TYPICAL EXTERIOR METAL STUD DETAILS |
| S0.33 | TYPICAL METAL STUD DETAILS |
| S0.34 | TYPICAL METAL STUD DETAILS |
| S0.35 | TYPICAL METAL STUD DETAILS |
| S0.36 | TYPICAL MISCELLANEOUS DETAILS |
| S0.37 | TYPICAL MISCELLANEOUS DETAILS |
| S1.00 | 3D VIEWS |
| S1.01 | DRAWING SET KEY PLAN |
| S1.02 | LOADING PLAN |
| S1.03 | PV LAYOUT PLAN |
| S2.11 | OVERALL FIRST FLOOR - FOUNDATION PLAN |
| S2.11A | 1ST FLOOR - FOUNDATION PLAN - SEGMENT A |
| S2.11B | 1ST FLOOR - FOUNDATION PLAN - SEGMENT B |
| S2.12 | ROOF - OVERALL FRAMING PLAN |
| S2.12A | ROOF FRAMING PLAN - SEGMENT A |
| S2.12B | ROOF FRAMING PLAN - SEGMENT B |
| S2.12C | PROJECTION ROOM FRAMING PLANS |
| S2.13B | CATWALK FRAMING PLAN |
| S2.14B | THEATER ROOF - BOTTOM OF TRUSS BRACING AND LOFT BEAM FRAMING PLAN |
| S2.15B | HIGH ROOF LEVEL - FRAMING PLAN |
| S2.21 | OVERALL FIRST FLOOR REFLECTED CEILING FRAMING PLAN |
| S2.21A | FIRST FLOOR REFLECTED FRAMING CEILING PLAN - SEGMENT A |
| S2.21B | FIRST FLOOR REFLECTED CEILING FRAMING PLAN - SEGMENT B |
| S2.22B | THEATER REFLECTED CEILING FRAMING PLAN - SEGMENT B |
| S3.01 | FOUNDATION SCHEDULE |
| S3.02 | FOUNDATION SCHEDULE AND DETAILS |
| S3.11 | STEEL COLUMN SCHEDULE AND DETAILS |
| S4.01 | RETAINING WALLS DETAILS |
| S4.02 | CONCRETE DETAILS |
| S4.03 | DETAILS |
| S4.10 | CONCRETE WALL ELEVATIONS |
| S4.11 | CONCRETE WALL ELEVATIONS |
| S5.11 | MOMENT FRAME ELEVATIONS |
| S5.12 | BRBF ELEVATIONS |
| S5.13 | BRBF ELEVATIONS |
| S5.14 | MOMENT FRAME ELEVATIONS |
| S5.15 | BRBF ELEVATIONS |
| S5.31 | TRUSS ELEVATIONS |
| S6.01 | MOMENT FRAME DETAILS (SLRS) |
| S6.02 | MOMENT FRAME DETAILS (SLRS) |
| S6.11 | BRBF SCHEDULE AND DETAILS |
| S6.12 | BRBF SCHEDULE AND DETAILS |
| S6.13 | BRBF SCHEDULE AND DETAILS |
| S6.14 | BRBF DETAILS |
| S6.21 | BRB ELEVATION SHEET |
| S6.22 | BRB AND CONNECTION DETAILS |
| S6.23 | BRB AND CONNECTION DETAILS |
| S7.11 | WALL SECTIONS |
| S7.12 | WALL SECTIONS |
| S7.13 | WALL SECTIONS |
| S7.14 | WALL SECTIONS |
| S7.15 | WALL SECTIONS |
| S7.16 | WALL SECTIONS |
| S7.17 | WALL SECTIONS |
| S7.21 | WALL ELEVATIONS |
| S7.22 | WALL ELEVATIONS |
| S7.23 | WALL ELEVATIONS |
| S7.24 | WALL ELEVATIONS |
| S7.25 | WALL ELEVATIONS |
| S7.26 | WALL ELEVATIONS |
| S7.27 | WALL ELEVATIONS |
| S7.28 | WALL ELEVATIONS |
| S8.01 | CATWALK DETAILS |
| S8.02 | SECTIONS AND DETAILS |
| S8.11 | TRUSS DETAILS |
| S8.21 | STEEL DETAILS |
| S8.22 | STEEL DETAILS |
| S8.31 | STEEL DETAILS |
| 89 | |
| MECHANICAL | |
| M0.00 | MECHANICAL LEGEND AND ABBREVIATIONS |
| M0.01 | BASIS OF DESIGN AND GENERAL NOTES |
| M0.02 | MECHANICAL SCHEDULES |
| M0.03 | MECHANICAL SCHEDULES |
| M2.11 | LEVEL 1 - OVERALL HVAC PLAN |
| M2.11A | LEVEL 1 - HVAC PLAN - SEGMENT A |
| M2.11B | LEVEL 1 - HVAC PLAN - SEGMENT B |
| M2.12 | LEVEL 2 - HVAC PLAN - SEGMENT B |
| M2.21 | ROOF - OVERALL HVAC PLAN |
| M2.21A | ROOF - HVAC PLAN - SEGMENT A |
| M2.21B | ROOF - HVAC PLAN - SEGMENT B |
| M3.11 | LEVEL 1 - OVERALL HVAC ZONING PLAN |
| M3.11A | LEVEL 1 - HVAC ZONING PLAN - SEGMENT A |
| M3.11B | LEVEL 1 - HVAC ZONING PLAN - SEGMENT B |
| M3.12 | LEVEL 2 - ZONING PLAN - SEGMENT B |
| M4.11 | LEVEL 1 - OVERALL REFRIGERANT PIPING PLAN |
| M4.11A | LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT A |
| M4.11B | LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT B |
| M4.21 | ROOF - OVERALL REFRIGERANT PIPING PLAN |
| M4.21A | ROOF - REFRIGERANT PIPING PLAN - SEGMENT A |
| M4.21B | ROOF - REFRIGERANT PIPING PLAN - SEGMENT B |
| M5.01 | MECHANICAL SECTIONS |
| M6.01 | MECHANICAL EQUIPMENT SELECTIONS |
| M6.02 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.03 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.04 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.05 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M7.01 | MECHANICAL CONTROLS |
| M7.02 | MECHANICAL CONTROLS |
| M7.03 | MECHANICAL CONTROLS |
| M7.04 | MECHANICAL CONTROLS |
| M7.05 | MECHANICAL CONTROLS |
| M9.01 | MECHANICAL DETAILS |
| M9.02 | MECHANICAL DETAILS |
| M9.03 | MECHANICAL OPM DETAILS |
| M9.04 | MECHANICAL OPM DETAILS |
| M9.05 | MECHANICAL OPM DETAILS |
| M9.06 | MECHANICAL DETAILS |
| M9.07 | MECHANICAL OPM DETAILS |
| M9.08 | MECHANICAL OPM DETAILS |
| M10.01 | MECHANICAL TITLE 24 |
| M10.02 | MECHANICAL TITLE 24 |
| M10.03 | MECHANICAL TITLE 24 |
| M10.04 | MECHANICAL TITLE 24 |
| 44 | |
| ELECTRICAL | |
| E0.00 | ELECTRICAL LEGEND AND ABBREVIATIONS |
| E0.01 | ELECTRICAL GENERAL NOTES |
| E0.02 | ELECTRICAL SCHEDULES |
| E0.03 | LUMINAIRE SCHEDULE |
| E0.04 | ELECTRICAL EQUIPMENT SCHEDULE |
| E0.05 | LIGHTING SEQUENCE OF OPERATIONS |
| E0.06 | TITLE 24 FORMS |
| E0.07 | TITLE 24 FORMS |
| E0.08 | TITLE 24 FORMS |
| E0.09 | TITLE 24 FORMS |
| E0.10 | TITLE 24 FORMS |
| E0.11 | TITLE 24 FORMS |
| E1.10 | ELECTRICAL DEMO SITE PLAN |
| E1.11 | ELECTRICAL NEW SITE PLAN |
| E1.12 | SITE LIGHTING PLAN |
| E1.13 | SITE LIGHTING PHOTOMETRICS |
| E1.14 | SITE LIGHTING EMERGENCY PHOTOMETRICS |
| E2.11 | LEVEL 1 - OVERALL LIGHTING PLAN |
| E2.11A | LEVEL 1 - LIGHTING PLAN - SEGMENT A |
| E2.11B | LEVEL 1 - LIGHTING PLAN - SEGMENT B |
| E2.11C | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A |
| E2.11D | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT B |
| E2.11E | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A - EMERGENCY |
| E2.11F | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT B - EMERGENCY |
| E2.12 | LEVEL 2 - LIGHTING PLAN - CATWALK |
| E2.13 | ROOF - OVERALL LIGHTING PLAN |
| E2.13A | ROOF - LIGHTING PLAN - SEGMENT A |
| E2.13B | ROOF - LIGHTING PLAN - SEGMENT B |
| E3.11 | LEVEL 1 - OVERALL POWER PLAN |
| E3.11A | LEVEL 1 - POWER PLAN - SEGMENT A |
| E3.11B | LEVEL 1 - POWER PLAN - SEGMENT B |
| E3.12 | LEVEL 2 - POWER PLAN - CATWALK |
| E3.13 | ROOF - OVERALL POWER PLAN |
| E3.13A | ROOF - POWER PLAN - SEGMENT A |
| E3.13B | ROOF - POWER PLAN - SEGMENT B |
| E4.11 | DEMO SINGLE LINE DIAGRAM |
| E4.12 | SINGLE LINE DIAGRAMS |
| E5.11 | PANELBOARD SCHEDULES |
| E5.12 | PANELBOARD SCHEDULES |
| E5.13 | PANELBOARD SCHEDULES |
| E5.14 | PANELBOARD SCHEDULES |
| E5.15 | ENLARGED PLANS |
| E6.10 | LIGHTING CONTROL DIAGRAMS |
| E6.11 | ELECTRICAL DIAGRAMS |
| E6.12 | GROUNDING DIAGRAM |
| E6.13 | ELECTRICAL DETAILS |
| E6.14 | ELECTRICAL DETAILS |
| E6.15 | ELECTRICAL DETAILS |
| E6.16 | GENERATOR DETAILS |
| E6.17 | GENERATOR SEISMIC REPORT |
| E6.18 | GENERATOR SEISMIC DRAWINGS |
| E6.19 | LIGHTING DETAILS |
| E6.20 | ELECTRICAL DETAILS |
| E6.21 | ELECTRICAL DETAILS |
| E6.22 | ELECTRICAL DETAILS |
| E6.23 | ELECTRICAL DETAILS |
| E6.24 | ELECTRICAL DETAILS |
| E6.25 | ELECTRICAL DETAILS |
| 58 | |
| PLUMBING | |
| P0.00 | PLUMBING LEGEND AND ABBREVIATIONS |
| P0.01 | PLUMBING BASIS OF DESIGN AND CALCULATIONS |
| P0.02 | SCHEDULES |
| P1.01 | PLUMBING SITE PLAN |
| P1.01A | PLUMBING SITE PLAN - SEGMENT A |
| P1.01B | PLUMBING SITE PLAN - SEGMENT B |
| P1.02 | UNDERGROUND PLAN - PLUMBING |
| P1.02A | UNDERGROUND PLUMBING PLAN - SEGMENT A |
| P1.02B | UNDERGROUND PLUMBING PLAN - SEGMENT B |
| P1.03 | LEVEL 1 - OVERALL PLUMBING PLAN |
| P1.03A | LEVEL 1 - PLUMBING PLAN - SEGMENT A |
| P1.03B | LEVEL 1 - PLUMBING PLAN - SEGMENT B |
| P1.04 | ROOF - OVERALL PLUMBING PLAN |
| P1.04A | ROOF - PLUMBING PLAN - SEGMENT A |
| P1.04B | ROOF - PLUMBING PLAN - SEGMENT B |
| P3.01 | PLUMBING ENLARGED PLANS |
| P4.01 | PLUMBING PIPING ISOMETRIC DIAGRAM |
| P4.02 | PLUMBING PIPING ISOMETRIC DIAGRAM |
| P4.03 | DOMESTIC & DWV SCHEMATICS |
| P4.04 | STORM PIPING ISOMETRIC DIAGRAM |
| P9.01 | PLUMBING DETAILS |
| P9.02 | PLUMBING DETAILS |
| P9.03 | PLUMBING DETAILS |
| P9.04 | PLUMBING DETAILS |
| P9.05 | PLUMBING DETAILS |
| P9.06 | PLUMBING DETAILS |
| P9.07 | PLUMBING DETAILS |
| P9.08 | PLUMBING DETAILS |
| 28 | |
| TECHNOLOGY | |
| T0.00 | TECHNOLOGY LEGEND AND ABBREVIATIONS |
| T0.01 | TECHNOLOGY BASIS OF DESIGN AND RESPONSIBILITY MATRIX |
| T1.01 | TECHNOLOGY SCHEDULES |
| T1.11 | TECHNOLOGY SITE PLAN |
| T2.01 | LEVEL 1 - OVERALL TECHNOLOGY PLAN |
| T2.01A | LEVEL 1 - TECHNOLOGY PLAN - SEGMENT A |
| T2.01B | LEVEL 1 - TECHNOLOGY PLAN - SEGMENT B |
| T2.02 | LEVEL 2 - TECHNOLOGY PLAN - CATWALK |
| T4.01 | TECHNOLOGY ENLARGED ROOM PLAN |
| T4.02 | TECHNOLOGY ENLARGED ROOM PLAN |
| T4.03 | AV ENLARGED ROOM PLAN |
| T4.04 | AV ENLARGED ROOM PLAN |
| T5.01 | COMMUNICATIONS BACKBONE CABLING DIAGRAM |
| T6.01 | TECHNOLOGY DETAILS |
| T6.02 | TECHNOLOGY DETAILS |
| T6.03 | TECHNOLOGY DETAILS |
| T6.04 | WIRELESS ACCESS POINT DETAILS |
| T6.05 | CAMERA DETAILS |
| T6.06 | ACCESS CONTROL ROUGH IN DETAILS |
| 19 | |
| FIRE ALARM | |
| FA0.00 | COVER SHEET |
| FA0.01 | RISER DIAGRAM |
| FA0.02 | RISER DIAGRAM |
| FA0.03 | SEQUENCE OF OPERATION |
| FA0.04 | CALCULATIONS |
| FA0.05 | CALCULATIONS |
| FA0.06 | DETAILS |
| FA0.07 | DETAILS |
| FA0.08 | DETAILS |
| FA0.09 | DETAILS |
| FA1.00 | FIRE ALARM - PANEL RELOCATION SITE PLAN |
| FA1.01 | FIRE ALARM - OVERALL SITE PLAN |
| FA1.11 | FIRE ALARM - SITE PLAN |
| FA3.11A | 1ST FLOOR - SEGMENT A - FIRE ALARM PLAN |
| FA3.11B | 1ST FLOOR - SEGMENT B - FIRE ALARM PLAN |
| FA3.21A | ROOF PLAN - SEGMENT A - FIRE ALARM PLAN |
| FA3.21B | ROOF PLAN - SEGMENT B - FIRE ALARM PLAN |
| 17 | |
| FIRE SPRINKLER | |
| FS0.01 | GENERAL NOTES |
| FS0.02 | CIVIL UTILITY PLAN - FOR REFERENCE |
| FS3.10 | FULL HEIGHT SECTION & DETAILS |
| FS3.11 | FIRE SPRINKLER SYSTEM OVERALL LAYOUT |
| FS3.12 | FIRE SPRINKLER SYSTEM SEGMENT A & DETAIL PLANS |
| FS3.13 | FIRE SPRINKLER SYSTEM SEGMENT B LAYOUT |
| FS3.14 | FIRE SPRINKLER HANGER & SEISMIC BRACING DETAILS |
| 7 | |
| THEATER | |
| TR0.00 | SHEET INDEX AND PROJECT NOTES |
| TR2.11 | STAGE RIGGING PLAN |
| TR6.11 | STAGE RIGGING SECTION |
| TR7.11 | STAGE RIGGING ELEVATIONS |
| TR7.12 | STAGE RIGGING ELEVATIONS |
| TR7.13 | STAGE RIGGING ELEVATIONS |
| TR7.14 | STAGE RIGGING ELEVATIONS |
| TR8.11 | STAGE RIGGING DETAILS |
| TR8.12 | STAGE RIGGING DETAILS |
| TR8.21 | STAGE RIGGING DETAILS -CONNECTOR STRIP |
| TR9.21 | STAGE RIGGING SCHEDULES |
| TL0.00 | SHEET INDEX AND PROJECT NOTES |
| TL2.11 | STAGE LIGHTING PLAN -STAGE LEVEL |
| TL2.12 | STAGE LIGHTING PLAN -MEZZANINE LEVEL |
| TL2.13 | STAGE LIGHTING PLAN -CATWALK LEVEL |
| TL7.11 | STAGE LIGHTING ELEVATIONS |
| TL7.12 | STAGE LIGHTING MOUNTING DETAILS |
| TL8.11 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.12 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.21 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.22 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.23 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL9.11 | STAGE LIGHTING CONTROL RISER |
| TL9.12 | STAGE LIGHTING RISERS |
| TL9.21 | STAGE LIGHTING -SCHEDULES |
| TL9.31 | STAGE LIGHTING PLOT |
| 26 | |
| AV | |
| AV0.01 | AV GENERAL NOTES AND SHEET INDEX |
| AV0.02 | AV ABBREVIATIONS, NOTES AND SYMBOLS |
| AV0.03 | AV JUNCTION BOX SCHEDULE |
| AV2.11 | 1ST FLOOR - AV FLOOR PLAN |
| AV2.11B | 1ST FLOOR - SEGMENT B - AV FLOOR PLAN |
| AV2.21 | 2ND FLOOR - AV FLOOR PLAN |
| AV2.21B | 2ND FLOOR - SEGMENT B - AV FLOOR PLAN |
| AV2.41 | 1ST FLOOR - REFLECTED CEILING PLAN |
| AV2.41B | 1ST FLOOR - SEGMENT B - REFLECTED CEILING PLAN |
| AV2.71 | AV THEATER SECTIONS |
| AV2.91 | AV RISER DIAGRAM |
| AV3.00 | WIRING SCHEME AND SYMBOL KEY |
| AV3.01 | THEATER - AV ONLINE DIAGRAM |
| AV3.02 | THEATER - AV ONLINE DIAGRAM |
| AV3.03 | THEATER - AV ONLINE DIAGRAM |
| AV3.04 | INTERCOM ONELINE DIAGRAM |
| AV3.05 | AUDIO NETWORK ONLINE DIAGRAM |
| AV4.50 | AV CONTROL ROOM LAYOUT |
| AV4.51 | AV EQUIPMENT LAYOUTS |
| AV5.01 | AV RACK DETAILS |
| AV5.02 | AV RACK ELEVATIONS |
| AV6.01 | AV DETAILS |
| AV6.02 | AV DETAILS |
| AV6.51 | FACILITY PANEL DETAILS |
| AV6.52 | FACILITY PANEL DETAILS |
| 25 | |
| PHOTOVOLTAIC | |
| PV-001 | COVER SHEET |
| PV-002 | GENERAL NOTES AND PRODUCT CERTIFICATES |
| PV-101 | ROOF PLAN/PROPOSED SOLAR PANEYL LAYOUT |
| PV-500 | DETAILS |
| PV-502 | DETAILS |
| PVE-000 | ABBREVIATIONS, SYMBOLS AND GENERAL NOTES |
| PVE-100 | SINGLE LINE DIAGRAM |
| PVE-200 | ELECTRICAL ROOF PLAN |
| PVE-400 | PV ELECTRICAL DETAILS |
| PVE-401 | PV ELECTRICAL DETAILS |
| 10 | |

Grand total: 510

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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DATE: 10/15/2025

COMMITTED TO COLLEGE AND CAREER READINESS
GARFIELD HIGH SCHOOL
ESTABLISHED 1901


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**SHEET INDEX**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

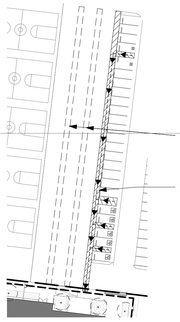
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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THE LINE SHOWN ABOVE IS EQUAL TO ONE FOOT ON 24X36 SHEETS ORIGINAL PAGE SIZE.

## DROP-OFF AND LOADING ZONE DEMO PLAN | 2

1" = 60'-0"

| BUILDING INFORMATION | |
|---|---|
| BUILDING TYPE | DSA# |
| B - CLASSROOMS | A12231, A14662, A51005, A03-107693 |
| C - CLASSROOMS | A12231, A51005, A03-107693 |
| D - CLASSROOMS | A12231, A51005, A03-107693 |
| E - CLASSROOMS | A12231, A51005, A03-107693, A03-108334* |
| F - HOME EC & GRAPHIC ARTS | A12231, A15051, A51005, A03-107693 A03-112915* |
| G - WEIGHT & INDUSTRIAL ARTS | A16527, A555592, A03-107693, A03-112915* |
| G1 - CLASSROOMS | A12231, A13542, A51105 A03-107693 A03-112915* |
| H - GIRLS LOCKERS | A12231, A14662, A03-107693 |
| J - BOYS LOCKERS | A12231, A14662, A03-107693 |
| K - CAFETERIA & MAINTENANCE | A12231, A14662, A51105, A03-107693, A03-123169 |
| L - STUDENT CENTER | A13542, A03-107693 |
| N - CLASSROOMS | A13542, A51005, A03-107693 |
| O - MEDIA CENTER | A13542, A68779, A03-107693 |
| P - CLASSROOMS | A15051, A51005, A03-107693 |
| R - GYMNASIUM | A16527, A03-107693 |
| S - CLASSROOMS | A13912, A03-107693, A03-108334* |
| T - TEAM ROOM / FIELD | A13912, A16527, A03-107693 |
| U - VISITOR TEAM ROOM | A13912, A03-107693 |
| V - PORTABLES | A28579, A03-121878 |
| W - STORAGE | A28579 |
| Y - CLASSROOMS | A03-108334 |




## 1ST FLOOR - ARCHITECTURAL SITE BUILDING PLAN | 1

1" = 60'-0"

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

NOT FOR CONSTRUCTION


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| 6 | DSA SUBMITTAL | 06/23/2025 |

## NOTES

**DESIGN PROFESIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT**

THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEET THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS, AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEIMATES COMPONENTS OF PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON COMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THE INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS, AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT WHAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHHOLD LIMITATIONS OR A FINDING OF UNRESANOBLE HARDSHIP ARE INDICATED IN THESE CONSTUCTION DOCUMENTS.

DURING CONSTRUCTION IF POT ITEMS WHITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROGHT INTO COMPLIANCE WITH THE CBC AS PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION DOCUMENT.

FOR ACCESSIBLE PATH OF TRAVEL COMPLIANCE OF EXISTING CAMPUS, SEE DSA APPLICATION 03-108334, 03-118952 & 03-123169.

**PATH OF TRAVEL (P.O.T)**

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX SLOPE, OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAX, AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP RESISTANT. CROSS SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5%, UNLESS OTHERWISE INDICATED. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM, AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL AND ABOVE 27" AND LESS THAN 80".

**PARKING COUNT**

(E) PARKING ADJACENT TO COURTS & NORTH OF NEW BLDG. :
STANDARD STALLS: 98
ACCESSIBLE STALLS: 5 (2 VAN ACCESSIBLE)
EV CHARGING STATIONS: 7 (2 ACCESSIBLE (1 VAN))

PROPOSED PARKING ADJACENT - EAST OF NEW BLDG. :
STANDARD STALLS: 6
ACCESSIBLE STALLS: 2 (1 VAN)

PER CBC 2022 REQUIREMENTS, THE EXISTING NUMBER OF ACCESSIBLE PARKING MEETS CODE.

## LEGEND

- EXISTING BUILDINGS
- NEW BUILDING
- APPROXIMATE LIMIT OF WORK.
- (N) ACCESSIBLE PATH OF TRAVEL
- (E) ACCESSIBLE PATH OF TRAVEL DSA# 03-108334
- (E) ACCESSIBLE PATH OF TRAVEL DSA# 03-123169
- FIRE HYDRANT - SEE CIVIL DRAWINGS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CODE SITE PLAN - PATH OF TRAVEL**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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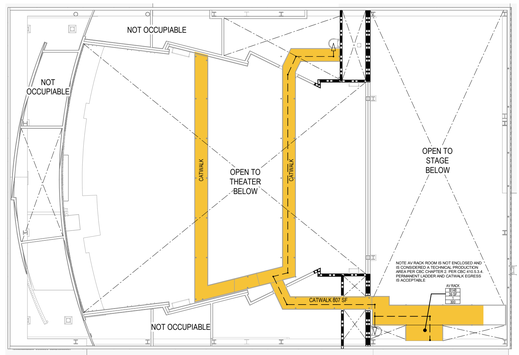
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THE LINE SHOWN ABOVE IS 3" LONG ON ORIGINAL PLOT IF THIS SHEET IS ORIGINAL PAGE SIZE




| THEATER OCCUPANT LOAD CALCULATION | |
|---|---|
| FIXED SEATING | 426 |
| WHEELCHAIR SPACES | 6 |
| COMPANION SEATS | 6 |
| TOTAL OL: | 438 |

## 1ST FLOOR - PLAN 1
1/16" = 1'-0"




## TECHNICAL PRODUCTION AREAS - PLAN 2
1/16" = 1'-0"

**BUILDING REQUIREMENTS**

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (CBC 2022 TABLE 601)

| | |
|---|---|
| PRIMARY STRUCTURAL FRAME | 0-NR |
| ALL BEARING WALLS | 0-NR |
| NONBEARING WALLS AND PARTITIONS - INTERIOR | 0-NR |
| FLOOR AND SECONDARY MEMBERS | 0-NR |
| ROOF AND SECONDARY MEMBERS | 0-NR |

INTERIOR WALL AND CEILING FINISH REQUIREMENTS, SPRINKLERED (CBC 2022 TABLE 803.13)

| OCCUPANCY | INTERIOR EXIT STAIRWAYS AND RAMPS | CORRIDORS AND ENCLOSURES FOR EXIT ACCESS STAIRWAYS | ROOMS AND ENCLOSED SPACES |
|---|---|---|---|
| A-1 | B | B | C |
| B | B | C | C |
| E | B | C | C |
| S-1 | C | C | C |

TRAVEL DISTANCE (CBC 2022 TABLE 1017.2 & CBC 2022 410.5.3.2)

| | |
|---|---|
| "A" OCCUPANCY W/ SPRINKLERS | 250' |
| "B" OCCUPANCY W/ SPRINKLERS | 300' |
| "E" OCCUPANCY W/ SPRINKLERS | 250' |
| "S-1" OCCUPANCY W/ SPRINKLERS | 250' |
| TECHNICAL PRODUCTION AREAS W/ SPRINKLERS | 400' |

STAGE DETAILED REQUIREMENTS (CBC 2022 410)

STAGE CONSTRUCTION (CBC 2022 410.2.1)
STAGES OF TYPE IIB WITH A NOMINAL 2-INCH WOOD DECK NEED NOT BE CONSTRUCTED OF THE SAME MATERIALS AS REQUIRED FOR THE TYPE OF CONSTRUCTION, PROVIDED THAT THE STAGE IS SEPARATED FROM OTHER AREAS IN ACCORDANCE WITH SECTION 410.2.4.
STAGE AREAS ARE MEASURED TO INCLUDE THE ENTIRE PERFORMANCE AREA AND ADJACENT BACKSTAGE AND SUPPORT AREAS NOT SEPARATED FROM THE PERFORMANCE AREA BY FIRE-RESISTANCE-RATED CONSTRUCTION. STAGE HEIGHT IS MEASURED FROM THE LOWEST POINT ON THE STAGE FLOOR TO THE HIGHEST POINT OF THE ROOF OR FLOOR DECK ABOVE THE STAGE.

TECHNICAL PRODUCTION AREAS: GALLERIES, GRIDIRONS AND CATWALKS (CBC 2022 410.2.2)
BEAMS DESIGNED ONLY FOR THE ATTACHMENT OF PORTABLE OR FIXED THEATER EQUIPMENT, GRIDIRONS, GALLERIES AND CATWALKS SHALL BE CONSTRUCTED OF APPROVED MATERIALS CONSISTENT WITH THE REQUIREMENTS FOR THE TYPE OF CONSTRUCTION OF THE BUILDING; AND A FIRE-RESISTANCE RATING SHALL NOT BE REQUIRED.

SCENERY (CBC 2022 410.2.6)
COMBUSTIBLE MATERIALS USED IN SETS AND SCENERY SHALL BE FLAME RESISTANT IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN CCR, TITLE 19, DIVISION 1, CHAPTER 8, IN ACCORDANCE WITH SECTION 806 AND THE CALIFORNIA FIRE CODE. FOAM PLASTICS AND MATERIALS CONTAINING FOAM PLASTICS SHALL COMPLY WITH SECTION 2603 AND THE CALIFORNIA FIRE CODE.

STAGE VENTILATION (CBC 2022 410.2.7)
ROOF VENTS PER CBC 2022 410.2.7.1.

DRESSING AND APPURTENANT ROOMS (CBC 2022 410.4)
DRESSING AND APPURTENANT ROOMS ARE SEPARATED FROM THE STAGE AND EACH OTHER BY A 1HR RATED FIRE BARRIER PER CBC SECTION 707.

MEANS OF EGRESS (CBC 2022 410.5)
WHERE TWO OR MORE EXITS OR EXIT ACCESS DOORWAYS FROM THE STAGE ARE REQUIRED IN ACCORDANCE WITH CBC 1006.2, NOT FEWER THAN ONE EXIT OR EXIT ACCESS DOORWAY IS PROVIDED ON EACH SIDE OF A STAGE. EXIT ACCESS STAIRWAYS AND RAMPS SERVING A STAGE, PLATFORM OR TECHNICAL PRODUCTION AREAS ARE NOT REQUIRED TO BE ENCLOSED.
NOT FEWER THAN ONE MEANS OF EGRESS SHALL BE PROVIDED FROM TECHNICAL PRODUCTION AREAS. THE EXIT ACCESS TRAVEL DISTANCE IS NOT GREATER THAN 400 FEET (122 MM) (BUILDING EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1).

STANDPIPES (CBC 2022 410.7)
STANDPIPE SYSTEM IS PROVIDED IN ACCORDANCE WITH CBC SECTION 905.

| | |
|---|---|
| DUCTS AND TRANSFER OPENINGS | FIRE BARRIERS (CBC 2022 717.5.2)<br>DUCTS AND AIR TRANSFER OPENINGS OF FIRE BARRIERS SHALL BE PROTECTED WITH LISTED FIRE DAMPERS INSTALLED IN ACCORDANCE WITH THEIR LISTING.<br><br>THROUGH PENETRATION FIRESTOP SYSTEM (CBC 2022 714.4.1.2)<br>THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTIVE RATING OF THE WALL PENETRATED. |
| FLOOR FINISHES (CBC 2022 804.4.1 & 804.4.2) | CLASS II (SMOKE DENSITY RATING OF LESS THAN 450 PER ASTM E662) |
| FIRE ALARM AND DETECTION SYSTEM (CBC 2022 907) | AUTOMATIC FIRE ALARM SYSTEM REQUIRED (CBC 2022 907.2.1, 907.2.2, 907.2.3 AND 907.2.10)<br>SMOKE DETECTORS REQUIRED<br>HEAT DETECTORS REQUIRED IN COMBUSTIBLE SPACES WHERE SPRINKLERS OR SMOKE DETECTORS ARE NOT INSTALLED. |
| STANDPIPE SYSTEM (CBC 2022 905) | CLASS III REQUIRED<br>THE SYSTEM WILL PROVIDE A 1½" HOSE STATION TO SUPPLY WATER FOR TRAINED PERSONNEL AND 2½" HOSE CONNECTIONS TO SUPPLY A LARGER VOLUME OF WATER FOR USE BY FIRE DEPARTMENTS. THE HOSE CONNECTIONS WILL BE INSTALLED AT EITHER SIDE OF THE STAGE PER CFC SECTION 905.3.4. |
| FIRE EXTINGUISHERS (CBC 2022 906) | 75' MAX TRAVEL DISTANCE TO EXTINGUISHER IN GROUP A, B, E, AND S OCCUPANCIES (CBC 2022 906.3) |
| MINIMUM CORRIDOR WIDTH (CBC 2022 TABLE 1020.3) | 72" |
| ROOF COVERING CLASSIFICATION (CBC 2022 1505.1) | CLASS C |
| FLOOR LEVEL EXIT SIGNS (CBC 2022 1013.7 EXCEPTION 1) | NOT REQUIRED |

**ASSISTIVE LISTENING SYSTEM 11B-219**

11B-219.3 RECEIVERS - THE MIN. NUMBER OF RECEIVERS PROVIDED SHALL BE EQUAL TO 4% OF THE TOTAL NUMBER OF SEATS, BUT IN NO CASE NO LESS THAN TWO. 25% MIN. OF RECEIVERS PROVIDED, BUT NO FEWER THAN TWO, SHALL BE HEARING-AID COMPATIBLE IN ACCORDANCE WITH SECTION 11B706.3

| ROOM NUMBER | ROOM NAME | NUMBER OF OCCUPANTS | NUMBER OF TRANSMITTERS | TOTAL NUMBER OF RECEIVERS (# OF OCC. X .04) |
|---|---|---|---|---|
| A117, A123, A138 | CONF | 6 | 1 (PORTABLE SYSTEM PER 11B-219.5) | 2 (2") SEE NOTE 2 (PORTABLE SYSTEM PER 11B-219.5) |
| B105 | SEAT THEATER | 438 | 1 | 18 (5") SEE NOTE 2 |
| B118 | CHORAL ROOM | 106 | 1 | 5 (2") SEE NOTE 1 |
| B125 | BAND ROOM | 56 | 1 | 3 (2") SEE NOTE 1 |
| B133 | DRAMA CLASSROOM | 42 | 1 | 2 (2") SEE NOTE 1 |

* NUMBER OF TOTAL RECEIVERS TO BE HEARING AID COMPATIBLE

1. CLASSROOM ASSISTED LISTENING SYSTEM (ALS) COUNTS - PROVIDE 2 PORTABLE ASSISTIVE LISTENING SYSTEMS, EACH WITH A TRANSMITTER AND A MINIMUM OF 2 RECEIVERS, FOR USE IN THE CLASSROOM WITHOUT AUDIO AMPLIFICATION. THE ASSISTED LISTENING RECEIVERS AND TRANSMITTER SHALL BE STORED IN THE SCHOOL SITE ADMINISTRATION OFFICE UNTIL REQUESTED
2. ASSEMBLY SPACES - ASSISTED LISTENING RECEIVERS AND TRANSMITTER ARE TO BE STORED IN OR NEAR THE ASSEMBLY AREA

## CODE BUILDING ANALYSIS
12" = 1'-0"

| CALIFORNIA PLUMBING CODE 2022 | | | |
|---|---|---|---|
| OCCUPANCY CLASSIFICATION PER CPC CHAPTER 4 AND DSA IR A-26.CC | OCCUPANT LOAD FACTOR (OLF) PER CPC TABLE 4-1 | BUILDING FLOOR AREA, SF OR NUMBER OF FIXED SEATS | BUILDING OCCUPANTS FOR PLUMBING FIXTURE REQUIREMENT |
| ASSEMBLY - FIXED SEATS | 50% OF FIXED SEATS | 438 SEATS | 225 |
| ASSEMBLY - WAITING | 15 | 2,065 SF | 138 |
| BUSINESS | 150 | 7,139 SF | 48 |
| EDUCATION - VOCATIONAL | 50 | 9,105 SF | 183 |
| EDUCATION - CLASSROOM | 30 | 1099 SF | 33 |
| STORAGE | 4,000 | 3,340 SF | 1 |
| TOTAL | | | 628 |

| CALIFORNIA PLUMBING CODE 2022 TABLE 422.1 | | | | | |
|---|---|---|---|---|---|
| | MALE (314) | | FEMALE (314) | | RATIO |
| FIXTURE TYPE | REQUIRED | PROVIDED | REQUIRED | PROVIDED | |
| WATER CLOSETS | 3 | 9 | 8 | 12 | |
| URINALS | 3 | 3 | - | - | |
| LAVATORIES | 2 | 8 | 5 | 9 | |
| BATHTUBS OR SHOWERS | - | - | - | - | |
| DRINKING FOUNTAINS | 3 REQUIRED, 3 PROVIDED | | | | |
| OTHER | 1 SERVICE SINK OR LAUNDRY TRAY REQUIRED, 2 PROVIDED | | | | |

## LEGEND - CODE PLUMBING COUNT
12" = 1'-0"

CBC 2022 NONSEPARATED OCCUPANCY PER CBC 508.3

| BUILDING NAME | OCCUPANCY CLASSIFICATION PER CBC CHAPTER 3 AND DSA IR A-26 | OCCUPANT LOAD FACTOR (OLF) PER CBC TABLE 1004.5, 1004.6 AND DSA IR A-26 | CONSTRUCTION TYPE PER CBC CHAPTER 6 AND TABLE 601 | ALLOWABLE NUMBER OF STORIES PER CBC TABLE 504.4 | ACTUAL NUMBER OF STORIES PROPOSED | ALLOWABLE BUILDING HEIGHT IN FEET PER CBC TABLE 504.3 | ACTUAL BUILDING HEIGHT IN FEET PROPOSED | ALLOWABLE FLOOR AREA IN SQ. FT. PER CBC TABLE 506.2 (SM) | WITH AREA OF INCREASE (SEE PLAN FOR CALC) PER CBC 506.3 | ACTUAL FLOOR AREA IN SQ. FT. PROPOSED | REQUIRED SEPARATION OF OCCUPANCIES PER CBC TABLE 508.4 | FIRE RESISTIVE RATING REQUIREMENTS PER CBC TABLE 601 | ALLOWABLE OPENINGS PER CBC TABLE 705.8 | AUTOMATIC FIRE SPRINKLER SYSTEM PER CBC CHAPTER 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADMINISTRATION | B BUSINESS OFFICE | 150 GROSS | IIB | 4 | 1 | 75 | 49 | 94,000 | - | 7,225 | NONE REQUIRED, CBC 508.3 | NONE REQUIRED | NO LIMIT | SPRINKLERED |
| PERFORMING ARTS | A-1 ASSEMBLY, FIXED SEATING | NUMBER OF SEATS | IIB | 3 (MOST STRINGENT) | 1+TECHNICAL PRODUCTION AREAS | 75 (MOST STRINGENT) | 49 | 34,000 (MOST STRINGENT) | 36,125 (MOST STRINGENT) | 13,611 (TECHNICAL PRODUCTION AREAS 816) | NONE REQUIRED, CBC 508.3 | NONE REQUIRED | NO LIMIT | SPRINKLERED |
| | E - CLASSROOMS | 20 NET | IIB | 3 | 1 | 75 | 49 | 58,000 | - | 8,190 | NONE REQUIRED, CBC 508.3 | NONE REQUIRED | NO LIMIT | SPRINKLERED |
| | E - VOCATIONAL | 50 NET | IIB | 3 | 1 | 75 | 49 | 58,000 | - | 1,114 | NONE REQUIRED, CBC 508.3 | NONE REQUIRED | NO LIMIT | SPRINKLERED |
| | S-1 STORAGE | 300 GROSS | IIB | 4 | 1 | 75 | 49 | 70,000 | - | 3,350 | NONE REQUIRED, CBC 508.3 | NONE REQUIRED | NO LIMIT | |

| TOTAL ALLOWABLE FLOOR AREA | TOTAL PROPOSED FLOOR AREA | TOTAL PROPOSED FIRE AREA |
|---|---|---|
| TOTAL 36,125 SF | TOTAL 33,490 SF | TOTAL 35,086 SF |

## CODE ANALYSIS TABLE
12" = 1'-0"

PLEASE RECYCLE

IDENTIFICATION STAMP
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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 03/31/2025 |

## KEYNOTES

## LEGEND

- A-1 — ASSEMBLY - FIXED SEATING
- B — BUSINESS GROUP B - OFFICE
- E — CLASSROOM
- E — CLASSROOM - VOCATIONAL
- S-1 — STORAGE GROUP S - STORAGE
- NON-OCCUPIABLE CLASSIFED SPACES (CIRCULATION, RESTROOMS, MECHNICAL & ELECTRICAL ROOMS)
- 1-HR FIRE RATED FIRE BARRIER
- ACCESSIBLE ROUTE SERVING ALL ACCESSIBLE SEATING LOCATIONS, STAGE, ORCHESTRA PIT AND CONTROL ROOMS.

**ROOM OCCUPANCY INFORMATION**

ROOM NAME
XXX — ROOM NUMER
XXX — ROOM SQUARE FOOTAGE
XXX — OCCUPANT LOAD
XXX — OCCUPANT LOAD FACTOR

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CODE & OCCUPANCY ANALYSIS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

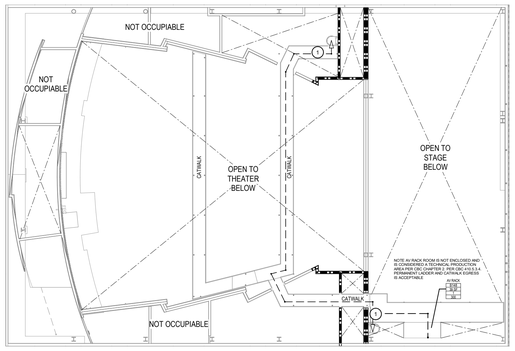
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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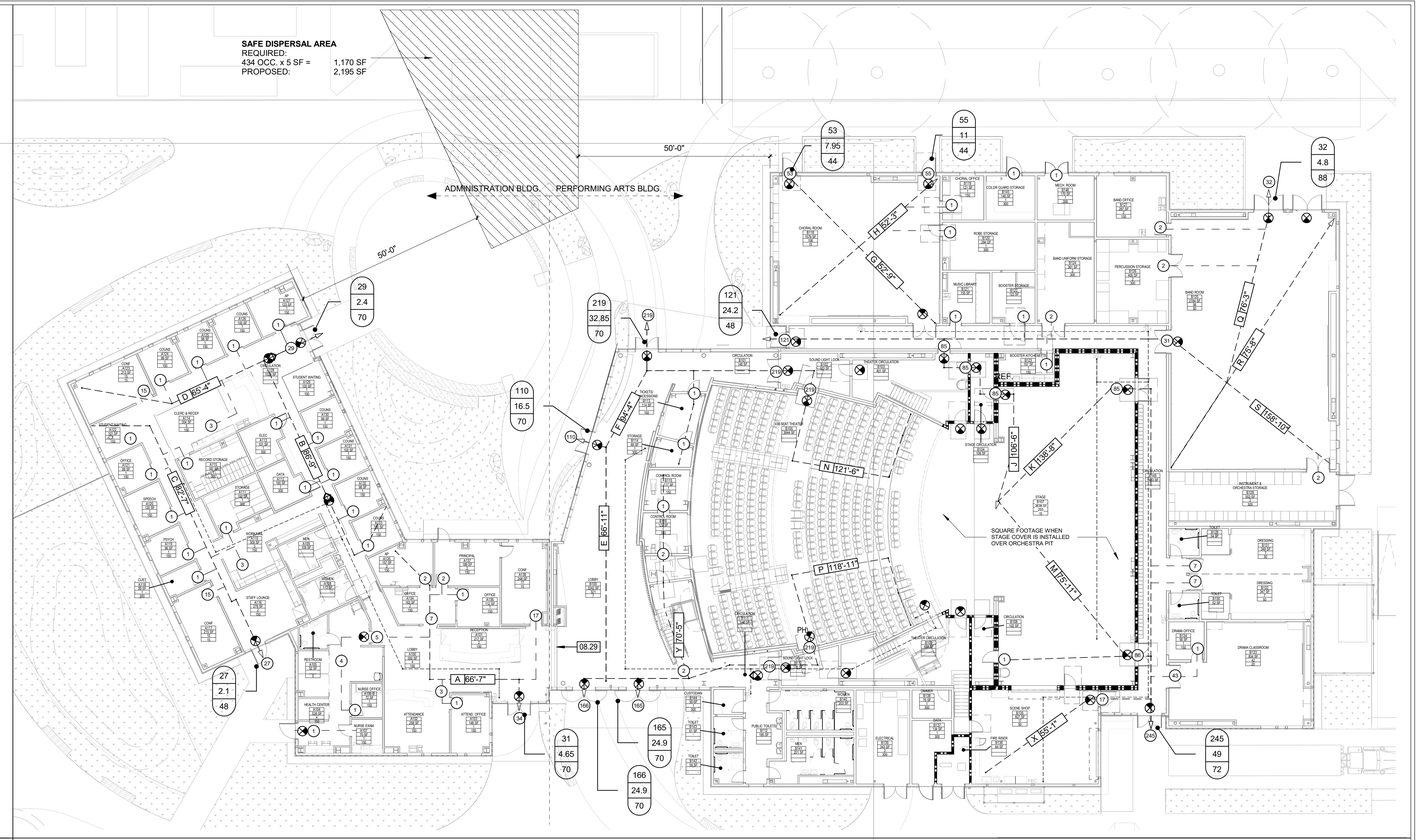
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## TECHNICAL PRODUCTION AREAS - CODE COMPLIANCE PLAN

2

1/16" = 1'-0"



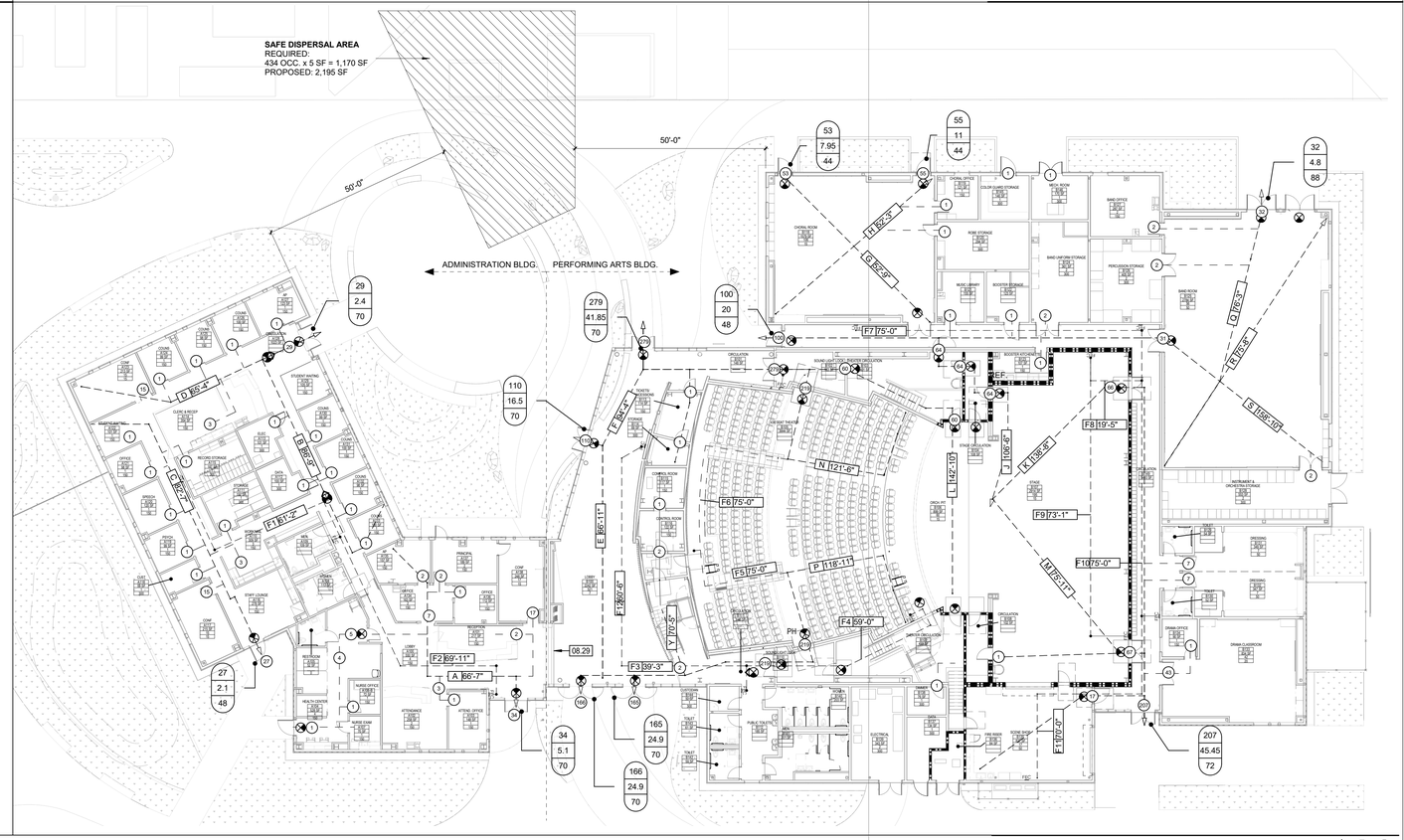

## 1ST FLOOR - CODE COMPLIANCE PLAN W/O ORCHESTRA PIT

1

1/16" = 1'-0"

### EGRESS PATHS- LEVEL 1

| PATH | DISTANCE |
|---|---|
| A | 66'-7 1/2" |
| B | 86'-9 1/2" |
| C | 82'-6 1/2" |
| D | 65'-4" |
| E | 66'-11" |
| F | 94'-4" |
| F1 | 61'-2" |
| F2 | 69'-11 1/2" |
| F3 | 39'-3" |
| F4 | 59'-0" |
| F5 | 75'-0" |
| F6 | 75'-0" |
| F7 | 75'-0" |
| F8 | 19'-5" |
| F9 | 73'-0 1/2" |
| F10 | 75'-0" |
| F11 | 69'-11 1/2" |
| F12 | 60'-6" |
| G | 52'-9 1/2" |
| H | 52'-3" |
| J | 106'-5 1/2" |
| K | 138'-8" |
| L | 142'-10" |
| M | 75'-10 1/2" |
| N | 121'-6" |
| P | 118'-11 1/2" |
| Q | 76'-2 1/2" |
| R | 75'-8" |
| S | 158'-9 1/2" |
| T | 64'-9" |
| U | 117'-6 1/2" |
| V | 20'-6" |
| W | 30'-7" |
| X | 55'-1 1/2" |
| Y | 70'-5" |




## 1ST FLOOR - CODE COMPLIANCE PLAN

A1

1/16" = 1'-0"

PLEASE RECYCLE

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| Δ | DESCRIPTION | DATE |
|---|---|---|
| 6 | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

08.29 GLAZED OPERABLE PARTITION. NOT TO BE USED IN LIEU OF EXIT.

## LEGEND

SAFE DISPERSAL AREA
(TOTAL OCCUPANT LOAD x 5 SF)

DISTANCE- COMMON PATH OF TRAVEL (Cx 19'-7")
DISTANCE- EGRESS PATH (Ex 19'-7")
DISTANCE- BETWEEN FIRE EXTINGUISHERS 75' MAX. (Fx 19'-7")
PATH DISTANCE
PATH NUMBER
PATH

**BUILDING ELEMENTS**

NON-RATED PARTITION
1 HR FIRE BARRIER
FIRE RATED DOOR

15 / 32 / 34
NUMBER OF OCCUPANTS EXITING THRU DOOR OPENING
REQUIRED EXIT WIDTH (OCCUPANT LOAD X 0.15 IN INCHES) REFER TO **CBC 1005.1**
PROVIDED EXIT WIDTH (IN INCHES)

ILLUMINATED EXIT SIGN: AT EXIT/EXIT ACCESS (ONE SIDED)
EXIT SIGN: EXIT DIRECTION (ONE SIDED)
EXIT SIGN: MULTIPLE EXIT DIRECTION (ONE SIDED)
EXIT SIGN: TWO FILLED QUADRANTS INDICATE TWO SIDED SIGN (HATCHED AREAS INDICATE DIRECTIONS SIGN IS VISIBLE FROM)

FEC FIRE EXTINGUISHER CABINETS

**ROOM OCCUPANCY INFORMATION**

ROOM NAME
XXX ROOM NUMER
XXX ROOM SQUARE FOOTAGE
XXX OCCUPANT LOAD
XXX OCCUPANT LOAD FACTOR
XXX REQUIRED EXITS BEYOND 1

## NOTES

1. FIRE RESISTANCE RATINGS SHOWN ARE MINIMUM RATINGS REQUIRED. REFER TO PARTITION TYPES ON A10.11 - A10.12, AND SPECIFICATIONS, FOR MORE INFORMATION
2. FIRE RESISTANCE RATINGS IN PARTITIONS ARE SHOWN WHERE PARTITIONS ARE NOT CUT BY DOORS, WINDOWS, STOREFRONTS, OR OTHER OBJECTS. RATED PARTITION MAY EXIST ABOVE OBJECTS.

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**EXITING ANALYSIS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

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* The two flow tests are not simultaneous tests and the available flows are not cumulative.

**PART II** **INFORMATION ON FIRE FLOW AVAILABILITY**
**(Part II to be completed by Water Purveyor)**

Location of hydrant: Cedar Ave. S/ E. Hallwood Dr.
Hydrant Number: 700E
Distance from Nearest Property Line: 50' +/- Size of Hydrant: 6"x4"x2-1/2" Size of Water main: 8"
Static PSI: 54 Residual PSI: 38 Orifice size: 4" Pitot: 20
Fire Flow at 20 PSI: 2887 gpm Duration: 2 hours [X] Flow Test Date / Time: 04/20/23 @ 11:10 AM [ ] Hydraulic model

Location of hydrant: Cedar Ave. S/ E. Fairview Ave.
Hydrant Number: 701E
Distance from Nearest Property Line: 50' +/- Size of Hydrant: 6"x4"x2-1/2" Size of Water main: 8"
Static PSI: 54 Residual PSI: 19 Orifice size: 4" Pitot: 19
Fire Flow at 20 PSI: 1843 gpm Duration: 2 hours [ ] Flow Test Date / Time: [X] Hydraulic model

[ ] (Check box if Simultaneous/ Dual flow test was performed) Combined flow at 20 psi:

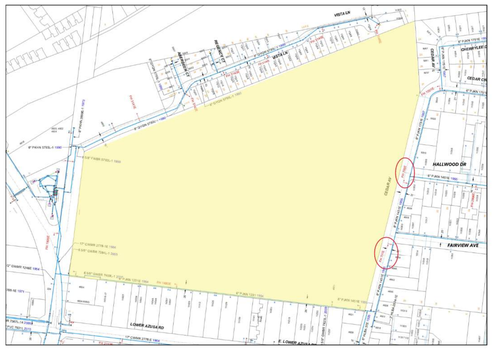
Location of hydrant:
Hydrant Number:
Distance from Nearest Property Line: Size of Hydrant: Size of Water main:
Static PSI: Residual PSI: Orifice size: Pitot:
Fire Flow at 20 PSI: Duration: [ ] Flow Test Date / Time: [ ] Hydraulic model

[ ] (Check box if Simultaneous/ Triple flow test was performed) Combined flow at 20 psi:

San Gabriel Valley Water Company — Water Purveyor
Signature
909-201-7347 — Phone Number
April 20, 2023 — Date
Design Manager — Title

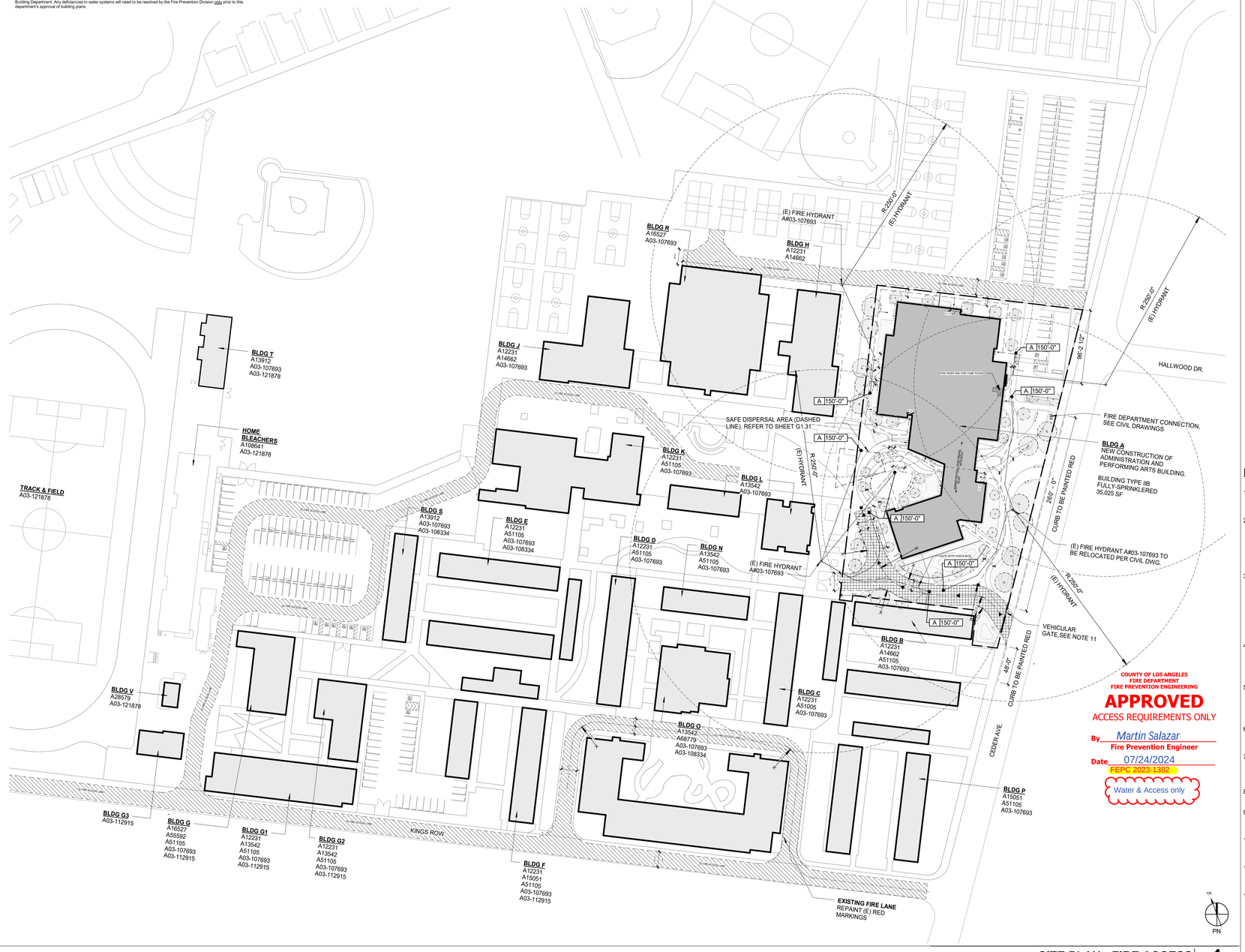
**This Information is Considered Valid for Twenty Four Months**

Fire Department approval of building plans shall be required prior to the issuance of a Building Permit by the jurisdictional Building Department. Any deficiences in water systems will need to be resolved by the Fire Prevention Division only prior to this department's approval of building plans.




**Map No. 06**

1 inch = 250 feet




**SITE PLAN - FIRE ACCESS** **1** 1" = 60'-0"

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# ADSA 810

## FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply.

Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy *PL 09-01: Fire Flow for Buildings*.

| PROJECT INFORMATION | |
|---|---|
| School District/Owner: | El Monte Union High School District |
| Project Name/School: | New Theater & Administration Building / Arroyo High School |
| Project Address: | 4921 Cedar Ave. El Monte, CA 91732 |

| FIRE & LIFE SAFETY INFORMATION | | | | |
|---|---|---|---|---|
| 1. | Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data.)* | Yes ☑ | | No ☐ |
| 2. | Was the fire hydrant water flow test performed as part of this LFA review? | Yes ☑ | | No ☐ |
| 3. | Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? *(If yes, indicate FHSZ classification below.)* | Yes ☐ | | No ☑ |
| | Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/ | Moderate ☐ | High ☐ | Very High ☐ |
| | Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)* | | | WIFA ☐ |



DSA 810
**FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL**

| CONDITION MEANS AND METHODS RESOLUTION | | ALTERNATE ACCEPTED | | | |
|---|---|---|---|---|---|
| | | Yes | No | N/A | N/R |
| 4. | Emergency vehicle access roadways do not meet CFC requirements. | | | | |
| 4a. | **Acceptable Alternate:** Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property. | ✔ | | | |
| 5. | **Fire Hydrants:** Number and spacing does not meet CFC requirements. | | | ✔ | |
| 5a. | **Acceptable Alternate:** Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property. | | | | |
| 6. | **Fire Hydrants:** Water flow and pressure are less than CFC minimum. | | | ✔ | |
| 6a. | **Acceptable Alternate:** The available flow and pressure is acceptable for providing fire suppression and protection of life and property. | | | | |
| 7. | Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements. | | | ✔ | |
| 7a. | **Acceptable Alternate:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property. | | | | |

**School District Acceptance of Acceptable Design Alternates**

By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements, as indicated by one or more of the conditions indicated at items 4a, 5a, 6a or 7a, for providing fire and life safety protection of life and property.

Accepted by: Norma Macias Title: Director of Facilities
Signature: Date: 06/18/24

| LOCAL FIRE AUTHORITY (LFA) INFORMATION | |
|---|---|
| LFA Agency Name: | Los Angeles County Fire Department |
| LFA Review Official: | Patricia Zepeda |
| Title: | Work Phone: (323) 881-2411 |
| Work Email: | Patricia.Zepeda@fure.lacounty.gov |

LFA Reviewer's Signature: Date:



## FIRE ACCESS GENERAL NOTES

1. FIRE DEPARTMENT VEHICULAR ACCESS ROADS MUST BE INSTALLED AND MAINTAINED IN A SERVICEABLE MANNER PRIOR TO AND DURING THE TIME OF CONSTRUCTION. FIRE CODE 501.4
2. PROVIDE APPROVED SIGNS OR OTHER APPROVED NOTICES OR MARKINGS THAT INCLUDE THE WORDS NO PARKING - FIRE LANE. SIGNS SHALL HAVE A MINIMUM DIMENSION OF 12 INCHES WIDE BY 18 INCHES HIGH AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGNS SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS, TO CLEARLY INDICATE THE ENTRANCE TO SUCH ROAD, OR PROHIBIT THE OBSTRUCTION THEREOF AND AT INTERVALS, AS REQUIRED BY THE FIRE INSPECTOR. FIRE CODE 503.3. REFER TO DETAIL 5/A10.02 FOR FIRE LANE CURB MARKING
3. WHEN SECURITY GATES ARE PROVIDED, MAINTAIN A MINIMUM ACCESS WIDTH OF 20 FEET. THE SECURITY GATE SHALL BE PROVIDED WITH AN APPROVED MEANS OF EMERGENCY OPERATION AND SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES AND REPLACED OR REPAIRED WHEN DEFECTIVE. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM F2200. GATES SHALL BE OF THE SWINGING OR SLIDING TYPE. CONSTRUCTION OF GATES SHALL BE OF MATERIALS THAT ALLOW MANUAL OPERATION BY ONE PERSON. FIRE CODE 503.6.
4. APPROVED BUILDING ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION SHALL BE PROVIDED AND MAINTAINED SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET FRONTING THE PROPERTY. THE NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND, BE ARABIC NUMERALS OR ALPHABET LETTERS, AND BE A MINIMUM OF 4 INCHES HIGH WITH A MINIMUM STROKE WIDTH OF 0.5 INCH. FIRE CODE 505.1
5. FIRE APPARATUS ACCESS ROADS SHALL BE IDENTIFIED WITH APPROVED SIGNS. TEMPORARY SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT AND BE MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS. FIRE CODE 505.2
6. AN APPROVED KEY BOX, LISTED IN ACCORDANCE WITH UL 1037 SHALL BE PROVIDED AS REQUIRED BY FIRE CODE 506. REFER TO DETAIL 4/A10.02 THE LOCATION OF EACH KEY BOX SHALL BE DETERMINED BY THE FIRE INSPECTOR.
7. THE REQUIRED FIRE FLOW FOR A SINGLE PRIVATE ON-SITE FIRE HYDRANT AT THIS LOCATION IS 2887 GPM AT 20 PSI RESIDUAL PRESSURE. IF MORE THAN ONE ON-SITE FIRE HYDRANT IS REQUIRED, THE ON-SITE FIRE FLOW SHALL BE 2500 GPM AT 20 PSI RESIDUAL PRESSURE FOR 2 HOURS. FIRE CODE C106.1
8. ALL FIRE HYDRANTS SHALL MEASURE 6" X 4" X 2-1/2", BRASS OR BRONZE, CONFORMING TO AMERICAN WATER WORKS ASSOCIATION STANDARD C503, OR APPROVED EQUAL.
9. ALL REQUIRED PUBLIC FIRE HYDRANTS SHALL BE INSTALLED, TESTED AND ACCEPTED PRIOR TO BEGINNING CONSTRUCTION. FIRE CODE 501.4
10. ALL ON-SITE FIRE HYDRANTS SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO BUILDING OCCUPANCY. FIRE CODE 501.3 AND 901.5.1
11. VEHICULAR SWINGING GATE , WITH EXTERNAL LOCKABLE PADLOCK. PADLOCK TO BE KNOX PADLOCK MODEL #3771 W/RED FIRE IDENTIFICATION LABEL, KEYED FOR LA COUNTY FIRE DEPARTMENT ACCESS. SEE DETAIL 1/A10.02 FOR FURTHER DETAILS
12. NEW BUILDINGS SHALL BE PROVIDED WITH EMERGENCY RESPONDER RADIO COVERAGE IN ACCORDANCE WITH CALIFORNIA FIRE CODE SECTION 510. THE PROJECT ARCHITECT (AOR) SHALL CONTACT THE LOCAL FIRE DEPARTMENT AND/OR EMERGENCY COMMUNICATIONS AUTHORITY TO OBTAIN DESIGN, EQUIPMENT SPECIFICATIONS, TESTING AND ACCEPTANCE CRITERIA. PLANS AND REQUESTED DOCUMENTATION SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL. UPON COMPLETION, COPIES OF THE APPROVED PLANS, EQUIPMENT DATA SHEETS, TESTING AND ACCEPTANCE DOCUMENTATION SHALL BE PROVIDED TO THE SCHOOL DISTRICT.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

EL MONTE UNION HIGH SCHOOL DISTRICT — ESTABLISHED 1901 — COMMITTED TO COLLEGE AND CAREER

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT — VIRGINIA ELAINE MARQUARDT — No. C-33423 — 06/30/2025 — RENEWAL DATE — STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| 6 | DSA SUBMITTAL | 06/23/2025 |

## NOTES

- FOR CONCRETE ROADWAY SECTION DETAIL SEE SHEET 1/C-5.0
- REFER TO SHEET C-2.0 FOR LOCATION OF CONCRETE PAVEMENT
- REFER TO SHEET C-3.0 FOR GRADES ALONG FIRE DEPARTMENT ACCESS ROADWAY INDICATING NO GRADE ALONG ROADWAY IS GREATER THEN 15% AND INDICATING SLOPES ALONG WALKING SURFACE

## LEGEND

- APPROXIMATE LIMIT OF WORK. REFER TO ADDITIONAL DRAWINGS FOR WORK WHICH MAY EXTEND BEYOND THIS APPROXIMATE LIMIT OF WORK LINE.
- PROPERTY LINE
- NEW BUILDING
- EXISTING BUILDINGS
- EXISTING FIRE LANE PER A# 03-118952 & 03-123169
- PROPOSED FIRE LANE
- A | DIST. — HOSE PULL AND DISTANCE (150 FT MAX.)
- FIRE HYDRANT - SEE CIVIL DRAWINGS
- 250 FT RADIUS FIRE HYDRANT COVERAGE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**LOCAL FIRE AUTHORITY SITE ACCESS PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 — A NO.: 03-123641
DATE: 06/23/2025 — CLIENT PROJ NO: 3361008100
SHEET:

**G1.51**

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON 24"X36" SHEETS ORIGINAL PAGE SIZE

## GENERAL NOTES:

1. ALL WORK PERFORMED IN THIS CONTRACT SHALL CONFORM TO:
   - A. PROJECT SPECIFICATIONS.
   - B. THE LATEST EDITION AND SUPPLEMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) AND AMERICAN PUBLIC WORKS ASSOCIATION (APWA).
   - C. EL MONTE UNION HIGH SCHOOL DISTRICT STANDARDS AND SPECIFICATIONS.
   - D. 2022 CALIFORNIA BUILDING CODE, OR LATEST VERSION.
2. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE WORK SPECIFIED ON THE DRAWINGS AND WITHIN THE VARIOUS NOTES SHOWN HEREIN.
3. THE EXISTING CONDITIONS SHOWN DIAGRAMMATICALLY ON THE PLANS ORIGINATED FROM AS BUILT DRAWINGS AND FIELD SURVEY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE JOB SITE AND VERIFY THE EXACT EXISTING CONDITIONS UNLESS CONCEALED BEFORE SUBMITTING HIS BID. ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE DISTRICT USING THE PROPER REQUEST FOR INFORMATION FORMS PRIOR TO SUBMITTING HIS BID FOR PROPER ACTION.
4. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES IN THE AREA OF WORK WHICH ARE NOT INCLUDED IN THIS CONSTRUCTION. ANY DAMAGE RESULTING FROM THIS WORK SHALL BE REPAIRED AND/OR REPLACED AT NO ADDITIONAL COST TO THE DISTRICT.

   UNDERGROUND SERVICE ALERT:

5. BEFORE COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL OBTAIN AN UNDERGROUND SERVICE ALERT INQUIRY I.D. NUMBER BY CALLING 1-800-422-4133. TWO (2) WORKING DAYS SHALL BE ALLOWED AFTER THE I.D. NUMBER IS OBTAINED AND BEFORE THE EXCAVATION WORK IS STARTED THAT UTILITY OWNERS CAN BE NOTIFIED.

   PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS:

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PUBLIC AND PRIVATE PROPERTY ADJACENT TO THE WORK PER SPPWC SECTION 7-9 OF THE STANDARD SPECIFICATIONS.

   REMOVALS:

7. EXISTING STRUCTURES AND SUBSTRUCTURES WHICH ARE INDICATED TO BE REMOVED IN THIS CONSTRUCTION DOCUMENTS SHALL BE TOTALLY REMOVED AND DISPOSED OF OFFSITE, UNLESS OTHERWISE INDICATED. EXISTING FACILITIES WHICH ARE DISCOVERED DURING CONSTRUCTION (INCLUDING WALLS, FOOTINGS AND FOUNDATIONS) SHALL BE REPORTED TO AND COORDINATED WITH THE DISTRICT AS TO THEIR REMOVAL. CONTRACTOR WILL NOTIFY THE DISTRICT IN WRITING PRIOR TO COMMENCING THE WORK.
8. ALL SITE PREPARATION AS INDICATED SHALL BE MADE UNDER THE CONTINUOUS INSPECTION OF THE INSPECTOR OF RECORD (IOR) AND OWNER AUTHORIZED REPRESENTATIVE (OAR). SECURE THE REQUIRED PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY FOR THE CONSTRUCTION OF TRENCHES, SHORING OR EXCAVATIONS WHICH ARE 5 FEET OR DEEPER OR WORK THAT MAY JEOPARDIZE THE WORKERS. SHORING CALCULATIONS SHALL BE PROVIDED AS REQUIRED FOR APPROVAL AND PERMITTING.
9. THE CONTRACTOR SHALL KEEP THE CONSTRUCTION AREA SUFFICIENTLY DAMPENED TO CONTROL DUST CAUSED BY WORK ACTIVITIES AS REQUIRED BY THE DISTRICT AND JURISDICTIONAL AGENCY.
10. ALL WORK IN THE PUBLIC RIGHT OF WAY REQUIRES APPROVAL BY THE JURISDICTIONAL AGENCY DEPARTMENT OF PUBLIC WORKS / TRAFFIC AND TRANSPORTATION DEPARTMENTS BEFORE CONSTRUCTION BEGINS. CONTRACTOR SHALL SECURE AND PAY FOR ANY PERMIT INCLUDING UTILITY CONNECTIONS REQUIRED PRIOR TO CONSTRUCTION.
11. ALL FILL OR BACKFILL SHALL BE COMPACTED TO A MINIMUM 95% RELATIVE COMPACTION.
12. CONSTRUCTION STAKING AND ADJUSTMENTS FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR PAID FOR BY THE CONTRACTOR AND INCLUDED IN THE CONTRACT.
13. VOIDS RESULTING FROM REMOVAL WORK SHALL BE FILLED WITH SUITABLE MATERIALS APPROVED BY THE DISTRICT RETAINED GEOTECHNICAL ENGINEER AND COMPACTED TO AT LEAST 95% MAXIMUM DENSITY PER ASTM D-1557.
14. CONSTRUCT OFFSITE WORK TO COMPLY WITH THE REQUIREMENTS OF THE LOCAL GOVERNING AGENCY. SECURE AND PAY FOR REQUIRED CONSTRUCTION PERMITS.
15. IF EXISTING UTILITIES ARE EXPOSED OR DETERMINED TO EXIST UNDER THE CONSTRUCTION LIMITS, CONTRACTOR SHALL PROVIDE A FLAGGED STAKE THAT INDICATES THEIR LOCATION, TYPE OF UTILITY, SIZE, PIPE MATERIAL AND DEPTH. STAKES SHALL BE INSTALLED NO LESS THAN 50' ON CENTER ON STRAIGHT LINES AND AT BENDS.
16. MAINTAIN A RECORD OF LOCATION OF UTILITY MARKERS ON THE AS-BUILT PLAN AND REINSTALL THEM AFTER PAVING. REPLACE BENT OR UNUSABLE MARKERS FOR ALL UTILITY LINES DISCOVERED WITHIN THE WORK AREA. INSTALL BRASS UTILITY MARKERS INDICATING DIRECTIONS OF LINES AT ALL CHANGES IN DIRECTIONS AFTER PAVING. INFORM THE SURVEYOR TO LOCATE AND RECORD ACTUAL LOCATIONS.
17. UNCLOG, CLEAN AND FLUSH THE WORK AREA DRAINAGE SYSTEM AFTER PAVING AND IMMEDIATELY BEFORE A RAIN FORECAST.
18. ALL GRADING AND CONSTRUCTION ACTIVITIES SHALL COMPLY WITH THE LOCAL GOVERNING AGENCY'S PUBLIC WORKS DEPARTMENT, THAT CONTROLS AND RESTRICTS NOISE FROM THE USE OF CONSTRUCTION AND GRADING EQUIPMENT FROM THE HOURS OF 8:00PM TO 6:30AM, AND ON SUNDAYS AND HOLIDAYS. (MORE RESTRICTIVE CONSTRUCTION ACTIVITY TIMES MAY GOVERN, AS REQUIRED BY THE DEPARTMENT OF REGIONAL PLANNING AND SHOULD BE SHOWN ON THE GRADING PLANS WHEN APPLICABLE.)
19. CALIFORNIA PUBLIC RESOURCES CODE (SECTION 5097.98) AND HEALTH AND SAFETY CODE (SECTION 7050.5) ADDRESS THE DISCOVERY AND DISPOSITION OF HUMAN REMAINS. IN THE EVENT OF DISCOVERY OR RECOGNITION OF ANY HUMAN REMAINS IN ANY LOCATION OTHER THAN A DEDICATED CEMETERY, THE LAW REQUIRES THAT GRADING IMMEDIATELY STOPS AND NO FURTHER EXCAVATION OF DISTURBANCE OF THE SITE, OR ANY NEARBY AREA WHERE HUMAN REMAINS MAY BE LOCATED, OCCUR UNTIL THE FOLLOWING MEASURES HAVE BEEN TAKEN:
   - A. THE COUNTY CORONER HAS BEEN INFORMED AND HAS DETERMINED THAT NO INVESTIGATION OF THE CAUSE OF DEATH IS REQUIRED AND,
   - B. IF THE REMAINS ARE OF NATIVE AMERICAN ORIGIN, THE DESCENDANTS FROM THE DECEASED NATIVE AMERICANS HAVE MADE A RECOMMENDATION FOR THE MEANS OF TREATING OR DISPOSING, WITH APPROPRIATE DIGNITY, OF THE HUMAN REMAINS AND ANY ASSOCIATED GRAVE GOODS.
20. ALL EXPORT OF MATERIAL FROM THE SITE MUST GO TO A PERMITTED SITE APPROVED BY INSPECTOR OF RECORD OR A LEGAL DUMPSITE. RECEIPTS FOR ACCEPTANCE OF EXCESS MATERIAL BY A DUMPSITE ARE REQUIRED AND MUST BE PROVIDED TO THE INSPECTOR OF RECORD UPON REQUEST.
21. ANY ADDITIONAL SURVEYS OR TESTING AS A RESULT OF CONTRACTOR ERROR OR MISINFORMATION WILL BE CHARGED TO THE CONTRACTOR.
22. SITE BOUNDARIES, EASEMENTS, DRAINAGE DEVICES, RESTRICTED USE AREAS SHALL BE LOCATED PER CONSTRUCTION STAKING BY A LICENSED SURVEYOR. PRIOR TO GRADING, AS REQUESTED BY THE INSPECTOR OF RECORD, ALL PROPERTY LINES, EASEMENTS, AND RESTRICTED USE AREAS SHALL BE STAKED.
23. A COPY OF THE APPROVED GRADING PLANS MUST BE IN THE POSSESSION OF A RESPONSIBLE PERSON AND AVAILABLE AT THE SITE AT ALL TIMES.
24. THE CONTRACTOR SHALL PREPARE, PAY, AND FILE FOR A SWPPP. THE CONTRACTOR SHALL MODIFY AS REQUIRED THE APPROVED SWPPP/EROSION CONTROL PLANS FOR EACH PHASE OF THE PROJECT OR AS CONSTRUCTION ACTIVITIES PROGRESS THROUGH THE DURATION OF THE CONTRACT. THESE MODIFICATIONS SHALL BE REPORTED AND COORDINATED WITH BOTH THE QSD AND THE QSP. ANY MODIFICATIONS TO THE OVERALL DURATION OF CONSTRUCTION SCHEDULE FROM THAT AS SHOWN ON THE CURRENT SWPPP, SHALL ALSO BE REPORTED TO THE QSD. THE QSD SHALL THAN BE REQUIRED TO FILE AN EXTENSION OF CONSTRUCTION OR COI, (CHANGE OF INFORMATION), WITH THE STATE WATER RESOURCE CONTROL BOARD. ALL BMP'S SHALL BE MAINTAINED YEAR ROUND TO THE SATISFACTION OF THE QSD AND QSP.
25. CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND THE PERIMETER OF THE CONSTRUCTION SITE AND STAGING AREA. FENCING SHALL BE MINIMUM 8 FEET TALL AND SHALL HAVE A DUST/VISION BARRIER ALONG THE FULL LENGTH. THE DUST/VISION BARRIER SHALL EXTEND THE LENGTH OF THE CONSTRUCTION SITE. THE FENCING SHALL BE ANCHORED TO THE SURFACE AND SHALL BE ABLE TO WITHSTAND A 200-POUND HORIZONTAL POINT LOAD IN ANY DIRECTION. TEMPORARY FENCING POLES AND GATES POST SHALL BE DRIVEN INTO THE GROUND. FENCE STANDS WILL NOT BE ALLOWED. WORK AREA AND STAGING AREA SHALL BE SECURE AT ALL TIMES.

## GENERAL NOTES (cont):

26. UTILITIES TO BE VERIFIED IN FIELD TO INSURE THE EXISTING SERVING FACILITIES TO REMAIN. COORDINATE RELOCATION IF REQUIRED. REMOVE INTERFERING SECTIONS OF ALL ABANDONED EXISTING UTILITIES. UTILITY OWNERS OF THESE ABOVE-MENTIONED INTERFERING UTILITIES AND THE DISTRICT OR OAR SHALL BE NOTIFIED IN ADVANCE PRIOR TO START OF REMOVAL.
27. STORM DRAINAGE SYSTEMS SHOWN ON THESE PLANS HAVE BEEN DESIGNED FOR THE ROUGH GRADING SITE CONDITION AT COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
28. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
29. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE SCHOOL DISTRICT WITH A COMPLETE SET OF REPRODUCIBLE "AS-BUILT" DRAWINGS OF ALL WORK PERFORMED UNDER THIS CONTRACT, AS SHOWN WITHIN THESE CONSTRUCTION DRAWINGS. ALL FIELD CHANGES SHALL BE SHOWN IN DETAIL ON THE "AS-BUILT" DRAWINGS AND SHALL INCORPORATE AS A MINIMUM, NEW ELEVATIONS, GRADES AND ALIGNMENT OF UNDERGROUND FACILITIES WITH DIMENSIONAL TIES TO BUILDINGS OR OTHER VISIBLE IMPROVEMENTS.
30. THE CONTRACTOR SHALL OBTAIN AN O.S.H.A PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER.
31. CONTRACTOR SHALL SECURE AND PAY FOR TEMPORARY POWER AND WATER TO BE USED FOR HIS/HER MEANS AND METHOD OF CONSTRUCTION.
32. CONSTRUCT STRAIGHT GRADES BETWEEN ELEVATIONS SHOWN ON PLAN UNLESS INTERRUPTED BY A GRADE CHANGE LINE. ANY DEVIATION FROM THE GRADING PLAN MUST HAVE PRIOR APPROVAL FROM THE ENGINEER OF RECORD.
33. "PATH OF TRAVEL (P.O.T) AS INDICATED IS A BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" BEVELED AT 1:2 MAXIMUM SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL AND IS AT LEAST 48" WIDE. SURFACE IS SLIP RESISTANT, STABLE, FIRM, AND SMOOTH. CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 5% UNLESS OTHERWISE INDICATED. (POT) SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM (11B-307.4) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTING FROM WALL AND ABOVE 27" AND LESS THAN 80" (11B-307.2). CONTRACTOR TO VERIFY THAT ALL BARRIERS IN THE PATH OF TRAVEL HAVE BEEN REMOVED OR WILL BE REMOVED UNDER THIS PROJECT, AND PATH OF TRAVEL COMPLIES WITH CBC 11B-403.
34. SIDEWALK, WALKWAYS, ACCESS TO BUILDING, ACCESS DOORS, PLAY AREAS AND PATH OF TRAVEL SHOWN IN ARCHITECTURAL AND LANDSCAPE DRAWING SHALL HAVE NO MORE THAN 2% MAXIMUM CROSS SLOPE. COORDINATE GRADING PLAN WITH ARCHITECTURAL DRAWINGS AND REPORT TO OWNER AUTHORIZED REPRESENTATIVE ANY DISCREPANCY PRIOR TO COMMENCEMENT OF GRADING.
35. UPON COMPLETION OF PROJECT, CONTRACTOR SHALL REMOVE EXISTING CONSTRUCTION FENCING, APPURTENANCES AND OFFICE TRAILERS FROM THE SITE. PAVEMENT SHALL BE PATCHED AND REPAIRED TO MATCH ADJACENT PAVEMENT AND APPROVED BY THE INSPECTOR OF RECORD OR CITY INSPECTOR AS APPLICABLE.
36. GRADE LAWN, TURF, AND PLANTING AREA 1-1/2" MAX AT ACCESSIBLE PATH OF TRAVEL AND 2" MAX AT OTHER AREAS BELOW DESIGN GRADES INDICATED.
37. ADJUST TO GRADE EXISTING MANHOLE RIMS, AND ELECTRICAL VAULT LIDS TO DESIGN GRADES WITHIN THE IMPROVEMENT AREA. CONTRACTOR TO VERIFY LOCATION AND NUMBER OF MANHOLE RIMS, VALVE BOXES AND ELECTRICAL VAULT LIDS IN THE FIELD PRIOR TO BIDDING.
38. IF GRADING AUTHORIZED BY THIS PLAN IS TO EXTEND THROUGH THE RAINY SEASON, OCTOBER 1 THROUGH APRIL 15 OF THE FOLLOWING YEAR, SEPARATE UPDATED PLANS FOR EROSION CONTROL MUST BE SUBMITTED TO JURISDICTIONAL AGENCIES FOR APPROVAL PRIOR TO OCTOBER TO DSA FOR APPROVAL. CONTRACTOR TO PROVIDE STORM WATER PREVENTION PLAN, PRE-CONSTRUCTION AND POST CONSTRUCTION BMPS AND UPDATE FROM TIME TO TIME TO COMPLY WITH THE REQUIREMENTS.
39. CONTRACTOR IS RESPONSIBLE TO ADJUST EXISTING DRY AND / OR PRESSURIZED UTILITY PIPES ABOVE, BELOW AND / OR COORDINATE RELOCATION DUE TO THE INSTALLATION OF NEW GRAVITY LINES (SEWER AND STORM UTILITY PIPES).
40. CONTRACTOR IS REQUIRED TO RESTORE ALL EXISTING IMPROVEMENTS TO THE SAME CONDITION, THAT ARE NOT PART OF THIS PROJECT, THAT EXISTED PRIOR TO STARTING CONSTRUCTION. CONTRACTOR IS TO TAKE PHOTOS/VIDEO OF EXISTING SITE CONDITIONS AND PROVIDE TO OWNER PRIOR TO THE START OF CONSTRUCTION.

## HORIZONTAL CONTROL

A CAD GEOMETRIC ELECTRONIC FILE SHALL BE MADE AVAILABLE TO THE CONTRACTOR UPON REQUEST FOR THE CONTRACTOR'S SURVEYOR TO LAYOUT THE CONSTRUCTION STAKING OF THE PROJECT. THE SURVEYOR OR CONTRACTOR WILL NEED TO SIGN A WAIVER FORM BEFORE RELEASE OF ANY CAD ELECTRONIC DRAWINGS.

## LEGENDS:

- CONSTRUCT CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE.
- NEW PLANTER AREA PER ARCHITECTURAL AND LANDSCAPE DRAWINGS.
- CONSTRUCT BUILDING PER ARCHITECTURAL DRAWINGS.
- INSTALL TRUNCATED DOMES PER ARCHITECTURAL DRAWINGS.
- NEW LID PLANTER/BIOSWALE PER LANDSCAPE DRAWINGS.
- REMOVE EXISTING CONCRETE PAVEMENT AND BASE MATERIAL, FULL DEPTH.
- REMOVE EXISTING AC PAVEMENT AND BASE MATERIAL, FULL DEPTH.
- CLEAR, GRUB AND REMOVE EXISTING TURF/ PLANTER/SHRUBS/EXPOSED SUBGRADE AREA. REMOVE EXISTING SHRUBS AND ROOTS IN THEIR ENTIRETY.
- REMOVE EXISTING WALL.
- REMOVE EXISTING BUILDING.

## LEGENDS (CONT.):

- CENTER LINE
- CHAIN LINK FENCE (CLF)
- FLOW LINE
- PROPERTY LINE
- WOOD FENCE (CLF)
- BENCH
- BLOCK WALL
- BUSH
- CABLE TV PULLBOX
- CAR STOP
- COMMUNICATIONS PULLBOX (COMM)
- CONCRETE
- DRINKING FOUNTAIN (DF)
- ELECTRIC PULL BOX (EPB)
- ELECTRIC VAULT
- EXISTING ELEVATION (12.56)
- FINISHED GRADE ELEVATION 1355.00
- FIRE DEPT CONNECTION
- FIRE HYDRANT
- FIRE SPRINKLER RISER (F)
- FLAG POLE
- FLOOD LIGHT
- GAS METER
- GAS VALVE
- GAS VAULT (GV)
- GRATE
- GUARD POST (GP)
- GUY WIRE
- HANDICAP
- HOSE BIB
- IRRIGATION VALVE (I)
- MAIL BOX (MB)
- MONITORING WELL
- PALM
- PEDESTRIAN BUTTON
- PINE
- RAILROAD SIGNAL
- SEWER CLEANOUT (C)
- SEWER MANHOLE (S)
- SIGNAL VAULT (SV)
- SIGNAL PULLBOX
- SIGN POST
- STREET LIGHT
- STORM DRAIN MANHOLE (D)
- SURVEY MONUMENT
- TELEPHONE MANHOLE (T)
- TELEPHONE PULL BOX (TPB)
- TELEPHONE VAULT
- TRAFFIC SIGNAL
- TREE
- UNKNOWN PULLBOX
- UTILITY MARKER
- UTILITY/POWER POLE
- WATER BLOWOFF VALVE
- WATER METER
- WATER VALVE
- WATER VAULT (W)

## ABBREVIATIONS:

| | |
|---|---|
| AC | ASPHALT PAVEMENT |
| AOR | AUTHORIZED OWNER REPRESENTATIVE |
| APWA | AMERICAN PUBLIC WORKS ASSOCIATION |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| BFV | BACK FLOW VALVE |
| BMP | BEST MANAGEMENT PRACTICES |
| BTM | BOTTOM ELEVATION |
| BW | BACK OF WALK |
| CAB | CRUSHED AGGREGATE BASE |
| ℄ | CENTERLINE |
| CC | CONCRETE PAVEMENT |
| CLF | CHAIN LINK FENCE |
| COI | CHANGE OF INFORMATION |
| E | EAST |
| EP | EDGE OF PAVEMENT |
| EX, EXIST, (E) | EXISTING |
| FF | FINISHED FLOOR |
| FL | FLOW LINE |
| FS | FINISHED SURFACE |
| GB | GRADE BREAK |
| INV | INVERT |
| IOR | INSPECTOR OF RECORD |
| N | NORTH |
| NG | NATURAL GROUND |
| OAR | OWNER AUTHORIZED REPRESENTATIVE |
| OSHA | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| PA | PLANTER AREA |
| P | PROPERTY LINE |
| P.O.T. | PATH OF TRAVEL |
| QSD | QUALIFIED SWPPP DEVELOPER |
| QSP | QUALIFIED SWPPP PRACTITIONER |
| S | SOUTH |
| SSPWC | STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION |
| SPPWC | STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION |
| SWPPP | STORMWATER POLLUTION PREVENTION PLAN |
| TC | TOP OF CURB |
| TE | TRASH ENCLOSURE, TOP ELEVATION |
| TG | TOP OF GRATE |
| TOP | TOP ELEVATION |
| TR | ELECTRICAL TRANSFORMER |
| TW | TOP OF WALL |
| VIF | VERIFY IN FIELD |
| W | WEST |

## SHEET INDEX:



| | |
|---|---|
| C-1.0 | GENERAL NOTES, LEGENDS, AND ABBREVIATIONS |
| CD-1.0 | SITE DEMOLITION PLAN |
| C-2.0 | SITE CONTROL PLAN |
| C-3.0 | SITE GRADING PLAN |
| C-4.0 | SITE UTILITY PLAN |
| C-4.1 | SITE LID PLAN |
| C-5.0 | MISCELLANEOUS DETAILS |
| C-5.1 | MISCELLANEOUS DETAILS |
| C-5.2 | MISCELLANEOUS DETAILS |
| C-6.0 | EROSION CONTROL PLAN |
| C-6.1 | EROSION CONTROL DETAIL |



## SURVEY NOTES:

SURVEYOR AND BENCH MARK FOR THIS PRODUCT:

SURVEYOR:

SALAZAR SURVEYING, INC.
1655 E 6TH STREET, SUITE A4A
CORONA, CA 92879

BENCH MARK:

COUNTY OF LOS ANGELES BENCHMARK 4G3616

"CS MON 125MM(0.4FT) UP 2.5M(8.2FT) E/O CF @ NW COR FIRE STA 61M(197FT) N/O C/L CHERRYLEE DR & 15M(49FT) E/O C/L PECK RD MKD (NW COR LOT 5)

ELEVATION: 333.452' NAVD 88 QUAD YEAR 2013

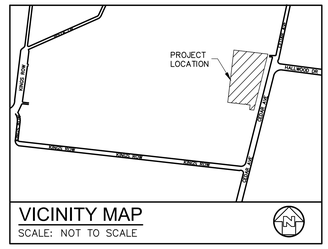
BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS PROJECT IS NORTH 64°58'41" EAST ALONG THE CENTERLINE OF VISTA LANE PER THE CALIFORNIA COORDINATE SYSTEM, ZONE 5 GRID, EPOCH 2020.250.

LOCALLY DEFINED BY GPS OBSERVATIONS.

UTILITY SURVEYOR:

UTIL LOCATE
1136 E. VALENCIA DR.,
FULLERTON, CA 92831
TOLL FREE: (888) 885-6228
TEL: (714) 521-5393
CELL: (714) 296-9680




VICINITY MAP
SCALE: NOT TO SCALE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

REGISTERED PROFESSIONAL ENGINEER — CONSTANTINO C. CABANAN — C36079 — Exp. 6/30/26 — CIVIL — STATE OF CALIFORNIA


MCA ENGINEERS INC
CIVIL ▪ STRUCTURAL
1041 S. Garfield Avenue, Suite #210
Alhambra, CA 91801
Tel: 323.729.6088 Fax: 323.729.6043


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME: GENERAL NOTES, LEGENDS, AND ABBREVIATIONS

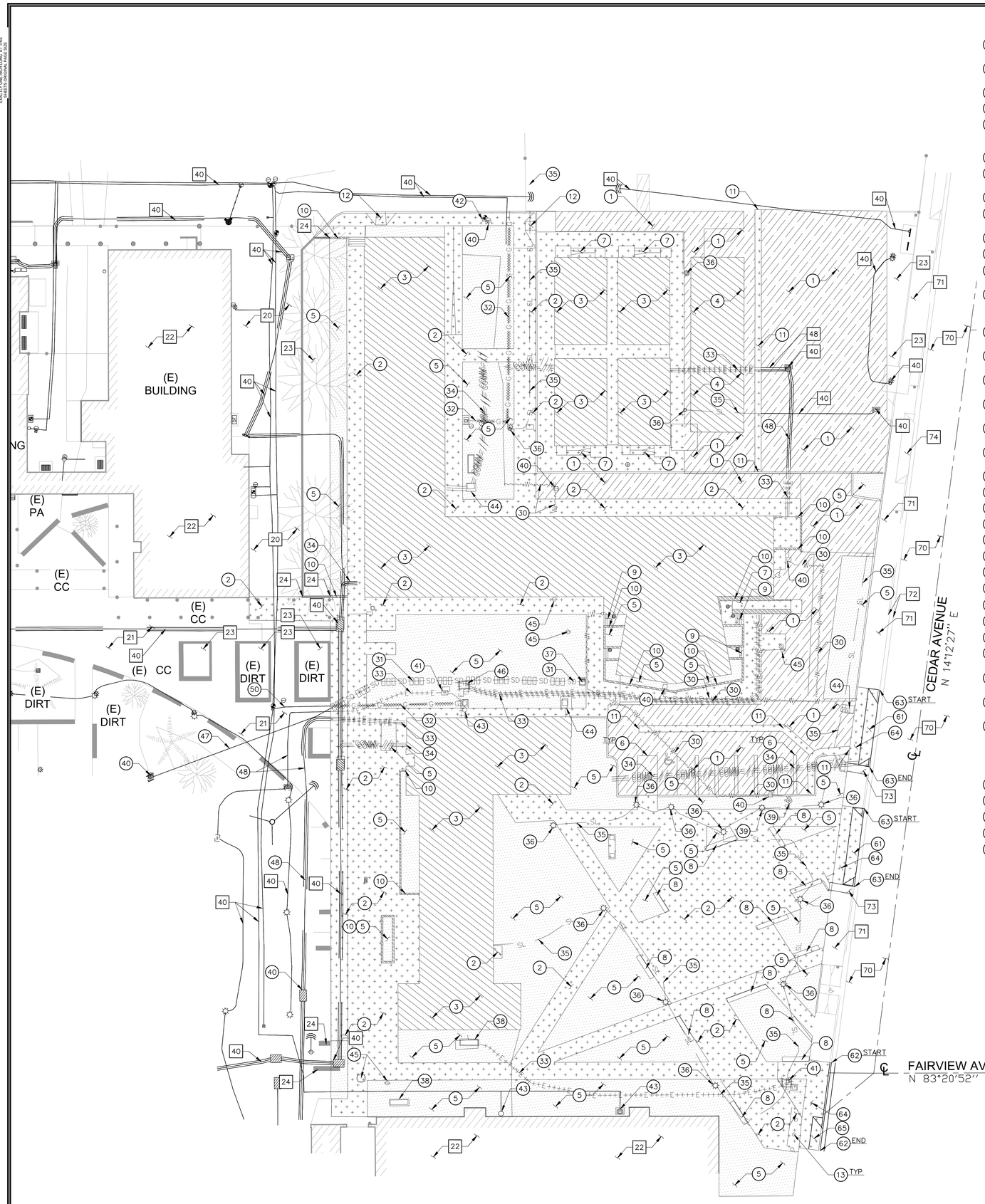
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

**C-1.0**

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## REMOVAL NOTES:

1. REMOVE EXISTING AC PAVEMENT AND BASE MATERIAL, FULL DEPTH.
2. REMOVE EXISTING CONCRETE PAVEMENT AND BASE MATERIAL, FULL DEPTH.
3. REMOVE EXISTING BUILDING AND FOOTINGS.
4. REMOVE EXISTING MODULAR BUILDING.
5. CLEAR, GRUB AND REMOVE EXISTING TURF/PLANTER/ EXPOSED SUBGRADE AREA. REMOVE EXISTING SHRUBS AND ROOTS IN THEIR ENTIRETY.
6. REMOVE EXISTING STRIPING.
7. REMOVE EXISTING CONCRETE RAMP, FOOTINGS AND HANDRAILS IN ITS ENTIRETY.
8. REMOVE EXISTING CONCRETE BENCH IN ITS ENTIRETY.
9. REMOVE EXISTING STEPS/STAIRS, FOOTINGS AND HANDRAILS IN ITS ENTIRETY.
10. REMOVE EXISTING PLANTER WALL IN ITS ENTIRETY.
11. REMOVE EXISTING V-GUTTER IN ITS ENTIRETY.
12. REMOVE EXISTING DRIVEWAY, REFER TO OFFSITE IMPROVEMENT PLANS IN ITS ENTIRETY.
13. RELOCATE EXISTING BOLLARDS. SEE CALLOUT 11 ON SHEET C-2.0 FOR RELOCATION REFERENCE.

## UTILITY REMOVAL NOTES:

30. REMOVE EXISTING WATER LINE AND APPURTENANCES IN ITS ENTIRETY.
31. REMOVE EXISTING STORM DRAIN LINE AND APPURTENANCES IN ITS ENTIRETY.
32. REMOVE EXISTING GAS LINE AND APPURTENANCES IN ITS ENTIRETY.
33. REMOVE EXISTING ELECTRICAL LINE AND APPURTENANCES IN ITS ENTIRETY.
34. REMOVE EXISTING COMMUNICATIONS LINE AND APPURTENANCES IN ITS ENTIRETY.
35. REMOVE EXISTING STREET LIGHT LINE AND APPURTENANCES IN ITS ENTIRETY.
36. REMOVE EXISTING PROPERTY LIGHT/LOCAL LIGHT .
37. REMOVE EXISTING STORMDRAIN GRATE.
38. REMOVE EXISTING ELECTRICAL CABINET.
39. REMOVE EXISTING FIRE HYDRANT.
40. REMOVE EXISTING WATER VALVE.
41. REMOVE EXISTING ELECTRICAL PULLBOX.
42. REMOVE EXISTING GAS VALVE.
43. REMOVE EXISTING GAS METER.
44. REMOVE EXISTING COMMUNICATION VAULT.
45. REMOVE EXISTING SEWER/STORM DRAIN CLEAN OUT.
46. REMOVE EXISTING ELECTRICAL VAULT.
47. ABANDON IN PLACE EXISTING UNDERGROUND STORMDRAIN LINE. CAP AND PLUG BOTH ENDS AS REQUIRED.
48. ABANDON IN PLACE EXISTING UNDERGROUND ELECTRICAL LINE. CAP AND PLUG BOTH ENDS AS REQUIRED.
49. ABANDON IN PLACE EXISTING UNDERGROUND STREET LIGHT LINE. CAP AND PLUG BOTH ENDS AS REQUIRED.
50. ABANDON IN PLACE EXISTING UNDERGROUND GAS LINE. CAP AND PLUG BOTH ENDS AS REQUIRED.

## REMOVAL NOTES - OFFSITE IMPROVEMENTS:

61. REMOVE EXISTING EXISTING DRIVEWAY IN ITS ENTIRETY.
62. REMOVE EXISTING CURB AND GUTTER IN ITS ENTIRETY.
63. REMOVE EXISTING CURB.
64. REMOVE EXISTING SIDEWALK IN ITS ENTIRETY.
65. REMOVE AND RECONSTRUCT DRIVEWAY.

## PROTECT-IN-PLACE NOTES:

20. PROTECT IN PLACE EXISTING ASPHALT PAVEMENT.
21. PROTECT IN PLACE EXISTING CONCRETE PAVEMENT.
22. PROTECT IN PLACE EXISTING BUILDING.
23. PROTECT IN PLACE EXISTING PLANTER AREA.
24. PROTECT IN PLACE EXISTING PLANTER WALL.

## UTILITY PROTECT-IN-PLACE NOTES:

40. PROTECT IN PLACE EXISTING UNDERGROUND UTILITY. ADJUST TO NEW GRADE AS NEEDED.

## PROTECT-IN-PLACE NOTES - OFFSITE IMPROVEMENTS:

70. PROTECT IN PLACE EXISTING ASPHALT PAVEMENT.
71. PROTECT IN PLACE EXISTING SIDEWALK.
72. PROTECT IN PLACE EXISTING CURB AND GUTTER.
73. PROTECT IN PLACE EXISTING PARKWAY DRAIN.
74. PROTECT IN PLACE EXISTING DRIVEWAY.

## REMOVAL LEGENDS:

- REMOVE EXISTING AC PAVEMENT AND BASE MATERIAL, FULL DEPTH.
- REMOVE EXISTING CONCRETE PAVEMENT AND BASE MATERIAL, FULL DEPTH.
- CLEAR, GRUB AND REMOVE EXISTING TURF/PLANTER/SHRUBS/EXPOSED SUBGRADE AREA. REMOVE EXISTING SHRUBS AND ROOTS IN THEIR ENTIRETY.
- REMOVE EXISTING WALL
- REMOVE EXISTING BUILDING.
- LIMIT OF REMOVAL

## UTILITY LEGENDS:

- REMOVE EXISTING WATER LINE AND APPURTENANCES IN ITS ENTIRETY.
- REMOVE EXISTING STORM DRAIN LINE AND APPURTENANCES IN ITS ENTIRETY.
- REMOVE EXISTING GAS LINE AND APPURTENANCES IN ITS ENTIRETY.
- REMOVE EXISTING ELECTRICAL LINE AND APPURTENANCES IN ITS ENTIRETY.
- REMOVE EXISTING COMMUNICATIONS LINE AND APPURTENANCES IN ITS ENTIRETY
- REMOVE EXISTING STREET LIGHT LINE AND APPURTENANCES IN ITS ENTIRETY.

DIGALERT

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DATE: 10/15/2025


HMC Architects

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**KEYNOTES**

SITE DEMOLITION PLAN

20 10 0 20 40

SCALE: 1"=20'

## NOTES

1. FOR GENERAL NOTES, LEGENDS AND ABBREVIATIONS, SEE SHEET C-1.0.
2. SEE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATED DIMENSIONS NOT SHOWN ON THIS DRAWING.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND SURFACE AND/OR UNDERGROUND UTILITIES IN CONFLICT WTH THE PROPOSED DEMOLITION AND DESIGN ITEMS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND/OR CONSTRUCTION RELATED ISSUES TO THE OWNER OR DESIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.
4. CONTRACTOR TO VERIFY IN FIELD THE JOINING TO EXISTING ELEVATION AND THE CURRENT SITE CONDITION WITH THE DESIGN GRADES. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER OR DESIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.

REGISTERED PROFESSIONAL ENGINEER — BRETT C. ADDISON — No. C-36079 — Exp. 6/30/26 — CIVIL — STATE OF CALIFORNIA


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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

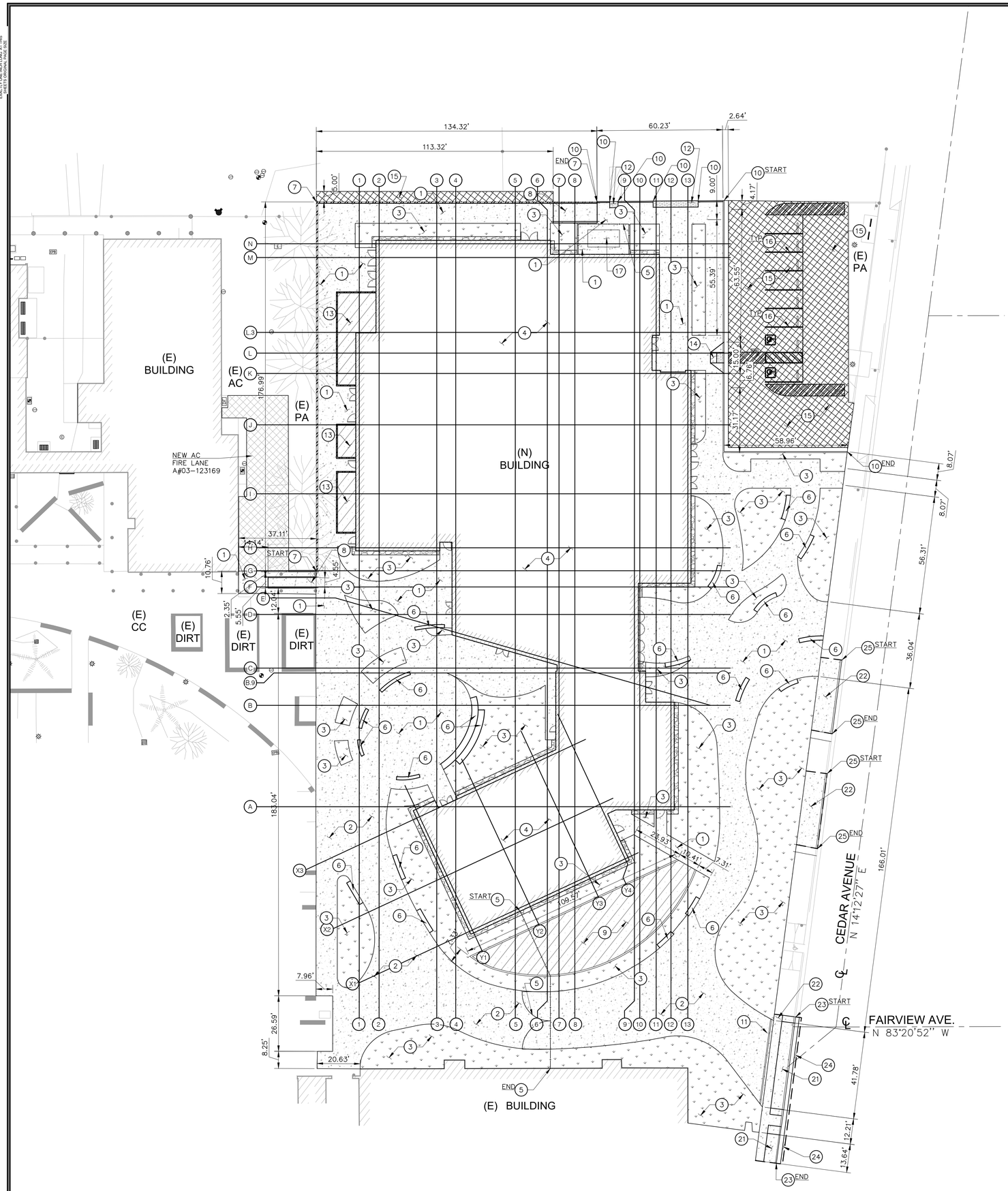
SITE DEMOLITION PLAN

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SHEET:

# CD-1.0




## CONSTRUCTION NOTES:

1. CONSTRUCT 6" THICK CONCRETE PAVEMENT OVER 4" CAB BASE PER DETAIL 1 ON SHEET C–5.0.
2. CONSTRUCT 7" THICK CONCRETE PAVEMENT OVER 6" CAB BASE PER DETAIL 1 ON SHEET C–5.0. REFER TO ARCHITECTURAL SET–FIRE ACCESS PLAN FOR FIRE LANE PAVEMENT LIMIT.
3. NEW PLANTER AREA PER ARCHITECTURAL AND LANDSCAPE DRAWINGS.
4. CONSTRUCT BUILDING PER ARCHITECTURAL DRAWINGS.
5. INSTALL FENCE/GATE PER ARCHITECTURAL DRAWINGS.
6. CONSTRUCT CONCRETE SEAT WALL PER ARCHITECTURAL AND LANDSCAPE DRAWINGS.
7. CONSTRUCT GRAVITY WALL PER DETAIL 3 ON SHEET C–5.0.
8. CONSTRUCT ACCESSIBLE RAMP PER DETAIL 6 ON SHEET C–5.1.
9. CONSTRUCT BIOSWALE PER DETAIL 4 ON SHEET C–5.1. COORDINATE WITH LANDSCAPE DRAWINGS. WALL PER STRUCTURAL DRAWINGS.
10. CONSTRUCT CURB AND GUTTER PER DETAIL ON 12 SHEET C–5.0.
11. INSTALL NEW VEHICULAR GATE PER ARCHITECTURAL DRAWINGS.
12. CONSTRUCT TRUNCATED DOMES PER ARCHITECTURAL DRAWINGS.
13. CONSTRUCT LID PLANTER BOX PER DETAIL 3 ON SHEET C–5.2.
14. CONSTRUCT NEW CURB RAMP PER ARCHITECTURAL DRAWINGS.
15. CONSTRUCT 4" THICK AC PAVEMENT AND 11.5" THICK CAB BASE PER DETAIL 5 ON SHEET C–5.2.
16. NEW STRIPING PER ARCHITECTURAL DRAWINGS.
17. TRANSFORMER PAD PER STRUCTURAL AND ELECTRICAL DRAWINGS.

## CONSTRUCTION NOTES - OFFSITE IMPROVEMENTS:

21. CONSTRUCT NEW 5" CONCRETE DRIVEWAY APPROACH OVER 3" CRUSHED AGGREGATE BASE PER SPPWC STANDARD PLAN 0–2, TYPE A, W=47.78', Y=6.25', X=3.00'.
22. CONSTRUCT NEW 4" CONCRETE SIDEWALK OVER 4" CRUSHED AGGREGATE BASE PER SPPWC STANDARD PLAN 2–2.
23. CONSTRUCT NEW CURB AND GUTTER PER SPPWC STANDARD PLAN 120–3, TYPE A2–8, W=1.78'.
24. OVERLAY MINIMUM 2" AC PAVEMENT.
25. CONSTRUCT NEW CURB AND GUTTER PER SPPWC STANDARD PLAN 120–3, TYPE A1–8.

## LEGENDS:

- CONSTRUCT CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE
- CONSTRUCT 4" THICK AC PAVEMENT AND 11.5" THICK CAB BASE PER DETAIL 5 ON SHEET C–5.2.
- CONSTRUCT BUILDING PER ARCHITECTURAL DRAWINGS.
- NEW LID PLANTER/BIOSWALE PER LANDSCAPE DRAWINGS.
- NEW PLANTER AREA PER ARCHITECTURAL AND LANDSCAPE DRAWINGS.
- NEW TRUNCATED DOME PER ARCHITECTURAL DRAWINGS.
- LIMIT OF WORK

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**KEYNOTES**

SITE CONTROL PLAN

20 10 0 20 40

SCALE: 1"=20'

**NOTES**

1. FOR GENERAL NOTES, LEGENDS AND ABBREVIATIONS, SEE SHEETS C–1.0.
2. REFER TO ARCHITECTURAL DRAWINGS FOR OTHER SITE DIMENSIONS AND IMPROVEMENTS NOT SHOWN ON THIS DRAWING.
3. REFER TO LANDSCAPE DRAWINGS FOR PLANTER AREA SITE CURVATURES.

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

SITE CONTROL PLAN

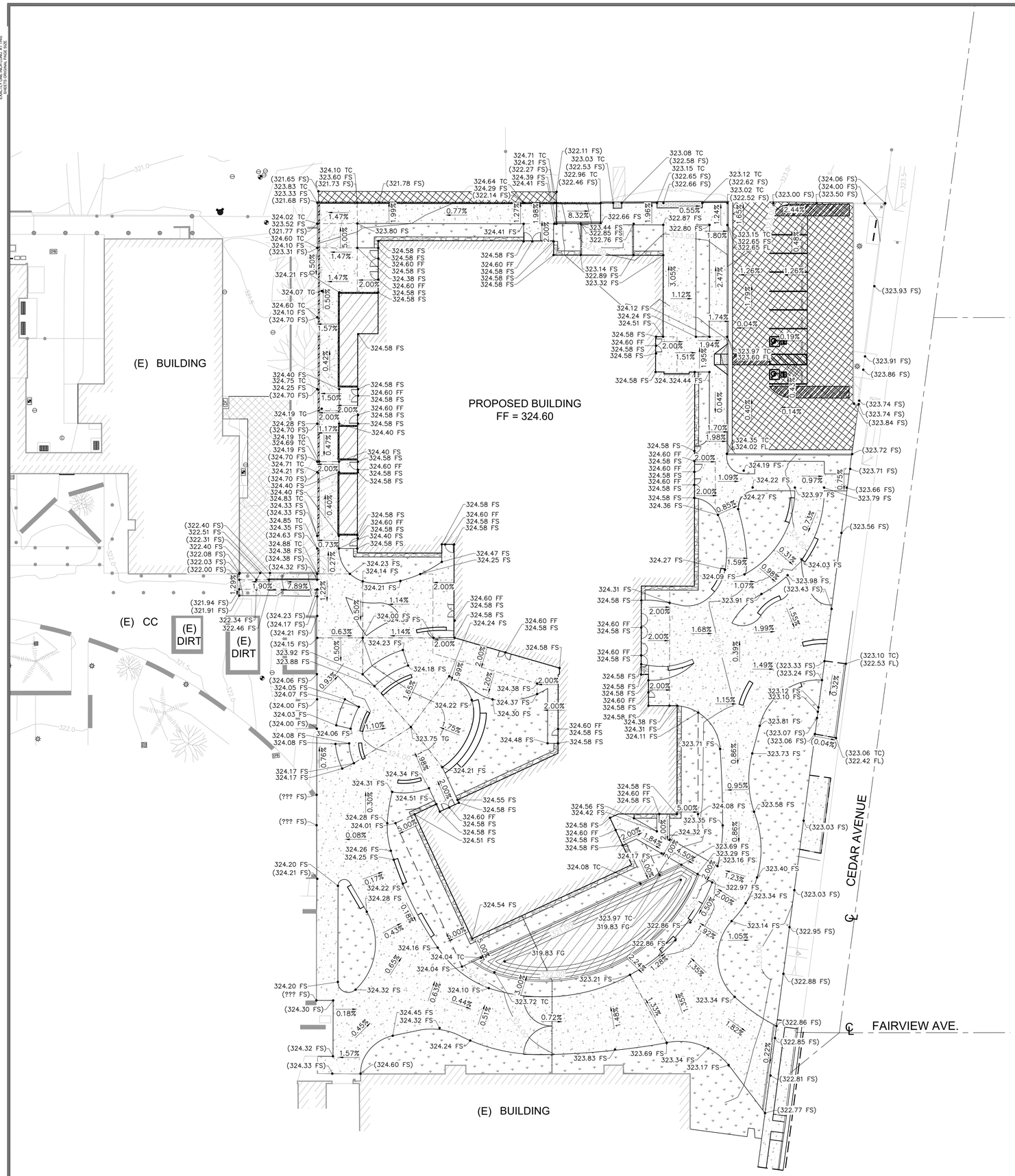
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## ESTIMATED EARTHWORK QUANTITY

ESTIMATED CUT= 478 CY
ESTIMATED FILL= 294 CY
NET VOLUME = 184 CY (CUT) (EXPORT)

1. THE ESTIMATED QUANTITIES PROVIDED ABOVE ARE FOR REFERENCE ONLY TO BE USED FOR JURISDICTIONAL PLAN CHECKING AND PERMITTING PURPOSES ONLY.
2. ESTIMATED EARTHWORK ABOVE IS BASED ON DESIGN FINISH GRADES TO EXISTING GRADES IN TOPOGRAPHICAL SURVEY. THE ESTIMATED EARTHWORK DOES NOT CONSIDER THE THICKNESS OF EACH PAVEMENT MATERIAL, FOUNDATION AND SLAB ON GRADE VOLUMES, THE REMOVAL OF ANY UNSUITABLE MATERIAL, AND THE REMOVAL OF EXISTING BASEMENTS, PITS, VAULTS, TOP SOIL OR VEGETATION.
3. THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE SHRINKAGE FACTORS DUE TO COMPACTION OR ANY OVER EXCAVATION QUANTITIES.
4. CONTRACTOR SHALL PERFORM DETAILED QUANTITY TAKE-OFF BASED ON THE EXISTING AND NEW ELEVATIONS PROVIDED ON THESE DOCUMENTS AND INFORMATION PROVIDED IN THE SPECIFICATIONS AND GEOTECHNICAL REPORTS NECESSARY FOR HIS BID AND WORK. VCA IS NOT RESPONSIBLE AND LIABLE FOR THE CONTRACTOR'S EARTHWORK CALCULATIONS.
5. ESTIMATED EARTHWORK QUANTITIES ABOVE ASSUME THAT ALL ON-SITE MATERIALS ARE SUITABLE FOR BACKFILLING. HOWEVER, ACTUAL EXISTING ON-SITE MATERIALS AND IMPORTED MATERIALS MUST FIRST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION, REMOVAL, OR REPLACEMENT.
6. THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE OVEREXCAVATION.
7. CONTRACTOR TO VERIFY IN FIELD THE JOINING TO EXISTING ELEVATION AND THE CURRENT SITE CONDITION WITH THE DESIGN GRADES. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER OR DEIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.

## SHEET NOTES:

1. ALL GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE JURISDICTIONAL AGENCIES.
2. PROVIDE A HAUL ROUTE AS REQUIRED BY THE JURISDICTIONAL AGENCIES.
3. NO GRADING WORK SHALL BE PERFORMED AT ANY TIME WITHOUT AN EROSION SYSTEM APPROVED BY THE ENGINEER AND THE JURISDICTIONAL DISTRICT.
4. CONSTRUCT DESIGN GRADES SHOWN ON PLAN. CONSTRUCT STRAIGHT GRADES BETWEEN INDICATED ELEVATIONS UNLESS INTERRUPTED BY A GRADE CHANGE LINE. ANY DEVIATIONS FROM THE GRADING PLAN MUST HAVE PRIOR APPROVAL OF THE ARCHITECT.
5. CONTRACTOR SHALL RECOMPACT THE TOP 12" OF THE PAVING SUB GRADE TO 95% MAXIMUM RELATIVE DENSITY.
6. THE CONTRACTOR SHALL NOT BEGIN THE PAVING OPERATION UNTIL THE SUB GRADE HAS BEEN APPROVED BY THE DISTRICT RETAINED GEOTECHNICAL ENGINEER AND IOR.
7. THE CONTRACTOR IS ADVISED THAT THE APPROVAL OF THIS PLAN DOES NOT WAIVE THE REQUIREMENTS FOR EXCAVATIONS CONTAINED IN THE STATE CONSTRUCTION SAFETY ORDERS ENFORCED BY THE STATE DIVISION OF INDUSTRIAL SAFETY.
8. NO FILL TO BE PLACED, UNTIL THE GEOTECHNICAL ENGINEER OR IOR HAS INSPECTED AND APPROVED THE BOTTOM OF EXCAVATION.
9. ALL FILL OR BACK FILL SHALL BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM 95% RELATIVE COMPACTION AS DETERMINED BY THE ASTM D-1557. ALL FILL INSTALLATION SHALL REQUIRE CERTIFICATION BY THE GEOTECHNICAL ENGINEER PRIOR TO FOUNDATION INSTALLATION.

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**KEYNOTES**

SITE GRADING PLAN

20 10 0 20 40
SCALE: 1"=20'

## NOTES

1. FOR GENERAL NOTES, LEGENDS, SHEET INDEX AND ABBREVIATIONS, SEE SHEET C-1.0.
2. SEE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATED DIMENSIONS NOT SHOWN ON THIS DRAWING.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURFACE AND/OR UNDERGROUND UTILITIES IN CONFLICT WITH THE PROPOSED DEMOLITION AND DESIGN ITEMS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND/OR CONSTRUCTION RELATED ISSUES TO THE OWNER OR DESIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.
4. CONTRACTOR TO VERIFY IN FIELD THE JOINING TO EXISTING ELEVATION AND THE CURRENT SITE CONDITION WITH THE DESIGN GRADES. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER OR DESIGN TEAM PRIOR TO THE COMMENCEMENT OF WORK.
5. CONTRACTOR SHALL VERIFY DEMOLITION PLAN WITH EXISTING CONDITIONS AND REPORT ANY MISSING ITEMS THAT REQUIRE DEMOLITION PRIOR TO BID.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH C. ARROYO
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SHEET NAME:

SITE GRADING PLAN

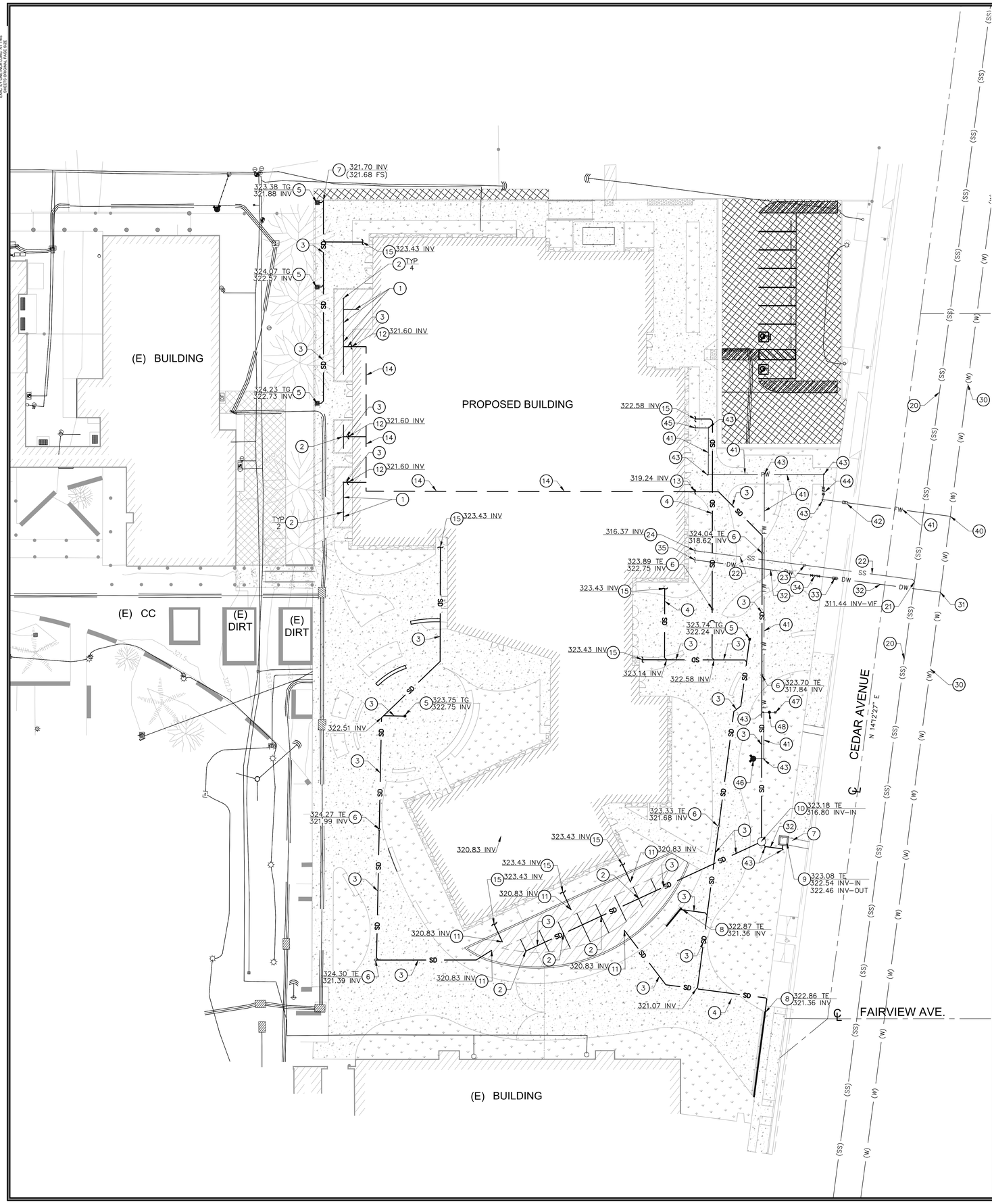
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SHEET:

C-3.0

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## CONSTRUCTION NOTES:

### STORM DRAIN:

1. INSTALL 4" PERFORATED PIPE PVC STORM DRAIN PIPE WRAPPED IN NON-WOVEN GEOTEXTILE MEMBRANE, MINIMUM SLOPE AT 0.50%. SEE DETAIL 2 ON SHEET C-5.2 FOR REFERENCE.
2. INSTALL 6" PVC PIPE OVER FLOW WITH ATRIUM GRATE INLET AT 12" ABOVE FINISH GRADE. FOR BIOSWALE, SEE DETAIL 4 ON SHEET C-5.1. FOR LID PLANTER BOX, SEE DETAIL 2 ON SHEET C-5.2.
3. INSTALL 6" SCH 40 PVC STORM DRAIN PIPE, MINIMUM SLOPE AT 0.50%. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C-5.0.
4. INSTALL 4" SCH 40 PVC STORM DRAIN PIPE, MINIMUM SLOPE AT 0.50%. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C-5.0.
5. CONSTRUCT 12X12 CATCH BASIN WITH FILTER INSERTS BY KRISTAR OR APPROVED EQUAL PER DETAIL 9 ON SHEET C-5.0.
6. CONSTRUCT STORM DRAIN CLEANOUT PER DETAIL 10 ON SHEET C-5.0.
7. CONNECT PROPOSED ENERGY DISSIPATOR TO EXISTING PARKWAY DRAIN.
8. CONSTRUCT TRENCH DRAIN WITH FILTER INSERTS BY KRISTAR OR APPROVED EQUAL PER DETAIL 1 ON SHEET C-5.2.
9. INSTALL ENERGY DISSIPATOR PER DETAIL 2 ON SHEET C-5.0.
10. INSTALL SUMP PUMP PER PLUMBING DRAWINGS.
11. POINT OF DISCHARGE INTO BIOSWALE.
12. POINT OF CONNECTION FROM PLANTER BOX OVERFLOW TO BUILDING SD SYSTEM.
13. POINT OF CONNECTION FROM BUILDING SD SYSTEM TO OVERFLOW SUMP PUMP.
14. INSTALL 6" PVC PIPE. COORDINATE WITH PLUMBING FOR INSTALLATION, EXACT LOCATION AND POINT OF CONNECTION. SCHEMATIC DESIGN SHOWN FOR REFERENCE. REFER TO PLUMBING AND STRUCTURAL PLANS FOR PIPE INSTALLATION WITHIN THE BUILDING FOOTPRINT.
15. POINT OF CONNECTION TO BUILDING DOWNSPOUT. SEE PLUMBING DRAWINGS FOR CONTINUATION.

### SANITARY SEWER:

20. EXISTING 8" VCP MAIN SANITARY SEWER LINE.
21. CONNECT TO EXISTING MAIN SANITARY SEWER LINE PER CITY STANDARDS. CONTRACTOR TO VERIFY IN FIELD EXISTING SEWER LINE INVERTS.
22. INSTALL 6" ABS SCH 40 SANITARY SEWER LINE. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C-5.0.
23. INSTALL SANITARY SEWER CLEAN OUT PER DETAIL 10 ON SHEET C-5.0
24. CONNECT TO BUILDING SANITARY SEWER LINE. COORDINATE AND MATCH LOCATION WITH PLUMBING DRAWINGS. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.

### DOMESTIC WATER:

30. EXISTING MAIN WATER LINE.
31. CONNECT TO EXISTING WATER MAIN LINE PER CITY STANDARDS. COORDINATE WITH THE UTILITY PURVEYOR FOR CONNECTION REQUIREMENT. CONTRACTOR TO VERIFY IN FIELD. CONTRACTOR TO PAY FOR PERMIT AND FEES.
32. INSTALL 4" AWWA C900 PVC PIPE DOMESTIC WATER LINE. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C-5.0.
33. INSTALL NEW DOMESTIC WATER METER AND/OR VAULT, COORDINATE WITH WATER PURVEYOR FOR REQUIREMENTS.
34. INSTALL 4"ø REDUCED PRESSURE PRINCIPLE ASSEMBLY ZURN MODEL 375A . SEE DETAIL 1 ON SHEET C-5.1 FOR REFERENCE. COORDINATE WITH WATER PURVEYOR FOR AN APPROVED BACKFLOW DEVICE PRIOR TO ORDERING. CONTACT MANUFACTURER FOR INSTALLATION COORDINATION.
35. CONNECT TO BUILDING DOMESTIC WATER LINE. COORDINATE AND MATCH LOCATION WITH PLUMBING DRAWINGS. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.

### FIRE WATER:

40. CONNECT TO EXISTING WATER MAIN LINE PER CITY STANDARDS. COORDINATE WITH THE UTILITY PURVEYOR FOR CONNECTION REQUIREMENT. CONTRACTOR TO VERIFY IN FIELD. CONTRACTOR TO PAY FOR PERMIT AND FEES.
41. INSTALL 6" AWWA C900 PVC PIPE FIRE WATER LINE. COORDINATE WITH FIRE SPRINKLER DESIGNER. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C-5.0. MINIMUM DEPTH OF PIPE SHALL BE 30 INCHES BELOW GRADE.
42. INSTALL NEW FIRE WATER METER AND/OR VAULT, COORDINATE WITH WATER PURVEYOR FOR REQUIREMENTS.
43. CONSTRUCT THRUST BLOCK PER DETAIL 5 ON SHEET C-5.1.
44. INSTALL 6"ø DOUBLE CHECK DETECTOR ZURN MODEL 350DA. SEE DETAIL 2 ON SHEET C-5.1 FOR REFERENCE. COORDINATE WITH WATER PURVEYOR FOR AN APPROVED BACKFLOW DEVICE PRIOR TO ORDERING. CONTACT MANUFACTURER FOR INSTALLATION COORDINATION.
45. CONNECT TO BUILDING FIRE WATER LINE. COORDINATE AND MATCH LOCATION WITH FIRE SPRINKLER DESIGNER. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.
46. RELOCATED EXISTING FIRE HYDRANT. SEE DEMOLITION PLAN FOR PREVIOUS LOCATION. CONNECT FIRE HYDRANT TO NEW FIRE WATER LINE, PROVIDE REDUCER AS NEEDED.
47. INSTALL FIRE DEPARTMENT CONNECTION PER DETAIL 3 ON SHEET C-5.2.
48. INSTALL POST INDICATOR VALVE PER DETAIL 4 ON SHEET C-5.2.

## UTILITY SHEET NOTES:

1. REFER TO LANDSCAPE DRAWINGS FOR DEMOLITION OF EXISTING PAVEMENT, DIRT, TREES, SHRUBS, AND PLANTED AREA.
2. REFER TO LANDSCAPE DRAWINGS FOR NEW TREES, SHRUBS, AND PLANTED AREA AND FOR NEW IRRIGATION LINE.
3. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATIVE DIMENSIONS NOT SHOWN ON THESE DRAWINGS.
4. FOR GAS, ELECTRICAL, CABLE, MECHANICAL REQUIREMENTS AND OTHER DRY UTILITIES, REFER TO MEP DRAWINGS.
5. EXISTING UTILITY BOXES SHOULD BE ADJUSTED TO GRADE AS REQUIRED. SEE GENERAL NOTES ON SHEET C-1.0.
6. FOR CATCH BASIN GRATE, RIM, CLEAN OUT, MANHOLE COVER, UTILITY COVER/BOX SPOT ELEVATION SHOWN ON THIS SHEET COORDINATE WITH GRADING PLAN. CONTRACT THE ENGINEER IF THERE ARE DISCREPANCY BETWEEN UTILITY SPOT ELEVATION AND GRADING SPOT ELEVATION PRIOR COMMENCING WORK.
7. FOR PIPE BEDDING SEE DETAIL 8 ON SHEET C-5.0.
8. SEWER INVERT ELEVATIONS ARE BASED ON AS-BUILT AND NAVIGATE LA, CONTRACTOR TO VERIFY IN FIELD THE INVERT ELEVATION AND SADDLE CONNECTION.
9. ALL STORM DRAIN INLETS AND CATCH BASINS SHALL BE STENCILED "NO DUMPING, DRAINS TO THE OCEAN" PER NOTES OF DETAIL 6 ON SHEET C-5.0.
10. INVERT ELEVATIONS OF EXISTING UNDERGROUND UTILITY LINES ARE UNKNOWN AND NOT PROVIDED ON THIS PLAN. CONTRACTOR IS ADVISED TO FIELD VERIFY EXISTING CONDITION, MATERIAL, DEPTH AND LOCATION OF PIPE. INSTALLATION OF STORM DRAINAGE LINE TO BE AT 0.50% SLOPE MIN.
11. CONTRACTOR SHOULD VISUALLY VERIFY IN FIELD ALL EXISTING FEATURES TO BE REMOVED WITHIN LIMIT OF WORK BEFORE BIDDING. ALL SURFACE AND UNDERGROUND FEATURES WITH LIMIT OF WORK ARE A PART OF DEMOLITION PLAN UNLESS OTHERWISE ASKED TO PROTECT.
12. CONTRACTOR TO COORDINATE WITH THE UTILITY PURVEYOR FOR INSPECTION, APPROVAL, AND PERMITTING.
13. CONTRACTOR TO VERIFY IN FIELD THE EXISTING UTILITIES PRIOR TO PLACEMENT OF THE NEW UTILITIES. IN CASE OF PIPE CONFLICT, COORDINATE WITH THE OAR.
14. CLEAN OUTS IN UNPAVED AREAS SHALL BE INSTALLED IN YARD BOXES.
15. FOR CATCH BASIN AT LANDSCAPE AREA UNDER THE GRAVEL SURFACE, CONTRACTOR TO PROVIDE SCREEN WITH FILTER FABRIC COVER ATTACHED. BOLTED OR TIED TO CATCH BASIN GRATE COVER.
16. FOR IRRIGATION REQUIREMENT, METERING, BACKFLOW DEVICE AND CONNECTION REFER TO LANDSCAPE.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

SITE UTILITY PLAN

20 10 0 20 40

SCALE: 1"=20'

## NOTES

1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEETS C-1.0.
2. SEE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATED DIMENSIONS NOT SHOWN ON THIS DRAWING.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURFACE AND/OR UNDERGROUND UTILITIES IN CONFLICT WITH THE PROPOSED DEMOLITION AND DESIGN ITEMS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND/OR CONSTRUCTION RELATED ISSUES TO THE OWNER OR DESIGN TEAM PRIOR THE COMMENCEMENT OF WORK.
4. CONTRACTOR TO VERIFY IN FIELD THE JOINING TO EXISTING ELEVATION AND THE CURRENT SITE CONDITION WITH THE DESIGN GRADES. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER OR DESIGN TEAM PRIOR TO COMMENCEMENT OF WORK.
5. HAND DIG ONLY AT LOCATIONS WHERE UNDERGROUND UTILITIES NEED TO BE PROTECTED IN PLACE.
6. IN CASE OF DISCREPANCIES WITH ON-SITE STORM DRAIN ELEMENTS BETWEEN THIS SHEET AND PLUMBING DRAWINGS, PLUMBING DRAWINGS SHALL GOVERN.

REGISTERED PROFESSIONAL ENGINEER
ANGELITO C. ADRIANO
No. C36079
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA


VCA ENGINEERS, INC
CIVIL • STRUCTURAL
1041 S. Garfield Avenue, Suite #210
Alhambra, CA 91801
Tel: 323.729.6098 Fax: 323.729.6043


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

SITE UTILITY PLAN

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

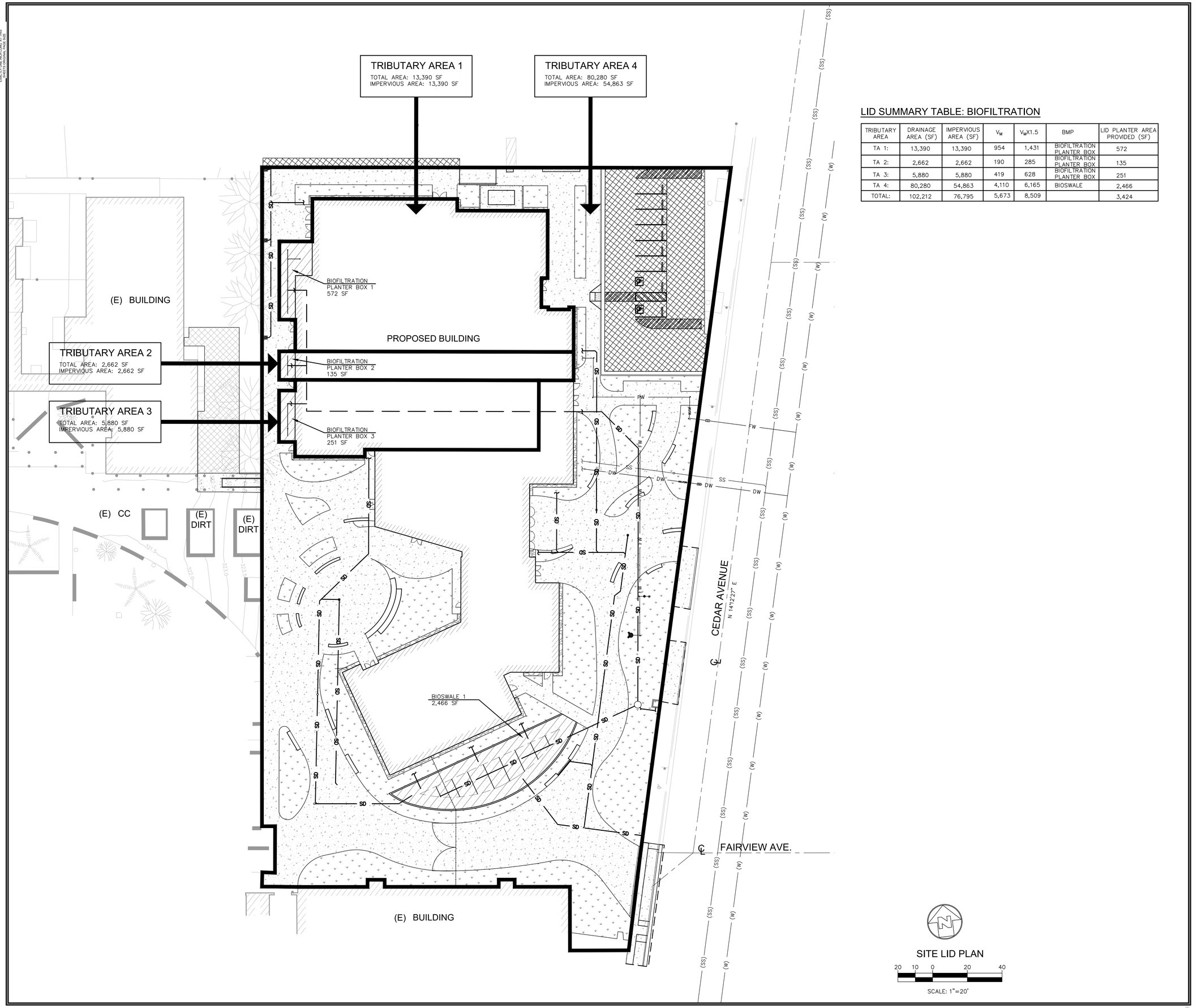
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

C-4.0


THE LINE BROKEN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET'S ORIGINAL PAGE SIZE

PLEASE RECYCLE




SITE LID PLAN

20 10 0 20 40

SCALE: 1"=20'

## LID SUMMARY TABLE: BIOFILTRATION

| TRIBUTARY AREA | DRAINAGE AREA (SF) | IMPERVIOUS AREA (SF) | $V_M$ | $V_M$X1.5 | BMP | LID PLANTER AREA PROVIDED (SF) |
|---|---|---|---|---|---|---|
| TA 1: | 13,390 | 13,390 | 954 | 1,431 | BIOFILTRATION PLANTER BOX | 572 |
| TA 2: | 2,662 | 2,662 | 190 | 285 | BIOFILTRATION PLANTER BOX | 135 |
| TA 3: | 5,880 | 5,880 | 419 | 628 | BIOFILTRATION PLANTER BOX | 251 |
| TA 4: | 80,280 | 54,863 | 4,110 | 6,165 | BIOSWALE | 2,466 |
| TOTAL: | 102,212 | 76,795 | 5,673 | 8,509 | | 3,424 |

## NOTES

1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEETS C-1.0.
2. SEE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATED DIMENSIONS NOT SHOWN ON THIS DRAWING.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURFACE AND/OR UNDERGROUND UTILITIES IN CONFLICT WITH THE PROPOSED DEMOLITION AND DESIGN ITEMS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND/OR CONSTRUCTION RELATED ISSUES TO THE OWNER OR DESIGN TEAM PRIOR THE COMMENCEMENT OF WORK.
4. CONTRACTOR TO VERIFY IN FIELD THE JOINING TO EXISTING ELEVATION AND THE CURRENT SITE CONDITION WITH THE DESIGN GRADES. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER OR DESIGN TEAM PRIOR TO COMMENCEMENT OF WORK.
5. HAND DIG ONLY AT LOCATIONS WHERE UNDERGROUND UTILITIES NEED TO BE PROTECTED IN PLACE.
6. IN CASE OF DISCREPANCIES WITH ON-SITE STORM DRAIN ELEMENTS BETWEEN THIS SHEET AND PLUMBING DRAWINGS, PLUMBING DRAWINGS SHALL GOVERN.

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER C. ARMANI — No. C36079 — Exp. 6/30/26 — CIVIL — STATE OF CALIFORNIA

MCA ENGINEERS INC — CIVIL ● STRUCTURAL — 1041 S. Garfield Avenue, Suite #210, Alhambra, CA 91801, Tel: 323.729.6068 Fax: 323.729.6043

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**KEYNOTES**

FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

SITE LID PLAN

**DSA SUBMITTAL**

FILE NO.: 19-H10 — A NO.: 03-123641

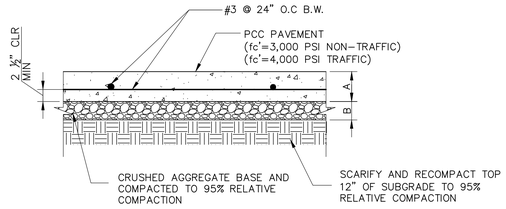
DATE: 06/23/2025 — CLIENT PROJ NO: 3361008100

SHEET:

C-4.1

PLEASE RECYCLE

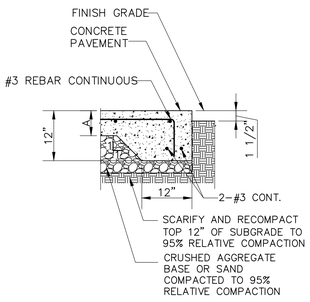
THE LINE BROWN ABOVE IS EXACTLY 1" WHEN PLOTTING SHEETS ORIGINAL PAGE SIZE




| LOCATION | CONCRETE PAVEMENT | TYPE OF BASE |
|---|---|---|
| | THICKNESS "A" | THICKNESS "B" |
| NON TRAFFIC | 6" | 4" CAB |
| TRAFFIC/FIRE LANE | 7" | 6" CAB |

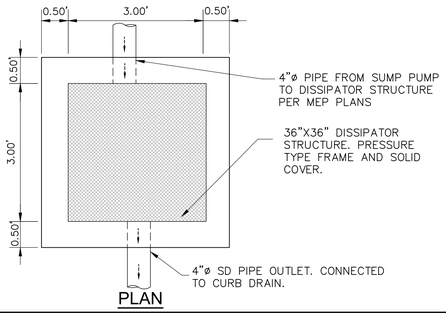
## NOTES:

1. REBARS, fy=60,000 psi ASTM A615.
2. FOR CONSTRUCTION AND EXPANSION JOINTS REFER TO DETAIL 4 ON THIS SHEET.
3. FOR PAVING FINISHES, COLOR INTEGRATION, REFER ARCHITECTURAL DRAWINGS.
4. CONCRETE, fc'=3,000 PSI @ 28 DAYS, FOR NON TRAFFIC, fc'=4,000 PSI @ 28 DAYS, FOR TRAFFIC.
5. CRACK CONTROL JOINTS SHOULD BE SPACED @ INTERVALS NOT GREATER THAN 10' USING SAWCUTS AND EXTEND MINIMUM OF 1/4 THE SLAB THICKNESS.
6. FOR FINISH SURFACES, COLOR INTEGRATION, EXPANSION JOINTS AND OTHER PAVEMENT SURFACE FEATURES, SEE ARCHITECTURAL DRAWINGS.

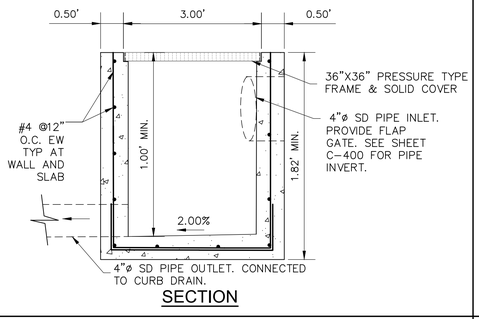



## EDGE OF RIGID PAVEMENT

1 CONCRETE PAVEMENT SECTION
NOT TO SCALE

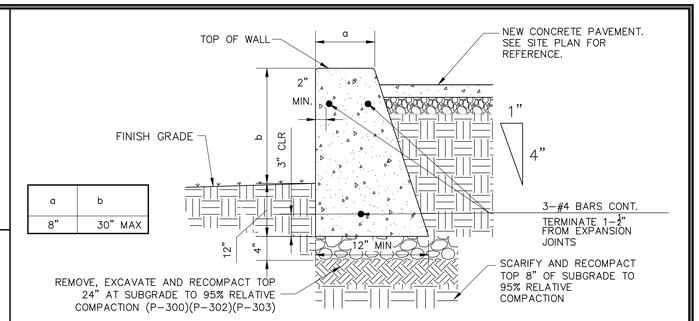



PLAN




SECTION

2 ENERGY DISSIPATOR STRUCTURE DETAIL
NOT TO SCALE

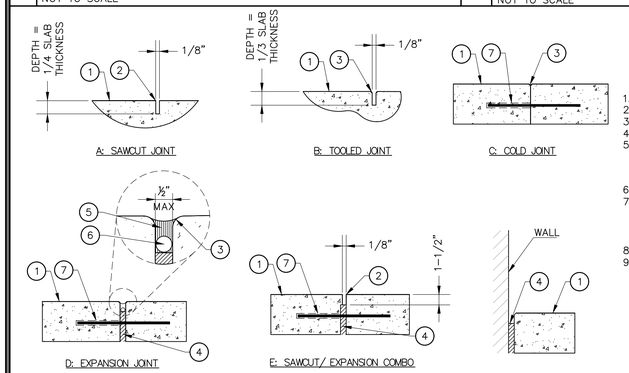



| a | b |
|---|---|
| 8" | 30" MAX |

## NOTES:

1. PROVIDE ¼" EXPANSION JOINT WITH PREFORMED JOINT FILLER AT ALL ANGLE POINTS AND THE BEGINNING AND END OF ALL CURVES.
2. PROVIDE CONTRACTION JOINTS CONSISTING OF ONE INCH DEEP CUT SCORES AT 20' O.C. MAX UNLESS OTHERWISE NOTED BY SIDEWALK OR PAVEMENT JOINT PATTERN.
3. WHERE A WALK IS ADJACENT TO THE CURB, ALL JOINTS IN THE CURB SHALL LINE WITH ALL JOINTS IN THE WALK.
4. CONCRETE, fc'=3000 psi @ 28 DAYS PER SSPWC.
5. REBARS, fy=60,000 psi ASTM A615.
6. THE EXISTING GRADE IN THIS AREA SHOULD BE REMOVED AND RECOMPACTED A MINIMUM OF 24" BELOW THE SUBGRADE ELEVATION. THE SOILS SHOULD BE BROUGHT TO THE OPTIMUM MOISTURE CONTENT AND RE-COMPACTED TO 95 PERCENT OF THE MAXIMUM DENSITY PER SOILS REPORT.
7. SEE SOILS REPORT FOR UNDERLAYMENT REQUIREMENTS.

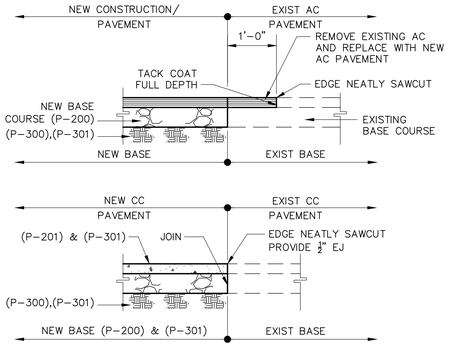
3 GRAVITY WALL DETAIL
NOT TO SCALE

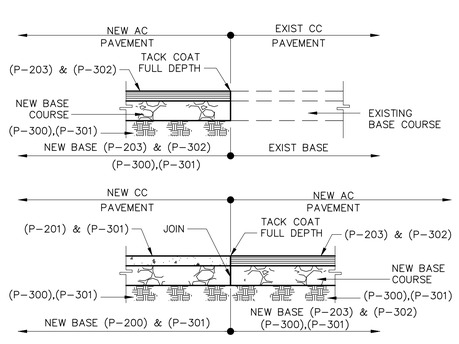



## LEGEND

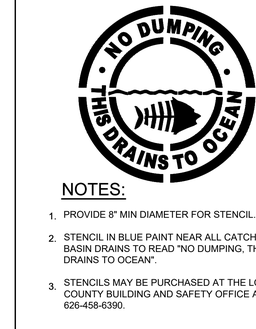
1. PAVING FINISH SURFACE.
2. SAWCUT.
3. 1/4" R. @ EDGES. TYP.
4. PREMOLDED E.J. FILLER.
5. JOINT SEALANT. COLOR TO BE SELECTED BY DISTRICT. SUBMIT COLOR SAMPLES PRIOR TO INSTALLATION.
6. BACKER ROD.
7. 18" #4 REBAR W/ 'SPEED DOWEL' @ 36" OC, CENTER IN CONC. AT COLD JOINTS & E.J.'S
8. CONTROL JOINTS 20' OC MAX.
9. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF CONTROL JOINT AND EXPANSION JOIN LAYOUT.

4 JOINT DETAIL
NOT TO SCALE



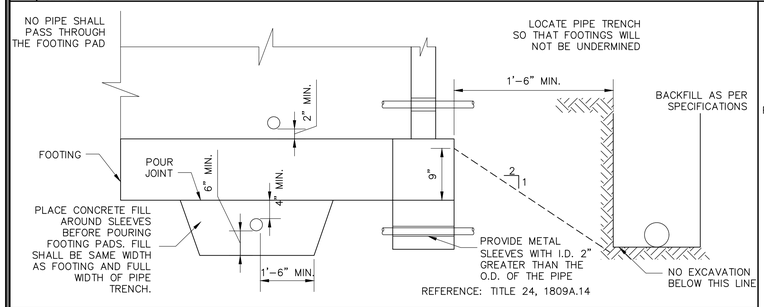

5 PAVEMENT TRANSITION DETAIL
NOT TO SCALE



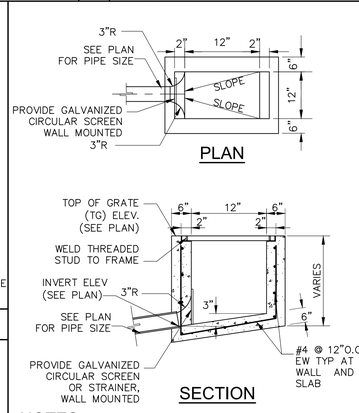

## NOTES:

1. PROVIDE 8" MIN DIAMETER FOR STENCIL.
2. STENCIL IN BLUE PAINT NEAR ALL CATCH BASIN DRAINS TO READ "NO DUMPING, THIS DRAINS TO OCEAN".
3. STENCILS MAY BE PURCHASED AT THE LOCAL COUNTY BUILDING AND SAFETY OFFICE AT 626-458-6390.

6 NO DUMPING SYMBOL DETAIL
NOT TO SCALE



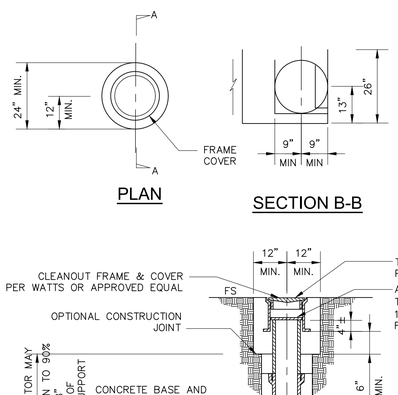

7 TYPICAL PIPE TRENCH OR DUCT BANK AND FOOTING DETAIL
NOT TO SCALE




## NOTES:

1. ALL METAL PARTS SHALL BE GALVANIZED AFTER FABRICATION AND WELDING, AND BEFORE ASSEMBLING.
2. FRAME SHALL BE SIMILAR TO ALHAMBRA FOUNDRY CO. LTD. SERIES OR BROOKS PRODUCTS, INC. OR APPROVED EQUAL. PROVIDE "HEEL PROOF" GRATES ON ALL PEDESTRIAN AREAS.
3. COVER SHALL BE OF VANDAL-RESISTANT CONSTRUCTION WITH ½" MAX OPENINGS.
4. SOLID FRAME COVER SHALL BE TRAFFIC-RATED WHEN INSTALLED IN PAVED (ASPHALT OR CONCRETE) AREAS.
5. COVER MUST COMPLY WITH ACCESSIBILITY REQUIREMENTS.
6. OPENING TO FIT FRAME. SEE PLAN FOR SIZES.
7. PROVIDE LABEL WITH "NO DUMPING – DRAINS TO OCEAN" AT ALL DRAINAGE INLETS (I.E. CATCH BASINS, TRENCH DRAINS) PER DETAIL 6 ON THIS SHEET.

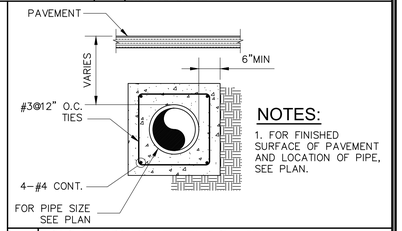
9 CATCH BASIN DETAIL
NOT TO SCALE




## NOTES:

1. FOR STORM DRAINAGE CLEAN OUT COVER, PROVIDE COVER WITH INSCRIPTION "D" TO DENOTE STORM DRAINAGE.
2. FOR SANITARY SEWER CLEAN OUT COVER, PROVIDE COVER WITH INSCRIPTION "S" TO DENOTE SANITARY SEWER.

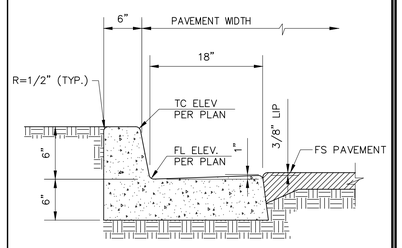
10 CLEANOUT DETAIL
NOT TO SCALE




## NOTES:

1. FOR FINISHED SURFACE OF PAVEMENT AND LOCATION OF PIPE, SEE PLAN.

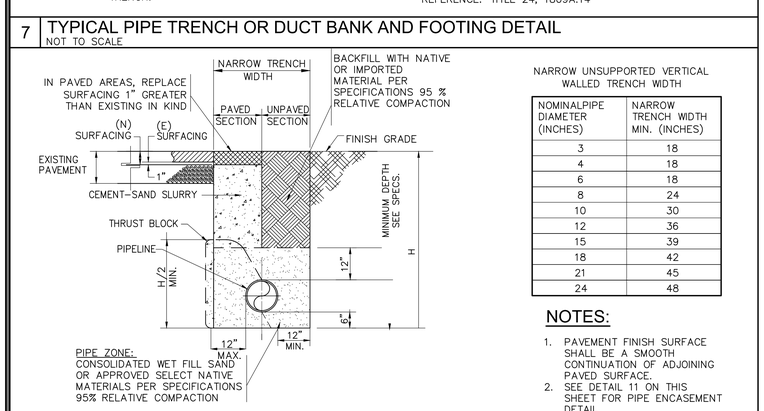
11 PIPE ENCASEMENT DETAIL
NOT TO SCALE




## NOTES:

1. PROVIDE 1/4" EXPANSION JOINT WITH PREFORMED JOINT FILLER AT ALL ANGLE POINTS AND THE BEGINNING AND END OF ALL CURVES.
2. PROVIDE CONTRACTION JOINTS CONSISTING OF ONE INCH DEEP CUT SCORES AT 20' O.C. MAX.
3. WHERE A WALK IS ADJACENT TO THE CURB, THE JOINTS SHALL LINE WITH JOINTS IN THE WALK.

12 CONCRETE CURB AND GUTTER
NOT TO SCALE




NARROW UNSUPPORTED VERTICAL WALLED TRENCH WIDTH

| NOMINALPIPE DIAMETER (INCHES) | NARROW TRENCH WIDTH MIN. (INCHES) |
|---|---|
| 3 | 18 |
| 4 | 18 |
| 6 | 18 |
| 8 | 24 |
| 10 | 30 |
| 12 | 36 |
| 15 | 39 |
| 18 | 42 |
| 21 | 45 |
| 24 | 48 |

## NOTES:

1. PAVEMENT FINISH SURFACE SHALL BE A SMOOTH CONTINUATION OF ADJOINING PAVED SURFACE.
2. SEE DETAIL 11 ON THIS SHEET FOR PIPE ENCASEMENT DETAIL.

8 BEDDING DETAIL
NOT TO SCALE

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APP: 03-123641 INC:
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KEYNOTES

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REGISTERED PROFESSIONAL ENGINEER
36079
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA
MCA ENGINEERS INC
STRUCTURAL CIVIL
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Tel: 323.729.6098 Fax: 323.729.6043

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

MISCELLANEOUS DETAILS

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

C-5.0

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON ALL SHEETS ORIGINAL PAGE SIZE

# ZURN Model 375A

## Reduced Pressure Principle Assembly


(with NRS gates)

LEAD FREE

USC

ALS

NSF/ANSI/CAN 61

**Application**

Designed for installation on potable water lines to protect against both backsiphonage and backpressure of contaminated water into the potable water supply. The Model 375A provides protection where a potential health hazard exists. Ideal for use where Lead-Free® valves are required.

**Standards Compliance**

- ASSE® Listed 1013
- AWWA Compliant C511 (with gates only), and C550
- cUPC® Listed
- CSA® Certified B64.4
- UL® Classified
- C-UL® Classified
- FM® Approved
- Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California.
- NYC MEA 484-04-M
- Meets the requirements of NSF/ANSI/CAN 61* *(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

**Materials**

| | |
|---|---|
| Main valve body | Ductile Iron ASTM A 536 |
| Access covers | Ductile Iron ASTM A 536 |
| Coatings | NSF Approved electrostatic epoxy |
| finish Internals | Stainless Steel, 300 Series NORYL™ |
| Fasteners & Springs | Stainless Steel, 300 Series |
| Seal rings | EPDM (FDA approved) |
| O-rings | Buna Nitrile (FDA approved) |
| Sensing line | Stainless Steel, braided hose |

**Features**

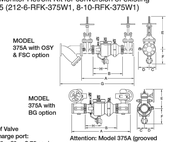
Sizes: 2 1/2"*, 3"*, 4", 6", 8", 10"

| | |
|---|---|
| Maximum working water pressure | 175 PSI |
| Maximum working water temperature | 140°F |
| Hydrostatic test pressure | 350 PSI |
| End connections (Grooved for steel pipe) | AWWA C606 |
| (Flanged) | ANSI B16.42 Class 150 |

*2 1/2 & 3" sizes use 4" body & reducer couplings

**Dimensions & Weights (do not include pkg.)**

| MODEL 375A SIZE | WEIGHT: WITHOUT GATES | WITH NRS GATES (SAP) | WITH OS&Y GATES (SAP) | WITH NRS GATES (CKG) | WITH OS&Y GATES (CKG) | WITH BUTTERFLY VALVES (CKG) | WITH BUTTERFLY VALVES (SAP) |
|---|---|---|---|---|---|---|---|
| in. / mm | lbs. / kg | lbs. / kg | lbs. / kg | lbs. / kg | lbs. / kg | lbs. / kg | lbs. / kg |
| 2 1/2 / 65 | 65 / 97 | 44 / 191 | 87 / 199 | 90 / 183 | 83 / 191 | 87 / 139 | 63 / 149 |
| 3 / 80 | 80 / 98 | 43.5 / 211 | 96 / 217 | 96 / 207 | 91 / 207 | 94 / 141 | 64 / 154 |
| 4 / 100 | 83 / 38 | 227 / 103 | 237 / 108 | 201 / 91 | 211 / 96 | 131 / 59 | 153 / 69 |
| 6 / 150 | 134 / 62 | 356 / 162 | 372 / 169 | 326 / 148 | 342 / 155 | 210 / 95 | 240 / 109 |
| 8 / 200 | 305 / 139 | 757 / 344 | 781 / 355 | 757 / 344 | 757 / 344 | 449 / 204 | 495 / 225 |
| 10 / 250 | 358 / 162 | 985 / 447 | 1043 / 473 | 863 / 391 | 921 / 418 | 574 / 260 | 633 / 287 |




| MODEL 375A SIZE | DIMENSION (approximate): A | A WITH BUTTERFLY VALVES | B LESS GATE VALVES | C | D | E OSAY OPEN | E OSAY CLOSED | E NRS GATE | E WITH BUTTERFLY VALVES | F | G | H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm |
| 2 1/2 / 65 | 15 / 381 | 15 / 381 | 7 1/2 / 190 | 7 1/4 / 184 | 7 1/4 / 184 | 16 3/8 / 416 | 13 7/8 / 352 | 11 3/8 / 289 | 8 1/4 / 210 | 13 / 330 | 27 3/4 / 705 | 24 / 610 |
| 3 / 80 | 16 1/4 / 413 | 16 1/4 / 413 | 8 1/4 / 210 | 8 1/4 / 210 | 8 1/4 / 210 | 18 7/8 / 479 | 15 5/8 / 397 | 12 3/8 / 314 | 8 1/2 / 216 | 11 / 279 | 40 1/4 / 1022 | 29 1/2 / 749 |
| 4 / 100 | 17 5/8 / 448 | 17 5/8 / 448 | 9 / 229 | 9 / 229 | 9 / 229 | 22 1/2 / 572 | 18 1/4 / 464 | 14 1/4 / 362 | 10 / 254 | 12 / 305 | 46 7/8 / 1191 | 33 1/2 / 851 |
| 6 / 150 | 22 1/2 / 572 | 22 1/2 / 572 | 12 / 305 | 12 / 305 | 12 / 305 | 30 1/2 / 775 | 24 1/4 / 616 | 17 1/2 / 445 | 12 / 305 | 17 / 432 | 63 1/2 / 1613 | 44 1/2 / 1130 |
| 8 / 200 | 30 1/2 / 775 | 30 1/2 / 775 | 15 / 381 | 15 / 381 | 15 / 381 | 37 3/4 / 959 | 31 1/4 / 794 | 24 1/2 / 622 | 16 / 406 | 22 / 559 | 80 1/2 / 2045 | 57 1/2 / 1461 |
| 10 / 250 | 37 1/2 / 953 | 37 1/2 / 953 | 18 / 457 | 18 / 457 | 18 / 457 | 45 5/8 / 1159 | 38 3/4 / 984 | 31 3/4 / 806 | 20 1/2 / 521 | 27 / 686 | 97 1/2 / 2477 | 69 1/2 / 1765 |
| 12 / 300 | 45 3/4 / 1162 | 45 3/4 / 1162 | 21 1/2 / 546 | 21 1/2 / 546 | 21 1/2 / 546 | 53 3/8 / 1356 | 45 3/4 / 1162 | 38 1/2 / 978 | 24 1/2 / 622 | 32 / 813 | 113 1/2 / 2883 | 81 1/2 / 2070 |

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Rev, I,
Date: 10/22
Document No. BF-375A
Product No., Model 375A
Patent zurn.com/patents

Page 1 of 2

**Flow Characteristics**

◊ Rated Flow (established by approval agencies)

MODEL 375A 2-1/2", 3" (STANDARD & METRIC)
FLOW RATE (l/s)
0.0 6.3 12.6 18.9 25.2 31.5
2 1/2" (65mm)
3" (80mm)
PRESSURE LOSS (PSIG) 0 5 10 15
PRESSURE LOSS (kPa) 0 34 69 103
FLOW RATE (GPM) 0 100 200 300 400 500

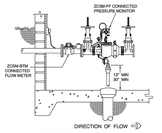
MODEL 375A 4" & 6" (STANDARD & METRIC)
FLOW RATE (l/s)
0.0 25.2 50.5 75.7 100.9
4" (100mm)
6" (150mm)
PRESSURE LOSS (PSIG) 0 5 10 15
PRESSURE LOSS (kPa) 0 34 69 103
FLOW RATE (GPM) 0 400 800 1200 1600

MODEL 375A 8" & 10" (STANDARD AND METRIC)
FLOW RATE (l/s)
0 63.1 126.2 189.3 252.4
8" (200mm)
10" (250mm)
PRESSURE LOSS (PSIG) 0 5 10 15 20
PRESSURE LOSS (kPa) 0 34 69 103 138
FLOW RATES (GPM) 0 1000 2000 3000 4000

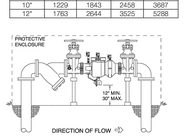
**Typical Installation**

Local codes shall govern installation requirements. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) and a maximum of 30" (762mm) above adequate drains with sufficient side clearance for testing and maintenance. The installation shall be made so that no part of the unit can be submerged.

| Capacity thru Schedule 40 Pipe (GPM) | | | | |
|---|---|---|---|---|
| Pipe size | 5 ft/sec | 7.5 ft/sec | 10 ft/sec | 15 ft/sec |
| 2 1/2" | 75 | 112 | 149 | 224 |
| 3" | 115 | 173 | 230 | 346 |
| 4" | 198 | 298 | 397 | 595 |
| 6" | 450 | 675 | 900 | 1351 |
| 8" | 780 | 1169 | 1559 | 2339 |
| 10" | 1229 | 1843 | 2458 | 3687 |
| 12" | 1763 | 2644 | 3525 | 5288 |



INDOOR INSTALLATION
(375AOSY with ZCSM-PF Connected Pressure Monitor and ZCSM-BTM Connected Flow Meter accessories)



OUTDOOR INSTALLATION (375A with FSC option)

**Specifications**

The Reduced Pressure Principle Backflow Prevention Assembly shall be certified to NSF/ANSI/CAN 61, ASSE® Listed 1013, and supplied with full port gate valves. The main body and access cover shall be epoxy coated ductile iron (ASTM A 536), the seat ring and check valve shall be NORYL™, the stem shall be stainless steel (ASTM A 276) and the seat disc elastomers shall be EPDM. The checks and the relief valve shall be accessible for maintenance without removing the device from the line. The Reduced Pressure Principle Backflow Prevention Assembly shall be a ZURN WILKINS Model 375A.

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Page 2 of 2

1 REDUCED PRESSURE PRINCIPLE ASSEMBLY - ZURN WILKINS 375A
NOT TO SCALE

# ZURN Model 350DA

## Double Check Detector Assembly



LEAD FREE

NSF/ANSI/CAN 61

**Application**

Designed for installation on water lines in fire protection systems to protect against both backsiphonage and backpressure of polluted water into the potable water supply. Model 350DA shall provide protection where a potential health hazard does not exist. Incorporates metered by-pass to detect leaks and unauthorized water use.

**Standards Compliance**

(Sizes 2 1/2" - 10" Horiz. & Vert.)
(12" Horizontal Only)

- ASSE® Listed 1048 (Sizes 2 1/2" thru 12")
- CSA® Certified B64.5 (Sizes 2 1/2" thru 8", & 12")
- AWWA Compliant C510 (Sizes 2 1/2" thru 12"), and C550
- UL® Classified (Sizes 2 1/2" thru 12")
- C-UL® Classified (Sizes 2 1/2" thru 12")
- FM® Approved (Sizes 2 1/2" thru 10")
- NYC MEA 147-99-M Vol 4 (2-1/2" - 10)
- Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California (Sizes 2 1/2" thru 10")
- Meets the requirements of NSF/ANSI/CAN 61* *(0.25% MAX. WEIGHTED AVERAGE LEAD CONTENT)

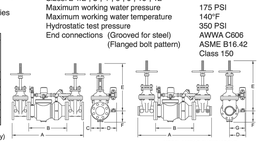
**By-Pass Backflow Assembly 3/4" Model 950XLD**

**Materials**

| | |
|---|---|
| Main valve body | Ductile Iron ASTM A 536 |
| Access covers | Ductile Iron ASTM A 536 |
| Coatings | NSF Approved fusion epoxy finish |
| Internals | Stainless steel, 300 Series NORYL™ |
| Fasteners | Stainless Steel, 300 Series |
| Elastomers | EPDM (FDA approved) Buna Nitrile (FDA approved) |
| Polymers | NORYL™ |
| Springs | Stainless Steel, 300 Series |

**Dimensions & Weights (do not include pkg.)**

| MODEL 350DA SIZE | WEIGHT: LESS SHUT OFF VALVES | OSAY GATE VALVES FLANGED | OSAY GATE VALVES GROOVED | BUTTERFLY VALVES GROOVED |
|---|---|---|---|---|
| in. / mm | lbs. / kg | lbs. / kg | lbs. / kg | lbs. / kg |
| 2 1/2 / 65 | 68 / 31 | 178 / 81 | 160 / 73 | 140 / 64 |
| 3 / 80 | 68 / 31 | 198 / 90 | 180 / 82 | 160 / 73 |
| 4 / 100 | 106 / 48 | 296 / 134 | 282 / 128 | 190 / 86 |
| 6 / 150 | 180 / 82 | 483 / 219 | 454 / 206 | 336 / 153 |
| 8 / 200 | 374 / 170 | 850 / 386 | 802 / 364 | 548 / 249 |
| 10 / 250 | 404 / 183 | 1222 / 554 | 1156 / 524 | 792 / 359 |
| 12 / 300 | 453 / 210 | 1623 / 736 | 1536 / 696 | 1044 / 474 |




**Attention:**
Model 350DA (flange body) and Model 350ADA (grooved body) have different lay lengths.

| MODEL 350DA SIZE | DIMENSION (approximate): A | A WITH BUTTERFLY VALVES | B LESS GATE VALVES | C | D | E OSAY OPEN | E OSAY CLOSED | E WITH BUTTERFLY VALVES | F | G |
|---|---|---|---|---|---|---|---|---|---|---|
| in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm | in. / mm |
| 2 1/2 / 65 | 15 / 381 | 15 / 381 | 7 1/2 / 190 | 7 1/4 / 184 | 7 1/4 / 184 | 16 3/8 / 416 | 13 7/8 / 352 | 11 3/8 / 289 | 8 1/4 / 210 | 13 / 330 |
| 3 / 80 | 16 1/4 / 413 | 16 1/4 / 413 | 8 1/4 / 210 | 8 1/4 / 210 | 8 1/4 / 210 | 18 7/8 / 479 | 15 5/8 / 397 | 12 3/8 / 314 | 8 1/2 / 216 | 11 / 279 |
| 4 / 100 | 17 5/8 / 448 | 17 5/8 / 448 | 9 / 229 | 9 / 229 | 9 / 229 | 22 1/2 / 572 | 18 1/4 / 464 | 14 1/4 / 362 | 10 / 254 | 12 / 305 |
| 6 / 150 | 22 1/2 / 572 | 22 1/2 / 572 | 12 / 305 | 12 / 305 | 12 / 305 | 30 1/2 / 775 | 24 1/4 / 616 | 17 1/2 / 445 | 12 / 305 | 17 / 432 |
| 8 / 200 | 30 1/2 / 775 | 30 1/2 / 775 | 15 / 381 | 15 / 381 | 15 / 381 | 37 3/4 / 959 | 31 1/4 / 794 | 24 1/2 / 622 | 16 / 406 | 22 / 559 |
| 10 / 250 | 37 1/2 / 953 | 37 1/2 / 953 | 18 / 457 | 18 / 457 | 18 / 457 | 45 5/8 / 1159 | 38 3/4 / 984 | 31 3/4 / 806 | 20 1/2 / 521 | 27 / 686 |
| 12 / 300 | 45 3/4 / 1162 | 45 3/4 / 1162 | 21 1/2 / 546 | 21 1/2 / 546 | 21 1/2 / 546 | 53 3/8 / 1356 | 45 3/4 / 1162 | 38 1/2 / 978 | 24 1/2 / 622 | 32 / 813 |

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Rev, G
Date: 9/22
Document No. BF-350DA
Product No., Model 350DA
Patent zurn.com/patents

Page 1 of 2

**Flow Characteristics**

◊ Rated Flow (established by approval agencies)

MODEL 350DA 2 1/2", 3" & 4" (STANDARD & METRIC)
FLOW RATES (l/s)
0.0 12.6 25.2 37.9 50.5
2 1/2" (65mm)
3" (80mm)
4" (100mm)
PRESSURE LOSS (PSIG) 0 5 10 15
PRESSURE LOSS (kPa) 0 35 69 104
FLOW RATES (GPM) 0 200 400 600 800

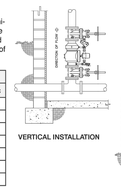
MODEL 350DA 6" & 8" (STANDARD & METRIC)
FLOW RATES (l/s)
0.0 31.5 63.1 94.6 126.2 157.7
6" (150mm)
8" (200mm)
PRESSURE LOSS (PSIG) 0 5 10 15
PRESSURE LOSS (kPa) 0 35 69 104
FLOW RATES (GPM) 0 500 1000 1500 2000 2500

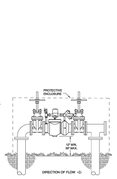
MODEL 350DA 10" & 12" (STANDARD & METRIC)
FLOW RATES (l/s)
0.0 31.5 63.1 94.6 126.2 157.7 189.3 220.8 252.4 283.9
10" (250mm)
12" (300mm)
PRESSURE LOSS (PSIG) 0 5 10 15
PRESSURE LOSS (kPa) 0 34 69 104
FLOW RATES (GPM) 0 500 1000 1500 2000 2500 3000 3500 4000 4500

**Typical Installation**

Local codes shall govern installation requirements. Unless otherwise specified, the assembly shall be mounted at a minimum of 12" (305mm) and a maximum of 30" (762mm) above adequate drains with sufficient side clearance for testing and maintenance. The installation shall be made so that no part of the unit can be submerged.

| Capacity thru Schedule 40 Pipe (GPM) | | | | |
|---|---|---|---|---|
| Pipe size | 5 ft/sec | 7.5 ft/sec | 10 ft/sec | 15 ft/sec |
| 2 1/2" | 75 | 112 | 149 | 224 |
| 3" | 115 | 173 | 230 | 346 |
| 4" | 198 | 298 | 397 | 595 |
| 6" | 450 | 675 | 900 | 1351 |
| 8" | 780 | 1169 | 1559 | 2339 |
| 10" | 1229 | 1843 | 2458 | 3687 |
| 12" | 1763 | 2644 | 3525 | 5288 |




**Specifications**

The Double Check Detector Backflow Prevention Assembly shall be certified to NSF/ANSI/CAN 61, ASSE® Listed 1048, and supplied with full port gate valves. The main body and access cover shall be epoxy coated ductile iron (ASTM A 536), the seat ring and check valve shall be Nory™, the stem shall be stainless steel (ASTM A 276) and the seat disc elastomers shall be EPDM. The first and second check valves shall be accessible for maintenance without removing the device from the line. The Double Check Detector Backflow Prevention Assembly shall be a ZURN WILKINS Model 350DA.

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Page 2 of 2

2 DOUBLE CHECK DETECTOR ASSEMBLY - ZURN WILKINS 350DA
NOT TO SCALE

**Options**
(Suffixes can be combined)

- ☐ - with OS & Y gate valves (standard)
- ☐ L - less shut-off valves (flanged body connections)
- ☐ LM - less water meter
- ☐ - with gallon meter (standard)
- ☐ CFM - with cu ft meter
- ☐ CMM - with cu meter meter
- ☐ G - with groove end gate valves
- ☐ FG - with flanged inlet connection and grooved outlet connection
- ☐ PI - with Post Indicator Gate Valve
- ☐ GF - with flanged inlet connection and grooved outlet connection
- ☐ BG - with grooved end butterfly valves with integral monitor switches (2 1/2" - 10")

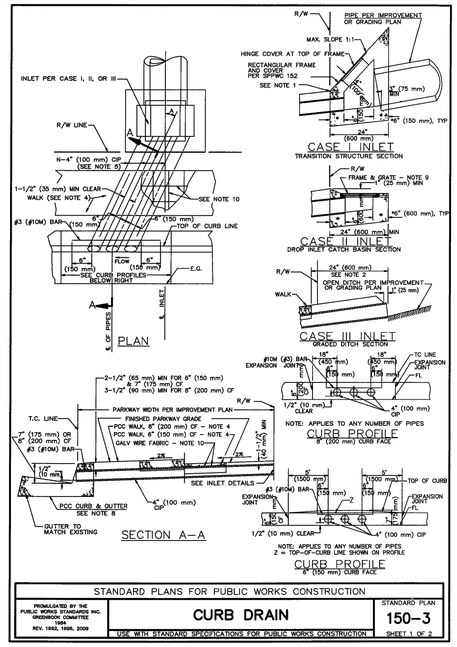
**Accessories**

- ☐ Repair kit (rubber only)
- ☐ Thermal expansion tank (Model XT)
- ☐ OS & Y Gate valve tamper switch (OSY-40)

**Features**

Sizes: 2 1/2", 3", 4", 6", 8", 10", 12"

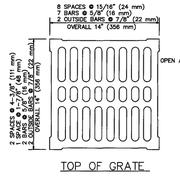
| | |
|---|---|
| Maximum working water pressure | 175 PSI |
| Maximum working water temperature | 140°F |
| Hydrostatic test pressure | 350 PSI |
| End connections (Grooved for steel) | AWWA C606 |
| (Flanged bolt pattern) | ASME B16.42 Class 150 |




| STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION | STANDARD PLAN |
|---|---|
| **CURB DRAIN** | 150–3 |
| PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE REV. 1992, 1998, 2009 | USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION — SHEET 1 OF 2 |

NOTES

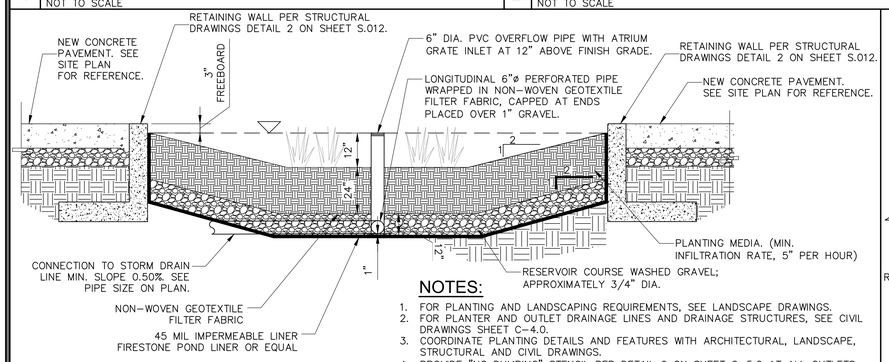
1. IF THE TOP OF SLOPE IS ALLOWED WITHIN THE R/W, INLET CASE I BEGINS AT THE TOP RATHER THAN THE R/W LINE.
2. FOR OPEN DITCH (CASE INLET III), THE 24" (600 mm) EXTENSION BEYOND THE R/W LINE IS NOT REQUIRED WHEN BACK OF WALK IS 24" (600 mm) OR MORE FROM THE R/W LINE. HOWEVER, PIPE SHALL EXTEND TO R/W LINE.
3. TOP OF INLET STRUCTURE (CASE I AND II) TO BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICAL.
4. CONSTRUCT PCC WALK WHEN SPECIFIED ON PLANS. THE CONTRACT PRICE PAID FOR PCC WALK ITEM SHALL INCLUDE WALK CONSTRUCTED IN CONJUNCTION WITH PARKWAY CULVERT.
5. "N" EQUALS NUMBER OF PIPES (MAXIMUM OF THREE) AS SPECIFIED ON PLANS.
6. INLET CASE TO BE SPECIFIED ON PLANS.
7. ANGLE A EQUALS 0°, UNLESS OTHERWISE SPECIFIED.
8. TYPE, DIMENSIONS AND ELEVATIONS OF P.C.C. CURB AND GUTTER PER PLANS.
9. UNLESS OTHERWISE SPECIFIED, FRAME AND GRATE FOR CASE II INLET SHALL BE GALVANIZED CAST IRON. WEIGHT OF FRAME AND GRATE SHALL BE 80 LBS (36 kg).
10. AT LOCATIONS WITH LESS THAN 8" (200 mm) CURB FACE, USE 6x6–10/10 (152x152–MW9.1xMW9.1) GALVANIZED WIRE FABRIC. WIRE FABRIC SHALL EXTEND 8" (200 mm) BEYOND THE EDGE OF CAST IRON PIPES.



GRATE FOR CASE II INLET

| STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION | STANDARD PLAN |
|---|---|
| **CURB DRAIN** | 150–3 |
| | SHEET 2 OF 2 |

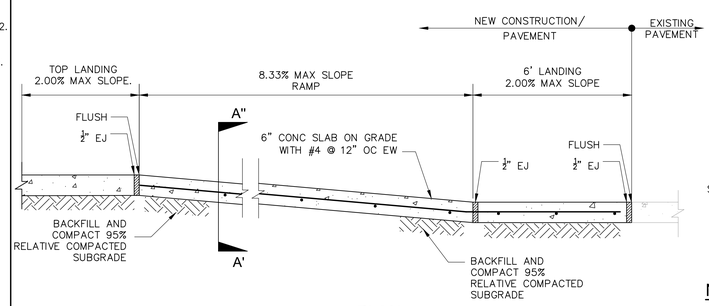
3 CURB DRAIN DETAIL - APWA STD PLAN 150-3
NOT TO SCALE




NOTES:

1. FOR PLANTING AND LANDSCAPING REQUIREMENTS, SEE LANDSCAPE DRAWINGS.
2. FOR PLANTER AND OUTLET DRAINAGE LINES AND DRAINAGE STRUCTURES, SEE CIVIL DRAWINGS SHEET C–4.0.
3. COORDINATE PLANTING DETAILS AND FEATURES WITH ARCHITECTURAL, LANDSCAPE, STRUCTURAL AND CIVIL DRAWINGS.
4. PROVIDE "NO DUMPING" STENCIL PER DETAIL 6 ON SHEET C–5.0 AT ALL OUTLETS.

4 BIOFILTRATION SWALE DETAIL
NOT TO SCALE

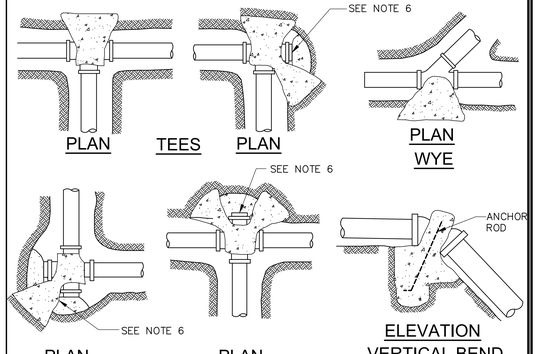


PLAN

NOTE:

1. REFER TO GRADING PLANS FOR UPPER RAMP LANDING HEIGHT.

6 ACCESSIBLE RAMP DETAIL
NOT TO SCALE




## GENERAL NOTES:

1. ALL ANCHOR AND THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL.
2. MINIMUM ALLOWABLE WATER PRESSURE FOR DESIGN OF THRUST BLOCKS IS 150 PSI. BEARING AREA INCREASE IN PRESSURE.
3. ALL CONCRETE USED IN THRUST BLOCKS SHALL ATTAIN 2000 PSI STRENGTH.
4. ALL ANCHOR RODS SHALL BE REINFORCING STEEL AND A MINIMUM OF 1/2–INCH IN DIAMETER.
5. USE ANCHOR BLOCKS AT VERTICAL BENDS WHEN PIPE IS ABOVE OR BELOW GROUND. SIZE OF BLOCK AND ROD SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER IN THE FIELD.
6. USE 30 POUND FELT TO INSURE COLD JOINT.
7. CONCRETE SHALL NOT COME INTO DIRECT WITH ASBESTOS CEMENT PIPE.
8. FOR PIPE 14" IN DIAMETER OR LARGER ENGINEER IS TO SUBMIT CALCULATIONS.

TABLE I

| MINIMUM BEARING AREAS IN SQ.FT. | | | | |
|---|---|---|---|---|
| MAIN SIZE | TEE | 90° BEND | 45° BEND | 22 1/2° BEND |
| 6" | 4 | 4 | 4 | |

BASED ON 150 PSI W.W.R. PRESSURE & SOIL BEARING LOADS OF 2000 PSF THE RATIO OF WIDTH TO HEIGHT SHALL NOT EXCEED 1 1/2 TO 1

TEES,PLUGS,CAPS & HYDRANTS.

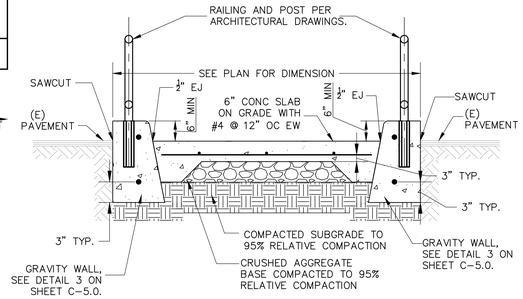
TABLE II

| SOIL TYPE | MAX. ALLOWABLE SOIL BEARING VALUES | FACTORS FOR INCREASING AREAS IN TABLE 1 |
|---|---|---|
| LOOSE SAND | 500 PSF | 4 |
| SOFT SANDY CLAY | 1000 PSF | 2 |
| ADOBE | 1000 PSF | 2 |
| COMPACT FINE SAND | 2000 PSF | 1 |
| COMPACT COARSE SAND | 2000 PSF | 1 |
| MEDIUM STIFF CLAY | 2000 PSF | 1 |

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SAFE SOIL BEARING VALUES AND SIZE OF BEARING AREAS.

BASED ON 2 FEET MINIMUM DEPTH OF COVER OVER THE PIPE.

5 THRUST BLOCK DETAILS
NOT TO SCALE



CROSS SECTION A' A"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER D. ARMSTRONG — No. C36079 — Exp. 6/30/26 — CIVIL — STATE OF CALIFORNIA

VCA ENGINEERS INC — CIVIL & STRUCTURAL — 1041 S. Garfield Avenue, Suite #210 Alhambra, CA 91801 Tel: 323.729.6098 Fax: 323.729.6043

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

MISCELLANEOUS DETAILS

**DSA SUBMITTAL**

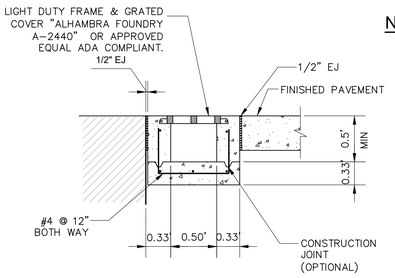
| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

C-5.1

PLEASE RECYCLE

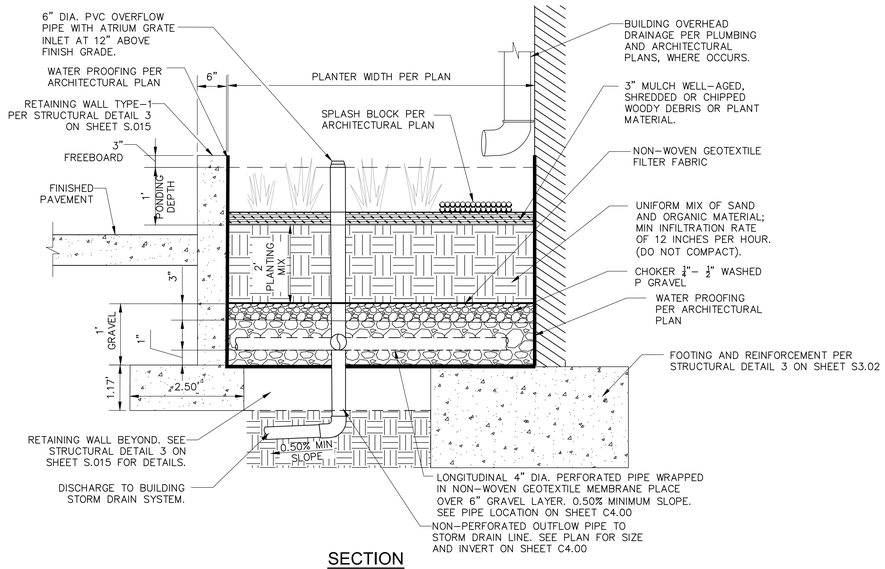
THE LINE BROWN ABOVE IS EXACTLY 3" WHEN PLOTTED ON ARCH D SHEETS ORIGINAL PAGE SIZE



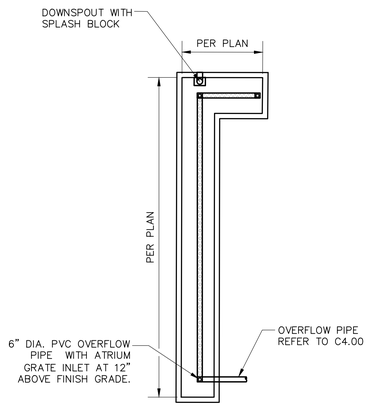

## NOTES:

1. THE INTERNAL SLOPE IN THE TRENCH DRAIN SHALL BE 1% MINIMUM
2. FOR THE ELEVATION OF THE CONCRETE SEE SHEET C-3.0.
3. FOR INVERT ELEVATION AND LOCATION OF DISCHARGE PIPE, SEE SHEET C-4.0.
4. GRATE SHALL BE A.D.A. COMPLIANT, HEEL PROOF, AND VANDAL RESISTANT
5. PROVIDE LABEL "WITH NO DUMPING – DRAINS TO OCEAN" AT ALL DRAINAGE INLETS (I.E. CATCH BASINS, TRENCH DRAINS) PER DETAIL 6 ON SHEET C-5.0.
6. INSTALL KRISTAR FLOGARD LOPRO TRENCH DRAIN FILTER INSERT OR APPROVED EQUAL.

## 1 TRENCH DRAIN DETAIL
NOT TO SCALE




SECTION

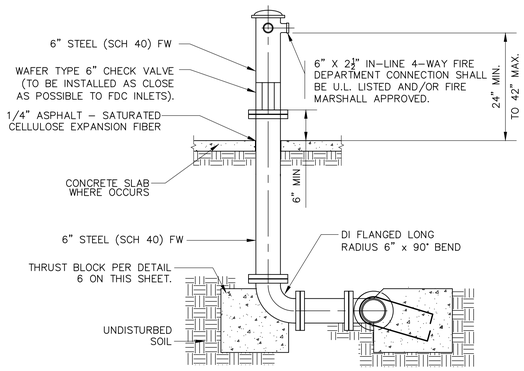



PLAN VIEW NTS.

## NOTES:

1. FOR WALL DETAILS AND FEATURES – SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. FOR ROOF DRAIN/DOWNSPOUT AND BUILDING PLUMBING STORM DRAIN OUTLET – SEE PLUMBING DRAWINGS.
3. FOR PLANTER AND OUTLET DRAINAGE LINES AND DRAINAGE STRUCTURES – SEE CIVIL DRAWINGS, SITE UTILITY PLAN.
4. FOR PLANTER AND OUTLET DRAINAGE LINES AND DRAINAGE STRUCTURES WITHIN BUILDING FOOTPRINT – SEE PLUMBING DRAWINGS.
5. MAXIMUM TOTAL HEIGHT OF PLANTER BOX IS 51". CONTRACTOR TO COORDINATE DETAILS AND INFORMATION ASSOCIATED WITH PLANTER BOX WITH ARCHITECTURAL, STRUCTURAL, LANDSCAPE, PLUMBING AND CIVIL DRAWINGS.
6. FOR PLANTER BOX TOP OF WALL ELEVATION IS 1.5 FEET MAX ABOVE FINISHED SURFACE. FOR DRAINAGE LINE AND INVERT SEE STORM DRAINAGE UTILITY PLAN ON SHEET C4.00.

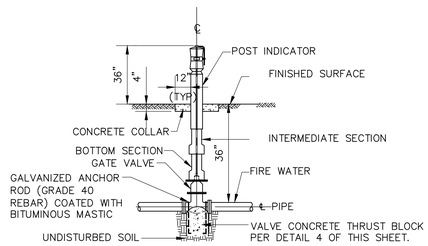
## 2 51" TYPICAL LID BIOFILTRATION PLANTER BOX
NOT TO SCALE




## NOTES:

1. THE FDC SHALL BE VISIBLE, ACCESSIBLE (THREE FEET CLEAR ABOVE AND ON BOTH SIDES) AND INSTALLED WITH THE INLETS NOT LESS THAN 24 INCHES AND NOT MORE THAN 42 INCHES ABOVE THE LEVEL OF GRADE, WITH THE FDC FACING THE STREET. WHEN A FENCE OR OTHER OBSTRUCTION IS PROVIDED, THE FDC SHALL BE ACESSIBLE FROM THE PUBLIC SIDE OF THE OBSTRUCTION. LACoFD REGULATION 7.
2. CLASS I STANDPIPE SYSTEMS SHALL BE EQUIPPED WITH A LISTED 4-WAY FDC, CLAPPERED BODY FDC, HAVING FOUR 2 1/2" INLETS SIAMESES INTO A MINIMUM 6" PIPE WITH A 6" CHECK VALVE. (CHECK VALVE HAS TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE FDC).
3. FIRE DEPARTMENT CONNECTION SHALL BE PAINTED RED ON ANY EXPOSED SURFACES SUBJECT TO RUST OR CORROSION. COUPLING THREADS, OPERATION MECHANISMS, ANY COMPONENTS OR PORTION OF THE VALVE WHERE THE APPLICATION OF PAINT WOULD VIOLATE THE LISTING OR HINDER ITS OPERATION SHALL NOT BE PAINTED. 2011 FC, SECTION 912.7.
4. FDCs SHALL HAVE A PERMANENT SIGN IDENTIFYING AREAS OR SYSTEMS CONTROLLED. SIGNS SHALL BE METAL, PAINTED WHITE WITH MINIMUM RED LETTERS 1" HIGH WITH 3/16" STROKE AND SHALL BE PERMANENTLY BANDED TO THE VALVE OR PERMANENTLY AFFIXED TO A WALL. INDICATE THE TYPE OF SYSTEM, ADDRESS, AND BUILDINGS SERVED BY THE FDC, AND SYSTEM PUMPING PRESSURE (IF OVER 150 PSI). SIGNS SHALL BE PROVIDED AS OUTLINED IN LACoFD REGULATION 7 AND 2011 FIRE CODE, SECTION 912.4.

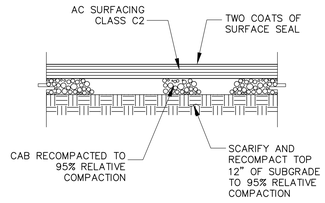
## 3 FIRE DEPARTMENT CONNECTION
NOT TO SCALE




## NOTE:

1. POST INDICATOR VALVE TO BE PROTECTED WITH ABOVEGROUND BOLLARD / GUARD POSTS PER FIRE DEPARTMENT REQUIREMENTS.
2. POST INDICATOR VALVE, AMERICAN FLOW CONTROL IP-71, 4" MODEL 1A OR APPROVED EQUAL.
3. PROVIDE ELECTRICAL TAMPER SWITCH.

## 4 POST INDICATOR VALVE DETAIL
NOT TO SCALE




| LOCATION | A C | | BASE COURSE | | |
|---|---|---|---|---|---|
| | THICKNESS | CLASS | THICKNESS | TYPE | GRADE |
| PARKING LOT | 4" | C2 | 11.5" | CAB | FINE |

## NOTES:

1. FOR PAVEMENT TRANSITION REFER TO DETAIL 5 ON SHEET C-5.0.

## 5 ASPHALT PAVEMENT SECTION DETAIL
NOT TO SCALE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

MISCELLANEOUS DETAILS

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

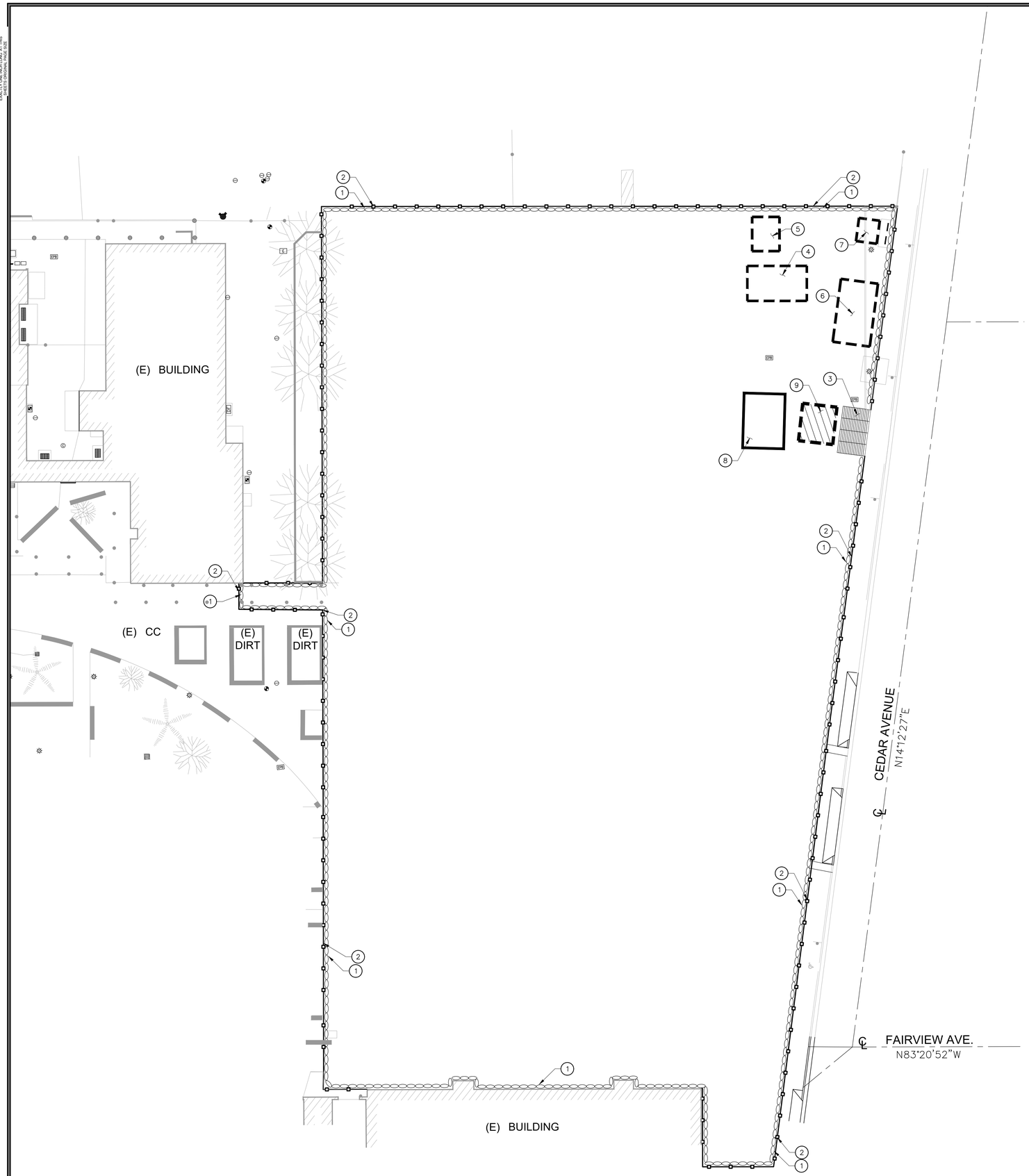
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

C-5.2

PLEASE RECYCLE

THE LINE BROWN ABOVE IS EXACTLY 1" WHEN PRINTED ON 24X36 SHEETS ORIGINAL PAGE SIZE




## CONSTRUCTION NOTES:

1. INSTALL GRAVEL BAGS UNTIL THE COMPLETION OF THE SITE CONSTRUCTION. REFER TO DETAIL 2 ON SHEET C–6.1.
2. SILT FENCE PER DETAIL 5 ON SHEET C–6.1.
3. STABILIZED CONSTRUCTION ENTRANCE/EXIT PER DETAIL 4 ON SHEET C–6.1.
4. PROPOSED AREA FOR EQUIPMENT STAGING. CONTRACTOR TO VERIFY EXACT LOCATION AND COORDINATE WITH THE CONTRACTOR PROJECT MANAGER.
5. PROPOSED AREA FOR FUELING/OILING. CONTRACTOR TO VERIFY ACTUAL AREA NEEDED AND COORDINATE WITH THE CPM. REFER TO DETAIL 9 ON SHEET C–6.1.
6. PROPOSED AREA FOR LOADING. CONTRACTOR TO VERIFY EXACT LOCATION AND COORDINATE WITH THE CONTRACTOR PROJECT MANAGER.
7. PROPOSED AREA FOR TEMPORARY TOILETS. CONTRACTOR TO VERIFY EXACT LOCATION AND COORDINATE WITH THE CONTRACTOR PROJECT MANAGER.
8. PROPOSED AREA FOR VEHICLE AND EQUIPMENT CLEANING. CONTRACTOR TO VERIFY EXACT LOCATION AND COORDINATE WITH THE CONTRACTOR PROJECT MANAGER.
9. TIRE WASH PER DETAIL 6 ON SHEET C–6.1.

## LEGENDS:

GRAVEL BAGS

SILT FENCE

## SHEET NOTES:

1. LOCATION FOR ANY DESIGNATED STOCKPILES SHALL BE COORDINATED AND DETERMINED BY THE CONTRACTOR ON–SITE. CONTRACTOR SHALL APPLY ALL APPLICABLE BMP'S TO PROTECT THE STOCKPILE AS OUTLINED IN DETAIL 7 ON SHEET C–6.1.
2. INSTALL 2" OF TEMPORARY CAB GRAVEL ON ALL ON–SITE CONSTRUCTION ROADWAYS TO STABILIZED AND CONTROL EROSION.
3. CONTRACTOR SHALL FROM TIME TO TIME MONITOR THE CONSTRUCTION SITE TO CLEAN AND SWEEP MATERIALS TRACKED OFF SITE.
4. ALL BMP'S, SILT FENCES, ETC., SHALL BE MONITORED AND MAINTAINED BY THE NTP1 CONTRACTOR FOR THE ENTIRE DURATION OF THE CONTRACT.
5. CONTRACTOR SHALL MONITOR WASTEWATER DISCHARGE (INCLUDING STORM RUNOFF) TO ENSURE IT MEETS STANDARDS SET BY APPROPRIATE LAWS, CODES, REGULATIONS, ORDINANCES AND PERMITS. PROVIDE A SETTLING BASIN AND OIL SEPARATOR PRIOR TO ITS DISCHARGE TO CITY OR COUNTRY SEWERS. PROVIDE A WATER SAMPLING STATION DOWNSTREAM OF BASIN FOR MONITORING OF WASTE WATER. DISPOSE OF WASTEWATER IN CLOSED CONDUITS SO AS NOT TO DAMAGE PUBLIC OR PRIVATE PROPERTY NOR CREATE A NUISANCE OR HEALTH HAZARD.
6. CONTRACTOR SHALL NOT DISCHARGE POLLUTANTS DOWNSTREAM OF THE SETTLING BASIN/OIL SEPARATOR. THESE POLLUTANTS INCLUDE LUBRICANTS, FUELS, CHEMICALS, AND BITUMENS. CONTROL USE OF LUBRICATING OILS, HYDRAULIC FLUIDS, GREASES, AND OTHER SUCH PRODUCTS. PROMPTLY CLEAN UP AND PROPERLY DISPOSE OF MATERIALS CONTAMINATED BY SPILLAGE OR LEAKAGE OF PRODUCTS.
7. THE CONTRACTOR SHALL MODIFY AS REQUIRED THE CURRENT APPROVED SWPPP/EROSION CONTROL PLANS FOR EACH PHASE OF THE PROJECT OR AS CONSTRUCTION ACTIVITIES PROGRESS THROUGH THE DURATION OF THE CONTRACT. THESE MODIFICATIONS SHALL BE REPORTED AND COORDINATED WITH BOTH THE QSD AND THE QSP. ANY MODIFICATIONS TO THE OVERALL DURATION OF CONSTRUCTION SCHEDULE FROM THAT AS SHOWN ON THE CURRENT SWPPP, SHALL ALSO BE REPORTED TO THE QSD. THE QSD SHALL THAN BE REQUIRED TO FILE AN EXTENSION OF CONSTRUCTION OR COI, (CHANGE OF INFORMATION), WITH THE STATE WATER RESOURCE CONTROL BOARD. ALL BMP'S SHALL BE MAINTAINED YEAR ROUND TO THE SATISFACTION OF THE QSD AND QSP.
8. CONTRACTOR SHALL PROTECT ALL EXISTING DRAIN INLETS WITHIN A 500–FT RADIUS FROM THE CENTER OF THE SITE TO PREVENT NON–STORMWATER RUNOFF FROM ENTERING THE STORM DRAIN SYSTEM.
9. FOR EROSION CONTROL GENERAL NOTES, AND MISCELLANEOUS REQUIREMENTS, SEE SHEET C–6.1.

EROSION CONTROL PLAN

20 10 0 20 40

SCALE: 1"=20'

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
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**KEYNOTES**

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

EROSION CONTROL PLAN

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

C-6.0

IF THE LINE SHOWN ABOVE IS EXACTLY 1" LONG THIS SHEETS ORIGINAL PAGE SIZE

## GENERAL NOTES:

1. IN CASE OF EMERGENCY, CALL: CONTRACTOR NAME _____. PHONE NUMBER: _____.
2. A STAND–BY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON (NOVEMBER 1 TO APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE ON–SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF EMERGENCY DEVICES WHEN RAIN IS IMMINENT.
3. EROSION CONTROL DEVICES SHOWN ON THIS PLAN MAY BE REMOVED WHEN APPROVED BY THE BUILDING OFFICIAL IF THE GRADING OPERATION HAS PROGRESSED TO THE POINT WHERE THEY ARE NO LONGER REQUIRED.
4. GRADED AREAS ADJACENT TO FILL SLOPES LOCATED AT THE SITE PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY. ALL LOOSE SOILS AND DEBRIS THAT MAY CREATE A POTENTIAL HAZARD TO OFF–SITE PROPERTY SHALL BE STABILIZED OR REMOVED FROM THE SITE ON A DAILY BASIS.
5. ALL SILT AND DEBRIS SHALL BE REMOVED FROM ALL DEVICES WITHIN 24 HOURS AFTER EACH RAINSTORM AND BE DISPOSED OF PROPERLY.
6. A GUARD SHALL BE POSTED ON SITE WHEREVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO FEET. THE DEVICE SHALL BE DRAINED OR PUMPED DRY WITHIN 24 HOURS AFTER EACH RAINSTORM. PUMPING AND DRAINING OF ALL BASINS AND DRAINAGE DEVICES MUST COMPLY WITH THE APPROPRIATE BMP FOR DEWATERING OPERATIONS.
7. THE PLACEMENT OF ADDITIONAL DEVICES TO REDUCE EROSION DAMAGE AND CONTAIN POLLUTANTS WITHIN THE SITE IS LEFT TO THE DISCRETION OF THE QSP. ADDITIONAL DEVICES AS NEEDED SHALL BE INSTALLED TO RETAIN SEDIMENTS AND OTHER POLLUTANTS ON SITE.
8. DESILTING BASINS MAY NOT BE REMOVED OR MADE INOPERABLE BETWEEN NOVEMBER 1 AND APRIL 15 OF THE FOLLOWING YEAR WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL.
9. STORM WATER POLLUTION AND EROSION CONTROL DEVICES ARE TO BE MODIFIED, AS NEEDED, AS THE PROJECT PROGRESSES, THE DESIGN AND PLACEMENT OF THESE DEVICES IS THE RESPONSIBILITY OF THE FIELD ENGINEER. PLANS REPRESENTING CHANGES MUST BE SUBMITTED FOR APPROVAL IF REQUESTED BY THE BUILDING OFFICIAL.
10. EVERY EFFORT MUST BE MADE TO ELIMINATE THE DISCHARGE OF NONSTORM WATER FROM THE PROJECT SITE AT ALL TIMES.
11. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON–SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
12. STOCKPILES OF EARTH AND OTHER CONSTRUCTION–RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
13. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTINGS AND ARE NOT TO CONTAMINATE THE SOILS AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
14. EXCESS OR WASTE CONCRETE MAY NOT BE WASTED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON–SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
15. DEVELOPERS/CONTRACTORS ARE RESPONSIBLE TO INSPECT ALL EROSION CONTROL DEVICES AND BMP's ARE INSTALLED AND FUNCTIONING PROPERLY IF THERE IS A 40% CHANCE OF 0.25 INCHES OR GREATER OF PREDICTED PRECIPITATION, AND AFTER ACTUAL PRECIPITATION. A CONSTRUCTION SITE INSPECTION CHECKLIST AND INSPECTION LOG SHALL BE MAINTAINED AT THE PROJECT SITE AT ALL TIMES AND AVAILABLE FOR REVIEW BY THE BUILDING OFFICIAL (COPIES OF SELF–INSPECTION CHECKLIST AND INSPECTION LOGS ARE AVAILABLE UPON REQUEST). AT HIS/HER EXPENSE THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A QUALIFIED SWPPP PRACTITIONER FOR THE DURATION OF THE PROJECT.
16. TRASH AND CONSTRUCTION–RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
17. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
18. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
19. AS THE ENGINEER OF RECORD, I HAVE SELECTED APPROPRIATE BMPs TO EFFECTIVELY MINIMIZE THE NEGATIVE IMPACTS OF THIS PROJECT'S CONSTRUCTION ACTIVITIES ON STORM WATER QUALITY. THE PROJECT OWNER AND CONTRACTOR ARE AWARE THAT THE SELECTED BMPs MUST BE INSTALLED, MONITORED, AND MAINTAINED TO ENSURE THEIR EFFECTIVENESS. THE BMPs NOT SELECTED FOR IMPLEMENTATION ARE REDUNDANT OR DEEMED NOT APPLICABLE TO THE PROPOSED CONSTRUCTION QUALITY."
20. THE FOLLOWING BMPs AS OUTLINED IN, BUT NOT LIMITED TO, THE "CALIFORNIA STORMWATER BEST MANAGEMENT PRACTICES HANDBOOK" – JANUARY 2003, OR THE LATEST REVISED EDITION, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY THE PROJECT ENGINEER OR THE BUILDING OFFICIAL).

_____
BUILDING OFFICIAL SIGNATURE

EROSION CONTROL

EC1 – SCHEDULING
EC2 – PRESERVATION OF EXISTING VEGETATION
EC3 – HYDRAULIC MULCH
EC4 – HYDROSEEDING
EC5 – SOIL BINDERS
EC6 – STRAW MULCH
EC7 – GEOTEXTILES AND MATS
EC8 – WOOD MULCHING
EC9 – EARTH DIKES AND DRAINAGE SWALES
EC10 – VELOCITY DISSIPATION DEVICES
EC11 – SLOPE DRAINS
EC12 – STREAMBANK STABILIZATION
EC13 – RESERVED
EC14 – COMPOST BLANKETS
EC15 – SOIL PREPARATION/ROUGHENING
EC16 – NON–VEGETATED STABILIZATION

TEMPORARY SEDIMENT CONTROL

SE1 – SILT FENCE
SE2 – SEDIMENT BASIN
SE3 – SEDIMENT TRAP
SE4 – CHECK DAM
SE5 – FIBER ROLLS
SE6 – GRAVEL BAG BERM
SE7 – STREET SWEEPING AND VACUUMING
SE8 – GRAVEL BAG BARRIER
SE9 – STRAW BALE BARRIER
SE10 – STORM DRAIN INLET PROTECTION
SE11 – ACTIVE TREATMENT SYSTEMS
SE12 – TEMPORARY SILT DIKE
SE13 – COMPOST SOCKS & BERMS
SE14 – BIOFILTERS BAGS

WIND EROSION CONTROL

WE1 – WIND EROSION CONTROL

EQUIPMENT TRACKING CONTROL

TC1 – STABILIZED CONSTRUCTION ENTRANCE EXIT
TC2 – STABILIZED CONSTRUCTION ROADWAY
TC3 – ENTRANCE/OUTLET TIRE WASH

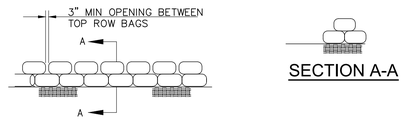
NON–STORMWATER MANAGEMENT

NS1 – WATER CONSERVATION PRACTICES
NS2 – DEWATERING OPERATIONS
NS3 – PAVING AND GRINDING OPERATIONS
NS4 – TEMPORARY STREAM CROSSING
NS5 – CLEARWATER DIVERSION
NS6 – ILLICIT CONNECTION/DISCHARGE
NS7 – POTABLE WATER/IRRIGATION
NS8 – VEHICLE AND EQUIPMENT CLEANING
NS9 – VEHICLE AND EQUIPMENT FUELING
NS10 – VEHICLE AND EQUIPMENT MAINTENANCE
NS11 – PILE DRIVING OPERATIONS
NS12 – CONCRETE CURING
NS13 – CONCRETE FINISHING
NS14 – MATERIAL AND EQUIPMENT USE
NS15 – DEMOLITION ADJACENT TO WATER
NS16 – TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL

WM1 – MATERIAL DELIVERY AND STORAGE
WM2 – MATERIAL USE
WM3 – STOCKPILE MANAGEMENT
WM4 – SPILL PREVENTION AND CONTROL
WM5 – SOLID WASTE MANAGEMENT
WM6 – HAZARDOUS WASTE MANAGEMENT
WM7 – CONTAMINATION SOIL MANAGEMENT
WM8 – CONCRETE WASTE MANAGEMENT
WM9 – SANITARY/SEPTIC WASTE MANAGEMENT
WM10 – LIQUID WASTE MANAGEMENT

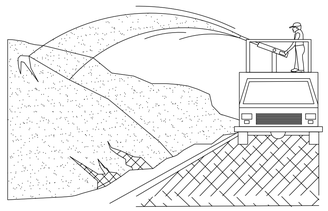
### 1 GENERAL NOTES






SECTION A-A

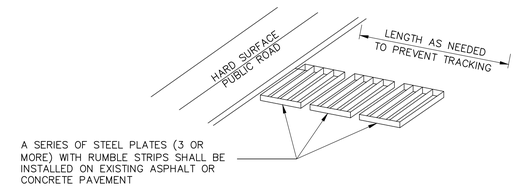
### 2 GRAVEL BAG DETAIL
NOT TO SCALE



## NOTES:

1. SOIL/SLOPE STABILIZATION PRACTICES SHALL BE DESIGNED TO PRESERVE EXISTING VEGETATION WHERE FEASIBLE AND TO REVEGETATE OPEN AREAS AS SOON AS FEASIBLE AFTER GRADING. THESE CONTROL PRACTICES SHALL INCLUDE TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SOD STABILIZATION, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES, OR OTHER SOIL STABILIZATION PRACTICES.
2. SOIL STABILIZATION SHALL BE IMPLEMENTED ON ALL INACTIVE DISTURBED AREAS FROM NOVEMBER 1 THRU APRIL 15 AND ON ALL DISTURBED AREAS DURING A RAIN EVENT OR POTENTIAL RAIN.
3. STABILIZATION PRACTICES SHALL CONTROL/PREVENT EROSION FROM THE FORCES OF WIND AND WATER.
4. STABILIZATION PRACTICES SHALL BE IMPLEMENTED IN CONJUNCTION WITH SEDIMENT TRAPPING/FILTERING PRACTICES AND PRACTICES TO REDUCE THE TRACKING OF SEDIMENT ONTO PAVED ROADS.
5. WHEN USING STRAW MULCHING, THE MINIMUM APPLICATION SHALL BE 2 TONS/ACRE. MULCH MUST BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.
6. WHEN USING HYDROSEEDING/MULCHING, THE MINIMUM APPLICATION OF WOOD FIBER SHALL BE 1,500 LBS/ACRE,THAT DOES NOT CONTAIN MORE THAN 50 PERCENT NEWSPRINT.
7. FOR SEEDING RECOMMENDATIONS, USDA, NATURAL RESOURCES CONSERVATION SERVICE.

### 3 EROSION CONTROL
NOT TO SCALE



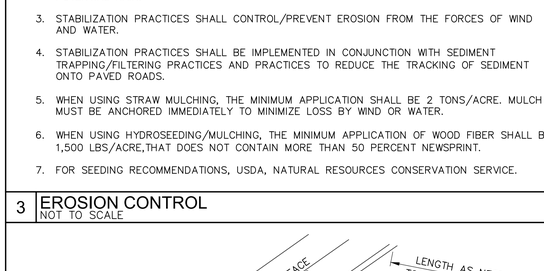

## NOTES:

1. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC ROADS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
   A. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE RD OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
   B. A SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN 4" COARSE AGGREGATE WITH LENGTH, WIDTH & THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACES.
3. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

## STREET MAINTENANCE

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

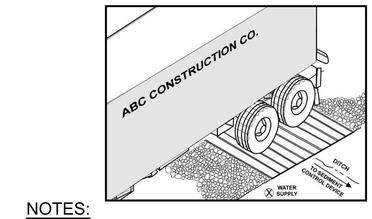
### 4 STABILIZED CONSTRUCTION ENTRANCE / EXIT
NOT TO SCALE




## NOTES:

1. CONSTRUCT THE SILT FENCE ALONG A LEVEL CONTOUR.
2. SILT FENCES SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
3. PROVIDE SUFFICIENT ROOM FOR RUNOFF TO POND BEHIND THE FENCE AND ALLOW SEDIMENT REMOVAL EQUIPMENT TO PASS BETWEEN THE SILT FENCE AND TOE OF SLOPE OR OTHER OBSTRUCTIONS. ABOUT 1200 SQ. FT. OF PONDING AREA SHALL BE PROVIDED FOR EVERY ACRE DRAINING TO THE FENCE.
4. TURN THE ENDS OF THE FILTER FENCE UPHILL TO PREVENT STORMWATER FROM FLOWING AROUND THE FENCE.
5. LEAVE AN UNDISTURBED OR STABILIZED AREA IMMEDIATELY DOWNSLOPE FROM THE FENCE.
6. DO NOT PLACE IN LIVE STREAM OR INTERMITTENTLY FLOWING CHANNELS.
7. WHEN STANDARD FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY–DUTY WIRE STAPLES AT LEAST 1 INCH LONG. TIE WIRES OR HOG RINGS.

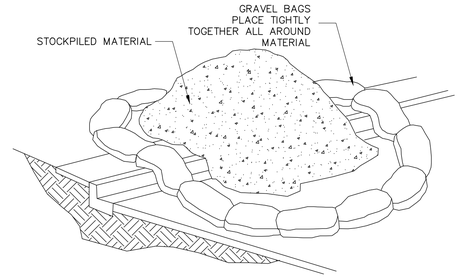
### 5 SILT FENCE
NOT TO SCALE




## NOTES:

1. THE TIRE WASH REQUIRES A SUPPLY OF WASH WATER.
2. A TURNOUT OR DOUBLEWIDE EXIT IS REQUIRED TO AVOID HAVING ENTERING VEHICLES DRIVE THROUGH THE WASH AREA.
3. DO NOT USE WHERE WET TIRE TRUCKS LEAVING THE SITE LEAVE THE ROAD DANGEROUSLY SLICK.
4. INCORPORATE WITH A STABILIZED CONSTRUCTION ENTRANCE/EXIT.
5. CONSTRUCT ON LEVEL GROUND WHEN POSSIBLE, ON A PAD OF COARSE AGGREGATE GREATER THAN 3 IN. BUT SMALLER THAN 6 IN. A GEOTEXTILE FABRIC SHOULD BE PLACED BELOW THE AGGREGATE.
6. WASH RACK SHOULD BE DESIGNED AND CONSTRUCTED/MANUFACTURED FOR ANTICIPATED TRAFFIC LOADS.

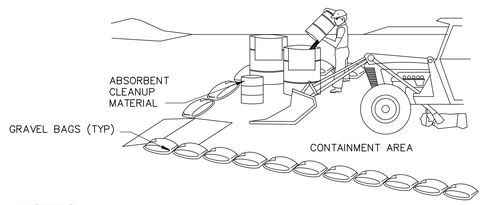
### 6 ENTRANCE/OUTLET TIRE WASH
NOT TO SCALE




## NOTES:

1. DIRT AND OTHER CONSTRUCTION RELATED MATERIALS PLACED IN THE STREET OR ON OTHER IMPERVIOUS SURFACES MUST BE CONTAINED WITH SANDBAGS OR OTHER MEASURES TO PREVENT TRANSPORT TO THE STORMDRAIN SYSTEM.
2. ANY CONSTRUCTION MATERIAL STORED OR STOCKPILED ON–SITE SHALL BE PROTECTED FROM BEING TRANSPORTED BY THE FORCE OF WIND OR WATER.

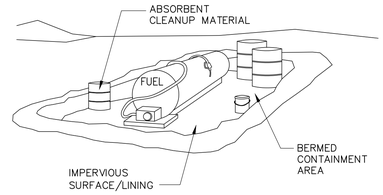
### 7 MATERIAL STORAGE
NOT TO SCALE




## NOTES:

1. LEAKING VEHICLES AND EQUIPMENT SHALL NOT BE ALLOWED ON–SITE. EQUIPMENT AND VEHICLES SHALL BE INSPECTED FREQUENTLY FOR LEAKS AND SHALL BE REPAIRED IMMEDIATELY. CLEAN UP SPILLS AND LEAKS PROMPTLY WITH ABSORBENT; DO NOT FLUSH WITH WATER.
2. VEHICLES AND EQUIPMENT SHALL BE MAINTAINED AND REPAIRED ON–SITE ONLY IN DESIGNATED AREAS. PREVENT RUN–ON AND RUN–OFF FROM DESIGNATED AREAS. CONTAINMENT DEVICES SHALL BE PROVIDED AND AREAS SHALL BE COVERED IF NECESSARY.
3. DESIGNATE ON–SITE VEHICLE AND EQUIPMENT MAINTENANCE AREAS, WAY FROM STORM DRAIN INLETS AND WATERCOURSES.
4. ALWAYS USE SECONDARY CONTAINMENT, SUCH AS A DRAIN PAN OR DROP CLOTH, TO CATCH SPILLS AND LEAKS WHEN REMOVING OR CHANGING FLUIDS.
5. LEGALLY DISPOSE OF USED OILS, FLUIDS, AND LUBRICANTS.
6. PROVIDE SPILL CONTAINMENT DIKES OR SECONDARY CONTAINMENT AROUND STORED OIL, FUEL, AND CHEMICAL DRUMS.
7. MAINTAIN ON ADEQUATE SUPPLY OF ABSORBENT SPILL CLEANUP MATERIALS IN DESIGNATED AREA.

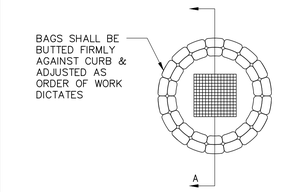
### 8 EQUIPMENT REPAIR/MAINTENANCE
NOT TO SCALE

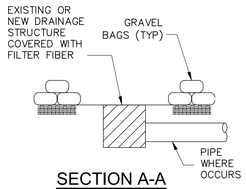



## NOTE:

1. FUELING SHALL BE PERFORMED IN A DESIGNATED AREA, AWAY FROM COURSES. ABSORBENT CLEANUP MATERIAL SHALL BE ON SITE AND USED IMMEDIATELY IN THE EVENT OF A SPILL.

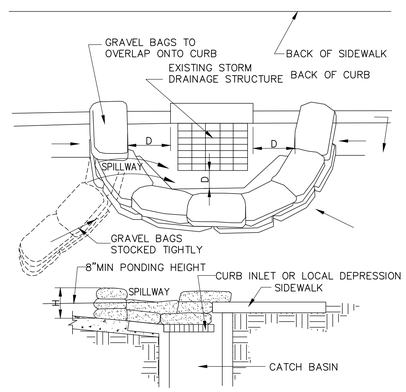
### 9 VEHICLE / EQUIPMENT FUELING
NOT TO SCALE




SECTION A-A

### 10 GRAVEL BAG CHECKDAM
NOT TO SCALE




## NOTES:

1. INLET PROTECTION IS REQUIRED ALONG WITH OTHER POLLUTION PREVENTION MEASURES SUCH AS: EROSION CONTROL, SOIL STABILIZATION, AND MEASURES TO PREVENT TRACKING ONTO PAVED SURFACES.
2. MODIFY INLET PROTECTION AS NEEDED TO AVOID CREATING TRAFFIC HAZARDS.
3. INCLUDE INLET PROTECTION MEASURES AT HILLSIDE V–DITCHES AND MISCELLANEOUS DRAINAGE SWALES.
4. INLET PROTECTION SHALL BE PROTECTED AND ACCUMULATED SEDIMENTS REMOVED. SEDIMENT SHALL BE DISPOSED OF PROPERTY AND IN A MANNER THAT ASSURES THAT THE SEDIMENT DOES NOT ENTER THE STORM DRAIN SYSTEM.
5. DAMAGED BAGS SHALL BE REPLACED IMMEDIATELY.
6. ADDITIONAL SANDBAG SEDIMENT TRAPS SHALL BE PLACED AT INTERVALS AS INDICATED ON SITE PLANT.

### 11 CATCH BASIN/INLET PROTECTION
NOT TO SCALE

## OWNER STATEMENT OF UNDERSTANDING:

AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENTS TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS. I, OR MY REPRESENTATIVE, CONTRACTOR, DEVELOPER, OR ENGINEER, WILL MAKE CERTAIN THAT ALL BMP SHOWN ON THIS PLAN WILL BE FULLY IMPLEMENTED, AND ALL EROSION CONTROL DEVICES WILL BE KEPT CLEAN AND FUNCTIONING. PERIODIC INSPECTIONS OF THE BMPs WILL BE CONDUCTED AND A CURRENT LOG, SPECIFYING THE EXACT NATURE OF THE INSPECTION AND ANY REMEDIAL MEASURES, WILL BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES AND WILL BE AVAILABLE FOR THE REVIEW BY THE BUILDING OFFICIAL.

AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, "I CERTIFY THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE INFORMATION SUBMITTED IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT SUBMITTING FALSE AND/OR INACCURATE INFORMATION, FAILING TO UPDATE THE LOCAL SWPPP TO REFLECT CURRENT CONDITIONS, OR FAILING TO PROPERLY AND/OR ADEQUATELY IMPLEMENT THE LOCAL SWPPP MAY RESULT IN REVOCATION OF GRADING AND/OR OTHER PERMITS OR OTHER SANCTIONS PROVIDED BY THE LAW."

_____ _____
OWNER OR AUTHORIZED REPRESENTATIVE (PERMITEE) DATE

### 12 STATEMENT OF UNDERSTANDING

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CERTIFIED UNION HIGH SCHOOL DESIGNER
COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

REGISTERED PROFESSIONAL ENGINEER
BRIGITTO C. ADRIANO
No. C36079
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA


VCA ENGINEERS INC
1041 S. Garfield Avenue, Suite #210
Alhambra, CA 91801
Tel: 323.729.6098 Fax: 323.729.6043


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

EROSION CONTROL DETAILS

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# C-6.1

PLEASE RECYCLE

IF THIS LINE SHOWN ABOVE IS LESS THAN 1" THEN ADJUST ALL SHEETS ORIGINAL PAGE SIZE

## GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS TO EXAMINE AND PREPARE THE TOTAL SCOPE OF WORK AND ALL REQUIRED COORDINATION.
2. THE CONTRACTOR SHALL VERIFY THE LIMIT OF THE SCOPE AREA PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION AND INSTALLATION OF PROPOSED LANDSCAPE ITEMS SHALL BE PER LOCAL AND GOVERNING CODES AND ORDINANCES.
4. ALL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR. IN CASE OF DISCREPANCIES, GRAPHICALLY SHOWN MATERIAL QUANTITIES SHALL TAKE PRECEDENCE. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARITY WITH ALL EXISTING UNDERGROUND UTILITIES, PIPES, AND STRUCTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING ALL EXISTING SEWER, UTILITY, AND WATER MAIN LINES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGES AND REPLACEMENT OF SAID UTILITIES.
6. THE LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR THE UTILITIES OR STRUCTURES, INCLUDING ALL PRIVATE & PUBLIC UTILITY EASEMENTS, SHOWN AND NOT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING OVER OR NEAR EXISTING GAS MAINS AND ELECTRICAL LINES, AND UTILITY EASEMENTS. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES, ABOVE AND BELOW GRADE PRIOR TO EXCAVATION AND TRENCHING.
7. CONTRACTOR SHALL REVIEW EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AND / OR REGRADING WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS EXIST THAT MAY HAVE NOT BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
8. SPOT ELEVATIONS AND GRADES SHOWN ON THE DRAWINGS ARE BASED ON SURVEY INFORMATION AND ARE FOR REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR FINISH GRADES AND SPOT ELEVATIONS. CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT DISCREPANCIES TO OWNER'S AUTHORIZED REPRESENTATIVE AND NOTIFY THE CIVIL ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO ANY GRADING AND CONSTRUCTION.
9. ARCHITECTURAL ELEMENTS AND SITE UTILITIES ARE SHOWN ON LANDSCAPE PLANS FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND ENGINEERING DRAWINGS FOR ACTUAL ARCHITECTURAL AND UTILITY INFORMATION. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL PROTECT ALL EXISTING TREES, UNLESS OTHERWISE NOTED, TO REMAIN DURING CONSTRUCTION. SEE TREE REMOVAL AND PROTECTION DRAWINGS, NOTES AND SPECIFICATIONS.
11. OFFSETS, FITTINGS, SLEEVES, ETC.; DUE TO THE SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL WHICH MAY BE REQUIRED FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF THIS WORK AND PLAN THIS WORK ACCORDINGLY, FURNISHING SUCH FITTINGS, ETC., AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. THE WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEMS, SITE STRUCTURAL DESIGN SUCH AS WALLS AND FOOTINGS, WATER FEATURE MECHANICAL SYSTEMS, PLANTING AND ARCHITECTURAL FEATURES.
12. THE LOCATION OF FEATURES TO BE CONSTRUCTED NOT SPECIFICALLY DIMENSIONED SHOULD FIELD VERIFIED BY THE CONTRACTOR AND REVIEWED BY THE LANDSCAPE ARCHITECT IN SHOP DRAWINGS.
13. EACH CONTRACTOR (TRADE) SHALL BE RESPONSIBLE TO PAY FOR AND OBTAIN ALL NECESSARY BUILDING PERMITS AS MAY BE REQUIRED BY LOCAL AGENCIES. AS WELL, EACH CONTRACTOR SHALL PROVIDE ALL DRAWINGS, SCHEDULES, AND SPECIFICATIONS AS MAY BE REQUIRED FOR BUILDING PERMITS.
14. REQUIRED SHOP DRAWINGS SHALL BE BASED ON FIELD MEASUREMENT AND LAYOUT VERIFICATION BY THE CONTRACTOR.
15. ANY AREA DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.

## LAYOUT AND MATERIALS NOTES

1. THE CONTRACTOR SHALL LAYOUT AND VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. A PRELIMINARY PAVING, FOOTING AND WALL LAYOUT WALK THROUGH SHALL BE CONDUCTED ONSITE PRIOR TO EXCAVATION OR FORMWORK CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
2. VERIFY LOCATIONS OF ALL SITE IMPROVEMENTS INSTALLED UNDER OTHER SECTIONS. IF ANY PART OF THIS PLAN CANNOT BE INSTALLED AS SHOWN IN THE DRAWINGS DUE TO SITE CONDITIONS, CONTACT THE LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO COMMENCING WORK.
3. ALL HANDICAPPED ACCESS TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT INCLUDING ANY LOCAL STANDARDS AND ORDINANCES.
4. WHERE DIMENSIONS ARE CALLED AS "EQUAL"OR "EQ", ALL REFERENCED ITEMS SHALL BE SPACED EQUALLY, MEASURED TO THEIR CENTER LINES.
5. DIMENSION ON SIDEWALKS AND PATHWAYS, LANDSCAPE EDGES, STAIRS, WALLS ARE FROM FACE OF EXISTING BUILDING OR ARCHITECTURAL FEATURE UNLESS OTHERWISE NOTED. DIMENSIONS TO SITE FROM BUILDING ARE FROM OUTSIDE (EXPOSED) FACE UNLESS OTHERWISE NOTED.
6. INSTALL ALL INTERSECTING ELEMENTS AT 90 DEGREES TO EACH OTHER UNLESS OTHERWISE NOTED.
7. INSTALL EXPANSION JOINTS FOR ALL CONCRETE FLATWORK THAT INTERFACE WITH VERTICAL SURFACES INCLUDING BUILDING AND FREE-STANDING WALLS, CURBS AND UTILITIES.
8. ALL LINES ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE NOTED.
9. CAST IN PLACE CONCRETE JOINTS PER PLANS AND SPECIFICATIONS. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION FOR APPROVAL.
10. ALL CURVE-TO-CURVE TANGENT LINES SHALL BE NEAT, TRIM, SMOOTH AND UNIFORM UNLESS OTHERWISE NOTED.
11. HARDSCAPE IS SHOWN FOR AESTHETIC FINISHES ONLY. FOR INFORMATION SUCH AS, BUT NOT LIMITED TO, MATERIAL INSTALLATION, CONSTRUCTION, AND WATERPROOFING, SEE CIVIL AND ARCHITECTURAL DRAWINGS.
12. CONTRACTOR SHALL INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS, DETAILS, NOTES, AND SPECIFICATIONS.
13. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION PERTAINING TO PROJECT MATERIALS, PROCEDURES, AND INSTALLATION.
14. ELECTRONIC DIGITAL DATA FILES OF THE LANDSCAPE PLANS WILL BE PROVIDED UPON REQUEST BY THE LANDSCAPE ARCHITECT FOR CONTRACTOR'S USE IN PREPARING THE SITE MARKOUT AND LAYOUT FOR FIELD REVIEW BY THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT WILL FURNISH THE CONTRACTOR ONE SET OF DIGITAL DRAWING FILES OF THE CONTRACT DRAWINGS. DIGITAL FILES OF THE CONTRACT DRAWINGS SHALL NOT SUBSTITUTE THE REQUIREMENTS FOR CONTRACTOR SUPPLIED SITE VERIFICATION AND SITE MEASUREMENTS FOR BIDDING, SHOP DRAWINGS AND CONSTRUCTION. THE LANDSCAPE ARCHITECT MAKES NO REPRESENTATIONS AS TO THE ACCURACY OR COMPLETENESS OF DIGITAL DATA DRAWING FILES AS THEY RELATE TO THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL REQUEST A DATA LICENSING AGREEMENT TO THE LANDSCAPE ARCHITECT TO ACQUIRE. UPON AGREEMENT, AN AUTOCAD FILE TO BE PROVIDED.

## SOIL PREPARATION AND FINE GRADING NOTES

1. SITE DRAINAGE AND SITE DEVICES INCLUDING ALL ON GRADE SLABS, WALKWAYS, ALL PLANTING AREAS, ON GRADE PAVED SURFACES ARE BY CIVIL ENGINEER. REFER TO ARCHITECTURAL AND CIVIL DRAWINGS FOR ALL SITE DRAINAGE. SEE CIVIL DRAWINGS FOR OVERALL DRAINAGE STRATEGY AND RIM ELEVATIONS OF ALL DRAINAGE AND SEWER STRUCTURES.
2. REFER TO CIVIL ENGINEER'S DRAWINGS FOR GRADING AND DRAINAGE INFORMATION AND OTHER RELATED NON-LANDSCAPE WORK. VERIFY ON-SITE AND REPORT DISCREPANCIES TO THE LANDSCAPE ARCHITECT BEFORE START OF ANY WORK ON THIS CONTRACT.
3. THE CONTRACTOR MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS, STRUCTURES, AND WALLS. FINISHED GRADES SHALL BE SMOOTHED TO ELIMINATE PONDING OR STANDING WATER. REFER TO CIVIL AND ARCHITECTURAL DRAWINGS. ALL WALKWAYS AND HARDSCAPE AREAS MUST HAVE POSITIVE DRAINAGE.
4. VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN THE EXISTING AND PROPOSED CONDITION TO THE LANDSCAPE ARCHITECT.
5. PITCH EVENLY BETWEEN ELEVATIONS ENSURING POSITIVE DRAINAGE THROUGHOUT SPACE. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT PRIOR TO CONTINUING WORK.
6. WHERE NEW PAVING OR EARTHWORK MEETS EXISTING PAVING OR EARTHWORK, SMOOTHLY BLEND LINE AND GRADE OF EXISTING WITH NEW.
7. CONTINUOUS SOIL PREPARATION IS REQUIRED IN ALL PLANTING AREAS.
8. UNLESS OTHERWISE NOTED IN THE CIVIL PLAN, FOR PLANTING AREA'S DRAINAGE, COMPACTION, AND PERCOLATION, GENERAL CONTRACTOR TO REVIEW SOILS BASED ON GEOTECHNICAL ENGINEER'S REPORT AND SPECIFICATIONS PRIOR TO SITE GRADING. GENERAL CONTRACTOR SHOULD REPORT IF COMPACTION AFTER ROUGH GRADE EXCEEDS THAT SPECIFIED.
9. FINAL GRADING SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND CIVIL ENGINEER IN THE FIELD AFTER SOIL PREPARATION AND PRIOR TO PLANTING. ALL PLANTING AREAS SHALL BE GRADED TO THE ELEVATIONS INDICATED ON THE CIVIL ENGINEER'S PLANS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
10. ANY AREA DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.

## CONSTRUCTION SCHEDULE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | EDGING | | | | | | |
| SYMBOL | DESCRIPTION | DETAIL | MANUFACTURER | MATERIALS | FINISH | COLOR | REMARKS |
| E-101 | METAL EDGER | 4/L6.00 | PERMALOC 616-399-9600 OR EQUAL | ALUMINUM | CLEANLINE | BLACK | CLEANLINE XL 1/8`` X 4`` |
| E-102 | CONCRETE MOW CURB | 9/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | |
| | ROCK | | | | | | |
| SYMBOL | DESCRIPTION | DETAIL | MANUFACTURER | MATERIAL | FINISH | COLOR | REMARKS |
| K-101 | ON-SITE BOULDER RELOCATED. CONTRACTOR TO V.I.F. QUANTITY OF EXISTING BOULDERS TO BE SALVAGED | 6/L6.00 | SOUTHWEST BOULDER & STONE 714-882-1010 OR EQUAL | APACHE SUNSET | NATURAL | - | SIZE 3`-5` |
| | PAVING | | | | | | |
| SYMBOL | DESCRIPTION | DETAIL | MANUFACTURER | MATERIAL | FINISH | COLOR | REMARKS |
| P-101A | CONCRETE PAVING - TYPE 1 (PED) | 2/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | ECOCAST #3 | MARSHLAND TAUPE | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-101B | CONCRETE PAVING - TYPE 1 (VEH) | SEE CIVIL | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | ECOCAST #3 | MARSHLAND TAUPE | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-102A | CONCRETE PAVING - TYPE 2 (PED) | 2/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | ECOCAST #75 | DAVIS PEBBLE | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-102B | CONCRETE PAVING - TYPE 2 (VEH) | SEE CIVIL | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | ECOCAST #75 | DAVIS PEBBLE | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-103 | CONCRETE PAVING - TYPE 3 | 2/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | ECOCAST SILICA CARBIDE #20 | DAVIS DARK GRAY 860 | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-104 | CONCRETE PAVING - TYPE 4 | 2/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | EXPOSED AGGREGATE (3/8``) | SPRING BEIGE MIX | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-105A | CONCRETE PAVING - TYPE 5 (PED) | 2/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-105B | CONCRETE PAVING - TYPE 5 (VEH) | SEE CIVIL | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | GC TO PREPARE 4` X 4` MOCKUPS FOR REVIEW & APPROVAL |
| P-106 | GRAVEL AT MAINTENANCE STRIP | 4/L6.00 | SOUTHWEST BOULDER & STONE 714-882-1010 OR EQUAL | CRUSHED ROCK | ANGULAR | HORSE CREEK | SIZE 1/2"-1" |
| P-107 | CONCRETE RAMP WITH GUARDRAIL | 8/L6.00 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | GC TO PROVIDE 4` X 4` MOCK UPS FOR REVIEW & APPROVAL |
| | SITE FURNISHINGS | | | | | | |
| SYMBOL | DESCRIPTION | DETAIL | MANUFACTURER | MODEL | FINISH | COLOR | REMARKS |
| S-101 | BIKE RACK | SEE MFR | DERO 888-337-6729 OR EQUAL | HOOP RACK | GALVANIZED | IRON GRAY | IN-GROUND MOUNTED, INSTALL PER MFR RECS |
| S-102 | BIKE LOCKER | SEE MFR | DERO 888-337-6729 OR EQUAL | VERTICAL | GALVANIZED | IRON GRAY | CONCRETE MOUNT , U-LOCK HANDLE. INSTALL PER MFR RECS |
| | WALL | | | | | | |
| SYMBOL | DESCRIPTION | DETAIL | MANUFACTURER | MATERIALS | FINISH | COLOR | REMARKS |
| (A-M) W-101 | CIP CONCRETE SEAT WALL - TYPE 1 | 4/L6.01 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | |
| (N-S) W-102 | CIP CONCRETE SEAT WALL - TYPE 2 | 3/L6.01 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | 18" WIDE SEATING |
| W-103 | CIP CONCRETE TIERED WALL | 1/L6.01 | TRADEMARK 805-642-2441 OR EQUAL | CIP CONCRETE | TOP CAST #2 | NATURAL GRAY | 36" WIDE SEATING |

HC HC COMPANION SEAT

PA PA PLANTING AREA

CJ EXPANSION JOINT, SEE 3/ L6.00

SJ SAWCUT JOINT, SEE 3/ L6.00

## SHEET INDEX


| | |
|---|---|
| L0.00 | LANDSCAPE CONSTRUCTION NOTES & SCHEDULE |
| L1.00 | TREE REMOVAL AND TREE PROTECTION PLAN |
| L2.01 | LANDSCAPE CONSTRUCTION PLAN |
| L6.00 | CONSTRUCTION DETAILS |
| L6.01 | CONSTRUCTION DETAILS |
| L7.00 | MASTER IRRIGATION LEGEND AND CALCULATIONS |
| L7.01 | IRRIGATION PLAN |
| L7.02 | IRRIGATION DETAILS |
| L7.03 | IRRIGATION DETAILS |
| L7.51 | HYDROZONE PLAN |
| L8.00 | PLANTING NOTES & SCHEDULE |
| L8.01 | PLANTING PLAN |
| L8.10 | PLANTING DETAILS |


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CONSTRUCTION TRADES EDUCATION COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
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## KEYNOTES

## NOTES


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LICENSED LANDSCAPE ARCHITECT
HONGJOO KIM NO. 5083
STATE OF CALIFORNIA
Expiration 12/31/25
Renewal Date 06/20/25
Date

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LANDSCAPE CONSTRUCTION NOTES & SCHEDULE**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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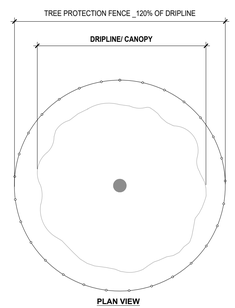
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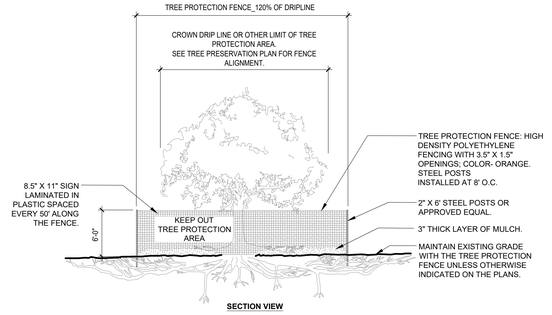
IF THE LINE BROWN ABOVE IS NOT 1" LONG, ADJUST ALL PLOTS AND SHEETS ORIGINAL PAGE SIZE

## TREE PROTECTION NOTES

1. THE CONTRACTOR SHALL REVIEW LOCAL GOVERNING JURISDICTION'S TREE PROTECTION AND TREE PRESERVATION ORDINANCES. THE CONTRACTOR IS RESPONSIBLE, AT A MINIMUM, ALL PROTECTION AND PRESERVATION PER LOCAL AND GOVERNING CODES AND ORDINANCES.
2. REFER TO THE CIVIL ENGINEER'S DEMOLITION PLAN FOR ALL OTHER SITE DEMOLITION.
3. MAXIMUM EFFORT MUST BE MADE TO RETAIN EXISTING TREES ON SITE. SEE TREE PROTECTION SPECIFICATIONS AND/OR DETAILS.
4. ALL EXISTING TREES NOT INDICATED FOR REMOVAL MUST BE PROTECTED ON SITE DURING CONSTRUCTION.
5. INSTALL TEMPORARY MINIMUM 6' HEIGHT CHAIN-LINK FENCING AT DRIP LINE OF TREES TO PROTECT PRIOR TO DEMOLITION. ADD 3-INCH MULCH PROTECTION LAYER TO RETAIN MOISTURE. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL TREE PROTECTION.
6. THE PROTECTION ZONE SHOULD BE IRRIGATED SUFFICIENTLY WITH CLEAN POTABLE WATER TO KEEP THE TREE IN GOOD HEALTH AND VIGOR BEFORE, DURING, AND AFTER CONSTRUCTION.
7. CUTTING THROUGH WOODY ROOTS SHALL NOT BE ALLOWED.
8. TRENCHING, DIGGING AND GRADING (BOTH EXCAVATION AND FILL) IS TO TAKE PLACE OUTSIDE THE DRIP ZONE OF TREES TO REMAIN.
9. ANY REQUIRED TRENCHING SHOULD BE ROUTED IN SUCH A MANNER AS TO MINIMIZE ROOT DAMAGE. RADIAL TRENCHING (RADIAL TO THE TREE TRUCK) IS PREFERRED AS IT IS LESS HARMFUL THAN TANGENTIAL TRENCHING. CONSTRUCTION ACTIVITY SHOULD BE DIVERTED FROM THE ROOT PROTECTION ZONE. CUTTING OF ROOTS SHOULD BE AVOIDED (I.E. PLACE PIPES AND CABLES BELOW UNCUT ROOTS). WHEREVER POSSIBLE AND IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS, THE SAME TRENCH SHOULD BE USED FOR MULTIPLE UTILITIES.
10. THE CONDITION OF EXISTING TREES TO REMAIN IS TO BE REVIEWED BY THE LANDSCAPE ARCHITECT VIA PHOTO DOCUMENTATION SUBMITTED BY THE CONTRACTOR PRIOR TO DEMOLITION OR CONSTRUCTION. NOTIFY LANDSCAPE ARCHITECT AT LEAST ONE WEEK PRIOR TO BEGINNING THE WORK.
11. THE LOCATION OF TREE PROTECTION FENCE, IS TO BE REVIEWED BY LANDSCAPE ARCHITECT VIA PHOTO DOCUMENTATION SUBMITTED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. NOTIFY LANDSCAPE ARCHITECT AT LEAST ONE WEEK PRIOR TO BEGINNING THE WORK.
12. NO CONSTRUCTION STAGING OR DISPOSAL OF CONSTRUCTION MATERIALS OR BYPRODUCTS INCLUDING BUT NOT LIMITED TO PAINT, PLASTER, OR CHEMICAL SOLUTIONS IS ALLOWED IN THE ROOT PROTECTION ZONE.
13. THE ROOT PROTECTION ZONE SHOULD NOT BE SUBJECTED TO FLOODING INCIDENTAL TO THE CONSTRUCTION WORK.
14. ALL WORK CONDUCTED IN THE GROUND WITHIN THE ROOT PROTECTION ZONE OF ANY PROTECTED TREE SHOULD BE ACCOMPLISHED WITH HAND TOOLS UNLESS AN AIR SPADE IS UTILIZED. TRENCHES IN THE ROOT PROTECTION ZONE SHOULD BE TUNNELED OR COMPLETED WITH AN AIR SPADE TO AVOID DAMAGE TO SMALL FEEDER ROOTS WITHIN THE ROOT PROTECTION ZONE.
15. WHERE MORE THAN 30 PERCENT OF THE ROOT ZONE IS IMPACTED OR ROOTS ARE TO BE REMOVED WITHIN THE ROOT PROTECTION AREA, THE CONTRACTOR SHALL SUBMIT ACCEPTABLE DESIGN ALTERNATIVES AS WELL AS A TREE PROTECTION PLAN BY A CERTIFIED THIRD-PARTY ARBORIST TO THE LANDSCAPE ARCHITECT FOR REVIEW.
16. WHEN ROOTS IN PROTECTION ZONE ARE TO BE MODIFIED, NOTIFY THE LANDSCAPE ARCHITECT AND SUBMIT A REVIEW BY A CERTIFIED THIRD-PARTY ARBORIST.
17. WHEN REMOVING EXISTING PAVEMENT IN THE ROOT PROTECTION ZONE, AVOID THE USE OF HEAVY EQUIPMENT, WHICH WILL COMPACT AND DAMAGE THE ROOT SYSTEM.
18. THE CONTRACTOR SHALL INFORM THE LANDSCAPE ARCHITECT OF ADDITIONAL TREE PROTECTION REQUIRED FOR ANY CONSTRUCTION STAGING OR ADDITIONAL CONSTRUCTION ACTIVITIES IDENTIFIED OUTSIDE OF THE AREAS SHOWN ON THE CONTRACT DRAWINGS.
19. THE GENERAL CONTRACTOR TO COORDINATE WITH THE LANDSCAPE ARCHITECT TO ATTEND THE PRE-COPNSTRUCTION MEETING WITH THE CONTRACTOR TO DISCUSS TREE PROTECTION PROCEDURES WITH THE SITE MANAGER.
20. CONTRACTOR SHALL ENGAGE A THIRD PARTY OR INDEPENDENT CERTIFIED ARBORIST TO EVALUATE / PROVIDE HAZARD ANALYSIS OF PROTECTED TREES AND THOSE IMMEDIATELY ADJACENT TO CONSTRUCTION AS REQUESTED BY THE LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER. ANALYSIS MAY BE REQUESTED AT ANY POINT DURING CONSTRUCTION AND/OR IMMEDIATELY AFTER FINAL COMPLETION.
21. WHEN A TREE PROTECTION DEFICIENCY, AS DETERMINED BY THE LANDSCAPE ARCHITECT, IS IDENTIFIED, IT MUST BE REMEDIED WITHIN 24-HOURS OF NOTIFICATION.
22. TREES DESTROYED OR DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE ASSESSED BY AN ARBORIST REPRESENTING THE OWNER AT THE CONTRACTOR'S EXPENSE USING THE CURRENT GUIDE FOR PLANT APPRAISAL FROM THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS (CTLA) OR OTHER METHOD APPROVED BY THE LANDSCAPE ARCHITECT.
23. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND/OR REMEDY OF EXISTING TREES DAMAGED DURING CONSTRUCTION. DAMAGE INCLUDES, BUT IS NOT LIMITED TO, AESTHETIC DAMAGE TO THE CROWN OF THE TREE, DAMAGE TO BRANCHES, DAMAGE TO THE TRUNK, DAMAGE TO ROOTS LARGER THAN 1" IN DIAMETER, DAMAGE TO ROOTS FROM SOIL COMPACTION WITHIN THE TREE PROTECTION ZONE OR DRIPLINE OF THE TREE CANOPY.
24. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS IN ADVANCE OF ANY WORK ON OR IMPACTING EXISTING TREES, INCLUDING BUT NOT LIMITED TO TREE PROTECTION, PRUNING, TREE REMOVAL, EXCAVATIONS, DECOMPACTION, TOPSOIL, AND PLANTING WORK WITHIN THE TREE PROTECTION ZONES.
25. TREE PROTECTION FENCING MAY REQUIRE ADJUSTMENTS AS WORK PROGRESSES IN ORDER TO COMPLETE THE WORK SHOWN ON THE PLANS. ADJUSTMENTS TO TREE PROTECTION FENCING SHALL BE MADE BY REVISED TREE PROTECTION PLAN INDICATING PROPOSED CHANGES. PLANS SHALL BE REVIEWED AND APPROVED BY OWNER/ARBORIST AND SUBMITTED TO LANDSCAPE ARCHITECT FOR FINAL APPROVAL. TREE PROTECTION SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN APPROVAL.
26. ALL EXISTING CONDITIONS INCLUDING, BUT NOT LIMITED TO, LANDSCAPES, LAWNS AND PLANTS TO REMAIN THAT ARE DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHOULD BE REPAIRED OR REPLACED IN KIND.



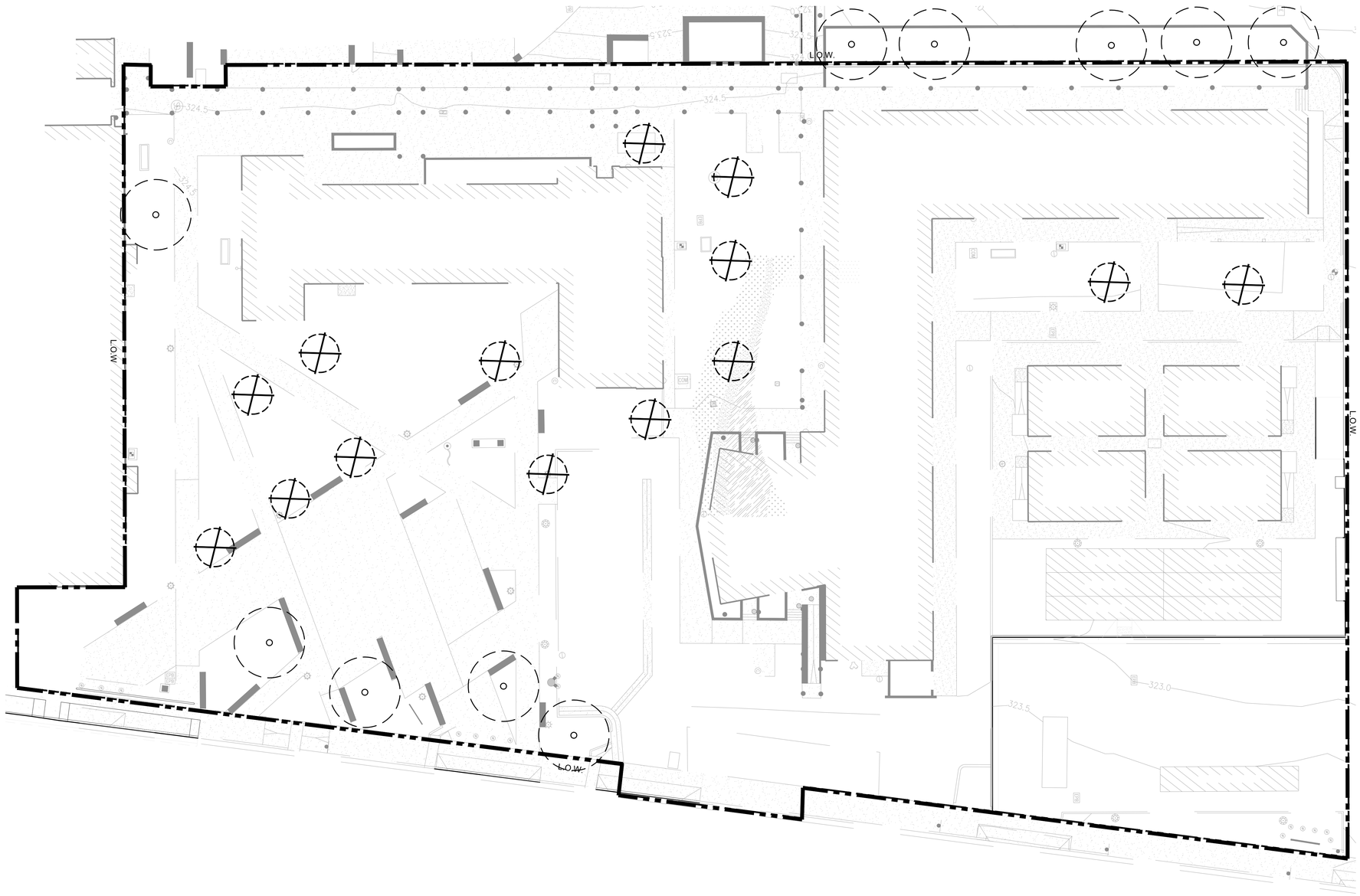

PLAN VIEW




SECTION VIEW

## 2 TREE PROTECTION

3/16" = 1'-0" P-ARH-25




LEGEND

TREE TO BE PROTECTED, SEE 2/L1.00

TREE TO BE REMOVED

## 1 TREE REMOVAL AND TREE PROTECTION PLAN

SCALE: 1/16" = 1'-0"

0 16' 32' 48'

1/16"=1'-0"

NORTH

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HONGJOO KIM NO. 5067
Signature
12/31/25
Renewal Date
06/20/25
Date
STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TREE REMOVAL AND TREE PROTECTION PLAN**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
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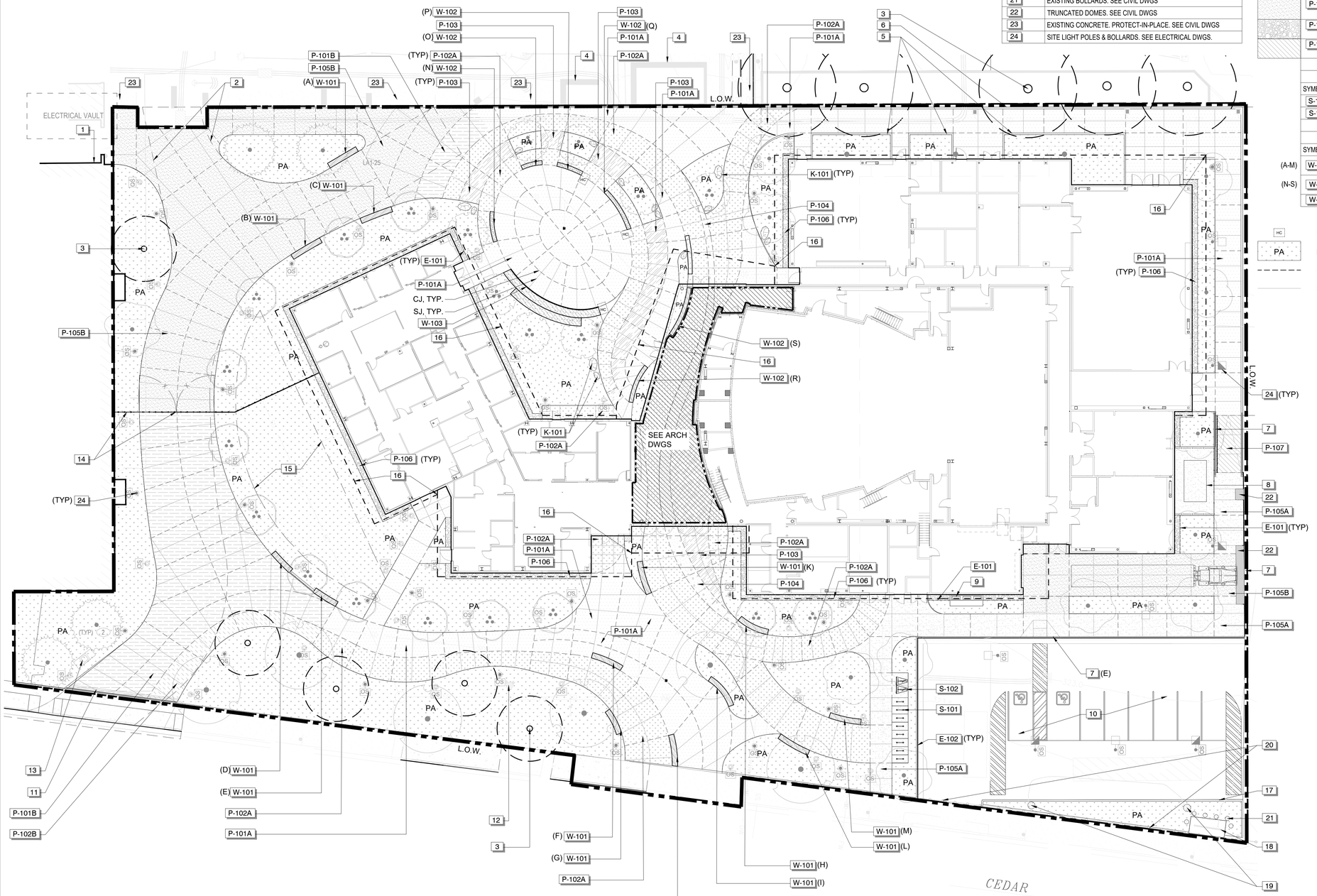
## CONSTRUCTION NOTES

| SYMBOL | DESCRIPTION |
|---|---|
| 1 | EXISTING BUILDING |
| 2 | FIRE LANE TURNAROUND DIAGRAM. SEE ARCH DWGS |
| 3 | EXISTING TREE (TYP). SEE SHEET L1.00 |
| 4 | EXISTING PLANTERS. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 5 | LID PLANTER, SEE CIVIL DWGS; WATERPROOFING, SEE ARCH DWGS |
| 6 | RETAINING WALL. SEE STRUCTURAL DWGS |
| 7 | CONCRETE CURB. SEE CIVIL DWGS |
| 8 | TRANSFORMER, SEE ELECTRICAL PLAN |
| 9 | UTILITY. SEE ARCH DWGS |
| 10 | EXISTING ASPHALT PAVING. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 11 | VEHICULAR GATE. SEE ARCH DWGS |
| 12 | EXISTING FIRE HYDRANT TO BE RELOCATED. SEE CIVIL DWGS |
| 13 | RELOCATED MONUMENT SIGN. GENERAL CONTRACTOR TO VERIFY LOCATION WITH OWNER |
| 14 | EVA ACCESS FENCE AND GATE. SEE ARCH DWGS |
| 15 | BIOSWALE. SEE CIVIL DWGS |
| 16 | BUILDING OVERHANG. SEE ARCH DWGS |
| 17 | EXISTING WOOD HEADER. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 18 | EXISTING GAS METER. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 19 | EXISTING LIGHT POLE. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 20 | EXISTING FENCE. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 21 | EXISTING BOLLARDS. SEE CIVIL DWGS |
| 22 | TRUNCATED DOMES. SEE CIVIL DWGS |
| 23 | EXISTING CONCRETE. PROTECT-IN-PLACE. SEE CIVIL DWGS |
| 24 | SITE LIGHT POLES & BOLLARDS. SEE ELECTRICAL DWGS. |

## CONSTRUCTION SCHEDULE

| | | |
|---|---|---|
| | EDGING | |
| SYMBOL | DESCRIPTION | DETAIL |
| E-101 | METAL EDGER | 4/L6.00 |
| E-102 | CONCRETE MOW CURB | 9/L6.00 |
| | ROCK | |
| SYMBOL | DESCRIPTION | DETAIL |
| K-101 | ON-SITE BOULDER RELOCATED. CONTRACTOR TO V.I.F. QUANTITY OF EXISTING BOULDERS TO BE SALVAGED | 6/L6.00 |
| | PAVING | |
| SYMBOL | DESCRIPTION | DETAIL |
| P-101A | CONCRETE PAVING - TYPE 1 (PED) | 2/L6.00 |
| P-101B | CONCRETE PAVING - TYPE 1 (VEH) | SEE CIVIL |
| P-102A | CONCRETE PAVING - TYPE 2 (PED) | 2/L6.00 |
| P-102B | CONCRETE PAVING - TYPE 2 (VEH) | SEE CIVIL |
| P-103 | CONCRETE PAVING - TYPE 3 | 2/L6.00 |
| P-104 | CONCRETE PAVING - TYPE 4 | 2/L6.00 |
| P-105A | CONCRETE PAVING - TYPE 5 (PED) | 2/L6.00 |
| P-105B | CONCRETE PAVING - TYPE 5 (VEH) | SEE CIVIL |
| P-106 | GRAVEL AT MAINTENANCE STRIP | 4/L6.00 |
| P-107 | CONCRETE RAMP WITH GUARDRAIL | 8/L6.00 |
| | SITE FURNISHINGS | |
| SYMBOL | DESCRIPTION | DETAIL |
| S-101 | BIKE RACK | SEE MFG |
| S-102 | BIKE LOCKER | SEE MFG |
| | WALL | |
| SYMBOL | DESCRIPTION | DETAIL |
| (A-M) W-101 | CIP CONCRETE SEAT WALL - TYPE 1 | 4/L6.01 |
| (N-S) W-102 | CIP CONCRETE SEAT WALL - TYPE 2 | 3/L6.01 |
| W-103 | CIP CONCRETE TIERED WALL | 1/L6.01 |

HC COMPANION SEAT
PA PLANTING AREA
CJ EXPANSION JOINT, SEE 3/ L6.00
SJ SAWCUT JOINT, SEE 3/ L6.00




1 LANDSCAPE CONSTRUCTION PLAN
SCALE: 1" = 20'-0"

0 16' 32' 48'
1/16"=1'-0"

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PROJECT:

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SHEET NAME:

**LANDSCAPE CONSTRUCTION PLAN**

**DSA SUBMITTAL**

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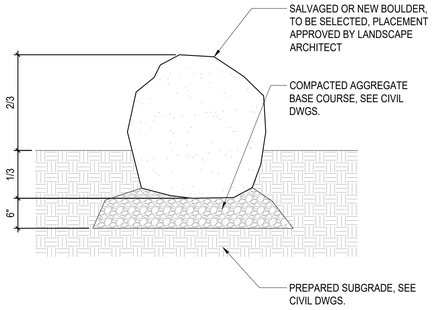
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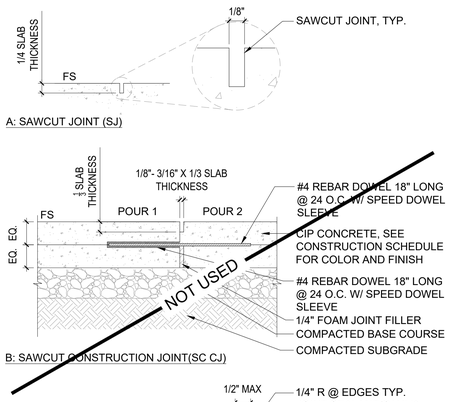
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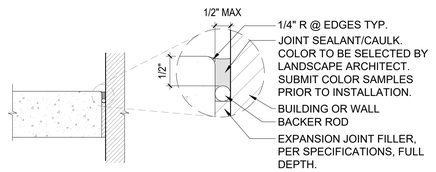

5 BOULDER
1" = 1'-0" P-ARH-14




A: SAWCUT JOINT (SJ)

B: SAWCUT CONSTRUCTION JOINT(SC CJ)

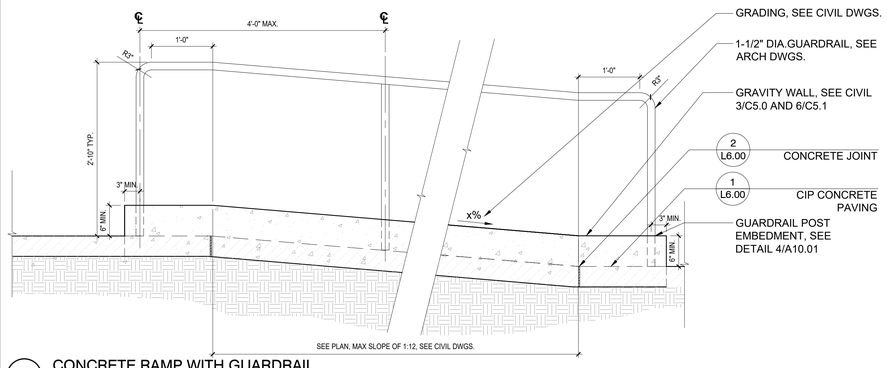
C: EXPANSION JOINT AT FLAT SURFACE (CJ)



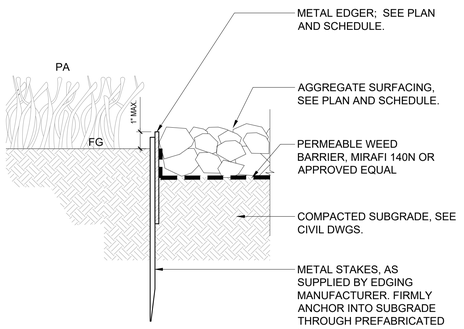

D: EXPANSION JOINT AT VERTICAL. SURFACE

NOTES
1. REFER TO CONSTRUCTION PLAN FOR ALL JOINTING LOCATIONS.
2. REFER TO GEOTECHNICAL REPORT AND CIVIL PLANS FOR ALL CONCRETE PAVING APPLICATIONS FOR THICKNESS, REINFORCEMENT, BASE COURSE, SUBGRADE PREPARATION, AND CALCULATIONS.

2 CONCRETE JOINT
1 1/2" = 1'-0" P-ARH-03



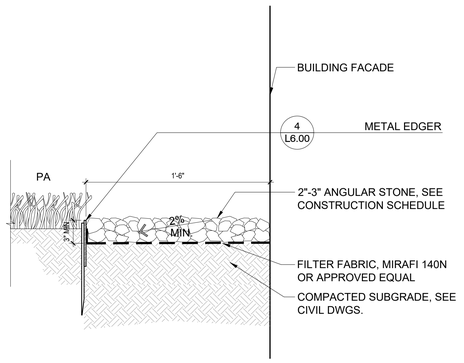

7 CONCRETE MOW CURB
1 1/2" = 1'-0" P-ARH-26



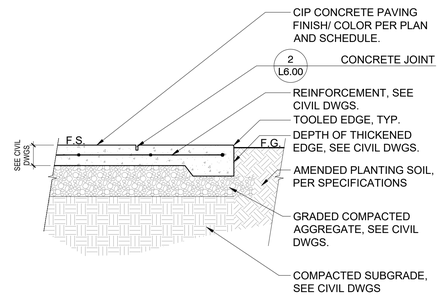

4 METAL EDGER
3" = 1'-0" P-ARH-11




6 CONCRETE RAMP WITH GUARDRAIL
1" = 1'-0" P-ARH-62




3 GRAVEL AT MAINTENANCE STRIP
1 1/2" = 1'-0" P-ARH-04




NOTE:
A. REFER TO SCHEDULE FOR ALL CONCRETE COLORS, TYPES, AND FINISHES.
B. REFER TO CONSTRUCTION PLAN FOR ALL JOINTING LOCATIONS.
C. REFER TO GEOTECHNICAL REPORT AND CIVIL PLANS FOR THICKNESS, REINFORCEMENT, BASE COURSE, AND SUBGRADE PREPARATION.

1 CIP CONCRETE PAVING
1" = 1'-0" P-ARH-02

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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

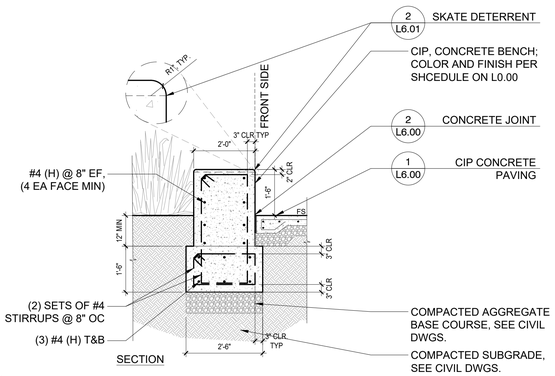
L6.00

PLEASE RECYCLE

IF THIS LINE BROWN ABOVE IS NOT 1" LONG, ADJUST ALL SHEETS ORIGINAL PAGE SIZE

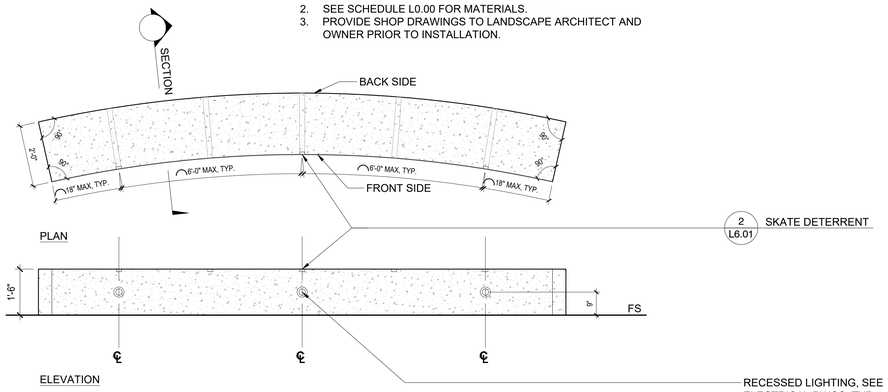
| TABLE OF CONDITIONS | | |
|---|---|---|
| CONDITION | FRONT SIDE LENGTH | FRONT SIDE RADIUS |
| A | 12'- 0" | R0 |
| B | 12'- 2 11/16" | R169'- 1 1/2" |
| C | 12'- 2 1/8" | R169'- 1 1/2" |
| D | 9'- 4" | R86'- 6 1/2" |
| E | 9'- 8 1/2" | R86'- 6 1/2" |
| F | 11'- 6 9/16" | R40'- 5 1/2" |
| G | 9'- 2 1/4" | R28- 8 1/2" |
| H | 12'- 0" | R41'- 1 1/2" |
| I | 11'- 2 1/2" | R40'- 5 1/2" |
| J | 11'- 11 13/16" | R18'- 4" |
| K | 12'- 0" | R23'- 2 1/2" |
| L | 11'- 11 13/16" | R55'- 1/2" |
| M | 12'- 0" | R45'- 3 1/2" |

TABLE




NOTES:

1. FRONT SIDE RADIUS LENGTH, SEE TABLE. CONTRACTOR TO VERIFY IN FIELD. SEE PLAN FOR LOCATIONS
2. SEE SCHEDULE L0.00 FOR MATERIALS.
3. PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT AND OWNER PRIOR TO INSTALLATION.

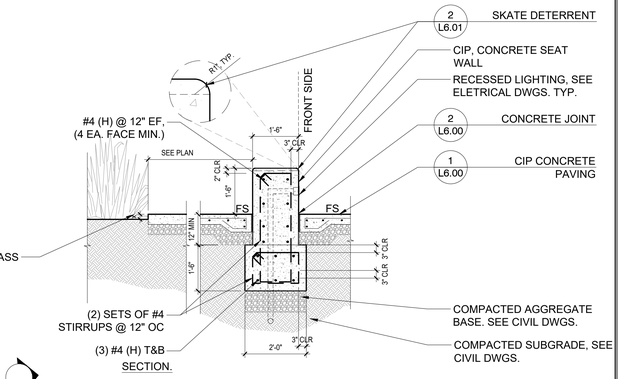



4 CIP CONCRETE SEAT WALL; TYPE 1 - W-101.

1/2" = 1'-0" P-ARH-12

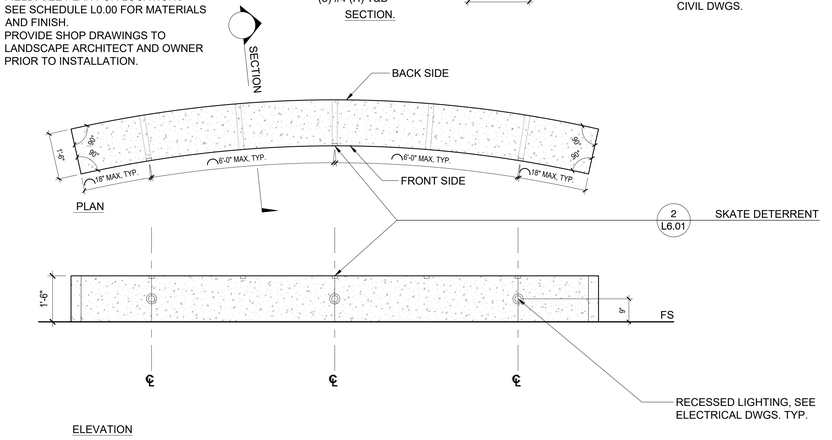
| TABLE OF CONDITIONS | | |
|---|---|---|
| CONDITION | FRONT SIDE LENGTH | FRONT SIDE RADIUS |
| N | 10'- 8 1/2" | R25'- 11" |
| O | 7'- 4 9/16" | R19'- 1" |
| P | 9'- 6 5/16" | R37'- 5" |
| Q | 16'- 1/2" | R35'- 2" |
| R | 14'- 8 1/4" | R24'- 8" |
| S | 18'- 11 5/8" | R39'- 3" |

TABLE



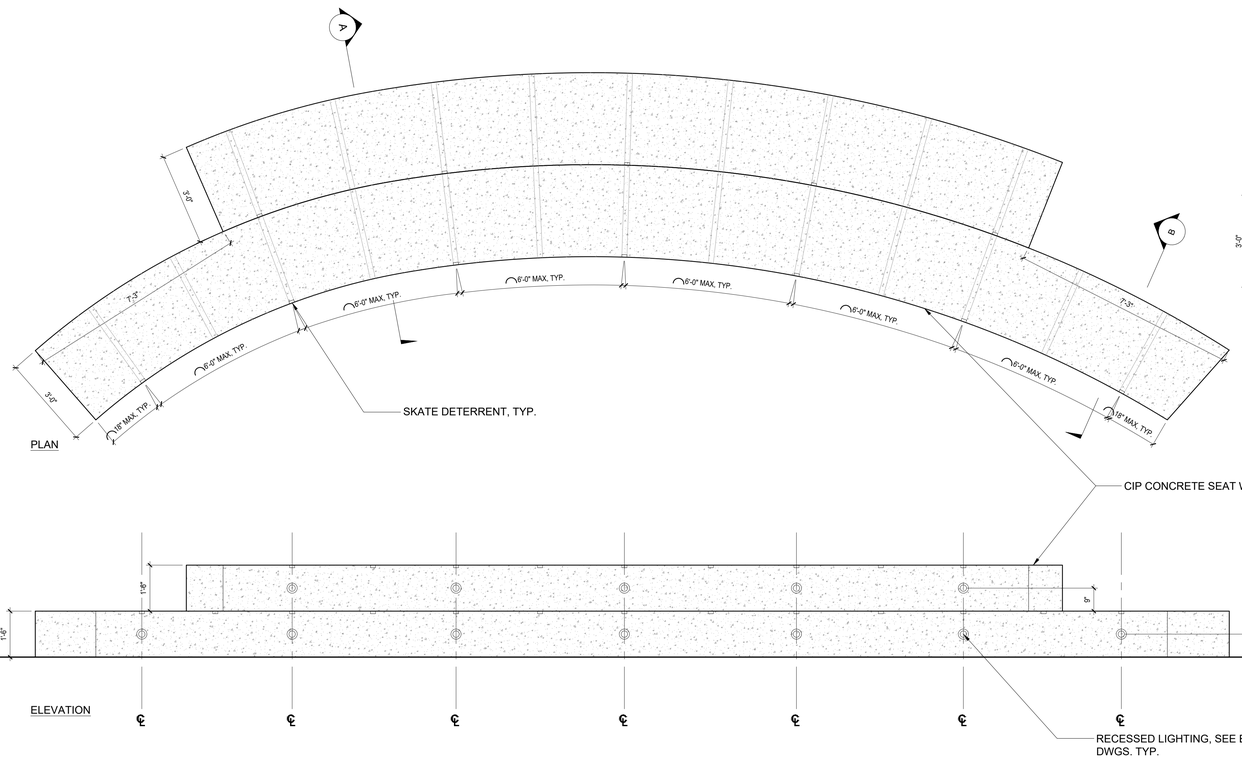

NOTES:

1. FRONT SIDE RADIUS AND LENGTH, SEE TABLE. CONSTRUCTOR TO VERIFY IN FIELD. SEE PLAN FOR LOCATIONS
2. SEE SCHEDULE L0.00 FOR MATERIALS AND FINISH.
3. PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT AND OWNER PRIOR TO INSTALLATION.



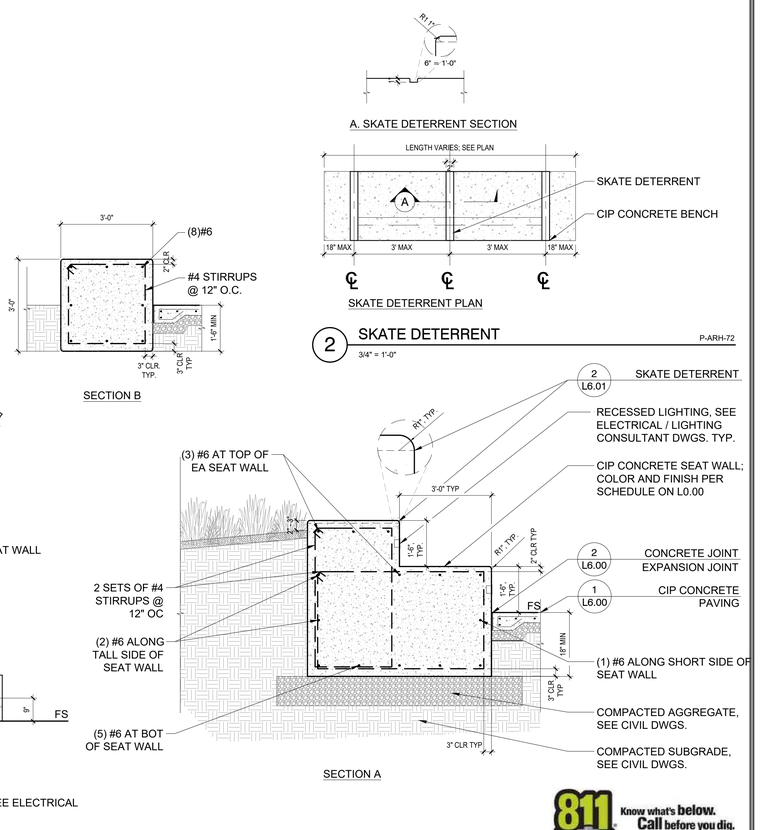

3 CIP CONCRETE SEAT WALL, TYPE 2 - W-102.

1/2" = 1'-0" P-ARH-69




1 CIP CONCRETE TIERED WALL - W-103.

1/2" = 1'-0" P-ARH-65




2 SKATE DETERRENT

3/4" = 1'-0" P-ARH-72

811 Know what's below. Call before you dig.

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
3/10/2023 10:57:35 AM

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

KEYNOTES

NOTES

HKLA
714 W. Olympic Blvd., STE 735, Los Angeles, CA 90015
213.293.3474 I INFO@HKLAINC.COM

LICENSED LANDSCAPE ARCHITECT
HONGJOO KIM NO. 5083
Expiration 12/31/25
Renewal Date 06/20/25
Date
STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**CONSTRUCTION DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

**L6.01**

PLEASE RECYCLE

THE LINE BROWN ABOVE IS EXACTLY 1" WHEN PLOTTED AT FULL SHEETS ORIGINAL PAGE SIZE

## IRRIGATION COORDINATION

1. CONTRACTOR TO LOCATION EXISTING 6" IRRIGATION MAINLINE SHOWN ON PLAN FOR POINT OF CONNECTION
2. THE MAINLINE FROM THE POC EQUIPMENT TO THE CONTROL VALVES SHALL BE PER PLAN AND INSTALLED BY THE IRRIGATION CONTRACTOR.
3. THE IRRIGATION CONTROL VALVES SHALL BE INSTALLED WITHIN THE PLANTER AREA AS INDICATED ON THE PLAN.
4. CONTROLLER TO BE WALL MOUNTED PER PLAN
5. THE CONTROLLER REQUIRES A 120 VOLT POWER SUPPLY, PREFERABLY FROM A DEDICATED 15 AMP CIRCUIT BREAKER. A CONNECTION IN A JUNCTION BOX ADJACENT TO THE CONTROLLER SHOULD BE SHOWN ON THE ELECTRICAL PLANS AND INSTALLED BY THE ELECTRICIAN.
6. IRRIGATION CONTROLLER WILL NEED ACCESS TO ON SITE SCHOOL WIFI. CONTRACTOR TO COORDINATE WITH FACILITIES TO ENSURE STRONG INTERNET WIFI CONNECT AT PROPOSED CONTROLLER LOCATION
7. THE IRRIGATION CONTRACTOR SHALL MAKE THE FINAL CONNECTION OF THE ELECTRICAL SUPPLY TO THE IRRIGATION CONTROLLER.
8. LOW VOLTAGE WIRING BETWEEN THE CONTROLLER.

## HYDROZONE TABLE

| VALVE # | EMISSION TYPE | FLOW RATE | APPLICATION RATE | OPERATING PRESSURE | HYDROZONE | AREA | RUN TIMES |
|---|---|---|---|---|---|---|---|
| 1 | MP ROTATOR | 12 GPM | .80 in/hr | 40 | LOW | 1276 SQFT | 8 min |
| 2 | BUBBLER | 3 GPM | - | 30 | LOW | 12 SQFT | 3 min |
| 3 | MP ROTATOR | 20 GPM | .80 in/hr | 40 | LOW/MED | 2411 SQFT | 12 min |
| 4 | BUBBLER | 6 GPM | - | 30 | LOW | 48 SQFT | 3 min |
| 5 | MP ROTATOR | 6 GPM | .80 in/hr | 40 | LOW/MED | 711 SQFT | 12 min |
| 6 | MP ROTATOR | 29 GPM | .80 in/hr | 40 | LOW/MED | 3241 SQFT | 12 min |
| 7 | MP ROTATOR | 17 GPM | .80 in/hr | 40 | LOW | 2017 SQFT | 8 min |
| 8 | MP ROTATOR | 19 GPM | .80 in/hr | 40 | LOW/MED | 2075 SQFT | 12 min |
| 9 | BUBBLER | 4 GPM | - | 30 | MED | 32 SQFT | 4 min |
| 10 | MP ROTATOR | 15 GPM | .80 in/hr | 40 | LOW/MED | 1283 SQFT | 12 min |
| 11 | BUBBLER | 7 GPM | - | 30 | LOW | 56 SQFT | 3 min |
| 12 | MP ROTATOR | 16 GPM | .80 in/hr | 40 | LOW/MED | 1789 SQFT | 12 min |
| 13 | MP ROTATOR | 7 GPM | .80 in/hr | 40 | LOW/MED | 746 SQFT | 12 min |
| 14 | BUBBLER | 2 GPM | - | 30 | MED | 16 SQFT | 4 min |
| 15 | BUBBLER | 3 GPM | - | 30 | LOW | 24 SQFT | 3 min |
| 16 | DRIP | 17 GPM | .96 in/hr | 30 | MED | 1716 SQFT | 12 min |
| 17 | DRIP | 6 GPM | .96 in/hr | 30 | LOW | 580 SQFT | 8 min |
| 18 | DRIP | 5 GPM | .96 in/hr | 30 | LOW | 518 SQFT | 8 min |
| 19 | BUBBLER | 6 GPM | - | 30 | LOW | 48 SQFT | 3 min |
| 20 | DRIP | 8 GPM | .96 in/hr | 30 | LOW | 815 SQFT | 8 min |
| 21 | MP ROTATOR | 6 GPM | .80 in/hr | 40 | LOW | 585 SQFT | 8 min |
| 22 | MP ROTATOR | 5 GPM | .80 in/hr | 40 | LOW | 427 SQFT | 8 min |
| 23 | BUBBLER | 10 GPM | - | 30 | MED | 80 SQFT | 4 min |
| 24 | DRIP | 11 GPM | .96 in/hr | 30 | LOW | 1112 SQFT | 8 min |

RUN TIMES ARE SET FOR THE HOTTEST DAY OF THE YEAR. ENABLE SOLAR SYNC DELAY FUNCTION FOR FIRST 60 DAYS OF ESTABLISHMENT PERIOD. SMART CONTROLLER WILL MAKE RUN TIME ADJUSTMENTS PER LIVE WEATHER DATA FROM INTERNET.

PROGRAM START TIMES:
RUN ALL STATIONS EVERY DAY FOR THE FIRST 30 DAYS.
ADJUST PROGRAM START TIMES FOR EVERY OTHER DAY FOR FOLLOWING 60 DAYS. AFTER 90 DAY MAINTENANCE PERIOD, ADJUST PROGRAM START TIMES TO THE FOLLOWING

SHRUB ZONES : MONDAY, WEDNESDAY, FRIDAY.

CONTRACTOR TO CONFIRM WITH FACILITIES MANAGER FINAL START TIMES FOR IRRIGATION PROGRAMS AT THE COMPLETION OF PROJECT.

## WATER EFFICIENT LANDSCAPE WORKSHEET

| | | | | | |
|---|---|---|---|---|---|
| DATE: | 3/19/2025 | WUCOLS ZONE: | South Coastal | LA Sq. Ft. : | 21,618 |
| PROJECT: | | | | | |
| CITY: | El Monte | CIMIS ETo REF. CITY: | Monrovia | SLA Sq. Ft. : | 0 |
| CLIENT: | El Monte Union High School District | | | | |
| PREPARED BY: | Hongjoo Kim Landscape Architects | Annual Eto: | 50.2 | | |

**Point of Connection - 1**

**MAXIMUM APPLIED WATER ALLOWANCE**

| | ETo | | Total Area | | SLA Area | | MAWA |
|---|---|---|---|---|---|---|---|
| **Landscape Irrigation MAWA** | 50.2 x 0.62 | x ( | 21,618 | x 0.45 + | 0 | x 0.6 ) = | 302,777 |

**ESTIMATED APPLIED WATER USE**

| | ETo | | Area | | PF | | IE | | ETWU |
|---|---|---|---|---|---|---|---|---|---|
| **Special Landscaped Area** | 50.2 x 0.62 | x ( | 0 | x | 0.3 | / | 0.81 | ) = | 0 |
| **A1 - Low Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 1,276 | x | 0.3 | / | 0.75 | ) = | 15,886 |
| **A2 - Low Trees - Bubbler** | 50.2 x 0.62 | x ( | 12 | x | 0.3 | / | 0.81 | ) = | 138 |
| **A3 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 2,411 | x | 0.3 | / | 0.75 | ) = | 30,016 |
| **A4 - Low Trees - Bubbler** | 50.2 x 0.62 | x ( | 48 | x | 0.3 | / | 0.81 | ) = | 553 |
| **A5 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 711 | x | 0.3 | / | 0.75 | ) = | 8,852 |
| **A6 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 3,241 | x | 0.3 | / | 0.75 | ) = | 40,349 |
| **A7 - Low Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 2,017 | x | 0.3 | / | 0.75 | ) = | 25,111 |
| **A8 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 2,075 | x | 0.3 | / | 0.75 | ) = | 25,833 |
| **A9- Med Trees - Bubbler** | 50.2 x 0.62 | x ( | 32 | x | 0.4 | / | 0.81 | ) = | 492 |
| **A10 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 1,283 | x | 0.3 | / | 0.75 | ) = | 15,973 |
| **A11 - Low Trees - Bubbler** | 50.2 x 0.62 | x ( | 56 | x | 0.3 | / | 0.81 | ) = | 646 |
| **A12 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 1,789 | x | 0.3 | / | 0.75 | ) = | 22,272 |
| **A13 - Low/Med Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 746 | x | 0.3 | / | 0.75 | ) = | 9,287 |
| **A14 - Med Trees - Bubbler** | 50.2 x 0.62 | x ( | 16 | x | 0.4 | / | 0.81 | ) = | 246 |
| **A15 - Low Trees - Bubbler** | 50.2 x 0.62 | x ( | 24 | x | 0.3 | / | 0.81 | ) = | 277 |
| **A16 - Med Shrubs - Drip** | 50.2 x 0.62 | x ( | 1,716 | x | 0.4 | / | 0.81 | ) = | 26,375 |
| **A17 - Low Shrubs - Drip** | 50.2 x 0.62 | x ( | 580 | x | 0.3 | / | 0.81 | ) = | 6,686 |
| **A18 - Low Shrubs - Drip** | 50.2 x 0.62 | x ( | 518 | x | 0.3 | / | 0.81 | ) = | 5,971 |
| **A19 - Low Trees - Bubbler** | 50.2 x 0.62 | x ( | 48 | x | 0.3 | / | 0.81 | ) = | 553 |
| **A20 - Low Shrubs - Drip** | 50.2 x 0.62 | x ( | 815 | x | 0.3 | / | 0.81 | ) = | 9,395 |
| **A21 - Low Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 585 | x | 0.2 | / | 0.75 | ) = | 4,855 |
| **A22 - Low Shrubs - MP Rotator** | 50.2 x 0.62 | x ( | 427 | x | 0.2 | / | 0.75 | ) = | 3,544 |
| **A23 - Med Trees - Bubbler** | 50.2 x 0.62 | x ( | 80 | x | 0.4 | / | 0.81 | ) = | 1,230 |
| **A24 - Low Shrubs - Drip** | 50.2 x 0.62 | x ( | 1,112 | x | 0.3 | / | 0.81 | ) = | 12,818 |
| | 50.2 x 0.62 | x ( | | x | 1.0 | / | 0.81 | ) = | 0 |
| | | | 21,618 | | | | **TOTAL ETWU** | = | **267,358** |

ETWU is less than MAWA

## GENERAL IRRIGATION NOTES

1. The irrigation contractor shall be responsible for familiarizing themselves with all differences in grade, location of seatwalls, location of retaining walls, etc. The contractor shall be responsible for coordinating all irrigation work with the general contractor, electrical contractor, and all other subcontractors for the location and the installation of irrigation related sleeves through walls, structures, under roadways, paving, etc.
2. The irrigation design presented in these documents is intended to be diagrammatic. All irrigation equipment, piping and valve locations, etc. shown within paved areas are for design clarification and shall only be installed in planting areas. Irrigation contractor shall install all remote control valves, quick couplers, and gate valves, in shrub planting areas or as approved by owner's representative & the landscape irrigation designer. Avoid any conflicts between the sprinkler system, planting and architectural features.
3. The irrigation system design is based upon the minimum operating pressure and the maximum flow demand shown on the irrigation drawings at each point of connection. The irrigation contractor shall verify water pressure prior to construction. Any difference between the water pressure indicated on the drawings and the actual pressure reading at the irrigation point of connection shall be immediately reported in writing to the owner's authorized representative. If the pressure differences are not immediately reported prior to beginning construction, the irrigation contractor shall assume full responsibility for all revisions to the irrigation system deemed necessary by the owner's representative and all costs associated with those revisions.
4. When it is apparent to the landscape contractor in the field that obstructions, grade differences, or differences in the calculated area dimensions exist that may have not been considered in the design of the system, the irrigation contractor shall not willfully install the irrigation system as indicated on the construction drawings. The owner's authorized representative shall be notified in writing of any such obstructions or differences prior to beginning any irrigation installation. If notification is not received prior to beginning installation, the irrigation contractor shall assume full responsibility for all revisions to the irrigation system as deemed necessary by owner's representative and all costs associated with those revisions.
5. The irrigation contractor shall be responsible for installing all control wire sleeving of sufficient size, under all paved areas in addition to the control wire sleeving shown on the drawings.
6. All piping and equipment shall be installed per the irrigation details. Teflon tape or Teflon pipe dope shall be applied to all male PVC pipe threads on all irrigation valve assemblies.
7. All pop-up style irrigation heads located in in shrub or groundcover areas shall be installed so the top of the irrigation head is 1" above finish grade.
8. All pop-up style irrigation heads to be located in turf areas shall initially be installed so the top of the irrigation heads are flush with the adjacent sidewalk or curb. Within 10 days of being notified by the owner's representative, the irrigation contractor shall be responsible for adjusting all turf irrigation heads so the top of the irrigation head is 1/2" above finish grade.
9. The irrigation contractor shall be responsible for flushing and adjusting all irrigation heads for optimum performance and to prevent over spray onto areas not intended for irrigation. This shall include throttling the flow control at each valve to obtain the optimum operating pressure for each system.
10. The irrigation contractor shall be responsible for adjusting the pressure regulator on each electric control valve so the irrigation head farthest and highest in elevation from its associated control valve functions within the operating pressure shown on the irrigation legend (not to exceed 5 PSI above the indicated operating pressure).
11. When installing spray nozzles that require arc patterns other than the standard arc patterns (e.g., 360°, 180°, and 90°), the contractor shall use the appropriate fixed arc pattern (e.g. 120°, 240°, 270°). The contractor shall use Hunter Pro Adjustable nozzles when installing irrigation heads on Pro Spray Bodies only when required pattern is not one of the fixed arc patterns. Select the radius of van nozzles to match site conditions.
12. The irrigation contractor shall be responsible for making field adjustments to the irrigation system by installing a quarter circle or half circle sprinkler head on each side of any vertical element (props, street lights, trees, etc.) which prevents proper coverage by interfering with the spray pattern of the irrigation head. All adjustments shall be made at no additional costs to the owner.
13. Drainage of irrigation water through spray head will not be allowed. Hunter check valve feature shall be used to prevent spray head drainage. During construction, the contractor shall change spray bodies with Hunter Check Valve features for spray heads showing signs of draining after the irrigation system has operated from an ON to OFF position. Installation of Hunter Check Valve feature shall be included in the Bid Price of the irrigation system.
14. The irrigation contractor shall be responsible for making the final connection between the power source and the automatic controller. 120 volt electrical power source shall be provided by others at the automatic controller location.
15. Adhesives, sealants and caulks shall meet local or regional air pollution control or south coast AQMD rule 1168 VOC and statewide VOC standards.

## OBSERVATION SCHEDULING

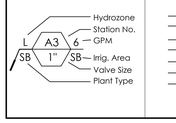
The landscape contractor shall be schedule an irrigation site observation by the irrigation designer, and/or the owner's representative, which shall not occur without at least 48 hours prior notification. The following items shall be reviewed:

1. Pre-job/kick-off meeting with contractor, general contractor, and irrigation designer.
2. Mainline, basket strainers, master valves, flow sensors, booster pump installation and operation, installation review prior to backfilling trenches, irrigation mainline pressure test, etc.
3. Finalizing the location for the controller assemblies - landscape contractor shall coordinate with the irrigation designer to verify connection of flow sensors and associated equipment to each controller assembly and for certification/warranty of equipment.
4. Irrigation coverage test - a dynamic pressure test shall be performed by the landscape contractor and shall be observed by the owner (or the owner's representative) and the irrigation designer for each valve during the irrigation coverage test.

## IRRIGATION LEGEND

| SYMBOL (F H Q A) | RAD. | MANF. | MODEL NO. WITH NOZZLE SIZE & TYPE |
|---|---|---|---|
| | 6'-8' | Hunter | PROS-12-PRS40-CV-F w/MP-8005R-360 |
| | 6'-8' | Hunter | PROS-12-PRS40-CV-F w/MP-8005R-90 |
| | 6'-8' | Hunter | PROS-12-PRS40-CV-F w/MP-8005R-90 |
| | 14' | Hunter | PROS-06-PRS40-CV-F w/MP-815-360 |
| | 14' | Hunter | PROS-06-PRS40-CV-F w/MP-815-90 |
| | 14' | Hunter | PROS-06-PRS40-CV-F w/MP-815-90 |
| | - | Hunter | RZWS-18-CV |
| | | Hunter | Irrigation Dripline - HDL-06-12-CV |
| | | Hunter | AVR-075 - Air Relief Valve |
| | | Hunter | ECO-ID - Drip Operation Indicator |
| | | Hunter | PLD-BV - Manual Flush Valve |
| | | Hunter | PLD-LOC- 050 - Drip Connector |
| POC | - | | Existing Potable 6" Main Line |
| PUMP | | Barrett | Pump Assembly - See detail sheet for model and specs |
| | | Febco | Backflow Preventer \| 825YA - Size Per Main Line |
| | | Nibco | Gate Valve \| T-111 Line Size 2 1/2" and smaller. |
| PR | | Zurn | High Range Adjustable Pressure Regulator 500XLS-HR |
| SM | | Hunter | Sub Meter \| HC-200-FLOW |
| MV | | Superior | Master Valve \| 3300 Series - Normally Open |
| FS | | Flomec | Flow Sensor \| QS-200 - Size Per Mainline |
| | | Hunter | Quick Coupler Valve \| HQ33D-RC |
| | | Hunter | Brass Remote Control Valve \| IBV-FS w/AS-ADJ Size Per Callout on Plan |
| | | Hunter | Brass Drip Control Zone Kit \| IBZ-101-LF-40 for .5-15 GPM or IBZ-151-40-XL for 20-50 GPM |
| WS | | Hunter | Wireless Solar Sync Sensor \| WSS-SEN |
| A | | Hunter | Smart Controller on Pedestal \| A2C-1200-SS w/PED-SS, (3) A2M-600 Expansion Modules and A2C-WIFI Communication Module |
| | | | Existing Mainline |
| | | | Mainline |
| | | | Lateral Line |
| | | | PVC Sleeves |

IRRIGATION VALVE CALLOUT:




LATERAL LINE SIZING CHART

| | |
|---|---|
| 3/4" | 1-7 GPM |
| 1" | 7-11 GPM |
| 1 1/4" | 11-20 GPM |
| 1 1/2" | 20-28 GPM |
| 2" | 28-48 GPM |
| 2 1/2" | 48-65 GPM |
| 3" | 65-100 GPM |

NOTE: THE LATERAL SIZE BETWEEN TWO IDENTICAL TICK MARKS SHALL BE SIZED THE SAME. MINIMUM PIPE SIZE IS 3/4".

| DESCRIPTION | PSI | FLOW RATE IN GPM F | H | Q | | DETAIL |
|---|---|---|---|---|---|---|
| 12" Pop-Up Shrub Spray Head | 40 | .78 | - | - | | E,F,G/L7.03 |
| 12" Pop-Up Shrub Spray Head | 40 | - | .42 | - | | E,F,G/L7.03 |
| 12" Pop-Up Shrub Spray Head | 40 | - | - | .23 | | E,F,G/L7.03 |
| 12" Pop-Up Shrub Spray Head | 40 | 1.87 | - | - | | E,F,G/L7.03 |
| 12" Pop-Up Shrub Spray Head | 40 | - | .93 | - | | E,F,G/L7.03 |
| 12" Pop-Up Shrub Spray Head | 40 | - | - | .49 | | E,F,G/L7.03 |
| Bubbler in Sleeve with Grate | 30 | .50 | - | - | - | L/L7.02 |
| Space lateral rows at 12'. Dripper spacing at 12". Install 3" Below Grade and Staked at 3' O.C. Use Hunter PLD-LOC fittings. Application rate: 0.96 in/hr. Time to apply 1/4": 15 minutes. | 30 | 0.6 GPH Flow Rate | | | | A,B/L7.03 |
| Install in a Hunter - Multi Purpose Box MB-0811 | | | | | | C/L7.03 |
| Install in a visible area. | | | | | | D/L7.03 |
| Install in a Hunter - Multi Purpose Box MB-0811 | | | | | | M/L7.02 |
| Install per manufacturers specifications. | | | | | | - |
| Existing Potable 6" Main Line on dedicated campus landscape meter. | | | | | | - |
| Contact Daryl Green at GPS Products 949.584.7311 gps10@earthlink.net | | | | | | H/L7.03 |
| Verify location in field prior to installation. Install within Strong Box SBBC-4SSS Stainless Steel Enclosure per detail. | | | | | | D,F/L7.02 |
| For mainline sizes 3" and larger, use Nibco FI-619-SQN, epoxy coated. Assemble with stainless steel hardware. Install in a 10" round valve box. | | | | | | H/L7.02 |
| Adjustable from 75-125 psi. Set to 100psi. Installed in a 6" round valve box. | | | | | | - |
| Sub Meter to be installed in a rectangle valve box adjacent to backflow. | | | | | | C/L7.02 |
| Master Valve to be installed in rectangle valve box adjacent to flow sensor. | | | | | | G/L7.02 |
| Size per plan. Install per detail. See irrigation construction notes for additional information and model numbers. | | | | | | E/L7.02 |
| Install with stabilizing stake. | | | | | | I/L7.02 |
| Self cleaning remote control valve with adjustable pressure dial. Install in rectangle valve box per detail. | | | | | | G/L7.02 |
| Remote control valve kit with pressure regulating filter. Install in rectangle valve box per detail. | | | | | | K/L7.02 |
| Weather/Rain Sensor. Locate in location with most sun. Open to air and free from any obstructions. Verify location in field. | | | | | | - |
| Smart irrigation controller with automatic time adjustments through an site ET Data provided by solar sync sensor. Controller also wifi and central control capable. | | | | | | J/L7.02 |
| Protect in place. | | | | | | - |
| Irrigation Mainline - PVC SCH. 40 IPS white pipe. PVC SCH. 40 IPS for mainline sizes 1" to 2" PVC Class 315 IPS for mainline sizes 2 1/2" to 3" Sleeve mainline per notes and details. | | | | | | B/L7.02 |
| Lateral Pipe - PVC SCH. 40 IPS white pipe. Minimum pipe size shall be 3/4" - size laterals per plan. PVC SCH. 40 IPS for sizes 3/4" to 2 1/2" PVC Class 315 IPS for sizes 3" and larger | | | | | | B/L7.02 |
| PVC SCH. 40 IPS white pipe - sleeves shall be installed for any mainline, lateral, or wires crossing under hardscape per irrigation construction notes. Size to be two times the pipe diameter or wire bundle. | | | | | | A/L7.02 |

LATERAL CAPACITY CHART

| | |
|---|---|
| 3/4" | 1-7 GPM |
| 1" | 7-11 GPM |
| 1 1/4" | 11-20 GPM |
| 1 1/2" | 20-28 GPM |
| 2" | 28-48 GPM |
| 2 1/2" | 48-65 GPM |
| 3" | 65-100 GPM |

PLANT MATERIAL ABBREVIATIONS:

| Plant Type: | | Hydrozone: | |
|---|---|---|---|
| TF | Turf | H | High |
| SB | Shrub/Ground cover | M | Medium |
| | | L | Low |
| TR | Trees | | |
| PT | Pots | | |

AT ANY POINT WHEN GPM CAPACITY EXCEEDS THE FOLLOWING BETWEEN TWO IDENTICAL TICK MARKS, PLEASE UPSIZE LATERAL LINE.

## POINT OF CONNECTION NOTES

1. CONTRACTOR TO INTERCEPT EXISTING 6" CAMPUS IRRIGATION MAINLINE AND INSTALL 'TEE' FOR PROPOSED NEW IRRIGATION POINT OF CONNECTION. INSTALL ISOLATION BALL VALVE AT POINT OF CONNECTION. VERIFY STATIC PRESSURE IN THE FIELD PRIOR TO COMMENCE OF WORK. IF ANY OF THE POC INFORMATION SHOWN ON THESE DRAWINGS IS FOUND TO BE DIFFERENT THAN THE ACTUAL POC INFORMATION GATHERED IN THE FIELD, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT. SHOULD THE CONTRACTOR FAIL TO VERIFY THE POC INFORMATION, ANY CHANGES REQUIRED BY LOW PRESSURE OR VOLUME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

- STATIC WATER PRESSURE 60 PSI (OBTAINED FROM QUICK COUPLER ON SITE)
- PRESSURE BOOST FROM PUMP ADJUSTED TO 90PSI WITH PRESSURE REGULATOR
- DESIGN WATER PRESSURE 66 PSI
- MAXIMUM SYSTEM DEMAND 16 GPM @ VALVE A16
- RESIDUAL WATER PRESSURE 24 PSI

## CONTROLLER INFORMATION

1. CONTROLLER SHALL BE WALL MOUNTED. REFER TO LEGEND FOR MODEL AND STATION COUNT. FINAL LOCATION OF CONTROLLER AND ELECTRICAL POC SHALL BE CONFIRMED WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK. THE CONTROLLER IS A SMART WEATHER BASED CONTROLLER.
2. WIRELESS WEATHER/RAIN SOLAR SYNC SENSOR FOR CONTROLLER SHALL BE MOUNTED OUTSIDE IN AN OPEN AREA OPEN TO THE SKY AND FREE FROM ANY OBSTRUCTIONS, AS APPROVED BY THE OWNER AND THE LANDSCAPE ARCHITECT.
3. THE 120 VOLT ELECTRICAL POWER SUPPLY AT CONTROLLER LOCATION IS NOT A PART OF THE IRRIGATION SYSTEM. COORDINATE POWER REQUIREMENTS WITH GENERAL CONTRACTOR, LANDSCAPE ARCHITECT AND/OR OWNER.
4. INSTALLATION OF CONTROL WIRES SHALL FOLLOW MAINLINE ROUTING.
5. THE SYSTEM IS DESIGNED FOR THE OPERATION OF ONE VALVE AT A TIME PER CONTROLLER. THE SYSTEM HAS BEEN DESIGNED FOR ONE VALVE OPENING AND ONE VALVE CLOSING.
6. **CONTRACTOR TO COORDINATE WITH SCHOOL FACILITIES MANAGER FOR WIRELESS INTERNET CONNECTION FOR CONTROLLER CENTRAL CONTROL FUNCTION.**

PRESSURE CALCULATIONS FOR DOMESTIC IRRIGATION

Project Name and/or Tract#: Arroyo High School
Date and Source of Information: 09.25.23
Name of Contact Person and Phone Number: -
P.O.C. Water Meter #: -
Water Meter Size and Type: 6" Dedicated Landscape Potable
Hydraulic Grade Level: - FT
Water Meter Elevation: - FT
Highest Head Elevation on the System: - FT
Basis for Calculations: Largest Capacity Furthest

Remote Control Valve#: A16
Size of Remote Control Valve: 1"
Demand at Remote Control Valve: 16 GPM

| QUANTITY | SIZE | DESCRIPTION | FLOW (GPM) | LOSS (PSI) |
|---|---|---|---|---|
| 1 | 6" | Water Meter | 16 | 1 |
| 1 | 2" | Backflow RP | 16 | 12 |
| 1 | 2" | Pressure Regulator | 16 | 1 |
| 3 | 2" | Gate Valve(s) | 16 | 3 |
| - | - | Gate Valve(s) | - | - |
| 1 | 2" | Master Valve | 16 | 1 |
| 1 | 2" | Flow Sensor | 16 | 1 |
| 450' | 2" | Mainline | 16 | 1 |
| - | - | Mainline | - | - |
| - | - | Mainline | - | - |
| - | - | Mainline | - | - |
| 1 | 1.5" | Remote Control Valve | 16 | 5 |
| | | Lateral Line Losses (10%) | | 3 |
| | | Other Losses (10%) | | 3 |
| | | Elevation Loss or Gain | | - |
| | | Total | | 31 |

PRESSURE (PSI)

| | |
|---|---|
| Pressure Required to Operate Irrigation Head | 30 |
| Sub-Total Pressure Required for Irrigation System | 61 |
| Total Pressure Required for Irrigation System (Sub-Total Pressure + 10% ) | 67 |
| Static Pressure Available | 90 |
| Residual Pressure (Subtract Total Pressure from Static Pressure) | 23 |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES


HKLA
714 W. Olympic Blvd., STE 735, Los Angeles, CA 90015
213.293.3474 I INFO@HKLAINC.COM


LICENSED LANDSCAPE ARCHITECT
HONGJOO KIM NO. 5067
Signature
12/31/25
Renewal Date
06/20/25
Date
STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING TYP.**

SHEET NAME:

**MASTER IRRIGATION LEGEND AND CALCS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**L7.00**

811 Know what's below. Call before you dig.

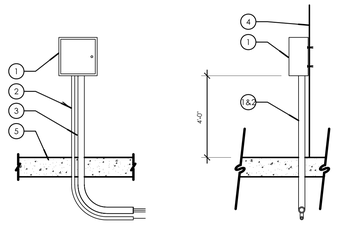
PLEASE RECYCLE

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
3/31/2023 10:57:35 AM

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH WHEN PLOTTED ON ANSI D SHEETS ORIGINAL SHEET SIZE

1. IRRIGATION CONTROLLER. PER PLAN.
2. MOUNT TO WALL PER MANUF. SPECS.
3. SCH 80 PVC CONDUIT, SIZE AS REQ., TO 120V POWER SUPPLY.
4. SCH 80 PVC CONDUIT, SIZE AS REQ., FOR IRRIGATION CONTROL WIRES. PROVIDE PVC SWEEP ELL BELOW GRADE.
5. FACE OF WALL, PER PLAN.
6. FINISH GRADE

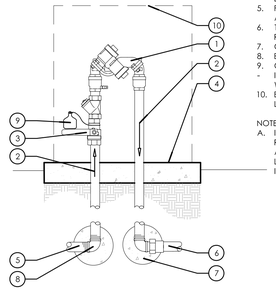
NOTES:
A. INSTALL ALL WIRING PER LOCAL CODE.
B. ALL CONDUIT ABOVE GRADE TO BE SCH 80 PVC OR RIGID GALV. STEEL.




J Wall Mounted Controller
**NTS**

1. REDUCED PRESSURE TYPE BACKFLOW PER LEGEND
2. BRASS RISER
3. BALL VALVE, INLET SIDE
4. CONCRETE BASE PER BACKFLOW ENCLOSURE DETAIL
5. FROM POINT OF CONNECTION - ADAPT AS REQUIRED
6. TO IRRIGATION SYSTEM - ADAPT AS REQUIRED
7. CONCRETE THRUST BLOCK, TYP.
8. BRASS 90 DEG ELL. TYP.
9. CHRISTY'S I.D.TAG
- ID.MAX.Y2.PW017 FOR POTABLE WATER SYSTEM
10. ENCLOSURE IF APPLICABLE PER LEGEND

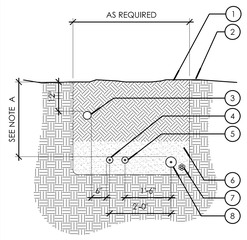
NOTES;
A. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES ANDHEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.



F Backflow Preventer
**Scale: NTS**

1. MINIMUM BACKFILL COMPACTION TO BE 90%.
2. FINISH GRADE
3. NON-PRESSURIZED LATERAL LINE PIPING
4. COMMUNICATION CABLE CONDUIT (WHERE REQUIRED)
5. FLOW SENSOR CABLE AND CONDUIT
6. APPROVED TOP SOIL OR SAND BACKFILL - PROVIDE 3" UNDER PIPE AND 6" ABOVE PIPE
7. CONTROL WIRES BUNDLED AND TAPED AT 10'-0" INTERVALS - INSTALL ADJACENT TO MAINLINE. SEE MASTER IRRIGATION LEGEND SHEET CONTROLLER NOTE FOR TYPE OF WIRE.
8. PRESSURIZED MAINLINE PIPING

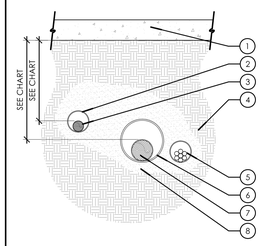
NOTES:
A. MINIMUM BACKFILL DEPTHS FROM FINISH GRADE TO TOP OF MAINLINE SHALL BE AS FOLLOWS:
- 24" IN PLANTING AREAS
- 36" UNDER PAVED AREAS
B. ALL PLASTIC PIPING SHALL BE SNAKED IN TRENCHES
C. TIE A LOOSE 20" LOOP IN WIRING AT ANY CHANGE IN DIRECTION GREATER THAN 30° - UNTIE ANY LOOPS AFTER ALL CONNECTIONS HAVE BEEN MADE
D. CLEARANCE BETWEEN PIPE TO EDGE OF TRENCHING LINE SHALL BE MINIMUM 4"




Section

B Trenching Detail
**Scale: 1/2"=1'-0"**

| LINE TYPE | LOCATION | DEPTH |
|---|---|---|
| PRESSURIZED MAINLINE | IN LANDSCAPE | 24" |
| | UNDER VEH. PAVING | 36" |
| LATERAL LINES | IN LANDSCAPE | 18" |
| | UNDER VEH. PAVING | 30" |



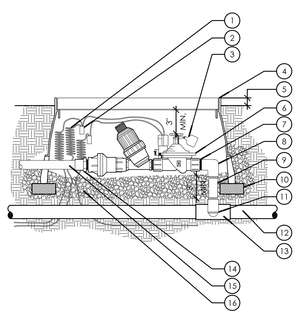

1. VEHICULAR or PEDESTRIAN PAVING - REFER TO CONSTRUCTION LAYOUT PLANS FOR SPECIFIC CONDITION
2. LATERAL LINE SLEEVING SHALL BE SCH. 40 PVC - SLEEVE DIA. SHALL BE 2 x LATERAL DIA.
3. LATERAL LINE - REFER TO SPECIFICATIONS
4. BACKFILL - 90% RELATIVE COMPACTION, MINIMUM - REFER TO GEOTECHNICAL REPORT
5. CONTROL WIRE BUNDLE SLEEVING SHALL BE SCH. 40 PVC PIPE. SEE MASTER IRRIGATION SHEET CONTROLLER NOTE FOR TYPE OF WIRE.
6. MAINLINE SLEEVING SHALL BE SCH. 40 PVC PIPE - SLEEVE DIA. SHALL BE 2 x MAINLINE DIA.
7. MAINLINE - REFER TO SPECIFICATIONS
8. SAND BACKFILL - 2" BASE & 6" OF COVER, MIN.

NOTES:
A. ALL IRRIGATION WIRES, LATERALS AND MAINLINE SHALL BE PLACED IN SLEEVES
B. IRRIGATION CONTRACTOR SHALL COORDINATE ALL SLEEVING LOCATIONS & SIZES WITH HARDSCAPE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION
C. ALL SLEEVES SHALL EXTEND A MINIMUM OF 12" BEYOND THE EDGE OF THE HARDSCAPE SURFACE

A Irrigation Sleeving
**Scale: 1"=1'-0"**

1. 30" LENGTH OF COILED WIRE
2. WATER PROOF CONNECTOR - Hunter DBRY6
3. ID TAG - REFER TO IRRIGATION SPECIFICATIONS
4. RECTANGULAR, GREEN PLASTIC VALVE BOX WITH LOCKING COVER - LID SHALL BE HEAT BRANDED WITH LETTERS "RCV" & STATION NUMBER - REFER TO IRRIGATION SPECIFICATIONS
5. FINISH GRADE:
- ½" FROM TOP OF BOX LID IN TURF
- 1 ½" FROM TOP OF BOX LID IN SHRUB/GC
6. REMOTE CONTROL VALVE WITH FILTER AND PRV - REFER TO IRRIGATION LEGEND
7. SCH. 80 PVC NIPPLE (CLOSE)
8. SCH. 40 PVC ELL
9. SCH. 80 PVC NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. SCH. 80 PVC NIPPLE (2" LENGTH, HIDDEN) AND SCH. 40 PVC ELL
12. PVC MAINLINE PIPE
13. SCH. 40 PVC TEE OR ELL
14. SCH. 40 PVC MALE ADAPTER
15. PVC LATERAL PIPE
16. (3) CUBIC FEET, MIN. OF ¾" MINUS, WASHED GRAVEL

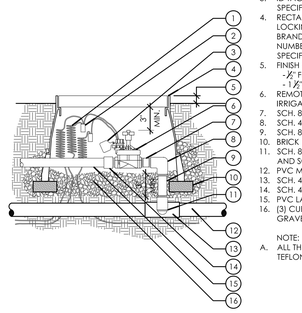
NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE




K **Remote Control Drip Valve and Filter**
Scale: 1 1/2"-1'-0"

1. 30" LENGTH OF COILED WIRE
2. WATER PROOF CONNECTOR - Hunter DBRY-6
3. ID TAG - REFER TO IRRIGATION SPECIFICATIONS
4. RECTANGULAR, PLASTIC VALVE BOX WITH LOCKING COVER - LID SHALL BE HEAT BRANDED WITH LETTERS "RCV" & STATION NUMBER - REFER TO IRRIGATION SPECIFICATIONS
5. FINISH GRADE:
- ½" FROM TOP OF BOX LID IN TURF
- 1 ½" FROM TOP OF BOX LID IN SHRUB/GC
6. REMOTE CONTROL VALVE - REFER TO IRRIGATION LEGEND
7. SCH. 80 PVC NIPPLE (CLOSE)
8. SCH. 40 PVC ELL
9. SCH. 80 PVC NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. SCH. 80 PVC NIPPLE (2" LENGTH, HIDDEN) AND SCH. 40 PVC ELL
12. PVC MAINLINE PIPE
13. SCH. 40 PVC TEE OR ELL
14. SCH. 40 PVC MALE ADAPTER
15. PVC LATERAL PIPE
16. (3) CUBIC FEET, MIN. OF ¾" MINUS, WASHED GRAVEL

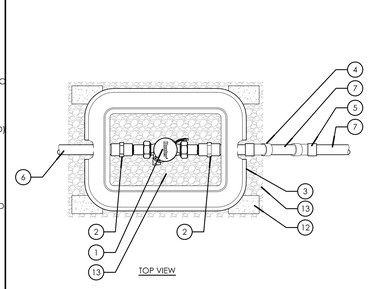
NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE



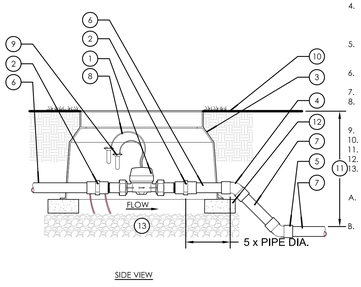

G **Remote Control Valve Box**
Scale: 1 1/2"-1'-0"

1. HUNTER HC FLOW METER WITH UNION CONNECTIONS
2. SCH 80 PVC FEMALE ADAPTER S X T
3. RECTANGULAR VALVE BOX. COLOR PER MASTER IRRIGATION LEGEND
4. SCH 80 PVC 45 DEGREE ELBOW S X S TO LOWER MAIN LINE TO PROPER DEPTH (SIZE FOR LARGER MAIN LINE AS NEEDED)
5. SCH 80 PVC 45 DEGREE ELBOW (S X S) TO LOWER MAIN LINE TO PROPER DEPTH
6. 1" DIA MAIN LINE AT INLET AND OUTLET
7. MAIN LINE TO SYSTEM
8. TWO FLOW SENSOR WIRES TO **BE CAPPED AND NOT USED** FOR FLOW SENSING FUNCTION
9. WEATHERPROOF WIRE CONNECTOR
10. FINISH GRADE
11. SPECIFIED SOIL COVER
12. COMMON BRICK SUPPORT
13. GRAVEL BASE

NOTES:
A. INLET PIPE ENTERING METER LENGTH MUST BE A MINIMUM OF 10 X THE PIPE DIAMETER
B. OUTLET PIPE MUST BE STRAIGHT PIPE WITH NO FITTINGS OR TURNS UNTIL AFTER SPECIFIED LENGTHS. PIPE FITTINGS MAY BE SHC 80 PVC SOLVENT WELD, THREADED OR BRASS AS REQUIRED FOR PROJECT



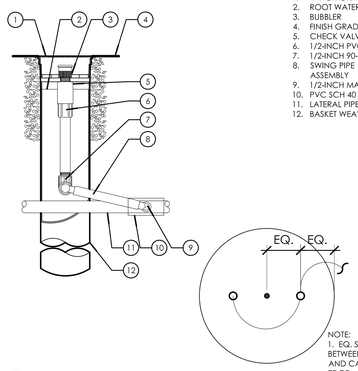
TOP VIEW




SIDE VIEW

C HC Flow Meter
**NTS**

1. 4-INCH GRATE
2. ROOT WATERING SYSTEM
3. BUBBLER
4. FINISH GRADE
5. CHECK VALVE
6. 1/2-INCH PVC SCH 80 NIPPLE
7. 1/2-INCH 90-DEGREE ELBOW
8. SWING PIPE 12-INCH SWING ASSEMBLY
9. 1/2-INCH MALE NPT INLET
10. PVC SCH 40 TEE OR EL
11. LATERAL PIPE
12. BASKET WEAVE CANISTER

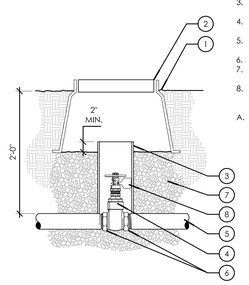



NOTE:
1. EQ. SPACE TYP. BETWEEN TRUNK AND CANOPY EDGE

L Root Watering System
NTS

1. FINISH GRADE
- 1" IN TURF
- 2" IN GROUND COVER
2. ROUND, PLASTIC VALVE BOX WITH LOCKING COVER SHALL BE BRANDED "GV" - REFER TO IRRIGATION LEGEND
3. 6" Ø PVC PIPE EXTENSION - LENGTH AS REQUIRED
4. GATE VALVE - REFER TO IRRIGATION LEGEND FOR SPECS.
5. PVC MAINLINE - REFER TO IRRIGATION LEGEND
6. PVC MALE ADAPTER - TWO (2) REQUIRED
7. PEA GRAVEL - TWO (2) CUBIC FEET AT BASE OF VALVE
8. RECLAIMED WATER TAG

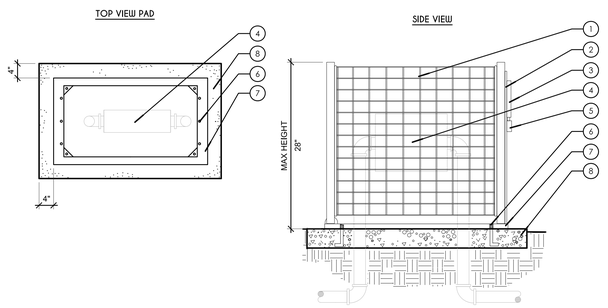
NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE




H Gate Valve
**Scale: 1"=1'-0"**

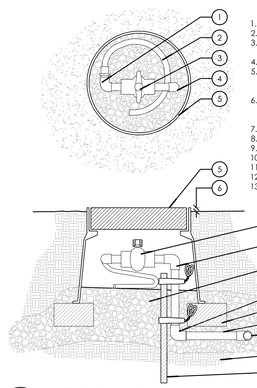
1. SMOOTH TOUCH BACKFLOW CAGE PER MASTER IRRIGATION LEGEND
2. ENCLOSURE LOCKING SWING DOOR
3. PADLOCK PROTECTIVE COVER
4. BACKFLOW PREVENTER SEE MASTER IRRIGATION LEGEND FOR MODEL
5. PAD LOCK
6. ENCLOSURE SWIVEL POINT ATTACHED TO MOUNTING BASE. SECURED IN LOCATIONS PER BACKFLOW CAGE MANUFACTURER SPECIFICATIONS
7. ANCHOR BASE MOUNT
8. POURED IN PLACE CONCRETE BASE 6" MINIMUM THICKNESS. EXTEND BEYOND 4" OUTSIDE DIMENSIONS OF ENCLOSURE

NOTES:
A. ANCHOR BOLTS TO BE SMOOTH TOUCH
B. MOUNTING BASE SECURED TO ENCLOSURE WITH ¾" J BOLTS. SECURED IN LOCATIONS PER BACKFLOW CAGE MANUFACTURER SPECIFICATIONS




D Backflow Enclosure
Scale: 1 1/2"- 1'-0"

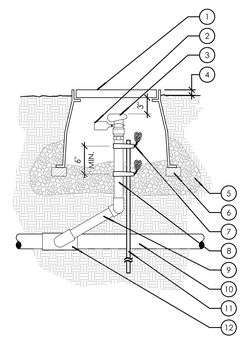
1. INSERT X MIP 90 DEGREE ELBOWS.
2. 1 ½" DIAMETER x 24" FLEX HOSE.
3. HUNTER PLD-BV DRIP CONNECTION BALL VALVE
4. SCH. 40 PVC DEGREE ELBOW MIP X FIP.
5. HUNTER MULTIPURPOSE VALVE BOX MB-0811 - WITH THE LETTERS 'F.V.' HEAT BRANDED ON THE LID.
6. FINISH GRADE:
- ½" BELOW TOP OF BOX IN TURF.
- 2" BELOW TOP OF BOX IN SHRUB/GC.
7. (1) CUBIC FOOT OF PEA GRAVEL SUMP.
8. SCH. 40 PVC 90 DEGREE ELBOW FIP X FIP.
9. BRICK SUPPORT
10. SCH. 80 PVC - LENGTH AS REQUIRED.
11. HARDIE SWIVEL TEE - MODEL #PTS16.
12. COMPACTED SUBGRADE.
13. No. 4 REBAR SPRINKLER SUPPORT.



M Flush Valve Assembly
**Scale: 2"=1'-0"**

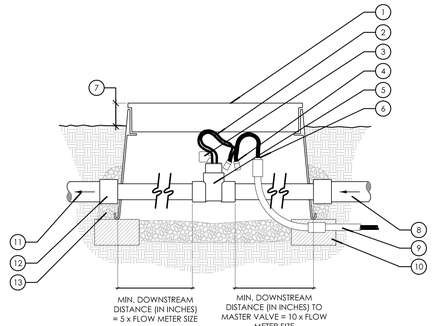
1. PLASTIC, 10" ROUND VALVE BOX WITH BOLT DOWN COVER, HEAT BRANDED, "QCV", COLOR PER MASTER IRRIGATION LEGEND
2. WATER ID TAG
3. QUICK COUPLER VALVE - REFER TO IRRIGATION LEGEND
4. FINISH GRADE:
- 1/2" BELOW BOX LID IN TURF AREAS
- 1 1/2" BELOW BOX LID IN SHRUB/GC AREAS
5. ONE (1) CU. FT. (MIN.) OF 3/4" CRUSHED ROCK AT BASE OF VALVE BOX
6. SUPPORT - COMMON RED BRICK
7. V.I.T. STAINLESS STEEL TIES - TYPICAL
8. SCH. 80 PVC NIPPLE - LENGTH AS REQUIRED
9. 1" DIA. SCH. 80 PVC SWING JOINT - PREASSEMBLED BY SPEARS
10. PVC MAINLINE
11. 1/2" DIA. x 24" LENGTH GALVANIZED PIPE STAKE
12. SCH. 80 PVC TEE FITTING

NOTES:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE
B. 12" MIN. CLEAR SPACE SHALL BE MAINTAINED BETWEEN THE QUICK COUPLER VALVE BOX AND ANY ADJACENT HARDSCAPE




I Quick Coupler Valve
**Scale: 3/4"=1'-0"**

1. PLASTIC, RECTANGULAR VALVE BOX WITH BOLT DOWN COVER. VALVE BOX COVER TO BE HEAT BRANDED 'FS' COLOR OF LID PER MASTER IRRIGATION LEGEND
2. FLOW SENSOR CABLE
3. WATER ID TAG
4. WATERPROOF CONNECTOR - REFER TO IRRIGATION SPECIFICATIONS
5. FLOW SENSOR
6. CONDUIT BUSHING
7. FINISH GRADE:
1/2" BELOW BOX LID IN TURF
1 1/2" SHRUB/GROUNDCOVER
8. IRRIGATION MAINLINE FROM MASTER VALVE
9. ELECTRICAL CONDUIT AND SWEEP ELBOW BACK TO CONTROLLER
10. SUPPORT - COMMON RED BRICK
11. MAINLINE TO REMOTE CONTROL VALVES
12. 40 PVC COUPLER
13. 3/4" CRUSHED ROCK. (2) CUBIC FEET MINIMUM




E Flow Sensor
**NTS**

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**


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714 W. Olympic Blvd., STE 735, Los Angeles, CA 90015
213.293.3474 I INFO@HKLAINC.COM


LICENSED LANDSCAPE ARCHITECT
HONGJOO KIM NO. 5049
Registration 12/31/25
Renewal Date
06/20/25
Date
STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING TYP.**

SHEET NAME:

**IRRIGATION DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

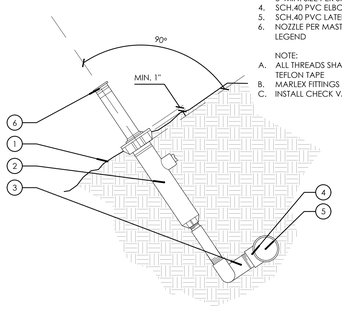
SHEET:

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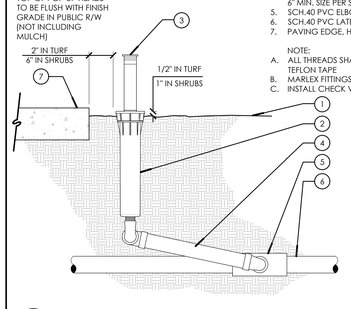
THE LINE BROWN ABOVE IS EXACTLY 1" WHEN PLOTTING SHEETS ORIGINAL PAGE SIZE




1. FINISH GRADE
2. IRRIGATION SPRAY BODY PER PLAN
3. TRIPLE SWING JOINT WITH SCH. 40 PVC NIPPLES AND STREET ELLS, MIPT INLET AND MIPT OUTLET - LAY LENGTH TO BE 6" MIN. SIZE PER SPRINKLER INLET
4. SCH.40 PVC ELBOW OR TEE
5. SCH.40 PVC LATERAL LINE
6. NOZZLE PER MASTER IRRIGATION LEGEND

NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE
B. MARLEX FITTINGS NOT ALLOWED
C. INSTALL CHECK VALVES AS REQUIRED

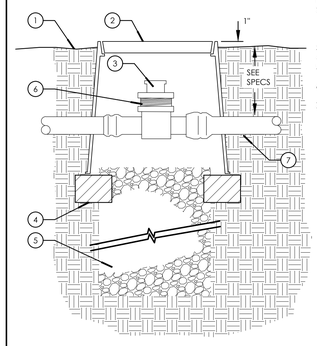
G Pop-Up Irrigation Head on Slope
**Scale: 3"=1'-0"**




1. FINISH GRADE
2. IRRIGATION SPRAY BODY PER PLAN
3. IRRIGATION NOZZLE
4. TRIPLE SWING JOINT WITH SCH. 40 PVC NIPPLES AND STREET ELLS, MIPT INLET AND MIPT OUTLET - LAY LENGTH TO BE 6" MIN. SIZE PER SPRINKLER INLET
5. SCH.40 PVC ELBOW OR TEE
6. SCH.40 PVC LATERAL LINE
7. PAVING EDGE, HEADER OR WALL

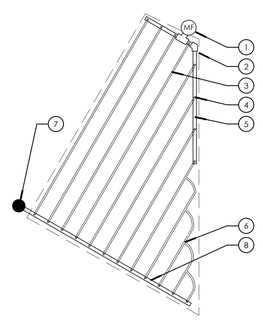
NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE
B. MARLEX FITTINGS NOT ALLOWED
C. INSTALL CHECK VALVES AS REQUIRED

F Pop-Up Irrigation Head
**Scale: 3"=1'-0"**



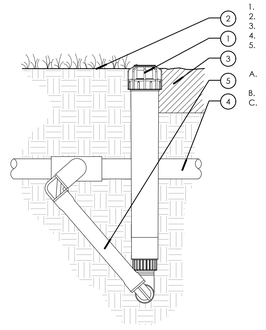

1. FINISH GRADE
2. HUNTER MULTI PURPOSE BOX MB-0811 WITH LETTERS AVR
3. AIR/VACUUM RELIEF VALVE
4. BRICK SUPPORTS (2 REQ.)
5. ¾" GRAVEL SUMP (1 CUBIC FT.)
6. ¾" M X ½" F REDUCTION BUSHING
7. SUBSURFACE DRIP LINE

C Air / Vaccum Valve
**Scale: NTS**




1. MANUAL FLUSH VALVE PLUMBED TO PVC OR POLY
2. AREA PERIMETER
3. DRIP TUBING, SEE LEGEND FOR EMITTER AND LATERAL LINE SPACING
4. DRIP TUBING START CONNECTION MALE ADAPTER
5. PVC OR POLY EXHAUST HEADER
6. DRIP TUBING TEE
7. DRIP CONTROL ZONE KIT
8. PVC OR POLY SUPPLY HEADER

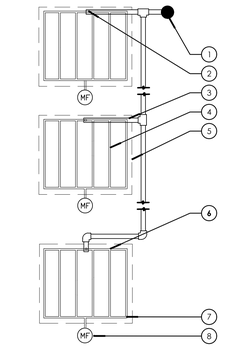
A Dripline Layout - Irregular Areas
**Scale: NTS**




1. ECO INDICATOR
2. FINISH GRADE
3. ADJACENT PLANTING AREA
4. PVC EXHAUST OR SUPPLY HEADER
5. SWING JOINT

NOTE:
A. ALL THREADS SHALL BE WRAPPED WITH TEFLON TAPE
B. MARLEX FITTINGS NOT ALLOWED
C. INSTALL CHECK VALVES AS REQUIRED

D Drip Operation Indicator
**Scale: NTS**

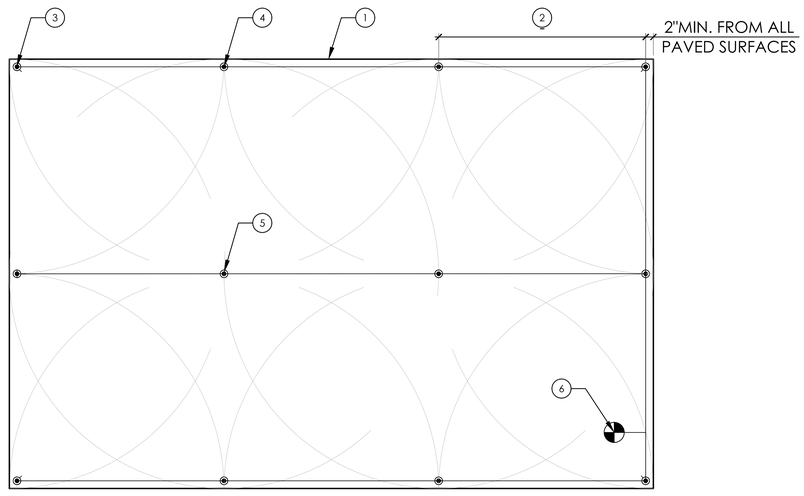



1. DRIP CONTROL ZONE KIT
2. DRIP TUBING START CONNECTION MALE ADAPTER
3. PVC OR POLY SUPPLY HEADER
4. DRIP TUBING, SEE LEGEND FOR EMITTER AND LATERAL LINE SPACING
5. ISLAND PERIMETER
6. DRIP TUBING TEE
7. DRIP TUBING ELL
8. MANUAL FLUSH VALVE PLUMBED TO DRIP TUBING

B Dripline Island Layout
**Scale: NTS**

1. AREA BEING IRRIGATED
2. SPRAY NOZZLE RADIUS THROW DISTANCE. DISTANCE - 1 FOOT PER MASTER IRRIGATION LEGEND. IE, IF THROW RADIUS IS SPECIFIED 8' AT 40 PSI, SPACE HEADS AT 7' TO ACCOUNT FOR WIND.
3. QUARTER PATTERN SPRAY BODY AND NOZZLE PER MASTER IRRIGATION LEGEND
4. HALF PATTERN SPRAY BODY AND NOZZLE PER MASTER IRRIGATION LEGEND
5. FULL PATTERN SPRAY BODY AND NOZZLE PER MASTER IRRIGATION LEGEND
6. VALVE PER MASTER IRRIGATION LEGEND

NOTES:
A. CONTRACTOR TO ADJUST PRESSURE SO THAT LAST NOZZLE ACHIEVES HEAD TO HEAD COVERAGE.




E Typical Head to Head Coverage Spray Nozzle Detail
**Scale: 1/2"=1'-0"**

811 Know what's below. Call before you dig.

1.8 Gauges shall be 2½" diameter face, glycerin filled with stainless casing and brass internals.

1.9 Flow switch shall be a 316 stainless steel and solid-state thermal sensor designed to measure change in flow velocity and in temperature. The flow switch shall include an integrated bar graph with 10 LED lights and shall be capable of providing indication of flow (green), closed (orange), and open (red) conditions.

1.10 Pump system shall be mounted on a structural aluminum skid with mounting flanges on front and back to allow for mounting of skid to concrete pad. Skid equipped with pipe support on suction and discharge piping. All nuts and bolts and washers shall be stainless steel on skid and piping. Skid shall include mounting hardware for integral aluminum enclosure.

1.11 The system enclosure shall be vandal and weather resistant, marine grade aluminum alloy 5052-H32 construction with rectangular punch-outs for viewing and heat dissipation. The enclosure shall be low profile hinged top design with padlock provision. The cover shall be secured to the concrete pad with stainless steel hardware. The enclosure shall measure 300" x 42W" x 52H" and concrete pad dimensions shall be 42" x 54". The enclosure shall be as manufactured by V.I.T. Products, Inc.

1.12 Pump Assembly shall include the following option(s):

- ❑ (PACT) Where specified by the System Design Parameters, the following items shall be provided to allow for stand-alone system pressure activation of pumping unit:
  - ❑ Variable Frequency Drive system to receive feedback signal from system mounted stainless steel pressure transducer, and in conjunction with internal software driven PID control loop to maintain customer adjustable constant system discharge pressure by varying the speed of the pump in response to varying system load. Variable Frequency Drive shall provide for on/off control of pumping unit via system pressure monitoring
  - ❑ Bladder Style Pressure Storage Tank, piped to pump discharge, designed to maintain system pressure when pump is off and properly sized by the manufacturer to prevent short cycling of pumping system.
  - ❑ Spring loaded wafer style disc check valve with cast iron body, bronze disc, and stainless steel spring to maintain system pressure when pump is off.

1.13 The services of a factory representative or trained service professional shall be made available on the job site to check installation and perform the startup and instruct the operating personnel. A startup report containing voltage and amperage readings, suction and discharge pressure readings, estimated flow conditions, and general operating characteristics shall be submitted to the Owner.

1.14 One electronic set of operating and maintenance manual shall be provided to the owner after startup and shall include parts manuals for major components, performance curve for pump, general sequence of operation, and electrical schematic for control panel.

1.15 The warranty period shall be a non-prorated period of 36 months from date of purchase.

1695 National Ave. San Diego CA 92113
Phone (619) 232-7867 • FAX (619) 232-3029
Represented by: Green Product Sales • (949) 584-7311 • dgreen@gps-10.com

H

## BARRETT ENGINEERED PUMPS

SPECIALISTS IN PUMPS AND PUMPING SYSTEMS

SUBMITTAL

PROJECT: EL MONTE U.H.S.D. – ARROYO H.S. October 21, 2022

SYSTEM DESIGN PARAMETERS

| | | | |
|---|---|---|---|
| IBCR32-15-2-3/PACT<br>System Model Number | 151 GPM<br>System Design Flow Rate | 134 PSI<br>System Design Pressure | 3 INCH<br>System Piping Size |
| 65 PSI<br>Minimum Suction Pressure | 208/230 or 460 VAC<br>System Electrical Voltage | 3 PHASE 60 Hz<br>System Electrical Phase and Frequency | |
| CR32-3<br>Pump Model Number | 151 GPM<br>Pump Capacity (GPM) | 185 FEET<br>Pump Total Head (Feet) | |
| 15 HP<br>Pump Horsepower | 3500 RPM<br>Pump RPM | Undetermined Voltage/Phase<br>System Full Load Amperage | |

BOOSTER PUMP ASSEMBLY

1.1 A simplex water pressure booster system as designed and fabricated by Barrett Engineered Pumps (619) 232-7867. The system shall be a completely prefabricated system with pump, piping, electrical and structural elements. The entire booster pump assembly shall be UL Listed and Approved.

1.2 Pump shall be:

1.2.1 (CR Series) Vertical Multi-Stage Centrifugal. Pump construction shall be cast iron stainless fitted with cast iron casing, stainless steel impellers and bowls. Pump shall be equipped with tungsten carbide mechanical seal. Pump shall be directly coupled to a C-face electric motor.

1.3 Electric motor shall be of the squirrel cage induction type suitable for full voltage starting. Motor shall be ODP to aid in cooling. Electric motor shall be rated for continuous service. The motor shall have horsepower ratings such that the motor will carry the maximum possible load to be developed under the designed pumping conditions and not overload the motor beyond the nameplate rating of the motor. Motor shall have a 1.15 service factor. The motor shall conform to the latest NEMA Standards for motor design and construction.

1.4 Pump Control Panel shall have a UL Listed Modular NEMA4X plain front non-metallic enclosure with stainless steel lockable latches. This Includes power and control re-settable thermal circuit breakers or Time Delay Fuses, heavy duty magnetic starter with adjustable overload protection, Controls Relays, Control on/off Switch, Hand-Off-Auto switch to select mode of operation, heavy duty numbered terminal strips for power and control wiring lead terminations to land all field wiring, Ground Lugs, Motor wiring whip, VFD to remote panel wiring whip, and wiring schematic.

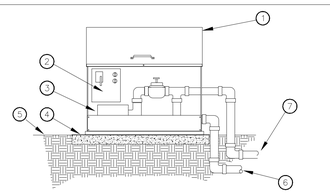
1.5 If 24V control started, a Metal oxide varistor protected pump start relay shall be incorporated in panel to start pump with signal from an irrigation controller.

1.6 All system piping shall be Schedule 10S 304 stainless steel. All major fittings shall be 304 stainless steel with flanges to allow for system disassembly or major component removal. All instrumentation fittings shall be 304SS. System shall incorporate an integral full pipe size bypass line with isolation valve to allow for pump removal and repair without disrupting water supply to system.

1.7 Isolation valves shall be all stainless quarter turn ball valves with hard chrome ball on lines 2" and less. Isolation valves shall be lug style butterfly valves with Buna-N elastomeric seats, ductile iron nickel coated disc, and stainless-steel stem with handle and 10 position galvanized memory plate on lines 2½" and greater.

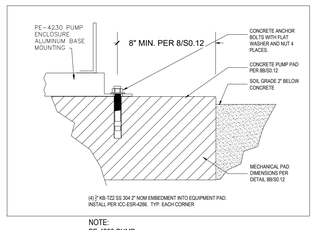
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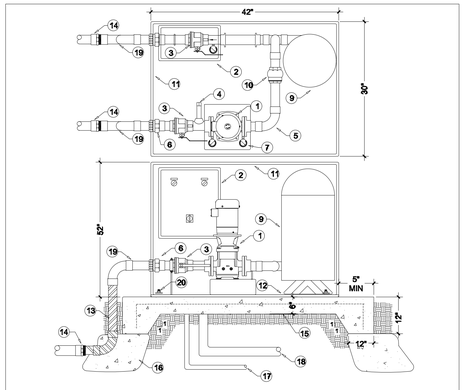

LEGEND

1. PUMP ENCLOSURE.
2. CONTROL PANEL.
3. BOOSTER PUMP
4. CONCRETE BASE TO SIZE
5. FINISH GRADE.
6. WATER SERVICE INLET PIPE
7. PRESSURED WATER OUTLET




NOTE:
PE-4230 PUMP:
DIMENSIONS = 42"(W) x 30" (L) x 52" (H)
MAX WEIGHT = 450LBS

H PE-4230 PUMP ENCLOSURE
N.T.S. PE-4230




H

KEYNOTE LEGEND

1. VERTICAL MULTISTAGE STAINLESS FITTED CENTRIFUGAL PUMP.
2. NEMA 4X SIMPLEX CONTROL PANEL FOR AUTOMATIC OPERATION.
3. STAINLESS 1/4 TURN VALVE
4. STAINLESS THERMAL DISPERSION FLOW SWITCH.
5. 3 INCH TYPE 304 STAINLESS STEEL.
6. STAINLESS UNION ADAPTER.
7. PRESSURE GAUGE, LIQUID DAMPENED.
8. OMIT.
9. BLADDER STYLE PRESSURE STORAGE TANK.
10. STAINLESS DISC STYLE CHECK VALVE.
11. MARINE GRADE ALUMINUM ENCLOSURE, HINGED TOP.
12. STRUCTURAL ALUMINUM BASEPLATE.
13. DOUBLE WRAP WITH 20 MIL PIPE WRAP TAPE.
14. MALE ADAPTER.
15. 6" THICK CONCRETE PAD SET 2" ABOVE FINISH GRADE. USE #5 BAR 18" OC. BOTH WAYS AT MID-DEPTH. CONCRETE MIX TO BE PER STRUCTURAL REQUIREMENTS.
16. THRUST BLOCK OR JOINT RESTRAINT (BY OTHERS)
17. IRRIGATION CONTROLLER SIGNAL CONDUIT.
18. MAIN POWER CONDUIT.
19. CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL INLET AND OUTLET PIPING; BRASS OR CAST IRON
20. (6) 1/2" DIA. KB-TZ SS 304, 2" MIN EMBEDMENT. INSTALL PER ICC-ESR 1917 TYP. EACH CORNER.

| | | | | |
|---|---|---|---|---|
| BARRETT ENGINEERED PUMPS | SIZE | DWG NO. | EL MONTE U.H.S.D. - ARROYO H.S. | REV |
| | SCALE | | SHEET IRH-LFPT-2.dwg | |

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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CONCORD UNION HIGH SCHOOL DISTRICT COMMITTED TO COLLEGE AND CAREER SUCCESS ESTABLISHED 1991


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## KEYNOTES

## NOTES


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714 W. Olympic Blvd., STE 735, Los Angeles, CA 90015
213.293.3474 I INFO@HKLAINC.COM


LICENSED LANDSCAPE ARCHITECT HONGJOO KIM NO. 5967 STATE OF CALIFORNIA
Signature
Renewal Date: 12/31/25
Date: 06/20/25

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING TYP.**

SHEET NAME:

**IRRIGATION DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

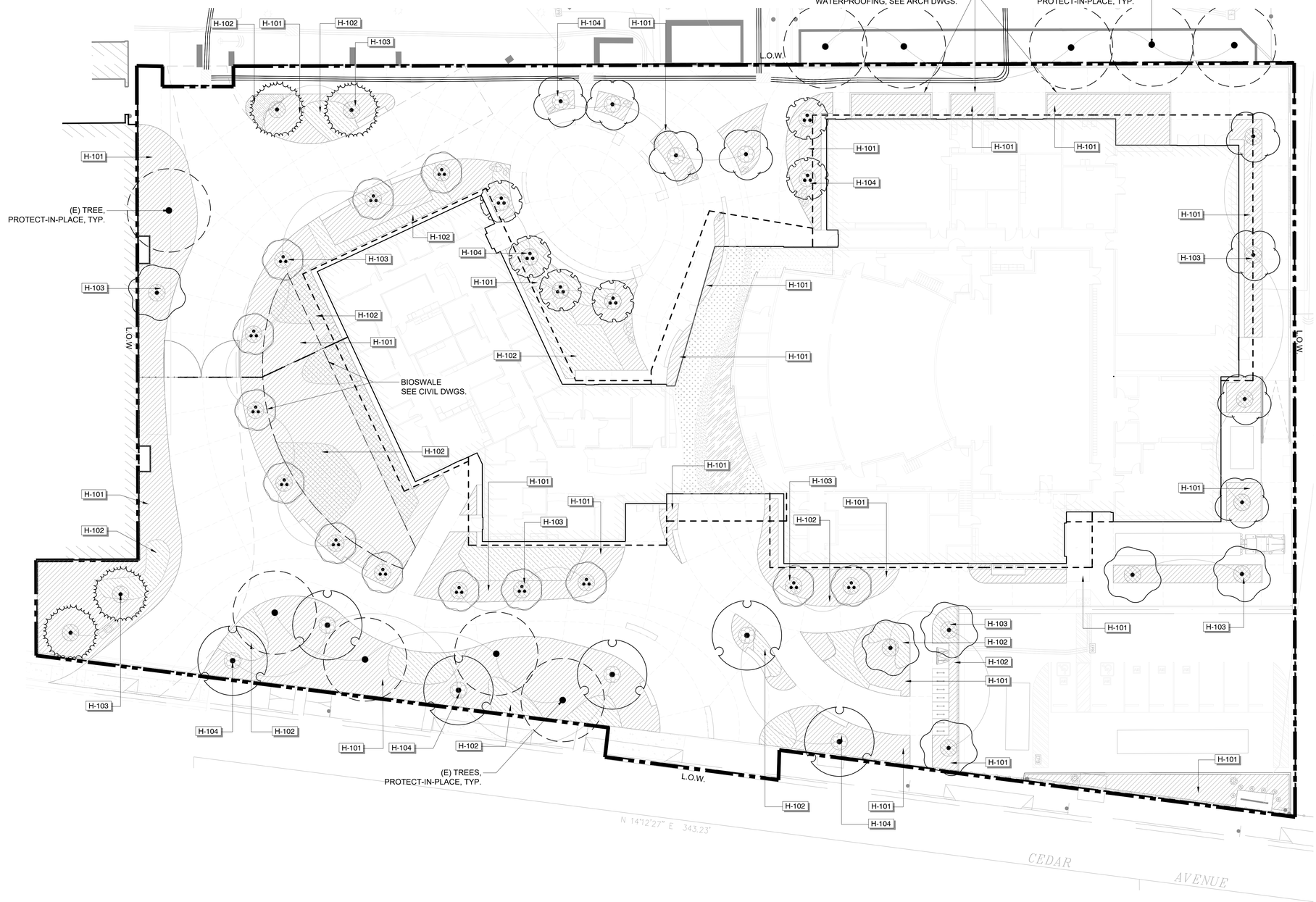
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**L7.03**

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1 HYDROZONE PLAN
SCALE: 1" = 16'-0"

0 16' 32' 48'
1/16"=1'-0"

NORTH

## HYDROZONE SCHEDULE

| SYMBOL | HYDROZONE DESCRIPTION | QTY |
|---|---|---|
| H-101 | SHRUB_LOW WATER | 19,256 SF |
| H-102 | SHURB_MODERATE | 5,191 SF |
| H-103 | TREE- LOW WATER | 763 SF |
| H-104 | TREE -MODERATE | 452 SF |

811 Know what's below. Call before you dig.

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HONGJOO KIM NO. 5083
Signature
12/31/25
Renewal Date
06/20/25
Date
STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**HYDROZONE PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

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## PLANTING NOTES

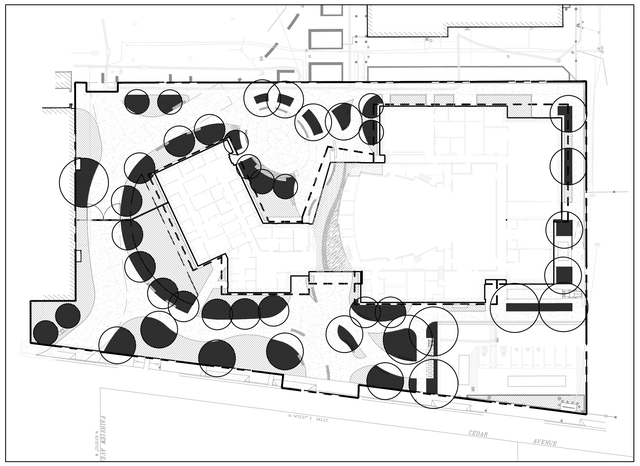
1. PRIOR TO PLANTING, THE IRRIGATION SYSTEM SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND BE FULLY OPERATIONAL. ALL PLANTING AREAS SHALL BE FULLY SOAKED.
2. TREE LOCATIONS MAY BE ADJUSTED TO AVOID CONFLICTS WITH UNDERGROUND UTILITIES ONLY AFTER CONSULTATION WITH THE LANDSCAPE ARCHITECT IN WRITING. PLANTING LAYOUT MUST BE APPROVED IN THE FIELD PRIOR TO EXCAVATION FOR PLANTING.
3. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO PLANTING. SEE SPECIFICATIONS.
4. FOR PROJECTS THAT INCLUDE LANDSCAPE WORK, THE LANDSCAPE CERTIFICATION, FORM GRN 12, SHALL BE COMPLETED PRIOR TO THE FINAL INSPECTION APPROVAL.

## TREE SCHEDULE

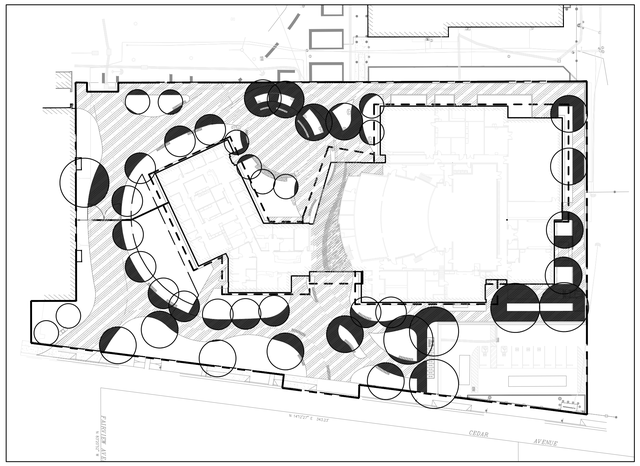
| TREES | CODE | QTY | BOTANICAL / COMMON NAME | SIZE | SPACING | WUCOLS |
|---|---|---|---|---|---|---|
| | ARB MUL | 6 | ARBUTUS X 'MARINA'<br>MARINA STRAWBERRY TREE MULTI-TRUNK | 24" BOX | AS SHOWN | MODERATE |
| | CER DES | 13 | CERCIDIUM X 'DESERT MUSEUM'<br>DESERT MUSEUM PALO VERDE | 24" BOX | AS SHOWN | LOW |
| | PIN HAL | 4 | PINUS HALEPENSIS<br>ALEPO PINE | 24" BOX | AS SHOWN | LOW |
| | PLA RAC | 6 | PLATANUS RACEMOSA<br>CALIFORNIA SYCAMORE | 24" BOX | AS SHOWN | MODERATE |
| | QUE AGR | 6 | QUERCUS AGRIFOLIA<br>COAST LIVE OAK | 24" BOX | AS SHOWN | LOW |
| | TIP TIP | 8 | TIPUANA TIPU<br>TIPU TREE | 24" BOX | AS SHOWN | MODERATE |
| | EX | 10 | EXISTING TREE | PROTECTED IN PLACE | | |

## SHRUB SCHEDULE

| SHRUBS | CODE | BOTANICAL / COMMON NAME | SIZE | SPACING | WUCOLS |
|---|---|---|---|---|---|
| | AEO ARB | AEONIUM ARBOREUM<br>TREE AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO CRL | AEONIUM X 'CAROL'<br>CAROL AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO SUN | AEONIUM X 'SUNBURST'<br>SUNBURST AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO ZWT | AEONIUM X 'ZWARTKOP'<br>ZWARTKOP AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AGA ATT | AGAVE ATTENUATA<br>FOXTAIL AGAVE | 5 GAL. | AS SHOWN | LOW |
| | ALO STR | ALOE STRIATA<br>CORAL ALOE | 5 GAL. | AS SHOWN | LOW |
| | CAR BAR | CAREX BARBARAE<br>SANTA BARBARA SEDGE | 1 GAL. | AS SHOWN | LOW |
| | CAR BOX | CARISSA MACROCARPA 'BOXWOOD BEAUTY'<br>BOXWOOD BEAUTY NATAL PLUM | 1 GAL. | AS SHOWN | MODERATE |
| | CEA JOY | CEANOTHUS X 'JOYCE COULTER'<br>JOYCE COULTER WILD LILAC | 5 GAL. | AS SHOWN | MODERATE |
| | GAL SPE | GALVEZIA SPECIOSA<br>ISLAND SNAPDRAGON | 5 GAL. | AS SHOWN | LOW |
| | GRE ROS | GREVILLEA ROSMARINIFOLIA<br>ROSEMARY GREVILLEA | 5 GAL. | AS SHOWN | LOW |
| | JUN ELK | JUNCUS PATENS 'ELK BLUE'<br>SPREADING RUSH | 1 GAL. | AS SHOWN | LOW |
| | LOM LI3 | LOMANDRA LONGIFOLIA 'LOMLON'<br>LIME TUFF DWARF MAT RUSH | 5 GAL. | AS SHOWN | LOW |
| | MUH CAP | MUHLENBERGIA CAPILLARIS<br>PINK MUHLY GRASS | 1 GAL. | AS SHOWN | MODERATE |
| | MUH RIG | MUHLENBERGIA RIGENS<br>DEER GRASS | 1 GAL. | AS SHOWN | LOW |
| | NAS PUL | NASSELLA PULCHRA<br>PURPLE NEEDLEGRASS | 1 GAL. | AS SHOWN | VERY LOW |
| | RHA MOU | RHAMNUS CALIFORNICA 'MOUND SAN BRUNO'<br>MOUND SAN BRUNO COFFEEBERRY | 5 GAL. | AS SHOWN | LOW |
| | ROS CAL | ROSA CALIFORNICA<br>CALIFORNIA WILD ROSE | 1 GAL. | AS SHOWN | LOW |
| | ROS TUS | ROSMARINUS OFFICINALIS 'TUSCAN BLUE'<br>TUSCAN BLUE ROSEMARY | 1 GAL. | AS SHOWN | MODERATE |
| | SAL API | SALVIA APIANA<br>WHITE SAGE | 1 GAL. | AS SHOWN | LOW |
| | SAL CLE | SALVIA CLEVELANDII<br>CLEVELAND SAGE | 5 GAL. | AS SHOWN | LOW |
| | SAL PO4 | SALVIA X 'POZO BLUE'<br>POZO BLUE SAGE | 1 GAL. | AS SHOWN | LOW |
| | SEN CYL | SENECIO CYLINDRICUS<br>NARROW-LEAF CHALKSTICKS | 1 GAL. | AS SHOWN | LOW |
| | WES B12 | WESTRINGIA FRUTICOSA 'BLUE GEM'<br>COAST ROSEMARY | 5 GAL. | AS SHOWN | LOW |
| | WES LOW | WESTRINGIA FRUTICOSA 'WES06'<br>LOW HORIZON™ COAST ROSEMARY | 5 GAL. | AS SHOWN | LOW |




TOTAL LANDSCAPE AREA: 23,260 SQ. FT.
TOTAL SHADED LANDSCAPE AREA REQUIRED: 20.0% OF TOTAL LANDSCAPE AREA.
TOTAL SHADED LANDSCAPE AREA PROVIDED: 50.3% OF TOTAL LANDSCAPE AREA = 11,711 SQ. FT.




TOTAL HARDSCAPE AREA: 35,539 SQ. FT.
TOTAL SHADED HARDSCAPE AREA REQUIRED: 20.0% OF TOTAL HARDSCAPE AREA.
TOTAL SHADED HARDSCAPE AREA PROVIDED: 28.0% OF TOTAL HARDSCAPE AREA = 9,954 SQ. FT.

## NOTES

1. CANOPY SIZES SHOWN ARE APPROXIMATE AND ARE ESTIMATED TO REPRESENT CANOPY SPREAD AFTER 15 YEARS OF MATURITY.
2. SHADED AREAS ARE ESTIMATED FROM CAST SHADE STUDIES MEASURED AT NOON ON SUMMER SOLSTICE.
3. TREE SHADING ON LANDSCAPE AND HARDSCAPE AREA ARE CALCULATED PER GREEN CODE 5.106.12.

1 TREE SHADING SITE PLAN DIAGRAM

SCALE: 1" = 50'-0"

0 50' 100' 150'

NORTH

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLANTING NOTES & SCHEDULE**

**DSA SUBMITTAL**

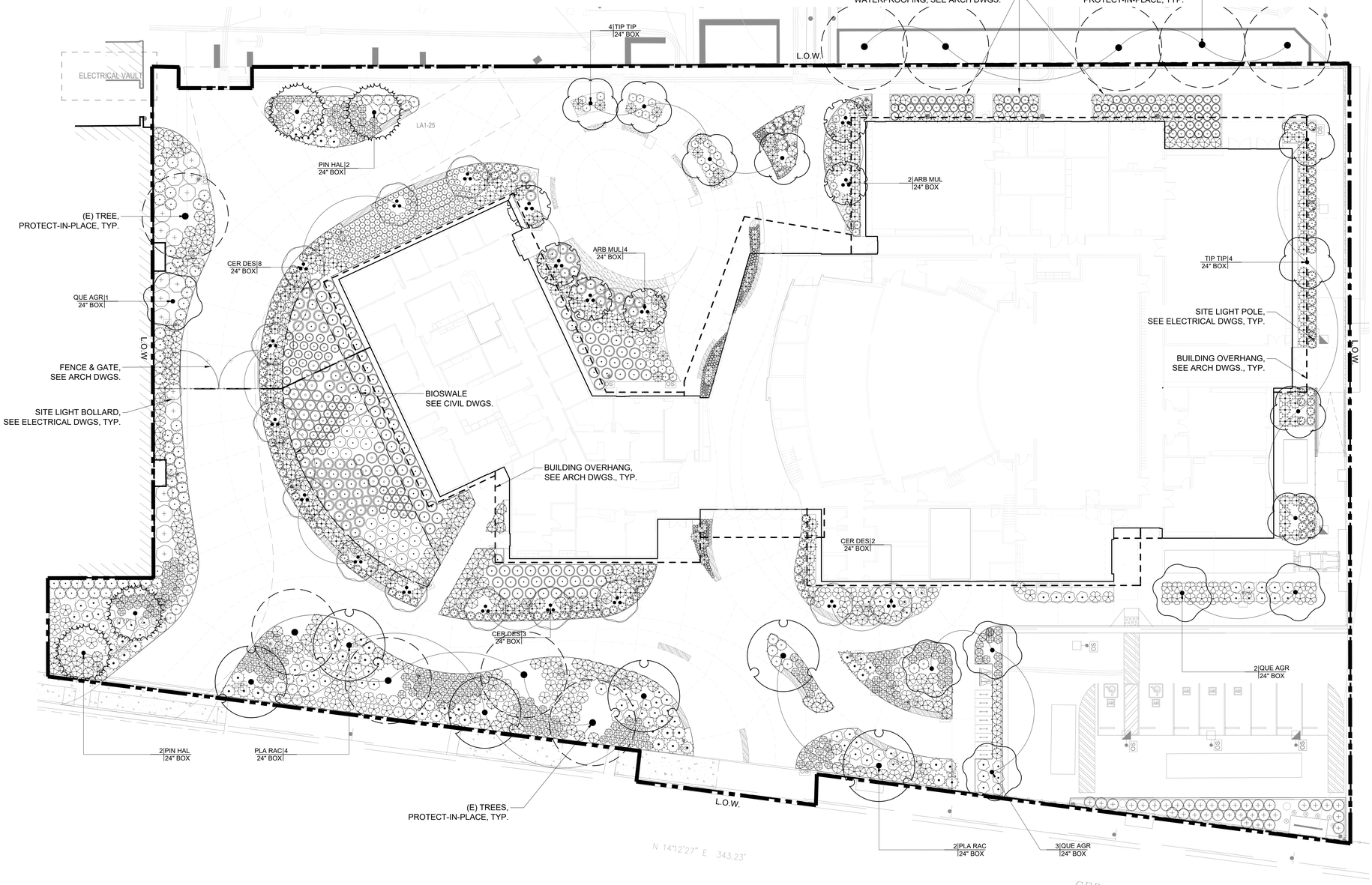
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## SHRUB SCHEDULE

| SHRUBS | CODE | BOTANICAL / COMMON NAME | SIZE | SPACING | WUCOLS |
|---|---|---|---|---|---|
| | AEO ARB | AEONIUM ARBOREUM<br>TREE AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO CRL | AEONIUM X 'CAROL'<br>CAROL AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO SUN | AEONIUM X 'SUNBURST'<br>SUNBURST AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AEO ZWT | AEONIUM X 'ZWARTKOP'<br>ZWARTKOP AEONIUM | 5 GAL. | AS SHOWN | LOW |
| | AGA ATT | AGAVE ATTENUATA<br>FOXTAIL AGAVE | 5 GAL. | AS SHOWN | LOW |
| | ALO STR | ALOE STRIATA<br>CORAL ALOE | 5 GAL. | AS SHOWN | LOW |
| | CAR BAR | CAREX BARBARAE<br>SANTA BARBARA SEDGE | 1 GAL. | AS SHOWN | LOW |
| | CAR BOX | CARISSA MACROCARPA 'BOXWOOD BEAUTY'<br>BOXWOOD BEAUTY NATAL PLUM | 1 GAL. | AS SHOWN | MODERATE |
| | CEA JOY | CEANOTHUS X 'JOYCE COULTER'<br>JOYCE COULTER WILD LILAC | 5 GAL. | AS SHOWN | MODERATE |
| | GAL SPE | GALVEZIA SPECIOSA<br>ISLAND SNAPDRAGON | 5 GAL. | AS SHOWN | LOW |
| | GRE ROS | GREVILLEA ROSMARINIFOLIA<br>ROSEMARY GREVILLEA | 5 GAL. | AS SHOWN | LOW |
| | JUN ELK | JUNCUS PATENS 'ELK BLUE'<br>SPREADING RUSH | 1 GAL. | AS SHOWN | LOW |
| | LOM LI3 | LOMANDRA LONGIFOLIA 'LOMLON'<br>LIME TUFF DWARF MAT RUSH | 5 GAL. | AS SHOWN | LOW |
| | MUH CAP | MUHLENBERGIA CAPILLARIS<br>PINK MUHLY GRASS | 1 GAL. | AS SHOWN | MODERATE |
| | MUH RIG | MUHLENBERGIA RIGENS<br>DEER GRASS | 1 GAL. | AS SHOWN | LOW |
| | NAS PUL | NASSELLA PULCHRA<br>PURPLE NEEDLEGRASS | 1 GAL. | AS SHOWN | VERY LOW |
| | RHA MOU | RHAMNUS CALIFORNICA 'MOUND SAN BRUNO'<br>MOUND SAN BRUNO COFFEEBERRY | 5 GAL. | AS SHOWN | LOW |
| | ROS CAL | ROSA CALIFORNICA<br>CALIFORNIA WILD ROSE | 1 GAL. | AS SHOWN | LOW |
| | ROS TUS | ROSMARINUS OFFICINALIS 'TUSCAN BLUE'<br>TUSCAN BLUE ROSEMARY | 1 GAL. | AS SHOWN | MODERATE |
| | SAL API | SALVIA APIANA<br>WHITE SAGE | 1 GAL. | AS SHOWN | LOW |
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| | SEN CYL | SENECIO CYLINDRICUS<br>NARROW-LEAF CHALKSTICKS | 1 GAL. | AS SHOWN | LOW |
| | WES B12 | WESTRINGIA FRUTICOSA 'BLUE GEM'<br>COAST ROSEMARY | 5 GAL. | AS SHOWN | LOW |
| | WES LOW | WESTRINGIA FRUTICOSA 'WES06'<br>LOW HORIZON™ COAST ROSEMARY | 5 GAL. | AS SHOWN | LOW |

## 1 PLANTING PLAN

SCALE: 1" = 16'-0"

0 16' 32' 48'

1/16"=1'-0"

NORTH

## TREE SCHEDULE

| TREES | CODE | QTY | BOTANICAL / COMMON NAME | SIZE | SPACING | WUCOLS |
|---|---|---|---|---|---|---|
| | ARB MUL | 6 | ARBUTUS X 'MARINA'<br>MARINA STRAWBERRY TREE MULTI-TRUNK | 24" BOX | AS SHOWN | MODERATE |
| | CER DES | 13 | CERCIDIUM X 'DESERT MUSEUM'<br>DESERT MUSEUM PALO VERDE | 24" BOX | AS SHOWN | LOW |
| | PIN HAL | 4 | PINUS HALEPENSIS<br>ALEPO PINE | 24" BOX | AS SHOWN | LOW |
| | PLA RAC | 6 | PLATANUS RACEMOSA<br>CALIFORNIA SYCAMORE | 24" BOX | AS SHOWN | MODERATE |
| | QUE AGR | 6 | QUERCUS AGRIFOLIA<br>COAST LIVE OAK | 24" BOX | AS SHOWN | LOW |
| | TIP TIP | 8 | TIPUANA TIPU<br>TIPU TREE | 24" BOX | AS SHOWN | MODERATE |
| | EX | 10 | EXISTING TREE | PROTECTED IN PLACE | | |

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLANTING PLAN**

**DSA SUBMITTAL**

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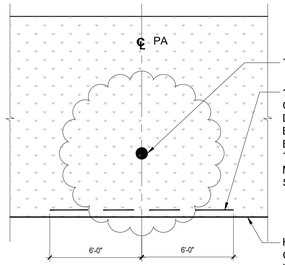
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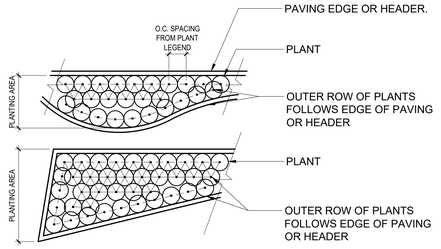



NOTE:
1. MIN. 10" LONG ROOT BARRIER TO BE ADDED AT THE EDGE OF HARDSCAPE IF DISTANCE BETWEEN TRUNK AND HARDSCAPE EDGE TO BE LESS THAN 6 FEET.

2. WHEN TREE IS LOCATED WITHIN 10' OF BUILDING FOUNDATION, ROOT BARRIER IS TO BE 12 LF OF 40"- DEEP ROOT CONTROL BARRIER.

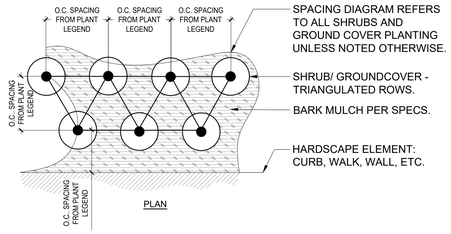
## 7 ROOT BARRIER

1/4" = 1'-0" P-ARH-01



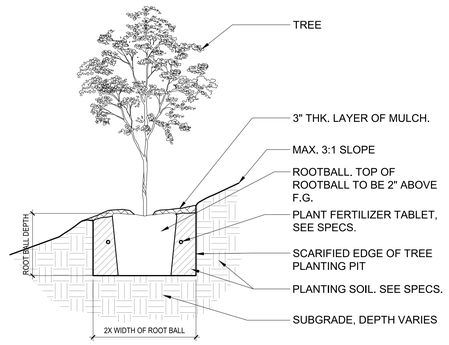

## 6 IRREGULAR SHRUB AND GROUNDCOVER SPACING

3/16" = 1'-0" P-ARH-09



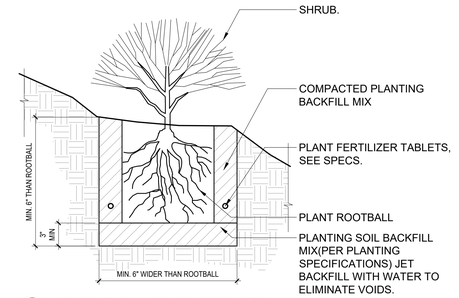

## 5 SHRUB AND GROUNDCOVER SPACING

1/2" = 1'-0" P-ARH-10



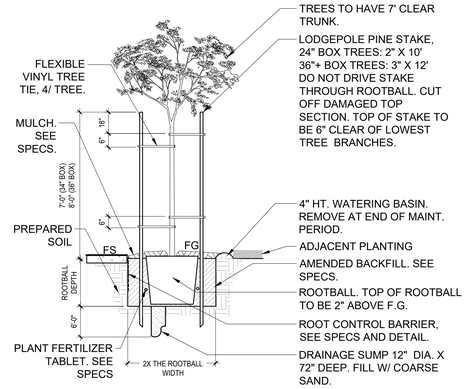

## 4 TREE PLANTING AT SLOPE

1/2" = 1'-0" P-ARH-06



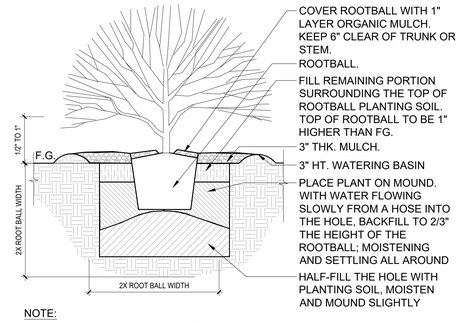

## 3 SHRUB PLANTING AT SLOPE

1 1/2" = 1'-0" P-ARH-07




## 2 TREE PLANTING WITH DOUBLE STAKES

3/8" = 1'-0" P-ARH-05




NOTE:
1. PRIOR TO ANY BACKFILLING, FILL PLANTING HOLE WITH WATER AND ALLOW TO PERCOLATE (DRAIN) INTO SUBSOIL.
2. AFTER PLANTING, WATER THOROUGHLY, FILL BASIN WITH WATER AND SPRINKLING AROUND TO SETTLE BACKFILL, MULCH AND BERM
3. ALLOW TO SOAK IN AND REPEAT.

## 1 SHRUB PLANTING

1/2" = 1'-0" P-ARH-08

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SHEET NAME:
**PLANTING DETAILS**

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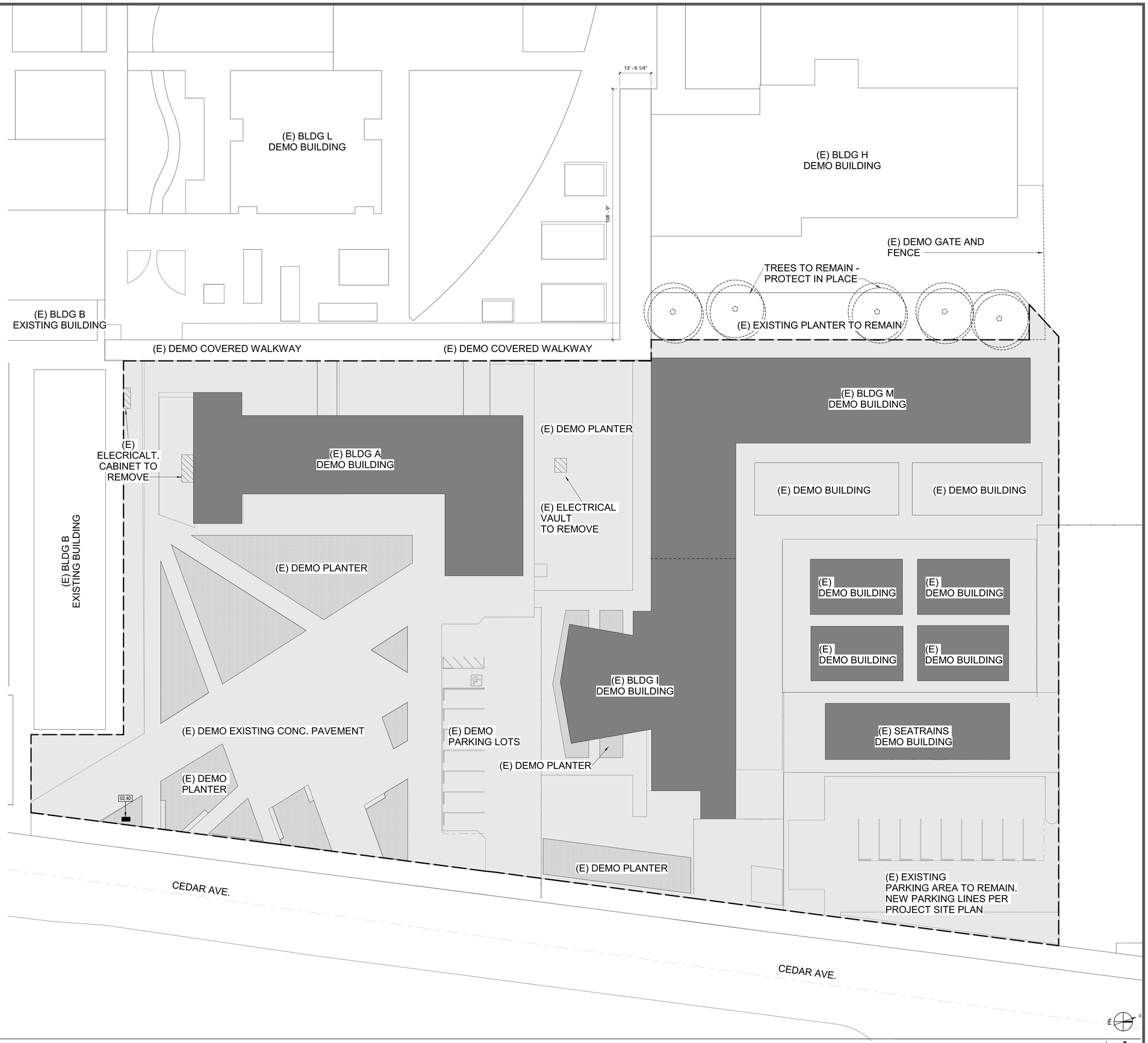
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ARCHITECTURAL DEMOLITION SITE PLAN **1**
1/16" = 1'-0"

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## KEYNOTES

02.40 (E) MARQUEE TO BE RELOCATED PER PROJECT SITE PLAN.

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OF WORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

## LEGEND

- APPROXIMATE LIMIT OF WORK. REFER TO ADDITIONAL DRAWINGS FOR WORK WHICH MAY EXTEND BEYOND THIS APPROXIMATE LIMIT OF WORK LINE.
- PROPERTY LINE
- EXISTING BUILDINGS TO BE DEMOLISHED
- AREA TO INTERVENE
- EXISTING - TO REMAIN

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SHEET NAME:

**SITE DEMOLITION PLAN**

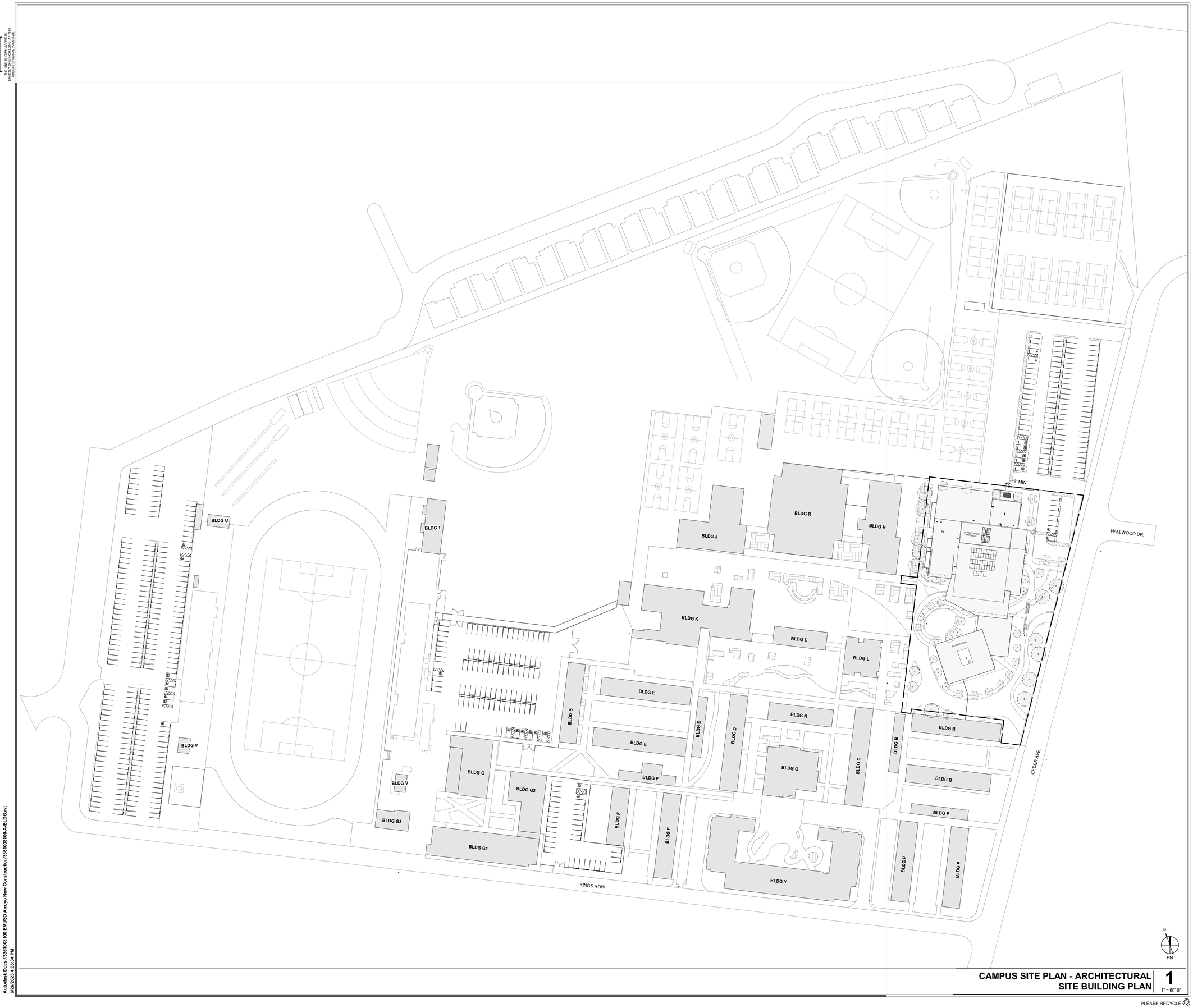
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CAMPUS SITE PLAN - ARCHITECTURAL SITE BUILDING PLAN

1
1" = 60'-0"

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## LEGEND

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- PROPERTY LINE
- EXISTING BUILDINGS
- NEW BUILDING
- EXISTING PARKING PAINT STRIPES
- FIRE HYDRANT - SEE CIVIL DRAWINGS

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

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**CAMPUS SITE PLAN**

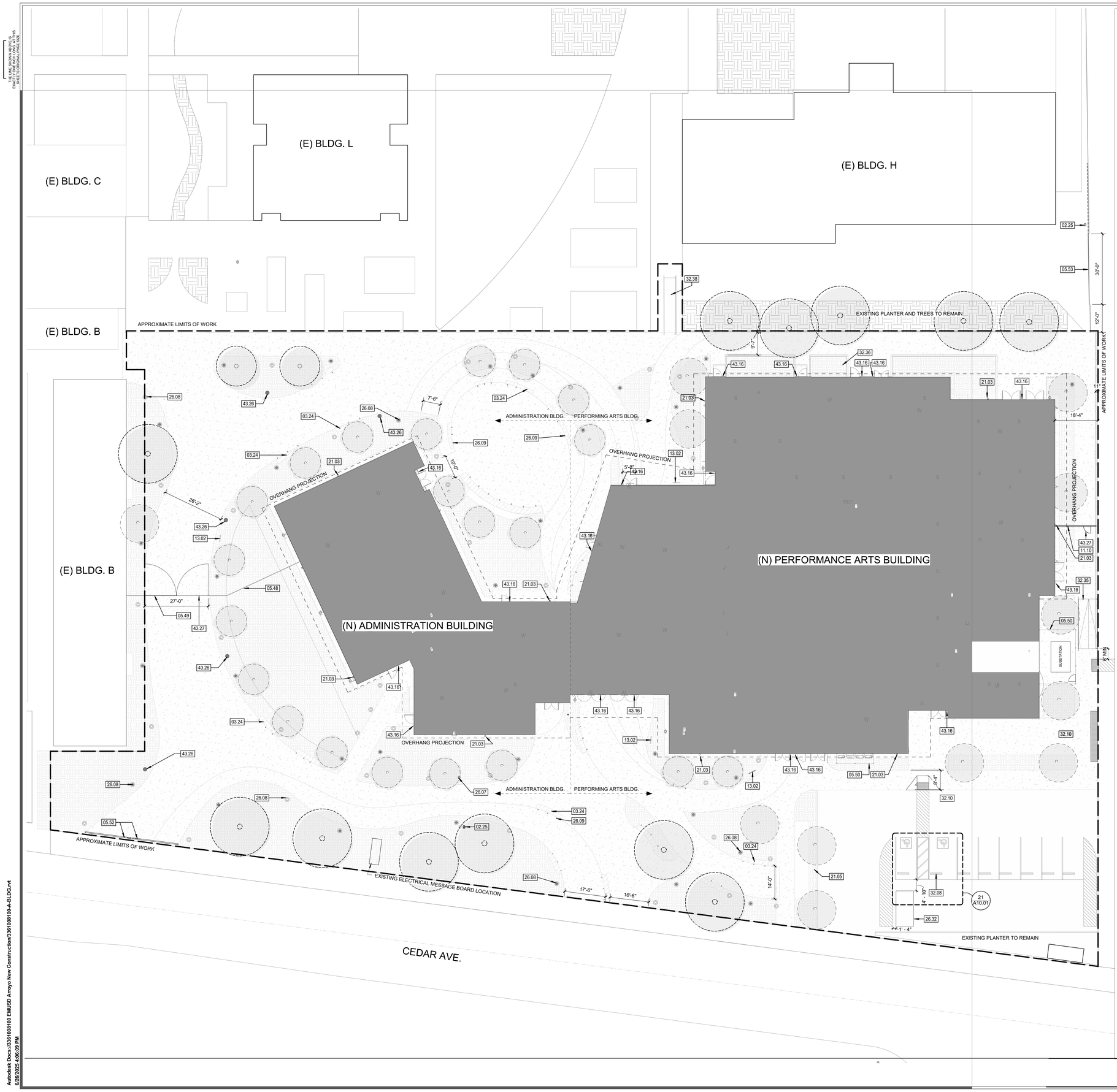
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## LEGEND

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- PROPERTY LINE
- EXISTING BUILDINGS
- NEW BUILDING
- BUILDING OVERHANG / CANOPIES
- CONCRETE - REFER TO LANDSCAPE FOR PAVINGS
- PLANTING AREA - REFER TO LANDSCAPE FOR PAVINGS
- CONCRETE SITE WALL / BENCH
- DECOMPOSED GRANITE - REFER TO LANDSCAPE FOR PAVINGS
- (E) ASPHALT TO REMAIN, RESURFACE WITH NEW PARKING STRIPING
- TREE, REFER TO LANDSCAPE DWGS
- EXTERIOR LIGHTING FIXTURE
- EXTERIOR LIGHTING FIXTURE

## KEYNOTES

| | |
|---|---|
| 02.25 | (E) FIRE HYDRANT TO REMAIN |
| 03.24 | CIP CONCRETE SEAT WALL - SEE L6.01 |
| 05.48 | SECURITY METAL FENCE - 2/A10.01 |
| 05.49 | WROUGHT IRON SECURITY GATE WITH KNOX BOX - 3/A10.02 |
| 05.50 | CHAIN LINK FENCE STEEL MESH - 8/A10.01 |
| 05.52 | VEHICULAR GATE - 1/A10.02 |
| 05.53 | EXISTING ROLLING GATE PER A#03-108641 |
| 11.10 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - WALL MOUNTED - 16/A10.51 |
| 13.02 | 3'X6.5' ENVIRONMENTAL GRAPHIC SIGNAGE, GRAPHIC & LOCATION TO BE FINALIZED BY ARCHITECT SEE DETAIL 19/A10.01 |
| 21.03 | RECESSED HOUSE BIB WITH COVER |
| 21.05 | FIRE DEPARTMENT CONNECTION, SEE CIVIL DRAWINGS |
| 26.07 | SITE POLE #2 - 1/A10.01 |
| 26.08 | LIGHT BOLLARD |
| 26.09 | STEP LIGHT - AT CONC. WALL BENCH - LA1-17 SJ3 PER ELECTRICAL |
| 26.32 | NEW 90" X 180" GENERATOR PER ELECTRICAL PLANS |
| 32.08 | CONCRETE WHEEL STOP - 3/A10.01 |
| 32.35 | STEEL RAMP RAILING 4/A10.01 & 6/L6.00 |
| 32.36 | PLANTER AT FIBER CEMENT WALL 11/A10.01 |
| 32.38 | NEW RAMP PER C2.0 |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |
| 43.26 | NO PARKING SIGN - 10/A10.02 |
| 43.27 | GATE SIGNAGE PER DETAIL 25/A10.01 |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO LANDSCAPE DRAWINGS FOR PAVING AND PLANTING INFORMATION
3. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR UTILITY INFORMATION
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ALL HARDSCAPE/PLANTING OUTSIDE OF LIMIT OFWORK LINE FOR CONNECTION OF UNDERGROUND UTILITIES

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PROJECT SITE PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**A1.21**

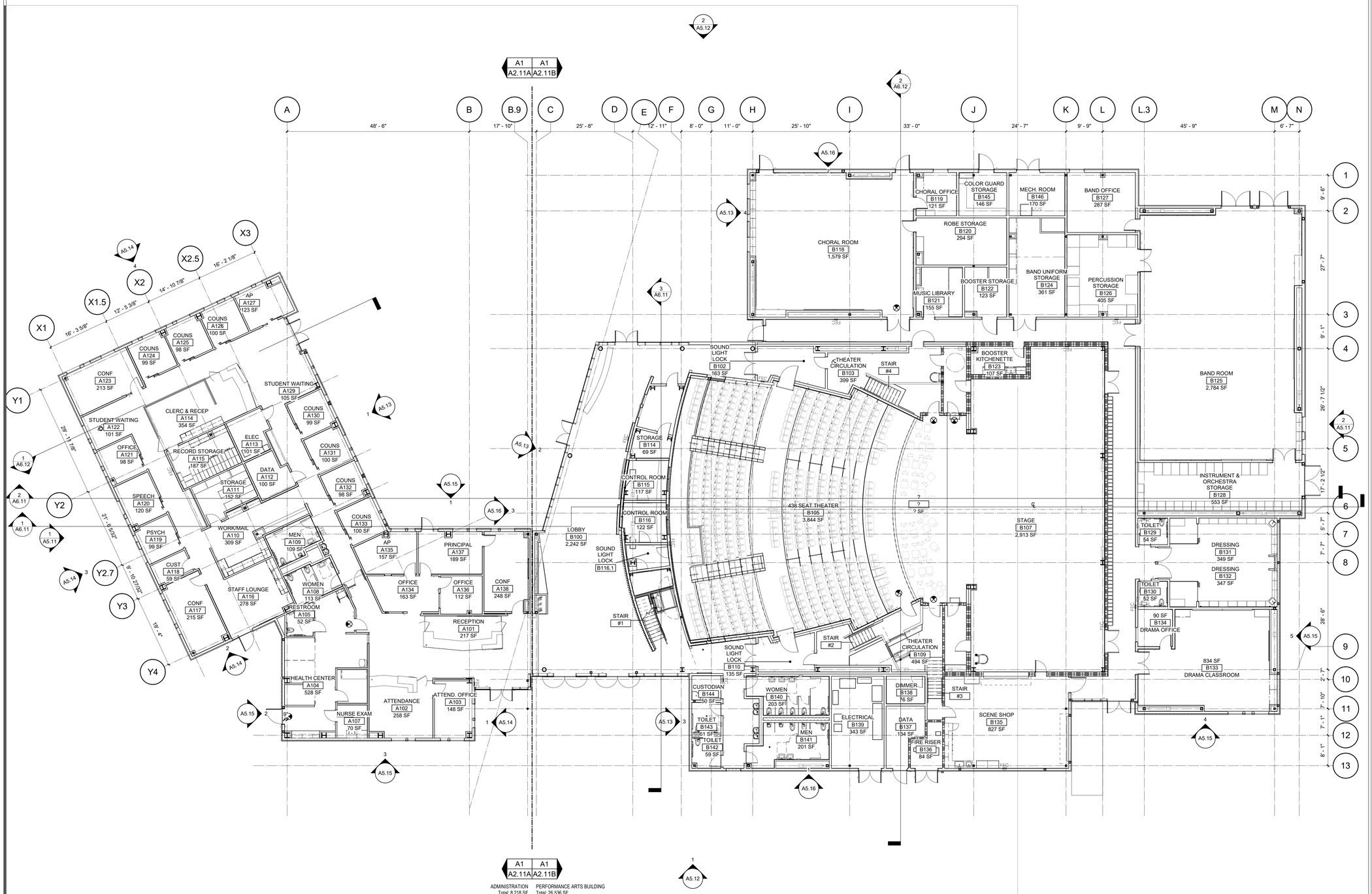
**ARCHITECTURAL SITE PLAN** 1 1/16" = 1'-0"

PLEASE RECYCLE

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## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER (SEMI-RECESSED)
- SLOPE DIRECTION
- 1i — STOREFRONT / WINDOW TAG, REFER TO A9.21-A9.24
- 101A — DOOR TAG, REFER TO DOOR SCHEDULE A9.11

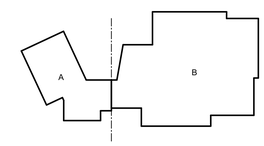
## KEYNOTES

| | |
|---|---|
| 03.02 | CONCRETE CURB |
| 10.77 | COPIER, OFOI |
| 21.02 | SEMI-RECESSED FIRE EXTINGUISHER CABINET - 1/A10.91 |

## NOTES

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3. FOR ADDITIONAL ELEVATION CALLOUTS SEE ENLARGED PLANS.
4. REFER TO INTERIOR ELEVATIONS FOR ALL CASEWORK INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
6. WALLS ARE TO BE TYPE AS4A, UNO.
7. SEE ENLARGED PLANS FOR ADDITIONAL CLEAR DIMENSIONS AND ACCESSIBILITY CLEARANCE REQUIREMENTS.
8. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
9. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT A - FLOOR PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# A2.11A

1ST FLOOR - SEGMENT A - FLOOR PLAN | A1 | 1/8" = 1'-0"

PN

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EQUIVALENT TO ONE INCH ON THE SHEETS ORIGINAL PAGE SIZE.

A1 | A2.11A
A1 | A2.12B

B.9 C D E F G H I J K L L.3 M N

25' - 8" | 12' - 11" | 8' - 0" | 11' - 0" | 25' - 10" | 33' - 0" | 24' - 7" | 9' - 9" | 11' - 1" | 34' - 8" | 6' - 7"

1 2 3 4 5 6 7 8 9 10 11 12 13

2' - 4" | 7' - 10" | 7' - 1" | 8' - 1" | 7' - 7" | 28' - 6" | 2' - 7" | 7' - 10" | 7' - 1" | 8' - 1"

CHORAL OFFICE B119 121 SF
COLOR GUARD STORAGE B145 146 SF
MECH. ROOM B146 170 SF
BAND OFFICE B127 287 SF
CHORAL ROOM B118 1,579 SF
ROBE STORAGE B120 294 SF
MUSIC LIBRARY B121 155 SF
BOOSTER STORAGE B122 123 SF
BAND UNIFORM STORAGE B124 361 SF
PERCUSSION STORAGE B126 405 SF
BAND ROOM B125 2,784 SF
SOUND LIGHT LOCK B102 163 SF
THEATER CIRCULATION B103 399 SF
STAGE CIRCULATION B104 108 SF
BOOSTER KITCHENETTE B123 107 SF
TICKETS/ CONCESSIONS B113 114 SF
STORAGE B114 69 SF
CONTROL ROOM B115 117 SF
OPEN TO ABOVE
CONTROL ROOM B116 122 SF
SOUND LIGHT LOCK B116.1 70 SF
438 SEAT THEATER B105 3,844 SF
STAGE B107 2,913 SF
ORCH. PIT B106 399 SF
INSTRUMENT & ORCHESTRA STORAGE B128 553 SF
TOILET B129 54 SF
DRESSING B131 349 SF
TOILET B130 52 SF
DRAMA OFFICE B134 90 SF
DRAMA CLASSROOM B133 834 SF
CONF A138 248 SF
LOBBY B100 2,242 SF
STAIR #1
STAIR #2
STAIR #3
CUSTODIAN B144 50 SF
TOILET B143 61 SF
TOILET B142 59 SF
WOMEN B140 203 SF
PUBLIC TOILETS B112 185 SF
MEN B141 201 SF
ELECTRICAL B139 343 SF
DIMMER B138 76 SF
DATA B137 134 SF
FIRE RISER B136 84 SF
CIRCULATION B108 102 SF
CIRCULATION B109 494 SF
CIRCULATION B149 1,410 SF
SCENE SHOP B135 827 SF
TOILET B132 54 SF
TOILET B131.1 54 SF

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## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER (SEMI-RECESSED)
- SLOPE DIRECTION
- 1i — STOREFRONT / WINDOW TAG, REFER TO A9.21-A9.24
- 101A — DOOR TAG, REFER TO DOOR SCHEDULE A9.11

| THEATER SEATING CALCULATION | REQUIRED | PROVIDED |
|---|---|---|
| FIXED SEATING | - | 426 |
| WHEELCHAIR SPACES (CBC 11B-221.2.1) | 6 | 6 |
| COMPANION SEATS (CBC 11B-221.3) | 6 | 6 |
| DESIGNATED AISLE SEATS (CBC 11B-221.4) | 3 | 4 |
| SEMI-AMBULANT SEATS (CBC 11B-221.6) | 5 | 8 |
| **TOTAL NUMBER OF SEATS:** | 432 + 6 WHEELCHAIR | |

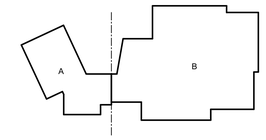
## KEYNOTES

| | |
|---|---|
| 08.26 | EXTERIOR ROLL UP DOOR. SEE 6/A10.92 |
| 08.32 | INTERIOR ROLL UP DOOR. SEE 22/A10.92 |
| 10.94 | KNOX BOX PER CFC 506 (LISTED PER UL 1037) - 4/A10.02 |
| 12.06 | COMPANION SEAT PER CBC 11B-221.3 |
| 12.07 | SEMI-AMBULANT SEATS PER CBC 11B-221.6 |
| 12.08 | DESIGNATED AISLE SEAT W/ FOLDABLE OR RETRACTABLE ARMRESTS, IDENTIFIED BY A SIGN OR MARKER WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, PER CBC 11B-802.4 |
| 21.01 | FIRE SPRINKLER RISER - VERIFY LOCATION W/FIRE PROTECTION DRAWINGS |
| 21.02 | SEMI-RECESSED FIRE EXTINGUISHER CABINET - 1/A10.91 |
| 21.06 | FIRE DEPARTMENT CONNECTION AND PUMP TEST OUTLETS, SEE FIRE SPRINKLER DRAWINGS |
| 32.14 | COLORED CONCRETE BENCH - 6 & 7/ A10.91 |

## NOTES

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5. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
6. WALLS ARE TO BE TYPE AS4A, UNO.
7. SEE ENLARGED PLANS FOR ADDITIONAL CLEAR DIMENSIONS AND ACCESSIBILITY CLEARANCE REQUIREMENTS.
8. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
9. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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DATE: 10/15/2025

HMC Architects
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LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025 RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - FLOOR PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

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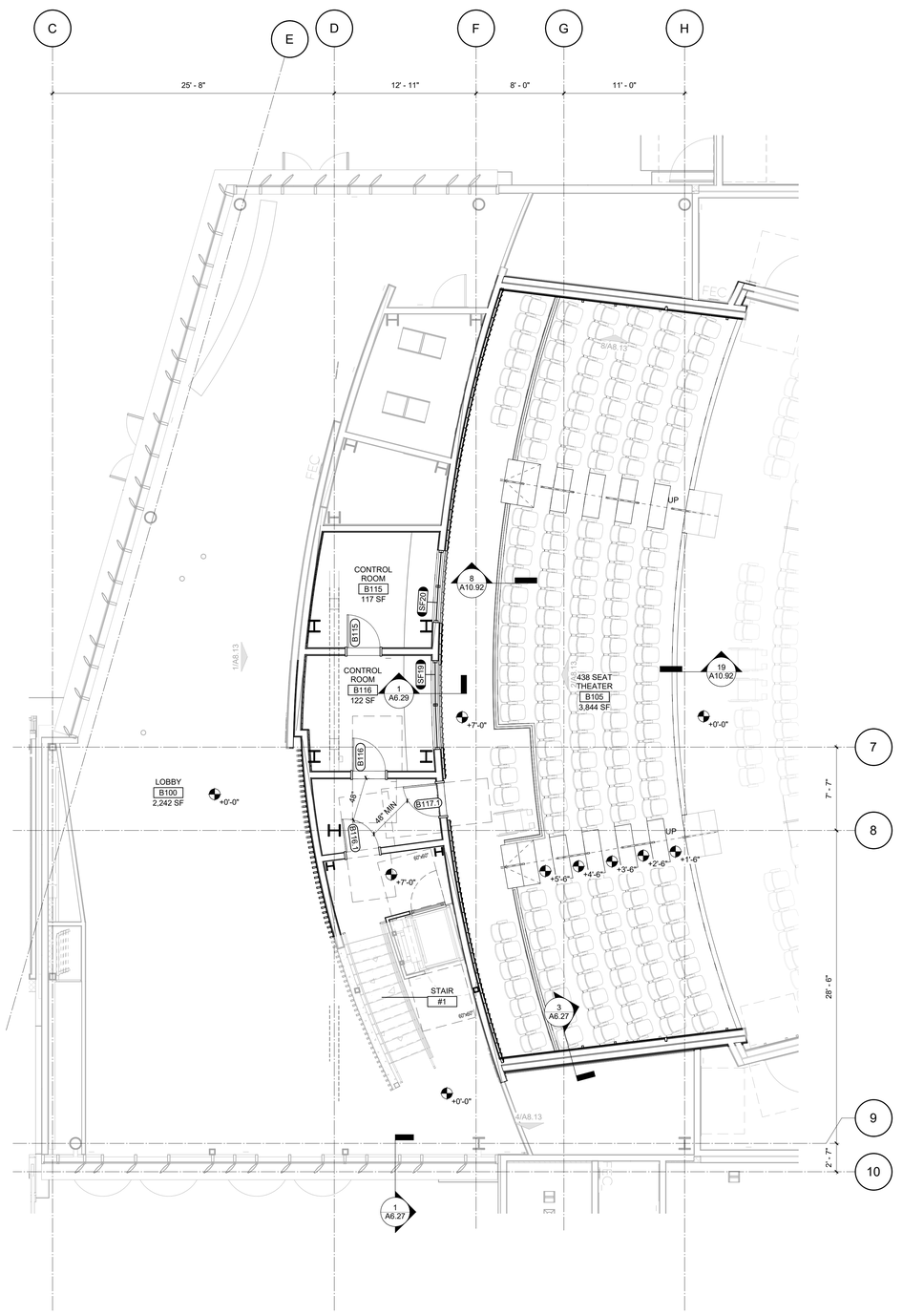
1ST FLOOR - SEGMENT B - FLOOR PLAN | A1 | 1/8" = 1'-0"

PN

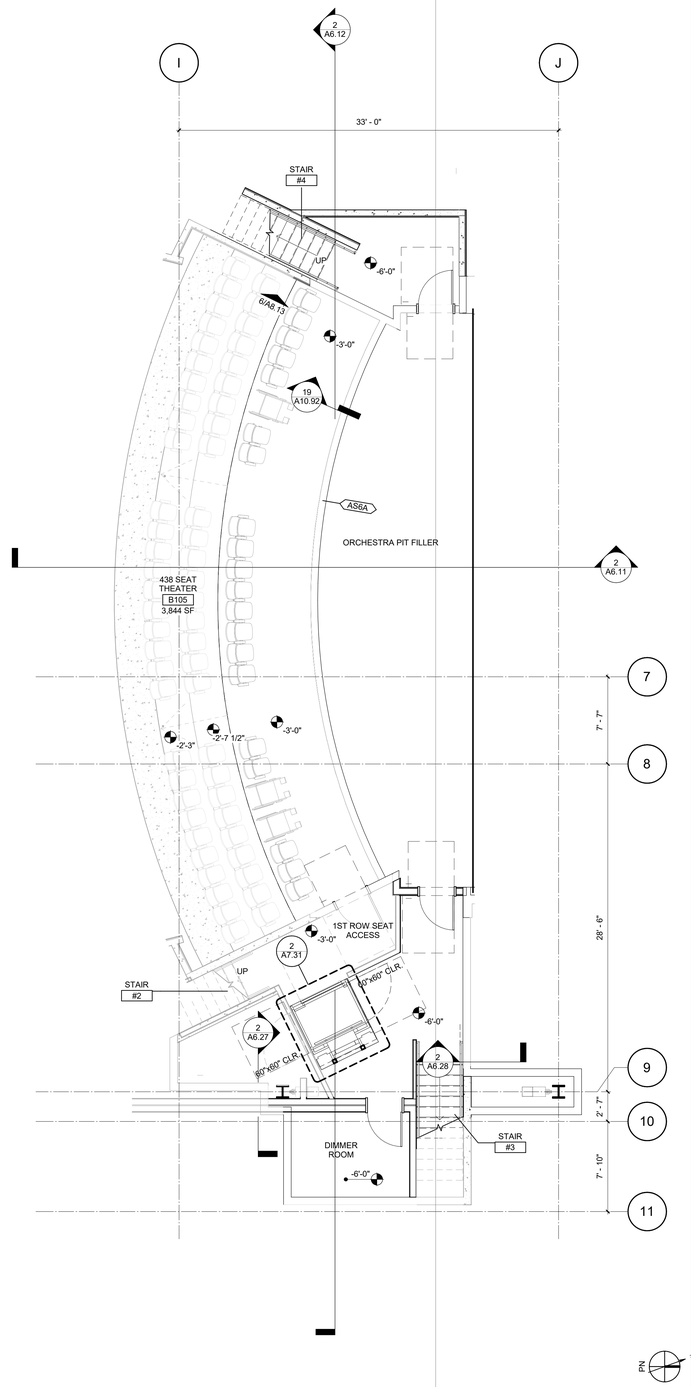
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1ST FLOOR - CONTROL ROOM LEVEL - FLOOR PLAN | 2 | 3/16" = 1'-0"




1ST FLOOR - ORCHESTRA PIT LEVEL - FLOOR PLAN | 1 | 3/16" = 1'-0"

## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER (SEMI-RECESSED)
- SLOPE DIRECTION
- 1| — STOREFRONT / WINDOW TAG, REFER TO A9.21-A9.24
- 101A — DOOR TAG, REFER TO DOOR SCHEDULE A9.11

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LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com


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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
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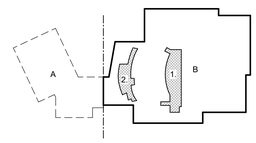
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## KEYNOTES

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. REFER TO G-SERIES SHEETS FOR ADDITIONAL INFO AND CODE REQUIREMENTS.
3. FOR ADDITIONAL ELEVATION CALLOUTS SEE ENLARGED PLANS.
4. REFER TO INTERIOR ELEVATIONS FOR ALL CASEWORK INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE
6. WALLS ARE TO BE TYPE AS4A, UNO.
7. SEE ENLARGED PLANS FOR ADDITIONAL CLEAR DIMENSIONS AND ACCESSIBILITY CLEARANCE REQUIREMENTS.
8. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
9. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - CONTROL ROOM & ORCHESTRA PIT LEVEL**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

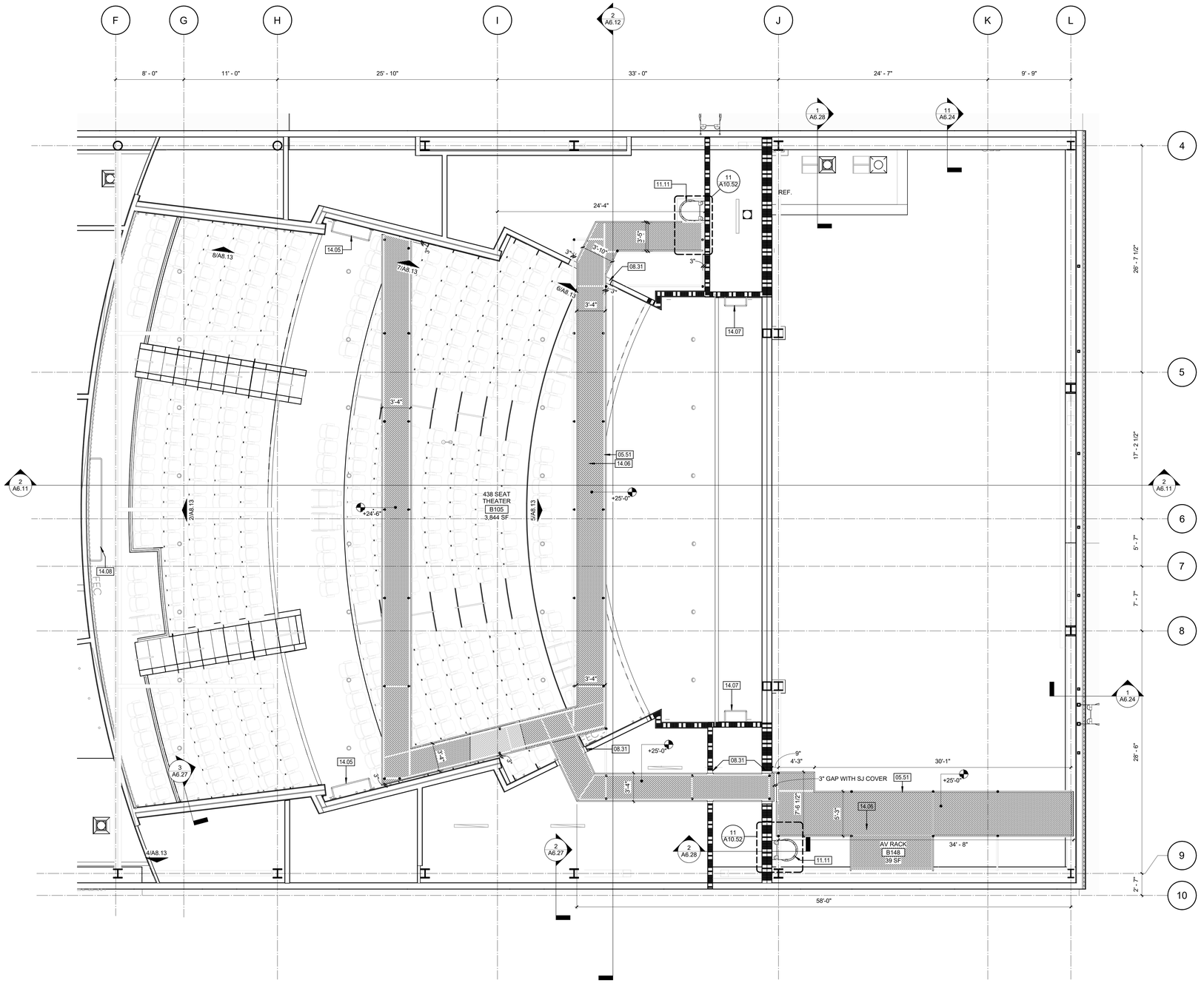
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## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER (SEMI-RECESSED)
- SLOPE DIRECTION
- 1I — STOREFRONT / WINDOW TAG, REFER TO A9.21-A9.24
- 101A — DOOR TAG, REFER TO DOOR SCHEDULE A9.11

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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 05.51 | SCHEDULE 40 NOMINAL SIZE 1.66" OD STD. STL. PIPE CATWALK RAILING. REFER TO STRUCTURAL & THEATER DRAWINGS |
| 08.31 | WALL OPENING. SEE STRUCTURAL DWGS FOR FRAMING. |
| 11.11 | CAGE LADDER - 17/A10.51 |
| 14.05 | 54" BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 3,10/A10.92 |
| 14.06 | CATWALK (3/8" CONT STEEL TREAD PLATE FINISH). REFER TO STRUCTURAL DRAWINGS (S8.01) FOR CATWALK DETAILS. |
| 14.07 | 30" BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 3,10/A10.92 |
| 14.08 | 1 BAY BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 18/A10.92 |

## NOTES

1ST FLOOR - CATWALK LEVEL - FLOOR PLAN
1
3/16" = 1'-0"

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - CATWALK LEVEL - SEGMENT B - FLOOR PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

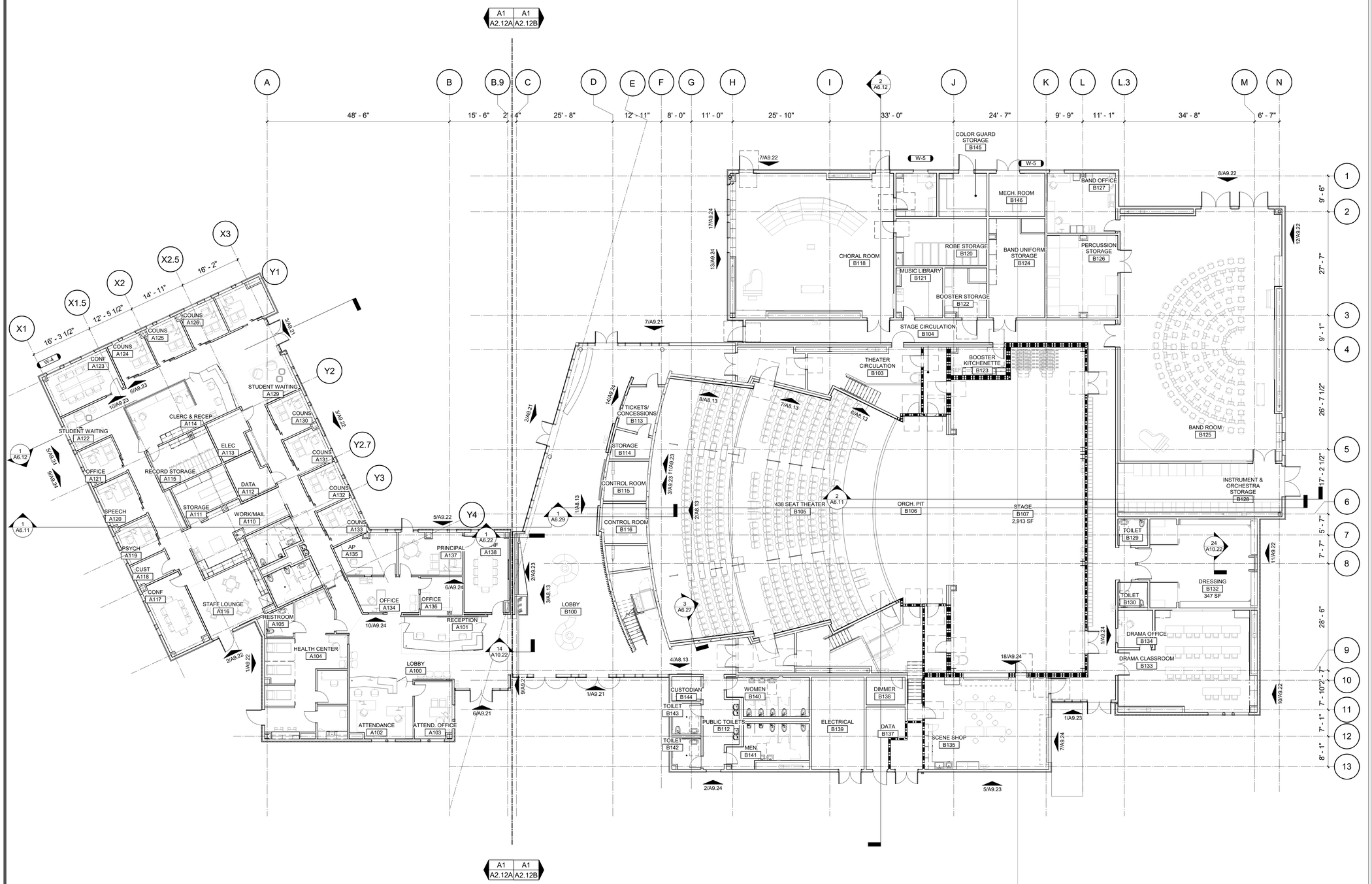
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1ST FLOOR - DIMENSION PLAN **A1**
3/32" = 1'-0"

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## KEYNOTES

## LEGEND - OVERALL FLOOR PLANS

**BUILDING ELEMENTS**

WALL / PARTITION

C12F — WALL TAG, REFER TO A10.11

## NOTES

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9. REFER TO ELEVATIONS FOR FINISHES.

FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - DIMENSION PLAN**

**DSA SUBMITTAL**

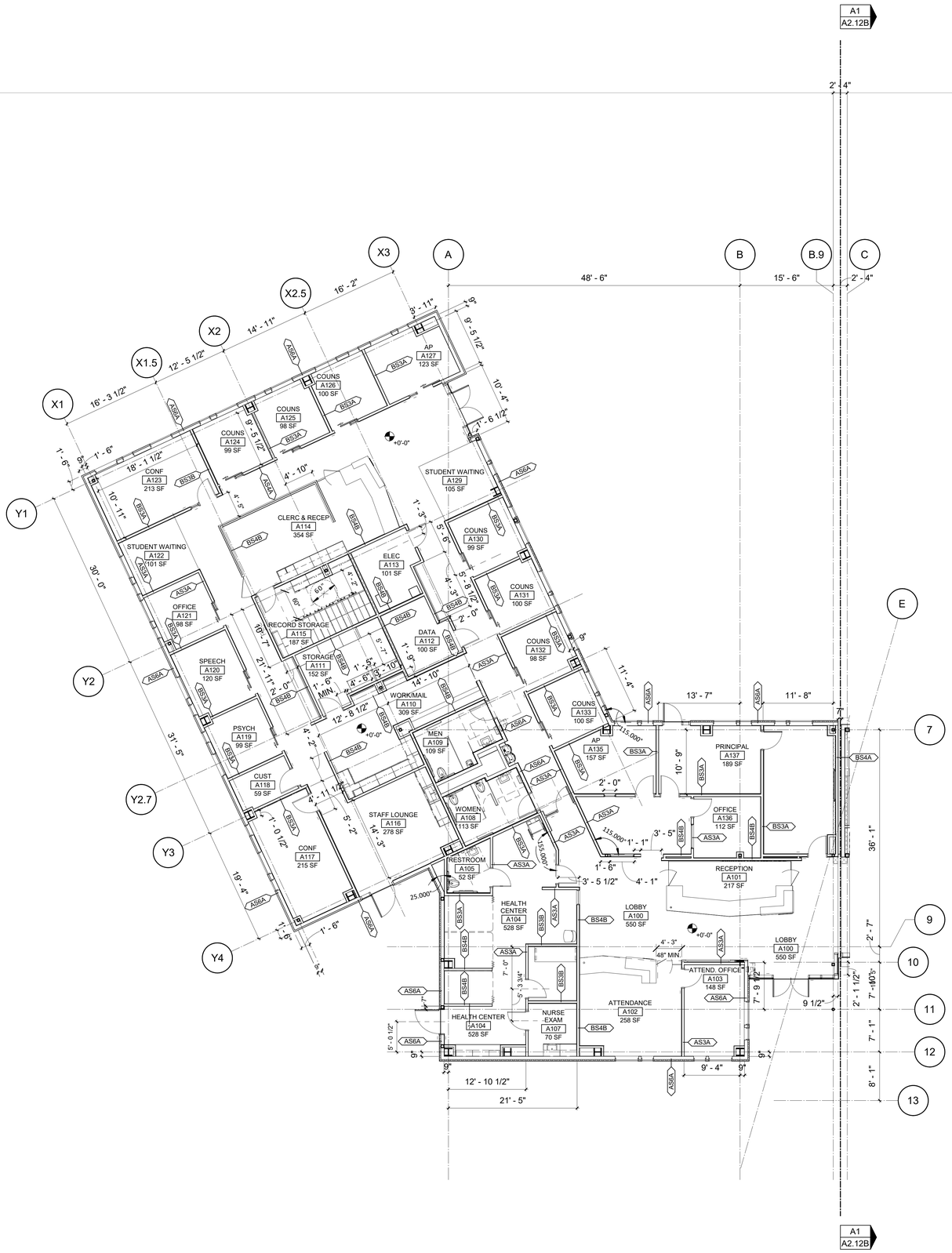
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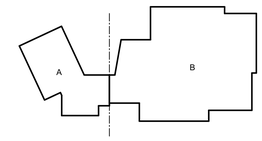

## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- AS4A — WALL TAGS - REFER TO A10.11
- AS4A / SS.1B

## NOTES

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10. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




## KEYNOTES

PN

1ST FLOOR - SEGMENT A - DIMENSION PLAN AND WALL TYPES | A1 | 1/8" = 1'-0"

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT A - DIMENSION PLAN & WALL TYPES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

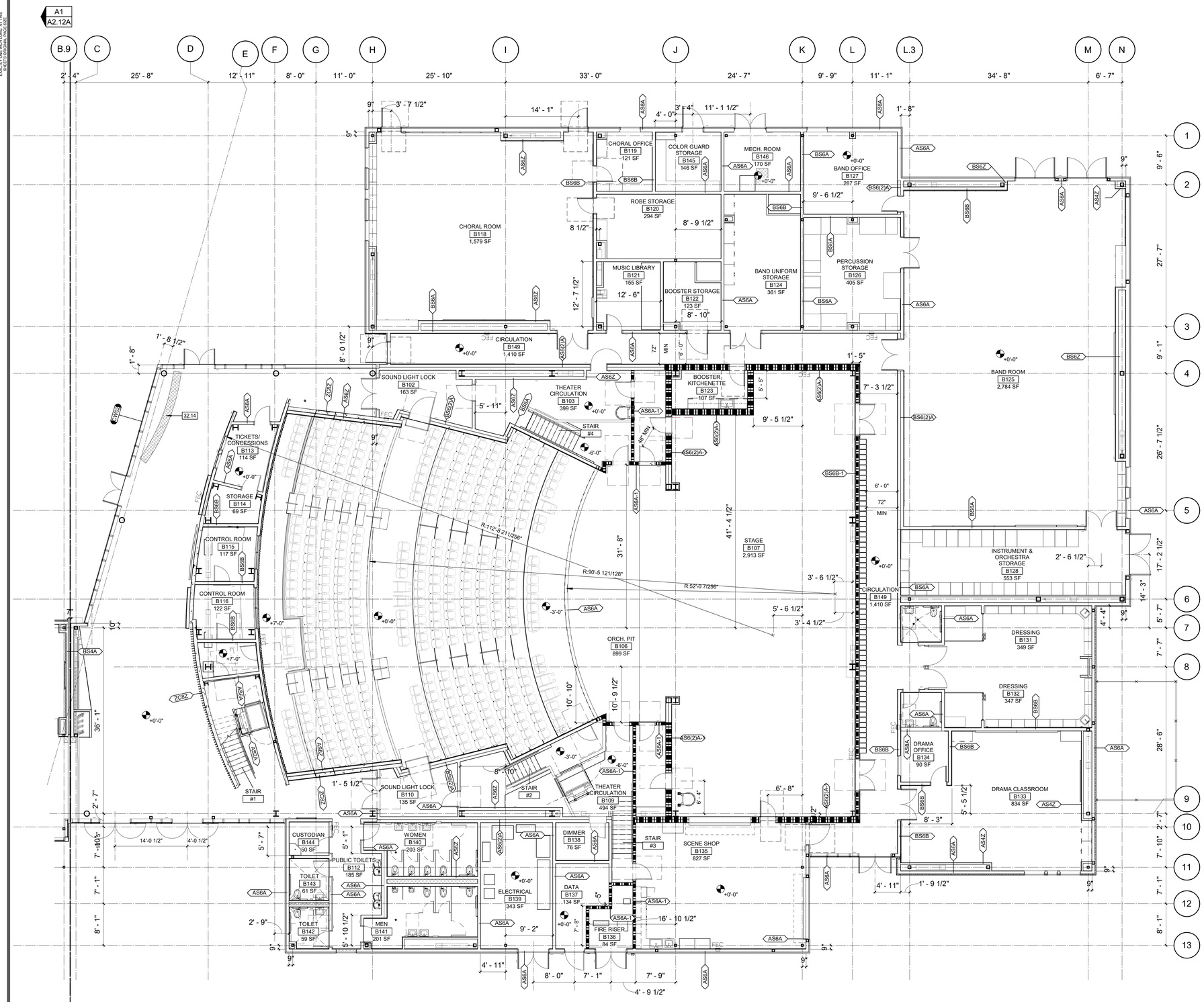
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## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- AS4A — WALL TAGS - REFER TO A10.11 (AS4A / 55 1B)

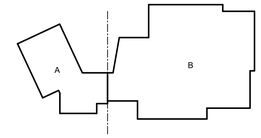
## KEYNOTES

32.14 COLORED CONCRETE BENCH - 6 & 7/ A10.91

## NOTES

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10. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - DIMENSION PLAN & WALL TYPES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

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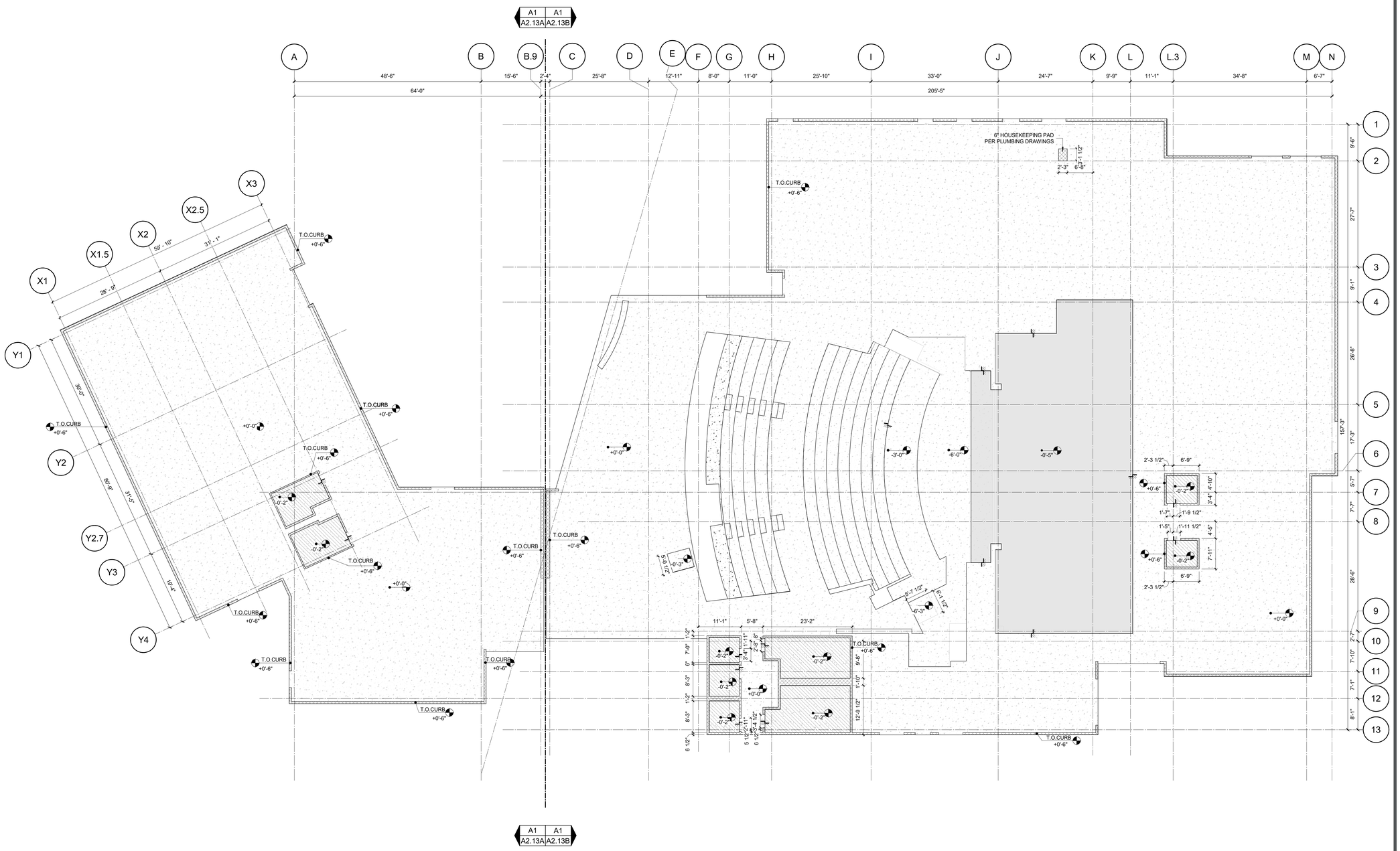
1ST FLOOR - SEGMENT B - DIMENSION PLAN AND WALL TYPES | A1 | 1/8" = 1'-0"

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## LEGEND- SLAB PLANS

**BUILDING ELEMENTS**

- CONCRETE SLAB
- DEPRESSED SLAB WITH SLOPED TOPPING SLAB
- CONCRETE CURB
- 6 5/8" WIDE CONCRETE CURB AT EXTERIOR WALLS
- CONCRETE EQUIPMENT CURB, SEE STRUCT. COORD LOCATIONS W/ ELEC.
- DEPRESSED SLAB FOR STAGE FINISH
- FLOOR DRAIN
- STEPPED LEVEL CHANGE

## GENERAL NOTES- SLAB PLANS

1. REFER TO CIVIL PLANS FOR FINISH FLOOR ELEVATIONS
2. SEE STRUCTURAL PLANS TO VERIFY EXTENT OF FLOOR SLAB DIMENSIONS
3. ALL LAYOUT DIMENSIONS TO BE VERIFIED IN FIELD BY THE CONTRACTOR
4. FLOOR PLAN WALL PARTITION DIMENSIONS GOVERN CONCRETE PARTITION WALL CURB LOCATIONS
5. REFER TO SPEC 07 26 16, FOR UNDER SLAB VAPOR BARRIER.
6. VERIFY EQUIPMENT PAD SIZE / INSTALLATION WITH MEP, STRUCTURAL DRAWINGS AND MANUFACTURER REQUIREMENTS. IN GENERAL PAD TO BE 6" LARGER THAN MOUNTED EQUIPMENT
7. COORDINATE FLOOR DRAIN, AND FLOOR SINK LOCATIONS WITH FLOOR PLANS, AND PLUMBING PLANS.
8. COORDINATE ALL SLAB EDGE EXTENTS W/ WALLS, WALL OPENINGS, AND EXTERIOR FINISH TYPES PER DETAILS.
9. COORDINATE ALL REQUIRED CLEAR OPENINGS, HVAC, SHAFTS & PENETRATIONS WITH MECHANICAL AND PLUMBING DRAWINGS.
10. COORDINATE CLEAR OPENING AT STAIR
11. REFER TO STRUCTURAL DRAWINGS SHEET SERIES "S2" FOR CONCRETE FLOOR TYPES, THICKNESS AND DEPRESSION.
12. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
13. FOR ALL VENT, PIPE AND DUCT PENETRATIONS, REFER TO MECHANICAL & PLUMBING DRAWINGS.

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SLAB EDGE PLAN**

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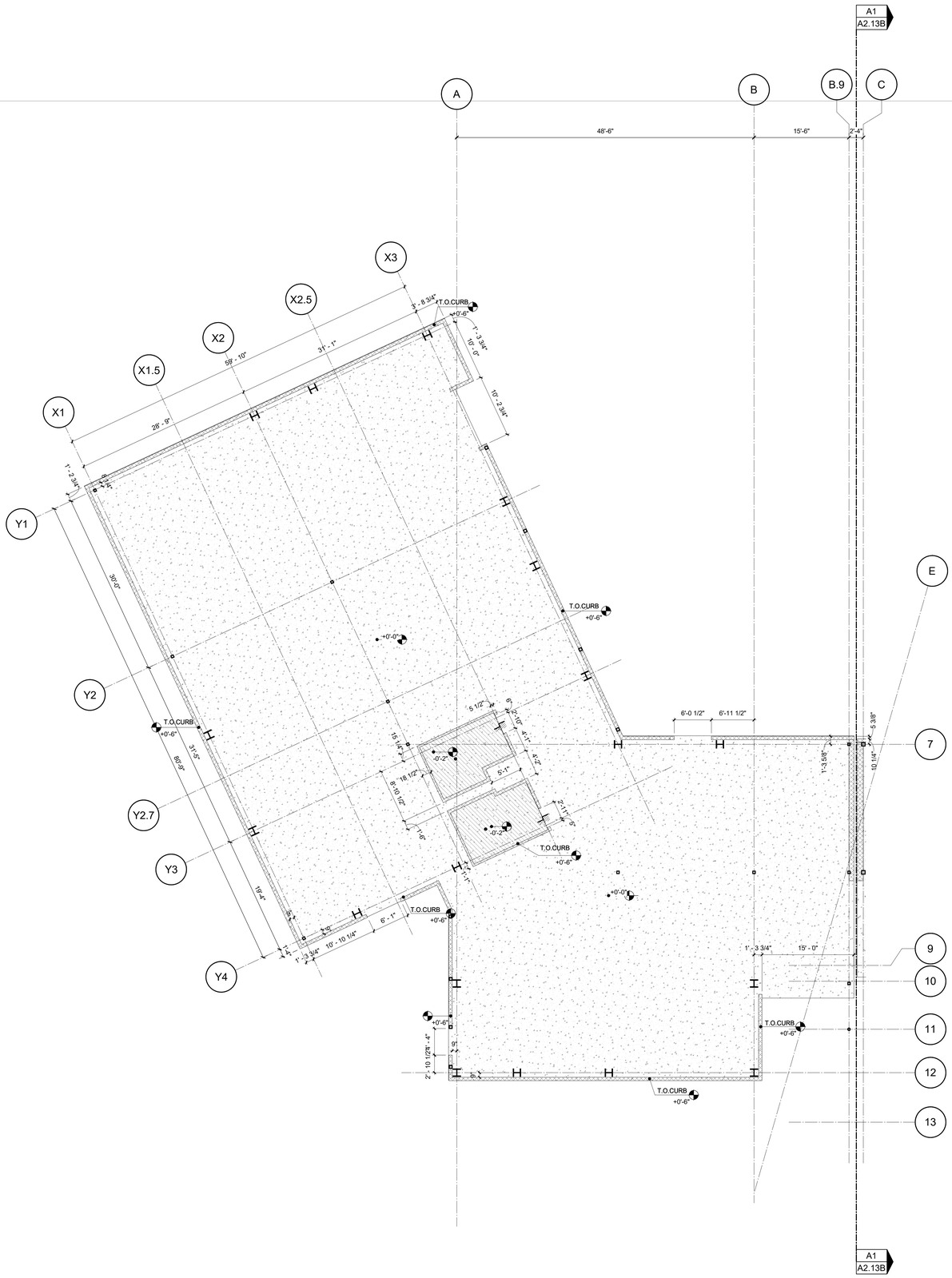
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**A2.13**

**1ST FLOOR - SLAB EDGE PLAN** **A1** 3/32" = 1'-0"

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## NOTES

## LEGEND- SLAB PLANS

**BUILDING ELEMENTS**

- CONCRETE SLAB
- DEPRESSED SLAB WITH SLOPED TOPPING SLAB
- CONCRETE CURB
- 6 5/8" W/DE CONCRETE CURB AT EXTERIOR WALLS
- CONCRETE EQUIPMENT CURB, SEE STRUCT. COORD LOCATIONS W/ ELEC.
- DEPRESSED SLAB FOR STAGE FINISH
- FLOOR DRAIN
- STEPPED LEVEL CHANGE

## GENERAL NOTES- SLAB PLANS

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3. ALL LAYOUT DIMENSIONS TO BE VERIFIED IN FIELD BY THE CONTRACTOR.
4. FLOOR PLAN WALL PARTITION DIMENSIONS GOVERN CONCRETE PARTITION WALL CURB LOCATIONS
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT A - SLAB EDGE PLAN**

**DSA SUBMITTAL**

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| DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100** |

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**A2.13A**

PN

**1ST FLOOR - SEGMENT A - SLAB EDGE** | **A1** 1/8" = 1'-0"

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## NOTES

## LEGEND- SLAB PLANS

**BUILDING ELEMENTS**

- CONCRETE SLAB
- DEPRESSED SLAB WITH SLOPED TOPPING SLAB
- CONCRETE CURB
- 6 5/8" WIDE CONCRETE CURB AT EXTERIOR WALLS
- CONCRETE EQUIPMENT CURB, SEE STRUCT. COORD LOCATIONS W/ ELEC.
- DEPRESSED SLAB FOR STAGE FINISH
- FLOOR DRAIN
- STEPPED LEVEL CHANGE

## GENERAL NOTES- SLAB PLANS

1. REFER TO CIVIL PLANS FOR FINISH FLOOR ELEVATIONS
2. SEE STRUCTURAL PLANS TO VERIFY EXTENT OF FLOOR SLAB DIMENSIONS
3. ALL LAYOUT DIMENSIONS TO BE VERIFIED IN FIELD BY THE CONTRACTOR
4. FLOOR PLAN WALL PARTITION DIMENSIONS GOVERN CONCRETE PARTITION WALL CURB LOCATIONS
5. REFER TO SPEC 07 26 16, FOR UNDER SLAB VAPOR BARRIER.
6. VERIFY EQUIPMENT PAD SIZE / INSTALLATION WITH MEP, STRUCTURAL DRAWINGS AND MANUFACTURER REQUIREMENTS. IN GENERAL PAD TO BE 6" LARGER THAN MOUNTED EQUIPMENT.
7. COORDINATE FLOOR DRAIN, AND FLOOR SINK LOCATIONS WITH FLOOR PLANS, AND PLUMBING PLANS.
8. COORDINATE ALL SLAB EDGE EXTENTS W/ WALLS, WALL OPENINGS, AND EXTERIOR FINISH TYPES PER DETAILS.
9. COORDINATE ALL REQUIRED CLEAR OPENINGS, HVAC, SHAFTS & PENETRATIONS WITH MECHANICAL AND PLUMBING DRAWINGS.
10. COORDINATE CLEAR OPENING AT STAIR
11. REFER TO STRUCTURAL DRAWINGS SHEET SERIES "S2" FOR CONCRETE FLOOR TYPES, THICKNESS AND DEPRESSION.
12. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
13. FOR ALL VENT, PIPE AND DUCT PENETRATIONS, REFER TO MECHANICAL & PLUMBING DRAWINGS.

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - SLAB EDGE PLAN**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

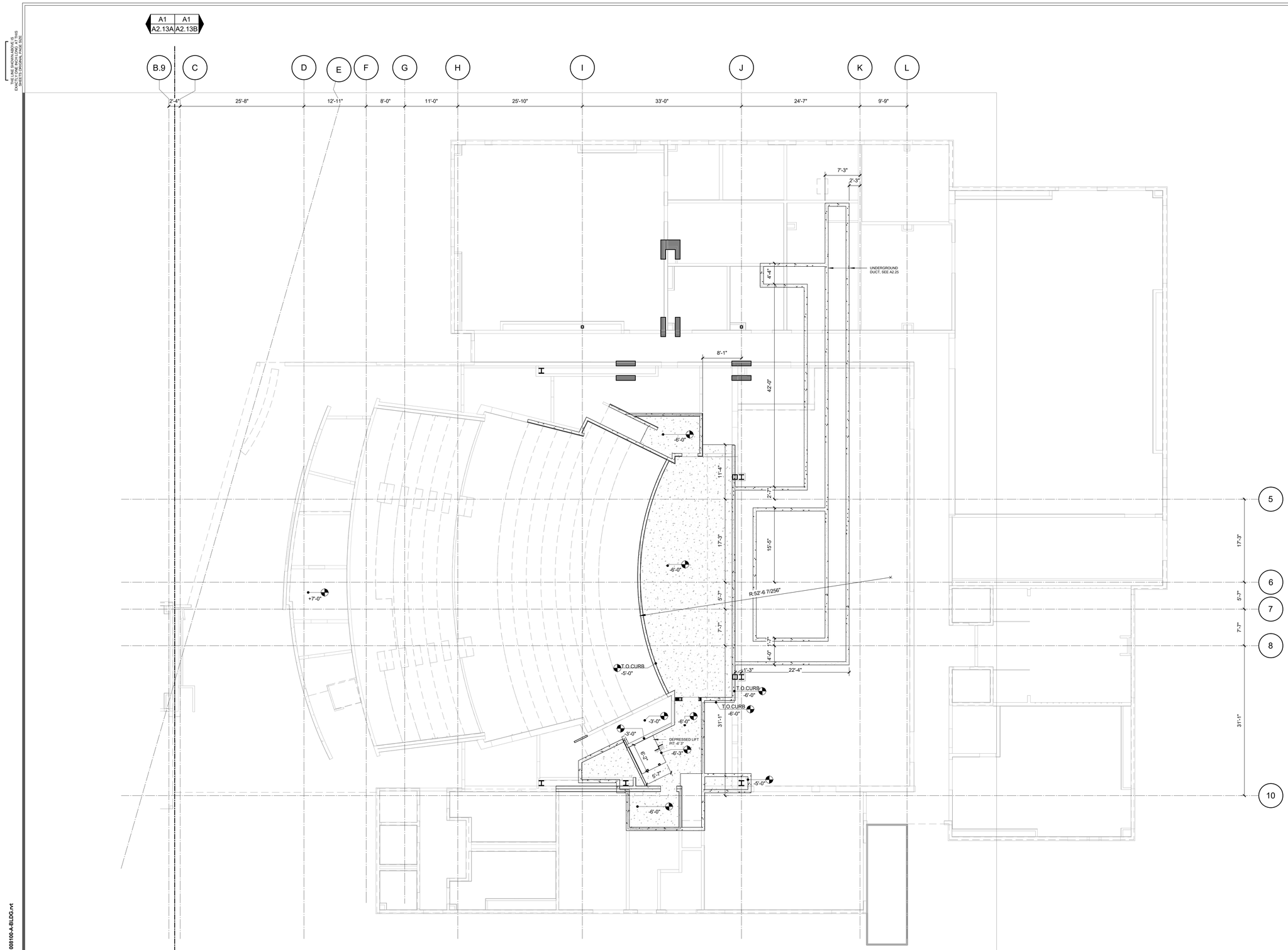
SHEET:

**A2.13B**

**1ST FLOOR - SEGMENT B - SLAB EDGE PLAN** | **A1** 1/8" = 1'-0"

PLEASE RECYCLE

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ORCHESTRA PIT LEVEL - SEGMENT B - SLAB EDGE PLAN

1
1/8" = 1'-0"

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HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
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VIRGINIA ELAINE MARQUARDT
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| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## NOTES

## LEGEND- SLAB PLANS

**BUILDING ELEMENTS**

- CONCRETE SLAB
- DEPRESSED SLAB WITH SLOPED TOPPING SLAB
- CONCRETE CURB
- 6 5/8" WIDE CONCRETE CURB AT EXTERIOR WALLS
- CONCRETE EQUIPMENT CURB, SEE STRUCT. COORD LOCATIONS W/ ELEC.
- DEPRESSED SLAB FOR STAGE FINISH
- FLOOR DRAIN
- STEPPED LEVEL CHANGE

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**A2.13C**

THIS LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG AT THIS ANSI B (11"X17") PLOT SIZE

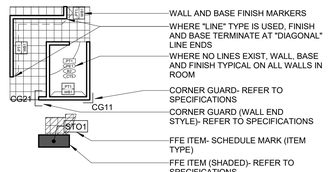
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# GENERAL NOTES- FINISH PLANS

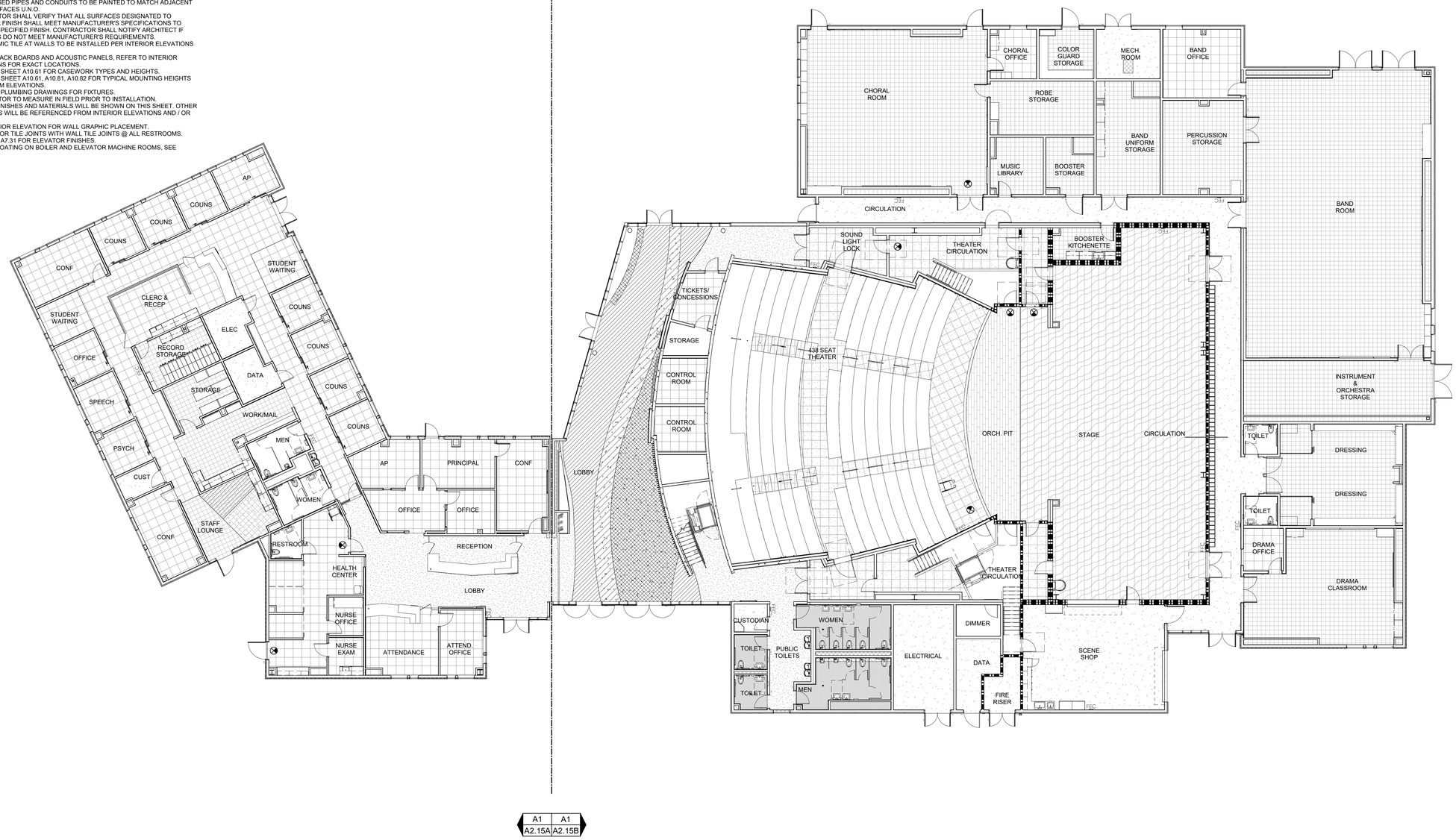
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# LEGEND- FINISH PLANS




- WALL AND BASE FINISH MARKERS
- WHERE "LINE" TYPE IS USED, FINISH AND BASE TERMINATE AT "DIAGONAL" LINE ENDS
- WHERE NO LINES EXIST, WALL, BASE AND FINISH TYPICAL ON ALL WALLS IN ROOM
- CORNER GUARD- REFER TO SPECIFICATIONS
- CORNER GUARD (WALL END STYLE)- REFER TO SPECIFICATIONS
- FFE ITEM- SCHEDULE MARK (ITEM TYPE)
- FFE ITEM (SHADED)- REFER TO SPECIFICATIONS

A1 A2.15A | A1 A2.15B




A1 A2.15A | A1 A2.15B

PN

1ST FLOOR - FINISH PLAN | A1 | 3/32" = 1'-0"

PLEASE RECYCLE

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COMMITTED TO COLLEGE AND CAREER

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## NOTES

FLOOR FINISH

| | | | |
|---|---|---|---|
| | STAGE FLOOR, REFER TO STRUCTURAL DWGS. | | |
| | PT1 | | VCT3 |
| | PT2 | | CONC1 |
| | CPTT1 | | CONC2 |
| | CPTT2 | | CONC3 |
| | CPTT4 | | CONC4 |
| | VCT1 | | CONC5 |
| | VCT2 | | LVT1 |

*REFER TO FINISH SCHEDULE FOR FINISH INFORMATION

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - FINISH PLAN**

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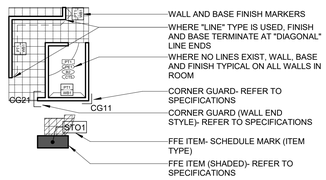
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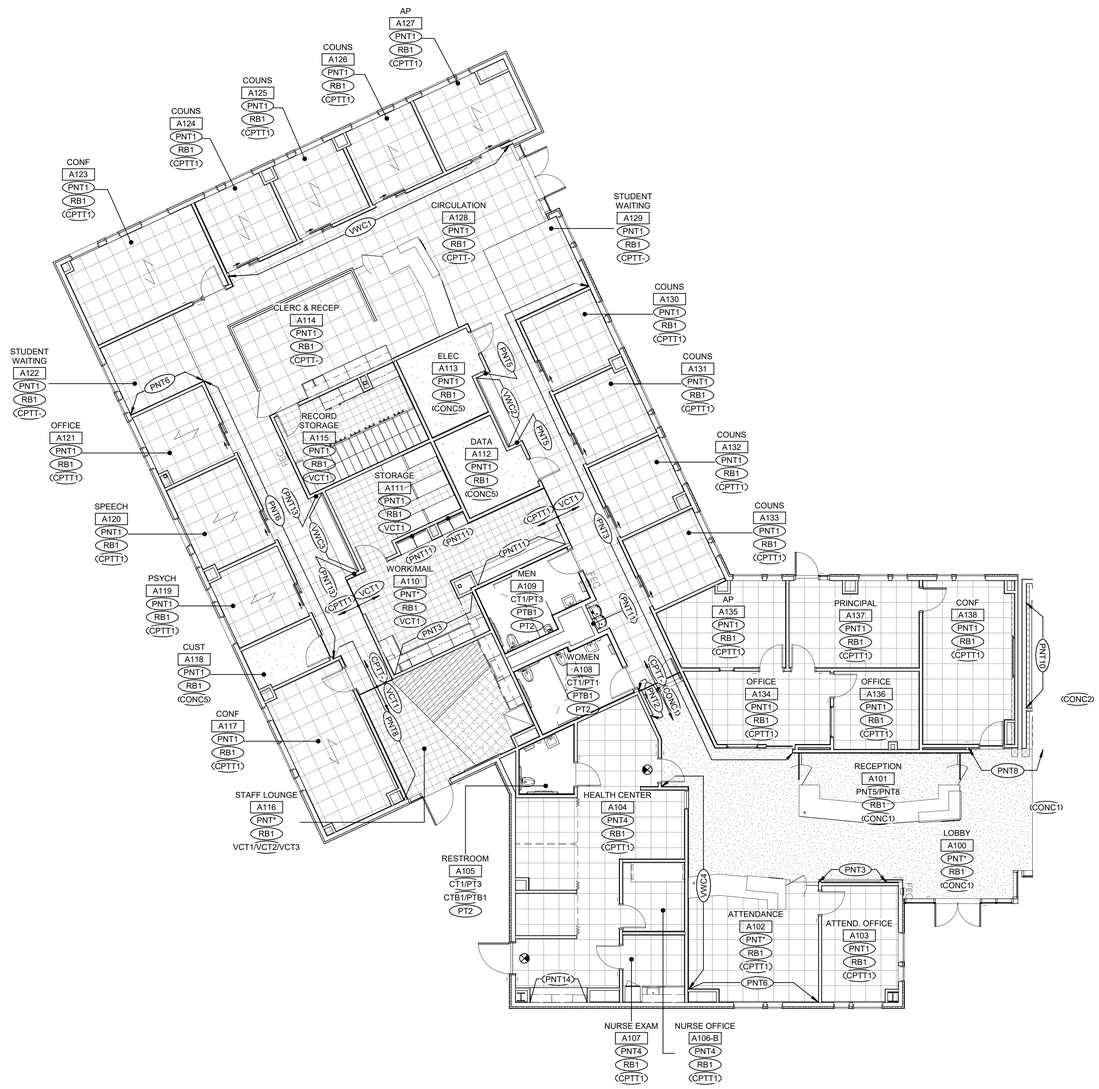
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# LEGEND- FINISH PLANS




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## KEYNOTES

### LEGENDS

Room Name
- ### / XX# — ROOM FIELD WALL FINISH - SEE FINISH SCHEDULE
  " = MULTIPLE FINISHES, SEE ELEVATION
- XX# — WALL BASE FINISH - FINISH SCHEDULE
- XX# — ROOM FLOORING FINISH - SEE FINISH SCHEDULE

FINISHES NOTED ABOVE ARE TYPICAL FIELD FINISHES FOR THE ROOM, UNO. ADDITIONAL FINISHES MAY BE INDICATED ON THIS PLAN AND/OR INTERIOR ELEVATIONS.

- FA — FINISH/COLOR - SEE FINISH SCHEDULE
- DENOTES DIRECTION OF FLOORING - IF APPLICABLE

### NOTES

FLOOR FINISH

| | | | |
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| CPTT2 | | CONC3 | |
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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT A - FINISH PLAN**

## DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641

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SHEET:

# A2.15A

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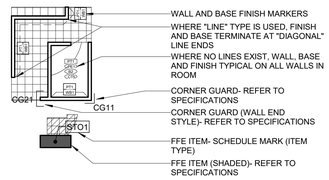
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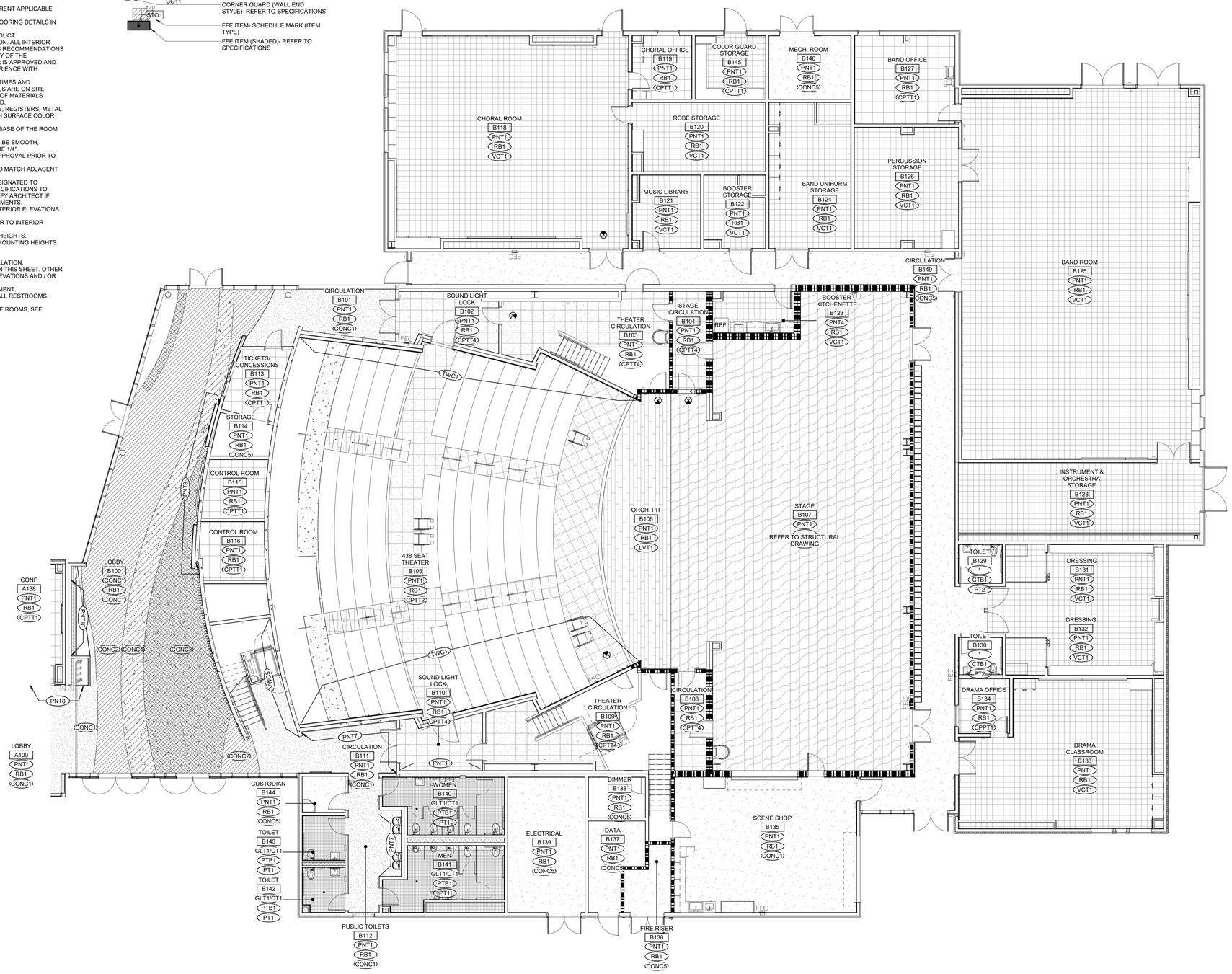
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## KEYNOTES

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- XX# — WALL BASE FINISH - FINISH SCHEDULE
- XX# — ROOM FLOORING FINISH - SEE FINISH SCHEDULE

FINISHES NOTED ABOVE ARE TYPICAL FIELD FINISHES FOR THE ROOM, UNO. ADDITIONAL FINISHES MAY BE INDICATED ON THIS PLAN AND/OR INTERIOR ELEVATIONS.

- FA — FINISH/COLOR - SEE FINISH SCHEDULE
- DENOTES DIRECTION OF FLOORING - IF APPLICABLE

## NOTES

FLOOR FINISH

STAGE FLOOR, REFER TO STRUCTURAL DWGS.

| | | | |
|---|---|---|---|
| PT1 | | VCT3 | |
| PT2 | | CONC1 | |
| CPTT1 | | CONC2 | |
| CPTT2 | | CONC3 | |
| CPTT4 | | CONC4 | |
| VCT1 | | CONC5 | |
| VCT2 | | LVT1 | |

*REFER TO FINISH SCHEDULE FOR FINISH INFORMATION

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - FINISH PLAN**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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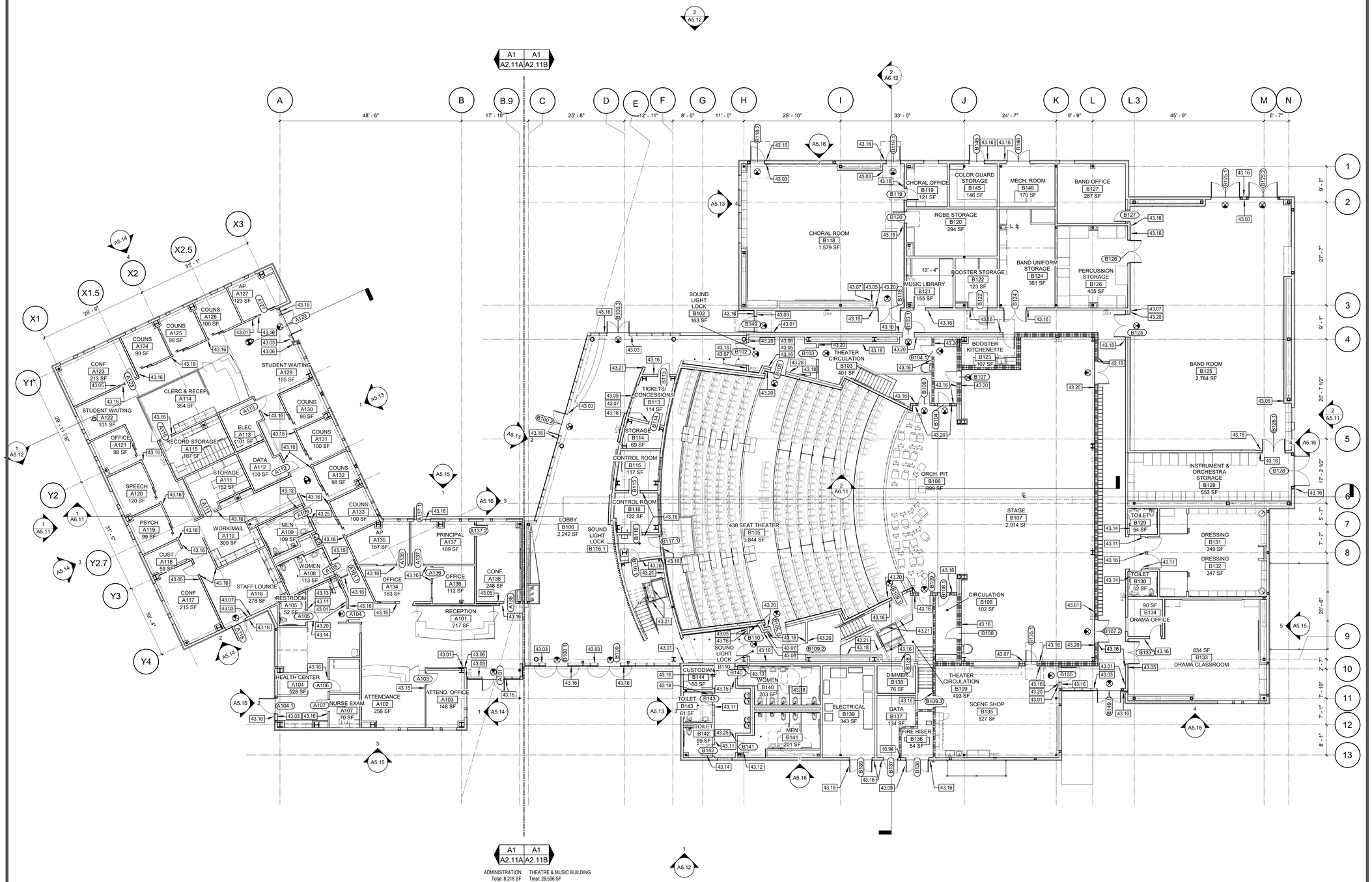
**A2.15B**

1ST FLOOR - SEGMENT B - FINISH PLAN | A1 | 1/8" = 1'-0"

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## 1ST FLOOR - SIGNAGE PLAN

1
3/32" = 1'-0"

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LOS ANGELES, CA, 90071
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## KEYNOTES

| | |
|---|---|
| 10.94 | KNOX BOX PER CFC 506 (LISTED PER UL 1037) - 4/A10.02 |
| 43.01 | EVACUATION PLAN SIGN - 22/A10.82 |
| 43.03 | TACTILE EXIT SIGNAGE - 1B/A10.82 |
| 43.05 | ASSISTED LISTENING DEVICE SIGN - 7/A10.82 |
| 43.06 | NO SMOKING SIGNAGE - 12/A10.82 |
| 43.07 | OCCUPANT LOAD SIGN - 18/A10.82 |
| 43.09 | FIRE SPRINKLER RISER INSIDE SIGN - 18/A10.82 |
| 43.11 | UNISEX RESTROOM WALL SIGN - 2/A10.81 & 5/A10.82 |
| 43.12 | MEN'S RESTROOM DOOR SIGNAGE - 2/A10.81 & 9/A10.82 |
| 43.13 | WOMEN'S RESTROOM DOOR SIGNAGE - 2/A10.18, 8/A10.82 |
| 43.14 | UNISEX RESTROOM DOOR SIGNAGE - 10/A10.82 |
| 43.15 | WOMEN'S RESTROOM WALL SIGN - 2/A10.81 & 3/A10.82 |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |
| 43.18 | NO STORAGE ALLOWED IN THIS ROOM SIGN - 20/A10.82 |
| 43.19 | ELECTRICAL DOOR LABELING PER CFC 603.4.1 |
| 43.20 | TACTILE EXIT ROUTE SIGNAGE - 1A/A10.82 |
| 43.21 | PLATFORM LIFT RESTRICTION SIGN PER CBC 11B-410.8, STATING "NO FREIGHT" AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY PER CBC 11B-703.7.2.1 - 21/A10.82 |
| 43.25 | MEN'S RESTROOM WALL SIGN - 2/A10.81 & 4/A10.82 |
| 43.28 | DIRECTIONAL LIFT SIGN PER 24/A10.82 |

## LEGEND

- ILLUMINATED EXIT SIGN: AT EXIT/EXIT ACCESS (ONE SIDED)
- EXIT SIGN: EXIT DIRECTION (ONE SIDED)
- EXIT SIGN: MULTIPLE EXIT DIRECTION (ONE SIDED)
- EXIT SIGN: TWO FILLED QUADRANTS INDICATE TWO SIDED SIGN (HATCHED AREAS INDICATE DIRECTIONS SIGN IS VISIBLE FROM)

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SIGNAGE PLAN**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

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# A2.16

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## LEGEND

**DESIGNATED AISLE SEAT PER CBC 11B-802.4**
WHERE ARMRESTS ARE PROVIDED ON THE SEATING IN THE IMMEDIATE AREA, FOLDING OR RETRACTABLE ARMRESTS SHALL BE PROVIDED ON THE AISLE SIDE OF THE SEAT. EACH DESIGNATED AISLE SEAT SHALL BE IDENTIFIED BY A SIGN OR MARKER WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY COMPLYING WITH SECTION 11B-703.7.2.1. SIGNS COMPLYING WITH SECTION 11B-703.5, NOTIFYING PATRONS OF THE AVAILABILITY OF SUCH SEATS SHALL BE POSTED AT THE TICKET OFFICE.

**COMPANION SEAT PER CBC 11B-802.3**
IN ROW SEATING, COMPANION SEATS SHALL BE LOCATED TO PROVIDE SHOULDER ALIGNMENT WITH ADJACENT WHEELCHAIR SPACES. THE SHOULDER ALIGNMENT POINT OF THE WHEELCHAIR SPACE SHALL BE MEASURED 36 INCHES (914 MM) FROM THE FRONT OF THE WHEELCHAIR SPACE. THE FLOOR SURFACE OF THE COMPANION SEAT SHALL BE AT THE SAME ELEVATION AS THE FLOOR SURFACE OF THE WHEELCHAIR SPACE. COMPANION SEATS SHALL BE EQUIVALENT IN SIZE, QUALITY, COMFORT AND AMENITIES TO THE SEATING IN THE IMMEDIATE AREA. COMPANION SEATS SHALL BE PERMITTED TO BE MOVABLE.

**SEMI-AMBULANT SEAT PER CBC 11B-802.5**
SEMI-AMBULANT SEATS SHALL PROVIDE AT LEAST 24 INCHES (610 MM) CLEAR LEG SPACE BETWEEN THE FRONT OF THE SEAT TO THE NEAREST OBSTRUCTION OR TO THE BACK OF THE SEAT IMMEDIATELY IN FRONT.

**WHEELCHAIR SPACE PER CBC 11B-802.1**
A SINGLE WHEELCHAIR SPACE SHALL BE 36 INCHES (914 MM) WIDE MINIMUM. WHERE TWO ADJACENT WHEELCHAIR SPACES ARE PROVIDED, EACH WHEELCHAIR SPACE SHALL BE 33 INCHES (838 MM) WIDE MINIMUM.

WHERE A WHEELCHAIR SPACE CAN BE ENTERED FROM THE FRONT OR REAR, THE WHEELCHAIR SPACE SHALL BE 48 INCHES (1219 MM) DEEP MINIMUM. WHERE A WHEELCHAIR SPACE CAN BE ENTERED ONLY FROM THE SIDE, THE WHEELCHAIR SPACE SHALL BE 60 INCHES (1524 MM) DEEP MINIMUM.

WHEELCHAIR SPACES SHALL ADJOIN ACCESSIBLE ROUTES. ACCESSIBLE ROUTES SHALL NOT OVERLAP WHEELCHAIR SPACES.

ACCESSIBLE ROUTE, SEE 1/G1.21 FOR FULL PATH

| THEATER SEATING CALCULATION | REQUIRED | PROVIDED |
|---|---|---|
| FIXED SEATING | - | 426 |
| WHEELCHAIR SPACES (CBC 11B-221.2.1) | 6 | 6 |
| COMPANION SEATS (CBC 11B-221.3) | 6 | 6 |
| DESIGNATED AISLE SEATS (CBC 11B-221.4) | 3 | 4 |
| SEMI-AMBULANT SEATS (CBC 11B-221.6) | 5 | 8 |
| **TOTAL NUMBER OF SEATS:** | | 432 + 6 WHEELCHAIR |

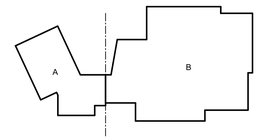
| AISLE CAPACITY (W/ SMOKE PROTECTION) PER CBC TABLE 1030.6.2 | |
|---|---|
| TOTAL NUMBER OF SEATS SERVED | 438 |
| NUMBER OF EXIT ACCESS AISLE | 2 |
| NUMBER OF SEATS SERVED BY EACH AISLE | 219 |

| AISLE TYPE | PROVIDED WIDTH | INCHES OF CAPACITY PER SEAT SERVED | OCCUPANT CAPACITY |
|---|---|---|---|
| STEPPED W/ HANDRAILS WITHIN 30" | 48" | 0.20 | 240 |
| LEVEL AISLE | 68" | 0.15 | 453 |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. REFER TO G-SERIES SHEETS FOR ADDITIONAL INFO AND CODE REQUIREMENTS.
3. FOR ADDITIONAL ELEVATION CALLOUTS SEE ENLARGED PLANS.
4. REFER TO INTERIOR ELEVATIONS FOR ALL CASEWORK INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE
6. WALLS ARE TO BE TYPE AS4A, UNO.
7. SEE ENLARGED PLANS FOR ADDITIONAL CLEAR DIMENSIONS AND ACCESSIBILITY CLEARANCE REQUIREMENTS.
8. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
9. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




## KEYNOTES

| | |
|---|---|
| 12.06 | COMPANION SEAT PER CBC 11B-221.3 |
| 12.07 | SEMI-AMBULANT SEATS PER CBC 11B-221.6 |
| 12.08 | DESIGNATED AISLE SEAT W/ FOLDABLE OR RETRACTABLE ARMRESTS, IDENTIFIED BY A SIGN OR MARKER WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, PER CBC 11B-802.4 |

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - THEATER SEATING PLAN**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

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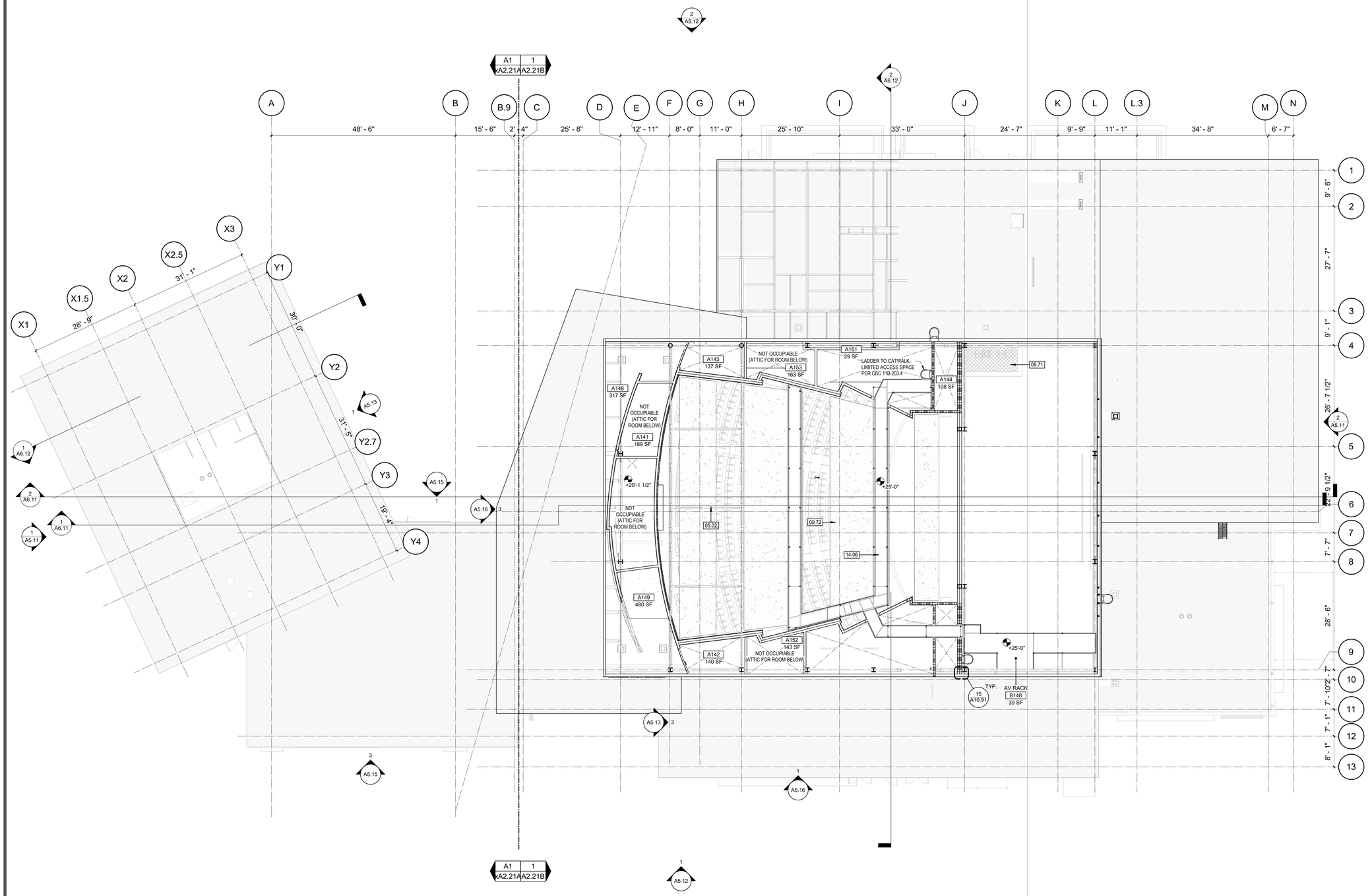
**A2.17**

1ST FLOOR - THEATER SEATING PLAN | A1 | 1/4" = 1'-0"

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## 2ND FLOOR - FLOOR PLAN | A1

3/32" = 1'-0"

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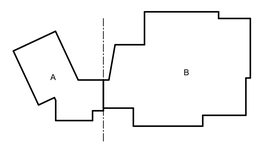
## KEYNOTES

| | |
|---|---|
| 05.02 | STEEL BEAM |
| 09.71 | PROJECTION OF 1-HR FIRE RATED BOOSTER KITCHENETTE CEILING BELOW. NOT TO BE USED FOR EQUIPMENT. |
| 09.72 | PROJECTION OF ACOUSTICAL CEILING AT THEATER BELOW |
| 14.06 | CATWALK (3/8" CONT STEEL TREAD PLATE FINISH). REFER TO STRUCTURAL DRAWINGS (S8.01) FOR CATWALK DETAILS. |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. FOR ADDITIONAL ELEVATION CALLOUTS SEE ENLARGED PLANS
3. OVERALL PLANS ARE INTENTED TO PRIVED CONTEXT FOR PARTIAL PLANS. REFER TO PARTIAL PLANS FOR MORE INFORMATION
4. REFER TO DIMENSION PLAN & WALL TYPES FOR ADDITIONAL INFORMATION
5. REFER TO SLAB PLANS FOR ALL SLAB LEVEL ELEVATIONS

KEY PLAN:




FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**2ND FLOOR - FLOOR PLAN**

**DSA SUBMITTAL**

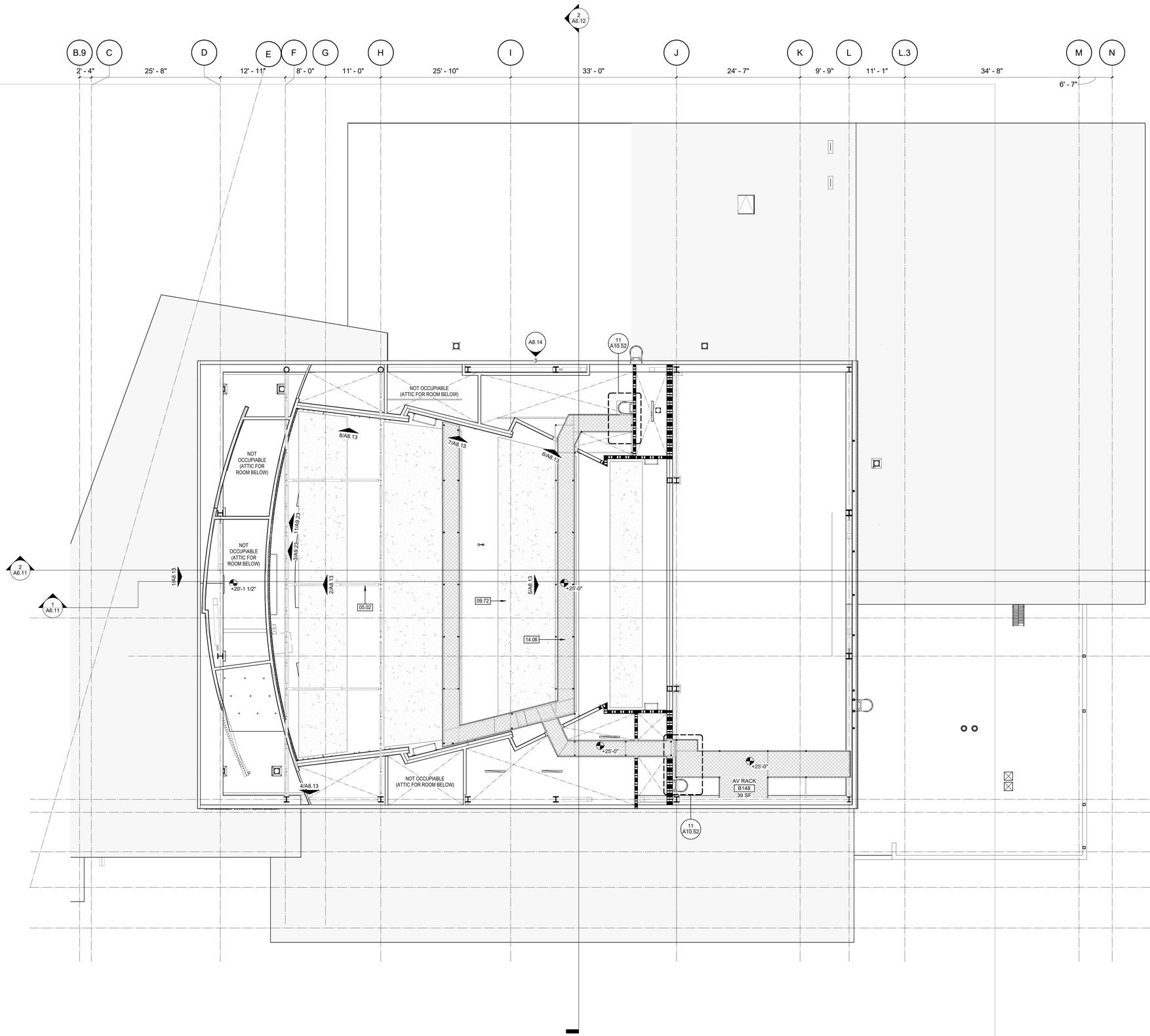
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## LEGEND

- NON-RATED PARTITION
- 1 HR FIRE BARRIER
- FEC — FIRE EXTINGUISHER (SEMI-RECESSED)
- SLOPE DIRECTION
- 1i — STOREFRONT / WINDOW TAG, REFER TO A9.21-A9.24
- 101A — DOOR TAG, REFER TO DOOR SCHEDULE A9.11

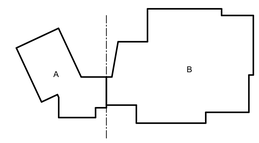
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SHEET NAME:

**2ND FLOOR - SEGMENT B - FLOOR PLAN**

**DSA SUBMITTAL**

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**2ND FLOOR - SEGMENT B - FLOOR PLAN** **1** 1/8" = 1'-0"

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## LEGEND

NON-RATED PARTITION

1 HR FIRE BARRIER

AS4A

AS4A
55:1B

WALL TAGS - REFER TO A10.11

B.9 C D E F G H I J K L L.3 M N

2' - 4" | 25' - 8" | 12' - 11" | 8' - 0" | 11' - 0" | 25' - 10" | 33' - 0" | 24' - 7" | 9' - 9" | 11' - 1" | 34' - 8" | 6' - 7"

1 2 3 4 5 6 7 8 9 10 11 12 13

9' - 6" | 27' - 7" | 9' - 1" | 26' - 7 1/2" | 17' - 2 1/2" | 5' - 7" | 7' - 7" | 28' - 6" | 2' - 7" | 7' - 10" | 7' - 1" | 8' - 1"

NOT OCCUPIABLE (ATTIC FOR ROOM BELOW)

AS4A

NOT OCCUPIABLE (ATTIC FOR ROOM BELOW)

AS4A

NOT OCCUPIABLE (ATTIC FOR ROOM BELOW)

R:112'-8 211/256"

R:112'-0"

BS6B

BS6B

3'-9"

11"

2'-2"

4'-8"

19' - 8"

2' - 3 1/2"

438 SEAT THEATER
B105
3,844 SF

+20'-1 1/2"

+25'-0"

05.02

09.72

14.06

+25'-0"

+25'-0"

AV RACK
B148
39 SF

NOT OCCUPIABLE (ATTIC FOR ROOM BELOW)

PN

2ND FLOOR - SEGMENT B - DIMENSION PLAN AND WALL TYPES | A1 | 1/8" = 1'-0"

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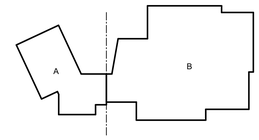
## KEYNOTES

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|---|---|
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| 14.06 | CATWALK (3/8" CONT STEEL TREAD PLATE FINISH). REFER TO STRUCTURAL DRAWINGS (S8.01) FOR CATWALK DETAILS. |

## NOTES

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8. REFER TO DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
9. REFER TO WINDOW SCHEDULE FOR ADDITIONAL INFORMATION.
10. REFER TO ELEVATIONS FOR FINISHES.

KEY PLAN:




FACILITY:

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SHEET NAME:

**2ND FLOOR - SEGMENT B - DIMENSION PLAN**

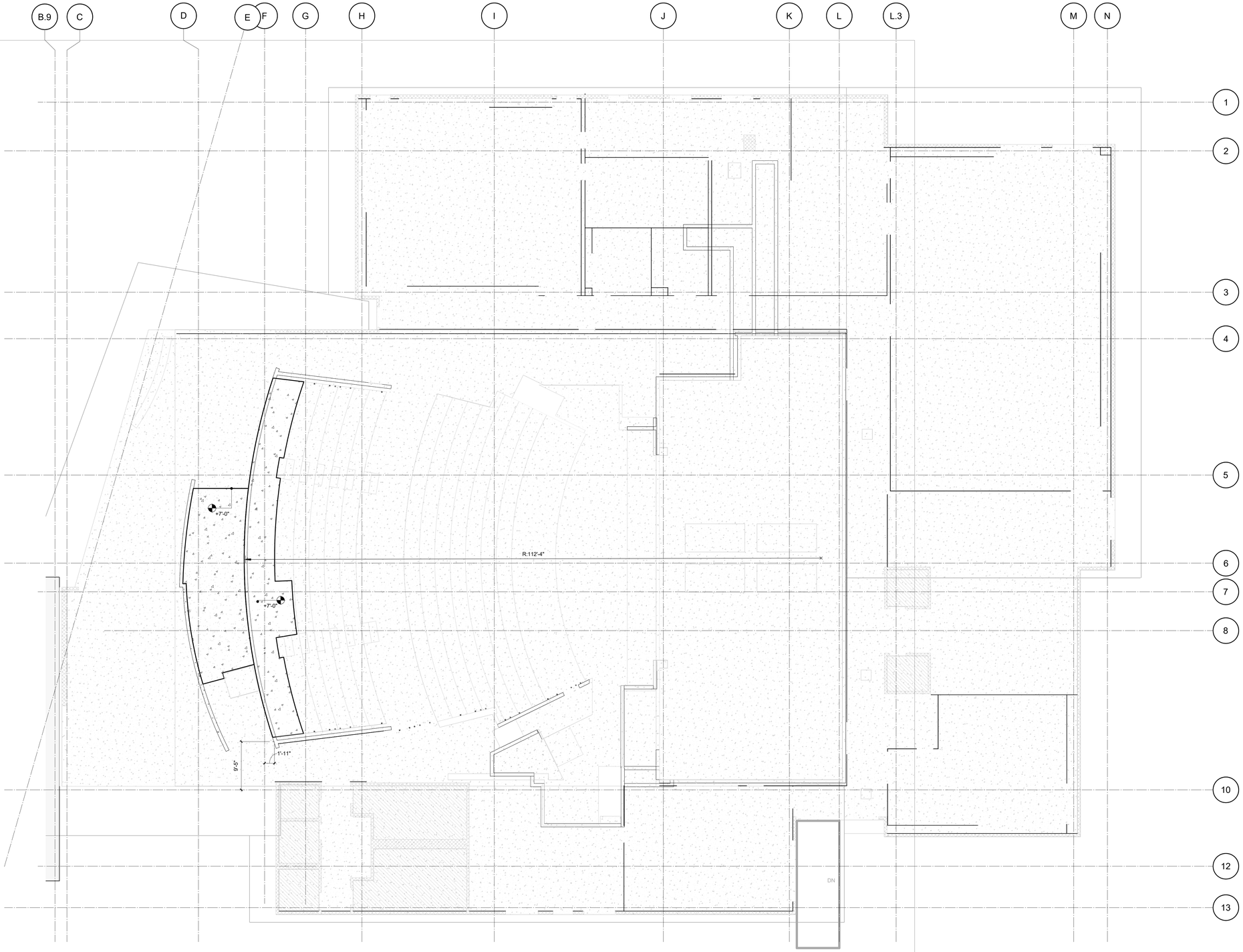
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## KEYNOTES

## NOTES

### LEGEND- SLAB PLANS

**BUILDING ELEMENTS**

- CONCRETE SLAB
- DEPRESSED SLAB WITH SLOPED TOPPING SLAB
- CONCRETE CURB
- 6 5/8" WIDE CONCRETE CURB AT EXTERIOR WALLS
- CONCRETE EQUIPMENT CURB, SEE STRUCT. COORD LOCATIONS W/ ELEC.
- DEPRESSED SLAB FOR STAGE FINISH
- FLOOR DRAIN
- STEPPED LEVEL CHANGE

### GENERAL NOTES- SLAB PLANS

1. REFER TO CIVIL PLANS FOR FINISH FLOOR ELEVATIONS
2. SEE STRUCTURAL PLANS TO VERIFY EXTENT OF FLOOR SLAB DIMENSIONS
3. ALL LAYOUT DIMENSIONS TO BE VERIFIED IN FIELD BY THE CONTRACTOR
4. FLOOR PLAN WALL PARTITION DIMENSIONS GOVERN CONCRETE PARTITION WALL CURB LOCATIONS
5. REFER TO SPEC 07 26 16, FOR UNDER SLAB VAPOR BARRIER.
6. VERIFY EQUIPMENT PAD SIZE / INSTALLATION WITH MEP, STRUCTURAL DRAWINGS AND MANUFACTURER REQUIREMENTS. IN GENERAL PAD TO BE 6" LARGER THAN MOUNTED EQUIPMENT.
7. COORDINATE FLOOR DRAIN, AND FLOOR SINK LOCATIONS WITH FLOOR PLANS, AND PLUMBING PLANS.
8. COORDINATE ALL SLAB EDGE EXTENTS W/ WALLS, WALL OPENINGS, AND EXTERIOR FINISH TYPES PER DETAILS
9. COORDINATE ALL REQUIRED CLEAR OPENINGS, HVAC, SHAFTS & PENETRATIONS WITH MECHANICAL AND PLUMBING DRAWINGS.
10. COORDINATE CLEAR OPENING AT STAIR
11. REFER TO STRUCTURAL DRAWINGS SHEET SERIES "S2" FOR CONCRETE FLOOR TYPES, THICKNESS AND DEPRESSION.
12. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
13. FOR ALL VENT, PIPE AND DUCT PENETRATIONS, REFER TO MECHANICAL & PLUMBING DRAWINGS.

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CONTROL LEVEL - SEGMENT B - SLAB EDGE PLAN**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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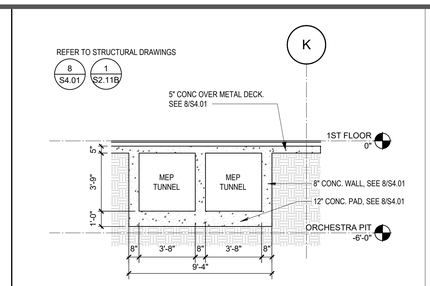
**A2.23B**

**FLOOR PLAN - SLAB EDGE - PARTIAL - CONTROL LEVEL** | **1** 1/8" = 1'-0"

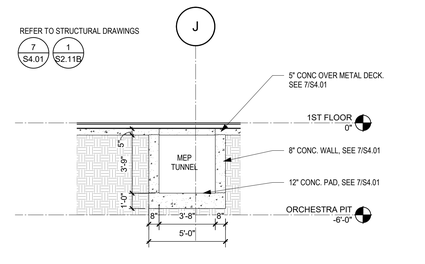

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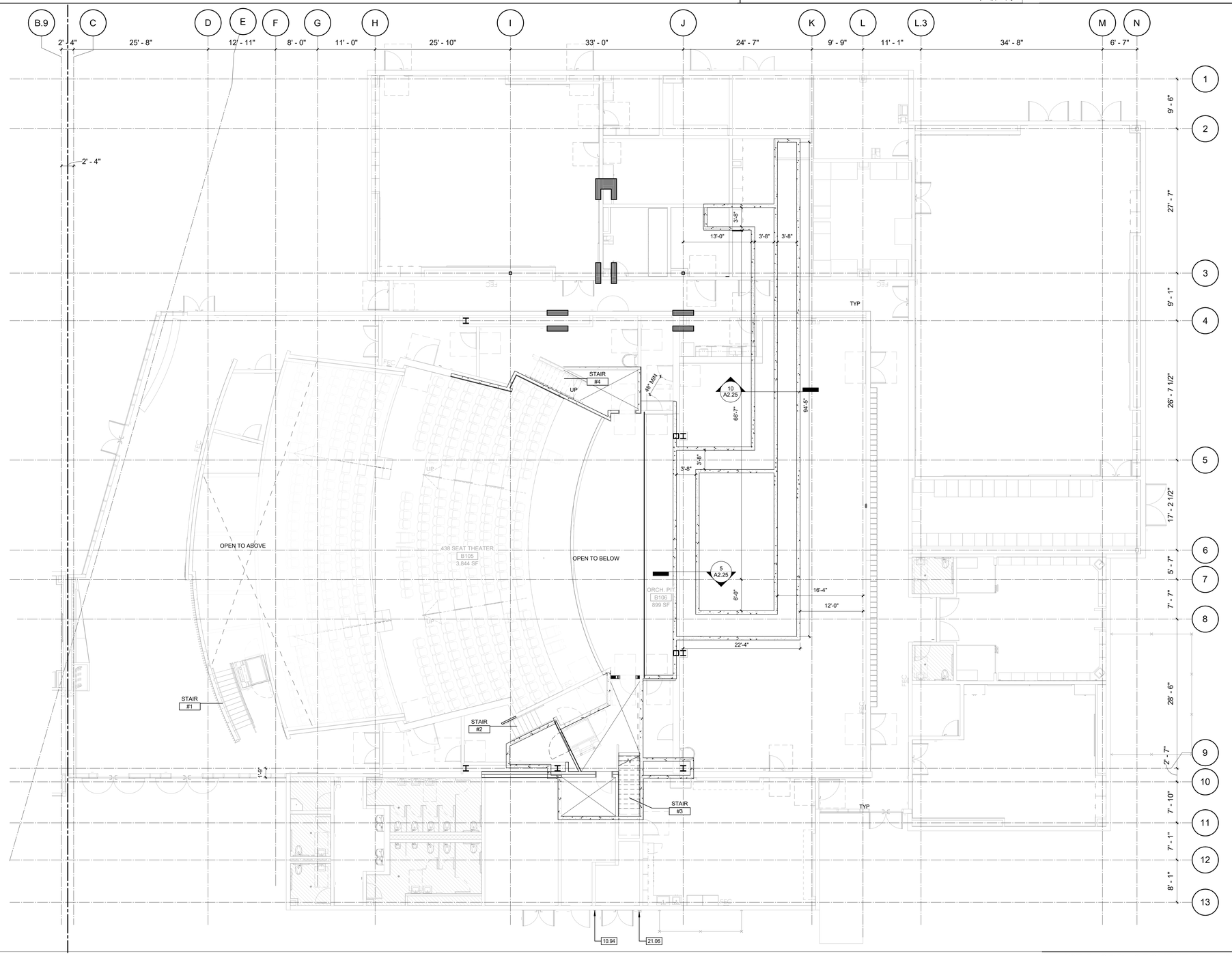
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**UNDERGROUND DUCT 2** **10** 1/4" = 1'-0"




**UNDERGROUND DUCT** **5** 1/4" = 1'-0"




**1ST FLOOR - SEGMENT B - FLOOR PLAN** **1** 1/8" = 1'-0"

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## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - UNDERGROUND DUCT PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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**A2.25**

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## GENERAL NOTES- PARTIAL RCP'S

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF SUBSTRATE LAYER AS SHOWN IN PARTITION TYPES ON A0.11. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LAYOUT ACOUSTIC CEILING TILE GRID FROM CENTER OF ROOMS, BOTH DIRECTIONS, U.N.O.
3. CENTER ALL LIGHTING FIXTURES IN ROOM/SPACE AS SHOWN, U.N.O.
4. ALL GYP. BD CEILINGS TO BE PAINTED PNT1, U.N.O.
5. REFER CEILINGS DETAILS TO A10.30 SERIES.
6. REFER TO 4/A10.32 FOR PENDANT LIGHTING ANCHORAGE.
7. FOR LIGHTING FIXTURES AND DEVICE ATTACHMENT TO CEILING REFER TO 2/A10.32

## LEGEND- EXIT SIGNS

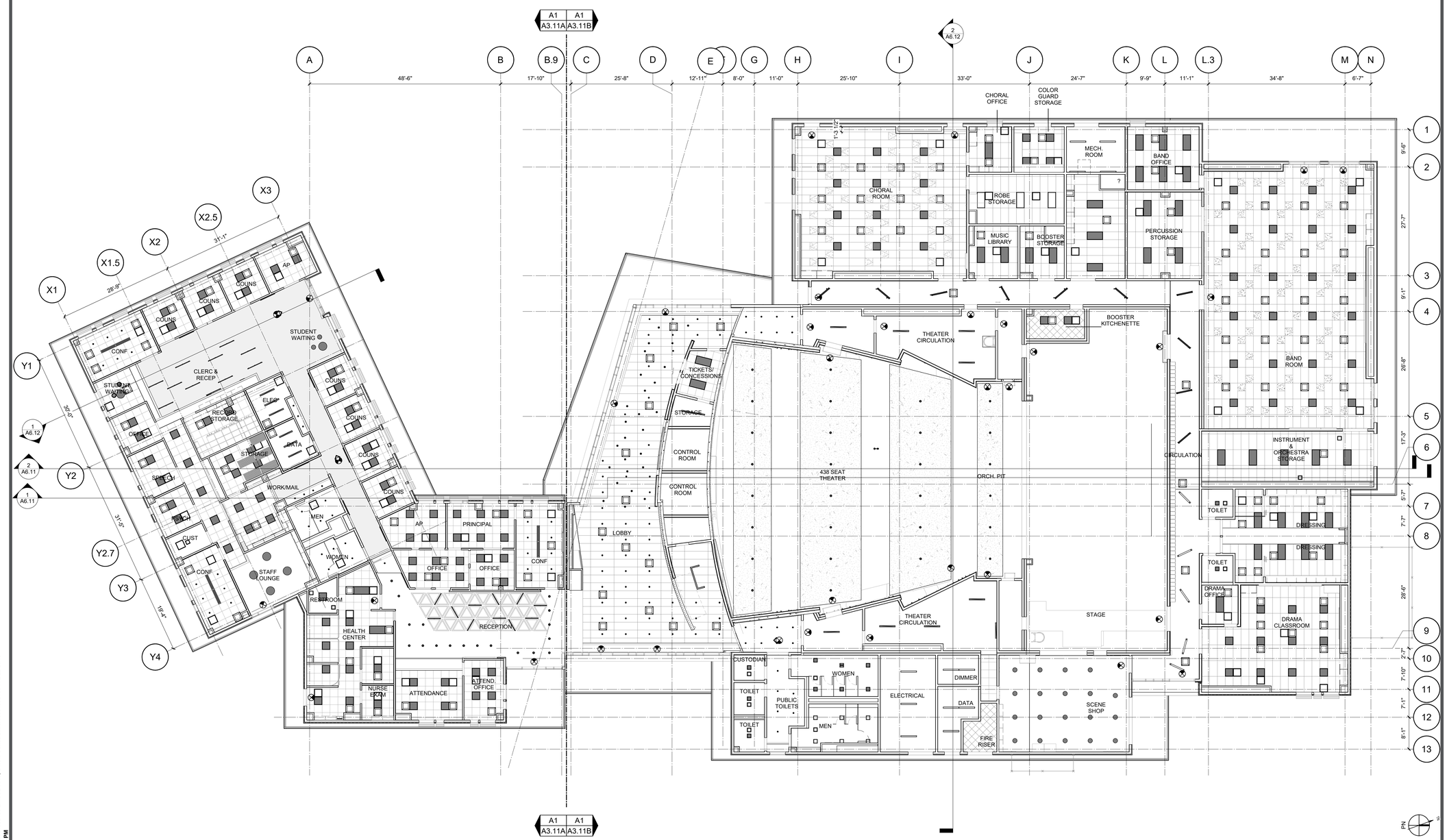
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- EXIT SIGN: TWO FILLED QUADRANTS INDICATE TWO SIDED SIGN (HATCHED AREAS INDICATE DIRECTIONS SIGN IS VISIBLE FROM)

## LEGEND- RCP'S

- GB, CEILING- REF: CEILING TAGS
- 2 LAYER GB ACOUSTIC BAFFLE-REF.CEILING TAGS
- 24"x24" ACOUSTIC TILE CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- 24"x48" ACOUSTIC TILE CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- GB, 1 HR RATED CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- NO CEILING, EXPOSED TO STRUCTURAL ABOVE
- EXTERIOR CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY
- RETURN AIR GRILLE
- SUPPLY AIR GRILLE
- ACOUSTIC CEILING PYRAMIDAL
- ACOUSTIC CEILING TILE SEE 1/ A10.36
- XX'-XX" HEIGHT ABOVE LEVEL (NOT FINISH FLOOR)
- (FX12) LIGHT FIXTURE TAG. REFER TO FIXTURE SCHEDULE FOR FIXTURE LOCATION. CONFIRM LIGHT FIXTURE TYPE WITH ELECTRICAL
- FA FINISH TAG, SEE FINISH SCHEDULE

## LEGEND- LIGHTING

- F-1 LINEAR PENDANT AT CIRCULATION
- F-2 CYLINDER PENDANT DOWNLIGHT
- F-3A 2X2 RECESSED TROFFER
- F-3B 2X4 RECESSED TROFFER
- F-4 SIDE MOUNTED LINEAR AT CEILING CLOUD
- F-5 LINEAR LIGHTING AT ELECTRICAL / DATA ROOM
- F-6 RECESSED DOWNLIGHT
- F-7 SMALL PENDANT AT STUDENT WAITING
- F-8 LARGE PENDANT AT STUDENT WAITING
- F-9 8' LINEAR PENDANT
- F-10 1x1 RECESSED LIGHT
- F-11 CYLINDER PENDANT DOWNLIGHT AT RECEPTION
- F-12 ROUND PENDANT AT SCENE SHOP
- F-13 12" VERTICAL PENDANT
- F-14 24" VERTICAL PENDANT
- F-15 36" VERTICAL PENDANT




## 1ST FLOOR - RCP

A1
3/32" = 1'-0"

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## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - REFLECTED CEILING PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# A3.11

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY

# GENERAL NOTES- PARTIAL RCP'S

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF SUBSTRATE LAYER AS SHOWN IN PARTITION TYPES ON A0.11. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LAYOUT ACOUSTIC CEILING TILE GRID FROM CENTER OF ROOMS, BOTH DIRECTIONS, U.N.O.
3. CENTER ALL LIGHTING FIXTURES IN ROOM/SPACE AS SHOWN, U.N.O.
4. ALL GYP. BD CEILINGS TO BE PAINTED PNT1, U.N.O.
5. REFER CEILINGS DETAILS TO A10.30 SERIES.
6. REFER TO 2/A10.32 FOR PENDANT LIGHTING ANCHORAGE.
7. FOR LIGHTING FIXTURES AND DEVICE ATTACHMENT TO CEILING REFER TO 2/A10.32

# LEGEND- RCP'S

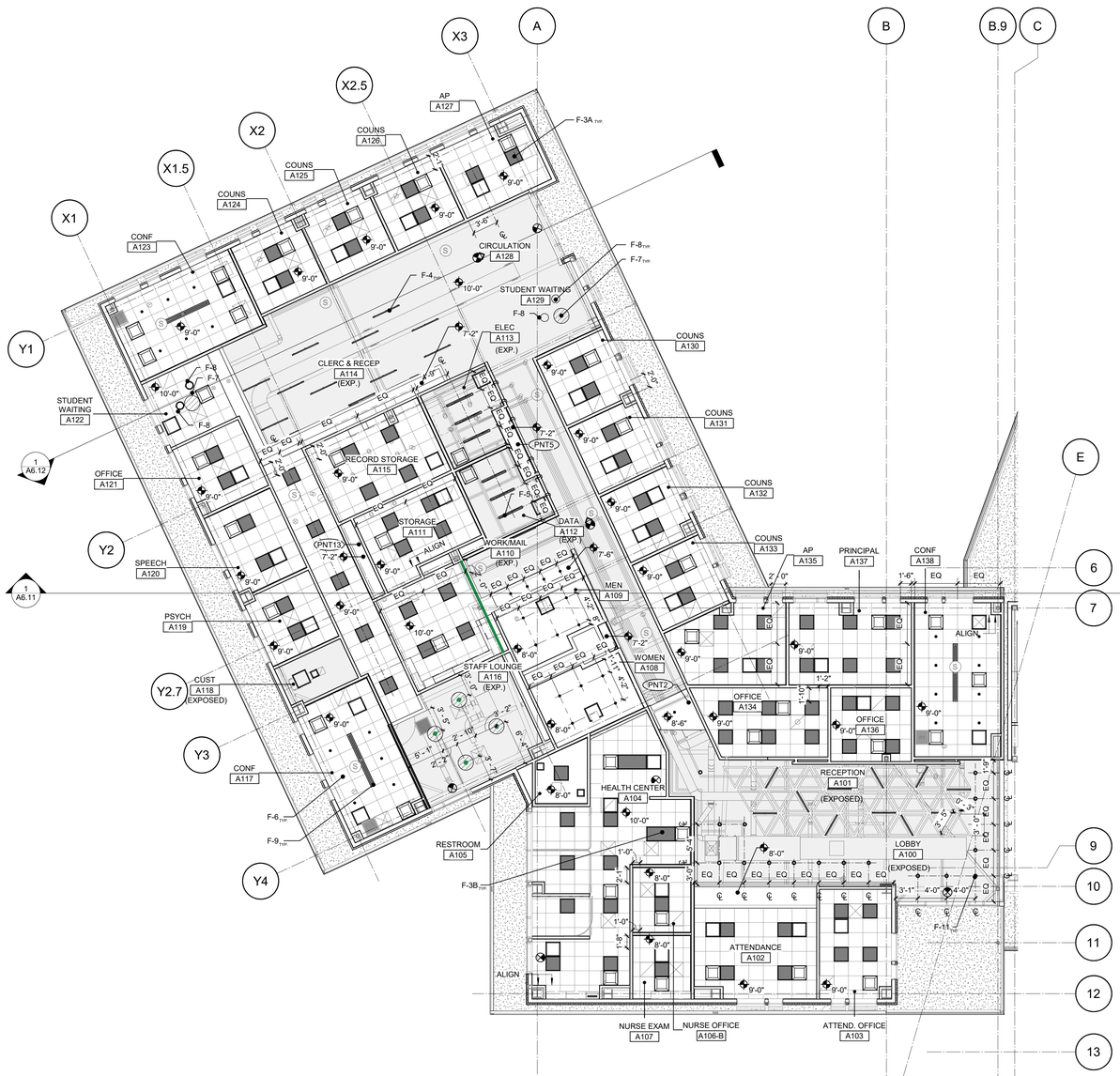
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- XX'-XX" — HEIGHT ABOVE LEVEL (NOT FINISH FLOOR)
- F-X12 — LIGHT FIXTURE TAG. REFER TO FIXTURE SCHEDULE FOR FIXTURE LOCATION. CONFIRM LIGHT FIXTURE TYPE WITH ELECTRICAL
- FA — FINISH TAG, SEE FINISH SCHEDULE
- RETURN AIR GRILLE
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- ACOUSTIC CEILING PANEL SEE 5/A10.35

# LEGEND- LIGHTING

- F-1 LINEAR PENDANT AT CIRCULATION
- F-2 6" RECESSED DOWNLIGHT
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- F-5 LINEAR LIGHTING AT ELECTRICAL / DATA ROOM
- F-6 4" RECESSED DOWNLIGHT
- F-7 SMALL PENDANT AT STUDENT WAITING
- F-8 LARGE PENDANT AT STUDENT WAITING
- F-9 8' LINEAR PENDANT
- F-10 1x1 RECESSED LIGHT
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# LEGEND- EXIT SIGNS

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## KEYNOTES

## NOTES

1. REFER TO PAGES A10.31 - 10.36 FOR CEILING CONSTRUCTION DETAILS, INCLUDE SEISMIC BRACING.
2. CEILING HEIGHTS ARE REFERENCED FROM THE FLOOR BELOW WHERE HEIGHTS ARE INDICATED.
3. LOCATION OF ALL LIGHT FIXTURES, MECHANICAL DIFFUSERS, ACCESS PANELS, FIRE ALARM DEVICES AND SECURITY DEVICES IN CEILINGS SHALL BE GOVERNED BY THE ARCHITECTURAL REFLECTED CEILING PLANS
4. CENTER ALL DEVICES AND FIXTURES IN CEILING / TILE / PANELS, TYPICAL U.N.O
5. SEE FLOOR PLANS AND INTERIOR ELEVATIONS FOR WALL-MOUNTED LIGHT FIXTURES AND OTHER FIRE ALARM SYSTEM, SECURITY AND ELECCTRICAL DEVICE LOCATIONS NOT SHOWN OR DIMENSIONED ON THE REFLECTED CEILING PLANS.
6. REFER TO THE MECHANICAL DRAWINGS FOR DUCT LOCATIONS IN AREAS WITHOUT CEILINGS, U.N.O.
7. LOCATION OF ACCESS PANELS IN CEILING TO BE COORDINATED WITH ARCHITECT. SIZE TO BE COORDINATED WITH MEP REQUIREMENTS.
8. PROVIDE GFRG ACCESS PANELS AT LOBBY AND GALLERY SPACES
9. SEE ELECTRICAL LIGHTING PLANS FOR LIGHT FIXTURE TYPES.
10. SPRINKLER HEADS TO BE CONCEALED WITH CAPS TO MATCH ADJACENT CEILING COLOR. TYP AT LOBBY, LECTURE HALLS, AND GALLERY. PROVIDE SEMI RECESSED HEADS AT OTHER LOCATIONS.
11. STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND FIRE PROTECTION SYSTEMS TO BE PAINTED AT EXPOSED CEILING AREAS TYPICAL AT ALL OCCUPIED SPACES, U.N.O. FOR PAINT COLORS REFER TO SHEET A9.31
12. LOCATE ELECTRICAL JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS OR AREAS WITHOUT CEILINGS.
13. REFER TO A10.30 SERIES FOR TYPICAL DEVICE LOCATION IN CEILING TILES.
14. PROVIDE CONTROL JOINTS AT GYP BOARD CEILING 30' SPACING MAX PER SPECS, COORDINATE LOCATION W/ ARCHITECT.

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT A - REFLECTED CEILING PLAN**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

**A3.11A**

PN

1ST FLOOR - SEGMENT A - RCP | A1 | 1/8" = 1'-0"

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| LIGHTING FIXTURE F-13 LOCATION | | |
|---|---|---|
| Mark | X-Coord | Y-Coord |
| 1 | 15'-0" | 1'-6" |
| 2 | 10'-0" | 11'-6" |
| 3 | 18'-0" | 23'-6" |
| 4 | 10'-6" | 25'-0" |
| 5 | 15'-0" | 39'-0" |
| 6 | 22'-0" | 41'-0" |
| 7 | 18'-6" | 45'-0" |
| 8 | 26'-0" | 45'-6" |

| LIGHTING FIXTURE F-14 LOCATION | | |
|---|---|---|
| Mark | X-Coord | Y-Coord |
| 9 | 10'-0" | -0'-6" |
| 10 | 4'-6" | 1'-0" |
| 11 | 8'-0" | 5'-6" |
| 12 | 10'-6" | 8'-6" |
| 13 | 6'-0" | 9'-6" |
| 14 | 14'-0" | 13'-0" |
| 15 | 14'-6" | 19'-0" |
| 16 | 10'-0" | 21'-0" |
| 17 | 13'-6" | 23'-0" |
| 18 | 15'-0" | 29'-0" |
| 19 | 17'-6" | 31'-0" |
| 20 | 20'-0" | 35'-0" |
| 21 | 16'-0" | 41'-0" |

| LIGHTING FIXTURE F-15 LOCATION | | |
|---|---|---|
| Mark | X-Coord | Y-Coord |
| 22 | 14'-6" | 9'-6" |
| 23 | 8'-0" | 15'-0" |
| 24 | 10'-0" | 17'-0" |
| 25 | 14'-0" | 33'-0" |

## GENERAL NOTES- PARTIAL RCP'S

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## LEGEND- RCP'S

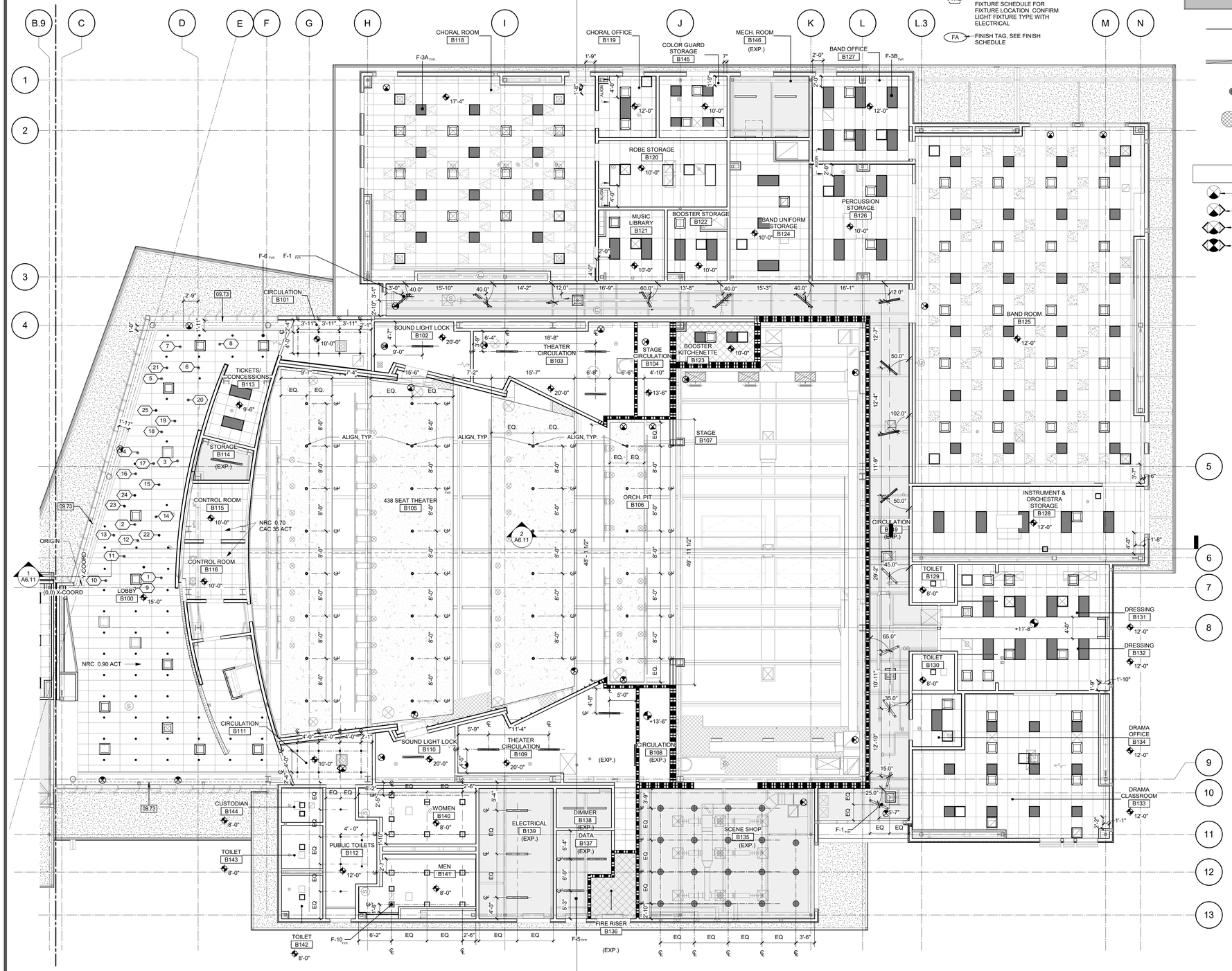
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## KEYNOTES

09.73 AUTOMATIC ROLL-UP SHADE POCKET, SEE FINISH PLAN FOR WINDOW SHADE TYPE - 22/A10.32

## NOTES

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - REFLECTED CEILING PLAN**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

**A3.11B**

**1ST FLOOR - SEGMENT B - RCP** | **A1** | 1/8" = 1'-0"

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EADJUST SCALES ACCORDINGLY IF SHEET IS ORIGINAL PAGE SIZE

## GENERAL NOTES- PARTIAL RCP'S

1. DIMENSIONS TO FACE OF PARTITIONS ARE TO FACE OF SUBSTRATE LAYER AS SHOWN IN PARTITION TYPES ON A0.11. FINISHES DEPICTED IN FINISH PLANS AND ELEVATIONS ARE NOT SHOWN ON PARTIAL FLOOR PLANS. REFER TO ENLARGED PLANS, ELEVATIONS, AND DETAILS.
2. LAYOUT ACOUSTIC CEILING TILE GRID FROM CENTER OF ROOMS, BOTH DIRECTIONS, U.N.O.
3. CENTER ALL LIGHTING FIXTURES IN ROOM/SPACE AS SHOWN, U.N.O.
4. ALL GYP. BD CEILINGS TO BE PAINTED PNT1, U.N.O.
5. REFER CEILINGS DETAILS TO A10.30 SERIES.
6. REFER TO 2/A10.32 FOR PENDANT LIGHTING ANCHORAGE.
7. FOR LIGHTING FIXTURES AND DEVICE ATTACHMENT TO CEILING REFER TO 2/A10.32

## LEGEND- RCP'S

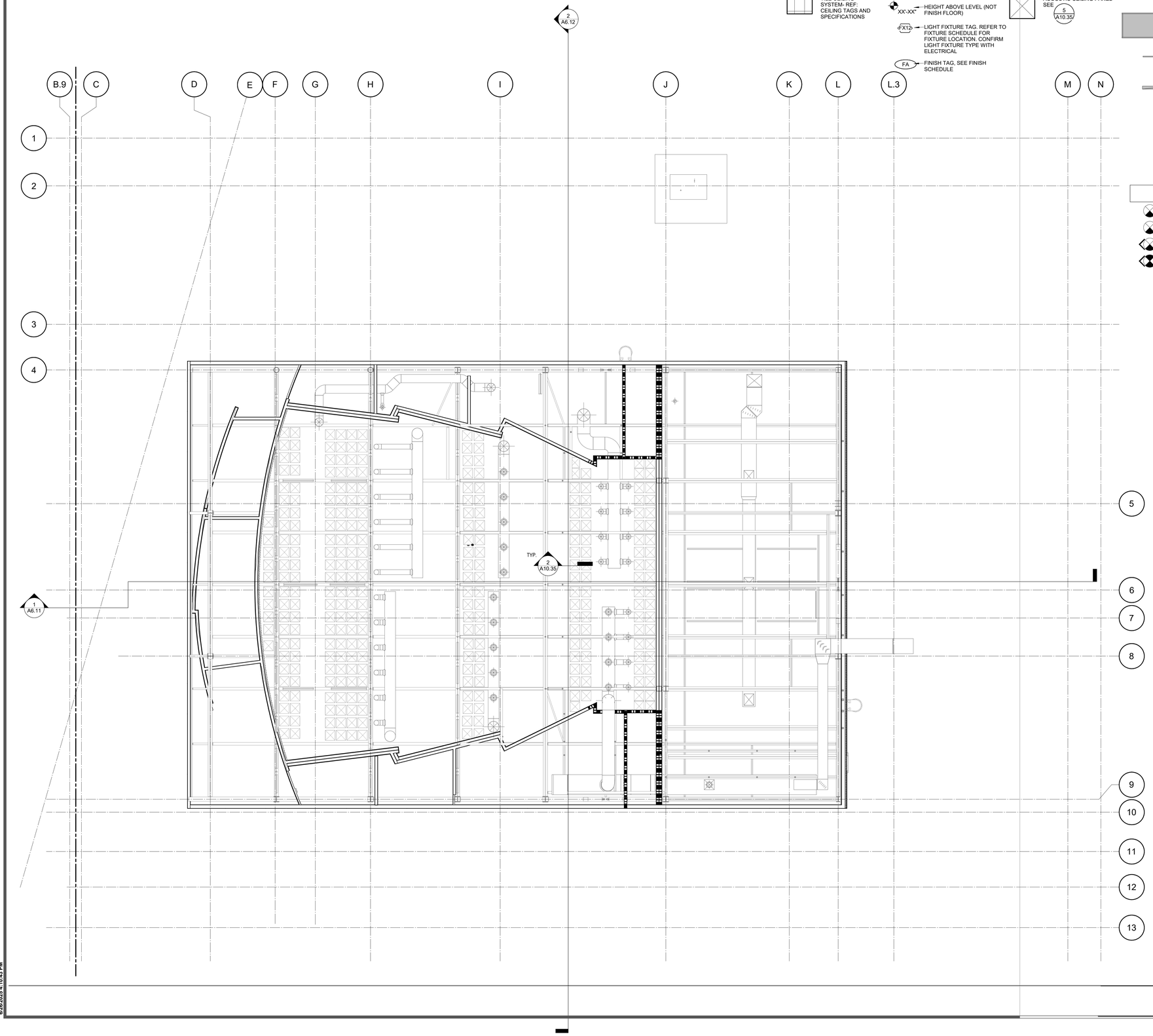
- GB, CEILING- REF: CEILING TAGS
- 2 LAYER GB ACOUSTIC BAFFLE-REF:CEILING TAGS
- 24"x24" ACOUSTIC TILE CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- 24"x48" ACOUSTIC TILE CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- NO CEILING, EXPOSED TO STRUCTURAL ABOVE
- EXTERIOR CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY
- GB, 1 HR RATED CEILING SYSTEM- REF: CEILING TAGS AND SPECIFICATIONS
- RETURN AIR GRILLE
- SUPPLY AIR GRILLE
- ACOUSTIC CEILING PYRAMIDAL
- ACOUSTIC CEILING PANEL SEE 5/A10.35
- XX-XX — HEIGHT ABOVE LEVEL (NOT FINISH FLOOR)
- FX12 — LIGHT FIXTURE TAG. REFER TO FIXTURE SCHEDULE FOR FIXTURE LOCATION. CONFIRM LIGHT FIXTURE TYPE WITH ELECTRICAL
- FA — FINISH TAG, SEE FINISH SCHEDULE

## LEGEND- LIGHTING

- F-1 LINEAR PENDANT AT CIRCULATION
- F-2 6" RECESSED DOWNLIGHT
- F-3A 2X2 RECESSED TROFFER
- F-3B 2X4 RECESSED TROFFER
- F-4 SIDE MOUNTED LINEAR AT CEILING CLOUD
- F-5 LINEAR LIGHTING AT ELECTRICAL / DATA ROOM
- F-6 4" RECESSED DOWNLIGHT
- F-7 SMALL PENDANT AT STUDENT WAITING
- F-8 LARGE PENDANT AT STUDENT WAITING
- F-9 8' LINEAR PENDANT
- F-10 1x1 RECESSED LIGHT
- F-11 CYLINDER PENDANT DOWNLIGHT AT RECEPTION
- F-12 ROUND PENDANT AT SCENE SHOP
- F-13 12" VERTICAL PENDANT
- F-14 24" VERTICAL PENDANT
- F-15 36" VERTICAL PENDANT

## LEGEND- EXIT SIGNS

- ILLUMINATED EXIT SIGN: AT EXIT/EXIT ACCESS (ONE SIDED)
- EXIT SIGN: EXIT DIRECTION (ONE SIDED)
- EXIT SIGN: MULTIPLE EXIT DIRECTION (ONE SIDED)
- EXIT SIGN: TWO FILLED QUADRANTS INDICATE TWO SIDED SIGN (HATCHED AREAS INDICATE DIRECTIONS SIGN IS VISIBLE FROM)




2ND FLOOR - SEGMENT B - RCP | A1 | 1/8" = 1'-0"

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**KEYNOTES**

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**2ND FLOOR - SEGMENT B - REFLECTED CEILING PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

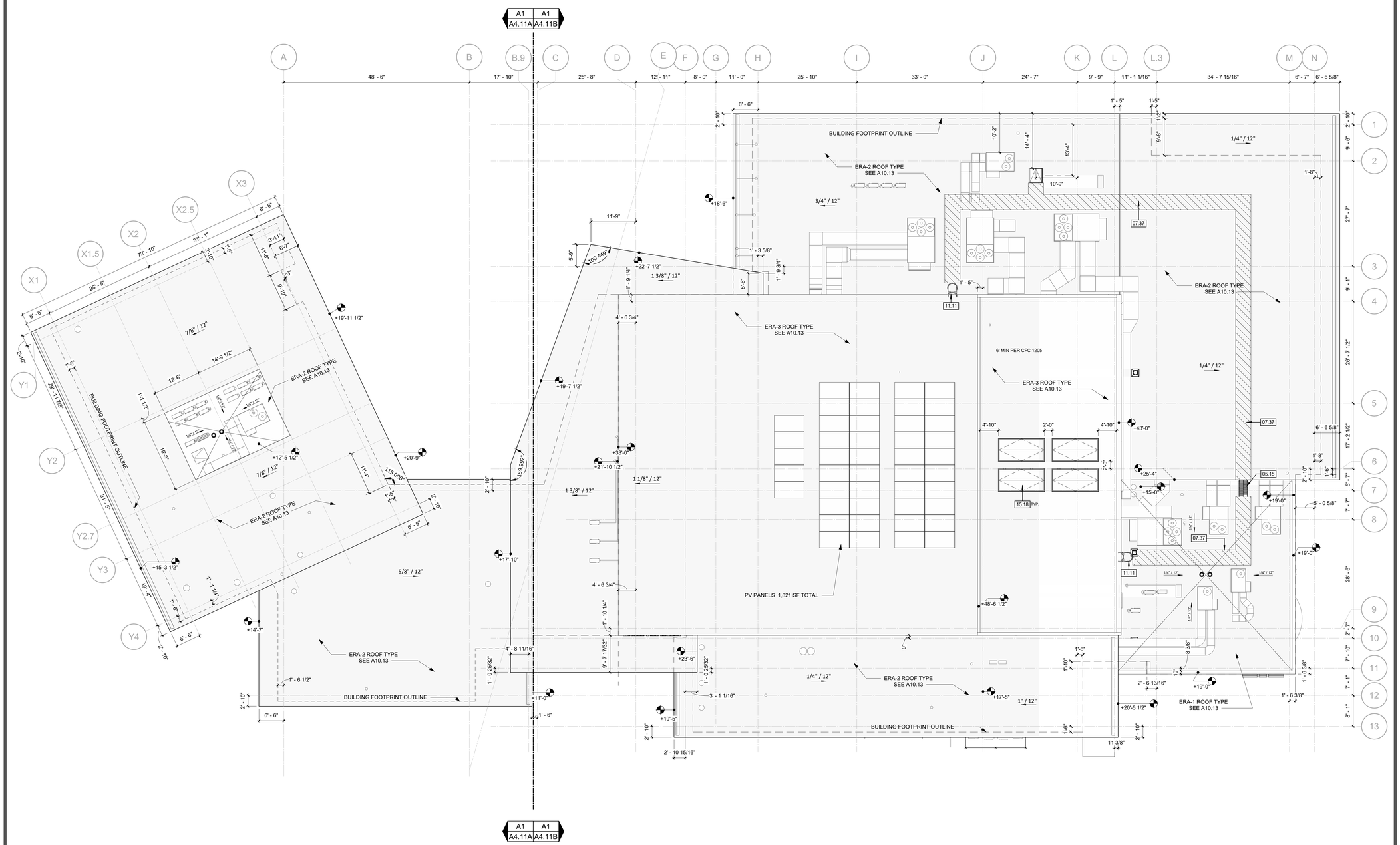
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## LEGEND- ROOF PLANS

**BUILDING ELEMENTS**

- PARTITION
- MARKER (LEADER)
- ELEVATION AT MARKER
- MINIMUM REQUIRED SLOPE- THIS RIDGE OR VALLEY (PARALLEL TO ARROW HEAD)
- MINIMUM REQUIRED SLOPE (PLANE OF ROOF ENCLOSING TAIL OF ARROW)
- TAPERED INSULATION (CRICKET) UNDERNEATH ROOFING SYSTEM (HATCHED AREA)
- ROOF WALK MATS/PADS
- ROOF DRAIN (REFER TO PLUMBING DRAWINGS)
- OVERFLOW DRAIN (REFER TO PLUMBING DRAWINGS)
- SCUPPER AND DOWNSPOUT (REFER TO PLUMBING DRAWINGS)
- SCUPPER (REFER TO PLUMBING DRAWINGS)
- 3'-0" WIDE MIN. WALKING PAD

## NOTES - ROOF PLANS

1. ITEMS FROM MECHANICAL, PLUMBING, AND ELECTRICAL SCOPES MAY BE SHOWN FOR REFERENCE AND COORDINATION ONLY. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPING, CURBS, VENTS, DUCTS, FANS, AND OTHER ITEMS ON THE ROOF SURFACE
2. ALL ROOF FLASHING TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS
3. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL UNITS AND DETAILS
4. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
5. REFER TO SHEET A10.41 FOR ROOF ASSEMBLY, FLASHING CURB, PENETRATIONS & EQUIPMENT PLATFORM DETAILS.
6. ALL ROOF COMPONENT HEIGHTS ARE RELATIVE TO THE 0'-0" FINISH FLOOR HEIGHT FOR THE BUILDING.

## KEYNOTES

| | |
|---|---|
| 05.15 | ROOF LADDER |
| 07.37 | 24" X 24" ROOF WALKWAY PADS |
| 11.11 | CAGE LADDER - 17/A10.51 |
| 15.18 | AUTOMATIC EMERGENCY ROOF VENT - 12/A10.41 |

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 — A NO.: 03-123641

DATE: 06/23/2025 — CLIENT PROJ NO: 3361008100

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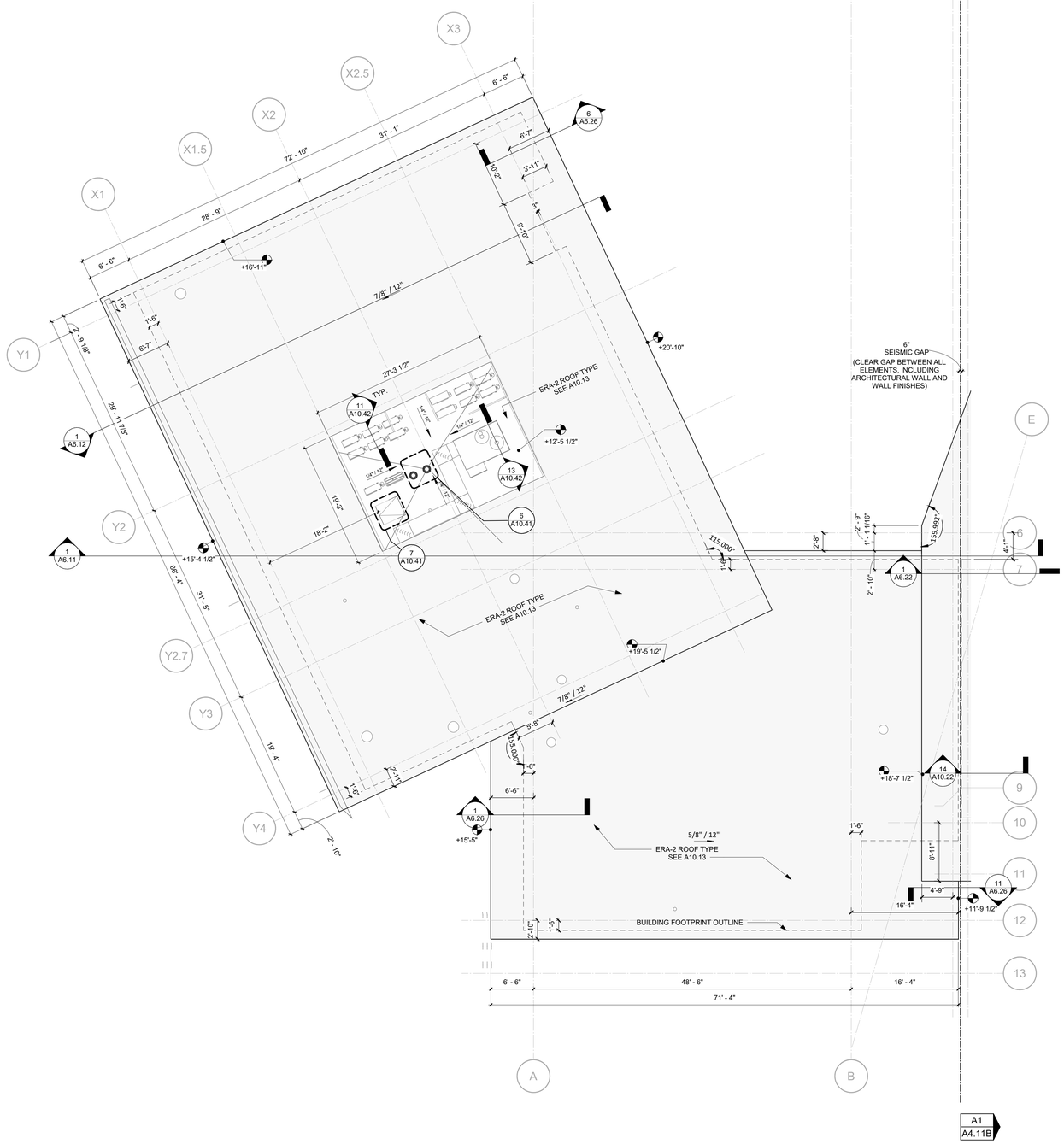
# A4.11

ROOF PLAN | A1 | 3/32" = 1'-0"

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## KEYNOTES

## LEGEND- ROOF PLANS

**BUILDING ELEMENTS**

- PARTITION
- MARKER (LEADER)
- ELEVATION AT MARKER
- MINIMUM REQUIRED SLOPE- THIS RIDGE OR VALLEY (PARALLEL TO ARROW HEAD)
- MINIMUM REQUIRED SLOPE (PLANE OF ROOF ENCLOSING TAIL OF ARROW)
- TAPERED INSULATION (CRICKET) UNDERNEATH ROOFING SYSTEM (HATCHED AREA)
- ROOF WALK MATS/PADS
- ROOF DRAIN (REFER TO PLUMBING DRAWINGS)
- OVERFLOW DRAIN (REFER TO PLUMBING DRAWINGS)
- SCUPPER AND DOWNSPOUT (REFER TO PLUMBING DRAWINGS)
- SCUPPER (REFER TO PLUMBING DRAWINGS)
- 3'-0" WIDE MIN. WALKING PAD

## NOTES - ROOF PLANS

1. ITEMS FROM MECHANICAL, PLUMBING, AND ELECTRICAL SCOPES MAY BE SHOWN FOR REFERENCE AND COORDINATION ONLY. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPING, CURBS, VENTS, DUCTS, FANS, AND OTHER ITEMS ON THE ROOF SURFACE
2. ALL ROOF FLASHING TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS
3. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL UNITS AND DETAILS
4. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
5. REFER TO SHEET A10.41 FOR ROOF ASSEMBLY, FLASHING CURB, PENETRATIONS & EQUIPMENT PLATFORM DETAILS.
6. ALL ROOF COMPONENT HEIGHTS ARE RELATIVE TO THE 0'-0" FINISH FLOOR HEIGHT FOR THE BUILDING.

FACILITY:

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF PLAN - SEGMENT A**

**DSA SUBMITTAL**

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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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# A4.11A

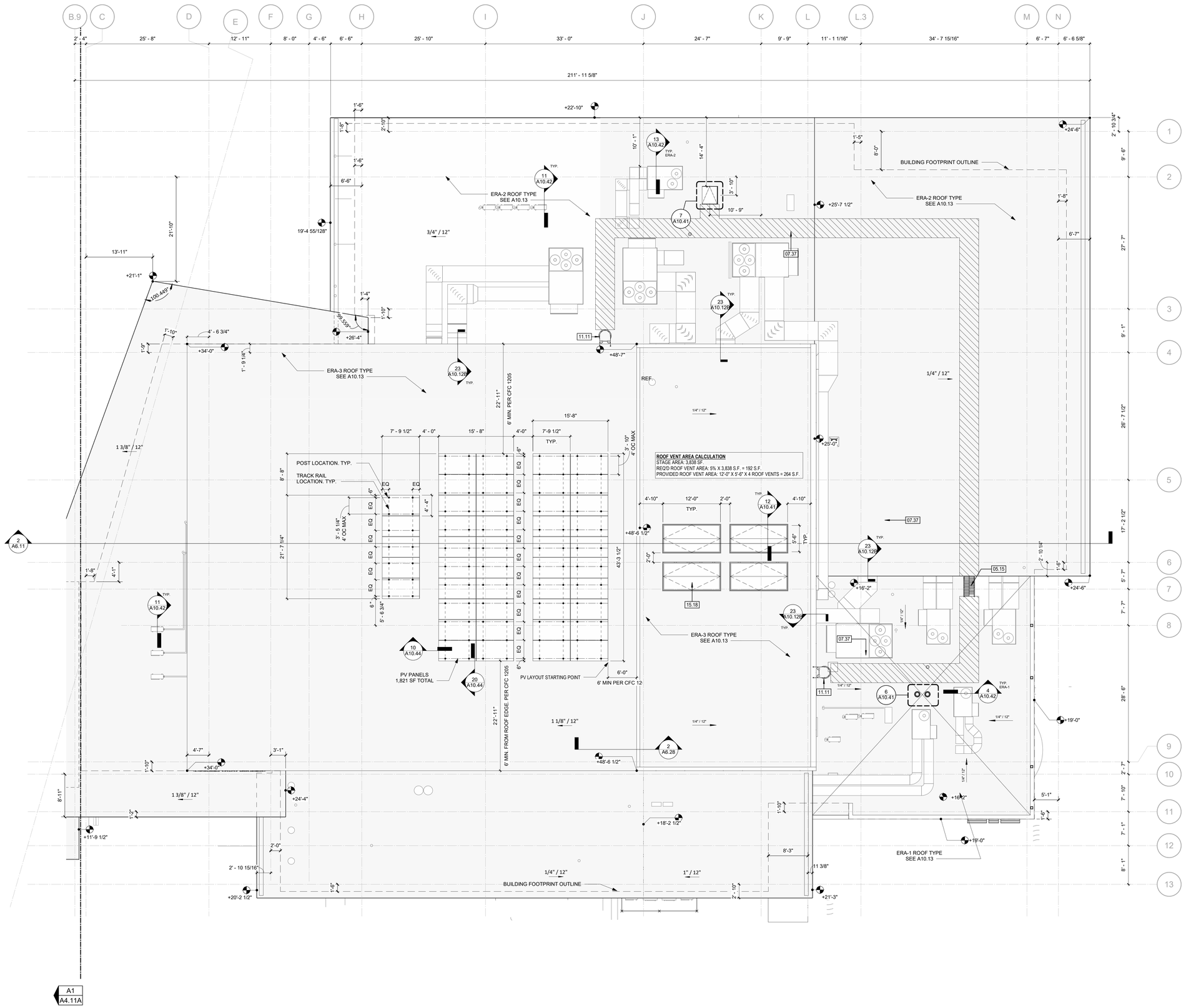
**SEGMENT A - ROOF PLAN** | **A1** 1/8" = 1'-0"

PN

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## KEYNOTES

| | |
|---|---|
| 05.15 | ROOF LADDER |
| 07.37 | 24" X 24" ROOF WALKWAY PADS |
| 11.11 | CAGE LADDER - 8/A10.51 |
| 15.18 | AUTOMATIC EMERGENCY ROOF VENT - 12/A10.41 |

## LEGEND- ROOF PLANS

**BUILDING ELEMENTS**

- PARTITION
- MARKER (LEADER)
- ELEVATION AT MARKER (10.000)
- MINIMUM REQUIRED SLOPE- THIS RIDGE OR VALLEY (PARALLEL TO ARROW HEAD)
- MINIMUM REQUIRED SLOPE (PLANE OF ROOF ENCLOSING TAIL OF ARROW)
- TAPERED INSULATION (CRICKET) UNDERNEATH ROOFING SYSTEM (HATCHED AREA)
- ROOF WALK MATS/PADS
- ROOF DRAIN (REFER TO PLUMBING DRAWINGS) (RD)
- OVERFLOW DRAIN (REFER TO PLUMBING DRAWINGS) (OD)
- SCUPPER AND DOWNSPOUT (REFER TO PLUMBING DRAWINGS) (SD1)
- SCUPPER (REFER TO PLUMBING DRAWINGS) (SC1)
- 3'-0" WIDE MIN. WALKING PAD

## NOTES - ROOF PLANS

1. ITEMS FROM MECHANICAL, PLUMBING, AND ELECTRICAL SCOPES MAY BE SHOWN FOR REFERENCE AND COORDINATION ONLY. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPING, CURBS, VENTS, DUCTS, FANS, AND OTHER ITEMS ON THE ROOF SURFACE
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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF PLAN - SEGMENT B**

**DSA SUBMITTAL**

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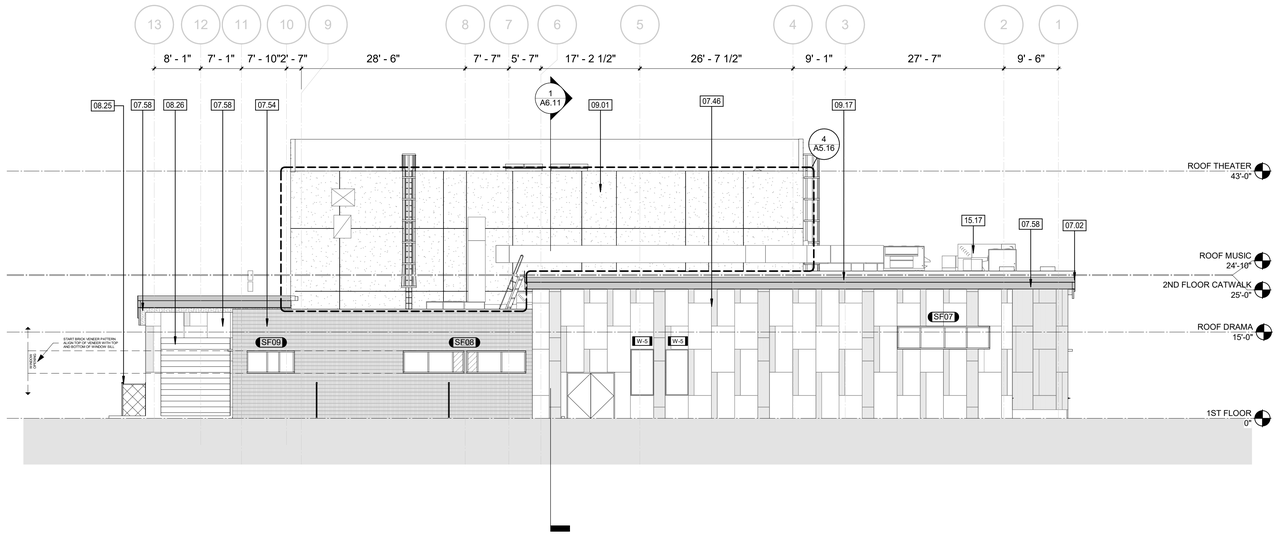
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**SEGMENT B - ROOF PLAN** | **A1** 1/8" = 1'-0"

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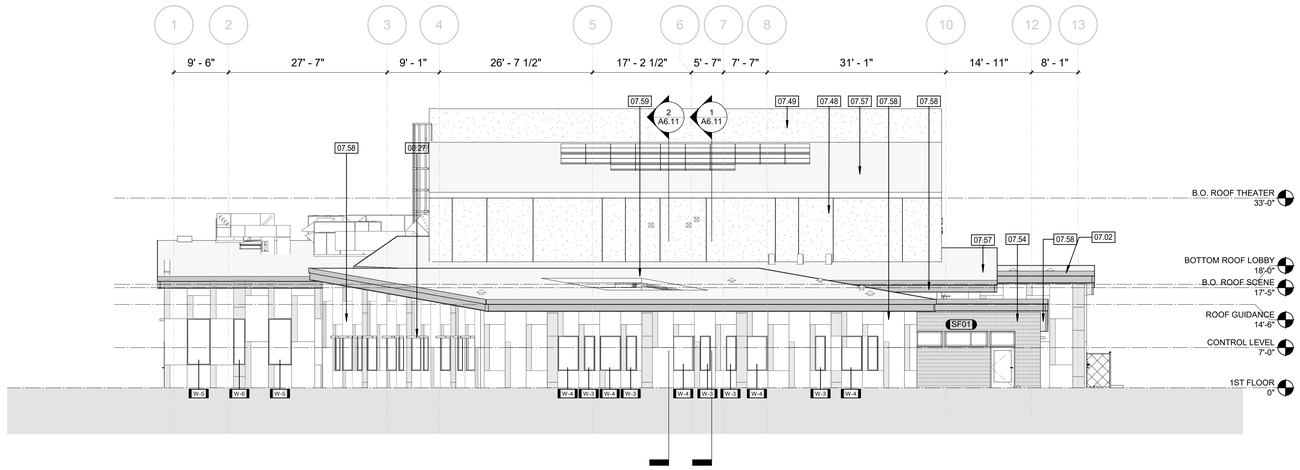
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## ELEVATION - EXTERIOR - NORTH

2

3/32" = 1'-0"




## ELEVATION - EXTERIOR - SOUTH

1

3/32" = 1'-0"

## LEGEND- ELEVATIONS

FIBER CEMENT PANEL
STYLE: AFC STONE (FIELD)
AFC GROOVE (ACCENT)
COLOR: 545 SAND

THIN BRICK
STYLE: INTERSTATE BRICK
PARK ROSE (FIELD)
PACIFIC CLAY
ROSE TAN(ACCENT)
SEE PARTIAL ELEVATIONS FOR PATTERN

GL-11 GL-21 EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE

COMPOSITE METAL PANEL, SEE SPEC

PLASTER

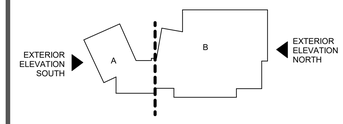
## KEYNOTES

| | |
|---|---|
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.46 | EWA-1B FIBER CEMENT PANEL, SEE A10.13 FOR ASSEMBLY |
| 07.48 | EWA-2A CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.49 | EWA-2AP CEMENT PLASTER PARAPET, SEE A10.13 FOR ASSEMBLY |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 07.59 | MECHANICAL WELL, SEE ROOF PLAN A4.11A FOR DIMENSIONS |
| 08.25 | CHAIN FENCE STEEL MESH |
| 08.26 | ROLL UP DOOR. SEE 1/A10.92 |
| 08.27 | HORIZONTAL ALUMINUM SUN SHADE. REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 09.01 | PLASTER |
| 09.17 | COMPOSITE METAL PANEL |
| 15.17 | MECHANICAL EQUIPMENT, REFER TO ROOF PLAN & MECHANICAL DRAWINGS |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. REFER TO EXTERIOR WALL TYPES SHEET A10.13 AND SECTIONS FOR ADDITIONAL INFORMATION ON BUILDING MATERIALS & FINISHES.
3. ALL EXTERIOR METAL GUARDRAILS/RAILINGS TO BE FINISHED W/ HIGH PERFORMANCE COATING, U.N.O.
4. REFER TO CURTAIN WALL, STOREFRONT, AND WINDOW SCHEDULE FOR GLAZING TYPES.
5. FOR ALL EXTERIOR WINDOWS/CURTAIN WALL MULLIONS, LOUVERS, AND CANOPY, REFER TO SPECIFICATION.
6. REFER TO SIGNAGE SHEET FOR BUILDING INDETIFICATION INFORMATION.

AA WINDOW TAG




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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**EXTERIOR ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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# A5.11

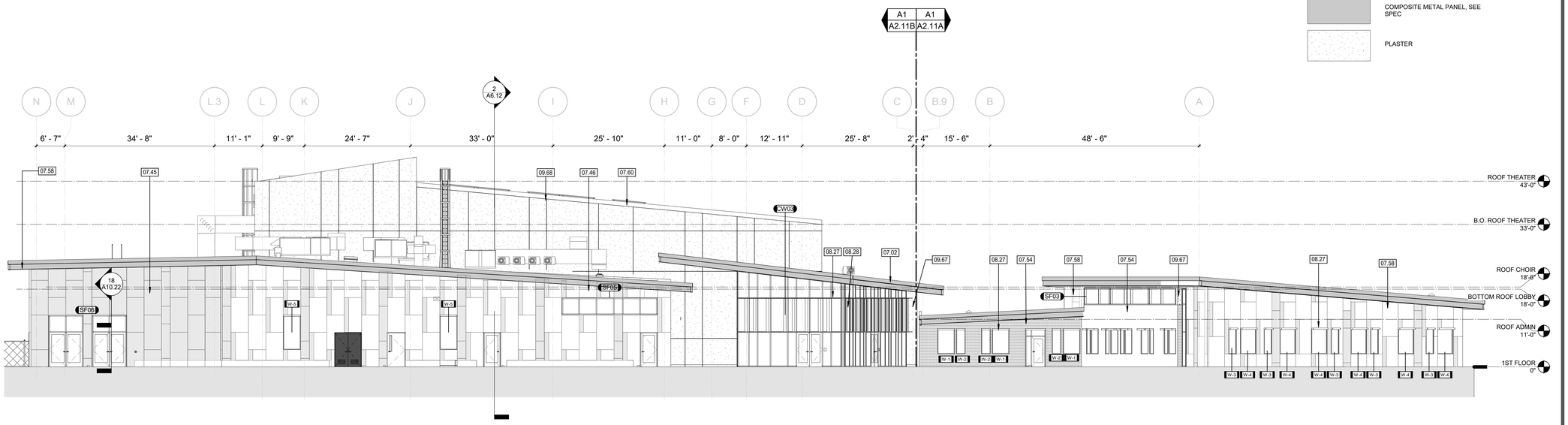

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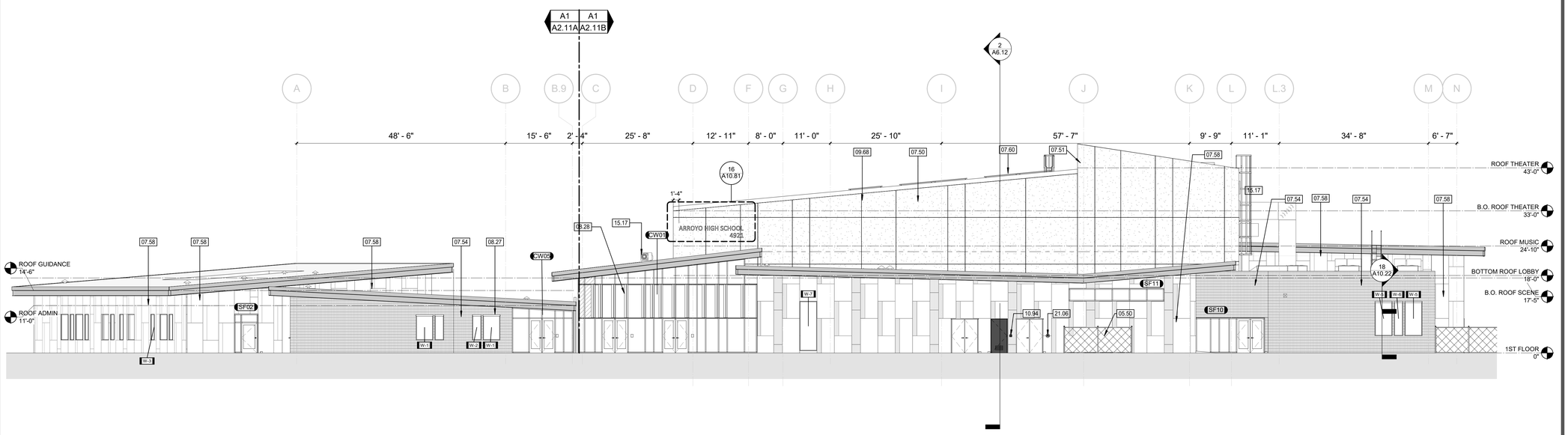
## LEGEND- ELEVATIONS

- FIBER CEMENT PANEL
  STYLE: AFC STONE (FIELD)
  AFC GROOVE (ACCENT)
  COLOR: 545 SAND
- THIN BRICK
  STYLE: INTERSTATE BRICK
  PARK ROSE (FIELD)
  PACIFIC CLAY
  ROSE TAN(ACCENT)
  SEE PARTIAL ELEVATIONS FOR PATTERN
- GL-11 / GL-21 — EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE
- COMPOSITE METAL PANEL, SEE SPEC
- PLASTER




## ELEVATION - EXTERIOR - WEST 2

3/32" = 1'-0"




## ELEVATION - EXTERIOR - EAST 1

3/32" = 1'-0"

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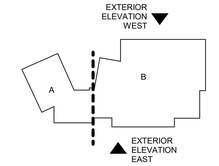
## KEYNOTES

| | |
|---|---|
| 05.50 | CHAIN LINK FENCE STEEL MESH - 8/A10.01 |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.45 | EWA-1A FIBER CEMENT BOARD, SEE A10.13 FOR ASSEMBLY |
| 07.46 | EWA-1B FIBER CEMENT PANEL, SEE A10.13 FOR ASSEMBLY |
| 07.50 | EWA-2B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.51 | EWA-2BP CEMENT PLASTER PARAPET, SEE A10.13 FOR ASSEMBLY |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 07.60 | ERA-3 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 08.27 | HORIZONTAL ALUMINUM SUN SHADE. REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 08.28 | VERTICAL ALUMINUM LOUVRE, REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 09.67 | PLASTER FINISH, PAINT TO MATCH COMPOSITE METAL PANEL |
| 09.68 | PLASTER CONTROL JOINT, SEE DETAILS ON A10.14 |
| 10.94 | KNOX BOX PER CFC 506 (LISTED PER UL 1037) - 4/A10.02 |
| 15.17 | MECHANICAL EQUIPMENT, REFER TO ROOF PLAN & MECHANICAL DRAWINGS |
| 21.06 | FIRE DEPARTMENT CONNECTION AND PUMP TEST OUTLETS, SEE FIRE SPRINKLER DRAWINGS |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. REFER TO EXTERIOR WALL TYPES SHEET A10.13 AND SECTIONS FOR ADDITIONAL INFORMATION ON BUILDING MATERIALS & FINISHES.
3. ALL EXTERIOR METAL GUARDRAILS/RAILINGS TO BE FINISHED W/ HIGH PERFORMANCE COATING, U.N.O.
4. REFER TO CURTAIN WALL, STOREFRONT, AND WINDOW SCHEDULE FOR GLAZING TYPES.
5. FOR ALL EXTERIOR WINDOWS/CURTAIN WALL MULLIONS, LOUVERS, AND CANOPY, REFER TO SPECIFICATION.
6. REFER TO SIGNAGE SHEET FOR BUILDING INDETIFICATION INFORMATION.

AA WINDOW TAG




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**EXTERIOR ELEVATIONS**

## DSA SUBMITTAL

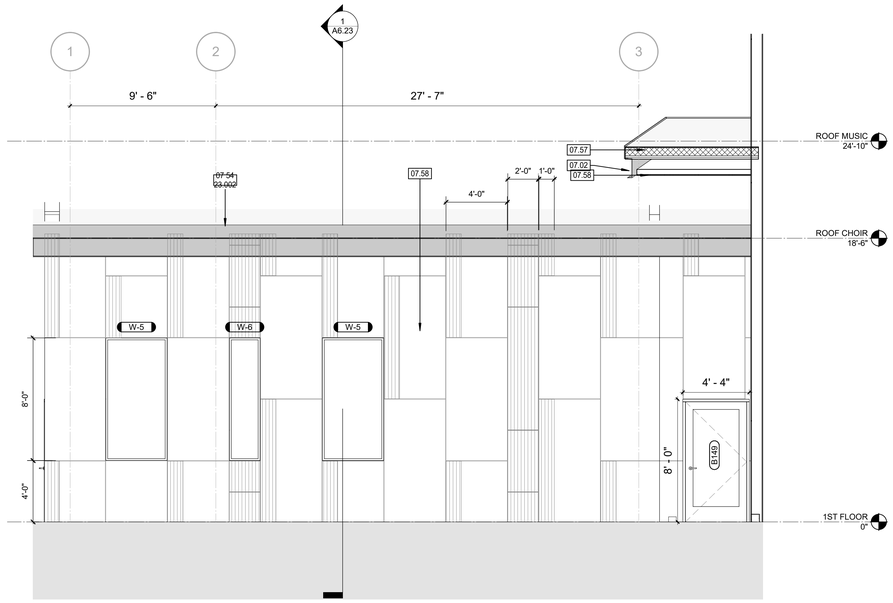
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

# A5.12

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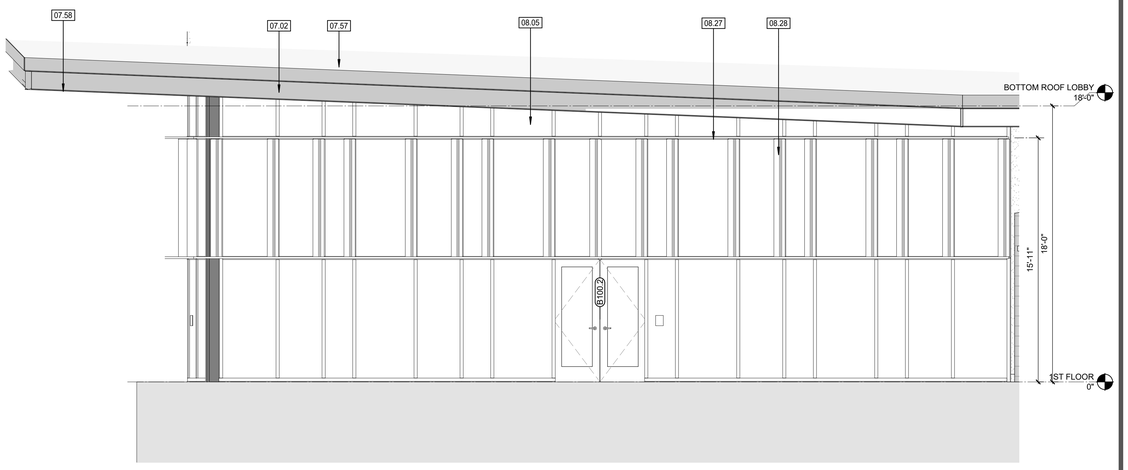

## PARTIAL ELEVATION - CHOIR - SOUTH

4

1/4" = 1'-0"

## LEGEND- ELEVATIONS

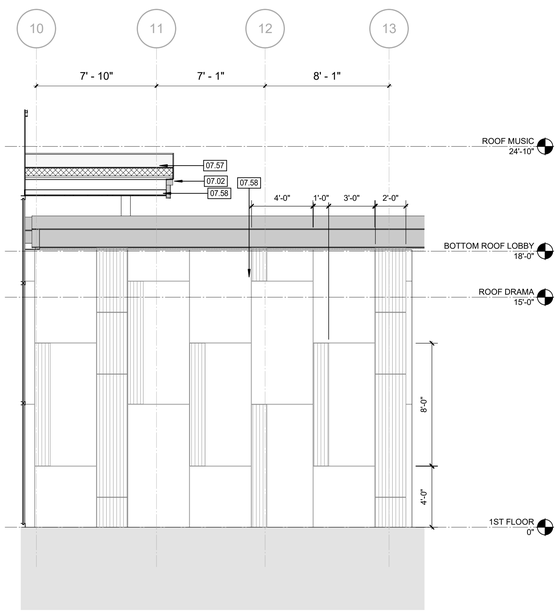
- FIBER CEMENT PANEL
  STYLE: AFC STONE (FIELD)
  AFC GROOVE (ACCENT)
  COLOR: 545 SAND
- THIN BRICK
  STYLE: INTERSTATE BRICK
  PARK ROSE (FIELD)
  PACIFIC CLAY
  ROSE TAN(ACCENT)
  SEE PARTIAL ELEVATIONS FOR PATTERN
- GL-11 / GL-21 — EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE
- COMPOSITE METAL PANEL, SEE SPEC
- PLASTER




## PARTIAL ELEVATION - LOBBY SW

2

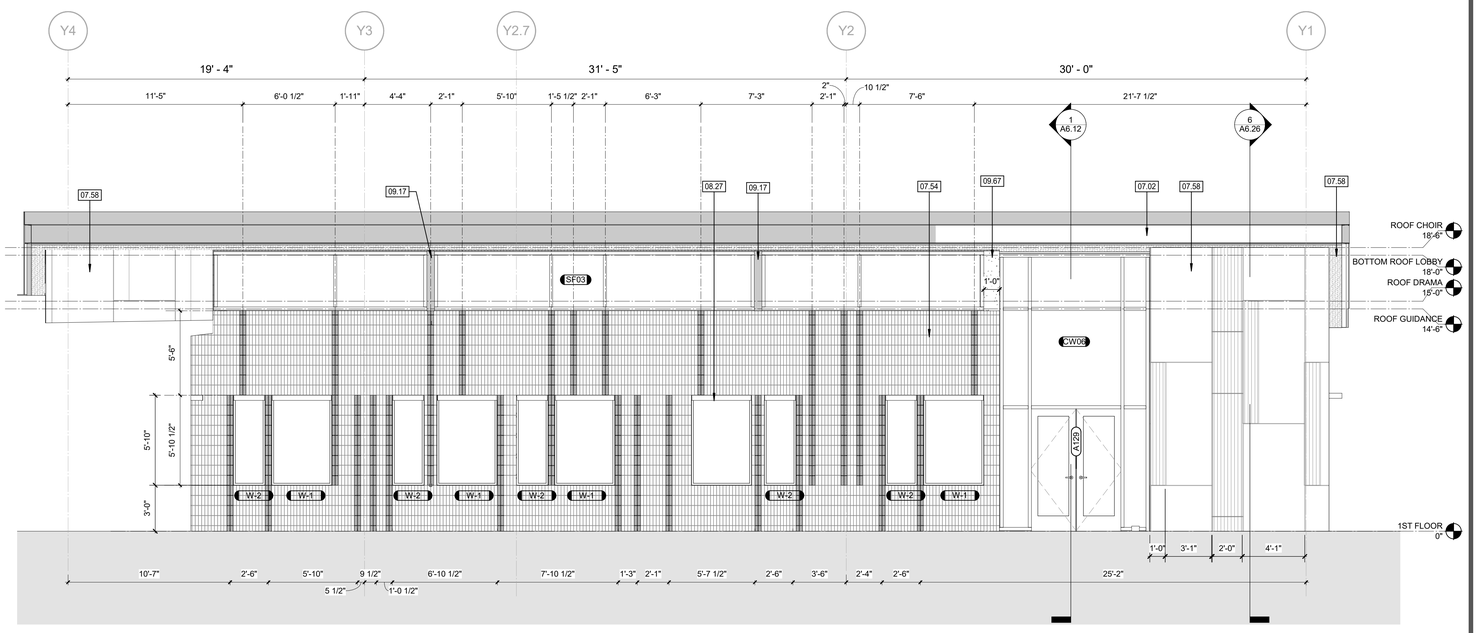
1/4" = 1'-0"




## PARTIAL ELEVATION - LOBBY TOILETS - SOUTH

3

1/4" = 1'-0"




## PARTIAL ELEVATION - GUIDANCE - NORTH

1

1/4" = 1'-0"

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DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA


## ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

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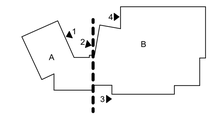
| | |
|---|---|
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 08.05 | CURTAIN WALL. SEE WINDOW SCHEDULE & CURTAIN WALL DRAWINGS. |
| 08.27 | HORIZONTAL ALUMINUM SUN SHADE. REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 08.28 | VERTICAL ALUMINUM LOUVRE, REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 09.17 | COMPOSITE METAL PANEL |
| 09.67 | PLASTER FINISH, PAINT TO MATCH COMPOSITE METAL PANEL |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. REFER TO EXTERIOR WALL TYPES SHEET A10.13 AND SECTIONS FOR ADDITIONAL INFORMATION ON BUILDING MATERIALS & FINISHES.
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AA WINDOW TAG

## KEY PLAN




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PARTIAL EXTERIOR ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

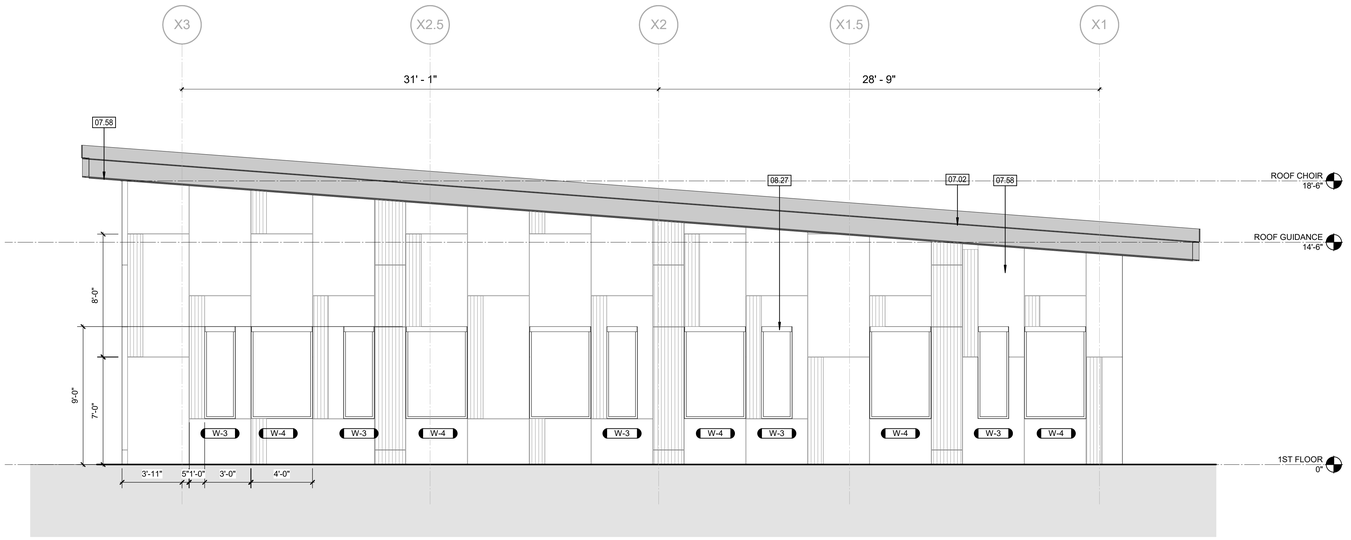
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## PARTIAL ELEVATION - GUIDANCE - WEST

4

1/4" = 1'-0"

## LEGEND- ELEVATIONS

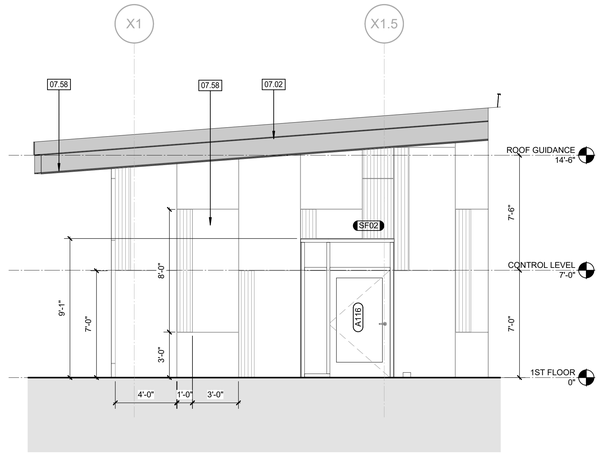
FIBER CEMENT PANEL
STYLE: AFC STONE (FIELD)
AFC GROOVE (ACCENT)
COLOR: 545 SAND

THIN BRICK
STYLE: INTERSTATE BRICK
PARK ROSE (FIELD)
PACIFIC CLAY
ROSE TAN(ACCENT)
SEE PARTIAL ELEVATIONS FOR PATTERN

GL-11 GL-21 EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE

COMPOSITE METAL PANEL, SEE SPEC

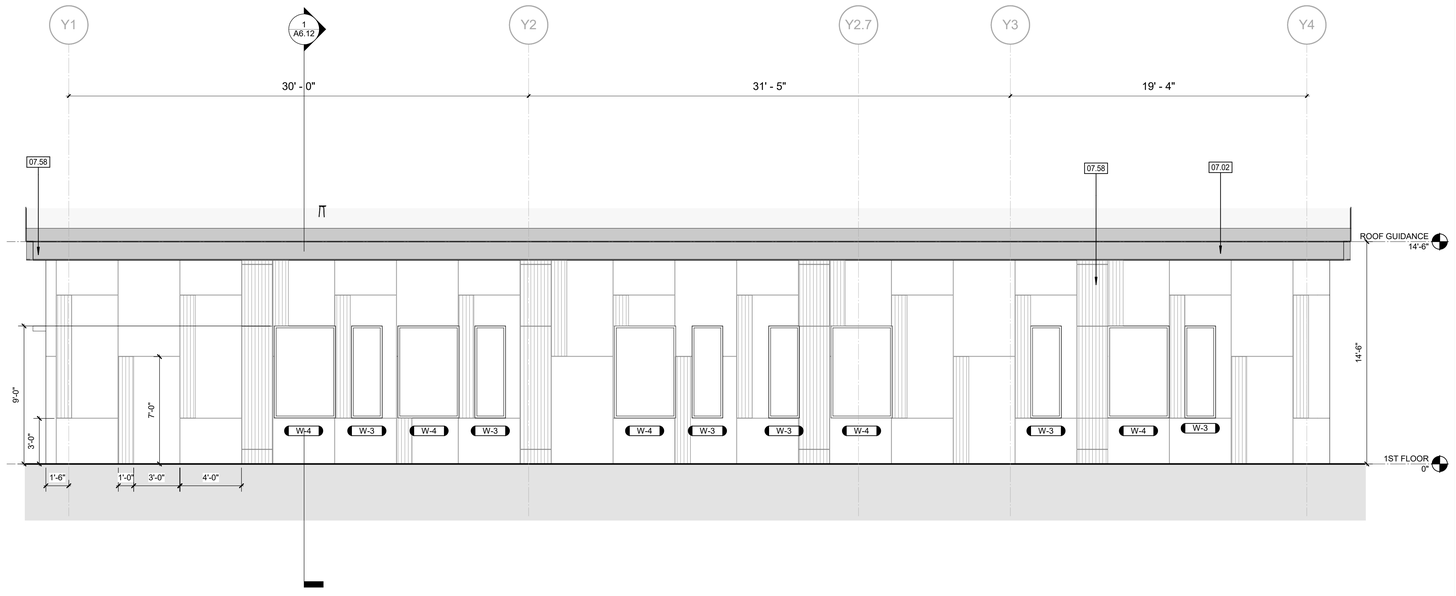
PLASTER




## PARTIAL ELEVATION - STAFF LOUNGE - EAST

2

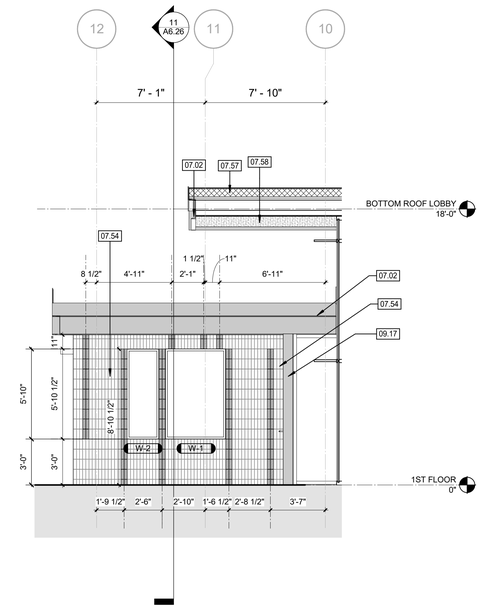
1/4" = 1'-0"




## PARTIAL ELEVATION - GUIDANCE - SOUTH

3

1/4" = 1'-0"




## PARTIAL ELEVATION - ATTENDANCE OFFICE - NORTH

1

1/4" = 1'-0"

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| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

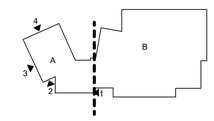
| | |
|---|---|
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 08.27 | HORIZONTAL ALUMINUM SUN SHADE. REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 09.17 | COMPOSITE METAL PANEL |

## NOTES

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AA WINDOW TAG

## KEY PLAN




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PARTIAL EXTERIOR ELEVATIONS**

**DSA SUBMITTAL**

| | |
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

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## LEGEND- ELEVATIONS

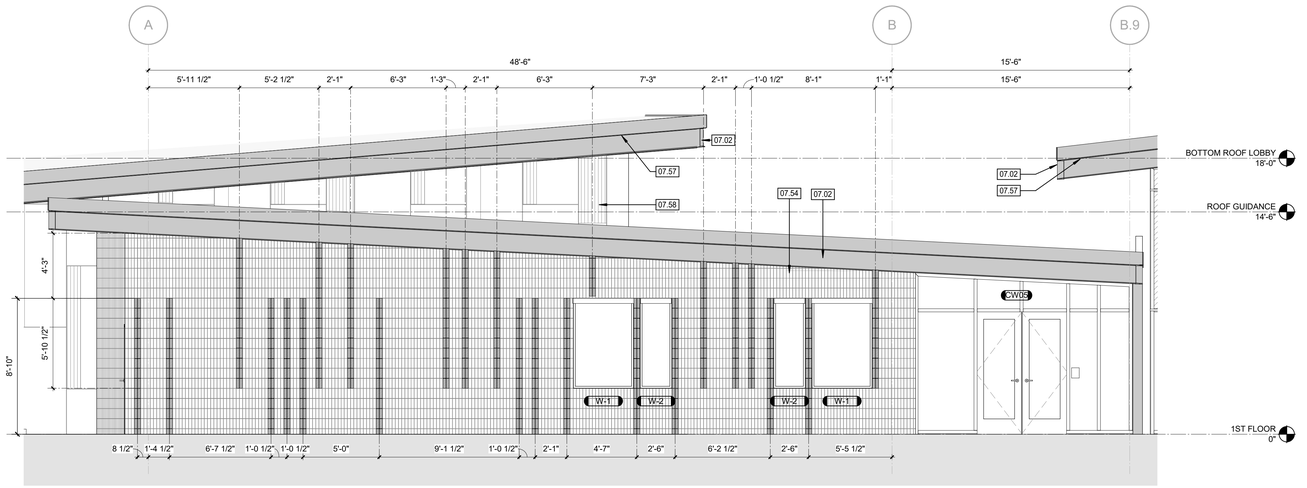
FIBER CEMENT PANEL
STYLE: AFC STONE (FIELD)
AFC GROOVE (ACCENT)
COLOR: 545 SAND

THIN BRICK
STYLE: INTERSTATE BRICK
PARK ROSE (FIELD)
PACIFIC CLAY
ROSE TAN(ACCENT)
SEE PARTIAL ELEVATIONS FOR PATTERN

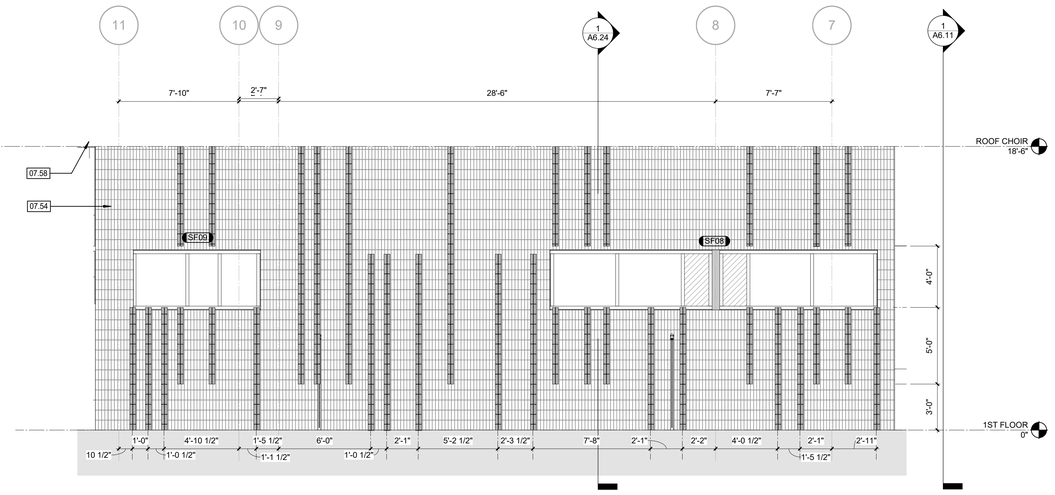
GL-11 GL-21 EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE

COMPOSITE METAL PANEL, SEE SPEC

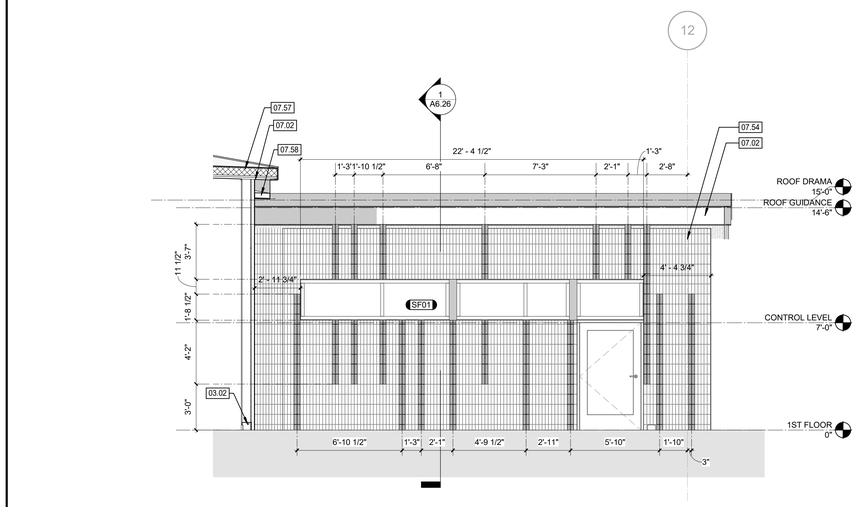
PLASTER



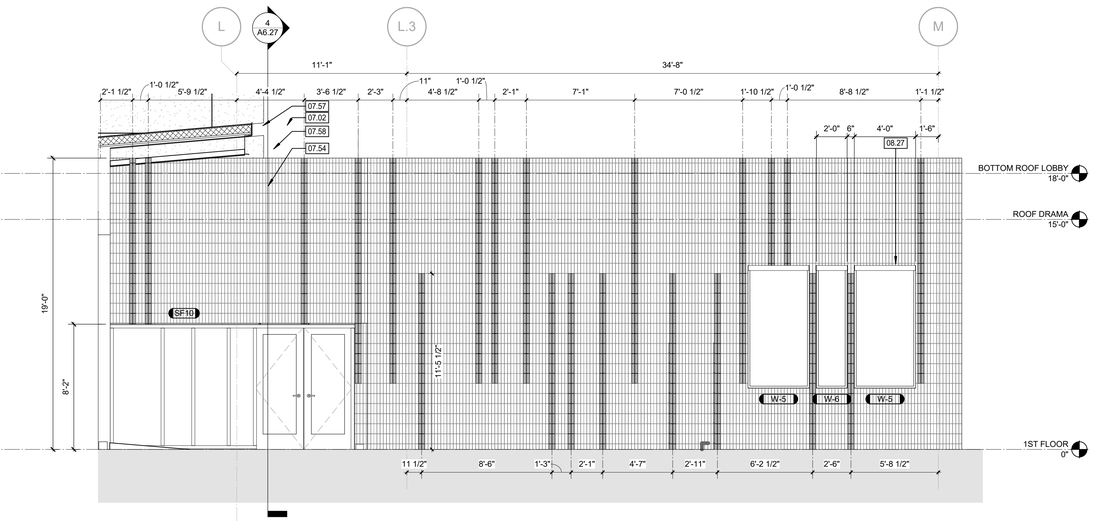

## PARTIAL ELEVATION ATTENDANCE/ RECEP - EAST 3
1/4" = 1'-0"



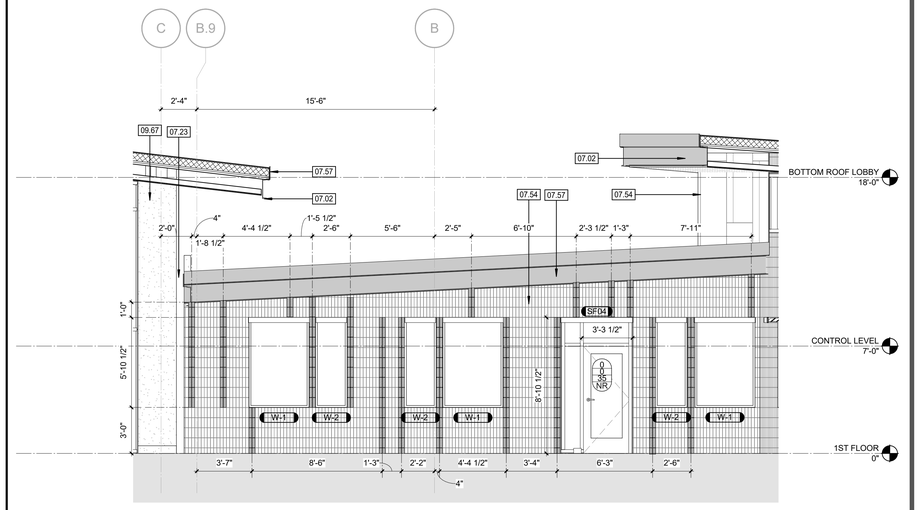

## PARTIAL ELEVATION - DRAMA - NORTH 5
1/4" = 1'-0"




## PARTIAL ELEVATION - HEALTH CENTER - SOUTH 2
1/4" = 1'-0"




## PARTIAL ELEVATION - DRAMA - EAST 4
1/4" = 1'-0"




## PARTIAL ELEVATION - PRINCIPAL - WEST 1
1/4" = 1'-0"

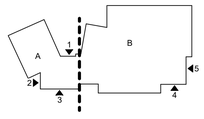
## KEYNOTES

| | |
|---|---|
| 03.02 | CONCRETE CURB |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.23 | 6" SEISMIC SEPARATION |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 08.27 | HORIZONTAL ALUMINUM SUN SHADE. REFER TO WINDOW SCHEDULE & CURTAIN WALL DRAWINGS |
| 09.67 | PLASTER FINISH, PAINT TO MATCH COMPOSITE METAL PANEL |

## NOTES

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AA WINDOW TAG




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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PARTIAL EXTERIOR ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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## LEGEND- ELEVATIONS

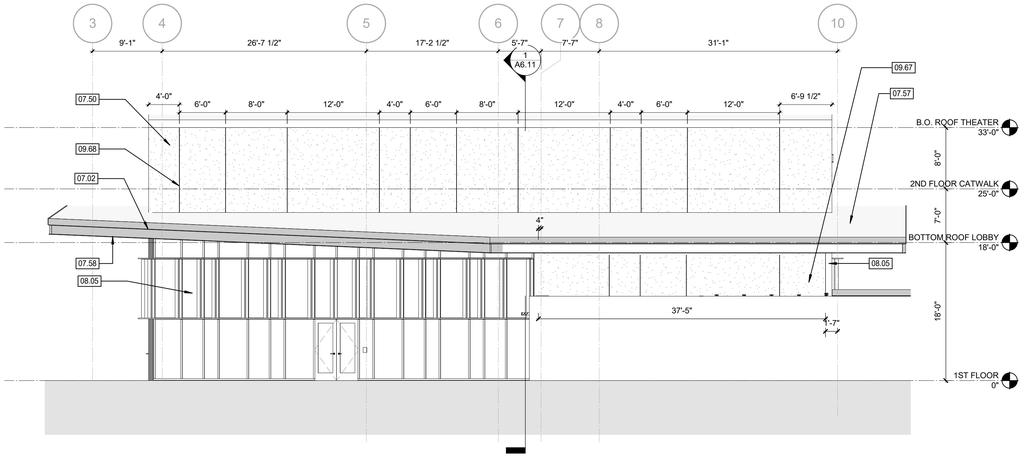
FIBER CEMENT PANEL
STYLE: AFC STONE (FIELD)
AFC GROOVE (ACCENT)
COLOR: 545 SAND

THIN BRICK
STYLE: INTERSTATE BRICK
PARK ROSE (FIELD)
PACIFIC CLAY
ROSE TAN(ACCENT)
SEE PARTIAL ELEVATIONS FOR PATTERN

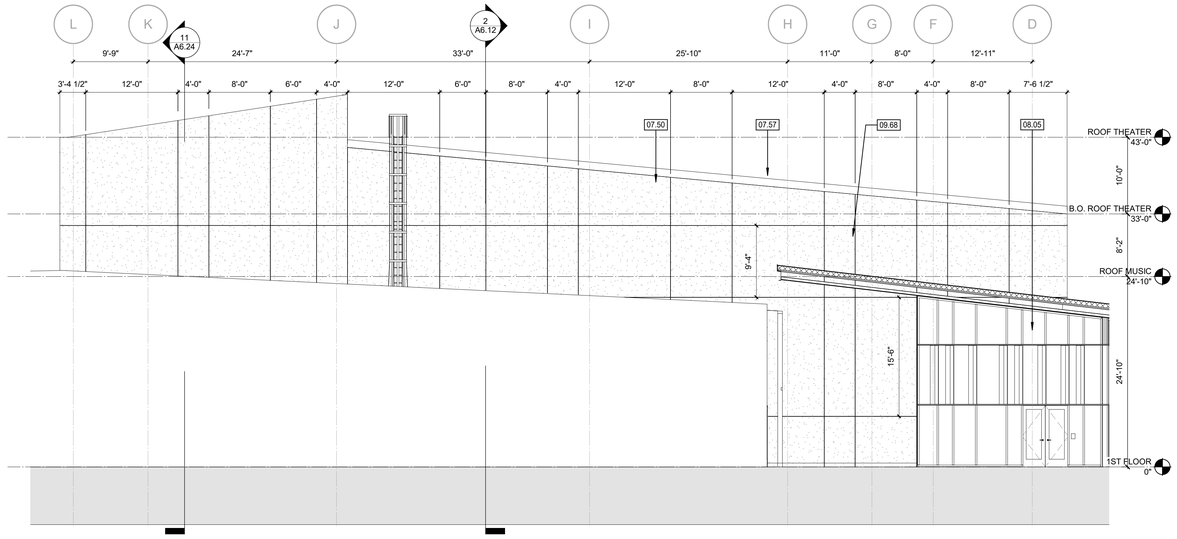
GL-11 GL-21 EXTERIOR GLAZING STOREFRONT, SEE WINDOW SCHEDULE

COMPOSITE METAL PANEL, SEE SPEC

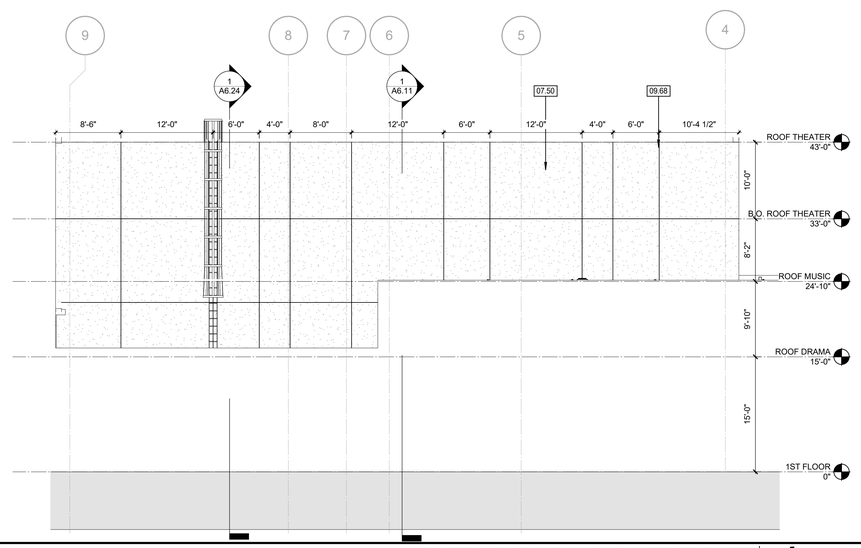
PLASTER



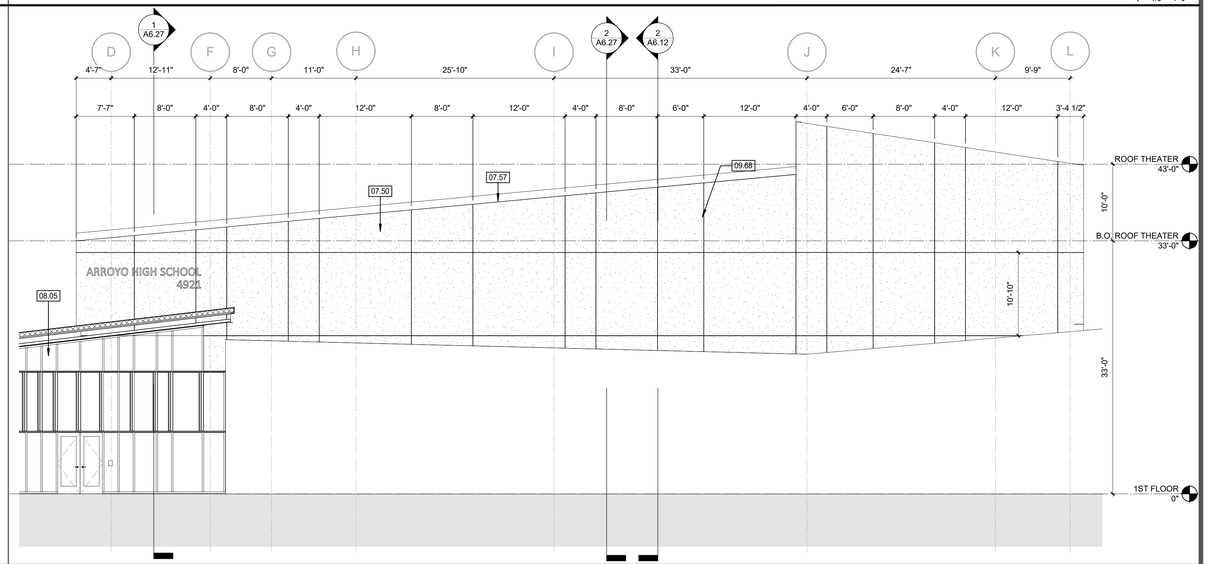

**PARTIAL ELEVATION - PLASTER THEATER WALL - SOUTH** 3 1/8" = 1'-0"




**PARTIAL ELEVATION - PLASTER THEATER WALL - WEST** 2 1/8" = 1'-0"




**PARTIAL ELEVATION - PLASTER THEATER WALL - NORTH** 4 1/8" = 1'-0"




**PARTIAL ELEVATION - PLASTER THEATER WALL - EAST** 1 1/8" = 1'-0"

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## KEYNOTES

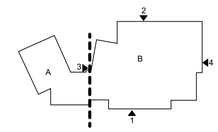
| | |
|---|---|
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.50 | EWA-2B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 08.05 | CURTAIN WALL. SEE WINDOW SCHEDULE & CURTAIN WALL DRAWINGS. |
| 09.67 | PLASTER FINISH, PAINT TO MATCH COMPOSITE METAL PANEL |
| 09.68 | PLASTER CONTROL JOINT. SEE DETAILS ON A10.14 |

## NOTES

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AA WINDOW TAG

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SHEET NAME:

**PARTIAL EXTERIOR ELEVATIONS**

**DSA SUBMITTAL**

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DATE: 09/13/2024 | CLIENT PROJ NO: 3361008100

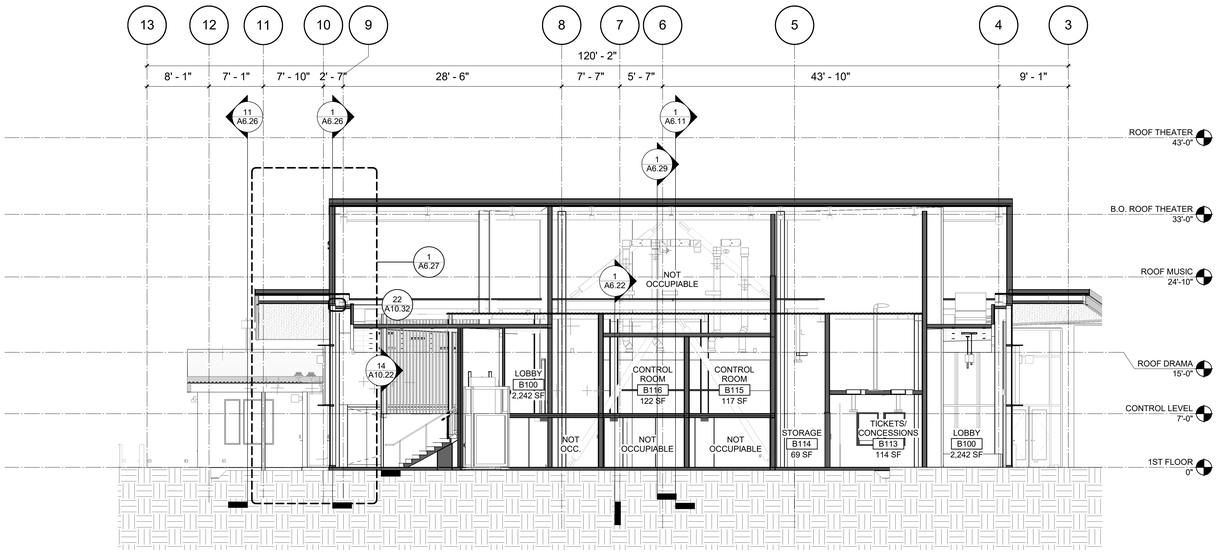
SHEET:

# A5.16

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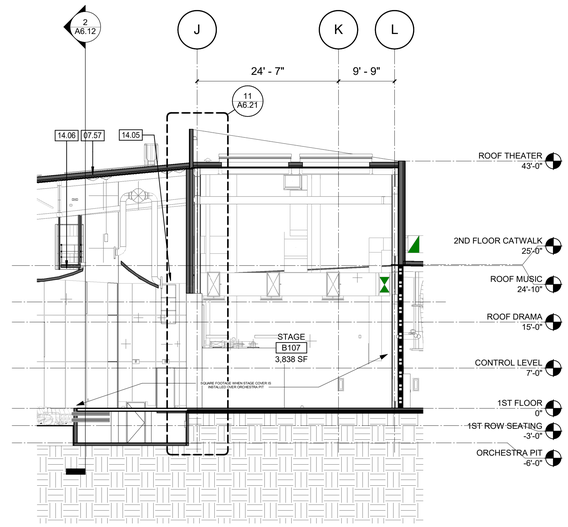
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## BUILDING SECTION AT GRID F

3

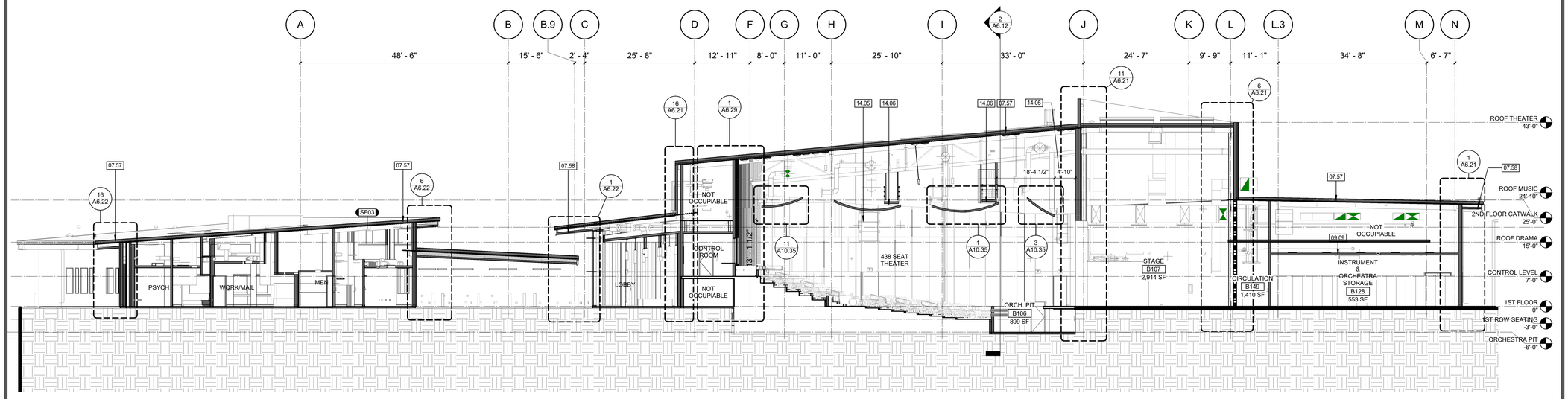
1/8" = 1'-0"




## LONGITUDINAL SECTION W/O ORCHESTRA PIT

2

3/32" = 1'-0"




## LONGITUDINAL SECTION W/ ORCHESTRA PIT

1

3/32" = 1'-0"

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DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 14.05 | 54" BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 3,10/A10.92 |
| 14.06 | CATWALK (3/8" CONT STEEL TREAD PLATE FINISH). REFER TO STRUCTURAL DRAWINGS (S8.01) FOR CATWALK DETAILS. |

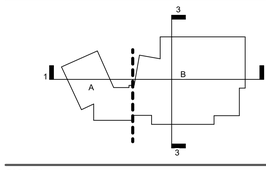
## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. SEE INTERIOR ELEVATIONS FOR INTERIOR SPACE NOTES & INFORMATION.
3. SEE ROOF PLAN FOR NOTES & ADDITIONAL INFORMATION.
4. SEE FINISH PLANS FOR FINISH MATERIALS NOT SHOWN.
5. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFO ON STRUCTURAL MEMBER SIZES AND CONNECTIONS.
6. FOR RATED OCCUPANCY SEPARATION REQUIREMENTS, REFER TO SHEET G1.11.
7. REFER TO DIMENSION PLANS FOR WALL TYPES AND SHEETS A10.11A, A10.11B & A10.12 FOR WALL TYPE CONSTRUCTION.
8. FOR HANDRAILS, ALL WELDED JOINTS AND SURFACES SHALL BE GROUND SMOOTH, NO SHARP OR ABRASIVE CORNERS, EDGES, OR SURFACES. WALL SURFACES ADJACENT TO HANDRAIL SHALL BE FREE OF SHARP, OR ABRASIVE ELEMENTS. PER CBC 2022, 11B-505.6, 11B-505.8, & 11B-405.8.
9. HANDRAILS FOR STAIRS & RAMPS SHALL BE 1 1/4" TO 1 1/2" DIAMETER (1 1/2" NOMINAL) & MOUNTED 1 1/2" CLEAR FROM SIDE WALLS. PER CBC 2022, 11B-307.2, 11B-405.8, AND 11B-505. SEE DETAILS ON SHEET A10.51

## LEGEND - BUILDING SECTION

1 HR RATED CEILING

1 HR FIRE / SMOKE BARRIER




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**BUILDING SECTIONS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

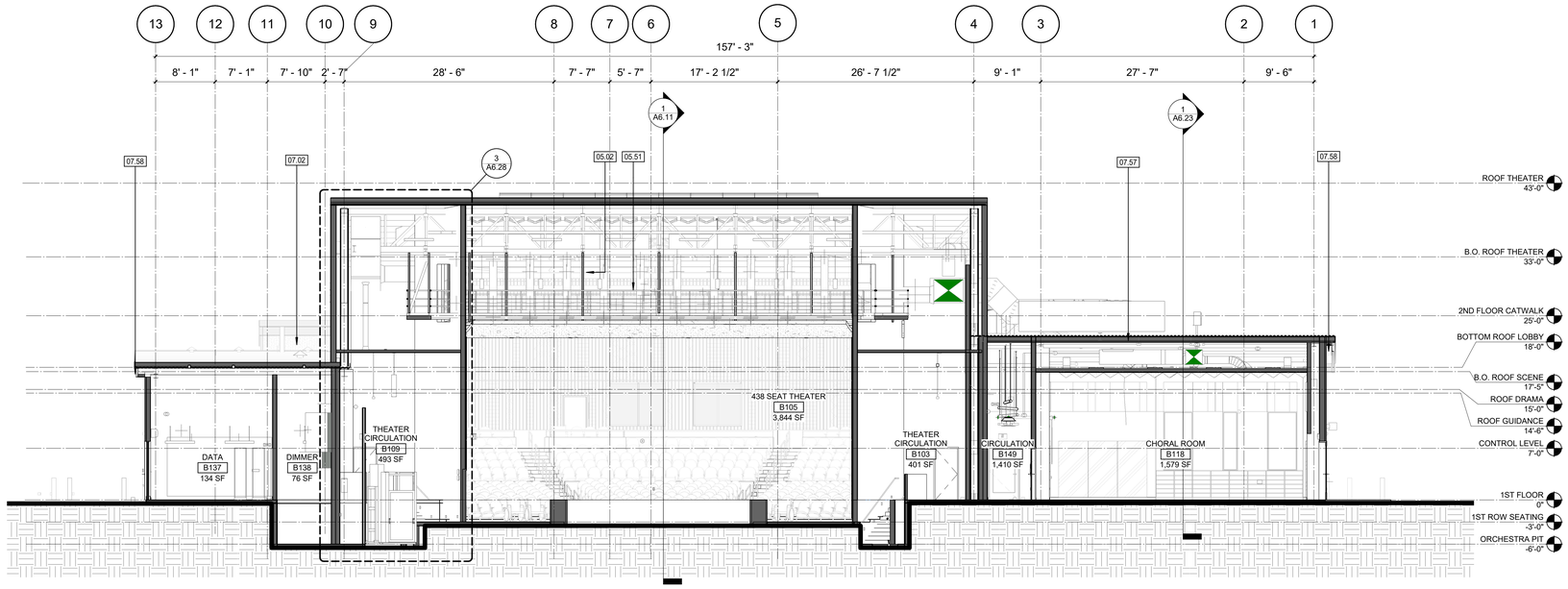
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# A6.11

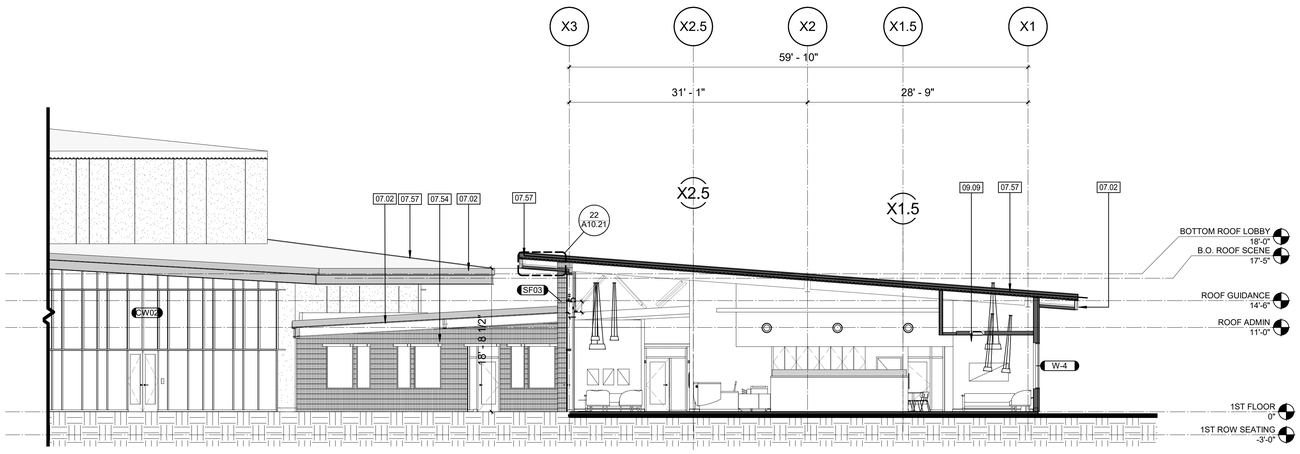
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## TRANSVERSAL SECTION 2

1/8" = 1'-0"




## OFFICES - SECTION 1

1/8" = 1'-0"

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**ISSUE**

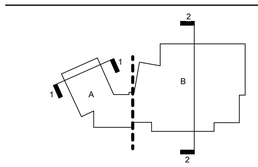
| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 02.25 | (E) FIRE HYDRANT TO REMAIN |
| 02.40 | (E) MARQUEE TO BE RELOCATED PER PROJECT SITE PLAN. PROVIDE NEW CONCRETE FOOTING AND BASE PER STRUCTURAL DRAWINGS. |
| 03.01 | CONCRETE SLAB ON GRADE |
| 03.02 | CONCRETE CURB |
| 03.04 | CONCRETE FLOOR SLAB |
| 03.24 | CIP CONCRETE SEAT WALL - SEE L6.01 |
| 03.26 | CONCRETE WALL PER STRUCTURAL DRAWINGS |
| 04.01 | CONCRETE WALL |
| 05.01 | BRACE FRAME |
| 05.02 | STEEL BEAM |
| 05.03 | WIDE FLANGE COLUMN |
| 05.04 | DOUBLE METAL STUD WALL, SEE FLOOR PLAN FOR TYPES |
| 05.12 | HSS |
| 05.15 | ROOF LADDER |
| 05.29 | HSS COLUMN |
| 05.48 | SECURITY METAL FENCE - 2/A10.01 |
| 05.49 | WROUGHT IRON SECURITY GATE WITH KNOX BOX - 3/A10.02 |
| 05.50 | CHAIN LINK FENCE STEEL MESH - 8/A10.01 |
| 05.51 | SCHEDULE 40 NOMINAL SIZE 1.66" OD STD. STL. PIPE CATWALK RAILING. REFER TO STRUCTURAL & THEATER DRAWINGS |
| 05.52 | VEHICULAR GATE - 1/A10.02 |
| 05.53 | EXISTING ROLLING GATE PER A#03-108641 |
| 06.07 | DISPLAY CASE |
| 06.14 | CASEWORK. FOR ATTACHMENT DETAIL REFER TO 1/S0.31 |
| 06.24 | WOOD SLATS - 12/A10.91 |
| 06.25 | FLOOR ASSEMBLY: 3/4" PLYWOOD OVER BARE METAL DECK WITH A LUXURY VINYL TILE (LVT1) FINISH, SEE DETAIL - 20/A10.63. REFER TO STRUCTURAL DRAWINGS FOR METAL DECK SPECIFICATIONS AND A9.31 FOR FINISH SPECIFICATIONS. |
| 07 54 23.002 | |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.23 | 6" SEISMIC SEPARATION |
| 07.25 | EXPANSION JOINT - CS SF-600 |
| 07.37 | 24" X 24" ROOF WALKWAY PADS |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. SEE INTERIOR ELEVATIONS FOR INTERIOR SPACE NOTES & INFORMATION.
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**BUILDING SECTIONS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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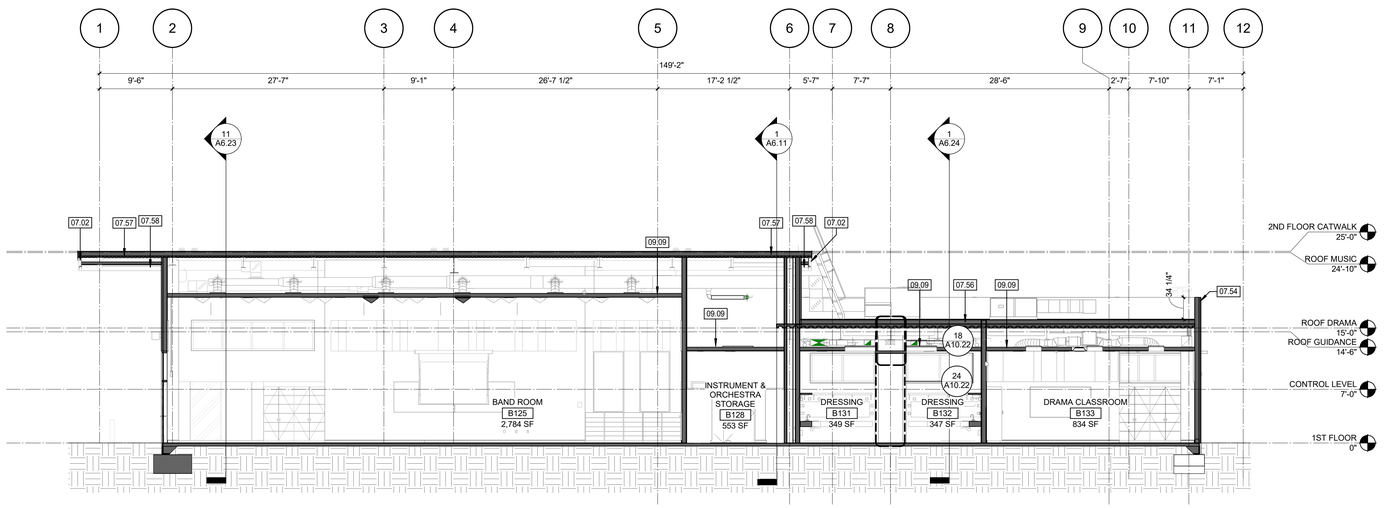
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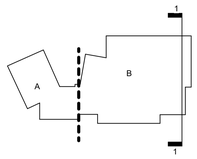



## KEYNOTES

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| 03.24 | CIP CONCRETE SEAT WALL - SEE L6.01 |
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## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**BUILDING SECTIONS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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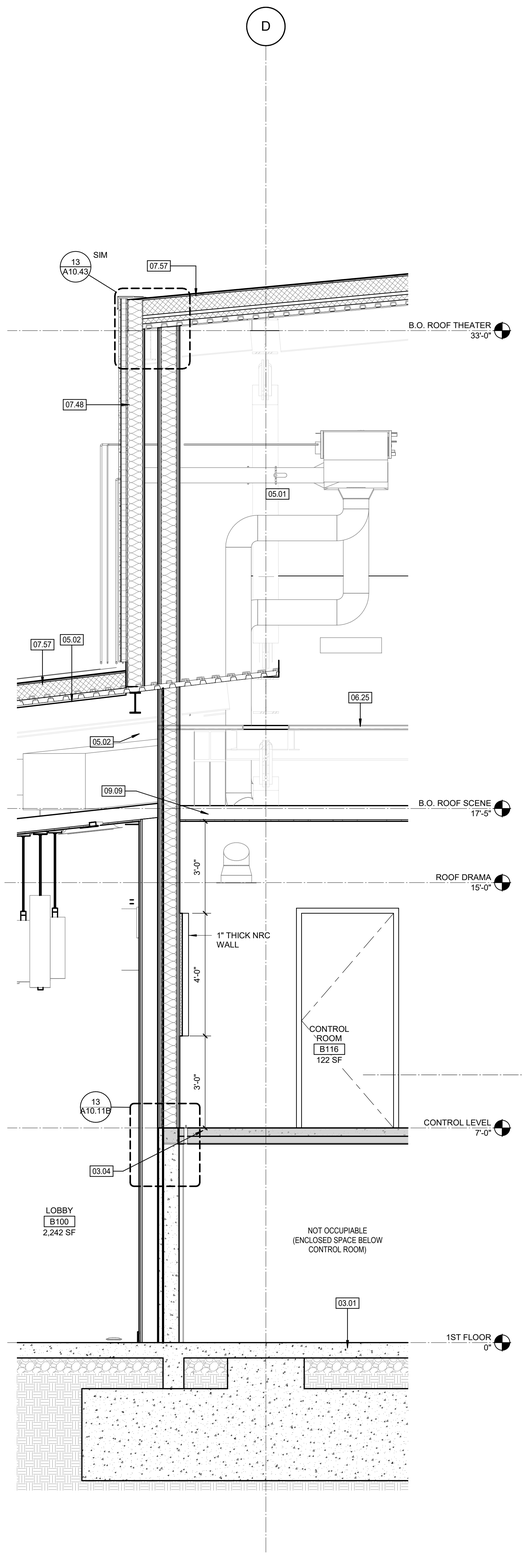
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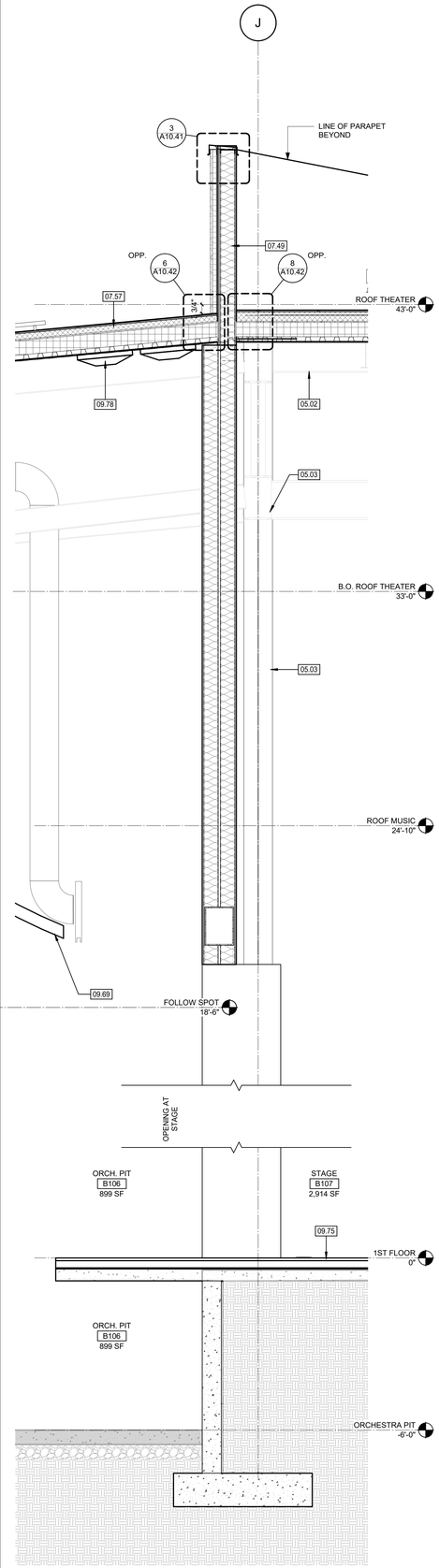
**BUILDING SECTION AT GRID M** **1** 1/8" = 1'-0"

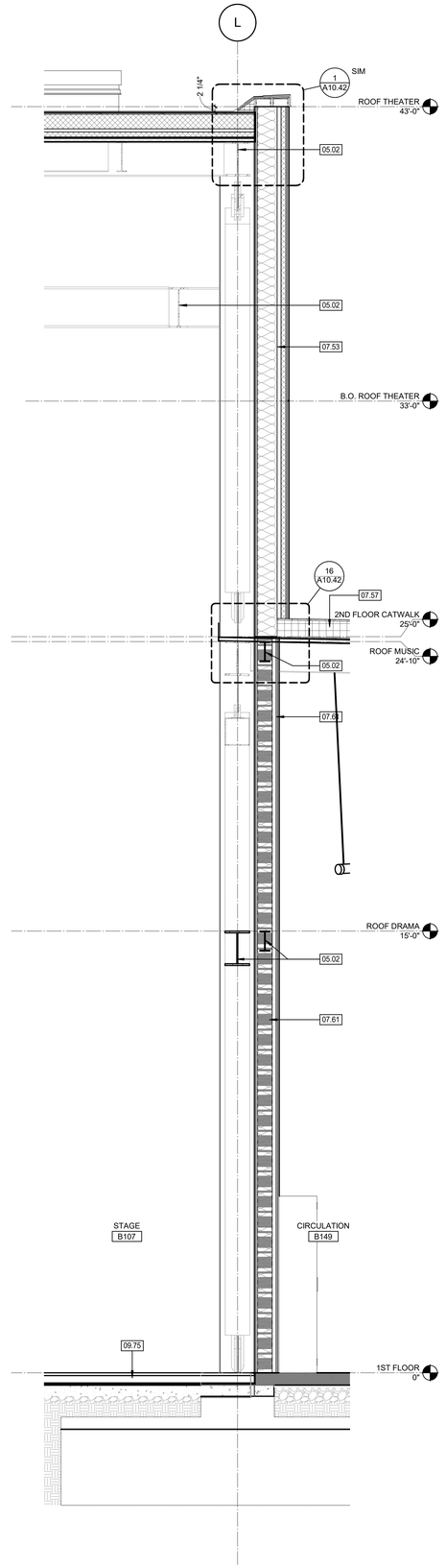
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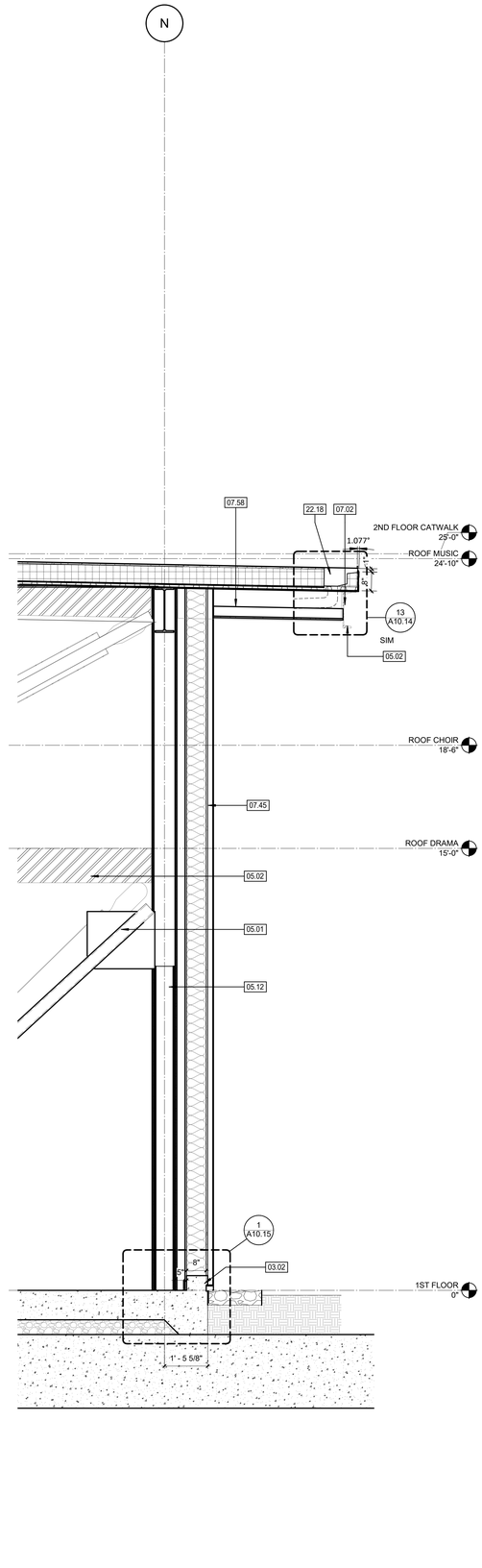
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THEATER LOBBY - CONTROL ROOM **16** 1/2" = 1'-0"

ORCHESTRA PIT **11** 1/2" = 1'-0"

STAGE / CIRCULATION **6** 1/2" = 1'-0"

INSTRUMENT &ORCHESTRA STORAGE **1** 1/2" = 1'-0"

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EL MONTE UNION HIGH SCHOOL DISTRICT ESTABLISHED 1901 COMMITTED TO COLLEGE AND CAREER


HMC Architects

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## KEYNOTES

| | |
|---|---|
| 03.01 | CONCRETE SLAB ON GRADE |
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| 05.01 | BRACE FRAME |
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| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.45 | EWA-1A FIBER CEMENT BOARD, SEE A10.13 FOR ASSEMBLY |
| 07.48 | EWA-2A CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.49 | EWA-2AP CEMENT PLASTER PARAPET, SEE A10.13 FOR ASSEMBLY |
| 07.53 | EWA-3B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.56 | ERA-1 CONCRETE FILLED MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 07.61 | 1-HR RATED FIRE BARRIER, SEE A10.11 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.69 | HANGING ACOUSTICAL BAFFER 7,17&19/A10.35 |
| 09.75 | STAGE FLOOR SYSTEM PER 18/A10.63 |
| 09.78 | ACOUSTIC CEILING TILE, SEE 1/A10.36 |
| 22.18 | 1/12" SHEET METAL SHAPED, FASTENED TO METAL DECK |

## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

## DSA SUBMITTAL

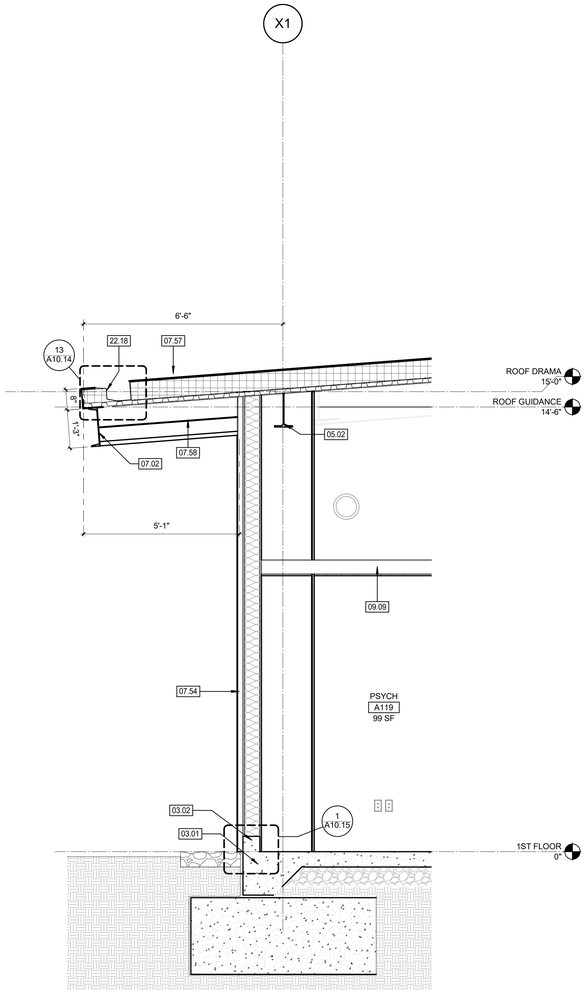
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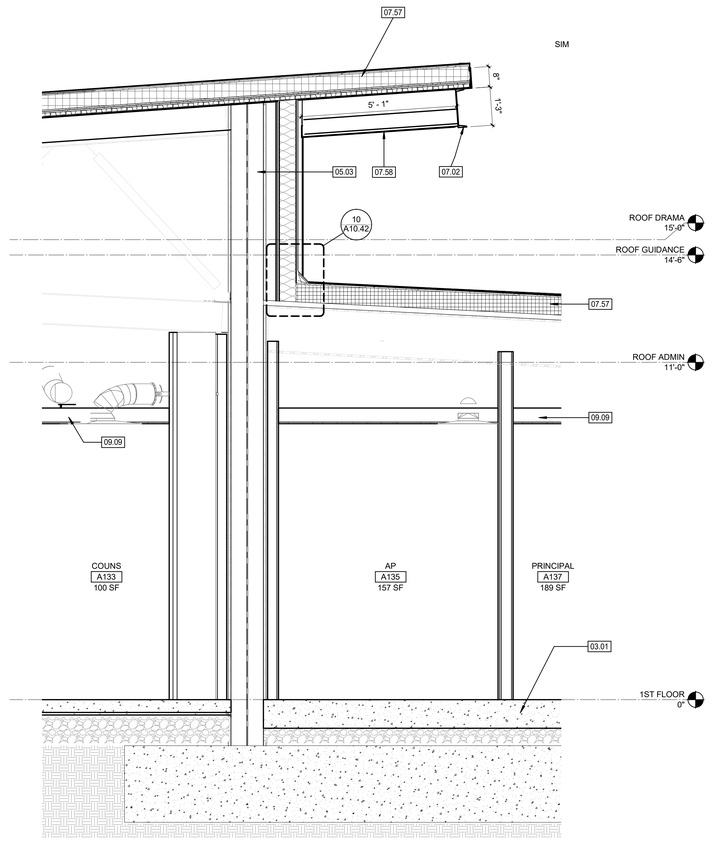
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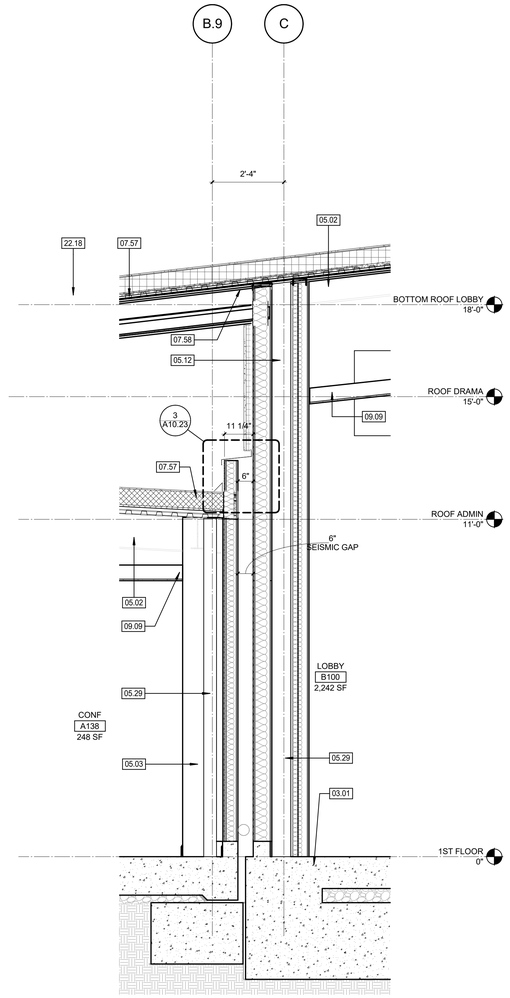



PSYCHOLOGY OFFICE **16** 1/2" = 1'-0"




SIM

COUNSELOR OFFICE **6** 1/2" = 1'-0"




CONFERENCE ROOM - THEATER LOBBY **1** 1/2" = 1'-0"

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APP: 03-123641 INC:
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DATE: 10/15/2025


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3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
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LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 03.01 | CONCRETE SLAB ON GRADE |
| 03.02 | CONCRETE CURB |
| 05.02 | STEEL BEAM |
| 05.03 | WIDE FLANGE COLUMN |
| 05.12 | HSS |
| 05.29 | HSS COLUMN |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 22.18 | 1/12" SHEET METAL SHAPED, FASTENED TO METAL DECK |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. SEE INTERIOR ELEVATIONS FOR INTERIOR SPACE NOTES & INFORMATION.
3. SEE ROOF PLAN FOR NOTES & ADDITIONAL INFORMATION.
4. SEE FINISH PLANS FOR FINISH MATERIALS NOT SHOWN.
5. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFO ON STRUCTURAL MEMBER SIZES AND CONNECTIONS.
6. FOR RATED OCCUPANCY SEPARATION REQUIREMENTS, REFER TO SHEET G1.11.
7. REFER TO DIMENSION PLANS FOR WALL TYPES AND SHEETS A10.11A, A10.11B & A10.12 FOR WALL TYPE CONSTRUCTION.
8. FOR HANDRAILS, ALL WELDED JOINTS AND SURFACES SHALL BE GROUND SMOOTH, NO SHARP OR ABRASIVE CORNERS, EDGES, OR SURFACES. WALL SURFACES ADJACENT TO HANDRAIL SHALL BE FREE OF SHARP, OR ABRASIVE ELEMENTS. PER CBC 2022, 11B-505.6, 11B-505.8, & 11B-405.8.
9. HANDRAILS FOR STAIRS & RAMPS SHALL BE 1 1/4" TO 1 1/2" DIAMETER (1 1/2" NOMINAL) & MOUNTED 1 1/2" CLEAR FROM SIDE WALLS. PER CBC 2022, 11B-307.2, 11B-405.8, AND 11B-505. SEE DETAILS ON SHEET A10.51

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

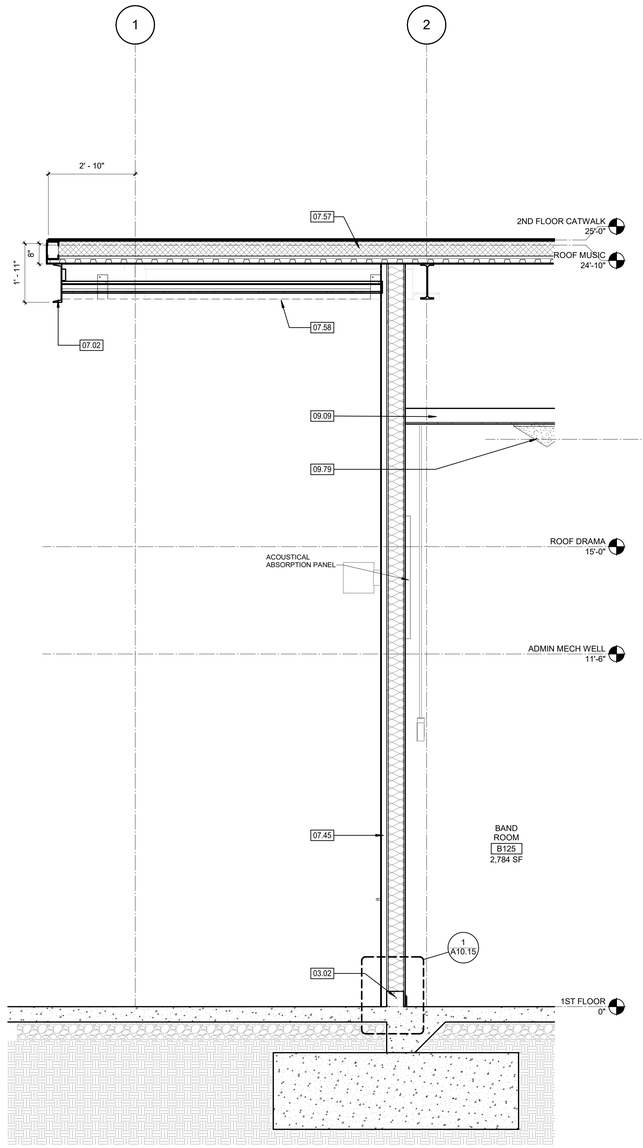
FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

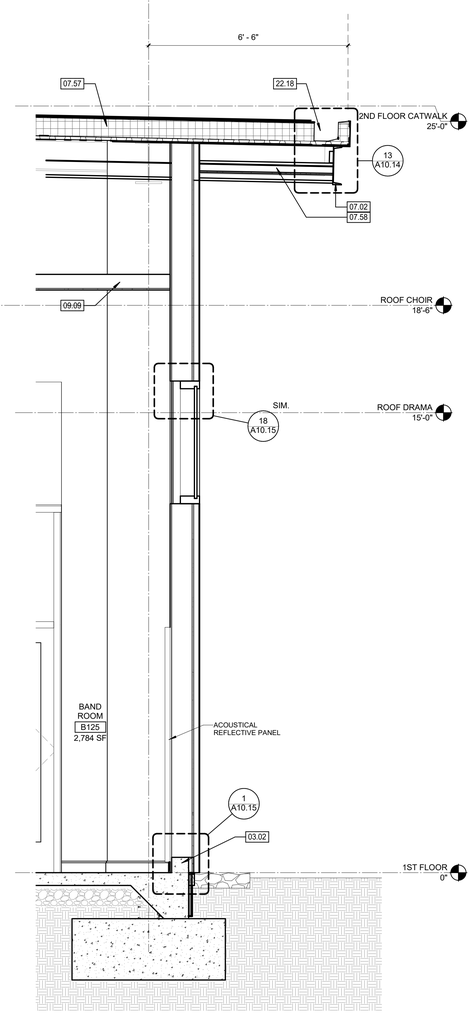
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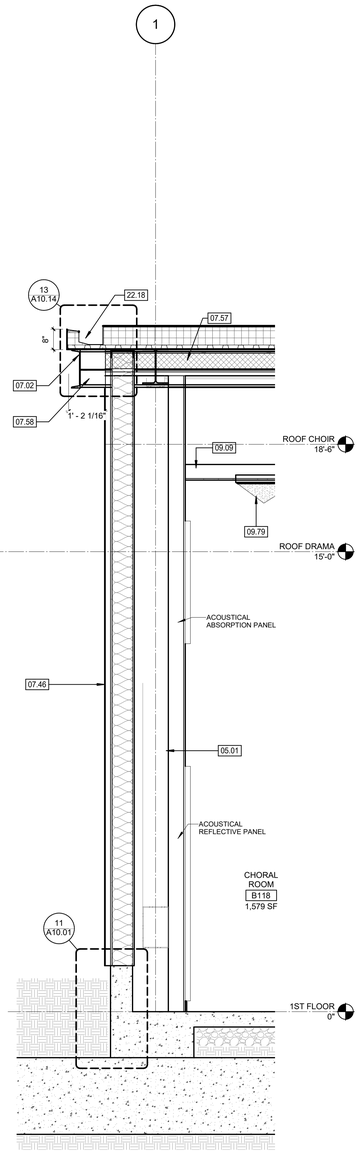
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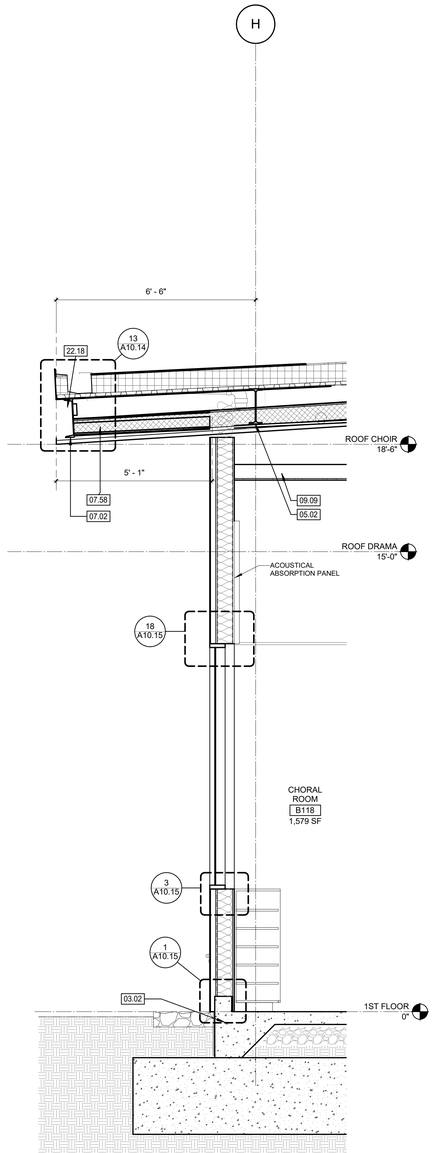

BAND ROOM ENTRANCE 16
1/2" = 1'-0"




BAND ROOM 11
1/2" = 1'-0"




CHORAL ROOM 6
1/2" = 1'-0"




CHORAL ROOM WINDOW 1
1/2" = 1'-0"

## KEYNOTES

| | |
|---|---|
| 03.02 | CONCRETE CURB |
| 05.01 | BRACE FRAME |
| 05.02 | STEEL BEAM |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.45 | EWA-1A FIBER CEMENT BOARD, SEE A10.13 FOR ASSEMBLY |
| 07.46 | EWA-1B FIBER CEMENT PANEL, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.79 | ACOUSTIC CEILING PYRAMIDAL |
| 22.18 | 1/12" SHEET METAL SHAPED, FASTENED TO METAL DECK |

## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

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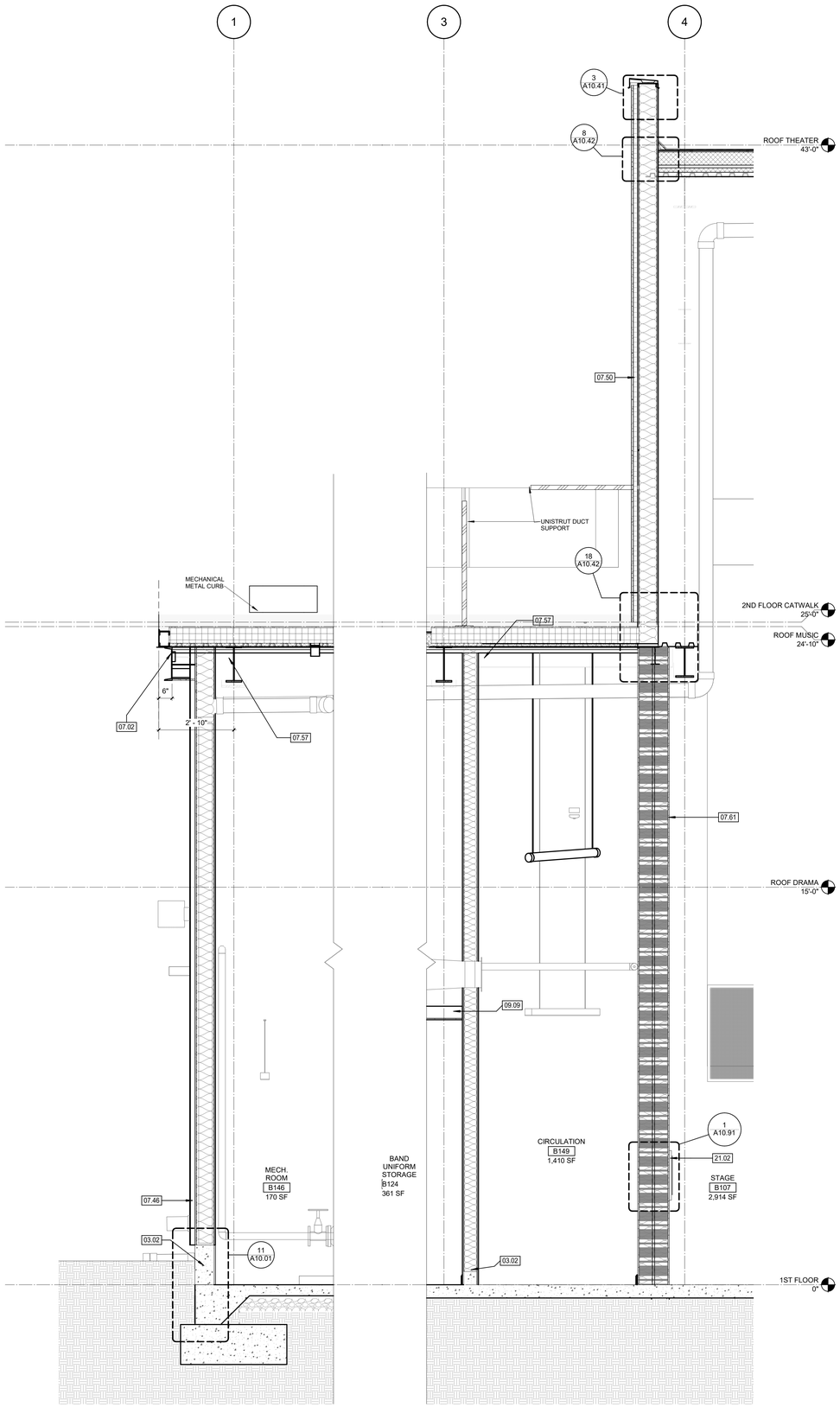
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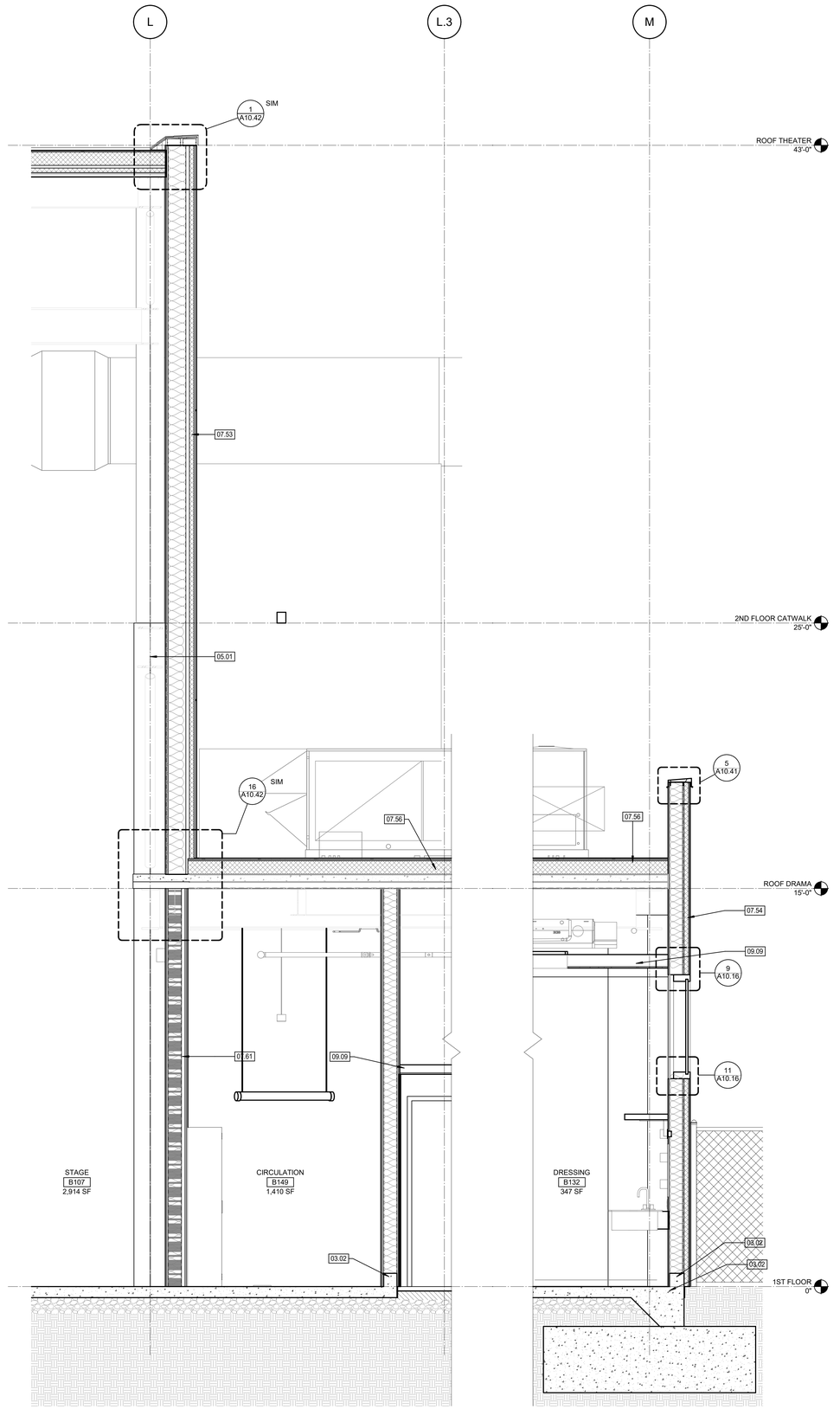
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**BOILER** 11
1/2" = 1'-0"




**DRAMA CLASSROOM WINDOW** 1
1/2" = 1'-0"

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## KEYNOTES

| | |
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| 05.01 | BRACE FRAME |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.46 | EWA-1B FIBER CEMENT PANEL, SEE A10.13 FOR ASSEMBLY |
| 07.50 | EWA-2B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.53 | EWA-3B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.56 | ERA-1 CONCRETE FILLED MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.61 | 1-HR RATED FIRE BARRIER, SEE A10.11 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 21.02 | SEMI-RECESSED FIRE EXTINGUISHER CABINET - 1/A10.91 |

## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

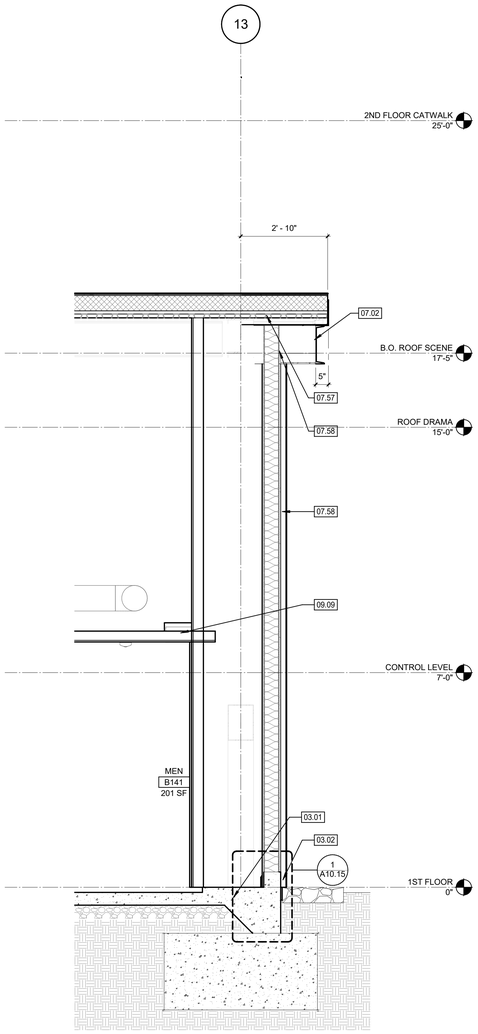
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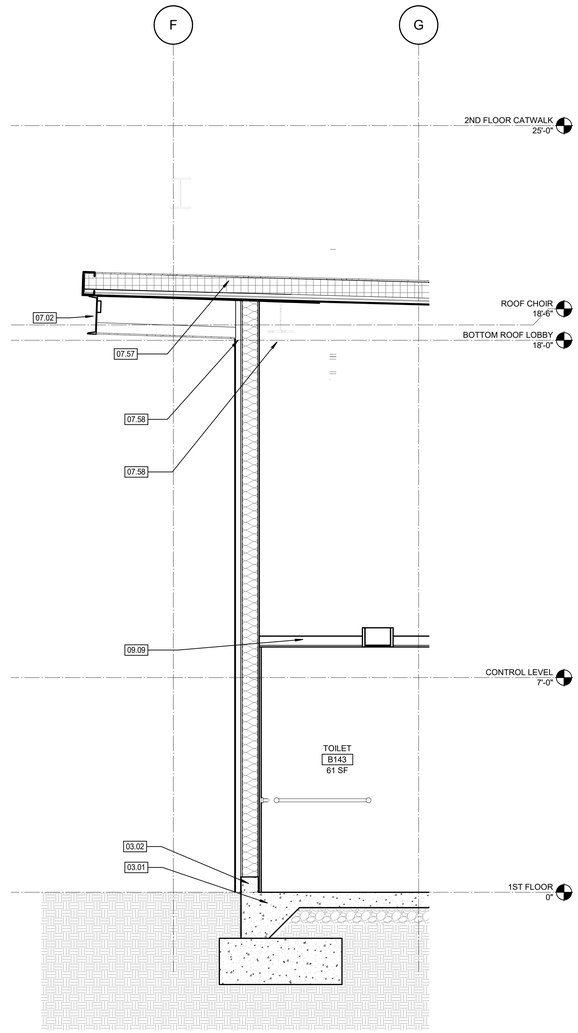
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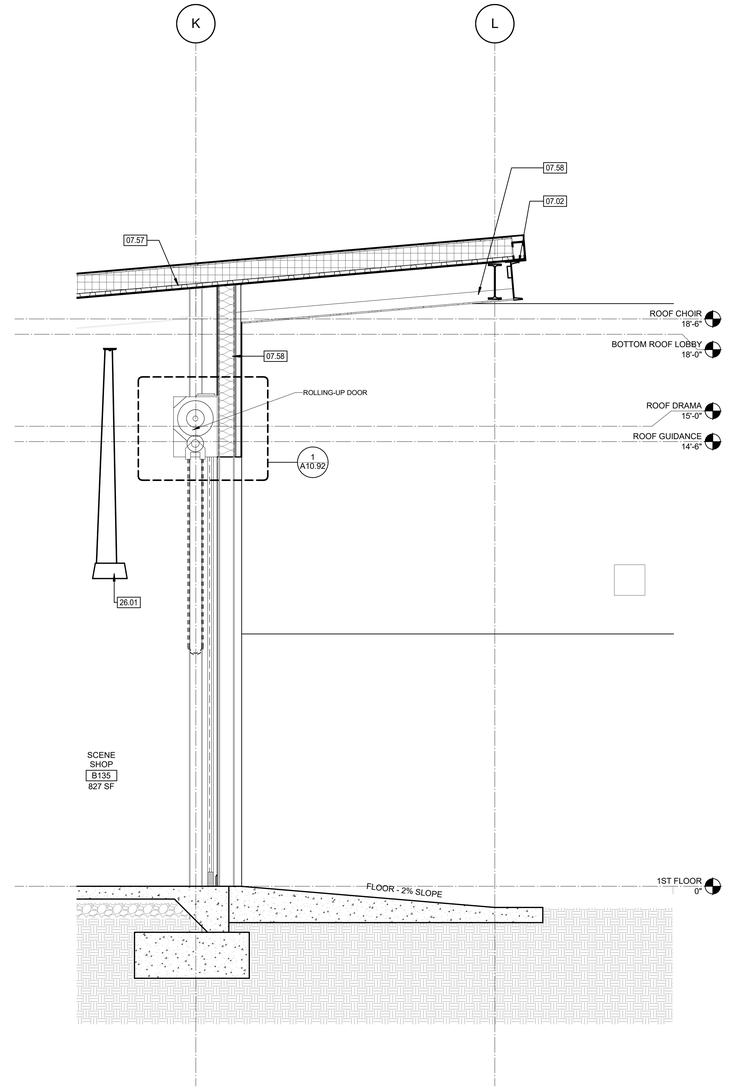
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RESTROOM 16 1/2" = 1'-0"




TOILETS THEATER AREA 11 1/2" = 1'-0"




SCENE SHOP 1 1/2" = 1'-0"

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EL MONTE UNION HIGH SCHOOL DISTRICT · ESTABLISHED 1901 · COMMITTED TO COLLEGE AND CAREER


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
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## ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 03.01 | CONCRETE SLAB ON GRADE |
| 03.02 | CONCRETE CURB |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 26.01 | LIGHT FIXTURE \| ELECTRICAL |

## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

## DSA SUBMITTAL

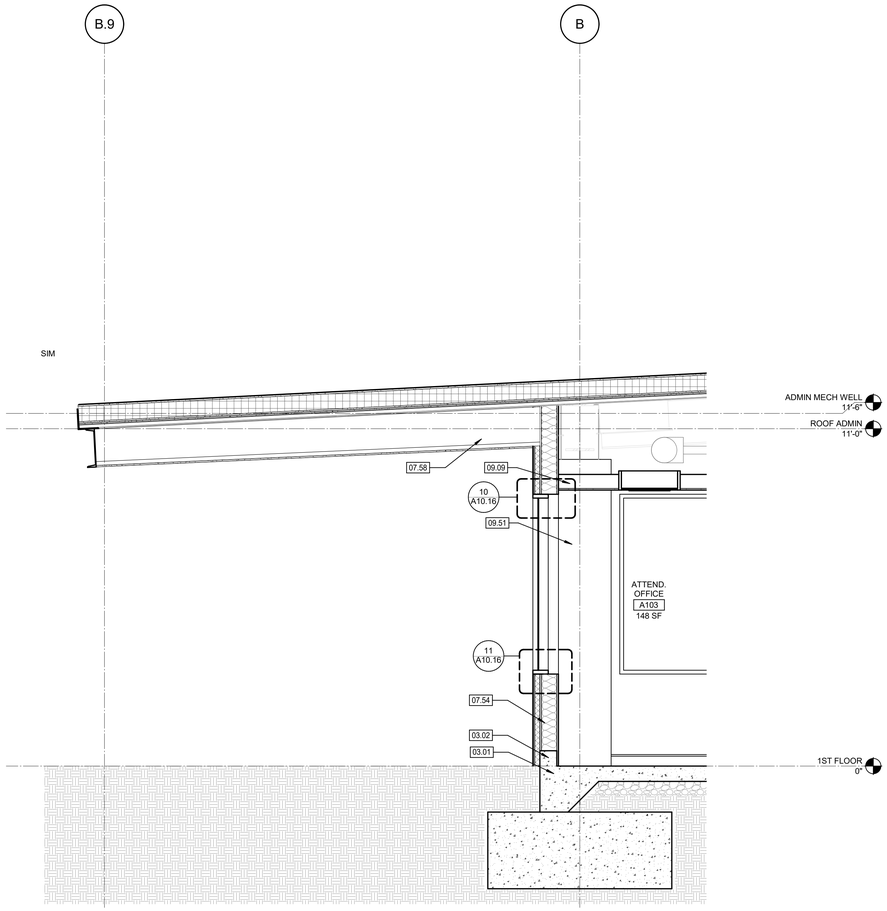
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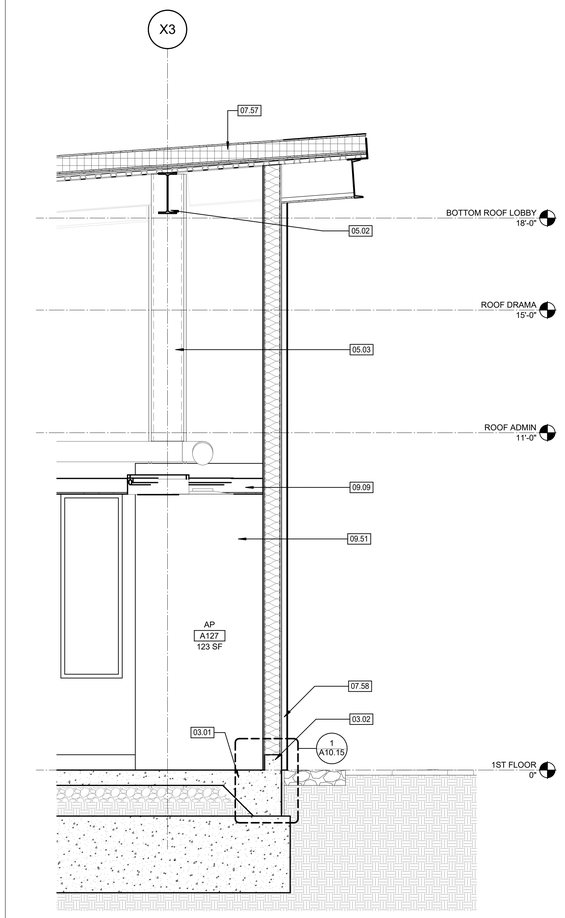
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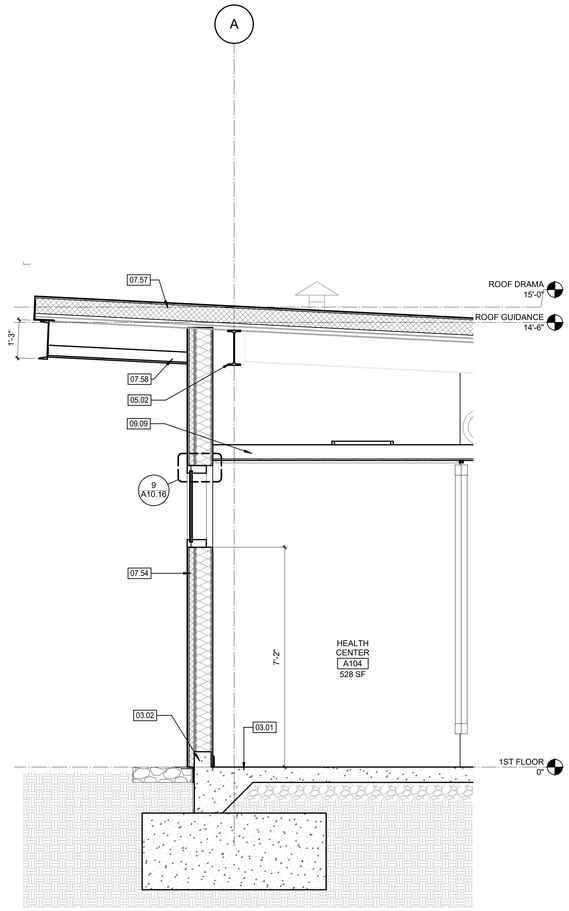
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ATTEND OFFICE 11
1/2" = 1'-0"




AP OFFICE 6
1/2" = 1'-0"




HEALTH CENTER 1
1/2" = 1'-0"

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| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.51 | SHAFT WALL |

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SHEET NAME:

**WALL SECTIONS**

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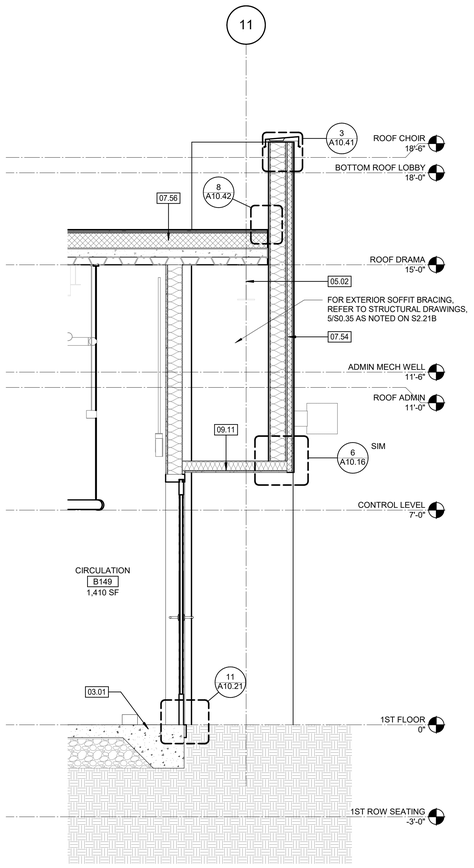
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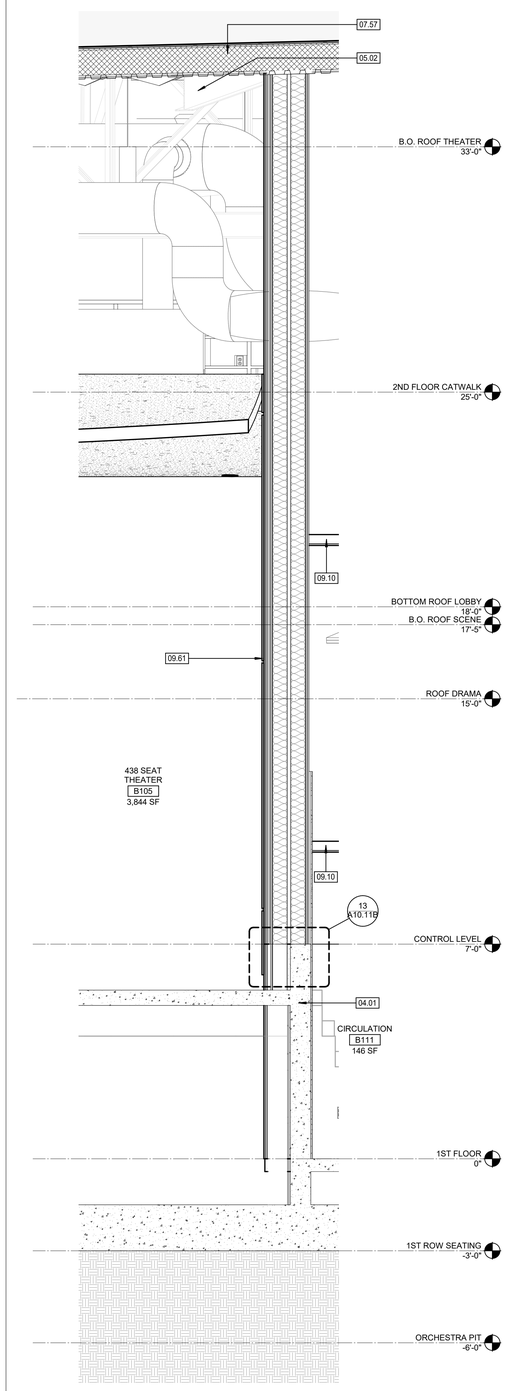
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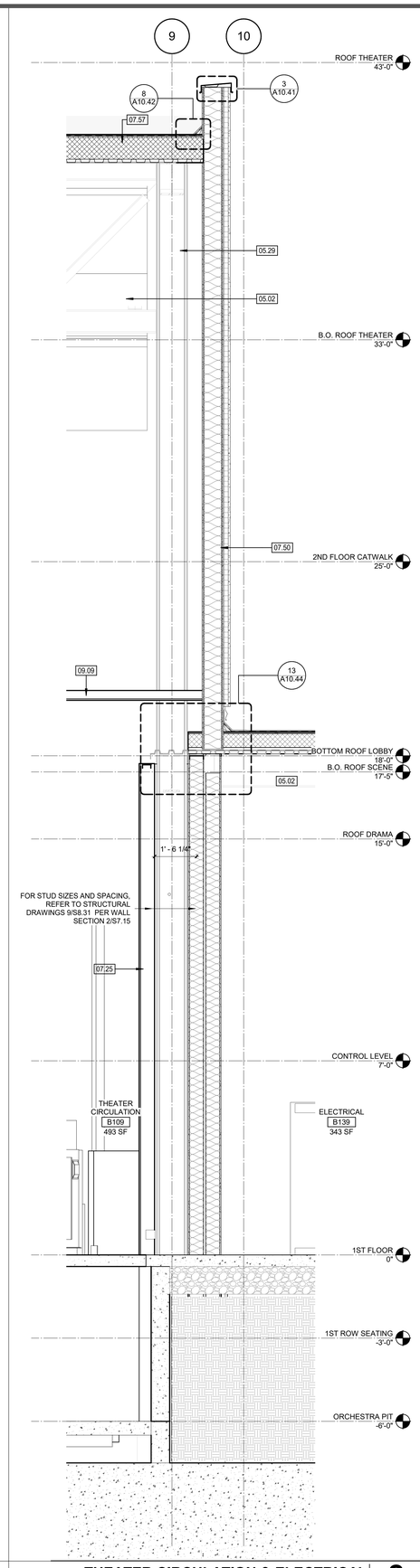
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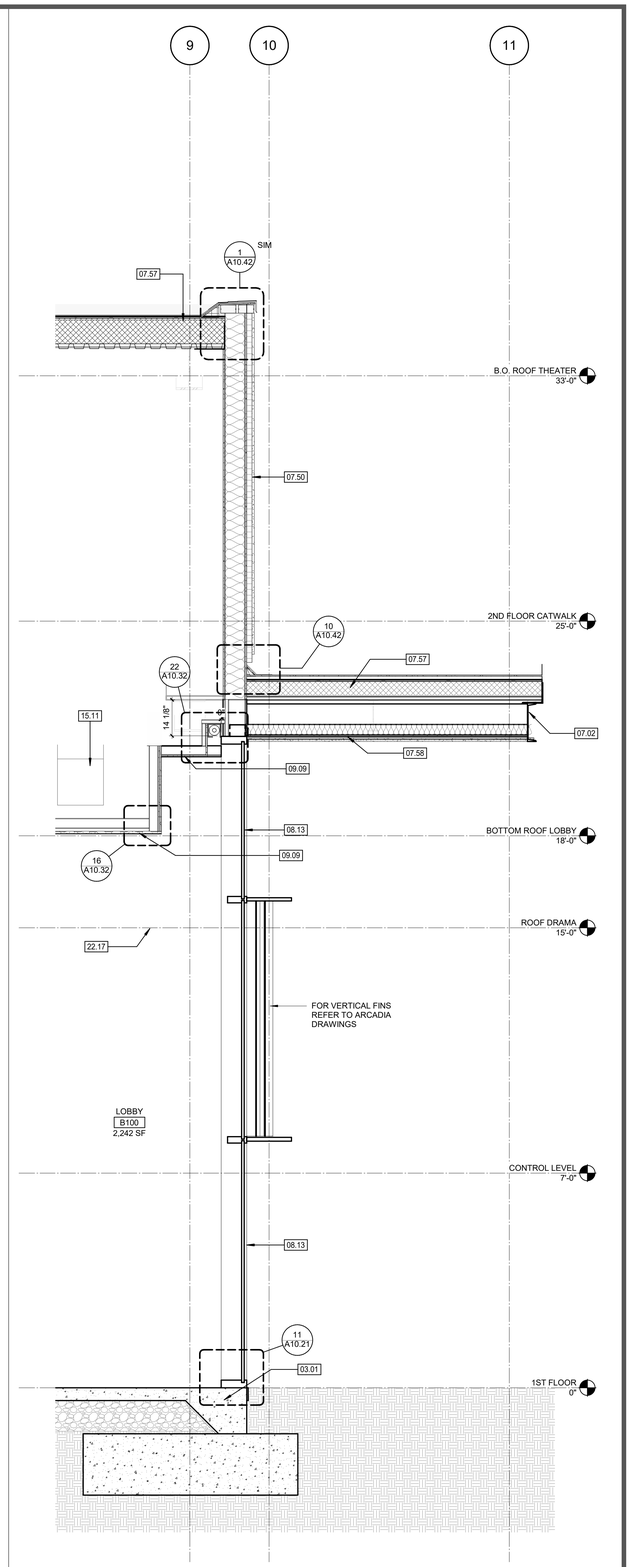

## DRAMA HALLWAY | 4 | 1/2" = 1'-0"




## THEATER WALL | 3 | 1/2" = 1'-0"




## THEATER CIRCULATION & ELECTRICAL | 2 | 1/2" = 1'-0"




## LOBBY - EAST | 1 | 1/2" = 1'-0"

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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

## ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 03.01 | CONCRETE SLAB ON GRADE |
| 04.01 | CONCRETE WALL |
| 05.02 | STEEL BEAM |
| 05.29 | HSS COLUMN |
| 07.02 | FASCIA & GUTTER, SEE 18/A10.14 |
| 07.25 | EXPANSION JOINT - CS SF-600 |
| 07.50 | EWA-2B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.54 | EWA-4 BRICK VENEER, SEE A10.13 FOR ASSEMBLY |
| 07.56 | ERA-1 CONCRETE FILLED MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.58 | ESA-1 EXTERIOR PLASTER SOFFIT, SEE A10.13 FOR ASSEMBLY |
| 08.13 | GLAZING |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.10 | GYP BD CEILING |
| 09.11 | PLASTER SOFFIT |
| 09.61 | ACOUSTICAL WALL PANEL, SEE LEGEND AND INTERIOR ELEVATIONS. |
| 15.11 | HVAC DUCTWORK, REFER TO MECHANICAL DRAWINGS |
| 22.17 | COLD WATER PIPE |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. SEE INTERIOR ELEVATIONS FOR INTERIOR SPACE NOTES & INFORMATION.
3. SEE ROOF PLAN FOR NOTES & ADDITIONAL INFORMATION.
4. SEE FINISH PLANS FOR FINISH MATERIALS NOT SHOWN.
5. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFO ON STRUCTURAL MEMBER SIZES AND CONNECTIONS.
6. FOR RATED OCCUPANCY SEPARATION REQUIREMENTS, REFER TO SHEET G1.11.
7. REFER TO DIMENSION PLANS FOR WALL TYPES AND SHEETS A10.11A, A10.11B & A10.12 FOR WALL TYPE CONSTRUCTION.
8. FOR HANDRAILS, ALL WELDED JOINTS AND SURFACES SHALL BE GROUND SMOOTH, NO SHARP OR ABRASIVE CORNERS, EDGES, OR SURFACES. WALL SURFACES ADJACENT TO HANDRAIL SHALL BE FREE OF SHARP, OR ABBRASIVE ELEMENTS. PER CBC 2022, 11B-505.6, 11B-505.8, & 11B-405.8.
9. HANDRAILS FOR STAIRS & RAMPS SHALL BE 1 1/4" TO 1 1/2" DIAMETER (1 1/2" NOMINAL) & MOUNTED 1 1/2" CLEAR FROM SIDE WALLS. PER CBC 2022, 11B-307.2, 11B-405.8, AND 11B-505. SEE DETAILS ON SHEET A10.51

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

## DSA SUBMITTAL

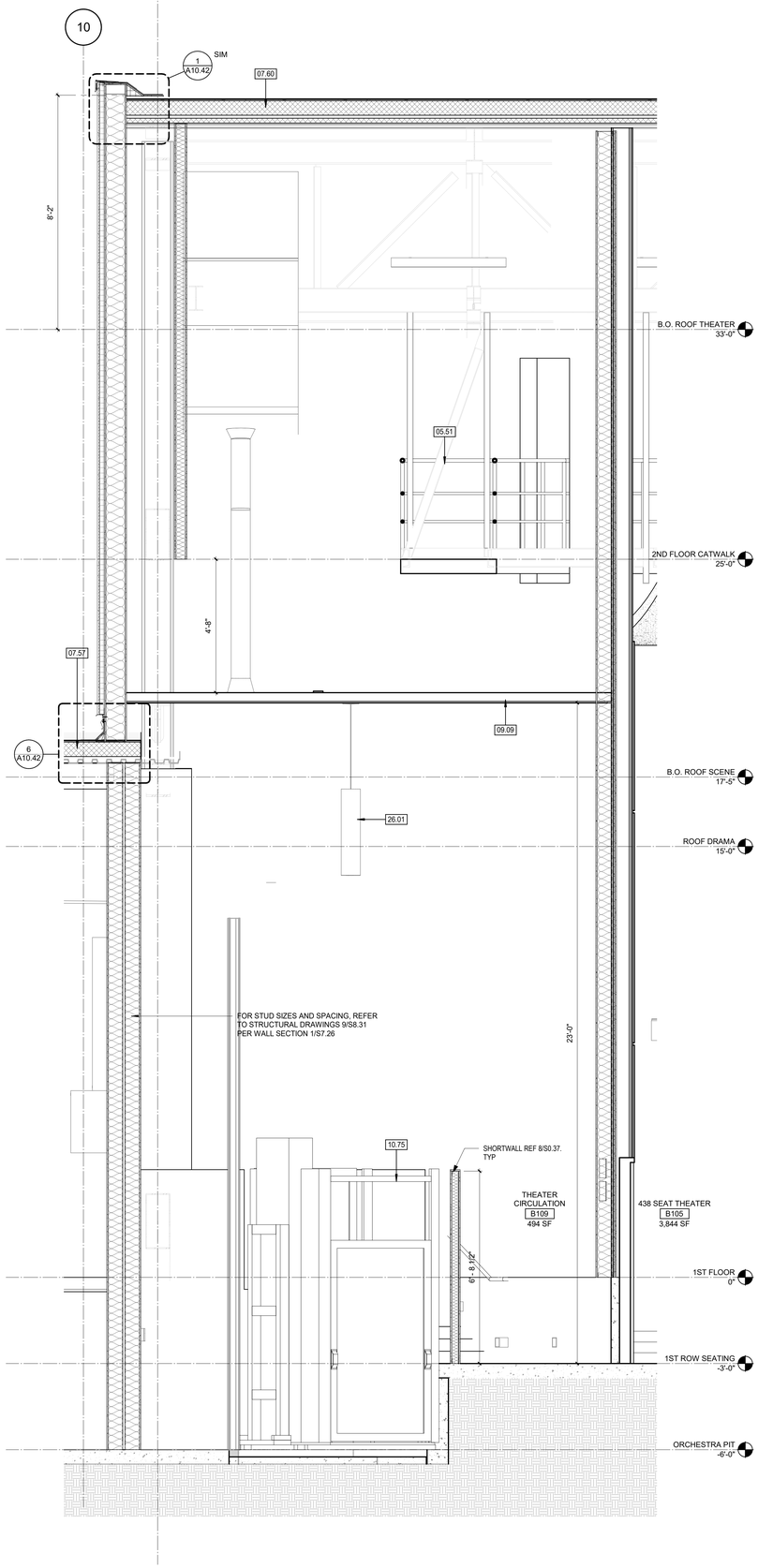
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DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

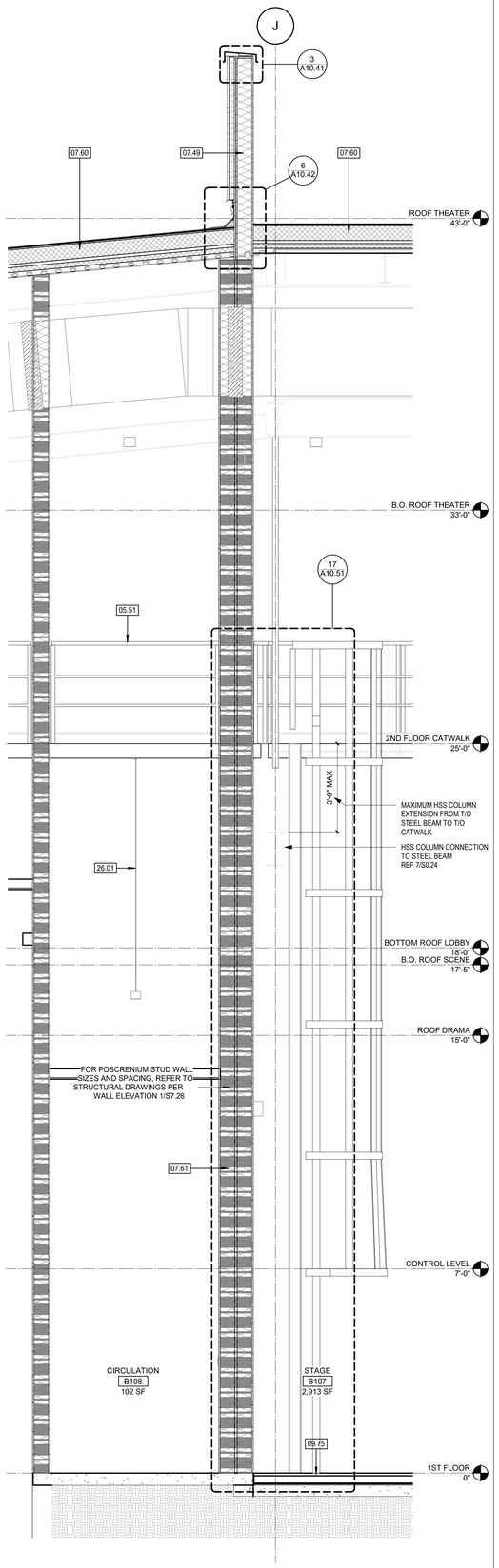
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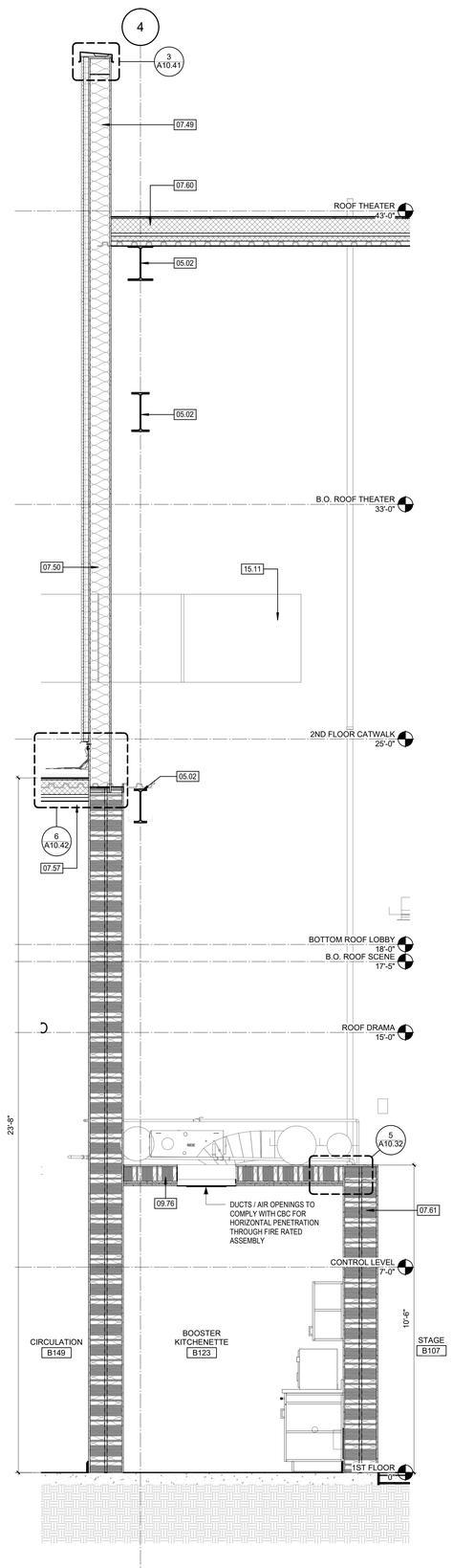
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TRANSVERSAL SECTION - SOUTH OF STAGE **3** 1/2" = 1'-0"




LADDER CIRCULATION STAGE LEFT **2** 1/2" = 1'-0"




KITCHENETTE **1** 1/2" = 1'-0"

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


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## KEYNOTES

| | |
|---|---|
| 05.02 | STEEL BEAM |
| 05.51 | SCHEDULE 40 NOMINAL SIZE 1.66" OD STD. STL. PIPE CATWALK RAILING. REFER TO STRUCTURAL & THEATER DRAWINGS |
| 07.49 | EWA-2AP CEMENT PLASTER PARAPET, SEE A10.13 FOR ASSEMBLY |
| 07.50 | EWA-2B CEMENT PLASTER, SEE A10.13 FOR ASSEMBLY |
| 07.57 | ERA-2 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.60 | ERA-3 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 07.61 | 1-HR RATED FIRE BARRIER, SEE A10.11 FOR ASSEMBLY |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.75 | STAGE FLOOR SYSTEM PER 18/A10.63 |
| 09.76 | 1-HR RATED GYP BD CEILING. |
| 10.75 | VERTICAL 3-WAY ENCLOSED LIFT, TO BE PROVIDED WITH STANDBY POWER PER CBC 1009.5 |
| 15.11 | HVAC DUCTWORK, REFER TO MECHANICAL DRAWINGS |
| 26.01 | LIGHT FIXTURE | ELECTRICAL |

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. SEE INTERIOR ELEVATIONS FOR INTERIOR SPACE NOTES & INFORMATION.
3. SEE ROOF PLAN FOR NOTES & ADDITIONAL INFORMATION.
4. SEE FINISH PLANS FOR FINISH MATERIALS NOT SHOWN.
5. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFO ON STRUCTURAL MEMBER SIZES AND CONNECTIONS.
6. FOR RATED OCCUPANCY SEPARATION REQUIREMENTS, REFER TO SHEET G1.11.
7. REFER TO DIMENSION PLANS FOR WALL TYPES AND SHEETS A10.11A, A10.11B & A10.12 FOR WALL TYPE CONSTRUCTION.
8. FOR HANDRAILS, ALL WELDED JOINTS AND SURFACES SHALL BE GROUND SMOOTH, NO SHARP OR ABRASIVE CORNERS, EDGES, OR SURFACES. WALL SURFACES ADJACENT TO HANDRAIL SHALL BE FREE OF SHARP, OR ABBRASIVE ELEMENTS. PER CBC 2022, 11B-505.6, 11B-505.8, & 11B-405.8.
9. HANDRAILS FOR STAIRS & RAMPS SHALL BE 1 1/4" TO 1 1/2" DIAMETER (1 1/2" NOMINAL) & MOUNTED 1 1/2" CLEAR FROM SIDE WALLS. PER CBC 2022, 11B-307.2, 11B-405.8, AND 11B-505. SEE DETAILS ON SHEET A10.51

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **09/13/2024** | CLIENT PROJ NO: **3361008100**

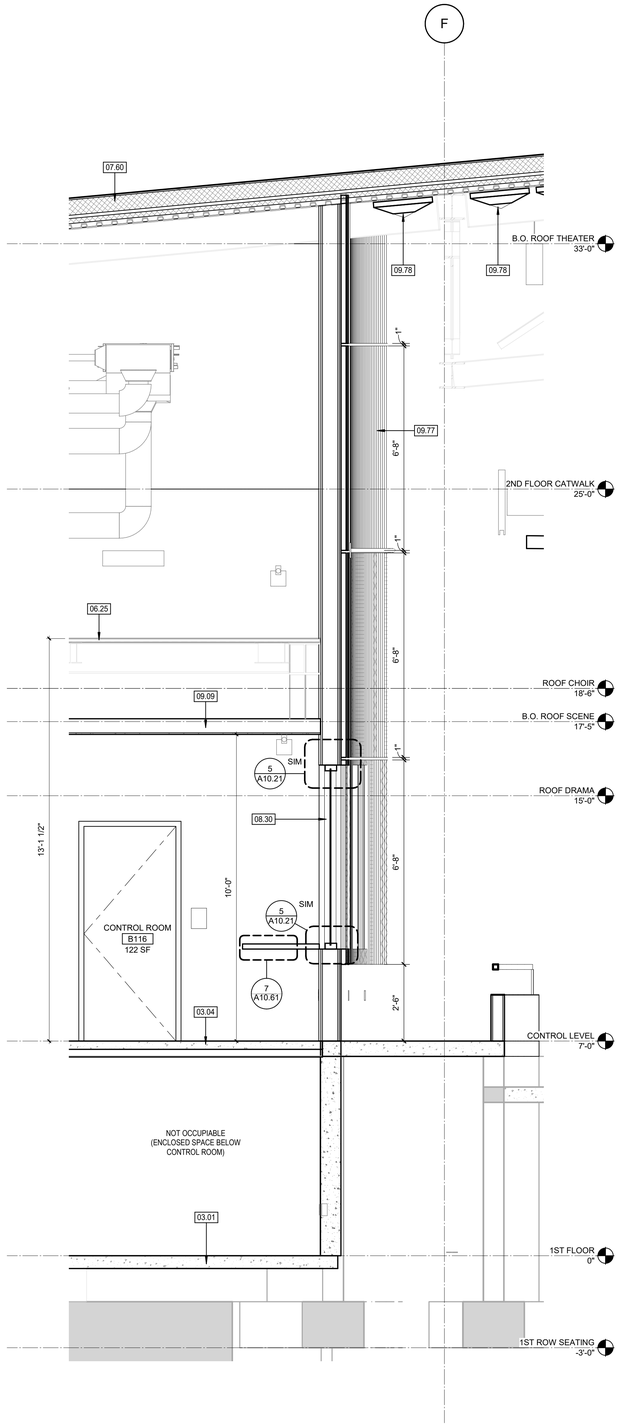
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**WALL SECTION - CONTROL ROOM ROOF** 1

1/2" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 03.01 | CONCRETE SLAB ON GRADE |
| 03.04 | CONCRETE FLOOR SLAB |
| 06.25 | FLOOR ASSEMBLY: 3/4" PLYWOOD OVER BARE METAL DECK WITH A LUXURY VINYL TILE (LVT1) FINISH, SEE DETAIL - 20/A10.63. REFER TO STRUCTURAL DRAWINGS FOR METAL DECK SPECIFICATIONS AND A9.31 FOR FINISH SPECIFICATIONS. |
| 07.60 | ERA-3 MTL DECK ROOF, SEE A10.13 FOR ASSEMBLY |
| 08.30 | OPENING FOR PROJECTOR |
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 09.77 | ACOUSTIC 3D PANEL, ZINTRA PEAKS OR SIMILAR (TYPE 2). |
| 09.78 | ACOUSTIC CEILING TILE, SEE 1/A10.36 |

## NOTES

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
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**WALL SECTIONS**

**DSA SUBMITTAL**

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| DATE: 09/13/2024 | CLIENT PROJ NO: 3361008100 |

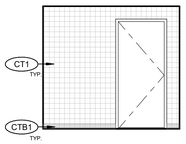
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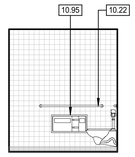
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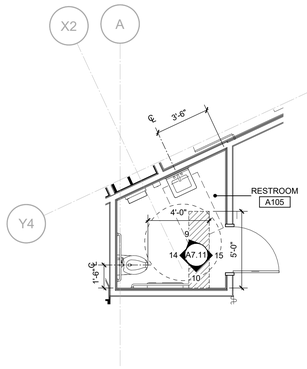
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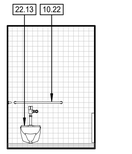

ROOM A107 - TOILET - NORTH ELEVATION **15** 1/4" = 1'-0"



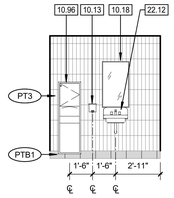

ROOM A107 - TOILET - EAST ELEVATION **10** 1/4" = 1'-0"



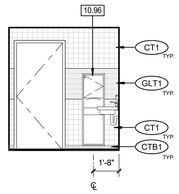

ENLARGED PLAN - ROOM A107 - TOILET **4** 1/4" = 1'-0"



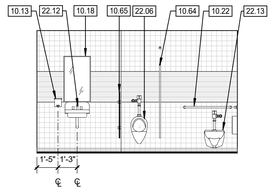

ROOM A107 - TOILET - SOUTH ELEVATION **14** 1/4" = 1'-0"



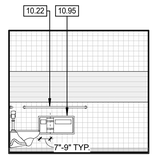

ROOM A107 - TOILET - WEST ELEVATION **9** 1/4" = 1'-0"



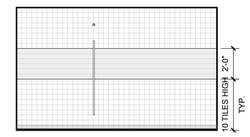

ROOM A109 - TOILETS - NORTH ELEVATION **18** 1/4" = 1'-0"



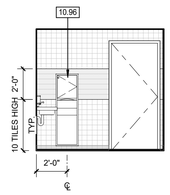

ROOM A109 - TOILETS - EAST ELEVATION **13** 1/4" = 1'-0"



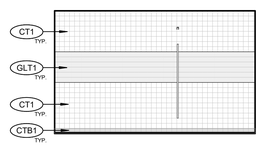

ROOM A109 - TOILETS - SOUTH ELEVATION **8** 1/4" = 1'-0"



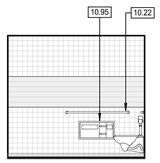

ROOM A109 - TOILETS - WEST ELEVATION **3** 1/4" = 1'-0"



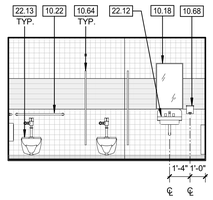

ROOM A108 - TOILETS - NORTH ELEVATION **17** 1/4" = 1'-0"



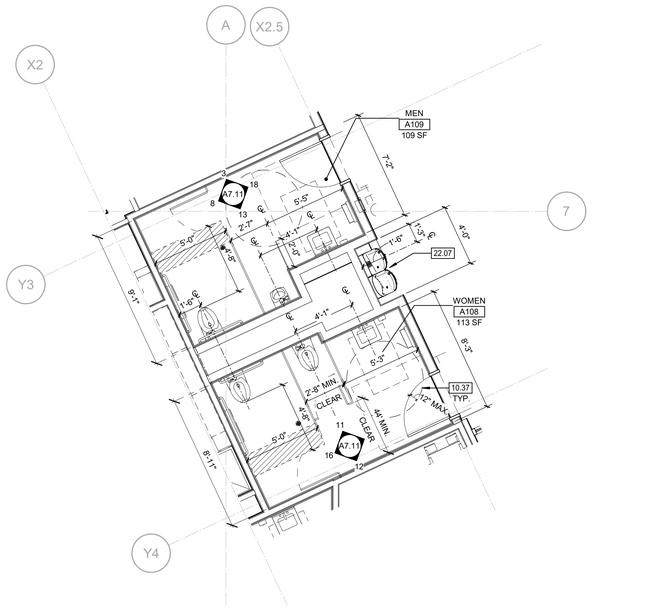

ROOM A108 - TOILETS - EAST ELEVATION **12** 1/4" = 1'-0"




ROOM A108 - TOILETS - SOUTH ELEVATION **16** 1/4" = 1'-0"




ROOM A108 - TOILETS - WEST ELEVATION **11** 1/4" = 1'-0"




ENLARGED PLAN - ROOMS A108 & A109 - RESTROOMS **1** 1/4" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 10.13 | SOAP DISPENSER - 1/A10.72 |
| 10.18 | 21X36 MIRROR - 1/A10.72 |
| 10.22 | GRAB BAR, 36" MIN AT REAR WALL & 42" MIN AT SIDE WALL \| -18 & 1/A10.72 |
| 10.37 | 60" DIA. TURNING SPACE |
| 10.64 | TOILET PARTITION. REFER TO SPECS & FINISH SCHEDULE |
| 10.65 | URINAL SCREEN |
| 10.68 | WALL MOUNTED SOAP DISPENSER, SEE 1/A10.72 |
| 10.95 | SURFACE-MOUNTED TOILET TISSUE, SEAT-COVER DISPENSER AND WASTE DISPOSAL - 1/A10.72 |
| 10.96 | SEMI-RECESSED CONVERTIBLE PAPER TOWEL DISPENSER/WASTE RECEPTACLE - 1/A10.72 |
| 22.06 | URINAL - 1/A10.72 |
| 22.07 | HI-LO DRINKING FOUNTAIN W/ BOTTLE FILLER - 11/A10.72 |
| 22.12 | LAVATORY, REFER TO PLUMBING SPECS |
| 22.13 | WALL MOUNTED TOILET, REFER TO PLUMBING SPECS |

## NOTES

LEGEND

CT# — FINISH/MATERIAL, REFER TO SHEET A9.31

30" x 48" ACCESSIBLE CLEAR SPACE

60" DIAMETER ACCESSIBLE TURN AROUND

60" x 56" ACCESSIBLE CLEAR SPACE

DRAIN PER PLAN; 2% MAX SLOPE TYPICAL

NOTES
1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. FOR FIXTURE & ACCESSORY MOUNTING HEIGHTS AND LOCATIONS, SEE 1/A10.72.
3. HATCH PATTERNS DO NOT REFLECT TILE SIZE OR PATTERN, REFER TO RESPECTIVE DETAILS FOR PATTERN LAYOUT AND TILE SIZES.
4. DIMENSIONS ARE TO FACE OF STUD, U.N.O.
5. REFER TO SLAB PLANS FOR FLOOR DRAIN LOCATIONS, SEE A2.13A, A2.13B, A2.23A, & A2.23B.
6. REFER TO A10.63 FOR FINISH DETAILS

FACILITY:

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLANS AND ELEVATIONS - TOILET**

**DSA SUBMITTAL**

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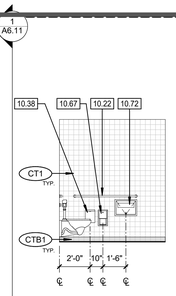
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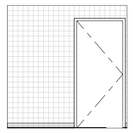

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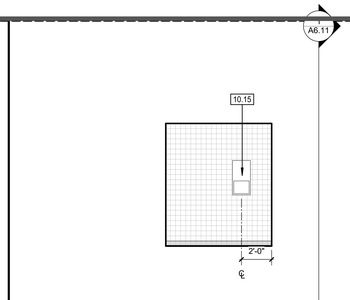
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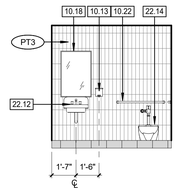

**ROOM B129 - TOILET - NORTH ELEVATION** **25** 1/4" = 1'-0"



**ROOM B129 - TOILET - EAST ELEVATION** **20** 1/4" = 1'-0"

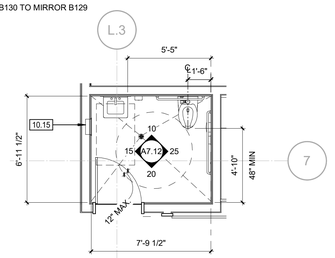



**ROOM B129 - TOILET - SOUTH ELEVATION** **15** 1/4" = 1'-0"

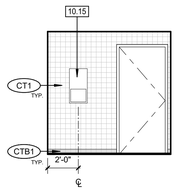



**ROOM B129 - TOILET - WEST ELEVATION** **10** 1/4" = 1'-0"

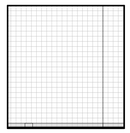
* ROOM B130 TO MIRROR B129



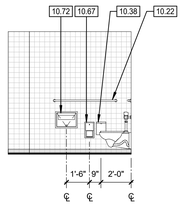

**ROOMS B129 & B130 - SINGLE TOILETS** **5** 1/4" = 1'-0"



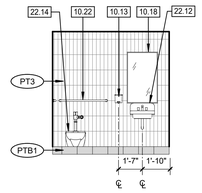

**ROOM B142 - TOILET - NORTH ELEVATION** **24** 1/4" = 1'-0"



**ROOM B142 - TOILET - EAST ELEVATION** **19** 1/4" = 1'-0"

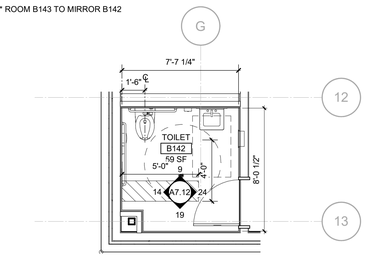



**ROOM B142 - TOILET - SOUTH ELEVATION** **14** 1/4" = 1'-0"

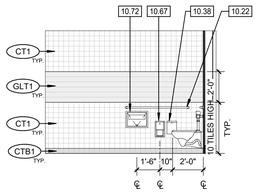



**ROOM B142 - TOILET - WEST ELEVATION** **9** 1/4" = 1'-0"

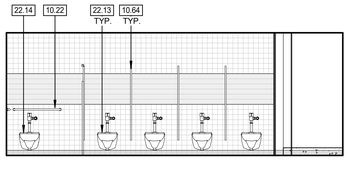
* ROOM B143 TO MIRROR B142



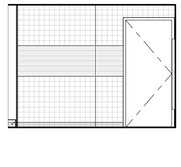

**ROOMS B142 & B143 - SINGLE TOILETS** **4** 1/4" = 1'-0"



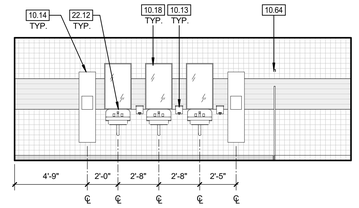

**ROOM B139 - WOMEN - NORTH ELEVATION** **18** 1/4" = 1'-0"



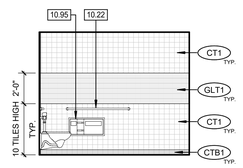

**ROOM B139 - WOMEN - EAST ELEVATION** **13** 1/4" = 1'-0"



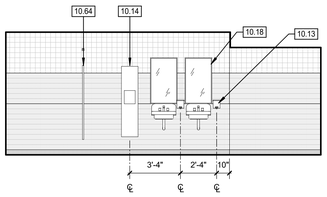
**ROOM B139 - WOMEN - SOUTH ELEVATION** **8** 1/4" = 1'-0"



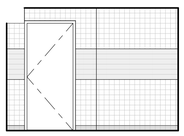

**ROOM B139 - WOMEN - WEST ELEVATION** **3** 1/4" = 1'-0"



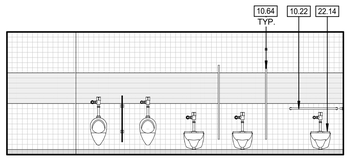

**ROOM B140 - MEN - NORTH ELEVATION** **17** 1/4" = 1'-0"



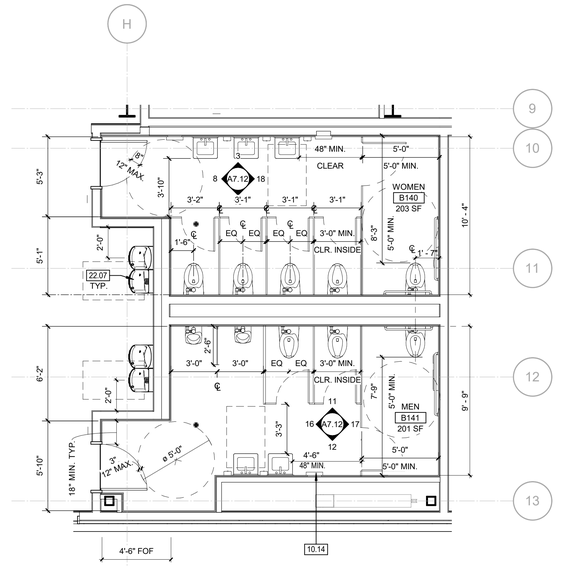

**ROOM B140 - MEN - EAST ELEVATION** **12** 1/4" = 1'-0"



**ROOM B140 - MEN - SOUTH ELEVATION** **16** 1/4" = 1'-0"




**ROOM B140 - MEN - WEST ELEVATION** **11** 1/4" = 1'-0"




**ENLARGED PLAN - ROOMS B139 & B140 - WOMEN'S AND MEN'S RESTROOMS** **1** 1/4" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 10.13 | SOAP DISPENSER - 1/A10.72 |
| 10.14 | SEMI-RECESSED PAPER TOWEL DISPENSER (4" MAX. PROJECTION) - 1/A805 |
| 10.15 | RECESSED PAPER TOWEL DISPENSER - 1/A10.72 |
| 10.18 | 21X36 MIRROR - 1/A10.72 |
| 10.22 | GRAB BAR; 36" MIN AT REAR WALL & 42" MIN AT SIDE WALL ] - 18 & 1/A10.72 |
| 10.38 | SANITARY NAPKIN DISPOSAL - 1/A10.72 |
| 10.64 | TOILET PARTITION. REFER TO SPECS & FINISH SCHEDULE |
| 10.67 | SURFACE MOUNTED TOILET TISSUE DISPENSER - 1/A10.72 |
| 10.72 | SEAT COVER DISPENSER: SURFACED MOUNTED - 1/A10.72 |
| 10.95 | SURFACE-MOUNTED TOILET TISSUE, SEAT-COVER DISPENSER AND WASTE DISPOSAL - 1/A10.72 |
| 22.07 | HI-LO DRINKING FOUNTAIN W/ BOTTLE FILLER - 11/A10.72 |
| 22.12 | LAVATORY, REFER TO PLUMBING SPECS |
| 22.13 | WALL MOUNTED TOILET, REFER TO PLUMBING SPECS |
| 22.14 | A.D.A. ACCESSIBLE WATER CLOSET, REFER TO PLUMBING SPECS - 1/A10.72 |

LEGEND

CT# — FINISH/MATERIAL, REFER TO SHEET A9.31

30" x 48" ACCESSIBLE CLEAR SPACE

60" DIAMETER ACCESSIBLE TURN AROUND

60" x 56" ACCESSIBLE CLEAR SPACE

DRAIN PER PLAN; 2% MAX SLOPE TYPICAL

NOTES
1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. FOR FIXTURE & ACCESSORY MOUNTING HEIGHTS AND LOCATIONS, SEE 1/A10.72.
3. HATCH PATTERNS DO NOT REFLECT TILE SIZE OR PATTERN, REFER TO RESPECTIVE DETAILS FOR PATTERN LAYOUT AND TILE SIZES.
4. DIMENSIONS ARE TO FACE OF STUD, U.N.O.
5. REFER TO SLAB PLANS FOR FLOOR DRAIN LOCATIONS, SEE A2.13A, A2.13B, A2.23A, & A2.23B.
6. REFER TO A10.63 FOR FINISH DETAILS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLANS AND ELEVATIONS - TOILET**

**DSA SUBMITTAL**

| | |
|---|---|
| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 09/13/2024 | CLIENT PROJ NO: 3361008100 |

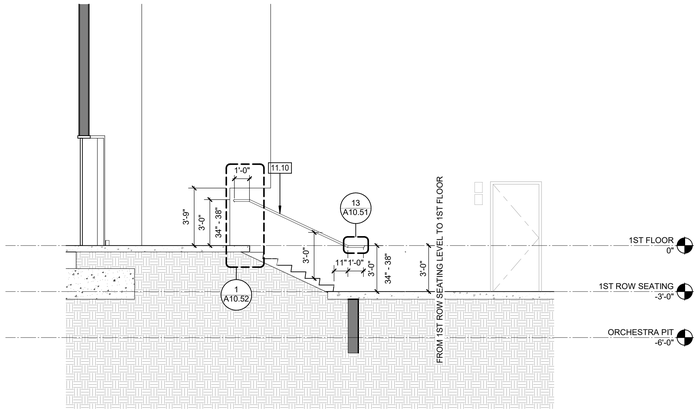
SHEET:

**A7.12**

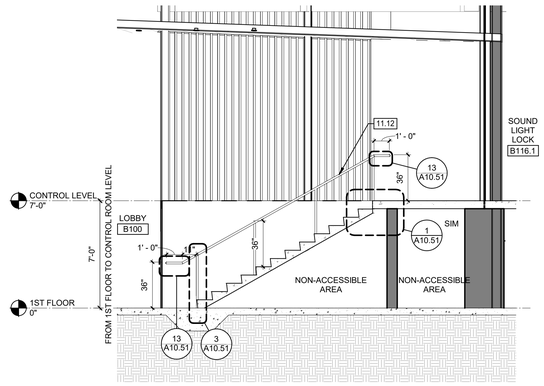

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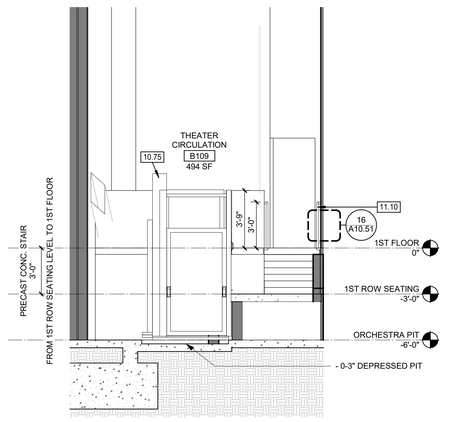
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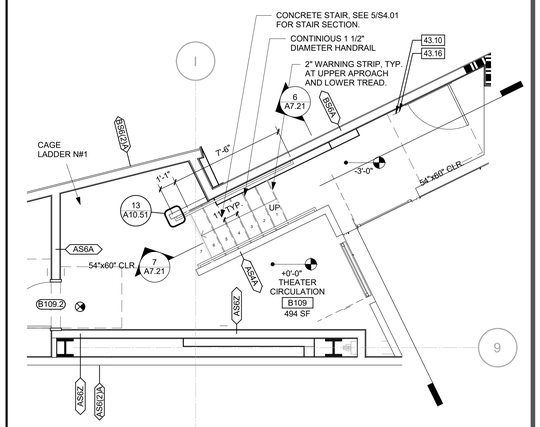

**STAIR #2 - SECTION 7** | **7** | 1/4" = 1'-0"



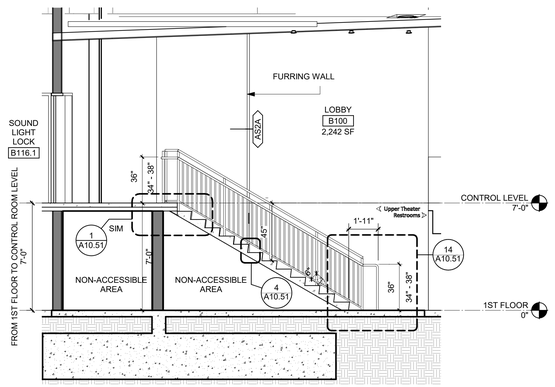

**STAIR #1 - SECTION 4** | **4** | 1/4" = 1'-0"



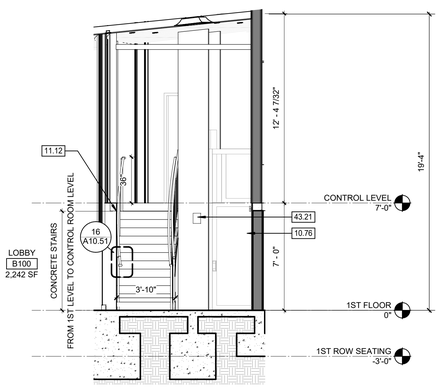

**STAIR #2 - SECTION 6** | **6** | 1/4" = 1'-0"



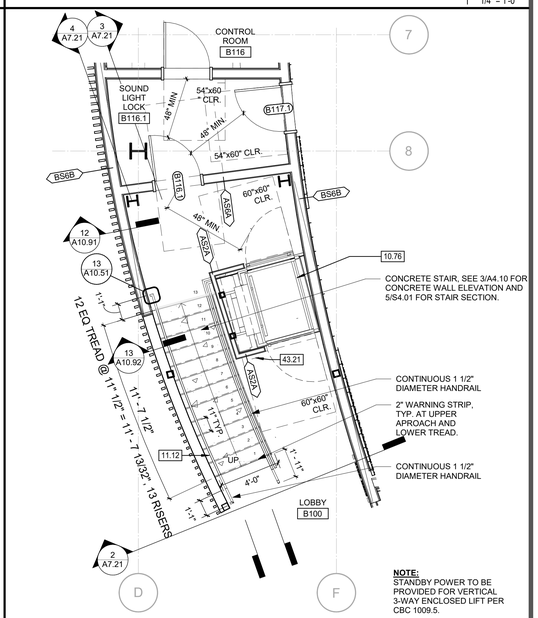

**ENLARGED STAIR #2 - 1ST FLOOR PLAN** | **5** | 1/4" = 1'-0"




**STAIR #1 - SECTION 3** | **3** | 1/4" = 1'-0"




**STAIR #1 - SECTION 2** | **2** | 1/4" = 1'-0"




**ENLARGED STAIRS #1 - 1ST FLOOR PLAN** | **1** | 1/4" = 1'-0"

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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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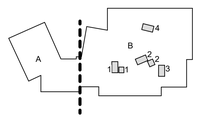
**ISSUE**

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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 10.75 | VERTICAL 3-WAY ENCLOSED LIFT, TO BE PROVIDED WITH STANDBY POWER PER CBC 1009.5 |
| 10.76 | VERTICAL ENCLOSED LIFT - STRAIGHT THROUGH EXIT |
| 11.10 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - WALL MOUNTED - 16/A10.51 |
| 11.12 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - STRINGER MOUNTED - 3/A10.51 |
| 43.10 | FLOOR LEVEL ID |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |
| 43.21 | PLATFORM LIFT RESTRICTION SIGN PER CBC 11B-410.8, STATING "NO FREIGHT" AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY PER CBC 11B-703.7.2.1 - 21/A10.82 |

## NOTES




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

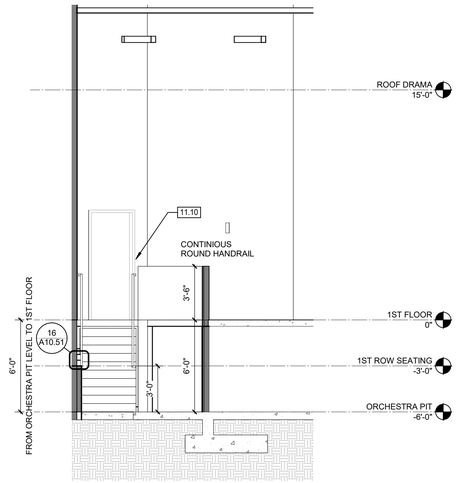
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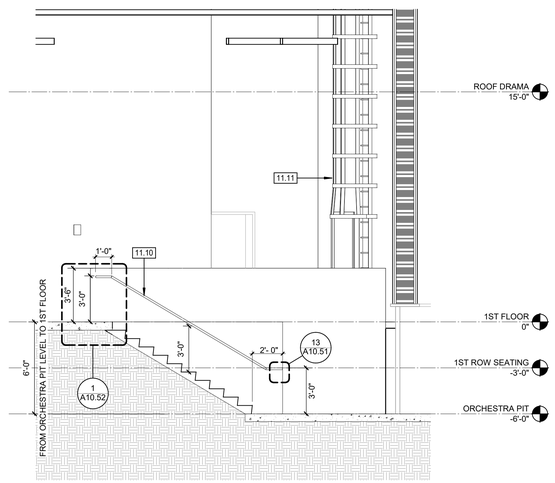
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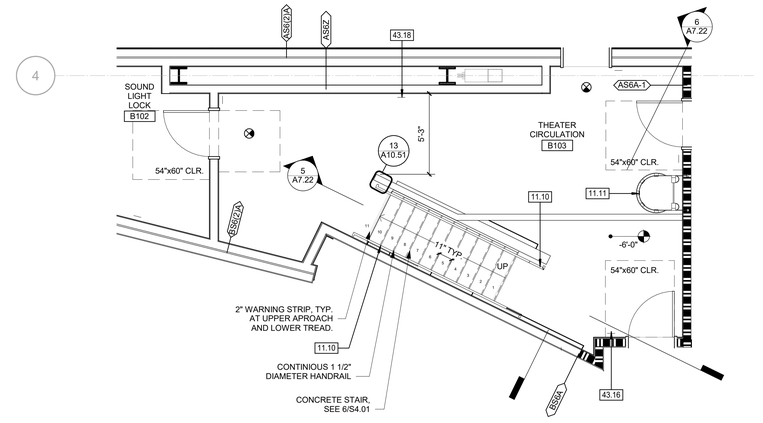
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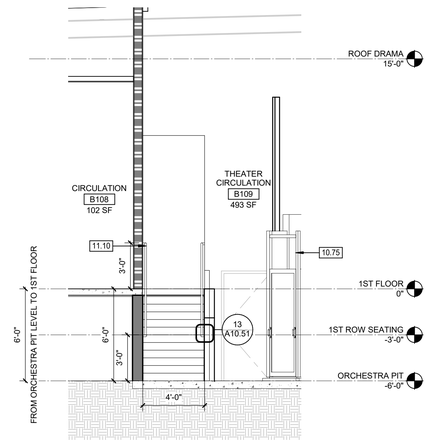

## STAIR #4 - SECTION 6 | 6
1/4" = 1'-0"



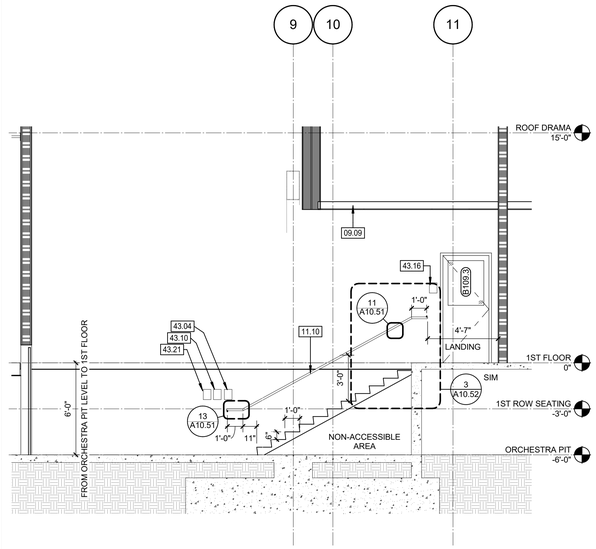

## STAIR #4 - SECTION 5 | 5
1/4" = 1'-0"



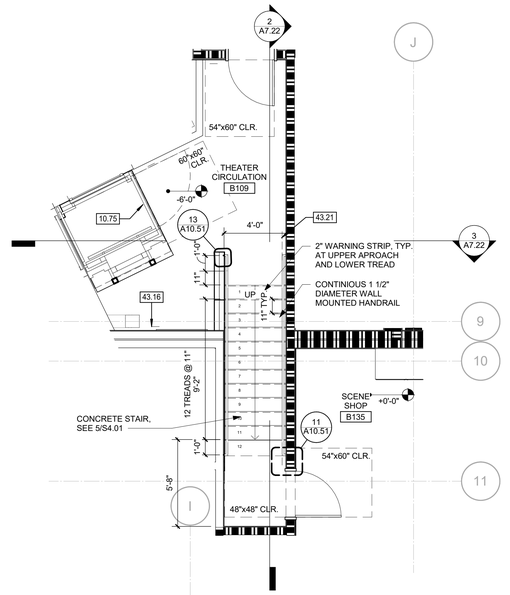

## ENLARGED STAIR #4 - 1ST FLOOR PLAN | 4
1/4" = 1'-0"




## STAIR #3 - SECTION 3 | 3
1/4" = 1'-0"




## STAIR #3 - SECTION 2 | 2
1/4" = 1'-0"




## ENLARGED STAIR #3 - 1ST FLOOR PLAN | 1
1/4" = 1'-0"

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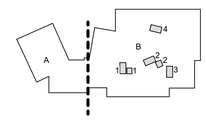
## ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 09.09 | ACOUSTICAL CEILING. REFER TO SHEET A10.31 FOR DETAILS |
| 10.75 | VERTICAL 3-WAY ENCLOSED LIFT, TO BE PROVIDED WITH STANDBY POWER PER CBC 1009.5 |
| 11.10 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - WALL MOUNTED - 16/A10.51 |
| 11.11 | CAGE LADDER - 17/A10.51 |
| 43.04 | STAIRWAY IDENTIFICATION SIGNAGE - 6/A10.82 |
| 43.10 | FLOOR LEVEL ID |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |
| 43.18 | NO STORAGE ALLOWED IN THIS ROOM SIGN - 20/A10.82 |
| 43.21 | PLATFORM LIFT RESTRICTION SIGN PER CBC 11B-410.8, STATING "NO FREIGHT" AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY PER CBC 11B-703.7.2.1 - 21/A10.82 |

## NOTES




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

**ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS**

**DSA SUBMITTAL**

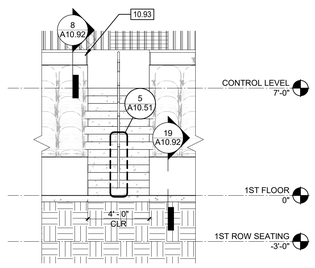
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DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

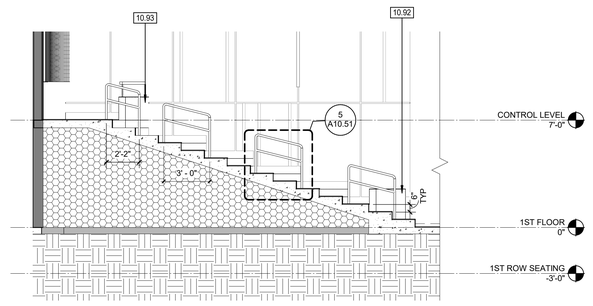
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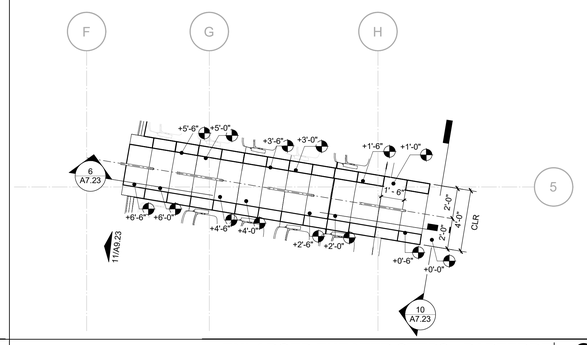
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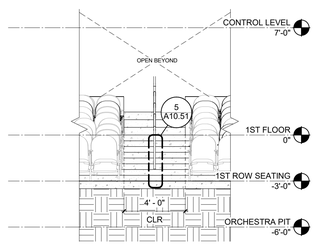

PARTERRE SEATING STEPS - SECTION B **10** 1/4" = 1'-0"



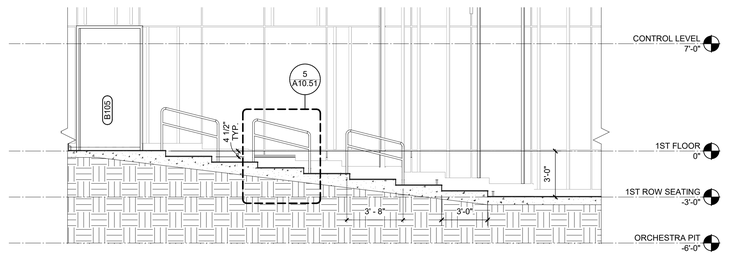

PARTERRE SEATING STEPS - SECTION A **6** 1/4" = 1'-0"



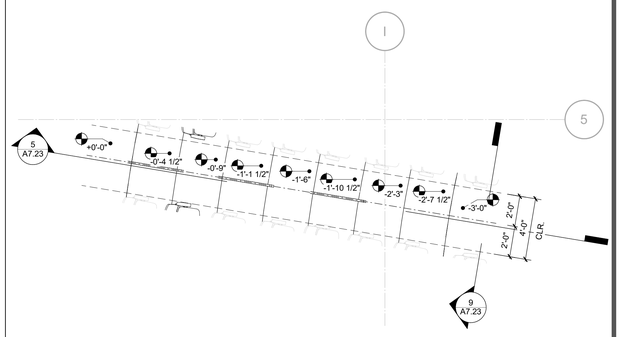

ENLARGED THEATER STEPS - PARTERRE SEATING **2** 1/4" = 1'-0"




Section 130 **9** 1/4" = 1'-0"




F.O.H SEATING STEPS - SECTION A **5** 1/4" = 1'-0"




ENLARGED THEATER STEPS - FRONT OF HOUSE SEATING **1** 1/4" = 1'-0"

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3361008100

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## KEYNOTES

10.92 PARTIAL HEIGHT WALL, SEE DETAIL 19/A10.92
10.93 PARTIAL HEIGHT WALL & GUARDRAIL, SEE DETAIL 8/A10.92

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED STAIR PLANS, ELEVATIONS, AND SECTIONS**

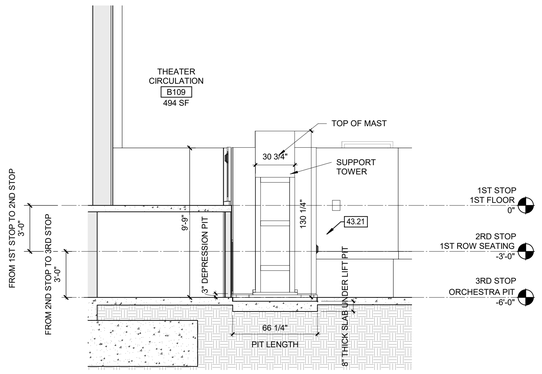
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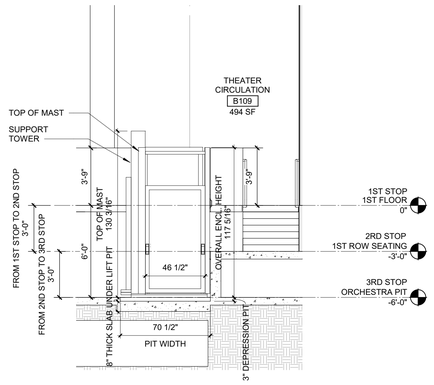
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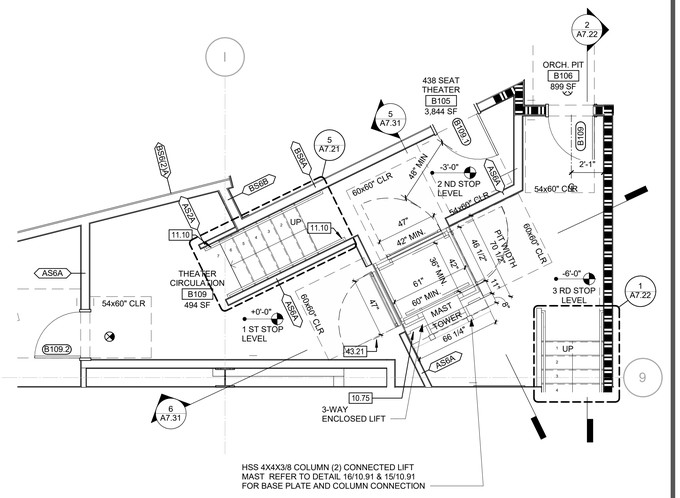
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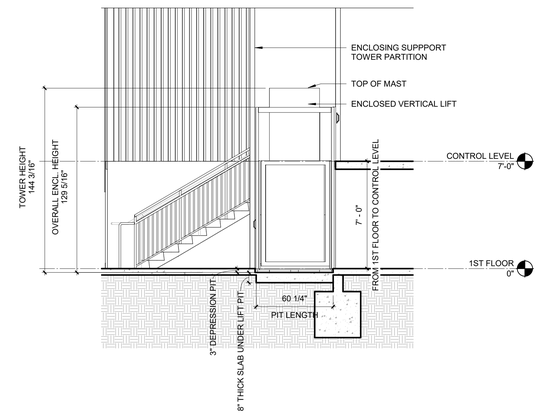

## LIFT #2 - SECTION B1 | 6
1/4" = 1'-0"



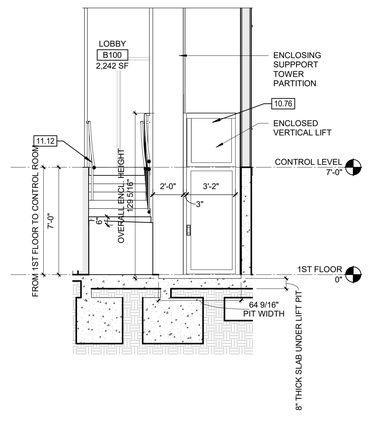

## LIFT #2 - SECTION A1 | 5
1/4" = 1'-0"



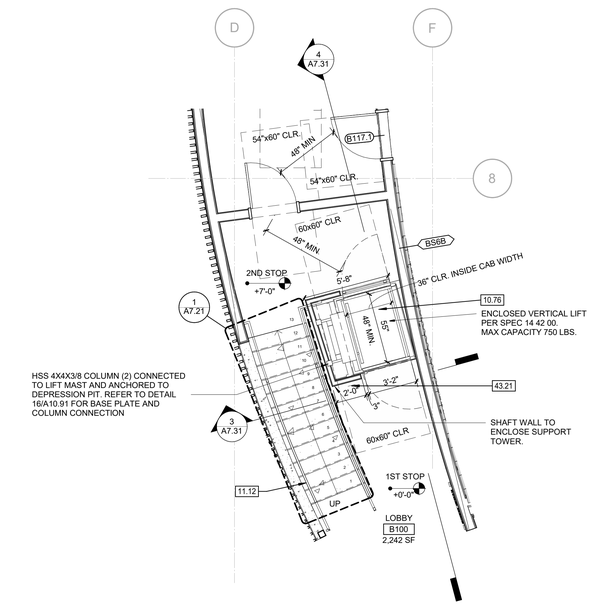

## LIFT - PIT PLAN #2 - 1ST FLOOR PLAN | 2
1/4" = 1'-0"




## LIFT #1 - SECTION B1 | 4
1/4" = 1'-0"




## LIFT #1 - SECTION A | 3
1/4" = 1'-0"




## LIFT - PIT PLAN #1 - 1ST FLOOR PLAN | 1
1/4" = 1'-0"

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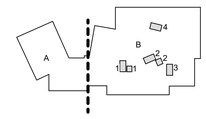
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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 10.75 | VERTICAL 3-WAY ENCLOSED LIFT, TO BE PROVIDED WITH STANDBY POWER PER CBC 1009.5 |
| 10.76 | VERTICAL ENCLOSED LIFT - STRAIGHT THROUGH EXIT |
| 11.10 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - WALL MOUNTED - 16/A10.51 |
| 11.12 | 1 1/2" NOM. STANDARD STEEL ROUND HANDRAIL - STRINGER MOUNTED - 3/A10.51 |
| 43.21 | PLATFORM LIFT RESTRICTION SIGN PER CBC 11B-410.8, STATING "NO FREIGHT" AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY PER CBC 11B-703.7.2.1 - 21/A10.82 |

## NOTES




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED LIFT PLANS, ELEVATIONS, AND SECTIONS**

**DSA SUBMITTAL**

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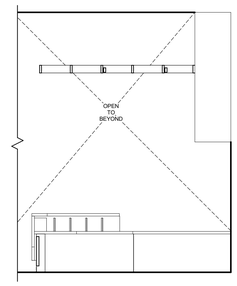
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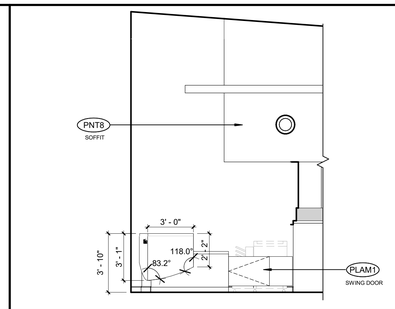
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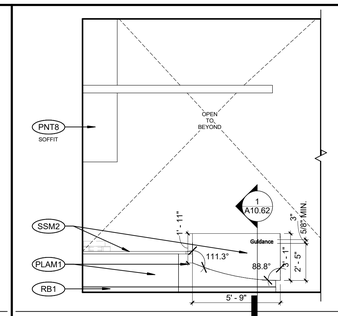
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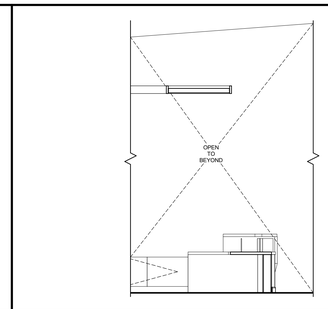

ROOM A114 - RECEPTION DESK - NORTH ELEVATION **23** 1/4" = 1'-0"



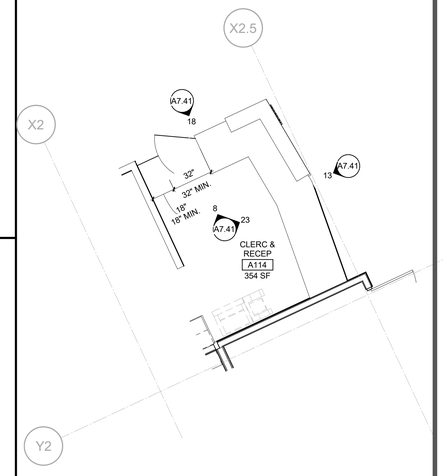

ROOM A114 - RECEPTION DESK - EAST ELEVATION **18** 1/4" = 1'-0"



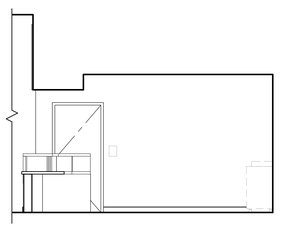

ROOM A114 - RECEPTION DESK - SOUTH ELEVATION **13** 1/4" = 1'-0"



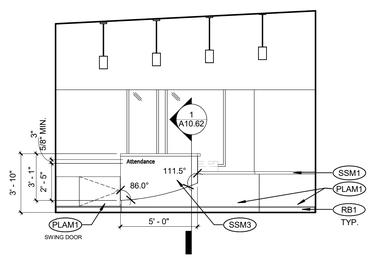

ROOM A114 - RECEPTION DESK - WEST ELEVATION **8** 1/4" = 1'-0"



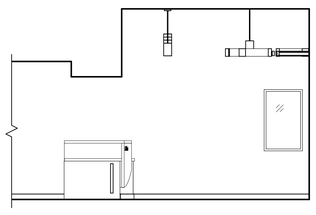

ROOM A114 - RECPTION DESK **3** 1/4" = 1'-0"



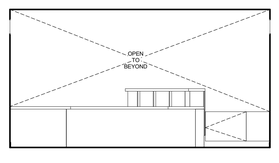
ROOM A102 - ATTENDANCE - NORTH ELEVATION **22** 1/4" = 1'-0"



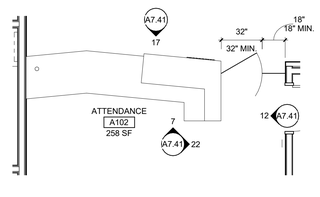

ROOM A102 - ATTENDANCE - EAST ELEVATION **17** 1/4" = 1'-0"



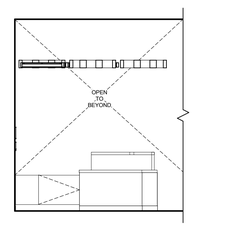
ROOM A102 - ATTENDANCE - SOUTH ELEVATION **12** 1/4" = 1'-0"



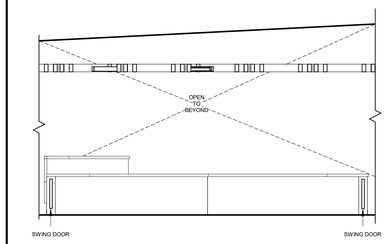

ROOM A102 - ATTENDANCE - WEST ELEVATION **7** 1/4" = 1'-0"



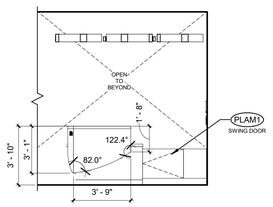

ROOM A102 - ATTENDANCE DESK **2** 1/4" = 1'-0"



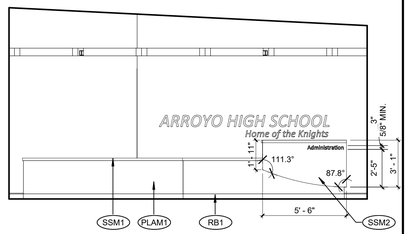

ROOM A101 - RECEPTION - NORTH ELEVATION **21** 1/4" = 1'-0"



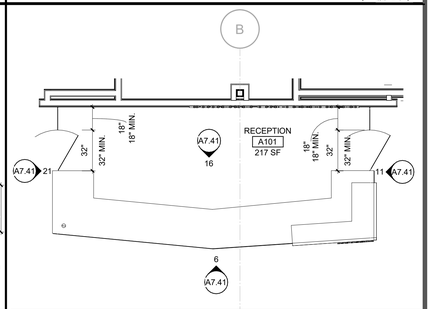

ROOM A101 - RECEPTION - EAST ELEVATION **16** 1/4" = 1'-0"




ROOM A101 - RECEPTION - SOUTH ELEVATION **11** 1/4" = 1'-0"




ROOM A101 - RECEPTION - WEST ELEVATION **6** 1/4" = 1'-0"




ROOM A101 - RECEPTION DESK **1** 1/4" = 1'-0"

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## KEYNOTES

## NOTES

1. REFER TO SHEET G0.11 FOR TYPICAL SYMBOLS AND ABBREVIATIONS
2. REFER TO SHEET A10.61 AND A10.62 FOR CASEWORK DETAILS
3. REFER TO SHEET A9.31 FOR FINISHES SCHEDULE

FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLANS AND ELEVATIONS - CASEWORK**

**DSA SUBMITTAL**

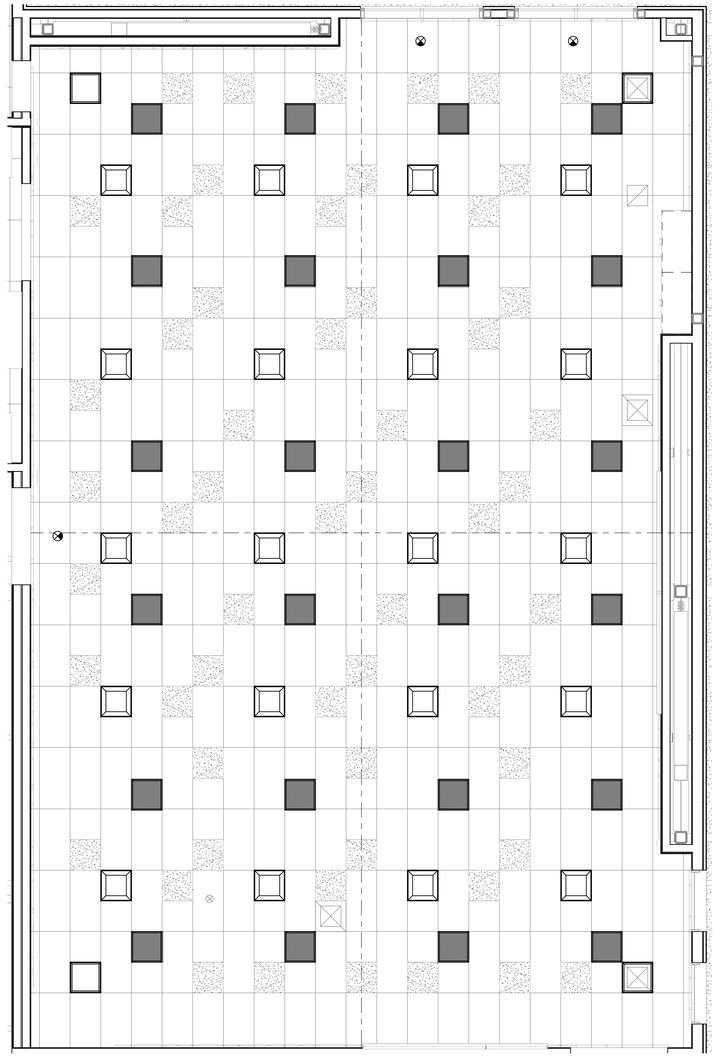
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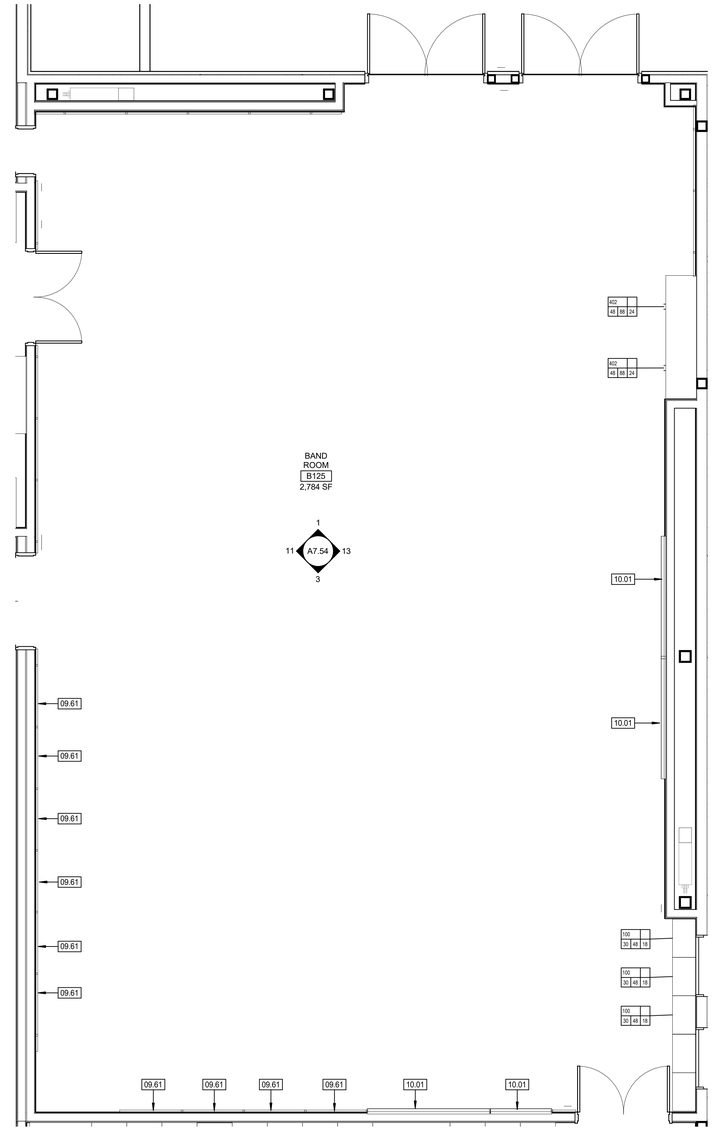
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1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

RCP - ROOM B125 - BAND ROOM **11** 1/4" = 1'-0"




ENLARGED PLAN - ROOM B125 - BAND ROOM **1** 1/4" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 09.61 | ACOUSTICAL WALL PANEL, SEE LEGEND AND INTERIOR ELEVATIONS. |
| 10.01 | MARKER BOARD, OFOI. FOR ATTACHMENT DETAIL SEE 3/A10.91 |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

## ACOUSTIC PANEL LEGEND

- ABSORPTIVE PANEL - TYPE 3 - DUVALTEX - BALTIC
- BARREL DIFFUSER REFLECTIVE PANELS TYPE 3 - DUVALTEX - BALTIC
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - SILVER PAPIER
- 2" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER
- 4" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER

* REFER PANEL HEIGHT TO ELEVATION

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLAN - BAND ROOM**

**DSA SUBMITTAL**

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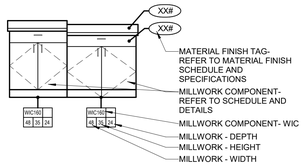
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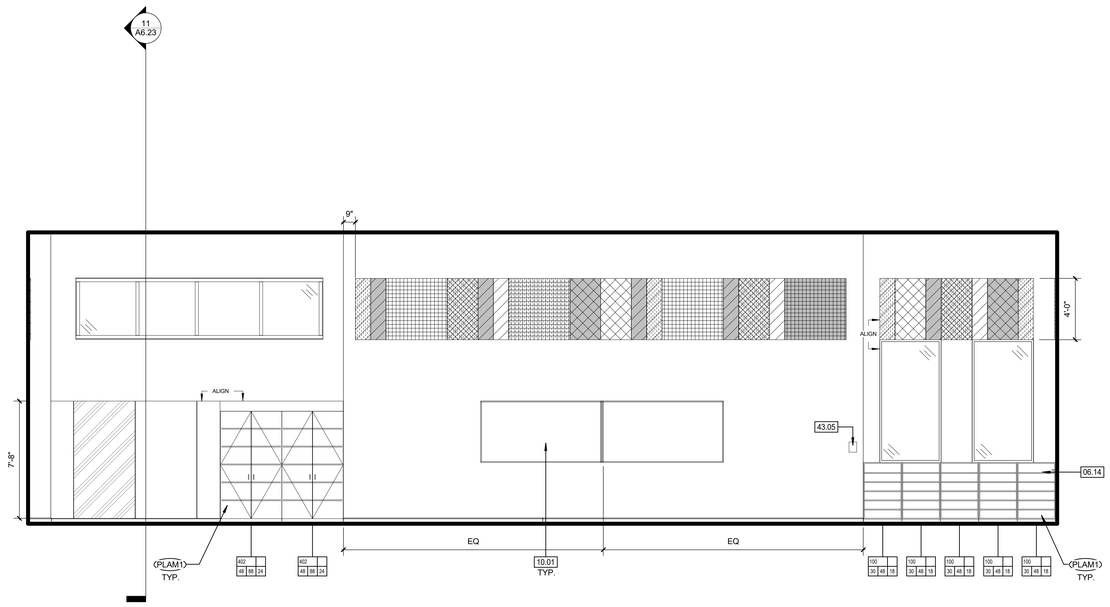
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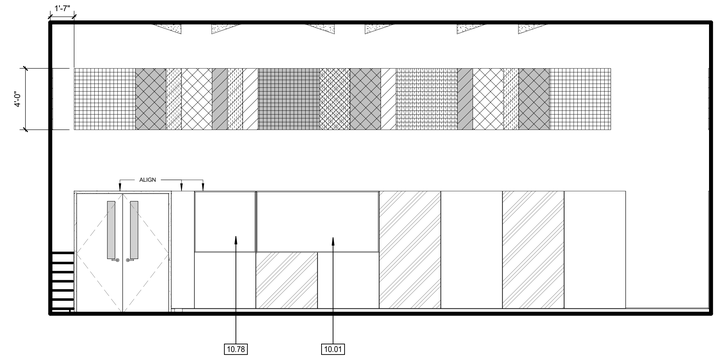
## LEGEND- ELEVATIONS

**BUILDING ELEMENTS**

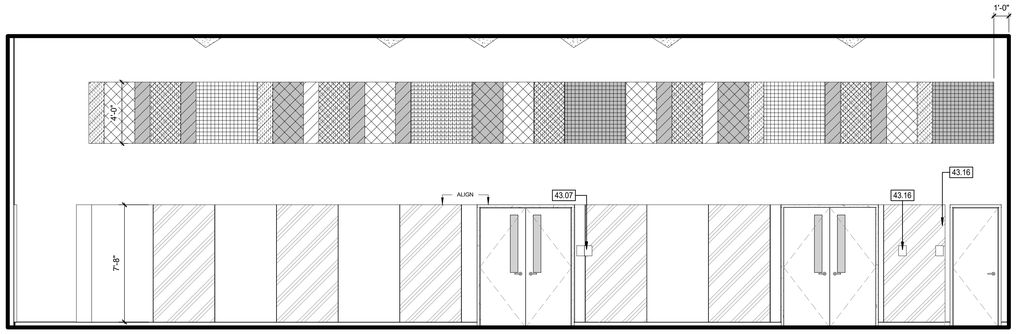


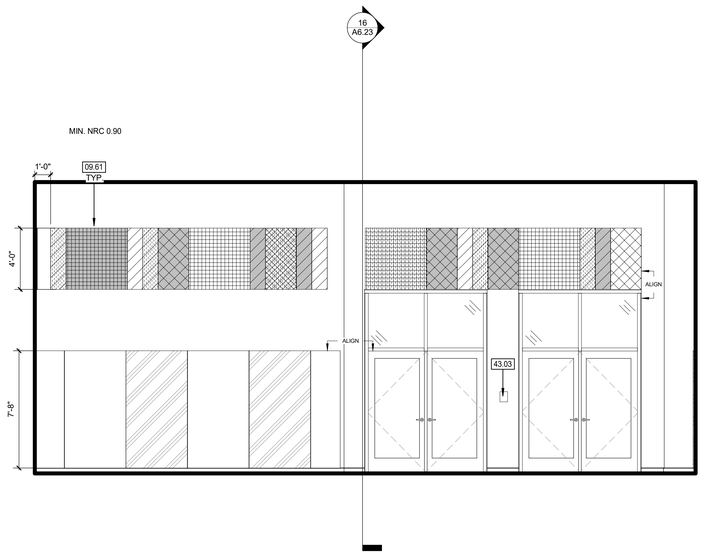

## ROOM B124 - BAND ROOM - EAST ELEVATION 13
1/4" = 1'-0"




## ROOM B124 - BAND ROOM - SOUTH ELEVATION 3
1/4" = 1'-0"




## ROOM B124 - BAND ROOM - WEST ELEVATION 11
1/4" = 1'-0"




## ROOM B124 - BAND ROOM - NORTH ELEVATION 1
1/4" = 1'-0"

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 06.14 | CASEWORK. FOR ATTACHMENT DETAIL REFER TO 1/S0.31 |
| 09.61 | ACOUSTICAL WALL PANEL, SEE LEGEND AND INTEROR ELEVATIONS. |
| 10.01 | MARKER BOARD, OFOI. FOR ATTACHMENT DETAIL SEE 3/A10.91 |
| 10.78 | TACK BOARD, OFOI |
| 43.03 | TACTILE EXIT SIGNAGE - 1B/A10.82 |
| 43.05 | ASSISTED LISTENING DEVICE SIGN - 7/A10.82 |
| 43.07 | OCCUPANT LOAD SIGN - 16/A10.82 |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

## ACOUSTIC PANEL LEGEND

- ABSORPTIVE PANEL - TYPE 3 - DUVALTEX - BALTIC
- BARREL DIFFUSER REFLECTIVE PANELS TYPE 3 - DUVALTEX - BALTIC
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - SILVER PAPIER
- 2" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER
- 4" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER

* REFER PANEL HEIGHT TO ELEVATION

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED ELEVATIONS - BAND ROOM**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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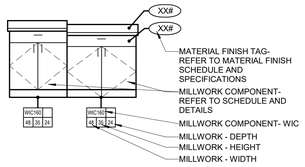
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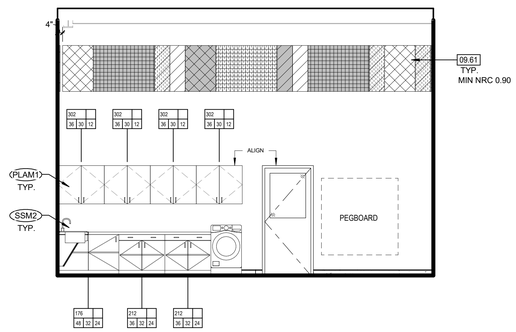
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## LEGEND- ELEVATIONS

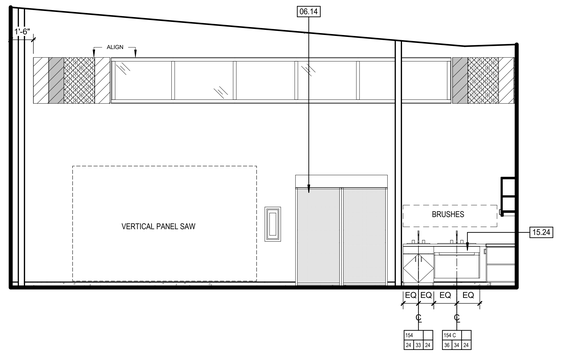
**BUILDING ELEMENTS**



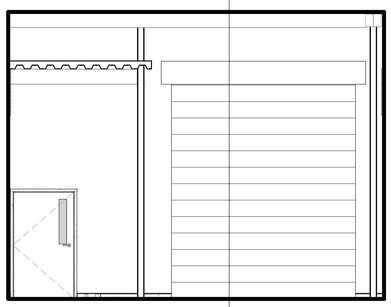




1 A6.25

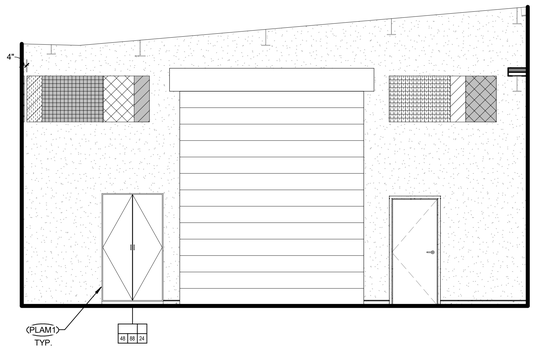
**ROOM B134 - SCENE SHOP - WEST ELEVATION** **1B** 1/4" = 1'-0"



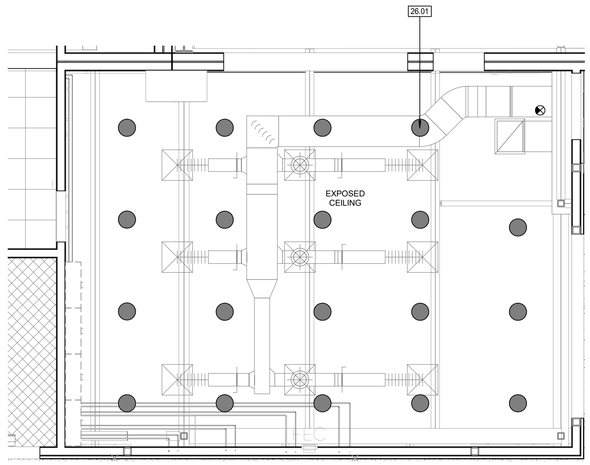

**ROOM B134 - SCENE SHOP - SOUTH ELEVATION** **1D** 1/4" = 1'-0"



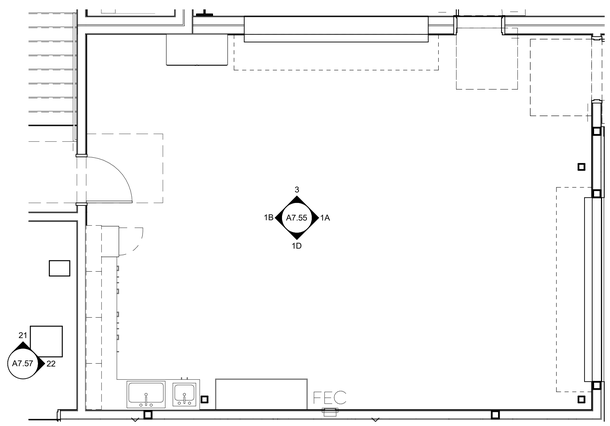
**ROOM B134 - SCENE SHOP - EAST ELEVATION** **1A** 1/4" = 1'-0"




**ROOM B134 - SCENE SHOP - NORTH ELEVATION** **3** 1/4" = 1'-0"




**RCP - ENLARGED - 1ST FLOOR - SCENE SHOP** **2** 1/4" = 1'-0"




**FLOOR PLAN - ENLARGED - 1ST FLOOR - SCENE SHOP** **1** 1/4" = 1'-0"

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## KEYNOTES

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| 06.14 | CASEWORK. FOR ATTACHMENT DETAIL REFER TO 1/S0.31 |
| 09.61 | ACOUSTICAL WALL PANEL. SEE LEGEND AND INTEROR ELEVATIONS. |
| 15.24 | ACCESSIBLE DROP-IN SINK. 20/A10.61 |
| 26.01 | LIGHT FIXTURE \| ELECTRICAL |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

## ACOUSTIC PANEL LEGEND

- ABSORPTIVE PANEL - TYPE 3 - DUVALTEX - BALTIC
- BARREL DIFFUSER REFLECTIVE PANELS TYPE 3 - DUVALTEX - BALTIC
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
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- 2" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER
- 4" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER

* REFER PANEL HEIGHT TO ELEVATION

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLAN AND ELEVATIONS - SCENE SHOP**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**A7.55**

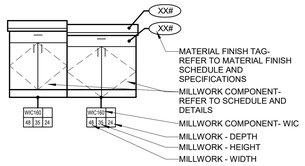

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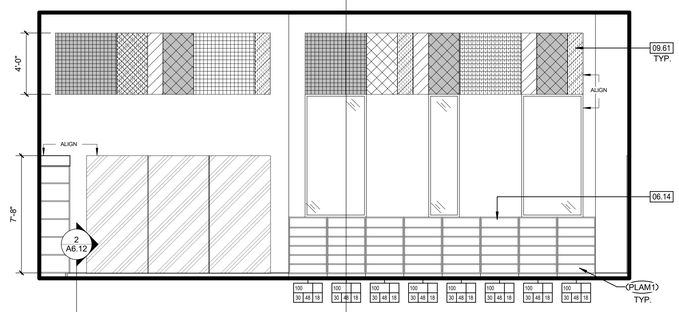

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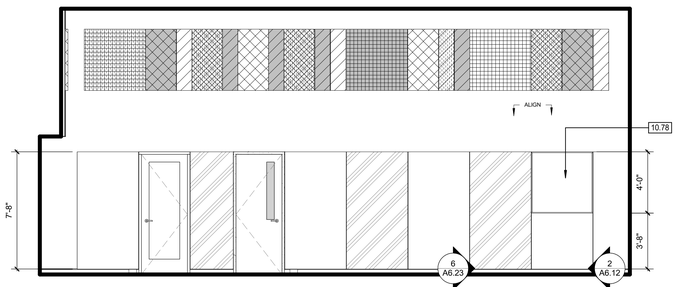
## LEGEND- ELEVATIONS

**BUILDING ELEMENTS**

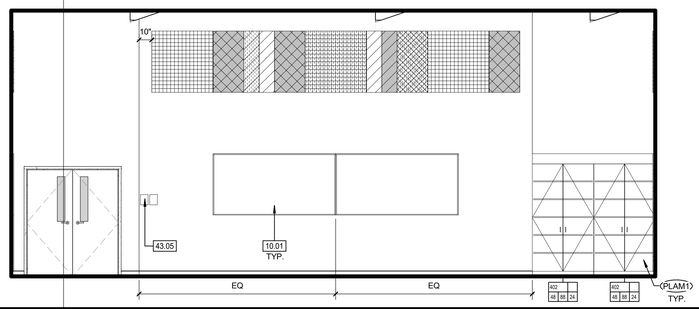


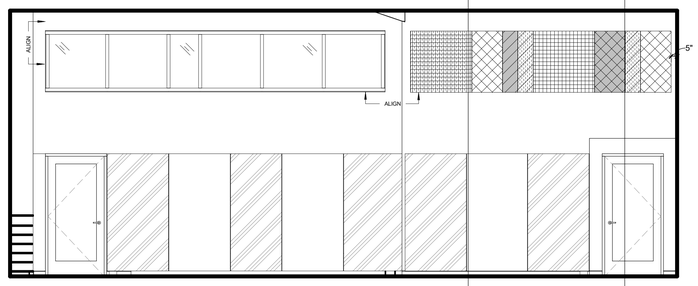

## ROOM B117 - CHORAL ROOM - WEST ELEVATION | 15
1/4" = 1'-0"



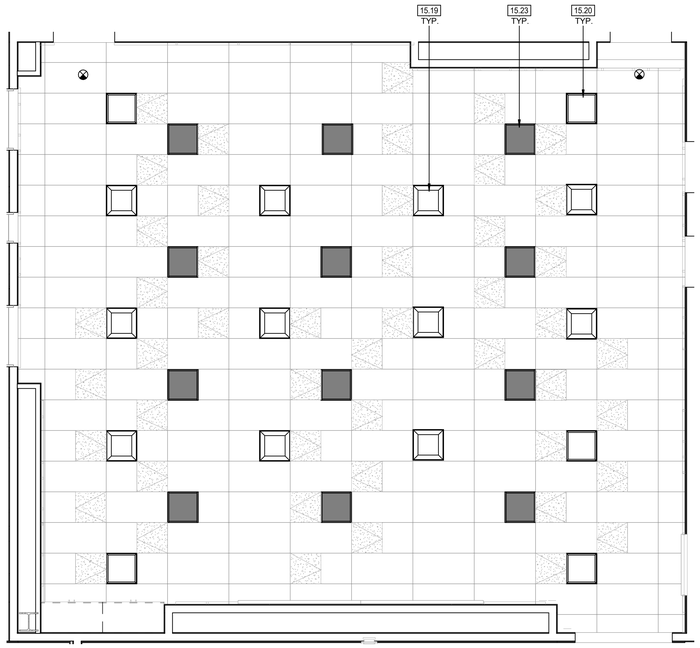

## ROOM B117 - CHORAL ROOM - EAST ELEVATION | 5
1/4" = 1'-0"



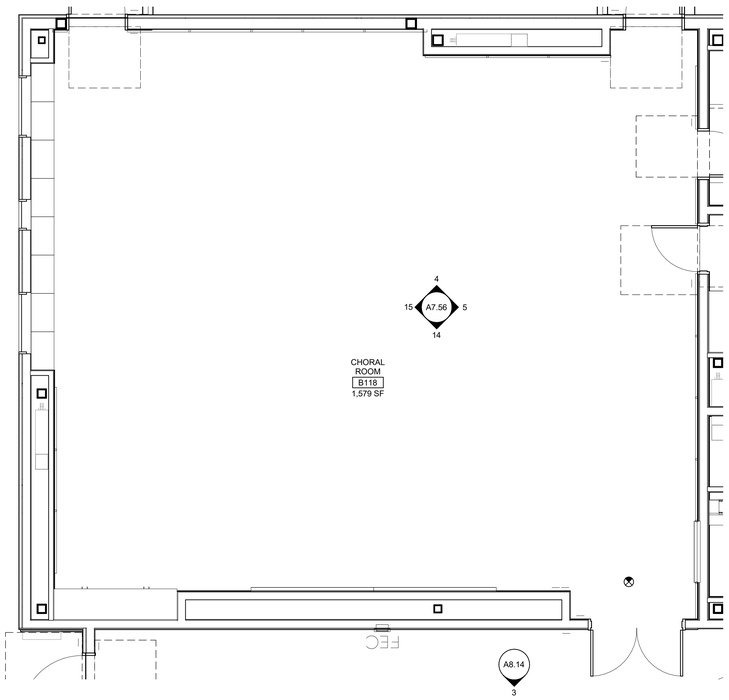

## ROOM B117 - CHORAL ROOM - SOUTH ELEVATION | 14
1/4" = 1'-0"




## ROOM B117 - CHORAL ROOM - NORTH ELEVATION | 4
1/4" = 1'-0"




## RCP - ENLARGED - 1ST FLOOR - CHOIR | 11
1/4" = 1'-0"




## FLOOR PLAN - ENLARGED - 1ST FLOOR - CHOIR ROOM | 1
1/4" = 1'-0"

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## KEYNOTES

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| 06.14 | CASEWORK. FOR ATTACHMENT DETAIL REFER TO 1/S0.31 |
| 09.61 | ACOUSTICAL WALL PANEL, SEE LEGEND AND INTEROR ELEVATIONS. |
| 10.01 | MARKER BOARD, OFOI. FOR ATTACHMENT DETAIL SEE 3/A10.91 |
| 10.78 | TACK BOARD, OFOI |
| 15.19 | SUPPLY AIR GRILLE. FOR CEILING ATTACHMENT DETAIL SEE 2/A10.32 |
| 15.20 | RETURN AIR GRILLE. FOR CEILING ATTACHMENT DETAIL SEE 2/A10.32 |
| 15.23 | F-3A 2X2 RECESSED TROFFER. FOR CEILING ATTACHMENT DETAIL SEE 2/A10.32 |
| 43.05 | ASSISTED LISTENING DEVICE SIGN - 7/A10.82 |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

## ACOUSTIC PANEL LEGEND

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- 4" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER

* REFER PANEL HEIGHT TO ELEVATION

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**ENLARGED FLOOR PLAN AND ELEVATIONS - CHOIR ROOM**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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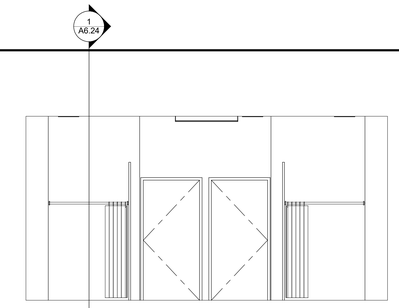
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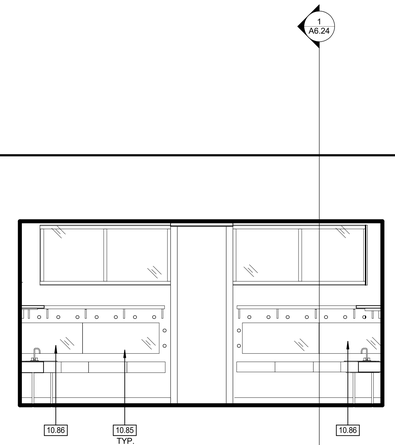
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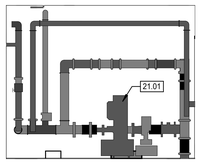
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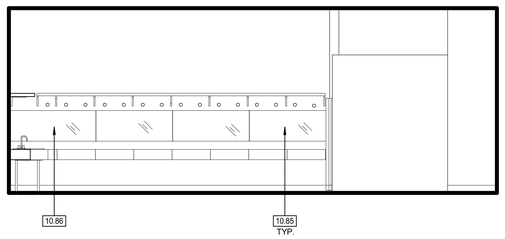

ROOM B129 -DRESSING -WEST ELEVATION **14** 1/4" = 1'-0"



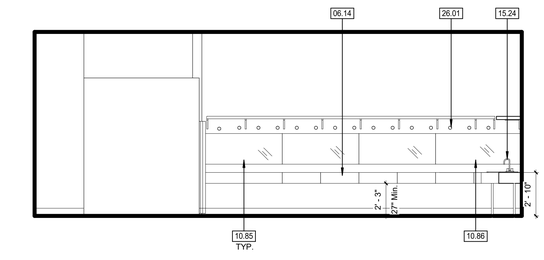

ROOM B129 - DRESSING - EAST ELEVATION **4** 1/4" = 1'-0"



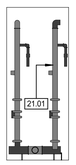

ROOM B136 - FIRE RISER ROOM - EAST ELEVATION **22** 1/4" = 1'-0"




ROOM B129 - DRESSING - SOUTH ELEVATION **13** 1/4" = 1'-0"



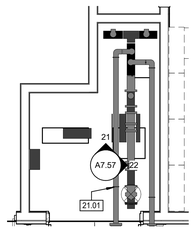

ROOM B129 - DRESSING - NORTH ELEVATION **3** 1/4" = 1'-0"



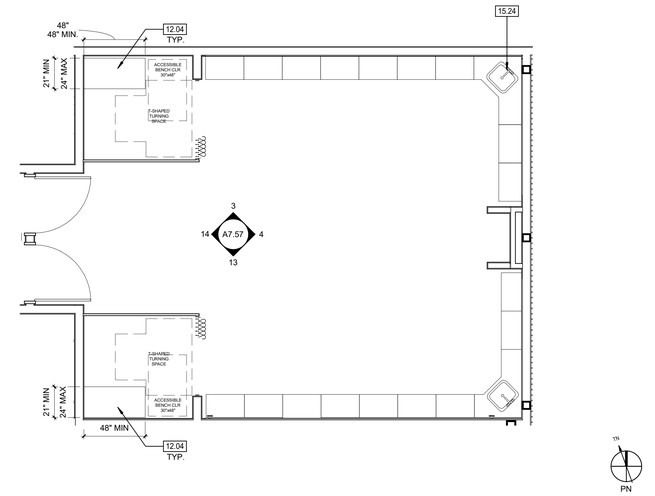

ROOM B136 - FIRE RISER ROOM - NORTH ELEVATION **21** 1/4" = 1'-0"




RCP - PARTIAL - 1ST FLOOR - DRESSING ROOMS **11** 1/4" = 1'-0"




FLOOR PLAN - ENLARGED - 1ST FLOOR - FIRE RISER ROOM **20** 1/4" = 1'-0"




FLOOR PLAN - ENLARGED - 1ST FLOOR - DRESSING ROOM **1** 1/4" = 1'-0"

## KEYNOTES

| | |
|---|---|
| 06.14 | CASEWORK. FOR ATTACHMENT DETAIL REFER TO 1/S0.31 |
| 10.85 | 60" X 20" MIRROR |
| 10.86 | MIRROR, SIZE V.I.F. |
| 12.04 | CHANGING BENCH, OFOI |
| 15.19 | SUPPLY AIR GRILLE. FOR CEILING ATTACHMENT DETAIL SEE 2/A10.32 |
| 15.20 | RETURN AIR GRILLE. FOR CEILING ATTACHMENT DETAIL SEE 2/A10.32 |
| 15.21 | F-3B. 2X4 RECESSED TROFFER |
| 15.24 | ACCESSIBLE DROP-IN SINK. 20/A10.61 |
| 21.01 | FIRE SPRINKLER RISER - VERIFY LOCATION W/FIRE PROTECTION DRAWINGS |
| 26.01 | LIGHT FIXTURE \| ELECTRICAL |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED FLOOR PLAN AND ELEVATIONS - DRESSING ROOM AND FIRE RISER ROOM**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

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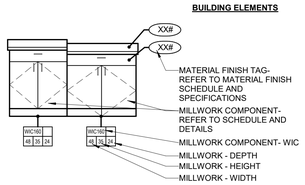
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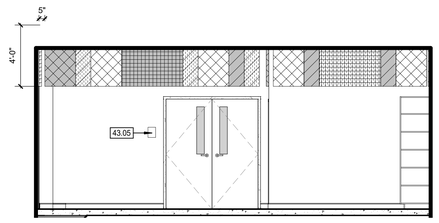
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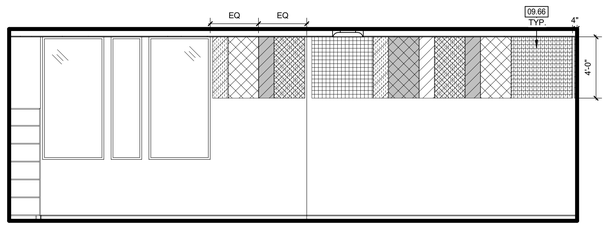
## LEGEND- ELEVATIONS

**BUILDING ELEMENTS**

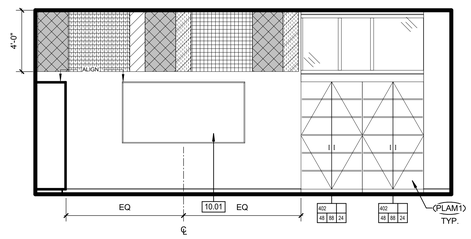


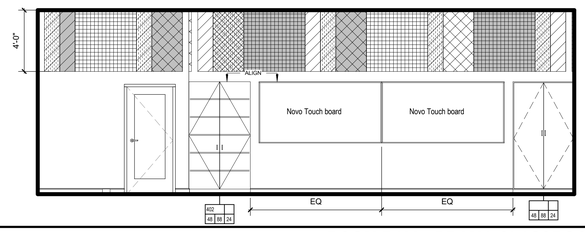

**ROOM B132 - DRAMA CLASSROOM - WEST ELEVATION** 14 1/4" = 1'-0"




**ROOM B132 - DRAMA CLASSROOM - SOUTH ELEVATION** 13 1/4" = 1'-0"



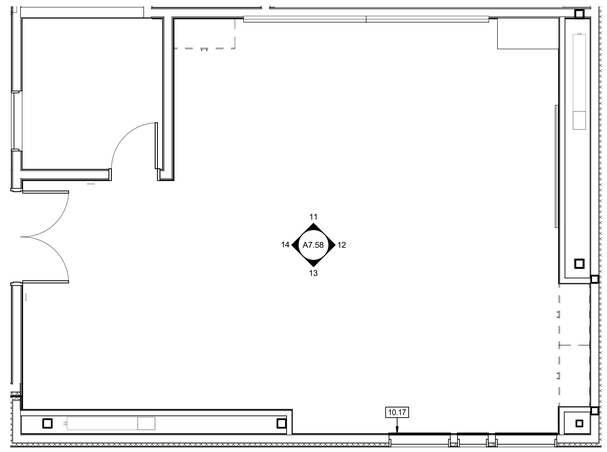

**ROOM B132 - DRAMA CLASSROOM - EAST ELEVATION** 12 1/4" = 1'-0"




**ROOM B132 - DRAMA CLASSROOM - NORTH ELEVATION** 11 1/4" = 1'-0"



**RCP - PARTIAL - 1ST FLOOR - DRAMA CLASSROM** 3 1/4" = 1'-0"




**FLOOR PLAN - ENLARGED - 1ST FLOOR - DRAMA CLASSROOM** 1 1/4" = 1'-0"

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DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 09.66 | SOUND ABSORPTIVE WALL PANEL |
| 10.01 | MARKER BOARD, OFOI. FOR ATTACHMENT DETAIL SEE 3/A10.91 |
| 10.17 | ACOUSTICAL DRAPERY - NRC MIN |
| 43.05 | ASSISTED LISTENING DEVICE SIGN - 7/A10.82 |

## NOTES

1. REFER TO SHEET A3.11 SERIES FOR RCP LEGEND
2. REFER TO DETAIL 10/A10.91 FOR ACOUSTIC PANEL ATTACHMENT TO WALL

## ACOUSTIC PANEL LEGEND

- ABSORPTIVE PANEL - TYPE 3 - DUVALTEX - BALTIC
- BARREL DIFFUSER REFLECTIVE PANELS TYPE 3 - DUVALTEX - BALTIC
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - WEDGEWOOD
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 2" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 4" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - MEDIUM GREY
- 1" ACOUSTIC PANELS - TYPE 1 - DUVALTEX - SILVER PAPIER
- 2" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER
- 4" ACOUSTIC PANELS - TYPE 1- DUVALTEX - SILVER PAPIER

* REFER PANEL HEIGHT TO ELEVATION

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**ENLARGED FLOOR PLAN AND ELEVATIONS - DRAMA CLASSROOM**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# A7.58


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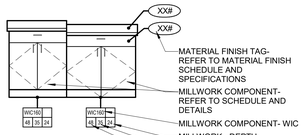


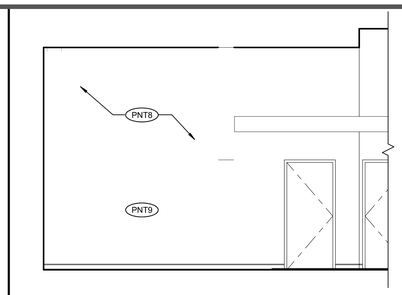
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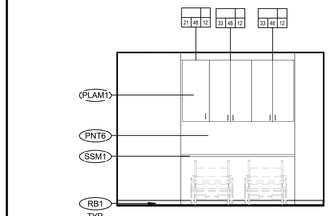
## LEGEND- ELEVATIONS

**BUILDING ELEMENTS**

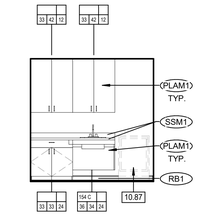


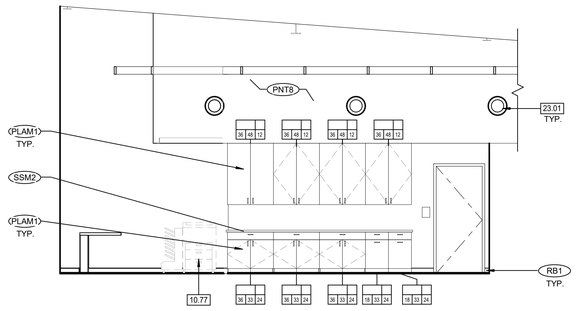

### ROOM A116 - STAFF LOUNGE - SOUTH ELEVATION | 15
1/4" = 1'-0"



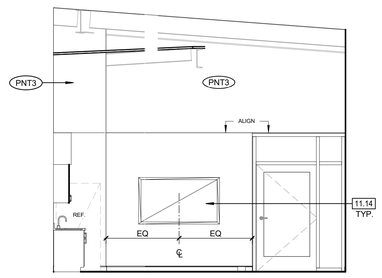

### ROOM A104 - HEALTH CENTER - EAST ELEVATION | 10
1/4" = 1'-0"



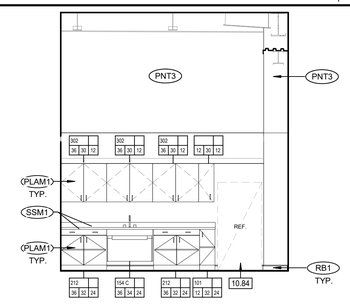

### ROOM A107 - NURSE EXAM - EAST ELEVATION | 5
1/4" = 1'-0"



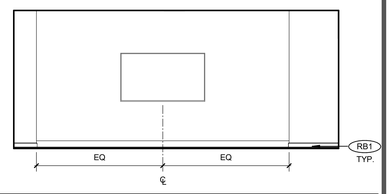

### ROOM A114 - CLERICAL & RECEPTION - EAST ELEVATION | 19
1/4" = 1'-0"




### ROOM A116 - STAFF LOUNGE - EAST ELEVATION | 14
1/4" = 1'-0"




### ROOM A116 - STAFF LOUNGE - NORTH ELEVATION | 9
1/4" = 1'-0"




### ROOM A138 - CONFERENCE - NORTH ELEVATION | 4
1/4" = 1'-0"



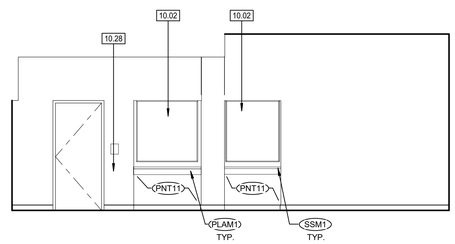

### ROOM A110 - WORK/MAIL - EAST ELEVATION | 18
1/4" = 1'-0"



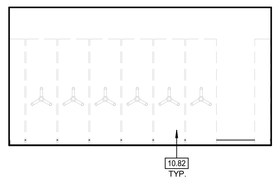

### ROOM A115 - RECORD STORAGE - WEST ELEVATION | 13
1/4" = 1'-0"



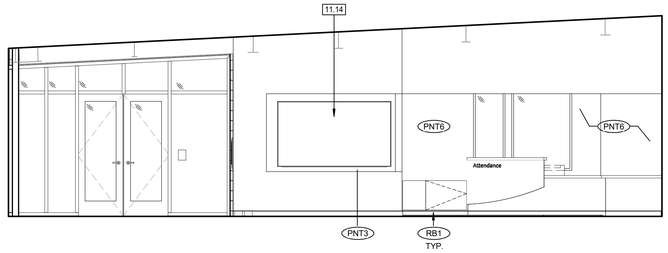

### ROOM A100 - LOBBY - SOUTH ELEVATION | 3
1/4" = 1'-0"



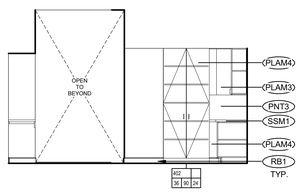

### ROOM A110 - WORK/MAIL - WEST ELEVATION | 17
1/4" = 1'-0"



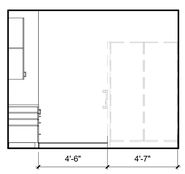

### ROOM A115 - RECORD STORAGE - EAST ELEVATION | 12
1/4" = 1'-0"



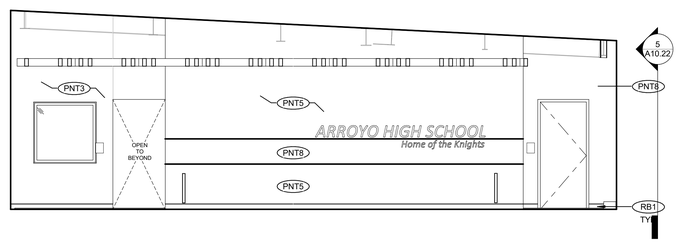

### ROOM A100 - LOBBY - EAST ELEVATION | 2
1/4" = 1'-0"




### ROOM A110 - WORK/MAIL - NORTH ELEVATION | 16
1/4" = 1'-0"




### ROOM A115 RECORD STORAGE - NORTH ELEVATION | 11
1/4" = 1'-0"




### ROOM A100 - LOBBY - WEST ELEVATION | 1
1/4" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 10.02 | BULLETIN BOARD |
| 10.28 | ROOM ID SIGN - 1/A921 |
| 10.77 | COPIER, OFOI |
| 10.82 | MOBILE CABINET SHELVING - REFER TO STRUCTURAL FOR ANCHORING |
| 10.84 | FULL SIZE REFRIGERATOR, OFOI |
| 10.87 | UNDERCOUNTER REFRIGERATOR, OFOI |
| 11.14 | DIGITAL SCREEN |
| 23.01 | AIR VENT |

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - INTERIOR ELEVATIONS - ADMIN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

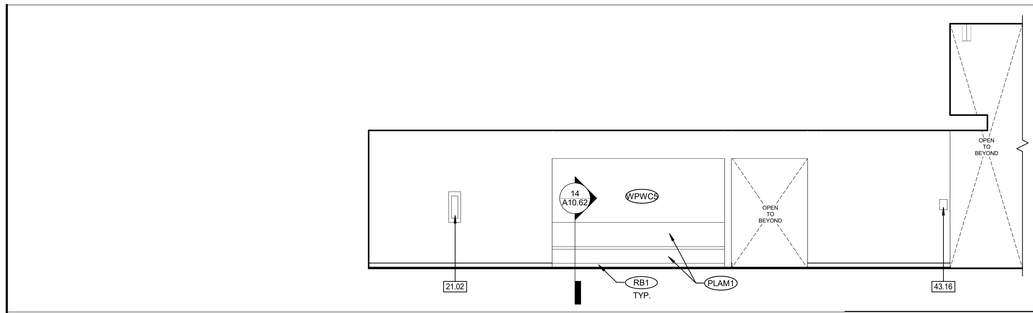
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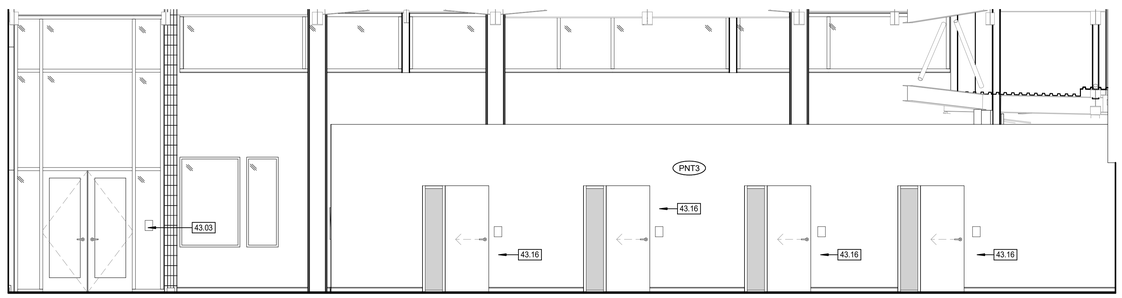
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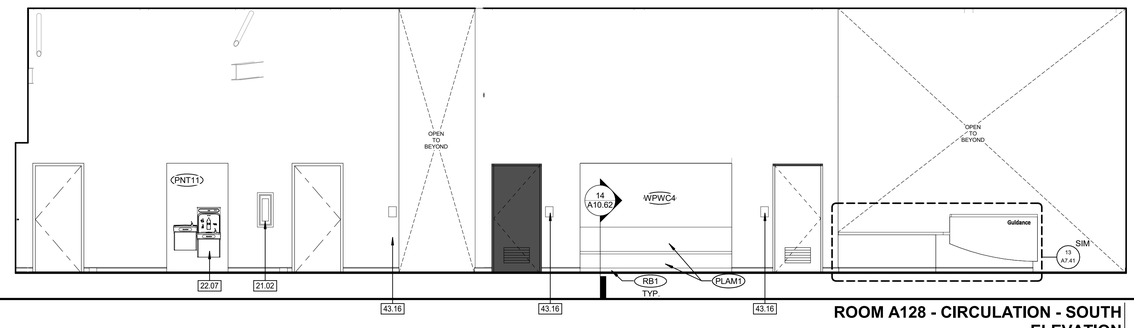
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ROOM A128 - CIRCULATION NORTH ELEVATION 2 — 3 — 1/4" = 1'-0"




ROOM A128 - CIRCULATION - NORTH ELEVATION 1 — 2 — 1/4" = 1'-0"




ROOM A128 - CIRCULATION - SOUTH ELEVATION — 1 — 1/4" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 21.02 | SEMI-RECESSED FIRE EXTINGUISHER CABINET - 1/A10.91 |
| 22.07 | HI-LO DRINKING FOUNTAIN W/ BOTTLE FILLER - 11/A10.72 |
| 43.03 | TACTILE EXIT SIGNAGE - 1B/A10.82 |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - INTERIOR ELEVATIONS - ADMIN**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

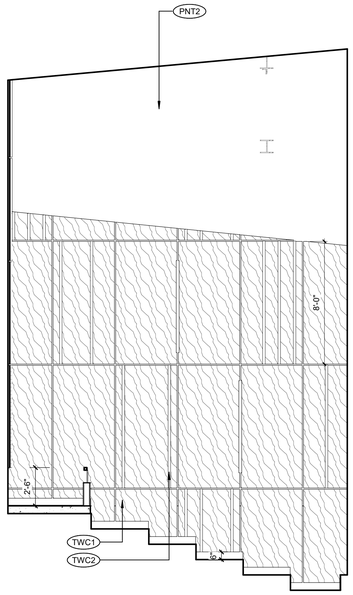
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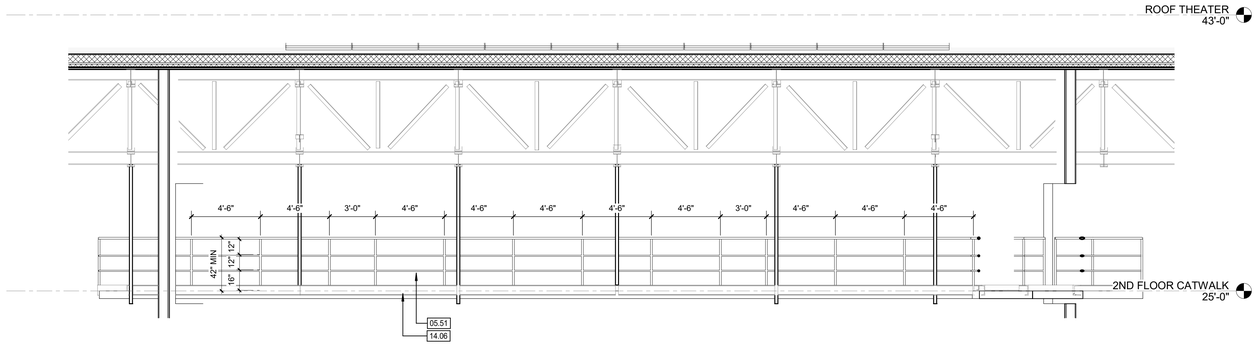
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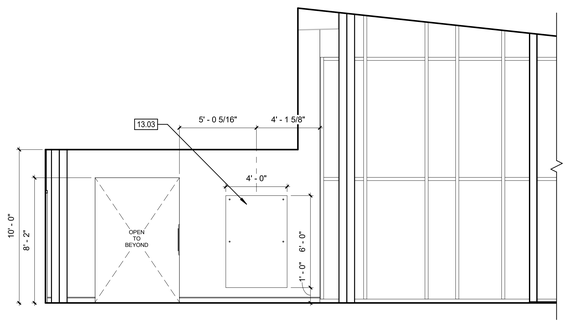
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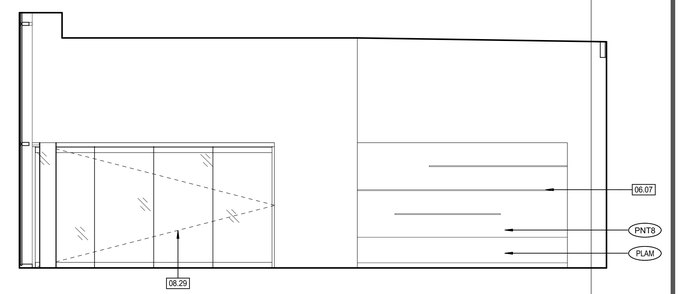

## ROOM B105 - THEATRE - NORTH ELEVATION 3 — 8 — 1/4" = 1'-0"



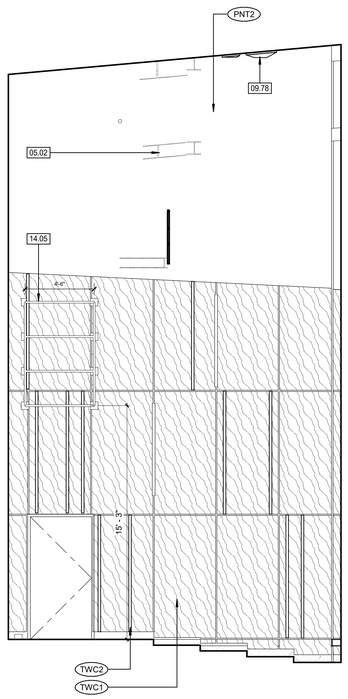

## CATWALK RAILING ELEVATION — 5 — A6.22 — 1/4" = 1'-0"



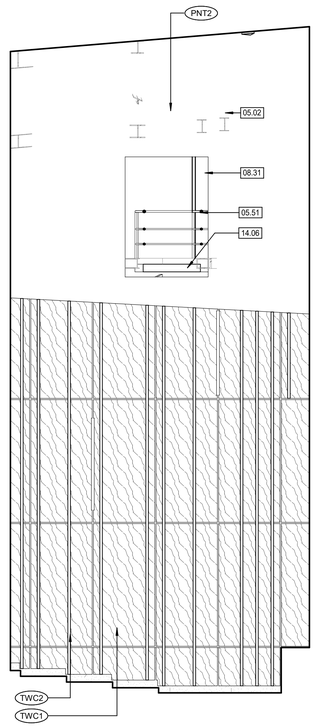

## ROOM B100 - THEATRE LOBBY CIRCULATION- SOUTH ELEVATION — 4 — 1/4" = 1'-0"



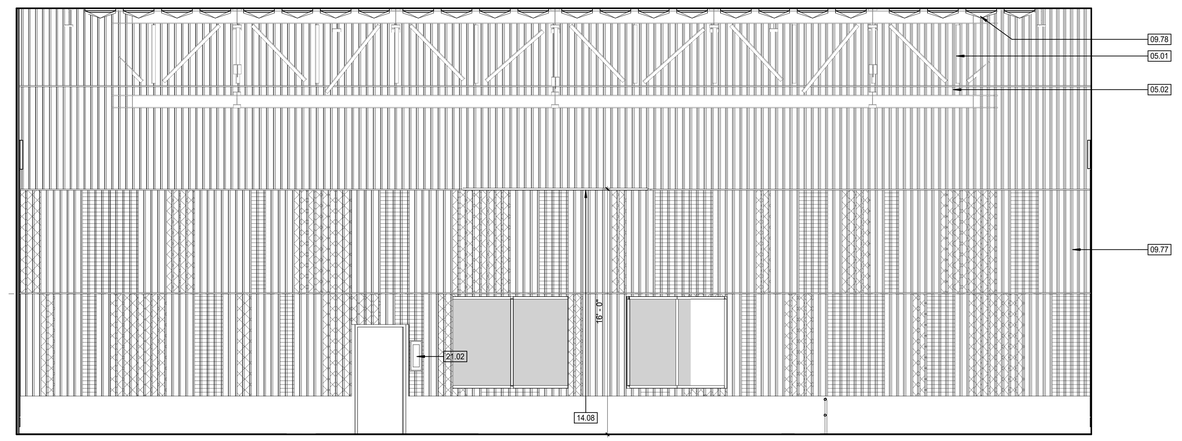

## ROOM B100 - THEATRE LOBBY - WEST ELEVATION — 3 — 1/4" = 1'-0"



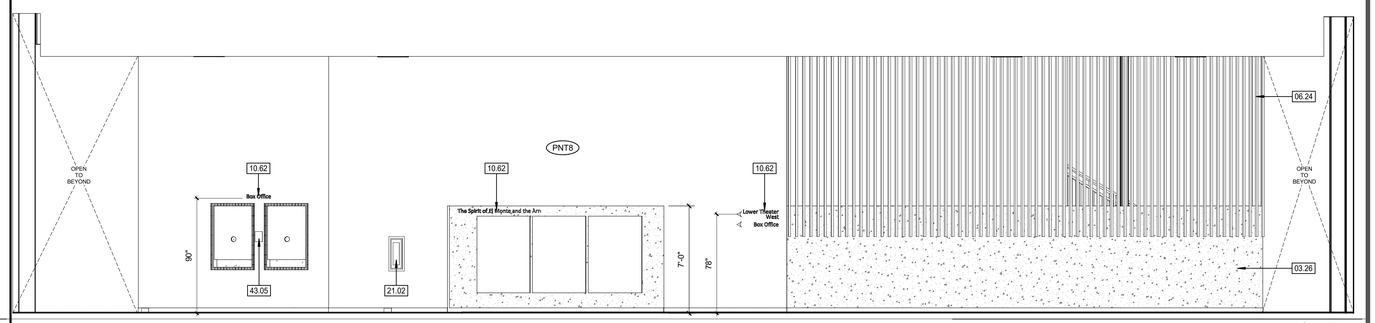

## ROOM B105 - THEATRE - NORTH ELEVATION 2 — 7 — 1/4" = 1'-0"




## ROOM B105 - THEATRE - NORTH ELEVATION 1 — 6 — 1/4" = 1'-0"




## ROOM B105 - THEATRE - WEST ELEVATION — 2 — 1/4" = 1'-0"




## ROOM B100 - THEATRE LOBBY - EAST ELEVATION — 1 — 1/4" = 1'-0"

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## KEYNOTES

| | |
|---|---|
| 03.26 | CONCRETE WALL PER STRUCTURAL DRAWINGS |
| 05.01 | BRACE FRAME |
| 05.02 | STEEL BEAM |
| 05.51 | SCHEDULE 40 NOMINAL SIZE 1.66" OD STD. STL. PIPE CATWALK RAILING. REFER TO STRUCTURAL & THEATER DRAWINGS |
| 06.07 | DISPLAY CASE |
| 06.24 | WOOD SLATS - 12/A10.91 |
| 08.29 | GLAZED OPERABLE PARTITION. NOT TO BE USED IN LIEU OF EXIT. |
| 08.31 | WALL OPENING. SEE STRUCTURAL DWGS FOR FRAMING. |
| 09.77 | ACOUSTIC 3D PANEL, ZINTRA PEAKS OR SIMILAR (TYPE 2). |
| 09.78 | ACOUSTIC CEILING TILE, SEE 1/A10.36 |
| 10.62 | DIRECTIONAL SIGN - 2" MIN TEXT HEIGHT PER CBC 11B-703.5 |
| 13.03 | 4'X6' CUSTOM PRINTED ACRYLIC PANEL. INTERIOR ENVIRONMENTAL GRAPHIC, GRAPHIC TO BE FINALIZED BY ARCHITECT |
| 14.05 | 54" BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 3,10/A10.92 |
| 14.06 | CATWALK (3/8" CONT STEEL TREAD PLATE FINISH). REFER TO STRUCTURAL DRAWINGS (S8.01) FOR CATWALK DETAILS. |
| 14.08 | 1 BAY BOX BOOM RIGGING. REFER TO STRUCTURAL & THEATER DRAWINGS - 18/A10.92 |
| 21.02 | SEMI-RECESSED FIRE EXTINGUISHER CABINET - 1/A10.91 |
| 43.05 | ASSISTED LISTENING DEVICE SIGN - 7/A10.82 |

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

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**DSA SUBMITTAL**

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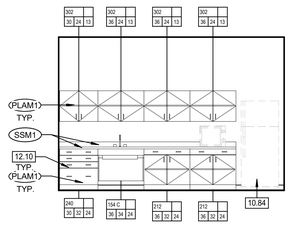
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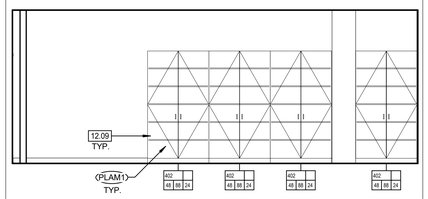
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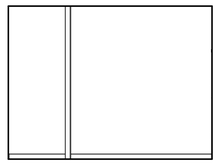

## ROOM B123 - BOOSTER KITCHENETTE - EAST ELEVATION — 25
1/4" = 1'-0"



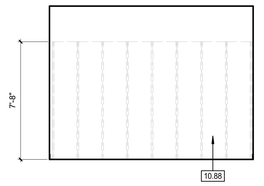

## ROOM B124 - BAND UNIFORM STORAGE - WEST ELEVATION — 20
1/4" = 1'-0"



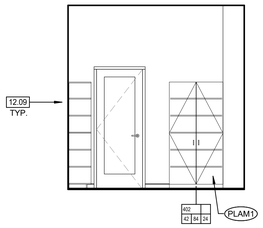
## ROOM B121 - BOOSTER STORAGE - WEST ELEVATION — 15
1/4" = 1'-0"



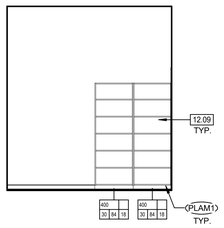
## ROOM B121 - BOOSTER STORAGE - EAST ELEVATON — 10
1/4" = 1'-0"



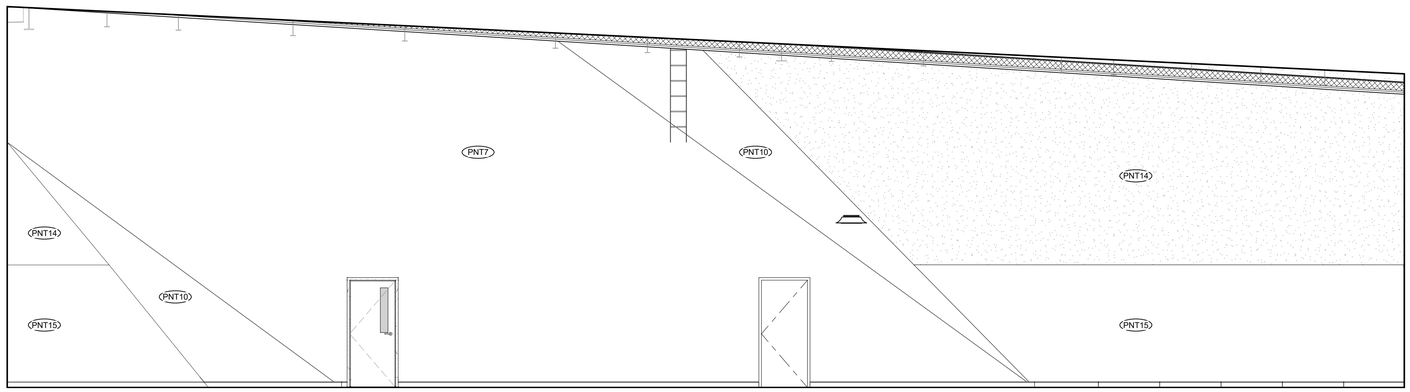

## ROOM B121 MUSIC LIBRARY - EAST ELEVATION — 5
1/4" = 1'-0"



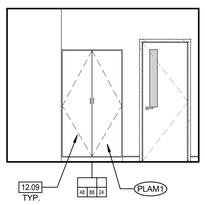

## ROOM B119 - CHORAL OFFICE -WEST ELEVATION — 24
1/4" = 1'-0"



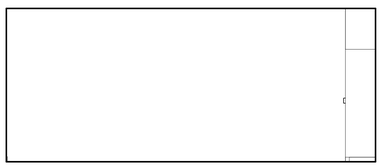

## ROOM B119 - CHORAL OFFICE - SOUTH ELEVATION — 23
1/4" = 1'-0"



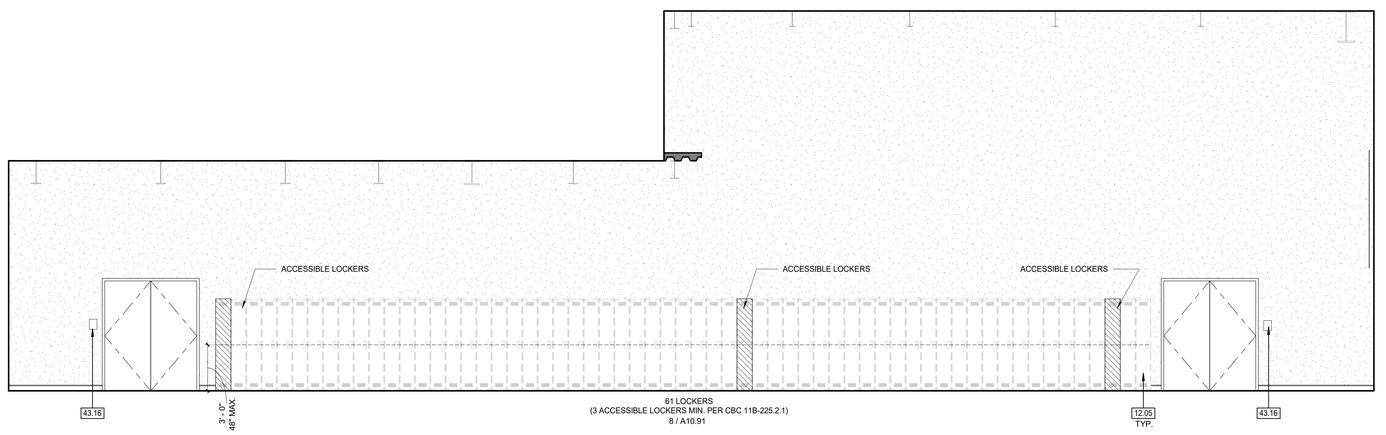

## ROOM B149 - CIRCULATION- SOUTH ELEVATION — 3
1/4" = 1'-0"




## ROOM B120 - ROBE STORAGE - EAST ELEVATION — 22
1/4" = 1'-0"



## ROOM B120 - ROBE STORAGE - SOUTH ELEVATION — 21
1/4" = 1'-0"




## ROOM B149 - CIRCULATION - WEST ELEVATION — 1
1/4" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

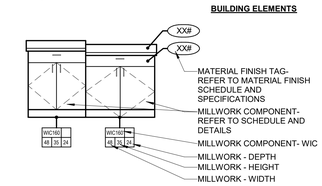
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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| | |
|---|---|
| 10.84 | FULL SIZE REFRIGERATOR, OFOI |
| 10.88 | WENGER MUSIC LIBRARY SHELF SYSTEM, OFOI - SEE DETAIL 16/A10.62 FOR ANCHORAGE |
| 12.05 | LOCKERS, OFOI. AT LEAST 5% OF LOCKERS MUST BE ACCESSIBLE AND COMPLY WITH CBC 11B-811 - 8/A10.91 |
| 12.09 | FULL HEIGHT CASEWORK PER CASEWORK SCHEDULE. ANCHORAGE PER 9/A10.61 |
| 12.10 | BASE CABINET PER CASEWORK SCHEDULE. ANCHORAGE PER 23/A10.61 |
| 43.16 | TACTILE ROOM ID SIGN - 13/A10.82 |

## NOTES

**LEGEND- ELEVATIONS**




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - INTERIOR ELEVATIONS - THEATRE & MUSIC**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

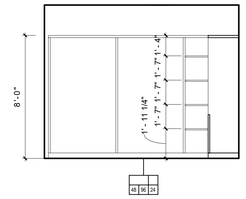
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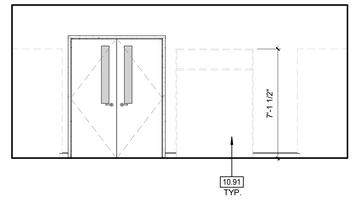
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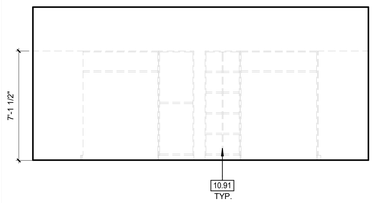
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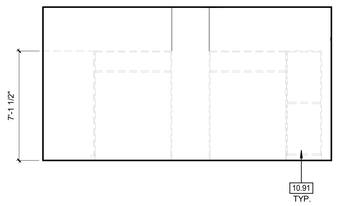

ROOM B145- COLOR GUARD - SOUTH **10** 1/4" = 1'-0"



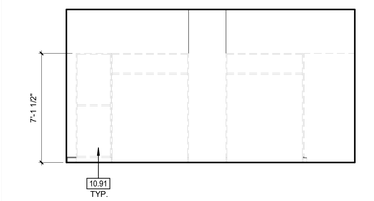

ROOM B125 - PERCUSSION STORAGE - EAST ELEVATION **5** 1/4" = 1'-0"



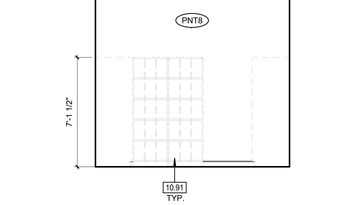

ROOM B125 - PERCUSSION STORAGE - WEST ELEVATION **9** 1/4" = 1'-0"



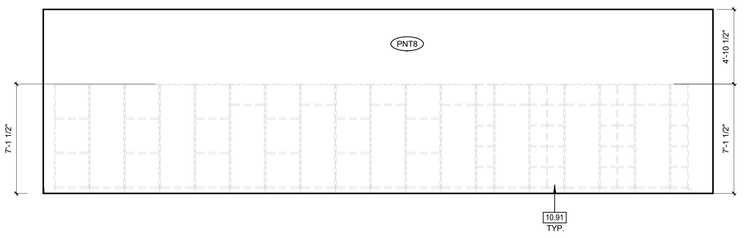

ROOM B125 - PERCUSSION STORAGE - NORTH ELEVATION **4** 1/4" = 1'-0"



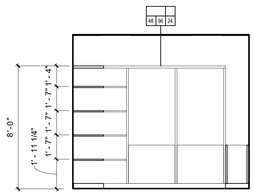

ROOM B125 - PERCUSSION STORAGE - SOUTH ELEVATION **8** 1/4" = 1'-0"



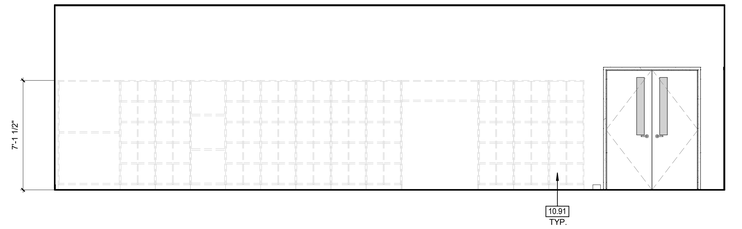

ROOM B127 - INSTRUMENT & ORCHESTRA STORAGE - WEST ELEVATION **3** 1/4" = 1'-0"




ROOM B127 - INSTRUMENT & ORCHESTRA STORAGE - SOUTH ELEVATION **2** 1/4" = 1'-0"




ROOM B145- COLOR GUARD - WEST **11** 1/4" = 1'-0"




ROOM B127 - INSTRUMENT & ORCHESTRA STORAGE - NORTH ELEVATION **1** 1/4" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

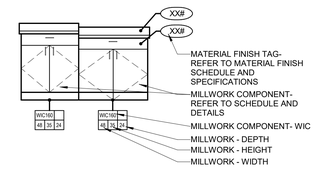
## KEYNOTES

| | |
|---|---|
| 10.91 | WENGER STORAGE TYP., OFOI - SEE DETAIL 16/A10.62 FOR ANCHORAGE |

## NOTES

LEGEND- ELEVATIONS

BUILDING ELEMENTS




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - INTERIOR ELEVATIONS - MUSIC**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# A8.15

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# GENERAL NOTES

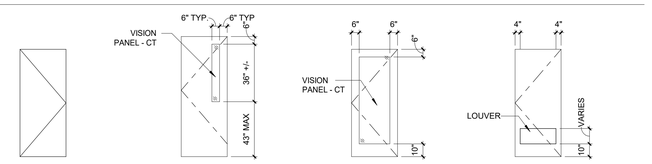
1. THE PURPOSE OF THIS SHEET IS TO DESCRIBE AND ILLUSTRATE DOOR TYPES. NOT ALL DOOR TYPES SHOWN ARE NECESSARILY USED. SEE DOOR SCHEDULE FOR DOOR TYPES USED.
2. FIRE DOORS, FIRE WINDOWS AND FIRE DAMPERS SHALL HAVE AN APPROVED LABEL OR LISTING MARK, INDICATING THE FIRE PROTECTION RATING WHICH IS PERMANENTLY AFFIXED AT THE FACTORY WHERE FABRICATION AND ASSEMBLY ARE DONE.
3. SMOKE BARRIER DOORS INSTALLED ACROSS THE CORRIDORS AND EXIT ACCESS DOORS LOCATED AT ZONE BOUNDARIES SHALL BE EQUIPPED WITH APPROVED VISION PANELS.
4. ALL SMOKE BARRIER DOORS LOCATED ON THE FLOOR OR IN THE AFFECTED ZONE SHALL COMPLY WITH CBC SECTION 716.2.6.6 AND SHALL BE AUTOMATIC CLOSING UPON ACTIVATION OF THE FIRE ALARM OR FIRE SPRINKLER SYSTEM.
5. ALL DOORS IN THE SMOKE BARRIERS AND OPENING INTO RATED EXIT WAYS SHALL BEAR AN APPROVED LABEL BEARING THE LETTER "S" (CBC 716.2.9.3)
6. ALL INTERIOR DOORS IN A 2-HOUR EXIT ENCLOSURE SHALL BE PROTECTED BY A FIRE ASSEMBLY OF NOT LESS THAN 90 MINUTES. THE MAXIMUM TRANSMITTED TEMPERATURE END POINT FOR SUCH DOORS SHALL NOT EXCEED 450 DEGREES F ABOVE AMBIENT AT THE END OF 30 MINUTES OF THE FIRE EXPOSURE SPECIFIED IN CBC 716.2.2.3.
7. FIRE ASSEMBLIES REQUIRED TO HAVE 1 1/2 HOURS, 1 HOUR OR 3/4 HOUR FIRE PROTECTION RATING SHALL BE EITHER AUTOMATIC OR SELF CLOSING FIRE ASSEMBLIES. AUTOMATIC CLOSING FIRE ASSEMBLIES TO BE ACTIVATED BY AN INCREASE IN TEMPERATURE SHALL HAVE HEAT-ACTUATING DEVICES INSTALLED ON EACH SIDE OF THE WALL AT THE CEILING HEIGHT WHERE THE CEILING IS MORE THAN 3 FEET ABOVE THE TOP OF THE OPENING OR BY A SINGLE FUSIBLE LINK IN THE OPENING INCORPORATED IN THE CLOSING DEVICE.
8. GLASS:
   A. INTERIOR DOORS:
      1. NON-RATED DOORS SHALL HAVE 1/4" CLEAR TEMPERED GLASS MIN, UNO.
      2. ALL RATED DOORS SHALL HAVE 1/4" CLEAR FIRE RATED GLASS MN, UNO.
   B. MAXIMUM GLASS IN FIRE RATED DOORS:
      1. 20 MINUTE DOORS: 1296 SQUARE INCHES MAXIMUM.
      2. 60 MINUTE DOORS: 100 SQUARE INCHES MAXIMUM.
      3. 90 MINUTE DOORS: 100 SQUARE INCHES MAXIMUM PER LITE.
9. GLAZING IN THE FOLLOWING LISTED AREAS SHALL BE DEEMED TO BE LOCATED IN HAZARDOUS LOCATIONS AND SUBJECT TO HUMAN IMPACT, AND AS SUCH SHALL BE REQUIRED TO BE COMPOSED OF SAFETY GLAZING:
   A. INGRESS AND EGRESS DOORS.
   B. FIXED PANELS IN SWINGING DOORS.
   C. GLAZING IN FIXED PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN A 24 INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR ON A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE.
   D. GLAZING IN INDIVIDUAL FIXED PANELS WHERE:
      1. THE EXPOSED AREA OF THE INDIVIDUAL PANE EXCEEDS 9 SQUARE FEET.
      2. THE EXPOSED BOTTOM EDGE IS LESS THAN 18 INCHES ABOVE THE FLOOR.
      3. THE EXPOSED TOP EDGE IS GREATER THAN 36 INCHES ABOVE THE FLOOR.
      4. ONE OR MORE WALKING SURFACES WITHIN 36 INCHES HORIZONTALLY OF THE PLANE OF THE GLAZING.
10. EACH LIGHT OF THE GLAZING SHALL BEAR THE MANUFACTURER'S LABEL DESIGNATING THE TYPE AND THICKNESS OF GLASS. WHEN APPROVED BY THE AGENCY, LABELS MAY BE OMITTED FROM OTHER THAN SAFETY GLAZING MATERIALS, PROVIDED AN AFFIDAVIT IS FURNISHED BY THE GLAZING CONTRACTOR CERTIFYING THAT EACH LIGHT IS GLAZED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. IDENTIFICATION OF GLAZING IN HAZARDOUS LOCATIONS AND SUBJECT TO HUMAN IMPACT SHALL BE ETCHED OR CERAMIC FIRED ON THE GLASS AND READABLE FROM THE INSIDE OF THE BUILDING AFTER INSTALLATIONS.
11. EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
12. PANIC HARDWARE SHALL COMPLY WITH THE REQUIREMENTS OF CBC SECTION 1010.1.10. THE ACTIVATING MEMBER SHALL BE MOUNTED AT A HEIGHT OF NOT LESS THAN 36 INCHES NOR MORE THAN 44 INCHES ABOVE THE FLOOR. THE UNLATCHING FORCE SHALL NOT EXCEED 15 POUNDS WHEN APPLIED IN THE DIRECTION OF TRAVEL.
13. DOOR ASSEMBLIES, APPROACHES AND FINISH HARDWARE SHALL BE IN COMPLIANCE WITH DISABLED ACCESS CONSTRUCTION STANDARDS.
14. THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED THE FOLLOWING:
   A. EXTERIOR DOORS = 5.0 POUNDS
   B. INTERIOR DOORS = 5.0 POUNDS
   C. FIRE DOORS = 15.0 POUNDS
15. DOOR OPENING LOCATIONS:
   A. IMMEDIATELY 6" FROM F.O.S. ADJACENT TO A FLANKING WALL U.N.O.
   B. DOOR OPENINGS IN OTHER LOCATIONS ARE LOCATED BY DIMENSIONS.
16. SEE SPECIFICATIONS FOR HARDWARE SCHEDULE
17. FINISH FLOOR TRANSITIONS OCCUR AT CENTERLINE OF DOORS, UNLESS NOTED OTHERWISE
18. ALL INTERIOR DOORS WITH FIRE-RATINGS GREATER THAN 20 MINUTE SHALL HAVE A NONCOMBUSTIBLE SILL WITH AN UNDERCUT OF 3/8" MAXIMUM ABOVE THE SILL.
19. MIN. 32" CLEAR WIDTH: AT LEAST ONE ACTIVE LEAF TO MEET 32" CLEAR WIDTH.
20. THE BOTTOM 10 INCHES OF ALL DOORS AND GATES TO HAVE SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION (CBC. 11B-404.2.10).
21. DOOR THRESHOLD NOT TO EXCEED 1/2" WITH BEVELED SLOPE NOT MORE THAN 2:1 FOR THE UPPER 1/4" (CBC. 11B-303.3).
22. EACH LIGHT OF SAFETY GLAZING MATERIAL IN HAZARDOUS LOCATIONS AS DEFINED IN SECTION 2406 OF CHAPTER 24, "GLASS AND GLAZING," SHALL BE IDENTIFIED BY A LABEL WHICH WILL SPECIFY THE LABELER, WHETHER THE MANUFACTURER OR INSTALLER, AND STATE THAT SAFETY GLAZING MATERIAL HAS BEEN UTILIZED IN SUCH INSTALLATIONS. THE LABEL SHALL BE LEGIBLE AND VISIBLE FROM THE INSIDE OF THE BUILDING AFTER INSTALLATION AND SHALL SPECIFY THAT THE LABEL SHALL NOT BE REMOVED.
23. EACH PANE SHALL BEAR THE MANUFACTURER'S MARK DESIGNATING THE TYPE AND THICKNESS OF THE GLASS OR GLAZING MATERIAL. SAFETY GLAZING SHALL BE IDENTIFIED IN ACCORDANCE WITH CBC SECTION 2406.3. EACH PANE OF TEMPERED GLASS, EXCEPT TEMPERED SPANDREL GLASS, SHALL BE PERMANENTLY IDENTIFIED BY THE MANUFACTURER. THE IDENTIFICATION MARK SHALL BE ACID ETCHED, SAND BLASTED, CERAMIC FIRED, LASER ETCHED, EMBOSSED OR OF A TYPE THAT, ONCE APPLIED CANNOT BE REMOVED WITHOUT BEING DESTROYED. TEMPERED SPANDREL GLASS SHALL BE PROVIDED WITH A REMOVABLE PAPER MARKING BY THE MANUFACTURER.

# DOOR MATERIAL/FINISH LEGEND

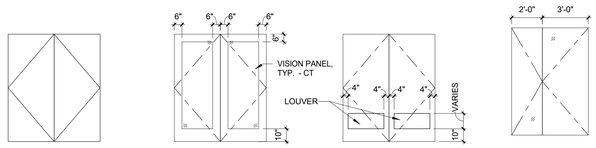
| | |
|---|---|
| A | ALARM CONTACT |
| AL | ALUMINUM |
| ADG-1 | ACOUSTIC DOOR GASKET |
| AO | AUTOMATIC DOOR OPERATOR |
| CA | CLEAR ANODIZED |
| CL | COMBO LOCK |
| CR | CARD READER |
| CT | CLEAR TEMPERED GLAZING |
| CW | CURTAIN WALL |
| DE | DELAYED EGRESS |
| EB | "PUSH TO EXIT" EMERGENCY BUTTON |
| EL | ELECTRICAL LOCK |
| EMC | ELECTRO MECHANICAL CLOSER |
| FA | FIRE ALARM INTERFACE RELAY |
| FF | FACTORY FINISHED |
| FG | FIRE RATED GLASS |
| FGF | FIRE RATED GLASS & FRAMING |
| HM | HOLLOW METAL |
| ID | INTEGRATED DOOR ASSEMBLY |
| IGU | INSULATED GLAZING UNITS |
| IP | INFILL PANEL |
| KD | KNOCK DOWN FRAME |
| MHO | MAGNETIC HOLD OPEN |
| NR | NOT RATED |
| PH | PANIC HARDWARE |
| PL | PLASTIC LAMINATE |
| PT | PAINT |
| REX | REQUEST TO EXIT MOTION SENSOR |
| RF | RF COPPER SHIELDED NON-FERROUS SYSTEM |
| ST | STAIN GRADE WOOD VENEER |
| SC | SOLID CORE WOOD DOOR |
| SG | SAFETY GLAZING |
| SHD | SHIELDED DOOR FRAME / GLAZING |
| SP | SPANDREL GLAZING |
| STL | STEEL |
| SM | SMOKE BARRIER SEAL |
| SF | STOREFRONT SYSTEM |
| UC | UNDERCUT |
| WD | WOOD |
| WS | WAVE SENSOR |

# DOOR TYPE LEGEND

PNL-F- XX-
- DOOR PANEL TYPE - SEE BELOW
- DOOR PANEL MATERIAL /FINISH - SEE LEGEND



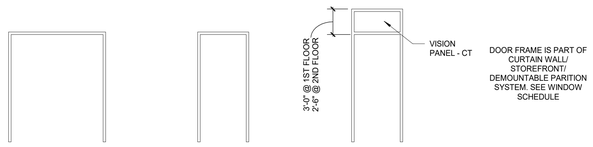

PNL-F | PNL-N | PNL-FG | PNL-L




PNL-F | PNL-FG | PNL-L | PNL-U

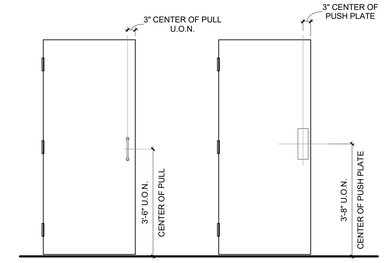
# DOOR FRAME LEGEND

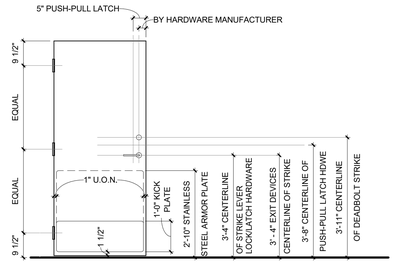
FRM-##XX-
- DOOR FRAME TYPE - SEE BELOW
- DOOR FRAME MATERIAL / FINISH - SEE LEGEND




FRM-00HM | FRM-00HM | FRM-10HM | FRM-00AL
FRM-50AL

# TYPICAL FINISH HARDWARE




NOTES:

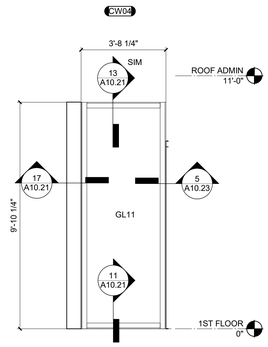
1. KICK AND ARMOR PLATES TO BE 1/2" FROM EDGE OF DOOR LEAVES FOR PAIR OF DOORS.
2. ARMOR PLATE AFFIXED TO FIRE RATED DOOR SHALL BE LABELED.

# DOOR SCHEDULE

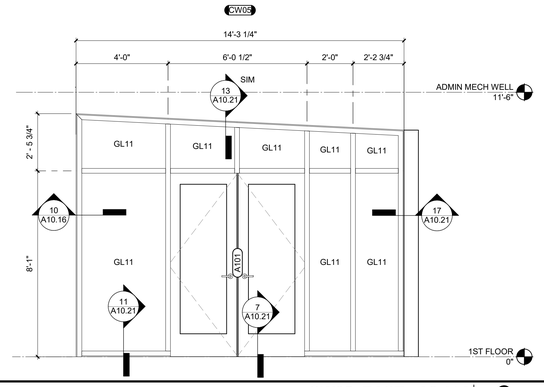
| DOOR NUMBER | SIZE WIDTH PANEL 1 | SIZE WIDTH PANEL 2 | SIZE HEIGHT | DOOR TYPE | FRAME TYPE | FIRE RATING (MINUTES) | HARDWARE GROUP | PANIC HARDWARE | UNDERCUT | DETAIL HEAD | DETAIL JAMB | DETAIL SILL | CARD READER | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ORCHESTRA PIT | | | | | | | | | | | | | | |
| B106 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B109 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| 2 | | | | | | | | | | | | | | |
| 1ST ROW SEATING | | | | | | | | | | | | | | |
| B109.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 31 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| 1 | | | | | | | | | | | | | | |
| 1ST FLOOR | | | | | | | | | | | | | | |
| A101 | 3'-0 1/4" | 3'-0 1/4" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 01 | | 0" | | | | YES | SAFETY GLAZING |
| A101.1 | 3'-0" | | 7'-0" | PNL-FG-AL | FRM-00AL(CW) | | | | 0" | | | | YES | SAFETY GLAZING |
| A103 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 11 | No | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| A104 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 17 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| A104.1 | 4'-0" | | 7'-0" | PNL-FG-AL | FRM-00AL2 | NR | 03 03 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| A105 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 19 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | ACCESSIBLE RESTROOM SIGN |
| A106 | 3'-0" | | 7'-0" | A : S | A : S | NR | 12 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| A107 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 21 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| A108 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 23 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | WOMEN DOOR SIGNAGE |
| A109 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 23 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | MEN DOOR SIGN |
| A111 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 23 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | |
| A112 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 27 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | |
| A113 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 28 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET ADG-2 |
| A115 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 26 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | |
| A116 | 4'-0" | | 7'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 03 | Yes | 0" | | | | YES | SAFETY GLAZING |
| A117 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 30 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| A118 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 29 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| A119 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A120 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A121 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A123 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 30 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | |
| A124 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A125 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A126 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A127 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A129 | 3'-0 1/4" | 3'-0 1/4" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 05 | Yes | 0" | | | | YES | |
| A130 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 6/A10.21 | 6/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A131 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A132 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A133 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-50HM6 | NR | 08 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SLIDING DOOR |
| A135 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | | | |
| A136 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | | | |
| A137 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 08 | | 0" | 3/A10.21 | 3/A10.21 | | | |
| A137.1 | 3'-0 1/2" | | 7'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 04 | | 0" | | | | YES | SAFETY GLAZING |
| A137.2 | 3'-0" | | 7'-0" | PNL-F-WD | FRM-00HM1 | NR | 11 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| A138 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 30 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B100 | 3'-0" | 3'-0" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B100.1 | 3'-0" | 3'-0" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B100.2 | 3'-0" | 3'-0" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B100.3 | 3'-0" | 3'-0" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B102 | 3'-0" | 3'-0" | 7'-2" | PNL-F-HM | FRM-00HM1 | NR | 32 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B103 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 31 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B103.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 33 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B104 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B104.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B105 | 4'-0" | | 8'-0" | PNL-F-HM | FRM-00HM1 | NR | 45 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B105.1 | 4'-0" | | 8'-0" | PNL-F-HM | FRM-00HM1 | NR | 45 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B107 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B107.1 | 3'-0" | 3'-0" | 7'-2" | PNL-F-HM | FRM-00HM1 | 45 | 10 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SCD-2 -STC 50 SOUND CONTROL ASSEMBLY |
| B107.2 | 3'-0" | 3'-0" | 7'-2" | PNL-F-HM | FRM-00HM1 | 45 | 10 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SCD-2 -STC 50 SOUND CONTROL ASSEMBLY |
| B108 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 41 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B108.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 41 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B109.2 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 31 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B109.3 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 36 | | 0" | | | | | |
| B110 | 3'-0" | 3'-0" | 7'-2" | PNL-F-HM | FRM-00HM1 | NR | 32 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B113 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 13 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B114 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 24 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B115 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 15 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B118 | 3'-0" | 3'-0" | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 15 | | 0" | 6/A10.21 | 6/A10.21 | 6/A10.21 | YES | SCD-2 -STC 50 SOUND CONTROL ASSEMBLY |
| B118.1 | 3'-8" | | 7'-10" | PNL-FG-AL | FRM-00AL2 | NR | 03 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B118.2 | 3'-8" | | 7'-10" | PNL-FG-AL | FRM-00AL2 | NR | 03 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B119 | 3'-0" | | 7'-10" | PNL-FG-AL | FRM-00AL2 | NR | 06 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B120 | 3'-0" | | 7'-10" | PNL-N-WD | FRM-00HM1 | NR | 27 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B121 | 3'-0" | | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 47 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B122 | 4'-0" | | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 47 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B123 | 3'-0" | | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 14 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | SAFETY GLAZING |
| B124 | 3'-0" | 3'-0" | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 48 | | 0" | 6/A10.21 | 6/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B125 | 3'-0" | 3'-0" | 7'-10" | PNL-N-WD | FRM-00HM1 | NR | 09 | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SCD-2 -STC 50 SOUND CONTROL ASSEMBLY / SAFETY GLAZING |
| B125.1 | 3'-11" | 3'-11" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 05 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B125.2 | 3'-11" | 3'-11" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 05 | Yes | 0" | | | | YES | SAFETY GLAZING |
| B126 | 3'-0" | 3'-0" | 7'-10" | PNL-N-WD | FRM-00HM1 | NR | 49 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B127 | 3'-0" | | 7'-10" | PNL-F-WD | FRM-00HM1 | | 46 | | 0" | | | | | |
| B128 | 4'-0" | 4'-0" | 7'-10" | PNL-F-HM | FRM-00AL2 | NR | 42 | | 0" | 3/A10.21 | 3/A10.21 | 6/A10.21 | YES | |
| B128.1 | 3'-0" | 3'-0" | 7'-10" | PNL-N-WD | FRM-00HM1 | NR | 49 | | 0" | 6/A10.21 | 6/A10.21 | 6/A10.21 | | SAFETY GLAZING |
| B129 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 20 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B130 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 20 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B131 | 3'-8" | | 7'-10" | PNL-F-HM | FRM-00HM1 | NR | 18 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B131.1 | 3'-8" | | 7'-10" | PNL-F-HM | FRM-00HM1 | NR | 18 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B133 | 3'-0" | 3'-0" | 7'-2" | PNL-N-WD | FRM-00HM1 | NR | 43 | | 0" | 6/A10.21 | 6/A10.21 | 1/A10.21 | YES | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET / SAFETY GLAZING |
| B134 | 3'-0" | | 7'-0" | PNL-FG-AL | FRM-00AL2 | NR | 07 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET / SAFETY GLAZING |
| B135 | 4'-0" | | 7'-0" | PNL-N-WD | FRM-00HM1 | NR | 39 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B135.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 | 35 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | TYPE ADG-3 - EXTREMELY HEAVY DUTY ACOUST. GASKET |
| B135.2 | | | | | | 45 | | | | | | | | 45 MIN FIRE RATED ROLL UP DOOR |
| B136 | 3'-0" | 3'-0" | 7'-10" | PNL-F-HM | FRM-00HM1 | 45 | 40 | | 0" | 6/A10.21 | 6/A10.21 | 1/A10.21 | YES | |
| B137 | 3'-0" | 3'-0" | 7'-10" | PNL-L-HM | FRM-00HM1 | | 16 | | | 6/A10.21 | 6/A10.21 | 1/A10.21 | YES | |
| B138 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | TYPE ADG-2 - HEAVY DUTY ACOUST. GASKET |
| B139 | 3'-0" | 3'-0" | 7'-10" | PNL-F-HM | FRM-00HM1 | NR | 44 | | 0" | 6/A10.21 | 6/A10.21 | 6/A10.21 | YES | |
| B140 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 23 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | WOMEN DOOR SIGNAGE |
| B141 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 23 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | MEN DOOR SIGN |
| B142 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 20 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | ACCESSIBLE RESTROOM SIGN |
| B143 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 20 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | ACCESSIBLE RESTROOM SIGN |
| B144 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | NR | 29 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B145 | 4'-0" | | 7'-10" | PNL-N-AL | FRM-00HM1 | NR | 40 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B146 | 3'-0" | 3'-0" | 7'-10" | PNL-L-HM | FRM-00HM1 | NR | 02 | | | 6/A10.21 | 6/A10.21 | 6/A10.21 | YES | |
| B149 | 4'-0" | | 7'-10" | PNL-FG-AL | FRM-00AL2 | NR | | Yes | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | YES | SAFETY GLAZING |
| B149.1 | 3'-2" | 3'-2" | 8'-0" | PNL-FG-AL | FRM-00AL(CW) | NR | 01 | Yes | 0" | 10/A10.21 | 9/A10.21 | 6/A10.21 | YES | SAFETY GLAZING |
| 96 | | | | | | | | | | | | | | |
| CONTROL LEVEL | | | | | | | | | | | | | | |
| B116 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 MIN | 16 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B116.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 MIN | 16 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| B117.1 | 3'-0" | | 7'-0" | PNL-F-HM | FRM-00HM1 | 45 MIN | 16 | | 0" | 3/A10.21 | 3/A10.21 | 1/A10.21 | | |
| 3 | | | | | | | | | | | | | | |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHIT

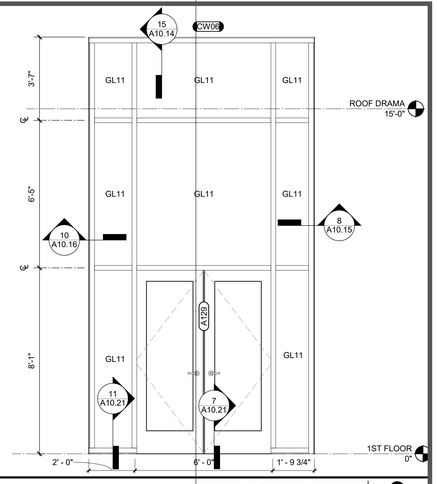
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET'S ORIGINAL PAGE SIZE



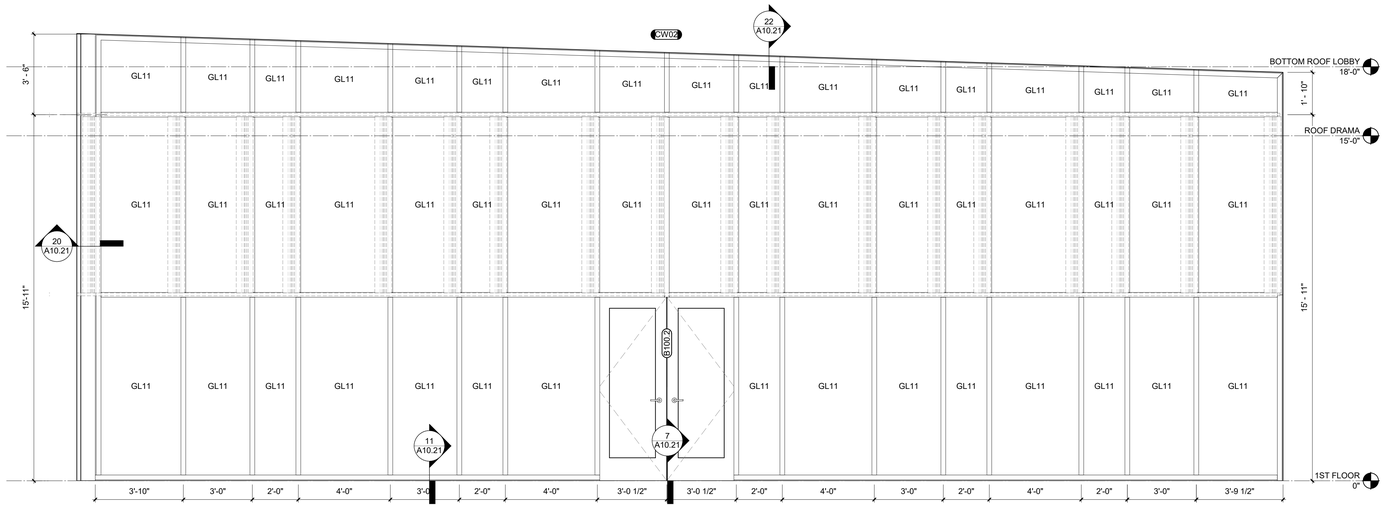

CW04_SOUTH_A2.11A | 9 | 3/8" = 1'-0"



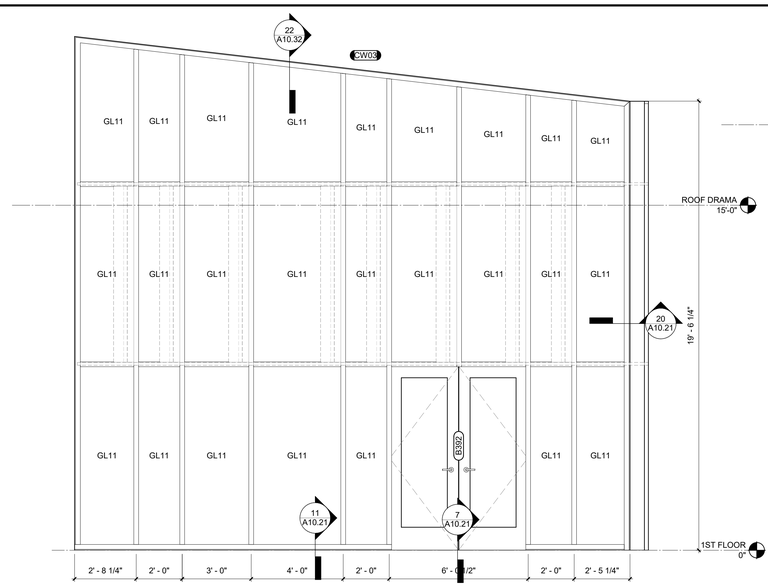

CW05_EAST_ A2.11A | 6 | 3/8" = 1'-0"



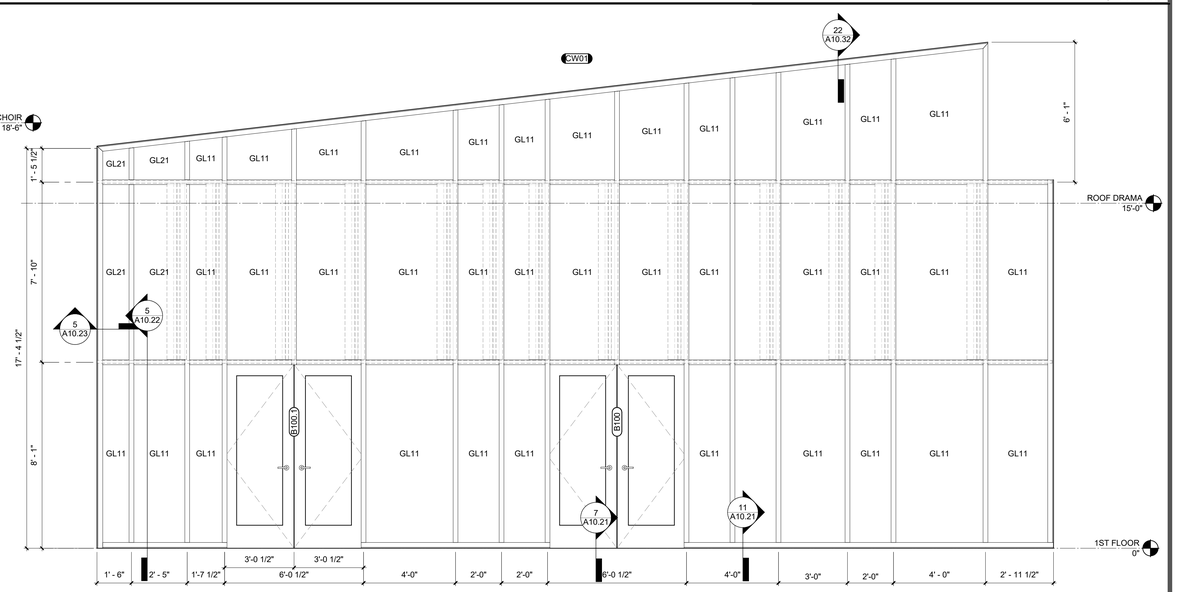

CW06_NORTH_A2.11A | 3 | 3/8" = 1'-0"




CW02_SOUTH_A2.11B | 2 | 3/8" = 1'-0"




CW03_WEST_ A2.11B | 7 | 3/8" = 1'-0"




CW01_EAST_A2.11B | 1 | 3/8" = 1'-0"

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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

## WINDOW LEGEND

**NAME**

W## - WINDOW
SF## - STOREFRONT
CW## - CURTAIN WALL

**GLAZING TYPE**

GL11 - 1" INSULATED GLAZING, CLEAR SAFETY GLAZING

GL21 - 1" INSULATED GLAZING, SPANDREL GLAZING

GL31 - 1/4"- NON INSULATED GLAZING (INT SF)

MP - 1"- METAL COMPOSITE PANEL - ARCADIA LIGHT CHAMPAGNE

VERTICAL / HORIZONTAL SUN SHADE. REFER TO CURTAIN WALL DRAWINGS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WINDOW SCHEDULE**

**DSA SUBMITTAL**

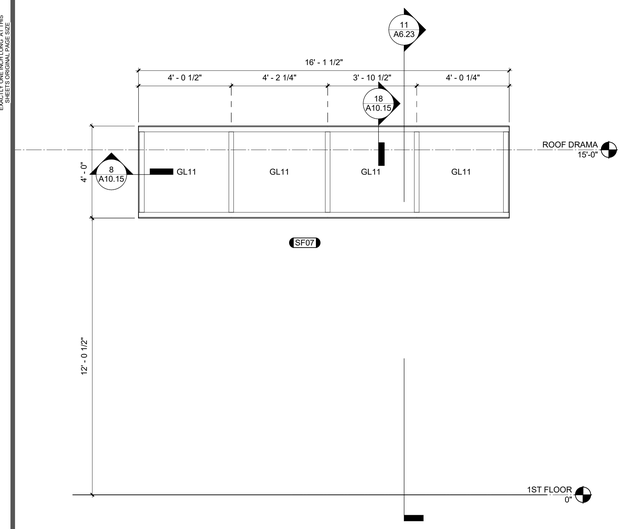
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

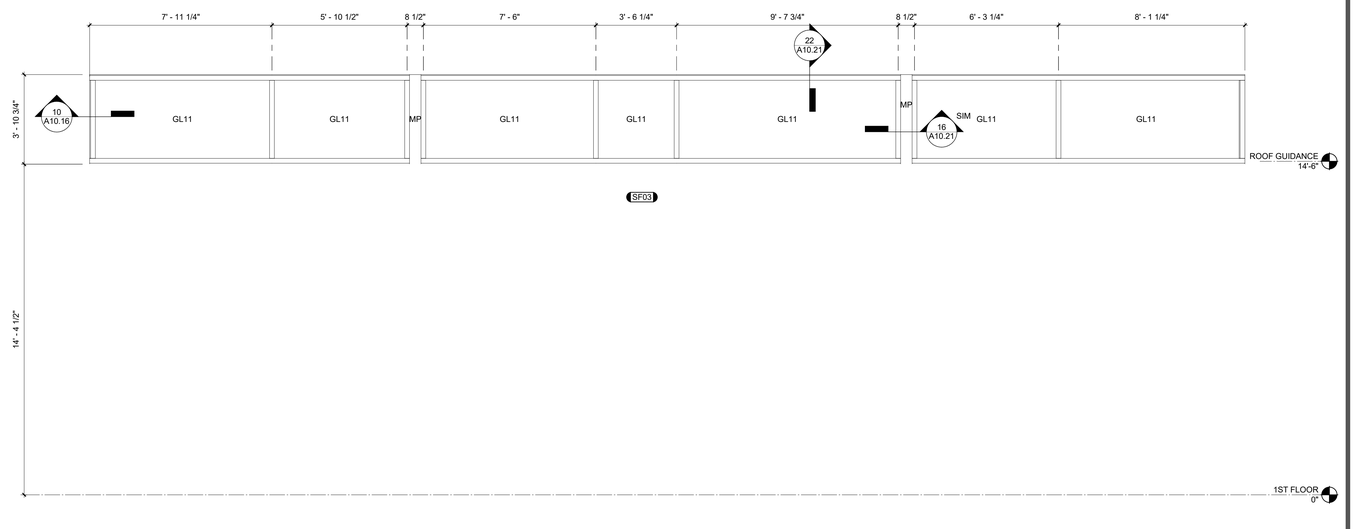
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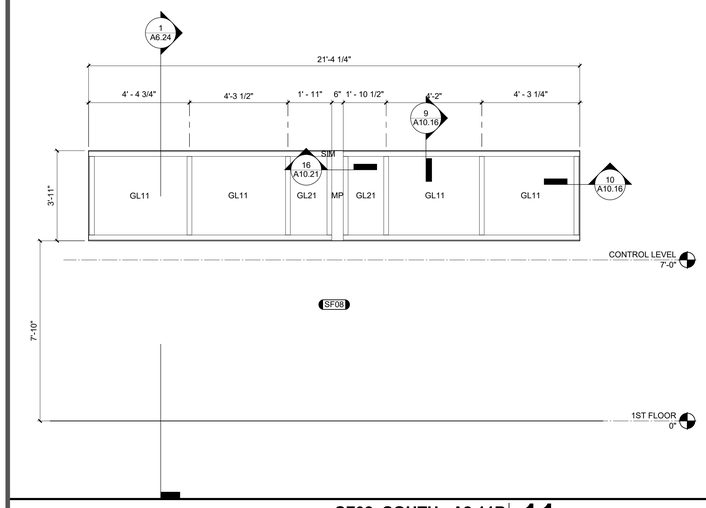
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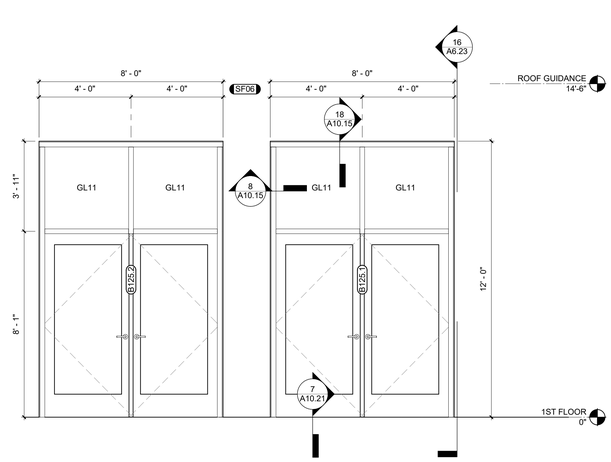

SF07_SOUTH_ A2.11B | 12 | 3/8" = 1'-0"



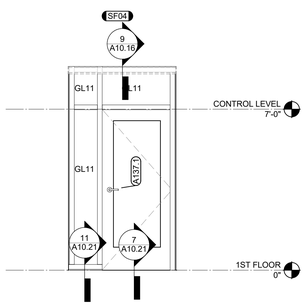

SF03_NORTH_A2.11A | 3 | 3/8" = 1'-0"



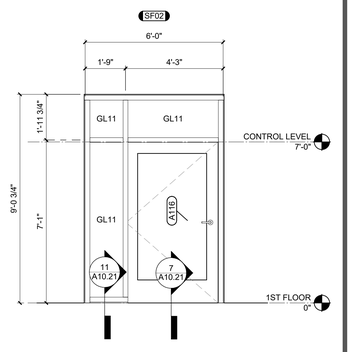

SF08_SOUTH_ A2.11B | 11 | 3/8" = 1'-0"



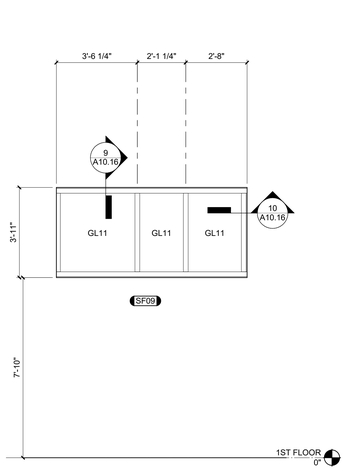

SF06_WEST_21.11B | 8 | 3/8" = 1'-0"



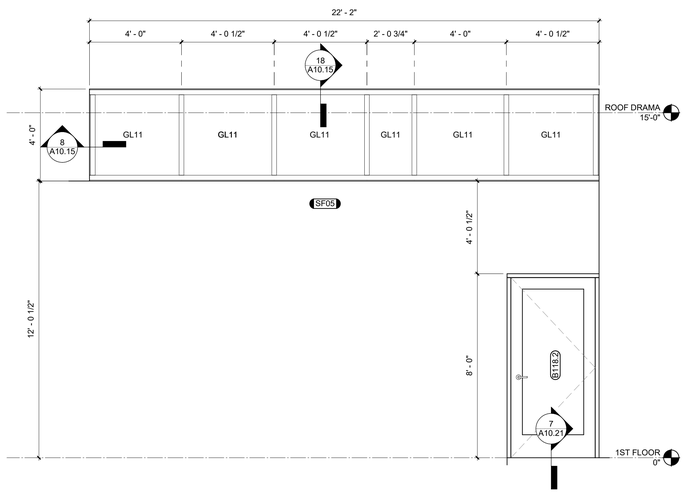

SF04_WEST_A2.11A | 5 | 3/8" = 1'-0"



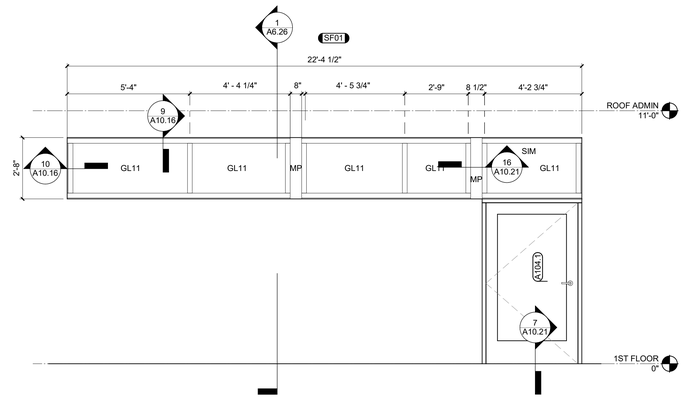

SF02_EAST_A2.11A | 2 | 3/8" = 1'-0"




SF09_NORTH_A2.11B | 10 | 3/8" = 1'-0"




SF05_EAST_ A2.11B | 7 | 3/8" = 1'-0"




SF01_SOUTH_A2.11A | 1 | 3/8" = 1'-0"

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VERTICAL / HORIZONTAL SUN SHADE. REFER TO CURTAIN WALL DRAWINGS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WINDOW SCHEDULE**

**DSA SUBMITTAL**

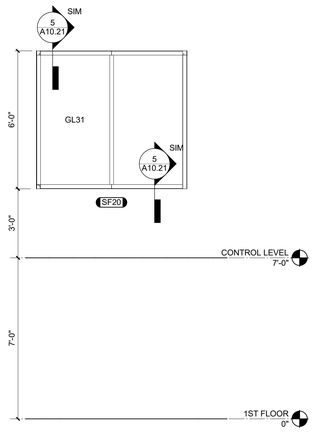
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

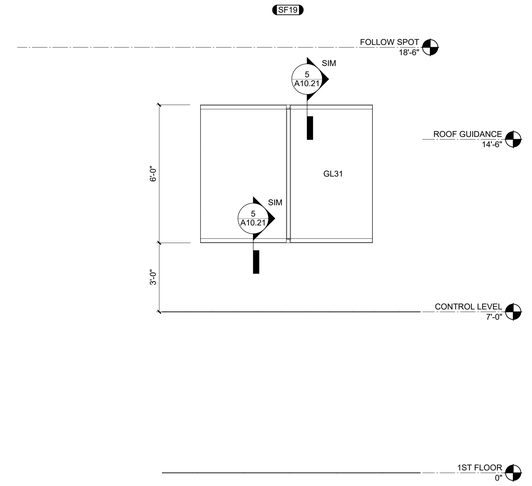
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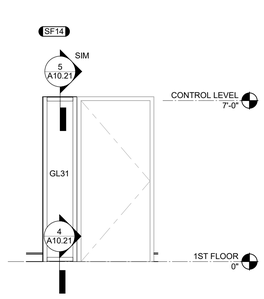
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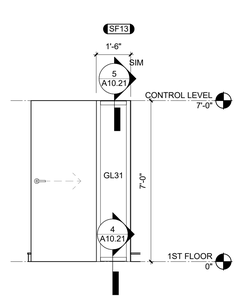

SF20_INT. THEATER | 11 | 3/8" = 1'-0"



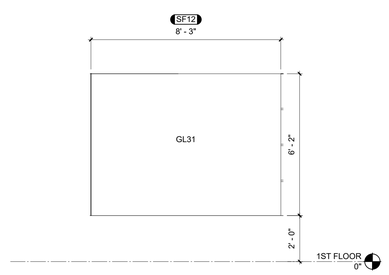

SF19_INT. THEATER | 3 | 3/8" = 1'-0"



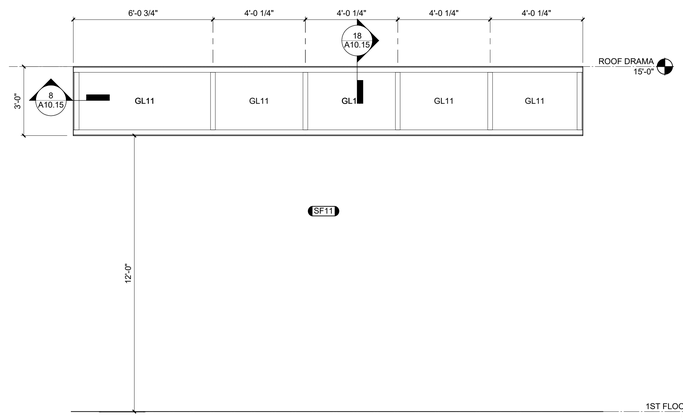

SF14_7'-2" x 1' - 6" | 10 | 3/8" = 1'-0"



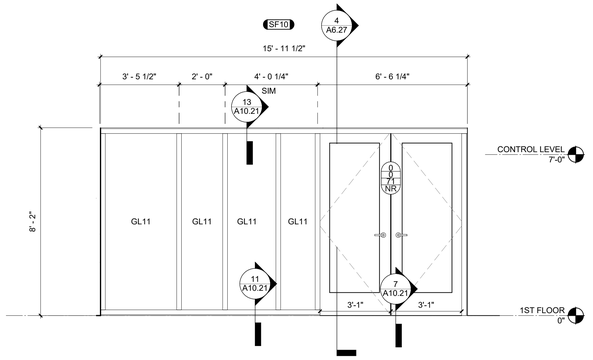

SF13_7'-0" x 1'- 6" | 6 | 3/8" = 1'-0"




SF12_LOBBY TROPHY CASE | 2 | 3/8" = 1'-0"




SF11_EAST_ A2.11B | 5 | 3/8" = 1'-0"




SF10_EAST_ A2.11B | 1 | 3/8" = 1'-0"

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WINDOW SCHEDULE**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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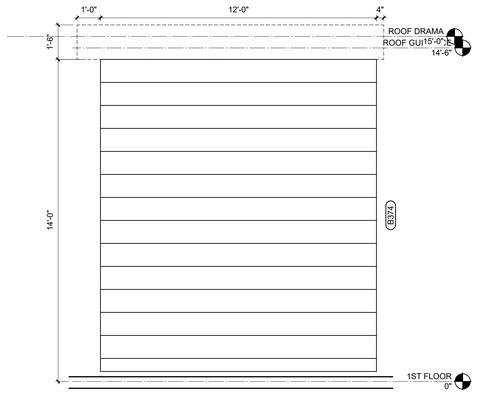
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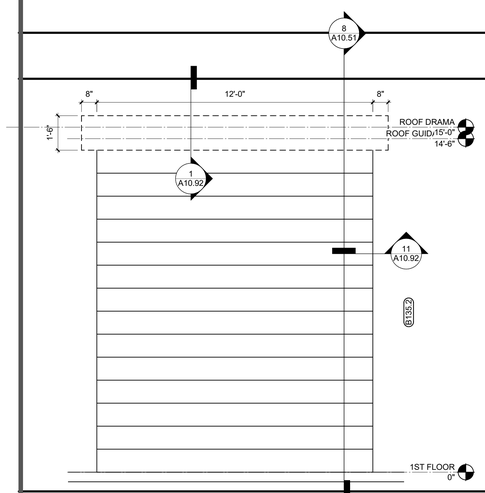
| WINDOWS | | | |
|---|---|---|---|
| Type Mark | Count | Width | Height |
| W-1 | 12 | 3'-11" | 5'-10 3/8" |
| W-2 | 11 | 2'-0 3/4" | 5'-10 3/8" |
| W-3 | 11 | 2'-0" | 6'-0" |
| W-4 | 11 | 4'-0" | 6'-0" |
| W-5 | 8 | 4'-0" | 8'-0" |
| W-6 | 2 | 2'-0" | 8'-0" |
| W-7 | 1 | 4'-0" | 11'-6" |
| W-8 | 1 | 2'-0" | 3'-0" |
| W-9 | 2 | 4'-1" | 4'-0" |
| W-10 | 1 | 2'-6" | 4'-0" |
| W-11 | 2 | 3'-0" | 4'-4" |
| W-12 | 1 | 5'-0" | 1'-6" |

| CURTAIN WALL | | | |
|---|---|---|---|
| Mark | Length | Unconnected Height | Glazing Type |
| CW01 | 41'-11 3/4" | 18'-0" | GL11 |
| CW02 | 51'-11 1/4" | 18'-0" | GL11 |
| CW03 | 24'-1 3/4" | 18'-6" | GL11 |
| CW04 | 3'-8 1/4" | 9'-10 1/4" | GL11 |
| CW05 | 14'-7 1/4" | 9'-6" | GL11 |
| CW06 | 10'-7 1/2" | 18'-1 1/2" | GL11 |

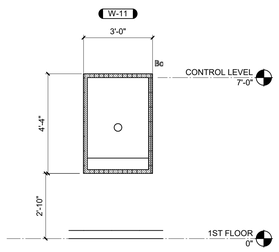
| STOREFRONT | | | |
|---|---|---|---|
| Mark | Length | Unconnected Height | Glazing Type |
| SF01 | <varies> | <varies> | <varies> |
| SF02 | 6'-1" | 9'-0 3/4" | GL11 |
| SF03 | 50'-2 3/4" | 3'-10 3/4" | GL11 |
| SF04 | 4'-8" | 8'-10 1/2" | GL11 |
| SF05 | 22'-2" | 4'-0" | GL11 |
| SF06 | 8'-0" | 12'-0" | GL11 |
| SF07 | 16'-1 1/2" | 4'-0" | GL11 |
| SF08 | 21'-4 1/4" | 3'-11" | GL11 |
| SF09 | 8'-3 3/4" | 3'-10 3/4" | GL11 |
| SF10 | 16'-4 1/4" | 8'-2" | GL11 |
| SF11 | 22'-1 3/4" | 3'-0" | GL11 |
| SF12 | 8'-4" | 6'-2" | GL11 |
| SF13 | 1'-6" | 7'-0" | GL11 |
| SF14 | 1'-6" | 7'-2" | GL11 |
| SF19 | 8'-1" | 6'-0" | GL31 |
| SF20 | 6'-6 3/4" | 6'-0" | GL31 |
| SF22 | 1'-6" | 7'-0" | GL11 |



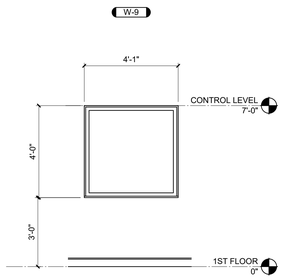

ROLL UP DOOR - SCENE SHOP 7 3/8" = 1'-0"



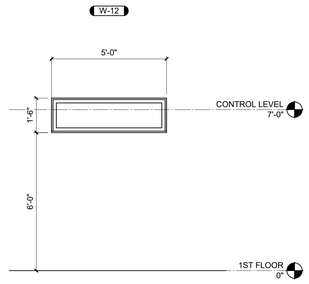

ROLL UP FIRE DOOR - STAGE - 45-MIN FIRE RATED 18 3/8" = 1'-0"



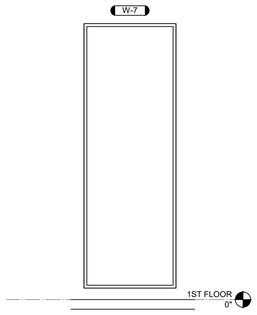

W11_3'-0" x 4'-4" 14 3/8" = 1'-0"



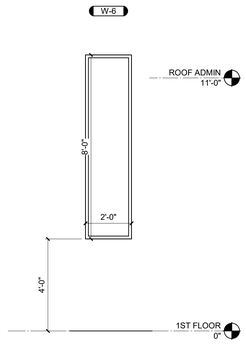

W9_4'-0 31/32" x 4'-0 10 3/8" = 1'-0"



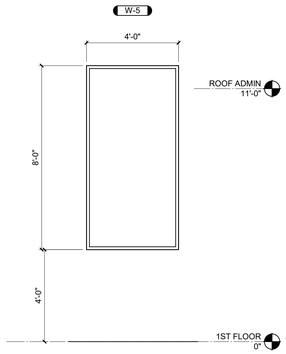

W12_2'-0" x 3'-0" 6 3/8" = 1'-0"



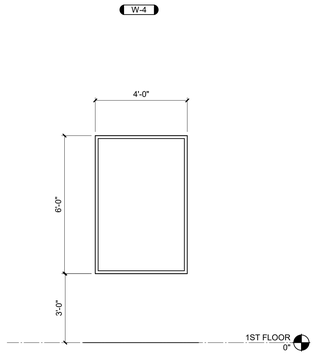

W7_4'-0" x 12'-0" 2 3/8" = 1'-0"



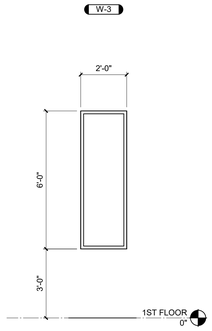

W6_2'-0" x 8'-0" 17 3/8" = 1'-0"



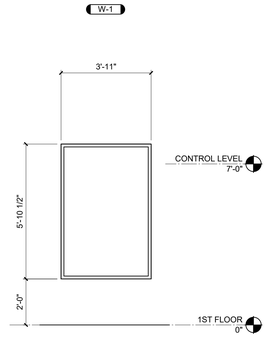

W5_4'-0" x 8'-0" 13 3/8" = 1'-0"




W4_4'-0" x 6'-0" 9 3/8" = 1'-0"




W3_2'-0" x 6'-0" 5 3/8" = 1'-0"




W1_4'-0" x 6'-0 1 3/8" = 1'-0"

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VERTICAL / HORIZONTAL SUN SHADE. REFER TO CURTAIN WALL DRAWINGS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WINDOW SCHEDULE**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**A9.24**

THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON THIS SHEET'S ORIGINAL PAGE SIZE

## CONCRETE

### CONCRETE FLOORS

**CONC1** MANUFACTURER: TRADEMARK CONCRETE
COLOR: MARSHLAND TAUPE
FINISH: ECOCAST 3
NOTE:

**CONC2** MANUFACTURER: TRADEMARK CONCRETE
COLOR: DAVIS PEBBLE
FINISH: ECOCAST 75
NOTE: SAMPLE REQUEST #1795-05

**CONC3** MANUFACTURER: TRADEMARK CONCRETE
COLOR: DAVIS DARK GRAY 860
FINISH: ECOCAST SILICA CARBIDE #20
NOTE: SAMPLE REQUEST #1689-02

**CONC4** MANUFACTURER: TRADEMARK CONCRETE
COLOR: SPRING BEIGE MIX NAUTRAL GRAY
FINISH: EXPOSED AGGREGATE 3/8"
NOTE:

**CONC5** FINISH: SEALED CONCRETE
NOTE: REFER TO SPECS

## ARCHITECTURAL WOODWORK CASEWORK

### PLASTIC LAMINATE

**PLAM1** MANUFACTURER: WILSONART
COLOR: BLOND ECHO 7939K-18
FINISH: FINE VELVET
NOTE: GRAIN TO RUN VERTICAL ON ALL CASEWORK

**PLAM2** MANUFACTURER: WILSONART
COLOR: PASADENA OAK 7986-38
FINISH: FINE VELVET
NOTE: GRAIN TO RUN VERTICAL ON ALL CASEWORK

**PLAM3** MANUFACTURER: WILSONART
COLOR: CRISP LINEN 4942-38
FINISH: FINE VELVET
NOTE: GRAIN TO RUN VERTICAL ON ALL CASEWORK

**PLAM4** MANUFACTURER: NEVAMAR
COLOR: NAVY MATRIX II – MR3008T
FINISH:
NOTE: GRAIN TO RUN VERTICAL ON ALL CASEWORK

## COUNTERTOPS

### SOLID SURFACE MATERIAL

**SSM1** MANUFACTURER: WILSONART
COLOR: CHILLED EARTH 9228SS

**SSM2** MANUFACTURER: WILSONART
COLOR: KIMBERLITE 9215CE

## RESILIENT FLOORING

### VINYL COMPOSITION TILE

**VCT1** MANUFACTURER: UPO FLOOR
COLLECTION: QUARTZ TILE - TEMA
COLOR: 9101
INSTALLATION METHOD: TBD

**VCT2** MANUFACTURER: UPO FLOOR
COLLECTION: QUARTZ TILE - MOSAIC
COLOR: 8354
INSTALLATION METHOD: TBD

**VCT3** MANUFACTURER: UPO FLOOR
COLLECTION: QUARTZ TILE - MOSAIC
COLOR: 8302
INSTALLATION METHOD: TBD

### LUXURY VINYL TILE

**LVT1** MANUFACTURER: MANNINGTON
COLLECTION: AMTICO SIGNATURE
COLOR: ROTTERDAM OAK AROW8440
INSTALLATION METHOD: TBD

## RESILIENT BASE AND ACCESSORIES

### RUBBER BASE

**RB1** MANUFACTURER: JOHNSONITE
TYPE: BASEWORKS (TYPE TS)
COLOR NAME: COOL METAL
COLOR #: CG VL4
HEIGHT: 4"

## TILING

### CERAMIC TILE

**CTB1** MANUFACTURER: DALTILE
SERIES: COLOR WHEEL COLLECTION
COLOR: ARCTIC WHITE 0190
FINISH: GLOSSY
SIZE: 4"X4"
TRIM: COVE BASE
NOTE: RESTROOM FLOOR COVE BASE TILE
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: BRIGHT WHITE

**CT1** MANUFACTURER: DALTILE
SERIES: COLOR WHEEL COLLECTION
COLOR: ARCTIC WHITE 0190
FINISH: GLOSSY
SIZE: 4" X 4"
NOTE: WALL TILE
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: BRIGHT WHITE

### PORCELAIN TILE

**PTB1** MANUFACTURER: DALTILE
STYLE: MATTE
COLOR: ROYAL NAVY RET13
FINISH: UNPOLISHED UPS
TRIM: COVE BASE
NOTE: BASE TILE
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: ADMIRAL BLUE
SIZE: 6"X12

**PT1** MANUFACTURER: DALTILE
STYLE: KEYSTONES
COLOR: NAVY D189
FINISH: MATTE
NOTE: THEATER RESTROOMS FLOOR TILE
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: ADMIRAL BLUE
SIZE: 2"X2"

**PT2** MANUFACTURER: AMERICAN OLEAN
STYLE: UNGLAZED MOSAIC
COLOR: SNOW LEOPARD 0A68
NOTE: RESTROOMS FLOOR
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: DOVE GRAY
SIZE: 1" X 1"

**PT3** MANUFACTURER: CROSSVILE
STYLE: RETRO ACTIVE 2.0
COLOR: ROYAL NAVY RET13
FINISH: POLISHED PO
NOTE: RESTROOM WALL TILE
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: ADMIRAL BLUE
SIZE: 3"X12"

### GLASS TILE

**GLT1** MANUFACTURER: DALTILE
SERIES: CASCADING WATERS
COLOR: CERULEAN SWELL CW45
FINISH: GLASS
SIZE: 1" X 4"
GROUT:
MANUFACTURER: CUSTOM BUILDING PRODUCTS
STYLE: CEG-IG
COLOR: ADMIRAL BLUE

## TILE CARPETING

### CARPET TILE

**CPTT1** MANUFACTURER: SHAW
COLLECTION: TEAMWORK
STYLE: KICKOFF
COLOR: CONTRIBUTE
SIZE: 9X36
INSTALLATION: ASHLAR
NOTE:

**CPTT2** MANUFACTURER: SHAW
COLLECTION: TEAMWORK
STYLE: COLLABORATION
COLOR: INNOVATE
SIZE: 9X36
INSTALLATION: ASHLAR
NOTE:

**CPTT3** MANUFACTURER: SHAW
COLLECTION: TEAMWORK
STYLE: COLLABORATION
COLOR: CONTRIBUTE
SIZE: 9X36
INSTALLATION: ASHLAR
NOTE:

**CPTT4** MANUFACTURER: MOHAWK
COLLECTION: EXPEDITION
STYLE: DIGITAL TERRAIN
COLOR: LAGOON
SIZE: 12X36
INSTALLATION: ASHLAR
NOTE: THEATER AND CIRCULATION

## ACOUSTICAL CEILING PANELS

### ACOUSTICAL CEILING PANEL

**ACP1** MANUFACTURER: ARMSTRONG
STYLE: OPTIMA – SQUARE LAY-IN
SIZE: 24" x 24"
THICKNESS: 1"
COLOR: WHITE
EDGE: SQUARE LAY-IN 15/16
NRC:
LIGHT REFLECTANCE:
SUSPENSION SYSTEM
MANUFACTURER: ARMSTRONG
STYLE:
COLOR: WHITE

### LINEAR WOOD CEILINGS

**LW1** MANUFACTURER: TURF DESIGN
STYLE:PLAID
COLOR: PLANKED OAK

**LW2** MANUFACTURER: TURF DESIGN
STYLE:FREEDOM
COLOR: PLANKED OAK

## WALL COVERINGS

### TEXTILE WALL COVERING

**TWC1**
MANUFACTURER: KOROSEAL
STYLE: ARBOR WOOD WC
COLOR: ANIGRE QC AA0201
PATTERN: QUATER CUT

### STAIN

**TWC2**
MANUFACTURER: HUSSEY
COLOR: MAPLE - NATURAL PEAR 7061

### VINYL WALL COVERING

**VWC1**
MANUFACTURER: DESIGNTEX
STYLE: DNA NON-VINYL DW11
COLOR: POP COLOR
PATTERN: ABSTRACT

**VWC2**
MANUFACTURER: CUSTOM
STYLE:
COLOR: BLUE
PATTERN: ABSTRACT

**VWC3**
MANUFACTURER: CUSTOM
STYLE:
COLOR: NAVY 1
PATTERN: ABSTRACT

**VWC4**
MANUFACTURER: CUSTOM
STYLE:
COLOR: NAVY 2
PATTERN: ABSTRACT

**VWC5**
MANUFACTURER: CUSTOM
STYLE:
COLOR: CHARTREUSE
PATTERN: ABSTRACT

## PAINT

### PAINT (EXTERIOR)

**PNT-** MANUFACTURER: TBD
FINISH: TBD
COLOR: TBD

### PAINT (INTERIOR)

**PNT1** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: ARIA PPG1001-2

**PNT2** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: BLACK MAGIC PPG1001-7

**PNT3** MANUFACTURER: PPG
FINISH:EGGSHELL
COLOR: FLASTONE PPG1001-4

**PNT4** MANUFACTURER: PPG
FINISH: SEMI-GLOSS
COLOR: ARIA PPG1001-2

**PNT5** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: XAVIER BLUE PPG1240-4

**PNT6** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: TOUCH OF BLUE - PPG1242-2

**PNT7** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: VIVA LA BLEU PPG1039-7

**PNT8** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: HIGH SALUTE PPG1242-3

**PNT9** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: SMOKEY SAGE PPG11-24

**PNT10** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: EDAMAME PPG11-23

**PNT11** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: OLD TIMES SAKE PPG11-05

**PNT12** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: (PANTONE - COLUMBIA BLUE 292-C)

**PNT13** MANUFACTURER: PPG
FINISH: EGGSHELL
COLOR: HIP HOP PPG1217-3

**PNT14** MANUFACTURER: PPG
FINISH: SEMI-GLOSS
COLOR: TOUCH OF BLUE - PPG1242-2

## TEXTILES

**UP1** MANUFACTURER: MOMENTUM
STYLE: ORGIN
COLOR: INDIGO

**UP2** MANUFACTURER: MOMENTUM
STYLE: ORIGIN
COLOR: MANTA

**UP3** MANUFACTURER: MOMENTUM
STYLE: ORGIN
COLOR: BASALT

**UP4** MANUFACTURER: MOMENTUM
STYLE: TRIBECA CV
COLOR: SHADOW

**UP5** MANUFACTURER: MOMENTUM
STYLE: CAIRNS
COLOR: ATROLL

**UP6** MANUFACTURER: MOMENTUM
STYLE: TRIVIA
COLOR: MARINE

**UP7** MANUFACTURER: MAHARAM
STYLE: ELM 466557
COLOR: SPACESHIP

**UP8** MANUFACTURER: MAHARAM
STYLE: TEMPERA 466426
COLOR: RAINDROP 005

**UP9** MANUFACTURER: GUILFORD OF MAINE
STYLE: FR701 2100
COLOR: MEDIUM GREY 298

**UP10** MANUFACTURER: GUILFORD OF MAINE
STYLE: FR701 2100
COLOR: WEDGEWOOD 150

**UP11** MANUFACTURER: GUILFORD OF MAINE
STYLE: FR701 210
COLOR: BALTIC 153

**UP12** MANUFACTURER: ULTRA FABRICS
STYLE: BRISA
COLOR: QUICKSILVER 533-5820

**UP13** MANUFACTURER: ULTRA FABRICS
STYLE: BRISA
COLOR: WROUGHT IRON 533-5703

**UP14** MANUFACTURER: ULTRA FABRICS
STYLE: BRISA
COLOR: INDIGO 533-2683

**UP15** MANUFACTURER: KNOLL
STYLE: C23745
COLOR: COMET
PATTERN: SIGNAL

## ROLLER WINDOW SHADES

### MOTOR-OPERATED ROLLER WINDOW SHADE

**SBM1** MANUFACTURER: MECHO SHADES
VALANCE:
COLLECTION: SOHO
STYLE: 1600 SERIES
SHADE CLOTH COLOR: 1605 DOVE GREY | TV: 5%
OPENNESS: 3%

**SBM2** MANUFACTURER: MECHO SHADES
VALANCE:
COLLECTION: EQUINOX BLACKOUT
STYLE: SOHO 0100 SERIES (OPAQUE)
SHADE CLOTH COLOR: 0117 GRAPHITE
OPENNESS: BLACKOUT

## TOILET COMPARTMENTS

### REINFORCED SOLID COMPOSITE

**TLC1** MANUFACTURER: BOBRICK
SERIES:
FINISH: MATTE FINISH
COLOR: BEIGEWOOD 7850-60
LOCATION:

**TLC2** MANUFACTURER: BOBRICK
SERIES: SIERRA SCRC
FINISH: MATTE FINISH
COLOR: GOLDEN KHAKI SC01
LOCATION:

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
6/26/2025 4:16:14 PM

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**FINISH SCHEDULE**

**DSA SUBMITTAL**

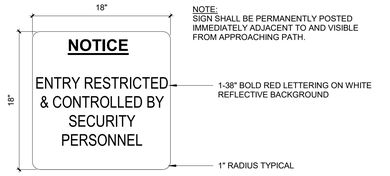
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

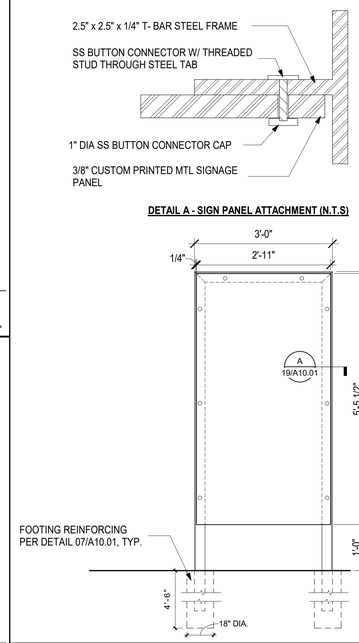
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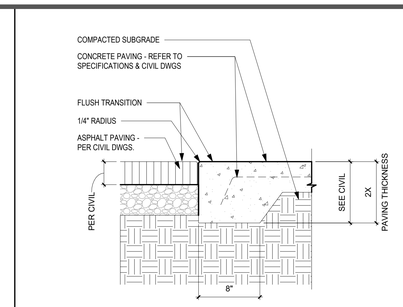
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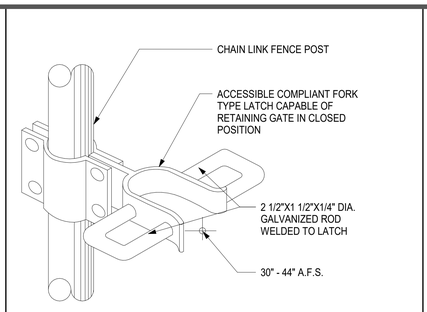

## ENTRY RESTRICTED SIGN | 25
1 1/2" = 1'-0"



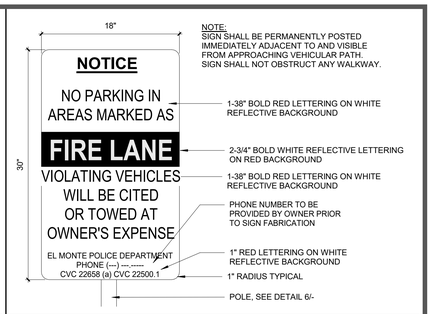

## EXTERIOR CHPS SIGNAGE | 19
3/4" = 1'-0"



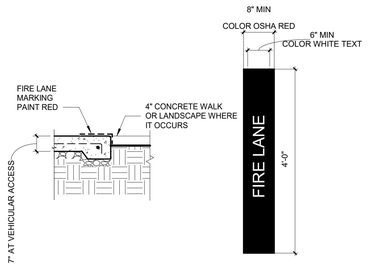

## ASPHALT AT CONCRETE PAVING | 15
1 1/2" = 1'-0"



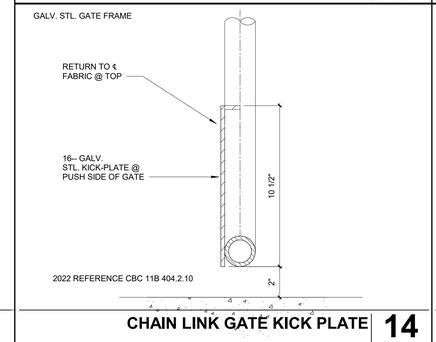

## ACCESSIBLE FORK TYPE LATCH | 10
1/2" = 1'-0"



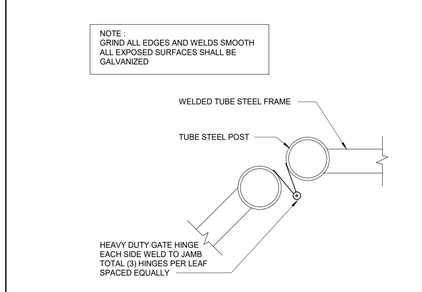

## FIRE LANE SIGNAGE | 5
1 1/2" = 1'-0"



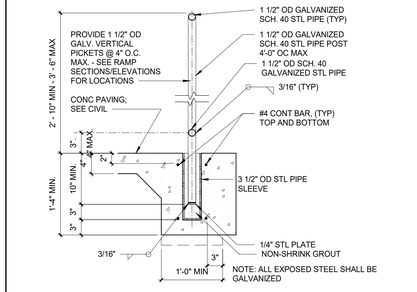

## FIRE LANE MARKING | 24
3/4" = 1'-0"




## CHAIN LINK GATE KICK PLATE | 14
3" = 1'-0"

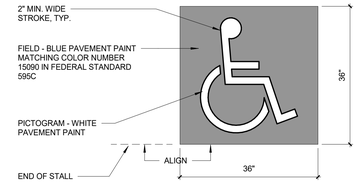



## C.L. GATE DETAIL | 9
1/4" = 1'-0"

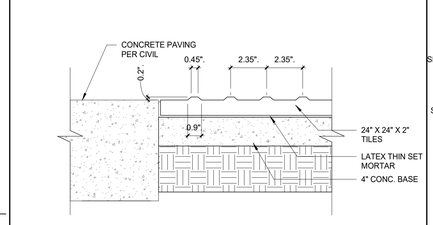


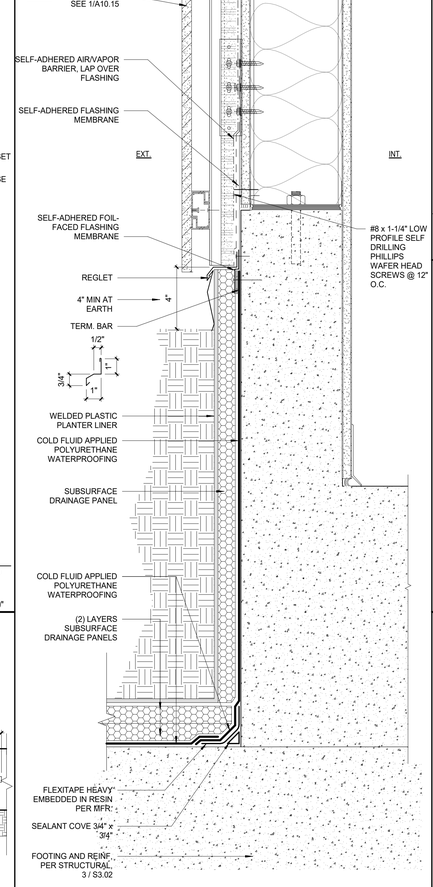

## RAILING POST @ RAMP | 4
1" = 1'-0"

THE SURFACE OF EACH ACCESSIBLE PARKING SPACE OR STALL SHALL HAVE A SURFACE IDENTIFICATION. THE PAVEMENT SYMBOL SHALL CONSIST OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A BLUE BACKGROUND. THE PROFILE VIEW SHALL BE LOCATED SO THAT IT IS VISIBLE TO A TRAFFIC ENFORCEMENT OFFICER WHEN A VEHICLE IS PROPERLY PARKED IN THE SPACE AND SHALL BE 36" HIGH BY 36" WIDE.

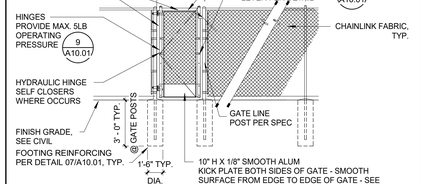



## ACCESSIBLE PARKING SYMBOL | 23
3/4" = 1'-0"

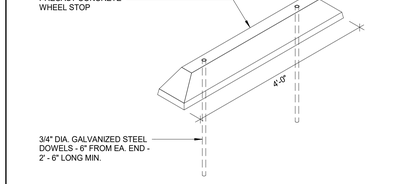


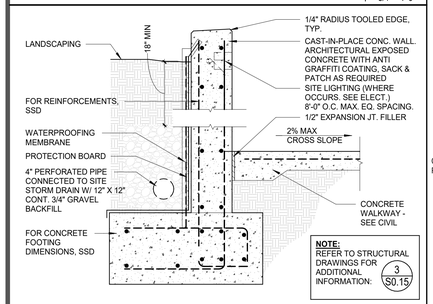

## PLANTER AT FIBER CEMENT WALL | 11
3" = 1'-0"



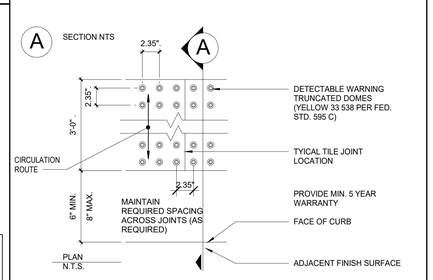

## SINGLE C.L. GATE | 8
1/4" = 1'-0"



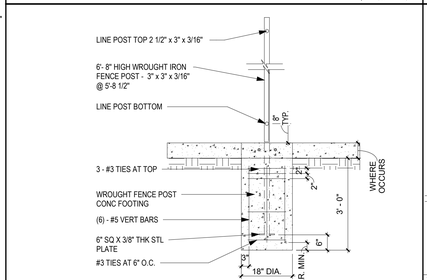

## PRECAST CONC. WHEEL STOP | 3
3/4" = 1'-0"



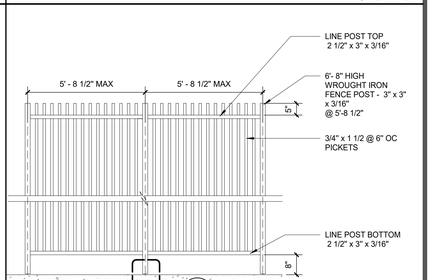

## CAST-IN-PLACE CONCRETE PLANTER WALL | 22
1" = 1'-0"



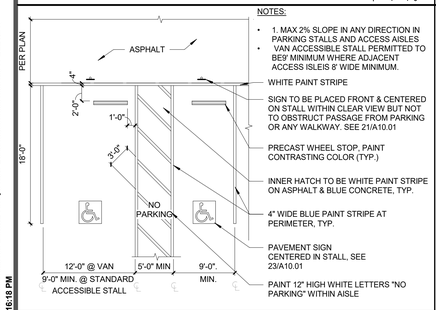

## TRUNCATED DOME PAVERS | 17
1/8" = 1'-0"



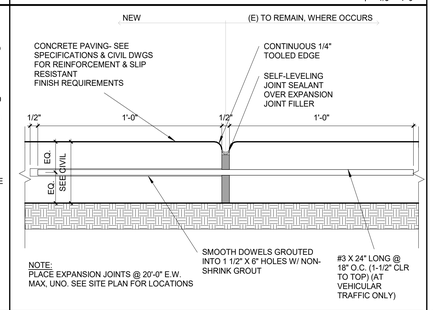

## WROUGHT IRON FENCE FOOTING DETAIL | 7
1/2" = 1'-0"



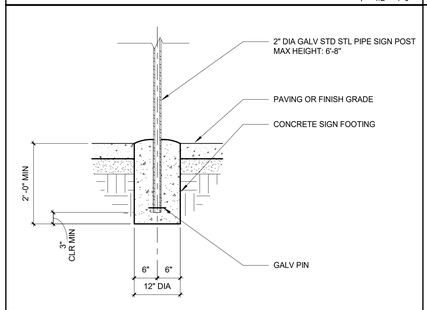

## WROUGHT IRON FENCE ELEVATION | 2
1/2" = 1'-0"



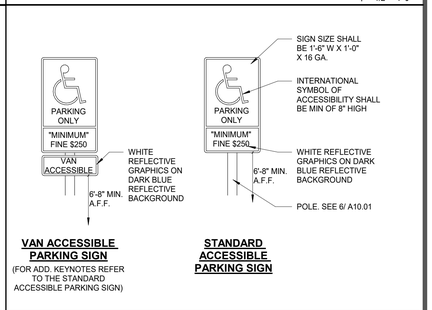

## TYPICAL ACCESSIBLE PARKING PLAN | 21
1/8" = 1'-0"




## EXPANSION JOINT | 16
3" = 1'-0"




## SIGN FOOTING | 6
3/4" = 1'-0"




## ACCESSIBLE PARKING SIGN | 1
3" = 1'-0"

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

EL MONTE UNION HIGH SCHOOL DISTRICT — ESTABLISHED 1901 — COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT — VIRGINIA ELAINE MARQUARDT — No. C-33423 — 06/30/2025 — RENEWAL DATE — STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**SITE AND GATE DETAILS**

**DSA SUBMITTAL**

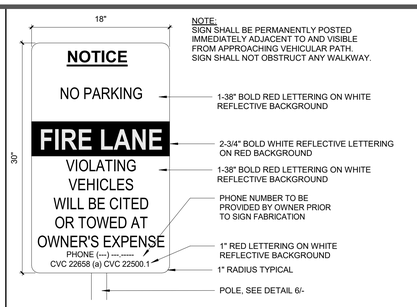
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# A10.01

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET'S ORIGINAL PAGE SIZE




NOTE:
SIGN SHALL BE PERMANENTLY POSTED IMMEDIATELY ADJACENT TO AND VISIBLE FROM APPROACHING VEHICULAR PATH. SIGN SHALL NOT OBSTRUCT ANY WALKWAY.

1-38" BOLD RED LETTERING ON WHITE REFLECTIVE BACKGROUND

2-3/4" BOLD WHITE REFLECTIVE LETTERING ON RED BACKGROUND

1-38" BOLD RED LETTERING ON WHITE REFLECTIVE BACKGROUND

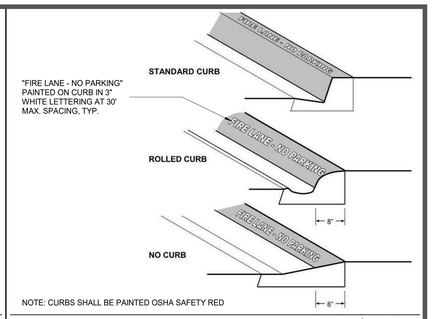
PHONE NUMBER TO BE PROVIDED BY OWNER PRIOR TO SIGN FABRICATION

1" RED LETTERING ON WHITE REFLECTIVE BACKGROUND

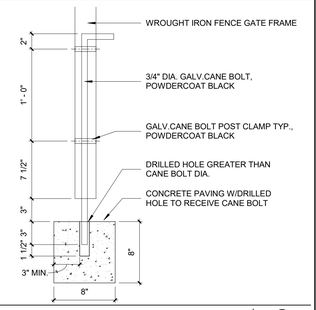
1" RADIUS TYPICAL

POLE, SEE DETAIL 6/-

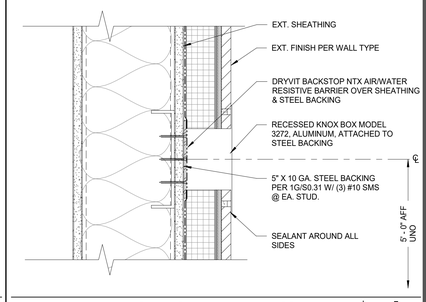
## NO PARKING FIRE LANE SIGNAGE | 10
1 1/2" = 1'-0"



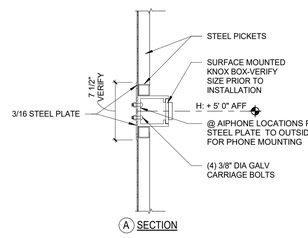

## FIRE LANE IDENTIFICATION - RED CURBS | 5
3/4" = 1'-0"

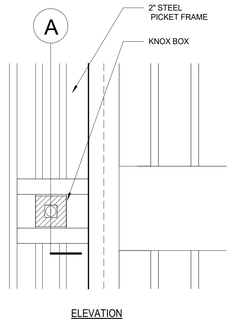



## CANE BOLT & DROP ROD DETAIL | 9
1 1/2" = 1'-0"

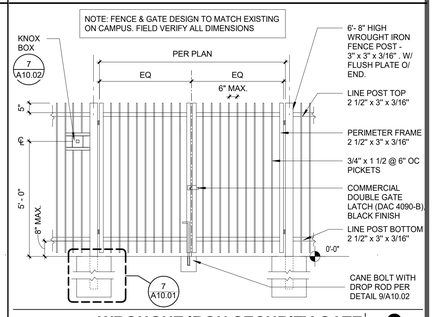



## KNOX BOX AT EXTERIOR WALL | 4
3" = 1'-0"

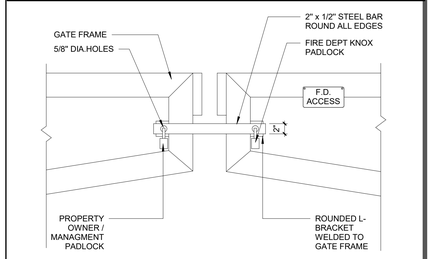



## KNOX BOX AT WROUGHT IRON GATE | 7
1 1/2" = 1'-0"

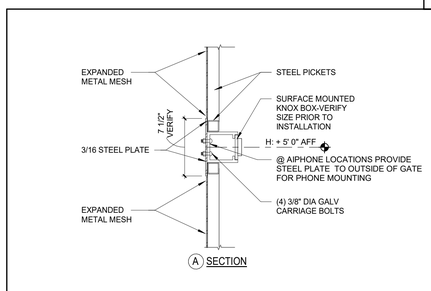


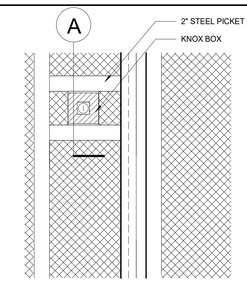

## WROUGHT IRON SECURITY GATE | 3
3/8" = 1'-0"



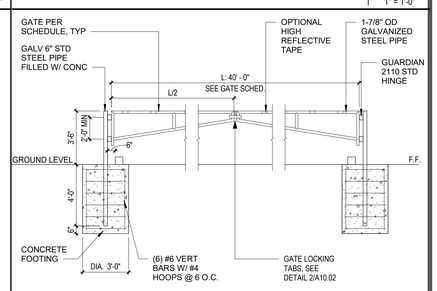

NOTE: AN APPROVED KNOX PADLOCK SERIES #3771 SHALL BE ACCESSIBLE FROM BOTH SIDES OF THE GATE ENTRANCE AND EXIT

## DOUBLE GATE LATCH | 2
1" = 1'-0"




## KNOX BOX AT CHAIN LINK FENCE | 6
1 1/2" = 1'-0"




NOTE: GATE SHALL BE HOT-DIP GALV AFTER FABRICATION.

## SWINGING GATE VEHICULAR DETAIL | 1
1/4" = 1'-0"

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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**SITE AND GATE DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

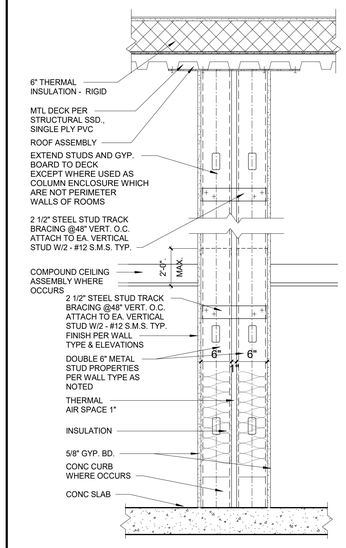
DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# A10.02

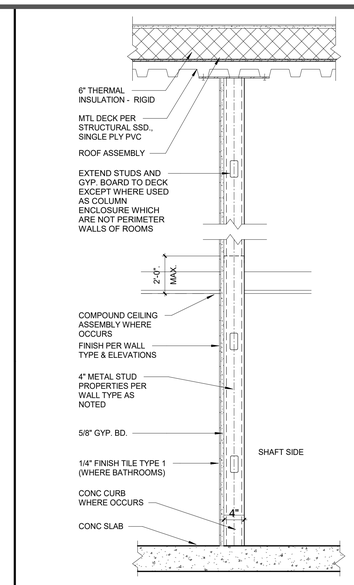
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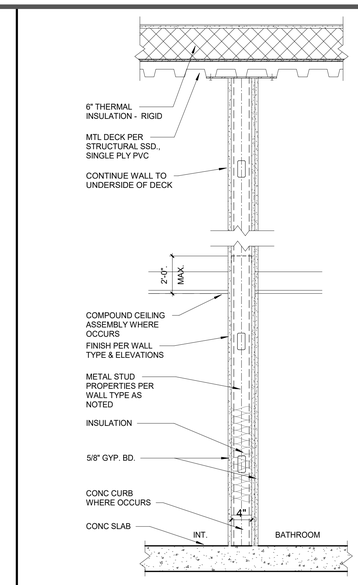

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS42A | (2) 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS62A | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| AS62A-1 | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U493 |

**INT. WALL TYPE. AS6(2)A** 19 — 1" = 1'-0"



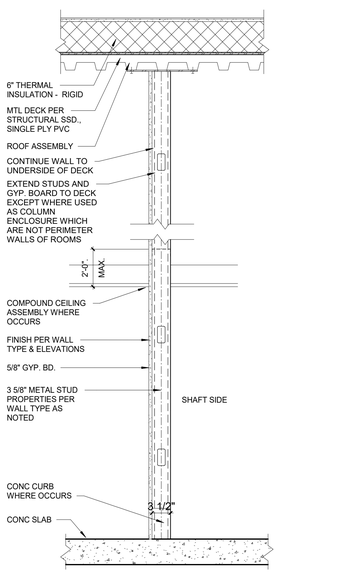

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS4Z | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS6Z | 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. AS4Z** 14 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| AS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. AS4B** 9 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS4Z | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS6Z | 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. AS3Z** 4 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS6A | 16 GA., 6" METAL STUDS @ 16" OC | N/A | | | |
| AS4A | 16 GA., 4" METAL STUDS @ 16" OC | N/A | | | |
| AS8A | 16 GA., 8" METAL STUDS @ 16" OC | N/A | | | |

**INT. WALL TYPE. AS4A** 17 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS42A | (2) 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS62A | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| AS62A-1 | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U493 |

**INT. WALL TYPE. AS4(2)A** 12 — 1" = 1'-0"



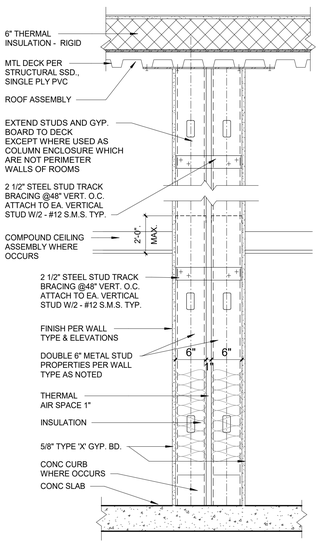

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS6A-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| AS62A-1 | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U493 |

**INT. WALL TYPE. AS6A-1 (1-HR FIRE RATED)** 7 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS6A | 16 GA., 6" METAL STUDS @ 16" OC | N/A | | | |
| AS4A | 16 GA., 4" METAL STUDS @ 16" OC | N/A | | | |
| AS8A | 16 GA., 8" METAL STUDS @ 16" OC | N/A | | | |

**INT. WALL TYPE. AS6A** 2 — 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS42A | (2) 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS62A | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| AS62A-1 | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U493 |

**INT. WALL TYPE. AS6(2)A-1 (1-HR FIRE RATED)** 21 — 1" = 1'-0"

## TABLE A - HEIGHT VARIABLE

| DESIGNATION | SHEATHING 1 | NO. LAYERS | SHEATHING 2 | NO. LAYERS |
|---|---|---|---|---|
| A | 5/8" GYPSUM BOARD (TYPE 'X' WHERE APPLICABLE) | 1 | - | - |
| B | 5/8" GYPSUM BOARD (TYPE 'X' WHERE APPLICABLE) | 2 | - | - |
| C | 5/8" GYPSUM BOARD | 3 | - | - |
| D | 5/8" GYPSUM BOARD W 1.5 LB/SF LEAD | 1 | - | - |
| E | 5/8" GYPSUM BOARD W 2.0 LB/SF LEAD | 1 | - | - |
| F | 5/8" GYPSUM BOARD W 2.5 LB/SF LEAD | 1 | - | - |
| G | 5/8" GYPSUM BOARD W 4.0 LB/SF LEAD | 1 | - | - |
| H | 5/8" GYPSUM BOARD W 6.0 LB/SF LEAD | 1 | - | - |
| J | 5/8" GYPSUM BOARD W 8.0 LB/SF LEAD | 1 | - | - |
| K | 5/8" GYPSUM BOARD | 1 | 1/2" HAT CHANNEL | 1 |
| L | 5/8" GYPSUM BOARD | 1 | 3/4" PLYWOOD | 1 |
| M | 5/8" CEMENTITIOUS WALL BOARD | 1 | - | - |
| N | 5/8" CEMENTITIOUS WALL BOARD | 1 | 5/8" GYPSUM BOARD | - |
| P | 1" SHAFT LINER | 1 | - | - |
| Q | 3/4" PLASTER | 1 | - | - |
| R | 1/2" PLYWOOD | 1 | - | - |
| S | 3/4" PLYWOOD | 1 | - | - |
| T | 5/8" EXTERIOR GYPSUM BOARD | 1 | - | - |
| U | (PROJECT SPECIFIC) | 1 | - | - |
| V | (PROJECT SPECIFIC) | 1 | - | - |
| W | (PROJECT SPECIFIC) | 1 | - | - |
| X | (PROJECT SPECIFIC) | 1 | - | - |
| Y | (PROJECT SPECIFIC) | 1 | - | - |
| Z | NONE | | - | - |

## TABLE B - WALL STRUCTURE TYPE

| DESIGNATION | STRUCTURE |
|---|---|
| S | STEEL STUD (METAL STUD) |
| H | C-H STUD |
| W | WOOD STUD |
| M | CONCRETE MASONRY UNIT |
| C | CAST- IN- PLACE CONCRETE |
| T | TILT-UP CONCRETE PANELS |

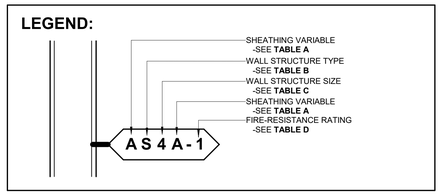
## TABLE C - STRUCTURE MEMBER SIZE VARIABLE

| DESIGNATION | STEEL STUD | C-H STUD | WOOD STUD | CMU | CONCRETE/TILT UP |
|---|---|---|---|---|---|
| 0 | 7/8" HAT CHANNEL | - | - | - | - |
| 1 | 1 5/8" | - | - | - | - |
| 2 | 2 1/2" | 2 1/2" | - | - | - |
| 3 | 3 5/8" | - | - | 3 5/8" | - |
| 4 | 4" | 4" | 3 1/2" | 3 5/8" | - |
| 6 | 6" | 6" | 5 1/2" | 5 5/8" | 6" |
| 8 | 8" | - | - | 7 5/8" | 8" |
| 10 | 10" | - | - | 9 5/8" | 10" |
| 12 | 12" | - | - | 11 5/8" | 12" |

## TABLE D - FIRE-RESISTANCE RATING

| DESIGNATION | UL ASSEMBLY | FIRE-RESISTANCE RATING |
|---|---|---|
| 1 | 465 | 1 HR |
| | 488 | 1 HR |

**LEGEND:**




**WALL TYPE KEY** 1 — 6" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT — VIRGINIA ELAINE MARQUARDT — No. C-33423 — 06/30/2025 — STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FOR WALL ATTACHMENT WITH ROOF ASSEMBLIES SEE A10.12B

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL TYPES**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **09/13/2024** | CLIENT PROJ NO: **3361008100**

SHEET:

# A10.11A


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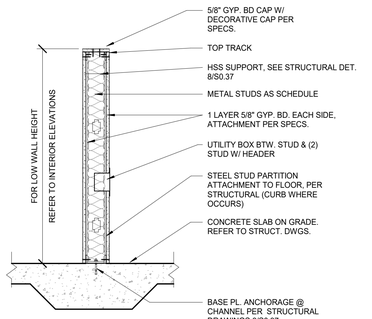


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NOTE:
SEE DETAILS FOR ADDITIONAL INFORMATION AT THESE CONDITIONS

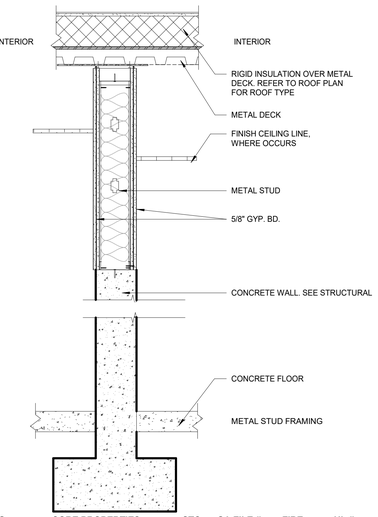
1 A10.62 @ CASEWORK




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS6A | 16 GA., 6" METAL STUDS @ 16" OC | N/A | | | |
| AS4A | 16 GA., 4" METAL STUDS @ 16" OC | N/A | | | |
| AS8A | 16 GA., 8" METAL STUDS @ 16" OC | N/A | | | |

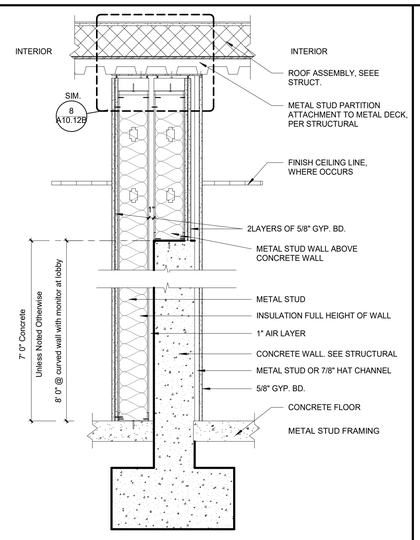
## INT. WALL TYPE. NON-RATED LOW WALL PARTITION 23
1" = 1'-0"

NOTE:
1. REFER TO SOUND WALL NOTES



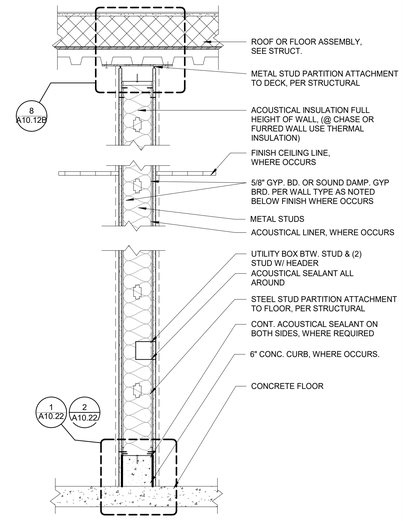

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL. CONCRETE WALL WITH HAT CHANNEL 18
1" = 1'-0"



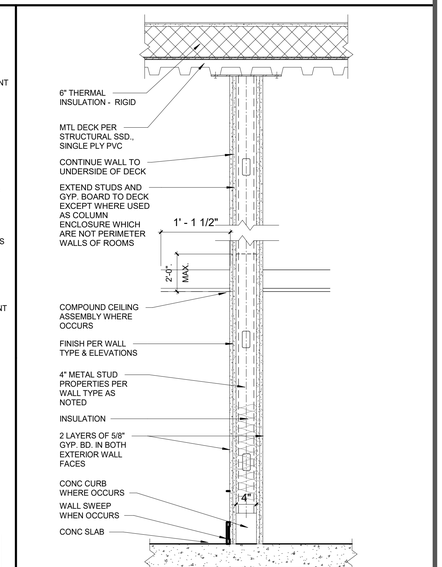

| WALL TYPE | STUD SIZE | NOTES |
|---|---|---|
| BS6(2)B | (2) 6" @ 16" O.C | (2) LAYER OF GYP. BD. EACH SIDE<br>(1) LAYER OF SOUND DAMP. AC. LINER |
| BS6B | 6" @ 16" O.C | (2) LAYER OF GYP. BD. EACH SIDE<br>(1) LAYER OF SOUND DAMP. AC. LINER |

## INT. WALL TYPE. CONC. WALL WITH HAT CHANNEL 13
1" = 1'-0"



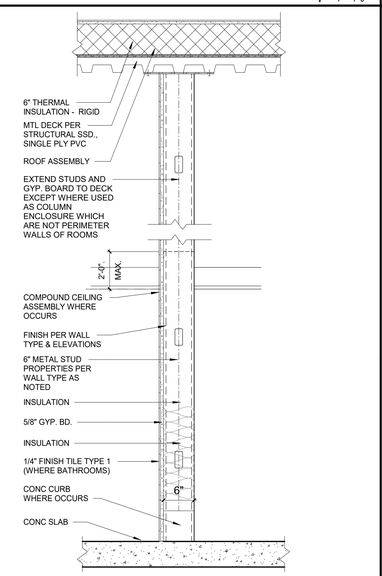

| WALL TYPE | STUD SIZE | NOTES |
|---|---|---|
| BS6(2)B | (2) 6" @ 16" O.C | (2) LAYER OF GYP. BD. EACH SIDE<br>(1) LAYER OF SOUND DAMP. AC. LINER |
| BS6(2)A | (2) 6" @ 16" O.C | (2) LAYER OF GYP. BD. (1) LAYER OF GYP<br>(1) LAYER OF SOUND DAMP. AC. LINER |
| BS6B | 6" @ 16" O.C | (2) LAYER OF GYP. BD. EACH SIDE<br>(1) LAYER OF SOUND DAMP. AC. LINER |
| BS6A | 6" @ 16" O.C | (2) LAYER OF GYP. BD. (1) LAYER OF GYP<br>(1) LAYER OF SOUND DAMP. AC. LINER |

## INT. WALL TYPE. SOUND WALL - (2) GYP. BD. EACH SIDE 8
1" = 1'-0"



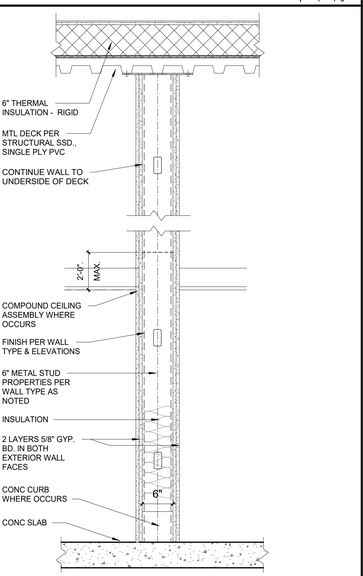

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. BS4B 3
1" = 1'-0"



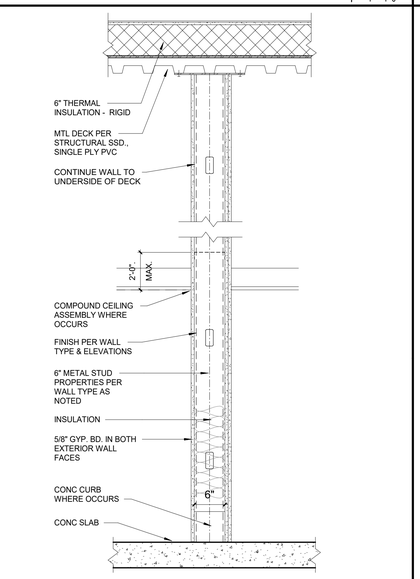

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS4Z | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| AS6Z | 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. AS6Z 21
1" = 1'-0"



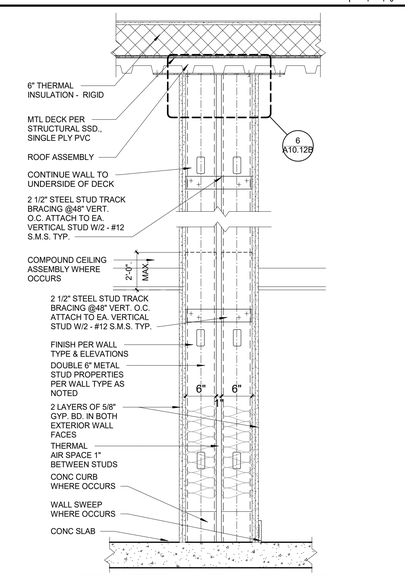

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. BS6B 16
1" = 1'-0"



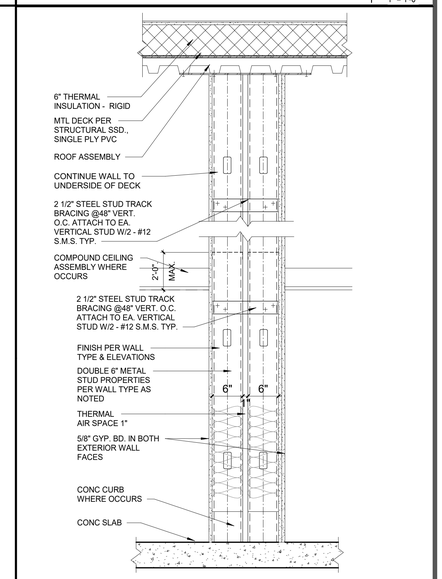

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4A | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6A | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS62A | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. BS6A 11
1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. BS6(2)B 6
1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4A | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6A | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS62A | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

## INT. WALL TYPE. BS6(2)A 1
1" = 1'-0"

Autodesk Docs://3361008100 EMU\SD Arroyo New Construction\3361008100-A-BLDG.rvt
7/1/2025 3:49:16 PM

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR, LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FOR WALL ATTACHMENT WITH ROOF ASSEMBLIES SEE A10.12B

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL TYPES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

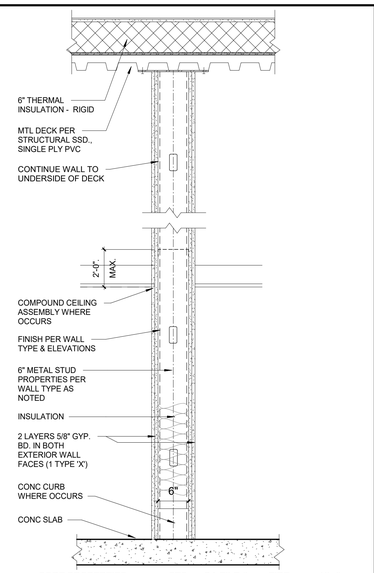
DATE: 09/13/2024 | CLIENT PROJ NO: 3361008100

SHEET:

**A10.11B**

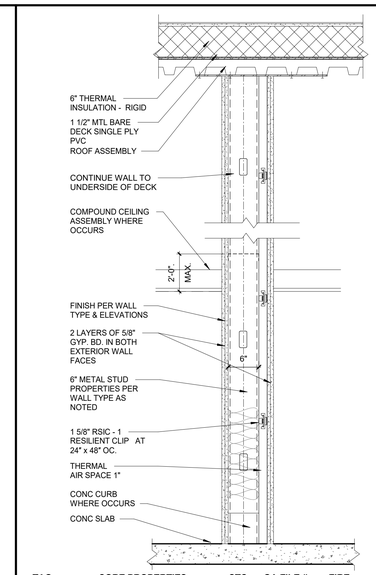
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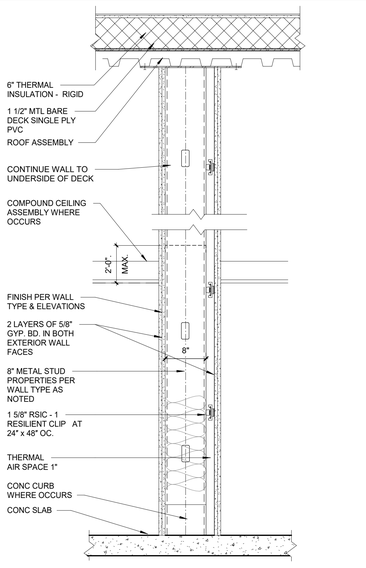

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. BS6B-1 (1-HR FIRE RATED)** **8** 1" = 1'-0"



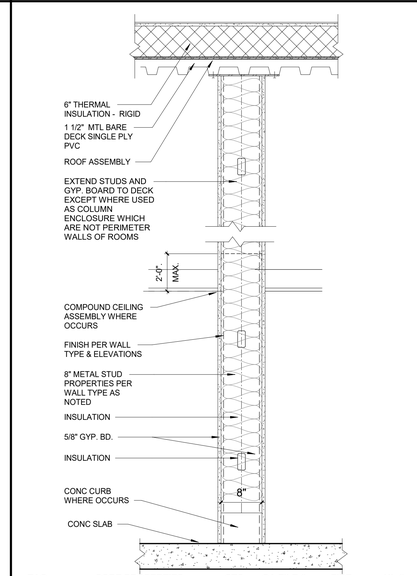

| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. BS6B_TYPE 2** **3** 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| BS4B | 16 GA., 4" METAL STUDS @ 16" OC | | | | |
| BS6B | 16 GA., 6" METAL STUDS @ 16" OC | | | | |
| BS6B-1 | 16 GA., 6" METAL STUDS @ 16" OC | | | 1 HR | U419 |
| BS62B | (2) 16 GA., 6" METAL STUDS @ 16" OC | | | | |

**INT. WALL TYPE. BS8B** **6** 1" = 1'-0"




| TAG | CORE PROPERTIES | STC | GA FILE # | FIRE | UL # |
|---|---|---|---|---|---|
| AS6A | 16 GA., 6" METAL STUDS @ 16" OC | N/A | | | |
| AS4A | 16 GA., 4" METAL STUDS @ 16" OC | N/A | | | |
| AS8A | 16 GA., 8" METAL STUDS @ 16" OC | N/A | | | |

**INT. WALL TYPE. AS8A** **1** 1" = 1'-0"

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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FOR WALL ATTACHMENT WITH ROOF ASSEMBLIES SEE A10.12B
FOR WALL ATTACHMENT WITH FLOOR ASSEMBLIE SEE A10.22B

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL TYPES**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **09/13/2024** CLIENT PROJ NO: **3361008100**

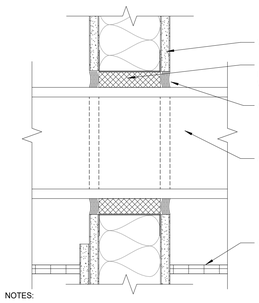
SHEET:

# A10.12

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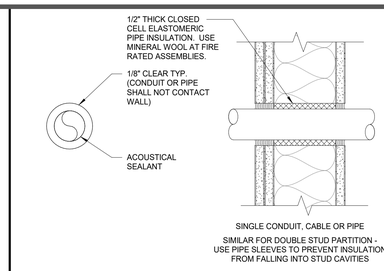



NOTES:

1. PENETRATIONS OF ACOUSTICAL PARTITIONS BY DUCTWORK SHALL BE ACOUSTICALLY SEALED AS SHOWN. ANY GAP LATGER THAN 1/2" SHALLF BE COVERED WITH GYP. BD., LAPPED A MIN. OF 2" AND SCREWED BEFORE USING ACOUSTICAL SEALANT.

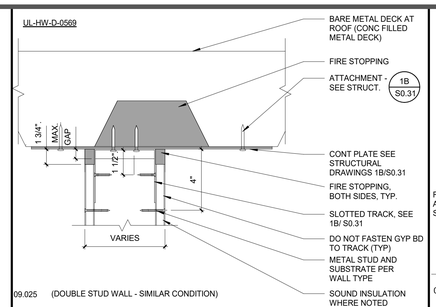
2. WHERE PENETRATING WALL TYPE M4SB OR M6SB TEST SEALANT IN ACCORDANCE TO ASTM E814 AND OR UL 1479 AND UL 2079.

## TYP DUCT PENETRATION @ FULL HT. WALL 23
3" = 1'-0"



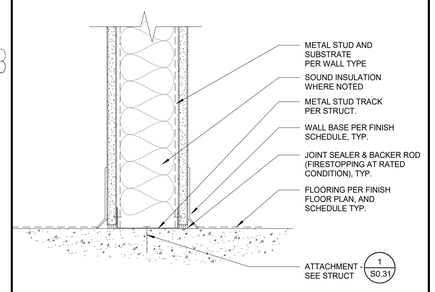

NOTES:
1. PENETRATIONS OF ACOUSTICAL PARTITIONS BY, CONDUIT, CABLE, PIPES ETC. SHALL BE ACOUSTICALLY SEALED AS SHWON. ANY GAP LARGER THAN 1.2" SHALL BE COVERED WITH GYP. BD., LAPPED A MIN. OF 2" AND SCREWED BEFORE USING ACOUSTICAL SEALANT. CABLE TRAYS SHOULD NOT PENETRATE SLAB -TO-SLAB PARTITIONS. A CONDUIT SLEEVE SHOULD BE USED AT SUCH PENETRATIONS. A CONDUIT SLEEVE SHOULD BE USED AT SUCH PENETRATIONSAND SEALED AS SHOWN ON THIS DETAIL. SEAL THE ENDS OF THE CONDUIT WITH FIRE STOP PUTTY ON BOTH SIDES OF THE WALL.
2. FLEXIBLE DUCT, PIPE, CONDUIT, ETC. CONNECTIONS SHOULD BE INCORPORATED BETWEEN ROMOS WHERE RESILIENTLY ISOLATED FLOORS, WALLS OR CEILING LIDS OCCUR.
3. WHERE PENETRATING WALL TYPE M4SB OR M6SB TEST SEALANT IN ACCORDACE TO ASTM E 814 AND OR UL 1479 AND 2013 CBC 714.3

## THRU PENETRATION @ FULL HT. WALL 17
3" = 1'-0"

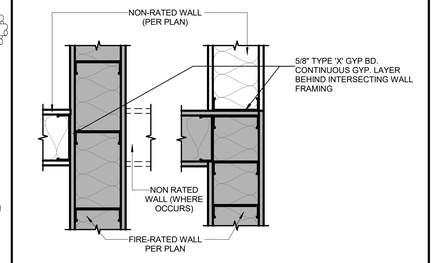



09.025 (DOUBLE STUD WALL - SIMILAR CONDITION)

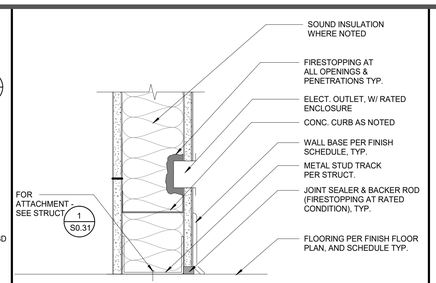
## FIRE RATED MTL STUD WALL PARALLEL TO MTL DEC 15
3" = 1'-0"




## TYP INTERIOR WALL BASE 14
3" = 1'-0"

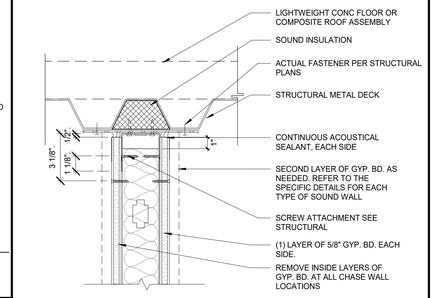



## FIRE RATED WALL AT INTERSECTING WALLS 1HR 13
1 1/2" = 1'-0"




09.023 (DOUBLE STUD WALL - SIMILAR CONDITION)

## BASE OF FIRE RATED WALL 10
3" = 1'-0"

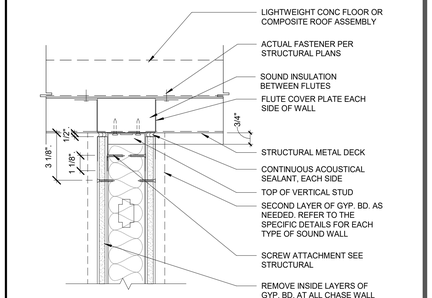



NOTE:
1. VERIFY FLUTE SIZE & SPACING WITH DECK & UL ASSEMBLY REQUIRED COVER PLATE SIZE & FASTENING VARY AS DECK FLUTE PARAMETERS VARY.

2. THIS HEAD DETAIL GIVES A MAXIMUM STC 49 RATING. FOR WALLS WITH A HIGHER STC RATING, SEE SPECIFIC SOUND WALL DETAIL FOR ACTUAL NUMBER OF GYP. BD. LAYERS REQUIRED.

1) ATTACHMENT TO STRUCTURAL METAL ROOF DECK, SEE S0.31 - STUD TO DECK DETAIL / B

## HW PARALLEL TO METAL DECKING NON RATED SOUND WALL 8
3" = 1'-0"




NOTE:
1. VERIFY FLUTE SPACING WITH STEEL DECK MANUFACTURE (COVER PLATE SIZE AND FASTENER SPACING VARY WITH FLUTE SPACING).

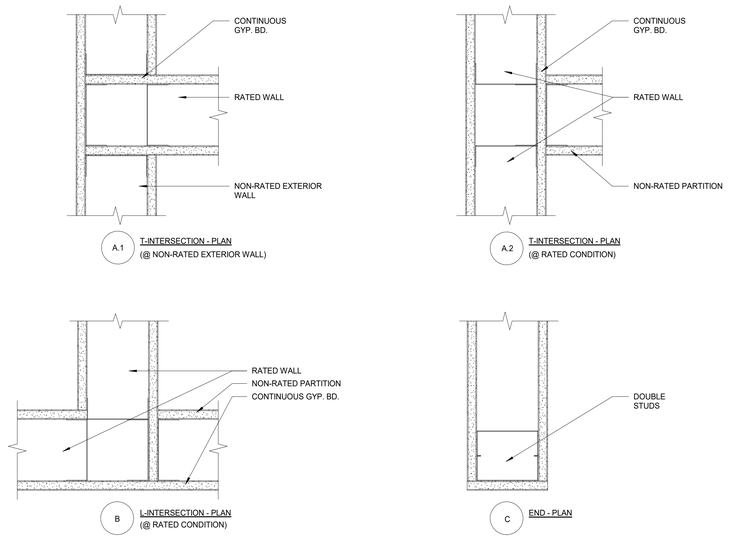
2. WHERE HEAD OF WALL CONFLICTS WITH STRUCTURAL BEAM SEE DETAIL S0.31 / STUD TO DECK DETAIL / B

3. THIS HEAD DETAIL GIVES A MAXIMUM STC 49 RATING. FOR WALLS WITH A HIGHER STC RATING, SEE SPECIFIC SOUND WALL DETAIL FOR ACTUAL NUMBER OF GYP. BD. LAYERS REQUIRED.

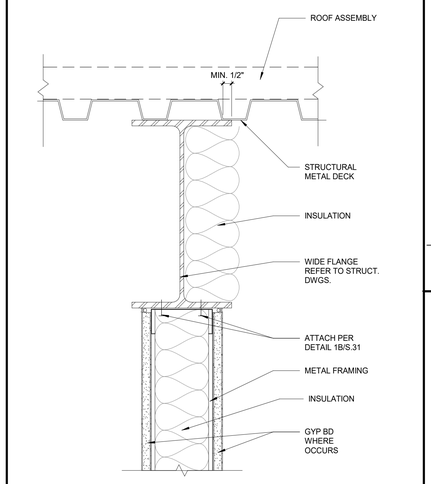
1) ATTACHMENT TO STRUCTURAL METAL ROOF DECK, SEE S0.31 - STUD TO DECK DETAIL / B

## HEAD PERP. TO METAL DECKING NON RATED NON-COMBUST. AT SOUND WALL 3
3" = 1'-0"

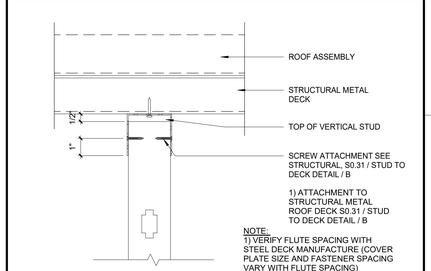
(DOUBLE STUD WALL - SIMILAR CONDITION)



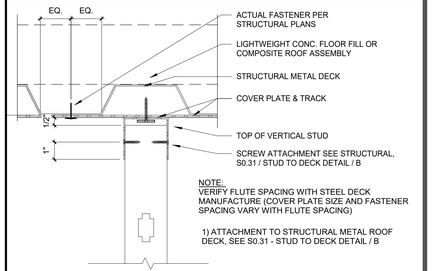

## TYPICAL STUD WALL CONDITIONS 16
3" = 1'-0"



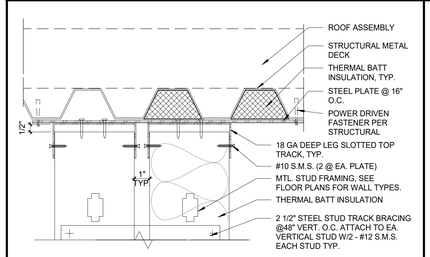

## HEAD OF WALL METAL STUD AT STRUCTURAL STEEL 11.
3" = 1'-0"



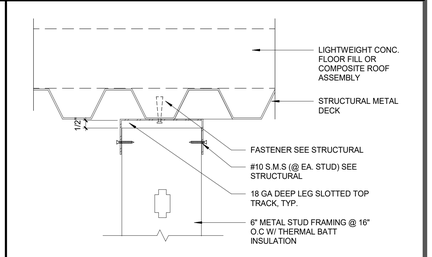

## HW PERPENDICULAR TO METAL DECKING NON RATED 7
3" = 1'-0"




## HW PARALLEL TO METAL DECK NON RATED/ NON-COMBUSTIBLE WALL 2
3" = 1'-0"




## METAL STUD HEAD CONDITION AT DOUBLE FRAMED WALL 6
3" = 1'-0"




1) ATTACHMENT TO STRUCTURAL METAL ROOF DECK, SEE S0.31 - STUD TO DECK DETAIL / B

## HEAD CONDITION @ STUD PARALLEL TO STEEL DECK 1
3" = 1'-0"

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DATE: 10/15/2025

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HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# A10.12B

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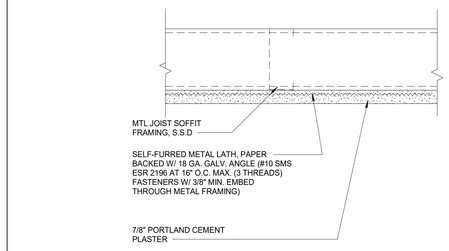
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# EXTERIOR SOFFIT (ESA) & ROOF ASSEMBLIES (ERA)

## ESA-1

PORTLAND CEMENT PLASTER SOFFIT

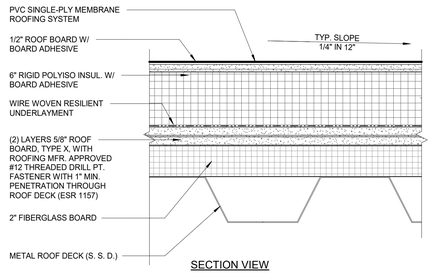



SECTION VIEW

RATING: NON-RATED

## ERA-3

PVC SINGLE-PLY MEMBRANE OVER METAL DECK

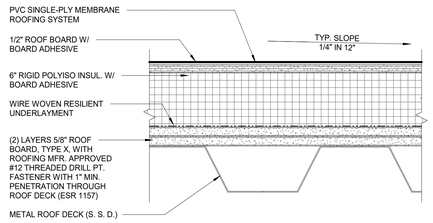



SECTION VIEW

RATING: NON-RATED

## ERA-2

PVC SINGLE-PLY MEMBRANE OVER METAL DECK

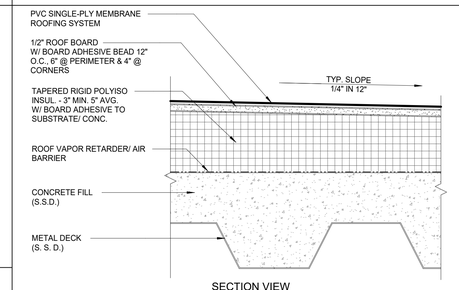



SECTION VIEW

RATING: NON-RATED

## ERA-1

PVC SINGLE-PLY MEMBRANE OVER CONCRETE FILLED METAL DECK



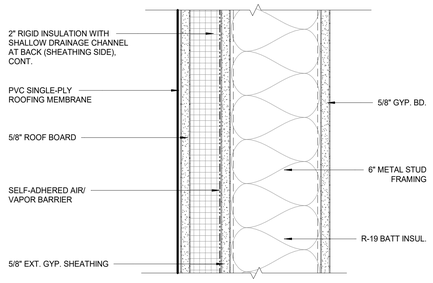

SECTION VIEW

RATING: NON-RATED

# EXTERIOR WALL ASSEMBLIES (EWA)

## EWA-5

PVC SINGLE-PLY AT MECHANICAL WELL



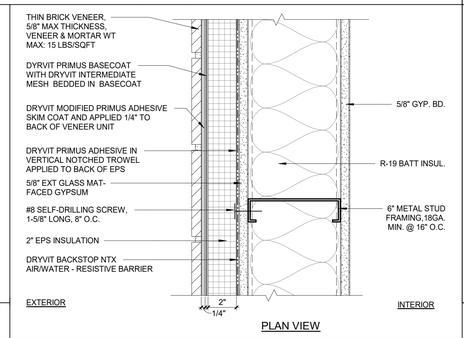

SECTION VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

# EXTERIOR WALL ASSEMBLIES (EWA)

## EWA-4

BRICK VENEER



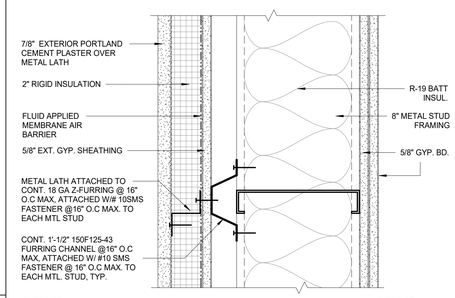

NOTE:
- ASSEMBLY IS DRYVIT OUTSULATION MASONRY SYSTEM ESR REPORT - 1543
- VEENER NEEDS TO COMPLY WITH ICC ES AC 51 OR COMPLYING WITH THE REQUIREMENTS OF ASTM C1088

PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-3B

PORTLAND CEMENT PLASTER

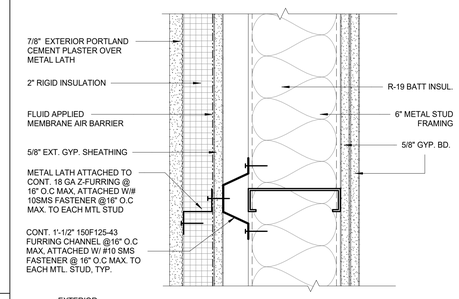



PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-3A

PORTLAND CEMENT PLASTER

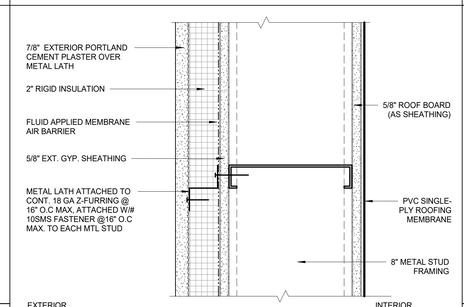



PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-2BP

PORTLAND CEMENT PLASTER AT PARAPET

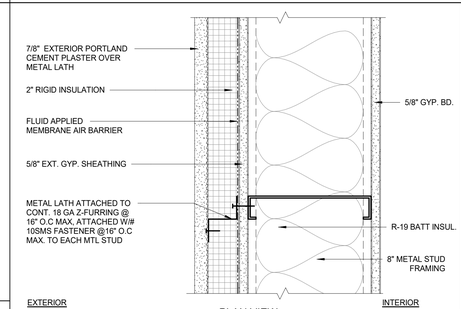



PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-2B

PORTLAND CEMENT PLASTER



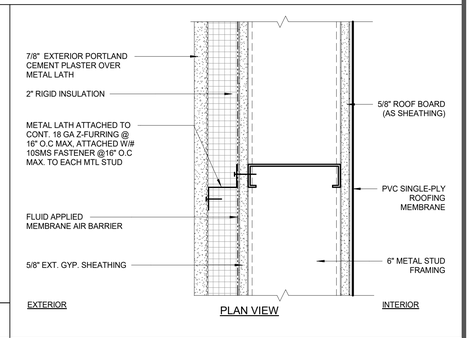

PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

# EXTERIOR WALL ASSEMBLIES (EWA)

## EWA-2AP

PORTLAND CEMENT PLASTER AT PARAPET

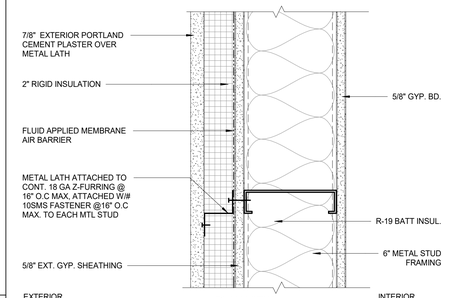



PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-2A

PORTLAND CEMENT PLASTER




PLAN VIEW

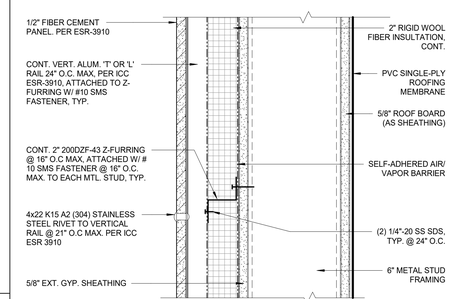
RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-1AP

FIBER CEMENT PANEL RAIN SCREEN AT PARAPET

ICC-ES: ESR-3910

NFPA 285: COMPLIANT




PLAN VIEW

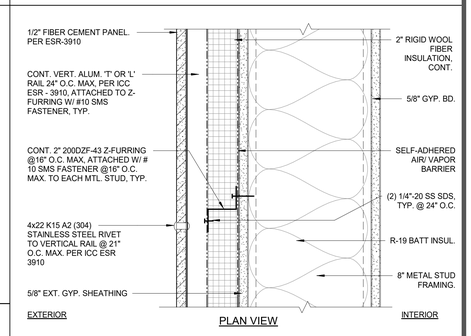
RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-1B

FIBER CEMENT PANEL RAIN SCREEN

ICC-ES: ESR-3910

NFPA 285: COMPLIANT




PLAN VIEW

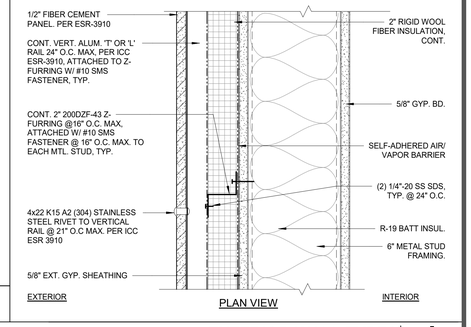
RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

## EWA-1A

FIBER CEMENT PANEL RAIN SCREEN

ICC-ES: ESR-3910

NFPA 285: COMPLIANT




PLAN VIEW

RATING: NON-RATED | DETAIL REFERENCE: SEE WALL SECTIONS

**EXTERIOR WALL TYPES** 1 — 3" = 1'-0"

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DATE: 10/15/2025


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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**EXTERIOR ASSEMBLIES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

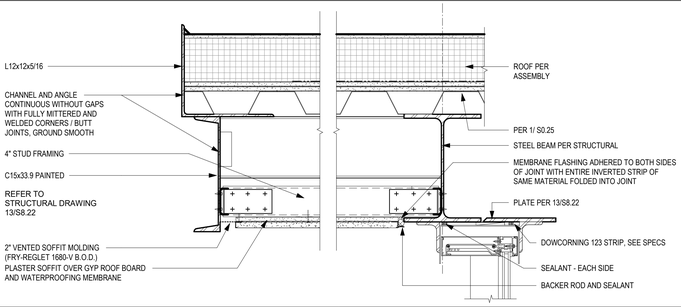
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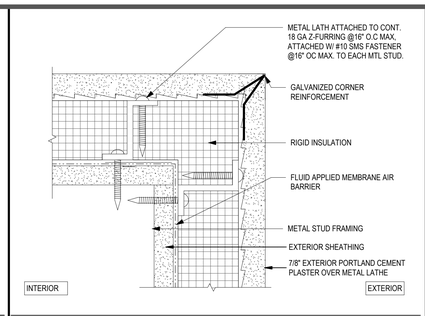
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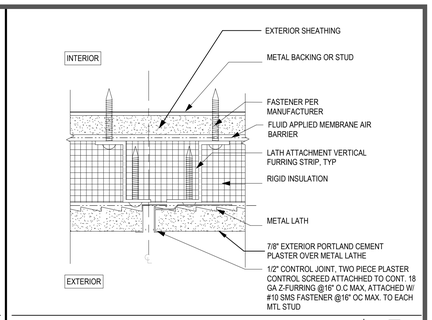
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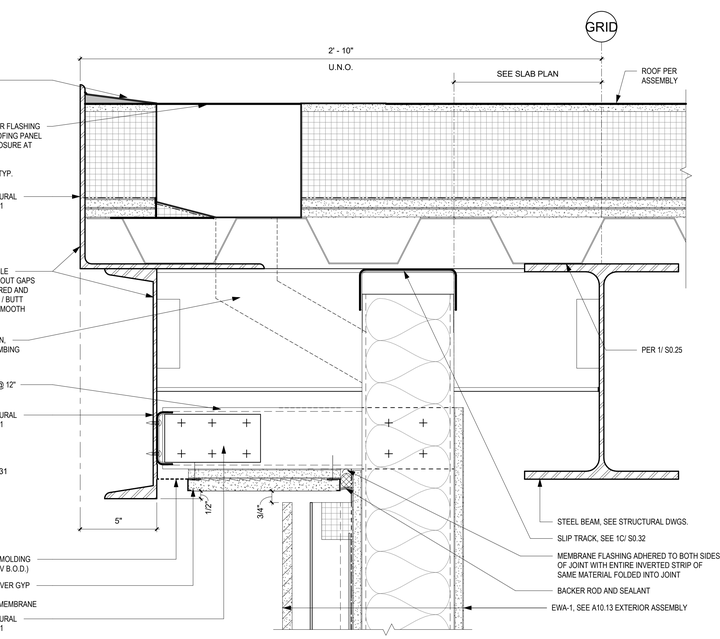

## TYP EXTERIOR CURTAIN WALL HEAD @ STEEL BEAM - PLASTER FINISH — 15
1 1/2" = 1'-0"



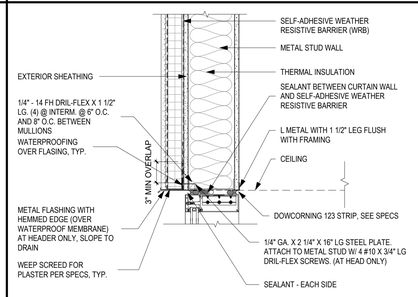

## PLASTER - CORNER REINFORCEMENT — 10
6" = 1'-0"



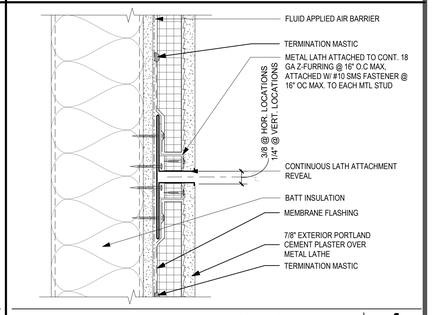

## PLASTER - CONTROL JOINT — 5
6" = 1'-0"



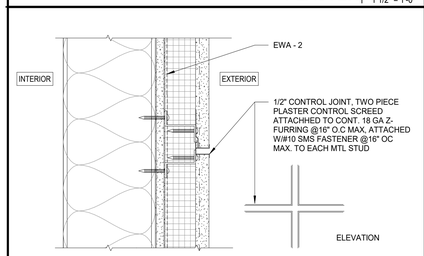

## ROOF PROFILE - PARALLEL TO SLOPE W/GUTTER — 13
3" = 1'-0"



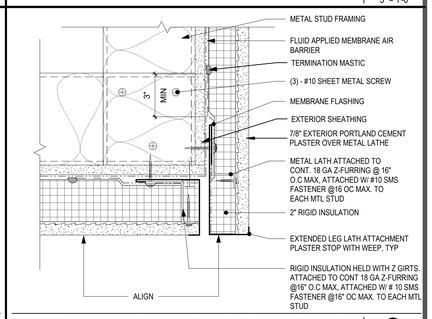

## TYP EXTERIOR CURTAIN WALL HEAD @ PLASTER — 9
1 1/2" = 1'-0"



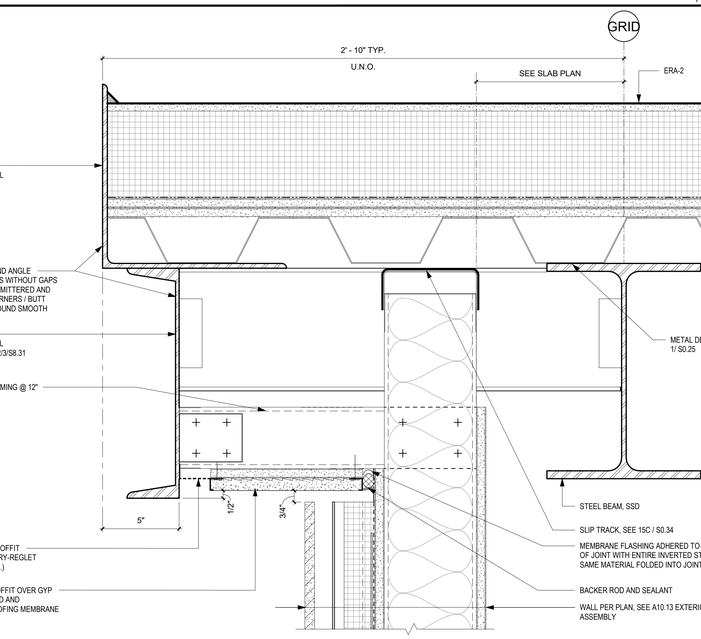

## PLASTER - REVEAL — 4
3" = 1'-0"



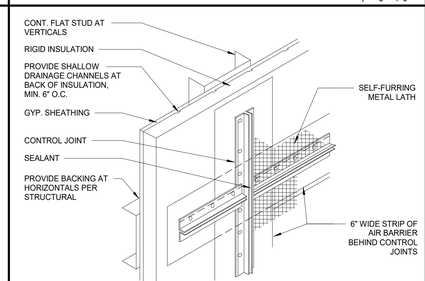

## TYP PLASTER CONTROL JOINT — 8
3" = 1'-0"



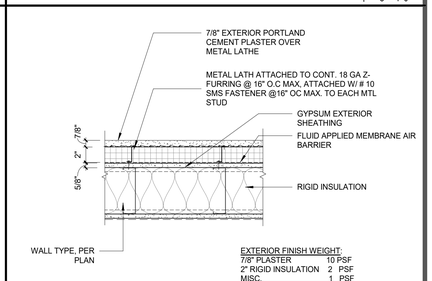

## PLASTER WALL AT PLASTER SOFFIT — 3
3" = 1'-0"



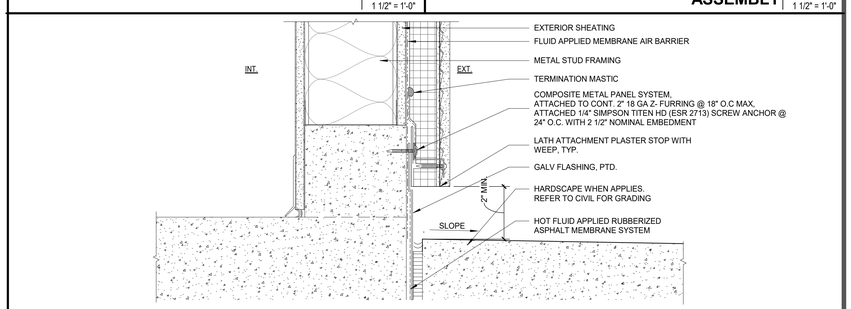

## ROOF PROFILE - PARALLEL TO SLOPE — 11
3" = 1'-0"




## TYP PLASTER CONTROL JOINT — 7
1 1/2" = 1'-0"




## EXTERIOR WALL - TYP CEMENT PLASTER ASSEMBLY — 2
1 1/2" = 1'-0"




## EXTERIOR WALL - PLASTER - BASE — 1
3" = 1'-0"

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DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

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| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**PLASTER DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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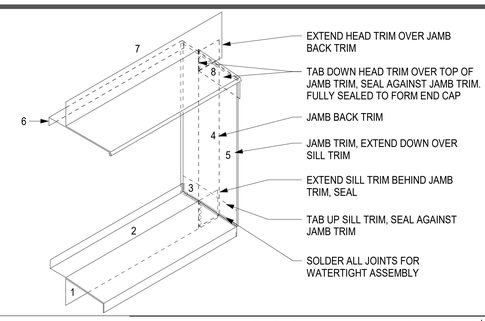
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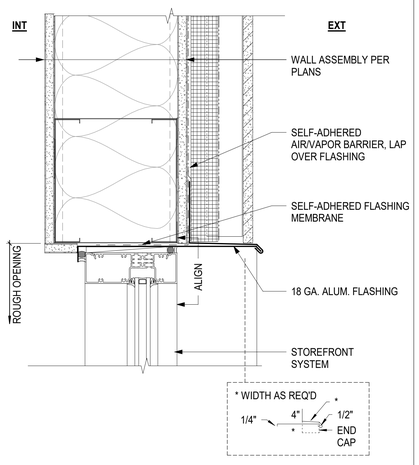
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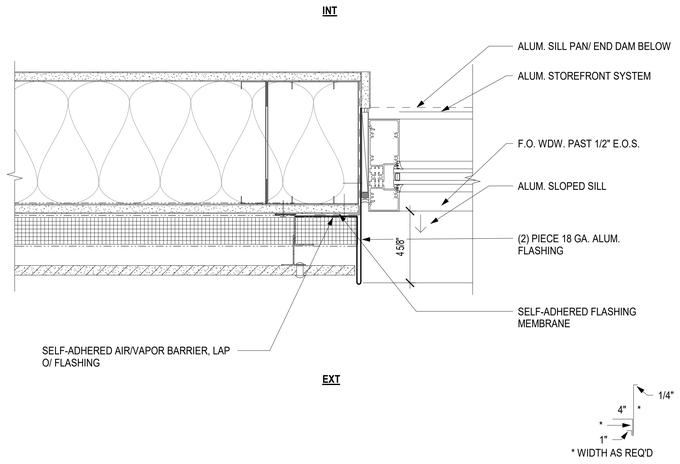
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1. SILL BOTTOM TRIM
2. SILL TRIM
3. SILL TRIM TAB UP
4. JAMB BACK TRIM
5. JAMB TRIM
6. HEAD BOTTOM TRIM
7. HEAD TOP TRIM
8. HEAD TOP TRIM TAB DOWN



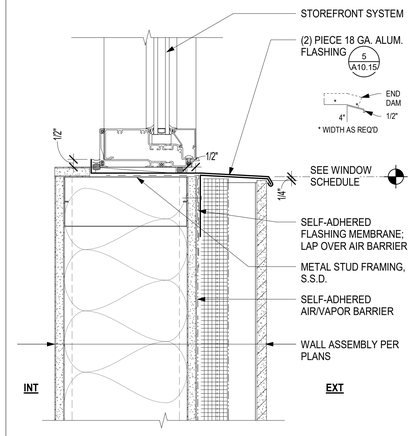

**FLASHING AT FRAMED OPENING** 5 — 3" = 1'-0"



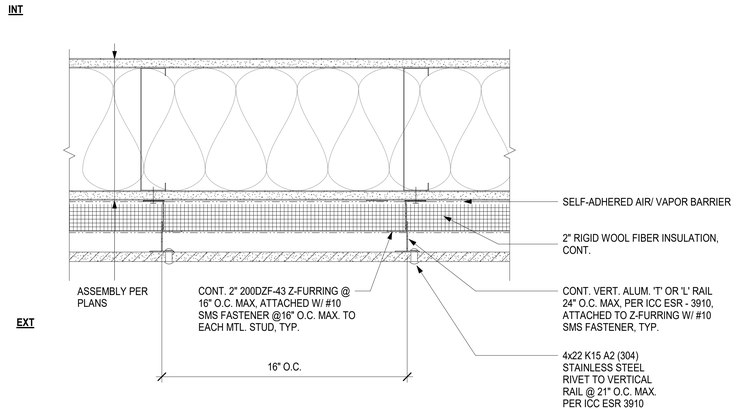

**FIBER CEMENT PANEL STOREFRONT HEAD SECTION VIEW** 18 — 3" = 1'-0"



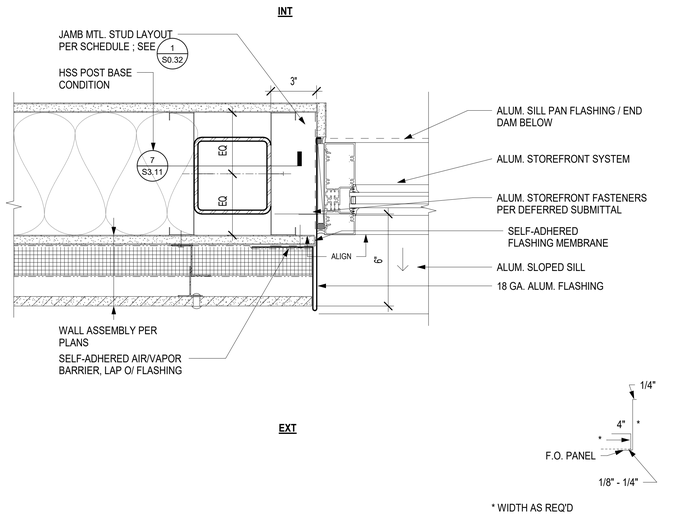

**FIBER CEMENT PANEL @ STOREFRONT JAMB - PLAN VIEW** 8 — 3" = 1'-0"



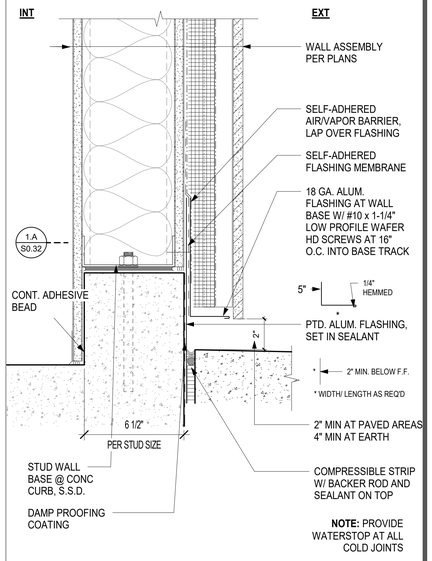

**FIBER CEMENT PANEL @ STOREFRONT SILL** 3 — 3" = 1'-0"




**FIBER CEMENT PANEL - TYPICAL - PLAN VIEW** 16 — 3" = 1'-0"




**FIBER CEMENT PANEL @ STOREFRONT JAMB W/ HSS - PLAN VIEW** 6 — 3" = 1'-0"




**FIBER CEMENT PANEL @ CONCRETE CURB - SECTION VIEW** 1 — 3" = 1'-0"

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SHEET NAME:

**FIBER CEMENT DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

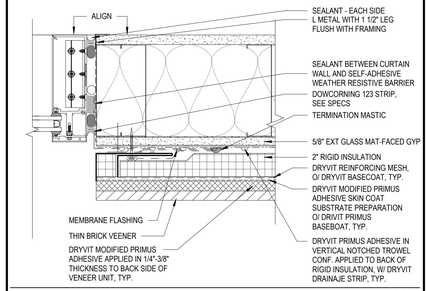
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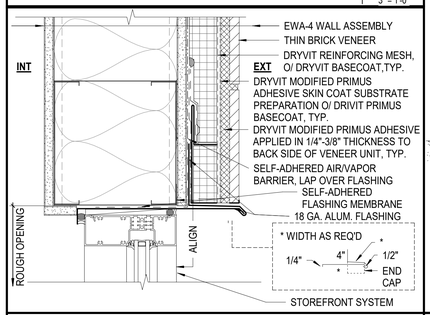
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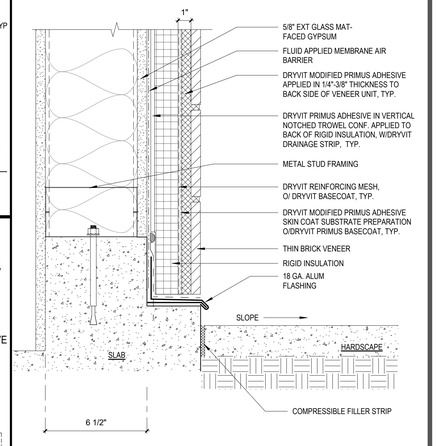
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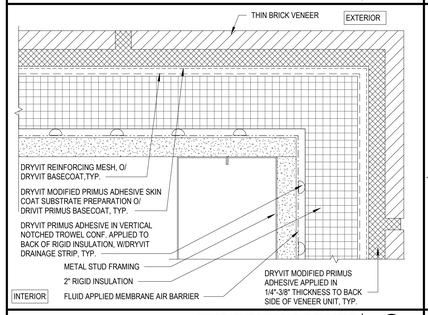

## STOREFRONT JAMB @ BRICK 10
3" = 1'-0"



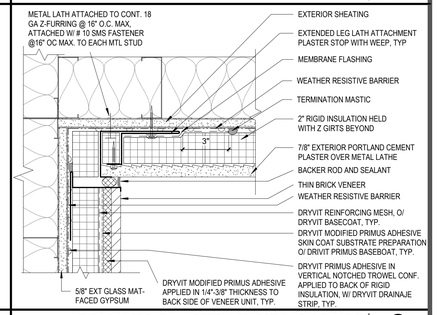

## STOREFRONT HEAD @ BRICK 9
3" = 1'-0"



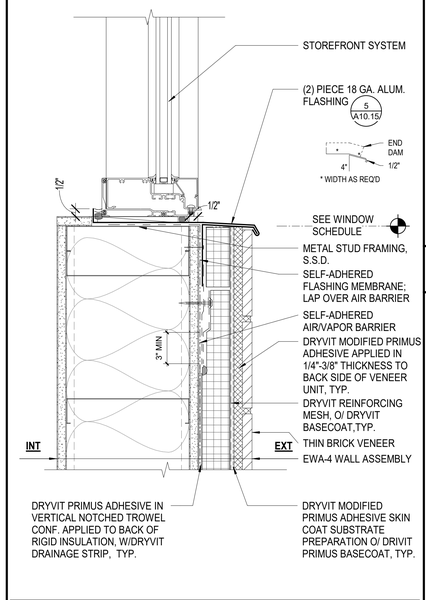

## BRICK VENEER BASE @ FINISH PAVEMENT 4
3" = 1'-0"



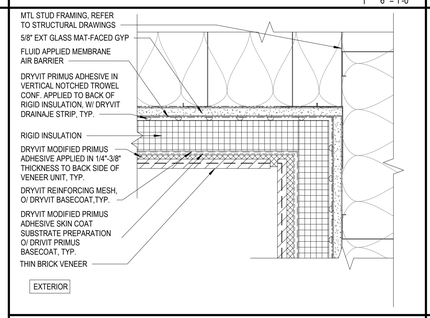

## TYP BRICK CORNER 8
6" = 1'-0"



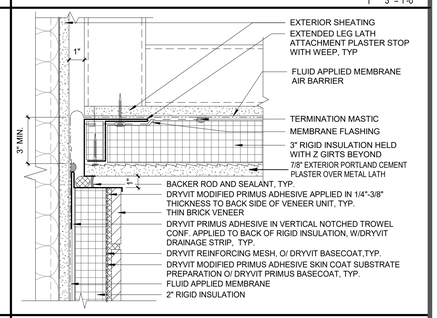

## BRICK TO PLASTER INSIDE CORNER 3
3" = 1'-0"



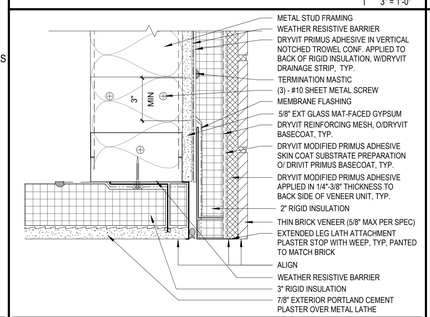

## STOREFRONT SILL@ BRICK 11
3" = 1'-0"



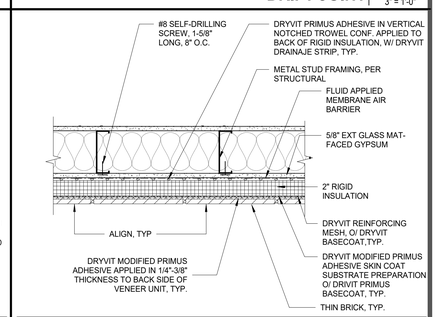

## THIN BRICK - INSIDE CORNER 7
3" = 1'-0"




## PLASTER SOFFIT TO BRICK VENEER AT DRIFT JOINT 2
3" = 1'-0"




## BRICK VENEER WALL TO PLASTER SOFFIT 6
3" = 1'-0"




## TYP ACCENT BRICK DETAIL 1
1 1/2" = 1'-0"


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HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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ELAINE
MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**BRICK VENEER DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

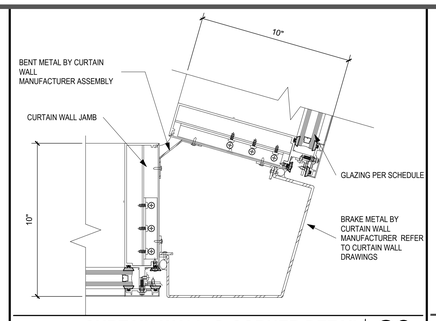
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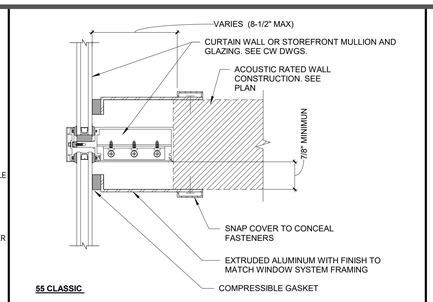
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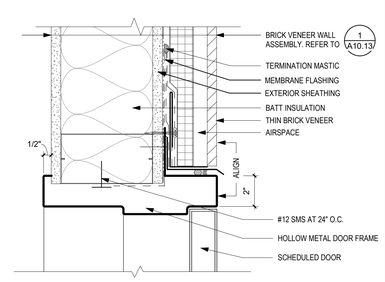
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT SHEETS ORIGINAL PAGE SIZE



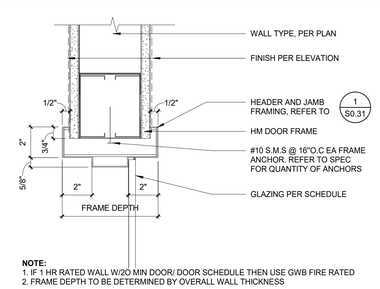

## CURTAIN WALL @ CORNER DETAIL — 20
3" = 1'-0"




## TYP EXTERIOR CURTAIN WALL JAMB — 15
3" = 1'-0"

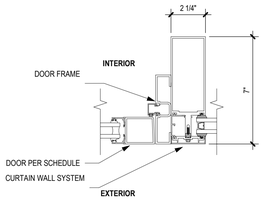



## DOOR HEAD @ THIN BRICK — 10
3" = 1'-0"

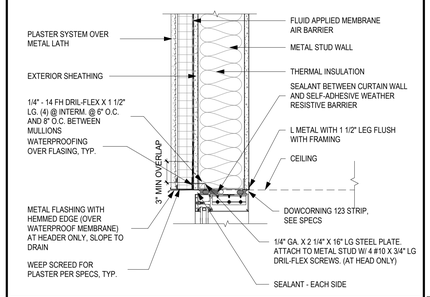



**NOTE:**
1. IF 1 HR RATED WALL W/2O MIN DOOR/ DOOR SCHEDULE THEN USE GWB FIRE RATED
2. FRAME DEPTH TO BE DETERMINED BY OVERALL WALL THICKNESS

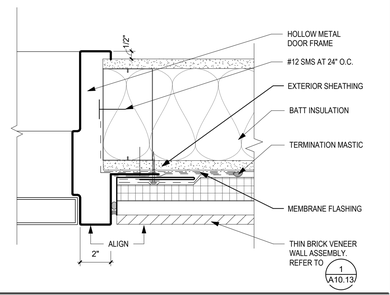
## INTERIOR HM WINDOW OR SIDE-LIGHT. HEAD, JAMB, SILL SIM. — 5
3" = 1'-0"



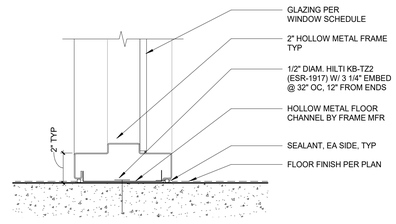

## TYP CURTAIN WALL - DOOR JAMB @ MULLION — 19
3" = 1'-0"



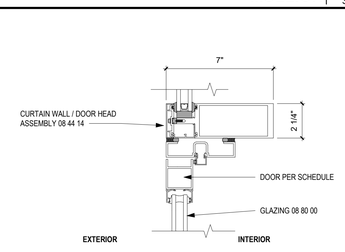

## TYP STOREFRONT - HEAD @ DRIFT JOINT — 14
1 1/2" = 1'-0"



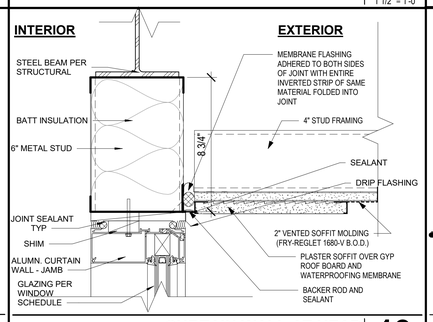

## DOOR JAMB @ THIN BRICK — 9
3" = 1'-0"



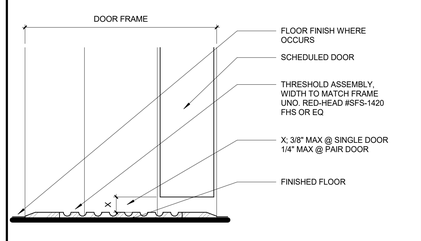

## INTERIOR HM WINDOW OR SIDE-LIGHT. SILL @ FLOOR — 4
3" = 1'-0"




## TYP CURTAIN WALL - DOOR HEAD @ MULLION — 18
3" = 1'-0"

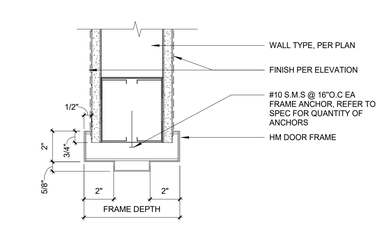



## CURTAIN WALL AT HEAD — 13
3" = 1'-0"



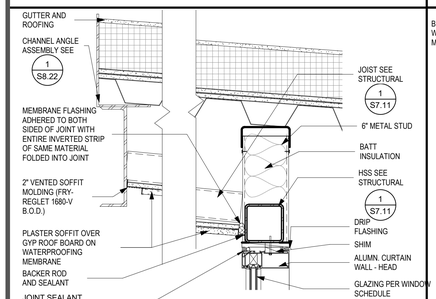

**NOTE:**
1. THIS DETAIL APPLIES TO ALL 45, 60, 90 MIN, FIRE RATED DOORS

## THRESHOLD AT RATED DOORS, 45 MINUTES AND ABOVE — 8
6" = 1'-0"

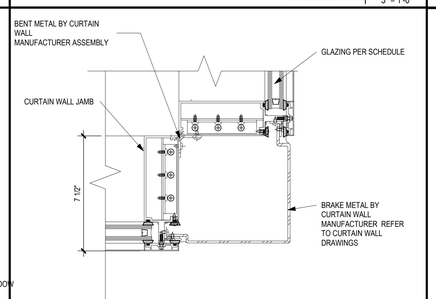



**NOTE:**
1. IF 1 HR RATED WALL W/2O MIN DOOR/ DOOR SCHEDULE THEN USE GWB FIRE RATED
2. FRAME DEPTH TO BE DETERMINED BY OVERALL WALL THICKNESS

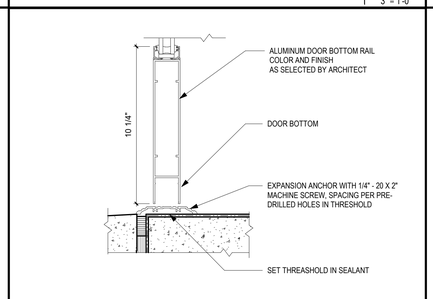
## INTERIOR HM DOOR HEAD, JAMB SIM. — 3
3" = 1'-0"




## STOREFRONT HEAD @ GL X3 — 22
1 1/2" = 1'-0"

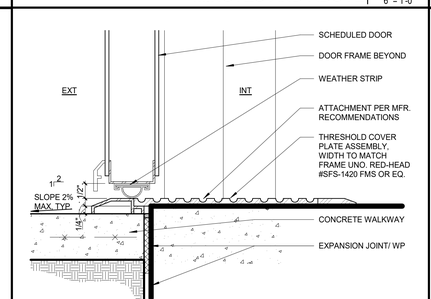



## TYP CURTAIN WALL - JAMB @ BREAK METAL 7.5" — 17
3" = 1'-0"

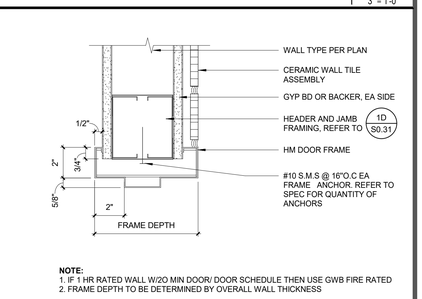



**NOTE:** SEAL ALL THRESHOLD WITH EITHER 3 ROWS OF SEALANT.

## TYP CURTAIN WALL THRESHOLD FLOOR ATTACHMENT DETAIL — 12
3" = 1'-0"

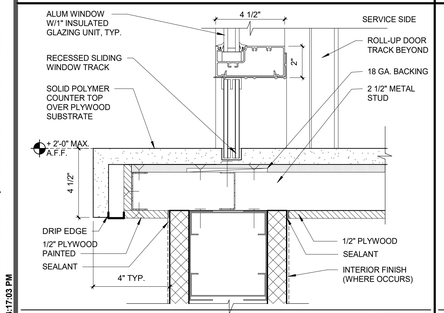



## EXTERIOR DOOR THRESHOLD @ GROUND FLOOR — 7
6" = 1'-0"

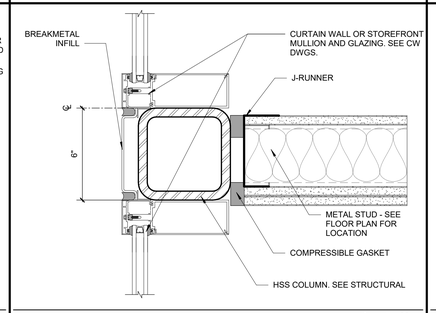



**NOTE:**
1. IF 1 HR RATED WALL W/2O MIN DOOR/ DOOR SCHEDULE THEN USE GWB FIRE RATED
2. FRAME DEPTH TO BE DETERMINED BY OVERALL WALL THICKNESS

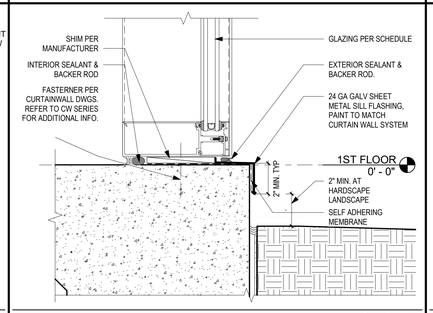
## INTERIOR HM DOOR HEAD, JAMB SIM. AT TILE WALL — 2
3" = 1'-0"



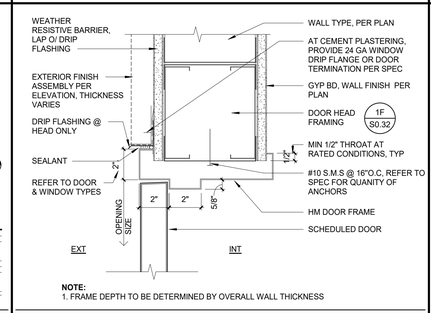

## INTERIOR - ALUMINIUM WINDOW SERVICE SILL AT COUNTER — 21
3" = 1'-0"




## TYP EXTERIOR CURTAIN WALL_BREAK METAL DETAIL — 16
3" = 1'-0"

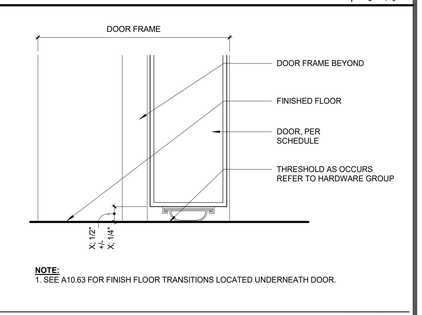



## TYP CURTAIN WALL - ATTACHMENT AT GRADE — 11
3" = 1'-0"




**NOTE:**
1. FRAME DEPTH TO BE DETERMINED BY OVERALL WALL THICKNESS

## EXTERIOR HM DOOR HEAD, JAMB SIM. — 6
3" = 1'-0"




**NOTE:**
1. SEE A10.63 FOR FINISH FLOOR TRANSITIONS LOCATED UNDERNEATH DOOR.

## TYPICAL INTERIOR DOOR SILL — 1
6" = 1'-0"

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3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
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## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL OPENING DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

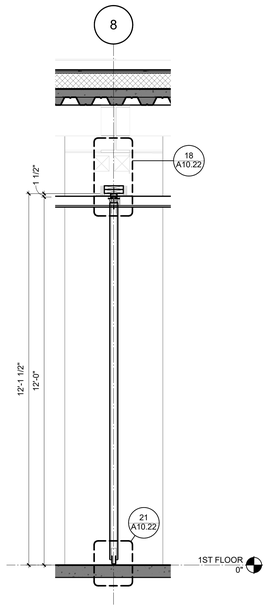
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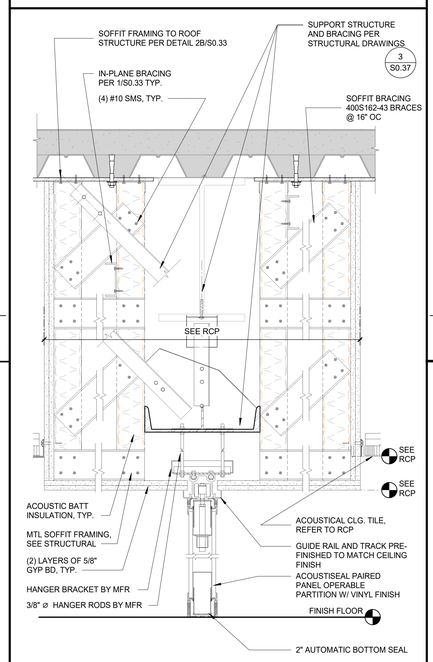
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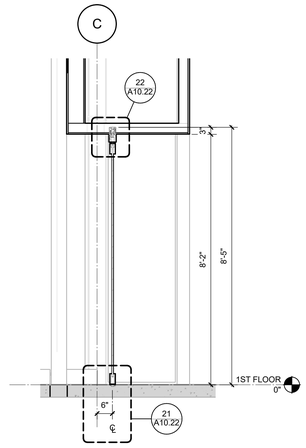
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EXACTLY 1" LONG ON THIS
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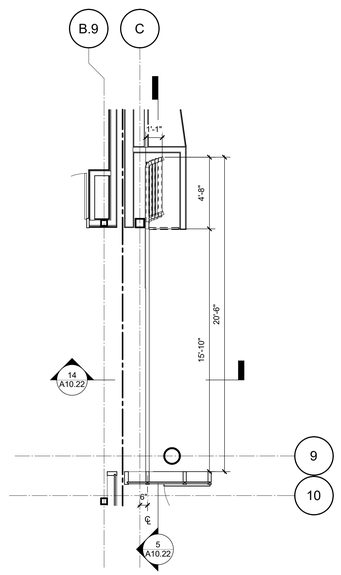

**DRESSING ROOM - SLIDING OPERABLE PARTITION - SECTION** 24 — 1/2" = 1'-0"



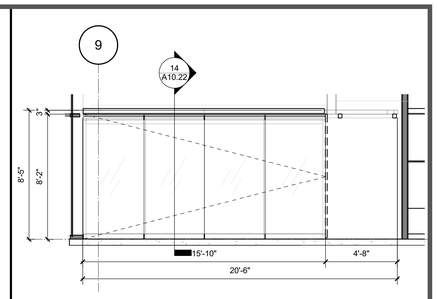

**DRESSING ROOM - SLIDING OPERABLE PARTITION** 18 — 1 1/2" = 1'-0"



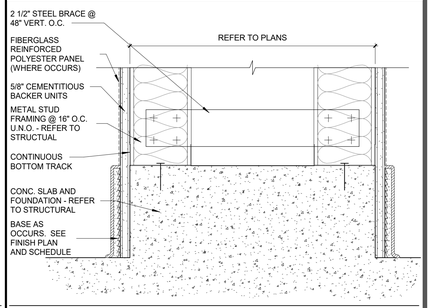

**ADMIN LOBBY & THEATER LOBBY - GLAZED OPERABLE PARTITION - SECTION** 14 — 1/2" = 1'-0"




**ADMIN LOBBY & THEATER LOBBY - GLAZED OPERABLE PARTITION - PLAN** 9 — 1/4" = 1'-0"



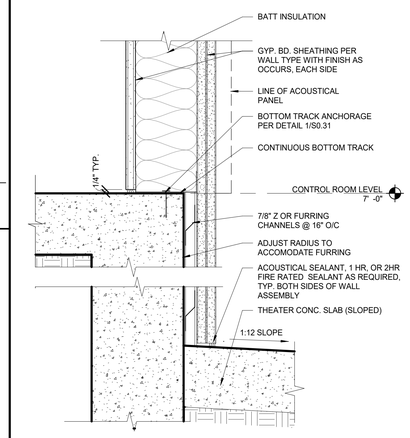

**ADMIN LOBBY & THEATER LOBBY - GLAZED OP. PARTITION - ELEVATION** 5 — 1/4" = 1'-0"



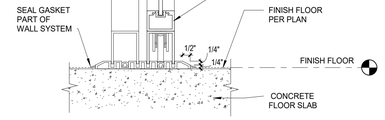

**INTERIOR WALL BASE CHASE AT RAISED CURB** 4 — 3" = 1'-0"




**GLAZED OPERABLE PARTITION - HEAD** 22 — 6" = 1'-0"



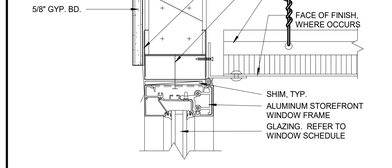

**WALL FRAMING AT CONTROL BOOTH/SOUND ROOM** 16 — 3" = 1'-0"



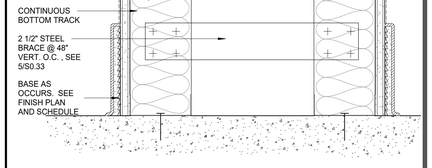

**SLIDING DOOR - THRESHOLD** 13 — 3" = 1'-0"




**GUARD @ BALCONY STAIR** 11 — 1 1/2" = 1'-0"



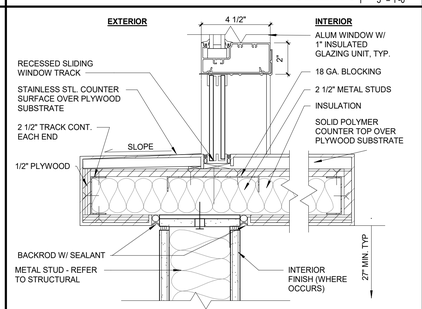

**ALUMINUM WINDOW HEAD AT METAL PANEL CEILING** 8 — 3" = 1'-0"



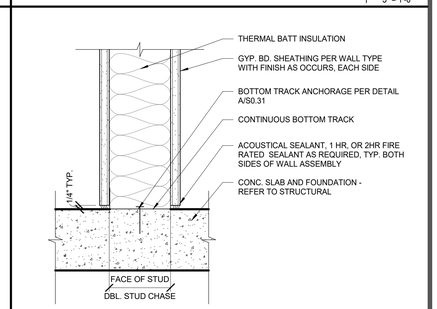

**INTERIOR WALL BASE CHASE** 3 — 3" = 1'-0"



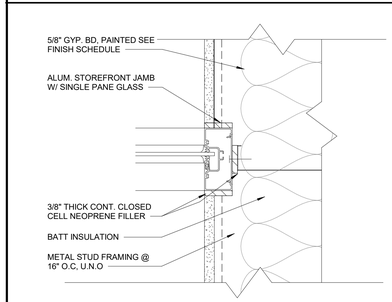

**GLAZED OPERABLE PARTITION - SILL** 21 — 6" = 1'-0"



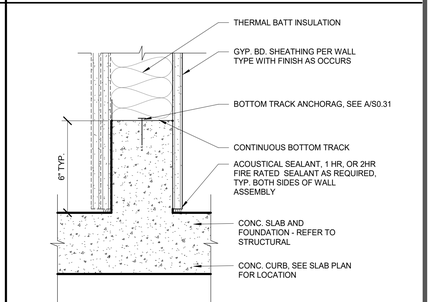

**EXTERIOR ALUM. WINDOW SERVICE SILL AT STAINLESS STEEL COUNTER** 7 — 3" = 1'-0"




**INTERIOR PARTITION** 2 — 3" = 1'-0"




**INTERIOR - ALUMINUM WINDOW SERVICE JAMB** 6 — 3" = 1'-0"




**CONCRETE CURB AT INTERIOR PARTITION** 1 — 3" = 1'-0"

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**WALL DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

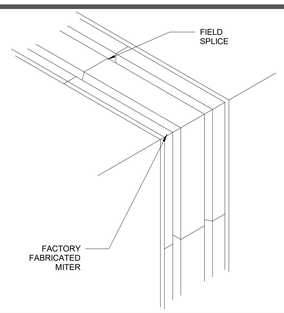
DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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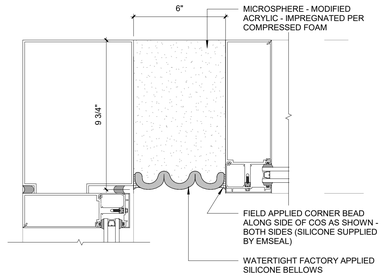
# A10.22

PLEASE RECYCLE

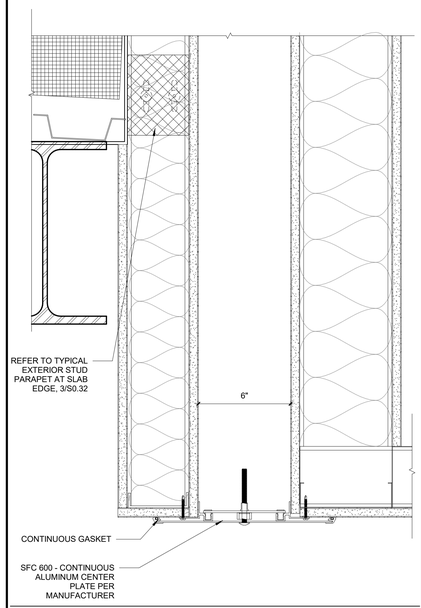
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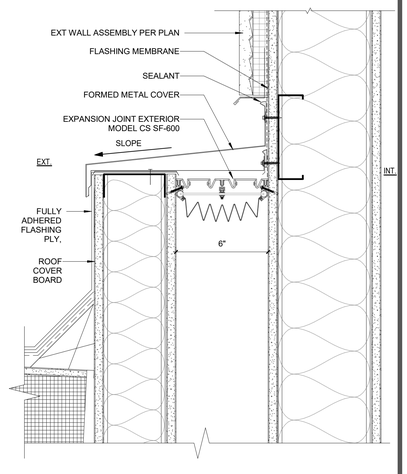

**EXPANSION JOINT - OUTSIDE MITER** | **10** NTS



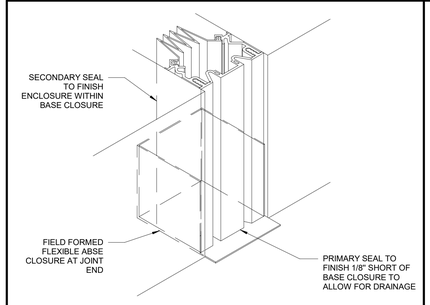

**EXPANSION JOINT AT CURTAIN WALL** | **5** 3" = 1'-0"



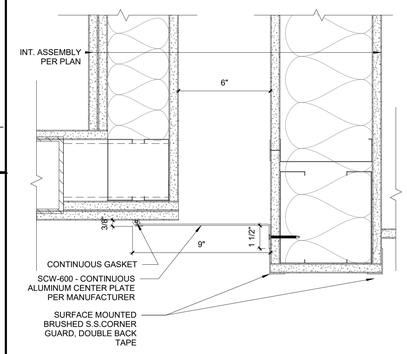

**EXPANSION JOINT AT GL B.9 - C - CEILING TRANSITION-VB-WORKING** | **8** 3" = 1'-0"



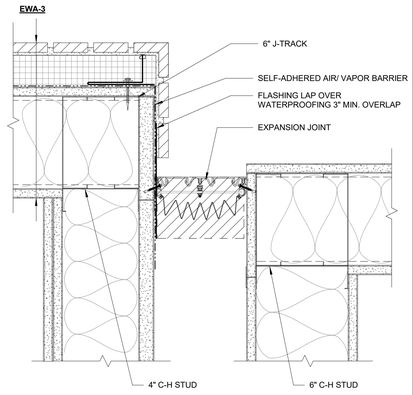

**EXPANSION JOINT AT GL B.9 - C - PARAPET TO WALL - WALL SECTION** | **3** 3" = 1'-0"



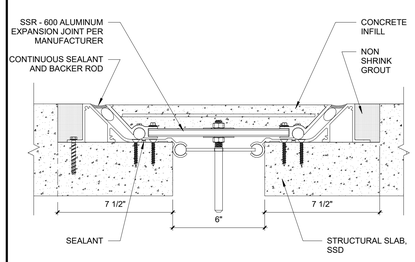

**EXPANSION JOINT - BASE ENCLOSURE** | **12** NTS




**EXPANSION JOINT AT GL 7 - WALL TO WALL INTERIOR - PLAN VIEW** | **6** 3" = 1'-0"




**EXPANSION JOINT AT GL 7 - WALL TO WALL - PLAN VIEW** | **1** 3" = 1'-0"




**EXPANSION JOINT - FLOOR TO FLOOR** | **11** 3" = 1'-0"

IDENTIFICATION STAMP
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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CONTROL JOINT DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

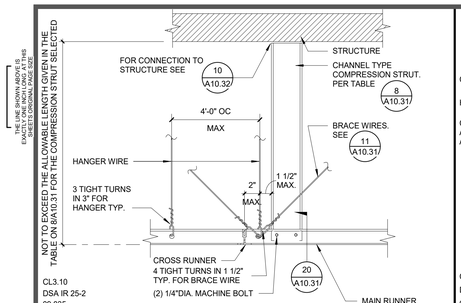
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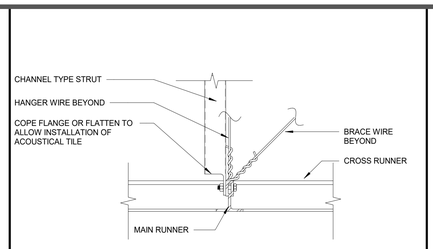
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6/26/2025 4:17:14 PM

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CL3.10
DSA IR 25-2
09.035

## SUSPENDED ACOUSTICAL CLG - CHANNEL TYPE STRUT | 25 | 1 1/2" = 1'-0"



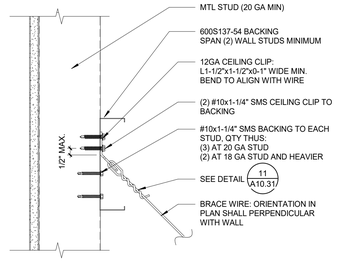

CL3.10
DSA IR 25-2
09.032

## SUSPENDED ACOUSTICAL CLG - CHANNEL TYPE STRUT (SECTION) | 20 | 3" = 1'-0"

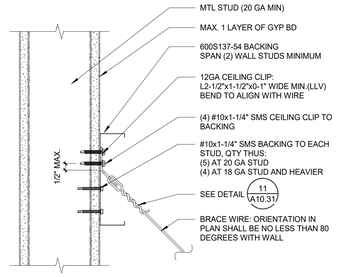
| STRUCTURAL CONDITION OF FLOOR/ ROOF ABOVE SUSPENDED CEILING | APPLICABLE HANGER WIRE DETAIL | APPLICABLE BRACING WIRE DETAIL |
|---|---|---|
| METAL DECK | 23 A10.31 | 4 S0.33 |
| CONCRETE OVER METAL DECK | 18 A10.31 | 13 A10.31 |
| STRUCTURAL STEEL | 17 A10.31 | 16 A10.31 |
| METAL STUD WALL | | 9 A10.31 |

CL4.11
DSA IR 25-2

## HANGER AND BRACING WIRE CONNECTION MATRIX | 15 | 3" = 1'-0"




**WALL WITHOUT GYP. BOARD**




CL4.34
DSA IR 25-2
09.024

**WALL WITH GYP. BOARD**

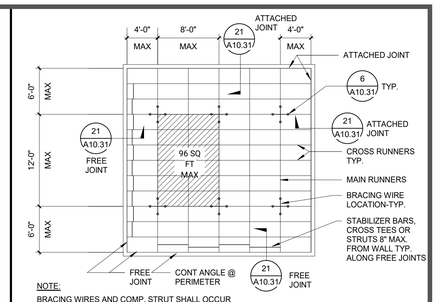
## BRACING WIRE CONNECTION TO MTL STUD WALL | 9 | 3" = 1'-0"

| EMT COMPRESSION STRUT | MAXIMUM LENGTH |
|---|---|
| 1/2" DIAMETER EMT (0.042" WALL THICKNESS) | 3'-11" |
| 3/4" DIAMETER EMT (0.049" WALL THICKNESS) | 6'-4" |
| 1" DIAMETER EMT (0.057" WALL THICKNESS) | 9'-9" |
| 1 1/4" DIAMETER EMT (0.065" WALL THICKNESS) | 12'-9" |
| 1 1/2" DIAMETER EMT (0.065" WALL THICKNESS) | 14'-9" |
| 2" DIAMETER EMT (0.065" WALL THICKNESS) | 18'-10" |

| CHANNEL COMPRESSION STRUT | MAXIMUM LENGTH |
|---|---|
| 250S125-33 | 5'-10" |
| 250S137-33 | 6'-10" |
| 362S137-33 | 8'-0" |
| 250S137-43 | 8'-10" |
| 400S137-43 | 10'-10" |

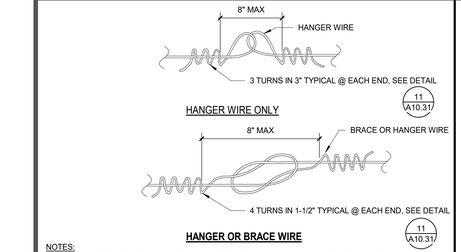
CL3.21
DSA IR 25-2
09.023

## COMPRESSION STRUT TABLE | 8 | 3" = 1'-0"




NOTE:
BRACING WIRES AND COMP. STRUT SHALL OCCUR AT EVERY 96 SQ. FT. MAX. IN ROOMS OVER 144 SQ. FT.

## TYP CLG PLAN FOR 8'-0" X 12'-0" BRACE ASSEMBLY SPACING | 5 | 1/8" = 1'-0"

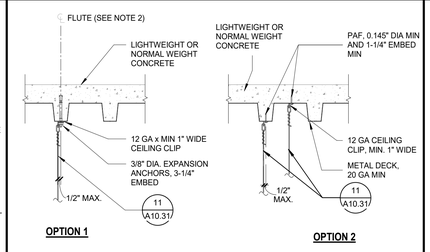


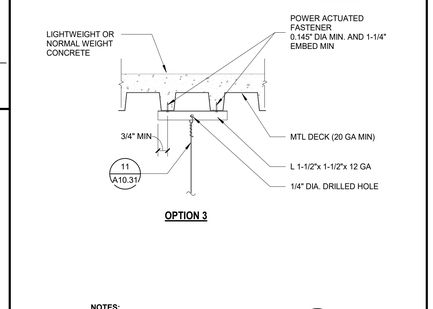

**HANGER OR BRACE WIRE**

NOTES:
1. WIRE SPLICES ARE SHOWN LOOSELY TIED FOR ILLUSTRATIVE PURPOSES ONLY AND SHALL BE DRAWN TIGHT TO COMPLETE INSTALLATION WHEN CONSTRUCTED.
2. WIRE LOOPS SHALL BE TIGHTLY WRAPPED AND SHARPLY BENT TO PREVENT ANY VERTICAL MOVEMENT OR ROTATION WITHIN THE LOOPS
3. EACH HANGER AND BRACE WIRE SHALL BE SPLICED NO MORE THAN ONCE ALONG ITS LENGTH.

CL6.10
DSA IR 25-2

## CEILING WIRE SPLICES | 24 | 3" = 1'-0"

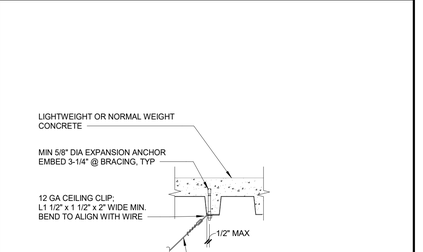



**NOTES:**
1. FOR ADDITIONAL INFORMATION, REFER TO DETAIL 11 A10.31
2. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE.
3. TEST POST-INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTES 5.01 AND 5.02 IN 1 A10.31

CL4.21
DSA IR 25-2
09.027

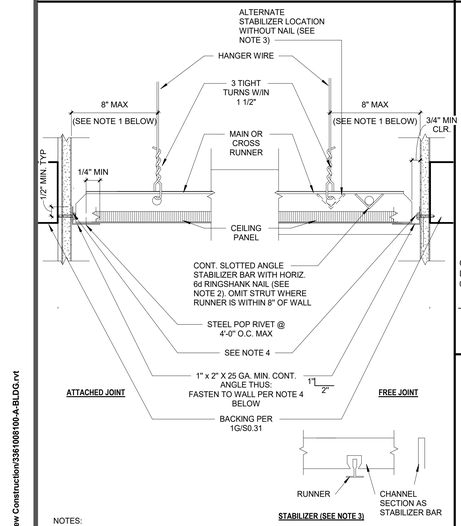
## HANGER WIRE CONNECTION TO CONCRETE OVER MTL DECK | 18 | 1 : 10




**NOTES:**
1. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CEILING NOTE 5.03
2. REFER TO 11 A10.31 FOR ADDITIONAL DETAILS
3. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE.

CL4.31
DSA IR 25-2
09.031

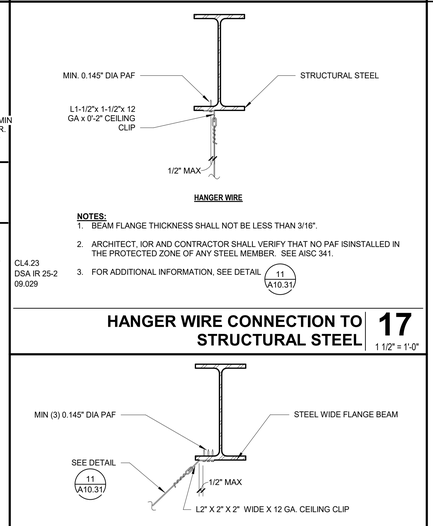
## BRACING WIRE CONNECTION TO CONCRETE OVER MTL DECK | 13 | 1 : 10




NOTES:
1. PROVIDE #12 GAUGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN (8) INCHES OF THE SUPPORT OR WITHIN (1/4) OF THE LENGTH OF THE END TEE, WHICHEVER IS LESS. FOR THE PERIMETER OF THE CEILING AREA, PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS (8) INCHES OR LESS.
2. NAILS AT ENDS OF HORIZONTAL STABILIZERS ARE TO BE PLACED WITH NAIL HEAD TOWARD CENTER LINE OF SPAN OF STRUT.
3. STABILIZER BAR MAY BE SLOTTED APPROVED ANGLES OR CHANNELS WITH "DIAMOND POINTS" OF SPRING STEEL WHICH SNAP TIGHT TO PREVENT MOVEMENT OF STRUT.
4. FASTEN ANGLE TO WALL STUD OR BLOCKING AS FOLLOWS:
   A. METAL STUD (20 GA. MIN.) WALL: (1) #10 SMS AT 24" O.C. MAX.
5. FOR CEILING ATTACHMENT TO STRUCTURE REFER TO 4/S0.33

09.033

## CEILING PERIMETER | 21 | 3" = 1'-0"



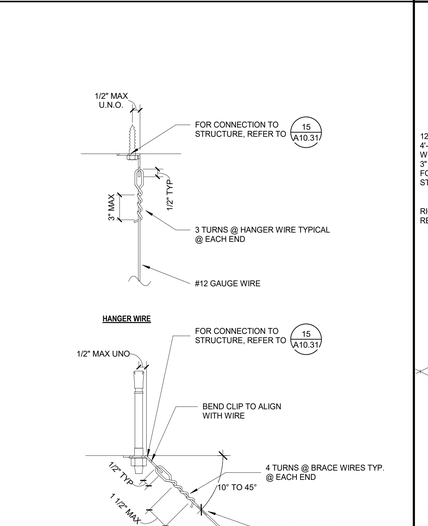

CL4.23
DSA IR 25-2
09.029

## HANGER WIRE CONNECTION TO STRUCTURAL STEEL | 17 | 1 1/2" = 1'-0"



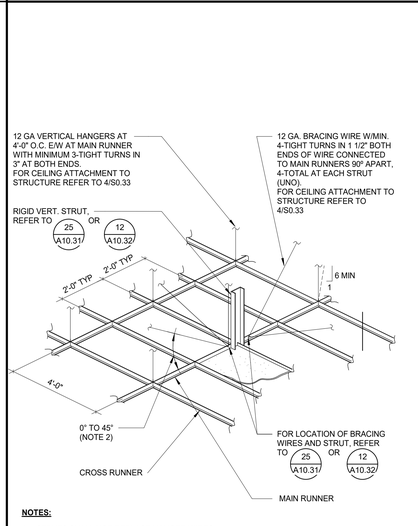

CL4.33
DSA IR 25-2
09.030

## BRACING WIRE CONNECTION TO STRUCTURAL STEEL | 16 | 1 1/2" = 1'-0"




CL4.10
DSA IR 25-2
09.034

## HANGER AND BRACING WIRE CONNECTION - TYPICAL WIRE TURNS | 11 | 3" = 1'-0"




**NOTES:**
1. STRUTS SHALL NOT REPLACE HANGER WIRES.
2. THE MINIMUM ACCEPTABLE ANGLE IS DETERMINED SUCH THAT THE WIRES DO NOT INTERFERE WITH THE RUNNERS, LIGHT FIXTURES, ETC. AND REMAIN STRAIGHT AND UNOBSTRUCTED.
4. FOR CEILING ATTACHMENT TO STRUCTURE REFER TO 15/A10.31

CL2.35
DSA IR 25
09.022

## SUSPENDED CEILING - SUSPENSION AND BRACING ASSEMBLY | 6 | 3" = 1'-0"

**1. CEILING SYSTEM GENERAL NOTES: (HEAVY DUTY)**

**1.01** Ceiling system components shall comply with ASTM C635 and Section 1.1 of ASTM E580.
**1.02** The ceiling grid system must be rated heavy duty as defined by ASTM C635.
**1.03** Ceiling systems. The following ceiling system(s) is/are part of the scope of this project:

TYPICAL ACOUSTICAL CEILING/GRID SYSTEM

MANUFACTURER'S CATALOG NAMES/NO.S (ARMSTRONG or EQUAL):

| | |
|---|---|
| GRID: | HEAVY DUTY 9/16" "INTERLUDE XL" SUSPENSION SYSTEM, ICC-ESR 1308/ DSA IR 25-2.13 |
| WALL ANGLE: | #7877 SHADOW MOLD (COLOR TO MATCH PANEL SYSTEM)* ESR 1308* *TO BE USED WITH "BERC 2 CLIP" & "SEISMIC RX" SYSTEM BY ARMSTRONG |
| ADD'L EDGE TRIM: | 4"H EDGE TRIM WHERE APPLICABLE (COLOR TO MATCH CLG PANEL) |
| CEILING TILE: | 2'X4' "ULTIMA HIGH NRC" BEVELD TEGULAR, COLOR: WHITE FACTORY CUT ALL EDGES @ LIGHT FIXTURE |

**1.05** Ceiling panels shall not support any light fixtures, air terminals or devices.
**1.06** For acoustical tile panels of any material other than mineral or glass fiber, a ¾" clearance shall be provided between the panel and the wall on the sides of the ceiling free to slip. Clearance between the ceiling grid runners and walls shall comply with the details on these drawings regardless of ceiling tile material.

**2. MATERIALS:**

**2.01** Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641. Wire shall be #12 gauge (0.106" diameter) with soft temper and minimum ultimate tensile strength = 70 ksi.
**2.02** Galvanized sheet steel (including that used for metal stud compression struts) shall conform to ASTM A653, or other equivalent sheet steel listed in Section A3.1 of the North American Specification for the Design of Cold-Formed Steel Structural Members (AISI S100).
Material 43 mil (18 gauge) thick and lighter shall have minimum yield strength of 33 ksi.
Material 54 mil (16 gauge) thick and heavier shall have a minimum yield strength of 50 ksi.
**2.03** Electrical metallic tube (EMT) shall conform to ANSI C80.3/UL 797 carbon steel with G90 galvanizing. EMT shall have minimum yield strength of 30 ksi and minimum ultimate strength of 48 ksi.

**3. ATTACHMENT OF HANGER AND BRACING WIRES:**

**3.01** All ceiling hanger and bracing wires shall be separated at least six (6) inches from all unbraced ducts, pipes, conduit, etc.
**3.02** Hanger and bracing wires shall not attach to or bend around obstructions including but not limited to: piping, ductwork, conduit and equipment.
**3.03** Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires.
**3.04** Slack safety wires shall be considered hanger wires for installation and testing requirements.
**3.05** Hanger and bracing wire anchorage to the structure shall be installed such that the direction of the anchorage aligns with the direction of the wire. Bracing wire ceiling clips shall be bent as shown in the details and rotated as required to align with the direction of the wire. Screws in wood shall be installed to align with the direction of the wire.

**4. FASTENERS AND WELDING:**

**4.01** Sheet metal screws shall comply with ASTM C1513 and ASME B18.6.3. Penetration of screws through joined material shall not be less than three exposed threads.
**4.04** If not otherwise specified in the evaluation report, power-actuated fasteners installed in steel shall be installed so the entire pointed end of the fastener is driven through the steel member.
**4.05** Power-actuated fasteners in concrete or masonry are not permitted for bracing wires.
**4.06** Concrete reinforcement and prestressing tendons shall be located by non-destructive means prior to installing post-installed anchors.
**4.07** Welding shall be in accordance with AWS D1.3 using E60XX series electrodes.

**5. TESTING:**

**5.01** All field testing must be performed in the presence of the project inspector.
**5.02** Post-installed anchors in concrete used to support hanger wires shall be tested at a frequency of 10 percent. Power actuated fasteners (PAF) in concrete shall be field tested for 200 lbs. in tension. All other post-installed anchors in concrete shall be tested in accordance with CBC Section 1910A.5.
**5.03** Post-installed anchors in concrete used to attach bracing wires shall be tested at a frequency of 50 percent in accordance with CBC Section 1910A.5

**6. LUMINAIRES**:

**6.01** All luminaires shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the luminaire. A minimum of two screws or approved fasteners are required at each luminaire, per ASTM E580, Section 5.3.1.
**6.02** Surface-mounted luminaires shall be attached to the main runner with at least two positive clamping devices. The clamping device shall completely surround the supporting ceiling runner and be made of steel with a minimum thickness of #14 gauge. Rotational spring catches are not permitted. A #12 gauge slack safety wire shall be connected from each clamping device to the structure above. Additional supports shall be provided when luminaires are (8) feet or longer or exceed 56 lb. Maximum spacing between supports shall not exceed (8) feet.
**6.03** Luminaires weighing less than or equal to 10 lbs. supported directly on the ceiling runners shall have a minimum of (1) #12 gauge slack safety wire connected from the fixture housing to the structure above.
**6.04** Luminaires weighing greater than 10 lbs. but less than or equal to 56 lbs. supported directly on the ceiling runners shall have a minimum of (2) #12 gauge slack safety wires connected from the fixture housing at diagonal corners to the structure above.
Exception: All luminaires greater than two by four feet weighing less than 56 lbs. shall have a #12 gauge slack safety wire at each corner.
**6.05** All luminaires weighing greater than 56 lb. shall be independently supported from the structure above. See support details on these drawings for more information.

**7. SERVICES WITHIN THE CEILING:**

**7.01** All flexible sprinkler hose fitting mounting brackets, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means. Screws or other fasteners specified on the drawings are required. A minimum of two attachments are required at each component.
**7.02** Ceiling-mounted services weighing less than or equal to 20 lbs. shall have (1) #12 gauge slack safety wire attached from the terminal or service to the structure above.
**7.03** Ceiling-mounted services weighing more than 20 lb. but less than or equal to 56 lb. shall have (2) #12 gauge slack safety wires (at diagonal corners) connected from the terminal or service to the structure above.
**7.04** Ceiling-mounted services weighing more than 56 lb. shall be independently supported from the structure above. See support details on these drawings for more information.

**8. OTHER DEVICES WITHIN THE CEILING:**

**8.01** All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid. Devices weighing more than 10 lbs. shall have (1) #12 gauge slack safety wire anchored to the structure above. Devices weighing more than 20 lbs. shall be independently supported from the structure above.

(REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION)

09.020

## CEILING REQUIREMENTS PER DSA IR 25-2 | 1 | 1/8" = 1'-0"

IDENTIFICATION STAMP
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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CONSTRUCTION TRADES ACADEMY AT ARROYO HIGH SCHOOL — COMMITTED TO COLLEGE AND CAREER — ESTABLISHED 1991


HMC Architects
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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CEILING DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

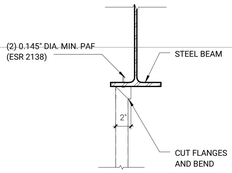
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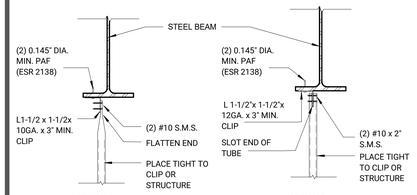

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**CHANNEL STRUT**

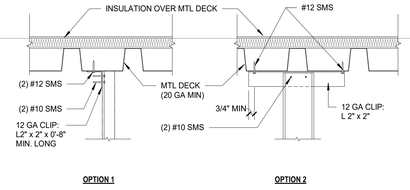



**EMT STRUT**

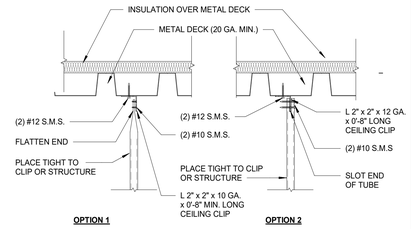
NOTES:

1. STRUCTURAL STEEL MEMBER SHALL NOT BE LESS THAN 3/16".
2. ARCHITECT, I.O.R. AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER, SEE AISC 341.

## STRUT CONNECTION TO STRUCTURAL STEEL | 24 | 1 1/2" = 1'-0"



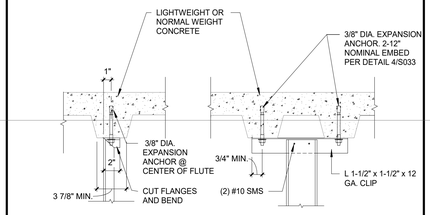

## CHANNEL STRUT




CL5.20
DSA IR 25-2
09.028

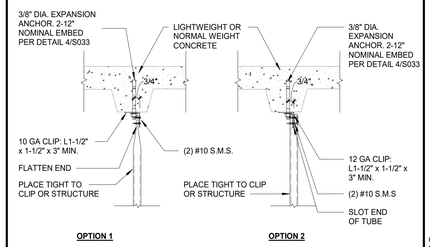
## EMT STRUT

## STRUT CONNECTION TO MTL DECK | 19 | 1 1/2" = 1'-0"




NOTES:
1. POST-INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE.
2. TEST POST INSTALLED ANCHORS IN ACCORDANCE WITH CBC SECTION 1910A.5; REFER TO STRUCTURAL DETAIL 4/S0.33 FOR ADDITIONAL DETAILS

## CHANNEL STRUT




CL5.21
DSA IR 25-2
09.028

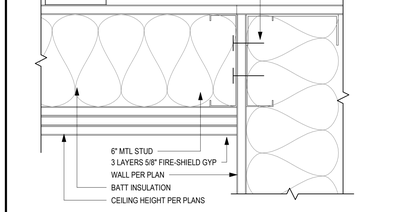
## EMT STRUT

## STRUT CONNECTION TO CONCRETE OVER MTL DECK | 14 | 1 1/2" = 1'-0"

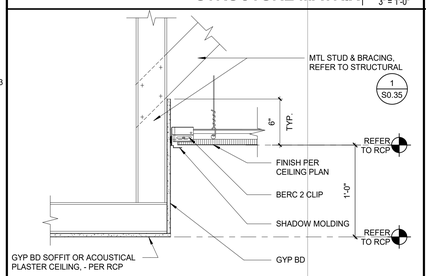
| STRUCTURAL CONDITION OF FLOOR/ ROOF ABOVE COMPRESSION STRUT | APPLICABLE DETAIL |
|---|---|
| METAL DECK | 19 / A10.32 |
| CONCRETE OVER METAL DECK | 14 / A10.32 |
| STRUCTURAL STEEL | 24 / A10.32 |

CL5.10
DSA IR 25-2

## COMPRESSION STRUT CONNECTION TO STRUCTURE MATRIX | 10 | 3" = 1'-0"

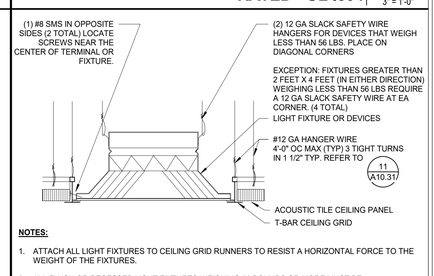



## GYPSUM CEILING TO WALL - 1 HR FIRE RATED - UL I504 | 5 | 3" = 1'-0"




09.042

## GYP BD CEILING TO SUSPENDED CEILING | 9 | 1 1/2" = 1'-0"




NOTES:
1. ATTACH ALL LIGHT FIXTURES TO CEILING GRID RUNNERS TO RESIST A HORIZONTAL FORCE TO THE WEIGHT OF THE FIXTURES.
2. ALL FLUSH OR RECESSED LIGHT FIXTURES WEIGHING 56 POUNDS OR MORE MUST BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN (4) TAUT #12 GAUGE WIRES EACH ATTACHED TO THE FIXTURE AND TO THE STRUCTURE ABOVE. THE (4) WIRES, INCLUDING ATTACHMENTS, MUST BE CAPABLE OF SUPPORTING FOUR TIMES THE WEIGHT OF THE UNIT.

## TYP FIXTURE OR DEVICE @ SUSP GRID CLG | 4 | 1 1/2" = 1'-0"




09.043

## CEILING PLASTER EXPANSION JOINT | 23 | 3" = 1'-0"




09.050 **NOTE:** THIS DETAIL APPLIES FOR ALL BREAKS IN FRAMING AT HARD LID CEILINGS

## RECESSED FIXTURE @ FRAMED CEILING | 18 | 1 1/2" = 1'-0"

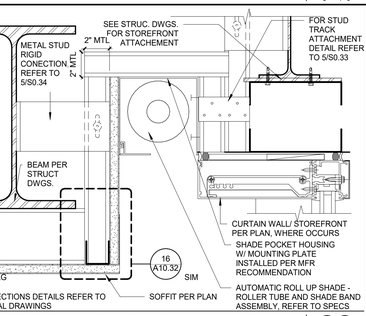



NOTES:
1. MACHINE BOLT IS NOT REQUIRED ON OPTION 3
2. OPTION 3 IS PERMITTED ONLY WHERE THE ROOF OR FLOOR STRUCTURE IS SAWN TIMBER WITHOUT GYPSUM BOARD.

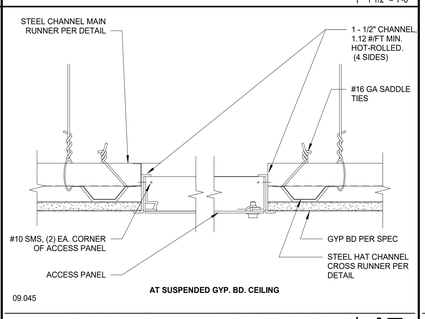
## SUSPENDED ACOUSTICAL CEILING - EMT TYPE STRUT | 12 | 1 1/2" = 1'-0"




## SUSPENDED LIGHT FIXTURE SUPPORT AT OBSTRUCTION / ACT | 2 | 1 1/2" = 1'-0"



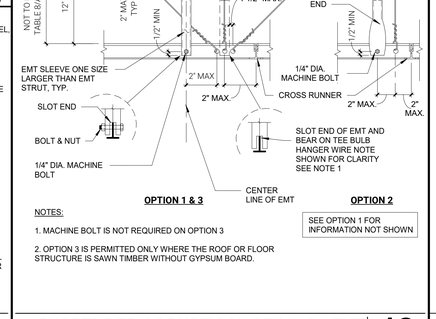

## RECESSED WINDOW SHADE AT GYP BD SOFFIT 2 | 22 | 3" = 1'-0"



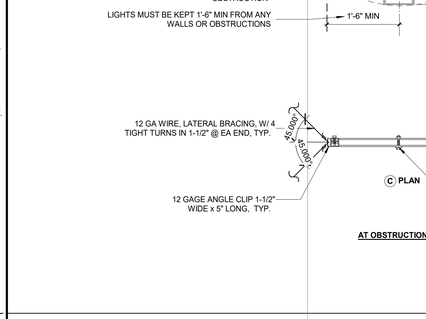

09.045

**AT SUSPENDED GYP. BD. CEILING**

## ACCESS PANEL @ SUSPENDED GYP BD CLG | 17 | 3" = 1'-0"



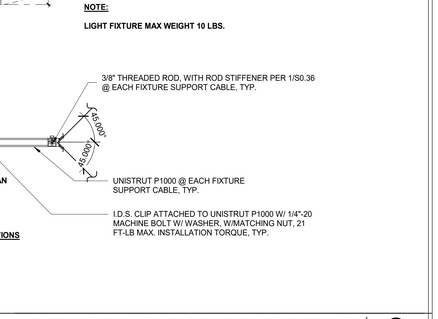

## FRAMED GYP CLG TO FRAMED CLG DETAIL | 11 | 1" = 1'-0"




NOTE:
1. PROVIDE 1/2" SIDE LAP W/ WIRE TIES AT 6" OC
2. PROVIDE 1" END LAPS OVER SUPPORTS W/ MAJOR RIBS NESTED

09.042

## PLASTER CEILING ATTACHED TO JOIST | 6 | 3" = 1'-0"




09.036

## HORIZONTAL CONTROL FOR CLG DEVICES | 1 | 1 1/2" = 1'-0"




09.51.34.01 IR25-2 DETAIL 4.29

## TYP. SADDLE TIE DETAIL | 21 | 3" = 1'-0"




## ACOUSTICAL PLASTER CEILING TO GYP SOFFIT INT | 16 | 3" = 1'-0"


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DATE: 10/15/2025



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3361008100
633 W. 5TH STREET, THIRD FLOOR, LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com
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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CEILING DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**A10.32**

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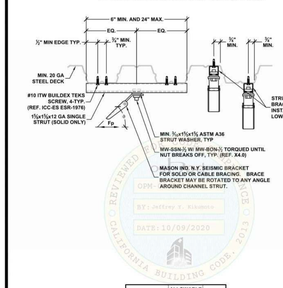
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**A10.34**

### SEISMIC BRACKET ATTACHMENT TO NON-CONCRETE FILLED METAL DECK




| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | MAX. BRACE RANGE ϕ |
|---|---|---|
| 50A TO 50E | 350 | 30°- 45° |
| 50A TO 50C | 200 | 46°- 60° |

SEE DETAIL N6.00 FOR SECTION NOTES

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, www.masonwest.com

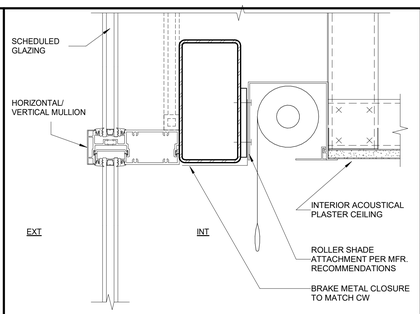
Jiafu "Jeff" Zhang, SE
California SE No. S5270

PAGE N7.10

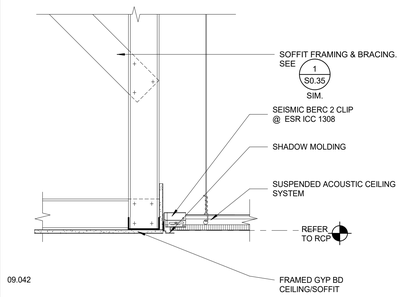
10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 738 of 846

**NOTE:**
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE.
MAXIMUM LOADING IMPOSED ON BARE METAL DECK TO BE PER S/S0.29.

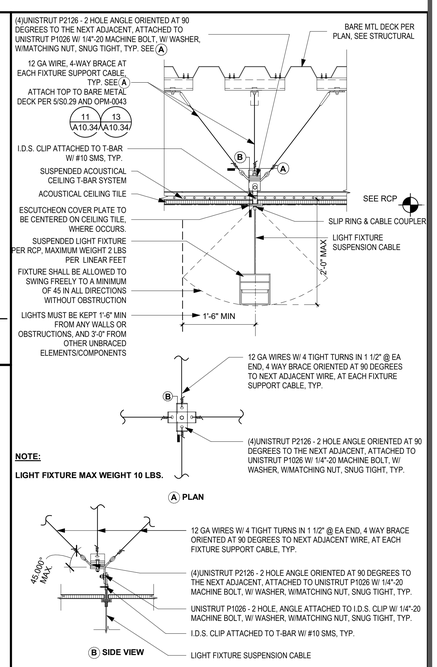
## OPM-0043 BRACKET ATTACHMENT TO BARE METAL DECK | 13
12" = 1'-0"




## EXT SF HORIZONTAL MULLION @ ROLLER SHADE | 9
3" = 1'-0"



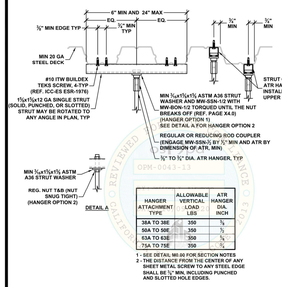

## GYP TO SUSPENDED CEILING | 8
1 1/2" = 1'-0"




**NOTE:**
**LIGHT FIXTURE MAX WEIGHT 10 LBS.**

## SUSPENDED LIGHT FIXTURE SUPPORT AT ACT | 3
1 1/2" = 1'-0"

### HANGER ATTACHMENT TO NON-CONCRETE FILLED METAL DECK




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
|---|---|---|
| 38A TO 38E | 350 | ⅜ |
| 50A TO 50E | 350 | ½ |
| 63A TO 63E | 350 | ⅝ |
| 75A TO 75E | 350 | ¾ |

1 - SEE DETAIL M5.00 FOR SECTION NOTES
2 - THE DISTANCE FROM THE CENTER OF ANY SHEET METAL SCREW TO ANY STEEL EDGE SHALL BE ½" MIN. INCLUDING PUNCHED AND SLOTTED HOLE EDGES.

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, www.masonwest.com

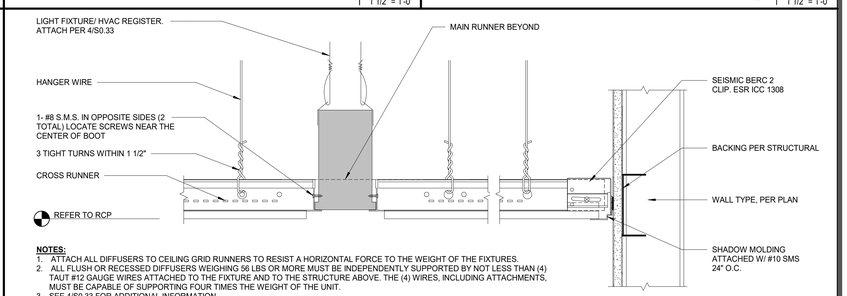
Jiafu "Jeff" Zhang, SE
California SE No. S5270

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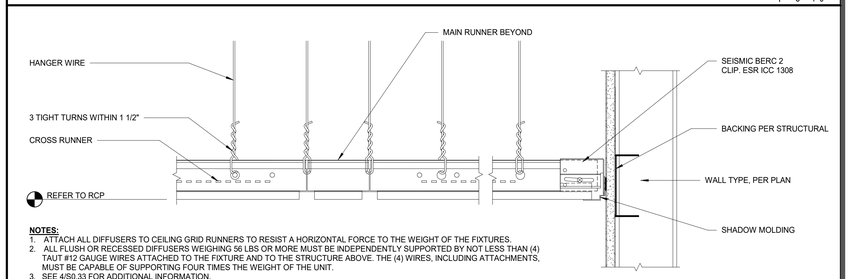
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MAXIMUM LOADING IMPOSED ON BARE METAL DECK TO BE PER S/S0.29.

## OPM-0043 HANGER ATTACHMENT TO BARE METAL DECK | 11
NTS




**NOTES:**
1. ATTACH ALL DIFFUSERS TO CEILING GRID RUNNERS TO RESIST A HORIZONTAL FORCE TO THE WEIGHT OF THE FIXTURES.
2. ALL FLUSH OR RECESSED DIFFUSERS WEIGHING 56 LBS OR MORE MUST BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN (4) TAUT #12 GAUGE WIRES ATTACHED TO THE FIXTURE AND TO THE STRUCTURE ABOVE. THE (4) WIRES, INCLUDING ATTACHMENTS, MUST BE CAPABLE OF SUPPORTING FOUR TIMES THE WEIGHT OF THE UNIT.
3. SEE 4/S0.33 FOR ADDITIONAL INFORMATION

## LINEAR DIFFUSER @ ACT | 2
3" = 1'-0"



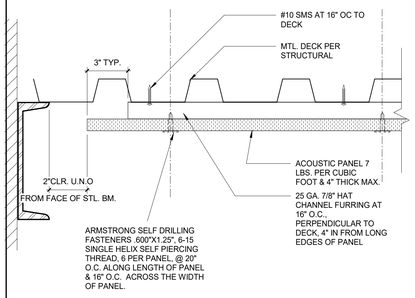

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3. SEE 4/S0.33 FOR ADDITIONAL INFORMATION.

## INFILL PIECE @ ACT TECHZONE | 1
3" = 1'-0"

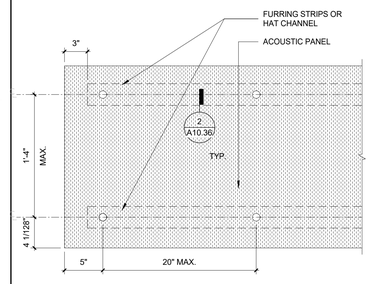
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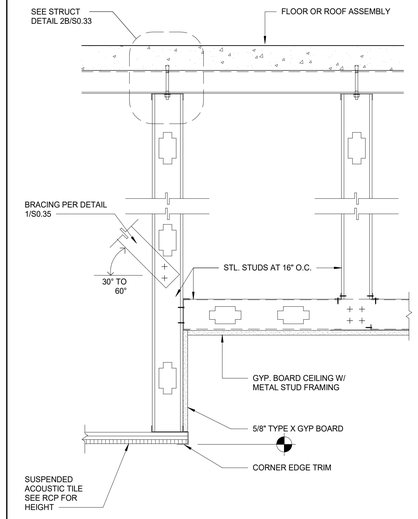
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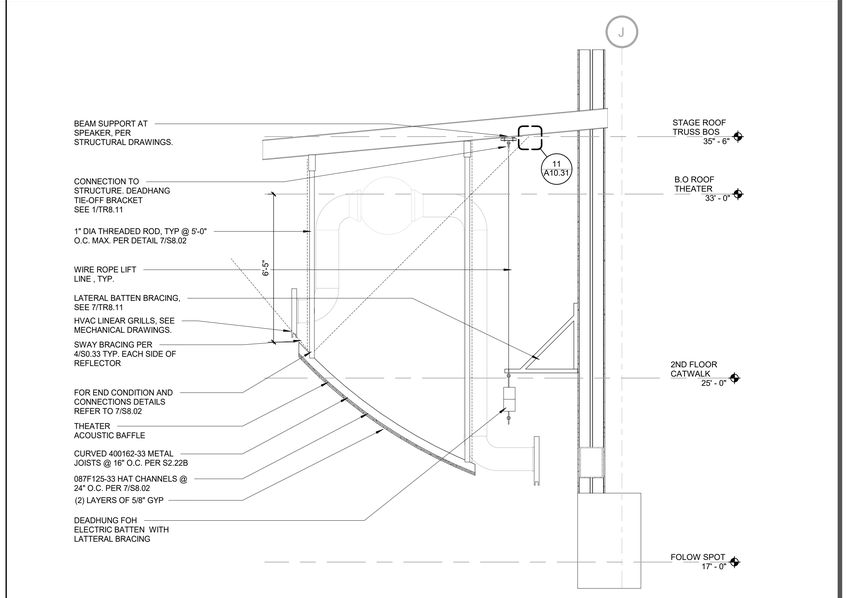

**ACOUSTICAL CEILING PANEL - SECTION** **2** 3" = 1'-0"



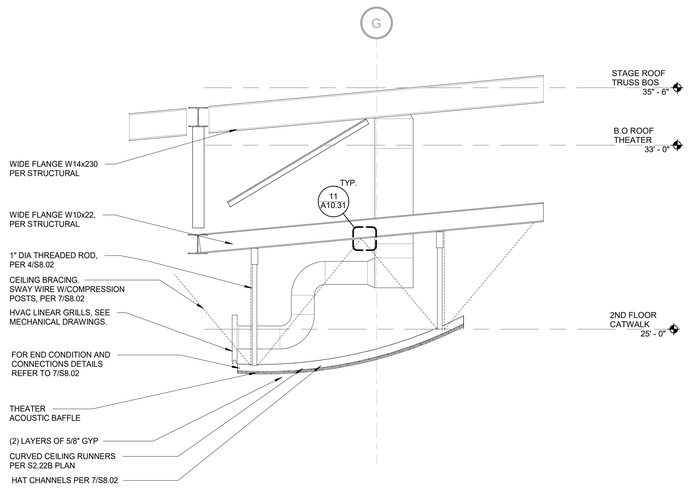

**ACOUSTICAL CEILING PANEL** **5** 1 1/2" = 1'-0"



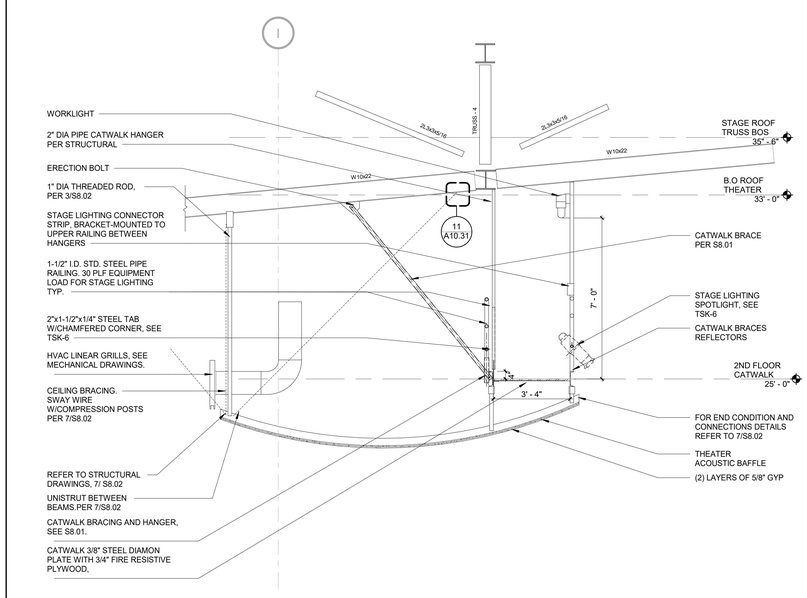

**RECESSED SOFFIT** **13** 1" = 1'-0"




**ACOUSTICAL CEILING AT THEATER** **3** 3/8" = 1'-0"




**ACOUSTICAL CEILING DETAIL_BACK THEATER SEATING** **11** 3/8" = 1'-0"




**TYP. SUSPENDED CATWALK FRAMING** **1** 3/8" = 1'-0"

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DATE: 10/15/2025


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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

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|---|---|---|
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## KEYNOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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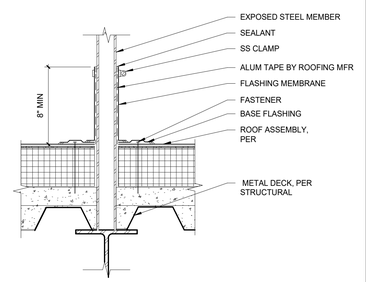
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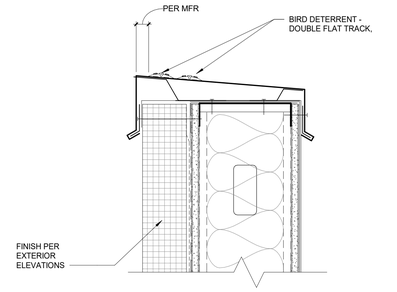
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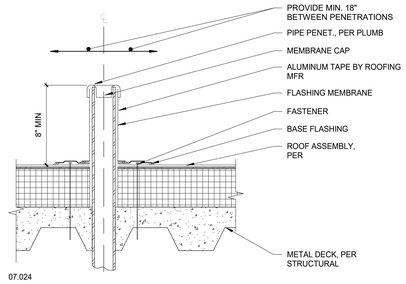



07.015

## TYPICAL PENETRATION AT ROOF | 10
1 1/2" = 1'-0"

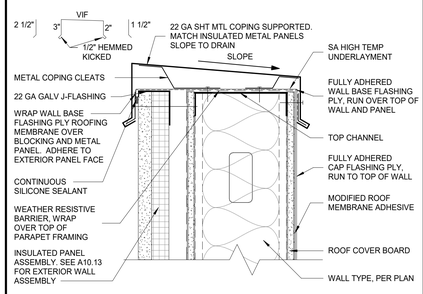



## BIRD DETERRENT TRACK @ PARAPET | 5
3" = 1'-0"




07.024

## VENT STACK FLASHING | 9
1 1/2" = 1'-0"




## METAL PANEL - PARAPET COPING | 4
3" = 1'-0"




## BIL-CLIP FLASHING SYSTEM @ SMOKE VENT ATTACHMENT TO ROOF | 13
3" = 1'-0"




**NOTE:**
PROVIDE NON-CORROSIVE SEPARATION WASHER/ELEMENT BETWEEN STAINLESS STEEL CURB AND STL FASTENERS / BENT PL (DISSIMILAR METALS).

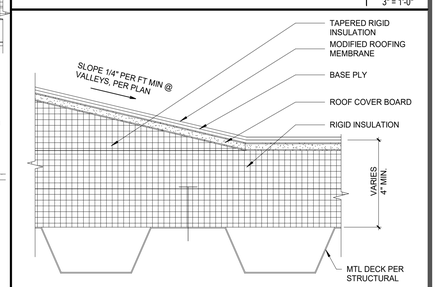
## ROOF HATCH AT METAL DECK | 7
1 1/2" = 1'-0"




## PARAPET COPING | 3
3" = 1'-0"




## SMOKE VENT ATTACHMENT TO ROOF - BARE MTL DECK | 12
1" = 1'-0"




07.007 **NOTES:** ATTACH TAPERED INSULATION TO BASE LAYER WITH ADHESIVE PER SPEC.

## ROOF CRICKET @ BARE DECK | 2
3" = 1'-0"




## ROOF/OVERFLOW DRAIN (SECTION) | 11
1" = 1'-0"




## ROOF/OVERFLOW DRAIN | 6
1" = 1'-0"




## BIRD DETERRENT GEL @ PARAPET | 1
3" = 1'-0"

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DATE: 10/15/2025

COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

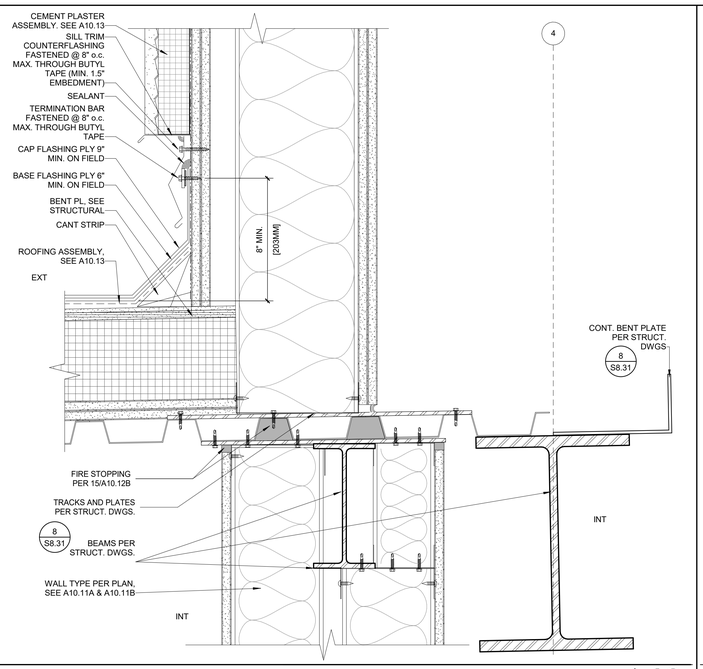
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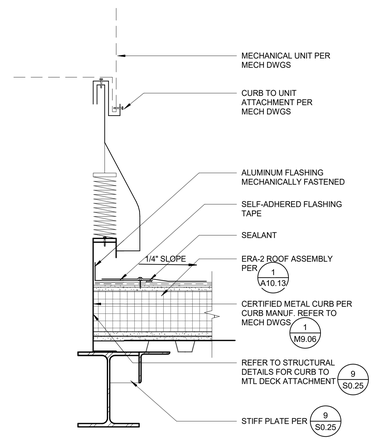
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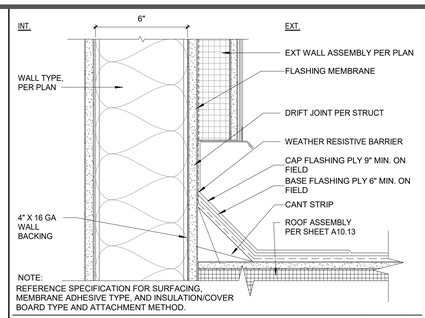
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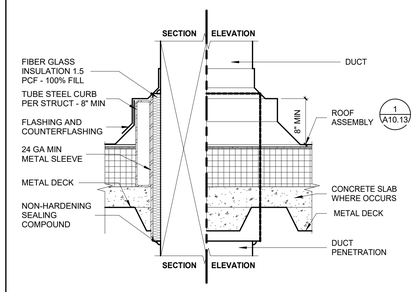

## WALL FLASHING CEMENT PLASTER WALL @ GL 4 — 18
3" = 1'-0"



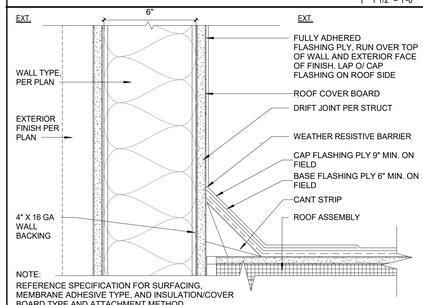

## TYP LARGE MECHANICAL UNIT ATTACHMENT TO ROOF — 13
1 1/2" = 1'-0"



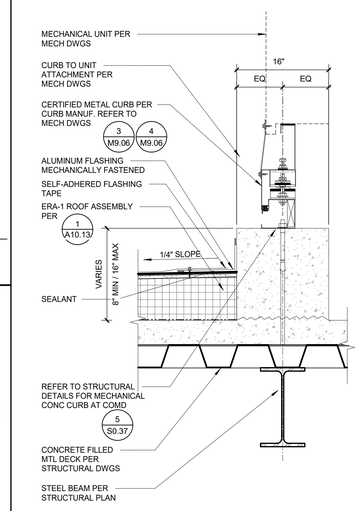

## ROOF CANT @ HIGH ROOF — 10
3" = 1'-0"




## TYPICAL DUCT PENETRATION AT ROOF — 9
1 1/2" = 1'-0"




## ROOF CANT @ ROOFING PARAPET — 8
3" = 1'-0"



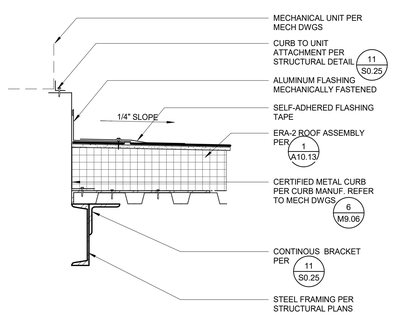

## RTU-3, RTU-4, RTU-5, RTU-6, RTU-10 ATTACHMENT TO CONC FILLED MTL DECK — 4
1 1/2" = 1'-0"




## WALL FLASHING @ EQUIPMENT PAD — 3
1 1/2" = 1'-0"

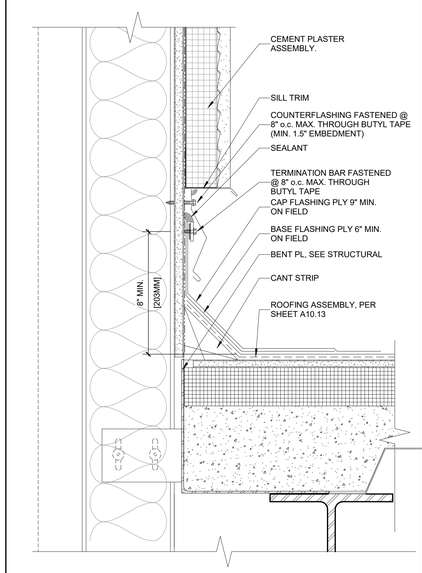



## WALL FLASHING CEMENT PLASTER WALL @ GL L — 16
3" = 1'-0"

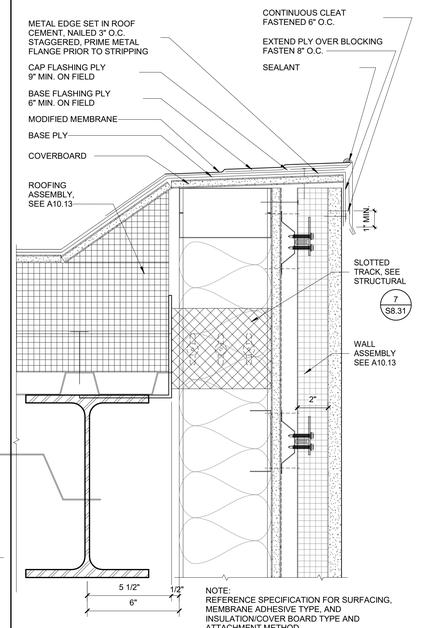



NOTE: REFER TO STRUCTURAL DETAIL 11/S0.25/FOR CURB TO STRUCTURE ATTACHMENT

## EF UNIT PLATFORM O/ BARE MTL DECK — 11
1 1/2" = 1'-0"




## WALL FLASHING CEMENT PLASTER WALL — 6
3" = 1'-0"




## ROOF PARAPET - IMP — 1
3" = 1'-0"

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SHEET NAME:

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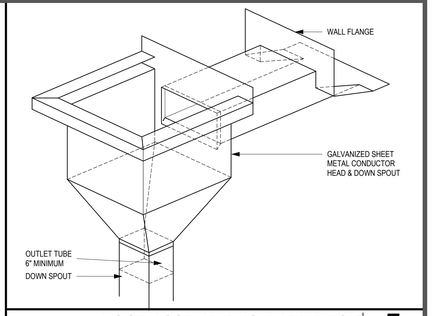
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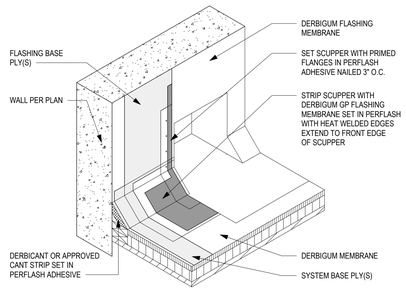
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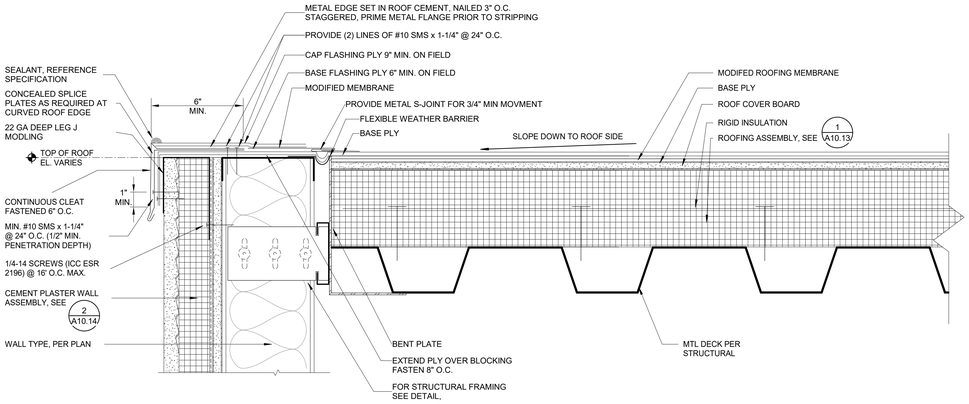



**ROOF ASSEMBLY @ BARE DECK** **5** 1 1/2" = 1'-0"

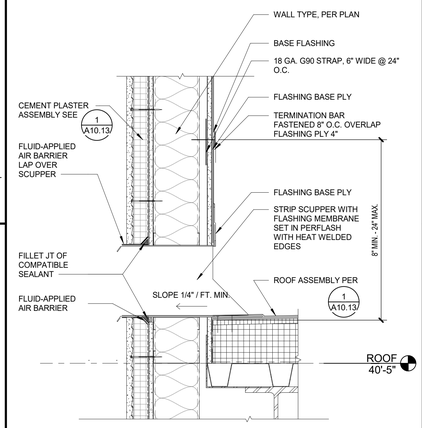



**ROOF FLASHING AT THRU WALL SCUPPER ISOMETRIC** **4** 1" = 1'-0"

## EXTERIOR FACADE SIDE

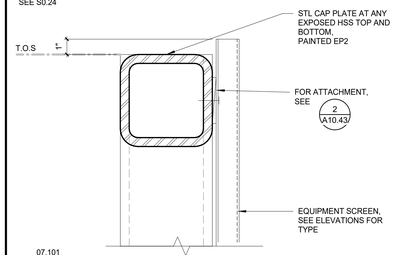



**PARAPET COPING/ROOF** **13** 3" = 1'-0"

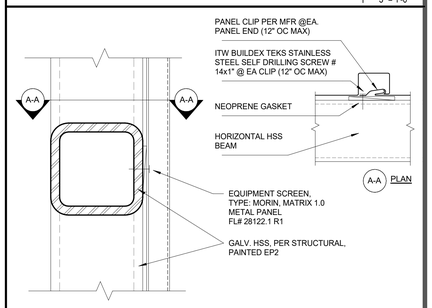



**ROOF FLASHING AT THRU WALL SCUPPER - SECTION** **7** 1 1/2" = 1'-0"

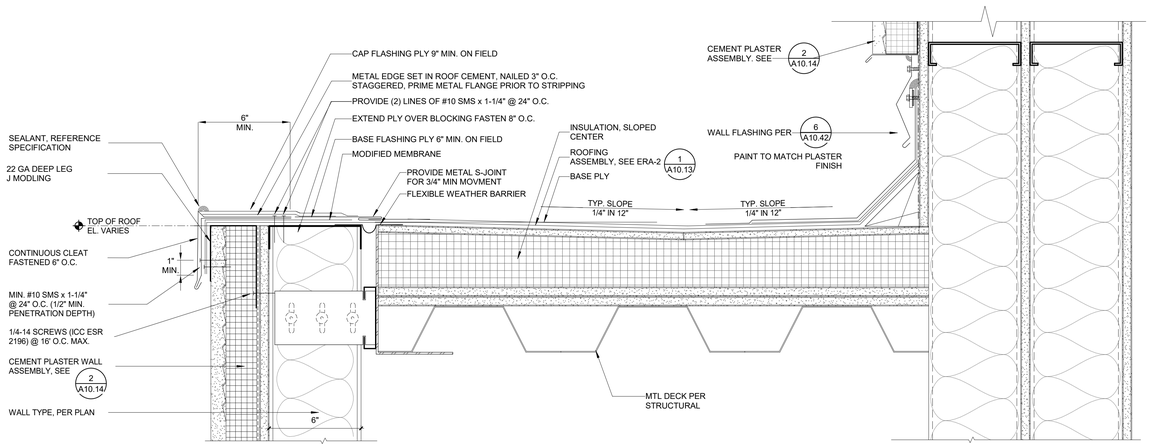
NOTE:
FOR HSS FRAMING CONNECTIONS , SEE S0.24




**EQUIP. PLATFORM AT CONCRETE PLINTH** **3** 3" = 1'-0"

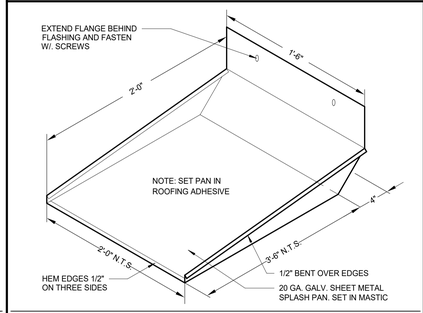



**EQUIP. PLATFORM AT CONCRETE PLINTH** **2** 3" = 1'-0"

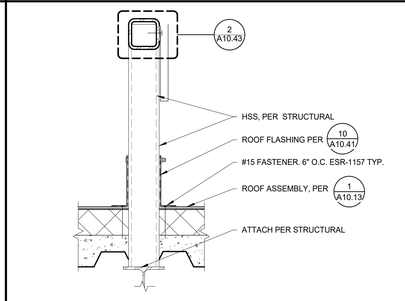



NOTE:
REFERENCE SPECIFICATION 07 55 00 FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

**PARAPET COPING/ROOF @ DOUBLE WALL SLOPE** **11** 3" = 1'-0"




**ROOF PARAPET - IMP** **6** 1 1/2" = 1'-0"




**BASE CABINET W/ PULL OUT TRASH DRAWER** **1** 1" = 1'-0"

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FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

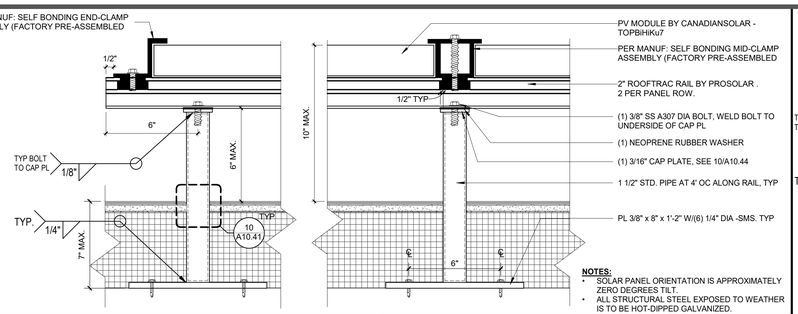
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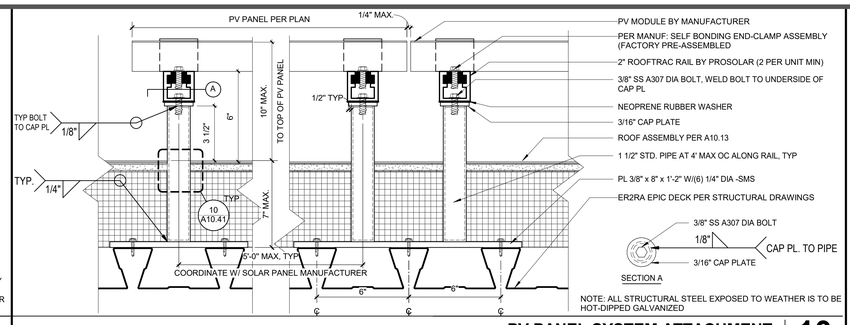
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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PAPER SIZE. ADJUST SCALES ACCORDINGLY IF THIS SHEET'S ORIGINAL PAPER SIZE



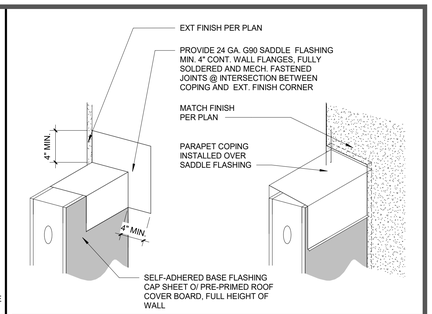

**NOTES:**
- SOLAR PANEL ORIENTATION IS APPROXIMATELY ZERO DEGREES TILT.
- ALL STRUCTURAL STEEL EXPOSED TO WEATHER IS TO BE HOT-DIPPED GALVANIZED.

**PV PANEL SYSTEM ATTACHMENT - PARALLEL TO TRACK - SECTION** 20 — 3" = 1'-0"

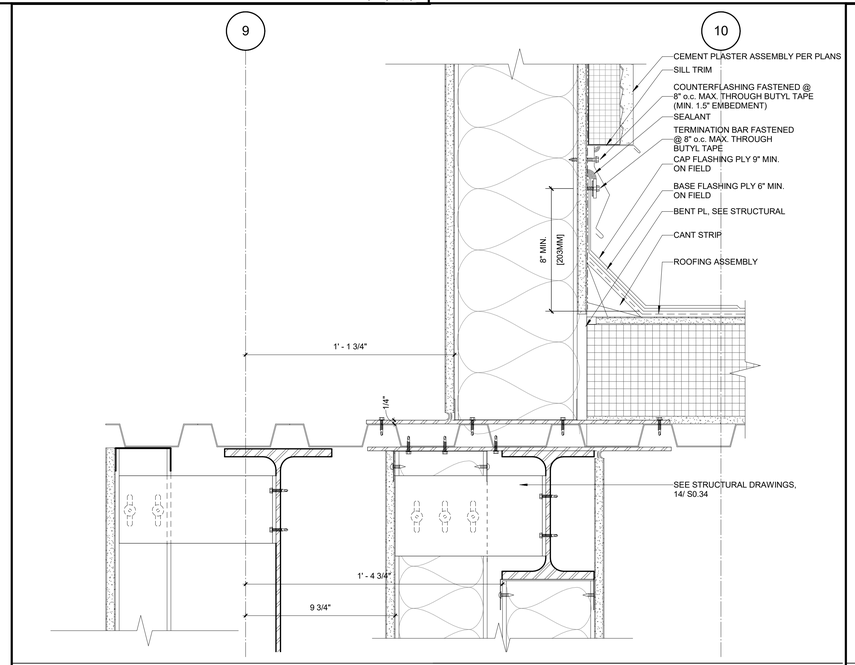



NOTE: ALL STRUCTURAL STEEL EXPOSED TO WEATHER IS TO BE HOT-DIPPED GALVANIZED

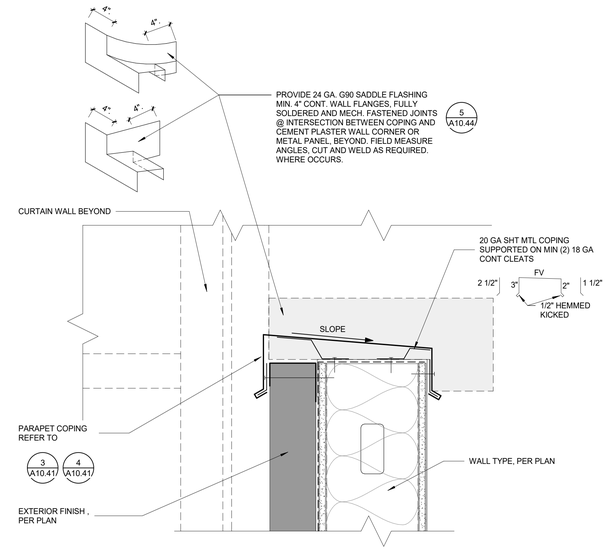
**PV PANEL SYSTEM ATTACHMENT - PERPENDICULAR TO TRACK - SECTION** 10 — 3" = 1'-0"



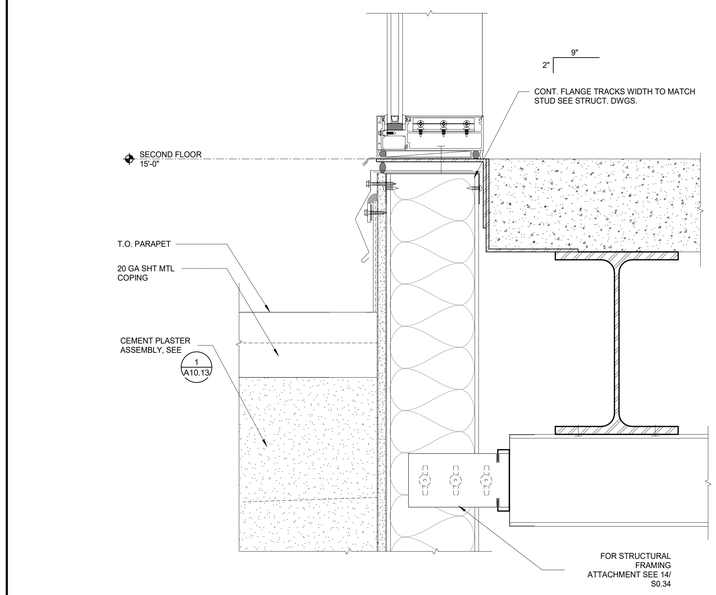

**SADDLE FLASHING** 5 — 1" = 1'-0"



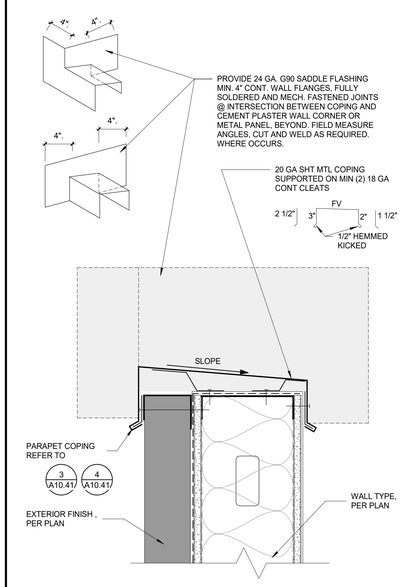

**WALL FLASHING CEMENT PLASTER WALL BETWEEN GL 9 - GL 10** 13 — 3" = 1'-0"




**METAL PANEL - COPING / SADDLE @ EAST PARAPET BY CURTAINWALL** 3 — 3" = 1'-0"




**WATERPROOFING AT DRIFT JOINT** 6 — 3" = 1'-0"




**METAL PANEL - PARAPET COPING / SADDLE** 1 — 3" = 1'-0"

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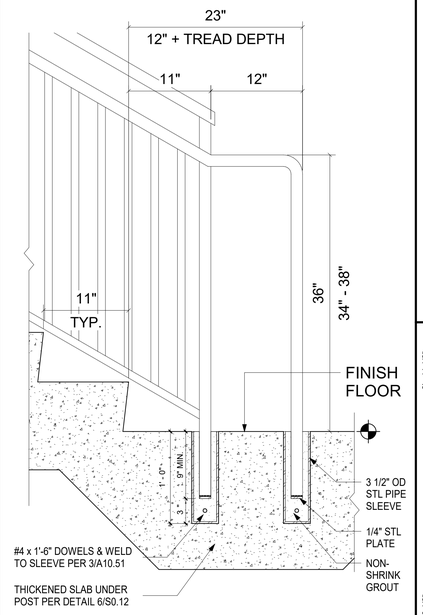
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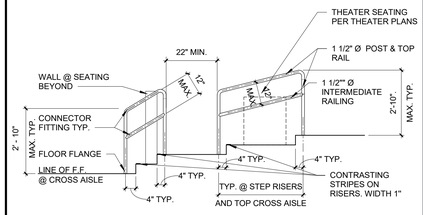
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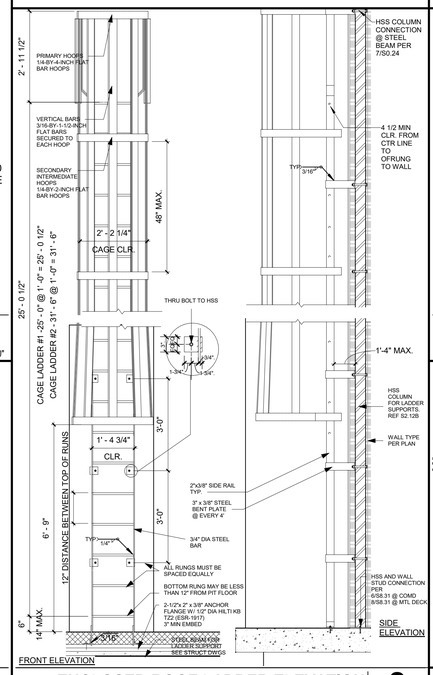
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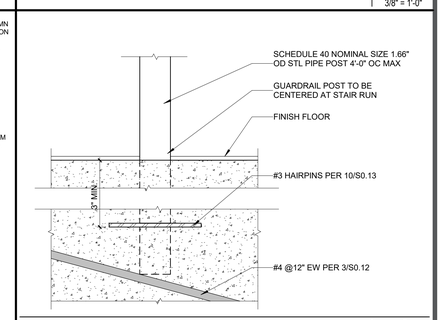

**HANDRAIL EXTENSION @ STAIR #1** | **14** | 1 1/2" = 1'-0"



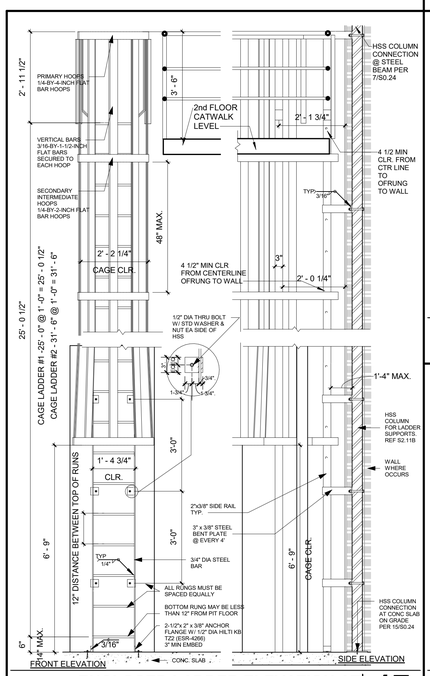

**THEATER MID-AILE HANDRAILS** | **5** | 3/8" = 1'-0"



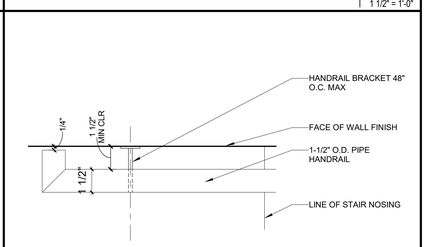

**ENCLOSED ROOF LADDER ELEVATION** | **8** | 1/2" = 1'-0"



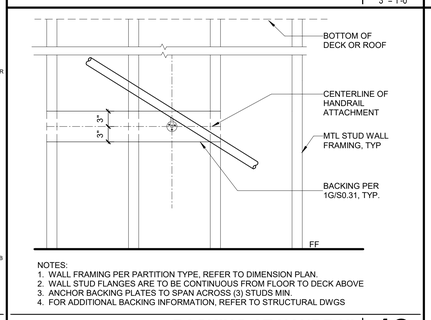

**GUARDRAIL POST SECTION @ CONC. STEPS** | **4** | 3" = 1'-0"




**ENCLOSED LADDER ELEVATION AT THEATER CIRCULATION AND STAGE** | **17** | 1/2" = 1'-0"

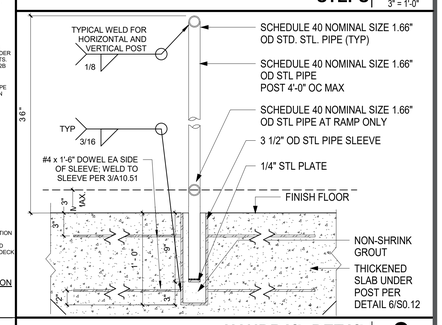



**HANDRAIL END CONDITION** | **13** | 3" = 1'-0"

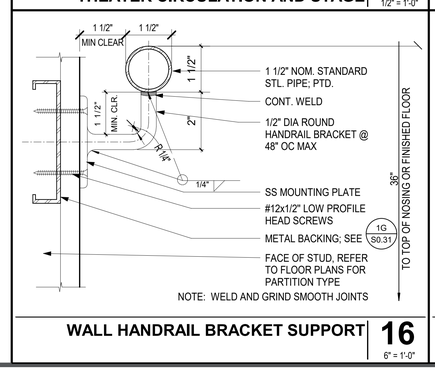



NOTES:
1. WALL FRAMING PER PARTITION TYPE, REFER TO DIMENSION PLAN.
2. WALL STUD FLANGES ARE TO BE CONTINUOUS FROM FLOOR TO DECK ABOVE
3. ANCHOR BACKING PLATES TO SPAN ACROSS (3) STUDS MIN.
4. FOR ADDITIONAL BACKING INFORMATION, REFER TO STRUCTURAL DWGS

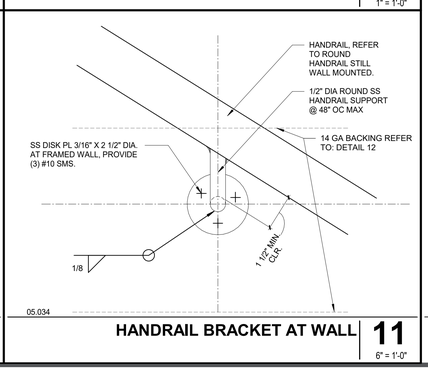
**BACKING AT HANDRAIL** | **12** | 1" = 1'-0"




**HANDRAIL DETAIL** | **3** | 1 1/2" = 1'-0"

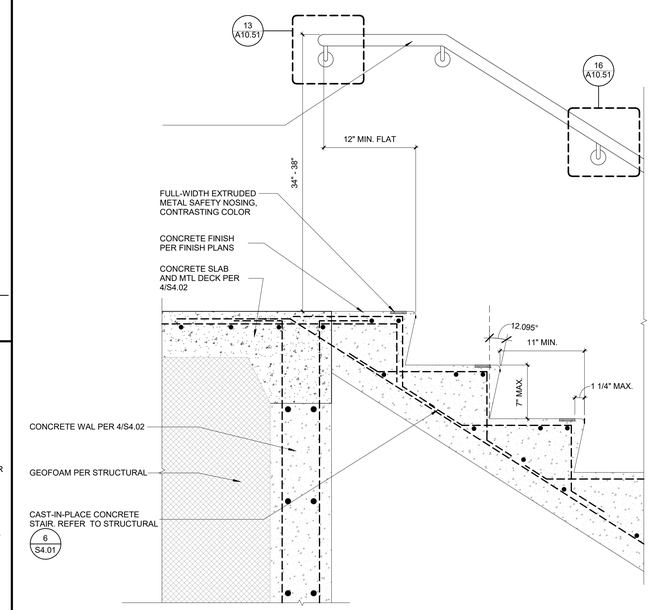



**WALL HANDRAIL BRACKET SUPPORT** | **16** | 6" = 1'-0"




05.034

**HANDRAIL BRACKET AT WALL** | **11** | 6" = 1'-0"




REFER TO STRUCTURAL DETAIL 4/S4.02

**CAST-IN-PLACE STAIR TOP TRANSITION - STAIR #1 - CONCRETE FINISH** | **1** | 1 1/2" = 1'-0"

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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025 RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAIR DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

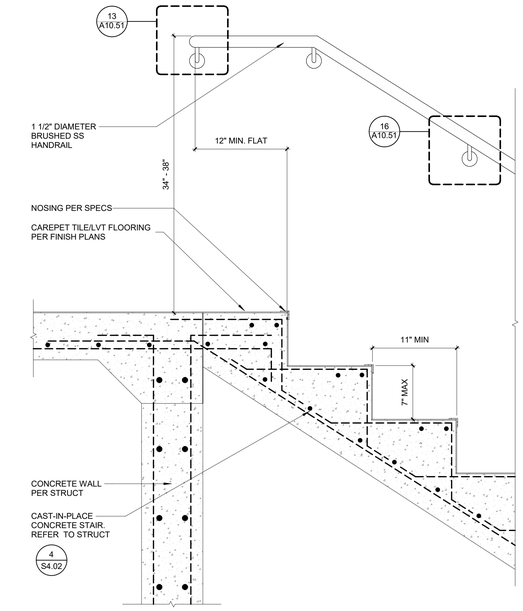
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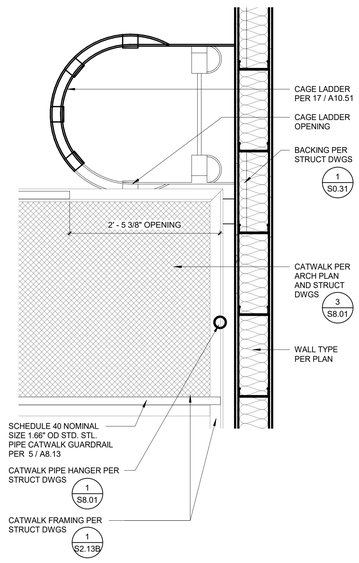
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PLEASE RECYCLE

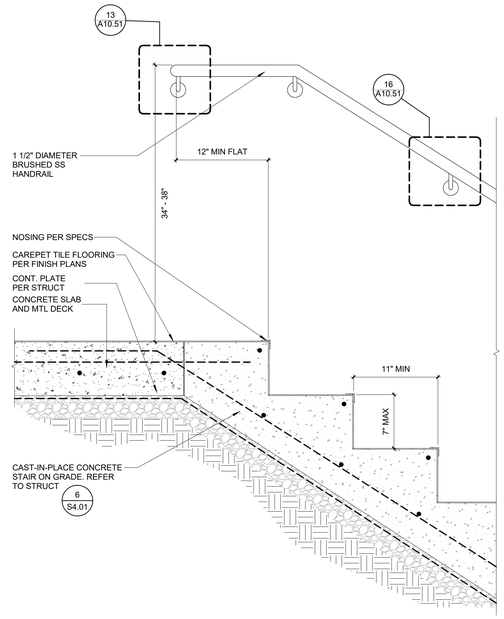
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON FULL SIZED DRAWINGS. IF THIS SHEET IS ORIGINAL PAGE SIZE




CAST-IN-PLACE STAIR TOP TRANSITION - STAIR #3 - CARPET/LVT FINISH **3**
1 1/2" = 1'-0"




CAGE LADDER / CATLWALK PLAN **11**
1" = 1'-0"




CAST-IN-PLACE STAIR ON GRADE TOP TRANSITION - STAIR #2 & #4 - CARPET FINISH **1**
1 1/2" = 1'-0"

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LICENSED ARCHITECT
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAIR DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

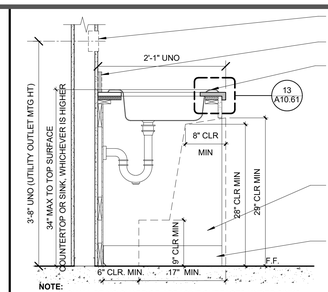
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# A10.52

PLEASE RECYCLE

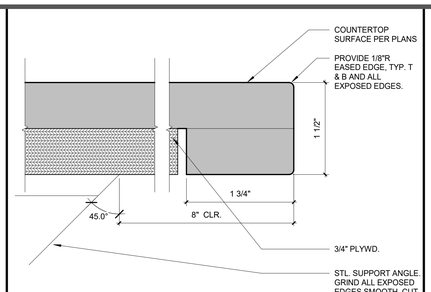
THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED AT THE SHEET'S ORIGINAL PAGE SIZE




**NOTE:**
THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS.

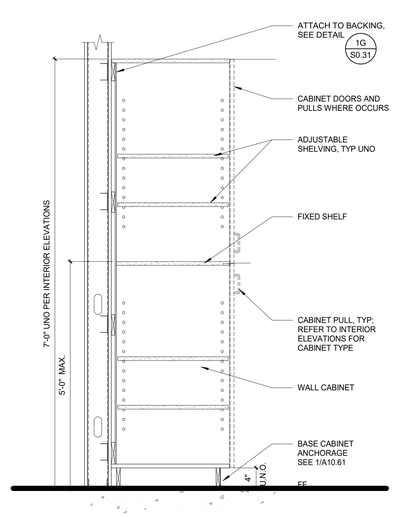
06.006

## ACCESSIBLE DROP IN SINK W/ /COUNTERTOP 20
1" = 1'-0"



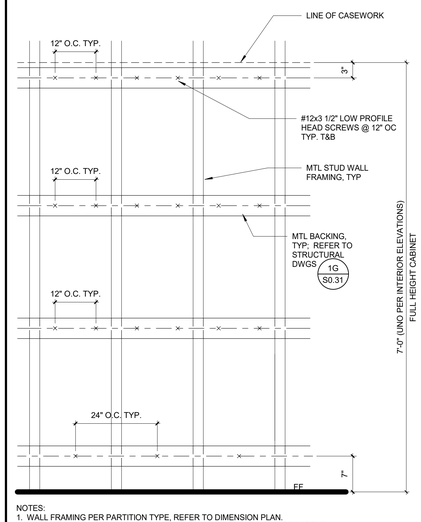

06.015

## COUNTERTOP EDGE DETAIL 15
12" = 1'-0"



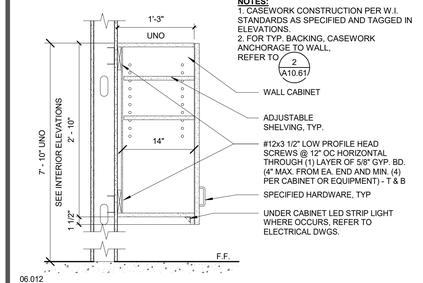

06.005

## SECTION AT FULL HEIGHT CASEWORK 9
1" = 1'-0"




NOTES:
1. WALL FRAMING PER PARTITION TYPE, REFER TO DIMENSION PLAN.
2. WALL STUD FLANGES ARE TO BE CONTINUOUS FROM FLOOR TO DECK ABOVE
3. ANCHOR BACKING PLATES TO SPAN ACROSS (3) STUDS MIN.
4. FOR ADDITIONAL BACKING INFORMATION, REFER TO STRUCTURAL DWG 1 S0.31

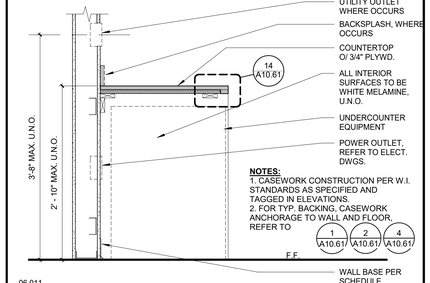
## BACKING AT FULL HEIGHT CASEWORK 4
1" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL, REFER TO 2 A10.61

06.012

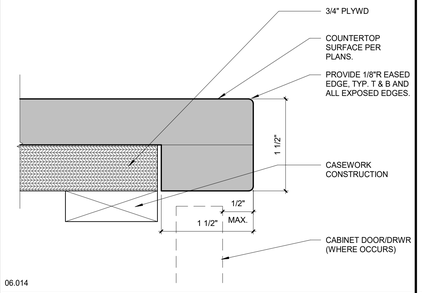
## UPPER CABINET SECTION 24
1" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL AND FLOOR, REFER TO 1 A10.61, 2 A10.61, 4 A10.61

06.011

## BASE CABINET FOR APPLIANCE 19
1" = 1'-0"



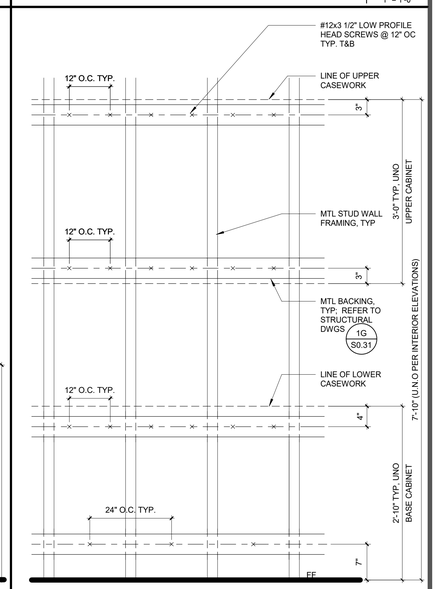

06.014

## COUNTERTOP EDGE DETAIL AT BASE CABINET 14
12" = 1'-0"



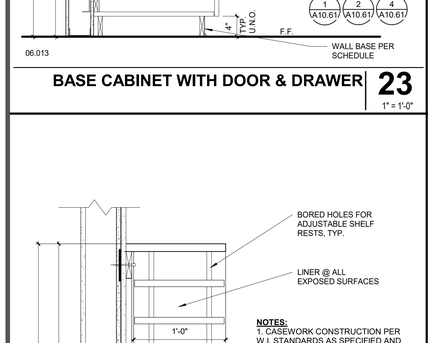

06.004

## COUNTERTOP SUPPORT 7
1 1/2" = 1'-0"



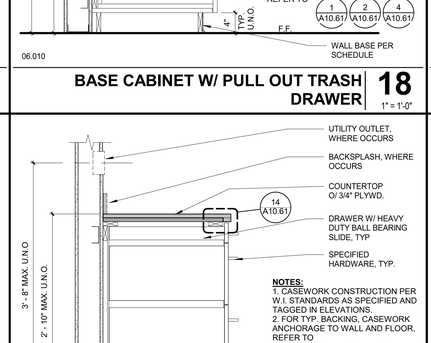

NOTES:
1. WALL FRAMING PER PARTITION TYPE, REFER TO DIMENSION PLAN.
2. WALL STUD FLANGES ARE TO BE CONTINUOUS FROM FLOOR TO DECK ABOVE
3. ANCHOR BACKING PLATES TO SPAN ACROSS (3) STUDS MIN.
4. FOR ADDITIONAL BACKING INFORMATION, REFER TO STRUCTURAL DWGS 1G S0.31

## BACKING AT LOWER AND UPPER CASEWORK 2
1" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL AND FLOOR, REFER TO 1 A10.61, 2 A10.61, A10.61

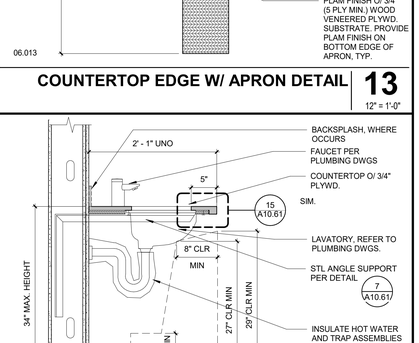
## BASE & MAILBOX UPPER CABINET DETAIL 21
1 1/2" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL AND FLOOR, REFER TO 1 A10.61, 2 A10.61, 4 A10.61

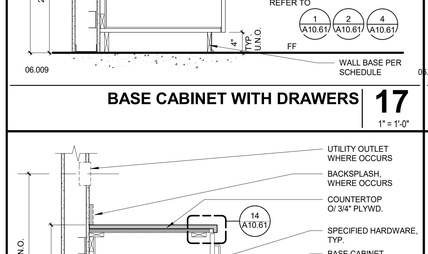
06.010

## BASE CABINET W/ PULL OUT TRASH DRAWER 18
1" = 1'-0"




06.013

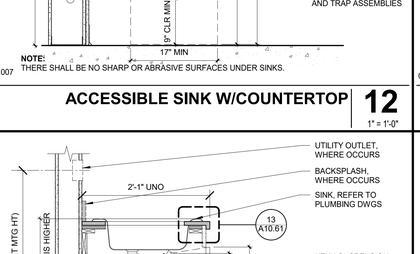
## COUNTERTOP EDGE W/ APRON DETAIL 13
12" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL AND FLOOR, REFER TO 1 A10.61, 2 A10.61, 4 A10.61

06.009

## BASE CABINET WITH DRAWERS 17
1" = 1'-0"




**NOTE:**
THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS.

06.007

## ACCESSIBLE SINK W/COUNTERTOP 12
1" = 1'-0"




**NOTES:**
1. CASEWORK CONSTRUCTION PER W.I. STANDARDS AS SPECIFIED AND TAGGED IN ELEVATIONS.
2. FOR TYP. BACKING, CASEWORK ANCHORAGE TO WALL AND FLOOR, REFER TO 1 A10.61, 2 A10.61, 4 A10.61

06.008

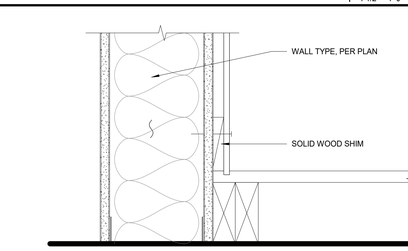
## BASE CABINET WITH DOOR 16
1" = 1'-0"




**NOTE:**
THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS.

06.006

## ACCESSIBLE SINK W /REMOVABLE PANEL 11
1" = 1'-0"




## BASE CABINET ANCHORAGE DETAIL - FLOOR 1
3" = 1'-0"

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CASEWORK DETAILS**

**DSA SUBMITTAL**

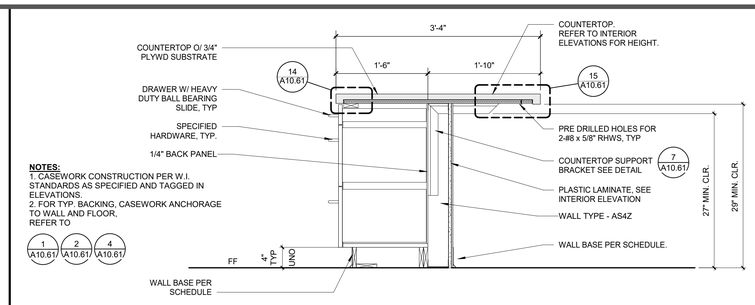
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

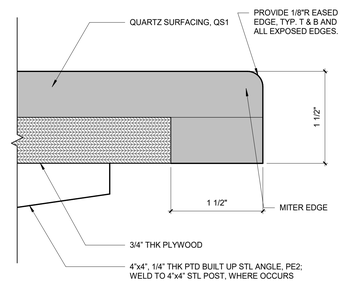
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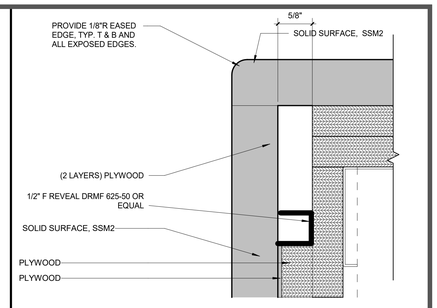
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET'S ORIGINAL PAPER SIZE



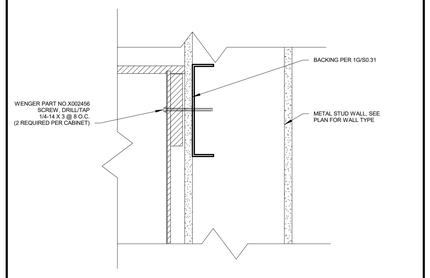

## COUNTERTOP SUPPORT @ ISLAND — 15
1" = 1'-0"



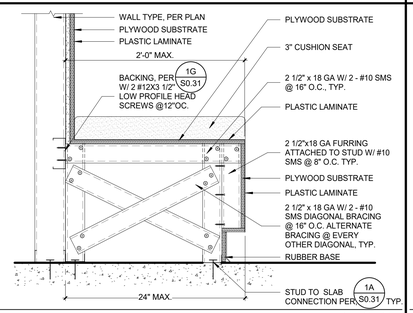

## RECEPTION DESK - SURFACE EDGE 01 — 10
12" = 1'-0"



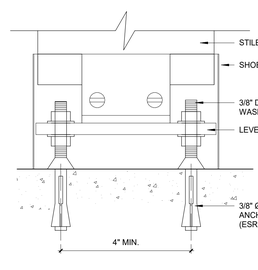

## RECEPTION DESK - SURFACE EDGE 02 — 5
12" = 1'-0"



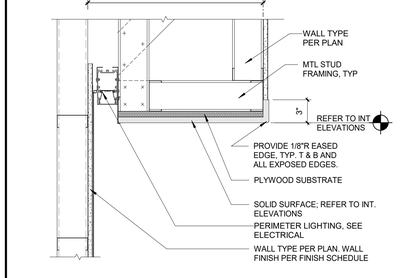

## INSTRUMENT STORAGE ANCHORAGE AT METAL STUD WALL — 19
3" = 1'-0"



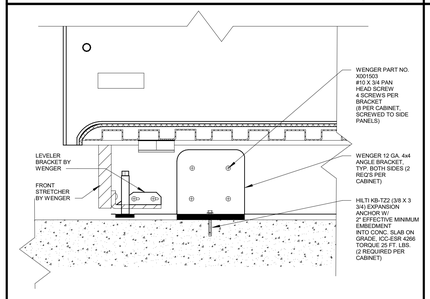

## BUILT-IN SEATING AT HALLWAY — 14
1 1/2" = 1'-0"



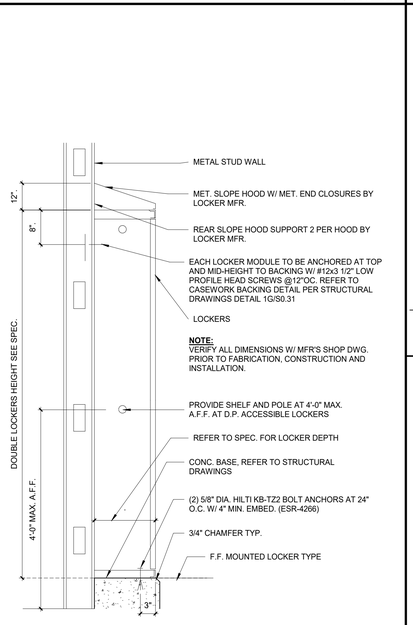

## PARTITION TO FLOOR — 9
6" = 1'-0"



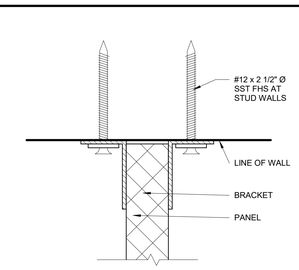

## BUILT-IN ALCOVE AT HALLWAY - CEILING — 4
1 1/2" = 1'-0"



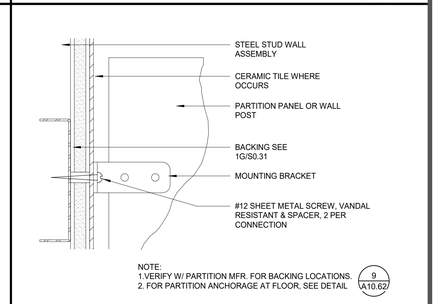

## INSTRUMENT STORAGE CONCRETE FLOOR ANCHOR — 18
3" = 1'-0"



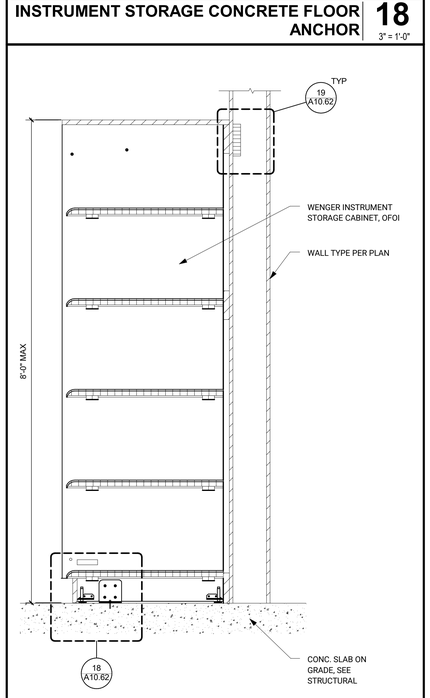

## METAL LOCKERS BASE — 11
1" = 1'-0"




## PARTITION TO WALL / CEILING MOUNT — 8
3" = 1'-0"



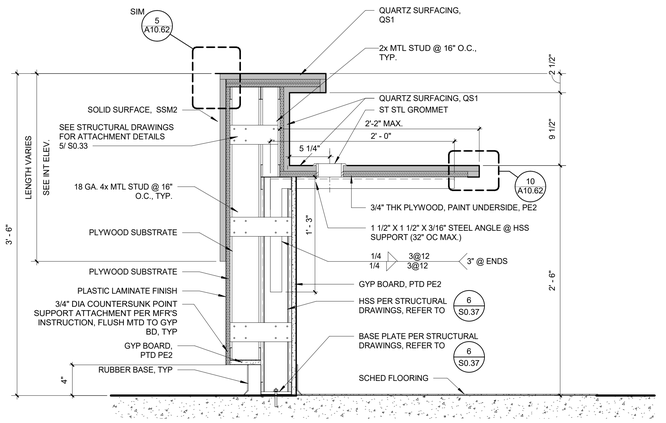

## TOILET/URINAL PARTITION ANCHORAGE — 3
6" = 1'-0"




## INSTRUMENT STORAGE DOUBLE ANCHORAGE DETAIL — 16
1" = 1'-0"

**D.P. ACCESSIBLE LOCKER NOTES (SEE PLANS FOR LOCATIONS):**

1. PROVIDE AT LEAST ONE PERCENT TOTAL LOCKERS (BUT NEVER LESS THAN ONE) ACCESSIBLE LOCKERS (SEE PLANS).
2. PROVIDE 36" MIN. CLEAR PATH TO ACCESSIBLE LOCKERS (SEE PLANS).
3. PROVIDE LATCH AND LOCKING HARDWARE THAT DOES NOT REQUIRE TWISTING, PINCHING OR GRASPING TO OPERATE.
4. PROVIDE 30"X48" CLEAR FLOOR AREA IN FRONT OF EACH OF THE ACCESSIBLE LOCKERS (SEE PLANS).
5. PROVIDE 60" DIAMETER TURNING AREA ADJACENT TO ACCESSIBLE LOCKERS (SEE PLANS).
6. DISPERSE ACCESSIBLE LOCKERS. LOCATE IN MORE THAN ONE AREA (SEE PLANS).
7. LOCATE ACCESSIBLE LOCKERS NEAR ACCESSIBLE SHOWER FACILITIES (SEE PLANS).
8.PROVIDE SHELF AND POLE AT 48" MAX. A.F.F. AND LOWER SHELF AT 15" MIN. A.F.F.




## RECEPTION DESK - SECTION 01 — 1
1 1/2" = 1'-0"

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## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**CASEWORK DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **09/13/2024** | CLIENT PROJ NO: **3361008100**

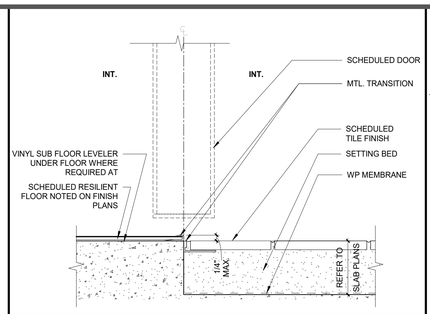
SHEET:

# A10.62

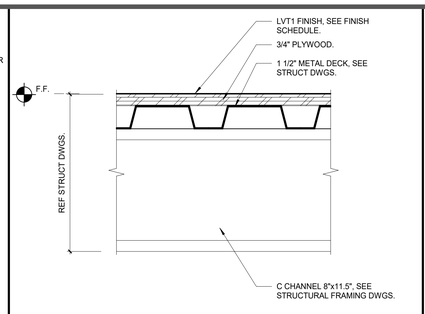
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PLEASE RECYCLE

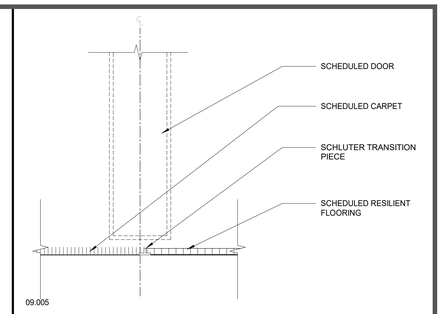
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY



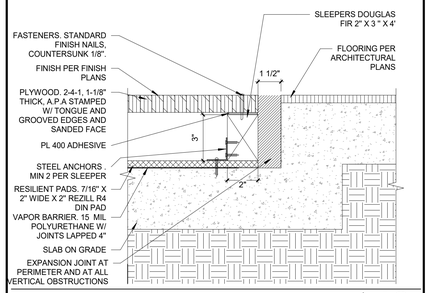

**RESILIENT FLOOR TO CERAMIC TILE FLOORING TRANSITION** **15** 6" = 1'-0"



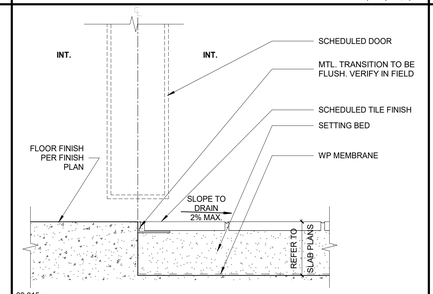

**CONTROL ROOM ROOF ASSEMBLY** **10** 3" = 1'-0"



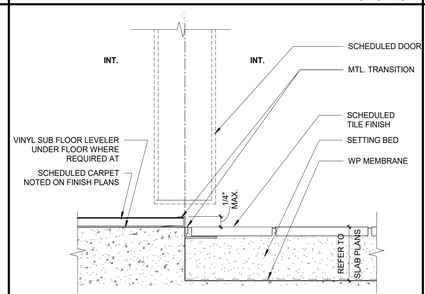

**CARPET TO RESILIENT FLOORING TRANSITION** **5** 6" = 1'-0"



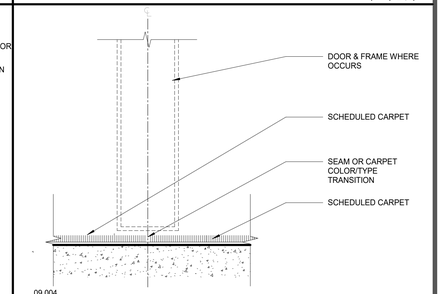

**STAGE FLOOR @ SLAB DEPRESSION** **19** 3" = 1'-0"



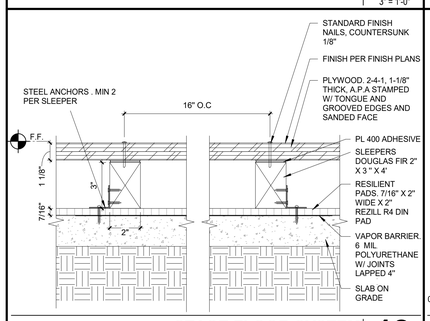

**CONCRETE TO CERAMIC TILE TRANSITION** **14** 6" = 1'-0"



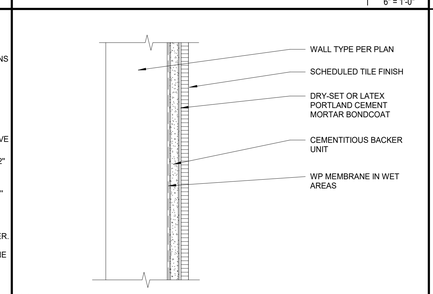

**CARPET TILE TO CERAMIC TILE FLOORING TRANSITION** **9** 6" = 1'-0"



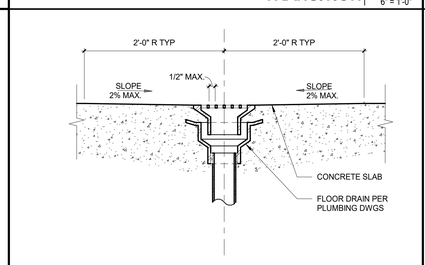

**CARPET TO CARPET TRANSITION** **4** 6" = 1'-0"



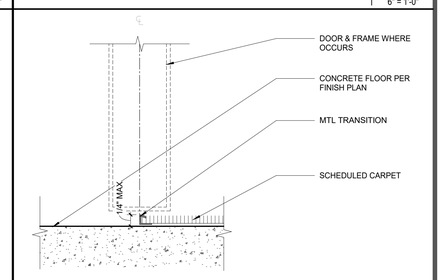

**STAGE FLOOR SYSTEM** **18** 3" = 1'-0"



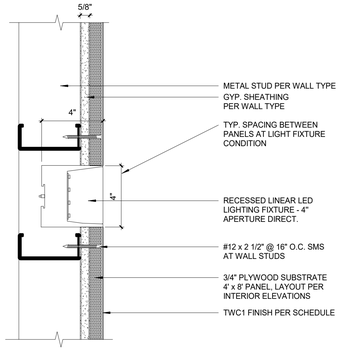

**TYPICAL WALL TILE ASSEMBLY** **13** 3" = 1'-0"



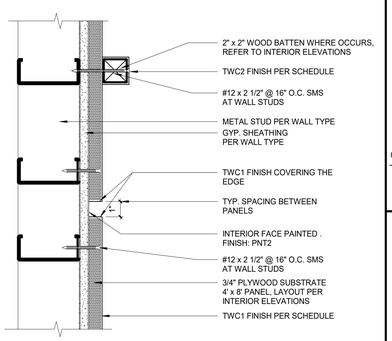

**FLOOR DRAIN @ CONCRETE FLOOR** **8** 1 1/2" = 1'-0"



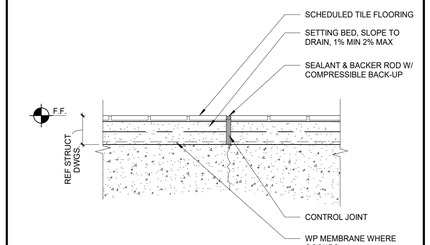

**CONCRETE TO CARPET** **3** 6" = 1'-0"



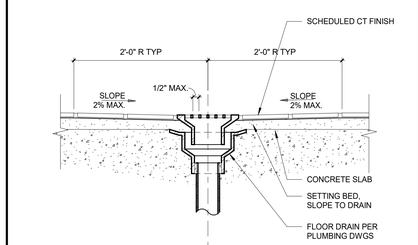

**TYPICAL THEATER WALL ASSEMBLY W/ LIGHT FIXTURE (PLAN)** **21** 3" = 1'-0"



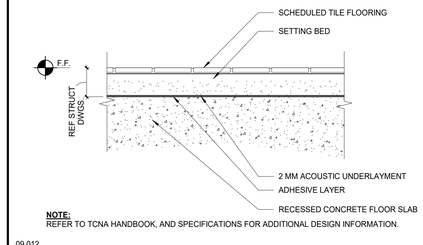

**TYPICAL THEATER WALL ASSEMBLY (PLAN)** **16** 3" = 1'-0"



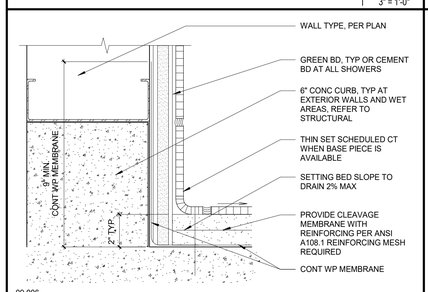

**TYPICAL CONTROL JOINT AT TILE FLOOR** **12** 3" = 1'-0"



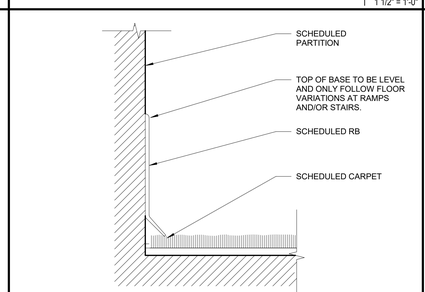

**FLOOR DRAIN AT TILE** **7** 1 1/2" = 1'-0"



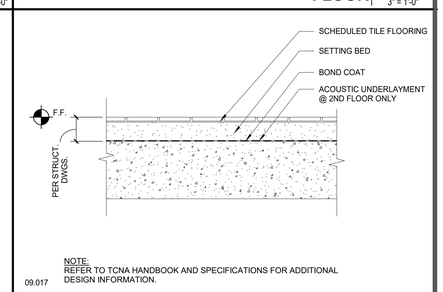

**ACOUSTICAL UNDERLAYMENT AT TILE FLOOR** **2** 3" = 1'-0"




**CERAMIC TILE BASE AT CONC CURB** **11** N.T.S.




**TYP RESILIENT BASE DETAIL** **6** 6" = 1'-0"




**TYPICAL TILE FLOOR ASSEMBLY** **1** 3" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**FINISH DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 09/13/2024 | CLIENT PROJ NO: 3361008100

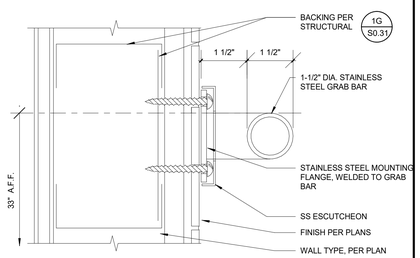
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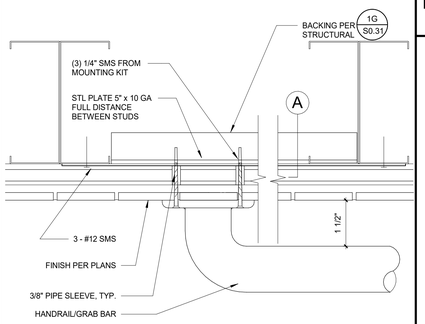
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PLEASE RECYCLE

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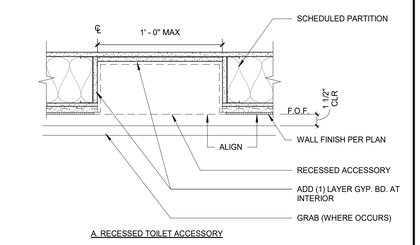



**NOTE:**
1. BAR MOUNTING AND FASTENERS SHALL WITHSTAND A LOADING OF 250#/FT. IN BENDING, SHEAR AND TENSION.
2. ADD NEW FULL HEIGHT STUD WHERE HANDRAIL CONNECTION OCCURS

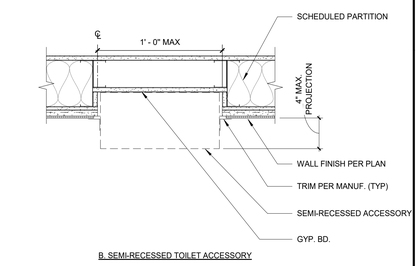



10.053

## MTL STUD BACKING @ GRAB BAR/HANDRAIL | 18
6" = 1'-0"



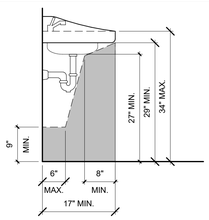

A. RECESSED TOILET ACCESSORY




B. SEMI-RECESSED TOILET ACCESSORY

10.052

## RECESSED & SEMI-RECESSED TOILET ACCESSORY @ NON-RATED WALLS | 16
1 1/2" = 1'-0"




22.003

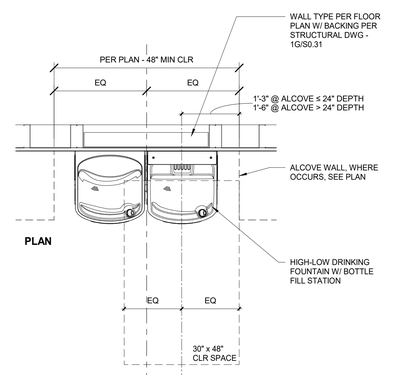
**NOTES:**

1. KNEE AND TOE SPACE (SHADED AREA) SHALL BE PROVIDED AS REQUIRED BY CBC FIGURE 11B-306.3. ALL WATER AND DRAIN PIPES UNDER SINKS SHALL BE INSULATED OR OTHERWISE COVERED PER CBC 11B-606.5. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS.

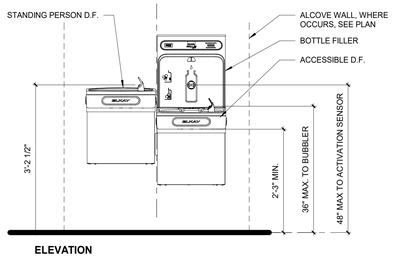
2. SHADED AREA IS THE ACCESSIBLE CLEAR SPACE.

3. SINK DEPTH 6" MAX.

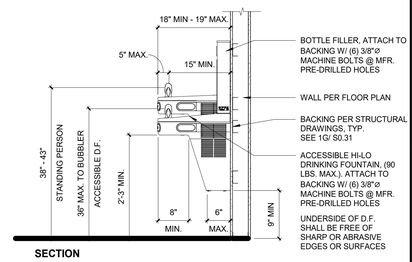
## REQUIRED KNEE AND TOE CLEARANCES @ LAVS. | 14
3/4" = 1'-0"




PLAN



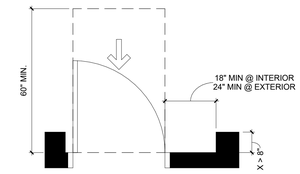

ELEVATION



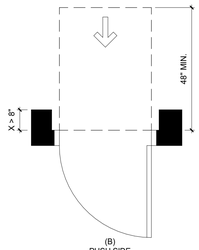

SECTION

22.002

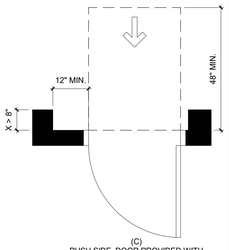
## DRINKING FOUNTAIN DETAIL | 11
3/4" = 1'-0"



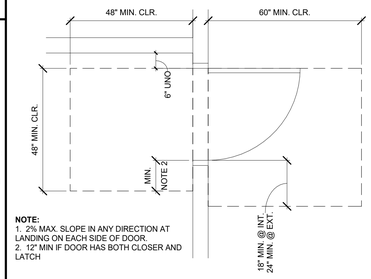

(A)
PULL SIDE



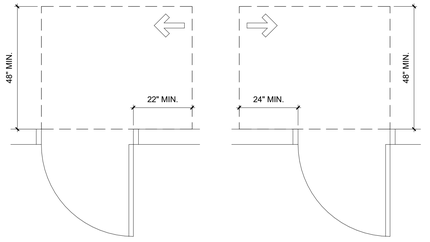

(B)
PUSH SIDE

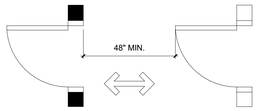



(C)
PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH

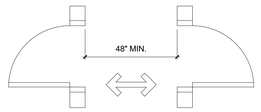



**NOTE:**
1. 2% MAX. SLOPE IN ANY DIRECTION AT LANDING ON EACH SIDE OF DOOR.
2. 12" MIN IF DOOR HAS BOTH CLOSER AND LATCH

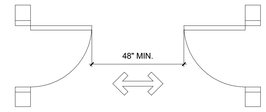



(A)



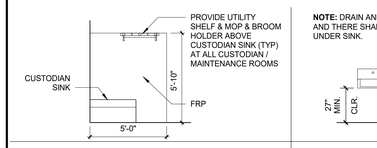

(B)




(C)

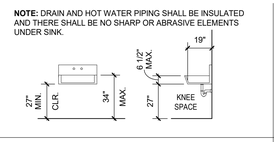
08.050

## DOOR LANDING AND REQUIRED CLEARANCES | 3
1/2" = 1'-0"

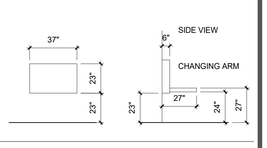



**MOP RACK AT CUSTODIAN SINK**

**NOTE:** DRAIN AND HOT WATER PIPING SHALL BE INSULATED AND THERE SHALL BE NO SHARP OR ABRASIVE ELEMENTS UNDER SINK.

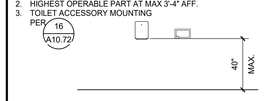



**ACCESSIBLE SERVICE SINK**



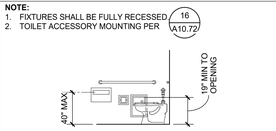

**BABY CHANGING TABLE HEIGHT**

**NOTE:**
1. PROVIDE MINIMUM 30"x48" CLEAR FLOOR SPACE IN FRONT OF ACCESSORY TO ALLOW FORWARD OR PARALLEL APPROACH.
2. HIGHEST OPERABLE PART AT MAX 3'-4" AFF.
3. TOILET ACCESSORY MOUNTING PER 16 A10.72



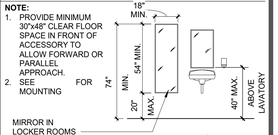

**PAPER TOWEL DISPENSER/ HAND DRYER**

**NOTE:**
1. PROVIDE MINIMUM 30"x48" CLEAR FLOOR SPACE IN FRONT OF ACCESSORY TO ALLOW FORWARD OR PARALLEL APPROACH.
2. HIGHEST OPERABLE PART AT MAX 3'-4" AFF.
3. TOILET ACCESSORY MOUNTING PER 16 A10.72




**SANITARY NAPKIN DISPOSAL/ SEAT COVER DISPENSER**

**NOTE:**
1. PROVIDE MINIMUM 30"x48" CLEAR FLOOR SPACE IN FRONT OF ACCESSORY TO ALLOW FORWARD OR PARALLEL APPROACH.
2. SEE 74" MOUNTING FOR
3. TOILET ACCESSORY MOUNTING PER 16 A10.72

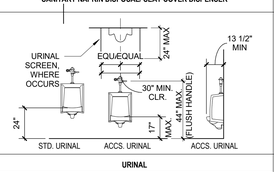



**MIRROR / SOAP DISPENSER**

**NOTE:**
1. PROVIDE MINIMUM 30"x48" CLEAR FLOOR SPACE IN FRONT OF ACCESSORY TO ALLOW FORWARD OR PARALLEL APPROACH.
2. HIGHEST OPERABLE PART AT MAX 3'-4" AFF.
3. TOILET ACCESSORY MOUNTING PER 16 A10.72

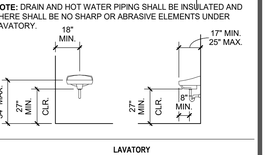



**SANITARY NAPKIN VENDOR**



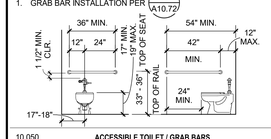

**URINAL**

**NOTE:** DRAIN AND HOT WATER PIPING SHALL BE INSULATED AND THERE SHALL BE NO SHARP OR ABRASIVE ELEMENTS UNDER LAVATORY.




**LAVATORY**

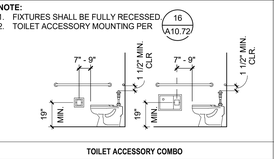
**NOTE:**
1. GRAB BAR INSTALLATION PER 18 A10.72




10.050

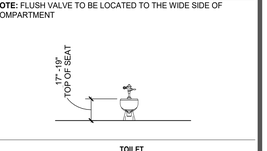
**ACCESSIBLE TOILET / GRAB BARS**

**NOTE:**
1. FIXTURES SHALL BE FULLY RECESSED.
2. TOILET ACCESSORY MOUNTING PER 16 A10.72




**TOILET ACCESSORY COMBO**

**NOTE:** FLUSH VALVE TO BE LOCATED TO THE WIDE SIDE OF COMPARTMENT




**TOILET**

## FIXTURE & ACCESSORY MOUNTING HEIGHTS | 1
1/4" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

COMMITTED TO COLLEGE AND CAREER

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**ACCESSIBILITY DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

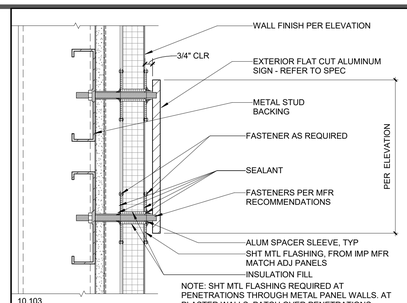
SHEET:

# A10.72

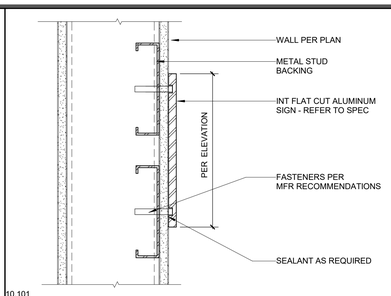
Autodesk Docs://3361008100 EMU\SD Arroyo New Construction\3361008100-A-BLDG.rvt
6/26/2025 4:18:06 PM

PLEASE RECYCLE

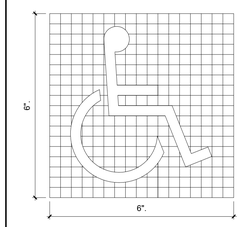
THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED AT THE SHEET'S ORIGINAL PAGE SIZE




## BUILDING FLAT CUT ALUMINUM SIGNAGE @ EXTERIOR — 15 — 3" = 1'-0"



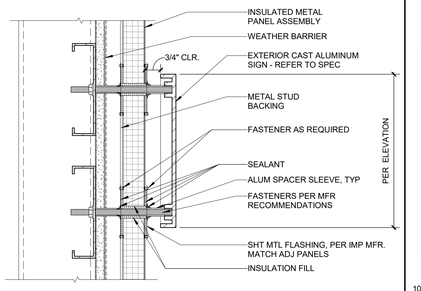

## BUILDING CAST ALUMINUM SIGNAGE @ INTERIOR — 10 — 3" = 1'-0"



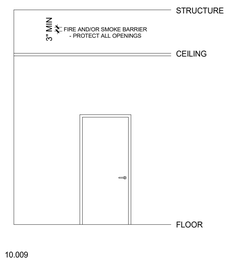

NOTES:

1. GRID LINES ARE SHOWN FOR PROPORTION ONLY AND ARE NOT TO APPEAR AS PART OF SYMBOL.
2. SIGNAGE SHALL COMPLY WITH SECTION 11B-703.7 CALIFORNIA BUILDING CODE.

## ACCESSIBILTY SYMBOL — 5 — 1/8" = 1'-0"




## BUILDING CAST ALUMINUM SIGNAGE @ EXTERIOR — 14 — 3" = 1'-0"

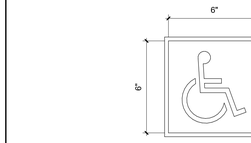



NOTES:

WHERE THERE IS AN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACE, FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS, SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING IN THE CONCEALED SPACE, SUCH IDENTIFICATION SHALL:

1. BE LOCATED WITHIN 15 FEET (4572 MM) OF THE END OF EACH WALL AND AT INTERVALS NOT EXCEEDING 30 FEET (9144 MM) MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION
2. INCLUDE LETTERING NOT LESS THAN 3 INCHES (76 MM) IN HEIGHT WITH A MINIMUM 3/8-INCH (9.5 MM) STROKE IN A CONTRASTING COLOR INCORPORATING THE SUGGESTED WORDING, "FIRE AND/OR SMOKE BARRIER–PROTECT ALL OPENINGS," OR OTHER WORDING

## FIRE WALL SIGNAGE LOCATIONS — 9 — 1/4" = 1'-0"

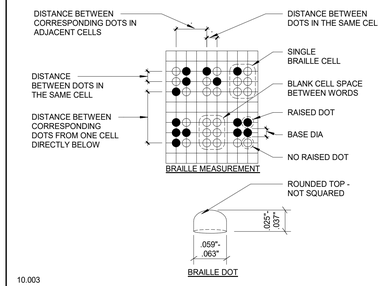



NOTES:

1. WHERE SIGNAGE IS INSTALLED ON GLASS, PROVIDE BLANK SIGNAGE ON OPPOSITE SIDE BEING EQUAL SIZE AND COLOR TO MASK ADHESIVE.
2. ALL BLDG ENTRANCES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD SIGN AND ADDITIONAL DIRECTIONAL SIGNS AS REQUIRED TO BE VISIBLE TO PERSONS ALONG APPROACHING PEDESTRIAN WAYS.

10.004

## ACCESSIBILTY SIGN — 4 — 3" = 1'-0"




NOTES:

1. CHARACTER TYPE: CHARACTERS ON SIGN SHALL BE RAISED 1/32" MINIMUM AND SHALL BE "FUTURA MEDIUM" UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE
2. CHARACTER SIZE: RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8" AND A MAXIMUM OF 2" HIGH
3. FINISH AND CONTRAST: CHARACTERS, SYMBOLS, AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH AND CONTRAST 70% MINIMUM WITH THEIR BACKGROUNDS.

CHARACTER & SYMBOLS - "APCO" COLOR #A01 WHITE, UNO

BACKGROUND - "APCO" COLOR #A54 GRAPHITE, UNO

INTEGRAL COLOR FRAME: "APCO" COLOR PEARL GREY, UNO

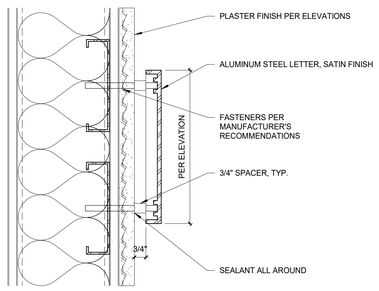
PANEL: 1/4" THICK ACRYLIC PANEL WITH PHOTO POLYMER RAISED TACTILE COPY SUB-SURFACE SYMBOL, UNO

4. BRAILLE: CONTRACTED CALIFORNIA GRADE 2 BRAILLE SHALL BE USED WHERE BRAILLE IS REQUIRED, DOTS SHALL BE 1/10 INCH ON CENTER IN EACH CELL WITH 2/10 INCH SPACE BETWEEN CELLS AND HAVE DOMED OR ROUNDED TOPS. CBC TABLE 11B-703.3.1
5. EXTERIOR SIGNS SHALL BE METAL COMPONENTS SUITABLE TO EXTERIOR USE AND SIMILAR TO INTERIOR SIGNS FOR SHAPE AND FORM
6. CONTRACTOR TO SUBMIT A SCHEDULE TO VERIFY ALL PERMANENT NUMBERS AND TEXT PRIOR TO FABRICATION

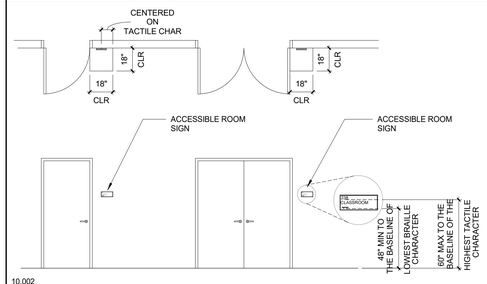
*MEASURED CENTER TO CENTER

| MEASUREMENT RANGE | MINIMUM IN INCHES MAXIMUM IN INCHES |
|---|---|
| DOT BASE DIAMETER | 0.059 IN TO 0.063 IN |
| DISTANCE BETWEEN TWO DOTS IN THE SAME CELL* | 0.100 IN |
| DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS* | 0.300 IN |
| DOT HEIGHT | 0.025 IN TO 0.037 IN |
| DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW* | 0.395 TO 0.400 IN |

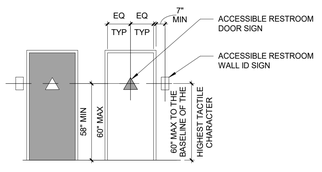
## TACTILE CHARACTER & BRAILLE STANDARDS FOR SIGNAGE PER TITLE 24 — 3 — 1/4" = 1'-0"




## BUILDING CAST ALUMINUM SIGNAGE @ EXTERIOR W/O LIGHTING — 17 — 3" = 1'-0"




**NOTE:** AT RESTROOM SIGNAGE, CONTRAST DOOR TO GEOMETRIC SIGN 70% LIGHT/DARK

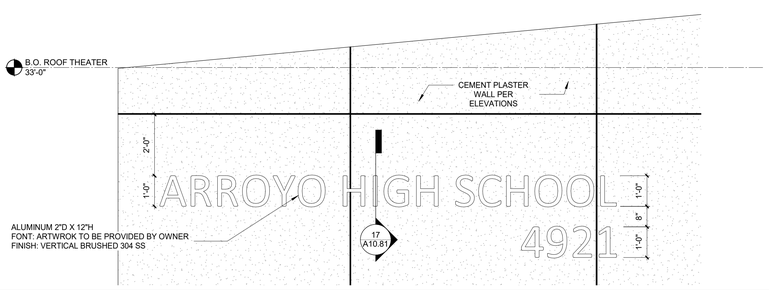



**NOTES:**

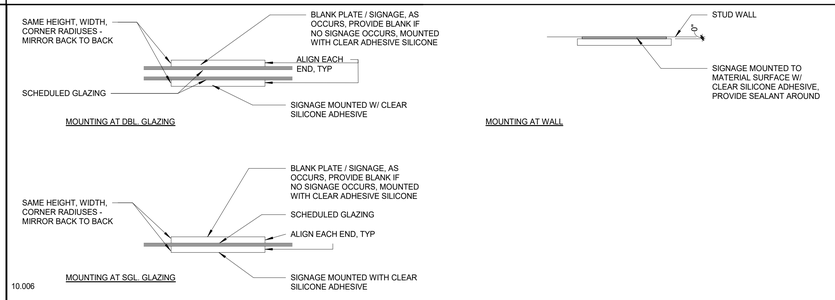
1. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAVES, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. TACTILE CHARACTER HEIGHTS SHALL BE 48" MINIMUM ABOVE THE FINISH FLOOR TO THE BASELINE OF THE LOWEST TACTILE BRAILLE CELLS, AND HIGHEST LINE OF RAISED CHARACTERS SHALL BE 60" MAXIMUM ABOVE FINISH FLOOR.
FOR PAIRS OF DOORS WHERE DOOR SWING IS LIMITED TO 90 DEGREE, MOUNT SIGN 9" FROM EDGE OF DOOR. FOR PAIRS OF DOORS WHERE DOOR SWING EXCEEDS 90 DEGREES, MOUNT SIGN AT DOOR WIDTH PLUS 9" FROM EDGE OF DOOR. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MIN BY 18" MIN, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND THE 45 DEGREE OPEN POSITION. **REFER TO CBC 11B-703.4.2.**

2. RESTROOM GEOMETRIC SIGNS SHALL BE INSTALLED CENTERED ON THE DOOR. MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN. THE COLOR AND CONTRAST OF THE SIGN SHALL BE DISTINCTLY DIFFERENT FROM THE COLOR AND CONTRAST OF THE DOOR.
3. SEE (6 / A10.81) FOR SIGNAGE MOUNTING

## DOOR SIGNAGE LOCATIONS — 2 — 1/4" = 1'-0"




## BUILDING CAST ALUMINUM SIGNAGE @ EXTERIOR W/O LIGHTING — 16 — 1/2" = 1'-0"




## TYP. ROOM IDENTIFICATION SIGN MOUNTING — 6 — 3" = 1'-0"

MATERIALS KEYNOTES:

1. ALUMINUM - WITH SATIN, HORIZONTALLY BRUSHED FINISH ALL AROUND UNLESS OTHERWISE NOTED IN DRAWINGS. SQUARE EASED CORNERS AND EDGES ALL AROUND. SUBMIT FINISH WITH SAMPLE TO ARCHITECT PRIOR TO FABRICATION.
2. ACRYLIC - PAINTED AS DESIGNATED IN DESIGN DRAWINGS. FINE SANDED AND SQUARED EASED CORNERS AND EDGES ALL AROUND.
3. ACRYLIC - CLEAR NON-GLARE ACRYLIC - MIZUBISHI, SHINKOLITE N2 001. FINE SANDED AND SQUARED EASED CORNERS AND EDGES ALL AROUND.
4. TACTILE COPY WITH BRAILLE. GRAVOTAC/ROUTER METHOD AND CLEAR BRAILLE BEEDS PLUG MOUNTED INTO SIGN SURFACE. GRAVOTAC TO BE SURFACE APPLIED TO SIGN PANEL PRIOR TO ROUTING. ROUTE MINIMAL DEPTH INTO SIGN PANEL TO INSURE VANDAL RESISTANCE. FABRICATOR TAKE NECESSARY PRECAUTIONS TO AVOID DISTORTION OF LETTER FORMS.

PAINT COLOR KEYNOTES (LOW-SHEEN, TYP.):
S1. PROJECT GREY - PMS COOL GREY #2
S2. PROJECT - PMS WHITE
S3. PROJECT RED - PMS 201 RED

10.001

## SIGNAGE MATERIALS & COLOR KEYNOTES — 1 — 12" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CONSOLIDATED UNION HIGH SCHOOL DISTRICT ESTABLISHED 1901 COMMITTED TO COLLEGE AND CAREER

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**SIGNAGE DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

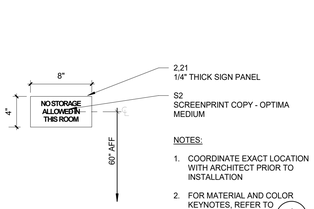
SHEET:

# A10.81

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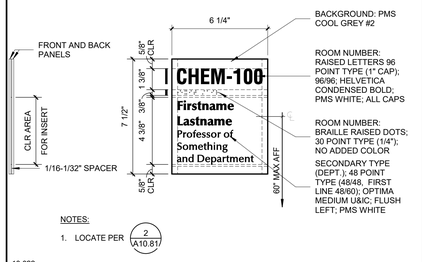
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON THIS SHEET'S ORIGINAL PAPER SIZE




NOTES:
1. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION
2. FOR MATERIAL AND COLOR KEYNOTES, REFER TO (1 / A10.81)

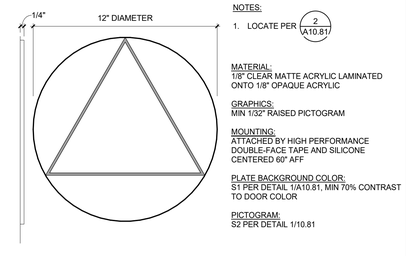
## NO STORAGE SIGNAGE | 20
1 1/2" = 1'-0"




10.022

NOTES:
1. LOCATE PER (2 / A10.81)

## ROOM SIGNAGE SINGLE INSERT | 15
3" = 1'-0"




10.011

NOTES:
1. LOCATE PER (2 / A10.81)

MATERIAL:
1/8" CLEAR MATTE ACRYLIC LAMINATED ONTO 1/8" OPAQUE ACRYLIC

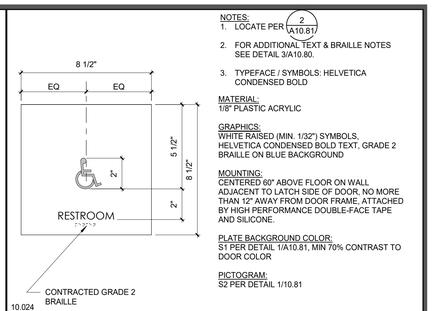
GRAPHICS:
MIN 1/32" RAISED PICTOGRAM

MOUNTING:
ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE CENTERED 60" AFF

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

## UNISEX RESTROOM DOOR SIGNAGE | 10
3" = 1'-0"




10.024

NOTES:
1. LOCATE PER (2 / A10.81)
2. FOR ADDITIONAL TEXT & BRAILLE NOTES SEE DETAIL 3/A10.80.
3. TYPEFACE / SYMBOLS: HELVETICA CONDENSED BOLD

MATERIAL:
1/8" PLASTIC ACRYLIC

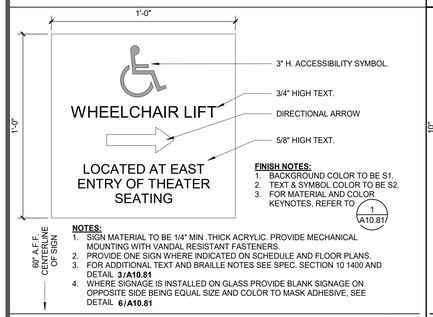
GRAPHICS:
WHITE RAISED (MIN. 1/32") SYMBOLS, HELVETICA CONDENSED BOLD TEXT, GRADE 2 BRAILLE ON BLUE BACKGROUND

MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE.

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1/A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

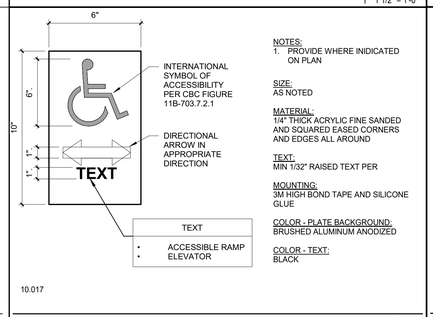
## UNISEX RESTROOM SIGNAGE | 5
3" = 1'-0"




**FINISH NOTES:**
1. BACKGROUND COLOR TO BE S1.
2. TEXT & SYMBOL COLOR TO BE S2.
3. FOR MATERIAL AND COLOR KEYNOTES, REFER TO (1 / A10.81)

**NOTES:**
1. SIGN MATERIAL TO BE 1/4" MIN .THICK ACRYLIC. PROVIDE MECHANICAL MOUNTING WITH VANDAL RESISTANT FASTENERS.
2. PROVIDE ONE SIGN WHERE INDICATED ON SCHEDULE AND FLOOR PLANS.
3. FOR ADDITIONAL TEXT AND BRAILLE NOTES SEE SPEC. SECTION 10 1400 AND DETAIL **3/A10.81**
4. WHERE SIGNAGE IS INSTALLED ON GLASS PROVIDE BLANK SIGNAGE ON OPPOSITE SIDE BEING EQUAL SIZE AND COLOR TO MASK ADHESIVE, SEE DETAIL **6/A10.81**

## WHEELCHAIR LIFT DIRECTIONAL SIGN | 24
3" = 1'-0"




10.017

NOTES:
1. PROVIDE WHERE INDICATED ON PLAN

SIZE:
AS NOTED

MATERIAL:
1/4" THICK ACRYLIC FINE SANDED AND SQUARED EASED CORNERS AND EDGES ALL AROUND

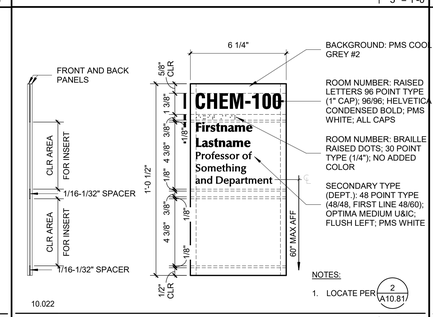
TEXT:
MIN 1/32" RAISED TEXT PER

MOUNTING:
3M HIGH BOND TAPE AND SILICONE GLUE

COLOR - PLATE BACKGROUND:
BRUSHED ALUMINUM ANODIZED

COLOR - TEXT:
BLACK

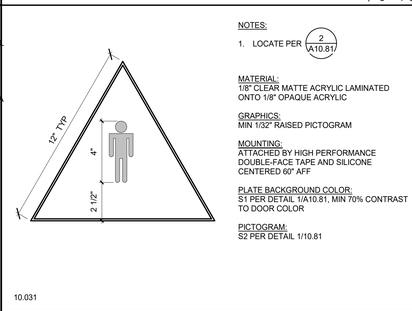
## ACCESSIBILTY INFORMATIONAL SIGN | 19
3" = 1'-0"




10.022

NOTES:
1. LOCATE PER (2 / A10.81)

## ROOM SIGNAGE DOUBLE INSERT | 14
3" = 1'-0"




10.031

NOTES:
1. LOCATE PER (2 / A10.81)

MATERIAL:
1/8" CLEAR MATTE ACRYLIC LAMINATED ONTO 1/8" OPAQUE ACRYLIC

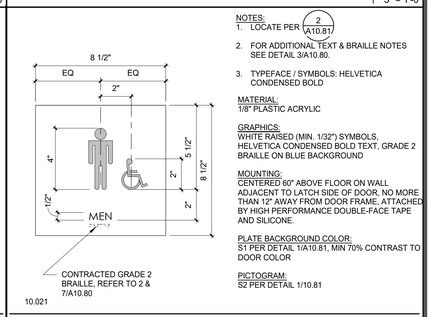
GRAPHICS:
MIN 1/32" RAISED PICTOGRAM

MOUNTING:
ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE CENTERED 60" AFF

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1/A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

## MEN'S RESTROOM DOOR SIGNAGE | 9
3" = 1'-0"




10.021

NOTES:
1. LOCATE PER (2 / A10.81)
2. FOR ADDITIONAL TEXT & BRAILLE NOTES SEE DETAIL 3/A10.80.
3. TYPEFACE / SYMBOLS: HELVETICA CONDENSED BOLD

MATERIAL:
1/8" PLASTIC ACRYLIC

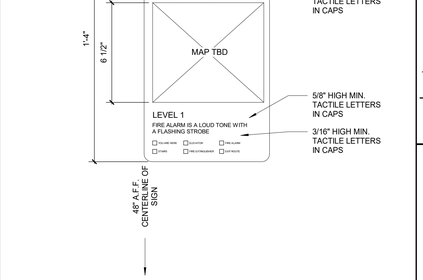
GRAPHICS:
WHITE RAISED (MIN. 1/32") SYMBOLS, HELVETICA CONDENSED BOLD TEXT, GRADE 2 BRAILLE ON BLUE BACKGROUND

MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE.

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1/A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

## MEN'S RESTROOM ROOM ID SIGNAGE | 4
3" = 1'-0"




**COLOR & FINISH LEGEND**
1. BACKGROUND COLOR TO BE S1.
2. TEXT COLOR TO BE S2.
3. FOR KEYNOTES ON MATERIALS & COLORS, SEE DETAIL (1 / A10.81)

**NOTES:**
1. SIGN MATERIAL TO BE 1/8" MIN .THICK ACRYLIC. PROVIDE MECHANICAL MOUNTING WITH VANDAL RESISTANT FASTENERS.
2. PROVIDE ONE SIGN WHERE INDICATED ON SCHEDULE AND FLOOR PLANS.
3. FOR ADDITIONAL TEXT AND BRAILLE NOTES SEE SPEC. SECTION 10 1400 AND DETAIL **3/A10.81**
4. WHERE SIGNAGE IS INSTALLED ON GLASS PROVIDE BLANK SIGNAGE ON OPPOSITE SIDE BEING EQUAL SIZE AND COLOR TO MASK ADHESIVE, SEE DETAIL **6/A10.81**
5. INTERIOR SPACES SHALL BE INDICATED BY SHADING AND CORRIDOR SHALL BE PROMINENT AND DISPLAYED IN WHITE

## EVACUATION PLAN SIGN | 22
3" = 1'-0"




10.118

NOTES:
1. COMPLY W/ ARTICLE 4.30 & A4.30 OF ADAAG.
2. SEE FLOOR PLANS FOR LOCATIONS.

SIZE:
AS SHOWN WITH 5/8" HIGH TEXT

MATERIAL:
1/8" THICK ACRYLIC FINE SANDED AND SQUARED EASED CORNERS AND EDGES ALL AROUND

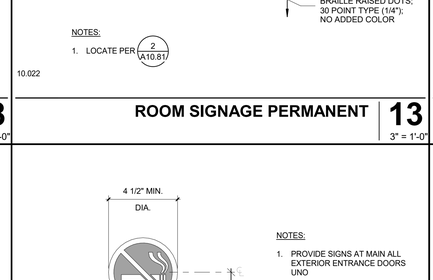
TEXT:
MIN 1/32" RAISED TEXT

MOUNTING:
3M HIGH BOND TAPE AND SILICONE GLUE

COLOR - PLATE BACKGROUND:
S3 - PROJECT RED - PMS 201 RED

COLOR - TEXT:
S2 - PROJECT WHITE

## FIRE SPRINKLER RISER INSIDE SIGN | 18
3" = 1'-0"




NOTES:
1. LOCATE PER (2 / A10.81)

## ROOM SIGNAGE PERMANENT | 13
3" = 1'-0"




10.028

NOTES:
1. LOCATE PER (2 / A10.81)

MATERIAL:
1/8" CLEAR MATTE ACRYLIC LAMINATED ONTO 1/8" OPAQUE ACRYLIC

GRAPHICS:
MIN 1/32" RAISED PICTOGRAM

MOUNTING:
ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE CENTERED 60" AFF

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1/A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

## WOMEN'S RESTROOM DOOR SIGNAGE | 8
3" = 1'-0"




10.020

NOTES:
1. LOCATE PER (2 / A10.81)
2. FOR ADDITIONAL TEXT & BRAILLE NOTES SEE DETAIL 3/A10.80.
3. TYPEFACE / SYMBOLS: HELVETICA CONDENSED BOLD

MATERIAL:
1/8" PLASTIC ACRYLIC

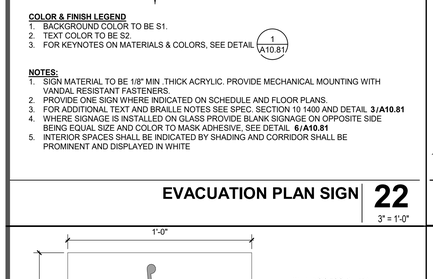
GRAPHICS:
WHITE RAISED (MIN. 1/32") SYMBOLS, HELVETICA CONDENSED BOLD TEXT, GRADE 2 BRAILLE ON BLUE BACKGROUND

MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE.

PLATE BACKGROUND COLOR:
S1 PER DETAIL 1/A10.81, MIN 70% CONTRAST TO DOOR COLOR

PICTOGRAM:
S2 PER DETAIL 1/10.81

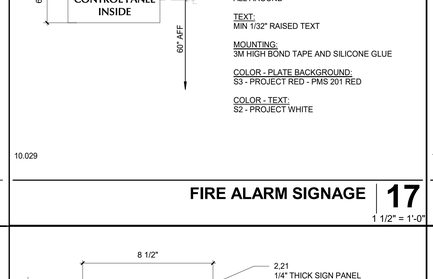
## WOMEN'S RESTROOM ROOM ID SIGNAGE | 3
3" = 1'-0"




**FINISH NOTES:**
1. BACKGROUND COLOR TO BE S1.
2. TEXT & SYMBOL COLOR TO BE S2.
3. FOR MATERIAL AND COLOR KEYNOTES, REFER TO (1 / A10.81)

**NOTES:**
1. SIGN MATERIAL TO BE 1/4" MIN .THICK ACRYLIC. PROVIDE MECHANICAL MOUNTING WITH VANDAL RESISTANT FASTENERS.
2. PROVIDE ONE SIGN WHERE INDICATED ON SCHEDULE AND FLOOR PLANS.
3. FOR ADDITIONAL TEXT AND BRAILLE NOTES SEE SPEC. SECTION 10 1400 AND DETAIL **3/A10.81**
4. WHERE SIGNAGE IS INSTALLED ON GLASS PROVIDE BLANK SIGNAGE ON OPPOSITE SIDE BEING EQUAL SIZE AND COLOR TO MASK ADHESIVE, SEE DETAIL **6/A10.81**

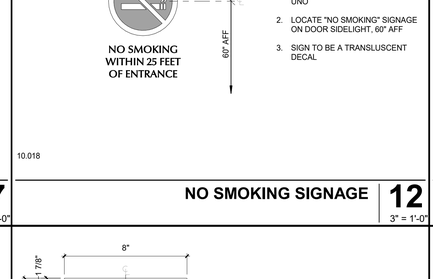
## WHEELCHAIR LIFT SIGN | 21
3" = 1'-0"




NOTES:
1. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION
2. FOR MATERIAL AND COLOR KEYNOTES, REFER TO (1 / A10.81)

10.032

## OCCUPANT LOAD SIGN | 16
3" = 1'-0"




NOTES:
1. A DIRECTIONAL SIGN TO ACCESSIBLE EXIT PER 1 / A10.82 MUST ACCOMPANY THIS SIGN.

MATERIAL:
CLEAR MATTE ACRYLIC PLASTIC 1/8" THICK

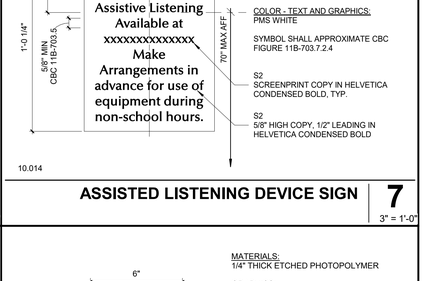
TEXT:
RAISED (MIN 1/32") 1 1/4" HIGH HELVETICA CONDENSED BOLD TEXT W/ CORRESPONDING CONTRACTED CALIFORNIA GRADE #2 BRAILLE, PMS WHITE (3 / A10.81)

MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE

COLOR - PLATE BACKGROUND: (1 / A10.81)
S1 PER DETAIL

COLOR - TEXT: (1 / A10.81)
S2 PER DETAIL

## TACTILE NOT AN EXIT SIGNAGE | 11
3" = 1'-0"




10.025

MATERIALS:
1/4" THICK ETCHED PHOTOPOLYMER

GRAPHICS:
RAISED (MIN 1/32") 1 1/4" HIGH HELVETICA CONDENSED BOLD TEXT W/ CORRESPONDING CONTRACTED CALIFORNIA GRADE #2 BRAILLE, PMS WHITE

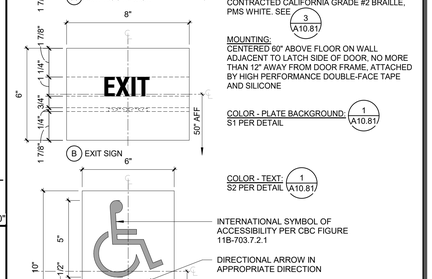
MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE.

COLOR - PLATE BACKGROUND COVER:
S1 - PROJECT GREY - PMS COOL GREY #2

COLOR - TEXT:
S2 - PROJECT WHITE

CONTRACTED GRADE II BRAILLE PER (3 / A10.81)

## STAIRWAY IDENTIFICATION SIGNAGE | 6
3" = 1'-0"




10.019

MATERIAL:
CLEAR MATTE ACRYLIC PLASTIC 1/8" THICK

TEXT:
RAISED (MIN 1/32") 1 1/4" HIGH HELVETICA CONDENSED BOLD TEXT W/ CORRESPONDING CONTRACTED CALIFORNIA GRADE #2 BRAILLE, PMS WHITE

MOUNTING:
CENTERED 60" ABOVE FLOOR ON WALL ADJACENT TO LATCH SIDE OF DOOR, NO MORE THAN 12" AWAY FROM DOOR FRAME, ATTACHED BY HIGH PERFORMANCE DOUBLE-FACE TAPE AND SILICONE

COLOR - PLATE BACKGROUND (1 / A10.81)
S1 PER DETAIL

COLOR - TEXT: (1 / A10.81)
S2 PER DETAIL

NOTES:
1. COMPLY WITH SECTION 703 OF 2010 ADAAG & 2022 CBC.
2. SEE FLOOR PLANS FOR LOCATION.
3. LOCATE SIGN PER DETAIL (2 / A10.81)
4. WHERE SIGNAGE IS INSTALLED ON GLASS, PROVIDE BLANK SIGNAGE ON OPPOSITE SIDE BEING EQUAL SIZE, AND COLOR TO MASK ADHESIVE, REFER TO (6 / A10.81)
5. FOR CHARACTER AND BRAILLE STANDARDS, REFER TO (3 / A10.81)
6. FOR MATERIAL AND COLOR KEYNOTES, REFER TO (1 / A10.81)

## TACTILE EXIT SIGNAGE | 1
3" = 1'-0"

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
6/26/2025 4:18:17 PM

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**SIGNAGE DETAILS**

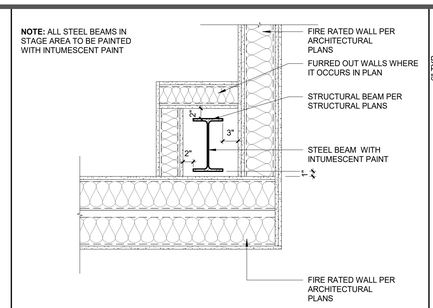
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
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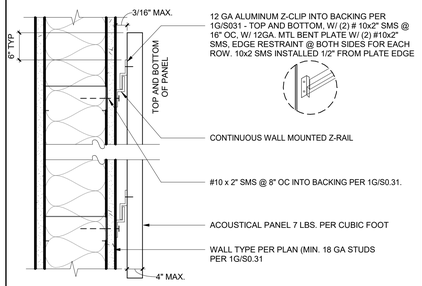
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PLEASE RECYCLE

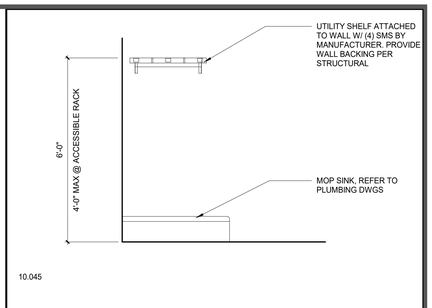
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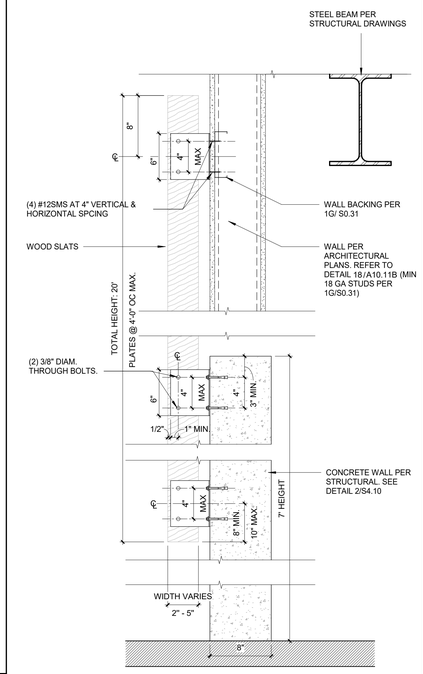

## EXPOSED STEEL COLUMN AT FIRE RATED WALLS — 15
1" = 1'-0"



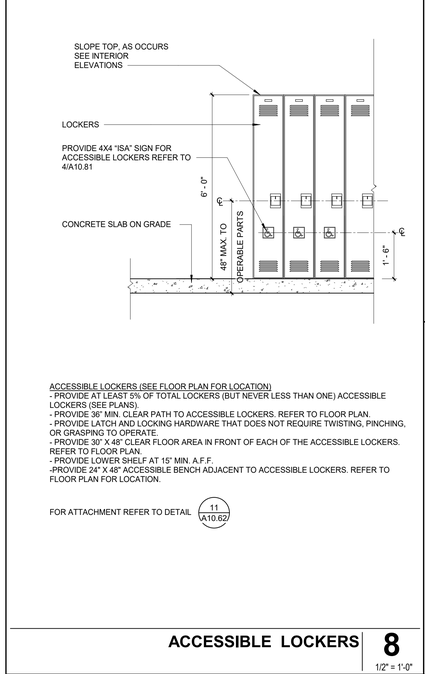

## ACOUSTIC PANELS ANCHORAGE — 10
3" = 1'-0"



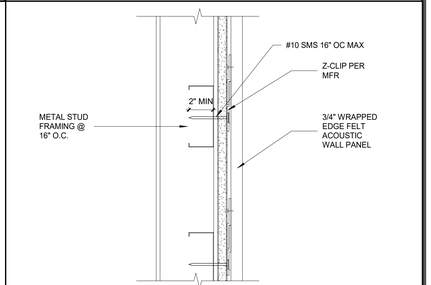

## UTILITY SHELF W/ MOP BRACKETS — 5
1/2" = 1'-0"



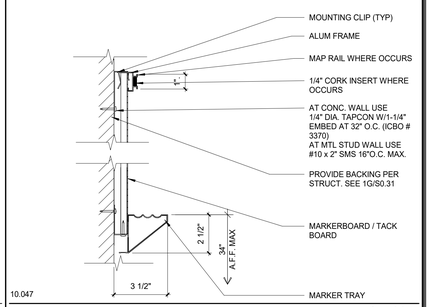

## WOOD SLATS AT STAIR #1 - STUD WALL TOP ATTACHMENT — 12
1 1/2" = 1'-0"



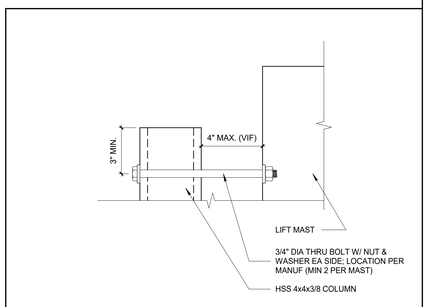

## ACCESSIBLE LOCKERS — 8
1/2" = 1'-0"



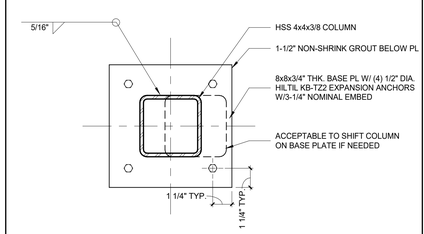

## AWP - ATTACHMENT DETAIL — 4
3" = 1'-0"




## WHITE BOARD / TACK BOARD — 3
3" = 1'-0"

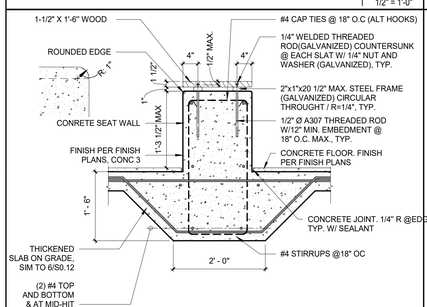



COLUMN TO LIFT MAST CONNECTION SECTION

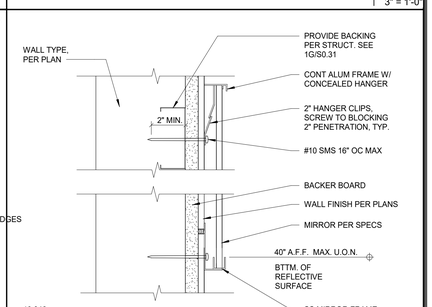



BASE PLATE TO COLUMN PLAN VIEW

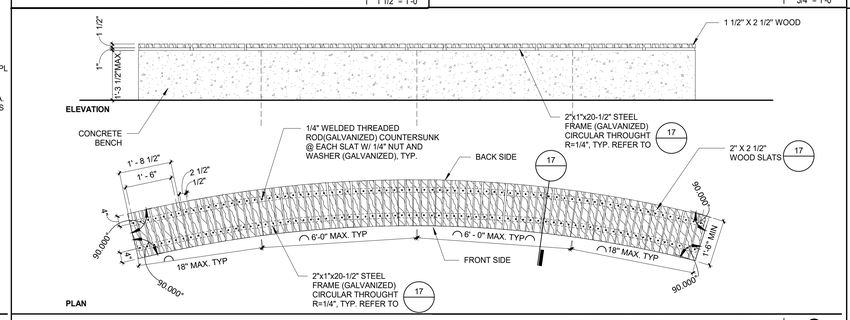
## BASE PLATE TO COLUMN & COLUMN TO LIFT MAST ATTACHMENTS — 16
3" = 1'-0"



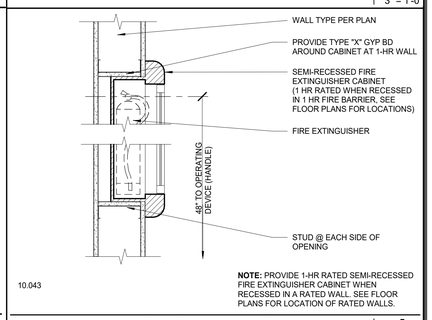

## LOBBY CONCRETE BENCH — 7
3/4" = 1'-0"




## MIRROR MOUNT — 2
3" = 1'-0"




## LOBBY CONCRETE BENCH — 6
1/2" = 1'-0"




**NOTE:** PROVIDE 1-HR RATED SEMI-RECESSED FIRE EXTINGUISHER CABINET WHEN RECESSED IN A RATED WALL. SEE FLOOR PLANS FOR LOCATION OF RATED WALLS.

## SEMI-RECESSED FIRE EXTINGUISHER CABINET — 1
1 1/2" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**MISCELLANEOUS DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

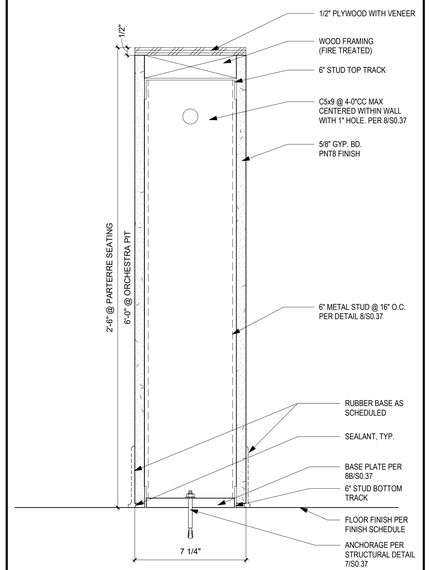
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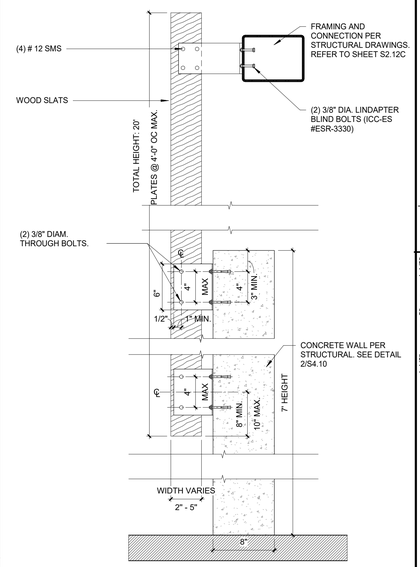
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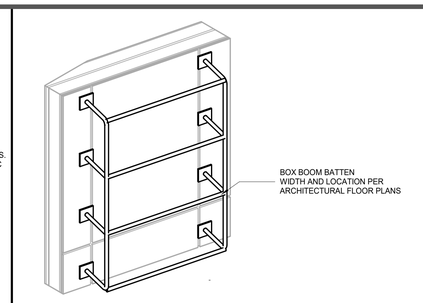
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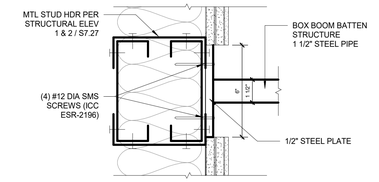

## PARTIAL WALL @ THEATER | 19
3" = 1'-0"




SECTION

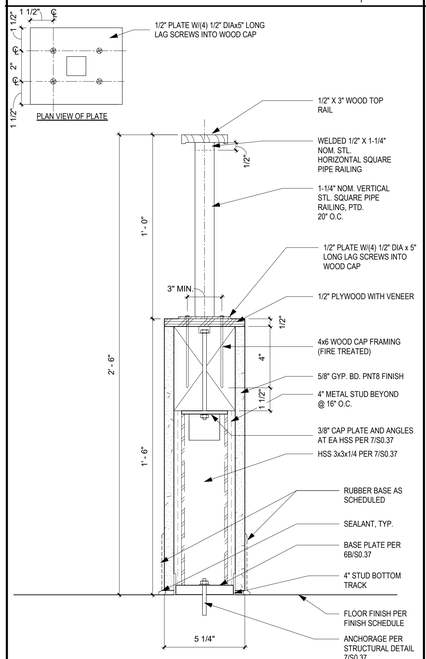



## BOX BOOM BATTEN AXONOMETRIC | 10

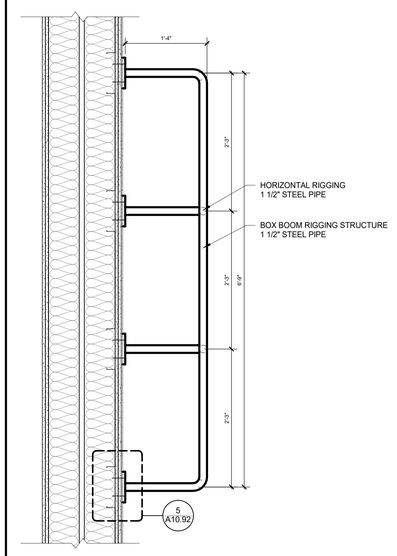



NOTE: FOR SPOTLIGHT BATTEN ATTACHEMENT REFRE TO 1D/S0.31

## BOX BOOM BATTEN ATTACHMENT | 5
3" = 1'-0"




## GUARDRAIL @ THEATER | 8
3" = 1'-0"




## BOX BOOM BATTEN | 3
1" = 1'-0"




## DOOR, OVERHEAD COILING - INTERIOR - ELEVATION | 22
1" = 1'-0"




## SPOTLIGHT BATTEN | 18
1" = 1'-0"




## WOOD SLATS AT STAIR #1 - BEAM TOP ATTACHMENT | 13
1 1/2" = 1'-0"




## DOOR, OVERHEAD COILING, ELEVATION | 6
1" = 1'-0"



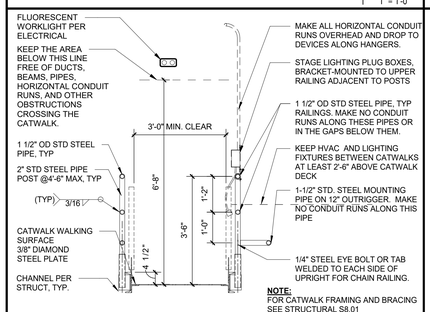

## DOOR, OVERHEAD COILING - INTERIOR - HEAD | 21
1" = 1'-0"



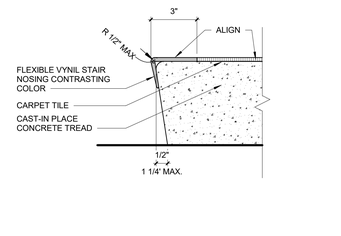

## DOOR, OVERHEAD COILING, JAMB/HEAD GUIDE | 11
3" = 1'-0"



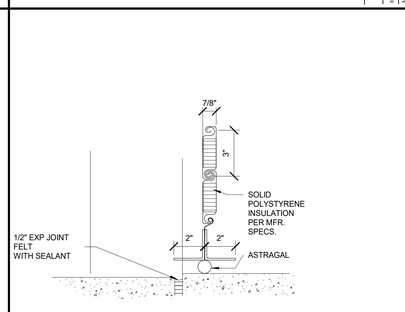

## COILING FIRE DOOR - HEAD | 1
1" = 1'-0"




## CATWALK RAILING | 17
1/2" = 1'-0"




## CAST-IN PLACE CONCRETE TREAD | 12
3" = 1'-0"




## DOOR, OVERHEAD COILING, SECTION. | 2
3" = 1'-0"

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

LICENSED ARCHITECT
VIRGINIA ELAINE MARQUARDT
No. C-33423
06/30/2025
RENEWAL DATE
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**EQUIPMENT AND MISCELLANEOUS INTERIOR DETAILS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

**A10.92**

Autodesk Docs://3361008100 EMU\SD Arroyo New Construction\3361008100-A-BLDG.rvt
6/26/2025 6:18:35 PM

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ALL SHEETS ORIGINAL PAGE SIZE

## PROJECT INFORMATION :

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW CONSTRUCTION**
4921 CEDAR AVENUE
EL MONTE, CA 91732

ARCHITECT:
**HMC ARCHITECTS**
633 W. 5TH STREET 3RD FLOOR
LOS ANGELES, CA 90071
Phone: 213.542.8300
Fax:

FRAMING: Exterior Storefront : 2" x 6 1/2" (AFG601T Series)
Exterior Storefront: 2 1/4" x 7" T-500 (OPG1900 Series)
Exterior Curtainwall : 2 1/4" x 10" T-500 (OPG3000 Series)
Exterior Door : WS512HD Series

FRAME FINISH: Light Champagne

## DESIGN CRITERIA: REF: S0.01

BUILDING CODE : 2022 CBC

MATERIAL:
- ALUMINUM FRAMING MEMBERS HAVE BEEN DESIGNED PER THE ALUMINUM DESIGN MANUAL.
ALUMINUM FRAMING MATERIAL TO BE 6063-T6 TEMPER ALLOY UNLESS NOTED OTHERWISE.

WIND LOADS:

| | |
|---|---|
| BASIC WIND SPEED | = 103 MPH |
| RISK CATEGORY | = III |
| ENCLOSURE CLASS. | = ENCLOSED BUILDING |
| EXPOSURE CATEGORY | = C |
| INTERNAL PRESSURE COEFF. | = +/-0.18 |

SEISMIC LOADS:

| | |
|---|---|
| SEISMIC DESIGN CATEGORY | = D |
| SITE CLASS | = D |

MAPPED SPECTRAL RESPONSE ACCELERATION:
$S_s$ = 1.82g
$S_1$ = 0.65g
DESIGN SPECTRAL RESPONSE COEFF.
$S_{DS}$ = 1.213g
$S_{D1}$ = 0.737g

Metal Studs:
All metal studs for Analysis are 16Ga. or Greater

## GLAZING CONTRACTOR, GENERAL CONTRACTOR, & ARCHITECT NOTES:

1. THE FOLLOWING DRAWING ARE FOR THE SPECIFIC ALUMINUM WINDOWS, STOREFRONTS, CURTAIN WALLS, DOORS MATERIAL ONLY. UNLESS SPECIFICALLY NOTED:
   A. SURROUNDING STRUCTURES / SUBSTRATE DETAILS ARE FOR REFERENCE ONLY AND MUST BE VERIFIED BY ARCHITECT, CONTRACTORS AND SUB-TRADES AS REQUIRED
   B. ALL DIMENSIONS, QUANTITIES AND CONDITIONS SHOWN MUST BE VERIFIED IN FIELD BEFORE FABRICATION AND INSTALLATION
   C. THESE DRAWINGS WHEN APPROVED WILL SUPERSEDE ALL OTHER DOCUMENTS WITH WHICH THE JOB WILL BE MANUFACTURED. ANY SUBSEQUENT CHANGES ARE SUBJECT TO THE APPROVAL OF ARCADIA INC.
   D. TOLERANCE OF ROUGH OPENING SHALL BE A MINIMUM +/- 3/16"
2. ARCADIA INC IS NOT RESPONSIBLE FOR WORK AND/OR ERRORS INCURRED BY OTHER TRADES THROUGH THE USE OF THIS SHOP DRAWING
3. ALL APPROVALS OF THESE SHOP DRAWING BY CONSULTANT, PUBLIC AGENCY ARCHITECT ETC. MUST BE OBTAINED BEFORE DIES ARE CUT, MATERIAL FABRICATED OR SHIPPED. ARCADIA INC. IS NOT RESPONSIBLE FOR MATERIAL FABRICATED, SHIPPED OR ERECTED PRIOR TO ALL APPROVALS.
4. THE CAPACITY OF THE BUILDING STRUCTURE TO SUPPORT THE DEAD AND WIND LOADING HAS NOT BEEN EVALUATED. A COPY OF THESE SHOP DRAWING AND CALCULATIONS SHOULD BE SUBMITTED TO THE PROJECT STRUCTURAL ENGINEER SO THAT THE ADEQUACY OF THE BUILDING STRUCTURE CAN BE EVALUATED.
5. ALL GASKET JOINTS, BUTT JOINTS, HORIZONTAL AND VERTICAL JOINT, LAP JOINTS AND WEEP HOLES SHOULD BE SEALED AND INSTALLED WATER TIGHT PER THE INSTALLATION INSTRUCTION AND/OR TEST REPORT AND FOLLOWING SEALANT MANUFACTURER RECOMMENDATIONS AS TO SIZE, METHOD OF APPLICATION AND COMPATIBILITY WITH ADJOINING MATERIAL.
6. IF CONNECTION CONFIGURATION OR MATERIALS DIFFER FROM THOSE USED IN THIS SET OF SHOP DRAWING IT SHALL BE BROUGHT TO THE ATTENTION OF ARCADIA INC. PRIOR TO FABRICATION OR INSTALLATION.
7. ALL SHEAR BLOCKS SHALL BE ALUMINUM WITH A DRILLED HOLE OF MAX. DIAMETER EQUAL TO BOLT DIAMETER PLUS 1/32".
8. ALL BOLTS, LAG SCREWS, AND CONCRETE ANCHORS SHALL BE INSTALLED WITH AMERICAN STANDARD PLAIN WASHERS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE ASTM A307 UNLESS NOTED OTHERWISE.
9. ALL POST-INSTALLED CONCRETE ANCHORS ARE SUBJECT TO SPECIAL INSPECTION PER THE ESR AND LOCAL ADOPTED BUILDING CODES.
10. INTERNAL STEEL STIFFENERS WHERE SPECIFIED SHALL BE FABRICATED USING ASTM A-36 STEEL FOR STRUCTURAL SHAPES AND ASTM A-569 FOR COLD FORMED SECTIONS. DIMENSIONS SHOWN IN THESE SHOP DRAWING AND CALCULATIONS ARE APPROXIMATE; ACTUAL FABRICATED SIZE SHALL PROVIDE FOR A TIGHT FIT WITH A MAXIMUM OF 1/8" CLEARANCE.
11. ALL WELDING OF ALUMINUM SHALL BE IN ACCORDANCE WITH BUILDING CODE. WELDING OF ALUMINUM TO OCCUR ONLY AT LOCATIONS SPECIFICALLY SHOWN ON SHOP DRAWING.
12. ALL ALUMINUM IN CONTACT WITH MASONRY, STUCCO, STEEL OR OTHER DISSIMILAR MATERIALS SHALL BE SEPARATED WITH VINYL TAPE OR POLYSTYRENE SHIMS. INTERNAL STEEL REINFORCING SHALL BE SHOP COATED WITH ALKYD TYPE ZINC CHROMATE PRIMER COMPLYING WITH FS TT-P-645.
13. ALL GLASS AND GLAZING SHALL MEET THE REQUIREMENTS FOR THE CURRENT BUILDING CODE. SAFETY GLAZING SHALL BE USED IN ALL AREAS WHERE REQUIRED. ALL GLASS SHALL BEAR SAFETY GLAZING BUBBLE MARKER PER ANSI Z79.1
14. GLASS SETTING BLOCKS SHALL BE INSTALLED AT GLASS LITE 1/4 POINTS EXCEPT AS SPECIFICALLY NOTED OTHERWISE ON THE WINDOW WALL ELEVATIONS.
15. ARCADIA INC. IS NOT RESPONSIBLE FOR THE TYPE, SIZE, OR LOCATION OF ANY LOAD BEARING STRUCTURAL MEMBERS OF THE BUILDING. THE DESIGN OF THE WINDOW WALL IS BASED ON THE ASSUMPTION THAT THE BUILDING MEMBERS ARE CAPABLE OF ADEQUATELY SUPPORTING ALL WIND AND DEAD LOADS IMPOSED ON THEM BY THE SYSTEM. THIS SYSTEM, AS DETAILED, SHALL BE DESIGNED TO ACCOMMODATE A BUILDING DEFLECTION OF + OR - 1/4" VERTICALLY. THE STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL VERIFY THAT ALL SURROUNDING STRUCTURES TO WHICH WINDOW WALL FRAMING IS TO BE ANCHORED ARE STRUCTURALLY SOUND AND CAPABLE OF SUPPORTING THE WEIGHTS AND REACTIONS OF THESE SYSTEMS UNDER MAXIMUM DESIGN LOADS.
16. STRUCTURAL ATTACHMENT BETWEEN ALUMINUM FRAMING AND STEEL STUD FRAMING SHALL BE ADEQUATE TO ACCEPT ALL LOADS IMPOSED BY THE WINDOW OR CURTAIN WALL FRAMING.(STEEL STUD FRAMING DESIGN AND SUPPLY BY OTHER)
17. USE +/- 50% ELONGATION SILICONE SEALANT DOW CORNING 791 / 795.
18. ALL SCREWS EXPOSED TO WEATHER TO BE STAINLESS STEEL. WHEN NOT EXPOSED TO WEATHER, ALL SCREWS FASTENING THROUGH ALUMINUM TO BE ZINC PLATED. ¼" DIAMETER SCREWS TO BE SAE J429 GRADE 5, ALL OTHER SCREWS TO BE SAE J429 GRADE 2 MINIMUM, UNLESS NOTED OTHERWISE.

## SHEET INDEX


| NO. | SHEET NO. | SHEET TITLE | REVISION 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1 | CW0.01 | COVER SHEET | | | | |
| 2 | CW0.02 | GENERAL NOTES | | | | |
| 3 | CW0.03 | SECTION PROPERTIES - AFG601T | | | | |
| 4 | CW0.04 | SECTION PROPERTIES - OPG3000/OPG1900 | | | | |
| 5 | CW0.05 | SECTION PROPERTIES - T200/WS512HD | | | | |
| 6 | CW1.01 | FLOOR PLAN - SEGMENT A | | | | |
| 7 | CW1.02 | FLOOR PLAN - SEGMENT B | | | | |
| 8 | CW2.01 | BUIDLING ELEVATIONS | | | | |
| 9 | CW2.02 | BUIDLING ELEVATIONS | | | | |
| 10 | CW2.03 | BUIDLING ELEVATIONS | | | | |
| 11 | CW3.01 | AFG601T ELEVATIONS | | | | |
| 12 | CW3.02 | AFG601T ELEVATIONS | | | | |
| 13 | CW3.03 | AFG601T ELEVATIONS | | | | |
| 14 | CW3.11 | OPG3000 ELEVATIONS | | | | |
| 15 | CW3.12 | OPG3000 ELEVATIONS | | | | |
| 16 | CW3.13 | OPG3000 ELEVATIONS | | | | |
| 17 | CW3.21 | OPG1900 ELEVATIONS | | | | |
| 18 | CW3.31 | T200 ELEVATIONS | | | | |
| 19 | CW3.32 | T200 ELEVATIONS | | | | |
| 20 | CW3.41 | OPG6000 ELEVATIONS | | | | |
| 21 | CW3.42 | OPG6000 ELEVATIONS | | | | |
| 22 | CW4.01 | AFG601T SECTION DETAILS | | | | |
| 23 | CW4.02 | AFG601T SECTION DETAILS | | | | |
| 24 | CW4.11 | OPG3000 SECTION DETAILS | | | | |
| 25 | CW4.12 | OPG3000 SECTION DETAILS | | | | |
| 26 | CW4.12A | OPG3000 SECTION DETAILS | | | | |
| 27 | CW4.13 | OPG3000 SECTION DETAILS | | | | |
| 28 | CW4.14 | OPG3000 SECTION DETAILS | | | | |
| 29 | CW4.15 | OPG3000 SECTION DETAILS | | | | |
| 30 | CW4.16 | OPG3000 SECTION DETAILS | | | | |
| 31 | CW4.21 | OPG1900 SECTION DETAILS | | | | |
| 32 | CW4.22 | OPG1900 SECTION DETAILS | | | | |
| 33 | CW4.23 | OPG1900 SECTION DETAILS | | | | |
| 34 | CW4.31 | T200 SECTION DETAILS | | | | |
| 35 | CW4.41 | OPG6000 SECTION DETAILS | | | | |
| 36 | CW4.42 | OPG6000 SECTION DETAILS | | | | |
| 37 | CW4.43 | OPG6000 SECTION DETAILS | | | | |
| 38 | CW4.44 | OPG6000 SECTION DETAILS | | | | |
| 39 | CW5.01 | AFG451T PLAN DETAILS | | | | |
| 40 | CW5.02 | AFG451T PLAN DETAILS | | | | |
| 41 | CW5.11 | OPG3000 PLAN DETAILS | | | | |
| 42 | CW5.12 | OPG3000 PLAN DETAILS | | | | |
| 43 | CW5.13 | OPG3000 PLAN DETAILS | | | | |
| 44 | CW5.13A | OPG3000 PLAN DETAILS | | | | |
| 45 | CW5.14 | OPG3000 PLAN DETAILS | | | | |
| 46 | CW5.15 | OPG3000 PLAN DETAILS | | | | |
| 47 | CW5.21 | OPG1900 PLAN DETAILS | | | | |
| 48 | CW5.22 | OPG1900 PLAN DETAILS | | | | |
| 49 | CW5.23 | OPG1900 PLAN DETAILS | | | | |
| 50 | CW5.31 | T200 PLAN DETAILS | | | | |
| 51 | CW5.41 | OPG6000 PLAN DETAILS | | | | |


## FIELD TESTING

REFER TO AAMA 502-12 VOLUNTARY SPECIFICATION FOR FIELD TESTING OF NEWLY INSTALLED FENESTRATION PRODUCTS FOR COMPLETE TESTING METHODS AND GUIDELINES

**FIELD TESTING OF INSTALLED SPECIMENS, (IF REQUIRED), SHALL BE TESTED AT A $\frac{1}{3}$ REDUCTION OF THE TEST PRESSURE LISTED IN PROJECT SPECIFICATIONS. (PER AMMA 502-12)**

REF: SECTION 5.3.2 TEST PROCEDURES; NOTE 6.

Unless otherwise specified, **water penetration resistance tests shall be conducted at a static test pressure equal to $\frac{2}{3}$ of the tested and rated laboratory performance test pressure** as indicated by the applicable product designation in AAMA/ WDMA/ CSA 101/ I.S. 2/ A440. For example, a product tested or rated as H-CW40 shall be field tested at a pressure differential of 0.0667 x 360Pa (8 psf) = 240 Pa (5.33 psf)

*NARRATIVE NOTE 6:*
*The default pressures used for water penetration resistance tests conducted in the field are not the same as the laboratory test pressure, to allow for field conditions and test methods that vary from the laboratory test conditions and test methods. These conditions are primarily related to the ambient environmental conditions and the installation. The certified product performance is based on laboratory testing performed under controlled laboratory conditions. The temperature, wind, and barometric pressure conditions during a field test will typically vary from the standard laboratory conditions.*

*The field installation conditions also influence the product performance. Products tested in the laboratory are perfectly plumb, level and square in a precise opening. Field test specimens, although installed within acceptable industry tolerances, are rarely perfectly plumb, level and square in a precision opening. Shipping, handling, acts of subsequent trades, aging and other environmental conditions all may have and adverse effect upon the performance of the installed specimen.* ***A $\frac{1}{3}$ reduction of the test pressure for field testing is specified as a reasonable amount adjustment for the difference between a laboratory test environment and a field test environment.***

# ALUMINUM CURTAINWALL & STOREFRONT CW DRAWINGS

Submittal DATE: 06/10/25

THESE DRAWINGS WERE PRODUCED USING THE FOLLOWING RESOURCES:
ARCHITECTURE DRAWINGS DATED 04/25/2023

AAE714

# ARROYO HIGH SCHOOL

## NEW THEATER & ADMINISTRATION BUILDING

4921 CEDAR AVENUE
EL MONTE, CA 91732

## REVIEW NOTES

## ARCADIA, INC.® PRODUCT USE & WARRANTY

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Arcadia, Inc., hereby disclaims all liability for the installation of project or design, any parts, gaskets, glazing aerials, components or sealant of other manufacturers used with Arcadia, Inc.,products , or lack of performance of Arcadia, Inc., products attributable to such items. Buyer agrees that under no circumstances shall Arcadia, Inc. be liable for installation defects as Arcadia, Inc. has not and will not be involved in the product selection or installation process. Buyer acknowledges that windows and doors are designed and manufactured to specific performance levels and are rated and classified for particular uses. Different product applications require different levels of product performance. Windows and doors are rated by independent certification agencies to insure they meet their specifications. Selecting the appropriate Arcadia, Inc. products and the installation and application of these products is not the responsibility of Arcadia, Inc. but of Buyer. Buyer represents and agrees that Buyer is solely responsible for the selection and application of proper systems and sizes and to ensure that when installed Arcadia, Inc.'s products will not allow water to pass beyond, around or through Arcadia, Inc.'s products. Unless Buyer has requested in writing and paid a separate and additional fee to Arcadia, Inc. for assembly and installation instructions and unless the same is reflected in this documents. Buyer agrees that any details shown are for purposes of illustrations purposes only and are not intended to show how the product should actually be installed and applied. This warranty also does not cover, and Arcadia, Inc., hereby disclaims all liability for any product which has accident, fire, war, flood, earthquakes, acts of God, or to which parts not supplied by Arcadia, Inc., have been added, or to defects caused by depreciation or normal wear. All decisions regarding the existence of defects in material and workmanship and the occurrence of any of the matters described in the preceding paragraphs or affecting this Warranty shall be made by Arcadia, Inc., and shall be final and binding upon the parties.

**Warranties**

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All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

PLEASE RECYCLE

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## NOTES

REGISTERED PROFESSIONAL ENGINEER
BRANDON J. DEEM
No. 38535
Exp. 12/31/25
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**COVER SHEET**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

CW0.01

THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ORIGINAL PLANS SHEETS ORIGINAL PAGE SIZE

## GLASS SCHEDULE:

| GLASS | SYMBOL | DESCRIPTION |
|---|---|---|
| 04 / INSIDE / 03 / 02 / OUTSIDE / 01 | GL-11 | **1" THICK IGU** |
| | GL-21 | **1" THICK IGU** |
| | T | **TEMPERED** |

## SETTING BLOCKS

| BLOCK | SYMBOL | DESCRIPTION |
|---|---|---|
| | SB01 | Setting Block [1" x 5/8" x 4 ] SB-1.0X0.6250X4 |
| | SB02 | Setting Block [1" x 7/16" x 4 ] SB-1.0X0.4375X4 |
| | SB03 | Setting Block [1" x 1/4" x 4 ] SB-1.0X0.2500X4 |
| | SB04 | Setting Block [1" x 3/8" x 4 ] SB-1.0X0.3750X4 |
| | | |
| | | |
| | | |

## GASKET TABLE

| GASKET | SYMBOL | GASKET No. | DESCRIPTION |
|---|---|---|---|
| | G01 | VTL-TG | Glazing gasket for AFG451T series |
| | G02 | OPG1985 | Glazing gasket for OPG3000 & OPG1900 |
| | G03 | E260 | Door Front Gasket |
| | G04 | E150 | Door Back Gasket |
| | G05 | | Mohair |
| | G06 | OPG1986IP Isolator | Pressure Bar Isolator gasket |
| | G07 | | Anti Walk Block |
| | G08 | | Nortan Tape (Window) |
| | G09 | | Window Wedge Gasket |
| | | | |

## REPETITIVE NOTES:

| NO | DESCRIPTION |
|---|---|
| 01 | SILICONE SEALANT WITH OPEN-CELL BACKER ROD (NOT BY ARCADIA) |
| 02 | WEATHER SEAL SEALANT WITH BACKER ROD (NOT BY ARCADIA) |
| 03 | 3/4" X 5/16" WEEP HOLE APPROX. 6" FROM EACH END |
| 04 | 3/4" X 5/16" WEEP HOLE APPROX. 3" FROM EACH END WITH WEEP BAFFLE - 2 PER LITE |
| 05 | 4" LONG SOLID SHIM WITH SEALANT |
| 06 | SEAL TO VERTICAL MULLION |
| 07 | SEAL AT FASTENER LOCATIONS |
| 08 | 1/8" thk END DAM BEDDED IN SEALANT AND SEALED THOROUGHLY |
| 09 | 5/16" x 5/8" WEEP SLOT @ 4" FROM END SIDE OF MULLION WITH WEEP BAFFLE - 2 PER LITE |
| 10 | CLEAR HOLE AT SCREW LOCATION AS MENTIONED IN DETAIL |
| 11 | SEALANT |

## FASTENERS

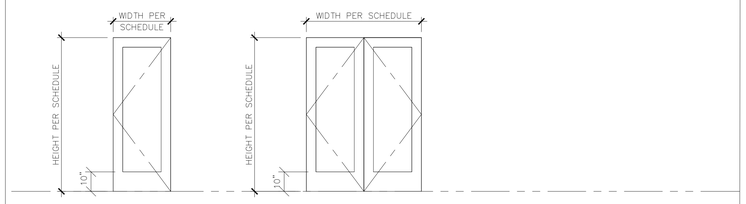
| TAG (FT.SL.X) | DESCRIPTION<br>FT = Fastener Type, SL = Size and Length, X = P for Zinc Plated or S for Stainless Steel | |
|---|---|---|
| FH.12x0.5.P | #12 x 1/2" FLAT HEAD SHEET METAL SCREW |  |
| PH.12x0.5.P | #12 x 1/2" PAN HEAD SHEET METAL SCREW |  |
| FH.12x0.625.P | #12 x 5/8" FLAT HEAD SHEET METAL SCREW |  |
| PH.12x0.625.P | #12 x 5/8" PAN HEAD SHEET METAL SCREW |  |
| PH.12x1.5.P | #12 x 1-1/2" PAN HEAD SHEET METAL SCREW |  |
| HH.12X1.S | #12 x 1" HEX HEAD SELF-DRILLING SCREW |  |
| PH.6x0.5.S | #6 x 1/2" PAN HEAD SHEET METAL SCREW |  |
| OPG2087HS | #12-11 x 7/8" HWHSMS 18-8 STAINLESS STEEL @ PRESURE PLATE |  |
| DF. 1/4 x 2.S | 1/4"-20 x 2" DRIL-FLEX (ESR 3332) |  |
| DF. 1/4 x 2.S | 1/4"-20 x 2" DRIL-FLEX (ESR 4374) |  |
| HT. 1/4x3.5 | 1/4"Ø HILTI KWIK HUS-EZ SCREW ANCHOR (ESR 3027) W/ 2 1/2" MIN CONC. EMBEDMENT |  |
| HT. 3/8x4 | 3/8"Ø HILTI KWIK HUS-EZ SCREW ANCHOR (ESR 3027) W/ 3 1/4" MIN CONC. EMBEDMENT |  |

## DOOR SCHEDULE

SEE SEPARATE SUBMITTAL FOR DOOR HARDWARE

| NO. | TYPE | WIDTH | HEIGHT | MATERIAL | LOCATION | REMARKS |
|---|---|---|---|---|---|---|
| B100.1 | - | 5'-7 3/4" | 7'-9 7/8" | AL-GL | LOBBY B100 | OPG3000 @ CW01/CW3.11 |
| B100 | - | 5'-7 3/4" | 7'-8 7/8" | AL-GL | LOBBY B100 | OPG3000 @ CW01/CW3.11 |
| A139 | - | 5'-10" | 7'-8 7/8" | AL-GL | STUDENT WAITING A129 | OPG3000 @ CW06/CW3.12 |
| B100.4 | - | 5'-7 3/4" | 7'-8 7/8" | AL-GL | LOBBY B100 | OPG3000 @ CW03/CW3.12 |
| B100.3 | - | 5'-7 3/4" | 7'-8 7/8" | AL-GL | LOBBY B100 | OPG3000 @ CW02/CW3.13 |
| B100.2 | - | 5'-7 3/4" | 7'-8 7/8" | AL-GL | LOBBY B100 | OPG3000 @ CW02/CW3.13 |
| A101 | - | 5'-7 3/4" | 7'-8 7/8" | AL-GL | RECEPTION A101 | OPG1900 @ CW05/CW3.21 |
| B274 | - | 3'-11 1/4" | 7'-0 1/2" | AL-GL | HEALTH CENTER A104 | AFG601T @ SF01/CW3.01 |
| A116 | - | 3'-9" | 7'-0" | AL-GL | STAFF LOUNGE A116 | AFG601T @ SF02/CW3.01 |
| A137.1 | - | 2'-10 1/8" | 7'-0" | AL-GL | PRINCIPAL A137 | AFG601T @ SF04/CW3.02 |
| B117.2 | - | 3'-5 1/2" | 7'-8 3/8" | AL-GL | CHORAL ROOM B118 | AFG601T @ SF05/CW3.02 |
| B148 | - | 7'-7" | 7'-10 1/4" | AL-GL | BAND ROOM B125 | AFG601T @ SF06/CW3.03 |
| B147 | - | 7'-7" | 7'-10 1/4" | AL-GL | BAND ROOM B125 | AFG601T @ SF06/CW3.03 |
| B116.1 | - | 6'-0 1/4" | 7'-10 3/8" | AL-GL | - | AFG601T @ SF10/CW3.03 |

## DOOR TYPE



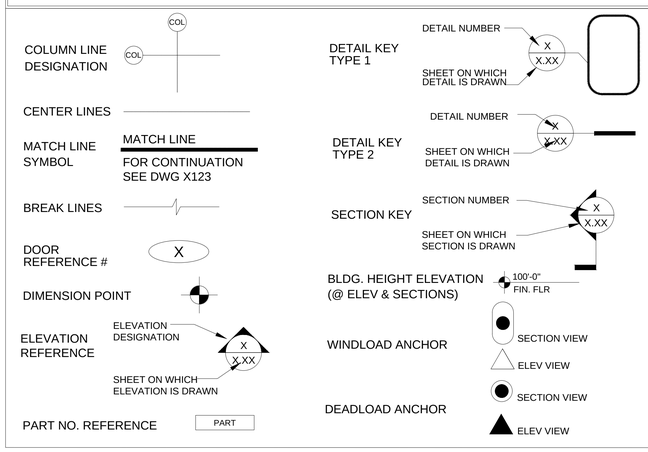

SINGLE DOOR
WIDE STILE -
HEAVY DUTY WS512HD

DOUBLE DOOR
WIDE STILE -
HEAVY DUTY WS512HD

## ABBREVIATIONS

| REFERENCE | DESCRIPTION | REFERENCE | DESCRIPTION |
|---|---|---|---|
| DIM. | DIMENSION | D .L .O. | DAYLGHT OPENING DIMENSION |
| F. D. | FRAME DIMENSION | D. O. | DOOR OPENING DIMENSION |
| OPP. | OPPOSITE HAND | R. O. | ROUGH OPENING DIMENSION |
| TYP. | TYPICAL | H.R.S.I. | HINGE RIGHT SWING IN |
| V.I.F. | VERIFY IN FIELD | ℄ | CENTER LINE |

## SYMBOL LEGEND




All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CONSTRUCTION TRADES ACADEMY · ARROYO HIGH SCHOOL · EST. 1991 · COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**NOTES**

REGISTERED PROFESSIONAL ENGINEER · BRANDON J. DEEMS · No. 35535 · Exp. 12/31/25 · STRUCTURAL · STATE OF CALIFORNIA


arcadia
ARCADIA, INC.
2301 East Vernon
Vernon, California 90058
Ph: (323) 269-7300
Fx: (323) 269-7390


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERAL NOTES**

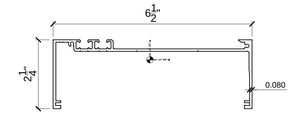
**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
| SHEET: | |

CW0.02

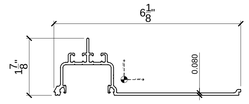
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ALL SHEETS ORIGINAL PAGE SIZE

## TBD643



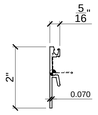

Area: 1.1189
Perimeter: 27.0852
Bounding box: X: -3.1661 -- 3.3343
Y: -1.5970 -- 0.6530
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.4786
Y: 7.1985
Product of inertia: XY: 0.0590
Radii of gyration: X: 0.6540
Y: 2.5365
Principal moments and X-Y directions about centroid:
I: 0.4781 along [1.0000 -0.0088]
J: 7.1991 along [0.0088 1.0000]

## TBD631



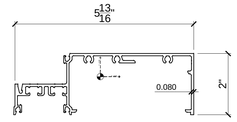

Area: 0.8235
Perimeter: 21.3479
Bounding box: X: -2.2958 -- 3.8111
Y: -0.5152 -- 1.3488
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.2295
Y: 2.5916
Product of inertia: XY: 0.4669
Radii of gyration: X: 0.5279
Y: 1.7740
Principal moments and X-Y directions about centroid:
I: 0.1405 along [0.9823 -0.1871]
J: 2.6805 along [0.1871 0.9823]

## TBD428ST



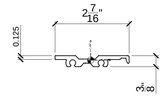

Area: 0.2311
Perimeter: 6.0116
Bounding box: X: -0.0986 -- 0.2364
Y: -1.1542 -- 0.8458
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0718
Y: 0.0021
Product of inertia: XY: -0.0023
Radii of gyration: X: 0.5573
Y: 0.0965
Principal moments and X-Y directions about centroid:
I: 0.0718 along [0.9995 -0.0329]
J: 0.0021 along [0.0329 0.9995]

## TB628



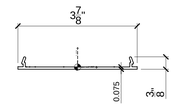

Area: 1.1773
Perimeter: 30.6447
Bounding box: X: -2.8281 -- 3.0539
Y: -1.2438 -- 0.7562
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.4891
Y: 4.5494
Product of inertia: XY: -0.5767
Radii of gyration: X: 0.6446
Y: 1.9658
Principal moments and X-Y directions about centroid:
I: 0.4088 along [0.9904 0.1380]
J: 4.6297 along [-0.1380 0.9904]

## TB427CL



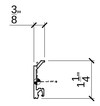

Area: 0.4420
Perimeter: 6.8426
Bounding box: X: -1.1639 -- 1.2572
Y: -0.2145 -- 0.1443
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0042
Y: 0.1849
Product of inertia: XY: 0.0033
Radii of gyration: X: 0.0969
Y: 0.6467
Principal moments and X-Y directions about centroid:
I: 0.0041 along [0.9998 0.0180]
J: 0.1849 along [-0.0180 0.9998]

## TB605



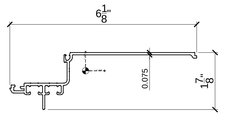

Area: 0.3449
Perimeter: 9.3914
Bounding box: X: -1.9498 -- 1.9464
Y: -0.0671 -- 0.3389
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0023
Y: 0.5331
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.0808
Y: 1.2432
Principal moments and X-Y directions about centroid:
I: 0.0023 along [1.0000 0.0000]
J: 0.5331 along [0.0000 1.0000]

## TB425ST



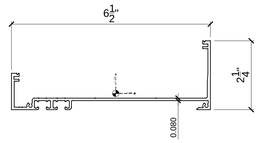

Area: 0.1473
Perimeter: 3.9345
Bounding box: X: -0.1081 -- 0.2412
Y: -0.5479 -- 0.6866
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0215
Y: 0.0013
Product of inertia: XY: 0.0004
Radii of gyration: X: 0.3822
Y: 0.0950
Principal moments and X-Y directions about centroid:
I: 0.0013 along [0.0189 0.9998]
J: 0.0215 along [-0.9998 0.0189]

## TBD625



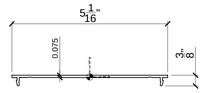

Area: 0.7192
Perimeter: 19.5508
Bounding box: X: -2.4757 -- 3.6313
Y: -1.2671 -- 0.5969
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.2347
Y: 2.1465
Product of inertia: XY: -0.5691
Radii of gyration: X: 0.5713
Y: 1.7276
Principal moments and X-Y directions about centroid:
I: 0.0781 along [0.9642 0.2653]
J: 2.3031 along [-0.2653 0.9642]

## TBD632



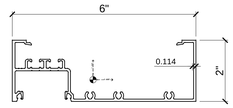

Area: 1.0029
Perimeter: 25.3994
Bounding box: X: -3.4089 -- 3.0915
Y: -0.5285 -- 1.7215
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.2849
Y: 6.0007
Product of inertia: XY: -0.5092
Radii of gyration: X: 0.5330
Y: 2.4461
Principal moments and X-Y directions about centroid:
I: 0.2399 along [0.9961 0.0880]
J: 6.0457 along [-0.0880 0.9961]

## FF665



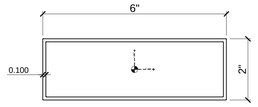

Area: 0.4239
Perimeter: 11.4172
Bounding box: X: -2.5467 -- 2.5434
Y: -0.2944 -- 0.0536
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0014
Y: 1.0457
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.0582
Y: 1.5706
Principal moments and X-Y directions about centroid:
I: 0.0014 along [1.0000 0.0000]
J: 1.0457 along [0.0000 1.0000]

## TBD665



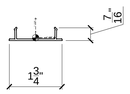

Area: 1.2016
Perimeter: 31.4211
Bounding box: X: -2.6398 -- 3.3602
Y: -0.7077 -- 1.2923
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.5015
Y: 5.6258
Product of inertia: XY: 0.3679
Radii of gyration: X: 0.6460
Y: 2.1637
Principal moments and X-Y directions about centroid:
I: 0.4752 along [0.9975 -0.0713]
J: 5.6520 along [0.0713 0.9975]

## T600



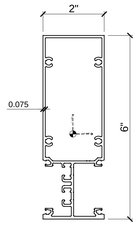

Area: 1.5600
Perimeter: 31.1485
Bounding box: X: -3.0000 -- 3.0000
Y: -1.0000 -- 1.0000
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.1812
Y: 6.7331
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.8701
Y: 2.0775
Principal moments and X-Y directions about centroid:
I: 1.1812 along [1.0000 0.0000]
J: 6.7331 along [0.0000 1.0000]

## TG611



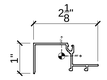

Area: 0.1363
Perimeter: 5.0866
Bounding box: X: -0.8710 -- 0.8710
Y: -0.0922 -- 0.3393
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0018
Y: 0.0414
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.1154
Y: 0.5509
Principal moments and X-Y directions about centroid:
I: 0.0018 along [1.0000 0.0000]
J: 0.0414 along [0.0000 1.0000]

## TBD651



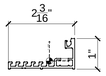

Area: 1.5904
Perimeter: 41.2076
Bounding box: X: -0.9784 -- 1.0216
Y: -2.7824 -- 3.2176
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 6.4240
Y: 0.8963
Product of inertia: XY: -0.0583
Radii of gyration: X: 2.0098
Y: 0.7507
Principal moments and X-Y directions about centroid:
I: 6.4246 along [0.9999 -0.0106]
J: 0.8956 along [0.0106 0.9999]

## TG221F



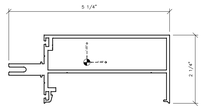

Area: 0.2231
Perimeter: 8.6494
Bounding box: X: -0.9173 -- 1.1962
Y: -0.5805 -- 0.4195
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0230
Y: 0.0918
Product of inertia: XY: -0.0179
Radii of gyration: X: 0.3208
Y: 0.6413
Principal moments and X-Y directions about centroid:
I: 0.0180 along [0.9715 -0.2371]
J: 0.0961 along [0.2371 0.9715]

## TG221BT



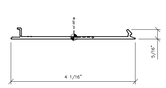

Area: 0.3559
Perimeter: 10.4654
Bounding box: X: -1.3406 -- 0.8253
Y: -0.2676 -- 0.7324
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0277
Y: 0.1754
Product of inertia: XY: 0.0391
Radii of gyration: X: 0.2789
Y: 0.7020
Principal moments and X-Y directions about centroid:
I: 0.0180 along [0.9705 0.2410]
J: 0.1851 along [-0.2410 0.9705]

## OPG6000



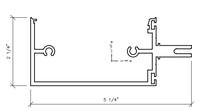

Area: 1.6673
Perimeter: 30.0066
Bounding box: X: -2.5534 -- 2.7016
Y: -1.3416 -- 0.8874
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.5994
Y: 4.7016
Product of inertia: XY: 0.2616
Radii of gyration: X: 0.5996
Y: 1.6783
Principal moments and X-Y directions about centroid:
I: 0.5828 along [0.9980 0.0634]
J: 4.7183 along [-0.0634 0.9980]

## OPG6001



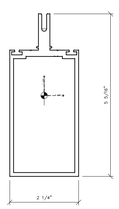

Area: 0.3508
Perimeter: 9.4301
Bounding box: X: -2.0600 -- 2.0040
Y: -0.0579 -- 0.3041
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0014
Y: 0.5235
Product of inertia: XY: -0.0008
Radii of gyration: X: 0.0642
Y: 1.2216
Principal moments and X-Y directions about centroid:
I: 0.0014 along [1.0000 -0.0016]
J: 0.5235 along [0.0016 1.0000]

## OPG6049



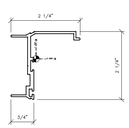

Area: 1.6347
Perimeter: 26.5601
Bounding box: X: -2.6468 -- 2.6082
Y: -0.8072 -- 1.4218
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.6264
Y: 5.1047
Product of inertia: XY: 0.3148
Radii of gyration: X: 0.6190
Y: 1.7671
Principal moments and X-Y directions about centroid:
I: 0.6044 along [0.9976 0.0698]
J: 5.1267 along [-0.0698 0.9976]

## OPG6010



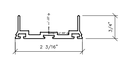

Area: 2.0276
Perimeter: 29.4132
Bounding box: X: -1.1249 -- 1.1251
Y: -2.6413 -- 2.6697
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 5.6527
Y: 1.3622
Product of inertia: XY: -0.0002
Radii of gyration: X: 1.6697
Y: 0.8197
Principal moments and X-Y directions about centroid:
I: 1.3622 along [0.0000 -1.0000]
J: 5.6527 along [1.0000 0.0000]

## OPG5072



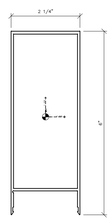

Area: 0.4697
Perimeter: 11.5019
Bounding box: X: -0.8216 -- 1.4414
Y: -1.3294 -- 0.8946
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.2845
Y: 0.1249
Product of inertia: XY: 0.0950
Radii of gyration: X: 0.7782
Y: 0.5156
Principal moments and X-Y directions about centroid:
I: 0.0806 along [0.4223 0.9065]
J: 0.3287 along [-0.9065 0.4223]

## OPG5002




Area: 0.3786
Perimeter: 8.6042
Bounding box: X: -1.0990 -- 1.0990
Y: -0.1709 -- 0.5791
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0102
Y: 0.1871
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.1645
Y: 0.7030
Principal moments and X-Y directions about centroid:
I: 0.0102 along [1.0000 0.0000]
J: 0.1871 along [0.0000 1.0000]

## OPG600225




Area: 1.3104
Perimeter: 32.3095
Bounding box: X: -1.1264 -- 1.1236
Y: -3.2022 -- 2.7978
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 5.2280
Y: 1.2465
Product of inertia: XY: -0.0046
Radii of gyration: X: 1.9974
Y: 0.9753
Principal moments and X-Y directions about centroid:
I: 1.2465 along [0.0011 -1.0000]
J: 5.2280 along [1.0000 0.0011]

All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

COMMITTED TO COLLEGE AND CAREER READINESS


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## NOTES

REGISTERED PROFESSIONAL ENGINEER
BRANDON J. DEEMS
No. 835355
Exp 12/31/25
STRUCTURAL
STATE OF CALIFORNIA


arcadia

ARCADIA, INC.
2301 East Vernon
Vernon, California 90058
Ph: (323) 269-7300
Fx: (323) 269-7390


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION PROPERTIES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

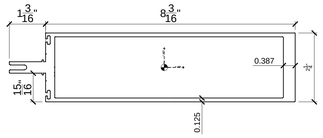
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW0.03

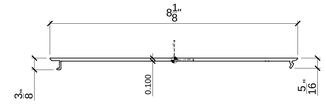
THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON ALL PLOTTED SHEETS ORIGINAL PAGE SIZE

## OPG3011



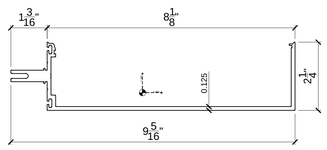

Area: 3.7084
Perimeter: 44.5188
Bounding box: X: -5.0648 -- 4.2782
Y: -1.1250 -- 1.1250
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 2.7160
Y: 38.6950
Product of inertia: XY: 0.0005
Radii of gyration: X: 0.8558
Y: 3.2303
Principal moments and X-Y directions about centroid:
I: 2.7160 along [1.0000 0.0000]
J: 38.6950 along [0.0000 1.0000]

## OPG3001



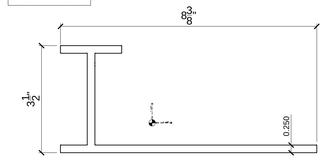

Area: 0.8316
Perimeter: 17.5047
Bounding box: X: -4.0640 -- 4.0346
Y: -0.3247 -- 0.0573
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0021
Y: 4.7193
Product of inertia: XY: 0.0032
Radii of gyration: X: 0.0498
Y: 2.3823
Principal moments and X-Y directions about centroid:
I: 0.0021 along [1.0000 0.0007]
J: 4.7193 along [-0.0007 1.0000]

## OPG3078



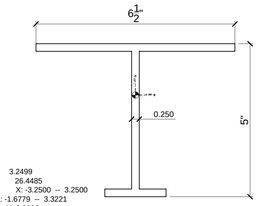

Area: 1.9387
Perimeter: 30.0443
Bounding box: X: -4.3004 -- 4.9856
Y: -0.5804 -- 1.6486
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.7885
Y: 20.2577
Product of inertia: XY: -0.9858
Radii of gyration: X: 0.6378
Y: 3.2325
Principal moments and X-Y directions about centroid:
I: 3.5070 along [0.9477 -0.3191]
J: 20.3075 along [0.0504 0.9987]

## OPG1552




Area: 3.3433
Perimeter: 27.2213
Bounding box: X: -2.9961 -- 5.3789
Y: -0.9752 -- 2.5248
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 5.4178
Y: 20.3583
Product of inertia: XY: 5.6744
Radii of gyration: X: 1.2730
Y: 2.4676
Principal moments and X-Y directions about centroid:
I: 5.8929 along [0.0000 -1.0000]
J: 11.6986 along [1.0000 0.0000]

## OPG1550



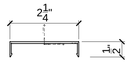

Area: 3.2499
Perimeter: 26.4485
Bounding box: X: -3.2500 -- 3.2500
Y: -1.6779 -- 3.3221
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 11.6986
Y: 5.8929
Product of inertia: XY: 0.0000
Radii of gyration: X: 1.8973
Y: 1.3466
Principal moments and X-Y directions about centroid:
I: 3.2499 along [1.0000 0.0000]
J: 11.6986 along [0.0000 1.0000]

## OPG1913



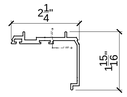

Area: 0.1828
Perimeter: 5.9239
Bounding box: X: -0.2042 -- 0.7258
Y: -0.6697 -- 0.9813
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0466
Y: 0.0104
Product of inertia: XY: -0.0104
Radii of gyration: X: 0.5049
Y: 0.2390
Principal moments and X-Y directions about centroid:
I: 0.0077 along [0.2575 -0.9663]
J: 0.0494 along [0.9663 0.2575]

## OPG1912




Area: 0.1735
Perimeter: 6.4400
Bounding box: X: -0.0858 -- 0.4142
Y: -1.1233 -- 1.1267
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.1039
Y: 0.0025
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.7737
Y: 0.1196
Principal moments and X-Y directions about centroid:
I: 0.0025 along [0.0001 1.0000]
J: 0.1039 along [-1.0000 0.0001]

## OPG1979



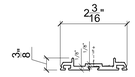

Area: 0.4261
Perimeter: 10.1895
Bounding box: X: -0.5300 -- 1.3780
Y: -1.3489 -- 0.8752
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.2321
Y: 0.1049
Product of inertia: XY: 0.0883
Radii of gyration: X: 0.7381
Y: 0.4963
Principal moments and X-Y directions about centroid:
I: 0.0597 along [0.4559 0.8900]
J: 0.2773 along [-0.8900 0.4559]

## OPG1999



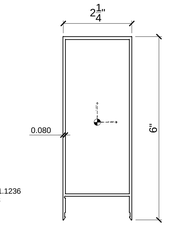

Area: 0.2486
Perimeter: 4.2738
Bounding box: X: -0.8363 -- 0.4137
Y: -0.6486 -- 0.2264
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0157
Y: 0.0388
Product of inertia: XY: 0.0143
Radii of gyration: X: 0.2514
Y: 0.3950
Principal moments and X-Y directions about centroid:
I: 0.0089 along [0.9019 -0.4319]
J: 0.0457 along [0.4319 0.9019]

## OPG1902



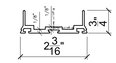

Area: 0.3363
Perimeter: 7.2055
Bounding box: X: -1.0999 -- 1.0981
Y: -0.1209 -- 0.2741
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0023
Y: 0.1390
Product of inertia: XY: -0.0046
Radii of gyration: X: 0.0829
Y: 0.6430
Principal moments and X-Y directions about centroid:
I: 0.0023 along [1.0000 0.0003]
J: 0.1390 along [-0.0003 1.0000]

## OPG600225




Area: 1.3104
Perimeter: 32.3095
Bounding box: X: -1.1264 -- 1.1236
Y: -3.2022 -- 2.7978
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 5.2280
Y: 1.2465
Product of inertia: XY: -0.0046
Radii of gyration: X: 1.9974
Y: 0.9753
Principal moments and X-Y directions about centroid:
I: 1.2465 along [0.0011 -1.0000]
J: 5.2280 along [1.0000 0.0011]

## OPG5002




Area: 0.3786
Perimeter: 8.6042
Bounding box: X: -1.0990 -- 1.0990
Y: -0.1709 -- 0.5791
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0102
Y: 0.1871
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.1645
Y: 0.7030
Principal moments and X-Y directions about centroid:
I: 0.0102 along [1.0000 0.0000]
J: 0.1871 along [0.0000 1.0000]

## OPGPRO9




Area: 1.0271
Perimeter: 28.6376
Bounding box: X: -2.4874 -- 2.7435
Y: -1.1250 -- 1.1250
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.8401
Y: 2.1438
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.9044
Y: 1.4447
Principal moments and X-Y directions about centroid:
I: 0.8401 along [1.0000 0.0000]
J: 2.1438 along [0.0000 1.0000]

## OPGPRO10




Area: 1.9051
Perimeter: 41.3220
Bounding box: X: -3.9611 -- 4.0629
Y: -1.0108 -- 1.0109
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.1919
Y: 11.7688
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.7910
Y: 2.4855
Principal moments and X-Y directions about centroid:
I: 1.1919 along [1.0000 0.0000]
J: 11.7688 along [0.0000 1.0000]

## EL1200




Area: 2.0249
Perimeter: 34.8065
Bounding box: X: -4.4208 -- 3.1168
Y: -1.2959 -- 1.2221
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.4893
Y: 7.3358
Product of inertia: XY: -0.2032
Radii of gyration: X: 0.8576
Y: 1.9034
Principal moments and X-Y directions about centroid:
I: 1.4822 along [0.9994 0.0347]
J: 7.3428 along [-0.0347 0.9994]

## SSBR15
MODIFIED




Area: 2.5418
Perimeter: 18.5127
Bounding box: X: -1.4172 -- 0.5719
Y: -2.6251 -- 2.6249
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 3.2205
Y: 0.8105
Product of inertia: XY: 0.0010
Radii of gyration: X: 1.1256
Y: 0.5647
Principal moments and X-Y directions about centroid:
I: 3.2205 along [1.0000 0.0004]
J: 0.8105 along [-0.0004 1.0000]

## ELCLIP1



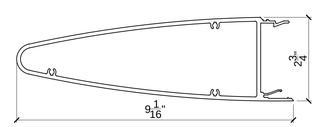

Area: 2.5452
Perimeter: 22.1134
Bounding box: X: -2.8025 -- 2.3279
Y: -1.2879 -- 1.2821
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.4755
Y: 5.3619
Product of inertia: XY: 0.0184
Radii of gyration: X: 0.7614
Y: 1.4514
Principal moments and X-Y directions about centroid:
I: 1.4754 along [1.0000 -0.0047]
J: 5.3620 along [0.0047 1.0000]

## EL1400



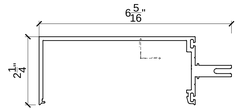

Area: 2.2897
Perimeter: 39.1353
Bounding box: X: -3.9624 -- 3.5753
Y: -1.3560 -- 1.2870
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.9256
Y: 11.2961
Product of inertia: XY: -0.2252
Radii of gyration: X: 0.9170
Y: 2.2211
Principal moments and X-Y directions about centroid:
I: 1.9202 along [0.9997 0.0240]
J: 11.3015 along [-0.0240 0.9997]

## EL1700



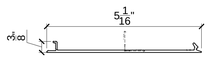

Area: 2.6687
Perimeter: 45.2899
Bounding box: X: -4.2873 -- 4.7552
Y: -1.3986 -- 1.3350
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 2.5889
Y: 19.4232
Product of inertia: XY: -0.2460
Radii of gyration: X: 0.9850
Y: 2.6978
Principal moments and X-Y directions about centroid:
I: 2.5853 along [0.9999 -0.0146]
J: 19.4268 along [0.0146 0.9999]

## OPG1978



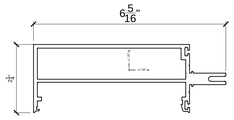

Area: 1.5637
Perimeter: 24.0507
Bounding box: X: -2.9662 -- 3.3198
Y: -0.7046 -- 1.5244
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.6634
Y: 7.3019
Product of inertia: XY: -0.5054
Radii of gyration: X: 0.6513
Y: 2.1609
Principal moments and X-Y directions about centroid:
I: 0.6252 along [0.9971 -0.0755]
J: 7.3402 along [0.0755 0.9971]

## OPG1901



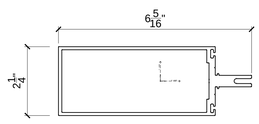

Area: 0.4303
Perimeter: 11.4205
Bounding box: X: -2.5541 -- 2.5039
Y: -0.3075 -- 0.0545
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0015
Y: 0.9890
Product of inertia: XY: 0.0011
Radii of gyration: X: 0.0592
Y: 1.5160
Principal moments and X-Y directions about centroid:
I: 0.0015 along [1.0000 0.0012]
J: 0.9890 along [-0.0012 1.0000]

## OPG1900



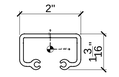

Area: 2.0426
Perimeter: 33.7381
Bounding box: X: -3.1648 -- 3.1212
Y: -0.8344 -- 1.3946
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.7531
Y: 8.5672
Product of inertia: XY: -0.3104
Radii of gyration: X: 0.6072
Y: 2.0480
Principal moments and X-Y directions about centroid:
I: 0.7408 along [0.9992 -0.0396]
J: 8.5795 along [0.0396 0.9992]

## OPG1910




Area: 2.0288
Perimeter: 33.1967
Bounding box: X: -2.9797 -- 3.3313
Y: -1.1251 -- 1.1249
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.4067
Y: 8.3837
Product of inertia: XY: -0.0004
Radii of gyration: X: 0.8327
Y: 2.0328
Principal moments and X-Y directions about centroid:
I: 1.4067 along [1.0000 -0.0001]
J: 8.3837 along [0.0001 1.0000]

## OPGUCH




Area: 0.6390
Perimeter: 10.9332
Bounding box: X: -1.0000 -- 1.0000
Y: -0.6688 -- 0.4992
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.1071
Y: 0.3292
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.4093
Y: 0.7178
Principal moments and X-Y directions about centroid:
I: 0.1071 along [1.0000 0.0000]
J: 0.3292 along [0.0000 1.0000]

All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

PLEASE RECYCLE

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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**NOTES**

REGISTERED PROFESSIONAL ENGINEER
BRANDON J. DEEMS
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

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**NEW THEATER & ADMINISTRATION BUILDING**

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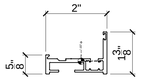
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

CW0.04

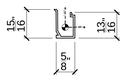
THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON ANSI D SHEETS ORIGINAL PAGE SIZE

## WTH02



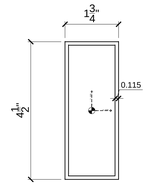

Area: 0.4808
Perimeter: 10.9320
Bounding box: X: -1.1575 -- 0.8425
Y: -0.4178 -- 0.9572
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0423
Y: 0.2522
Product of inertia: XY: 0.0362
Radii of gyration: X: 0.2966
Y: 0.7243
Principal moments and X-Y directions about centroid:
I: 0.0362 along [0.9863 0.1652]
J: 0.2583 along [-0.1652 0.9863]

## WWB03



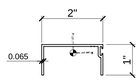

Area: 0.1320
Perimeter: 4.9376
Bounding box: X: -0.3627 -- 0.3156
Y: -0.3554 -- 0.5817
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0112
Y: 0.0082
Product of inertia: XY: -0.0005
Radii of gyration: X: 0.2913
Y: 0.2486
Principal moments and X-Y directions about centroid:
I: 0.0081 along [0.1665 -0.9860]
J: 0.0113 along [0.9860 0.1665]

## T450



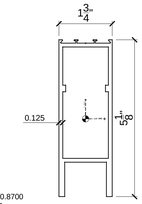

Area: 1.3846
Perimeter: 24.0800
Bounding box: X: -0.8750 -- 0.8750
Y: -2.2500 -- 2.2500
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 3.4275
Y: 0.7601
Product of inertia: XY: 0.0000
Radii of gyration: X: 1.5734
Y: 0.7409
Principal moments and X-Y directions about centroid:
I: 3.4275 along [1.0000 0.0000]
J: 0.7601 along [0.0000 1.0000]

## UCH201




Area: 0.2612
Perimeter: 8.2170
Bounding box: X: -1.0285 -- 0.9715
Y: -0.7258 -- 0.2742
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0247
Y: 0.1623
Product of inertia: XY: -0.0002
Radii of gyration: X: 0.3076
Y: 0.7881
Principal moments and X-Y directions about centroid:
I: 0.0247 along [1.0000 -0.0012]
J: 0.1623 along [0.0012 1.0000]

## 31430HVY




Area: 1.8421
Perimeter: 27.7669
Bounding box: X: -0.8700 -- 0.8700
Y: -2.5410 -- 2.5840
CenM troid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 4.8807
Y: 0.9943
Product of inertia: XY: 0.0000
Radii of gyration: X: 1.6278
Y: 0.7347
Principal moments and X-Y directions about centroid:
I: 0.9943 along [0.0000 -1.0000]
J: 4.8807 along [1.0000 0.0000]

## DS001



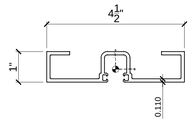

Area: 0.0923
Perimeter: 3.2699
Bounding box: X: -0.3766 -- 0.1284
Y: -0.3842 -- 0.4639
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0074
Y: 0.0015
Product of inertia: XY: 0.0017
Radii of gyration: X: 0.2838
Y: 0.1285
Principal moments and X-Y directions about centroid:
I: 0.0011 along [0.2525 0.9676]
J: 0.0079 along [-0.9676 0.2525]

## T407




Area: 0.5693
Perimeter: 11.1332
Bounding box: X: -1.9997 -- 2.0003
Y: -0.3187 -- 0.1813
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0111
Y: 0.8257
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.1397
Y: 1.2044
Principal moments and X-Y directions about centroid:
I: 0.0111 along [1.0000 0.0000]
J: 0.8257 along [0.0000 1.0000]

## M459




Area: 1.0406
Perimeter: 19.7642
Bounding box: X: -2.2500 -- 2.2500
Y: -0.4229 -- 0.5771
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.1473
Y: 2.2891
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.3762
Y: 1.4832
Principal moments and X-Y directions about centroid:
I: 0.1473 along [1.0000 0.0000]
J: 2.2891 along [0.0000 1.0000]

## DS45




Area: 0.1238
Perimeter: 5.4729
Bounding box: X: -0.4063 -- 0.3666
Y: -0.4630 -- 0.3030
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0070
Y: 0.0093
Product of inertia: XY: -0.0009
Radii of gyration: X: 0.2369
Y: 0.2737
Principal moments and X-Y directions about centroid:
I: 0.0066 along [0.9421 -0.3354]
J: 0.0096 along [0.3354 0.9421]

## DSO401H




Area: 2.3714
Perimeter: 26.1747
Bounding box: X: -2.5056 -- 2.4944
Y: -0.8693 -- 0.8807
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.2113
Y: 6.5689
Product of inertia: XY: 0.0353
Radii of gyration: X: 0.7147
Y: 1.6643
Principal moments and X-Y directions about centroid:
I: 1.2111 along [1.0000 0.0066]
J: 6.5691 along [-0.0066 1.0000]

## 31400HVY




Area: 2.1427
Perimeter: 26.9807
Bounding box: X: -0.8750 -- 0.8750
Y: -2.3619 -- 2.6381
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 6.0389
Y: 1.0945
Product of inertia: XY: 0.0000
Radii of gyration: X: 1.6788
Y: 0.7147
Principal moments and X-Y directions about centroid:
I: 1.0945 along [0.0000 1.0000]
J: 6.0389 along [-1.0000 0.0000]

## DRB810




Area: 2.9919
Perimeter: 48.4802
Bounding box: X: -5.0000 -- 5.0000
Y: -0.8750 -- 0.8750
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 1.7684
Y: 24.9678
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.7688
Y: 2.8888
Principal moments and X-Y directions about centroid:
I: 1.7684 along [1.0000 0.0000]
J: 24.9678 along [0.0000 1.0000]

## DRB811




Area: 0.3345
Perimeter: 10.6065
Bounding box: X: -0.7500 -- 0.7500
Y: -1.1711 -- 0.5039
Centroid: X: 0.0000
Y: 0.0000
Moments of inertia: X: 0.0815
Y: 0.1092
Product of inertia: XY: 0.0000
Radii of gyration: X: 0.4937
Y: 0.5713
Principal moments and X-Y directions about centroid:
I: 0.0815 along [1.0000 0.0000]
J: 0.1092 along [0.0000 1.0000]

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HMC Architects
3361008100
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION PROPERTIES**

**DSA SUBMITTAL**

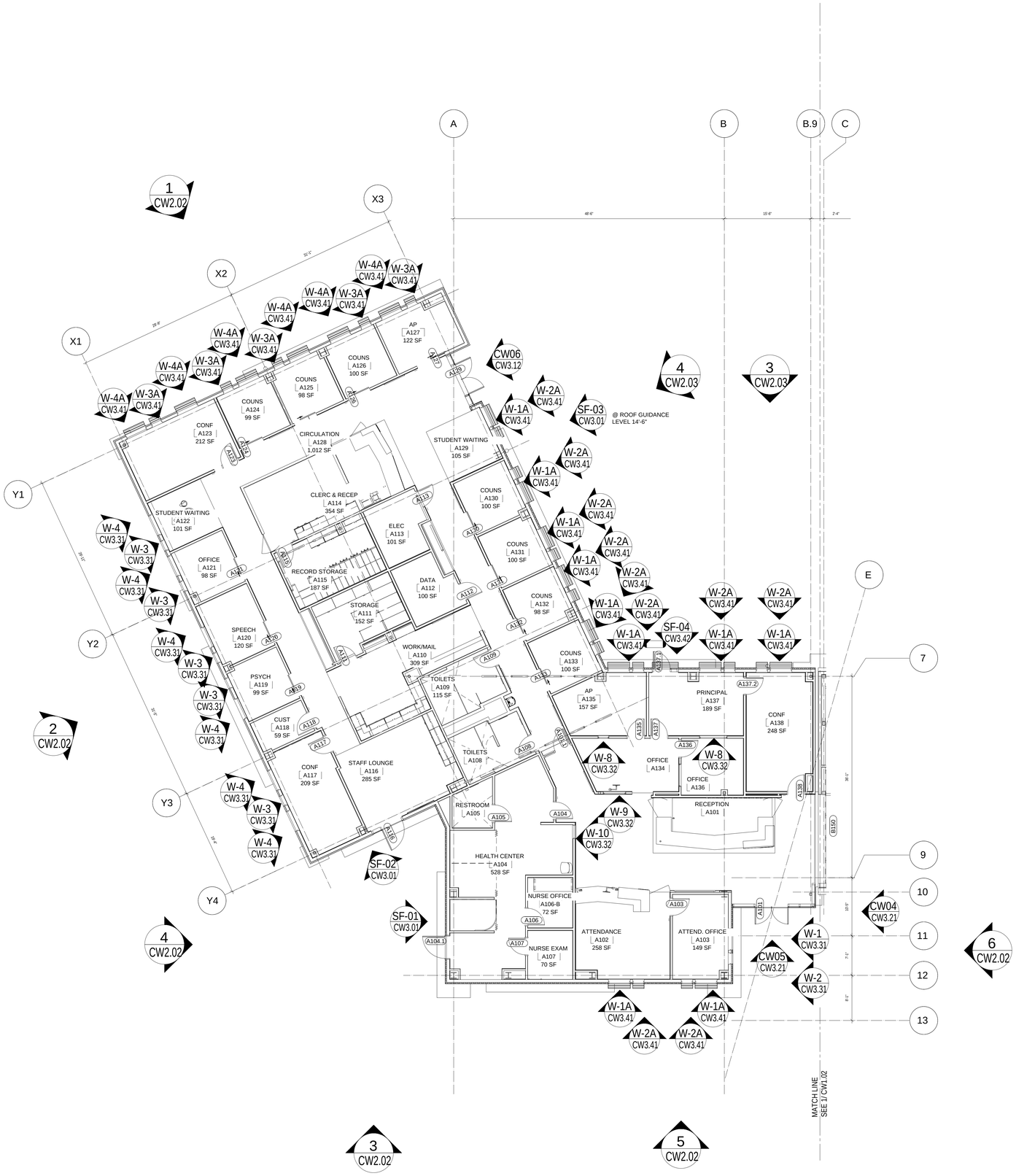
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW0.05

THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ORIGINAL SHEETS ORIGINAL PAGE SIZE




1 1ST FLOOR PLAN - SEGMENT A

Arch Ref: A1/A2.11A

Scale : 1/8" = 1'-0"

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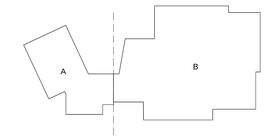
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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FLOOR PLAN**

**DSA SUBMITTAL**

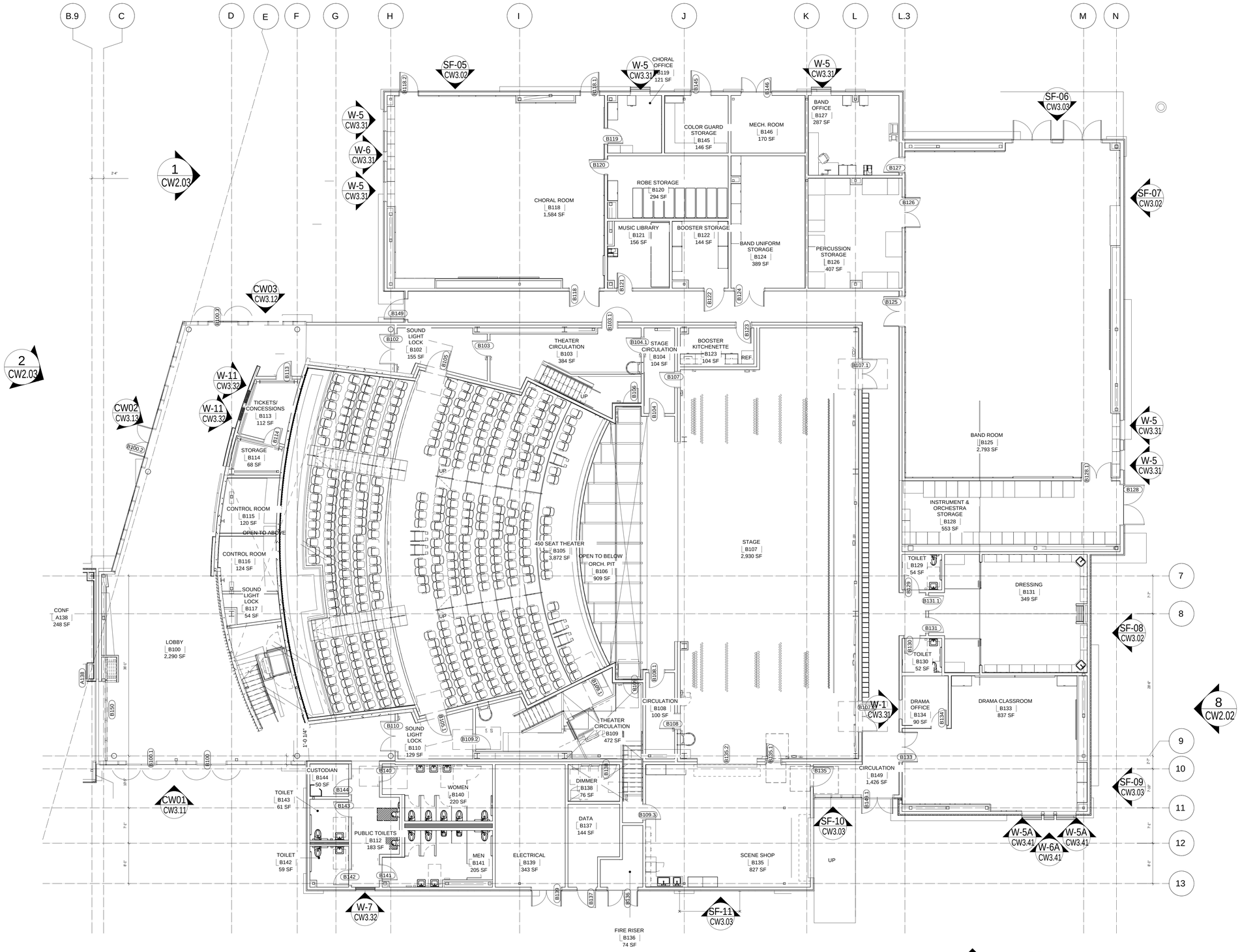
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

CW1.01

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ARCH D SHEETS ORIGINAL PAGE SIZE




7 CW2.02 — 1 — 1ST FLOOR PLAN - SEGMENT B

Arch Ref: A1/A2.11B

Scale : 1/8" = 1'-0"

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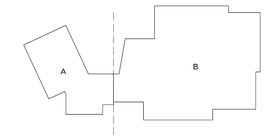
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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FLOOR PLAN**

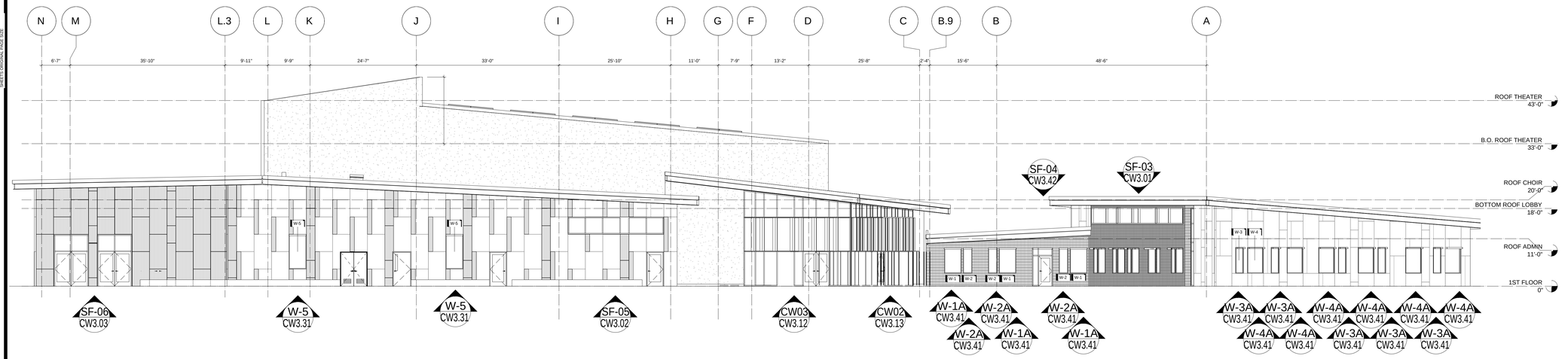
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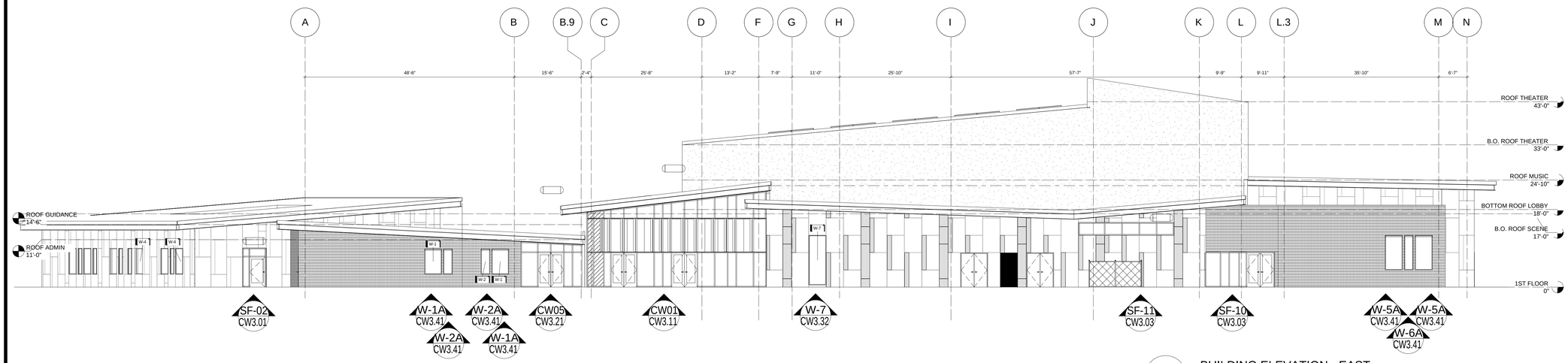
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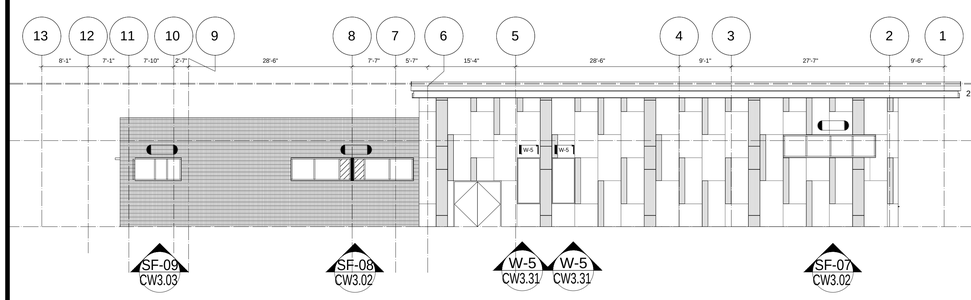

1 BUILDING ELEVATION - WEST

Arch Ref: 1/A5.12



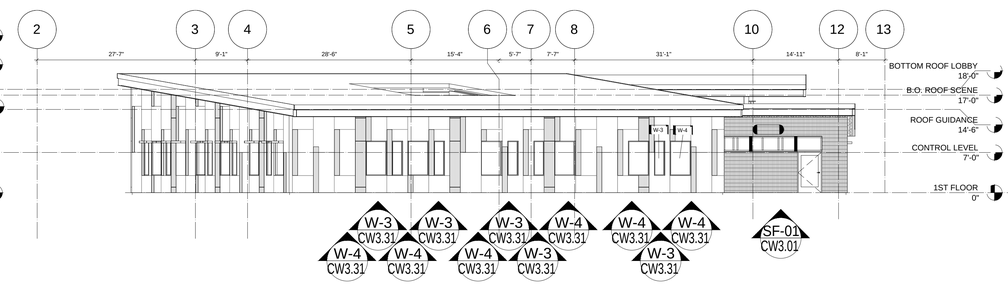

2 BUILDING ELEVATION - EAST

Arch Ref: 2/A5.12




3 BUILDING ELEVATION - NORTH

Arch Ref: 1/A5.11




4 BUILDING ELEVATION - SOUTH

Arch Ref: 2/A5.11

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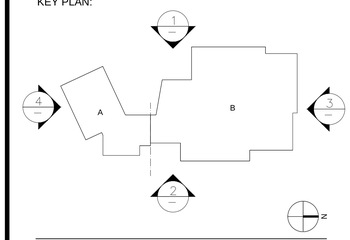
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**BUILDING ELEVATIONS**

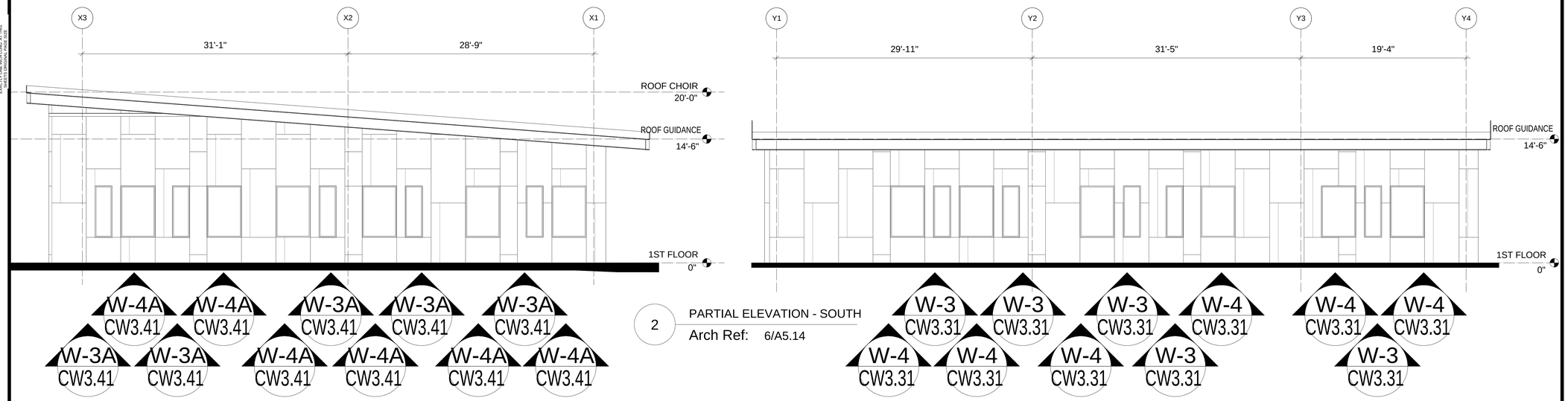
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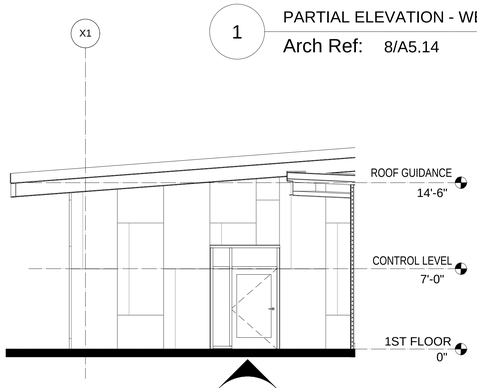
CW2.01



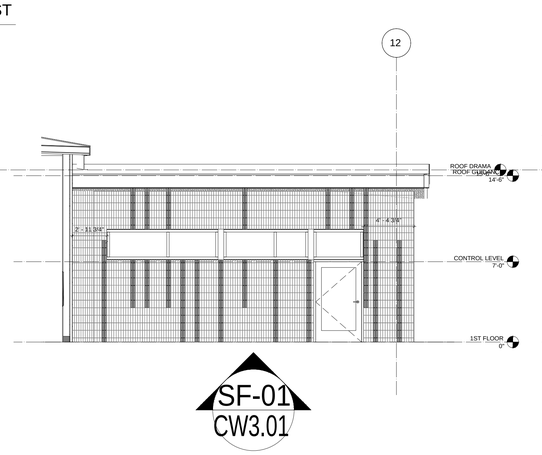

2 PARTIAL ELEVATION - SOUTH
Arch Ref: 6/A5.14



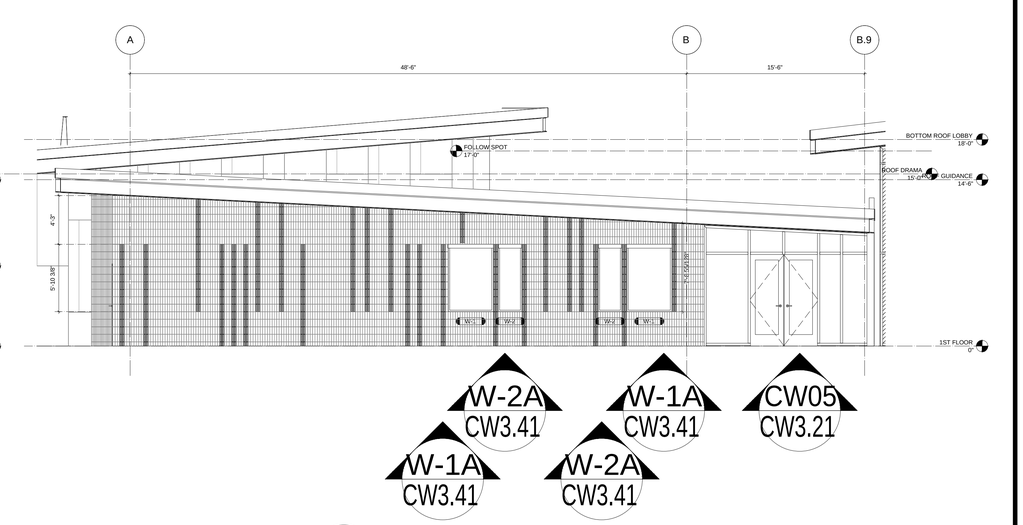

1 PARTIAL ELEVATION - WEST
Arch Ref: 8/A5.14



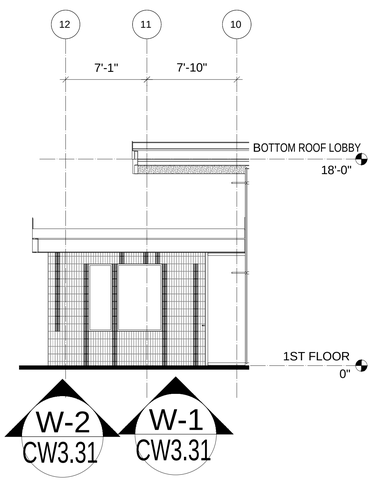

3 PARTIAL ELEVATION - EAST STAFF LOUNGE
Arch Ref: 3/A5.14



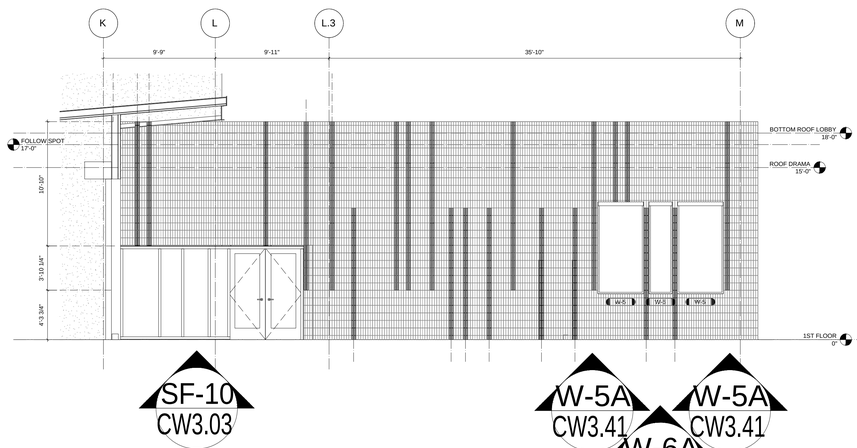

4 PARTIAL ELEVATION - SOUTH HEALTH CENTER
Arch Ref: 2/A5.15



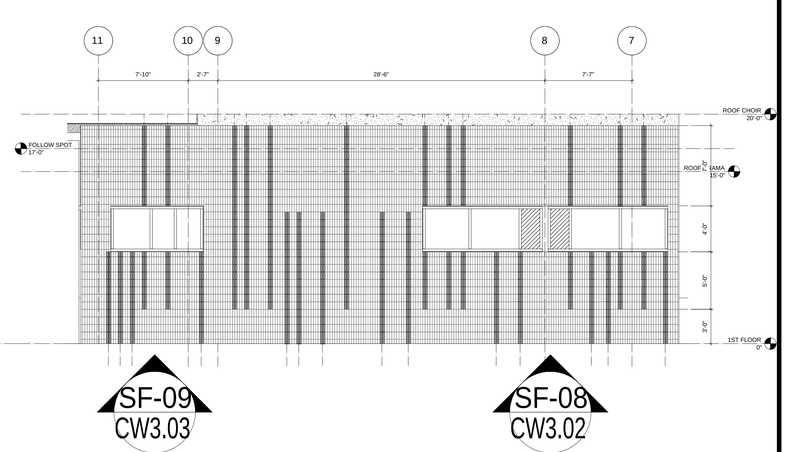

5 PARTIAL ELEVATION - EAST ATTENDANCE/RECEP
Arch Ref: 4/A5.15




6 PARTIAL ELEVATION - NORTH ATTENDANCE
Arch Ref: 1/A5.14




7 PARTIAL ELEVATION - EAST DRAMA
Arch Ref: 11/A5.15




8 PARTIAL ELEVATION - NORTH DRAMA
Arch Ref: 12/A5.15

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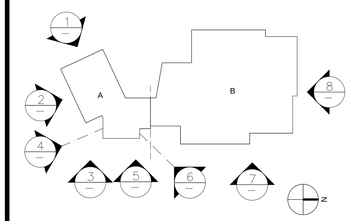
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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

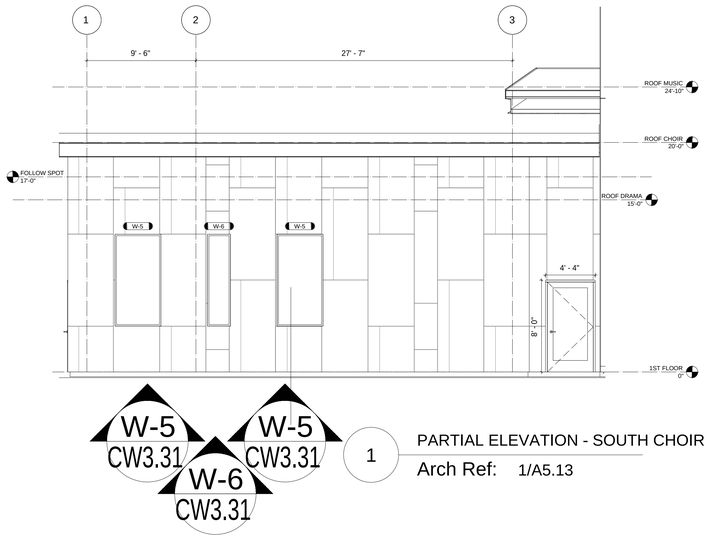
**BUILDING ELEVATIONS**

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FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

CW2.02

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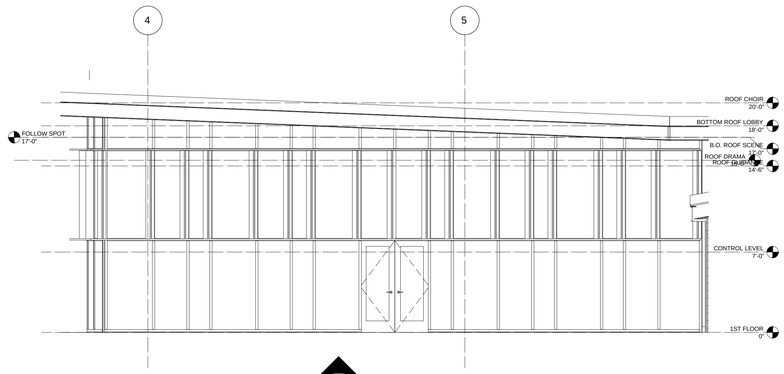






1 PARTIAL ELEVATION - SOUTH CHOIR

Arch Ref: 1/A5.13

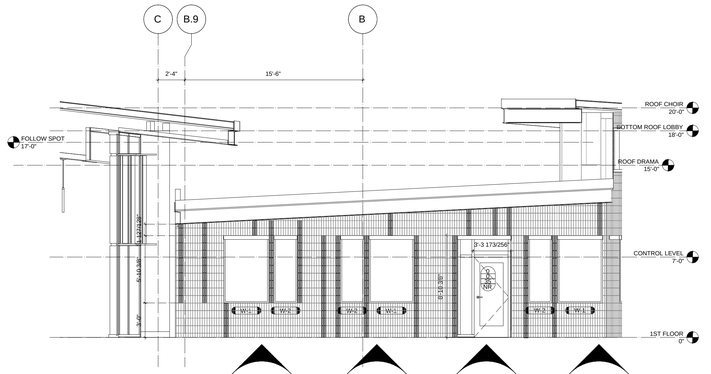


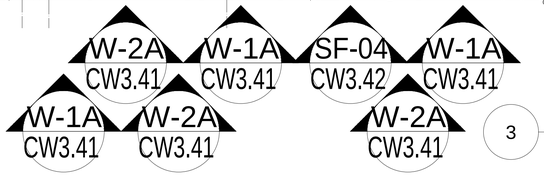




2 PARTIAL ELEVATION - SW LOBBY

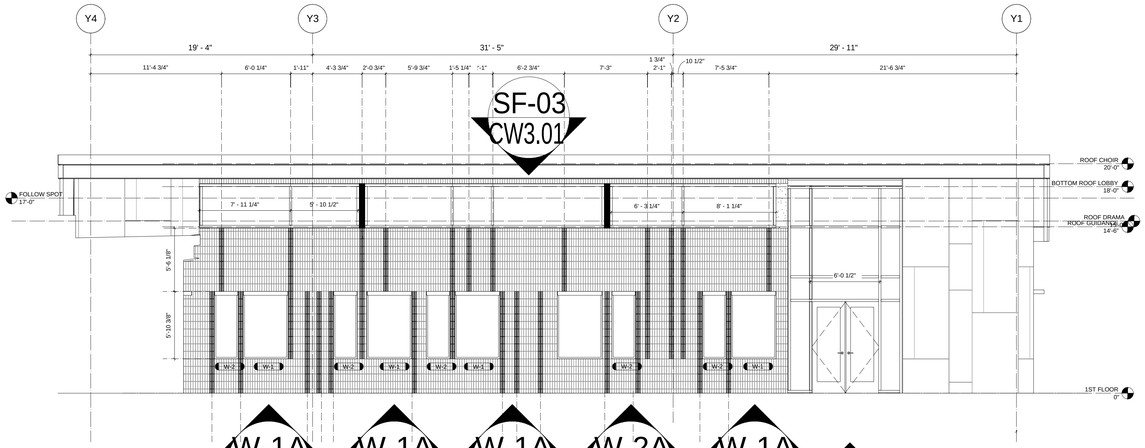
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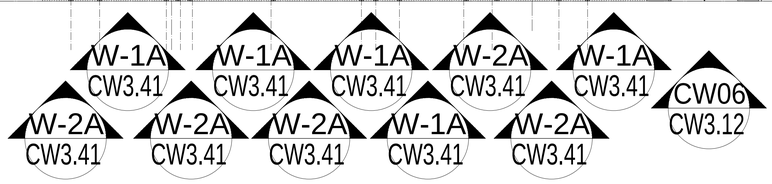



3 PARTIAL ELEVATION - WEST PRINCIPAL

Arch Ref: 1/A5.15




4 PARTIAL ELEVATION - NORTH GUIDANCE

Arch Ref: 3/A5.13

All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

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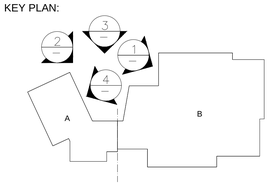
3361008100

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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KEY PLAN:




N

**NOTES**

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

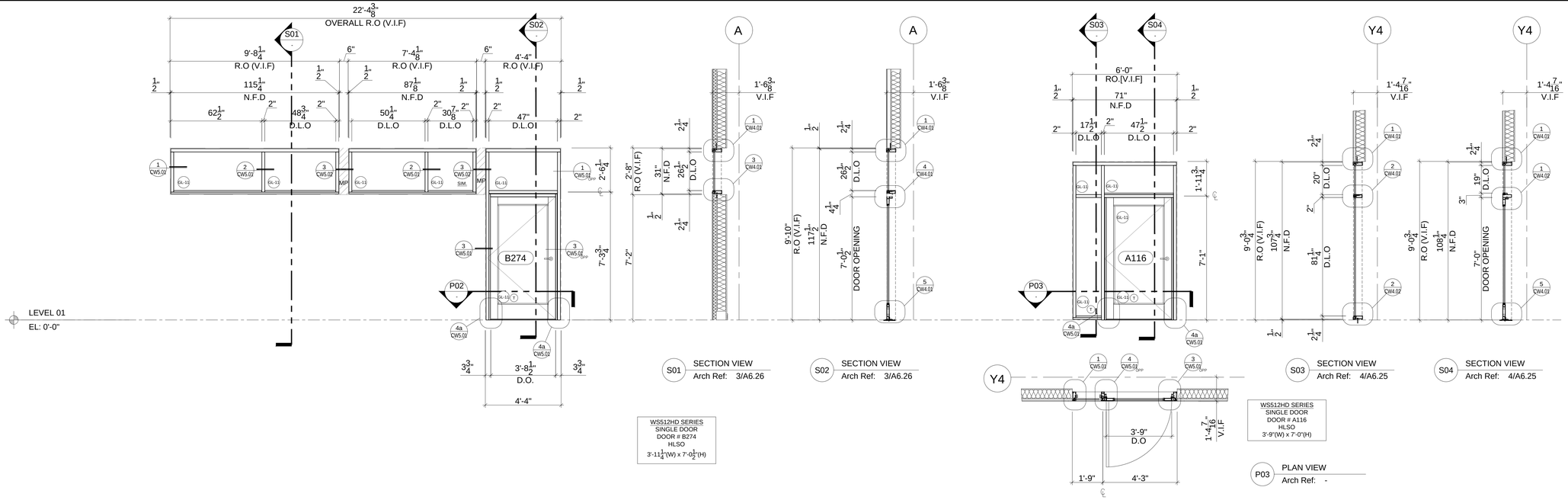
**BUILDING ELEVATIONS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

CW2.03




S01 SECTION VIEW
Arch Ref: 3/A6.26

S02 SECTION VIEW
Arch Ref: 3/A6.26

WS512HD SERIES
SINGLE DOOR
DOOR # B274
HLSO
3'-11 1/4"(W) x 7'-0 1/2"(H)

S03 SECTION VIEW
Arch Ref: 4/A6.25

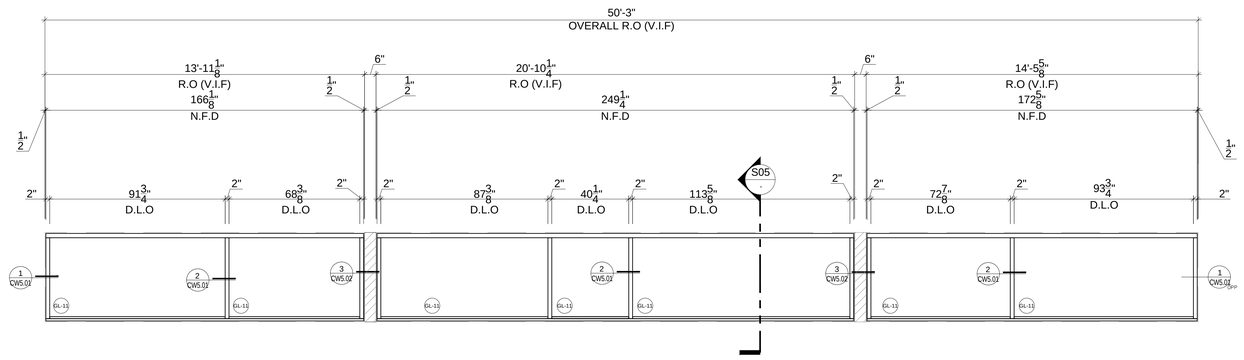
S04 SECTION VIEW
Arch Ref: 4/A6.25

WS512HD SERIES
SINGLE DOOR
DOOR # A116
HLSO
3'-9"(W) x 7'-0"(H)

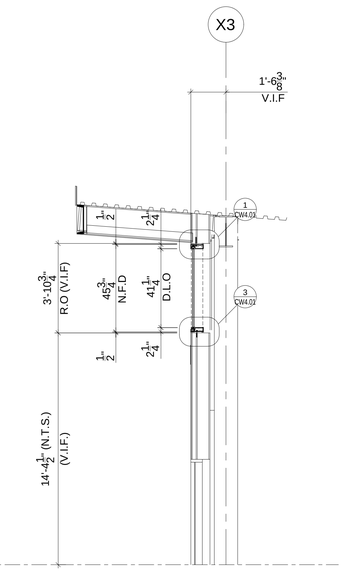
P03 PLAN VIEW
Arch Ref: -

SF-01 QTY 1 EXT. ELEVATION @ HEALTH CENTER A104
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 1/A9-22

SF-02 QTY-1 EXT. ELEVATION @ STAFF LOUNGE A116
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 2/A9-22




SF-03 QTY 1 EXT. ELEVATION @STUDENT WAITING A129
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 3/A9-22




S05 SECTION VIEW
Arch Ref: 1/A6.12 SIM.

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELEVATIONS - AFG601T**

**DSA SUBMITTAL**

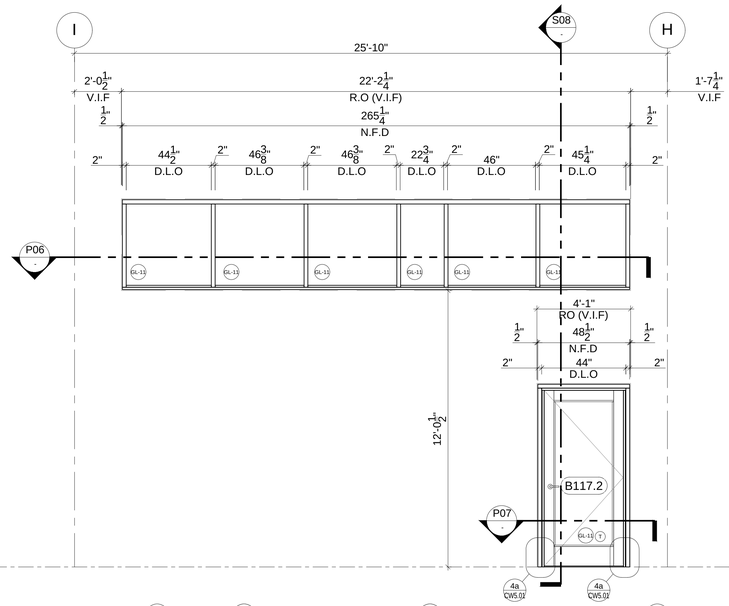
FILE NO.: 19-H10 | A NO.: 03-123641

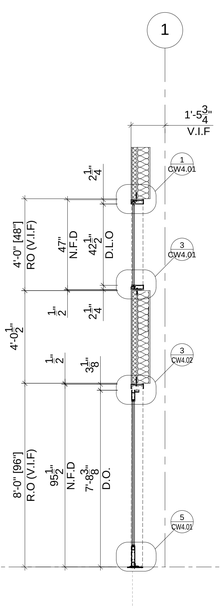
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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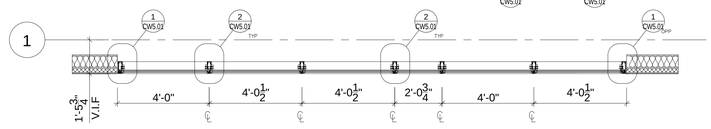
CW3.01

THE LINE SHOWN ABOVE IS EQUAL TO TWO INCHES ON SHEETS ORIGINAL PAGE SIZE



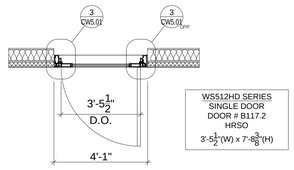




S08 SECTION VIEW
Arch Ref: -

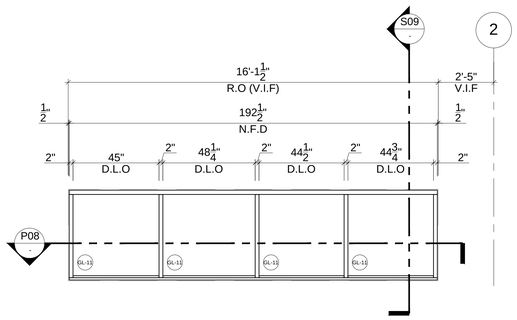


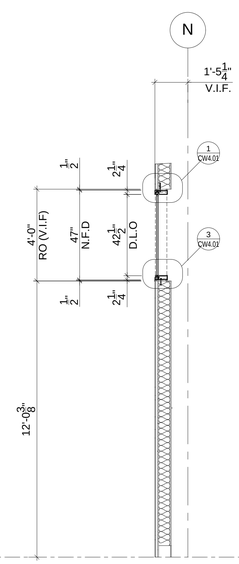

P06 PLAN VIEW
Arch Ref: -

QTY 1 EXT.ELEVATION @ CHORAL ROOM B118
SF-05 AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 8/A9-22

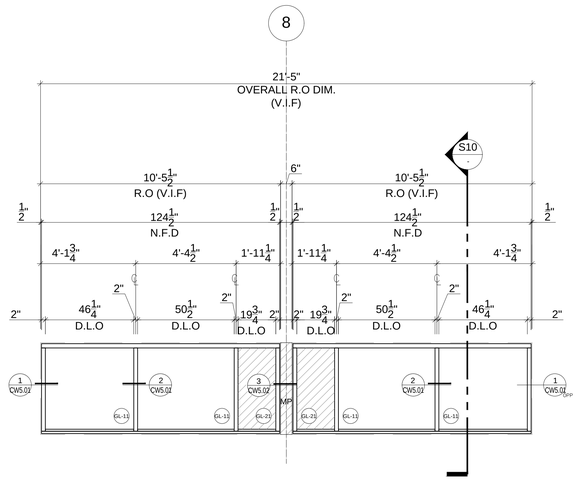



P07 PLAN VIEW
Arch Ref:

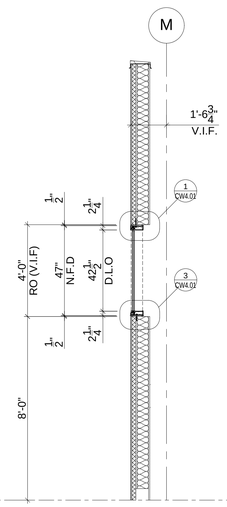



QTY-1 EXT. ELEVATION @ BAND ROOM B125
SF-07 AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 12/A9-22

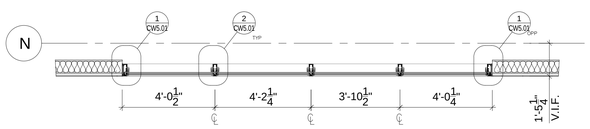



QTY-1 EXT. ELEVATION @ DRESSING
SF-08 AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 11/A9-22




S10 SECTION VIEW
Arch Ref: 1/A6.24

LEVEL 01
EL: 0'-0"




P08 PLAN VIEW
Arch Ref: -

S09 SECTION VIEW
Arch Ref: -

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## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELEVATIONS - AFG601T**

**DSA SUBMITTAL**

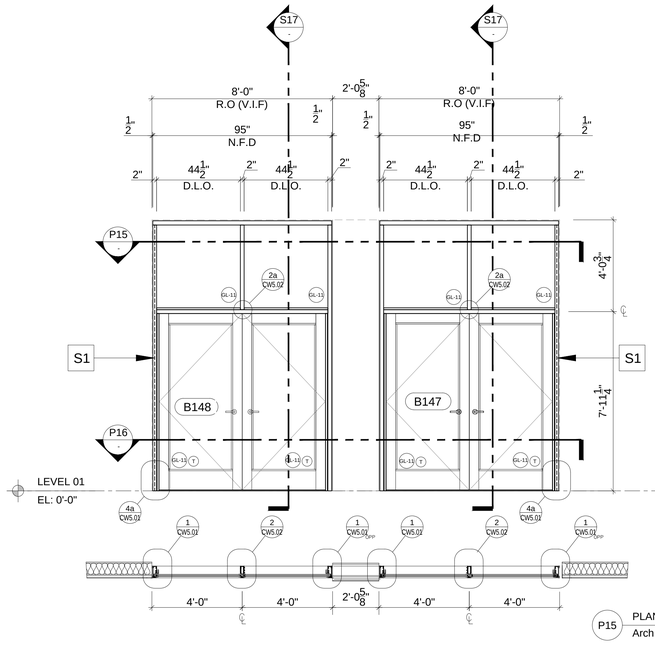
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

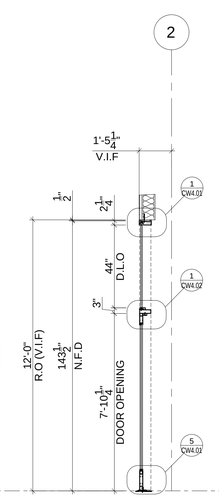
SHEET:

CW3.02

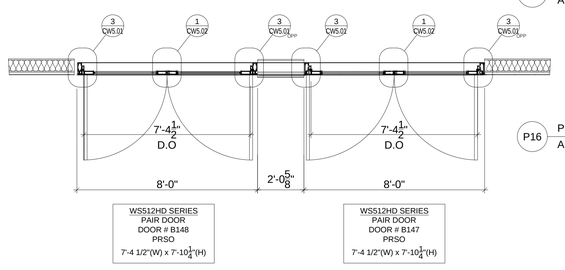
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S17 SECTION VIEW
Arch Ref: -




P15 PLAN VIEW
Arch Ref: -



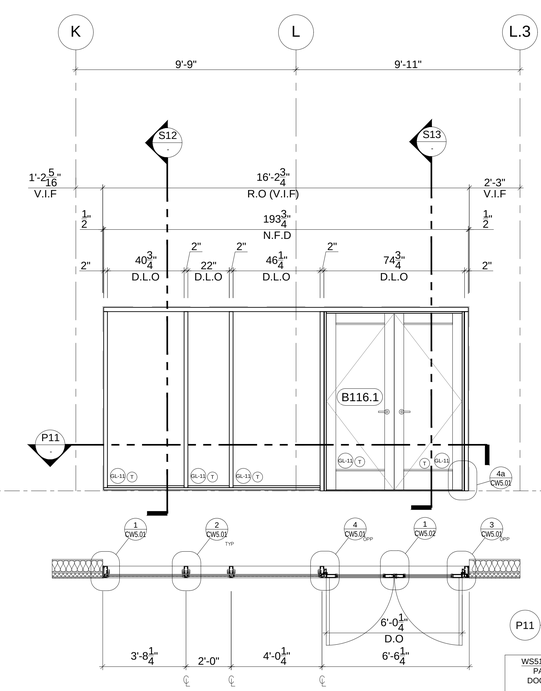

P16 PLAN VIEW
Arch Ref: -

WS512HD SERIES
PAIR DOOR
DOOR # B148
PRSO
7'-4 1/2"(W) x 7'-10 1/4"(H)

WS512HD SERIES
PAIR DOOR
DOOR # B147
PRSO
7'-4 1/2"(W) x 7'-10 1/4"(H)

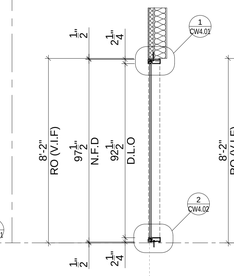
SF-06 QTY-1 EXT. ELEVATION @ BAND ROOM A125
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 8/A9-22
Scale : 3/8" = 1'-0"

| STEEL LEGEND | |
|---|---|
| S1 | 1 1/2" x 3 7/8" x 10GA (Steel Reinforcement) |

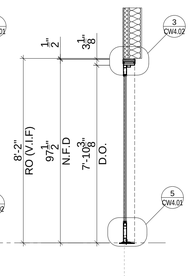



P11 PLAN VIEW
Arch Ref: -

WS512HD SERIES
PAIR DOOR
DOOR # B116.1
HRSO
6'-0 1/4"(W) x 7'-10 3/8"(H)

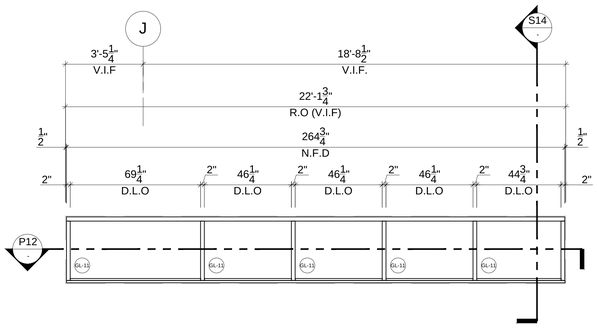


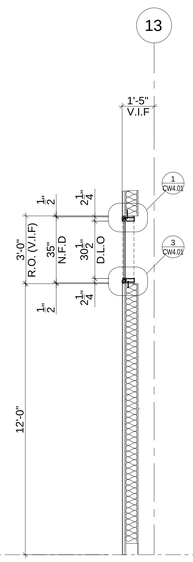

S12 SECTION VIEW
Arch Ref: -



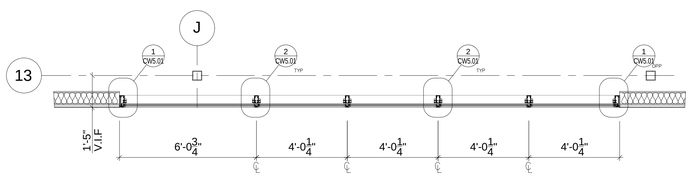

S13 SECTION VIEW
Arch Ref: -

SF-10 QTY-1 EXT. ELEVATION @ SCENE SHOP B135
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 1/A9-23
Scale : 3/8" = 1'-0"



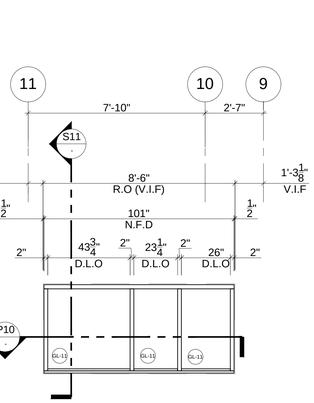




SF-11 QTY-1 EXT. ELEVATION @ SCENE SHOP B135
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 5/A9-22
Scale : 3/8" = 1'-0"

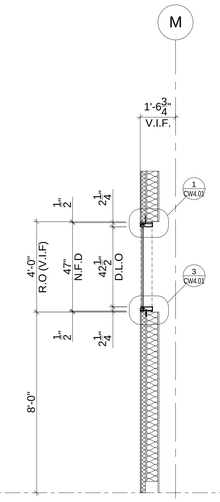



P12 PLAN VIEW
Arch Ref: -

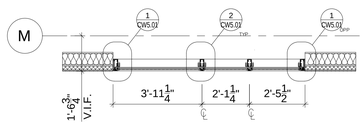
S14 SECTION VIEW
Arch Ref: -




SF-09 QTY-1 EXT. ELEVATION @ DRAMA CALSSROOM B133
AFG601T SERIES; 2" X 6" FOR 1" GLASS
Arch Ref: 10/A9-22
Scale : 3/8" = 1'-0"




S11 SECTION VIEW
Arch Ref: -




P10 PLAN VIEW
Arch Ref: 3/A6.25

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## NOTES

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PROJECT:

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELEVATIONS - AFG601T**

**DSA SUBMITTAL**

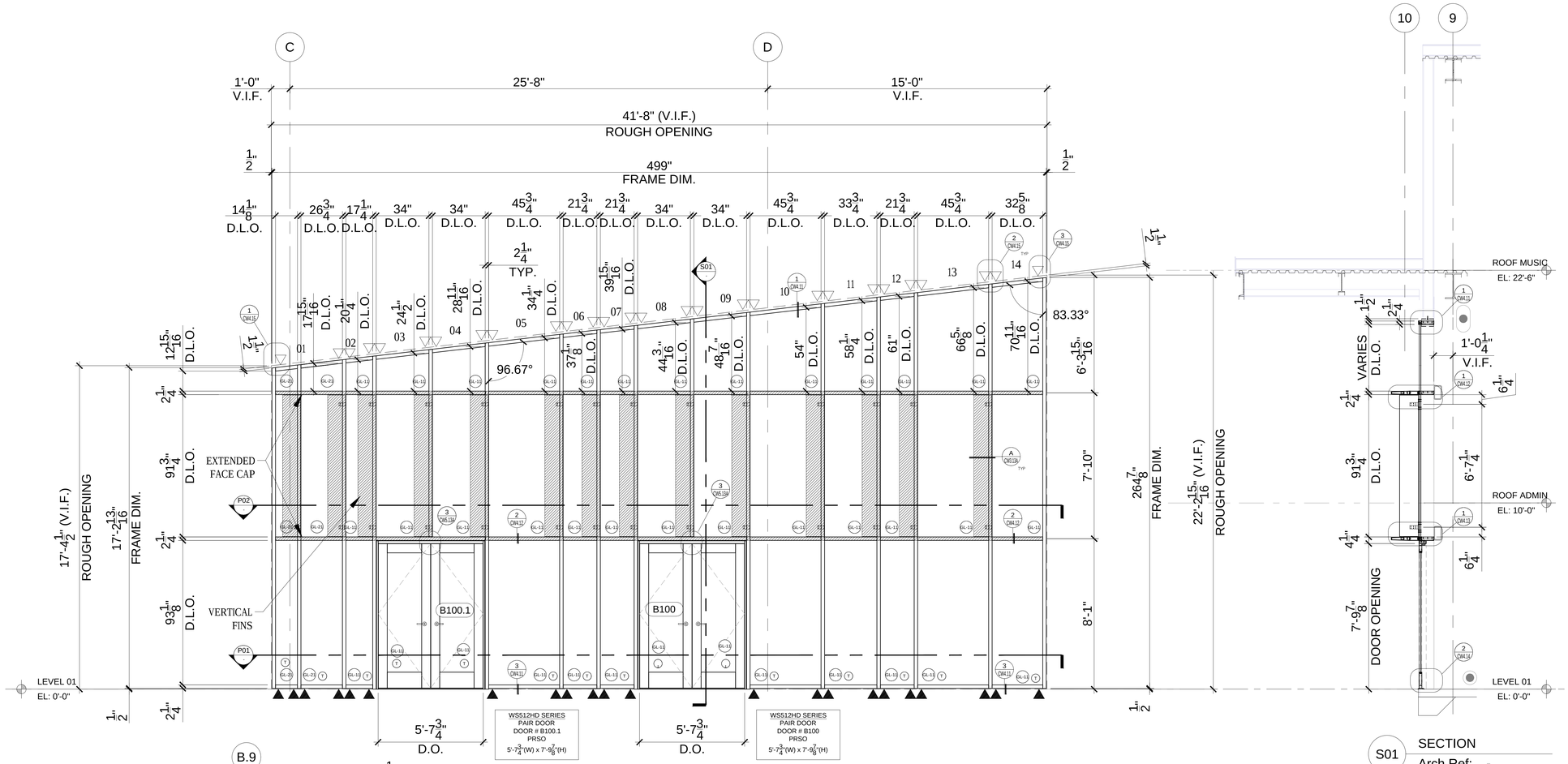
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

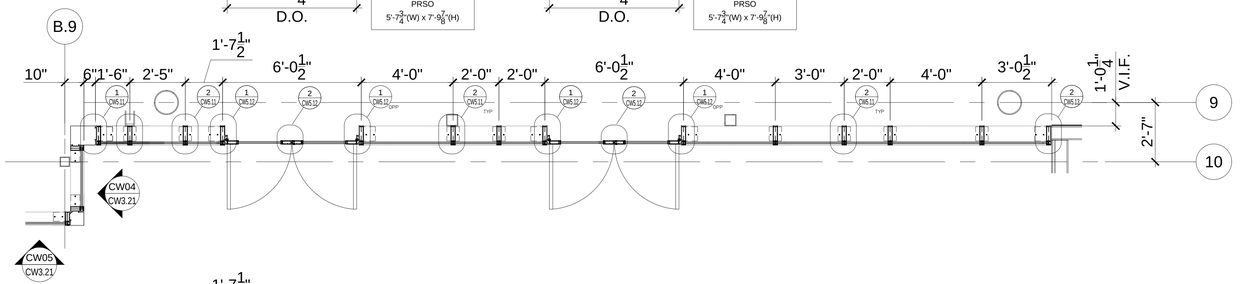
SHEET:

CW3.03

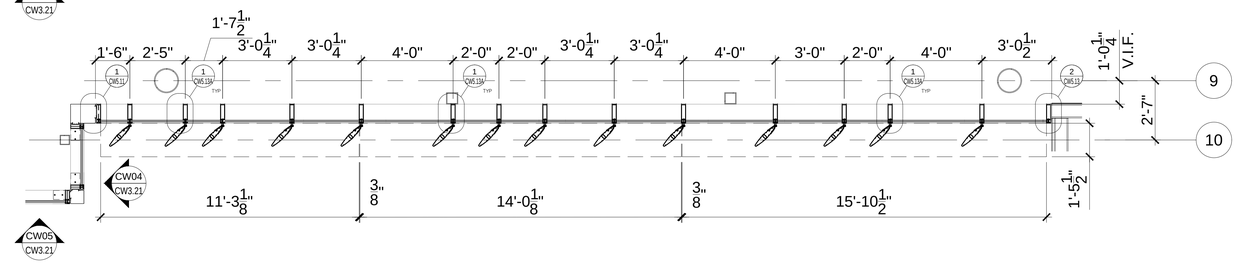
THE LINE SHOWN ABOVE IS
EXACTLY TWO INCHES (2") LONG
SHEETS ORIGINAL PAGE SIZE




S01 SECTION
Arch Ref: -




P01 PLAN
Arch Ref: A1/A2.11B




P02 PLAN
Arch Ref: A1/A2.11B

CW01 QTY-01 EXTERIOR ELEVATION @ LOBBY #B100
OPG3000 SERIES; 2 1/4" X 10" FOR 1" GLASS
Arch Ref: 2/A9.21
Scale : 3/8" = 1'-0"

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ANCHOR LEGEND

- ▲ "F" ANCHOR LOCATION @ SILL
- ▲▲ "T" ANCHOR LOCATION @ SILL
- ▽ "F" ANCHOR LOCATION @ HEAD
- ▽▽ "T" ANCHOR LOCATION @ HEAD
- DEAD LOAD ANCHOR
- WIND LOAD ANCHOR

**NOTES**

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**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

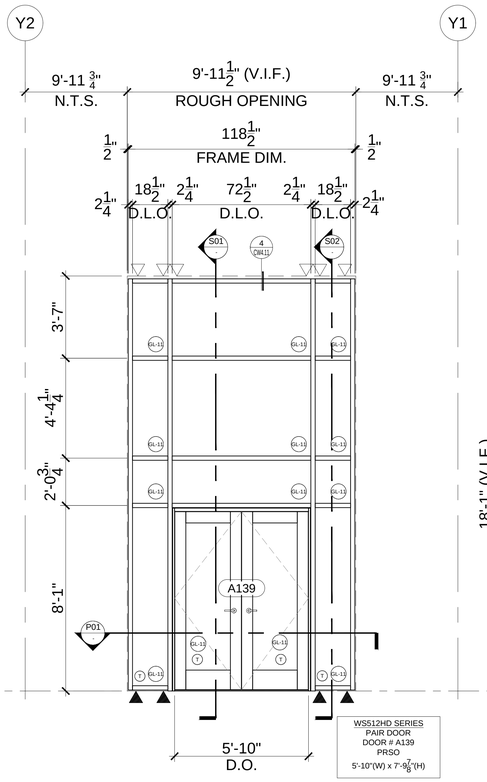
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**ELEVATIONS - OPG3000**

**DSA SUBMITTAL**

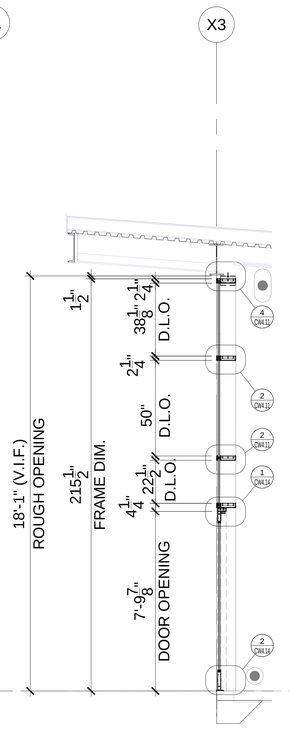
| FILE NO.: 19-H10 | A NO.: 03-123641 |
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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
| SHEET: | |

CW3.11

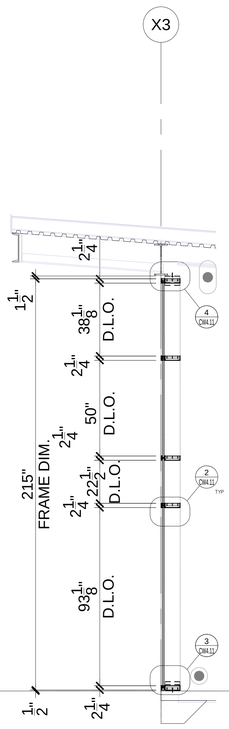
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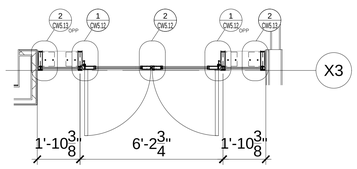



S01 SECTION
Arch Ref: -



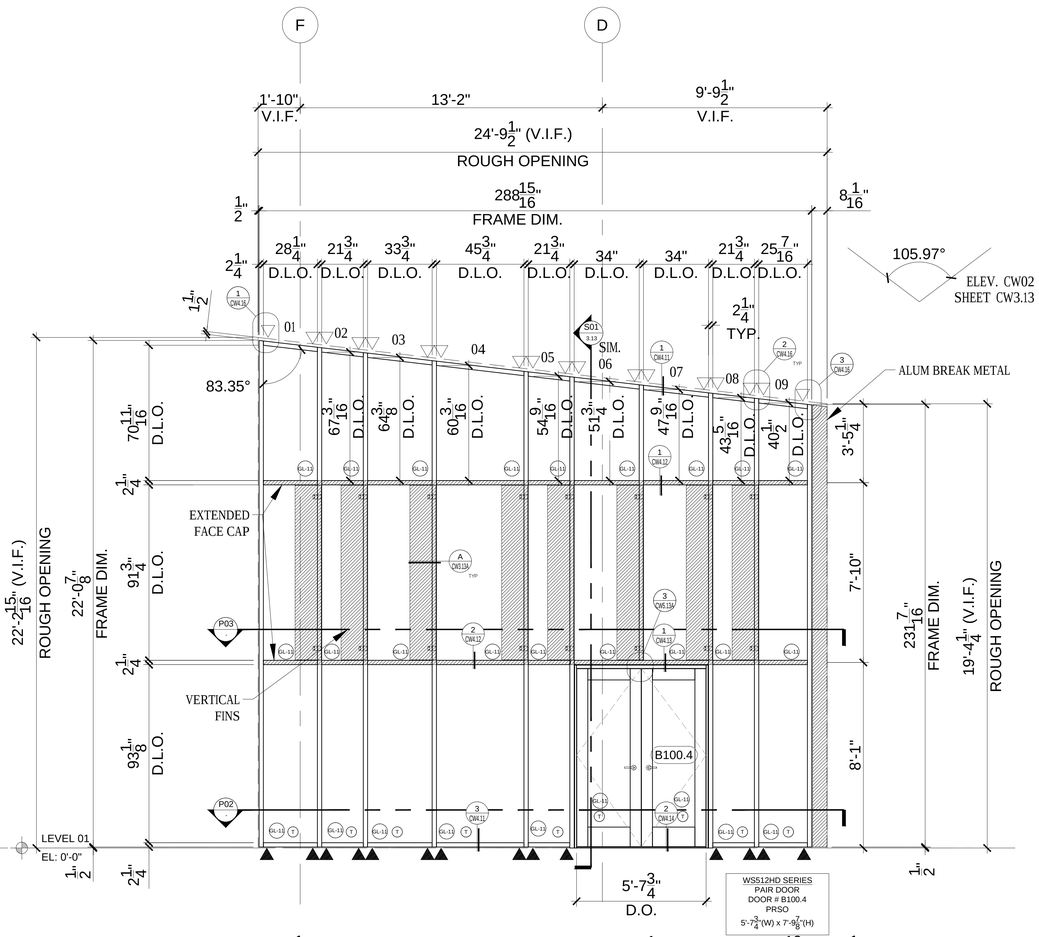

S02 SECTION
Arch Ref: -

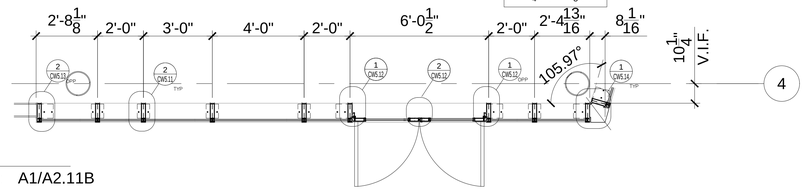


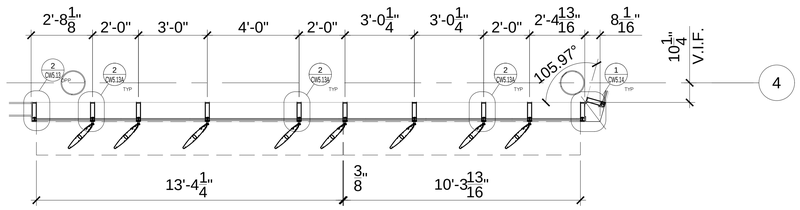

P01 PLAN
Arch Ref: A1/A2.11A

CW06 QTY-01 EXTERIOR ELEVATION @ STUDENT WAITING #A129
OPG3000 SERIES; 2 1/4" X 10" FOR 1" GLASS
Arch Ref: 8/A9.21
Scale : 3/8" = 1'-0"




P02 PLAN
Arch Ref: A1/A2.11B




P03 PLAN
Arch Ref: A1/A2.11B

CW03 QTY-01 EXTERIOR ELEVATION @ LOBBY #B100
OPG3000 SERIES; 2 1/4" X 10" FOR 1" GLASS
Arch Ref: 6/A9.21
Scale : 3/8" = 1'-0"

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APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

ANCHOR LEGEND

| | |
|---|---|
| ▲ | "F" ANCHOR LOCATION @ SILL |
| ▲▲ | "T" ANCHOR LOCATION @ SILL |
| ▽ | "F" ANCHOR LOCATION @ HEAD |
| ▽▽ | "T" ANCHOR LOCATION @ HEAD |
| ● | DEAD LOAD ANCHOR |
| ● | WIND LOAD ANCHOR |

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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| Δ | DESCRIPTION | DATE |
|---|---|---|
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NOTES

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FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

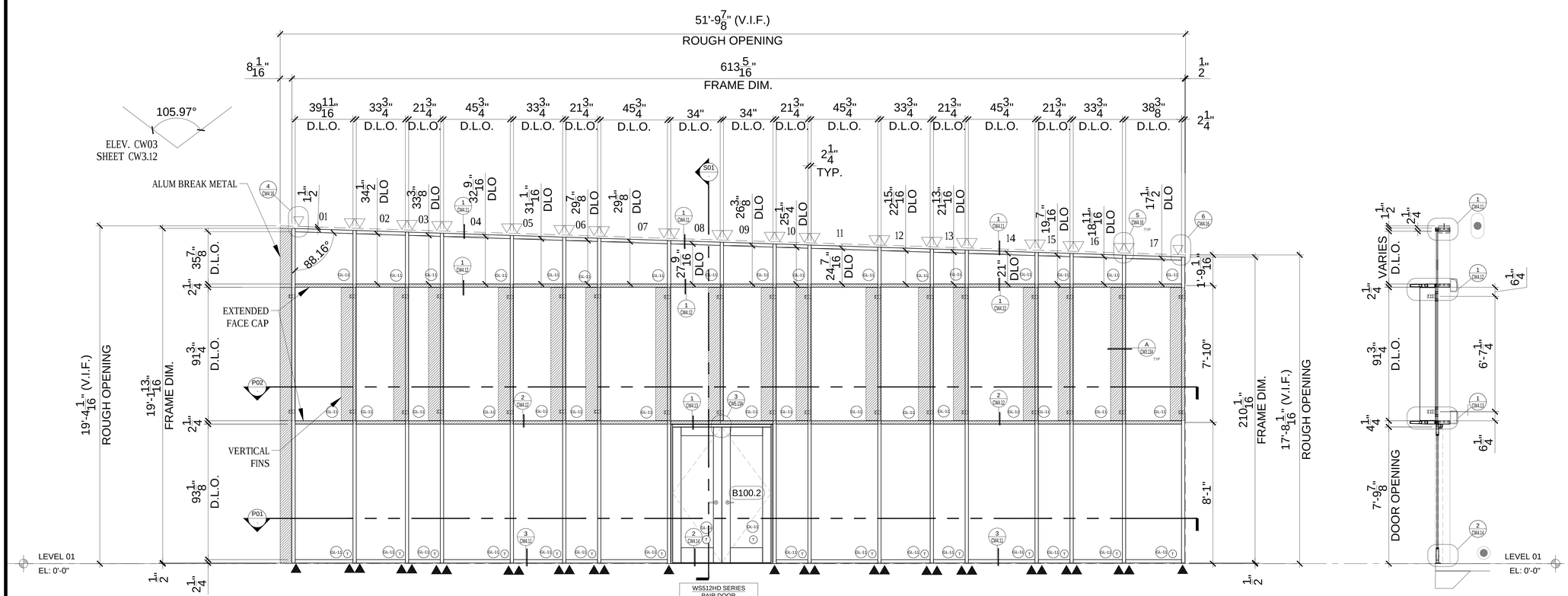
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**ELEVATIONS - OPG3000**

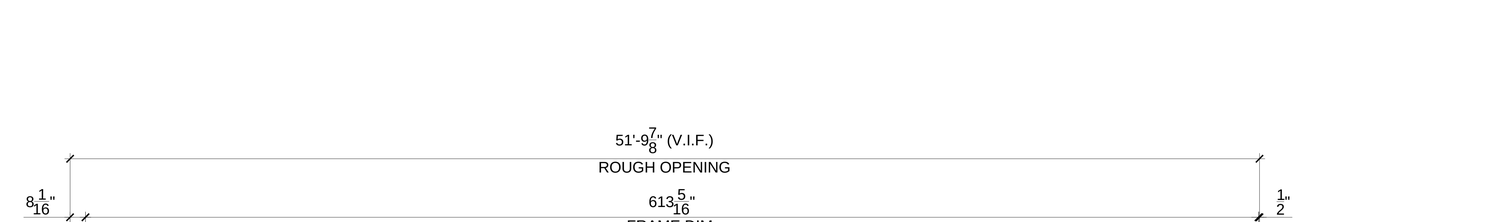
**DSA SUBMITTAL**

| | |
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:
CW3.12

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI SHEETS ORIGINAL PAGE SIZE




P01 PLAN
Arch Ref: A1/A2.11B




P02 PLAN
Arch Ref: A1/A2.11B

CW02 QTY-01 EXTERIOR ELEVATION @ LOBBY #B100
OPG3000 SERIES; 2 1/4" X 10" FOR 1" GLASS
Arch Ref: 3/A9.21
Scale : 3/8" = 1'-0"




S01 SECTION
Arch Ref: -

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ANCHOR LEGEND

- ▲ "F" ANCHOR LOCATION @ SILL
- ▲▲ "T" ANCHOR LOCATION @ SILL
- ▽ "F" ANCHOR LOCATION @ HEAD
- ▽▽ "T" ANCHOR LOCATION @ HEAD
- DEAD LOAD ANCHOR
- WIND LOAD ANCHOR

**NOTES**

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELEVATIONS - OPG3000**

**DSA SUBMITTAL**

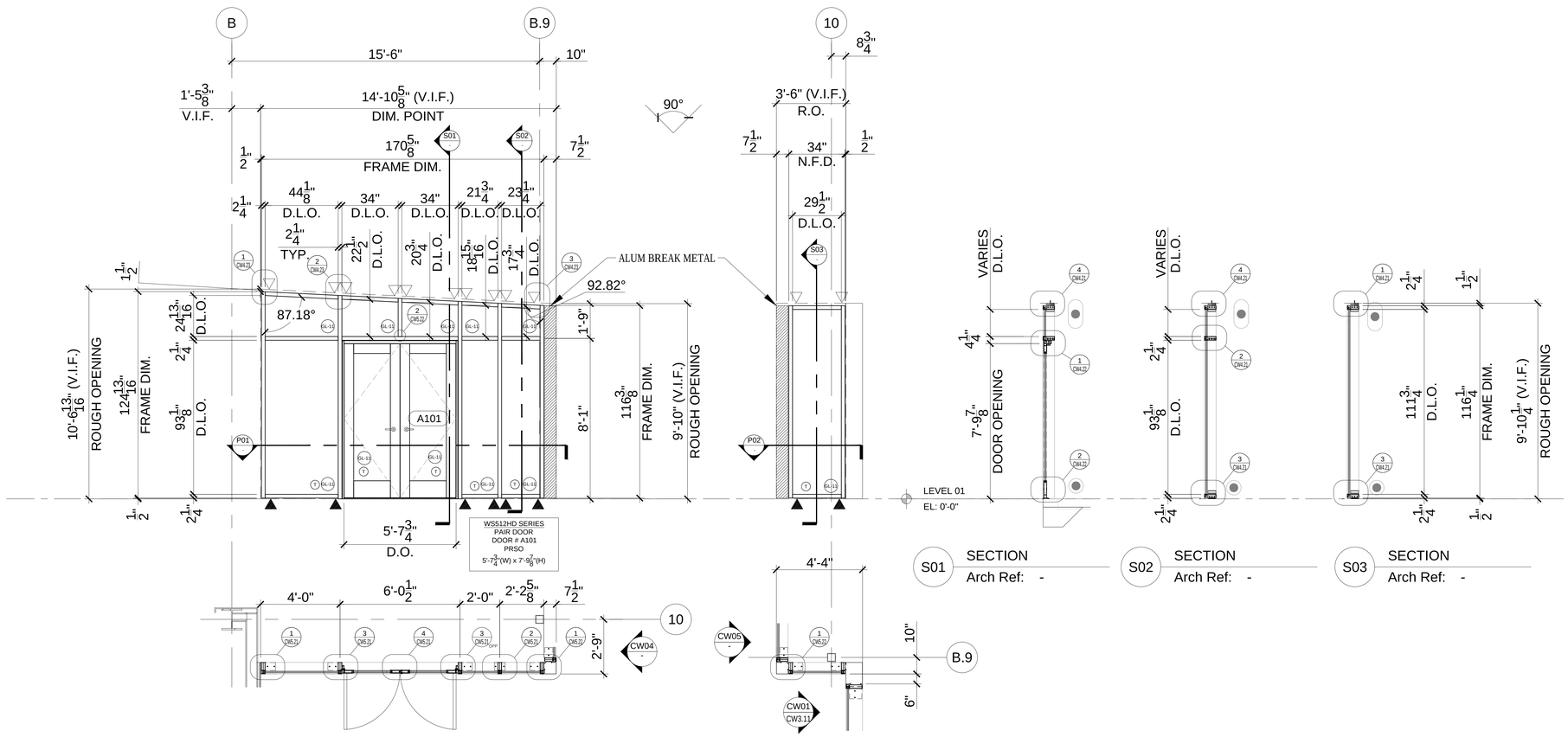
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DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW3.13

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S01 SECTION
Arch Ref: -

S02 SECTION
Arch Ref: -

S03 SECTION
Arch Ref: -

P01 PLAN
Arch Ref: A1/A2.11A

P02 PLAN
Arch Ref: A1/A2.11A

CW05 QTY-01 EXTERIOR ELEVATION @ RECEPTION #A101
OPG1900 SERIES; 2 1/4" X 7" FOR 1" GLASS
Arch Ref: 9/A9.21
Scale : 3/8" = 1'-0"

CW04 QTY-01 EXTERIOR ELEVATION @ RECEPTION #A101
OPG1900 SERIES; 2 1/4" X 7" FOR 1" GLASS
Arch Ref: 7/A9.21
Scale : 3/8" = 1'-0"

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ANCHOR LEGEND

| | |
|---|---|
| ▲ | "F" ANCHOR LOCATION @ SILL |
| ▲▲ | "T" ANCHOR LOCATION @ SILL |
| ▽ | "F" ANCHOR LOCATION @ HEAD |
| ▽▽ | "T" ANCHOR LOCATION @ HEAD |
| ◉ | DEAD LOAD ANCHOR |
| ● | WIND LOAD ANCHOR |

**NOTES**

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

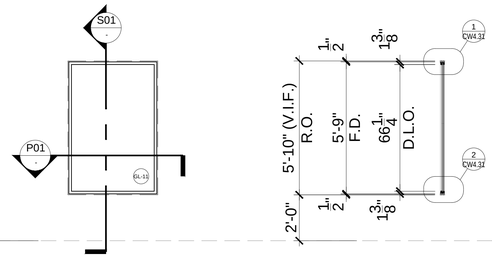
**ELEVATIONS - OPG1900**

**DSA SUBMITTAL**

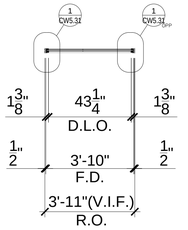
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CW3.21

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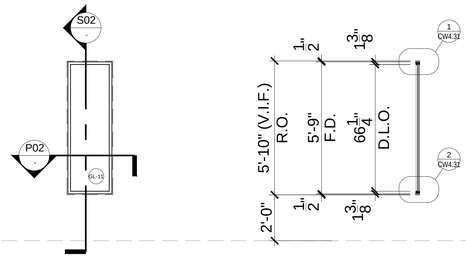

LEVEL 01
EL: 0'-0"

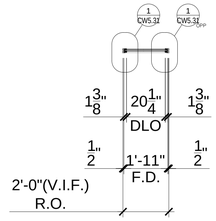



S01 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| Q | NORTH | A103 | 1 |
| B | INTERIOR | B134 | 1 |
| TOTAL QTY. | | | 2 |

P01 PLAN
Arch Ref: -

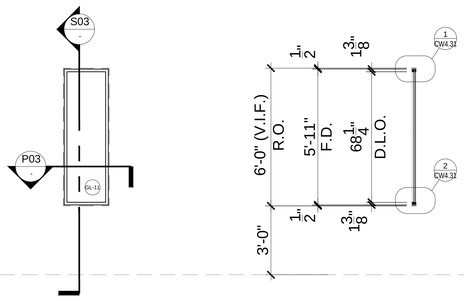


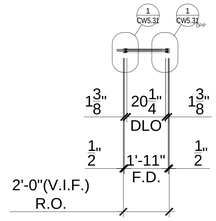




S02 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | NORTH | A103 | 1 |
| TOTAL QTY. | | | 1 |

P02 PLAN
Arch Ref: -




S03 SECTION
Arch Ref: -

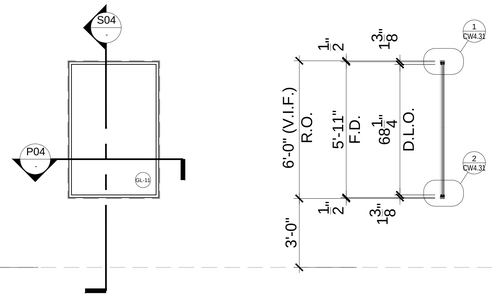
| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | SOUTH | A122 | 1 |
| A | SOUTH | A121 | 1 |
| A | SOUTH | A120 | 1 |
| A | SOUTH | A119 | 1 |
| A | SOUTH | A117 | 1 |
| TOTAL QTY. | | | 5 |

P03 PLAN
Arch Ref: -

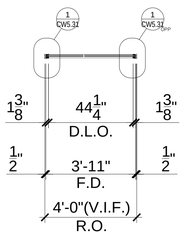
QTY-2 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-1 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

QTY-01 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-2 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

QTY-05 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-3 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"



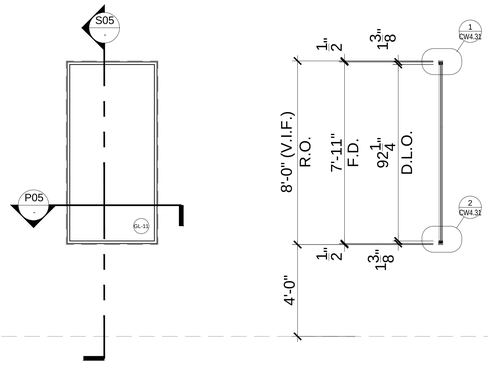

LEVEL 01
EL: 0'-0"

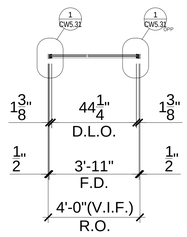



S04 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | SOUTH | A122 | 1 |
| A | SOUTH | A121 | 1 |
| A | SOUTH | A120 | 1 |
| A | SOUTH | A119 | 1 |
| A | SOUTH | A117 | 2 |
| TOTAL QTY. | | | 6 |

P04 PLAN
Arch Ref: -

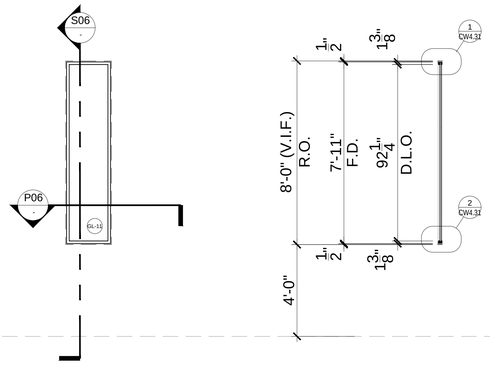


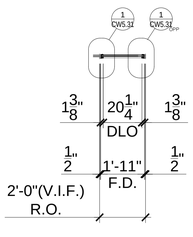




S05 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | NORTH | B125 | 2 |
| B | WEST | B127 | 1 |
| B | WEST | B119 | 1 |
| B | SOUTH | B118 | 2 |
| TOTAL QTY. | | | 6 |

P05 PLAN
Arch Ref: -




S06 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | SOUTH | B118 | 1 |
| TOTAL QTY. | | | 1 |

P06 PLAN
Arch Ref: -

QTY-06 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-4 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

QTY-06 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-5 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

QTY-01 SEE DISTRIBUTION TABLE FOR LOCATIONS
W-6 T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

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HMC Architects
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

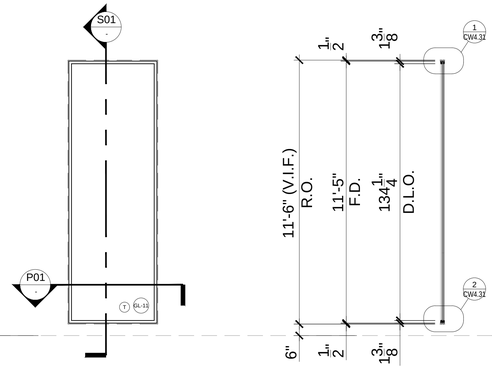
**ELEVATIONS - T200**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

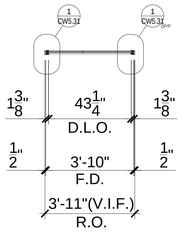
CW3.31

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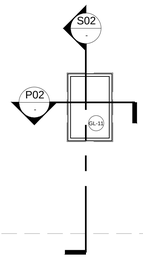



S01 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | EAST | B112 | 1 |
| TOTAL QTY. | | | 1 |

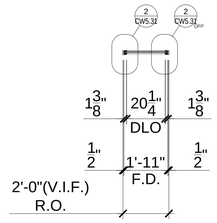



P01 PLAN
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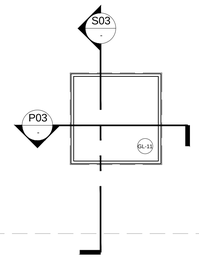



S02 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | INTERIOR | A136 | 1 |
| A | INTERIOR | A134 | 1 |
| TOTAL QTY. | | | 2 |

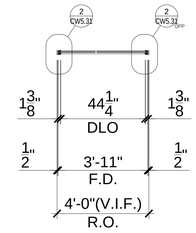



P02 PLAN
Arch Ref: -




S03 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | INTERIOR | A134 | 1 |
| TOTAL QTY. | | | 1 |

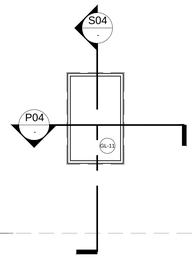



P03 PLAN
Arch Ref: -

W-7 QTY-1 SEE DISTRIBUTION TABLE FOR LOCATIONS
T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

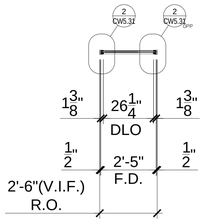
W-8 QTY-02 SEE DISTRIBUTION TABLE FOR LOCATIONS
T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

W-9 QTY-01 SEE DISTRIBUTION TABLE FOR LOCATIONS
T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

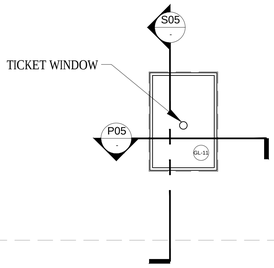



S04 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | INTERIOR | A104 | 1 |
| TOTAL QTY. | | | 1 |

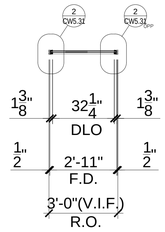



P04 PLAN
Arch Ref: -




S05 SECTION
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | INTERIOR | B113 | 2 |
| TOTAL QTY. | | | 2 |




P05 PLAN
Arch Ref: -

W-10 QTY-01 SEE DISTRIBUTION TABLE FOR LOCATIONS
T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

W-11 QTY-02 SEE DISTRIBUTION TABLE FOR LOCATIONS
T200 SERIES; HEAVY COMMERICAL WINDOW FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

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**ISSUE**

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FACILITY:

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PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**ELEVATIONS - T200**

**DSA SUBMITTAL**

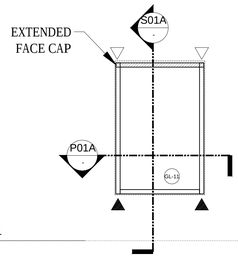
FILE NO.: **19-H10** A NO.: **03-123641**

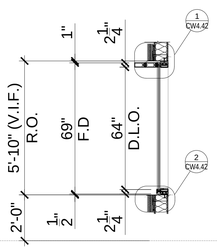
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

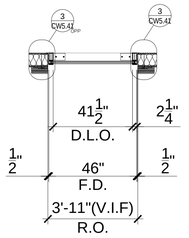
CW3.32

THE LINE SHOWN ABOVE IS 6" LONG ON ORIGINAL PLANS SHEETS ORIGINAL PAGE SIZE




LEVEL 01
EL: 0'-0"

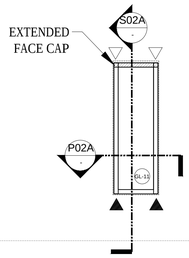


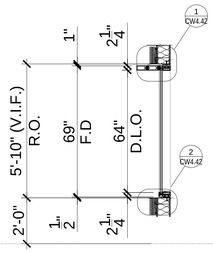

S01A SECTION
Arch Ref: -

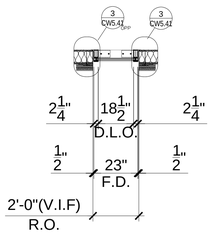
P01A PLAN
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | EAST | A102 | 1 |
| A | EAST | A103 | 1 |
| A | WEST | A138 | 1 |
| A | WEST | A137 | 1 |
| A | WEST | A135 | 1 |
| A | NORTH WEST | A133 | 1 |
| A | NORTH WEST | A132 | 1 |
| A | NORTH WEST | A131 | 1 |
| A | NORTH WEST | A130 | 1 |
| A | NORTH WEST | A129 | 1 |
| TOTAL QTY. | | | 10 |

W-1A QTY-10 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"



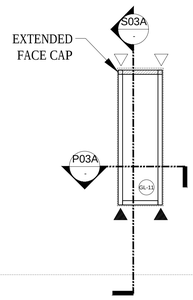



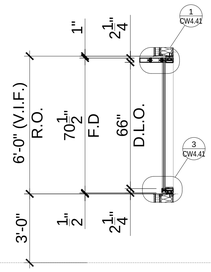

S02A SECTION
Arch Ref: -

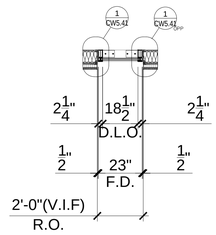
P02A PLAN
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | EAST | A102 | 1 |
| A | EAST | A103 | 1 |
| A | WEST | A138 | 1 |
| A | WEST | A137 | 1 |
| A | WEST | A135 | 1 |
| A | NORTH WEST | A133 | 1 |
| A | NORTH WEST | A132 | 1 |
| A | NORTH WEST | A131 | 1 |
| A | NORTH WEST | A130 | 1 |
| A | NORTH WEST | A129 | 1 |
| TOTAL QTY. | | | 10 |

W-2A QTY-10 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"



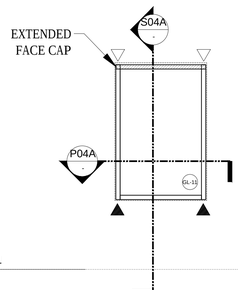



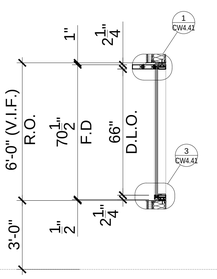

S03A SECTION
Arch Ref: -

P03A PLAN
Arch Ref: -

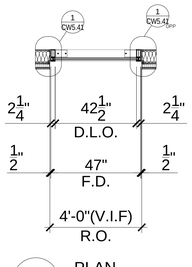
| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | WEST | A127 | 1 |
| A | WEST | A126 | 1 |
| A | WEST | A125 | 1 |
| A | WEST | A124 | 1 |
| A | WEST | A123 | 1 |
| TOTAL QTY. | | | 5 |

W-3A QTY-5 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"




LEVEL 01
EL: 0'-0"

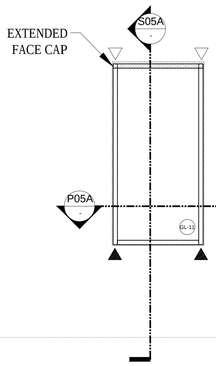


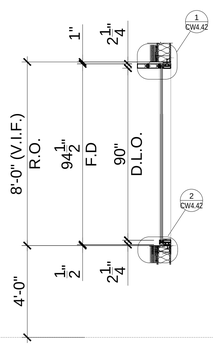

S04A SECTION
Arch Ref: -

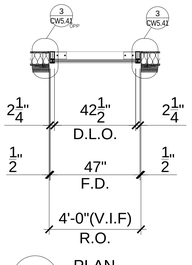
P04A PLAN
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| A | WEST | A127 | 1 |
| A | WEST | A126 | 1 |
| A | WEST | A125 | 1 |
| A | WEST | A124 | 1 |
| A | WEST | A123 | 2 |
| TOTAL QTY. | | | 6 |

W-4A QTY-6 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"



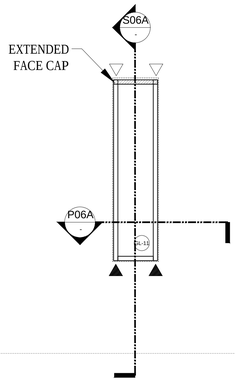



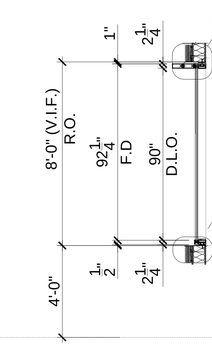

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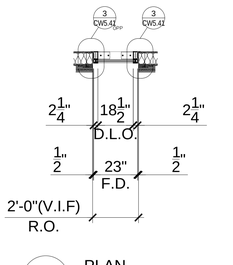
P05A PLAN
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | EAST | B133 | 2 |
| TOTAL QTY. | | | 2 |

W-5A QTY-2 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"




S06A SECTION
Arch Ref: -

P06A PLAN
Arch Ref: -

| WINDOWS - DISTRIBUTION | | | |
|---|---|---|---|
| SEGMENT | ELEVATION | ROOM | QTY. |
| B | EAST | B133 | 1 |
| TOTAL QTY. | | | 1 |

W-6A QTY-1 SEE DISTRIBUTION TABLE FOR LOCATIONS
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS
Arch Ref: A9.24
Scale : 3/8" = 1'-0"

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DATE: 10/15/2025

CERTIFIED COMMITTED TO COLLEGE AND CAREER

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PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

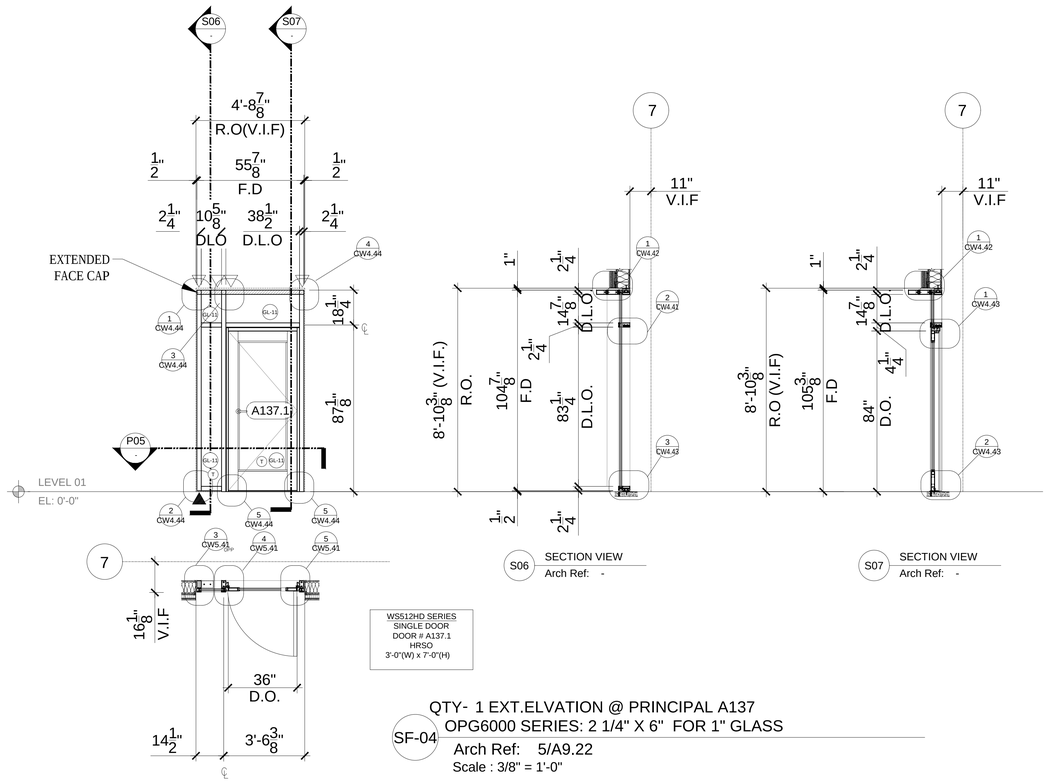
SHEET NAME:
**ELEVATIONS - OPG6000**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

CW3.41

THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ALL ORIGINAL SHEETS ORIGINAL PAGE SIZE




QTY- 1 EXT.ELVATION @ PRINCIPAL A137
OPG6000 SERIES: 2 1/4" X 6" FOR 1" GLASS

SF-04

Arch Ref: 5/A9.22
Scale : 3/8" = 1'-0"

P05 PLAN VIEW
Arch Ref: 3/A6.25

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELEVATIONS - OPG6000**

**DSA SUBMITTAL**

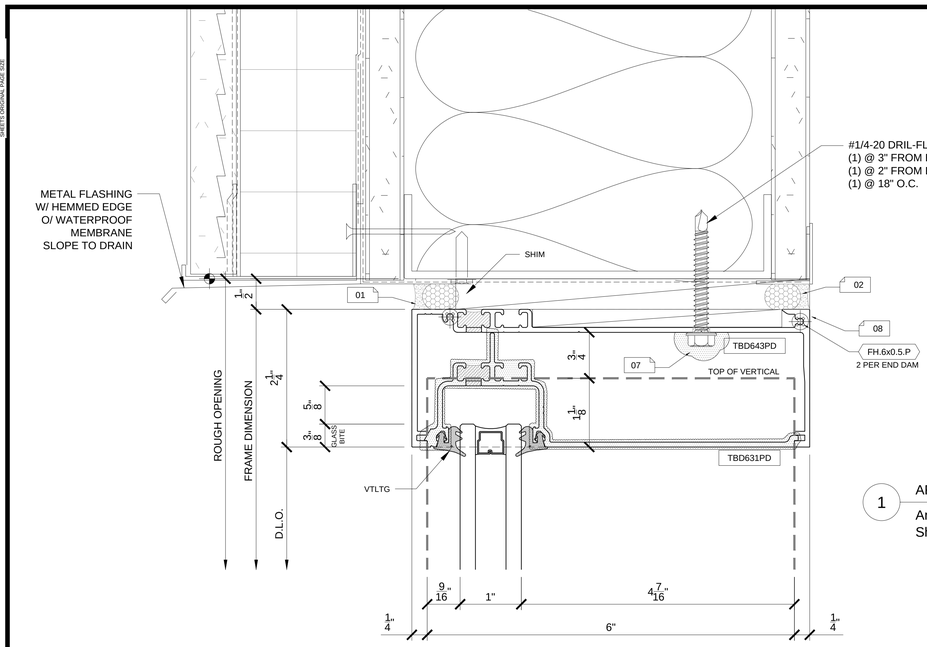
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

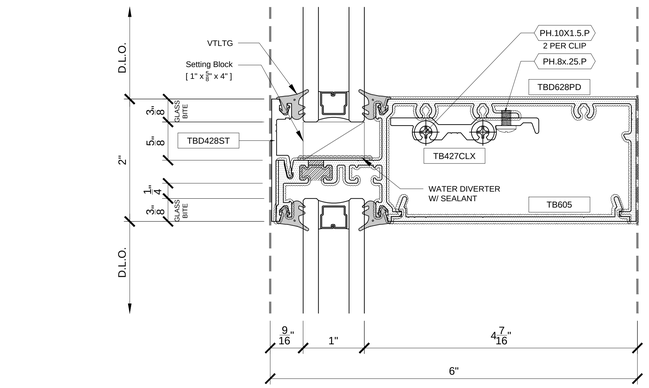
CW3.42

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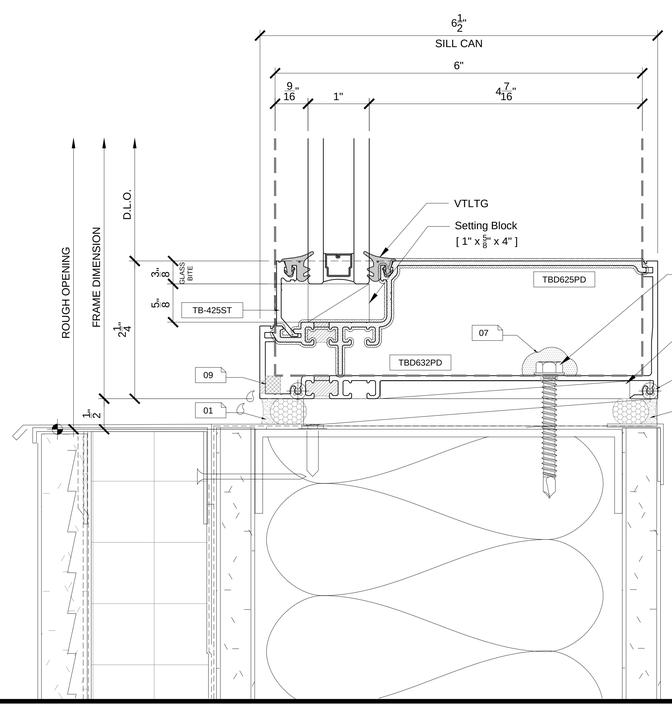

1 AFG601T HEAD DETAIL

Arch Ref: 14/A10.21 SIM.
Shop Ref: CW3.01 - CW3.03



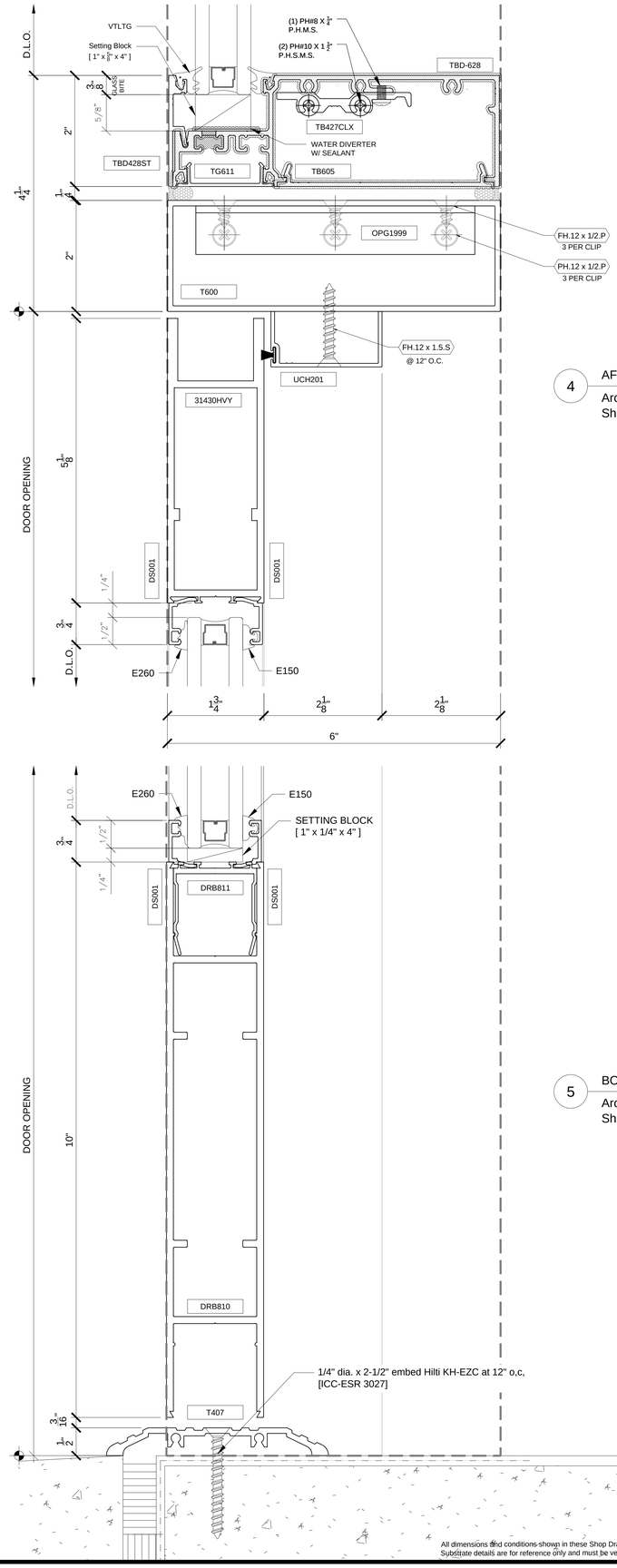

2 AFG601T HORIZ. DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03




3 AFG601T SILL DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03




4 AFG601T DOOR HEADER DETAIL

Arch Ref: -
Shop Ref: CW3.01




5 BOTTOM RAIL @ DOOR

Arch Ref: 12/A10.21 SIM.
Shop Ref: CW3.01 - CW3.03

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - AFG601T**

**DSA SUBMITTAL**

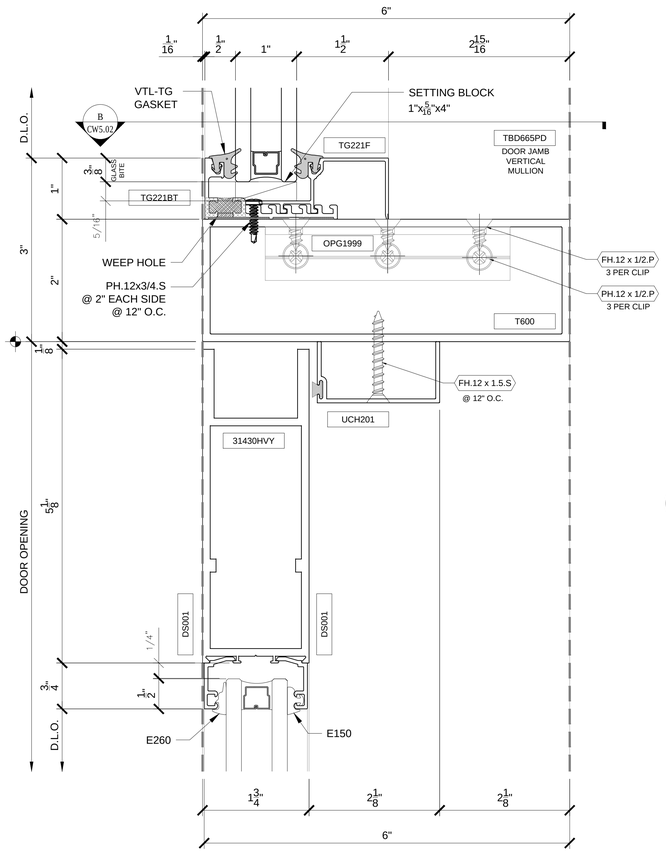
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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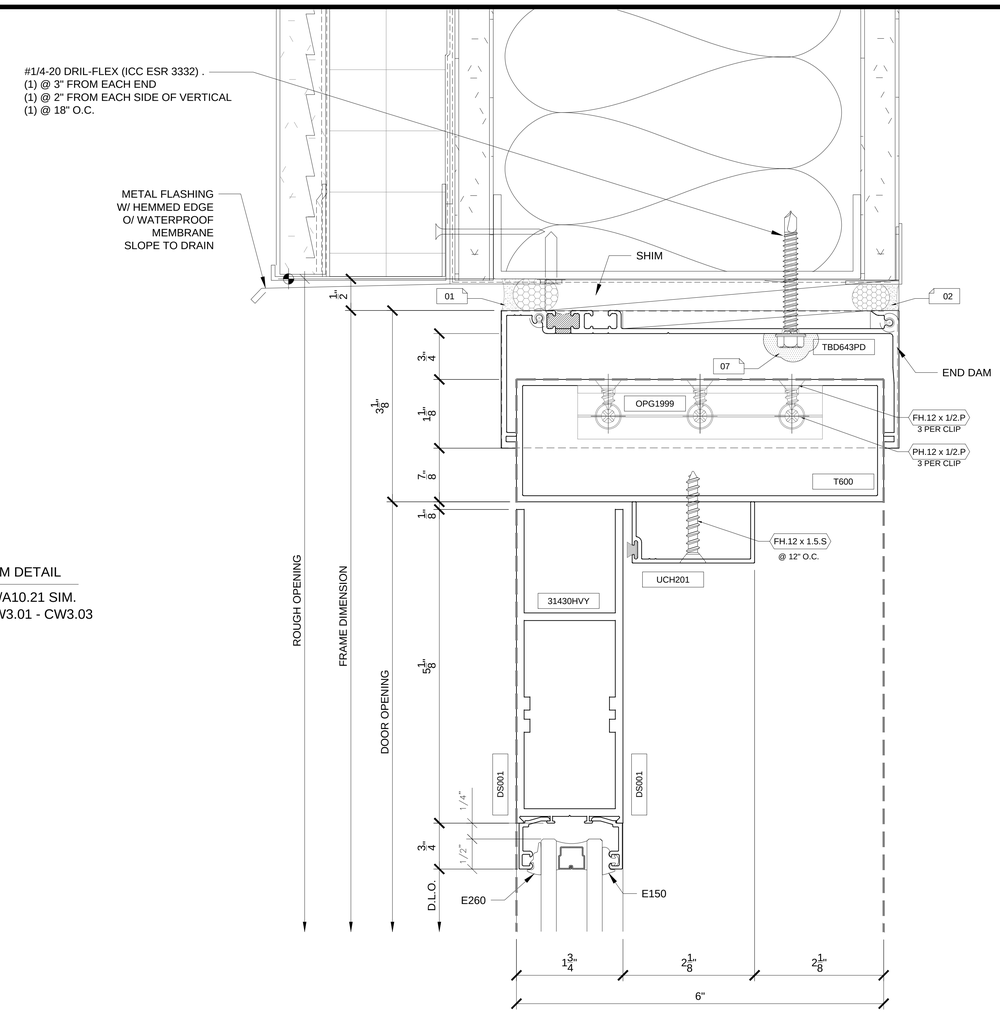
CW4.01

THE LINE SHOWN ABOVE IS 6" LONG WHEN PLOTTED ON 24x36 SHEETS ORIGINAL PAGE SIZE



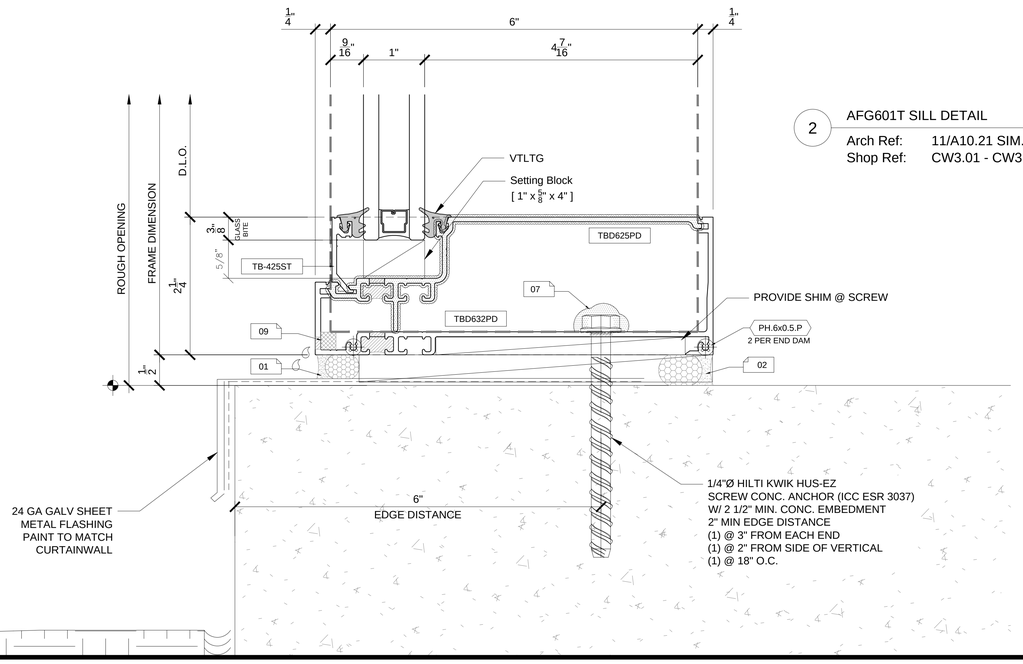

1 DOOR TRANSOM DETAIL

Arch Ref: 18/A10.21 SIM.
Shop Ref: CW3.01 - CW3.03




3 DOOR HEADER DETAIL

Arch Ref: -
Shop Ref: CW3.02 - CW3.03




2 AFG601T SILL DETAIL

Arch Ref: 11/A10.21 SIM.
Shop Ref: CW3.01 - CW3.03

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**NOTES**

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - AFG601T**

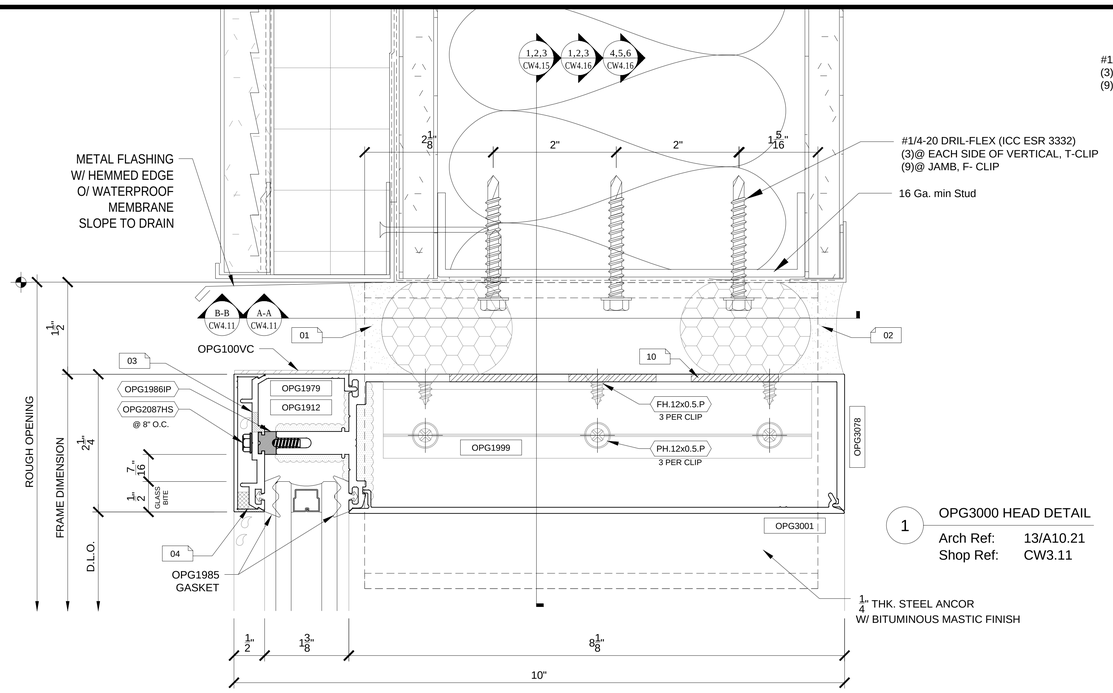
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SHEET:

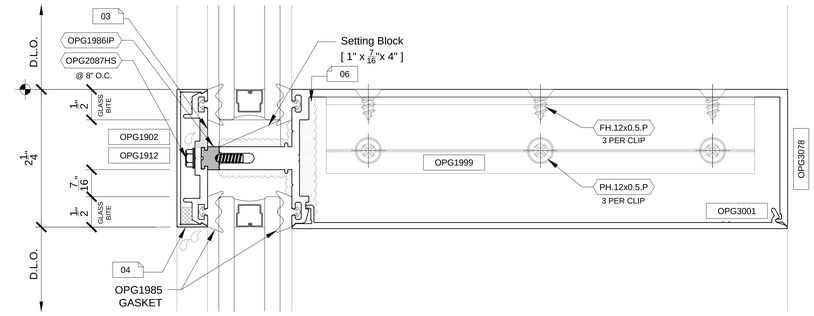
CW4.02

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1 OPG3000 HEAD DETAIL

Arch Ref: 13/A10.21
Shop Ref: CW3.11



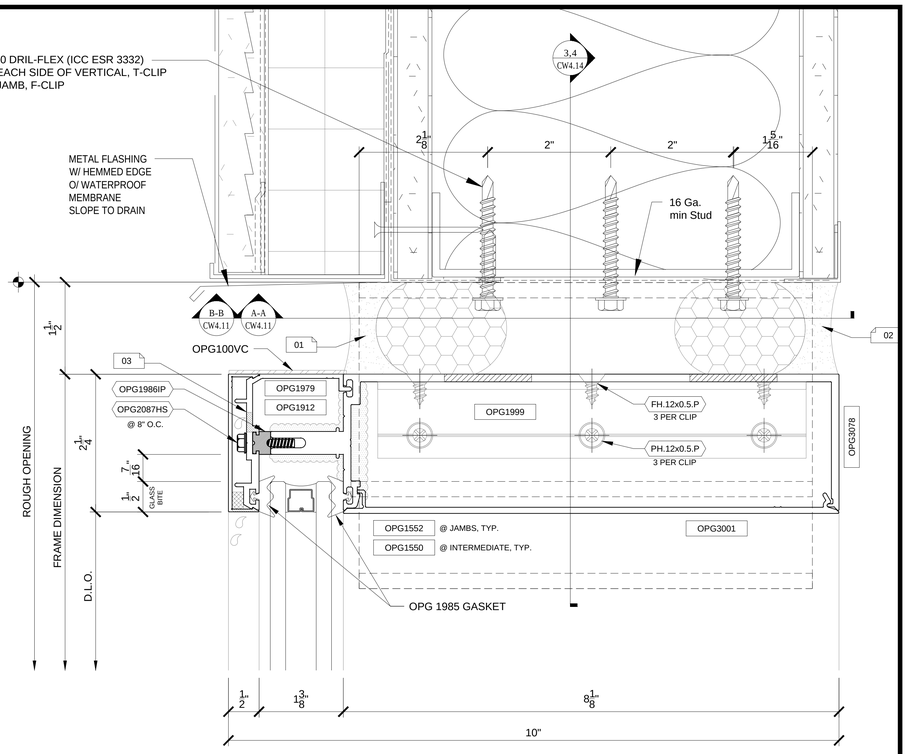

2 OPG3000 HORZ. DETAIL

Arch Ref: -
Shop Ref: CW3.11, CW3.12



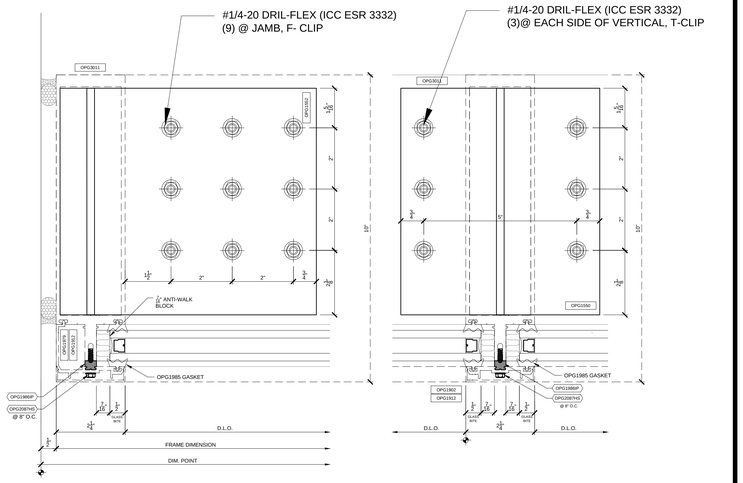

3 OPG3000 HEAD DETAIL

Arch Ref: 11/A10.21
Shop Ref: CW3.11




4 OPG3000 HEAD DETAIL

Arch Ref: 13/A10.21
Shop Ref: CW3.12




A-A HEAD CREW LAYOUT AT JAMBS

SCALE 1:2

B-B HEAD CREW LAYOUT AT VERTICALS

SCALE 1:2

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

**DSA SUBMITTAL**

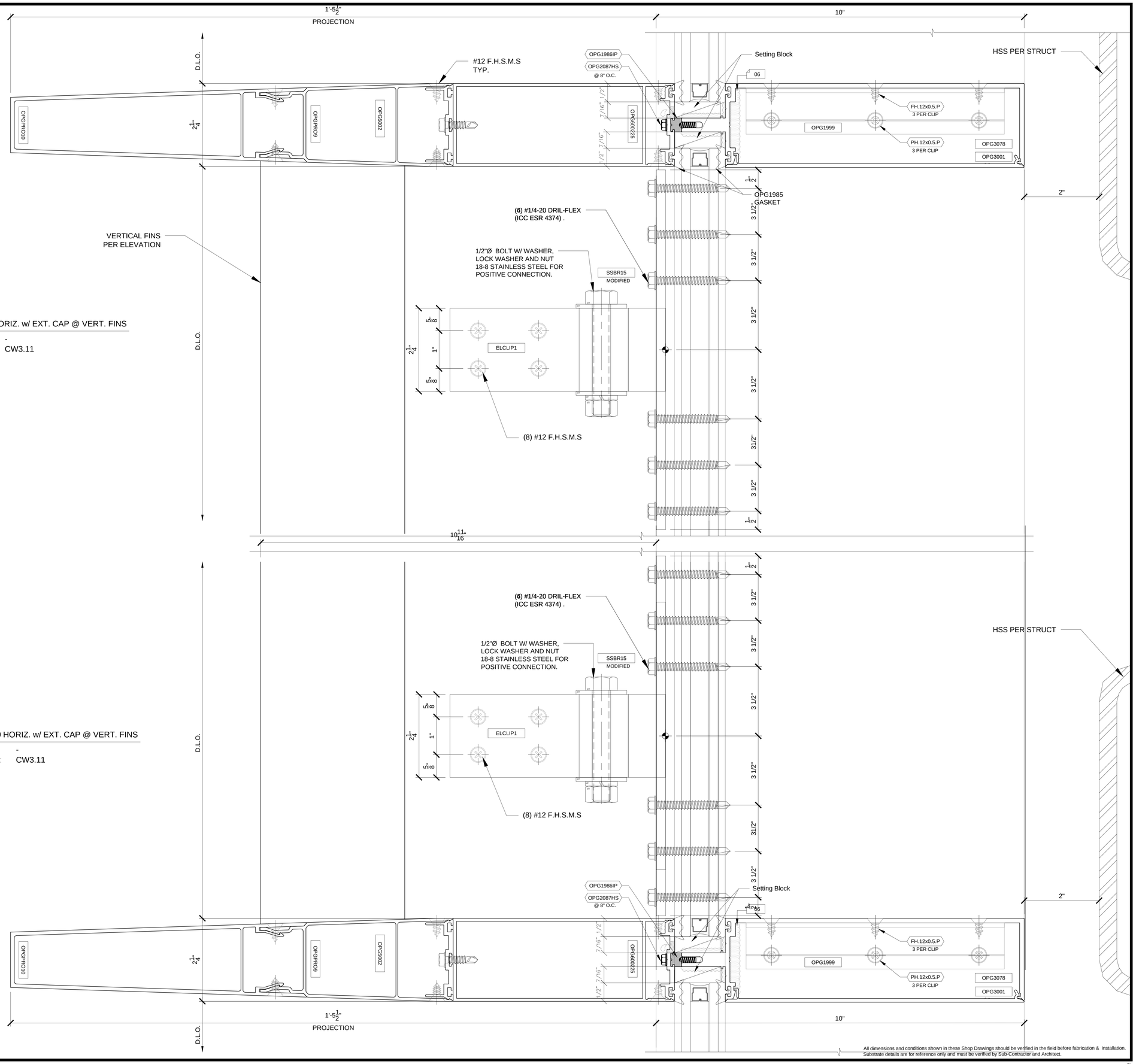
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

CW4.11

THE LINE SHOWN ABOVE IS 6" LONG WHEN PLOTTED AT FULL SIZED ORIGINAL PAGE SIZE




1 OPG3000 HORIZ. w/ EXT. CAP @ VERT. FINS

Arch Ref: -
Shop Ref: CW3.11




2 OPG3000 HORIZ. w/ EXT. CAP @ VERT. FINS

Arch Ref: -
Shop Ref: CW3.11

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## NOTES

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PROJECT:

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

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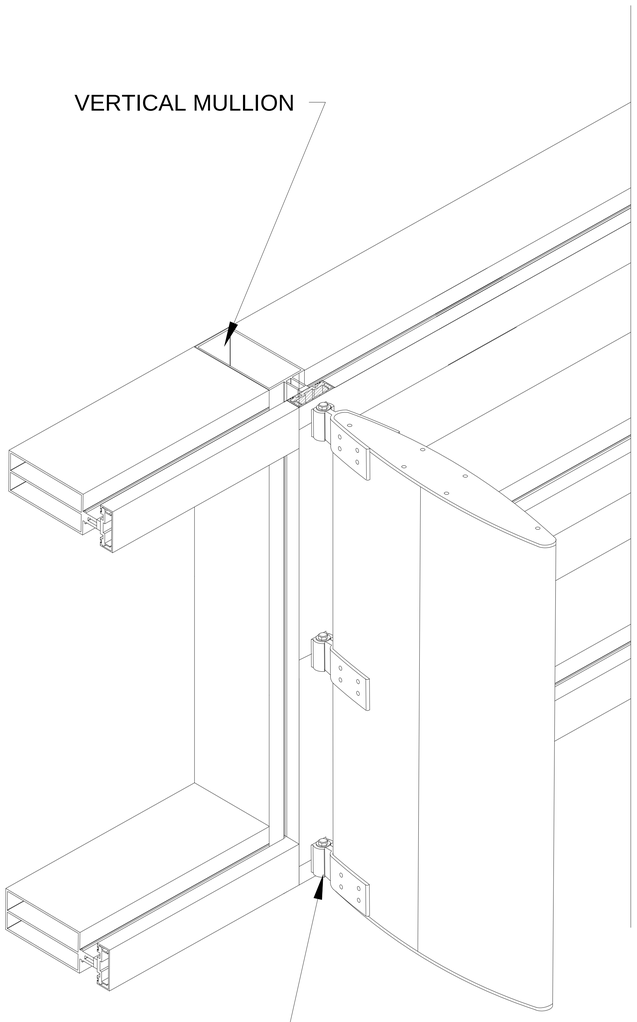
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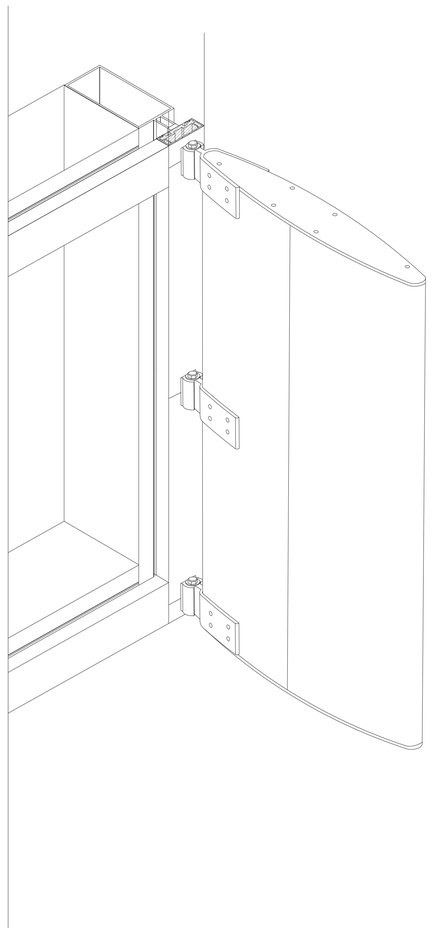
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

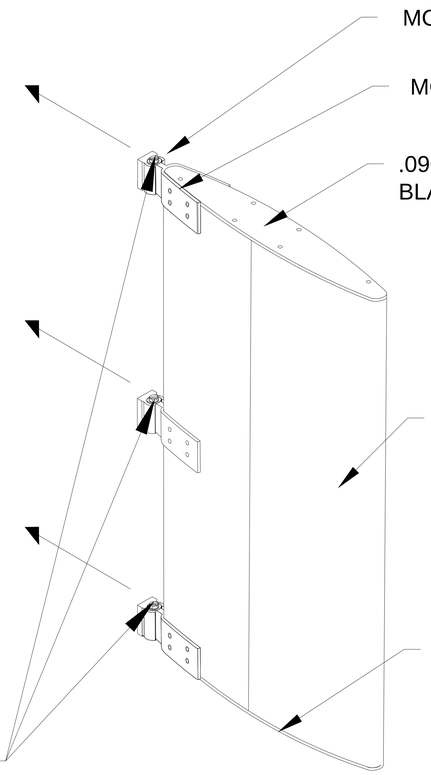
SHEET:

CW4.12

THE LINE SHOWN ABOVE IS
EXACTLY ONE INCH (1") ON
SHEETS ORIGINAL PAGE SIZE






1/2"Ø BOLT W/ WASHER,
LOCK WASHER AND NUT
18-8 STAINLESS STEEL
FOR POSITIVE CONNECTION AT
VERTICAL SUNSHADE BLADES.

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

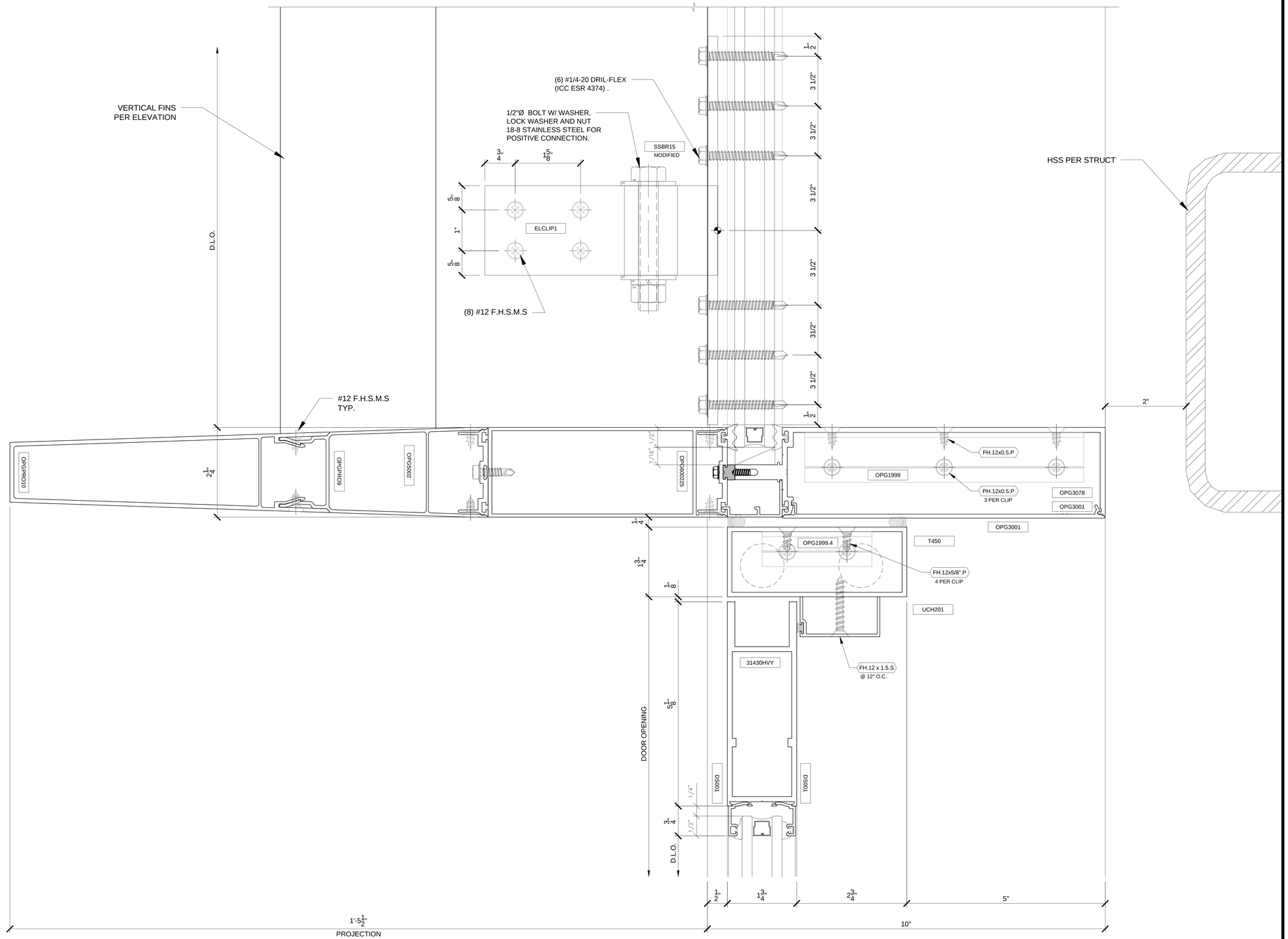
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SHEET:

CW4.12A

THE LINE SHOWN ABOVE IS EQUAL TO 1" WHEN PLOTTED ON 24x36 SHEETS ORIGINAL PAGE SIZE




1 OPG3000 HORIZ. w/ EXT. CAP @ DOOR HEADER

Arch Ref: -
Shop Ref: CW3.11

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

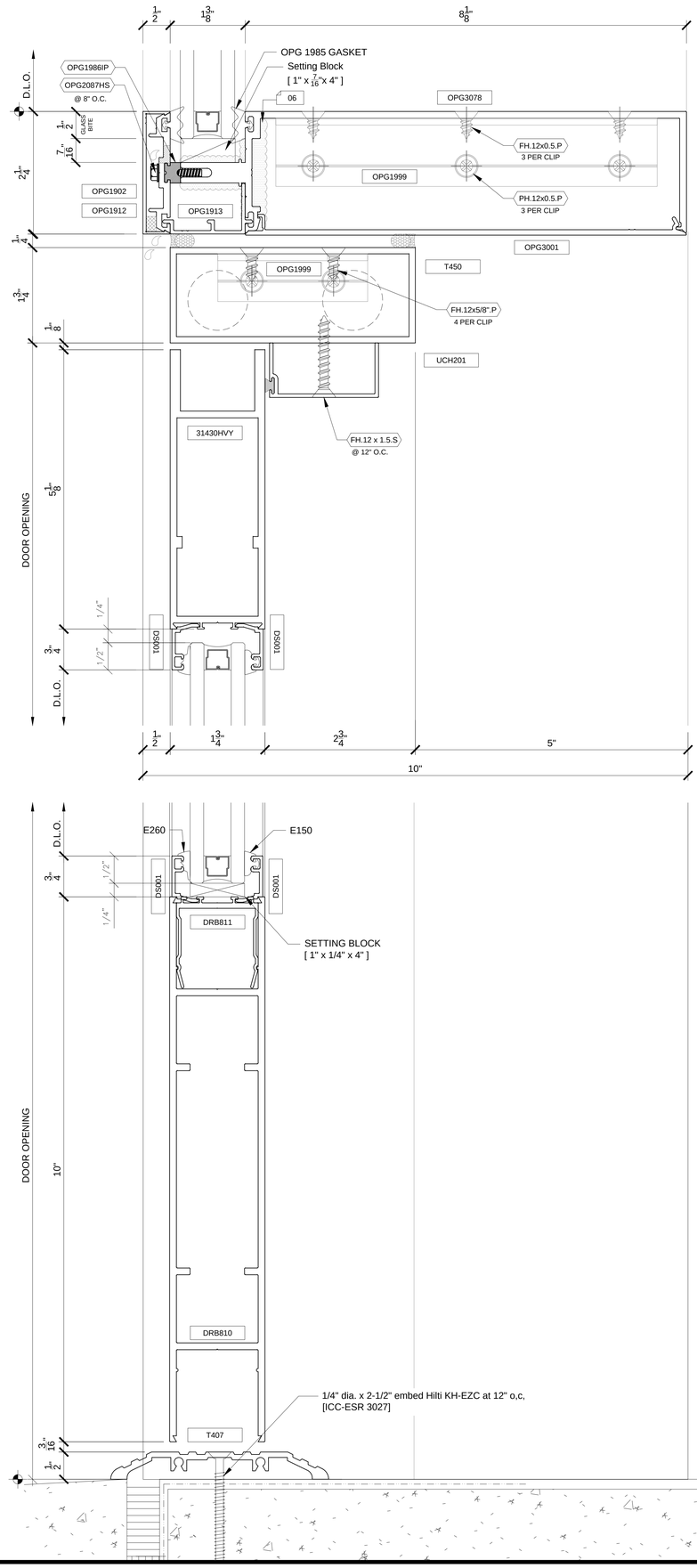
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SHEET:

CW4.13

THE LINE SHOWN ABOVE IS FOR PLOTTING PURPOSES ONLY. SHEETS ORIGINAL PAGE SIZE



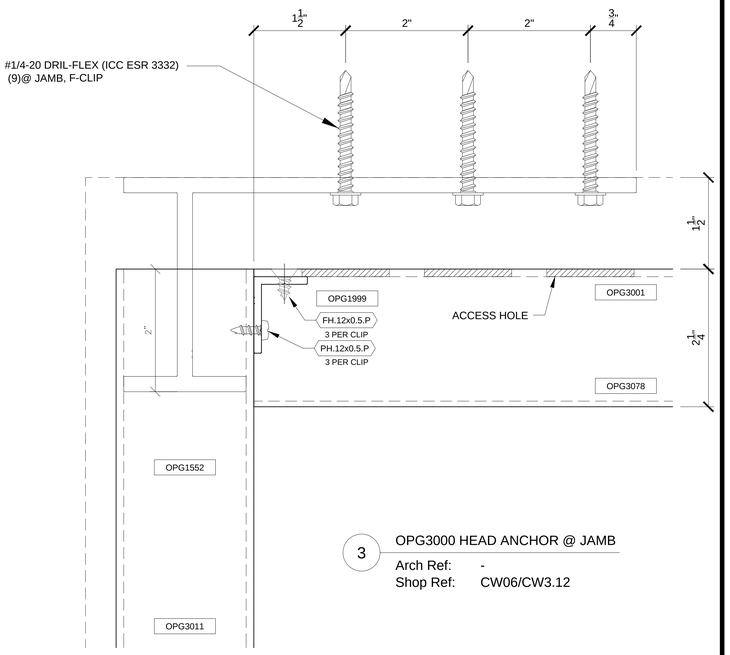

1 OPG3000 HEADER @ DOOR

Arch Ref: 18/A10.21
Shop Ref: CW3.11




2 BOTTOM RAIL @ DOOR

Arch Ref: 12/A10.21
Shop Ref: CW3.11




3 OPG3000 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW06/CW3.12




4 OPG3000 HEAD ANCHOR @ VER

Arch Ref: -
Shop Ref: CW06/CW3.12

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## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

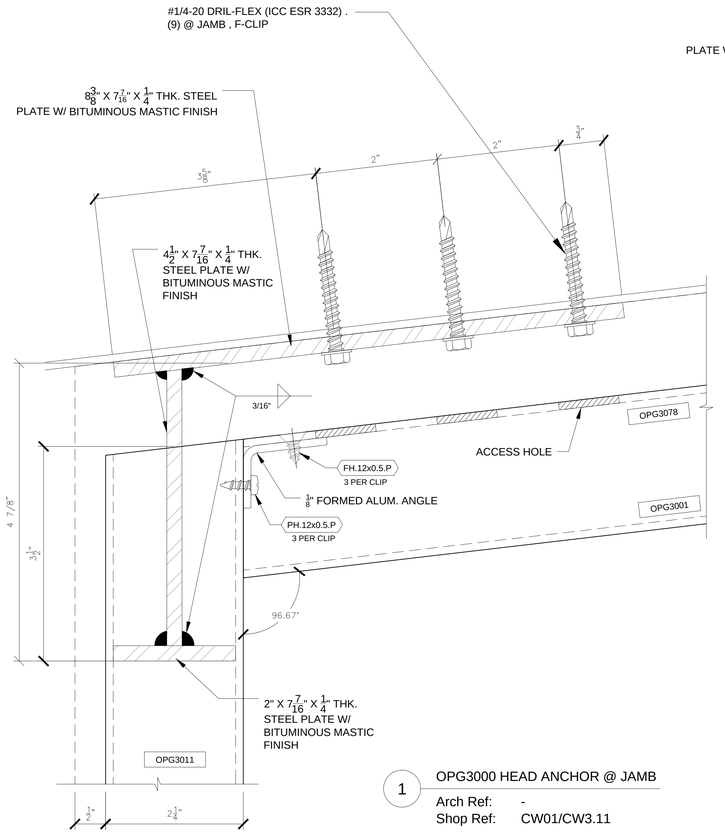
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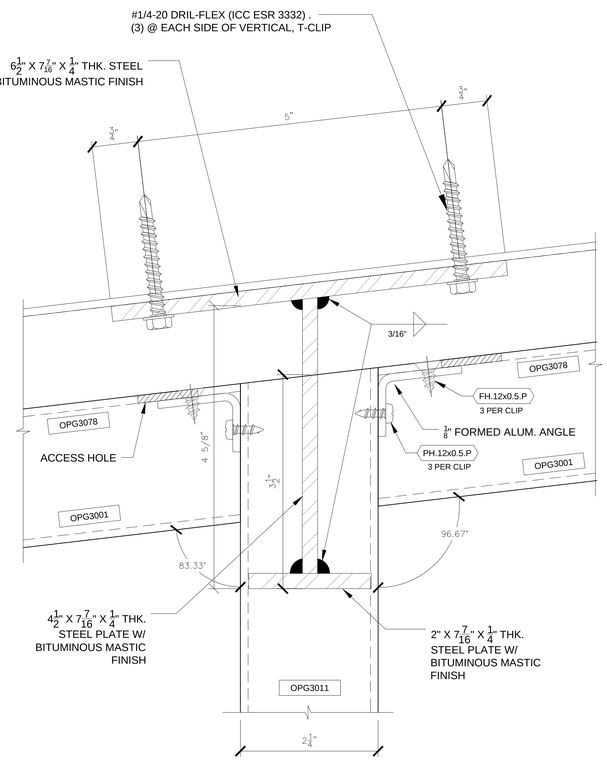
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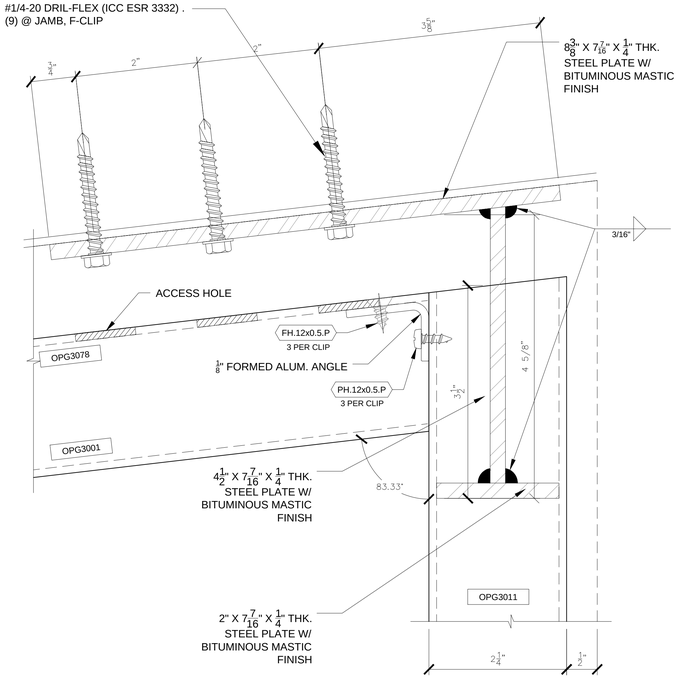

1 OPG3000 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW01/CW3.11



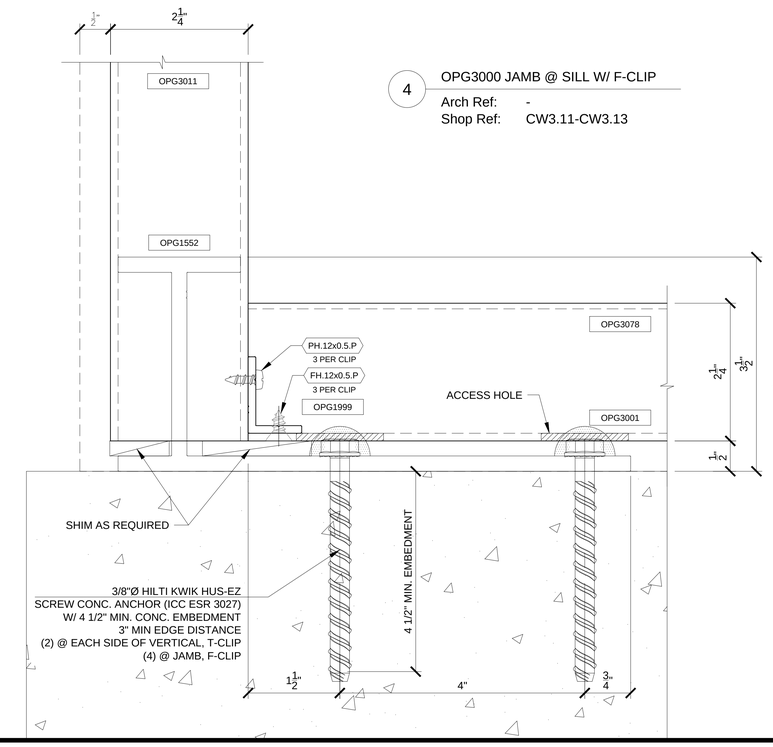

2 OPG3000 HEAD ANCHOR @ VERT.

Arch Ref: -
Shop Ref: CW01/CW3.11



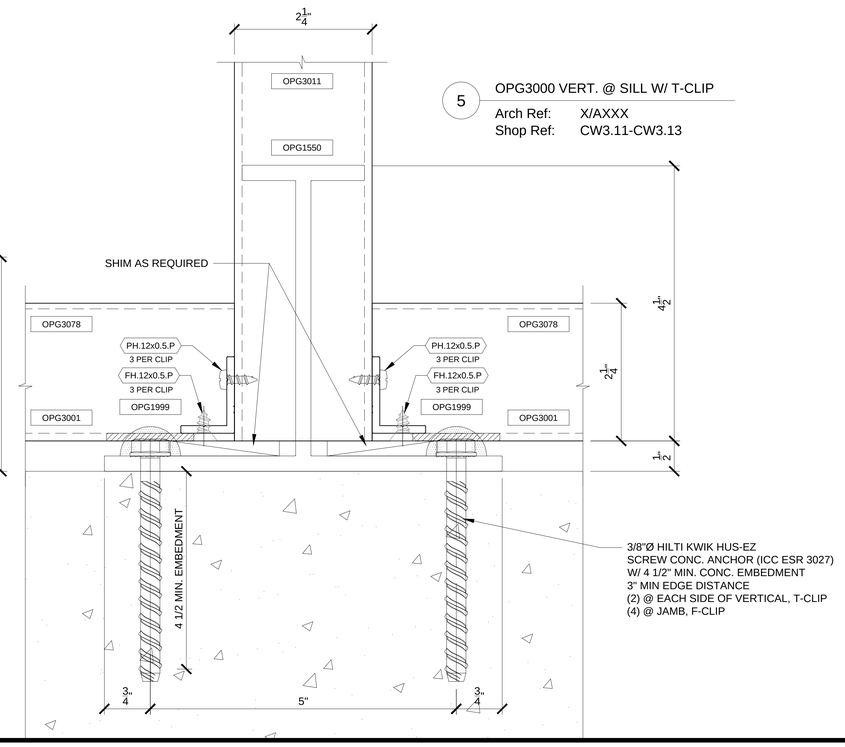

3 OPG3000 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW01/CW3.11




4 OPG3000 JAMB @ SILL W/ F-CLIP

Arch Ref: -
Shop Ref: CW3.11-CW3.13




5 OPG3000 VERT. @ SILL W/ T-CLIP

Arch Ref: X/AXXX
Shop Ref: CW3.11-CW3.13

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

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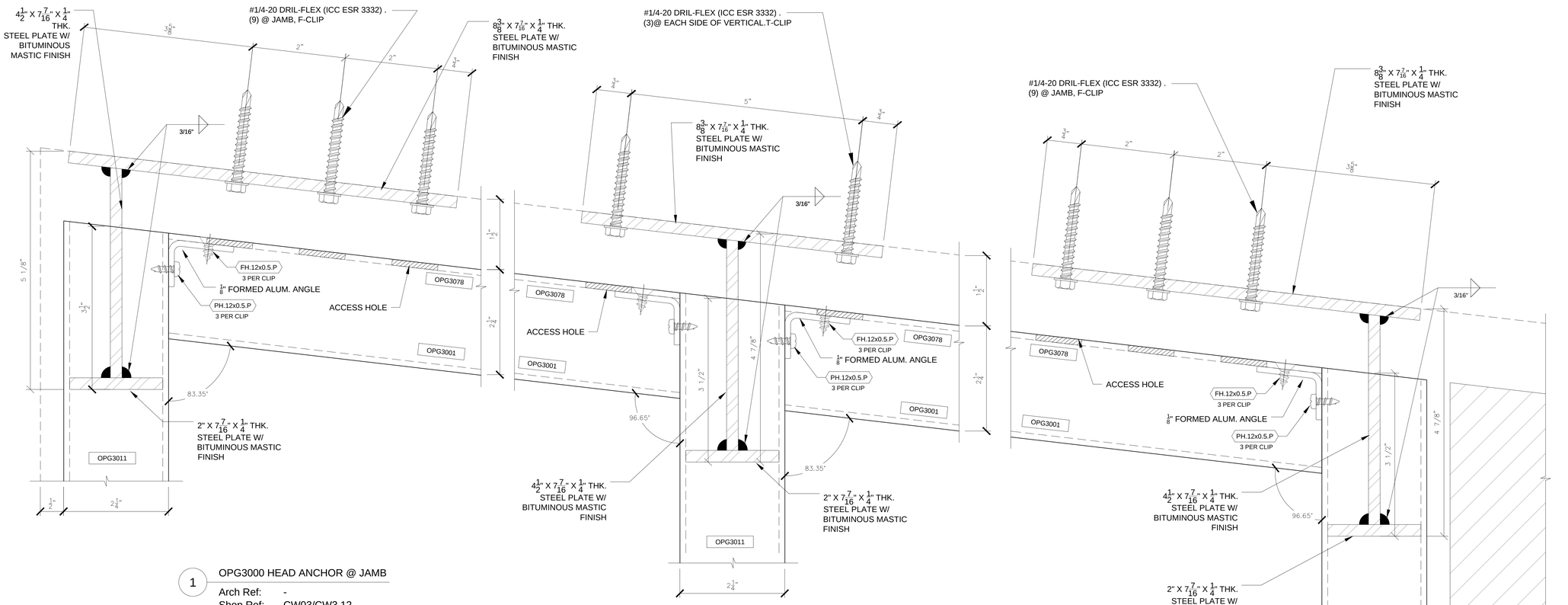
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CW4.15

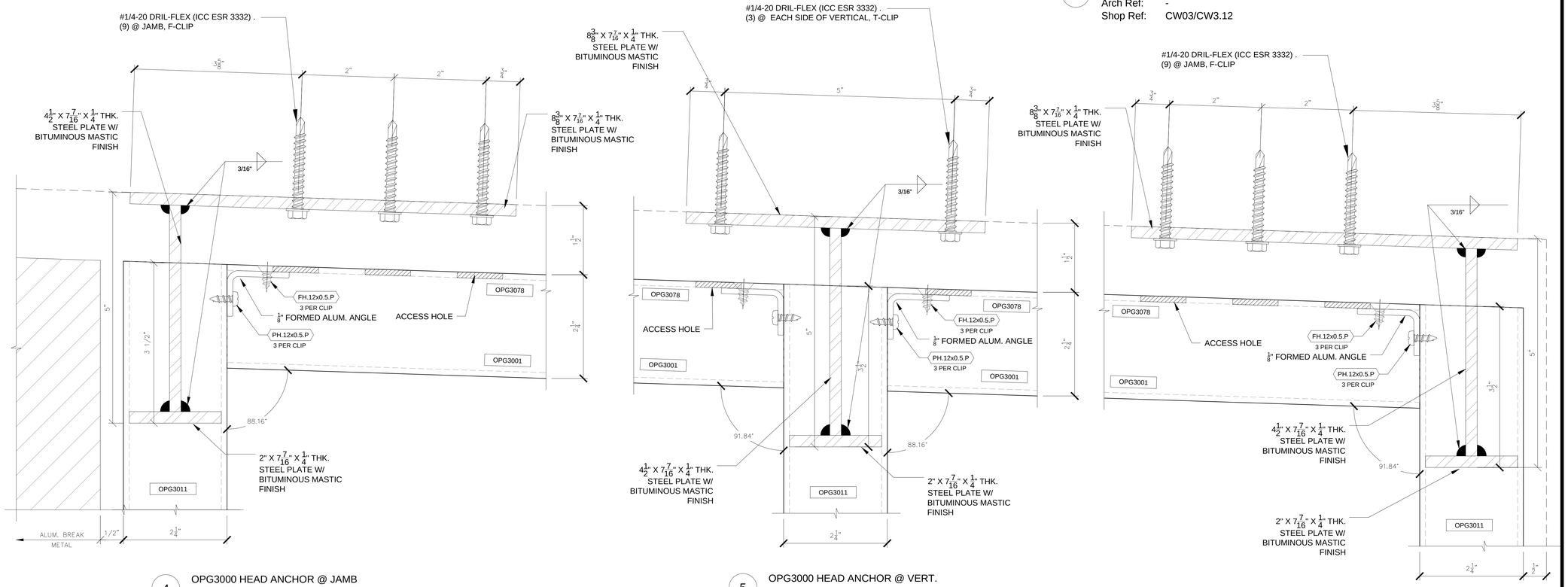
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1 OPG3000 HEAD ANCHOR @ JAMB
Arch Ref: -
Shop Ref: CW03/CW3.12

2 OPG3000 HEAD ANCHOR @ VERT.
Arch Ref: -
Shop Ref: CW03/CW3.12

3 OPG3000 HEAD ANCHOR @ VERT.
Arch Ref: -
Shop Ref: CW03/CW3.12




4 OPG3000 HEAD ANCHOR @ JAMB
Arch Ref: -
Shop Ref: CW02/CW3.13

5 OPG3000 HEAD ANCHOR @ VERT.
Arch Ref: -
Shop Ref: CW02/CW3.13

6 OPG3000 HEAD ANCHOR @ VERT.
Arch Ref: -
Shop Ref: CW02/CW3.13

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG3000**

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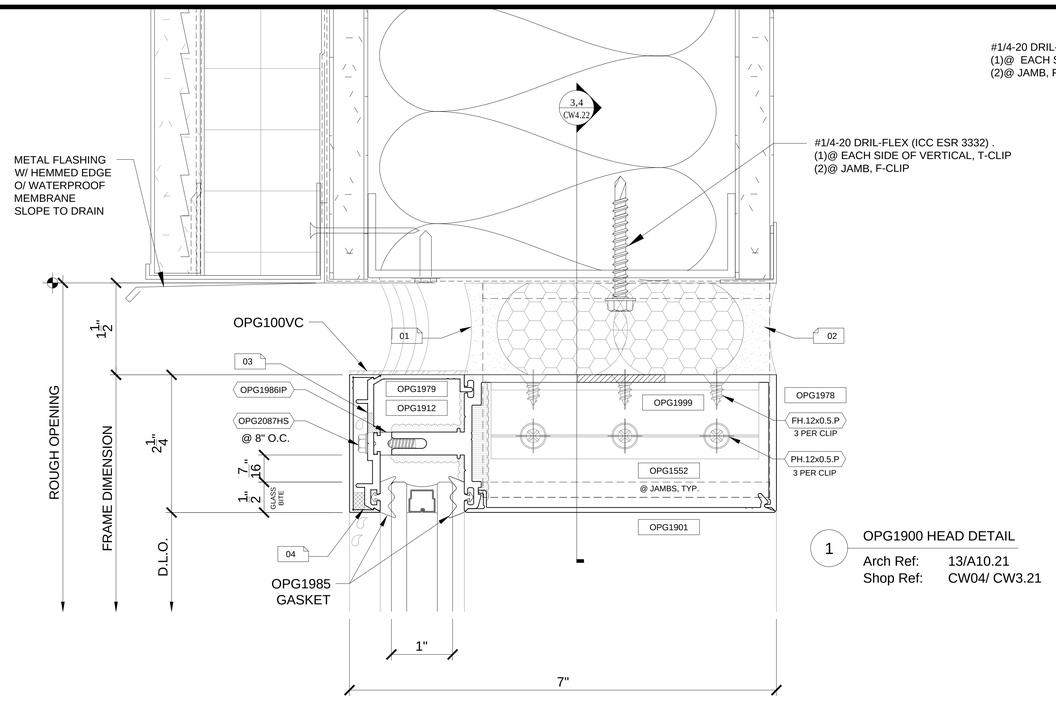
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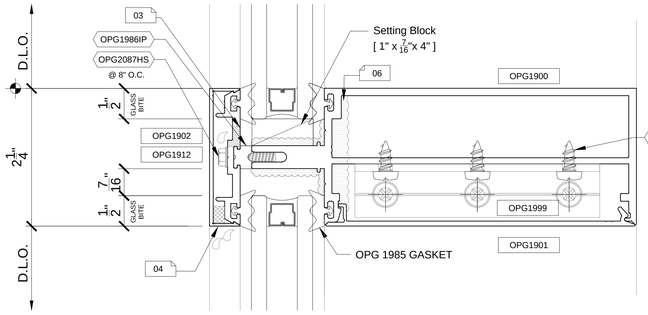
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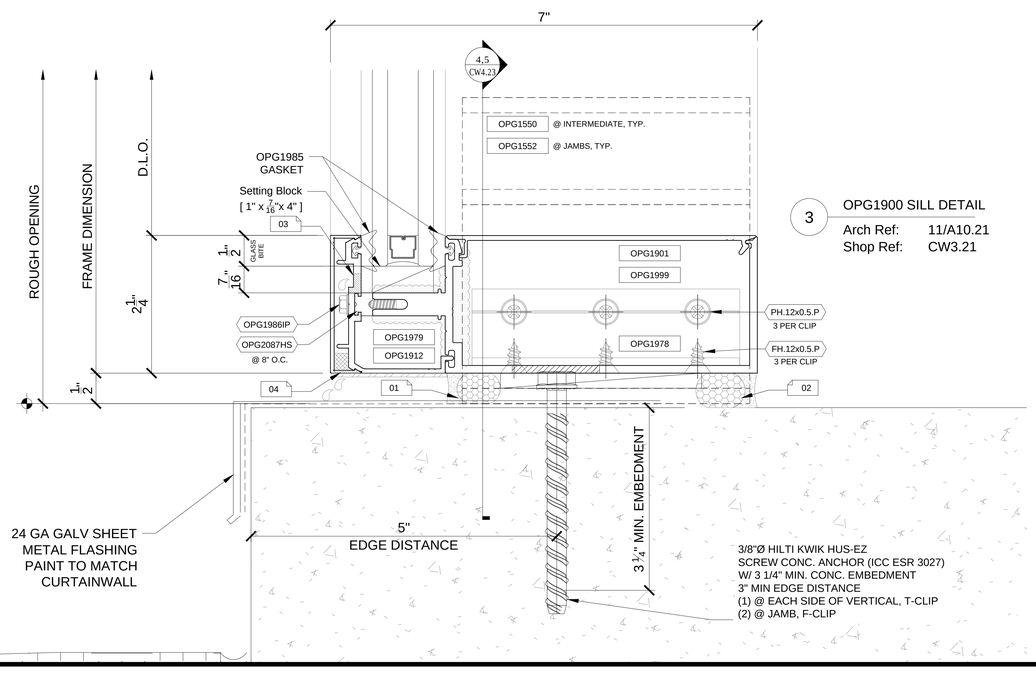

1 OPG1900 HEAD DETAIL

Arch Ref: 13/A10.21
Shop Ref: CW04/ CW3.21



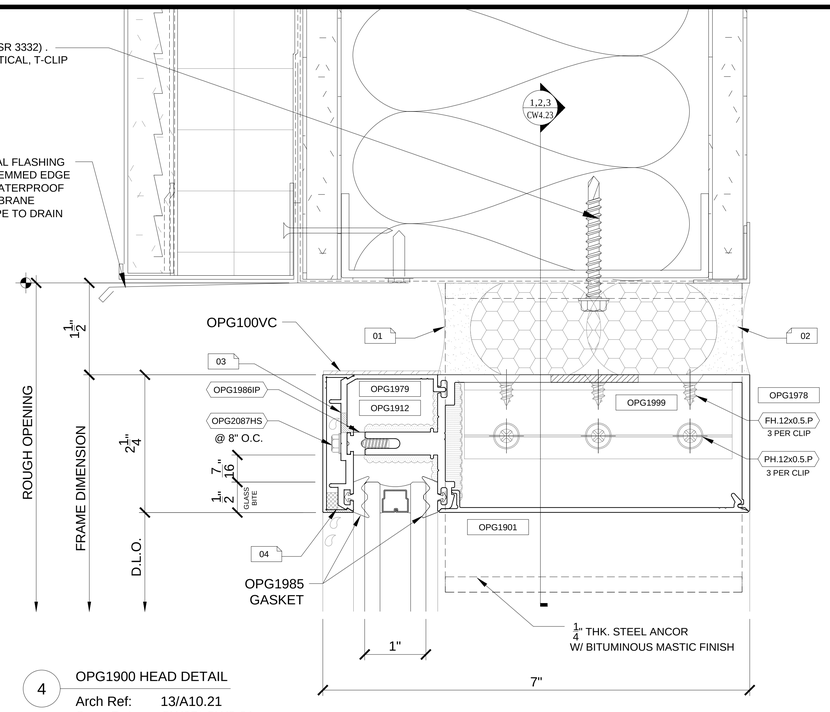

2 OPG1900 HORZ. DETAIL

Arch Ref: -
Shop Ref: CW3.21




3 OPG1900 SILL DETAIL

Arch Ref: 11/A10.21
Shop Ref: CW3.21




4 OPG1900 HEAD DETAIL

Arch Ref: 13/A10.21
Shop Ref: CW05/ CW3.21

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG1900**

**DSA SUBMITTAL**

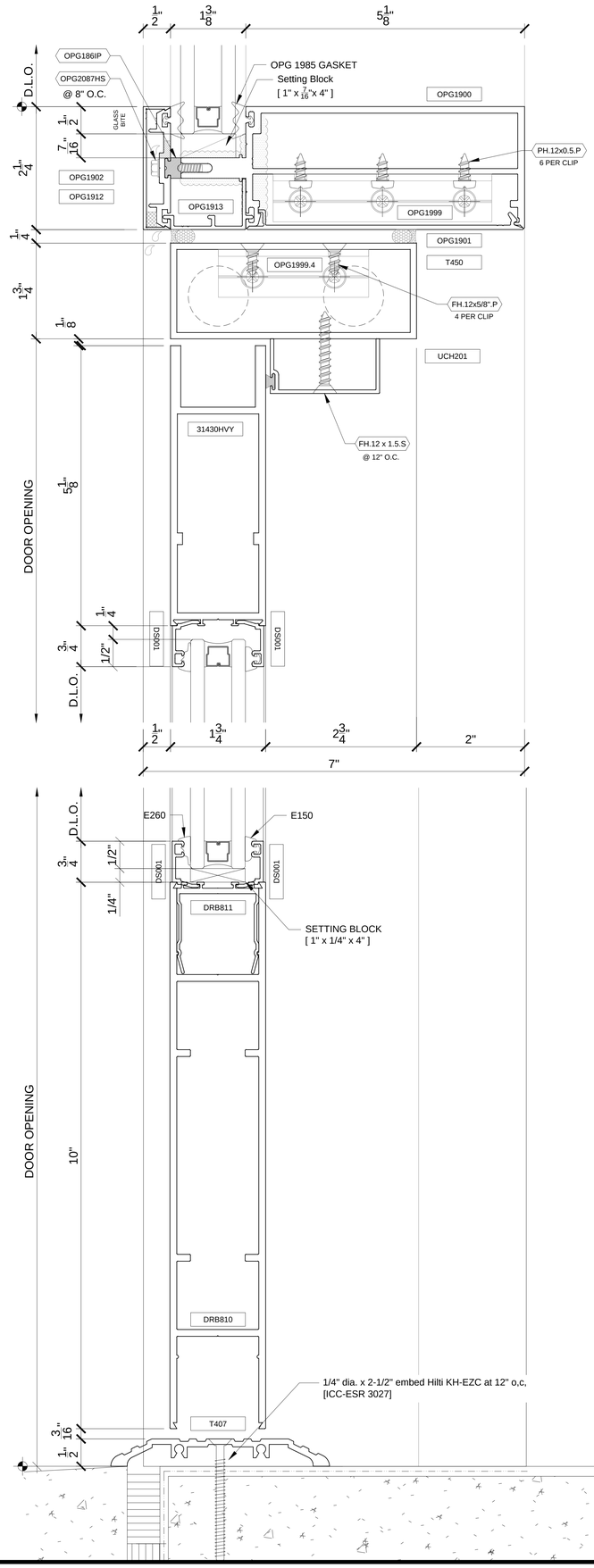
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW4.21

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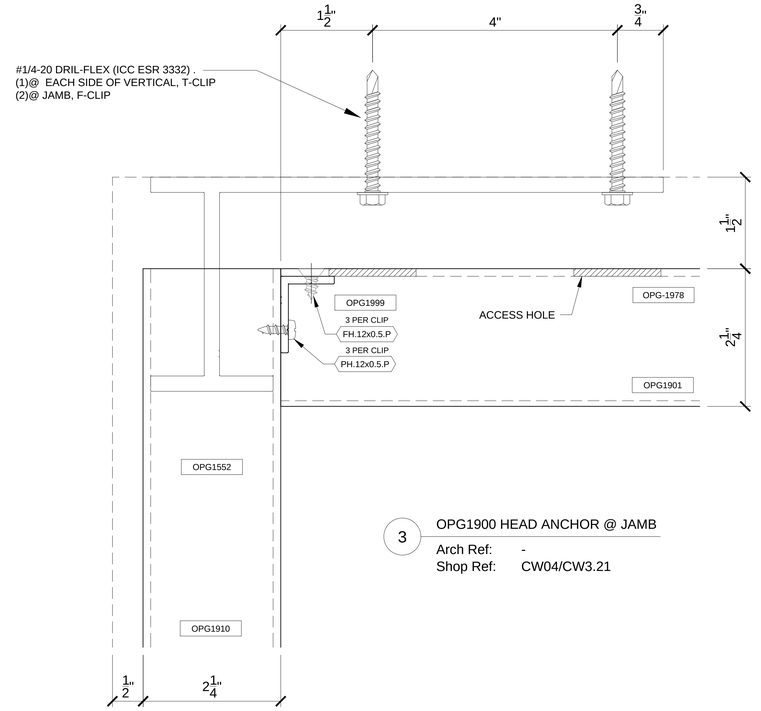



1 OPG1900 HEADER @ DOOR

Arch Ref: 18/A10.21
Shop Ref: CW3.21

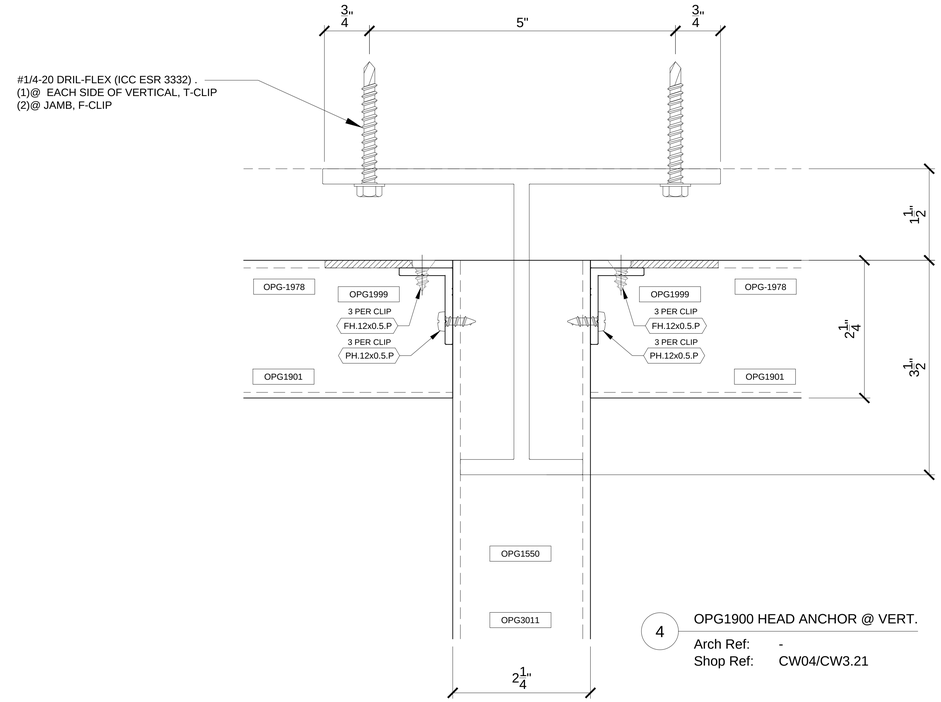
2 BOTTOM RAIL @ DOOR

Arch Ref: 12/A10.21
Shop Ref: CW3.21




3 OPG1900 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW04/CW3.21




4 OPG1900 HEAD ANCHOR @ VERT.

Arch Ref: -
Shop Ref: CW04/CW3.21

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG1900**

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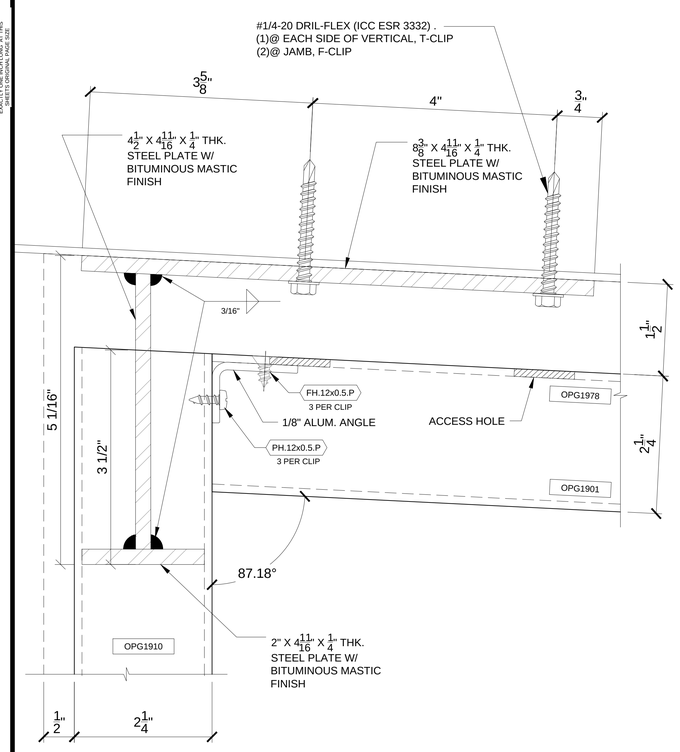
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

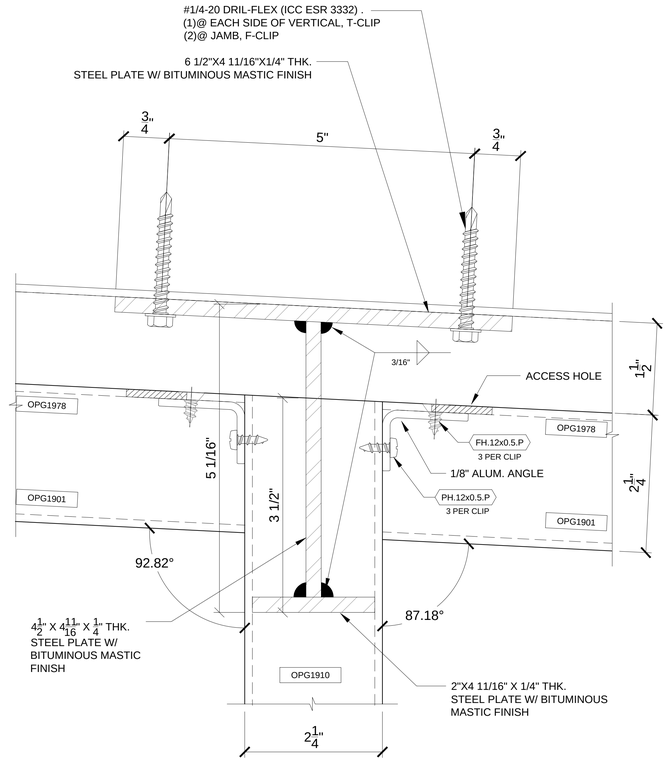
CW4.22

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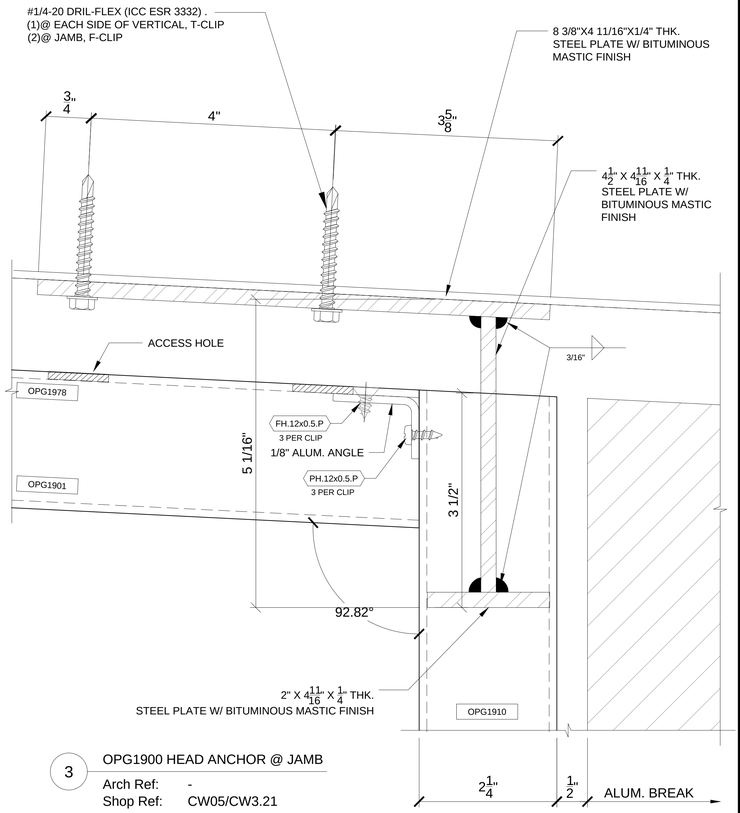

1 OPG1900 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW05/CW3.21



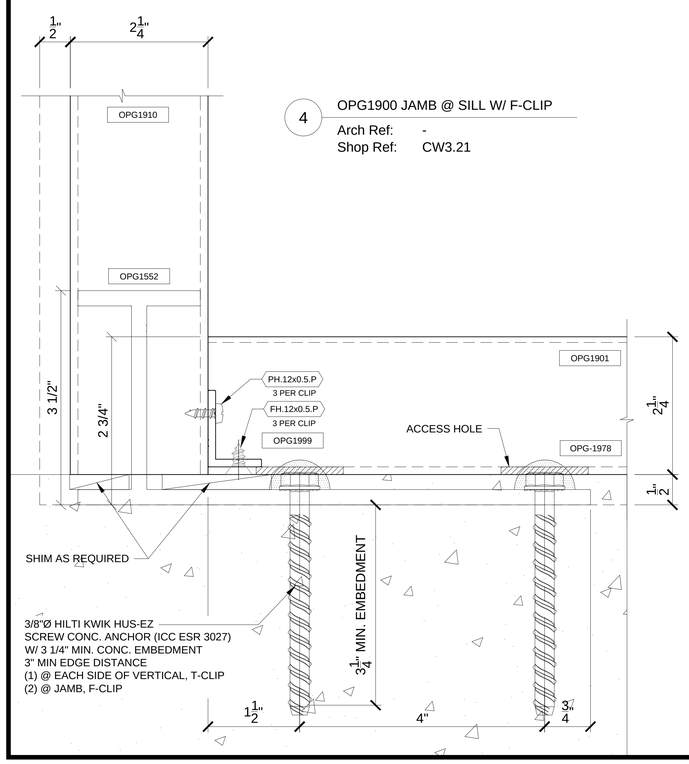

2 OPG1900 HEAD ANCHOR @ VERT.

Arch Ref: -
Shop Ref: CW05/CW3.21



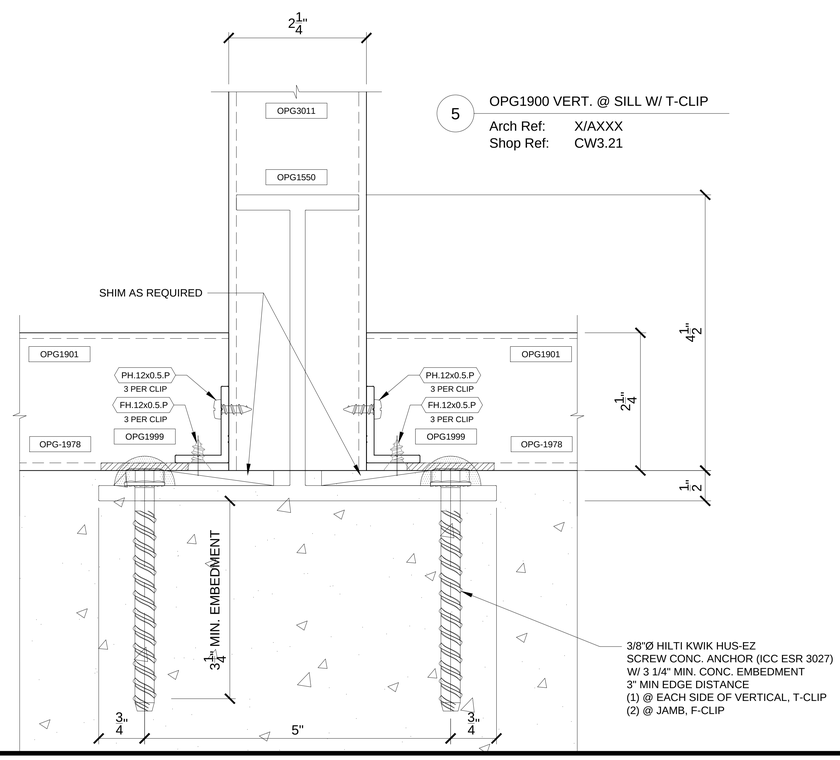

3 OPG1900 HEAD ANCHOR @ JAMB

Arch Ref: -
Shop Ref: CW05/CW3.21




4 OPG1900 JAMB @ SILL W/ F-CLIP

Arch Ref: -
Shop Ref: CW3.21




5 OPG1900 VERT. @ SILL W/ T-CLIP

Arch Ref: X/AXXX
Shop Ref: CW3.21

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## NOTES





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PROJECT:

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG1900**

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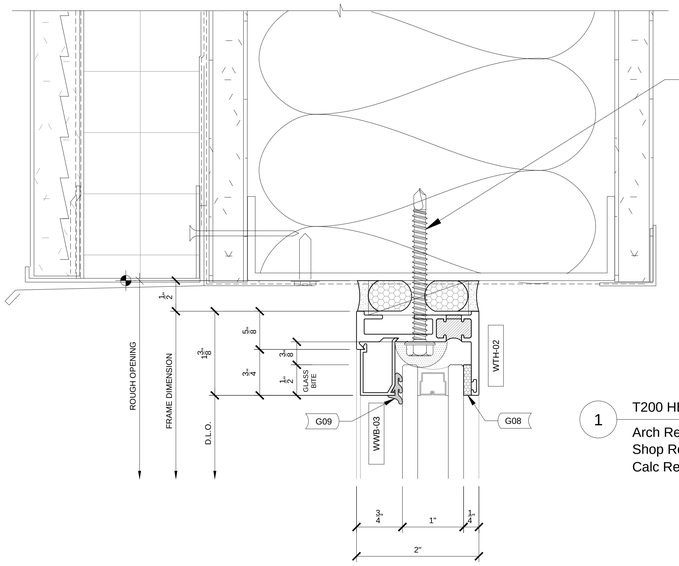
FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

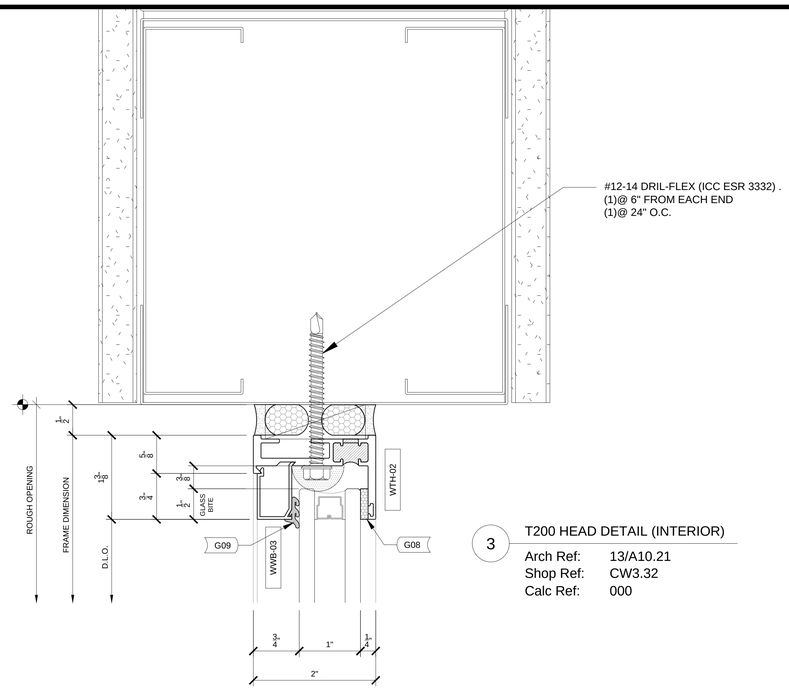
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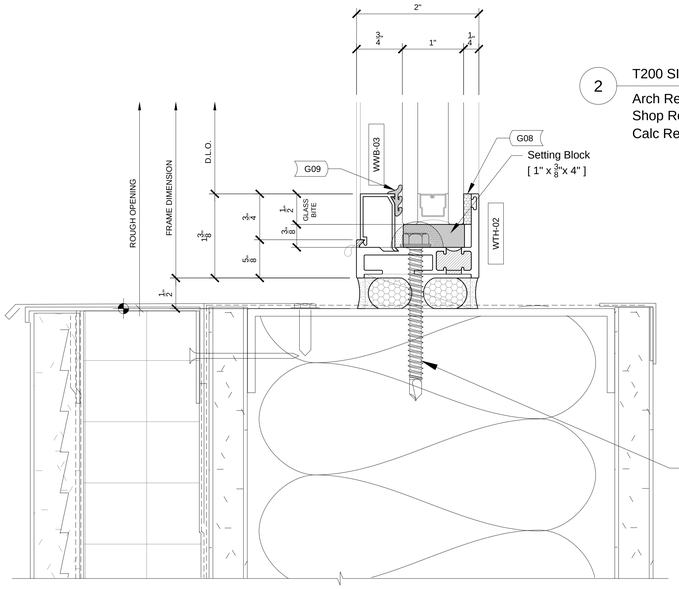

1 T200 HEAD DETAIL (EXTERIOR)

Arch Ref: 13/A10.21
Shop Ref: CW3.31
Calc Ref: 000



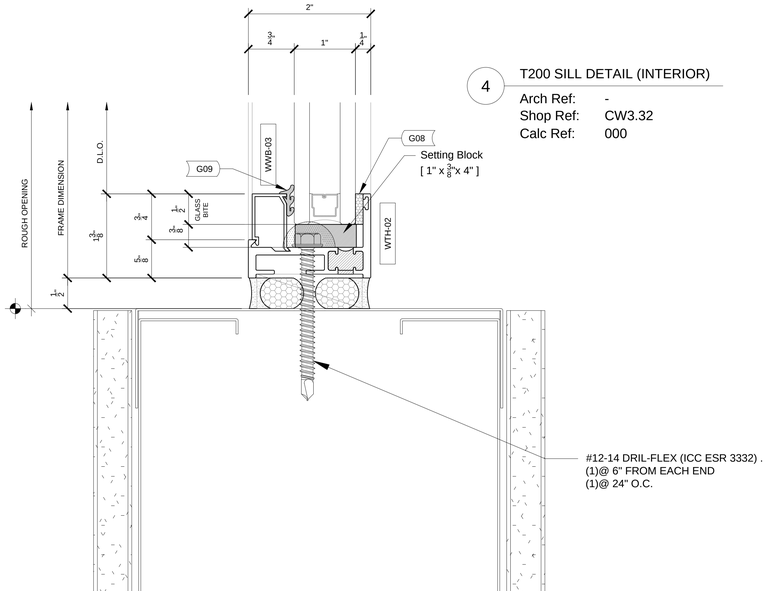

3 T200 HEAD DETAIL (INTERIOR)

Arch Ref: 13/A10.21
Shop Ref: CW3.32
Calc Ref: 000




2 T200 SILL DETAIL (EXTERIOR)

Arch Ref: -
Shop Ref: CW3.31
Calc Ref: 000




4 T200 SILL DETAIL (INTERIOR)

Arch Ref: -
Shop Ref: CW3.32
Calc Ref: 000

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## NOTES

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SHEET NAME:

**SECTION DETAILS - T200**

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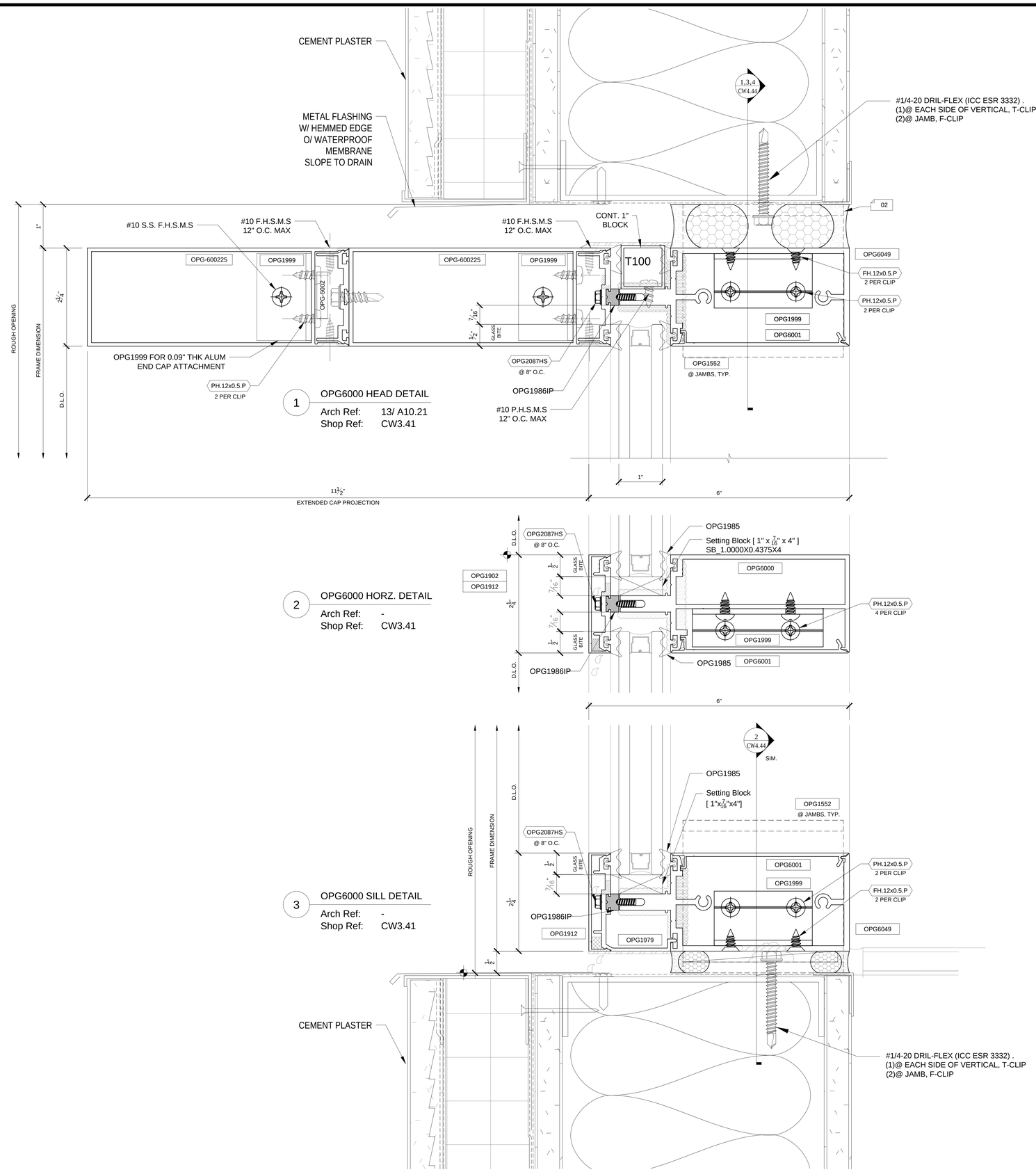
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SHEET:

CW4.31

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH (1") ON ANSI SHEETS ORIGINAL PAGE SIZE




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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG6000**

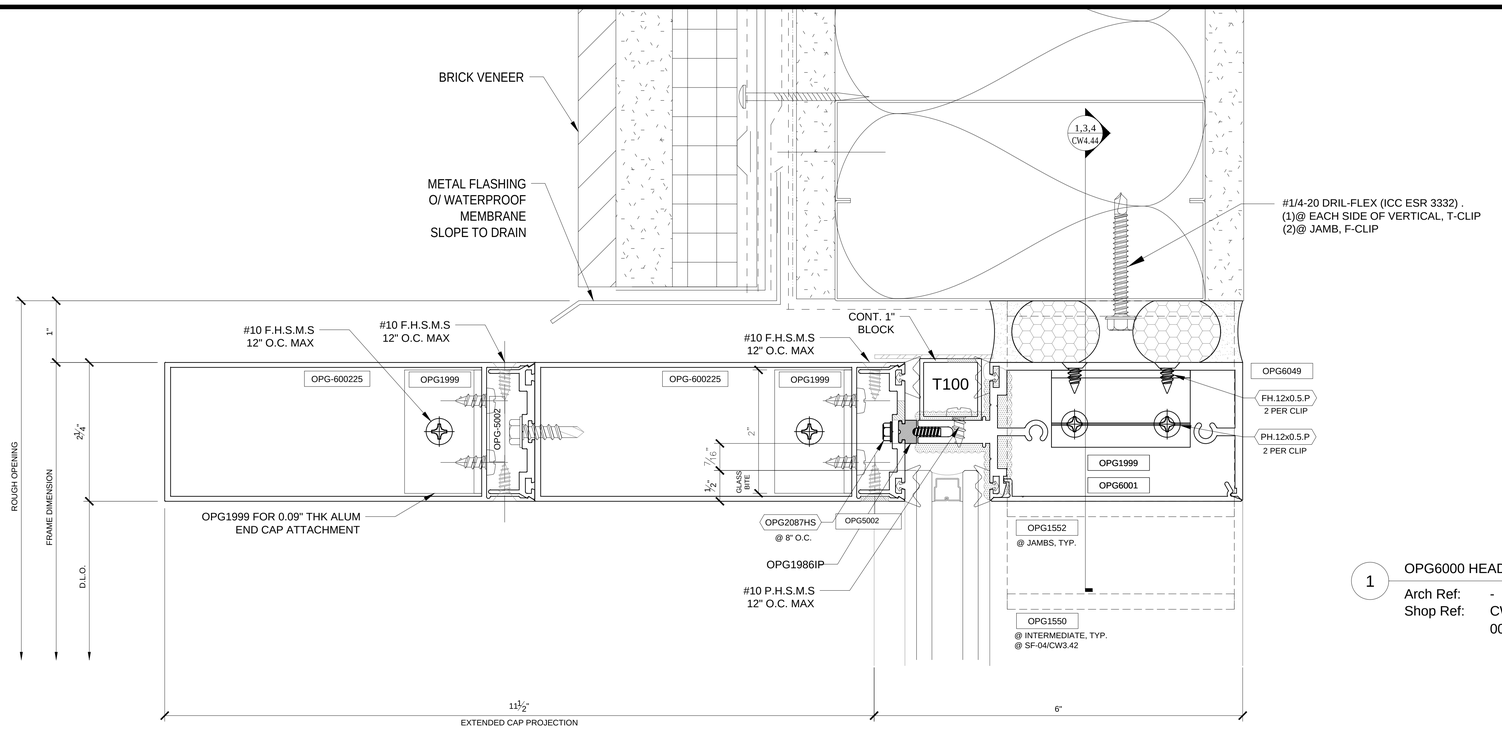
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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

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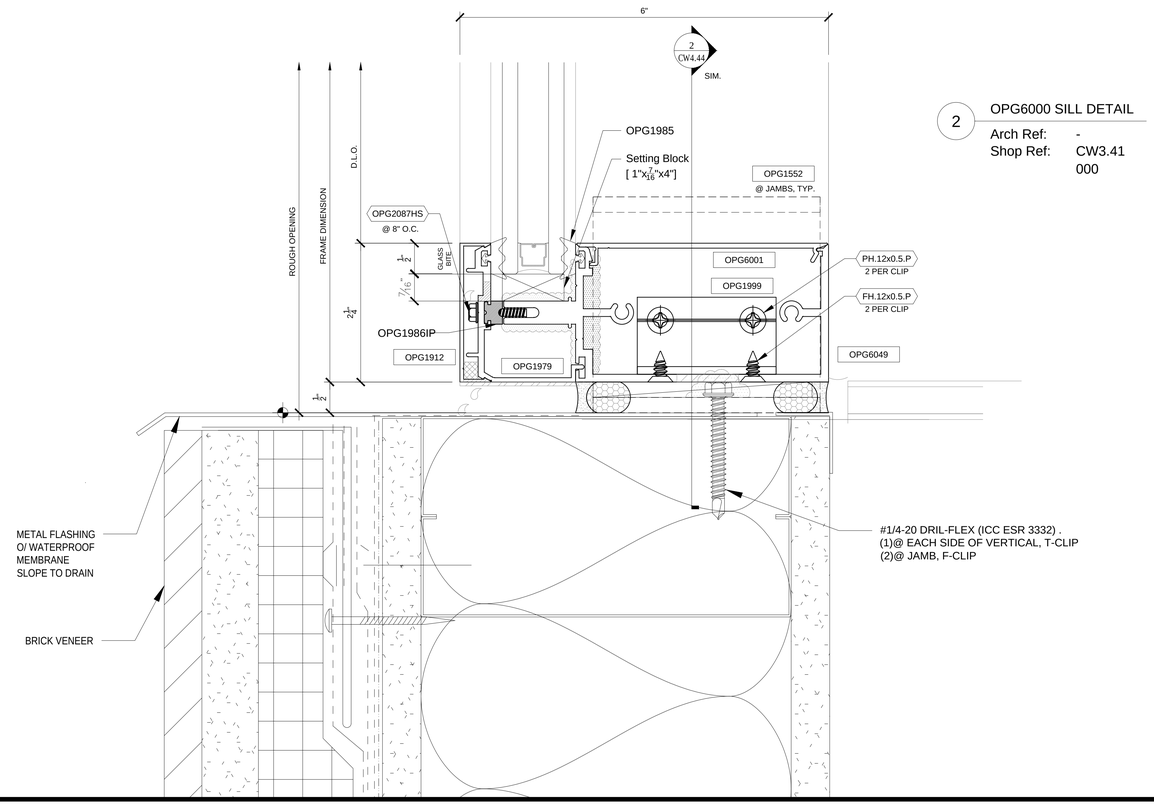
CW4.41

THE LINE SHOWN ABOVE IS
EQUAL TO 1" WHEN PLOTTED AT 11x17
SHEETS ORIGINAL PAGE SIZE




1 OPG6000 HEAD DETAIL

Arch Ref: -
Shop Ref: CW3.41 000




2 OPG6000 SILL DETAIL

Arch Ref: -
Shop Ref: CW3.41 000

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## NOTES

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG6000**

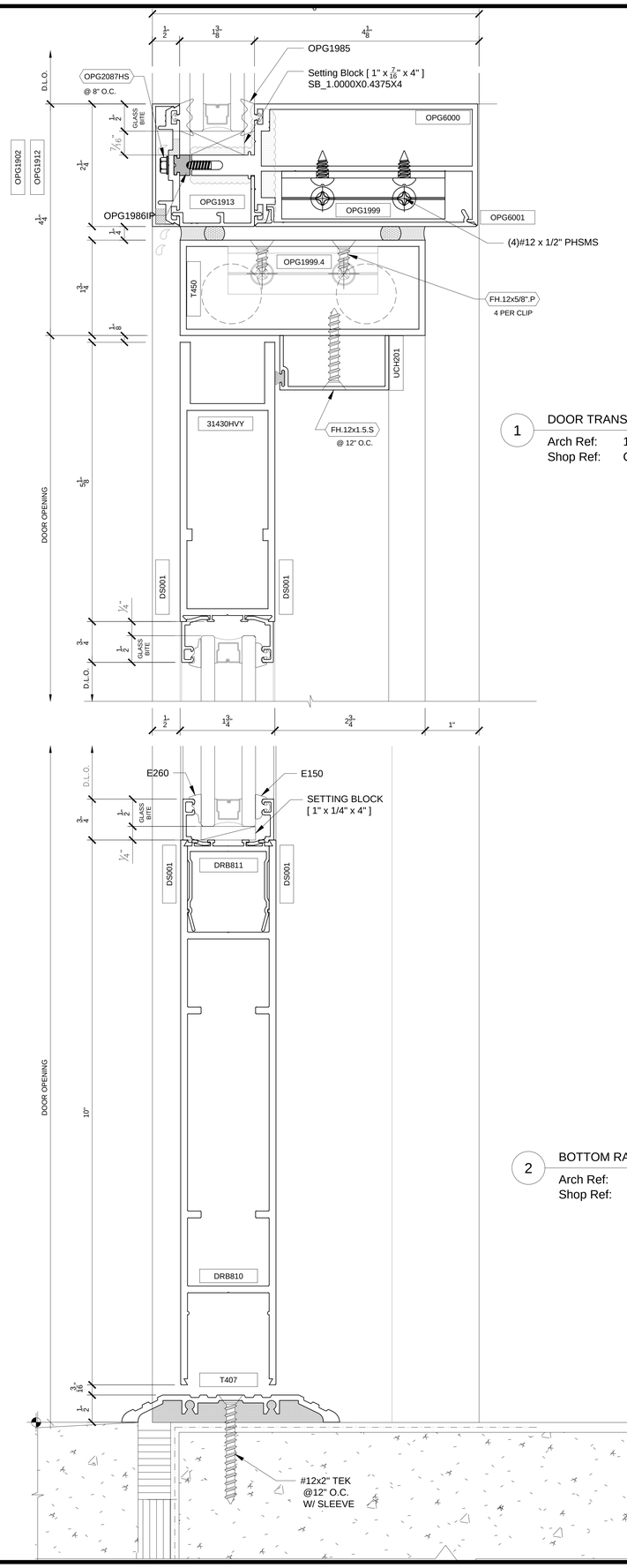
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

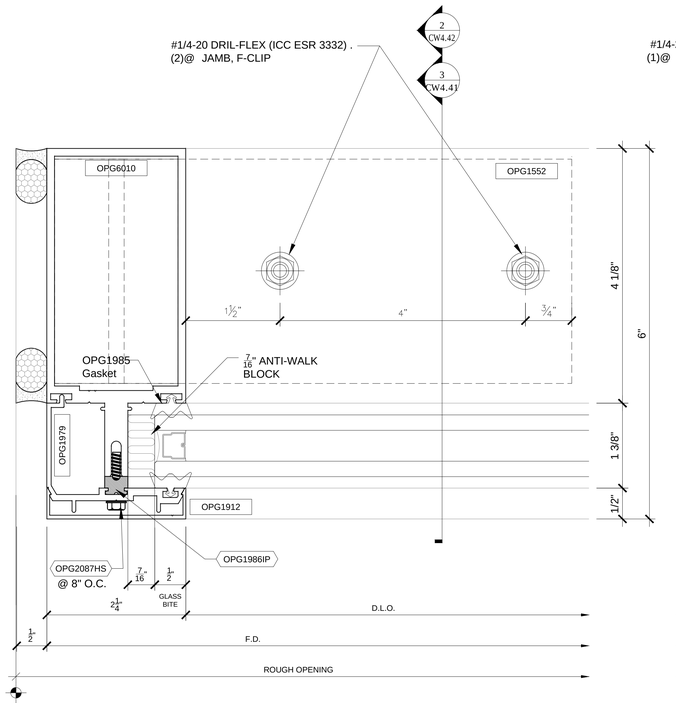
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CW4.42

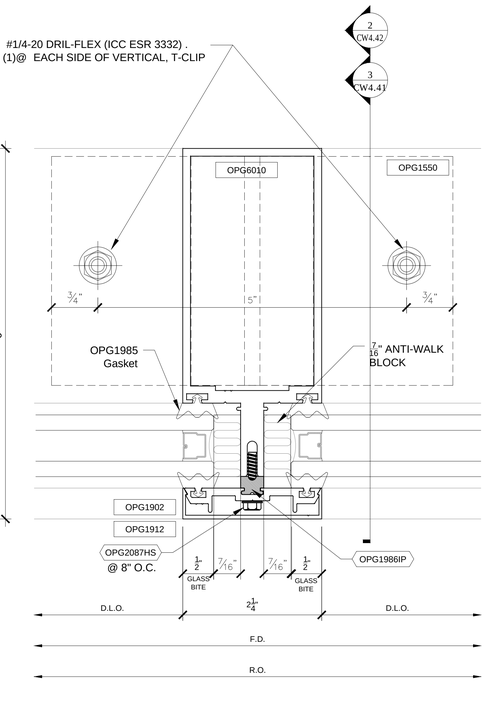



1 DOOR TRANSOM DETAIL
Arch Ref: 18/A10.21 SIM.
Shop Ref: CW3.42

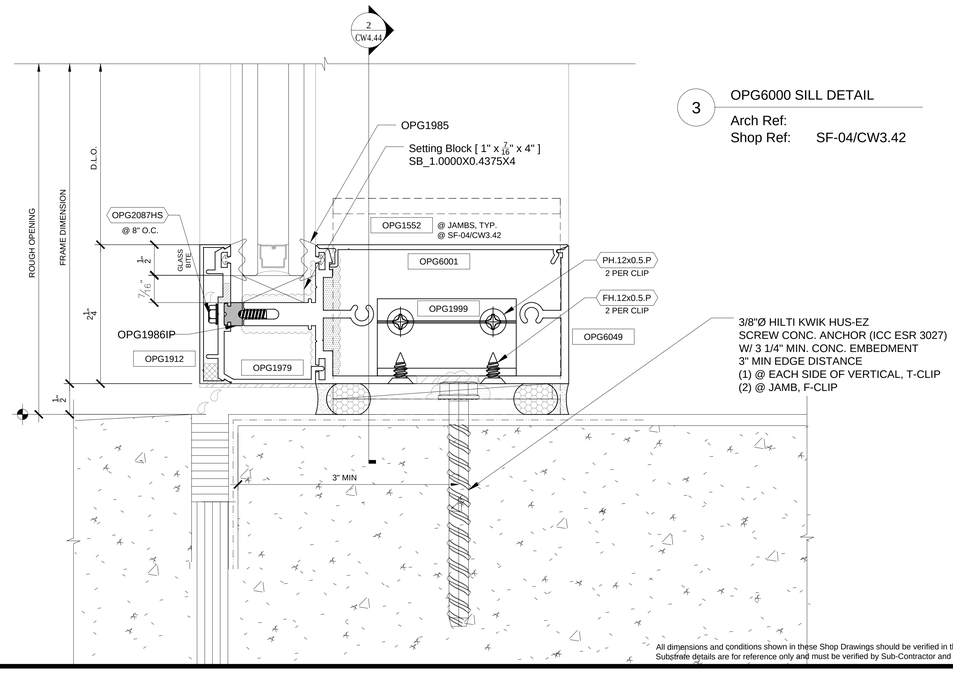
2 BOTTOM RAIL @ DOOR
Arch Ref: 12/A10.21 SIM.
Shop Ref: CW3.42




4 OPG6000 JAMB SCREW LAYOUT CONNECTION
Arch Ref: None
Shop Ref: ~




5 OPG6000 VERT. SCREW LAYOUT CONNECTION
Arch Ref: None
Shop Ref: ~




3 OPG6000 SILL DETAIL
Arch Ref:
Shop Ref: SF-04/CW3.42

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PROJECT:
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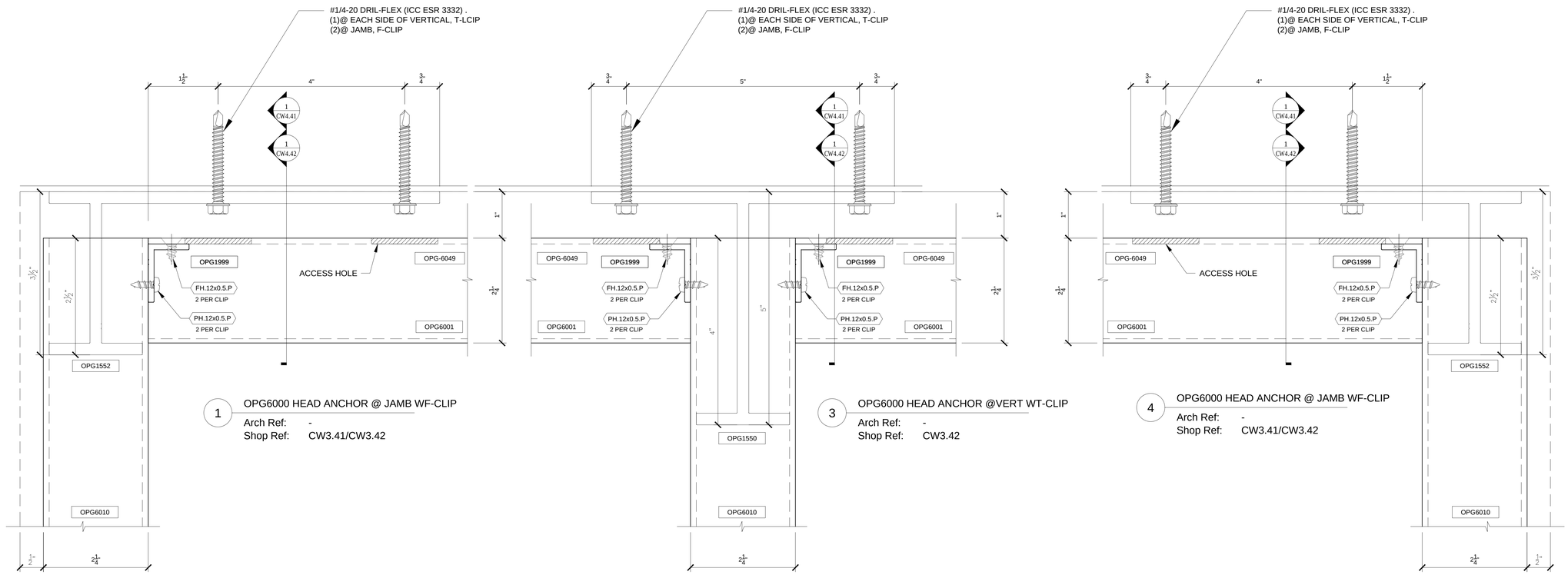
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**SECTION DETAILS - OPG6000**

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| FILE NO.: 19-H10 | A NO.: 03-123641 |
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| SHEET: | |

CW4.43

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1 OPG6000 HEAD ANCHOR @ JAMB WF-CLIP

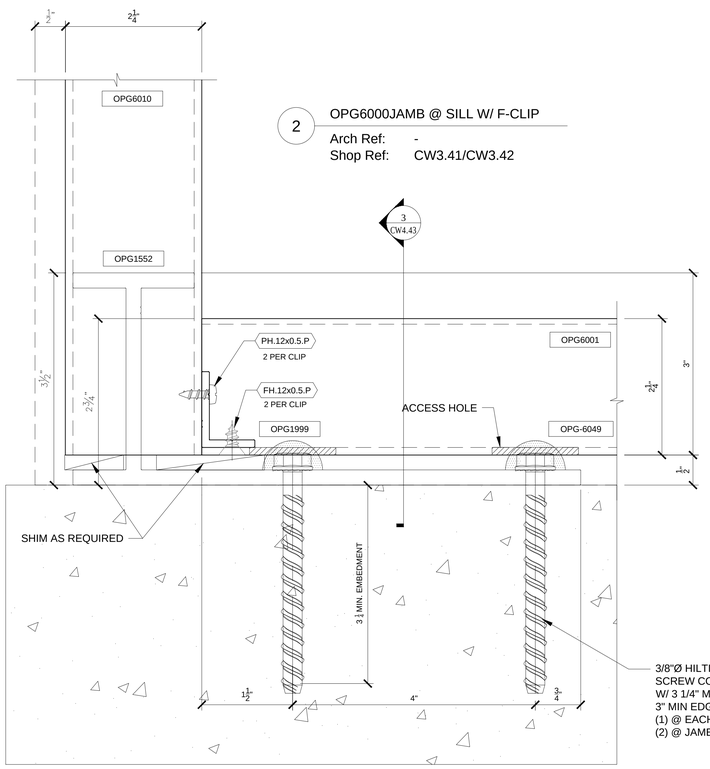
Arch Ref: -
Shop Ref: CW3.41/CW3.42

3 OPG6000 HEAD ANCHOR @VERT WT-CLIP

Arch Ref: -
Shop Ref: CW3.42

4 OPG6000 HEAD ANCHOR @ JAMB WF-CLIP

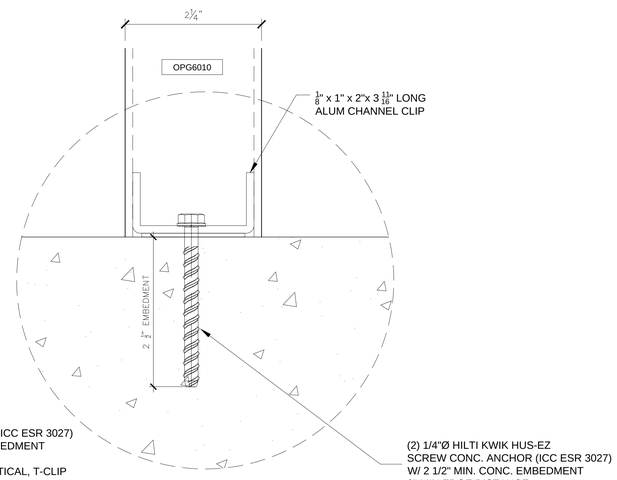
Arch Ref: -
Shop Ref: CW3.41/CW3.42




2 OPG6000JAMB @ SILL W/ F-CLIP

Arch Ref: -
Shop Ref: CW3.41/CW3.42

3/8"Ø HILTI KWIK HUS-EZ
SCREW CONC. ANCHOR (ICC ESR 3027)
W/ 3 1/4" MIN. CONC. EMBEDMENT
3" MIN EDGE DISTANCE
(1) @ EACH SIDE OF VERTICAL, T-CLIP
(2) @ JAMB, F-CLIP




5 OPG6000 DOOR JAMB ANCHOR

Arch Ref: -
Shop Ref: CW3.42

(2) 1/4"Ø HILTI KWIK HUS-EZ
SCREW CONC. ANCHOR (ICC ESR 3027)
W/ 2 1/2" MIN. CONC. EMBEDMENT
2" MIN EDGE DISTANCE

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## NOTES

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTION DETAILS - OPG6000**

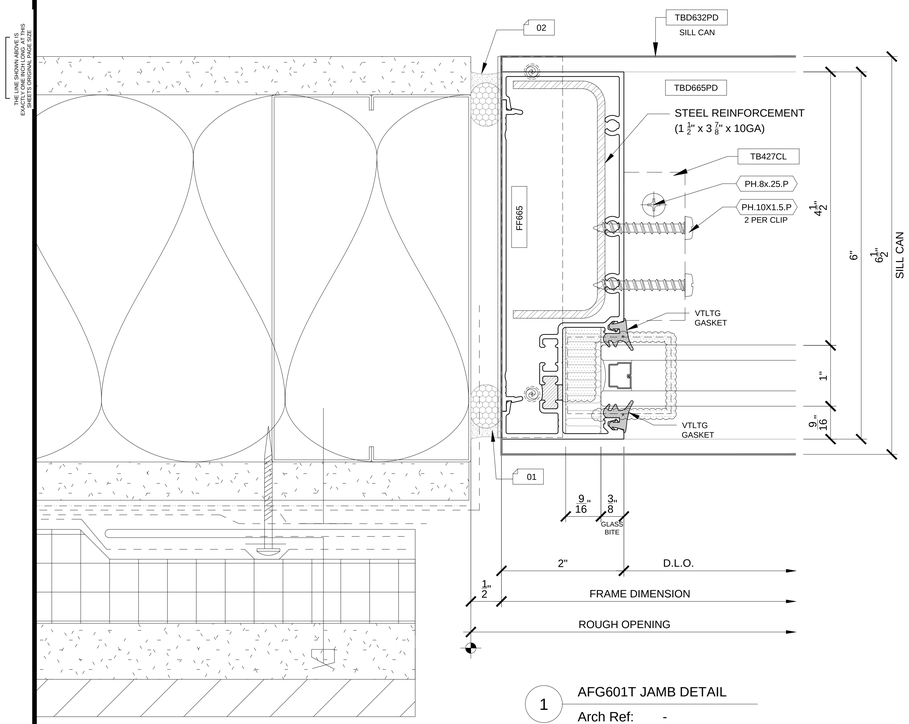
**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

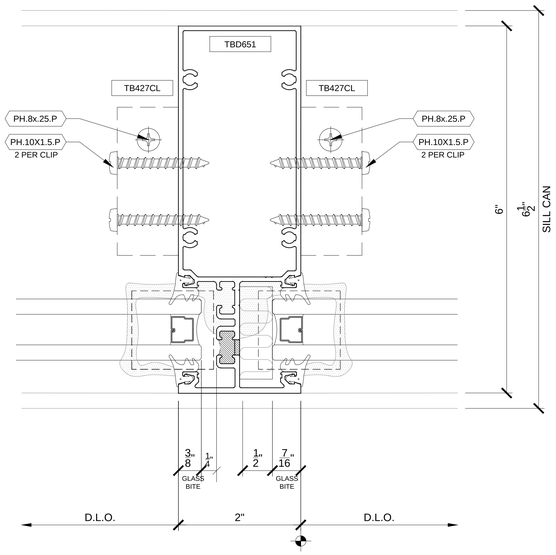
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CW4.44



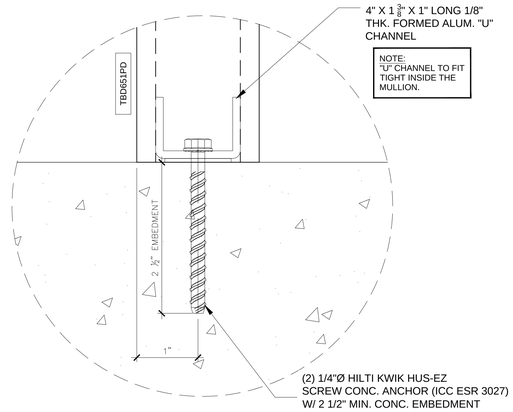

1 AFG601T JAMB DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03



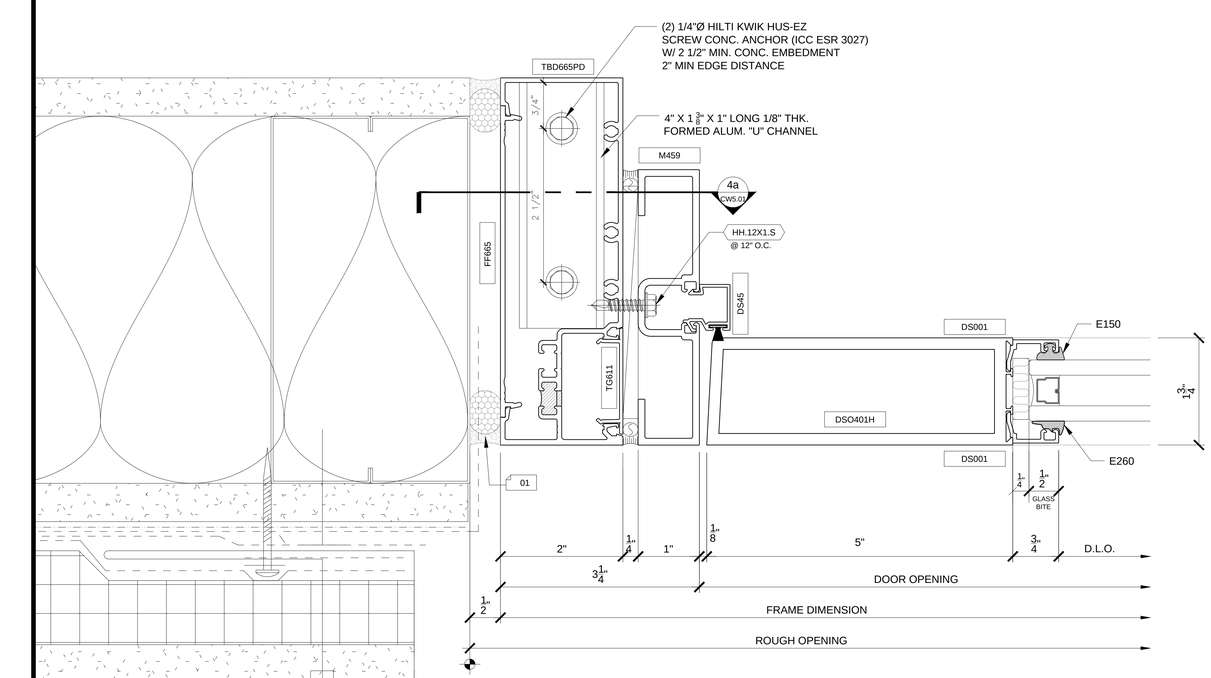

2 AFG601T VERT. DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03



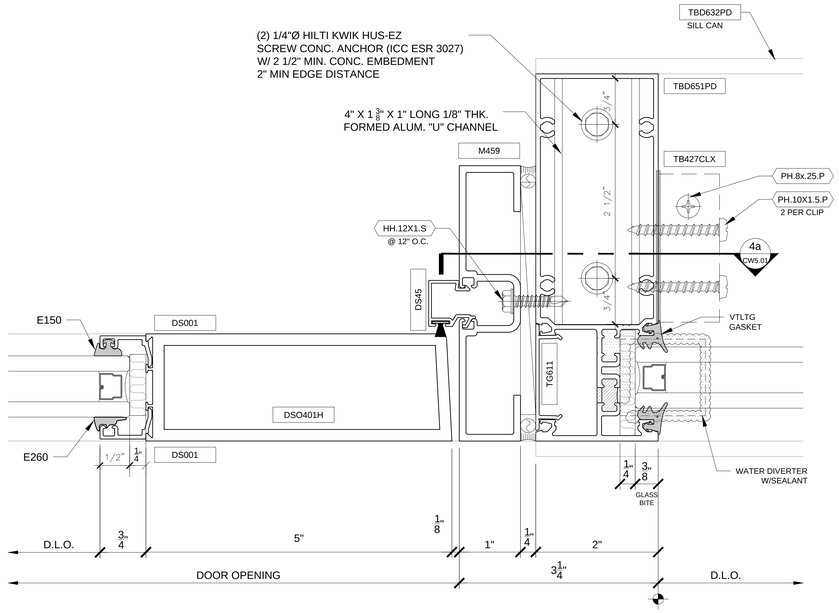

4a ANCHOR CONNECTION

Arch Ref: -
Shop Ref: CW3.01 - CW3.03




3 AFG601T JAMB @ DOOR DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03




4 AFG601T VERT. @ DOOR DETAIL

Arch Ref: -
Shop Ref: CW3.01 - CW3.03

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - AFG601T**

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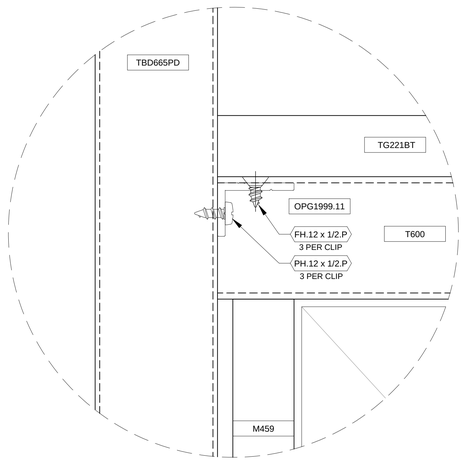
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

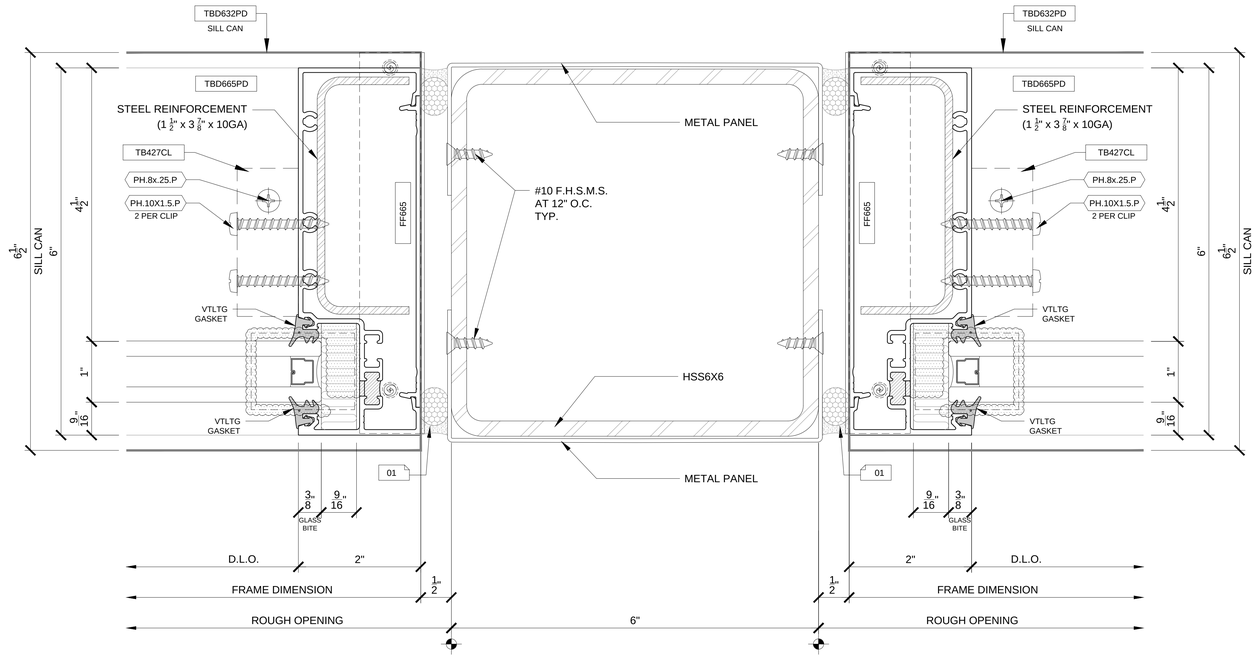
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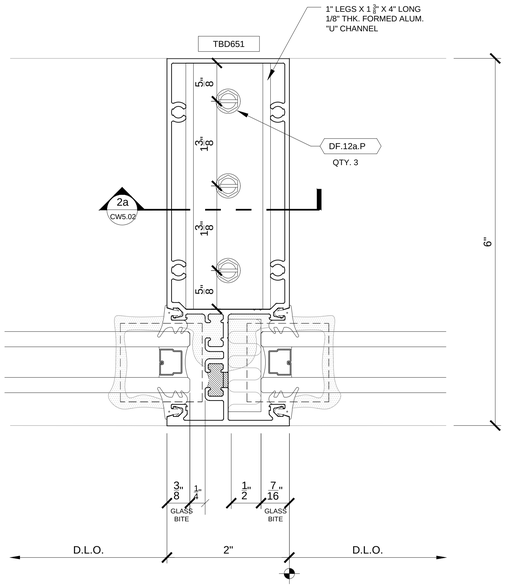
CW5.01

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI SHEETS ORIGINAL PAGE SIZE

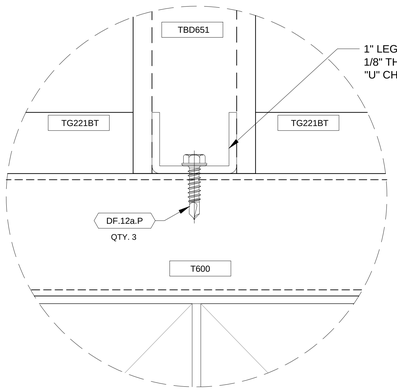



B — ANCHOR CONNECTION
Arch Ref: -
Shop Ref: CW4.02



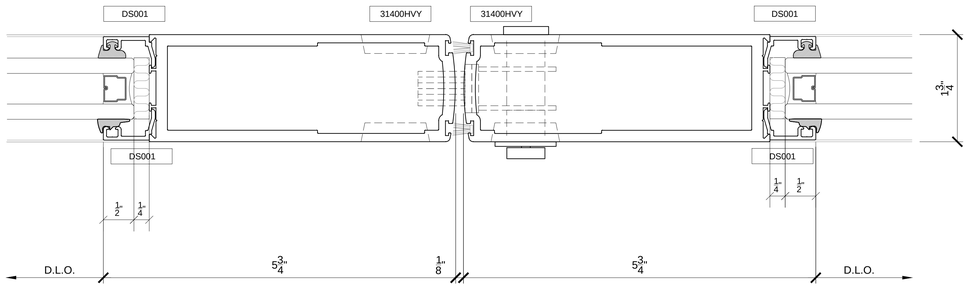




2 — AFG601T VERT. @ DOOR DETAIL
Arch Ref: -
Shop Ref: CW3.03




2a — ANCHOR CONNECTION
Arch Ref: -
Shop Ref: CW3.03

3 — AFG601T JAMB DETAIL AT PANEL
Arch Ref: -
Shop Ref:




1 — DOOR MEETING DETAIL
Arch Ref: -
Shop Ref: CW3.03

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - AFG601T**

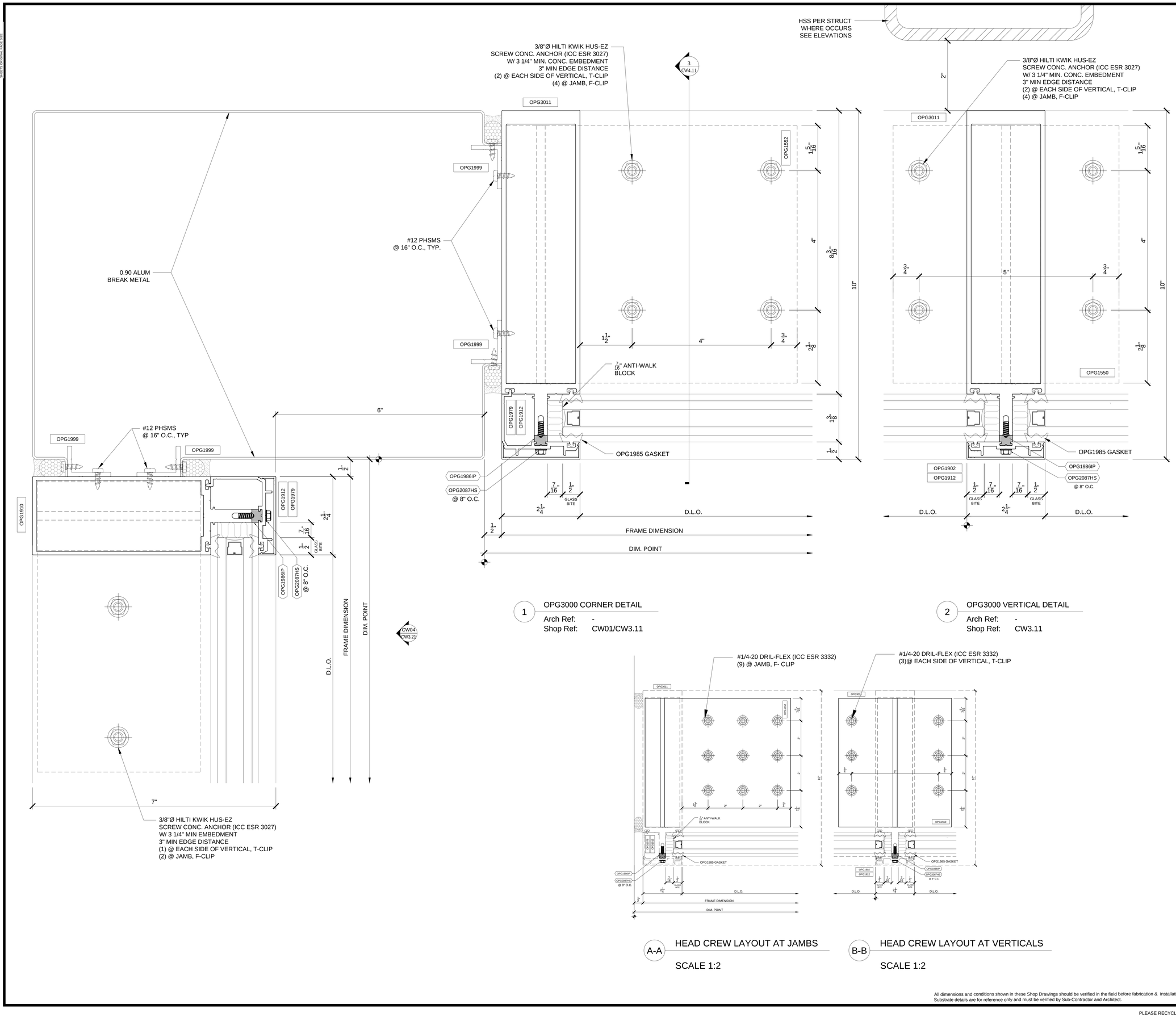
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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

CW5.02

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1 OPG3000 CORNER DETAIL

Arch Ref: -
Shop Ref: CW01/CW3.11

2 OPG3000 VERTICAL DETAIL

Arch Ref: -
Shop Ref: CW3.11




A-A HEAD CREW LAYOUT AT JAMBS

SCALE 1:2

B-B HEAD CREW LAYOUT AT VERTICALS

SCALE 1:2

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG3000**

**DSA SUBMITTAL**

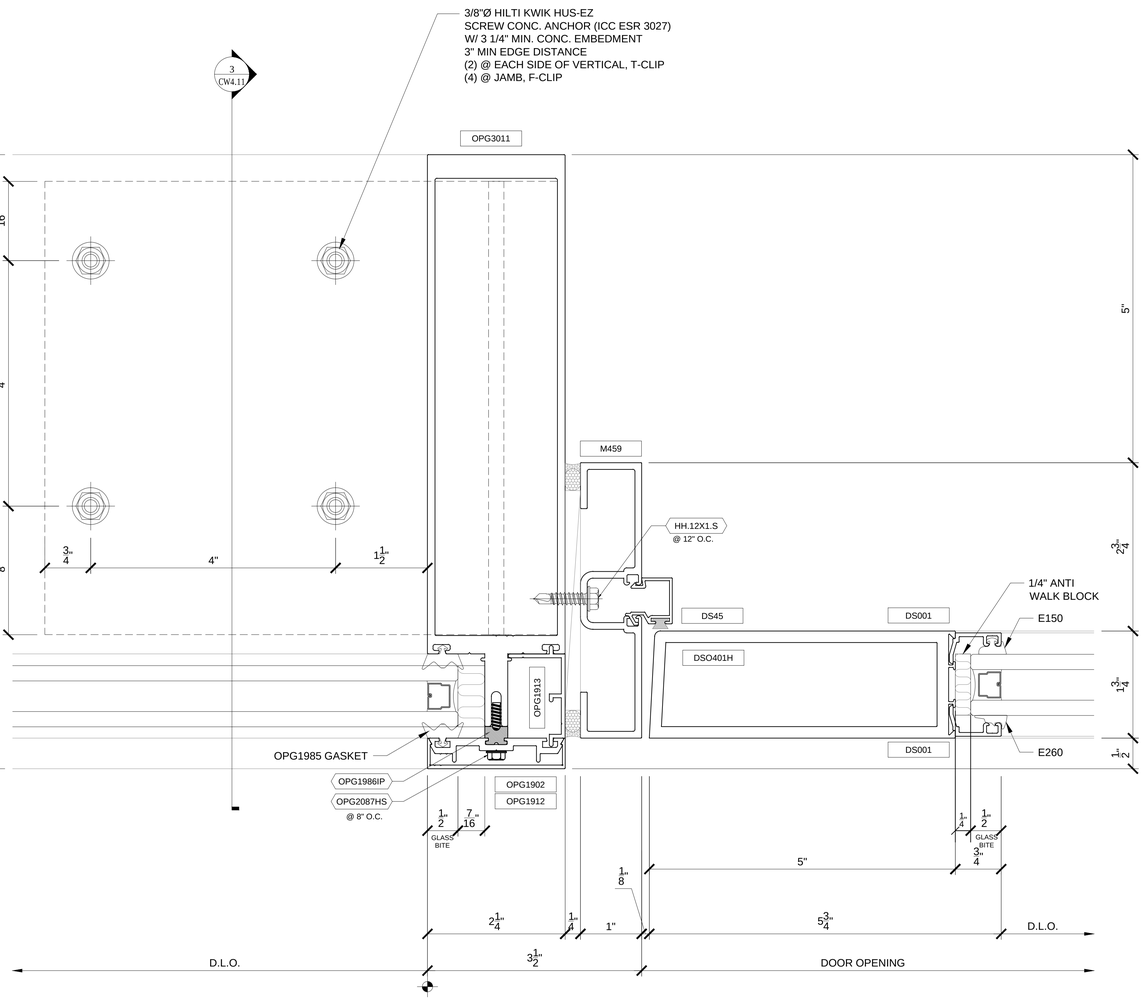
FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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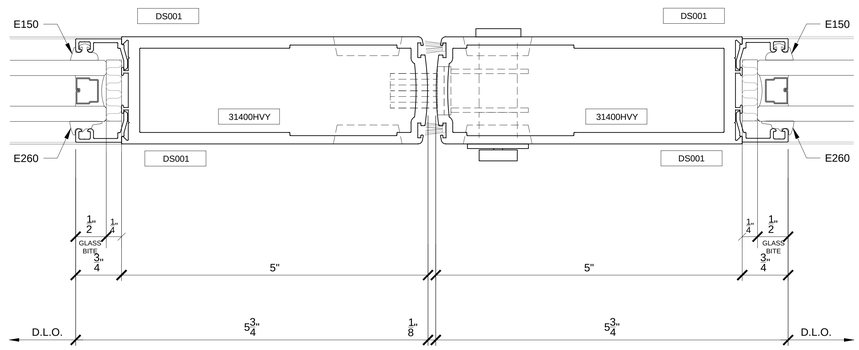
CW5.11

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ALL SHEETS ORIGINAL PAGE SIZE




1 OPG3000 JAMB @ DOOR DETAIL

Arch Ref: -
Shop Ref: CW3.11, CW3.12




2 DOOR MEETING DETAIL

Arch Ref: -
Shop Ref: CW3.11, CW3.12

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SHEET NAME:

**PLAN DETAILS - OPG3000**

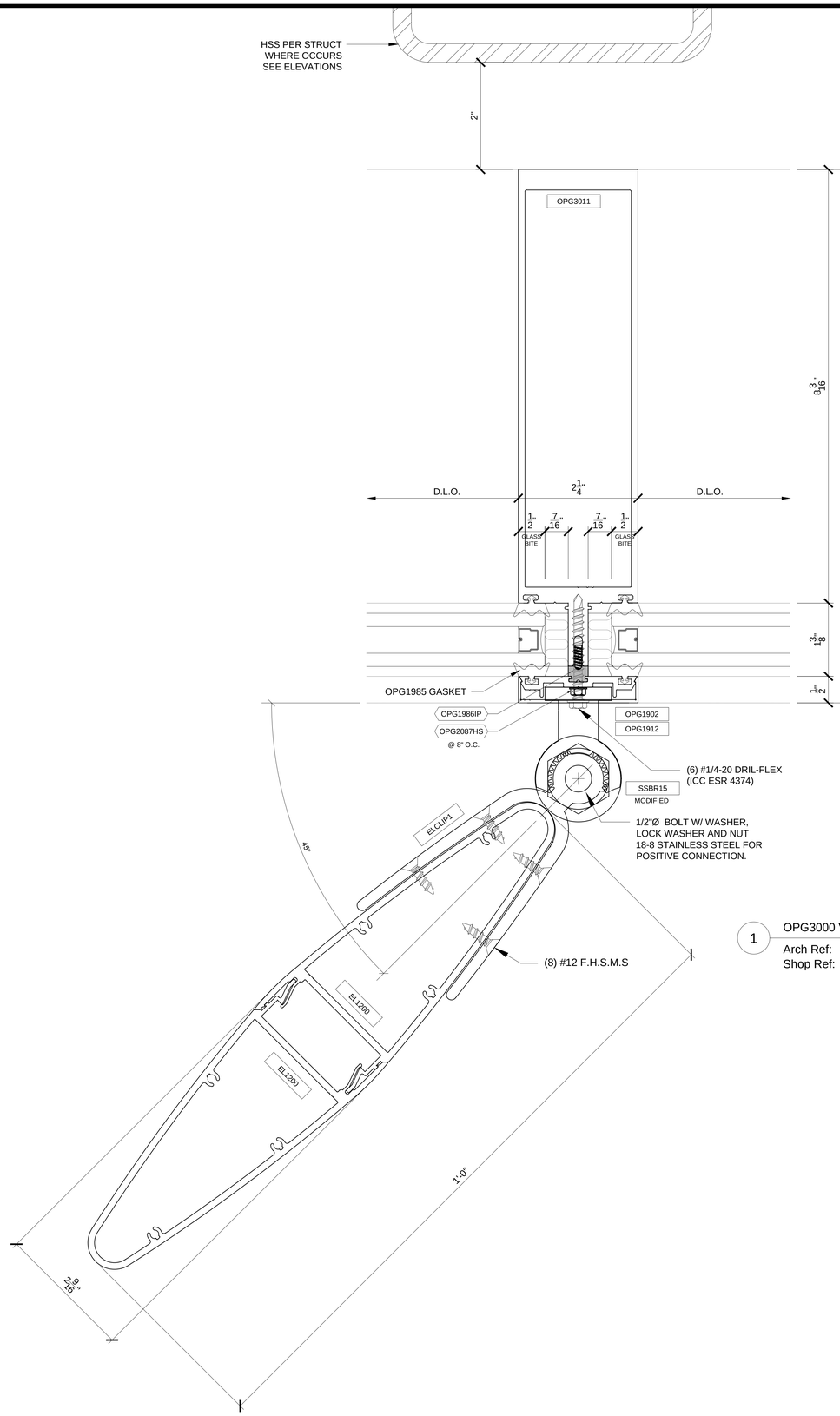
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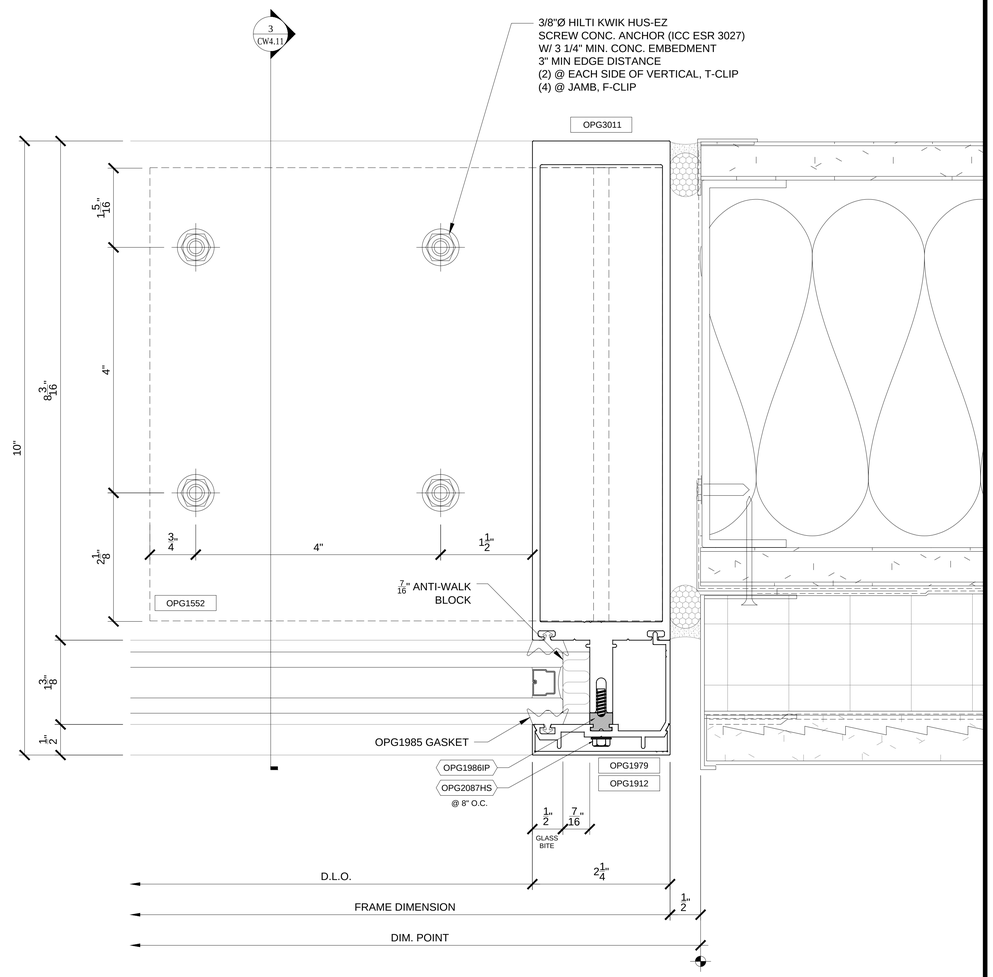
CW5.12

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH ON ANSI D SHEETS ORIGINAL PAGE SIZE




1 OPG3000 VERT @ VERTICAL FIN

Arch Ref: -
Shop Ref: CW3.13




2 OPG3000 JAMB DETAIL

Arch Ref: 13/A10.21 SIM.
Shop Ref: CW3.11, CW3.12

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**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG3000**

**DSA SUBMITTAL**

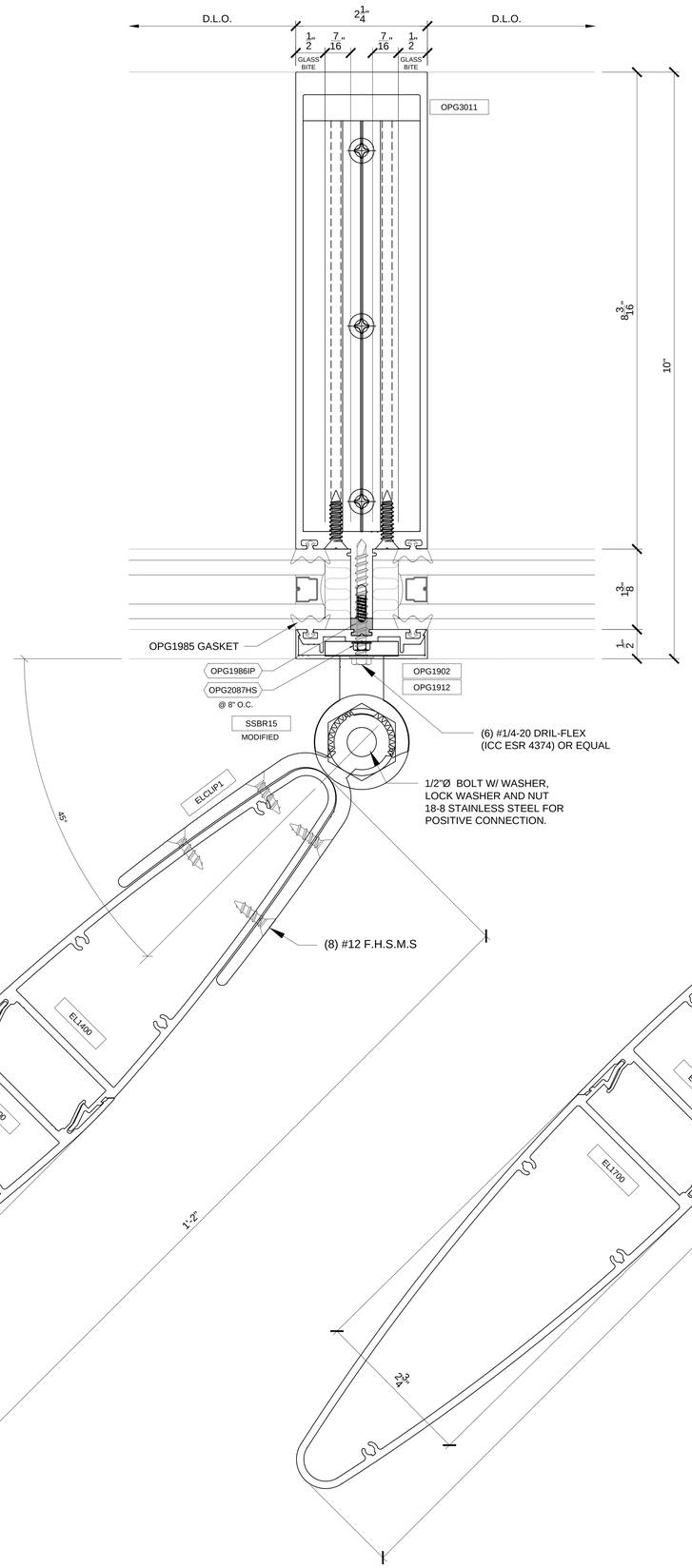
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DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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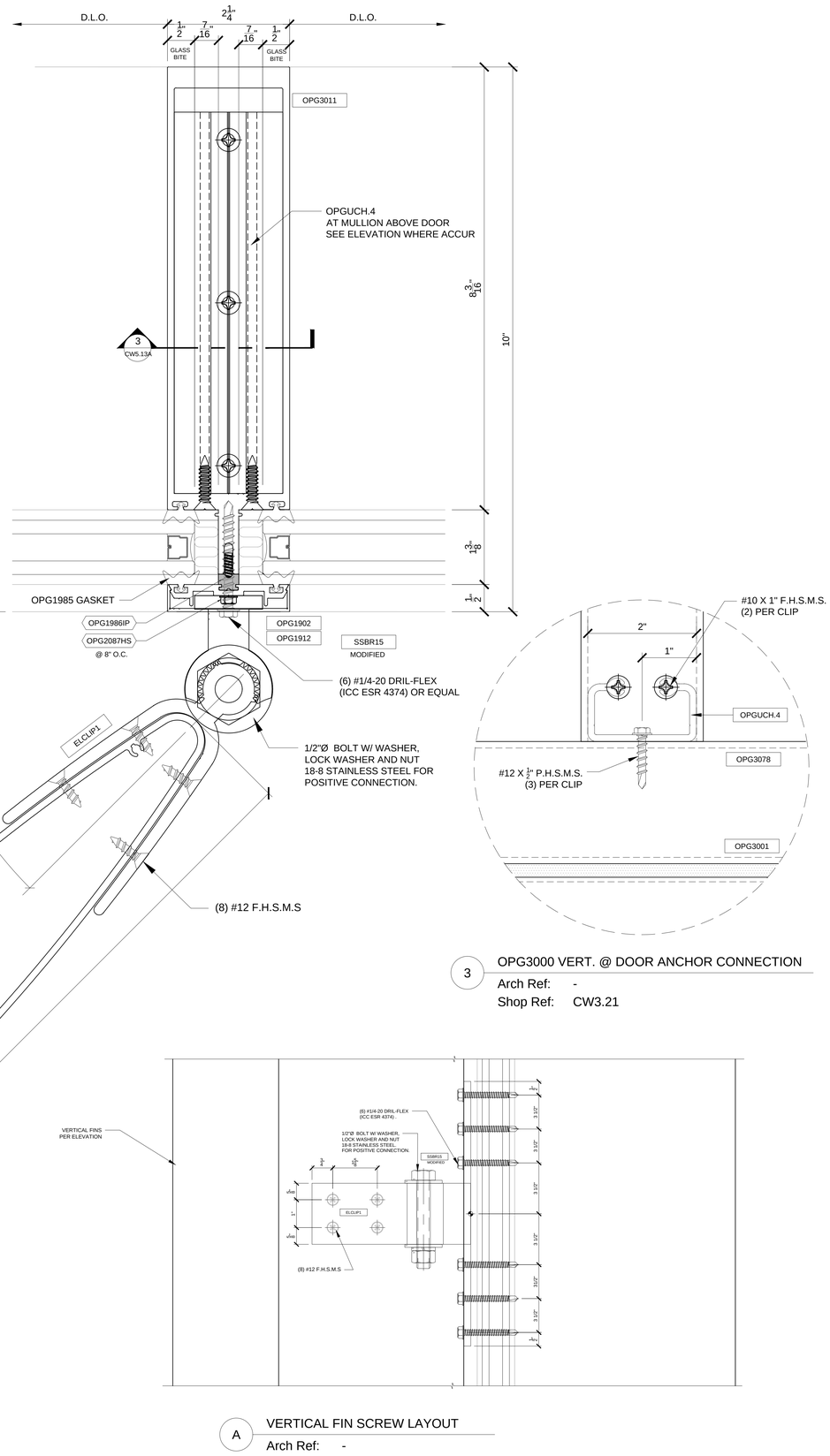
CW5.13

THE LINE SHOWN ABOVE IS EXACTLY 1" WHEN PLOTTED AT FULL SHEETS ORIGINAL PAGE SIZE




1 OPG3000 VERT @ VERTICAL FIN

Arch Ref: -
Shop Ref: CW3.11




2 OPG3000 VERT @ VERTICAL FIN

Arch Ref: -
Shop Ref: CW3.12




3 OPG3000 VERT. @ DOOR ANCHOR CONNECTION

Arch Ref: -
Shop Ref: CW3.21




A VERTICAL FIN SCREW LAYOUT

Arch Ref: -
Shop Ref: -

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PROJECT:

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**NEW THEATER & ADMINISTRATION BUILDING**

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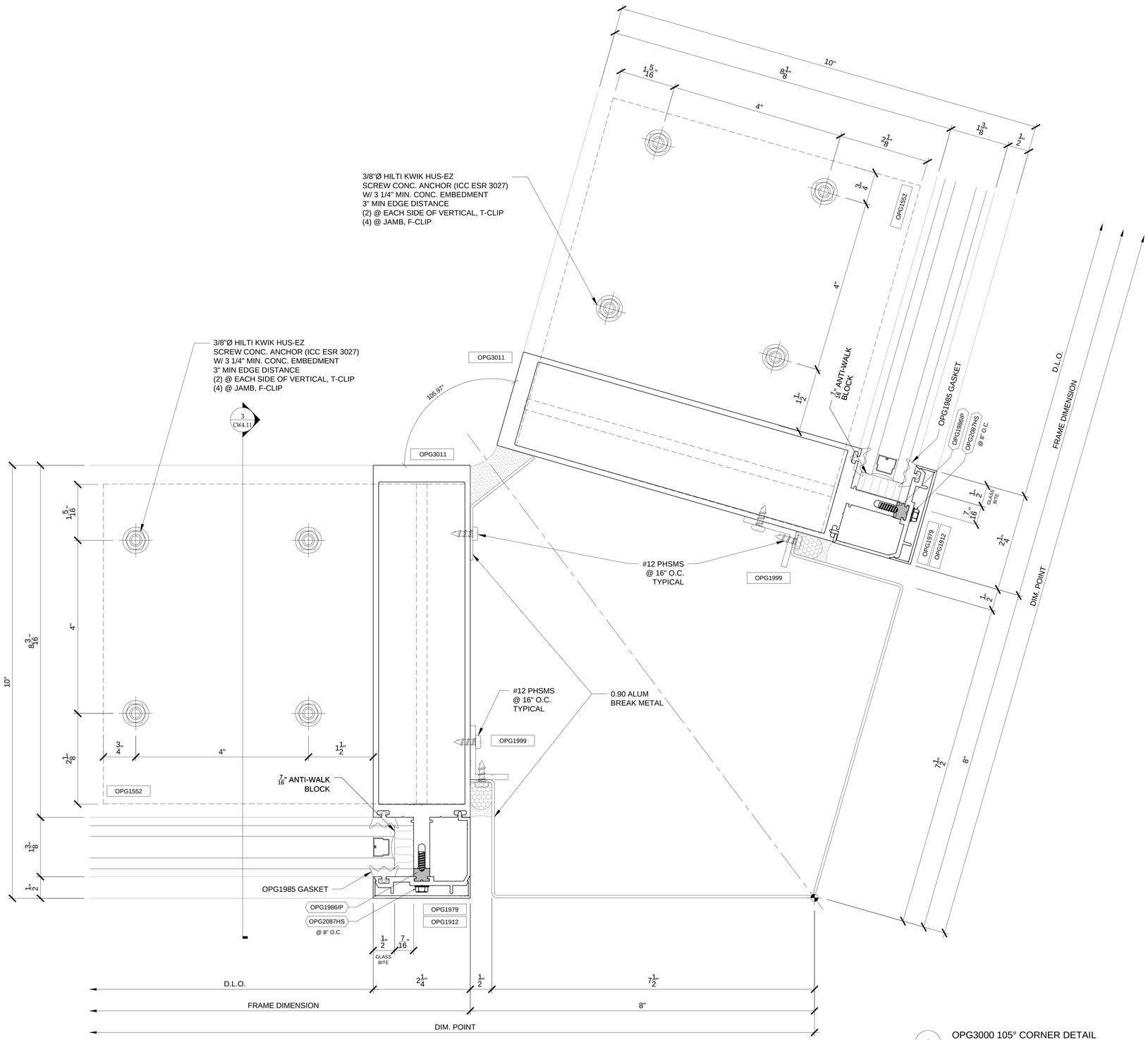
**PLAN DETAILS - OPG3000**

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| SHEET: | |

CW5.13A

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1 OPG3000 105° CORNER DETAIL

Arch Ref: -

Shop Ref: CW03/CW3.12

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG3000**

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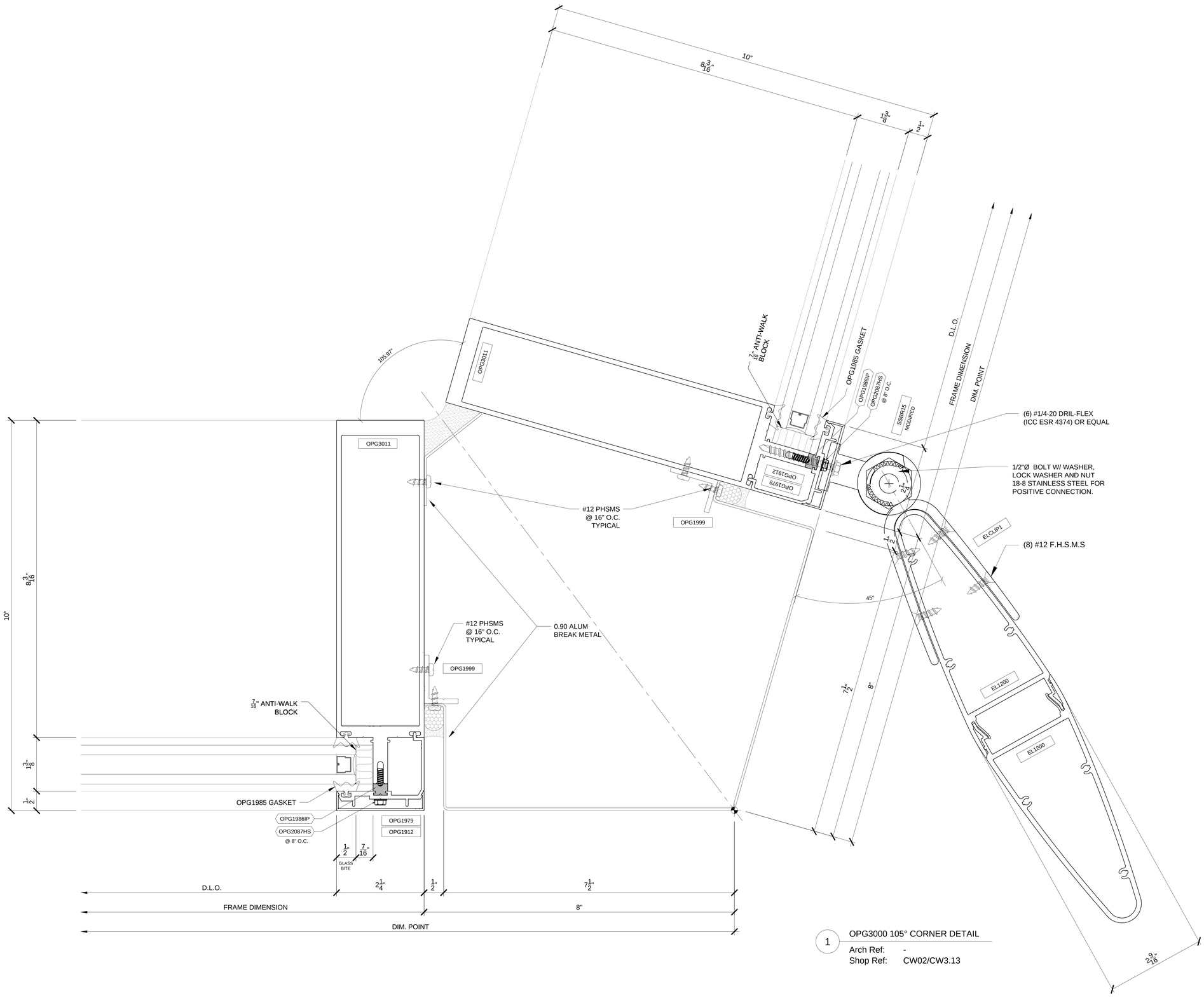
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SHEET:

CW5.14

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1 OPG3000 105° CORNER DETAIL

Arch Ref: -

Shop Ref: CW02/CW3.13

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PROJECT:

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SHEET NAME:

**PLAN DETAILS - OPG3000**

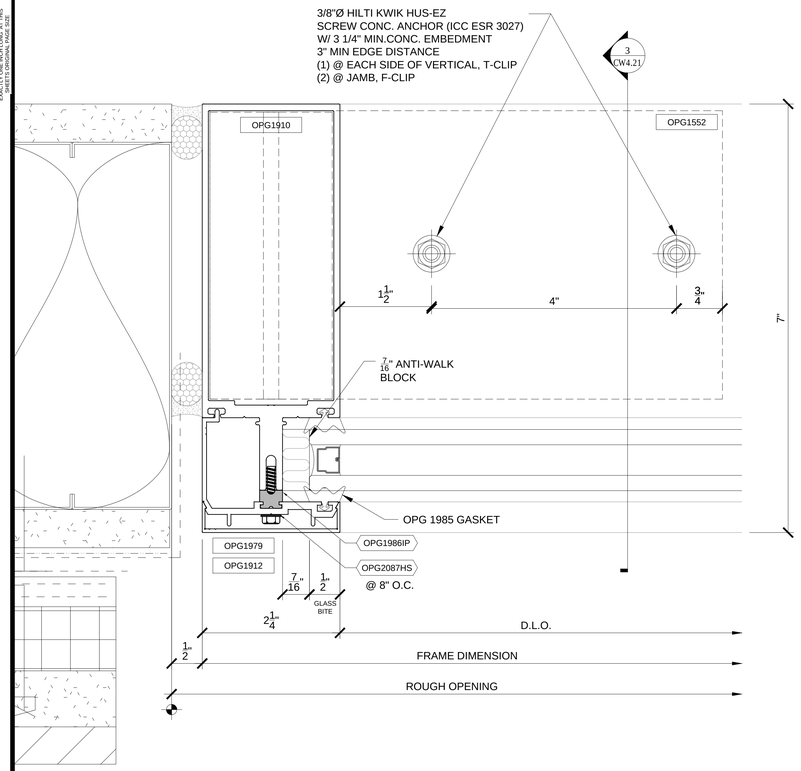
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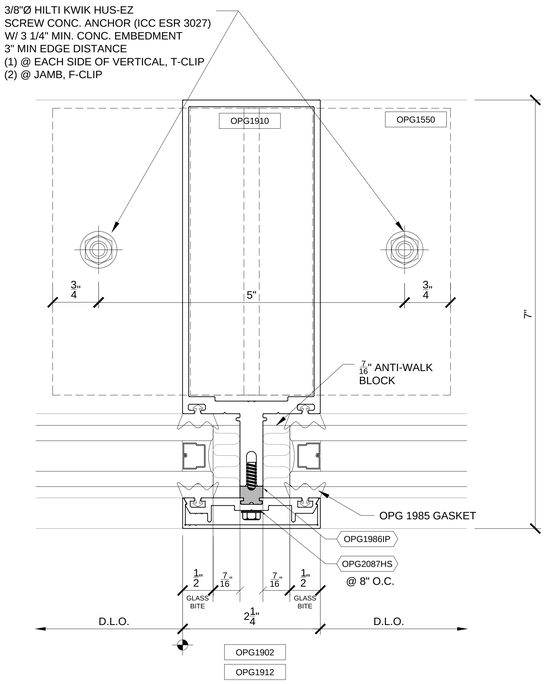
CW5.15

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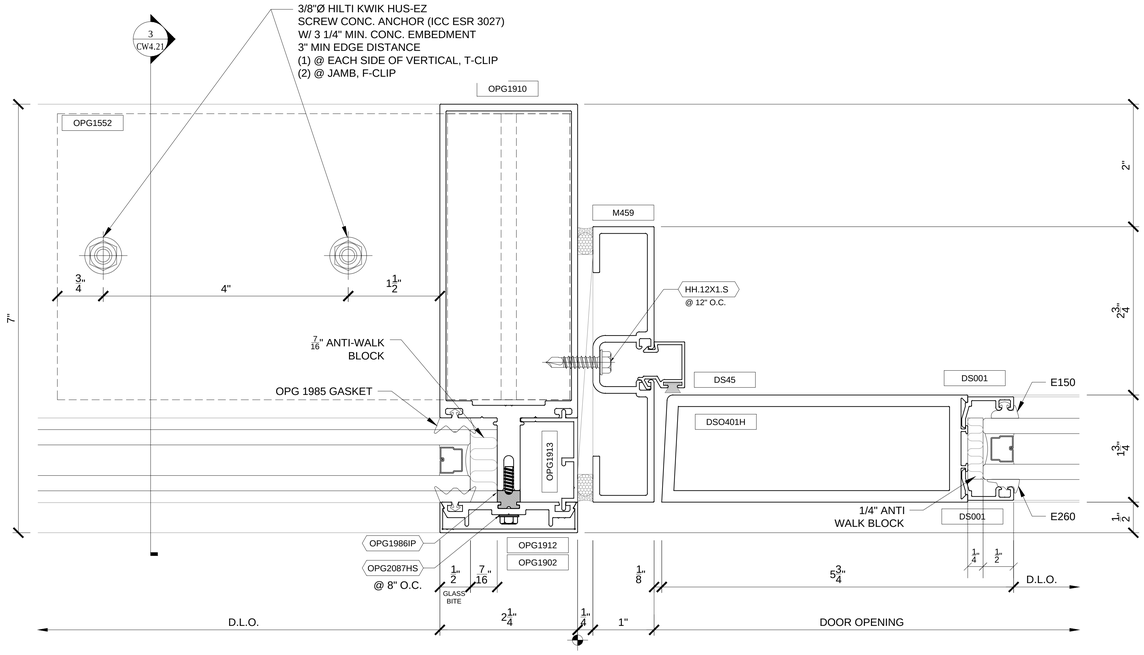

1 OPG1900 JAMB DETAIL

Arch Ref: 9/A10.21
Shop Ref: CW05/CW3.21



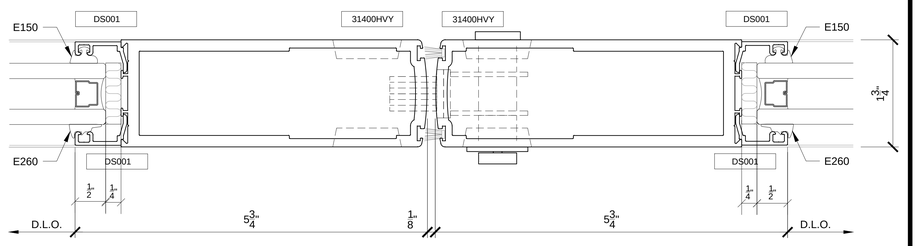

2 OPG1900 VERTICAL DETAIL

Arch Ref: -
Shop Ref: CW5.21




3 OPG1900 JAMB @ DOOR DETAIL

Arch Ref: 19/A10.21
Shop Ref: CW05/CW3.21




4 DOOR MEETING DETAIL

Arch Ref: -
Shop Ref: CW05/CW3.21

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SHEET NAME:

**PLAN DETAILS - OPG1900**

**DSA SUBMITTAL**

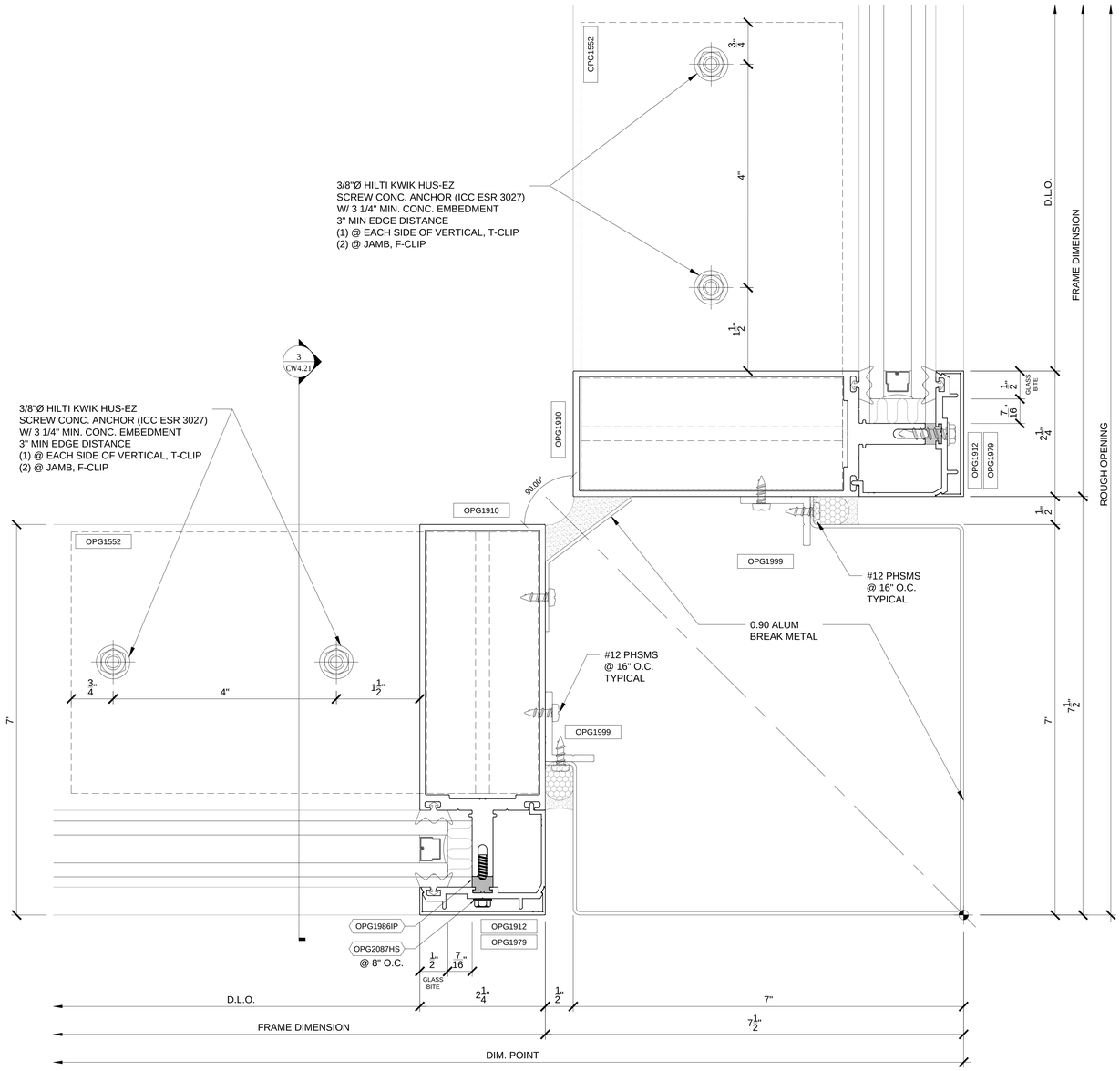
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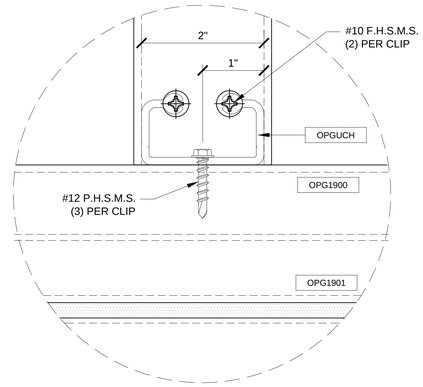
CW5.21

THE LINE SHOWN ABOVE IS
EXACTLY ONE INCH ON ORIGINAL
SHEETS ORIGINAL PAGE SIZE




1 OPG1900 90° CORNER DETAIL

Arch Ref: -
Shop Ref: CW3.21




2 OPG1900 VERT. @ DOOR ANCHOR CONNECTION

Arch Ref: -
Shop Ref: CW3.21

All dimensions and conditions shown in these Shop Drawings should be verified in the field before fabrication & installation. Substrate details are for reference only and must be verified by Sub-Contractor and Architect.

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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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3361008100

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**NOTES**

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG1900**

**DSA SUBMITTAL**

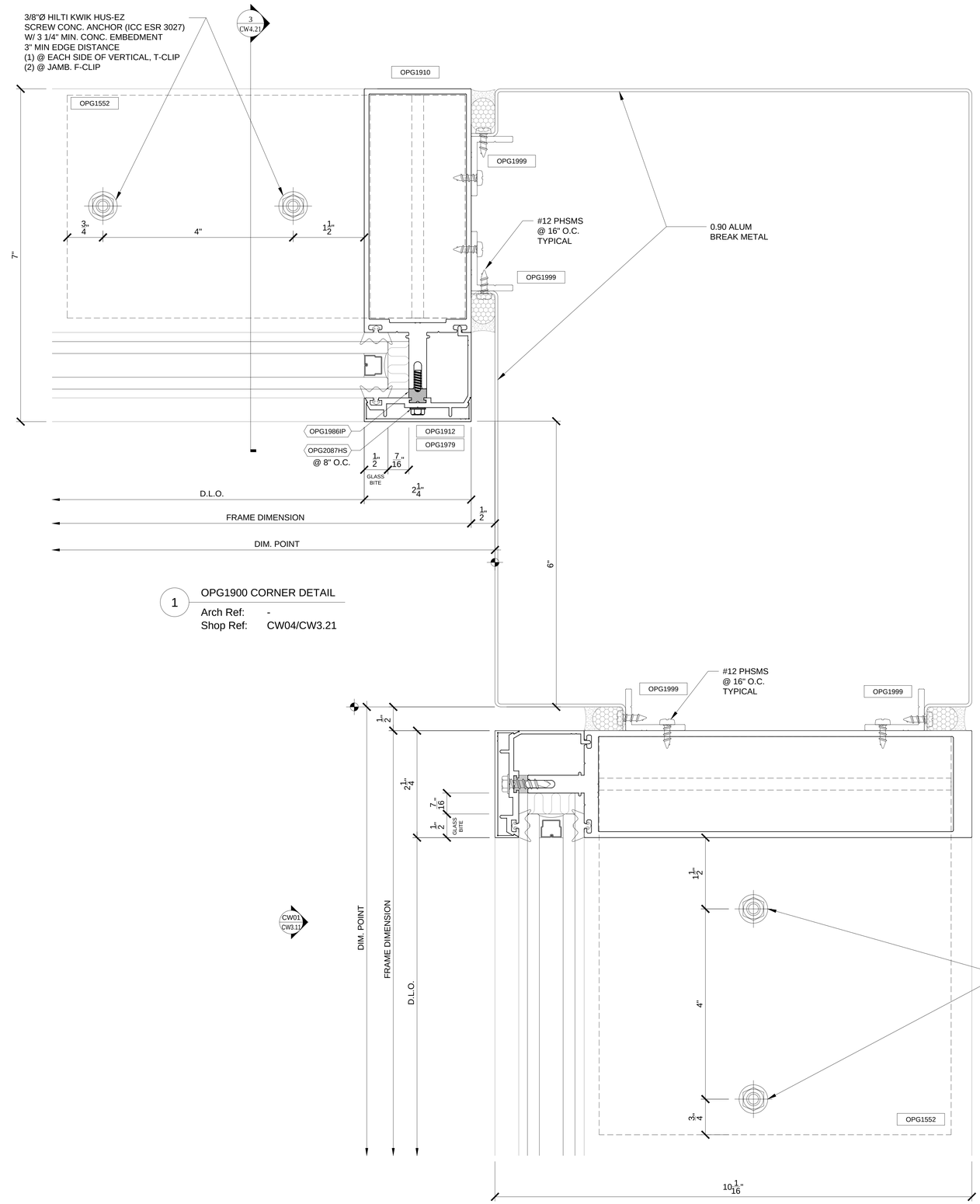
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW5.22

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1 OPG1900 CORNER DETAIL

Arch Ref: -
Shop Ref: CW04/CW3.21




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**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG1900**

**DSA SUBMITTAL**

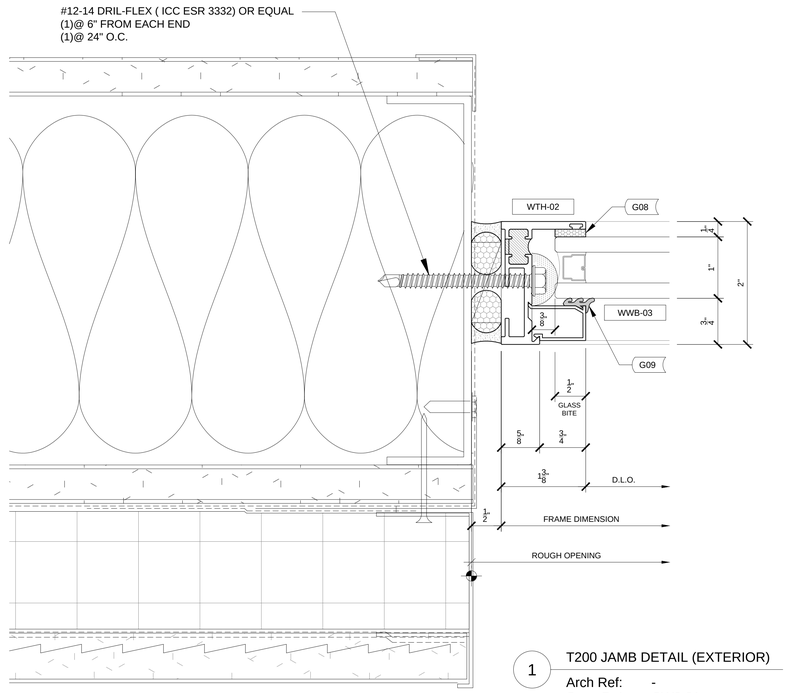
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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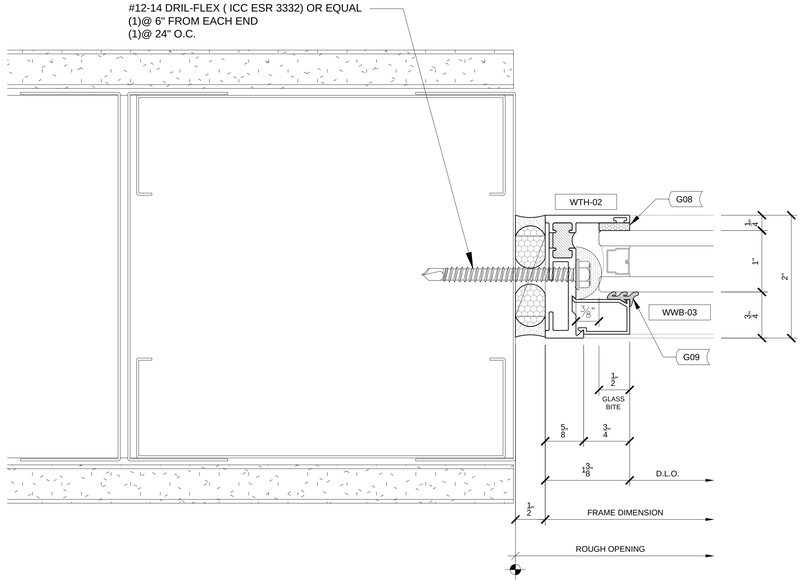
CW5.23

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1 T200 JAMB DETAIL (EXTERIOR)

Arch Ref: -
Shop Ref: CW3.31




2 T200 JAMB DETAIL (INTERIOR)

Arch Ref: -
Shop Ref: CW3.32

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## NOTES

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - T200**

**DSA SUBMITTAL**

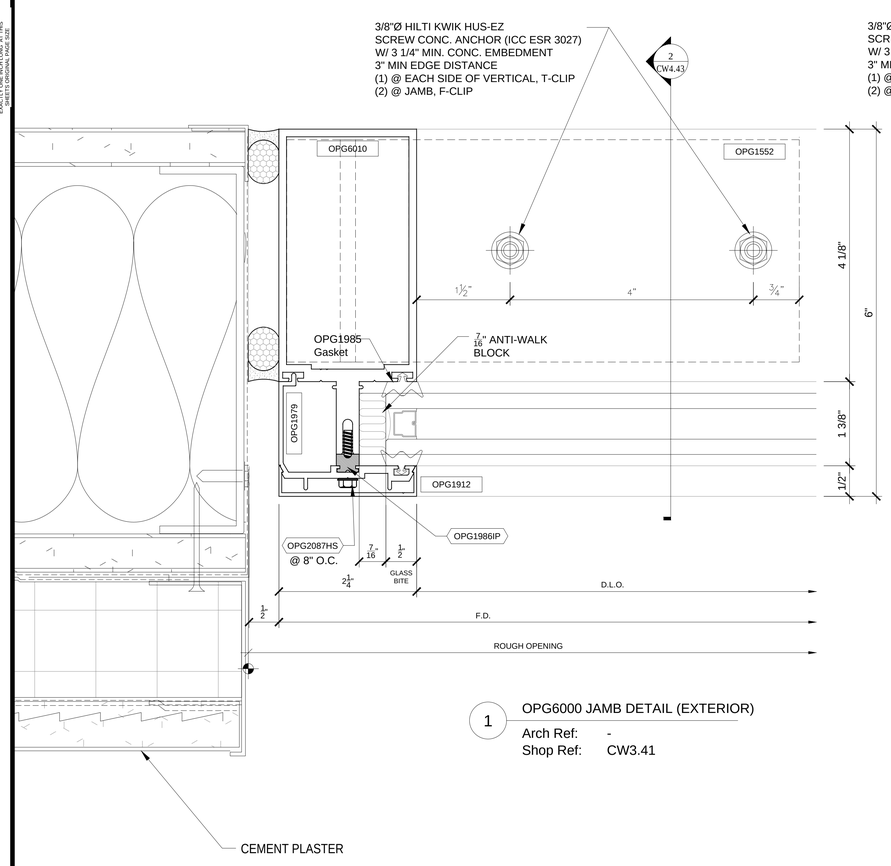
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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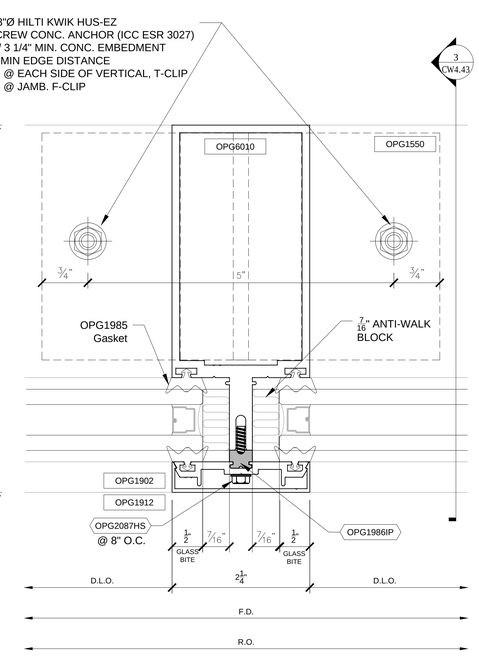
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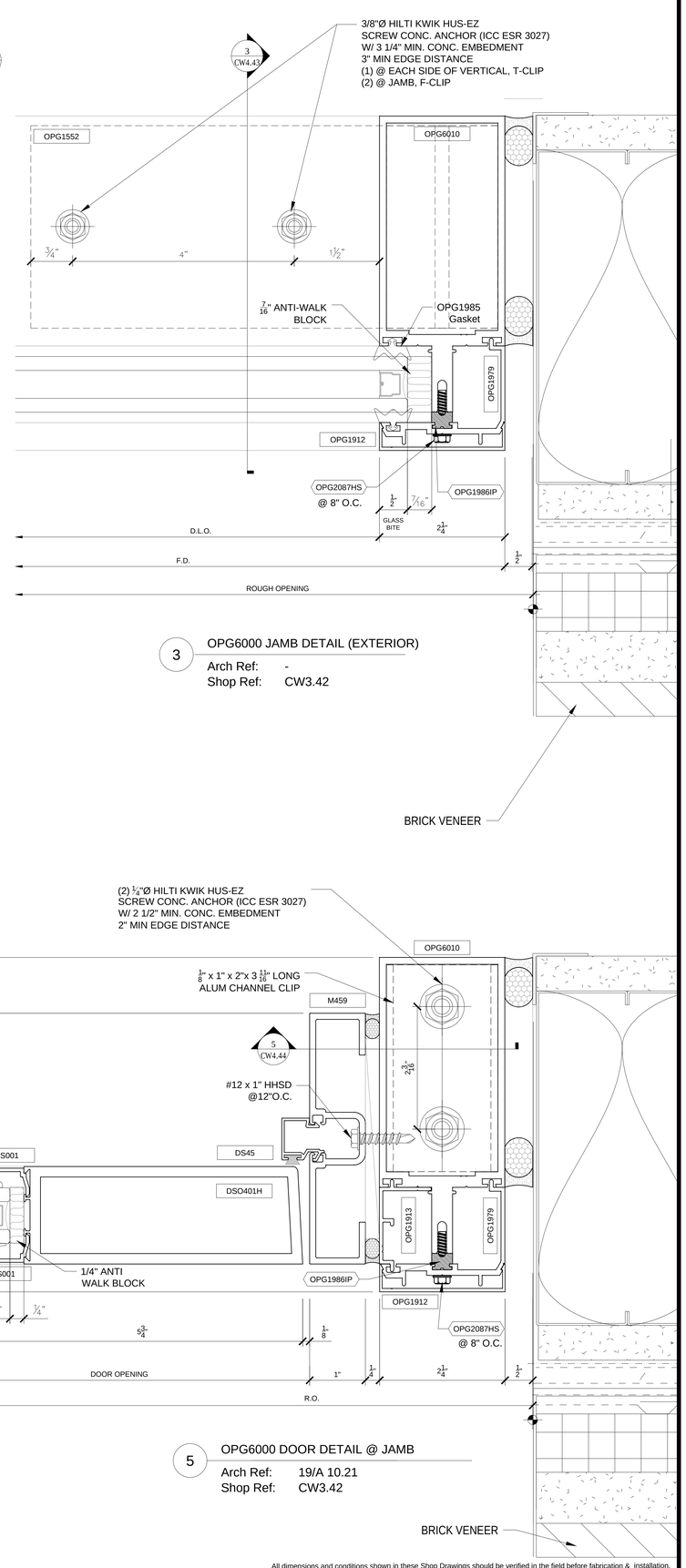

1 OPG6000 JAMB DETAIL (EXTERIOR)

Arch Ref: -
Shop Ref: CW3.41



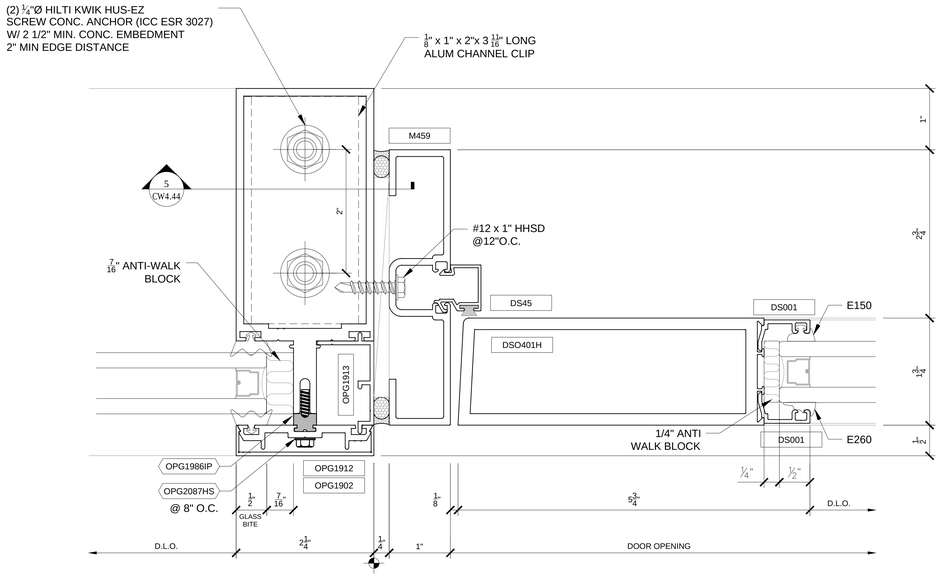

2 OGP6000 VERT. DETAIL

Arch Ref:
Shop Ref:




3 OPG6000 JAMB DETAIL (EXTERIOR)

Arch Ref: -
Shop Ref: CW3.42




4 OPG6000 JAMB @ DOOR DETAIL

Arch Ref: 19/A10.21
Shop Ref: CW3.42




5 OPG6000 DOOR DETAIL @ JAMB

Arch Ref: 19/A 10.21
Shop Ref: CW3.42

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PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLAN DETAILS - OPG6000**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

CW5.41

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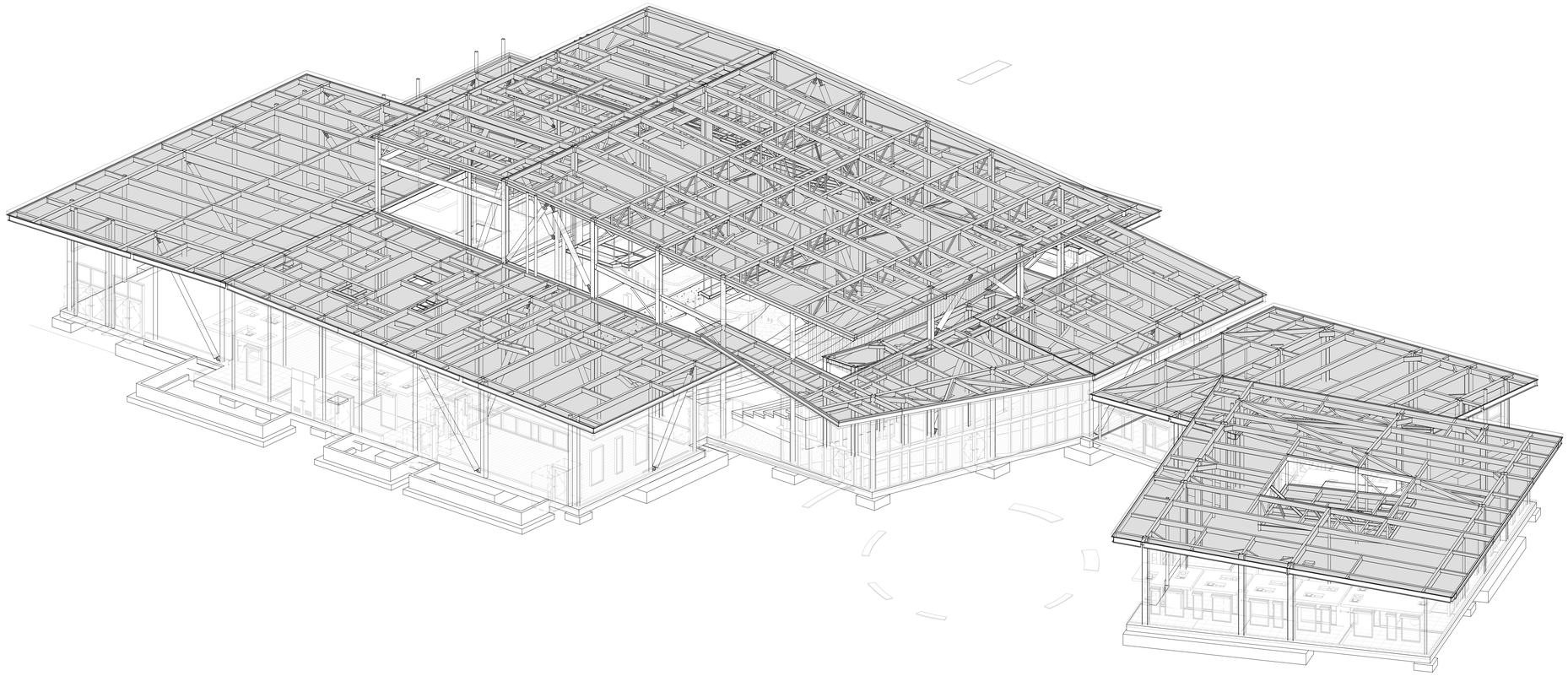
## MARCH 31, 2025 - DSA SUBMITTAL

| Sheet Number | Sheet Name |
|---|---|
| S0.XX SERIES - GENERAL | |
| S0.00 | COVER SHEET AND SHEET LIST |
| S0.01 | GENERAL NOTES |
| S0.02 | GENERAL NOTES |
| S0.03 | GENERAL NOTES |
| S0.04 | GENERAL NOTES |
| S0.05 | ABBREVIATIONS |
| S0.XX SERIES - TYPICAL DETAILS | |
| S0.11 | TYPICAL CONCRETE DETAILS |
| S0.12 | TYPICAL CONCRETE DETAILS |
| S0.13 | TYPICAL CONCRETE DETAILS |
| S0.15 | TYPICAL CONCRETE & EXCAVATION DETAILS |
| S0.20 | TYPICAL STEEL DETAILS |
| S0.21 | TYPICAL STEEL DETAILS |
| S0.22 | TYPICAL STEEL DETAILS |
| S0.23 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.24 | TYPICAL STEEL DETAILS |
| S0.25 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.26 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.27 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.28 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.29 | TYPICAL STEEL & METAL DECK DETAILS |
| S0.31 | TYPICAL INTERIOR METAL STUD DETAILS |
| S0.32 | TYPICAL EXTERIOR METAL STUD DETAILS |
| S0.33 | TYPICAL METAL STUD DETAILS |
| S0.34 | TYPICAL METAL STUD DETAILS |
| S0.35 | TYPICAL METAL STUD DETAILS |
| S0.36 | TYPICAL MISCELLANEOUS DETAILS |

| Sheet Number | Sheet Name |
|---|---|
| S0.37 | TYPICAL MISCELLANEOUS DETAILS |
| S1.XX SERIES - OVERAL VIEWS, LOADING DIAGRAMS & OTHER PLANS | |
| S1.00 | 3D VIEWS |
| S1.01 | DRAWING SET KEY PLAN |
| S1.02 | LOADING PLANS |
| S1.03 | PV LAYOUT PLAN |
| S2.XX SERIES - PLANS | |
| S2.11 | OVERALL FIRST FLOOR - FOUNDATION PLAN |
| S2.11A | 1ST FLOOR - FOUNDATION PLAN - SEGMENT A |
| S2.11B | 1ST FLOOR - FOUNDATION PLAN - SEGMENT B |
| S2.12 | ROOF - OVERALL FRAMING PLAN |
| S2.12A | ROOF FRAMING PLAN - SEGMENT A |
| S2.12B | ROOF FRAMING PLAN - SEGMENT B |
| S2.12C | PROJECTION ROOM FRAMING PLANS |
| S2.13B | CATWALK FRAMING PLAN |
| S2.14B | THEATER ROOF - BOTTOM OF TRUSS BRACING AND LOFT BEAM FRAMING PLAN |
| S2.15B | HIGH ROOF LEVEL - FRAMING PLAN |
| S2.21 | OVERALL FIRST FLOOR REFLECTED CEILING FRAMING PLAN |
| S2.21A | FIRST FLOOR REFLECTED FRAMING CEILING PLAN - SEGMENT A |
| S2.21B | FIRST FLOOR REFLECTED CEILING FRAMING PLAN - SEGMENT B |
| S2.22B | THEATER REFLECTED CEILING FRAMING PLAN - SEGMENT B |
| S3.XX SERIES - CONCRETE FOUNDATION SCHEDULE AND DETAILS | |
| S3.01 | FOUNDATION SCHEDULE |
| S3.02 | FOUNDATION SCHEDULE AND DETAILS |
| S3.11 | STEEL COLUMN SCHEDULE AND DETAILS |

| Sheet Number | Sheet Name |
|---|---|
| S4.XX SERIES -CONCRETE SLAB AND WALL DETAILS | |
| S4.01 | RETAINING WALL DETAILS |
| S4.02 | CONCRETE DETAILS |
| S4.03 | DETAILS |
| S4.10 | CONCRETE WALL ELEVATIONS |
| S4.11 | CONCRETE WALL ELEVATIONS |
| S5.XX SERIES -MOMENT FRAMES AND BRACE FRAMES ELEVATIONS | |
| S5.11 | MOMENT FRAME ELEVATIONS |
| S5.12 | BRBF ELEVATIONS |
| S5.13 | BRBF ELEVATIONS |
| S5.14 | MOMENT FRAME ELEVATIONS |
| S5.15 | BRBF ELEVATIONS |
| S5.31 | TRUSS ELEVATIONS |
| S6.XX SERIES - MOMENT FRAMES AND BRACE FRAMES DETAILS AND SCHEDULES | |
| S6.01 | MOMENT FRAME DETAILS (SLRS) |
| S6.02 | MOMENT FRAME DETAILS (SLRS) |
| S6.11 | BRBF SCHEDULE AND DETAILS |
| S6.12 | BRBF SCHEDULE AND DETAILS |
| S6.13 | BRBF SECTION AND DETAILS |
| S6.14 | BRBF DETAILS |
| S6.21 | BRB ELEVATION SHEET |
| S6.22 | BRB AND CONNECTION DETAILS |
| S6.23 | BRB AND CONNECTION DETAILS |
| S7.XX SERIES - WALL SECTIONS AND WALL ELEVATIONS | |

| Sheet Number | Sheet Name |
|---|---|
| S7.11 | WALL SECTIONS |
| S7.12 | WALL SECTIONS |
| S7.13 | WALL SECTIONS |
| S7.14 | WALL SECTIONS |
| S7.15 | WALL SECTIONS |
| S7.16 | WALL SECTIONS |
| S7.17 | WALL SECTIONS |
| S7.21 | WALL ELEVATIONS |
| S7.22 | WALL ELEVATIONS |
| S7.23 | WALL ELEVATIONS |
| S7.24 | WALL ELEVATIONS |
| S7.25 | WALL ELEVATIONS |
| S7.26 | WALL ELEVATIONS |
| S7.27 | WALL ELEVATIONS |
| S7.28 | WALL ELEVATIONS |
| S8.XX SERIES - DETAILS | |
| S8.01 | CATWALK DETAILS |
| S8.02 | SECTIONS AND DETAILS |
| S8.11 | TRUSS DETAILS |
| S8.21 | STEEL DETAILS |
| S8.22 | STEEL DETAILS |
| S8.31 | STEEL DETAILS |
| Grand total: 89 | |



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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**COVER SHEET AND SHEET LIST**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

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## CAST-IN-PLACE CONCRETE (CONTINUED)

23. AT LEAST TWO HOURS MUST ELAPSE BETWEEN THE END OF COLUMN OR WALL PLACEMENT AND THE BEGINNING OF SLAB PLACEMENT.

24. FORM EXPOSED CORNERS OF COLUMNS, BEAMS AND WALLS WITH A 3/4-INCH CHAMFER, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.

25. AT LEAST TWO HOURS MUST ELAPSE BETWEEN THE END OF COLUMN OR WALL PLACEMENT AND THE BEGINNING OF SLAB PLACEMENT.

26. CONCRETE SHALL BE MAINTAINED ABOVE 50 DEGREES FAHRENHEIT AND IN A MOIST CONDITION FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT UNLESS OTHERWISE ACCEPTED BY ARCHITECT (STRUCTURAL ENGINEER).

27. CURING COMPOUNDS, SEALERS, HARDENERS, ETC., USED ON CONCRETE THAT RECEIVES A FINISH SHALL BE APPROVED BY THE ARCHITECT BEFORE USE.

28. GROUT SHALL BE NON-SHRINK, NON-METALLIC, SHALL NOT CONTAIN CHLORIDES, AND SHALL ATTAIN A 28-DAY COMPRESSIVE STRENGTH OF 6,000 PSI.

29. LEAN CONCRETE SHALL CONTAIN 2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. USE ONLY WHERE SPECIFICALLY INDICATED.

## DEFERRED SUBMITTALS

THE FOLLOWING ITEMS OF WORK ARE TO BE DESIGNED PER PERFORMANCE CERTIFICATION AND SUBMIT FOR DEFERRAL APPROVAL:

-STAGE RIGGING SYSTEM
-ORCHESTRA PIT COVER

THE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM, AND FORWARD THEM TO DSA WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL HAS BEEN APPROVED BY DSA.

## INSPECTOR OF RECORD (IOR)

1. IOR'S SHALL HAVE CLASS 1 CERTIFICATION AND BE APPROVED BY DSA AS REQUIRED BY INTERPRETATION OF REGULATIONS (IR) A-7.

## CAST-IN-PLACE CONCRETE (CONTINUED)

2. UNLESS NOTED OTHERWISE HEREIN, CONCRETE IS ASSIGNED TO EXPOSURE CLASSES F0, S0, W0, AND C0, AS DEFINED IN TABLE 19.3.1.1 OF ACI 318-14.

   A. CONCRETE IN CONTACT WITH SITE SOIL SHALL BE ASSIGNED TO EXPOSURE CLASS S0.

3. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE II.

4. AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33. NORMAL WEIGHT CONCRETE SHALL HAVE A MINIMUM DRY UNIT WEIGHT OF 145 PCF.

5. AGGREGATES FOR LIGHTWEIGHT CONCRETE SHALL BE EXPANDED SHALE CONFORMING TO ASTM C330. PRESIZE AGGREGATE BEFORE FIRING TO ALLOW OUTER CERAMIC SHELL TO REMAIN INTACT. LIGHTWEIGHT CONCRETE SHALL HAVE A DRY UNIT WEIGHT OF 110±3 PCF AND AIR CONTENT OF 4.5±1.5 PERCENT AS MEASURED BY THE VOLUMETRIC METHOD DESCRIBED IN ASTM C173.

6. MAXIMUM AGGREGATE SIZE SHALL BE 1-1/2 INCHES FOR FOUNDATIONS AND 1 INCH ELSEWHERE, BUT NO LARGER THAN (A) 1/5 THE NARROWEST DIMENSION BETWEEN SIDES OF FORMS, (B) 1/3 THE DEPTH OF SLABS, OR (C) 3/4 THE MINIMUM CLEAR SPACING BETWEEN INDIVIDUAL REINFORCING BARS OR WIRES, BUNDLES OF BARS, INDIVDUAL TENDONS, BUNDLED TENDONS, OR DUCTS. SMALLER AGGREGATE SIZES MAY BE ALLOWED WITH THE APPROVAL OF THE ARCHITECT (STRUCTURAL ENGINEER).

7. MAXIMUM SLUMP SHALL BE 5 INCHES TYPICALLY AND 4 INCHES IN FLATWORK, UNLESS A HIGH-RANGE WATER REDUCING ADMIXTURE (SUPERPLASTICIZER) IS USED IN THE CONCRETE MIX PROPORTIONS.

8. CONCRETE SHRINKAGE SHALL BE LIMITED TO 0.05 PERCENT AT 35 DAYS AS DETERMINED BY ASTM C157. TEST SPECIMENS SHALL BE MOIST CURED IN LIME SATURATED WATER FOR 28 DAYS AND AIR STORED FOR 7 DAYS.

9. WATER CEMENT RATIO SHALL NOT EXCEED 0.45 FOR ALL FLATWORK THAT RECEIVES A MOISTURE SENSITIVE ADHESIVE TO AFFIX FLOOR FINISHES AND 0.50 ELSEWHERE. EXCEPTION: FOR CONCRETE ON METAL DECK, A WATER CEMENT RATIO OF 0.50 MAY BE USED FOR CONCRETE PLACED ON VENTED METAL DECKS.

10. CONCRETE MIX PROPORTIONING SHALL BE SIGNED AND SEALED BY A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA AND SHALL BE SUBMITTED TO THE ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW AND APPROVAL.

    A. STRENGTH: CONCRETE MIX PROPORTIONING SHALL BE BASED ON FIELD EXPERIENCE AND/OR TRIAL MIXTURES AS STIPULATED IN ACI 318, ARTICLE 26.4.3 SUBMIT CONCRETE MIX PROPORTIONING DATA, INCLUDING HISTORICAL STRENGTH RECORDS AND/OR RESULTS OF TRIAL MIXTURES, FOR EACH TYPE AND COMPRESSIVE STRENGTH OF CONCRETE.
    B. MODULUS OF ELASTICITY (MOE): MODULUS OF ELASTICITY TESTS SHALL BE PERFORMED ON LABORATORY TRIAL MIXTURES FOR EACH CONCRETE STRENGTH, EACH CONCRETE MIX PROPORTION, AND FOR EACH AGGREGATE SOURCE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
    C. THE DESIGN CONCRETE MIX PROPORTION SHALL SPECIFY AGGREGATES THAT PRODUCE A CONCRETE MODULUS OF ELASTICITY NOT LESS THAN THAT SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. THE MODULUS OF ELASTICITY OF PRODUCTION CONCRETE DELIVERED TO THE JOBSITE SHALL BE CONSISTENT WITH THE MODULUS OF ELASTICITY OF THE DESIGN MIX PROPORTION FOR ESTABLISHING THE CONCRETE f'c AND MOE USED IN THE BUILDING DESIGN.

11. FOR CONCRETE SLABS-ON-GRADE PLACED DIRECTLY ON VAPOR RETARDER:

    A. CONCRETE MIXTURE:

        1. USE INCREASED SIZE OF MAXIMUM-SIZE COARSE AGGREGATE (1" MINIMUM) AND COARSER SAND.
        2. COARSE AGGREGATE TO BE WELL GRADED WITH MINIMUM FLAT OR ELONGATED PARTICLES.
        3. REDUCE SAND CONTENT TO LOWEST LEVEL CONSISTENT WITH ADEQUATE WORKABILITY.
        4. USE HIGH-RANGE WATER-REDUCING ADMIXTURE WITH GOOD SHRINKAGE-REDUCTION CHARACTERISTICS.

    B. FINISHING AND CURING:

        1. USE PROPER FINISHING TECHNIQUES AND PROPER TIMING BETWEEN FINISHING OPERATIONS TO AVOID BLISTERING AND DELAMINATION.
        2. USE CONTINUOUS MOIST CURE OR HIGH-SOLIDS CURING COMPOUND.

12. CONCRETE MIXING SHALL CONFORM TO ASTM C94.

13. THE MAXIMUM SIZE OF A SINGLE POUR FOR ELEVATED SLABS SHALL NOT EXCEED 25,000 SQUARE FEET AND THE LENGTH TO WIDTH RATIO OF THE POUR SHALL NOT EXCEED 2 WITHOUT THE APPROVAL OF THE ARCHITECT (STRUCTURAL EINGINEER).

14. SUBMIT SHOP DRAWINGS INDICATING LOCATIONS OF CONCRETE CONSTRUCTION JOINTS TO THE ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW AND APPROVAL PRIOR TO PLACING CONCRETE. LOCATE CONSTRUCTION JOINTS TO MINIMIZE EFFECTS OF SHRINKAGE AND AT POINTS OF LOW STRESS. HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED IN BEAMS AND SLABS UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER) PRIOR TO CONSTRUCTION.

15. CONDUITS AND PIPES EMBEDDED IN WALLS AND SLABS ARE NOT ALLOWED UNLESS SPECIFICALLY BROUGHT TO THE ATTENTION OF AND APPOVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

16. PROVIDE SLEEVES FOR ELECTRICAL AND PLUMBING OPENINGS. IF CONFLICT OCCURS BETWEEN REINFORCING AND SLEEVES, REPOSITION REINFORCING OR SLEEVES OR BOTH. DO NOT CUT ANY REINFORCING. CORING IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE ARCHITECT (STRUCTURAL ENGINEER).

17. PRIOR TO PLACING CONCRETE, REINFORCING BARS (INCLUDING WELDED WIRE REINFORCEMENT), EMBEDDED PLATES, ANCHOR BOLTS, AND OTHER CONCRETE EMBEDMENTS SHALL BE WELL SECURED IN POSITION.

18. CONCRETE PLACEMENT SHALL CONFORM TO ACI 304 AND CONTRACT DOCUMENTS. INTENTIONALLY ROUGHEN ALL PREVIOUSLY HARDENED CONCRETE SURFACES TO A FULL AMPLITUDE OF 1/4-INCH AGAINST WHICH FRESH CONCRETE IS PLACE.

19. CONCRETE PLACEMENT SHALL CONFORM TO ACI 304 AND CONTRACT DOCUMENTS. INTENTIONALLY ROUGHEN ALL PREVIOUSLY HARDENED CONCRETE SURFACES TO A FULL AMPLITUDE OF 1/4-INCH AGAINST WHICH FRESH CONCRETE IS PLACE.

20. PROVIDE KEYED CONSTRUCTION JOINT WHERE INDICATED ON DRAWINGS. CLEAN, REMOVE LAITANCE, THOROUGHLY WET, AND REMOVE STANDING WATER IMMEDIATELY BEFORE PLACING FRESH CONCRETE.

21. FORMS SHALL BE CONSTRUCTED TO PROVIDE CAMBER AS SPECIFIED ON THE DRAWINGS. CONCRETE SLAB THICKNESS SHALL BE MAINTAINED.

22. FORM EXPOSED CORNERS OF COLUMNS, BEAMS AND WALLS WITH A 3/4-INCH CHAMFER, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.

## FOUNDATIONS

1. DESIGN OF FOUNDATION SYSTEM BASED ON RECOMMENDATIONS IN GEOTECHNICAL ENGINEERING INVESTIGATION REPORT BY KOURY ENGINEERING & TESTING, INC, DATED JUNE 9, 2023 (PROJECT NO. 23-1190) AND ALL SUBSEQUENT ADDENDA. GEOTECHNICAL REPORT AND ADDENDA SHALL BE CONSIDERED PART OF THESE CONTRACT DOCUMENTS AND SHALL BE KEPT AT JOB SITE AT ALL TIMES.

2. BUILDING FOUNDATION VALUES:

| ITEM | DESIGN VALUE |
|---|---|
| NET ALLOWABLE BEARING PRESSURE | 2000 PSF |
| INCREASE PER FOOT OF ADDITIONAL WIDTH PAST MIN WIDTH | 250 PSF |
| INCREASE PER FOOT OF ADDITIONAL DEPTH PAST MIN DEPTH | 250 PSF |
| MAX ALLOWABLE BEARING PRESSURE | 2500 PSF |
| ALLOWABLE BEARING CAPACITY INCREASE | 1/3 (SHORT TERM LOADING) |
| MINIMUM WIDTH | 18" (CONTINUOUS FTGS)<br>24" (ISOLATED FTGS) |
| MIN BOTTOM OF FTG BELOW LOWEST ADJACENT GRADE | 24 INCHES |
| ALLOWABLE PASSIVE PRESSURE | 250 PSF/ FT OF DEPTH |
| MAX ALLOWABLE PASSIVE PRESSURE | 2500 PSF |
| COEFFICIENT OF FRICTION | 0.35 |
| PASSIVE PRESSURE INCREASE | 1/3 (SHORT TERM LOADING) |
| TOTAL LATERAL RESISTANCE | FRICTIONAL RESISTANCE +<br>2/3 PASSIVE RESISTANCE |

ANCILLARY STRUCTURES (WITHIN GRADING PAD) FOUNDATION VALUES:

| ITEM | DESIGN VALUE |
|---|---|
| NET ALLOWABLE BEARING PRESSURE | 1800 PSF |
| INCREASE PER FOOT OF ADDITIONAL WIDTH PAST MIN WIDTH | - |
| INCREASE PER FOOT OF ADDITIONAL DEPTH PAST MIN DEPTH | - |
| MAX ALLOWABLE BEARING PRESSURE | 1800 PSF |
| ALLOWABLE BEARING CAPACITY INCREASE | 1/3 (SHORT TERM LOADING) |
| MINIMUM WIDTH | 18" (CONTINUOUS FTGS)<br>24" (ISOLATED FTGS) |
| MIN BOTTOM OF FTG BELOW LOWEST ADJACENT GRADE | 18 INCHES |
| ALLOWABLE PASSIVE PRESSURE | 250 PSF/ FT OF DEPTH |
| MAX ALLOWABLE PASSIVE PRESSURE | 2500 PSF |
| COEFFICIENT OF FRICTION | 0.35 |
| PASSIVE PRESSURE INCREASE | 1/3 (SHORT TERM LOADING) |
| TOTAL LATERAL RESISTANCE | FRICTIONAL RESISTANCE +<br>2/3 PASSIVE RESISTANCE |

3. FOUNDATIONS MAY BE CAST DIRECTLY AGAINST EXCAVATIONS PROVIDED EXCAVATION IS CAPABLE OF MAINTAINING A VERTICAL CUT WITHOUT SLOUGHING.

4. CONCRETE SHALL NOT BE PLACED ON FROZEN GRADE. IF FOOTING IS SUBJECT TO FREEZING TEMPERATURES AFTER FOUNDATION CONSTRUCTION, THEN FOOTING SHALL BE ADEQUATELY PROTECTED FROM FREEZING.

5. EXCAVATION, BACKFILL, AND COMPACTION SHALL BE DONE IN STRICT ACCORDANCE WITH REPORT OF GEOTECHNICAL ENGINEERING INVESTIGATION RECOMMENDATIONS.

6. FOUNDATION EARTHWORK SHALL BE OBSERVED BY A QUALIFIED GEOTECHNICAL ENGINEER, RETAINED BY OWNER AND SATISFACTORY TO ARCHITECT (STRUCTURAL ENGINEER) AND GOVERNING CODE AUTHORITY. PERFORM REQUIRED OBSERVATIONS OF THIS CONTRACT AND CBC SECTION 1705A.6.

7. FOUNDATION EXCAVATION, BACKFILLING, AND COMPACTION SHALL BE OBSERVED AND APPROVED BY A GEOTECHNICAL ENGINEER AND THE GOVERNING AGENCY PRIOR TO PLACING REINFORCING STEEL AND CONCRETE. GEOTECHNICAL ENGINEER SHALL PROVIDE A LETTER OF COMPLIANCE TO THE OWNER.

8. TEMPORARY CUT SLOPES SHALL NOT EXCEED THOSE RECOMMENDED IN THE REPORT OF GEOTECHNICAL ENGINEERING INVESTIGATION. DO NOT PERMIT ANY PERSON TO DESCEND INTO TRENCHES OR EXCAVATIONS GREATER THAN FIVE FEET IN DEPTH UNLESS NECESSARY PERMIT FROM STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY IS OBTAINED PRIOR TO ISSUANCE OF BUILDING OR GRADING PERMIT. CONTRACTOR TO PROVIDE FOR DESIGN, PERMIT, AND INSTALLATION OF ALL SHORING AND SHEATHING NECESSARY TO SAFELY RETAIN EARTH BANKS..

9. CONTRACTOR TO PROVIDE FOR DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER OR SEEPAGE. DEWATERING SHALL EFFECTIVELY ELIMINATE ANY HYDROSTATIC PRESSURE ON SHORING. ENSURE THAT CONTAMINATED WATER IS NOT DISPOSED OF IN PUBLIC SEWER OR STORM DRAIN SYSTEM AND ENSURE THAT DIRTY WATER IS NOT DISPOSED OF INTO PUBLIC RIGHT-OF-WAY.

10. UNLESS ADEQUATELY BRACED AND SHORED, RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL WALLS HAVE ATTAINED FULL DESIGN STRENGTH. FOR PIT WALLS AND BUILDING WALLS BELOW GRADE, BRACING AND SHORING SHALL REMAIN IN PLACE UNTIL ATTACHED FLOORS ARE PLACED, CURED FOR AT LEAST 7 DAYS, AND HAVE ATTAINED FULL DESIGN STRENGTH. BACKFILL PLACED IMMEDIATELY BEHIND RETAINING WALLS SHALL BE COMPACTED WITH HAND OPERATED EQUIPMENT.

11. SIDEWALKS OR PAVING IMMEDIATELY ADJACENT TO BUILDING PERIMETER SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING. LANDSCAPE IRRIGATION IS NOT PERMITTED WITHIN FIVE FEET OF BUILDING PERIMETER FOOTINGS EXCEPT WHEN ENCLOSED IN PROTECTED PLANTERS THAT DIRECT DRAINAGE AWAY FROM STRUCTURE AND FOUNDATIONS. DISCHARGE FROM DOWNSPOUTS, ROOF DRAINS AND SCUPPERS IS NOT PERMITTED ONTO UNPROTECTED SOILS WITHIN FIVE FEET OF BUILDING PERIMETER.

12. FOR EXCAVATION PROFILES, SEE **1** / **S0.15** & **2** / **S0.15**.

## CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", WITH MODIFICATIONS AS NOTED IN THE CONTRACT DOCUMENTS.

   A. CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28-DAY (f'c), UNLESS NOTED OTHERWISE:

| | | |
|---|---|---|
| SPREAD FOOTINGS | 4,000 PSI | NORMAL WEIGHT |
| BRBF/SMF FRAME FOOTINGS | 5,000 PSI | NORMAL WEIGHT |
| CONCRETE PILASTERS/PEDESTALS | 5,000 PSI | NORMAL WEIGHT |
| WALL FOOTINGS | 4,000 PSI | NORMAL WEIGHT |
| GRADE BEAMS | 5,000 PSI | NORMAL WEIGHT |
| SLABS-ON-GRADE | 4,000 PSI | NORMAL WEIGHT |
| RETAINING WALLS | 4,000 PSI | NORMAL WEIGHT |
| CONCRETE ON METAL DECK | 3,000 PSI | LIGHTWEIGHT |
| CONCRETE SLAB ON GRADE OR OVER GEOFOAM IN PERFORMING ARTS BUILDING SEATING AREA | 4,000 PSI | NORMAL WEIGHT |
| CONCRETE WALLS AT THE PERFORMING ARTS BUILDING SEATING AREA | 4,000 PSI | NORMAL WEIGHT |
| ALL OTHER CONCRETE | 4,000 PSI | NORMAL WEIGHT |

## GENERAL

1. ALL WORK SHALL CONFORM TO THE STANDARDS OF THE 2022 CALIFORNIA BUILDING CODE, AS AMENDED BY THE DIVISION OF THE STATE ARCHITECT - STRUCTURAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THE CONTRACT DOCUMENTS.

2. THE PROJECT MANUAL FORMS A PART OF THESE GENERAL NOTES. CODES, STANDARDS, AND SPECIFICATIONS, INCLUDING ADDENDA AND SUPPLEMENTS, REFERENCED IN THE CONTRACT DOCUMENTS SHALL BE THE LATEST APPROVED ISSUE, UNLESS SPECIFICALLY NOTED.

3. NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. IF CONFLICT OCCURS BETWEEN THE CONTRACT DRAWINGS AND THE PROJECT MANUAL, IMMEDIATELY NOTIFY ARCHITECT (STRUCTURAL ENGINEER) FOR RESOLUTION. DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS.

4. DESIGN LIVE LOADS ARE NOTED ON DRAWINGS. - SEE SHEET S1.02.

   DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING

   a. CODE LEVEL WIND DESIGN DATA:

| | |
|---|---|
| BASIC WIND SPEED | = 101 MPH (PERFORMING ARTS)<br>= 101 MPH (ADMIN) |
| EXPOSURE CATEGORY | = C |
| ENCLOSURE CLASSIFICATION | = ENCLOSED BUILDING |
| RISK CATEGORY | = III (PERFORMING ARTS)<br>= III (ADMIN) |
| INTERNAL PRESSURE COEFFICIENT, (GCpi) | = +/- 0.18 |

   SEE "HORIZONTAL COMPONENTS & CLADDING WIND PRESSURES ON WALL (STRENGTH LEVEL)" AND "VERTICAL COMPONENTS & CLADDING WIND PRESSURES ON ROOF (STRENGTH LEVEL)" TABLES ON THIS PAGE FOR COMPONENTS & CLADDING WIND PRESSURES.

   b. CODE LEVEL EARTHQUAKE DESIGN DATA:

| | |
|---|---|
| SITE COORDINATES | = 34.094131 °N, 34.094131 °W |
| MAPPED SPECTRAL RESPONSE ACCELERATION, $S_S$ | = 1.82g |
| MAPPED SPECTRAL RESPONSE ACCELERATION, $S_1$ | = 0.65g |
| SITE CLASS | = D |
| DESIGN SPECTRAL RESPONSE COEFFICIENT, $S_{DS}$ | = 1.213g |
| DESIGN SPECTRAL RESPONSE COEFFICIENT, $S_{D1}$ | = 0.737g |
| SEISMIC DESIGN CATEGORY | = D |

   SEISMIC BASE IS ASSUMED AT GROUND LEVEL: LEVEL-1 = 315.50
   SEE "SEISMIC DESIGN CRITERIA" TABLE ON THIS SHEET FOR THE FOLLOWING INFO.
   OCCUPANCY CATEGORY
   IMPORTANCE FACTOR, Ie
   BASIC SEISMIC-FORCE RESISTING SYSTEM
   ANALYTICAL PROCEDURE
   RESPONSE MODIFICATION FACTOR, R
   SEISMIC RESPONSE COEFFICIENT, Cs
   DESIGN BASE SHEAR
   REDUNDANCY FACTOR

5. GOVERNING CODE AUTHORITY: DIVISION OF THE STATE ARCHITECT (DSA) - STRUCTURAL SAFETY.

6. CONTRACT DOCUMENTS INDICATE INFORMATION SUFFICIENT TO CONVEY DESIGN INTENT. REVIEW CONTRACT DOCUMENTS AND VERIFY FIELD AND EXISTING CONDITIONS. PROMPTLY NOTIFY ARCHITECT (STRUCTURAL ENGINEER), PRIOR TO PROCEEDING WITH WORK, IF FURTHER CLARIFICATION OF DESIGN INTENT IS NEEDED.

7. VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ARCHITECT (STRUCTURAL ENGINEER) OF ANY DISCREPANCIES.

8. PERFORM STRUCTURAL RELATED WORK AND DEVELOP SHOP DRAWINGS CONSIDERING CONTRACT DOCUMENTS IN THEIR ENTIRETY. CONDITIONS NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED AS DETAILED FOR SIMILAR WORK.

9. CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE MEANS AND METHODS OF CONSTRUCTION. PROVIDE ALL NECESSARY MEASURES TO PROTECT THE STRUCTURE DURING CONSTRUCTION. COMPLY WITH THE STATE OF CALIFORNIA, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH REGULATIONS. CONSTRUCTION MATERIALS, IF PLACED ON FRAMED FLOORS AND ROOFS, SHALL BE SPREAD OUT SUCH THAT THE DESIGN LIVE LOAD PER SQUARE FOOT IS NOT EXCEEDED. PROVIDE ADEQUATE SHORING IF OVERLOAD IS ANTICIPATED OR WHERE STRUCTURAL ELEMENTS HAVE NOT ATTAINED FULL DESIGN STRENGTH. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT CONSTITUTE ACCEPTANCE OF CONSTRUCTION MEANS AND METHODS.

10. SUBMIT SHOP DRAWINGS FOR REVIEW BEFORE FABRICATION. CONTRACTOR SHALL REVIEW FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS PRIOR TO SUBMISSION TO ARCHITECT (STRUCTURAL ENGINEER). ARCHITECT'S (STRUCTURAL ENGINEER'S) REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN INTENT AND DOES NOT CONSTITUTE AN AUTHORIZATION TO DEVIATE FROM TERMS AND CONDITIONS OF CONTRACT. WHEN INDICATED, THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA. MAINTAIN AT SITE A COPY OF REVIEWED AND ACCEPTED SUBMITTALS.

11. MODIFICATIONS AND SUBSTITUTIONS MUST BE ACCEPTED IN WRITING BY ARCHITECT (STRUCTURAL ENGINEER) AND ARE SUBJECT TO APPROVAL BY DSA. NO MODIFICATION OR SUBSTITUTION WILL BE ACCEPTED VIA SHOP DRAWING REVIEW. MANUFACTURED MATERIALS SHALL BE APPROVED BY THE GOVERNING CODE AUTHORITY PRIOR TO THEIR USE. ADHERE TO ALL CONDITIONS OF THOSE APPROVALS.

12. REFER TO MECHANICAL DRAWINGS FOR PIPING AND DUCTWORK BRACING.

13. UNLESS SPECIFICALLY SHOWN ON THE PLANS NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.

14. SEE ARCHITECTURAL DRAWINGS FOR:
    A. SIZE AND LOCATION OF DOOR AND WINDOW OPENINGS IN STRUCTURAL WALLS
    B. SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS AND SLAB EDGES
    C. SIZE AND LOCATION OF CONCRETE CURBS, SLOPES, DEPRESSIONS, CHANGES IN LEVEL, CHAMFERS AND REVEALS, INSERTS FOR FINISH SYSTEMS.
    D. EXTERIOR WALL SYSTEM AND LOCATION
    E. DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS

15. WHERE SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA) DETAILS / FIGURES ARE REFERENCED, REFER TO THE LATEST EDITION OF THE SMACNA SEISMIC RESTRAINT MATERIAL GUIDELINES FOR MECHANICAL SYSTEMS.

16. SEE MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR:
    A. SIZE AND LOCATION OF EQUIPMENT PADS, EQUIPMENT ANCHORAGE TO STRUCTURE, AND EQUIPMENT WEIGHTS
    B. ANCHORAGE OF DUCTWORK, PIPING, ELECTRICAL CONDUITS TO STRUCTURE
    C. ELECTRICAL CONDUIT RUNS, OUTLETS AND BOXES IN CONCRETE SLABS AND WALLS
    D. PIPE SLEEVES, TRENCHES, AND OPENINGS THROUGH WALLS AND SLABS FOR DUCTWORK, PIPE RUNS, ELECTRICAL CONDUIT RUNS

17. MECHANICAL, ELECTRICAL AND PLUMBING LOADS SHALL BE SUPPORTED FROM BEAMS. EXCEPTION: LIGHT MECHANICAL, ELECTRICAL AND PLUMBING LOADS MAY BE SUPPORTED BY CONCRETE-ON-METAL DECK ASSEMBLY, BUT MUST BE ANCHORED INTO STRUCTURAL CONCRETE BY A SYSTEM HAVING CURRENT ICC-ES OR IAPMO UES EVALUATION REPORT.

### COMPONENTS AND CLADDING WIND DESIGN CRITERIA TABLE

| BLDG | HORIZONTAL COMPONENTS & CLADDING LOADS ON WALLS (STRENGTH LEVEL) | | |
|---|---|---|---|
| PERFORMING ARTS BLDG | WIND ZONE | WIND EFFECTIVE AREA = 10 SQ FT | WIND EFFECTIVE AREA = 200 SQ FT |
| | ZONE 4 | MAX = 27.6 PSF MIN = -29.9 PSF | MAX = 22.2 PSF MIN = -24.5 PSF |
| | ZONE 5 | MAX = 27.6 PSF MIN = -36.9 PSF | MAX = 22.2 PSF MIN = -26.2 PSF |
| | VERTICAL COMPONENTS & CLADDING LOADS ON ROOF (STRENGTH LEVEL) | | |
| | WIND ZONE | WIND EFFECTIVE AREA = 10 SQ FT | WIND EFFECTIVE AREA = 200 SQ FT |
| | ZONE 1 | MAX = 16.0 PSF MIN = -29.9 PSF | MAX = 16.0 PSF MIN = -29.9 PSF |
| | ZONE 2 | MAX = 16.0 PSF MIN = -34.6 PSF | MAX = 16.0 PSF MIN = -32.2 PSF |
| | ZONE 2' | MAX = 16.0 PSF MIN = -41.6 PSF | MAX = 16.0 PSF MIN = -39.2 PSF |
| | ZONE 3 | MAX = 16.0 PSF MIN = -46.3 PSF | MAX = 16.0 PSF MIN = -32.2 PSF |
| | ZONE 3' | MAX = 16.0 PSF MIN = -64.9 PSF | MAX = 16.0 PSF MIN = -41.6 PSF |
| ADMIN BLDG | HORIZONTAL COMPONENTS & CLADDING LOADS ON WALLS (STRENGTH LEVEL) | | |
| | WIND ZONE | WIND EFFECTIVE AREA = 10 SQ FT | WIND EFFECTIVE AREA = 200 SQ FT |
| | ZONE 4 | MAX = 22.9 PSF MIN = -24.8 PSF | MAX = 18.4 PSF MIN = -20.4 PSF |
| | ZONE 5 | MAX = 22.9 PSF MIN = -30.7 PSF | MAX = 18.4 PSF MIN = -21.7 PSF |
| | VERTICAL COMPONENTS & CLADDING LOADS ON ROOF (STRENGTH LEVEL) | | |
| | WIND ZONE | WIND EFFECTIVE AREA = 10 SQ FT | WIND EFFECTIVE AREA = 200 SQ FT |
| | ZONE 1 | MAX = 16.0 PSF MIN = -24.8 PSF | MAX = 16.0 PSF MIN = -24.8 PSF |
| | ZONE 2 | MAX = 16.0 PSF MIN = -28.7 PSF | MAX = 16.0 PSF MIN = -26.8 PSF |
| | ZONE 2' | MAX = 16.0 PSF MIN = -34.5 PSF | MAX = 16.0 PSF MIN = -32.6 PSF |
| | ZONE 3 | MAX = 16.0 PSF MIN = -38.4 PSF | MAX = 16.0 PSF MIN = -26.8 PSF |
| | ZONE 3' | MAX = 16.0 PSF MIN = -53.9 PSF | MAX = 16.0 PSF MIN = -34.5 PSF |

### SEISMIC DESIGN CRITERIA TABLE

| BUILDING | RISK CATEGORY | IMPORTANCE FACTOR | BASIC SEISMIC LOAD RESISTING SYSTEM (SLRS) | ANALYTICAL PROCEDURE | RESPONSE MODIFICATION FACTOR, R | ALLOWABLE STORY DRIFT (TABLE 12.12-1 & SECT 12.12.1.1 ASCE 07-16) | NORTH - SOUTH REDUNDANCY FACTOR (ρ) = 1.3 | | | EAST - WEST REDUNDANCY FACTOR (ρ) = 1.3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SEISMIC RESPONSE COEFFICIENT $C_S$ | DESIGN BASE SHEAR (STRENGTH LEVEL) | MAXIMUM INELASTIC DISPLACEMENT ΔM | SEISMIC RESPONSE COEFFICIENT $C_S$ | DESIGN BASE SHEAR (STRENGTH LEVEL) | MAXIMUM INELASTIC DISPLACEMENT ΔM | VERTICAL IRREGULARITIES (TABLE 12.3-2 ASCE 07-16) | HORIZONTAL IRREGULARITIES (TABLE 12.3-1 ASCE 07-16) |
| PERFORMING ARTS BUILDING | III | 1.25 | STEEL BUCKLING-RESTRAINED BRACED FRAME | MODAL RESPONSE SPECTRA | 8 | 1.50% | 0.190 | 399.7 KIPS | 3.71 IN | 0.190 | 399.7 KIPS | 4.59 IN | NONE | 1a |
| ADMIN. BUILDING | III | 1.25 | STEEL SPECIAL MOMENT FRAME | MODAL RESPONSE SPECTRA | 8 | 1.15% | 0.190 | 94.5 KIPS | 2.19 IN | 0.190 | 94.5 KIPS | 1.80 IN | NONE | 1a, 5 |
| PROJECTION ROOM | III | 1.25 | STEEL SPECIAL MOMENT FRAME | MODAL RESPONSE SPECTRA | 8 | 1.15% | 0.190 | 41.3 KIPS | 1.84 IN | 0.190 | 41.3 KIPS | 3.02 IN | NONE | 1a, 5 |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

COMMITTED TO COLLEGE BOUND


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES


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225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER
DAVID WAYNE RAUL
No. S-6892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALI

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH WHEN PLOTTED AT SCALE ON ORIGINAL SHEET. ADJUST SCALES ACCORDINGLY.

## AUTOMATIC END-WELDED STUDS

1. MATERIAL:
   AUTOMATIC END-WELDED STUDS SHALL BE NELSON SHEAR CONNECTOR OR NELSON DEFORMED BAR ANCHOR STUDS (OR APPROVED EQUAL) NELSON SHEAR CONNECTOR STUDS SHALL BE MANUFACTURED FROM ASTM A 108, GRADE C-1010 THROUGH C-1020 COLD-DRAWN STEEL. NELSON DEFORMED BAR ANCHOR STUDS ARE PRODUCED FROM DEFORMED WIRE COMPLYING WITH ASTM A 496.

2. INSTALLATION:
   THE STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS SUCH AS A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY AN AWS-CWI INSPECTOR APPROVED BY DSA.

3. INSPECTION AND TEST:
   INSPECTION IN ACCORDANCE WITH TITLE 24 SECTION 2213A.2, 2022 CALIFORNIA BUILDING CODE OF ALL THE SHOP AND FIELD WELDING OPERATIONS FOR THE AUTOMATIC END-WELDED STUDS SHALL BE MADE BY AN AWS-CWI INSPECTOR APPROVED BY THE DIVISION OF THE STATE ARCHITECT. THE TYPE OF CAPACITY OF THE WELDING EQUIPMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND SHALL BE CHECKED AND APPROVED BY A WELDING INSPECTOR. AT THE BEGINNING OF EACH DAY'S WORK, A MINIMUM OF TWO TEST STUD WELDS SHALL BE MADE WITH THE EQUIPMENT TO BE USED TO METAL WHICH IS THE SAME AS ACTUAL WORK PIECE. THE TEST STUDS SHALL BE SUBJECTED TO A 30% BEND TEST BY STRIKING THEM WITH A HEAVY HAMMER. AFTER THE ABOVE TEST, THE WELD SECTION SHALL BOT EXHIBIT ANY TEARING OUT OR CRACKING. TESTING OF END-WELDED STUDS SHALL BE IN ACCORDANCE WITH TITLE 24, SECTION 2213A.2, 2022 CALIFORNIA BUILDING CODE.

## FUSION WELDED HOLDING WIRES

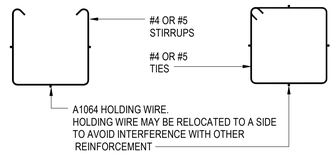
AUTOMATED IN-PLANT FUSION WELDING IS ALLOWED UNDER THE FOLLOWING CONDITIONS AND REQUIREMENTS UNDER CBC2022 SECTION 1903A.8:

1. FUSION WELDING OF HOLDING WIRES TO TIES, STIRRUPS, AND HOOPS IN BEAMS, COLUMNS, AND GRADE BEAMS TO PREASSEMBLE REINFORCING STEEL CAGES IS ALLOWED. FUSION WELDING IS NOT ALLOWED TO LONGITUDINAL REINFORCING STEEL IN ANY BEAM, COLUMN, OR GRADE BEAM. THE HOLDING WIRE AREA SHALL NOT EXCEED WIRE SIZE W5.

2. FUSION WELDING OF HOLDING WIRES TO THE ENDS OF THE REINFORCING STEEL PLACED IN MATS (SPEAD FOOTINGS, SLAB REINFORCEMENT, ETC) IS ALLOWED PROVIDED THE FUSION WELD OCCURS WITHIN 6 BAR DIAMETERS OF THE FREE END OF THE BAR (e.g. NOT ALLOWED AT END OF COUPLED, T-HEADED, OR WELD SPLICED BARS).

3. FUSION WELDING OF HOLDING WIRES SHALL NOT OCCUR ON ANY PORTION OF A REINFORCING BAR THAT MAY BE BENT IN ACCORDANCE WITH ACI 318-14 SECTION 25.3.

4. FUSION WELDED HOLDING BARS MAY BE USED FOR ALL BEAM AND COLUMN STIRRUPS AND TIES NO LARGER THAN #5 BARS. SAMPLE DETAILS OF HOLDING WIRE CONNECTION TO BEAM STIRRUP AND TIES ARE SHOWN BELOW.




5. THE HOLDING WIRES SHALL CONFORM TO ASTM A1064.

6. ALL REINFORCING STEELTO BE WELDED SHALL COMPLY WITH ASTM A706.

7. A. TYPE OF THE SPECIFIC FUSION WELDING MACHINE: SCHNELL IDEA MACHINE.
   B. PERIODIC INSPECTION OF THE IN-PLANT WELDING: INSPECTION SHALL BE DONE FOR EACH TYPE OF CONFIGURATION AND SIZE AT SHOP AT THE BEGINNING OF THE WORK.
   C. CWI INSPECTOR SHALL BE FAMILIAR WITH AUTOMATED FUSION WELDING.

8. TACK WELDING OF PRIMARY REINFORCING BARS TOGETHER OR TO STIRRUPS/TIES IS NOT PERMITTED.

9. PERFORMANCE & FREQUENCY OF YIELD AND TENSILE STRENGTH TESTING SHALL BE IN ACCORDANCE WITH CBC2022 SECTION 1910A.2.

## STRUCTURAL STEEL (CONTINUED)

17. DIFFUSIBLE HYDROGEN LEVEL FOR ELECTRODES AND ELECTRODE-FLUX COMBINATION SHALL MEET THE REQUIREMENTS TABLE 6.3 OF AWS D1.8/D1.8M.

18. DETAILS, MATERIALS, WORKMANSHIP, AND TESTING AND INSPECTION REQUIREMENTS OF WELDED JOINTS COMPRISING THE SFRS SHALL CONFORM TO THE FOLLOWING APPLICABLE STANDARDS:

    A. AWS D1.1/D1.1M "STRUCTURAL WELDING CODE - STEEL."
    B. AWS D1.8/D1.1M "STRUCTURAL WELDING CODE - SEISMIC SUPPLEMENT."
    C. ANSI/AISC 341, "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS", CHAPTER J (QUALITY CONTROL AND QUALITY ASSURANCE).
    D. ANSI/AISC 358 "PREQUALIFIED CONNECTIONS FOR SPECIAL AND INTERMEDIATE STEEL MOMENT FRAMES FOR SEISMIC APPLICATIONS."

19. WELD MATERIALS USED IN SFRS WELDED CONNECTIONS SHALL CONFORM TO THE FOLLOWING TOUGHNESS REQUIREMENTS:

    A. WELDED CONNECTIONS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 0°F AS DETERMINED BY THE APPROPRIATE AWS CLASSIFICATION TEST METHOD.
    B. WELDED CONNECTIONS DESIGNATED AS "DEMAND CRITICAL", SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 40 FT-LB AT 70°F BASED ON WPS HEAT INPUT ENVELOPE TESTING PRESCRIBED IN ANNEX A OF AWS D1.8/D1.8M.

20. INTERMIX OF FILLER METAL: WHEN FCAW-S FILLER METALS ARE USED IN COMBINATION WITH FILLER METALS FOR OTHER PROCESSES, INCLUDING FCAW-G, SUPPLEMENTAL CVN NOTCH TOUGHNESS TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH ONE OF MORE OF THE FOLLOWING:

    A. TESTS AS DESCRIBED IN ANNEX B OF AWS D1.8/D1.8M.
    B. PQR TESTS THAT CONTAIN INTERMIX WELD METAL, WHEREIN CVN TEST SPECIMENS HAVE BEEN TAKEN FROM THE INTERMIX ZONE.

21. WELDING OF SHEET METAL AND METAL STUDS SHALL BE IN ACCORDANCE WITH AWS D1.3.

22. MOVEMENT CONNECTIONS SHALL BE JOINED USING BOLTS WITH NUT AND JAM NUT. SNUG TIGHTEN FIRST NUT, AND THEN BACK OFF 1/4 TURN. FULLY TIGHTEN JAM NUT. SLOTTED HOLES SHALL BE MILLED SMOOTH. WHEN A SLOTTED HOLE OCCURS IN THE OUTER PLY, PROVIDE AN ASTM F436 WASHER OR A 5/16" PLATE WASHER TO COVER THE HOLE.

23. CONTRACTOR SHALL PROVIDE FOR AN ALLOWANCE OF 5 TONS OR 2%, WHICHEVER IS GREATER, OF STRUCTURAL STEEL TO BE FABRICATED AND/OR ERECTED DURING THE PROGRESS OF WORK AS MAY BE DIRECTED BY THE ARCHITECT (STRUCTURAL ENGINEER). THE UNUSED PORTION SHALL BE CREDITED TO THE OWNER AT THE COMPLETION OF STRUCTURAL STEEL WORK.

24. ALL STEEL THAT IS ARCHITECTURALLY EXPOSED SHALL BE AESS CLASSIFICATION AS INDICATED ON ARCHITECTURAL DRAWINGS - AESS-1 UNO. ALL EXPOSED WELDMENTS ARE TO BE SSPC SPS WITH CORROSION UNO.

25. BLIND FASTENERS CONNECTING STRUCTURAL STEEL TO HOLLOW STRUCTURAL SECTION (HSS) STEEL MEMBERS SHALL BE AS FOLLOWS:

    BOXBOLT TYPE C BLIND FASTENERS (ICC ESR-3217).

26. TORQUE TEST SHALL BE PERFORMED WITH THE INSTALLATION TORQUE SPECIFIED IN THE FOLLOWING TABLES FOR BLIND BOLTS:

| BOXBOLT TYPE C BLIND FASTENERS PER ICC REPORT #ESR-3217 | | | |
|---|---|---|---|
| DIAMETER | 1/2" | 5/8" | 3/4" |
| TORQUE | 60 FT-LB | 140 FT-LB | 220 FT-LB |

## BUCKLING RESTRAINED BRACED FRAME

1. BUCKLING RESTRAINED BRACE (BRBF): MANUFACTURED BY COREBRACE.

2. BRBF SHALL CONFORM TO THE SPECIFICATIONS SECTION 05 12 50 FOR THIS PROJECT.

3. CORE PLATE OF THE BRB SHALL CONFORM SPECIFICATION 05 12 50 INCLUDING THE FOLLOWING MATERIAL PROPERTIES:
   A. MINIMUM BRACE YIELD FORCE: Py MIN = 38 KSI x Acp
      MAXIMUM BRACE YIELD FORCE: Py MAX = 46 KSI x Acp
      Acp = CORE PLATE AREA ($IN^2$)
   B. CORE PLATE 2-INCH THICK AND GREATER SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AT 70° F WHEN TESTED IN ACCORDANCE WITH ASTM A673, FREQUENCY P (PER AISC 341-10, SECTION A3.3).

4. BOLTS FOR BRBF CONNECTIONS SHALL BE ASTM A490-SC WITH THREADS EXCLUDED FROM SHEAR PLANE.

5. BRBF TUBE STEEL CASING: ASTM A500 GRADE B.

6. BRBF WELDING MATERIAL: CONFORM WITH THE WELDING MATERIAL REQUIREMENTSOF SPECIFICATION SECTION 05 12 00 FOR DEMAND CRITICAL WELDS (DCW),CHARPY-V-NOTCH TOUGHNESS OF 20 FT-LBS AT 0 DEGREES F AND 40 FT-LBAT 70 DEGREES F IN ACCORDANCE WITH AISC 341-10, SECTION A.3.4.B.

7. QUALITY ASSURANCE / QUALITY CONTROL PROGRAM:A QA/QC PROGRAM SHALL BE SUBMITTED BY THE MANUFACTURER FOR CSU BUILDING OFFICIAL REVIEW AND APPROVAL PRIOR TO FABRICATION. THE PROGRAM SHALL INCLUDE RELEVANT CODES, TEST DATA AND PREVIOUS HOSPITAL APPLICATIONS. THEPROGRAM SHALL ALSO OUTLINE FABRICATION PLANT VISIT(S) BY THE OWNER,MEMBERS OF THE PROJECT TEAM AS WELL AS STRUCTURAL ENGINEEROF RECORD REPRESENTATIVE(S).

8. THE STEEL CORE OF THE BRACE MEMBER AND THE CONNECTION OF THE BRACE TOTHE BEAM AND COLUMN ARE CONSIDERED "PROTECTED ZONES" IN ACCORDANCE WITHAISC 341-10, SECTION F.4.5.C. WITHIN THE PROTECTED ZONE, DISCONTINUITIESCREATED BY FABRICATION OR ERECTION OPERATIONS, SUCH AS TACK WELDS,ERECTION AIDS, AIR/ARC GOUGING AND THERMAL CUTTING SHALL BE REPAIRED. NO CONNECTION FOR BRACE ANGLES, EXTERNAL FACADES, PARTITIONS, DUCT WORK, PIPING OR OTHER CONSTRUCTION SHALL BE PLACED IN THE PROTECTED ZONE.

9. BEAM TO COLUMN MOMENT CONNECTIONS PART OF THE BRBF ARE CONSIDEREDDEMAND CRITICAL WELDS (DCW) AND SHALL COMPLY WITH REQUIREMENTS OF NOTE 6AND AISC 341-16, SECTION A.3.4.B.

10. HEAVY SECTIONS SHALL FOLLOW "STRUCTURAL STEEL" NOTE 4A & AISC 341-16 SECTION A3.3.

## STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI/AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" ANSI/AISC 341 "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS", AND AISI/AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", AS AMENDED BY CALIFORNIA BUILDING CODE (CBC) SECTIONS 2203A, 2204A AND 2205A.

2. SEISMIC FORCE RESISTING SYSTEM (SFRS) IS THAT PART OF THE STRUCTURAL SYSTEM THAT HAS BEEN CONSIDERED IN THE DESIGN TO PROVIDE THE REQUIRED RESISTANCE TO THE SEISMIC FORCES PRESCRIBED IN ASCE/SEI 7 .

3. STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS, UNLESS NOTED OTHERWISE ON DRAWINGS:

   WIDE FLANGE SHAPES.....ASTM A992/A992M
   CHANNELS, ANGLES, M- & S-SHAPES.....ASTM A36/A36M
   PIPES.....ASTM A53/A53M, GRADE B (Fy=35 KSI)
   ROUND HOLLOW STRUCTURAL SECTIONS.....ASTM A500/A500M, GRADE C (Fy=46 KSI)
   RECTANGULAR HOLLOW STRUCTURAL SECTIONS.....ASTM A500/A500M, GRADE C (Fy=50 KSI)
   PLATES.....ASTM A572/A572M, GRADE 50
   ANCHOR BOLTS.....ASTM F1554, GRADE 36 (UNO)
   ANCHOR BOLTS USED IN SFRS.....ASTM F1554, GRADE 55, WELDABLE, UNO
   UNFINISHED MACHINE BOLTS.....ASTM A307
   THREADED ROUND STOCK.....ASTM A36/A36M

   FURNISH READILY IDENTIFIABLE STRUCTURAL STEEL IN COMPLIANCE WITH CBC SECTION 2203A.1.

4. HIGH STRENGTH BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING BOLTS", AS AMENDED BY CBC SECTION 2204A.2. WHEN ASSEMBLED, ALL JOINT SURFACES, INCLUDING THOSE ADJACENT TO WASHERS, SHALL BE FREE OF SCALE, EXCEPT TIGHT MILL SCALE. USE STANDARD HOLES UNLESS NOTED OTHERWISE.

   A. PROVIDE ASTM F3125 GRADE A325, TYPE I, SNUG-TIGHTENED (ST) BOLTS WITH THREADS INCLUDED IN SHEAR PLANE, UNLESS NOTED OTHERWISE. PROVIDE ASTM F3125 GRADE A325, TYPE I, SLIP-CRITICAL(SC) BOLTS AT CRITICAL CONNECTIONS SHALL BE CLASS A, B OR C, UNLESS OTHERWISE NOTED. NUTS AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM A563 AND ASTM F436, RESPECTIVELY.
   B. ASTM F3125 GRADE A325-N BOLTS SHALL BE SNUG TIGHTENED IN ACCORDANCE WITH RCSC SPECIFICATION SECTION 8.1, UNLESS NOTED OTHERWISE. FULLY TENSION ALL ASTM F3125 GRADE A325-SC BOLTS AND ALL BOLTS REQUIRED TO BE TENSIONED BY AISC SPECIFICATION SECTION J1.10 AND RCSC SPECIFICATION SECTIONS 4.2 AND 4.3. FULLY TENSIONED BOLTS SHALL BE TIGHTENED TO THE MINIMUM TENSION USING TURN-OF-THE-NUT PRETENSIONING METHOD, CALIBRATED WRENCH PRETENSIONING METHOD, OR DIRECT-TENSION-INDICATOR PRETENSIONING METHOD USING DIRECT TENSION INDICATORS THAT MEET THE REQUIREMENTS OF ASTM F959.
   C. TENSION CONTROL BOLTS THAT MEET THE REQUIREMENTS OF ASTM F1852, TYPE 1, MAY BE USED IN LIEU OF ASTM F3125 GRADE A325-ST OR GRADE A325-SC BOLTS.

5. COMPOSITE STRUCTURAL BEAMS AND GIRDERS ARE DESIGNED FOR UNSHORED CONSTRUCTION UNLESS NOTED OTHERWISE.

6. HEADED STUD ANCHORS SHALL BE NELSON TYPE S3L OR TYPE H4L FLUX-FILLED HEADED SHEAR CONNECTOR STUDS (ICC EVALUATION SERVICE REPORT ER-2856), OR AN APPROVED EQUAL WITH AN ICC REPORT, AND SHALL BE MADE FROM COLD DRAWN, LOW CARBON STEEL CONFORMING TO ASTM A108, GRADES C1010 THROUGH C1020, WITH A MINIMUM TENSILE STRENGTH OF 65 KSI. STUD WELDING TEST AND INSPECTION SHALL CONFORM TO AWS D1.1, CHAPTER 7. ANCHOR LENGTHS NOTED ON DRAWINGS ARE AFTER WELD LENGTHS.

7. PROVIDE UPWARD CAMBER TO ALL BEAMS SPECIFIED TO HAVE CAMBER. AMOUNT MEASURES IN THE FIELD PRIOR TO ERECTION SHALL NOT DEVIATE MORE THAN ALLOWED BY AISC SPECIFICATIONS. BEAMS WITHOUT SPECIFIED CAMBER SHALL BE FABRICATED TO SO THAT ANY MINOR CAMBER DUE TO ROLLING SHALL BE UPWARD AFTER ERECTION.

8. SUBMIT SHOP DRAWINGS TO ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW AND, UPON REQUEST, TO GOVERNING CODE AUTHORITY. INDICATE AN ERECTION SEQUENCE OF WELDING TO MINIMIZE LOCKED-UP STRESSES OR DISTORTION FOR MOMENT-RESISTING STEEL FRAMES.

9. HOURLY FIRE RESISTIVE REQUIREMENTS FOR STRUCTURAL STEEL MEMBERS SHALL BE DETERMINED USING CBC TABLE 601. BUILDING TYPES OF CONSTRUCTION AND FIREPROOFING MATERIALS ARE AS INDICATED ON ARCHITECTURAL DRAWINGS.

10. ALL STEEL NOT ENCASED IN CONCRETE, MASONRY, OR FIREPROOFING SHALL BE SHOP PRIMED AND PAINTED PER SPECIFICATIONS, EXCEPT FOR TOP FLANGE OF BEAMS SUPPORTING METAL DECK. ANY ABRASIONS OR UNPAINTED AREAS SHALL BE TOUCHED UP AFTER ERECTION.

11. ALL STRUCTURAL STEEL AND MISCELLANEOUS METALS EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.

12. WELDING SHALL CONFORM TO LATEST EDITION OF AWS D1.1/D1.1M, AS AMENDED IN CBC SECTION 2204A.1.

    A. WELDING PROCESS SHALL BE ELECTRIC ARC USING E70XX ELECTRODES. SUBMERGED ARC PROCESS (SAW) WITH AUTOMATIC WELDING MAY BE USED AS AN ALTERNATIVE.
    B. WELDERS SHALL BE CERTIFIED TO CONFORM WITH AWS STANDARDS AND APPROVED BY THE GOVERNING CODE AUTHORITY.
    C. SHOP WELDING, INCLUDING ULTRASONIC TESTING OF FULL PENETRATION GROOVE WELDS, SHALL BE PERFORMED ON THE PREMISES OF AN APPROVED FABRICATOR.
    D. MINIMUM FILLET WELD SIZE SHALL CONFORM TO AISC SPECIFICATION TABLE J2.4. WELD LENGTHS NOTED ON DRAWINGS ARE THE NET EFFECTIVE LENGTHS REQUIRED.
    E. FIELD WELD SYMBOLS NOTED ON THE DRAWINGS SHOW ENGINEERING INTENT, BUT NO ATTEMPT HAS BEEN MADE TO CLASSIFY ALL WELDS. AT FABRICATOR'S OPTION, ANY WELD INDICATED AS A FIELD WELD MAY BE SHOP WELDED AND ANY WELD INDICATED AS A SHOP WELD MAY BE FIELD WELDED.

13. WELDS SHALL BE PREQUALIFIED PER AWS D1.1. NON-PREQUALIFIED WELDED JOINTS SHALL BE QUALIFIED BY TEST PER AWS D1.1.

14. SUBMIT TO ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW A WRITTEN WELDING PROCEDURE SPECIFICATION (WPS) FOR ALL WELDS USED ON PROJECT PRIOR TO FABRICATION. FOR WELDS NOT PREQUALIFIED, THE SUPPORTING PROCEDURE QUALIFICATION RECORD (PQR) SHALL ALSO BE SUBMITTED WITH THE WPS. WPS SHALL BE IN ACCORDANCE TO AWS D1.1, SECTION 4.6 AND SHALL INCLUDE THE FOLLOWING INFORMATION FOR EACH WELD TYPE AND POSITION:

    A. SKETCH OF JOINT DESCRIBING GEOMETRY AND APPLICABLE DIMENSIONS, WELD TYPE AND SIZE, SEQUENCE OF WELD DEPOSITION, AND MAXIMUM LAYER THICKNESS AND BEAD WIDTHS. LAYER THICKNESS SHALL NOT EXCEED 1/4 INCH, AND BEAD WIDTH SHALL NOT EXCEED 5/8 INCH.
    B. BASE METAL TYPES AND THICKNESS.
    C. APPLICABLE WELD PROCESS (SMAW OR FCAW).
    D. FILLER METAL PER AWS STANDARD AND ELECTRODE SPECIFICATION AND CLASSIFICATION, AS WELL AS DETAILS OF SHIELDING MATERIAL.
    E. ELECTRICAL CHARACTERISTICS FOR WELD PROCESS USED SUCH AS TYPE OF CURRENT AND ACCEPTABLE RANGE OF CURRENT MEASURED IN AMPERAGE, VOLTAGE RANGE, AND ELECTRODE DIAMETER. FOR WELD FEED PROCESS, INDICATE MANUFACTURER RECOMMENDED WIRE SPEED, CONTACT DISTANCE, MELT OFF RATE AND DEPOSITION RATE.
    F. A COPY OF ELECTRODE MANUFACTURER'S TECHNICAL INFORMATION AND CERTIFICATE OF CONFORMANCE.

15. TESTING LABORATORY WILL VERIFY COMPLIANCE WITH ACCEPTED WPS AND WILL PROMPTLY NOTIFY ARCHITECT (STRUCTURAL ENGINEER) IF DEVIATIONS ARE FOUND.

16. ELECTRODE DIAMETER SHALL NOT EXCEED PREQUALIFIED LIMITS SHOWN IN AWS D1.1 TABLE 3.7, AS APPLICABLE. FOR FCAW PROCESS, MAXIMUM ELECTRODE SIZE SHALL NOT EXCEED 1/8 INCH.

## REINFORCING STEEL

1. REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE TO AMERICAN CONCRETE INSTITUTE ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE".

2. REINFORCING STEEL SHALL CONFORM TO ASTM A615/A615M, GRADE 60, UNLESS NOTED OTHERWISE. BARS TO BE WELDED SHALL CONFORM TO LOW ALLOY ASTM A706/A706M, GRADE 60.

3. WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064/A1064M. LAP WELDED WIRE REINFORCEMENT 14 INCHES MINIMUM, MEASURED BETWEEN OUTERMOST CROSS WIRE OF EACH REINFORCEMENT SHEET.

4. HEADED STEEL REINFORCING BAR ANCHORS SHALL BE LENTON TERMINATOR BY ERICO INTERNATIONAL CORPORATION (IAPMO UES EVALUATION REPORT NO. 0188) OR APPROVED EQUAL. HEADED STEEL REINFORCING BAR ANCHORS MAY BE USED IN LIEU OF STANDARD HOOKS ONLY WHERE SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.

5. MECHANICAL COUPLERS FOR SPLICING REINFORCING BARS SHALL BE LENTON STANDARD COUPLERS OR LENTON FORM SAVER COUPLERS, SA OR FS SERIES, BY ERICO INTERNATIONAL CORPORATION (IAPMO UES EVALUATION REPORT NO. 0129) OR APPROVED EQUAL. MECHANICAL COUPLERS MAY BE USED IN LIEU OF LAP SPLICING REINFORCING BARS ONLY WHERE SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.

6. PREPARE REINFORCING STEEL SHOP DRAWINGS IN ACCORDANCE TO ACI 315, PART B. SHOP DRAWINGS MAY BE PREPARED MANUALLY OR BY COMPUTER. PLACING DRAWINGS SHALL BE PREPARED TO THE SAME STANDARD AS CONTRACT DRAWINGS. SHOW REINFORCING PLACEMENT, SPLICE LOCATIONS, REINFORCING LENGTHS, DETAILS, ELEVATIONS, BEND DETAILS, ETC. SUBMIT TO ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW PRIOR TO FABRICATION. PROMPTLY NOTIFY ARCHITECT (STRUCTURAL ENGINEER) PRIOR TO DEVELOPING REINFORCING STEEL SHOP DRAWINGS IF INSUFFICIENT CLEAR DISTANCES BETWEEN REINFORCING STEEL OR OTHER CONGESTION IS ENCOUNTERED. DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS. IF SUBMITTAL IS PARTIAL, CLEARLY INDICATE ITEMS EXCLUDED FROM SUBMITTAL. SHOP DRAWINGS WILL BE REJECTED IF NOT PREPARED TO THE STANDARDS STATED ABOVE.

7. REINFORCING STEEL SHALL BE SPLICED AS SHOWN ON THE DRAWINGS. IF NOT SHOWN, LOCATE SPLICES IN AREAS OF MINIMUM STRESS. LAP (SPLICE) LENGTHS ARE AS INDICATED ON THE DRAWINGS.

8. MINIMUM CLEARANCES BETWEEN PARALLEL REINFORCING STEEL INCLUDING SPLICED BARS SHALL BE ONE INCH, ONE BAR DIAMETER, OR 4/3 TIMES THE MAXIMUM SIZE AGGREGATE, WHICHEVER IS GREATER. PROVIDE 1 1/2 INCHES OR 1 1/2 BAR DIAMETERS, WHICHEVER IS GREATER, AT COLUMNS ONLY. FOR BUNDLED BARS, MINIMUM CLEAR DISTANCES BETWEEN UNITS OF BUNDLED BARS SHALL BE SAME AS SINGLE BARS EXCEPT BAR DIAMETER IS DERIVED FROM EQUIVALENT TOTAL AREA OF BUNDLE.

9. PROVIDE THE FOLLOWING CONCRETE COVERAGE FOR REINFORCING STEEL PLACED IN CAST-IN-PLACE CONCRETE:

   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH .....3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      NO. 6 THROUGH NO. 18 BARS .....2"
      NO. 5 BARS, W31 OR D31 WIRE, AND SMALLER .....1-1/2"
   C. CONCRETE NOT EXPOSED WEATHER OR IN CONTACT WITH GROUND:
      SLAB, WALLS, JOISTS:
      NO. 14 AND NO. 18 BARS .....1-1/2"
      NO. 11 BARS AND SMALLER (*) .....1"
      BEAMS AND COLUMNS
      PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS .....1-1/2"
   D. SLAB-ON-GRADE .....MID-HEIGHT OF SLAB

   (*) CONCRETE COVERAGE ADEQUATE FOR FIRE-RESISTIVE PERIOD OF 2 HOURS.

10. WALL AND COLUMN DOWELS SHALL MATCH SIZE, GRADE, AND SPACING OF RESPECTIVE VERTICAL REINFORCING, UNLESS OTHERWISE NOTED.

11. USE PLASTIC OR PLASTIC COATED SPACERS AND CHAIRS IF RESTING ON EXPOSED CONCRETE SURFACES.

12. WELDING OF REINFORCING STEEL SHALL BE MADE WITH LOW HYDROGEN ELECTRODES IN CONFORMANCE WITH AMERICAN WELD SOCIETY AWS D1.4 "STRUCTURAL WELDING CODE – REINFORCING STEEL".

    A. EXCEPT FOR REINFORCING STEEL CONFORMING TO ASTM A706/A706M, DETERMINE CARBON EQUIVALENT OF ALL REINFORCING STEEL TO BE WELDED. SUBMIT WPS FOR ALL REINFORCING STEEL TO BE WELDED TO ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW AND TO GOVERNING CODE AUTHORITY FOR APPROVAL PRIOR TO EXECUTION. WPS SHALL INCLUDE:

       1. SKETCH OF JOINT DESCRIBING GEOMETRY AND APPLICABLE DIMENSIONS, WELD TYPE AND SIZE, SEQUENCE OF WELD DEPOSITION, AND MAXIMUM LAYER THICKNESS AND BEAD WIDTHS.
       2. APPLICABLE WELD PROCESS.
       3. FILLER METAL PER AWS STANDARD AND ELECTRODE SPECIFICATION AND CLASSIFICATION, AS WELL AS DETAILS OF SHIELDING MATERIAL.
       4. ELECTRICAL CHARACTERISTICS FOR WELD PROCESS USED SUCH AS TYPE OF CURRENT AND ACCEPTABLE RANGE OF CURRENT MEASURED IN AMPERAGE, VOLTAGE RANGE, AND ELECTRODE DIAMETER. FOR WELD FEED PROCESS, INDICATE MANUFACTURER RECOMMENDED WIRE SPEED, MELT OFF RATE AND DEPOSITION RATE.
       5. PREHEAT TEMPERATURES.
       6. PROCEDURE QUALIFICATION RECORDS (PQR) FOR ALL WPS'S QUALIFIED BY TESTING.

    B. WELDERS SHALL BE CERTIFIED TO CONFORM WITH AWS STANDARDS AND APPROVED BY THE GOVERNING CODE AUTHORITY.

15. REINFORCING STEEL BENDS SHALL BE MADE COLD. RE-BENDING OF PREVIOUSLY BENT REINFORCING IS NOT PERMITTED.

16. ALL REINFORCING STEEL, INCLUDING WELDED WIRE REINFORCING, SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, CONCRETE BLOCKS, CHAIRS, BOLSTERS, ETC. SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL REINFORCING. HOOKING AND WALKING-IN IS NOT PERMITTED.

17. ALL REINFORCING STEEL SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN FINAL INSPECTION IS CONDUCTED.

18. CONTACTOR SHALL PROVIDE FOR AN ALLOWANCE OF 5 TONS OR 2%, WHICHEVER IS GREATER, OF REINFORCING STEEL TO BE FABRICATED AND/OR PLACED DURING THE PROGRESS OF WORK AS MAY BE DIRECTED BY THE ARCHITECT (STRUCTURAL ENGINEER). THE UNUSED PORTION SHALL BE CREDITED TO THE OWNER AT THE COMPLETION OF CONCRETE WORK.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

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STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERAL NOTES**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**S0.02**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 3" LONG ON ORIGINAL 24X36 SHEETS ORIGINAL SIZE: ASTM

## STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH SECTION 1704A.6 OF THE CALIFORNIA BUILDING CODE (CBC). STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT THE COMPLETION OF THE STRUCTURAL SYSTEM. SIGNIFICANT CONSTRUCTION STAGES ARE THE STAGES OF CONSTRUCTION IDENTIFIED BY THE ENGINEER OF RECORD AS SIGNIFICANT AND REQUIRE SITE STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED BY SECTION 110 AND SECTION 1705A OF THE CBC.

2. THE OWNER SHALL EMPLOY THE SEOR OR AOR TO PERFORM THE STRUCTURAL OBSERVATION. THE GOVERNING CODE AUTHORITY REQUIRES THE USE OF THE ENGINEER OR ARCHITECT, OR HIS/HER DESIGNEE RESPONSIBLE FOR THE STRUCTURAL DESIGN WHO ARE INDEPENDENT OF THE CONTRACTOR.

3. THE STRUCTURAL OBSERVER SHALL PROVIDE EVIDENCE OF EMPLOYMENT BY OWNER OR THE OWNER'S REPRESENTATIVE. A LETTER FROM THE OWNER, THE OWNER'S REPRESENTATIVE, OR A COPY OF THE AGREEMENT FOR SERVICES SHALL BE SENT TO BUILDING INSPECTOR BEFORE THE FIRST SITE VISIT.

4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL COORDINATE AND CALL FOR A MEETING BETWEEN ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN, STRUCTURAL OBSERVER, CONTRACTOR, AFFECTED SUBCONTRACTORS AND DEPUTY INSPECTORS. THE PURPOSE OF THE MEETING SHALL BE TO IDENTIFY MAJOR STRUCTURAL ELEMENTS AND CONNECTIONS THAT AFFECT VERTICAL AND LATERAL LOAD SYSTEMS OF THE STRUCTURE AND TO REVIEW SCHEDULING OF THE REQUIRED OBSERVATIONS. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT SUBMITTED TO THE BUILDING INSPECTOR.

5. THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE LISTED SIGNIFICANT CONSTRUCTION STAGES ON THE FOLLOWING "STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGE TABLE" BELOW REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.

6. THE STRUCTURAL OBSERVER SHALL PREPARE A REPORT FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED. THE ORIGINAL OF THE STRUCTURAL OBSERVATION REPORT SHALL BE SENT TO THE BUILDING INSPECTOR'S OFFICE AND SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER. ONE COPY OF THE OBSERVATION REPORT SHALL BE ATTACHED TO THE APPROVED PLANS. THE COPY ATTACHED TO PLANS SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER OR THEIR DESIGNEE. COPIES OF REPORT SHALL ALSO BE GIVEN TO THE OWNER, CONTRACTOR, AND DEPUTY INSPECTOR. ANY DEFICIENCIES NOTED ON THE OBSERVATION REPORT WILL BECOME THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OR ARCHITECT OF RECORD TO VERIFY ITS COMPLETION BY THE STRUCTURAL OBSERVER.

7. A FINAL OBSERVATION REPORT MUST BE SUBMITTED WHICH SHOWS THAT ALL OBSERVED DEFICIENCIES WERE RESOLVED AND STRUCTURAL SYSTEM GENERALLY CONFORMS WITH THE APPROVED PLANS AND SPECIFICATIONS. THE GOVERNING CODE AUTHORITY WILL NOT ACCEPT THE STRUCTURAL WORK WITHOUT THIS FINAL OBSERVATION REPORT.

8. THE STRUCTURAL OBSERVER SHALL PROVIDE THE ORIGINAL STAMPED AND SIGNED STRUCTURAL OBSERVATION REPORT TO THE BUILDING INSPECTOR.

9. WHEN THERE IS A NEED TO REPLACE THE STRUCTURAL OBSERVER OF RECORD, THE OWNER SHALL:

   A. NOTIFY THE BUILDING INSPECTOR IN WRITING BEFORE THE NEXT INSPECTION
   B. CALL AN ADDITIONAL PRECONSTRUCTION MEETING, AND
   C. FURNISH THE REPLACEMENT STRUCTURAL OBSERVER WITH A COPY OF ALL PREVIOUS OBSERVATION REPORTS.
   D. THE NEW STRUCTURAL OBSERVER MUST BE DESIGNATED BY THE ENGINEER OR ARCHITECT OR RECORD.

   THE REPLACEMENT STRUCTURAL OBSERVER SHALL APPROVE THE CORRECTION OF THE ORIGINAL OBSERVED DEFICIENCIES UNLESS OTHERWISE APPROVED BY THE GOVERNING CODE AUTHORITY. THE POLICY OF THE GOVERNING CODE AUTHORITY SHALL BE TO CORRECT ANY PROPERLY NOTED DEFICIENCIES WITHOUT CONSIDERATION OF THEIR SOURCE.

10. THE ENGINEER OR ARCHITECT OF RECORD WILL DEVELOP ALL CHANGES RELATING TO THE STRUCTURAL SYSTEMS. THE GOVERNING CODE AUTHORITY SHALL REVIEW AND APPROVE ALL CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS.

11. STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGE TABLE

| STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGE TABLE | | |
|---|---|---|
| CONST STAGE | CONST TYPE | ELEMENTS/CONNECTIONS TO BE OBSERVED |
| FOUNDATION | SPREAD FOOTINGS<br>CONTINUOUS FTGS<br>GRADE BEAMS<br>SLAB ON GRADE | REINF IN-PLACE PRIOR TO CONCRETING.<br>REINF IN-PLACE PRIOR TO CONCRETING.<br>REINF IN-PLACE PRIOR TO CONCRETING.<br>REINF IN-PLACE PRIOR TO CONCRETING. |
| WALL | CONC WALLS AND CMU | REINF IN PLACE PRIOR TO CLOSING FORMS. |
| FRAME | BUCKLING RESTRAINED BRACED FRAMES | FIRST SIGNIFICANT FRAME ERECTION. |
| ELEVATED RAMING AND DIAPHRAGM | STEEL DECKING<br><br><br>STEEL FRAMING | BARE METAL STEEL DECK PRIOR TO ROOFING. COMPOSITE STEEL DECK, SHEAR STUDS, AND REINFORCING IN-PLACE PRIOR TO CONCRETING.<br><br>STEEL FRAMING IN-PLACE PRIOR TO DECKING. |
| COMPLETION | OVERALL STRUCTURE | ALL OBSERVED DEFICIENCIES RESOLVED GENERAL CONFORMANCE TO APPROVED DOCUMENTS |

## POST-INSTALLED ANCHORS (CONTINUED)

A. EPOXY ANCHORS (CONTINUED)

3. THE TENSION TEST LOAD SHALL EQUAL TWICE THE ALLOWABLE LOAD FOR THE SPECIFIC LOCATION OF THE ANCHOR TO BE TESTED OR 80% OF THE YIELD STRENGTH OF THE BOLT, WHICHEVER IS LESS.

4. THE TEST PROCEDURE SHALL COMPLY WITH THAT OF EXPANSION TYPE ANCHORS LISTED ABOVE. HOWEVER, TORQUE TESTING OF EPOXY ANCHORS IS NOT PERMITTED.

5. WHERE EPOXY DOWELS ARE USED AS SHEAR DOWELS ACROSS COLD JOINTS IN SLABS ON GRADE, TESTING OF THESE DOWELS ARE NOT REQUIRED.

6. REFER TO CBC SECTION 1910A.5.3 FOR ALL OTHER TESTING EXEMPTIONS AND FOR CONDITIONS WHERE ONLY A PERCENTAGE OF THE ANCHORS NEED TO BE TESTED.

B. EXPANSION ANCHOR BOLTS

1. ALL FIELD INSTALLED CONCRETE EXPANSION ANCHORS SHALL BE APPROVED FOR THE TYPE AND INSTALLATION, FOR ITS APPLICATION, AND MATERIALS. ALL BOLTS SHALL HAVE AN APPROVED ICC EVALUATION REPORT.

2. ALL EXPANSION TYPE ANCHORS SHALL BE TENSION TESTED AS REQUIRED BY CBC 1910A.5 WHERE ANCHORS ARE USED FOR NON-STRUCTURAL APPLICATIONS SUCH AS EQUIPMENT ANCHORAGE, 50% OF ALL ANCHORS AND EACH BOLT GROUP SHALL BE TENSION TESTED.

3. REFER TO CBC SECTION 1910A.5.3 FOR ALL OTHER TESTING EXEMPTIONS AND FOR CONDITIONS WHERE ONLY A PERCENTAGE OF THE ANCHORS NEED TO BE TESTED.

4. ALL ANCHORS SHALL BE TESTED PER CORRESPONDING ICC-ESR REPORTS AND AS FOLLOWS:

   A. ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR A WEDGE AND TO THE ANCHOR OUTSIDE DIAMETER FOR THE SLEEVE CATEGORY.

   B. APPLY PROOF TEST LOADS TO WEDGE AND SLEEVE ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE THE NUT AND INSTALL A THREADED COUPLER NUT TO THE SAME TIGHTNESS OF THE ORIGINAL NUT USING A TORQUE WRENCH AND APPLY LOAD.

   C. FOR SLEEVE/SHELL INTERNALLY THREADED CATEGORIES, VERIFY THAT THE ANCHOR IS NOT PREVENTED FROM WITHDRAWING BY A BASE PLATE OR OTHER FIXTURES. IF RESTRAINT IS FOUND, LOOSEN AND SHIM OR REMOVE FIXTURE(S) PRIOR TO TESTING.

   D. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED. PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE(S).

   E. TEST EQUIPMENT SHALL BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.

   F. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
   HYDRAULIC RAM METHOD: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. FOR WEDGE AND SLEEVE TYPE ANCHORS, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE. TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE OR SLEEVE TYPE: ONE-HALF (1/2) TURN OF THE NUT ONE-QUARTER (1/4) TURN OF THE NUT FOR THE 3/8 IN. SLEEVE ANCHOR ONLY.

   G. TORQUE TEST SHALL BE PERFORMED WITH THE INSTALLATION TORQUE SPECIFIED IN THE FOLLOWING TABLE FOR EXPANSION ANCHORS INSTALLED IN CONCRETE

| HILTI KB-TZ-2 TORQUE TEST VALUES IN CONCRETE PER ICC REPORT #ESR-4266[FT-LB] | | | | |
|---|---|---|---|---|
| DIAMETER | 3/8" | 1/2" | 5/8" | 3/4" |
| TORQUE CARBON STEEL | 30 | 50 | 40 | 110 |
| TORQUE STAINLESS STEEL | 30 | 40 | 60 | 125 |

THE ANCHOR MANUFACTURER RECOMMENDED INSTALLATION TORQUE AS PUBLISHED IN THE CURRENT ICC-ES REPORT SHALL TAKE PRECEDENCE OVER TABULATED VALUES ABOVE.

C. LOW VELOCITY POWDER DRIVEN FASTENERS (SHOTPINS)

1. ALL FASTENERS TO COMPLY WITH ASCE 7-16 SECTION 13.4.5.

## METAL DECKING

1. METAL DECKING SHALL BE OF GAGE AND PROFILE AS INDICATED ON THE DRAWINGS, BY MANUFACTURER(S) SPECIFIED.

2. METAL DECKING AND ACCESSORIES SHALL BE COLD FORMED FROM GALVANIZED STEEL SHEETS COMPLYING WITH ASTM A653-SS GRADE 50 (MINIMUM), HAVING A MINIMUM YIELD STRENGTH OF 50,000 PSI, WITH COATING DESIGNATION G60. GALVANIZING SHALL BE BY THE HOT-DIP PROCESS COMPLYING WITH ASTM A924.

3. MINIMUM BEARING OF METAL DECKING ON SUPPORTS SHALL BE 2 INCHES. ATTACH METAL DECKING TO SUPPORTING STEEL MEMBERS BY WELDING AS SPECIFIED ON THE DRAWINGS AND AS RECOMMENDED BY DECK MANUFACTURER USING E60 OR E70 ELECTRODES. DECK WELDING SHALL BE IN COMPLIANCE WITH ANSI/AWS D1.3. WELDERS SHALL BE AWS CERTIFIED AS REQUIRED BY THE GOVERNING CODE AUTHORITY.

4. DECKING IS DESIGNED FOR UNSHORED CONSTRUCTION TO MAXIMUM SPANS INDICATED ON THE DRAWINGS. SUBJECT TO APPROVAL BY THE ARCHITECT (STRUCTURAL ENGINEER), PROVIDE ADEQUATE SHORING OR HEAVIER GAUGE DECK WHERE MAXIMUM SPANS ARE EXCEEDED. DECKING SHALL BE CONTINUOUS OVER THREE SPANS WHERE POSSIBLE.

5. HOURLY FIRE RESISTIVE REQUIREMENTS FOR FLOOR AND ROOF DECKS SHALL BE DETERMINED USING CBC TABLE 601. BUILDING TYPES OF CONSTRUCTION AND FIREPROOFING MATERIALS ARE AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

6. COMPOSITE SLABS OF CONCRETE ON STEEL DECK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CBC SECTIONS 1604A.3.3 AND 2210A.1.1.

   A. PROVIDE VENTED DECKING WHERE VAPOR-IMPERVIOUS MEMBRANE OCCURS OVER CONCRETE SLAB-ON-DECK.
   B. FOR COMPOSITE DECKS, PROVIDE DECKING WITH EMBOSSMENTS TO FORM A MECHANICAL LOCK BETWEEN CONCRETE AND DECKING.
   C. SHEAR STUDS SHALL BE NELSON SHEAR CONNECTOR STUDS (ICC EVALUATION SERVICE REPORT ER-2856), OR AN APPROVED EQUAL, AND SHALL BE MADE FROM COLD DRAWN, LOW CARBON STEEL CONFORMING TO ASTM A29-12, GRADES C1010 THROUGH C1020, WITH A MINIMUM TENSILE STRENGTH OF 65 KSI. STUD WELDING TEST AND INSPECTION SHALL CONFORM TO AWS D1.1, CHAPTER 7.
      1) PROVIDE SHEAR STUDS FASTENED TO ALL FLOOR BEAMS AND GIRDERS AS SHOWN ON DRAWINGS OR AT MAXIMUM SPACING INDICATED.
      2) WELD SHEAR STUDS IN COMPLIANCE WITH AWS D1.1, CHAPTER 7. WELDERS SHALL BE AWS CERTIFIED AS REQUIRED BY THE GOVERNING CODE AUTHORITY. FASTEN WITH AN AUTOMATIC ELECTRIC ARC WELD GUN. REPAIR DEFECTIVE STUDS PER AWS D1.1 SECTION 7.7.5.
      3) 18-GAUGE DECKING OR THICKER SHALL NOT BE LAPPED WHERE WELDED SHEAR STUDS ARE ATTACHED THROUGH THE DECK TO SUPPORTS.
   E. PROVIDE CLOSURE ANGLES AT ALL OPENINGS IN CONCRETE SLAB-ON-DECK, INCLUDING THOSE NOT SHOWN ON STRUCTURAL DRAWINGS. CLOSURE ANGLES SHALL BE 18-GAUGE MINIMUM AND SHALL BE WELDED TO DECKING OR SUPPORTS, UNLESS DETAILED OTHERWISE.
   F. SCREED CONCRETE PARALLEL TO METAL DECKING MAINTAINING CONCRETE THICKNESS AS INDICATED ON DRAWINGS.

7. ROOF DECKING:

   A. FOR COMPOSITE CONCRETE ON METAL ROOF DECKING, REFER TO FLOOR DECKING REQUIREMENTS HEREIN ABOVE.

8. AT COMPLETION OF METAL DECK ERECTION, ALL WELDS IN EXPOSED AREAS SHALL BE DE-SLAGGED, CLEAND AND PRIMED WITH A ZINC RICH PRIMER.

9. SUBMIT COMPLETE METAL DECKING SHOP DRAWINGS TO ARCHITECT (STRUCTURAL ENGINEER) FOR REVIEW PRIOR TO FABRICATION.

## POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS INSTALLED IN NORMAL WEIGHT OR LIGHTWEIGHT CAST-IN-PLACE CONCRETE SHALL BE AS FOLLOWS:

   A. KWIK BOLT TZ2 EXPANSION ANCHORS (ICC-ES REPORT ESR-4266) AS MANUFACTURED BY HILTI, INC.
   B. HIT-RE 500-V3 ADHESIVE ANCHORS (ICC-ES REPORT ESR-3814) AS MANUFACTURED BY HILTI, INC. (NORMAL WEIGHT CONCRETE ONLY).

2. POST-INSTALLED ANCHORS INSTALLED IN NORMAL WEIGHT OR LIGHTWEIGHT CAST-ON-METAL DECK CONCRETE SHALL BE AS FOLLOWS:

   A. INSTALLED ON UNDERSIDE OF DECK: KWIK BOLT TZ2 EXPANSION ANCHORS (ICC-ES REPORT ESR-4266) AS MANUFACTURED BY HILTI, INC.
   B. INSTALLED ON TOP SIDE OF DECK HAVING A MINIMUM CONCRETE THICKNESS OF 3-1/4 INCH OVER TOP OF DECK: KWIK BOLT TZ2 EXPANSION ANCHORS (ICC-ES REPORT ESR-4266) AS MANUFACTURED BY HILTI, INC.

3. POST-INSTALLED ANCHORS INSTALLED IN FULLY GROUTED CONCRETE MASONRY UNITS SHALL BE AS FOLLOWS:

   A. KWIK BOLTZ2 EXPANSION ANCHORS (ICC-ES REPORT ESR-4561) AS MANUFACTURED BY HILTI, INC.
   B. HIT-HY 200 EPOXY ANCHORS (ICC-ESR-4878) AS MANUFACTURED BY HILTI, INC.

4. POST-INSTALLED ANCHORS OF EQUAL QUALITY AND WITH CURRENT ICC-ES REPORT MAY BE SUBSTITUTED IF APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER) AND DSA.

5. POST-INSTALLED ANCHORS INSTALLED IN EXTERIOR EXPOSURE OR DAMP ENVIRONMENT SHALL BE STAINLESS STEEL.

6. DOWELS ANCHORED IN CONCRETE OR CONCRETE MASONRY UNITS SHALL BE AS FOLLOWS. DOWELS INSTALLED IN EXTERIOR EXPOSURE OR DAMP ENVIRONMENT SHALL BE STAINLESS STEEL. LENGTHS SHALL BE AS INDICATED ON DRAWINGS.

   A. DEFORMED REINFORCING BARS: ASTM A615, GRADE 60; OR ASTM A706.
   B. CARBON STEEL THREADED STEEL RODS: ASTM A36.
   C. STAINLESS STEEL THREADED RODS: ASTM F593, ALLOY GROUP I, TYPE 304, CONDITION CW.

7. INSTALL POST-INSTALLED ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REINFORCING STEEL DOWELS, THREADED RODS, AND ANCHORS SHALL BE FREE OF DUST, GREASE, RUST AND OTHER MATERIALS THAT WILL IMPAIR BOND WITH CONCRETE.

8. USE ONLY NON-REBAR CUTTING DRILL BITS TO DRILL HOLES IN CONCRETE AND CONCRETE MASONRY UNITS. EXISTING REINFORCING STEEL SHALL BE POSITIVELY LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. DO NOT CUT OR DAMAGE EXISTING REINFORCING STEEL UNLESS APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER).

9. WHERE EXISTING CONCRETE IS DAMAGED AND/OR DRILLED HOLES ABANDONED, THE DAMAGED CONCRETE OR ABANDONED HOLES SHALL BE REPAIRED OR FILLED WITH NON-SHRINK GROUT, RESPECTIVELY. BRING EACH CONDITION TO THE ATTENTION OF THE ARCHITECT (STRUCTURAL ENGINEER) PRIOR TO IMPLEMENTING REPAIRS.

10. DO NOT DRILL HOLES WITHIN 4 INCHES OF EXISTING ELECTRICAL OUTLETS THAT ARE EMBEDDED IN SUBSTRATE.

11. BRING TO THE ATTENTION OF THE ARCHITECT (STRUCTURAL ENGINEER) ANY POST-INSTALLED ANCHOR LOCATION THAT CANNOT COMPLY WITH THE PARAMETERS STATED HEREIN AND INDICATED ON THE DRAWINGS.

12. ALL POST-INSTALLED ANCHORS SHALL BE TESTED, UNO, TESTING AND INSTALLAION OF POST-INSTALLED ANCHORS SHALL COMPLY WITH THE FOLLOWING AND AS SPECIFIED IN PROJECT-SPECIFIC DETAILS.

    1. SHALLOW ANCHORS (EMBEDMENT LESS THAN 8 ANCHOR DIAMETERS) RESISTING DIRECT TENSION LOAD ARE NOT PERMITTED.

    2. ANCHORS SHALL BE TENSION TESTED PER CBC SECTION - 1910A.5, AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING TESTING.

## COLD-FORMED METAL FRAMING

1. THE INSTALLATION, AND CONSTRUCTION OF COLD-FORMED METAL FRAMING SHALL BE IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" (S100) AND AISI "NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS" (S200) AS AUGMENTED BY CBC SECTIONS 2210A AND 2211A.

2. COLD-FORMED METAL FRAMING INCLUDES METAL STUDS, TRACKS, JOISTS, STRAP BRACING, BRIDGING, END CLOSURES, AND ACCESSORIES. THESE GENERAL NOTES APPLY TO LOAD BEARING LOAD BEARING, NON LOAD BEARING AND INTERIOR PARTITION COLD-FORMED COLD-FORMED METAL FRAMING SHOWN ON STRUCTURAL DRAWINGS ONLY.

3. COLD-FORMED METAL FRAMING SHALL BE MANUFACTURED BY CURRENT MEMBERS OF THE SSMA (ICC-ES REPORT ESR-3064P), SFIA (ICC-ES REPORT ESR-4205) OR OTHERS WITH VALID ICC ESR, AND FORMED FROM GALVANIZED STEEL SHEETS CONFORMING TO ASTM A653-SS OR ASTM A1003 (TYPE H), GRADES AS FOLLOWS. GALVANIZING SHALL BE BY THE HOT-DIP PROCESS COMPLYING WITH COATING DESIGNATION G60.

   A. GRADE 33 (Fy=33 KSI) FOR THICKNESS 0.0451" (18 GAGE) & THINNER
   B. GRADE 50 (Fy=50 KSI) FOR THICKNESS 0.0566" (16 GAGE) & THICKER

4. PROVIDE UNPUNCHED TRACKS WITH DIMENSION AS REQUIRED TO ENSURE PROPER FIT OF STUDS. STUDS AND JOISTS SHALL HAVE STIFFENED FLANGES.

5. PROVIDE LATERAL BRIDGING FOR STUDS WHEN RIGID WALL FINISH DOES NOT CONTINUE FULL HEIGHT AND ATTACHED TO ONE OR BOTH SIDES OF STUDS. INSTALL HORIZONTAL STRAPS OR COLD-ROLLED CHANNELS AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH AISI-S100 AND AISI-S200 SPECIFICATIONS.

6. PLUMB, ALIGN AND TIGHTLY NEST STUDS AND BRACES IN BOTH UPPER AND LOWER TRACKS AND SECURE WITH ATTACHMENTS TO BOTH FLANGES OF TRACKS. STUDS MUST BE FULLY SEATED IN TRACKS AND FASTENED WITH SELF-DRILLING SCREWS OR WELDING. SPLICES IN STUDS AND BRACES ARE NOT PERMITTED.

7. SELF-DRILLING/SELF-TAPPING SHEET METAL SCREWS (SMS) SHALL BE HILTI SELF-DRILLING SCREWS MANUFACTURED BY HILTI, INC. (ICC-ES REPORT ESR-2196), OR APPROVED EQUAL WITH AN ICC REPORT. SMS SHALL BE NUMBER 10 MINIMUM U.N.O. AND SHALL PROTRUDE THROUGH THE ATTACHED MEMBERS THREE FULL THREADS, (1/4" INCH MINIMUM), BEYOND THE BACKSIDE OF THE ATTACHED MEMBERS. MINIMIN SPACING BETWEEN CENTERS OF FASTENERS AND MINIMUM DISTANCE FROM THE CENTER OF FASTENER TO THE EDGE OF ANY CONNECTED PART SHALL BE 3 TIMES THE NOMINAL DIAMETER OF THE SMS, EXCEPT WHEN THE EDGE IS PARALLEL TO THE DIRECTION OF APPLIED FORCE THE MINIMUM DISTANCE FROM THE CENTER OF FASTENER TO THE EDGE MAY BE 1.5 TIMES THE DIAMETER OF THE SMS.

8. FASTENERS TO CONCRETE SHALL BE HILTI LOW VELOCITY X-U UNIVERSAL POWDER DRIVEN FASTENERS (ICC-ES REPORT ESR-2269), OR APPROVED EQUAL WITH AN ICC REPORT, WITH 0.157 INCH SHANK DIAMETER EMBEDDED 1 1/4 INCH INTO CONCRETE USING STANDARD INSTALLATION METHOD. FASTENERS SHALL BE DRIVEN INTO CONCRETE AFTER CONCRETE HAS ATTAINED SPECIFIED STRENGTH WITH MINIMUM SPACING OF 4 INCHES AND MINIMUM EDGE DISTANCE OF 3 INCHES. CONCRETE THICKNESS MUST BE AT LEAST THREE TIMES THE PENETRATION DEPTH OF THE FASTENER.

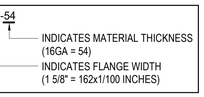
9. FASTENERS TO STEEL SHALL BE AS FOLLOWS:

   A. HILTI LOW VELOCITY X-U UNIVERSAL POWDER DRIVEN FASTENERS (ICC-ES REPORT ESR-2269), OR APPROVED EQUAL WITH AN ICC REPORT, WITH 0.157 INCH SHANK DIAMETER AND DRIVEN THROUGH THE STEEL MEMBER WITH MINIMUM SPACING OF 1 INCH AND MINIMUM EDGE DISTANCE OF 1/2 INCH.
   B. HILTI KWIK-FLEX SELF-DRILLING FASTENERS (ICC REPORT ESR-3332), OR APPROVED EQUAL. FASTENER MUST PROTRUDE THROUGH THE STEEL MEMBER WITH MINIMUM SPACING AND MINIMUM EDGE DISTANCE OF 3 TIMES NOMINAL SCREW DIAMETER.

10. WELDING SHALL COMPLY WITH ANSI/AWS D1.3. WIRE TYING OF FRAMING COMPONENTS IS NOT PERMITTED.

    A. WELDER SHALL BE AWS CERTIFIED AS REQUIRED BY THE GOVERNING CODE AUTHORITY.
    B. PLUG, BUTT, FILLET OR SEAM WELD. WHERE WELDING BURN-THROUGH OCCURS, PROVIDE SUITABLE STITCH PLATE OF SAME GAUGE.
    C. ELECTRODES SHALL BE E60XX FOR 33 KSI MEMBERS AND E70XX FOR 50 KSI MEMBERS.
    D. TOUCH-UP GALVANIZED MEMBERS WITH ZINC-RICH PAINT.

11. BOXED AND OTHER BUILT-UP SECTIONS SHALL BE STITCHED TOGETHER WITH 1/8 INCH FILLET WELDS, 2 INCH LONG AT 12 INCH ON CENTER AT ALL SEAMS.




## MECHANICAL, ELECTRICAL AND PLUMBING (MEP) SYSTEMS

1. CONTRACTOR SHALL SUBMIT THE EQUIPMENT ANCHORAGE INFORMATION LISTED BELOW TO JUSTIFY THE USE OF THE ANCHORAGE DETAILS IN THESE DRAWINGS, FOR REVIEW AND ACCEPTANCY BY THE DESIGN TEAM:
   A. SHOW THAT THE ACTUAL OPERATING WEIGHT OF EQUIPMENT IS EQUAL TO OR LESS THAN THE EQUIPMENT WEIGHT SHOWN ON THE DRAWINGS.
   B. SHOW THAT THE ACTUAL HEIGHT OF THE EQUIPMENT AND/OR HEIGHT TO CENTER OF GRAVITY ARE NOT GREATER THAN 10 PERCENT OF THE DIMENSIONS SHOWN ON THE DRAWINGS.
   C. SHOW THAT THE ACTUAL PLAN DIMENSIONS OF EQUIPMENT (WIDTH AND LENGTH) ARE NOT LESS THAN THE DIMENSIONS SHOWN ON THE DRAWINGS.
   D. SHOW THAT THE ACTUAL EQUIPMENT ANCHOR DETAILS CLEARLY MATCH THE ANCHORAGE DETAILS SHOWN ON THE DRAWINGS.

2. **SUSPENDED UTILITIES SUPPORT AND BRACING NOTES:**
   CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF THE SUPPORT AND BRACING SYSTEMS FOR SUSPENDED PIPING, DUCTWORK, CONDUIT AND CABLE TRAYS.
   SUSPENDED PIPING, DUCTWORK, CONDUIT AND CABLE TRAYS SHALL BE SUPPORTED AND BRACED IN ACCORDANCE WITH PRE-APPROVED OSHPD STANDARDS NOTED ON MEP DRAWINGS.

   COPIES OF THE OPM MANUALS SHALL BE ON THE JOB SITE PRIOR TO STARTING HANGING AND BRACING OF THE SUSPENDED PIPING, DUCTWORK, CONDUIT AND CABLE TRAYS. ONE COPY OF THE MANUAL SHALL BE MADE AVAILABLE TO THE INSPECTOR OF RECORD (IOR) AT ALL TIMES.

   HANGING LOADS AND BRACING SHALL NOT IMPOSE ANY LATERAL OR TORSIONAL FORCES ONT HE STEEL BEAM BOTTOM FLANGES. HANGERS SHALL BE CONCENTRIC TO STEEL BEAMS, CONCRETE SLABS, CONCRETE BEAMS OR BOTTOM FLUTE OF CONCRETE SLABS ON METAL DECK. LATERAL BRACES SHALL BE CONNECTED TO THE TOP FLANGE OF STEEL BEAMS WHICH ARE CONNECETD TO METAL DECK OR TO CONRETE SLABS N METAL DECK. HANGERS AND LATERAL BRACES SHALL NOT BE OCNNECTED TO BARE METAL DECK. POST-INSTALLED ANCHORS SHALL NOT BE USED IN POST-TENSIONED SLABS AND BEAMS.

   CONTRACTOR SHALL SUBMIT THE ITEMS LISTED BELOW PERTAINING TO THE SUPPORT AND BRACING OF SUSPENDED PIPING, DUCTWORK, CONDUIT AND CABLE TRAYS THAT WILL BE REVIEWED AND ACCEPTED BY THE ARCHITECT (STRUCTURAL ENGINEER).
   A. SUPPORT AND BRACING DETAILS TO BE USED ON THE PROJECT. DETAILS SHALL CLEARLY SHOW HOW SYSTEMS ARE CONNECTED TOT HE STRUCTURE AND ARE COORDINATED WITH THE ACTUAL STRUCTURAL SYSTEMS ON THE PROJECT.
   B. FLOOR PLAN LAYOUTS SHOWING CONNECTION LOCATIONS TO STRUCTURE AND THE DESIGN FORCES IMPOSED ON THE STRUCTURE AT THESE LOCATIONS.
   C. WHERE PRE-APPROVED OSHPD SYSTEMS DO NOT COVER A SPECIFIC CONDITION, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPORT DETAILS AND CALCULATIONS - TO BE SUBMITTED AS CCD FOR DSA APPROVAL.
   D. ALL SUPPORT DETAILS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF CALIFORNIA.

3. CONTRACTOR TO VERIFY DIMENSIONS OF UNIT AND ANCHOR POINTS, HOLES, PLATES ETC, PRIOR TO INSTALLAITON OF BACKING PLATES, DRILLING HOLES IN SLAB, ETC.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


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ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES


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## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERAL NOTES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

**S0.03**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY

**TABLE 8 (ANSI/AISC 341 APPENDIX J)**
**REQUIRED VERIFICATION AND INSPECTION OF SLRS**

| 8.1.1 | VISUAL INSPECTION TASKS BEFORE WELDING | TASK | DOC |
|---|---|---|---|
| MATERIAL IDENTIFICATION (TYPE/GRADE) | | O | – |
| FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) | | | |
| - JOINT PREPARATION | | | |
| - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) | | O | – |
| - CLEANLINESS (CONDITION OF STEEL SURFACES) | | | |
| - TACKING (TACK WELD QUALITY AND LOCATION) | | | |
| - BACKING TYPE AND FIT (IF APPLICABLE) | | | |
| CONFIGURATION AND FINISH OF ACCESS HOLES | | O | – |
| FIT-UP OF FILLET WELDS | | | |
| - DIMENSIONS (ALIGNMENT, GAPS AT ROOT) | | O | – |
| - CLEANLINESS (CONDITION OF STEEL SURFACES) | | | |
| - TACKING (TACK WELD QUALITY AND LOCATION) | | | |
| **8.1.2** | **VISUAL INSPECTION TASKS DURING WELDING** | **TASK** | **DOC** |
| WPS FOLLOWED | | | |
| - SETTINGS ON WELDING EQUIPMENT | | | |
| - TRAVEL SPEED | | | |
| - SELECTED WELDING MATERIALS | | | |
| - SHIELDING GAS TYPE/ FLOW RATE | | O | – |
| - PREHEAT APPLIED | | | |
| - INTERPASS TEMPERATURE MAINTAINED (MIN/ MAX) | | | |
| - PROPER POSITION (F, V, H, OH) | | | |
| - INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED | | | |
| USE OF QUALIFIED WELDERS | | O | – |
| CONTROL AND HANDLING OF WELDING CONSUMABLES | | | |
| - PACKAGING | | O | – |
| - EXPOSURE CONTROL | | | |
| ENVIRONMENTAL CONDITIONS | | | |
| - WIND SPEED WITHIN LIMITS | | O | – |
| - PRECIPITATION AND TEMPERATURE | | | |
| WELDING TECHNIQUES | | | |
| - INTERPASS AND FINAL CLEANING | | O | – |
| - EACH PASS WITHIN PROFILE LIMITATIONS | | | |
| - EACH PASS MEETS QUALITY REQUIREMENTS | | | |
| NO WELDING OVER CRACKED TACKS | | O | – |
| **8.1.3** | **VISUAL INSPECTION TASKS AFTER WELDING** | **TASK** | **DOC** |
| WELDS CLEANED | | O | – |
| WEDER IDENTIFICATION LEGIBLE | | O | – |
| VERIFY SIZE, LENGTH AND LOCATION OF WELDS | | P | – |
| VISUALLY INSPECT WELDS TO ACCEPTANCE CRITERIA | | | |
| - CRACK PROHIBITION | | | |
| - WELD/ BASE-METAL FUSION | | | |
| - CRATER CROSS-SECTION | | | |
| - WELD PROFILES | | P | D |
| - WELD SIZE | | | |
| - UNDERCUT | | | |
| - POROSITY | | | |
| PLACEMENT OF REINFORCEMENT FILLETS | | P | D |
| BACKING BARS REMOVED AND WELD TABS REMOVED AND FINISHED (IF REQUIRED) | | P | D |
| REPAIR ACTIVITIES | | P | D |

| 8.2.1 | INSPECTION TASKS PRIOR TO BOLTING | TASK | DOC |
|---|---|---|---|
| PROPER BOLTS SELECTED FOR THE JOINT DETAIL | | O | – |
| PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL | | O | – |
| CONNECTING ELEMENTS ARE FABRICATED PROPERLY, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEETS APPLICABLE REQUIREMENTS | | O | – |
| PRE-INSTALLATION VERIFICATION TESTING CONDUCTED FOR FASTENER ASSEMBLIES AND METHODS USED | | P | D |
| PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS | | O | – |
| **8.2.2** | **INSPECTION TASKS DURING BOLTING** | **TASK** | **DOC** |
| FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE PROPERLY POSITIONED | | O | – |
| JOINT BROUGHT TO THE SNUG TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION | | O | – |
| FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING | | O | – |
| BOLTS ARE PRETENSIONED PROGRESSING SYSTEMATICALLY FROM MOST RIGID POINT TOWARD FREE EDGES | | O | – |
| **8.2.3** | **INSPECTION TASKS AFTER BOLTING** | **TASK** | **DOC** |
| DOCUMENT ACCEPTED AND REJECTED CONNECTIONS | | P | D |
| **8.3.1** | **OTHER INSPECTION TASK** | **TASK** | **DOC** |
| REDUCED BEAM SECTION (RBS) REQUIREMENTS, IF APPLICABLE | | | |
| - CONTOUR AND FINISH | | P | D |
| - DIMENSIONAL TOLERANCES | | | |
| PROTECTED ZONE - NO HOLES AND UNAPPROVED ATTACHMENTS MADE BY CONTRACTOR | | P | D |

**TABLE 5 (ACI 530 TABLE 1.18.2)**
**LEVEL B VERIFICATION AND INSPECTION OF CMU CONSTRUCTION**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. AS MASONRY CONSTRUCTION BEGINS, VERIFT THAT THE FOLLOWING ARE IN COMPLIANCE | | |
| a. PROPORTIONS OF SITE-PREPARED MORTAR. | – | X |
| b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES | – | X |
| c. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORES | – | X |
| d. PRESTRESSING TECHNIQUE | – | X |
| e. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY | X[a] | X[b] |
| f. SAMPLE PANEL CONSTRUCTION | – | X |
| 2. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE | | |
| a. GROUT SPACE | – | X |
| b. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGE | – | X |
| c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS | – | X |
| d. PROPERTIES OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS | | |
| 3. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION: | | |
| a. MATERIALS AND PROCEDURES WITH APPROVED SUBMITTALS | – | X |
| b. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION. | – | X |
| c. SIZE AND LOCATION OF STRUCTURAL MEMBERS | – | X |
| d. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION | – | X |
| e. WELDING OF REINFORCEMENT | X | – |
| f. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)> OR HOT WEATHER (TEMPERATURE ABOVE 90°F(32.2°C)) | – | X |
| g. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE | X | – |
| h. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE | – | X |
| i. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS. | X[a] | X[b] |
| 4. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS | – | X |
| a. REQUIRED FOR THE FIRST 5,000 SFT OF AAC MASONRY | | |
| b. REQUIRED AFTER THE FIRST 5,000 SFT OF AAC MASONRY | | |

**TABLE 7.3 INSPECTION OF COMPOSITE STRUCTURES (CBC SECTION 1705.12.1)**

| TABLE 7.3.1 (ANSI/AISC 341 TABLE J9-1) | INSPECTION OF COMPOSITE STRUCTURES PRIOR TO CONCRETE PLACEMENT | TASK | DOC |
|---|---|---|---|
| MATERIAL IDENTIFICATION OF REINFORCING STEEL (TYPE/GRADE) | | O | - |
| DETERMINATION OF CARBON EQUIVALENT FOR REINFORCING STEEL OTHER THAN ASTM A706 | | O | - |
| PROPER REINFORCING STEEL SIZE, SPACING AND ORIENTATION | | O | - |
| REINFORCING STEEL HAS NOT BEEN REBENT IN THE FIELD | | O | - |
| REINFORCING STEEL HAS NOT BEEN TIED AND SUPPORTED AS REQUIRED | | O | - |
| REQUIRED REINFORCING STEEL CLEARANCE HAVE BEEN PROVIDED | | O | - |
| COMPOSITE MEMBER HAS REQUIRED SIZE | | O | - |

| TABLE 7.3.2 (ANSI/AISC 341 TABLE J9-2) | INSPECTION OF COMPOSITE STRUCTURES DURING CONCRETE PLACEMENT | TASK | DOC |
|---|---|---|---|
| CONCRETE: MATERIAL IDENTIFICATION (MIX DESIGN, COMPRESSIVE STRENGTH, MAXIMUM LARGE AGGREGATE SIZE MAXIMUM SLUMP) | | O | D |
| LIMITS ON WATER ADDED AT THE TRUCK OR PUMP | | O | D |
| PROPER PLACEMENT TECHNIQUES TO LIMIT SEGREGATION | | O | – |

| TABLE 7.3.3 (ANSI/AISC 341 TABLE J9-3) | INSPECTION OF COMPOSITE STRUCTURES AFTER CONCRETE PLACEMENT | TASK | DOC |
|---|---|---|---|
| ACHIEVEMENT OF MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH AT SPECIFIED AGE. | | - | D |

**KEY**

DOCUMENT (D) - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UP, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLE 8. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION REPORT.

OBSERVE (O) - THE SPECIAL INSPECTOR SHALL OBSERVE THESE FUNCTIONS ON A RANDOM, DAILY BASIS. WELDING OPERATIONS NEED NOT BE DELAYED PENDING OBSERVATIONS.

PERFORM (P) - THESE INSPECTIONS SHALL BE PERFORMED PRIOR TO THE FINAL ACCEPTANCE OF THE ITEM.

**TABLE 1 (CBC TABLE 1705A.2.1)**
**REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS: | | |
| A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. | – | X |
| B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. | – | X |
| 2. INSPECTION OF HIGH-STRENGTH BOLTING: | | |
| A. SNUG-TIGHT JOINTS. | – | X |
| B. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN OF THE NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION. | – | X |
| C. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN OF THE NUT WITHOUT MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION. | X | – |
| 3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK: | | |
| A. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360. | – | X |
| B. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. | – | X |
| C. MANUFACTURER'S CERTIFIED MILL TEST REPORTS | – | X |
| 4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS: | | |
| A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS. | – | X |
| B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. | – | X |
| 5. INSPECTION OF WELDING: | | |
| A. STRUCTURAL STEEL AND COLD FORMED STEEL DECK: | | |
| 1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS. | X | – |
| 2) MULTIPASS FILLET WELDS. | X | – |
| 3) SINGLE-PASS FILLET WELDS > 5/16" | X | – |
| 4) PLUG AND SLOT WELDS | X | – |
| 5) SINGLE-PASS FILLET WELDS ≤ 5/16" | – | X |
| 6) FLOOR AND ROOF DECK WELDS. | – | X |
| B. REINFORCING STEEL: | | |
| 1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706. | – | X |
| 2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF SHEAR AND SHEAR REINFORCEMENT. | X | – |
| 3) SHEAR REINFORCEMNT. | X | – |
| 4) OTHER REINFORCING STEEL. | – | X |
| 6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS. | | |
| A. DETAILS SUCH AS BRACING AND STIFFENING. | – | X |
| B. MEMEBER LOCATIONS. | – | X |
| C. APPLICATION OF JOINT DETAILS AT EACH CONNECTION. | – | X |

**TABLE 2 (CBC TABLE 1705A.3)**
**REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT. | – | X |
| 2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1, ITEM 5B. | – | X |
| 3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED. | X | – |
| 4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE. | X | – |
| 5. VERIFYING USE OF REQUIRED DESIGN MIX. | – | X |
| 6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. | X | – |
| 7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. | X | – |
| 8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. | – | X |
| 9. INSPECTION OF PRESTRESSED CONCRETE:<br>A. APPLICATION OF PRESTRESSING FORCES.<br>B. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM. | X<br>X | – |
| 10. ERECTION OF PRECAST CONCRETE MEMBERS. | – | X |
| 11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS. | – | X |
| 12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. | – | X |

**TABLE 3 (CBC 1705A.6)**
**REQUIRED VERIFICATION AND INSPECTION OF SOILS**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. VERIFY MATERIALS BELOW SHALLOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. | – | X |
| 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. | – | X |
| 3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS. | – | X |
| 4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL. | X | – |
| 5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY. | – | X |

**NOTE:** REFER TO DSA-103 FORM FOR ALL STRUCTURAL TESTING & SPECIAL INSPECTION REQUIREMENTS. OM THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATION, AND DSA-103 FORM, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

## STATEMENT OF SPECIAL INSPECTIONS (CONTINUED)

C. STRUCTURAL MASONRY CONSTRUCTION: SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE TO TMS 402/ACI 602 AND THE FOLLOWING:

1. FOR MASONRY IN RISK CATEGORY I, II, OR III STRUCTURES SEE TABLE 3.1 - LEVEL 2 QUALITY ASSURANCE.
2. SELF-CONSOLIDATING GROUT IS NOT PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE ARCHITECT (STRUCTURAL ENGINEER).
3. IN-SITU MASONRY TESTING: IN ACCORDANCE WITH CBC 2105A.4 EXCEPTION, AN DELAMINATIONS IN GROUTED MASONRY. SURVEY TO BE TWO RANDOM LOCATIONS FOR EVERY 5,000 SQ.FT. OF CONSTRUCTED WALL (16"×16" MIN SCAN AREA).

D. SOILS: SPECIAL INSPECTIONS AND TESTS OF EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT AND LOAD-BEARING REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH TABLE 3. THE APPROVED GEOTECHNICAL REPORT AND THE CONSTRUCTION DOCUMENTS SHALL BE USED TO DETERMINE COMPLIANCE.

E. DURING FILL PLACEMENT THE APPROVED AGENCY SHALL VERIFY THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.

8. APPROVED AGENCY SHALL PERFORM SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE IN ACCORDANCE WITH CBC SECTION 1705A.12 FOR THE FOLLOWING WORK.

A. INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AISC 341 (CHAPTER J) AND TABLES 1 AND 8.

1. NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS SHALL BE IN ACCORDANCE WITH AISC 341 (CHAPTER J.6), AWS D1.8/D1.8M AS FOLLOWS:
   a. k-AREA NDT: WHERE WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE k-AREA, THE WEB SHALL BE TESTED FOR CRACKS USING MT. THE MT INSPECTION AREA SHALL INCLUDE THE k-AREA BASE METAL WITHIN 3 INCHES OF THE WELD. THE MT SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.
   b. CJP GROOVE WELD NDT: UT SHALL BE PERFORMED ON 100 PERCENT OF CJP GROOVE WELDS IN MATERIALS 5/16 INCH OR GREATER. UT IN MATERIAL LESS THAN 5/16 INCH THICK IS NOT REQUIRED. MT SHALL BE PERFORMED ON 25 PERCENT OF ALL BEAM-TO-COLUMN CJP GROOVE WELDS.
   c. BASE METAL NOT FOR LAMELLAR TEARING AND LAMINATIONS: AFTER JOINT COMPLETION, BASE METAL THICKER THAN 1-1/2 INCHES LOADED IN TENSION IN THE THROUGH THICKNESS DIRECTION IN TEE AND CORNER JOINTS, WHERE THE CONNECTED MATERIAL IS GREATER THAN 3/4 INCH AND CONTAINS CJP GROOVE WELDS, SHALL BE UT FOR DISCONTINUITIES BEHIND AND ADJACENT TO THE FUSION LINE OF SUCH WELDS. ANY BASE METAL DISCONTINUITIES FOUND WITHIN T/4 OF THE STEEL SURFACE SHALL BE ACCEPTED OR REJECTED ON THE BASIS OF CRITERIA OF AWS D1.1 TABLE 6.2, WHERE T IS THE THICKNESS OF THE PART SUBJECTED TO THE THROUGH-THICKNESS STRAIN.
   d. BEAM COPE AND ACCESS HOLE NOT: AT WELDED SPLICES AND CONNECTIONS, THERMALLY CUT SURFACES OF BEAM COPES AND ACCESS HOLES SHALL BE TESTED USING MT OR DT, WHEN THE FLANGE THICKNESS EXCEEDS 1-1/2 INCHES FOR ROLLED SHAPES, OR WHEN THE WEB THICKNESS EXCEEDS 1-1/2 INCHES FOR BUILT-UP SHAPES.
   e. WELD TAB REMOVAL SITES: MT SHALL BE PERFORMED ON THE END OF WELDS FROM WHICH THE WELD TABS HAVE BEEN REMOVED, EXCEPT FOR CONTINUITY PLATE WELD TABS.
   f. REDUCTION OF PERCENTAGE OF UT: THE REDUCTION OF PERCENTAGE OF UT IS PERMITTED TO BE REDUCED IN ACCORDANCE WITH NOTE 7.A.1.f ABOVE, EXCEPT NO REDUCTION IS PERMITTED FOR DEMAND CRITICAL WELDS.
   g. REDUCTION OF PERCENTAGE OF MT: THE AMOUNT OF MT ON CJP GROOVE WELDS IS PERMITTED TO BE REDUCED IF APPROVED BY THE ENGINEER OF RECORD AND THE GOVERNING CODE AUTHORITY. THE MT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR MAY BE REDUCED TO 10 PERCENT, PROVIDED THE REJECT RATE IS DEMONSTRATED TO BE 5 PERCENT OR LESS OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING OF AT LEAST 20 COMPLETED WELDS FOR A JOB SHALL BE MADE FOR SUCH REDUCTION EVALUATION. REJECT RATE IS THE NUMBER OF WELDS CONTAINING REJECTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED. THIS REDUCTION IS NOT PERMITTED ON WELDS IN THE k-AREA, AT REPAIR SITES, WELD TAB AND BACKING REMOVAL SITES AND ACCESS HOLES.
2. INSPECTION OF HIGH-STRENGTH BOLTING: BOLTING INSPECTION SHALL CONFORM WITH NOTE 7.A.2 HEREINABOVE AND TABLE 8.2.
3. INSPECTION OF COMPOSITE STRUCTURES SHALL CONFORM WITH NOTE 7.A.3 HEREINABOVE AND TABLES 7.3.1, 7.3.2 AND 7.3.3.
4. OTHER INSPECTIONS OF STRUCTURAL STEEL SHALL CONFROM WITH NOTE 7.A.4. HEREINABOVE AND TABLE 8.3.1.

9. DEFINITIONS

A. CONTINUOUS SPECIAL INSPECTION: SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS PRESENT WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED.

B. PERIODIC SPECIAL INSPECTION: SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED.

C. OBSERVE (O): APPROVED AGENCY SHALL OBSERVE THESE FUNCTIONS ON A RANDOM, DAILY BASIS. OPERATIONS NEED NOT BE DELAYED PENDING OBSERVATIONS.

D. PERFORM (P): THESE INSPECTIONS SHALL BE PERFORMED PRIOR TO THE FINAL ACCEPTANCE OF THE ITEM.

E. DOCUMENT (D): APPROVED AGENCY SHALL PREPARE REPORTS INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION REPORT.

**CONTINUOUS BATCH PLANT INSPECTION WAIVER**

PER CBC 2022 SECTION 1705A.3.3.1, THE CONTINUOUS BATCH PLANT INSPECTION IS WAIVED WHERE THE CONCRETE PLANT COMPLIES FULLY WITH THE REQUIREMENTS OF ASTM C94, SECTIONS 9 AND 10, AND HAS A CURRENT CERTIFICATE FROM THE NATIONAL READY MIXED CONCRETE ASSOCIATION OR ANOTHER AGENCY ACCEPTABLE TO THE ENFORCEMENT AGENCY. THE CERTIFICATION SHALL INDICATE THAT THE PLANT HAS AUTOMATIC BATCHING AND RECORDING CAPABILITIES. ADDITIONALLY, THE FOLLOWING REQUIREMENTS PER CBC 2022 SECTION 1705A.3.3.1 SHALL BE APPLICABLE:

1. AN APPROVED AGENCY SHALL CHECK THE FIRST BATCH AT THE START OF THE DAY TO VERIFY MATERIALS AND PROPORTIONS CONFORM TO THE APPROVED MIX DESIGN.
2. A LICENSED WEIGHMASTER SHALL POSITIVELY IDENTIFY QUANTITY OF MATERIALS AND CERTIFY EACH LOAD BY A BATCH TICKET.
3. BATCH TICKETS, INCLUDING MATERIAL QUANTITIES AND WEIGHTS SHALL ACCOMPANY THE LOAD. SHALL BE TRANSMITTED TO THE INSPECTOR OF RECORD BY THE TRUCK DRIVER WITH LOAD IDENTIFIED THERE ON, THE LOAD SHALL NOT BE PLACED WITHOUT A BATCH TICKET IDENTIFYING THE MIX. THE INSPECTOR OF RECORD SHALL KEEP A DAILY RECORD OF PLACEMENTS, IDENTIFYING EACH TRUCK, ITS LOAD, AND TIME OF RECEIPT AT THE JOBSITE, AND APPROXIMATE LOCATION OF DEPOSIT IN THE STRUCTURE AND SHALL MANTAIN A COPY OF THE DAILY RECORD AS REQUIRED BY THE ENFOCEMENT AGENCY.

## STATEMENT OF SPECIAL INSPECTIONS

1. AN APPROVED AGENCY, RETAINED BY OWNER AND SATISFACTORY TO ARCHITECT (STRUCTURAL ENGINEER) AND GOVERNING CODE AUTHORITY, SHALL PERFORM SPECIAL INSPECTIONS AND TESTS REQUIRED BY THIS CONTRACT AND APPLICABLE CODE. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS REQUIRED BY CBC SECTION 110. AN APPROVED AGENCY IS AN ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING TESTS AND/OR FURNISHING INSPECTION SERVICES, WHERE SUCH AGENCY HAS BEEN APPROVED BY THE GOVERNING CODE AUTHORITY.
2. APPROVED AGENCY SHALL KEEP RECORDS OF ALL SPECIAL INSPECTIONS AND TESTS AND SHALL FURNISH REPORTS OF SPECIAL INSPECTIONS AND TESTS TO THE GOVERNING CODE AUTHORITY AND THE ARCHITECT (STRUCTURAL ENGINEER). REPORTS SHALL INDICATE WHETHER THE WORK INSPECTED OR TESTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPENCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF NOT CORRECTED, THE DISCREPENCIES SHALL BE BROUGHT TO THE ATTENTION OF THE GOVERNING CODE AUTHORITY AND THE ARCHITECT (STRUCTURAL ENGINEER) PRIOR TO THE COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF DISCREPENCIES, SHALL BE SUBMITTED UPON COMPLETION OF THAT PHASE OF WORK.
3. WHERE FABRICATION OF STRUCTURAL, LOAD-BEARING OR LATERAL LOAD-RESISTING MEMBERS OR ASSEMBLIES IS BEING CONDUCTED ON THE PREMISES OF A FABRICATOR'S SHOP, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE PERFORMED DURING FABRICATION.
4. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC FORCE-RESISTINGSYSTEM, DESIGNATED SEISMIC SYSTEM, OR A WIND- OR SEISMIC FORCE-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTION SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE GOVERNING CODE AUTHORITY AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS OF INSPECTION.
5. CONTRACTOR SHALL SUBMIT MATERIAL CERTIFICATION OR LABORATORY TEST REPORTS CERTIFYING MATERIALS ARE OF IDENTIFIABLE TESTED STOCK, COMPLYING WITH PROJECT SPECIFICATIONS, TO OWNER, APPROVED AGENCY, ARCHITECT (STRUCTURAL ENGINEER) AND, UPON REQUEST, TO GOVERNING CODE AUTHORITY. IF LABORATORY TEST REPORTS CANNOT BE MADE AVAILABLE, APPROVED AGENCY WILL PERFORM TESTS AS DIRECTED BY ARCHITECT (STRUCTURAL ENGINEER). CONTRACTOR SHALL PAY FOR COSTS RELATED TO TESTS AND INSPECTIONS OF UNIDENTIFIABLE MATERIALS. MATERIALS FURNISHED WITHOUT LABORATORY TEST REPORTS, MATERIALS FOUND DEFICIENT AFTER INITIAL TESTS AND INSPECTIONS, AND/OR MATERIALS REPLACING DEFICIENT MATERIALS.
6. APPROVED AGENCY SHALL SUBMIT MATERIAL TEST REPORTS INDICATING WHETHER TESTED MATERIALS ARE IN COMPLIANCE OR NONCOMPLIANCE WITH CONTRACT DOCUMENTS TO OWNER, CONTRACTOR, ARCHITECT (STRUCTURAL ENGINEER) AND, UPON REQUEST, TO GOVERNING CODE AUTHORITY.
7. APPROVED AGENCY SHALL PERFORM SPECIAL INSPECTIONS IN ACCORDANCE WITH CBC SECTION 1705A AND WITH THIS SHEET FOR THE FOLLOWING WORK. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL TEST AND INSPECTION REQUIREMENTS.

A. STEEL CONSTRUCTION: SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS, STRUCTURES, AND PORTIONS THEREOF SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360 (CHAPTER N).

1. INSPECTION OF WELDING: OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION OF IN-PROGRESS AND COMPLETED WELDS SHALL BE THE PRIMARY METHOD TO CONFIRM THAT MATERIALS, PROCEDURES AND WORKMANSHIP ARE IN CONFORMANCE WITH CONSTRUCTION DOCUMENTS. ALL PROVISIONS OF AWS D.1.1/D1.1M AND TABLE 1.1 SHALL APPLY.
   a. NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS SHALL BE IN ACCORDANCE WITH AISC 360 (CHAPTER N):5) AS FOLLOWS.
   b. PROCEDURES: ULTRASONIC TESTING (UT), MAGNETIC PARTICLE TESTING (MT), PENETRANT TESTING (PT) AND RADIOGRAPHIC TESTING (RT), WHERE REQUIRED, SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1/D1.1M CLAUSE 6). ACCEPTANCE CRITERIA SHALL BE IN ACCORDANCE WITH AWS D1.1/D1.1M (TABLE 6.2), UNLESS OTHERWISE DESIGNATED IN THE CONTRACT DOCUMENTS.
   c. CJP GROOVE WELD NDT: FOR STRUCTURES IN RISK CATEGORY III OR IV, UT SHALL BE PERFORMED ON ALL CJP GROOVE WELDS SUBJECT TO TRANSVERSELY APPLIED TENSION LOADING IN BUTT, T- AND CORNER JOINTS, IN MATERIALS 5/16" THICK OR GREATER. FOR STRUCTURES IN RISK CATEGORY II, UT SHALL BE PERFORMED ON 10% OF CJP GROOVE WELDS SUBJECT TO TRANSVERSELY APPLIED TENSION

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAGE SIZE

## ABBREVIATIONS

| | | |
|---|---|---|
| | # | POUNDS, NUMBER |
| | & | AND |
| | < | LESS THAN |
| | > | GREATER THAN |
| | @ | AT |
| | ° | DEGREE |
| | ± | PLUS OR MINUS |
| | ≤ | LESS THAN OR EQUAL TO |
| | ≥ | GREATER THAN OR EQUAL TO |

A

| | | |
|---|---|---|
| A | AA | ADHESIVE ANCHOR |
| A | AB | ANCHOR BOLT(S) |
| A | ABV | ABOVE |
| A | ADDL | ADDITIONAL |
| A | ADDN | ADDITION |
| A | ADJ | ADJACENT, ADJUSTABLE |
| A | AESS | ARCHITECTURALLY EXPOSED STRUCTURAL STEEL |
| A | ALT | ALTERNATE |
| A | ANCH | ANCHOR |
| A | APPROX | APPROXIMATE |
| A | AR | ALL AROUND |
| A | ARCH | ARCHITECTURAL |

B

| | | |
|---|---|---|
| B | BAL | BALANCE |
| B | BC | BOTTOM CHORD |
| B | BE | BOUNDARY ELEMENT |
| B | BEL | BELOW |
| B | BLDG | BUILDING |
| B | BLKG | BLOCKING |
| B | BLL | BOTTOM LOWER LAYER |
| B | BM | BEAM |
| B | BN | BOUNDARY NAILING |
| B | BO | BOTTOM OF |
| B | BOBP | BOTTOM OF BASE PLATE |
| B | BOS | BOTTOM OF STEEL |
| B | BOT | BOTTOM |
| B | BP | BASE PLATE |
| B | BPL | BEARING PLATE |
| B | BRB | BUCKLING-RESTRAINED BRACE |
| B | BRBF | BUCKLING-RESTRAINED BRACED FRAME |
| B | BRCG | BRACING |
| B | BRDG | BRIDGING |
| B | BRG | BEARING |
| B | BS | BOTH SIDES |
| B | BSMT | BASEMENT |
| B | BTWN | BETWEEN |
| B | BU | BUILT-UP |
| B | BUL | BOTTOM UPPER LAYER |
| B | BYD | BEYOND |

C

| | | |
|---|---|---|
| C | C | CAMBER |
| C | CA | COLUMN ABOVE |
| C | CANT | CANTILEVER |
| C | CB | COLUMN BELOW |
| C | CC | CENTER TO CENTER |
| C | CF | CUBIC FEET |
| C | CHKD | CHECKERED |
| C | CIP | CAST-IN-PLACE |
| C | CJ | CONSTRUCTION JOINT |
| C | CJP | COMPLETE JOINT PENETRATION |
| C | CL | CENETERLINE |
| C | CLG | CEILING |
| C | CLR | CLEAR |
| C | CLSM | CONTROL LOW STRENGTH MATERIAL |
| C | CMU | CONCRETE MASONRY UNIT |
| C | COL | COLUMN |
| C | CONC | CONCRETE |
| C | CONN | CONNECTION |
| C | CONST | CONSTRUCTION |
| C | CONT | CONTINUOUS, CONTINUITY |
| C | CONTR | CONTRACTOR |
| C | COORD | COORDINATE, COORDINATES |
| C | CTR | CENTER |
| C | CTRL JT | CONTROL JOINT |
| C | CVN | CHARPY V-NOTCH |
| C | CY | CUBIC YARD |
| C | CYL | CYLINDER |

D

| | | |
|---|---|---|
| D | DBA | DEFORMED BAR ANCHOR |
| D | DBL | DOUBLE |
| D | DBLR | DOUBLER |
| D | DEG | DEGREE |
| D | DEGF | DEGREE FAHRENHEIT |
| D | DEPR | DEPRESS, DEPRESSED, DEPRESSION |
| D | DET | DETAIL |
| D | DF-L | DOUGLAS FIR - LARCH |
| D | DIA | DIAMETER |
| D | DIAG | DIAGONAL |
| D | DIAPH | DIAPHRAGM |
| D | DIM | DIMENSION |
| D | DL | DEAD LOAD |
| D | DN | DOWN |
| D | DO | DITTO |
| D | DWG | DRAWING |
| D | DWL | DOWEL |

E

| | | |
|---|---|---|
| E | (E) | EXISTING |
| E | EA | EACH |
| E | EB | EXPANSION (ANCHOR) BOLT |
| E | EBF | ECCENTRICALLY BRACED FRAME |
| E | EF | EACH FACE |
| E | EFF | EFFECTIVE |
| E | EJ | EXANSION JOINT |
| E | EL | ELEVATION |
| E | ELEC | ELECTRICAL |
| E | ELEV | ELEVATOR |
| E | EMBD | EMBEDMENT, EMBED |
| E | EN | EDGE NAILING |
| E | ENGR | ENGINEER |
| E | EOR | ENGINEER OF RECORD |
| E | EOS | EDGE OF SLAB |
| E | EPL | EMBEDDED PLATE |
| E | EQ | EQUAL |
| E | EQUIP | EQUIPMENT |
| E | ES | EACH SIDE |
| E | ESC | ESCALATOR |
| E | EW | EACH WAY |
| E | EWTB | EACH WAY TOP AND BOTTOM |
| E | EXC | EXCAVATE |
| E | EXP | EXPANSION |
| E | EXT | EXTERIOR |

F

| | | |
|---|---|---|
| F | F | FAHRENHEIT |
| F | FAB | FABRICATE, FABRICATION |
| F | FCAW | FLUX CORED ARC WELDING |
| F | FDN | FOUNDATION |
| F | FF | FAR FACE |
| F | FIN | FINISH |
| F | FJ | FLOOR JOIST |
| F | FLG | FLANGE |
| F | FLR | FLOOR |
| F | FN | FIELD NAILING |
| F | FO | FACE OF |
| F | FOC | FACE OF CONCRETE |
| F | FOF | FACE OF FINISH |
| F | FOGB | FACE OF GYPSUM BOARD |
| F | FOS | FACE OF STUD |
| F | FOW | FACE OF WALL |
| F | FP | FIREPROOF, FIREPROOFING |
| F | FRMG | FRAMING |
| F | FS | FAR SIDE |
| F | FT | FOOT, FEET, FLUSH TOP |
| F | FTG | FOOTING |
| F | FUT | FUTURE |

G

| | | |
|---|---|---|
| G | GA | GAGE, GAUGE |
| G | GALV | GALVANIZED |
| G | GEN | GENERAL |
| G | GFRC | GLASS FIBER REINFORCED CONCRETE |
| G | GLB | GLUE-LAMINATED BEAM |
| G | GMAW | GAS METAL ARC WELDING |
| G | GOL | GAGE OF ANGLE |
| G | GR | GRADIE |
| G | GRTG | GRATING |
| G | GT | GROUND |

H

| | | |
|---|---|---|
| H | HAZ | HEATED AFFECTED ZONE |
| H | HCA | HEADED CONCRETE ANCHOR |
| H | HDB | HEADED DEFORMED BAR |
| H | HDG | HOT DIPPED GALVANIZED |
| H | HDR | HEADER |
| H | HGR | HANGER |
| H | HI, (HI) | HIGH |
| H | HORIZ, (H) | HORIZONTAL |
| H | HP | HIGH POINT |
| H | HR | HANDRAIL |
| H | HS | HIGH STRENGTH |
| H | HSB | HIGH STRENGTH BOLT |
| H | HT | HEIGHT |

I

| | | |
|---|---|---|
| I | I.F | INSIDE FACE |
| I | ICC-ES | INTERNATIONAL CODE COUNCIL EVALUATION SERVICE |
| I | ID | INSIDE DIAMETER |
| I | IE | INVERT ELEVATION |
| I | IMF | INTERMEDIATE MOMENT FRAME |
| I | IN | INCH |
| I | INFO | INFORMATION |
| I | INSP | INSPECTION, INSPECTOR |
| I | INSU | INSULATING |
| I | INT | INTERIOR |
| I | INTER | INTERMEDIATE |
| I | IRMSW | INTERMEDIATE REINFORCED MASONRY SHEAR WALL |

J

| | | |
|---|---|---|
| J | JST | JOIST |
| J | JT | JOINT |

K

| | | |
|---|---|---|
| K | K | KIP (KILOPOUND)(1000 POUNDS) |
| K | KSF | KIP PER SQUARE FOOT |
| K | KSI | KIP PER SQUARE INCH |

L

| | | |
|---|---|---|
| L | LAM | LAMINATED |
| L | LB | LAG BOLT, POUND |
| L | LG | LONG |
| L | LL | LIVE LOAD |
| L | LLBB | LONG LEG BACK TO BACK |
| L | LLH | LONG LEG HORIZONTAL |
| L | LLV | LONG LEG VERTICAL |
| L | LNDG | LANDING |
| L | LNTL | LINTEL |
| L | LO, (LO) | LOW |
| L | LONGIT | LONGITUDINAL |
| L | LP | LOW POINT |
| L | LSH | LONG SLOTTED HOLE |
| L | LTWT | LIGHTWEIGHT |
| L | LVL | LAMINATED VENEER LUMBER |
| L | LWC | LIGHTWEIGHT CONCRETE |

M

| | | |
|---|---|---|
| M | MAX | MAXIMUM |
| M | MB | MACHINE BOLT |
| M | MC | MOMENT CONNECTION |
| M | MECH | MECHANICAL |
| M | MEMB | MEMBER, MEMBRANE |
| M | MEZZ | MEZZANINE |
| M | MFR | MANUFACTURE(R) |
| M | MIN | MINIMUM |
| M | MISC | MISCELLANEOUS |
| M | MOV | MOVABLE |
| M | MR | MILD REINFORCED, MILD REINFORCING |
| M | MT | MAGNETIC PARTICLE TESTING |
| M | MTL | METAL |
| M | MWFRS | MAIN WIND-FORCE RESISTING SYSTEM |

N

| | | |
|---|---|---|
| N | (N) | NEW |
| N | NDT | NON-DESTRUCTIVE TESTING |
| N | NF | NEAR FACE |
| N | NIC | NOT IN CONTRACT |
| N | NIP | NOT IN PERMIT |
| N | NO | NUMBER, NORTH |
| N | NOM | NOMINAL |
| N | NS | NEAR SIDE |
| N | NTS | NOT TO SCALE |
| N | NWC | NORMAL WEIGHT CONCRETE |

O

| | | |
|---|---|---|
| O | O.F | OUTSIDE FACE |
| O | O/ | OVER |
| O | OC | ON CENTER |
| O | OCBF | ORDINARY CONCENTRICALLY BRACED FRAME |
| O | OD | OUTSIDE DIAMETER |
| O | OH | OPPOSITE HAND |
| O | OMF | ORDINARY MOMENT FRAME |
| O | OPNG | OPENING |
| O | OPP HD | OPPOSITE HAND |
| O | ORCSW | ORDINARY REINFORCED CONCRETE SHEAR WALL |
| O | ORMSW | ORDINARY REINFORCED MASONRY SHEAR WALL |
| O | OSB | ORIENTED STRAND BOARD |
| O | OVS | OVERSIZED |
| O | OZ | OUNCE |

P

| | | |
|---|---|---|
| P | P/C | PRECAST |
| P | PAF | POWDER ACTUATED FASTENER |
| P | PAR | PARALLEL |
| P | PC | PIECE, PILECAP |
| P | PCF | POUNDS PER CUBIC FOOT |
| P | PERP | PERPENDICULAR |
| P | PJ | POUR JOINT |
| P | PJP | PARTIAL JOINT PENETRATION |
| P | PL | PLATE |
| P | PLATF | PLATFORM |
| P | PLCS | PLACES |
| P | PLF | POUNDS PER LINEAR FOOT |
| P | PLMB | PLUMBING |
| P | PLWD | PLYWOOD |
| P | POT | POINT OF TANGENCY |
| P | PQR | PROCEDURE QUALIFICATION RECORD |
| P | PREFAB | PREFABRICATED |
| P | PRKG | PARKING |
| P | PROJ | PROJECTION |
| P | PS | PRESTRESS(ED) |
| P | PSF | POUNDS PER SQUARE FOOT |
| P | PSI | POUNDS PER SQUARE INCH |
| P | PSL | PARALLEL STRAND LUMBER |
| P | PT | POST-TENSION(ED), LIQUID PENETRANT TESTING |
| P | PTDF | PRESSURE TREATED DOUGLAS FIR |
| P | PWJ | PLYWOOD WEB JOIST |

R

| | | |
|---|---|---|
| R | PAF | POWER ACTUATED FASTENER |
| R | R | RADIUS, RISER |
| R | RAD | RADIANS |
| R | RBS | REDUCED BEAM SECTION |
| R | REF | REFERENCE |
| R | REINF | REINFORCING |
| R | REMV | REMOVABLE, REMOVE |
| R | REQD | REQUIRED |
| R | RET | RETURN |
| R | RF | ROOF |
| R | RJ | ROOF JOIST |
| R | ROTN | ROTATION |
| R | RT | RADIOGRAPHIC TESTING |
| R | RTNG | RETAINING |

S

| | | |
|---|---|---|
| S | SA | SCREW ANCHOR |
| S | SAD | SEE ARCHITECTURAL DRAWING(S) |
| S | SAW | SUBMERDGED ARC WELDING |
| S | SCBF | SPECIAL CONCENTRICALLY BRACED FRAME |
| S | SCHED | SCHEDULE |
| S | SCL | STRUCTURAL COMPOSITE LUMBER |
| S | SECT | SECTION |
| S | SEOR | STRUCTURAL ENGINEER OF RECORD |
| S | SEP | SEPARATION |
| S | SF | SQUARE FEET |
| S | SHT | SHEET |
| S | SHTHG | SHEATHING |
| S | SIM | SIMILAR |
| S | SL | SLOPE |
| S | SLBB | SHORT LEG BACK TO BACK |
| S | SLRS | SEISMIC LOAD RESISTING SYSTEM |
| S | SLV | SLEEVE |
| S | SMAW | SHIELDED METAL ARC WELDING |
| S | SMF | SPECIAL MOMENT FRAME |
| S | SMS | SHEET METAL SCREW |
| S | SO | SOUTH |
| S | SOF | SOFFIT |
| S | SOG | SLAB-ON-GRADE |
| S | SOMD | SLAB ON METAL DECK |
| S | SPEC | SPECIFICATIONS, SPECIAL |
| S | SPSW | SPECIAL PLATE SHEAR WALL |
| S | SQ | SQUARE |
| S | SRCSW | SPECIAL REINFORCED CONCRETE SHEAR WALL |
| S | SRMSW | SPECIAL REINFORCED MASONRY SHEAR WALL |
| S | SS | STAINLESS STEEL |
| S | SSH | SHORT SLOTTED HOLE |
| S | STA | STATION |
| S | STAG | STAGGER |
| S | STD | STANDARD |
| S | STIF | STIFFENER |
| S | STIR | STIRRUP |
| S | STL | STEEL |
| S | STMF | SPECIAL TRUSS MOMENT FRAME |
| S | STRUCT | STRUCTURAL |
| S | SW | STUD WELDING |
| S | SWBC | SHEAR WALL BOUNDARY COLUMN |
| S | SYMM | SYMMETRY |

T

| | | |
|---|---|---|
| T | T | TREAD, TOP |
| T | T&B | TOP AND BOTTOM |
| T | T.O | TOP OF |
| T | T/ | TOP OF |
| T | TAR | TYPICAL ALL AROUND |
| T | TC | TOP CHORD |
| T | TEMP | TEMPORARY, TEMPERATURE |
| T | THD | THREAD |
| T | THK | THICK, THICKNESS |
| T | THRU | THROUGH |
| T | TLL | TOP LOWER LAYER |
| T | TOBS | TOP OF BUILT-UP SLAB |
| T | TOC | TOP OF CONCRETE |
| T | TOD | TOP OF STEEL DECK |
| T | TOF | TOP OF FOOTING |
| T | TOG | TOP OF GRATING |
| T | TOPC | TOP OF PILE CAP |
| T | TOS | TOP OF STEEL |
| T | TOW | TOP OF WALL |
| T | TUL | TOP UPPER LAYER |
| T | TYP | TYPICAL |

U

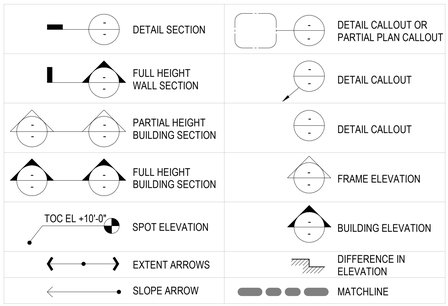
| | | |
|---|---|---|
| U | UNO | UNLESS NOTED OTHERWISE |
| U | UT | ULTRASONIC TESTING |

V

| | | |
|---|---|---|
| V | VERT, (V) | VERTICAL |
| V | VIF | VERIFY IN FIELD |

W

| | | |
|---|---|---|
| W | W/ | WITH |
| W | W/O | WITHOUT |
| W | WD | WOOD |
| W | WF | WIDE FLANGE |
| W | WL | WORK LINE |
| W | WP | WORK POINT |
| W | WPS | WELD PROCEDURE SPECIFICATIONS |
| W | WSP | WOOD STRUCTURAL PANEL |
| W | WT | WEIGHT |
| W | WWR | WELDED WIRE REINFORCEMENT |




Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects

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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES


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SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER ROBERT HALE RANDALL S-6802 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ABBREVIATIONS**

**DSA SUBMITTAL**

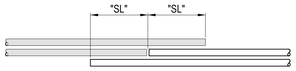
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

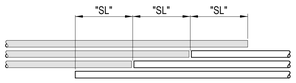
SHEET:

**S0.05**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED



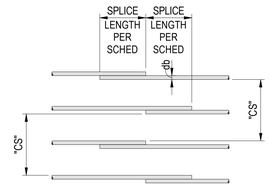

2 BAR BUNDLE SPLICE DETAIL



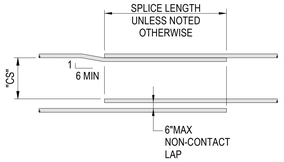

3 BAR BUNDLE SPLICE DETAIL

NOTES:
1. BARS SHALL BE BUNDLED WITH NO MORE THAN 2 BARS IN SAME PLANE
2. "SL" INDICATES SPLICE LENGTH AT BUNDLED BARS. SEE REINFORCING SPLICE NOTE 5.

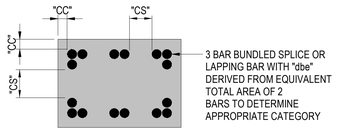
## TYPICAL BUNDLED LAP SPLICES




## TYPICAL STAGGERED LAP SPLICING DETAIL




## TYPICAL LAP SPLICE DETAIL




## TYPICAL BAR CONCRETE COVER & CLEAR SPACING DIAGRAM

## REINFORCING SPLICE NOTES:

1. SCHEDULED SPLICE LENGTHS ARE IN ACCORDANCE WITH ACI 318-19 AND APPLY TO REBAR Fy=60 KSI. LENGTHS ARE FROM CHAPTER 25 (NON-SEISMIC ELEMENTS) AND CHAPTER 18 (SEISMIC ELEMENTS).
2. 

| CATEGORY | DESCRIPTION |
|---|---|
| 1 | 2db ≤ CC AND 4db ≤ CS |
| 2 | [db ≤ CC < 2db & 2db ≤ CS] OR [db ≤ CC & 2db ≤ CS < 4db] |
| 3 | 1/2db ≤ CC < db OR db ≤ CS < 2db |
| CC INDICATES CONCRETE COVER, CS INDICATES BAR CLEAR SPACING. | |

3. IF CC < 1/2db OR CS < db CONTACT SEOR FOR REQUIRED SPLICE LENGTH.
4. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE POURED BELOW BARS.
5. FOR BUNDLED BARS, AN EFFECTIVE BAR DIAMETER (dbe) SHALL BE USED FOR DETERMINING COVER AND SPACING LIMITATIONS:
   a. FOR 2 BAR BUNDLE dbe = 1.414db
   b. FOR 3 BAR BUNDLE dbe = 1.732db
   c. FOR 4 BAR BUNDLE dbe = 2.000db
6. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED, LAP SPLICE LENGTH SHALL BE THE LARGER OF Ld (STRAIGHT BAR DEVELOPMENT) FOR LARGER BAR AND LAP SPLICE LENGTH OF SMALLER BAR.
7. SPLICES LENGTHS MAY BE REDUCED 23% IF SPECIFICALLY NOTED ON STRUCT DRAWINGS AS CLASS "A" SPLICE.
8. APPLY THE FOLLOWING MULTIPLIERS TO SCHEDULED SPLICE LENGTHS FOR EACH INSTANCE BELOW WHICH APPLIES:
   a. FOR REBAR YIELD STRENGTHS OTHER THAN 60 KSI, MULTIPLY SPLICE LENGTHS IN SCHEDULE BY RATIO OF ACTUAL YIELD STRENGTH / 60,000.
   b. SPLICE LENGTH OF LONGITUDINAL BARS IN THE "SPECIAL SPLICE ZONE" AS INDICATED ON SHEAR WALL ELEVATIONS SHALL BE MULTIPLIED BY 1.25 THAT INDICATED IN THE SCHEDULE.
   c. FOR 3-BAR BUNDLES, MULTIPLY SPLICE LENGTHS IN SCHEDULE BY 1.20. FOR 4-BAR BUNDLES, MULTIPY SPLICE LENGTHS IN SCHEDULE BY 1.33. ENTIRE BUNDLE SHALL NOT BE LAP SPLICED.
   d. FOR LIGHTWEIGHT CONCRETE, MULTIPLY SPLICE LENGTHS IN SCHEDULE BY 1.33.
   e. FOR EPOXY COATED BARS WITH CC < 3db OR CS < 6db, MULTIPLY SPLICE LENGTHS IN SCHEDULE BY 1.50. FOR OTHER EPOXY COATED BARS, MULTIPLY SPLICE LENGTHS IN SCHEDULE BY 1.20.
   f. FOR CONCRETE STRENGTH IN BETWEEN STRENGTHS INDICATED IN THE SCHEDULE. USE DEVELOPMENT LENGTH FOR THE LOWER CONCRETE STRENGTH.

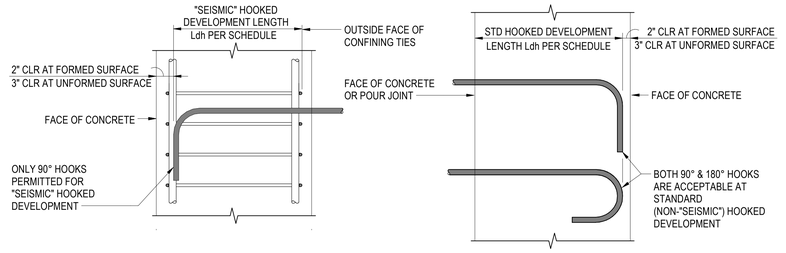
## SPLICE LENGTH SCHEDULE IN INCHES
(APPLICABLE TO REBAR W/ 60 KSI YIELD STRENGTH)

| NORMAL WEIGHT CONCRETE (f'c PSI) | | 3000 PSI | | | | | | 4000 PSI | | | | | | 5000 PSI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATEGORY | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | |
| BAR SIZE | BAR DIAMETER (db) | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS |
| #4 | 0.500 | 23 | 18 | 38 | 29 | 56 | 43 | 20 | 15 | 33 | 25 | 49 | 37 | 18 | 14 | 29 | 23 | 44 | 34 |
| #5 | 0.625 | 28 | 22 | 47 | 36 | 70 | 54 | 25 | 19 | 41 | 31 | 61 | 47 | 22 | 17 | 36 | 28 | 54 | 42 |
| #6 | 0.750 | 34 | 26 | 56 | 43 | 84 | 65 | 29 | 23 | 49 | 37 | 73 | 56 | 26 | 20 | 44 | 34 | 65 | 50 |
| #7 | 0.875 | 49 | 38 | 81 | 63 | 122 | 94 | 43 | 33 | 71 | 54 | 106 | 81 | 38 | 29 | 63 | 49 | 95 | 73 |
| #8 | 1.000 | 56 | 43 | 93 | 72 | 139 | 107 | 49 | 37 | 81 | 62 | 121 | 93 | 44 | 34 | 72 | 56 | 108 | 83 |
| #9 | 1.128 | 63 | 49 | 105 | 81 | 157 | 121 | 55 | 42 | 91 | 70 | 136 | 105 | 49 | 38 | 81 | 63 | 122 | 94 |
| #10 | 1.270 | 71 | 55 | 118 | 91 | 177 | 136 | 62 | 47 | 102 | 79 | 153 | 118 | 55 | 43 | 92 | 71 | 137 | 106 |
| #11 | 1.410 | 79 | 61 | 131 | 101 | 196 | 151 | 68 | 53 | 114 | 87 | 170 | 131 | 61 | 47 | 102 | 78 | 152 | 117 |

## SPLICE LENGTH SCHEDULE IN INCHES
(APPLICABLE TO REBAR W/ 60 KSI YIELD STRENGTH)

| NORMAL WEIGHT CONCRETE (f'c PSI) | | 6000 PSI | | | | | | 7000 PSI | | | | | | 8000 PSI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATEGORY | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | |
| BAR SIZE | BAR DIAMETER (db) | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS |
| #4 | 0.500 | 16 | 13 | 27 | 21 | 40 | 31 | 15 | 12 | 25 | 19 | 37 | 28 | 14 | 12 | 23 | 18 | 35 | 27 |
| #5 | 0.625 | 20 | 16 | 33 | 26 | 50 | 38 | 19 | 14 | 31 | 24 | 46 | 35 | 18 | 14 | 29 | 22 | 42 | 33 |
| #6 | 0.750 | 24 | 19 | 40 | 31 | 59 | 46 | 22 | 17 | 37 | 28 | 55 | 42 | 21 | 16 | 35 | 27 | 52 | 40 |
| #7 | 0.875 | 35 | 27 | 58 | 45 | 86 | 67 | 32 | 25 | 54 | 41 | 80 | 62 | 30 | 23 | 50 | 39 | 75 | 58 |
| #8 | 1.000 | 40 | 31 | 66 | 51 | 99 | 76 | 37 | 28 | 61 | 47 | 91 | 70 | 35 | 27 | 57 | 44 | 86 | 66 |
| #9 | 1.128 | 45 | 35 | 74 | 57 | 111 | 86 | 42 | 32 | 69 | 53 | 103 | 79 | 39 | 30 | 64 | 50 | 96 | 74 |
| #10 | 1.270 | 50 | 39 | 84 | 64 | 125 | 96 | 47 | 36 | 77 | 60 | 116 | 89 | 44 | 34 | 72 | 56 | 108 | 84 |
| #11 | 1.410 | 56 | 43 | 93 | 71 | 139 | 107 | 52 | 40 | 86 | 66 | 129 | 99 | 48 | 37 | 80 | 62 | 120 | 93 |

**TYPICAL REINFORCING SPLICE LENGTH SCHEDULE** — **2** — 3/4" = 1'-0"




"SEISMIC" HOOKED DEVELOPMENT — STANDARD (NON-"SEISMIC") HOOKED DEVELOPMENT

NOTES:

A. ALL HOOKED BARS SHALL EXTEND TO THE FAR FACE OF CONCRETE, AS MUCH AS PRACTICAL, WITH 2" MINIMUM END COVER AND WITH DEVELOPMENT NOT LESS THAN LENGTHS INDICATED IN SCHEDULE INCLUDING APPROPRIATE MULTIPLIERS.

B. PROVIDE 2 1/2" MINIMUM CONCRETE SIDE COVER.

C. "SEISMIC" HOOKED DEVELOPMENT LENGTH Ldh IN SCHEDULE INCLUDING APPROPRIATE MULTIPLIERS APPLY TO BARS W/ STD 90° HOOKS LOCATED WITHIN A CONFINED CORE OF SPECIAL MOMENT FRAME COLUMNS. 180° HOOKS ARE NOT PERMITTED FOR "SEISMIC" HOOKED DEVELOPMENT.

## HOOKED DEVELOPMENT Ldh

## STRAIGHT DEVELOPMENT LENGTH SCHEDULE (Ld) IN INCHES
(APPLICABLE TO REBAR W/ 60 KSI YIELD STRENGTH)

| NORMAL WEIGHT CONCRETE (f'c PSI) | | 3000 PSI | | | | | | | | 4000 PSI | | | | | | | | 5000 PSI | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATEGORY | | 1 | | 2 | | 3 | | SEISMIC | | 1 | | 2 | | 3 | | SEISMIC | | 1 | | 2 | | 3 | | SEISMIC | |
| BAR SIZE | BAR DIAMETER (db) | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS |
| #4 | 0.500 | 18 | 14 | 29 | 22 | 43 | 33 | 28 | 22 | 15 | 12 | 25 | 19 | 37 | 29 | 24 | 19 | 14 | 12 | 23 | 17 | 34 | 26 | 22 | 17 |
| #5 | 0.625 | 22 | 17 | 36 | 28 | 54 | 42 | 35 | 27 | 19 | 15 | 31 | 24 | 47 | 36 | 30 | 23 | 17 | 13 | 28 | 22 | 42 | 32 | 27 | 21 |
| #6 | 0.750 | 26 | 20 | 43 | 33 | 65 | 50 | 42 | 32 | 23 | 18 | 37 | 29 | 56 | 43 | 36 | 28 | 20 | 16 | 34 | 26 | 50 | 39 | 32 | 25 |
| #7 | 0.875 | 38 | 29 | 63 | 48 | 94 | 72 | 48 | 37 | 33 | 25 | 54 | 42 | 81 | 63 | 42 | 32 | 29 | 23 | 49 | 38 | 73 | 56 | 38 | 29 |
| #8 | 1.000 | 43 | 33 | 72 | 55 | 107 | 83 | 55 | 43 | 37 | 29 | 62 | 48 | 93 | 72 | 48 | 37 | 34 | 26 | 56 | 43 | 83 | 64 | 43 | 33 |
| #9 | 1.128 | 49 | 38 | 81 | 62 | 121 | 93 | 62 | 48 | 42 | 33 | 70 | 54 | 105 | 81 | 54 | 42 | 38 | 29 | 63 | 48 | 94 | 72 | 48 | 37 |
| #10 | 1.270 | 55 | 42 | 91 | 70 | 136 | 105 | 70 | 54 | 47 | 37 | 79 | 61 | 118 | 91 | 61 | 47 | 43 | 33 | 71 | 54 | 106 | 81 | 54 | 42 |
| #11 | 1.410 | 61 | 47 | 101 | 78 | 151 | 116 | 78 | 60 | 53 | 41 | 87 | 67 | 131 | 101 | 67 | 52 | 47 | 36 | 78 | 60 | 117 | 90 | 60 | 47 |
| #14 | 1.693 | 73 | 56 | 121 | 93 | 181 | 140 | - | - | 63 | 49 | 105 | 81 | 157 | 121 | - | - | 57 | 44 | 94 | 72 | 141 | 108 | - | - |
| #18 | 2.257 | 97 | 75 | 161 | 124 | 242 | 186 | - | - | 84 | 65 | 140 | 108 | 209 | 161 | - | - | 75 | 58 | 125 | 96 | 187 | 144 | - | - |

## STRAIGHT DEVELOPMENT LENGTH SCHEDULE (Ld) IN INCHES
(APPLICABLE TO REBAR W/ 60 KSI YIELD STRENGTH)

| NORMAL WEIGHT CONCRETE (f'c PSI) | | 6000 PSI | | | | | | | | 7000 PSI | | | | | | | | 8000 PSI | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATEGORY | | 1 | | 2 | | 3 | | SEISMIC, (SEE NOTE 6) | | 1 | | 2 | | 3 | | SEISMIC, (SEE NOTE 6) | | 1 | | 2 | | 3 | | SEISMIC, (SEE NOTE 6) | |
| BAR SIZE | BAR DIAMETER (db) | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS | TOP | OTHERS |
| #4 | 0.500 | 13 | 12 | 21 | 16 | 31 | 24 | 20 | 15 | 12 | 12 | 19 | 15 | 28 | 22 | 20 | 15 | 12 | 12 | 18 | 14 | 27 | 21 | 20 | 15 |
| #5 | 0.625 | 16 | 12 | 26 | 20 | 38 | 30 | 25 | 19 | 14 | 12 | 24 | 18 | 35 | 27 | 23 | 18 | 14 | 12 | 22 | 17 | 33 | 26 | 21 | 17 |
| #6 | 0.750 | 19 | 14 | 31 | 24 | 46 | 35 | 30 | 23 | 17 | 13 | 28 | 22 | 42 | 33 | 27 | 21 | 16 | 13 | 27 | 21 | 40 | 31 | 26 | 20 |
| #7 | 0.875 | 27 | 21 | 45 | 34 | 67 | 51 | 34 | 27 | 25 | 19 | 41 | 32 | 62 | 48 | 32 | 25 | 23 | 18 | 39 | 30 | 58 | 45 | 30 | 23 |
| #8 | 1.000 | 31 | 24 | 51 | 39 | 76 | 59 | 39 | 30 | 28 | 22 | 47 | 36 | 70 | 54 | 36 | 28 | 27 | 21 | 44 | 34 | 66 | 51 | 34 | 26 |
| #9 | 1.128 | 35 | 27 | 57 | 44 | 86 | 66 | 44 | 34 | 32 | 25 | 53 | 41 | 79 | 61 | 41 | 32 | 30 | 23 | 50 | 38 | 74 | 57 | 38 | 30 |
| #10 | 1.270 | 39 | 30 | 64 | 50 | 96 | 74 | 50 | 38 | 36 | 28 | 60 | 46 | 89 | 69 | 46 | 36 | 34 | 26 | 56 | 43 | 84 | 64 | 43 | 33 |
| #11 | 1.410 | 43 | 33 | 71 | 55 | 107 | 82 | 55 | 43 | 40 | 31 | 66 | 51 | 99 | 76 | 51 | 39 | 37 | 29 | 62 | 48 | 93 | 71 | 48 | 37 |
| #14 | 1.693 | 52 | 40 | 86 | 66 | 128 | 99 | - | - | 48 | 37 | 79 | 61 | 119 | 92 | - | - | 45 | 35 | 74 | 57 | 111 | 86 | - | - |
| #18 | 2.257 | 69 | 53 | 114 | 88 | 171 | 132 | - | - | 64 | 49 | 106 | 81 | 158 | 122 | - | - | 60 | 46 | 99 | 76 | 148 | 114 | - | - |

## HOOKED DEVELOPMENT LENGTH SCHEDULE (Ldh) IN INCHES
(APPLICABLE TO REBAR W/ 60 KSI YIELD STRENGTH)

| NORMAL WEIGHT CONCRETE (f'c PSI) | | 3000 PSI | | 4000 PSI | | 5000 PSI | | 6000 PSI | | 7000 PSI | | 8000 PSI | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BAR SIZE | BAR DIAMETER (db) | STANDARD | SEISMIC (SEE NOTE 7) | STANDARD | SEISMIC (SEE NOTE 7) | STANDARD | SEISMIC (SEE NOTE 7) | STANDARD | SEISMIC (SEE NOTE 7) | STANDARD | SEISMIC (SEE NOTE 7) | STANDARD | SEISMIC (SEE NOTE 7) |
| #4 | 0.500 | 8 | 9 | 7 | 8 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| #5 | 0.625 | 10 | 11 | 9 | 10 | 8 | 9 | 7 | 8 | 7 | 7 | 6 | 7 |
| #6 | 0.750 | 12 | 13 | 10 | 11 | 9 | 10 | 9 | 9 | 8 | 9 | 8 | 8 |
| #7 | 0.875 | 14 | 15 | 12 | 13 | 11 | 12 | 10 | 11 | 9 | 10 | 9 | 10 |
| #8 | 1.000 | 16 | 17 | 14 | 15 | 12 | 14 | 11 | 12 | 11 | 12 | 10 | 11 |
| #9 | 1.128 | 18 | 20 | 15 | 17 | 14 | 15 | 13 | 14 | 12 | 13 | 11 | 12 |
| #10 | 1.270 | 20 | 22 | 17 | 19 | 16 | 17 | 14 | 16 | 13 | 15 | 12 | 14 |
| #11 | 1.410 | 22 | 24 | 19 | 21 | 17 | 19 | 16 | 17 | 15 | 16 | 14 | 15 |
| #14 | 1.693 | 38 | - | 33 | - | 29 | - | 27 | - | 25 | - | 23 | - |
| #18 | 2.257 | 50 | - | 43 | - | 39 | - | 35 | - | 33 | - | 31 | - |




## TYPICAL BAR CONCRETE COVER & CLEAR SPACING DIAGRAM

## REINFORCING DEVELOPMENT NOTES:

1. SCHEDULED DEVELOPMENT LENGTHS ARE IN ACCORDANCE WITH ACI 318-19 AND APPLY TO REBAR Fy=60 KSI. LENGTHS ARE FROM CHAPTER 25 (NON-SEISMIC ELEMENTS) AND CHAPTER 18 (SEISMIC ELEMENTS).
2. 

| CATEGORY | DESCRIPTION |
|---|---|
| 1 | 2db ≤ CC AND 4db ≤ CS |
| 2 | [db ≤ CC < 2db & 2db ≤ CS] OR [db ≤ CC & 2db ≤ CS < 4db] |
| 3 | 1/2db ≤ CC < db OR db ≤ CS < 2db |
| SEISMIC | SEE NOTES 6 & 7 |
| CC INDICATES CONCRETE COVER, CS INDICATES BAR CLEAR SPACING. | |

3. IF CC < 1/2db OR CS < db CONTACT SEOR FOR REQUIRED DEVELOPMENT LENGTH.
4. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE POURED BELOW BARS.
5. FOR BUNDLED BARS, AN EFFECTIVE BAR DIAMETER (dbe) SHALL BE USED FOR DETERMINING COVER AND SPACING LIMITATIONS:
   a. FOR 2 BAR BUNDLE dbe = 1.414db
   b. FOR 3 BAR BUNDLE dbe = 1.732db
   c. FOR 4 BAR BUNDLE dbe = 2.000db
6. APPLY THE FOLLOWING MULTIPLIERS TO SCHEDULED DEVELOPMENT LENGTHS FOR EACH INSTANCE BELOW WHICH APPLIES:
   a. FOR REBAR YIELD STRENGTHS OTHER THAN 60 KSI, MULTIPLY DEVELOPMENT LENGTHS Ld & Ldh IN SCHEDULE BY RATIO OF ACTUAL YIELD STRENGTH / 60,000.
   b. DEVELOP LENGTH OF LONGITUDINAL BARS IN THE "SPECIAL SPLICE ZONE" AS INDICATED ON SHEAR WALL ELEVATIONS SHALL BE MULTIPLIED BY 1.25 THAT INDICATED IN THE SCHEDULE.
   c. FOR 3-BAR BUNDLES, MULTIPLY DEVELOPMENT LENGTHS Ld & Ldh IN SCHEDULE BY 1.20. FOR 4-BAR BUNDLES, MULTIPY DEVELOPMENT LENGTHS Ld & Ldh IN SCHEDULE BY 1.33.
   d. FOR LIGHTWEIGHT CONCRETE, MULTIPLY STRAIGHT DEVELOPMENT LENGTH Ld IN SCHEDULE BY 1.33. FOR LIGHTWEIGHT CONCRETE, MULTIPLY HOOKED DEVELOPMENT LENGTH Ldh IN SCHEDULE BY 1.33 .
   e. FOR CONCRETE STRENGTH IN BETWEEN STRENGTHS INDICATED IN THE SCHEDULE. USE DEVELOPMENT LENGTH FOR THE LOWER CONCRETE STRENGTH.

**TYP REINF STRAIGHT AND HOOKED DEVELOPMENT LENGTH SCHEDULE** — **1** — NTS

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
JOSEPH MICHAEL BANISH
64892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**TYPICAL CONCRETE DETAILS**

**DSA SUBMITTAL**

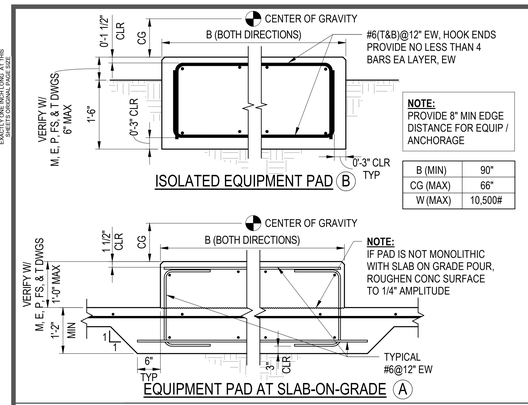
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

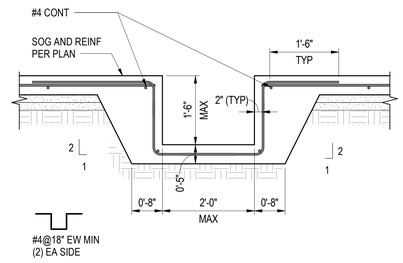
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**S0.11**

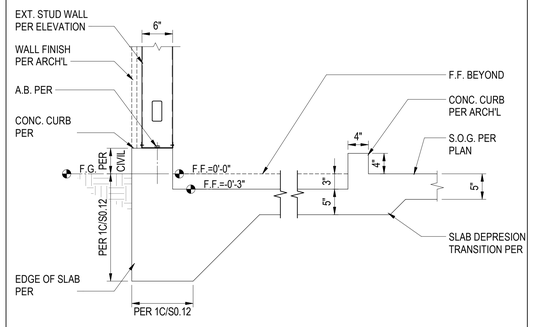
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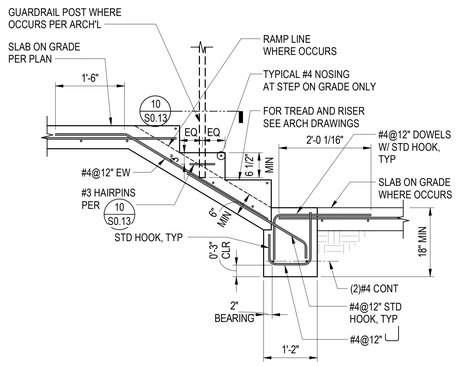

**TYP EQUIPMENT PAD (UP TO 14,000 LBS)** 9 NTS



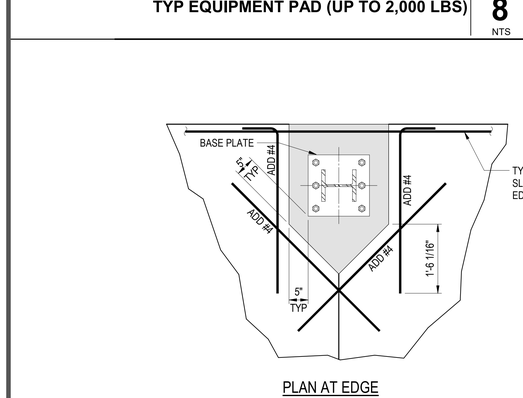

**TYP ELECTRICAL BOX IN CONC SOG** 7 NTS



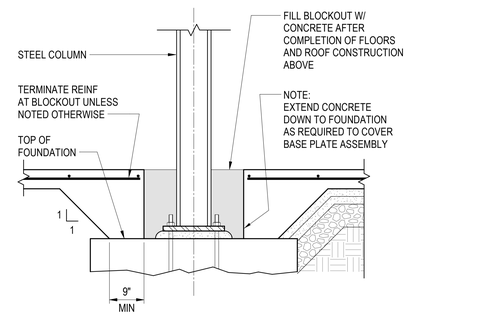

**DETAIL** 4 NTS



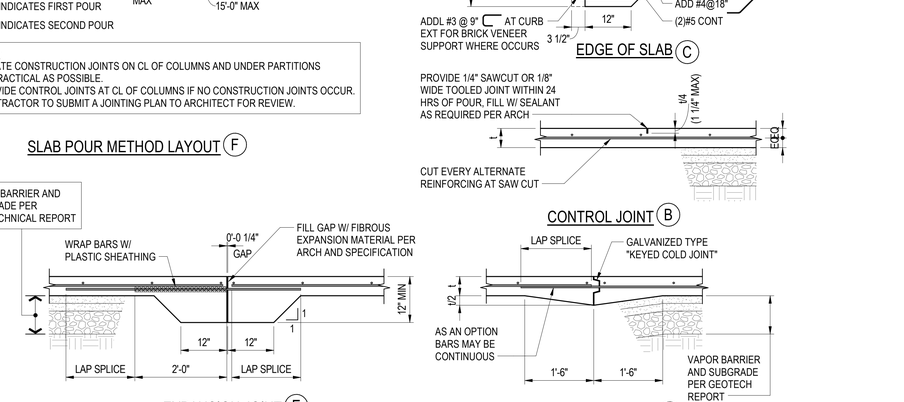

**TYPICAL CONCRETE STEPS OR RAMP ON GRADE DETAIL** 3 3/4" = 1'-0"



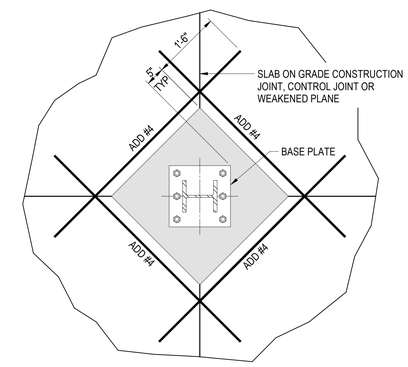

**TYP EQUIPMENT PAD (UP TO 2,000 LBS)** 8 NTS



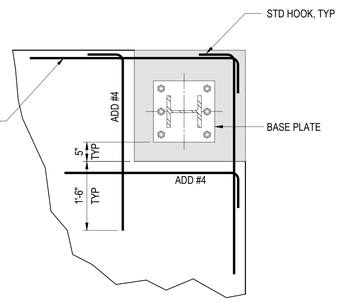

**DETAIL** 6 NTS




**PLANTER DETAIL** 2 NTS




PLAN AT EDGE




PLAN AT CORNER

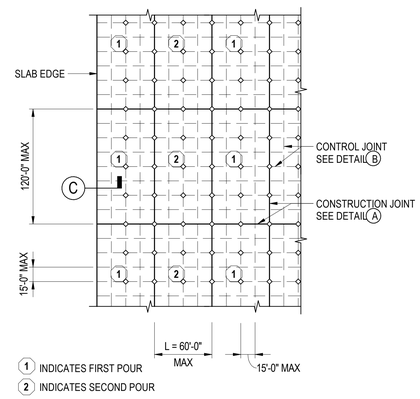



PLAN AT INTERIOR




TYPICAL ELEVATION

**TYPICAL BLOCKOUTS IN CONCRETE SLAB ON GRADE AT STEEL COLUMNS** 5 NTS

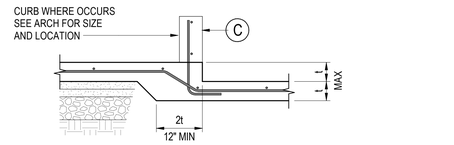



NOTES:
1. LOCATE CONSTRUCTION JOINTS ON CL OF COLUMNS AND UNDER PARTITIONS AS PRACTICAL AS POSSIBLE.
2. PROVIDE CONTROL JOINTS AT CL OF COLUMNS IF NO CONSTRUCTION JOINTS OCCUR.
3. CONTRACTOR TO SUBMIT A JOINTING PLAN TO ARCHITECT FOR REVIEW.

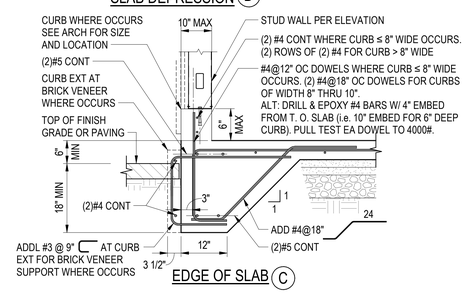
SLAB POUR METHOD LAYOUT (F)




EXPANSION JOINT (E)
(EXPANSION JOINTS APPLY ONLY WHERE INDICATED ON STRUCT DWGS)




SLAB DEPRESSION (D)




EDGE OF SLAB (C)




CONTROL JOINT (B)




POUR / CONSTRUCTION JOINT (A)

**TYPICAL CONCRETE SLAB ON GRADE DETAILS** 1 NTS

PLEASE RECYCLE

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL CONCRETE DETAILS**

**DSA SUBMITTAL**

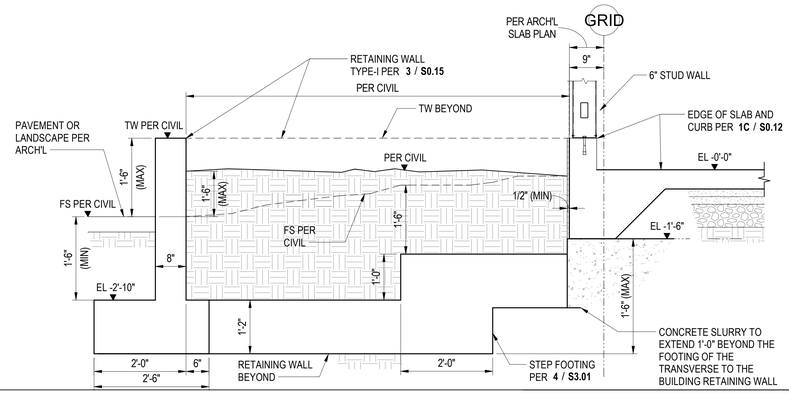
FILE NO.: 19-H10 | A NO.: 03-123641

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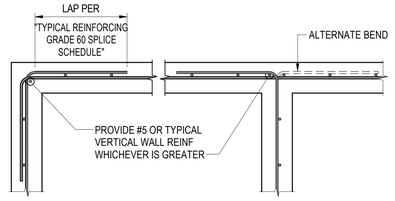
SHEET:

**S0.12**

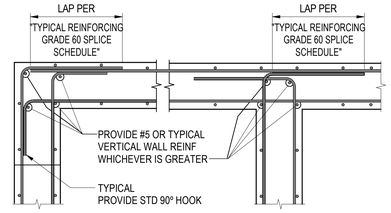
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") WHEN PLOTTED ON ORIGINAL SHEET SIZE




## PLANTER DETAIL 9
NTS



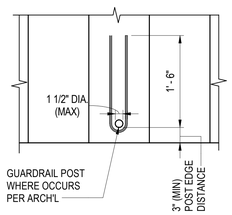

SINGLE CURTAIN



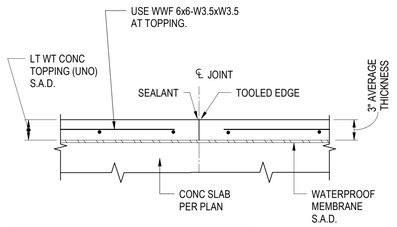

DOUBLE CURTAINS

## TYPICAL CONCRETE WALL REINFORCING AT INTERSECTION DETAILS 4
NTS

NOTE: SEE **3 / S0.12** FOR STAIR REINF.

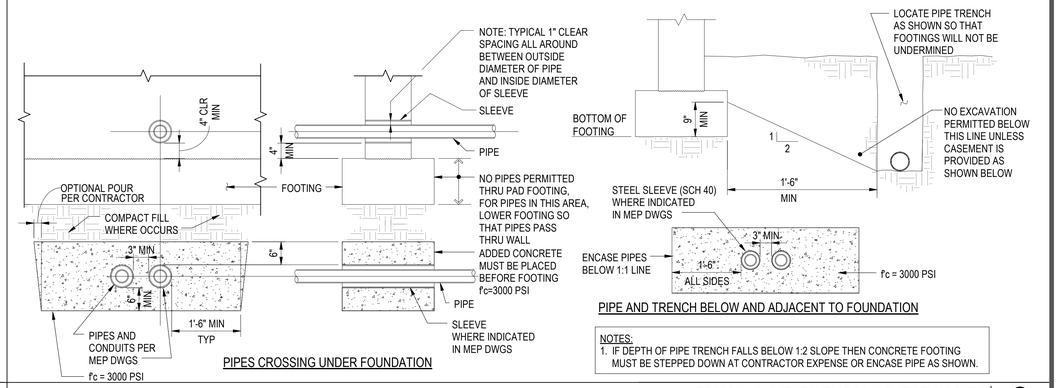



## DETAIL 10
1" = 1'-0"




**NOTES:**
1. MAXIMUM DISTANCE BETWEEN JOINTS SHALL BE 20'-0".
2. MAXIMUM LENGTH TO WIDTH RATIO OF TOPPING SLAB (BETWEEN JOINTS) SHALL BE 3:1.
3. MINIMUM SLAB WIDTH IN ANY CASE SHALL BE 2'-0".

## TYPICAL CONCRETE TOPPING SLAB DETAIL 8
NTS

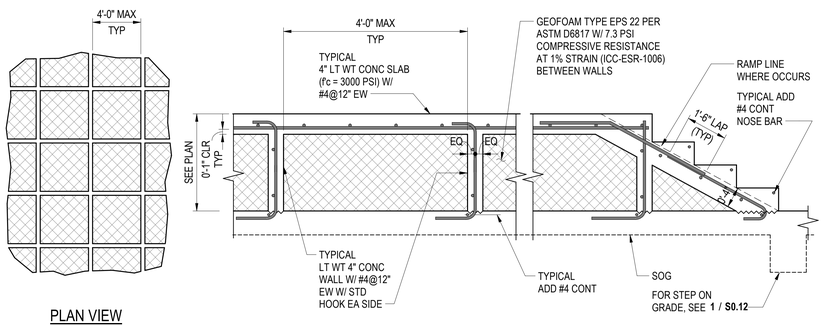



PIPES CROSSING UNDER FOUNDATION

PIPE AND TRENCH BELOW AND ADJACENT TO FOUNDATION

NOTES:
1. IF DEPTH OF PIPE TRENCH FALLS BELOW 1:2 SLOPE THEN CONCRETE FOOTING MUST BE STEPPED DOWN AT CONTRACTOR EXPENSE OR ENCASE PIPE AS SHOWN.

## TYPICAL PIPES THRU OR TRENCHES ADJACENT TO FOUNDATION 3
NTS

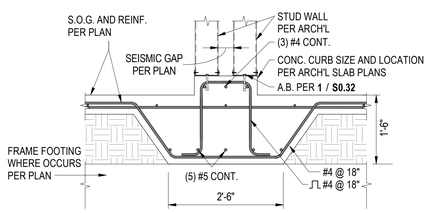



PLAN VIEW

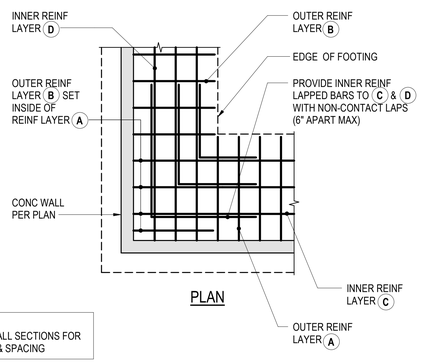
TYPICAL CONDITION

STAIR/RAMP CONDITION

## TYPICAL BUILT-UP CONCRETE SLAB OVER SOG 7
NTS



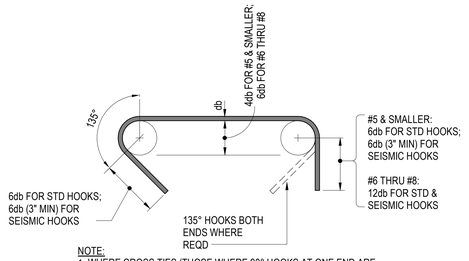

## DETAIL 11
3/4" = 1'-0"




PLAN

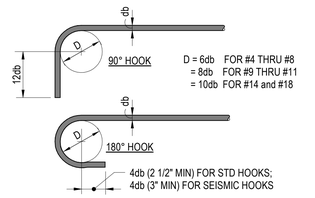
**NOTE:**
SEE WALL SECTIONS FOR REINF & SPACING

## TYPICAL FOOTING REINFORCING CONDITION AT INSIDE CORNER 6
NTS



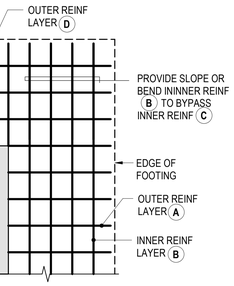

NOTE:
1. WHERE CROSS TIES (THOSE WHERE 90° HOOKS AT ONE END ARE PERMITTED) ENGAGE SAME LONGITUDINAL BAR, CONSECUTIVE CROSS TIES SHALL HAVE THEIR 90° HOOKS ALTERNATING END FOR END ALONG LONGITUDINAL BAR.

HOOKS FOR TIES, STIRRUPS AND HOOPS



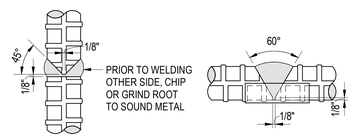

HOOKS FOR BARS OTHER THAN TIES, STIRRUPS AND HOOPS

## TYPICAL REINFORCING STEEL STANDARD AND SEISMIC HOOK DETAILS 1
NTS




**NOTE:**
SEE WALL SECTIONS FOR REINF & SPACING

PLAN




VERTICAL BAR HORIZONTAL BAR

NOTES:
1. AS AN ALTERNATE TO LAP SPLICE, BUTT WELD MAY BE USED AS INDICATED ABOVE, PROVIDED THEY ARE STAGGERED @24" MINIMUM.
2. AN APPROVED TESTING LABORATORY SHALL PROVIDE A PREQUALIFICATION TENSION TEST FOR SAMPLES ON EVERY SIZE OF BAR BEING WELDED.
3. MATERIALS, CONDITIONS AND WELDING PROCEDURES UTILIZED SHALL COMPLY WITH THE CURRENT APPLICABLE BUILDING CODE AND THE REQUIREMENTS OF THE GOVERNING INSPECTION AGENCY.

## TYPICAL FOOTING REINFORCING CONDITON AT CORNER 5
NTS

## TYPICAL REINFORCING BUTT WELDS DETAIL (ALTERNATE SPLICES) 2
NTS

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SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER — ROBERT WAYNE RANDALL — No. S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**TYPICAL CONCRETE DETAILS**

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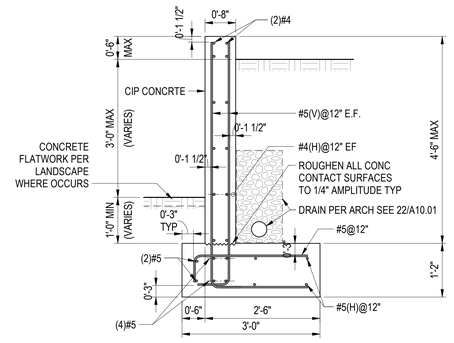
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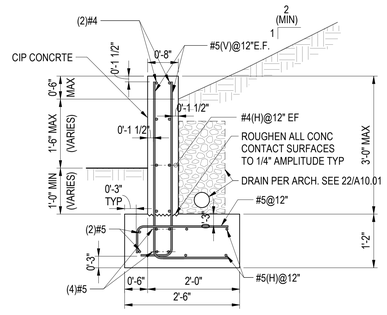
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PLEASE RECYCLE

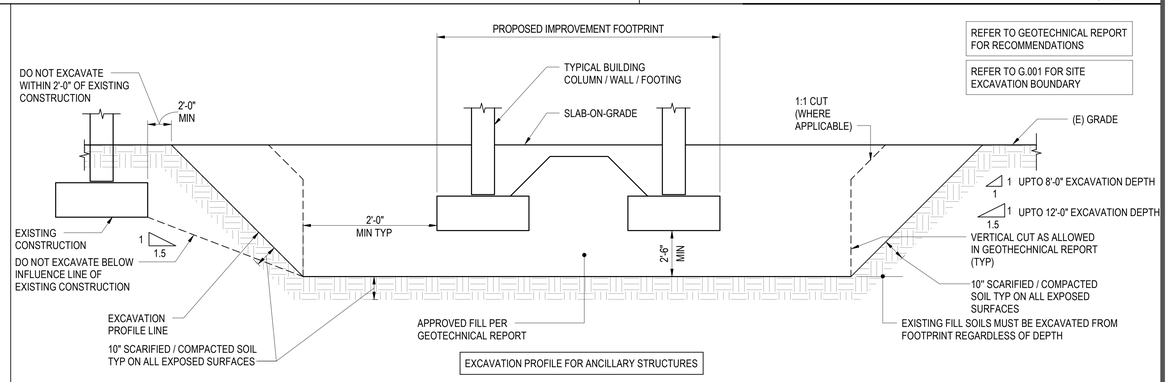
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY



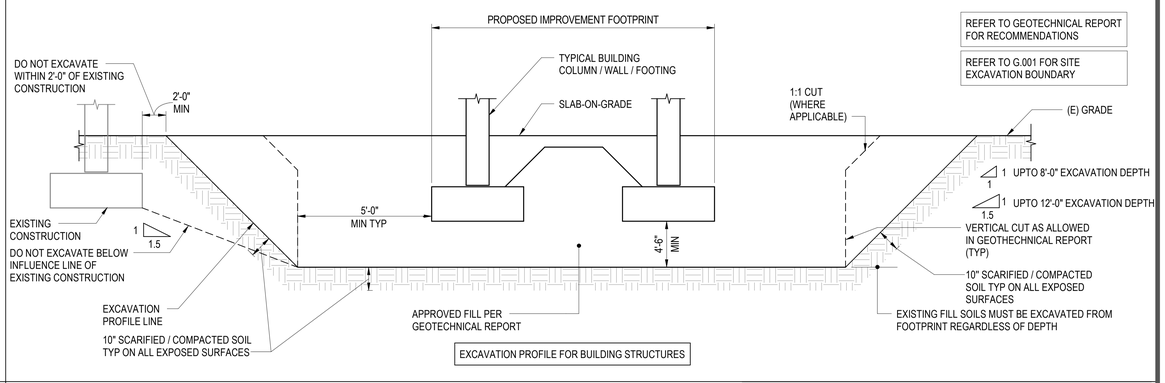

**RETAINING WALL - TYPE 2** **4** 3/4" = 1'-0"




**RETAINING WALL - TYPE 1** **3** 3/4" = 1'-0"




**FOOTING EXCAVATION PROFILE FOR ANCILLARY STRUCTURES** **2** 3/8" = 1'-0"




**FOOTING EXCAVATION PROFILE FOR BUILDING STRUCTURES** **1** 3/8" = 1'-0"

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San Diego, CA 92101
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SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER — OMAR WALEED KANJO — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL CONCRETE & EXCAVATION DETAILS**

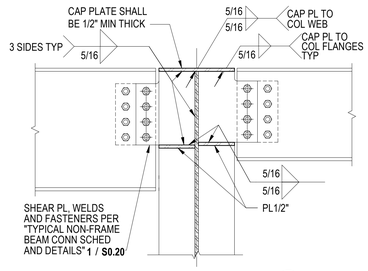
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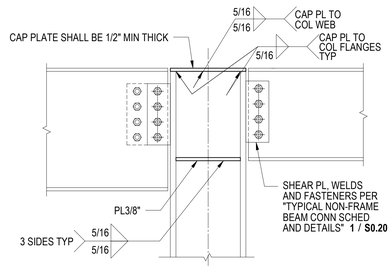
SHEET:

**S0.15**

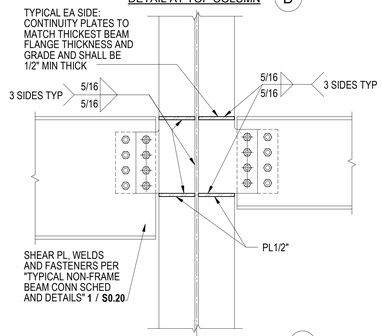
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY



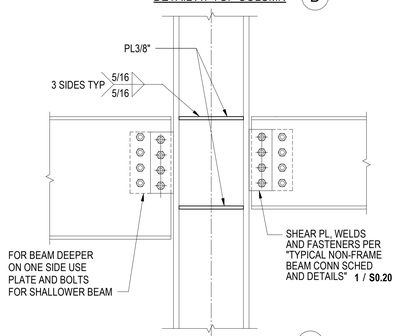

DETAIL AT TOP COLUMN D




DETAIL AT TOP COLUMN B




DETAIL AT CONTINUOUS COLUMN C




DETAIL AT CONTINUOUS COLUMN A

BEAM TO COLUMN WEB, INDICATED THUS ON PLAN:

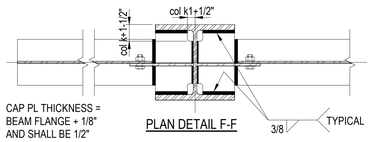
BEAM TO COLUMN FLANGE, INDICATED THUS ON PLAN:

**NOTE:**

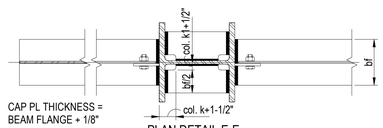
1. FOR DRAG BEAM CONNECTION AT HSS FRAME COLUMN, SEE **5 / S0.21**.
2. ALL BOLTS SHALL BE "SC" (SLIP CRITICAL) TYPE AND THE CONNECTION SURFACES SHALL BE CLASS "A" FAYING SURFACES. (SEE NOTE IN **1 / S0.20** FOR ADDITIONAL INFORMATION)
3. FOR DRAG BEAM CONNECTION AT BEAM TO BEAM WHERE INDICATED THUS ◁ | ▷ ON PLAN, SEE **7 / S0.22**.
4. FOR BALANCE OF INFORMATION, SEE **2 / S0.21**.
5. ▷ 1 ROW A-325-SC BOLTS PER **1 / S0.20** .
6. ▷▷ 2 ROW A325-SC BOLTS (2 TIMES NUMBER OF BOLTS PER **1 / S0.20** .
7. ▷F PROVIDE FULL-HT STIFFENER SIM TO **1E / S0.20**
8. ▷T CJP THE TOP FLANGE. PROVIDE BOLTS AND SHEAR PLATE PER **1 / S0.20** .

## TYPICAL DRAG BEAM CONNECTION (SLRS) 4

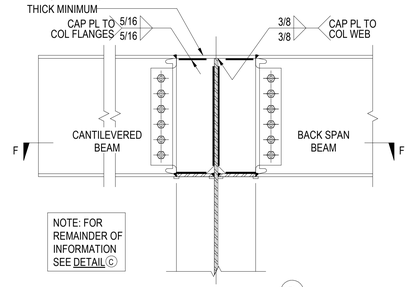
1" = 1'-0"



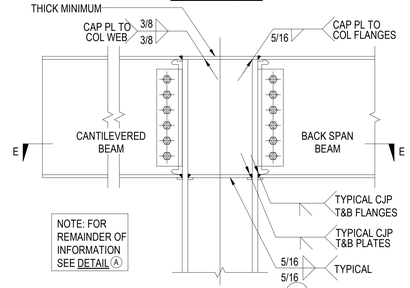

PLAN DETAIL F-F



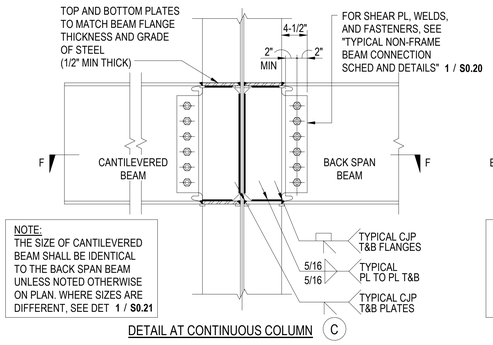

PLAN DETAIL E-E



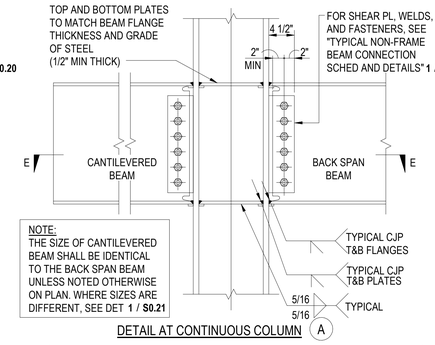

DETAIL AT TOP OF COLUMN D




DETAIL AT TOP OF COLUMN B




DETAIL AT CONTINUOUS COLUMN C




DETAIL AT CONTINUOUS COLUMN A

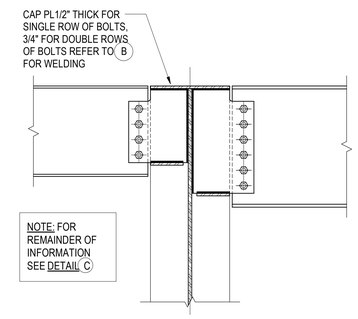
BEAM TO COLUMN WEB, INDICATED THUS ON PLAN:

BEAM TO COLUMN FLANGE, INDICATED THUS ON PLAN:

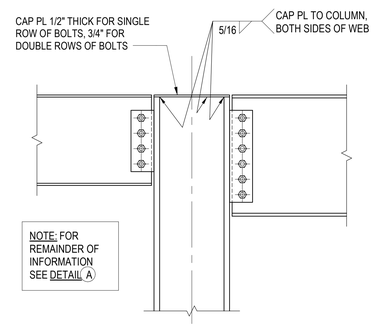
STEL-WBEM-0003

## TYPICAL NON-FRAME BEAM MOMENT CONNECTIONS 3

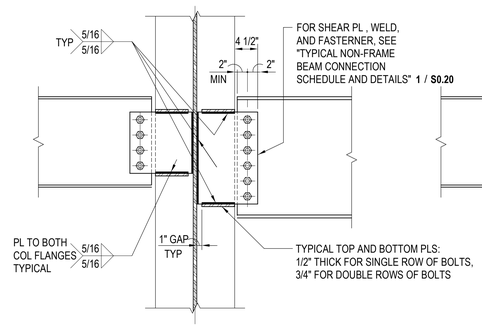
1" = 1'-0"



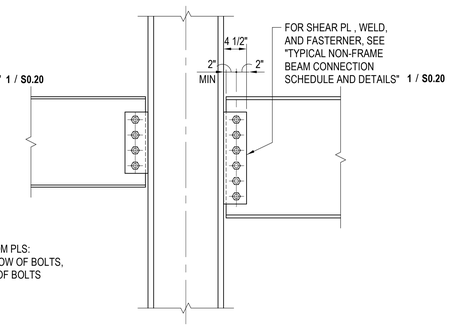

DETAIL AT TOP OF COLUMN D




DETAIL AT TOP OF COLUMN B




DETAIL AT CONTINUOUS COLUMN C




DETAIL AT CONTINUOUS COLUMN A

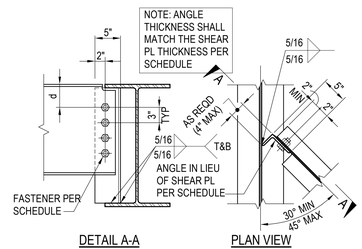
BEAM TO COLUMN FLANGE, INDICATED THUS ON PLAN:

BEAM TO COLUMN WEB, INDICATED THUS ON PLAN:

STEL-WBEM-0002

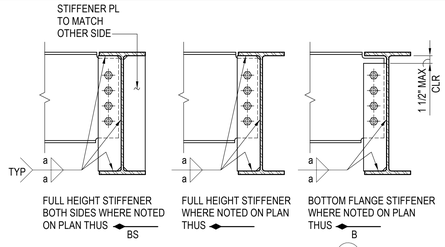
## TYPICAL NON-FRAME BEAM TO COLUMN CONNECTIONS 2

1" = 1'-0"



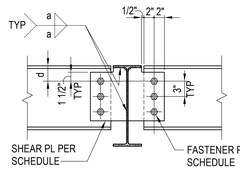

DETAIL A-A PLAN VIEW

TYPICAL SKEWED BEAM CONNECTION F

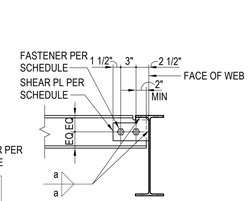



TYPICAL BEAM STIFFENER SHEAR PLATE DETAILS E

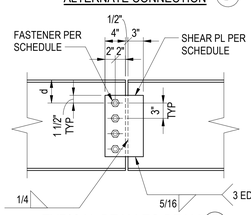
NOTES:
1. MINIMUM WIDTH OF STIFFENER SHALL EXTEND TO THE EDGE OF BEAM FLANGE
2. FOR REMAINDER OF INFORMATION, SEE TYPICAL BEAM CONNECTION DETAIL A




TYPICAL SYMMETRIC BEAM ALTERNATE CONNECTION D

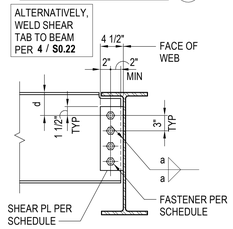



W6x AND C6x CONNECTION C




TYPICAL BEAM TO BEAM END CONNECTION B

ALTERNATIVELY, WELD SHEAR TAB TO BEAM PER 4 / S0.22




TYPICAL BEAM CONNECTION A

### BEAM CONNECTION SCHEDULE ✱

| BEAM SIZE | SHEAR PLATE | | | | |
|---|---|---|---|---|---|
| | THICKNESS (IN) | WELD "a" | FASTENER ✱ (A325-N HSB, UNO) | DISTANCE "d" | CAPACITY (KIPS) |
| W6x, C6x | 3/8 | 1/4 | 2-3/4"Ø | - | 18.4 |
| W8x, C8x | 3/8 | 1/4 | 2-3/4"Ø | 2 1/2" | 18.4 |
| W10x, C10x | 3/8 | 1/4 | 2-3/4"Ø | 3 1/2" | 18.4 |
| W12x, C12x MC12x | 3/8 | 5/16 | 3-7/8"Ø | 3" | 48.4 |
| W14x | 3/8 | 5/16 | 3-7/8"Ø | 4" | 48.4 |
| W16x | 3/8 | 5/16 | 4-7/8"Ø | 3 1/2" | 74.6 |
| W18x | 3/8 | 5/16 | 4-7/8"Ø | 4 1/2" | 74.6 |
| W21x | 3/8 | 5/16 | 5-7/8"Ø | 4 1/2" | 97.9 |
| W24x | 3/8 | 5/16 | 6-7/8"Ø | 4 1/2" | 117.0 |
| W27x | 1/2 | 5/16 | 7-7/8"Ø | 4 1/2" | 152.4 |
| W30x | 1/2 | 5/16 | 8-7/8"Ø | 4 1/2" | 177.9 |
| W33x | 1/2 | 5/16 | 9-1"Ø | 4 1/2" | 227.0 |
| W36x | 1/2 | 5/16 | 10-1"Ø | 4 1/2" | 251.0 |

✱ **NOTE:** PROVIDE ONE SIZE LARGER DIAMETER PRETENSIONED "SC" SLIP CRITICAL TYPE BOLTS AT "SLRS" BEAM CONNECTIONS OR WHERE INDICATED AS "SC" ON DETAILS. THE CONNECTION SURFACE SHALL BE CLASS "A" FAYING SURFACE.

STEL-WBEM-0001(REV-1)

## TYPICAL NON-FRAME BEAM CONNECTION SCHEDULE AND DETAILS 1

1" = 1'-0"

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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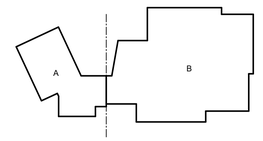
**KEYNOTES**


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225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL STEEL DETAILS**

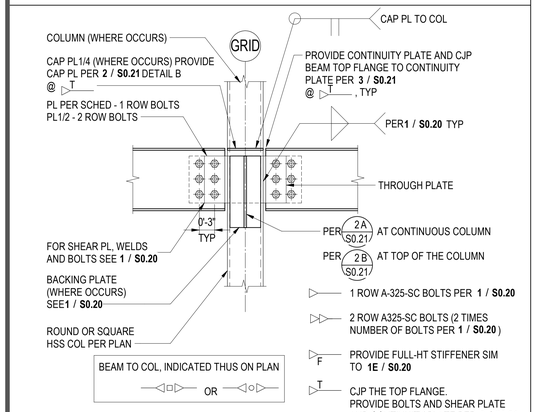
**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
| SHEET: | |

**S0.20**

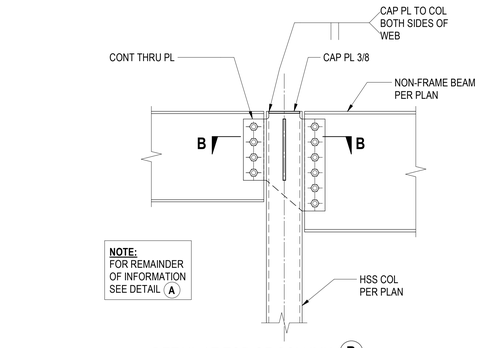
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THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") WHEN PLOTTED ON ORIGINAL SHEET SIZE (D)

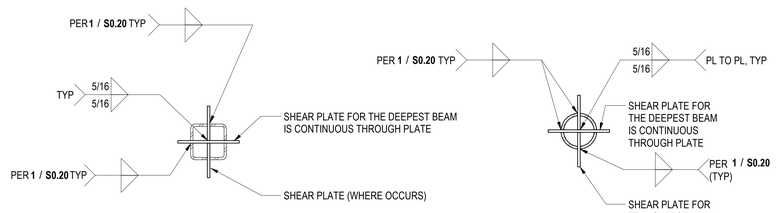



**NOTE:** PROVIDE ONE SIZE LARGER DIAMETER THAN ONE SPECIFIED IN **1 / S0.20** PRETENSIONED "SC" SLIP CRITICAL TYPE BOLTS AT ALL "SLRS" BEAM CONNECTIONS OR WHERE INDICATED AS "SC" ON DETAILS. THE CONNECTION SURFACE SHALL BE CLASS "A" FAYING SURFACE.

## TYP SLRS DRAG CONNECTION 5 NTS

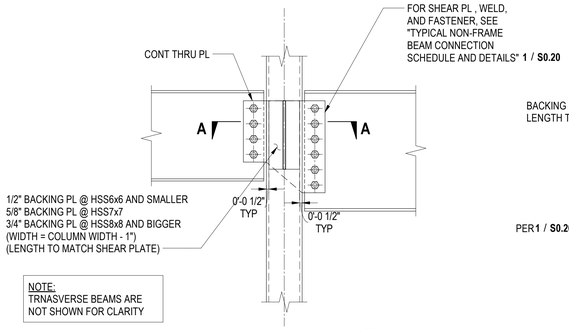



DETAIL AT TOP OF COLUMN (B)




SECTION B-B
(AT TOP OF COLUMN)




DETAIL AT CONTINUOUS COLUMN (A)



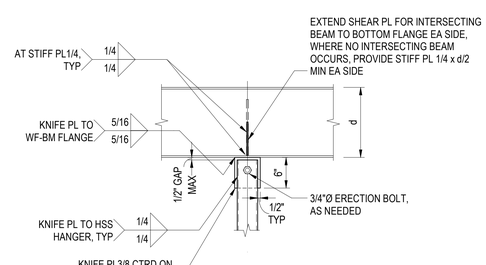




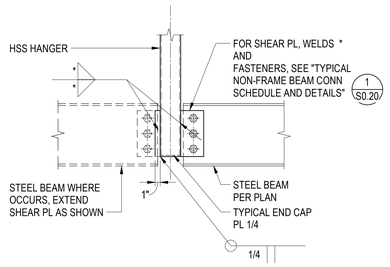
SECTION A-A
(AT CONTINUOUS COLUMN)

BEAM TO COLUMN, INDICATED THUS ON PLAN: OR

## TYPICAL NON-FRAME BEAM TO HSS COLUMN CONNECTIONS 2 NTS

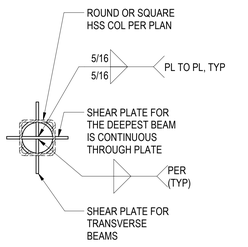



TOP CONNECTION (B)

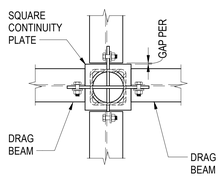



BOTTOM CONNECTION (A)

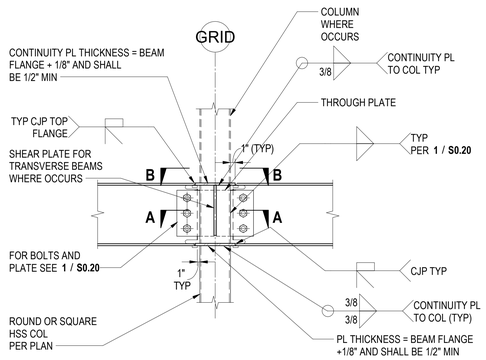
## TYPICAL HSS HANGER DETAILS 4 NTS




SECTION A-A

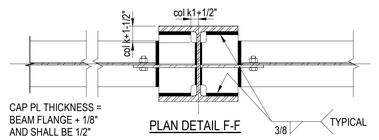



SECTION B-B

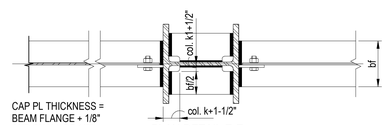



BEAM TO COL INDICATES THUS ON PLAN
OR

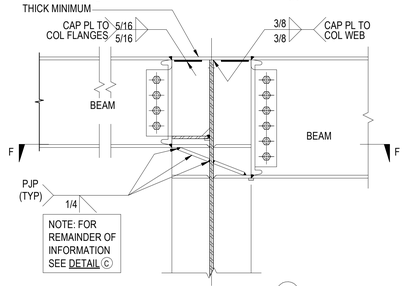
## TYP NON-FRAME MOMENT CONNECTION AT SQUARE OR ROUND COLUMN 3 NTS



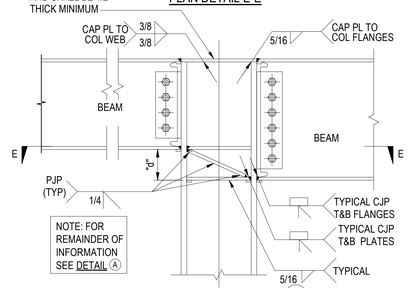

PLAN DETAIL F-F



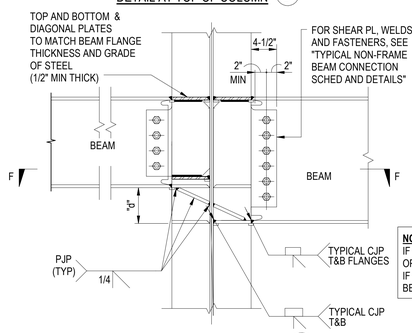

PLAN DETAIL E-E




DETAIL AT TOP OF COLUMN (D)

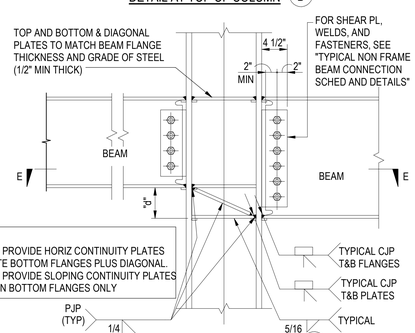



DETAIL AT TOP OF COLUMN (B)




DETAIL AT CONTINUOUS COLUMN (C)

BEAM TO COLUMN WEB, INDICATED THUS ON PLAN:




DETAIL AT CONTINUOUS COLUMN (A)

BEAM TO COLUMN FLANGE, INDICATED THUS ON PLAN:

## TYP NON-FRAME BEAM MOMENT CONN WITH DIFFERENT BACKSPAN Wx BM SIZES 1 NTS

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## KEYNOTES

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SHEET NAME:

**TYPICAL STEEL DETAILS**

**DSA SUBMITTAL**

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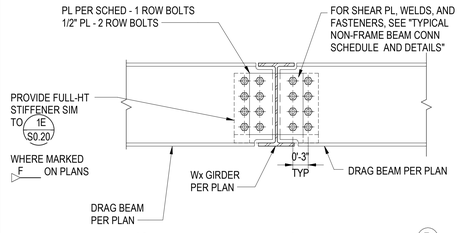
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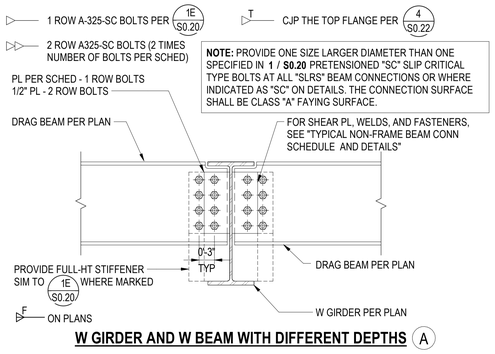
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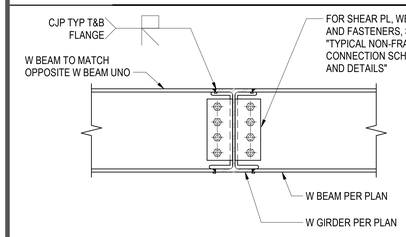

## W GIRDER AND W BEAM WITH EQUAL DEPTH (B)



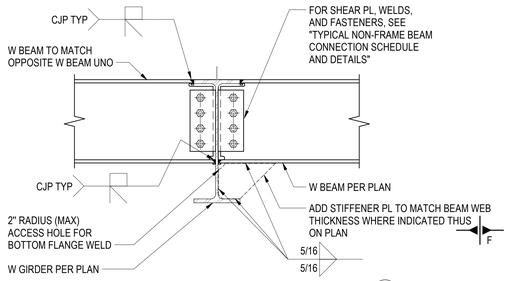

## W GIRDER AND W BEAM WITH DIFFERENT DEPTHS (A)

## SLRS BEAM TO BEAM DRAG CONNECTION INDICATE THUS ON PLAN — 7

1" = 1'-0"




## W GIRDER AND W BEAM WITH EQUAL DEPTH (B)



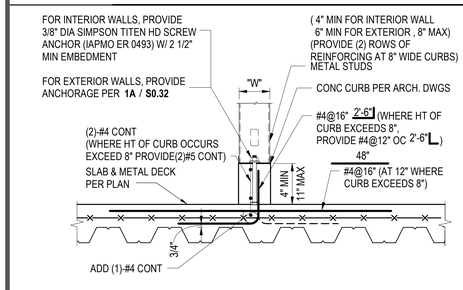

## W GIRDER AND W BEAM WITH DIFFERENT DEPTHS (A)

BEAM TO BEAM MOMENT CONNECTION, INDICATED THUS ON PLAN

## OPTIONAL ALTERNATE CONNECTION DETAILS

## TYPICAL BEAM TO BEAM MOMENT CONNECTIONS — 6

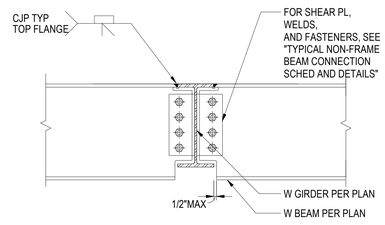
1" = 1'-0"



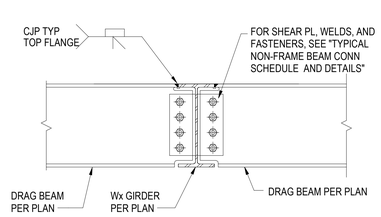

NOTE:
1. ACTUAL DECK DIRECTION MAY BE OPPOSITE THAN SHOWN.

## CONCRETE CURB AT SLAB-ON-DECK DETAL — 5

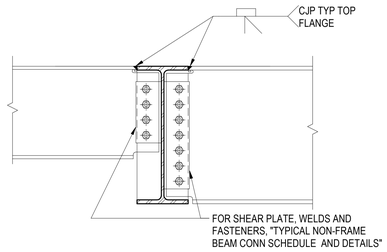
1" = 1'-0"



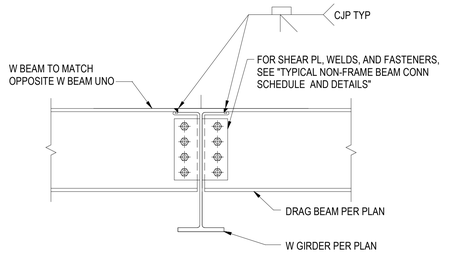

## AT W BEAM DEEPER THAN W GIRDER (C)




## W GIRDER AND W BEAM WITH EQUAL DEPTH (B)




## W GIRDER AND W BEAMS WITH DIFFERENT DEPTH (D)

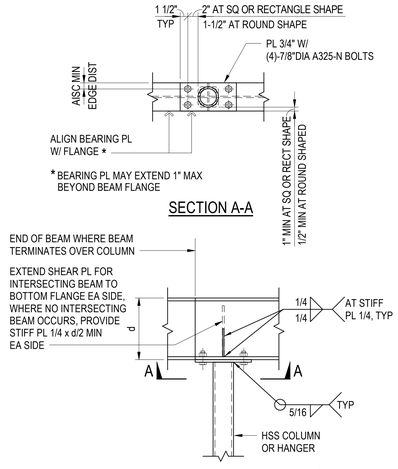



## W GIRDER AND W BEAM WITH DIFFERENT DEPTHS (A)

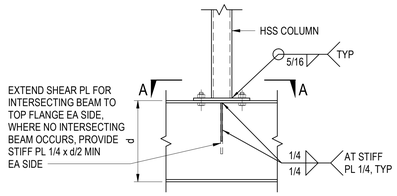
NOTE:
ONE SIZE LARGER DIAMETER THAN SPECIFIED IN 1 / S0.20 PRETENSIONED "SC" SLIP CRITICAL TYPE BOLTS ARE NOT REQUIRED AT FOR DRAG CONNECTIONS WITH WELDED BEAM TOP FLANGE.

## TYP SLRF WELDED BEAM TO BEAM DRAG CONNECTION INDICATE THUS ON PLAN — 4

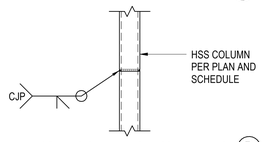
1" = 1'-0"




## TOP TO STEEL BEAM PLATE CONNECTION (E)



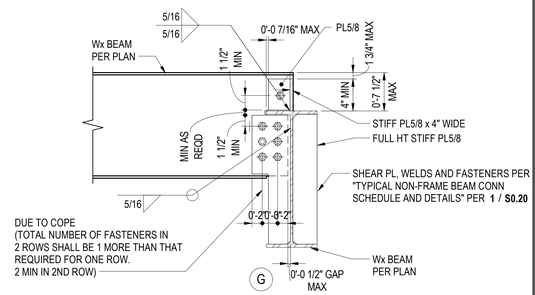

## BOTTOM PLATE CONNECTION TO STEEL BEAM (C)



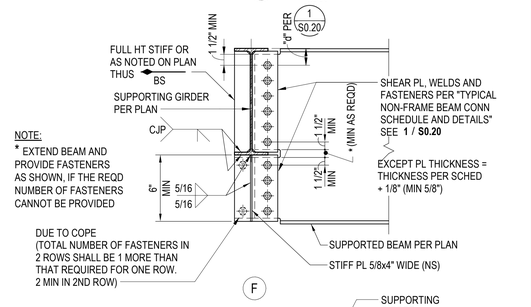

## TYPICAL COLUMN SPLICE DETAIL (B)

## TYPICAL HSS COLUMN CONNECTIONS — 3

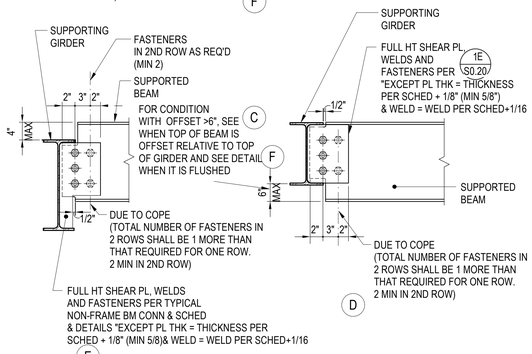
1" = 1'-0"

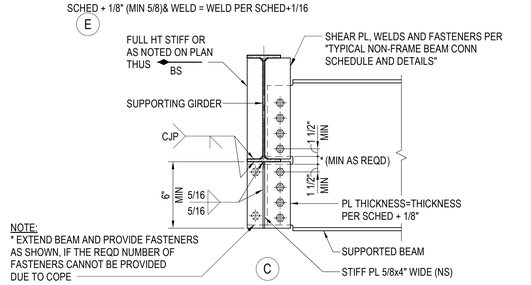


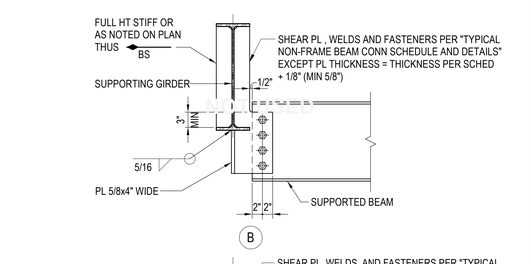

G




F




## TYPICAL OFFSET BEAM CONNECTION DETAILS — 1

1" = 1'-0"

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## KEYNOTES


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SHEET:

**S0.22**


Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET ORIGINALLY PLOTTED AT FULL SIZE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

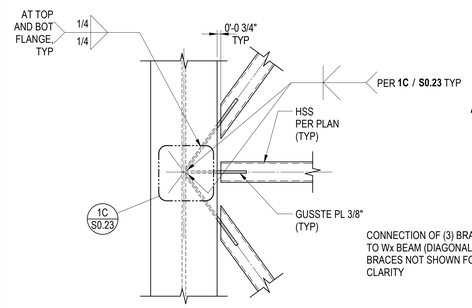
| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

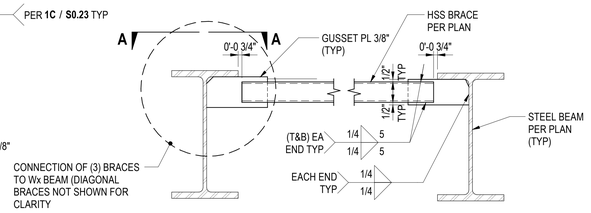

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER
ROBERT HALE BENNETT
64892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

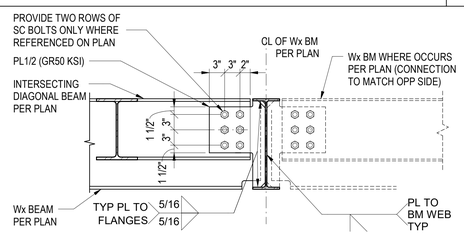
## NOTES



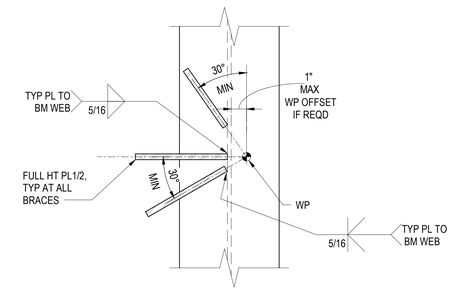

PLAN A-A



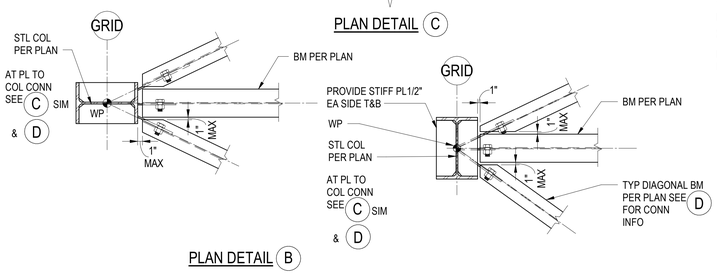

HSS BRACE CONNECTIONS



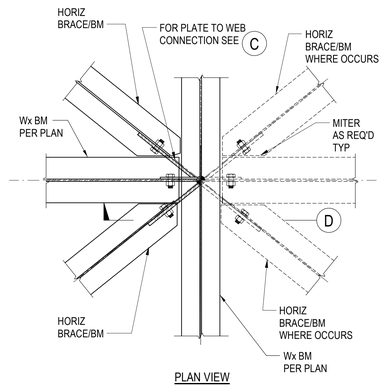

SECTION (D)



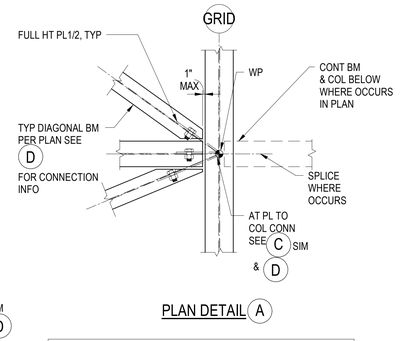

PLAN DETAIL (C)




PLAN DETAIL (B)




PLAN VIEW




PLAN DETAIL (A)

**NOTE:**
**ALL BOLTS SHALL BE 7/8"Ø, A325 PRETENSIONED "SC" (SLIP CRITICAL) TYPE IN STD HOLES AND THE CONNECTION SURFACES SHALL BE CLASS "A" FAYING SURFACES.**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL STEEL & METAL DECK DETAILS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

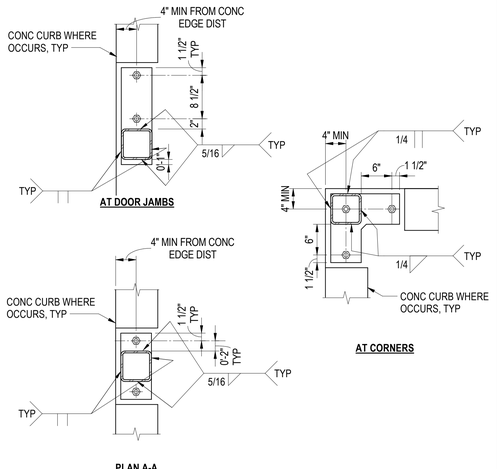
**S0.23**

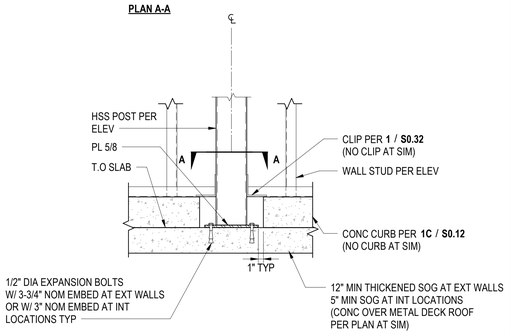
**TYPICAL HORIZONTAL BEAM BRACING** **1** 1" = 1'-0"

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED

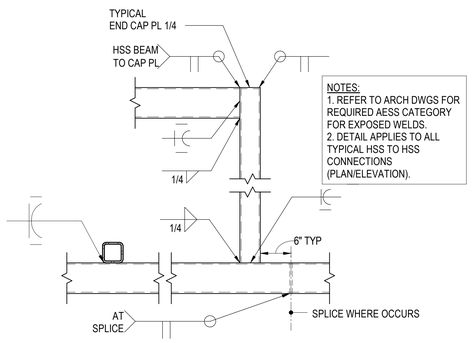


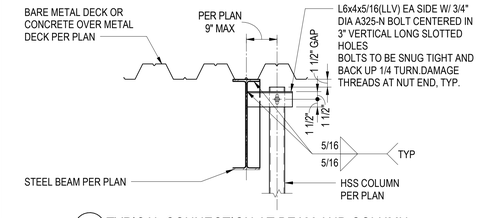

## TYPICAL WINDOW WALL HSS POST BASE PLATE DETAIL — 15 — 1" = 1'-0"



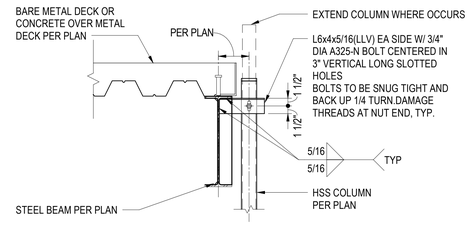

## OPTIONAL CATWALK CHANNEL SPLICE DETAIL — 9 — 1 1/2" = 1'-0"



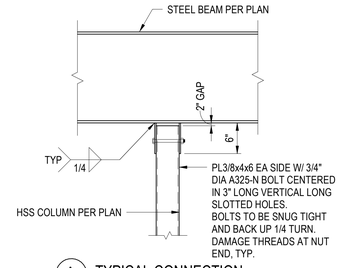

## TYPICAL HSS TO HSS CONNECTION DETAIL — 8 — 1" = 1'-0"




C TYPICAL CONNECTION AT BEAM AND COLUMN OFFSET UNDER THE DECK

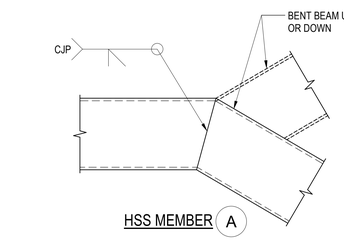



B TYPICAL CONNECTION AT BEAM AND COLUMN OFFSET AT EDGE OF DECK

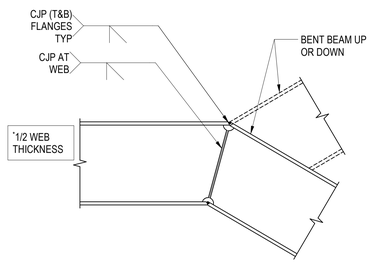



A TYPICAL CONNECTION UNDER THE BEAM

## TYPICAL HSS COLUMN TOP SLIPPED CONNECTION — 7 — 1" = 1'-0"



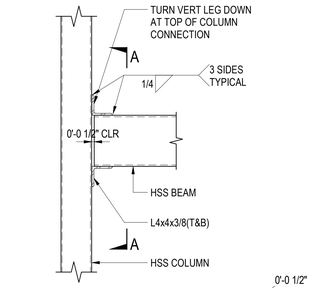

HSS MEMBER A



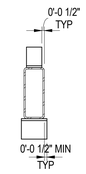

W BEAM, C OR MC MEMBER A

BROKEN BACK INDICATED THUS ON PLAN

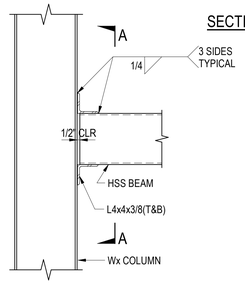
## TYPICAL BEAM BROKEN BACK CONNECTIONS — 6 — 1" = 1'-0"




HSS BEAM TO HSS COLUMN

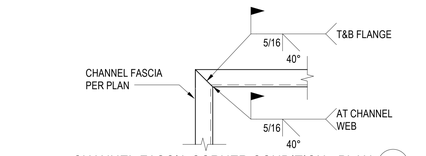



SECTION A-A

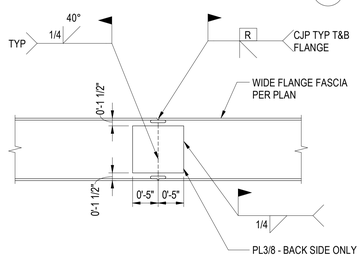



HSS BEAM TO W COLUMN

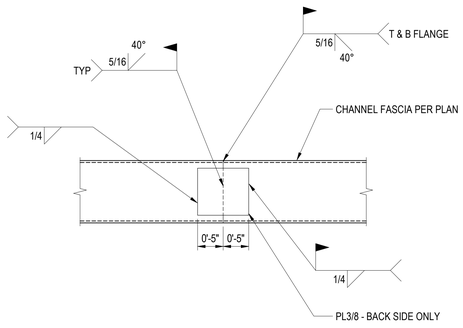
## TYPICAL HSS BEAM TO COLUMN CONNECTIONS — 5 — 1" = 1'-0"




CHANNEL FASCIA CORNER CONDITION - PLAN C

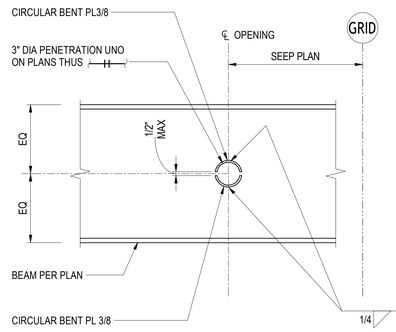



W-BEAM FASCIA B

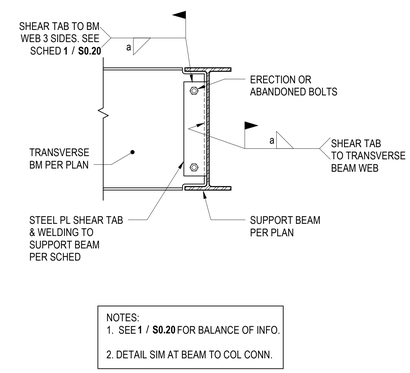



CHANNEL FASCIA A

## TYP W-ROOF FASCIA SPLICE — 4 — 1" = 1'-0"

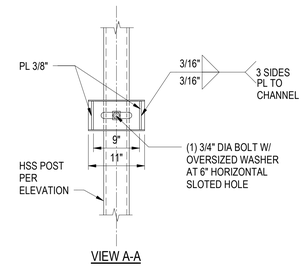



## TYPICAL SPRINKLER PIPE PENETRATION — 3 — 1 1/2" = 1'-0"

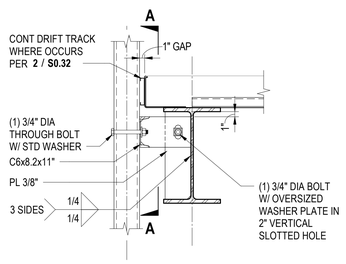



NOTES:
1. SEE 1 / S0.20 FOR BALANCE OF INFO.
2. DETAIL SIM AT BEAM TO COL CONN.

## TYP NON-FRAME WELDED BEAM CONN (ALTERNATE TO BOLTED CONN) — 2 — 1" = 1'-0"




VIEW A-A




## TYPICAL HSS POST TO SLAB — 1 — 1" = 1'-0"

IDENTIFICATION STAMP
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APP: 03-123641 INC:
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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — KAZEM ALI SAIFUL — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL STEEL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

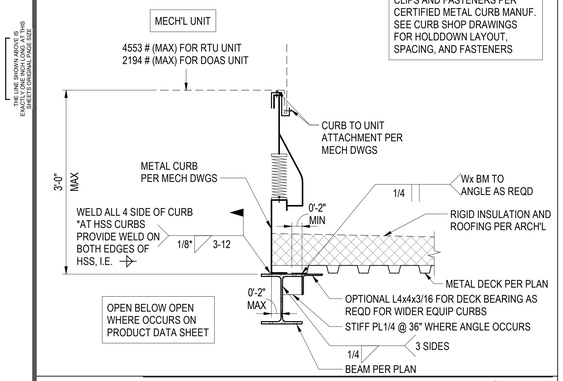
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

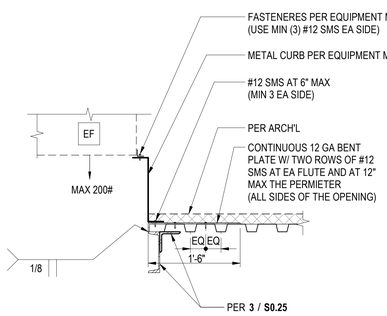
**S0.24**

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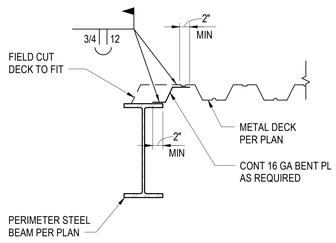
PLEASE RECYCLE




## TYP LARGE MECHANICAL UNIT ATTACHMENT TO ROOF DETAIL — 9
1" = 1'-0"

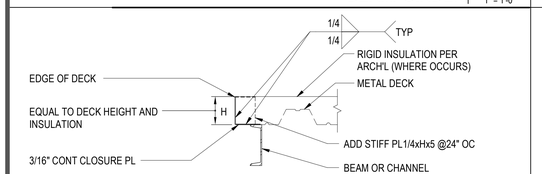



## EF CURB ATTACHMENT — 11
1" = 1'-0"

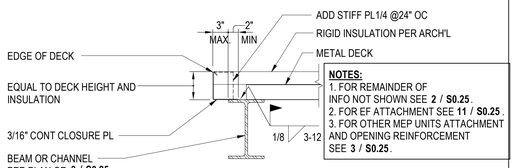



STEL-DECK-0016

## METAL DECK PARALLEL TO PERIMETER BEAM/ GIRDER — 7
1" = 1'-0"



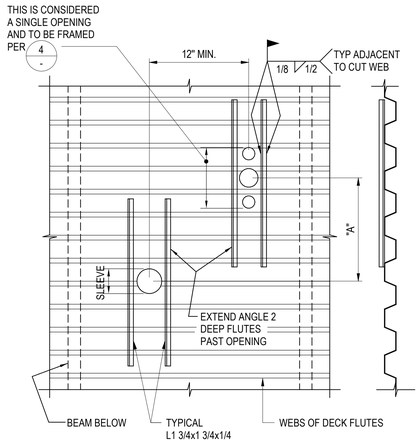

METAL DECK PARALLEL TO BEAM




METAL DECK PERPENDICULAR TO BEAM

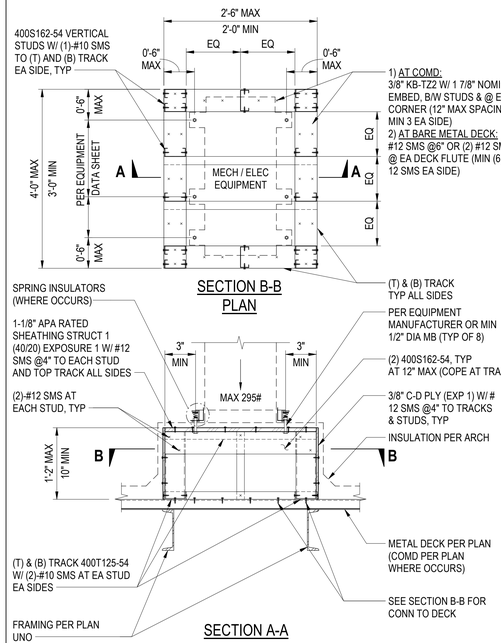
**NOTES:**
1. FOR REMAINDER OF INFO NOT SHOWN SEE **2 / S0.25**.
2. FOR EF ATTACHMENT SEE **11 / S0.25**.
3. FOR OTHER MEP UNITS ATTACHMENT AND OPENING REINFORCEMENT SEE **3 / S0.25**.

## TYP BARE METAL DECK (NO CONC FILL) AT INTERIOR DECK EDGE DETAILS (NO MEP EQUIPMENT EDGE) — 6
1" = 1'-0"

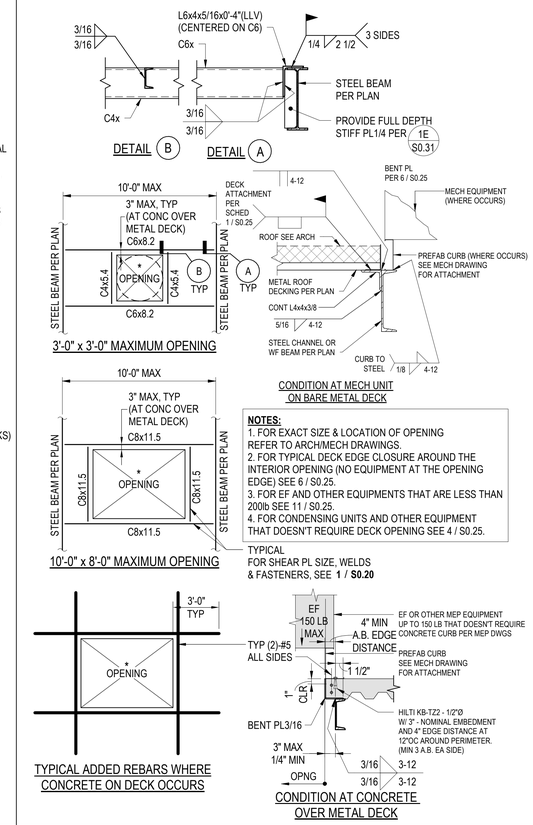



NOTES:
1. DO NOT CUT MORE THAN 2 ADJACENT WEB FLUTES.
2. HOLES THAT ARE BETWEEN WEBS OF HIGH FLUTES AND DO NOT CUT ANY WEBS NEED NO REINFORCING.
3. ANGLES SHALL BE PLACED ON TOP OF DECK.
4. ANGLES SHALL EXTEND AT LEAST 2 DEEP FLUTES PAST THE DECK (TYPICAL).
5. NO RESTRICTION ON DIMENSION "B".
6. IF DIMENSIONS "A" IS LESS THAN 32", THE OPENING GROUP WILL BE CONSIDERED AS A SINGLE HOLE, AND MUST BE REINFORCED AS REQUIRED FOR THE LARGER OPENING PER **3 / S0.25**

## TYPICAL BARE METAL DECK SLEEVE DETAIL — 5
1" = 1'-0"



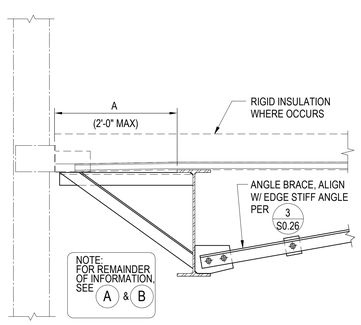

## ROOF EQUIPMENT PLATFORM DETAIL (WHERE NO DECK OPENING IS REQUIRED) — 4
1" = 1'-0"



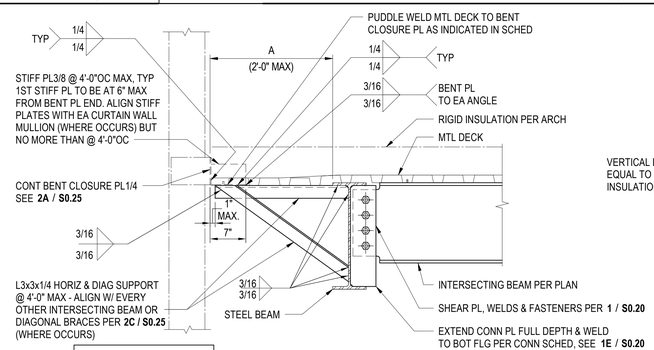

## TYPICAL METAL DECK OPENING DETAILS — 3
1" = 1'-0"




STEL-DECK-0016

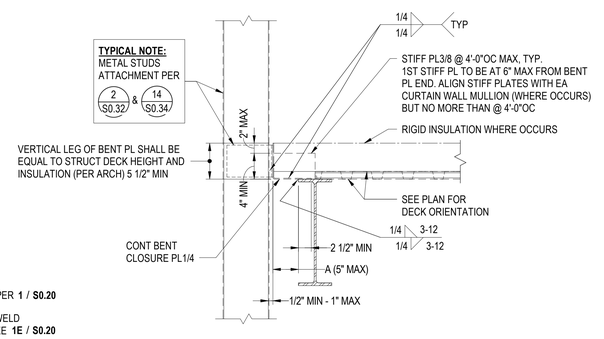



DECK PERPENDICULAR TO SLAB EDGE ( A > 5" ) C




NOTE: FOR REMAINDER OF INFO NOT SHOWN SEE A

DECK PARALLEL TO SLAB EDGE ( A > 5" ) B



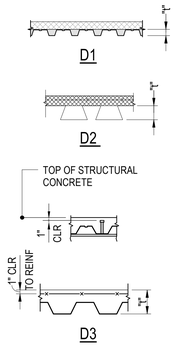

TYPICAL CONDITION ( A ≤ 5") A

## TYP BARE METAL DECK (NO CONCRETE FILL) AT EXTERIOR DECK EDGE DETAILS — 2
1" = 1'-0"

### METAL DECK CONSTRUCTION SCHEDULE

| MARK | METAL DECKING TYPE | GAUGE | TOTAL SLAB "t" | SLAB DESCRIPTION | METAL DECKING WELDING: PERPENDICULAR TO SUPPORT | PARALLEL TO SUPPORT | SEAMS | MAXIMUM UNSHORED SPAN (CLEAR SPAN BETWEEN SUPPORTS): SINGLE | DOUBLE | TRIPLE | HOURLY FIRE RATING | DIAPHRAGM SHEAR CAPACITY (PLF): PERPENDICULAR TO DECK | PARALLEL TO DECK | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1<br>D1b<br>D1c | 1 1/2" VERCO PLB 36 FORMLOCK DECK | 18 | 1 1/2" | ROOFING OVER RIGID INSULATION OVER METAL DECK | (7) 5/8" VISIBLE DIA ARC SPOT WELDS PER 36" SHEET | 5/8" VISIBLE DIA ARC SPOT WELDS @ 12" OC (@ 8" OC AT "D1b" & @ 6" OC AT "D1c") | VSC2 @ 24 OC (@ 8" OC AT "D1b") (@ 6" OC AT "D1c") | 7'-6" | 10'-0" | 9'-0" | NOT RATED | 798 AT "D1"<br>1509-1663 AT "D1b"<br>1509-1830 AT "D1c" (ASD) | 1127 AT "D1"<br>1691 AT "D1b"<br>2254 AT "D1c" (ASD) | NON-VENTED GALVANIZED COATING CONFORMING TO ASTM 525 CLASS G60 |
| D2 | 2" EPIC ER2RA ACCOUSTIC DECK | 16 | 2" | ROOFING OVER RIGID INSULATION OVER METAL DECK | (4) 3/4" DIA VISIBLE ARC PUDDLE WELD PER 24" SHEET | 3/4" DIA VISIBLE ARC PUDDLE WELD @ 8" OC | 1-1/2" SIDE LAP FILLET WELDS @ 12" OC | 10'-0" | 13'-0" | 12'-0" | NOT RATED | 887 (ASD) | 1414 (ASD) | ACOUSTICAL (IAPMO-226) SEE DETAIL 2 / S0.28 FOR ATTACHMENTS |
| D3 | VERCO PLW3 FORMLOK DECK | 18 | 6 1/4" | 3 1/4" LIGHT WEIGHT CONCRETE W/ 6x6 - W4.5xW4.5 WWF | (4) 5/8" VISIBLE DIA ARC SPOT WELDS PER 36" SHEET (3 PER 24" SHEET) | 5/8" VISIBLE DIA ARC SPOT WELDS @ 12" | VSC2 @ 18" | 11'-6" | 13'-3" | 13'-6" | 2 HR RATING | 6790 (LRFD) | 6790 (LRFD) | 1. VENTED GALVANIZED COATING CONFORMING TO ASTM A653 CLASS G60.<br>2. SEE PLANS FOR ADDED REBARS. |

NOTES:
1. DECKING SHALL BE CONTINUOUS OVER TWO (2) SPANS MIN. AND THREE (3) OR MORE WHEREVER APPLICABLE
2. NO DUCTS, ELECTRICAL OR OTHERWISE SHALL OCCUR IN FILL, UNLESS NOTED OTHERWISE.
3. PROVIDE VERCO METAL DECKING AND ACCESSORIES IN CONFORMANCE WITH IAPMO ER-2018.
4. SEE DETAILS 1 / S0.27 & 6 / S0.27 FOR STUD SPACING REQUIREMENTS.
5. ALL SLABS WHICH RECEIVE A WATERPROOFING MEMBRANE AND OR MOISTURE SENSITIVE FINISH SHALL BE PROVIDED WITH POSITIVE VENTED STEEL DECK.
6. VSC2 = VERCO SIDE LAP CONNECTION WITH PUNCHLOCK II SYSTEM.
7. THE BARE METAL DECK (DECK TYPES D1 & D2) DIAPHRAGM SHEAR CAPACITIES INDICATED HAVE BEEN REDUCED TO 80% OF THE ER TABULATED VALUES PER DSA IR A-5.




## TYPICAL METAL DECK CONSTRUCTION SCHEDULE — 1
1" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**TYPICAL STEEL & METAL DECK DETAILS**

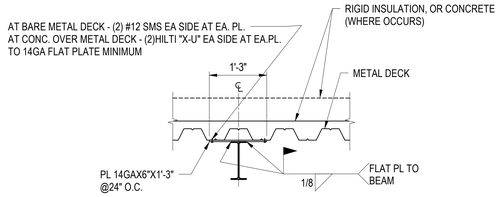
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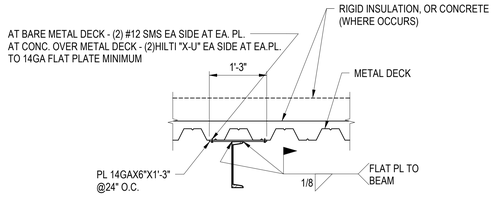
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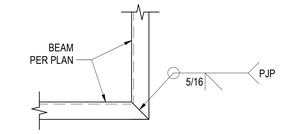
THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ORIGINAL DRAWING. IF NOT, SCALE DRAWINGS ACCORDINGLY



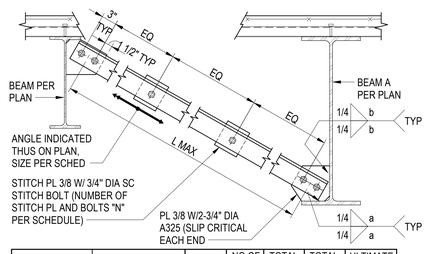

METAL DECK ATTACHMENT AT HIGH FLUTE AT BEAM (A)




METAL DECK ATTACHMENT AT HIGH FLUTE AT CHANNEL (B)

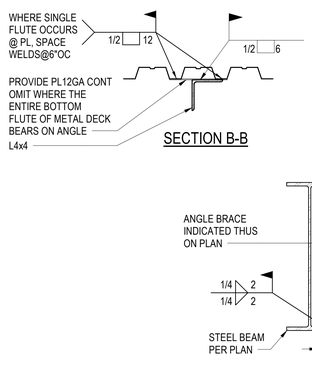



**CHANNEL FASCIA - CORNER CONNECTION** 5
1" = 1'-0"

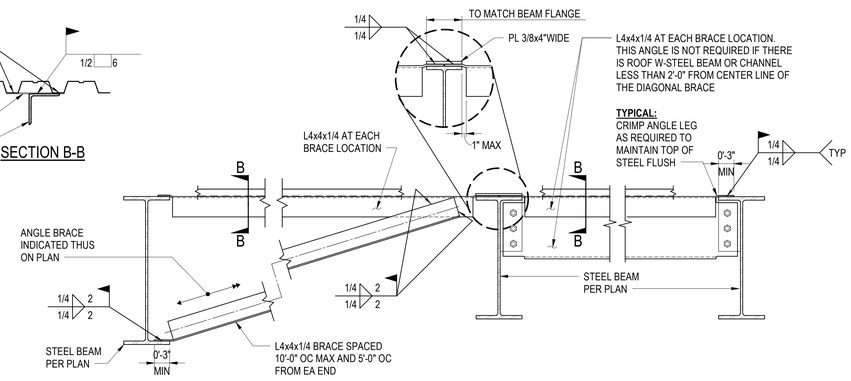



| BEAM A | BRACE SIZE | L (MAX) | NO OF STITCH PL & BOLTS ( N ) | TOTAL WELD LENGTH ( a ) | TOTAL WELD LENGTH ( b ) | ULTIMATE CAPACITY |
|---|---|---|---|---|---|---|
| DRAG / FRAME BEAMS | 2-L3x2-1/2x1/4, LLBB | 8'-0" | 2 | 3" | 3" | 30 K |
| | | 14'-0" | 3 | | 3" | 17.5 K |
| OTHER BEAMS | L3x3x1/4 | 8'-0" | - | 3" | 3" | 11 K |
| | L4x4x1/4 | 12'-0" | - | 3" | 3" | 11 K |

**TYPICAL ANGLE BRACE DETAIL** 6
1" = 1'-0"

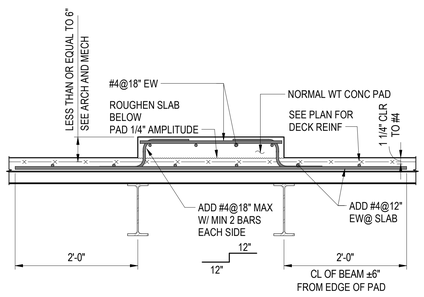


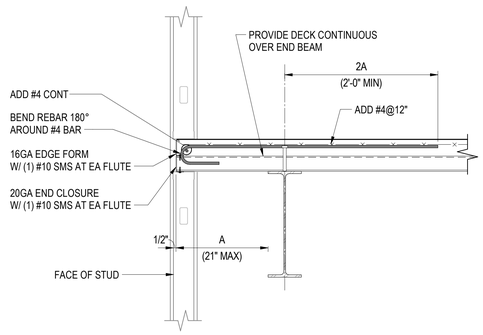

SECTION B-B



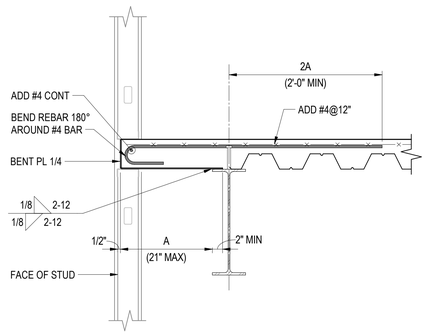

**TYPICAL ANGLE BRACE AT BARE METAL DECK DETAILS** 3
1" = 1'-0"

**METAL DECK ATTACHMENT HIGH FLUTE AT SUPPLEMENTAL BEAM OR CHANNEL FOR EQUIPMENT SUPPORT** 9
3/4" = 1'-0"

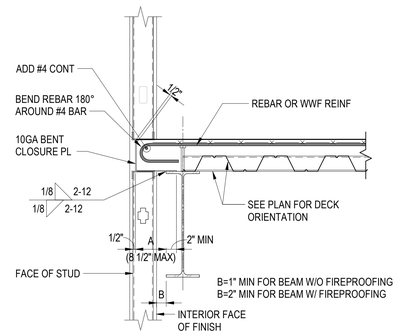



DECK PERPENDICULAR TO SLAB EDGE (A > 8 1/2") (C)



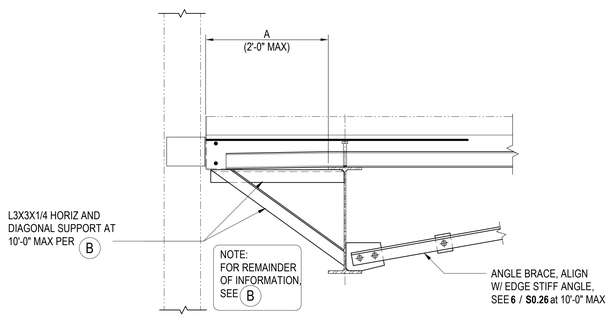

DECK PARALLEL TO SLAB EDGE (A > 8 1/2") (B)



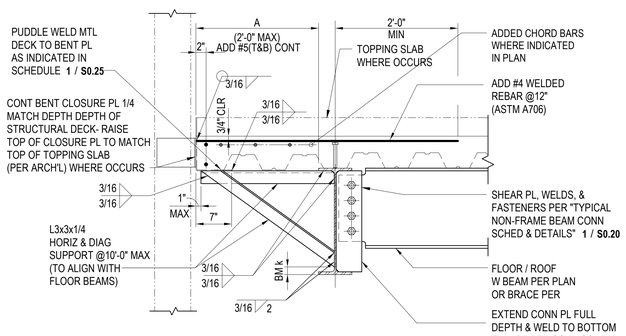

TYPICAL CONDITION ( 3" < A ≤ 8 1/2") (A)

**TYPICAL MECHANICAL PAD AT METAL DECK DETAIL** 8
1" = 1'-0"

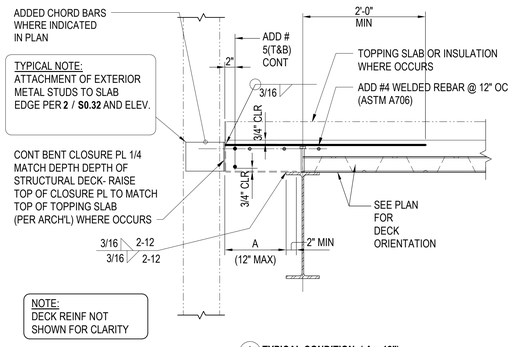
**TYPICAL METAL DECK INTERIOR SLAB EDGE DETAILS** 2
1" = 1'-0"




(C) DECK PERPENDICULAR TO SLAB EDGE ( A > 12" )




(B) DECK PARALLEL TO SLAB EDGE ( A > 12" )




(A) TYPICAL CONDITION ( A < 12")

STEL-DECK-0012

**TYPICAL CONCRETE FILLED METAL DECK EXTERIOR SLAB EDGE DETAILS** 1
1" = 1'-0"

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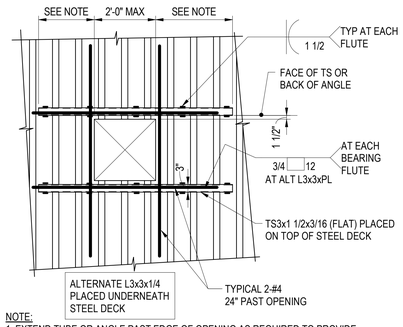
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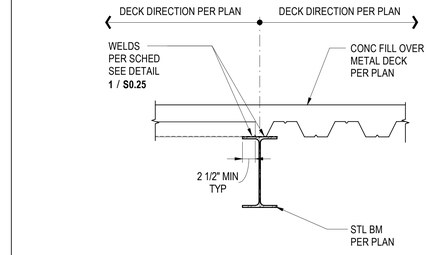
**S0.26**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY

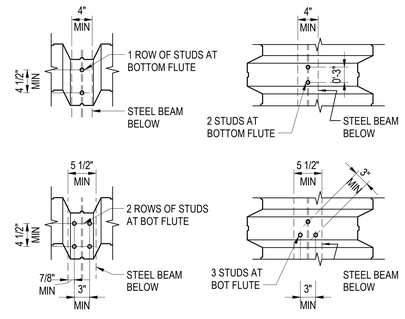



NOTE:
1. EXTEND TUBE OR ANGLE PAST EDGE OF OPENING AS REQUIRED TO PROVIDE THE MINIMUM NUMBER OF WELDS PAST THE EDGE AS FOLLOWS:
   A. 3" DECK-----2 WELDS (AS SHOWN ABOVE)
   B. 1 1/2" AND 2" DECK-----3 WELDS

## TYPICAL FLOOR AND ROOF DECK OPENING UP TO 2 FEET SQUARE — 7
1" = 1'-0"



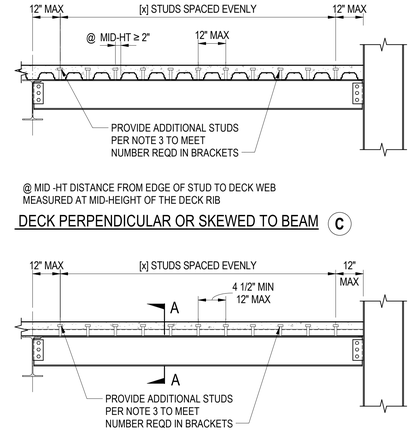

## DECK TRANSITION DETAIL — 3
1" = 1'-0"




DECK PARALLEL TO BEAM PLAN VIEW

DECK PERPENDICULAR TO BEAM PLAN VIEW

## TYPICAL TYPE "W" FORMLOK METAL DECK STUD SPACING DETAILS — 6
1" = 1'-0"

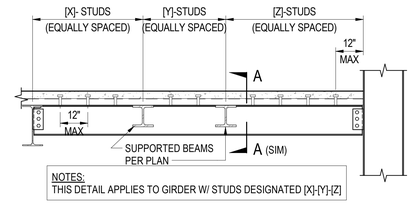



@ MID -HT DISTANCE FROM EDGE OF STUD TO DECK WEB MEASURED AT MID-HEIGHT OF THE DECK RIB

DECK PERPENDICULAR OR SKEWED TO BEAM (C)

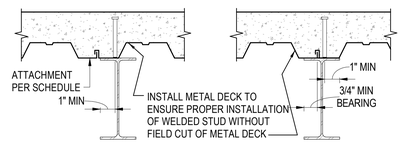



DECK PARALLEL TO BEAM (B)




NOTES:
THIS DETAIL APPLIES TO GIRDER W/ STUDS DESIGNATED [X]-[Y]-[Z]

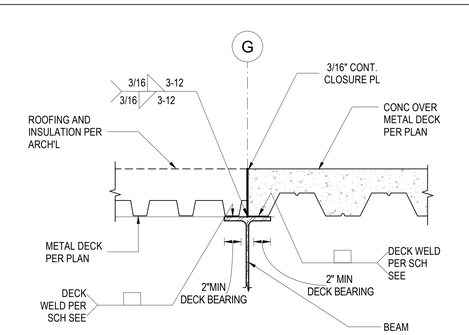
DECK PARALLEL OR PERPENDICULAR TO GIRDER (A)



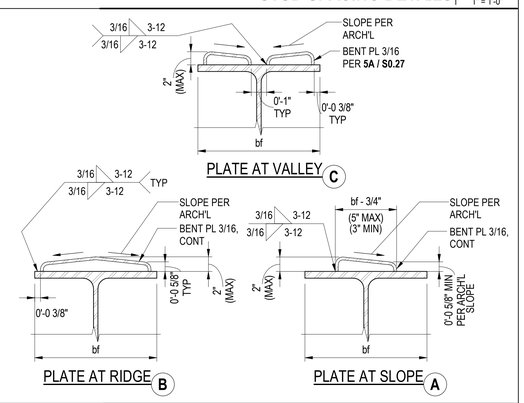

SECTION A-A

NOTES:
1. UNLESS NOTED OTHERWISE PROVIDE 3/4" DIA HEADED SHEAR STUDS ICC ESR-2856 @12" (MAX SPACING) FOR ALL BEAMS AND GIRDERS THAT SUPPORT STRUCTURAL CONCRETE.
2. MINIMUM NUMBER OF STUDS REQUIRED IS SHOWN AS [x] ON FRAMING PLANS OR 12" O.C WHERE NOT INDICATED ON PLAN. ADDIONAL STUDS MAY BE REQUIRED TO MEET THE MAXIMUM SPACING OF 12" O.C
3. IF MORE THAN ONE STUD IS REQUIRED IN ONE FLUTE THE TRANSVERSE SPACING SHALL BE PER DETAIL
4. STUDS TO BE LOCATED AT CENTER LINE OF BEAM WEB WHEN BEAM FLANGE IS < 5/16" THICK.

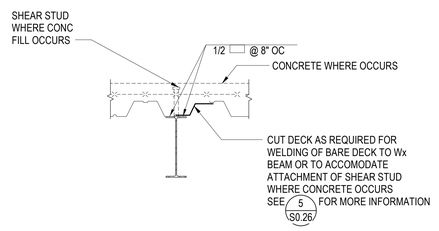
## TYPICAL COMPOSITE BEAM METAL DECK STUD SPACING DETAILS — 1
1" = 1'-0"




## DETAIL — 8
1 1/2" = 1'-0"




## TYPICAL SLOPED DECK SUPPORT AT STEEL BEAM DETAIL — 5
3" = 1'-0"




SECTION

1 / S0.20

## TYP METAL DECK ATTACHMENT WHEN DECK IS PARALLEL TO BEAM — 4
1" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — RAHEL R. SAIFUL — No. S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

**TYPICAL STEEL & METAL DECK DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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SHEET:

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINALLY PLOTTED AT FULL SIZE

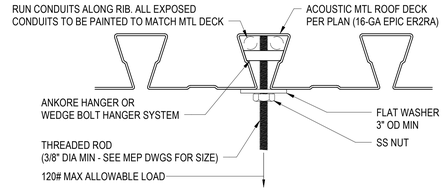
**NOTES:**

1. INSERT THE ANKORE HANGER W/ THREADED ROD OR WEDGE BOLT ANCHOR UP INTO THE DOVETAIL RIB, ROTATE THE HANGER FULLY 90 DEG, AND THEN PULL DOWN TO SEAT HANGER. INSTALL ANCHOR PER ESR & MANUFACTURER RECOMMENDATION.
2. AFTER PROPERLY SEATING, THE CORRESPONDING ANKORE LOCK OR WEDGE LOCK DEVICE SHALL BE INSERTED INTO THE DECK RIB AND VERTICAL LEGS STRADDLE THE HANGER.

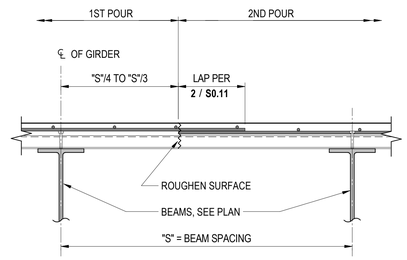
3a. FOR THE ANKORE HANGER, A WASHER AND NUT SHALL BE PLACED TO THE ANKORE LOCK DEVICE.

3b. FOR THE WEDGE BOLT HANGER, A WASHER AND COUPLING NUT SHALL BE PLACED TO THE WEDGE LOCK DEVICE.

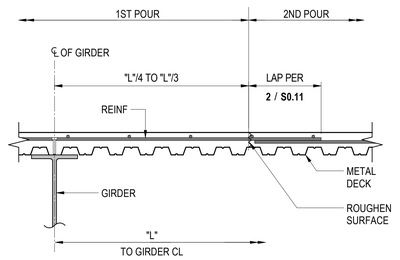
4. THE NUT SHALL BE FINGER-TIGHT PLUS ONE-HALF TURN. DO NOT OVERTIGHTEN.
5. AFTER THE HANGER IS LOADED, THE NUT SHALL BE RE-TIGHTENED AGAIN TO FINGER-TIGHT PLUS ONE-HALF TURN, AS NECESSARY.
6. FASTEN ROOF DECK TO ALL SUPPORTS W/ A MIN 24/3 PATTERN.
7. DO NOT PLACE HANGER CLOSER THAN 6 FT CENTER TO CENTER ALONG THE SAME DECK RIB & NO CLOSER THAN 2 FT CENTER TO CENTER PERPENDICULAR TO DECK SPAN.
8. HANGERS ARE DESIGNED FOR VERTICAL STATIC LOADING ONLY.
9. HANGING LOADS MUST NOT EXCEED THE LOAD CARRYING CAPACITY OF THE ROOF DECK.
10. DO NOT PLACE HANGERS AT DECK SIDELAPS.
11. USE OF THE ANKORE HANGER OR WEDGE BOLT HANGER SYSTEM FOR EARTHQUAKE LOAD RESISTANCE IS OUTSIDE SCOPE OF IAPMO ER-226 REPORT.
12. REFER TO IAPMO ER-226 FOR REMAINDER OF INFORMATION.
13. MAX DECK SPAN IS 11'-6".




**EPIC ER2RA METAL DECK HANGER DETAIL** **2** 3" = 1'-0"




CONSTRUCTION JOINT PERPENDICULAR TO DECK




CONSTRUCTION JOINT PARALLEL TO DECK

**TYPICAL FLOOR AND ROOF DECK SLAB CONSTRUCTION JOINT DETAILS** **1** 1" = 1'-0"

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FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

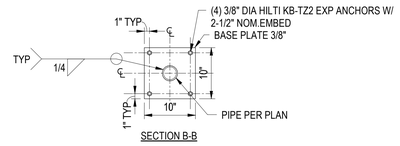
SHEET:

**S0.28**

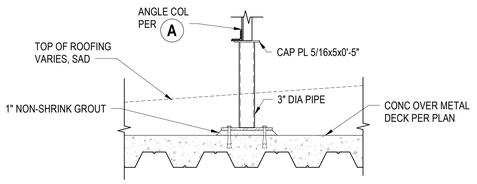
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PLEASE RECYCLE

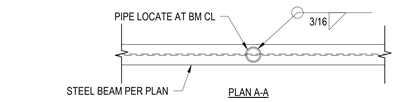
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWINGS. ADJUST SCALES ACCORDINGLY



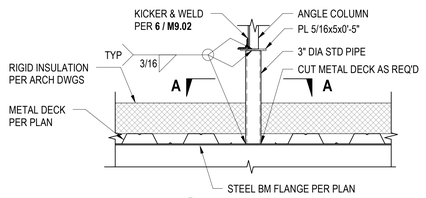

SECTION B-B




B AT CONC OVER METAL DECK



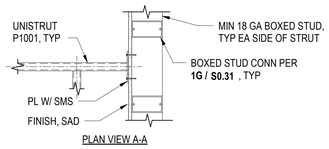

PLAN A-A




A AT BARE METAL DECK

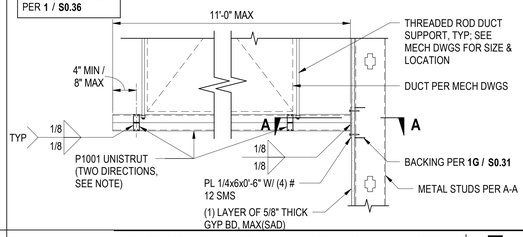
## TYPICAL MEP DUCT & PIPE SUPPORT CONN DETAILS 8 NTS

**NOTE:**
STRUTS ARE IN TWO DIRECTIONS AND ATTACH TO METAL STUD WALLS AND DUCTS IN THEATER. THESE STRUTS REPLACE THE NEED FOR P1000 BRACING IN TWO DIRECTIONS AS NOTED IN **1 / S0.36**

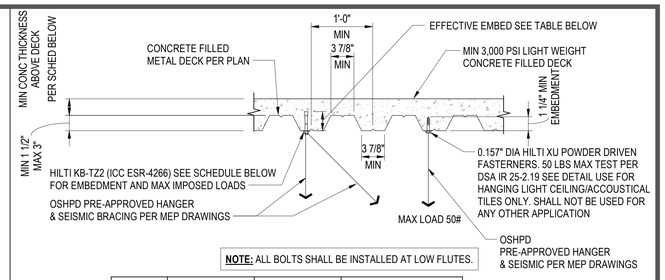



PLAN VIEW A-A

**TYPICAL:**
ATTACH TOP OF ROD TO ROOF FRAMING PER **1 / S0.36**




## DUCT STRUT TO METAL STUD WALL CONN DETAIL 7 NTS



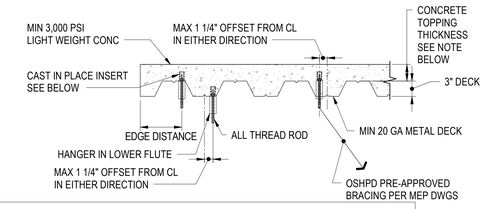

**NOTE:** ALL BOLTS SHALL BE INSTALLED AT LOW FLUTES.

| ANCHOR SIZE | CONC THICKNESS ABOVE DECK | * MIN EFFECTIVE EMBEDMENT | MAX ALLOWABLE LOADS IMPOSED (LBS) |
|---|---|---|---|
| 3/8" | 2 1/2" | 2 1/2" | 300 |
| 1/2" | 2 1/2" | 2 1/2" | 350 |
| 5/8" | 2 1/2" | 2 3/4" | 375 |
| 1/2" | 3 1/4" | 3 1/4" | 510 |
| 5/8" | 3 1/4" | 4" | 800 |
| 3/4" | 3 1/4" | 3 1/4" | 610 |

* INSTALLATION AT LOW FLUTE.

**NOTE: THE MAX ALLOWABLE IMPOSED LOADS INDICATED ABOVE SHALL NOT EXCEED** VALUES INDICATED IN TABLE ON (1 / S0.29) FOR ANY CONDITION

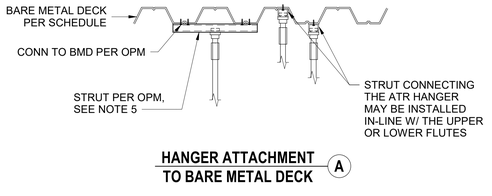
**ATTACHMENT OPTION WITH POST-INSTALLED ANCHORS** (B)




NOTE:
AT SLAB CONCRETE TOPPING MIN 3 1/4" AND THICKER USE BLUE BANGER SDI INSERT (ESR 3599) OR HILTI KCM-MD SP (ESR 4145) INSERTS

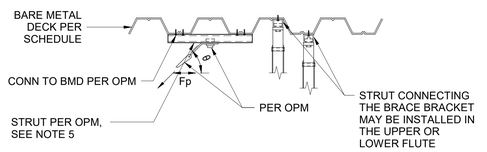
**ATTACHMENT OPTION WITH PROPIETARY INSERT HANGER (MAX ALLOWABLE LOAD = 450LBS)** (A)

## TYPICAL HANGING LOAD CONNECTION DETAIL AT FLOOR /ROOF CONCRETE METAL DECK 2 NTS

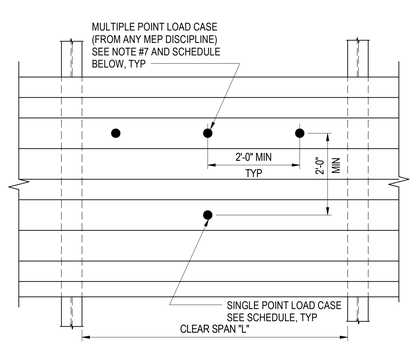



**HANGER ATTACHMENT TO BARE METAL DECK** (A)

**NOTE**
DETAIL IS NOT APPLICABLE FOR FIRE SPRINKLER SUPPORTS. FOR FIRE SPRINKLER SUPPORTS, REFER TO FS-SERIES.




**BRACE ATTACHMENT TO BARE METAL DECK** (B)




PARTIAL FLOOR / ROOF BARE-METAL DECK PLAN

NOTES:
1. THE SCHEDULE BELOW PROVIDES CRITERIA FOR MAXIMUM POINT LOAD(S) THAT CAN BE IMPOSED ON BARE-METAL DECK FOR GRAVITY AND/OR SEISMIC SUPPORT OF MEP PIPES, DUCTS, CABLE TRAPEZES, OR OTHER MEP DISTRIBUTION SYSTEMS. THE LOAD INFORMATION APPLIES TO ONE FLUTE OF DECK.
2. Fp REPRESENTS THE LATERAL LOADS THAT CAN BE APPLIED TO ONE FLUTE ON THE BARE METAL DECK.
3. MAX LOADING IN SCHEDULE BELOW IS FOR MEP DISTRIBUTION SYSTEMS ONLY AND DOES NOT INCLUDE CEILING AND MISCELLANEOUS LIGHT DECK ATTAHCMENTS.
4. LOADING SCHEDULE BELOW IS FOR BARE METAL DECK LOADING BASED ON THE SPECIFIED DECK IN THE LOAD SCHEDULE BELOW. SEE **1 / S0.25** FOR DECK SCHEDULE.
5. MAX VERTICAL LOADS AND MAXIMUM Fp LOADS IN THE SCHEDULE BELOW CAN BE MULTIPLIED BY TWO IF MORE THAN ONE FLUTE OF THE DECK IS ENGAGED, SEE DETAILS A AND B.
6. VERTICAL LOAD DIRECTION MAY BE UP OR DOWN.
7. SUMMATION OF ALL POINT LOADS IN ONE FLUTE SHALL NOT EXCEED THE LIMIT PROVIDED IN THE SCHEDULE.
8. ALL LOADS ARE SERVICE LEVEL.
9. BRACING NOT ALLOWED TO OCCUPY SAME FLUTE AS HANGERS.
10. MAXIMUM BRACE ANGLE, θ IS 45 DEGREES.

TYPICAL BARE-METAL DECK MEP POINT LOAD SCHEDULE

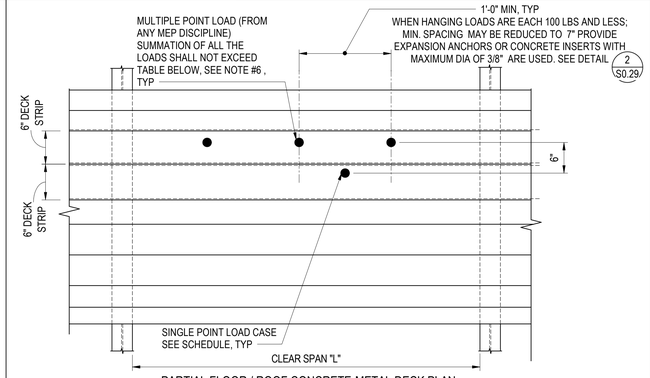
(1 1/2" VERCO PLB 36 DECK, 18 GA, FLUTE WIDTH = 0'-6")

| CLEAR SPAN "L" (FT) | MAX VERT POINT LOAD (LB) | MAX Fp (LB) |
|---|---|---|
| 9'-0" | 50 # | 50 # |
| 8'-0" | 100 # | 100 # |
| 7'-0" | 125 # | 125 # |

*14.5 PSF DL + 20 PSF LL MAX DISTRIBUTED LOAD CONSIDERED IN ADDITION TO POINT LOADS (DL+LL) (NOT INCLUDING DECK WT)

GC TO COORDINATE POINT LOADS FROM ALL MEP DISCIPLINES AND ENSURE THAT POINT LOADS ARE WITHIN THE MAXIMUM LIMIT AS PER THE SCHEDULE

## MEP POINT LOAD SCHEDULE FOR TYPICAL FLOOR/ROOF BARE-METAL DECK 5 1" = 1'-0"




PARTIAL FLOOR / ROOF CONCRETE-METAL DECK PLAN

NOTES:
1. THE SCHEDULE BELOW PROVIDES CRITERIA FOR MAXIMUM POINT LOAD(S) THAT CAN BE IMPOSED ON CONCRETE-METAL DECK FOR GRAVITY AND/OR SEISMIC SUPPORT OF MEP PIPES, DUCTS, CABLE TRAPEZES, OR OTHER MEP DISTRIBUTION SYSTEMS. THE LOAD INFORMATION APPLIES TO ONE STRIP 6" WIDE.
2. MAX LOADING IN SCHEDULE BELOW IS FOR MEP DISTRIBUTION SYSTEMS ONLY AND DOES NOT INCLUDE CEILING AND MISCELLANEOUS LIGHT DECK ATTACHMENTS.
3. LOADING SCHEDULE BELOW IS FOR COMPOSITE CONC/METAL DECK AND DOES NOT PERMIT BARE METAL DECK LOADING
4. WHERE THE MAXIMUM IMPOSED LOAD EXCEEDS THE MAXIMUM POINT LOAD INDICATED IN THE SCHEDULE BELOW, THE MEP ANCHORAGE POINT MAY BE DESIGNED TO ENGAGE ONE ADDITIONAL STRIP (12" WIDE)
5. LOAD DIRECTION MAY BE UP OR DOWN.
6. SUMMATION OF ALL MULTIPLE POINT LOADS IN ONE STRIP SHALL NOT EXCEED THE MAXIMUM POINT LIMIT PROVIDED IN THE SCHEDULE
7. ALL LOADS ARE SERVICE LEVEL.
8. FOR CONNECTION TO THE SLAB & THE MAX POINT LOAD ALLOWED PER CONNECTION SEE (2 / S0.29)

TYPICAL FLOOR / ROOF CONCRETE FILL METAL DECK TOTAL MAXIMUM MEP LOADS PER 6" WIDE STRIP

| CLEAR SPAN "L" (FT) | 3" DECK + MIN 3 1/4" TOPPING |
|---|---|
| | MAX POINT LOAD (LB) FOR TYPICAL CONDITION |
| 7'-0" | 500 |
| 8'-0" | 450 |
| 9'-0" | 400 |
| 10'-0" | 350 |
| 10'-6" | 300 |
| 11'-0" | 300 |
| 12'-0" | 200 |

GC TO COORDINATE POINT LOADS FROM MEP DISCIPLINES AND ENSURE THAT POINT LOADS ARE WITHIN THE MAXIMUM LIMIT PER THE TABLE

## TYPICAL HANGING LOAD CRITERIA / REQUIREMENTS FOR FLOOR / ROOF CONCRETE METAL DECK DETAIL 1 NTS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — 84892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**TYPICAL STEEL & METAL DECK DETAILS**

**DSA SUBMITTAL**

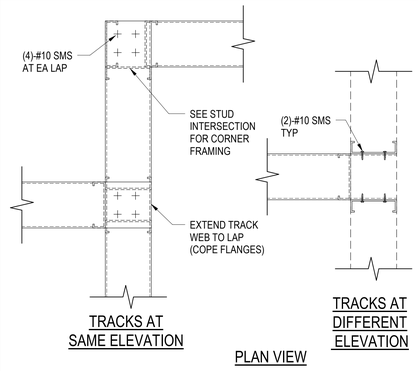
FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

# S0.29

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH (1") LONG WHEN PLOTTED ON ORIGINAL SHEET SIZE



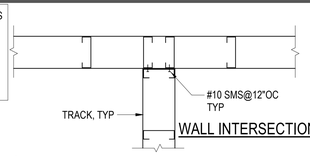

TRACKS AT SAME ELEVATION

TRACKS AT DIFFERENT ELEVATION

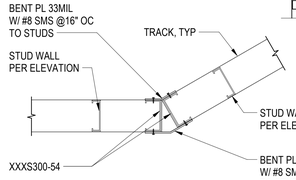
PLAN VIEW

## TOP TRACK INTERSECTION DETAIL 5
1 1/2" = 1'-0"

REFER TO ARCH WALL SECTIONS FOR GWB / FINISH APPLICATION TO STUDS AT RATED AND NON-RATED WALL ASSEMBLIES. ACCEPTABLE FOR GWB TO BE BETWEEN TWO STUDS FASTENED AS SHOWN.

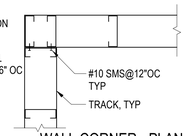



WALL INTERSECTION - PLAN



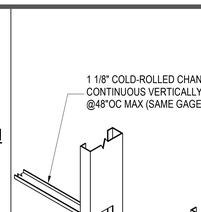

NOTE: BENT PL NOT REQUIRED ABOVE CEILING

ANGLED WALL - PLAN



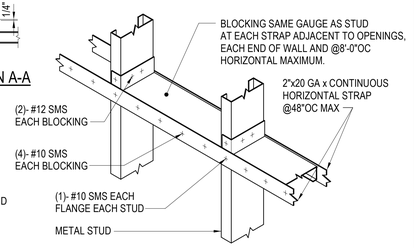

WALL CORNER - PLAN

## TYPICAL METAL STUD WALL AT INTERSECTION DETAILS 4
1" = 1'-0"




SECTION A-A

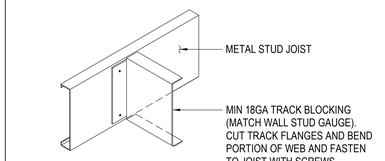
BRIDGING OPTION



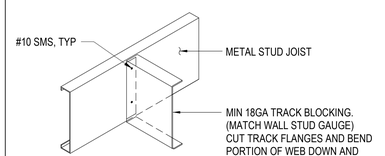

STRAP OPTION

NOTE:
REQUIRED WHERE RIGID WALL FINISH DOES NOT CONTINUE FULL HEIGHT OF EITHER OR BOTH SIDES OF STUDS

## TYPICAL LATERAL BRIDGING AT METAL STUDS 3
1" = 1'-0"

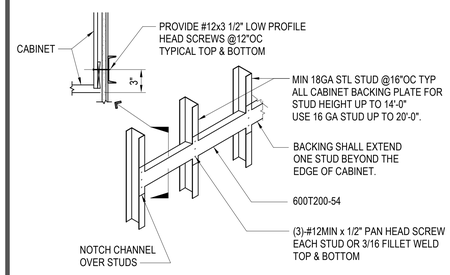



OPTION 2

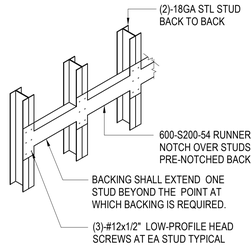



OPTION 1

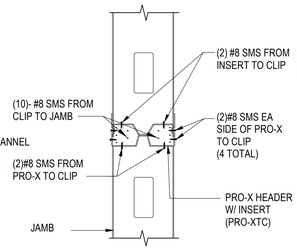
## TYPICAL JOIST BLOCKING DETAIL 2
1" = 1'-0"




BACKING AT CABINET

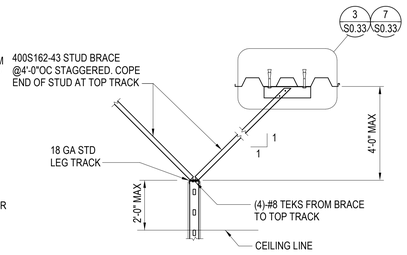



EQPM WEIGHT BETWEEN 100-250 LBS (AND FIXTURES)



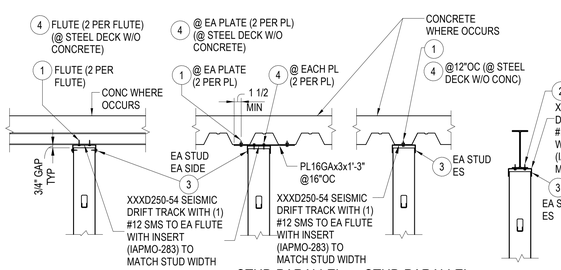

**SECTION A-A**

(PRO-X CLIP W/ INSERT ATTACHMENT)




NOTE:
NOT ALLOWED FOR ATTACHING BACKING AT WALL SUPPORTED ITEMS

TOP CONNECTION (F)




STUD PERPENDICULAR TO STEEL DECK

STUD PARALLEL TO STEEL DECK BETWEEN FLUTES

STUD PARALLEL TO STEEL DECK ON FLUTES

STUD AT STEEL BEAM

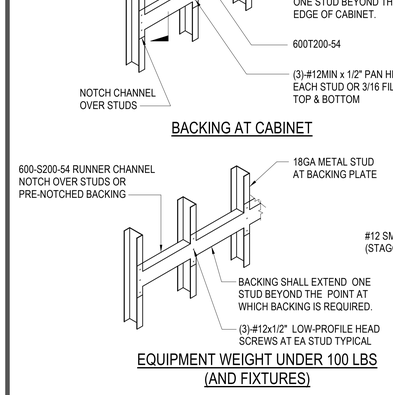
STUD TO DECK DETAIL (B)



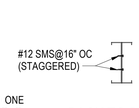

SINGLE STUD TO BOTTOM TRACK



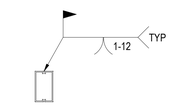

JAMB STUD TO BOTTOM TRACK



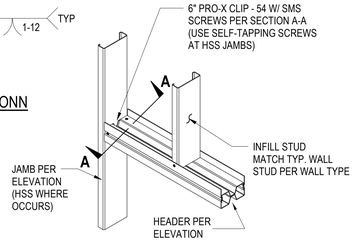

EQUIPMENT WEIGHT UNDER 100 LBS (AND FIXTURES)




BACK TO BACK STUD CONN

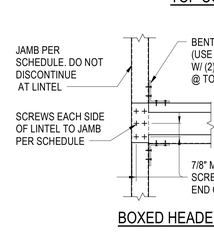



BOX STUD CONN




**PRO-XTC HEADER**

(PRO-XTC HEADER: ICC #IAPMO-ER 0286)




BOXED HEADER

"TYPICAL" WALL LINTEL / JAMB SCHEDULE FOR STUDS UP TO "H" = 18' TALL

| MAX LENGTH | BOXED HDR OPTION | PRO-X HDR OPTION | MIN JAMB SIZE | #10 SCREWS EACH SIDE OF BOX HDR TO JAMB |
|---|---|---|---|---|
| 6'-0" | (2) 400S162-33 | 400XTC425-54 | 400S300-54 | 4 SCREWS (8 TOTAL) |
| 10'-0" | (2) 600S162-33 | 400XTC425-68 | 400S300-68 OR 600S300-54 | 6 SCREWS (12 TOTAL) |
| 12'-0" | (2) 800S162-33 | 600XTC425-68 | 400S300-97 OR 600S300-54 | 8 SCREWS (16 TOTAL) |
| 14'-0" | (2) 800S162-43 | - | 600S300-54 | 8 SCREWS (16 TOTAL) |
| 16'-0" | (2) 1000S162-43 | - | 600S300-54 | 10 SCREWS (20 TOTAL) |

NOTE: METAL STUDS NOTED ARE ALLOWED TO BE WIDER TO MATCH WALL WIDTHS

BACKING FOR WALL SUPPORTED ITEMS (G)




**PRO-XTC HEADER**

(PRO-XTC HEADER: #IAPMO-ER 0286)

HEADER TO JAMB CONNECTION (E)




BOXED HEADER

"TALL" LINTEL / JAMB SCHEDULE FOR STUDS UP TO "H" = 43' TALL

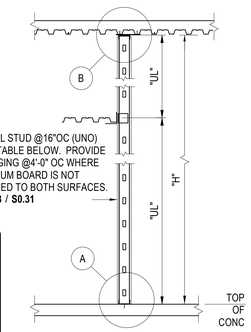
| MAX LENGTH | BOXED HDR | MIN JAMB SIZE | #10 SCREWS EACH SIDE OF BOX HDR TO JAMB |
|---|---|---|---|
| 6'-0" | (2) 600S162-54 | 600S300-54 | 6 SCREWS (12 TOTAL) |
| 8'-0" | (2) 600S162-54 | 600S300-68 | 6 SCREWS (12 TOTAL) |
| 10'-0" | (2) 800S162-68 | (2) 600S162-54 BOX | 8 SCREWS (16 TOTAL) |
| 12'-0" | (2) 800S162-68 | (2) 600S162-68 BOX | 8 SCREWS (16 TOTAL) |

NOTES: METAL STUDS NOTED ARE ALLOWED TO BE WIDER TO MATCH WALL WIDTHS
BOX JAMBS PER **1G/S0.31**

| METAL STUD FASTENER SCHEDULE | |
|---|---|
| MARK | FASTENERS SIZE AND SPACING |
| 1 | HILTI X-U POWER DRIVEN FASTENER @16"OC W/ 1 1/2" MIN EMBED |
| 2 | HILTI X-U 15 POWDER DRIVEN FASTENER @ 16" OC OR APPROVED EQUAL |
| 3 | (2) #10 SHEET METAL SCREW |
| 4 | #12 SHEET METAL SCREW |
| 5 | 1/2" DIA HEADED BOLT @ 24"OC (MIN 6" EMBED) ALT: 1/2" DIA EXP OR SCREW ANCHORS (MIN 4" EMBED) |

NOTES:
1. FOR STEEL STUD AND TRACK TYPE, SEE PLANS, SECTIONS AND METAL STUD SIZE SCHEDULE.
2. FOR METAL STUD FASTENERS, SEE METAL STUD FASTENER SCHEDULE.

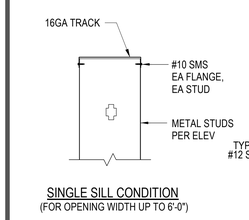
STUD TO SLAB DETAIL (A)




TYPICAL METAL STUD WALL SECTION

| MAXIMUM ALLOWABLE UNBRACED LENGTH ("UL") | | | | |
|---|---|---|---|---|
| METAL STUD (S-STUD) SIZE (MIN1 5/8" FLANGE) | | | | |
| GAUGE | 4" | 6" | 8" | |
| 16 | 18'-0" | -- | -- | |
| 18 | 17'-0" | 27'-0" | 27'-0" | |
| 20 | 13'-0" | 21'-0" | -- | |

NOTES:
1. MAXIMUM STUD HEIGHT "H" FOR STUDS @16"OC IS 43'-0"
2. SEE ARCHITECTURAL FOR OTHER CONDITIONS.
3. SEE ARCHITECTURAL FOR LOCATION OF CURB.
4. HILTI X-U & X-U 15 POWDER DRIVEN FASTENERS SHALL BE PER ICC REPORT No. ESR 2269
5. ALL TRACKS SHALL BE 1 GAGE THICKER THAN STUDS WITH 1-1/2" FLANGE TYP UNO.
6. PROVIDE TYPICAL CONNECTION PER SCHEDULE TO EA SIDE OF JAMB STUDS. AT END CONDITION, PROVIDE (2)-FASTENERS WITHIN 6" OF JAMB.




NESTED SILL CONDITION
(FOR OPENING WIDTH UP TO 10'-0")




SINGLE SILL CONDITION
(FOR OPENING WIDTH UP TO 6'-0")




SILL TO JAMB CONNECTION

SILL AND SILL TO JAMB CONNECTION (H)

LINTEL SECTION (D)




TYPICAL METAL STUD WALL ELEVATION

## TYPICAL NON-BEARING INTERIOR METAL STUD WALL CONSTRUCTION DETAILS 1
1" = 1'-0"

PLEASE RECYCLE

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90001
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**


saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER TOFIK ALI HALEL No. S-6892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL INTERIOR METAL STUD DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

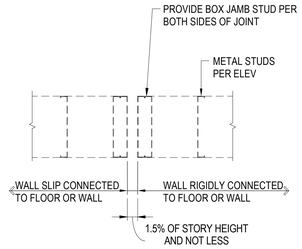
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# S0.31

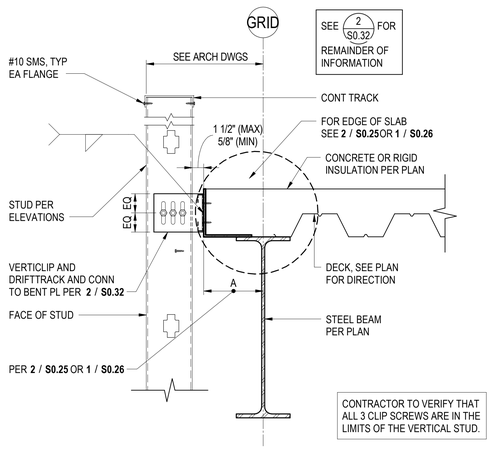
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL DRAWING SIZE ARCH D

**NOTE:**
1. SEE ARCHITECTURAL DETAILS FOR TYPE AND ADDITIONAL REQUIREMENTS AT JOINT.
2. THE ACTUAL JOINT WIDTH MAY NEED TO INCREASE BASED ON COMPRESSIBLITY OF CAULKING USED.



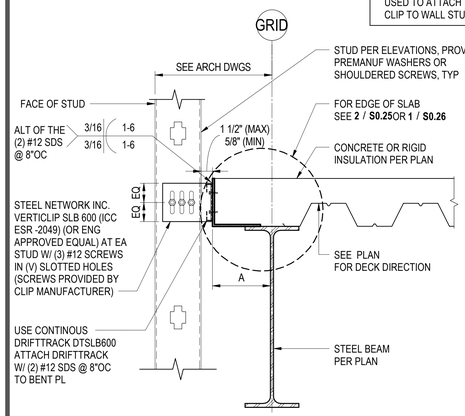

PLAN VIEW

## TYPICAL VERTICAL JOINT AT METAL STUDS | 4
1" = 1'-0"

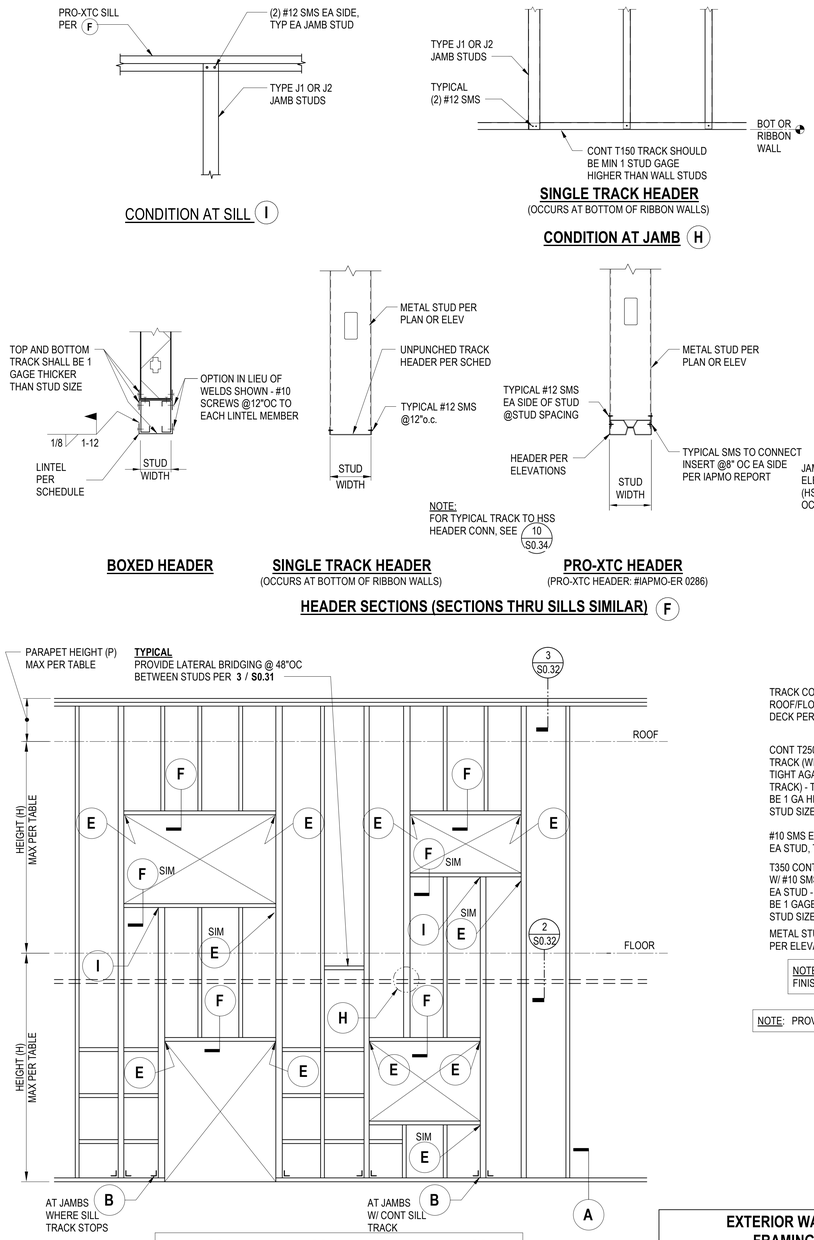



## TYPICAL EXTERIOR STUD PARAPET AT SLAB EDGE | 3
1 1/2" = 1'-0"

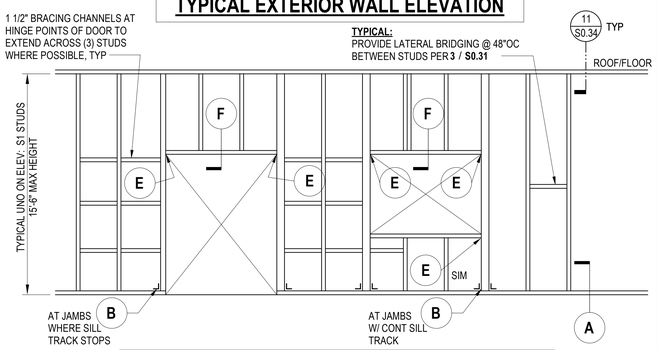
NOTE:
1. WHERE PARAPET OCCURS, SEE 3 / S0.32
2. ALL 3 SCREWS OF THE VERTICLIP SHALL BE USED TO ATTACH THE CLIP TO WALL STUD.




## TYPICAL EXTERIOR STUD AT SLAB EDGE | 2
1 1/2" = 1'-0"




## TYPICAL EXTERIOR WALL ELEVATION




## EXTERIOR WALL ELEVATION AT ONE STORY WALLS UNDER FLOOR/ROOF DECKING



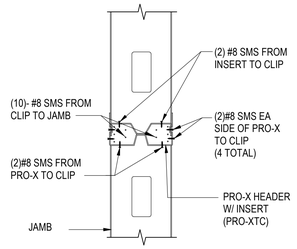

**BOXED HEADER** | **SINGLE TRACK HEADER** (OCCURS AT BOTTOM OF RIBBON WALLS) | **PRO-XTC HEADER** (PRO-XTC HEADER: #IAPMO-ER 0286)

## HEADER SECTIONS (SECTIONS THRU SILLS SIMILAR) F

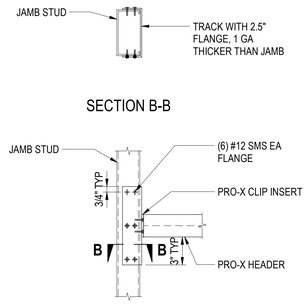
**CONDITION AT SILL** I

**SINGLE TRACK HEADER**
(OCCURS AT BOTTOM OF RIBBON WALLS)

**CONDITION AT JAMB** H

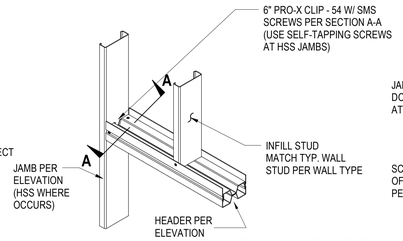



**SECTION A-A**

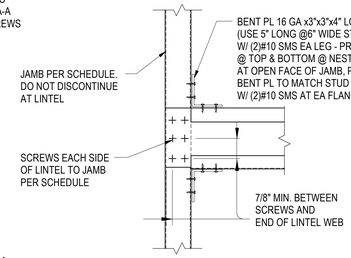



**PRO-X HEADER TO JAMB OPEN FACE CONNECTION**

(PRO-X CLIP W/ INSERT ATTACHMENT)




NOTE: FOR SINGLE TRACK TYPE HEADER TO JAMB SEE 1H SIM.

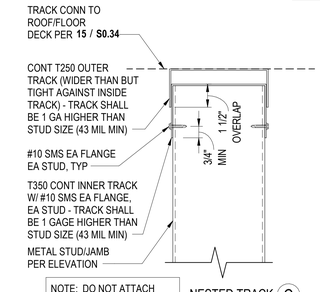



**PRO-XTC HEADER**
(PRO-XTC HEADER: ICC #IAPMO-ER 0286)

**BOXED HEADER**

## HEADER TO JAMB CONNECTION (CONDITION AT SILL SIMILAR) E

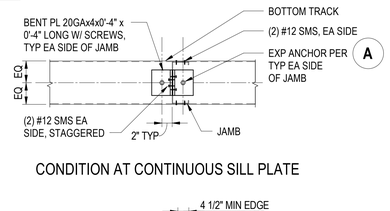
NOTE: SEE CONDITION AT CONC CURB FOR ADD'L INFO



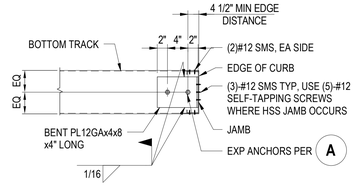

NOTE: DO NOT ATTACH FINISHES TO OUTER TRACK.

**NESTED TRACK** C

NOTE: PROVIDE NESTED TRACK WHERE REFERENCED ON WALL SECTIONS




CONDITION AT CONTINUOUS SILL PLATE



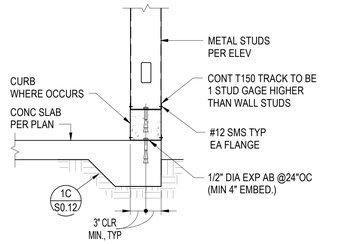

CONDITION AT CONCRETE CURB WHERE SILL PLATE TERMINATES AT JAMB & JAMB BEARS ON SLAB

**EXTERIOR WALL JAMB CONNECTIONS (PLAN VIEWS)** B

**EXTERIOR WALL LIGHT GAGE FRAMING SCHEDULE**

| | | |
|---|---|---|
| **STUDS** | | |
| ST1 | 600S162-43 @16"oc | H = 15'-0" MAX P = 3'-6" MAX |
| ST2 | 600S200-54 @12" oc | H = 20'-0" MAX P = 3'-6" MAX |
| ST3 | 800S200-54 @12"oc | H = 25'-0" MAX P = 7'-0" MAX |
| **HEADERS** | | |
| H1 | 600XTC425-54 | L = 4'-6" MAX |
| H2 | 600XTC425-68 | L = 7'-0" MAX |
| H3 | HSS6x6x5/16 | L = 21'-6" MAX |
| H4 | HSS4x4x5/16 | L = 13'-0" MAX |
| H5 | (2)600S162-54 BOX | L = 6'-8" MAX |
| H6 | HSS5x5x5/16 | L = 17'-0" MAX |
| **JAMBS** | | |
| J1 | 600S300-68 | H = 16'-0" MAX |
| J2 | (2)600S300-54 | H = 20'-0" MAX |
| J3 | HSS6x6x5/8 | H = 25'-0" MAX |
| J4 | HSS5x5x5/16 | H = 25'-0" MAX |
| J5 | (2)800S300-68 | H = 25'-0" MAX |
| **SILLS** | | |
| S1 | 600T150-54 | L = 4'-6" MAX |
| S2 | 600T150-68 | L = 7'-0" MAX |
| S3 | HSS6x6x5/16 | L = 21'-6" MAX |
| S4 | HSS4x4x5/16 | L = 13'-0" MAX |
| S5 | 800T150-54 | L = 4'-4" MAX |
| S6 | HSS5x5x5/16 | L = 17'-0" MAX |

**NOTE:** ALL HEADERS TO BE UN-PUNCHED STUDS.




**CONDITION AT SLAB ON GRADE** A

## TYPICAL METAL STUD EXTERIOR WALL CONSTRUCTION DETAIL | 1
1" = 1'-0"

PLEASE RECYCLE

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES


saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER
S-6892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

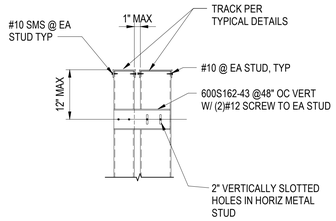
SHEET NAME:
**TYPICAL EXTERIOR METAL STUD DETAILS**

**DSA SUBMITTAL**

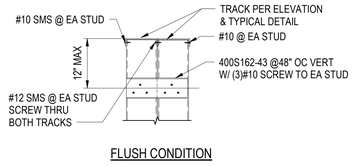
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
| SHEET: | |

# S0.32

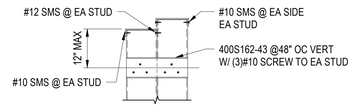
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWING. ADJUST SCALES ACCORDINGLY




## (2) TANDUM STUD TRACK ATTACHMENT DETAIL WITH VERTICALLY SLOTTED HOLES | 6 NTS

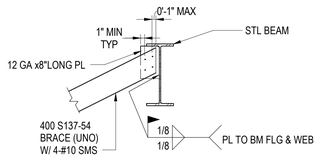



FLUSH CONDITION

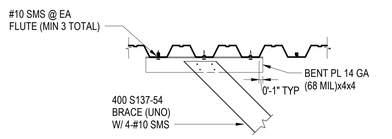



OFFSET CONDITION

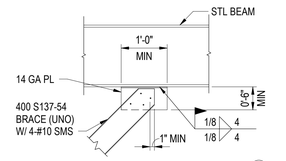
## (2) TANDUM STUD TRACK ATTACHMENT DETAIL | 5 NTS



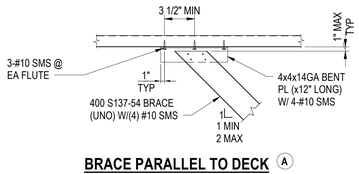

**BRACE PERPENDICULAR TO STEEL BEAM** (D)




**BRACE PERPENDICULAR TO DECK** (C)

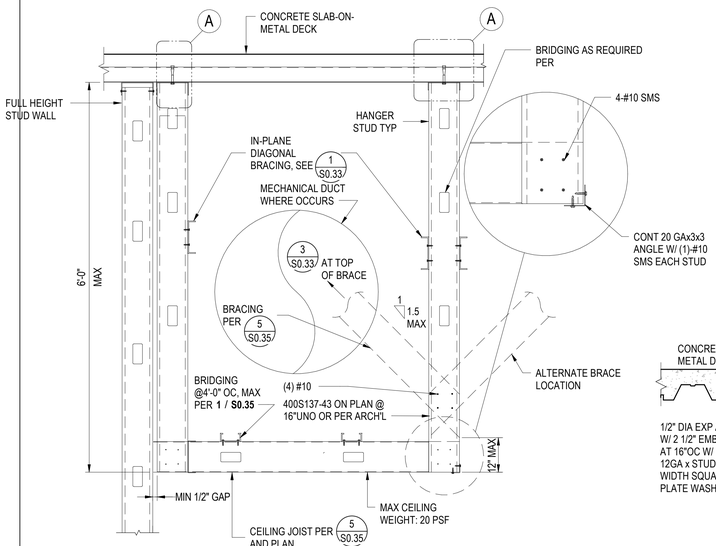



**BRACE PARALLEL TO STEEL BEAM** (B)



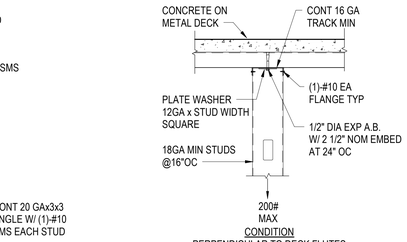

**BRACE PARALLEL TO DECK** (A)

## TYPICAL METAL STUD WALL BRACE DETAIL AT BARE METAL DECK | 7 3/4" = 1'-0"

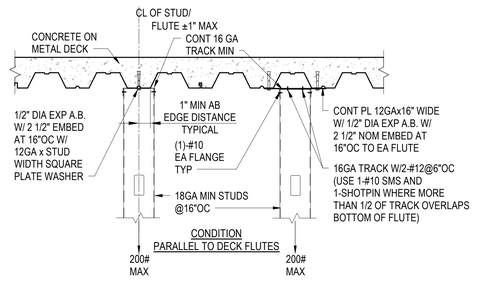



TYPICAL SOFFIT SECTION

NOTE
1. FOR SUPPORT FRAMING AT BARE METAL DECK, SEE 3 S0.35
2. FOR BALANCE OF INFO, SEE 5 S0.35



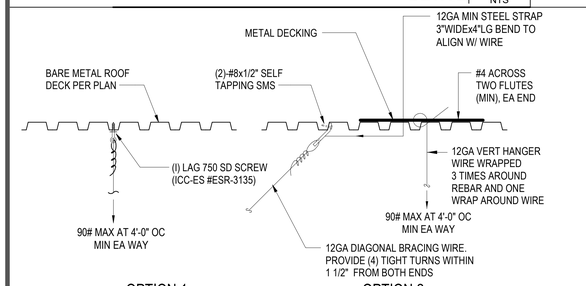

CONDITION
PERPENDICULAR TO DECK FLUTES



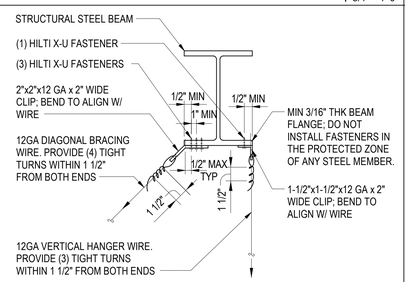

CONDITION
PARALLEL TO DECK FLUTES

TYPICAL HANGING SOFFIT STUD CONNECTION TO SLAB ON METAL DECK (A)

## TYPICAL EXTERIOR HANGING METAL STUD SOFFIT TO FULL HEIGHT WALL FRAMING DETAIL | 2B 1" = 1'-0"




OPTION 1




OPTION 2

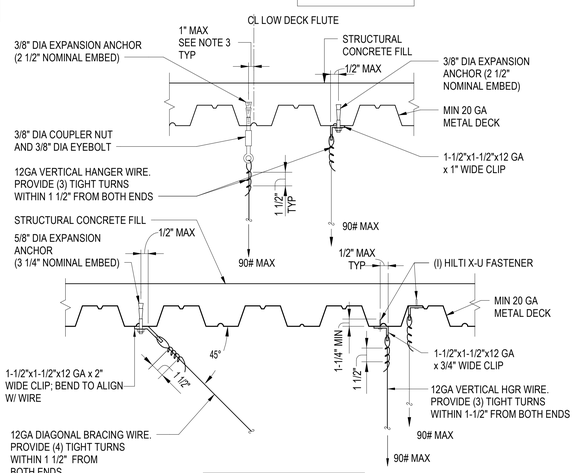
**AT BARE METAL DECK**

**AT STEEL BEAM**

NOTE:
WHERE THIS DETAIL IS REFERENCED FROM OTHER DETAILS ON MEP DRAWINGS, REFER TO DETAILS **1 / S0.29.2 / S0.29& 5 / S0.29** FOR ALLOWABLE LOADS TO STRUCTURE.

NOTES:
1. ALTERNATIVE SUSPENSION METHODS TO THOSE INDICATED ARE NOT ALLOWED UNLESS APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER) & IOR AND DSA.
2. TESTING IS NOT REQUIRED FOR ATTACHMENTS TO BARE METAL DECK AND STRUCTURAL STEEL TENSION TEST ALL MECHANICAL HANGER ANCHORAGES AT CONCRETE FILLED DECK PER DSA IR 25-2.
3. POST INSTALLED ANCHORS TO BE PLACED NO MORE THAN 1" OFFSET FROM CENTERLINE OF DECK LOW FLUTE.

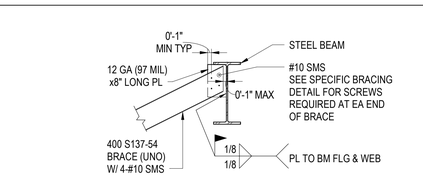
TESTING NOTES: (PER IR 25-2)
1. PULL TEST 1 IN 10 HANGER WIRE/ANCHOR ASSEMBLIES FOR DRILLED-IN OR SHOT-IN CONCRETE ANCHORS TO 200 LBS.
2. PULL TEST 1 IN 2 BRACING WIRE/ANCHOR ASSEMBLIES FOR DRILLED-IN CONCRETE ANCHORS TO 440 LBS (SHOT-IN CONCRETE ANCHORS ARE NOT PERMITTED FOR BRACING WIRES).



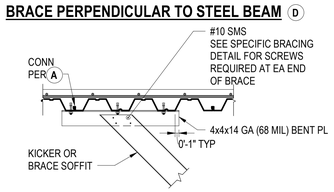

**AT CONC FILLED DECK**

## TYPICAL CEILING HANGER AND SWAY WIRE TO FLOOR OR ROOF | 4 NTS

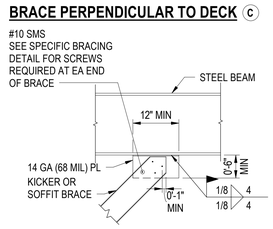
## TYPICAL METAL STUD WALL BRACE DETAIL AT CONCRETE OVER METAL DECK | 3 NTS



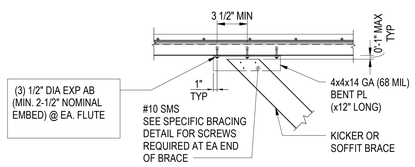

**BRACE PERPENDICULAR TO STEEL BEAM** (D)




**BRACE PERPENDICULAR TO DECK** (C)

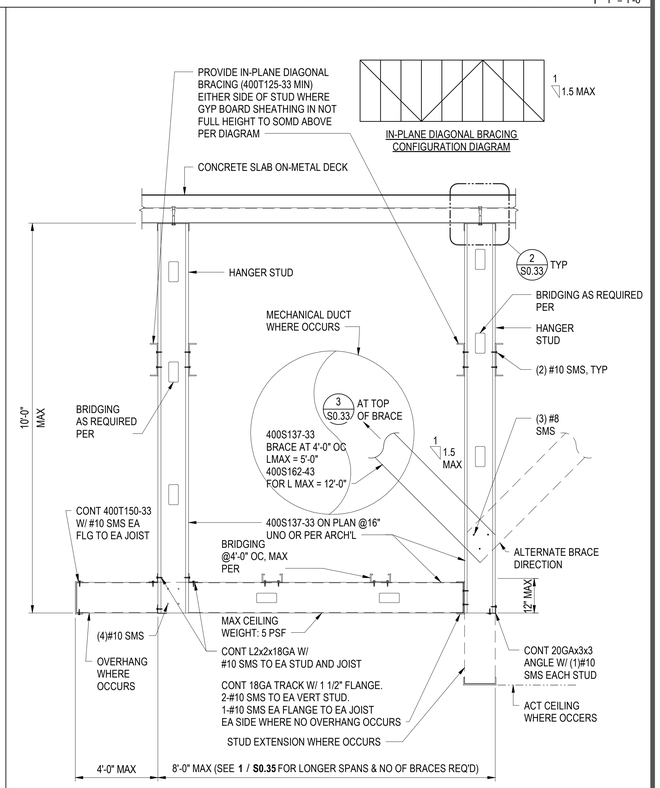



**BRACE PARALLEL TO STEEL BEAM** (B)




**BRACE PARALLEL TO DECK** (A)

## TYPICAL INTERIOR HANGING METAL STUD SOFFIT FRAMING DETAIL | 1 NTS




TYPICAL SOFFIT SECTION

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR, LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — TOBY WAYNE RANDALL — 54892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**TYPICAL METAL STUD DETAILS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

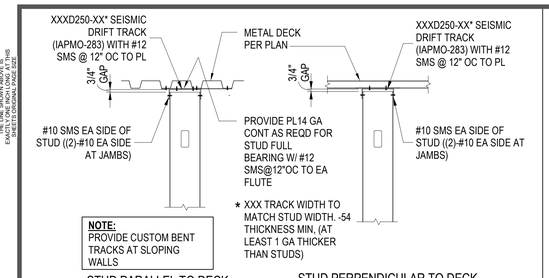
SHEET:

# S0.33

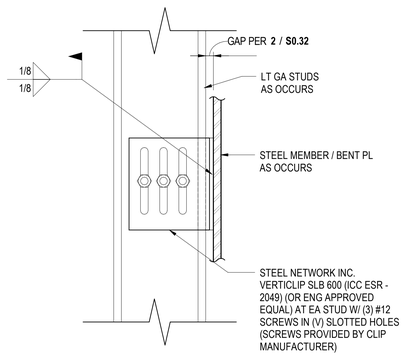
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PLEASE RECYCLE

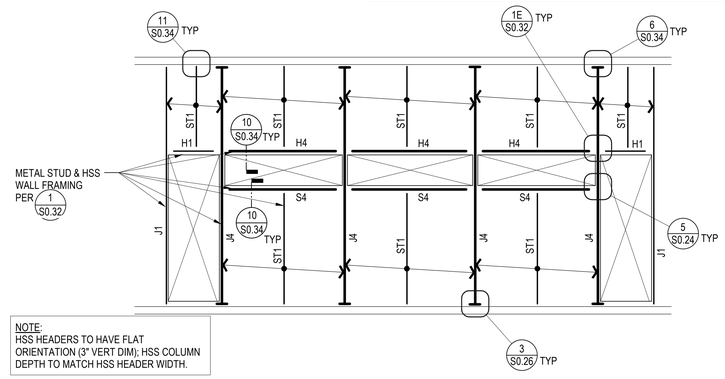
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY



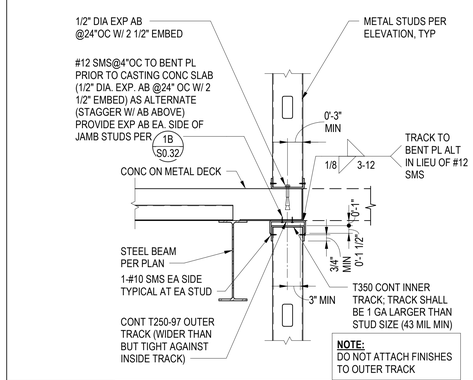

## TYP EXTERIOR METAL STUD WALL TOP AND BOTTOM CONN TO BARE METAL DECK — 15 NTS




## METAL STUD SLIP CONNECTION — 14 NTS




## TYPICAL CLERESTORY WINDOW WALL FRAMING ELEVATION — 8 NTS

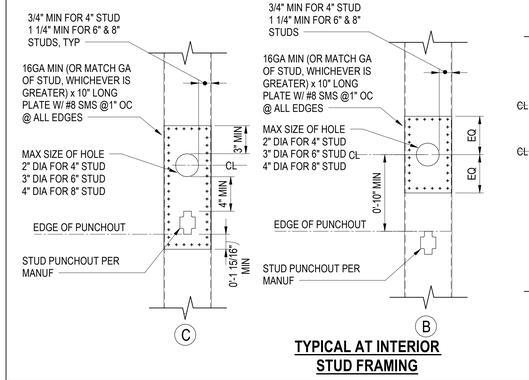



## METAL STUD WALL CONN AT CONC. SLAB ON METAL DECK — 11 NTS




CONDITION AT HSS

## TYPICAL STUD TRACK TO HSS BEAM — 10 NTS

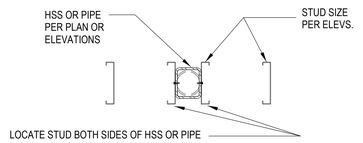



TYPICAL AT INTERIOR STUD FRAMING

TYPICAL AT EXTERIOR STUD FRAMING

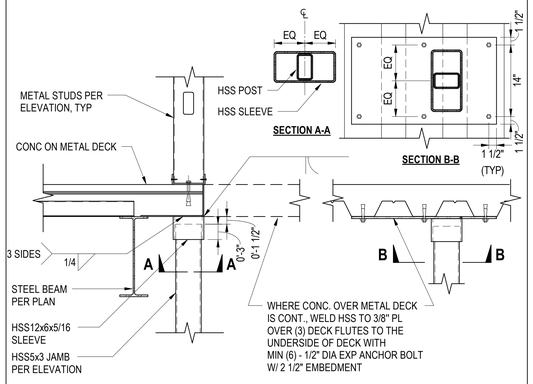
METL-GENL-0012

## TYPICAL PENETRATIONS AT METAL STUD DETAIL — 4 NTS

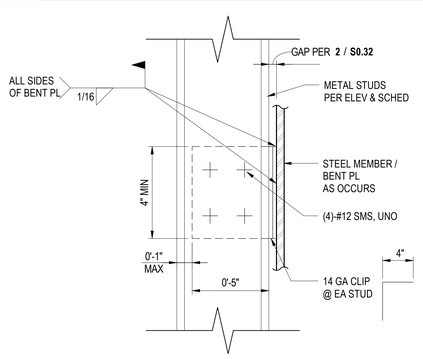



PLAN VIEW

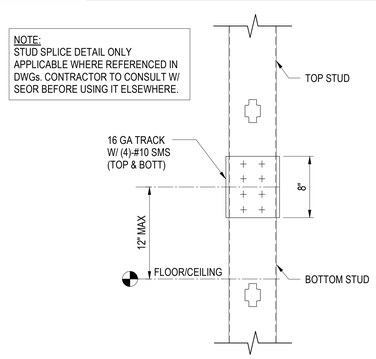
## VERTICAL HSS OR PIPES WITHIN STUD WALLS — 7 NTS



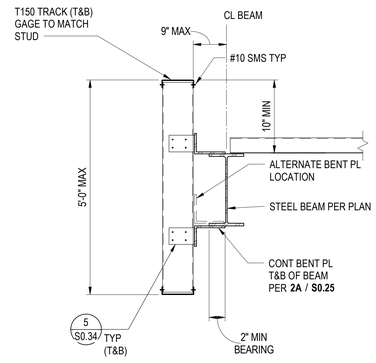

## HSS JAMB TO CONC. OVER METAL DECK CONN — 6 NTS




## METAL STUD RIGID CONNECTION — 5 NTS




## STUD SPLICE DETAIL — 1 1 1/2" = 1'-0"




## TYPICAL SPANDREL DETAIL — 2 1" = 1'-0"

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## NOTES

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PROJECT:

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SHEET NAME:

**TYPICAL METAL STUD DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

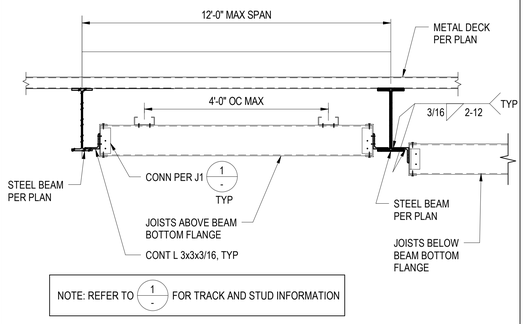
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

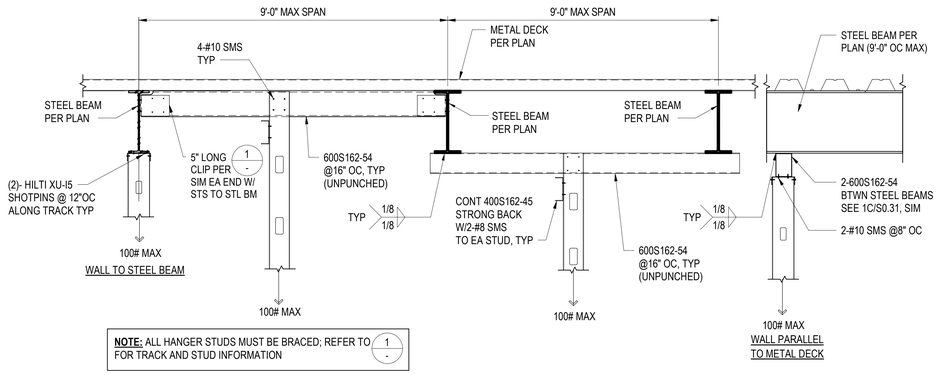
**S0.34**

PLEASE RECYCLE

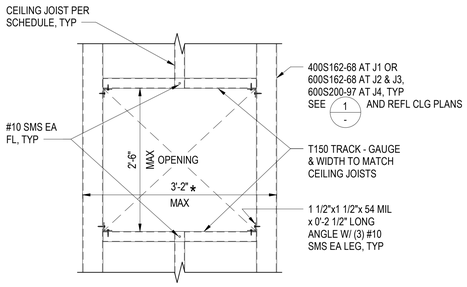
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL DRAWING. ADJUST SCALES ACCORDINGLY.




## SOFFIT CONNECTION TO BEAM FLANGES — 7 NTS

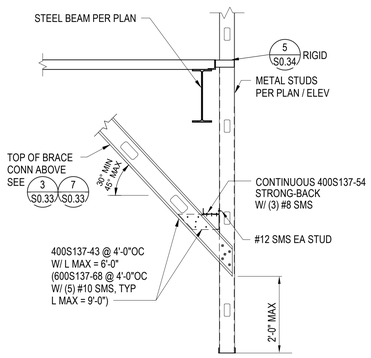



## TYPICAL METAL STUD HANGING SOFFIT CONNECTION TO BARE METAL DECK — 3 NTS

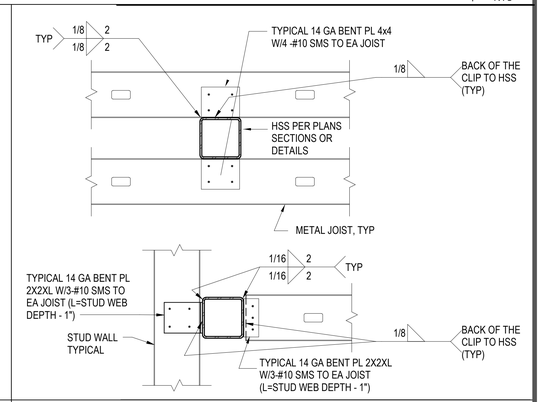



* NOTE:
IF FRAMED OPENING IS LESS THAN 16" WIDE, PROVIDE SINGLE CEILING JOIST EA SIDE OF OPENING.

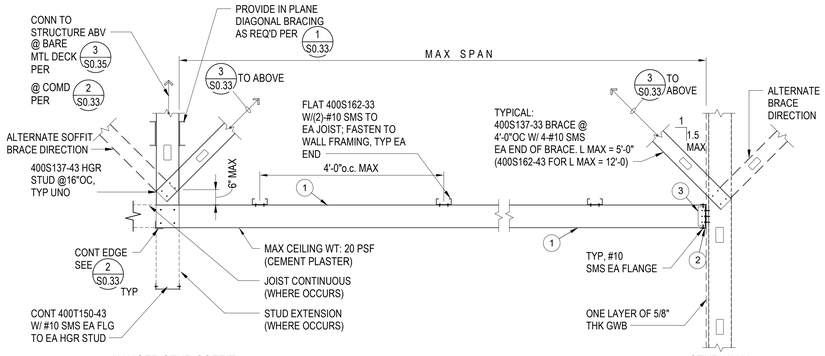
## TYPICAL JOIST FRAMING AT OPENING CEILING LESS THAN 30" WIDE — 8 NTS




## TYPICAL METAL STUD WALL KICKER CONNECTION DETAL AT FLOOR — 6 NTS




## TYPICAL METAL STUD FIXED CONN TO HSS — 2 NTS

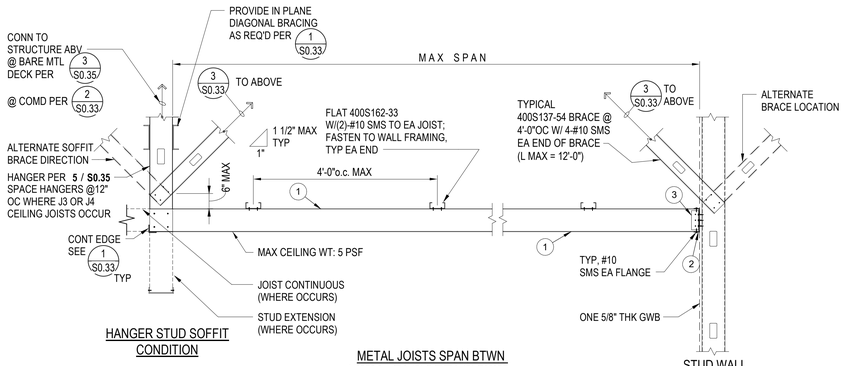



HANGER STUD SOFFIT CONDITION — METAL JOISTS SPAN BTWN HANGER STUDS & STUD WALL — STUD WALL CONDITION

| JOIST MARK PER PLAN | MAX SPAN (BETWEEN SUPPORTS) | 1 JOIST (UNPUNCHED) | 2 LEDGER TRACK | 3 CLIP ANGLE | NUMBER OF METAL SUTD BRACES REQUIRED |
|---|---|---|---|---|---|
| J1 | 6'-0" | 400S162-43 @ 16" | 400T150-54 W/ (2)-#10 TO EA STUD | 18 GA (43 MIL)x2"x2"x3" LONG W/ (2)-#10 EA LEG | (1) ; LOCATE BRACE AT EITHER END OF CLG JOIST |
| J2 | 12'-0" | 600S162-54 @ 16" | 600T150-68 W/ (3)-#10 TO EA STUD | 16 GA (54 MIL) x2"x2"x5" LONG W/ (3)-#10 EA LEG | (2); LOCATE BRACE AT BOTH ENDS OF CLG JOIST |
| B1 (BOX BEAM) | 8'-0" | 2-600S162-43 SEE 1/S0.31 FOR SECTION CONN) | 600T150-43 W/ (3)-#10 TO EA STUD | EA SIDE OF BOX BEAM: 18GA x2"x2"x5" LONG W/ (4)-#10 EA LEG TO HGR STUDS | |

**NOTES:**
1. LOCATE CEILING JOISTS TO EITHER SIDE OF RECESSED LIGHTING (AS REQUIRED) AT STUD WALL SUPPORTED CEILING FRAMING LOCATIONS.
2. FOR CEILING OPENINGS LESS THAN 2'-6" WIDE, SEE TYPICAL DETAIL 8 S0.35
3. HAT CHANNELS MAY BE REQUIRED AT SLOPED EXTERIOR SOFFITS; REFER TO ARCH DETAILS ON FOR EXTERIOR CEILING FINISH ATTACHMENT TO JOISTS.

## TYPICAL EXTERIOR WALL SUPPORTED METAL STUD CEILING DETAIL — 5 NTS




HANGER STUD SOFFIT CONDITION — METAL JOISTS SPAN BTWN HANGER STUDS & STUD WALL — STUD WALL CONDITION

| JOIST MARK PER PLAN | MAX SPAN (BETWEEN WALLS) | 1 JOIST (UNPUNCHED) | 2 LEDGER TRACK | 3 CLIP ANGLE | NUMBER OF METAL SUTD BRACES REQUIRED |
|---|---|---|---|---|---|
| J1 | 12'-0" | 400S162-33 @ 16" | 400T150-43 W/ (2)-#10 TO EA STUD | 18 GA x2"x2"x3" LONG W/ (2)-#10 EA LEG | (1) ; LOCATE BRACE AT EITHER END OF CLG JOIST |
| J2 | 16'-0" | 600S162-33 @ 16" | 600T150-43 W/ (3)-#10 TO EA STUD | 18 GA x2"x2"x5" LONG W/ (3)-#10 EA LEG | (1) ; LOCATE BRACE AT EITHER END OF CLG JOIST |
| J3 | 25'-0" | 600S162-43 @ 12" | 600T150-43 W/ (3)-#10 TO EA STUD | 18 GA x2"x2"x5" LONG W/ (3)-#10 EA LEG | (2); LOCATE BRACE AT BOTH ENDS OF CLG JOIST |
| J4 | 30'-0" | 600S162-54 @ 12" | 600T150-54 W/ (3)-#10 TO EA STUD | 18 GA x2"x2"x5" LONG W/ (3)-#10 EA LEG | (2); LOCATE BRACE AT BOTH ENDS OF CLG JOIST |
| J5 | 15'-0" | 800S162-54 @ 16" | 800T150-54 W/ (4)-#10 TO EA STUD | 18 GA x2"x2"x7" LONG W/ (4)-#10 EA LEG | NONE REQUIRED; SEE NOTE 3 |
| J6 | 19'-0" | 800S162-68 @ 16" | 800T150-68 W/ (4)-#10 TO EA STUD | 18 GA x2"x2"x7" LONG W/ (4)-#10 EA LEG | NONE REQUIRED; SEE NOTE 3 |
| B1 (BOX BEAM) | 8'-0" | 2-600S162-43 (SEE 1D/ S0.31 FOR SECTION CONN) | 600T150-43 W/ (3)-#10 TO EA STUD | EA SIDE OF BOX BEAM: 18 GA x2"x2"x5" LONG W/ (3)-#10 EA LEG | NONE REQUIRED. |

**NOTES:**
1. LOCATE CEILING JOISTS TO EITHER SIDE OF RECESSED LIGHTING (AS REQUIRED) AT STUD WALL SUPPORTED CEILING FRAMING LOCATIONS.
2. FOR CEILING OPENINGS LESS THAN 2'-6" WIDE, SEE TYPICAL DETAIL 8 S0.35
3. J5 AND J6 STUDS ONLY TO ATTACH DIRECTLY TO STUD WALLS. HANGER STUD SOFFIT CONDITION NOT ALLOWED FOR THESE JOISTS.

## TYPICAL WALL SUPPORTED INTERIOR METAL STUD CEILING DETAIL — 1 NTS

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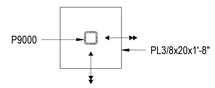
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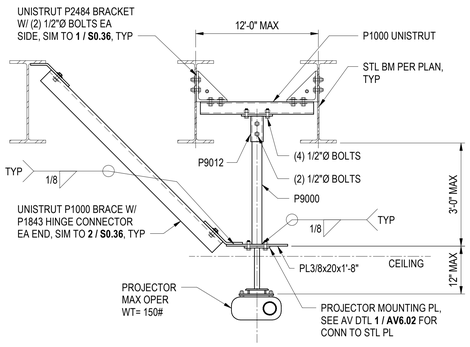
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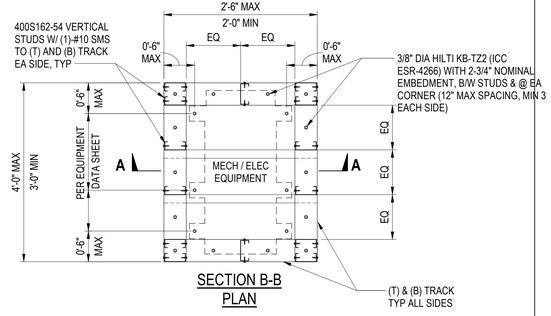
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS



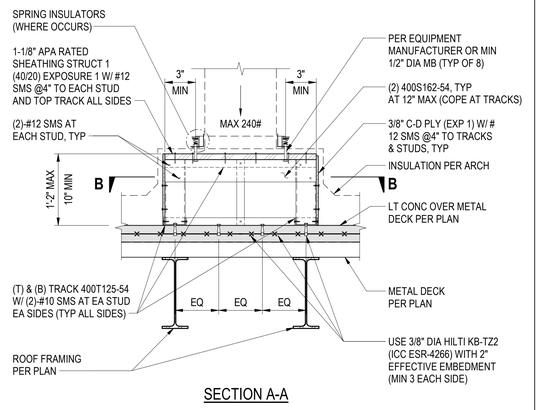

PLAN VIEW




## TYPICAL CEILING MOUNTED PROJECTOR | 4 NTS

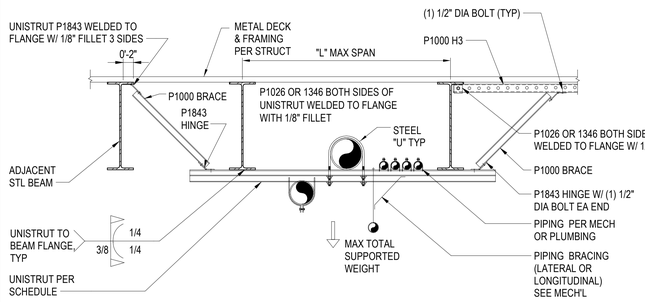



SECTION B-B
PLAN

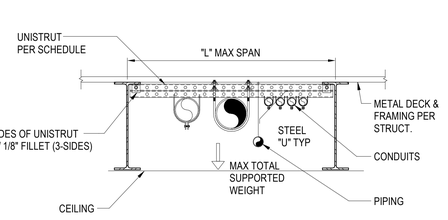



SECTION A-A

## CONDENSING UNIT ROOF PLATFORM DETAIL | 3 NTS




WHERE SPACE IS AVAILABLE BETWEEN BOTTOM FLANGE AND CEILING




WHERE CEILING IS DIRECTLY UNDER BOTTOM FLANGE OF BEAMS

| TRAPEZE SUPPORT SCHEDULE | | | | |
|---|---|---|---|---|
| TRAPEZE SUPPORT MEMBER | | MAX SPAN "L" | MAX TOTAL SUPPORTED WEIGHT (LBS) | BEAM CLAMP |
| UNISTRUT P-1000 $1\frac{5}{8}$ X $1\frac{5}{8}$ X12 GA. | | 12'-0" | 50 | P1379S |
| | | | | |
| | | | | |
| UNISTRUT P-5500 $1\frac{5}{8}$ X $2\frac{7}{16}$ X12 GA. | | 12'-0" | 90 | P2786 |
| | | | | |
| | | | | |
| P-5501 @ FIRE PROTECTION HANGERS | | 12'-0" | 420 | P2787 |
| | | | | |
| | | | | |

**NOTES**

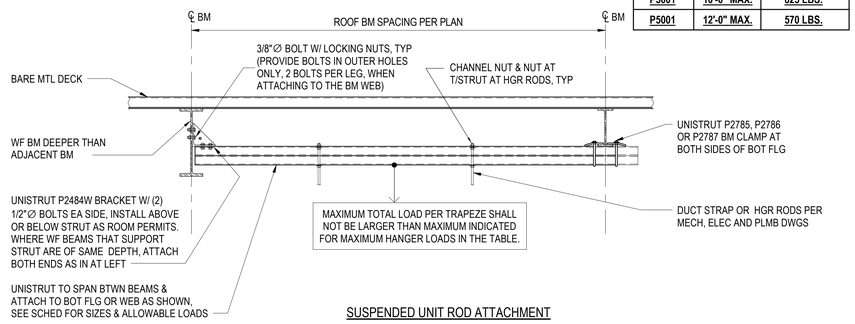
1. THE MAXIMUM TOTAL SUPPORTED WEIGHT SCHEDULED IS BASED ON A UNIFORM DISTRIBUTION OF WEIGHT ACROSS THE TRAPEZE WIDTH. REDUCE THE MAXIMUM ALLOWABLE TOTAL SUPPORTED WEIGHT BY 50% WHEN THE WEIGHT CENTROID IS OFFSET GREATER THAN "L/8" FROM THE MIDSPAN OF THE TRAPEZE.
2. TRAPEZE HANGER SPACING SHALL NOT EXCEED THE SPACINGS FOR THE MAXIMUM SUPPORTED LOAD & ALLOWABLE SPAN OF THE PIPES.
3. PIPING/CONDUIT BRACING FORCE SHALL NOT EXCEED TWICE THE MAXIMUM ALLOWED SUPPORT LOAD IN SCHEDULE.

## TYPICAL DUCT PIPE / CONDUIT HANGER | 2 NTS

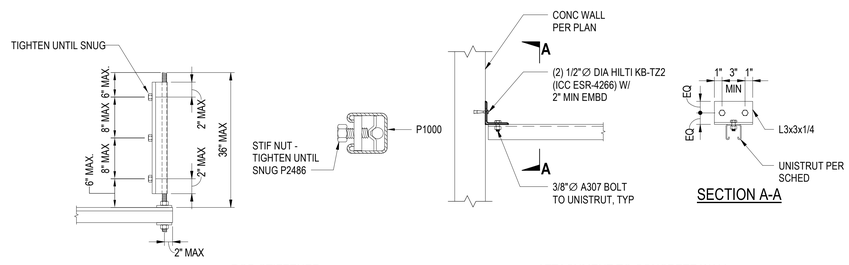
NOTES:

1. MAXIMUM ALLOWABLE HANGING LOADS TO BE AS FOLLOWS (MAXIMUM HANGER LOAD MAY BE FROM A SINGLE HANGER LOAD OR THE TOTAL LOAD FROM ALL HANGERS SUPPORTED BY THE SAME STRUT).
2. MAXIMUM TOTAL LOAD PER TRAPEZE SHALL NOT BE LARGER THAN MAXIMUM INDICATED FOR MAXIMUM HANGER LOADS IN THE TABLE.
3. SPACE TRAPEZE AS REQUIRED TO ENSURE MAXIMUM HANGER LOAD PER TABLE IS NOT EXCEED (MAX SPACING SHALL NOT EXCEED 12'-0"). THE MAXIMUM SPACING SHALL NOT EXCEED THOSE INDICATED ON ALL DESIGN DRAWINGS INCLUDING MEP AND ARCH'L REQUIREMENTS.
4. DO NOT SUSPEND PIPING OVER 1 1/2" DIAMETER, DUCTS LARGER THAN 12"x16" (OR EQUIVALENT PERIMETER), OR OTHER LOADS WITH EXCEPTION OF SUSPENDED ACOUSTICAL CEILINGS AND INTEGRALLY SUPPORTED LIGHT FIXTURES FROM BARE ROOF DECKING OR BARE METAL DECK W/ INSULATING CONCRETE FILL.
5. 18" MIN SPACING BETWEEN P2484 UNISTRUT SUPPORTS.
6. MAX LOAD TO INDIVIDUAL BEAMS SHALL NOT EXCEED 500 # WITHOUT SEOR REVIEW.

| UNISTRUT SCHEDULE SIZE AND LOAD TABLE | | |
|---|---|---|
| UNISTRUT SIZE | BEAM SPACING | MAX. HANGER LOADS |
| P1000 | 10'-0" MAX. | 60 LBS. |
| P1000 | 12'-0" MAX. | 50 LBS. |
| P1001 | 10'-0" MAX. | 305 LBS. |
| P1001 | 12'-0" MAX. | 254 LBS. |
| P5000 | 10'-0" MAX. | 142 LBS. |
| P5000 | 12'-0" MAX. | 100 LBS. |
| P5001 | 10'-0" MAX. | 825 LBS. |
| P5001 | 12'-0" MAX. | 570 LBS. |



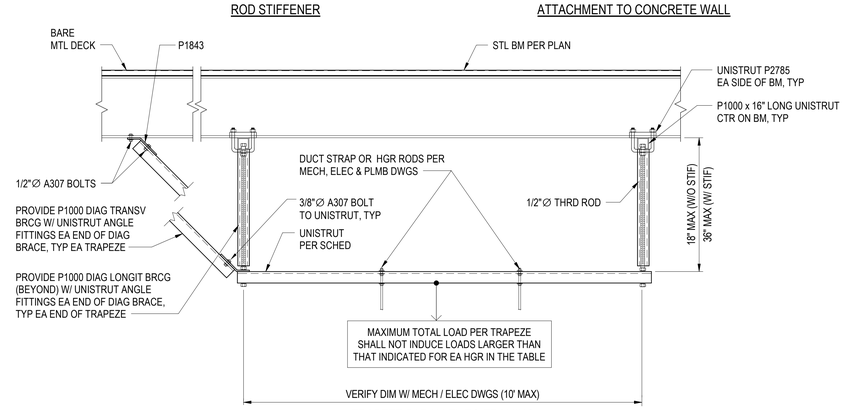

SUSPENDED UNIT ROD ATTACHMENT



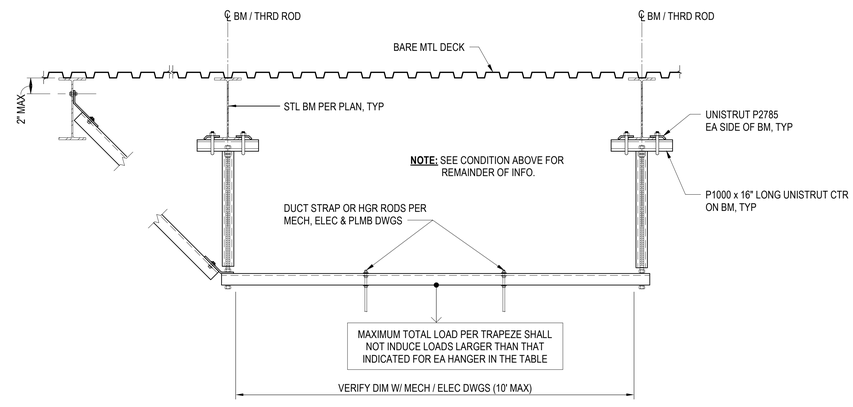

ROD STIFFENER

SECTION A-A

ATTACHMENT TO CONCRETE WALL




TRAPEZE PARALLEL TO FRAMING




TRAPEZE PERPENDICULAR TO FRAMING

## UNISTRUT SUPPORT DETAIL FOR MEP SUSPENDED ELEMENTS | 1 NTS

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3361008100
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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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**KEYNOTES**

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www.saifulbouquet.com
SB Job No:22576

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL MISCELLANEOUS DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

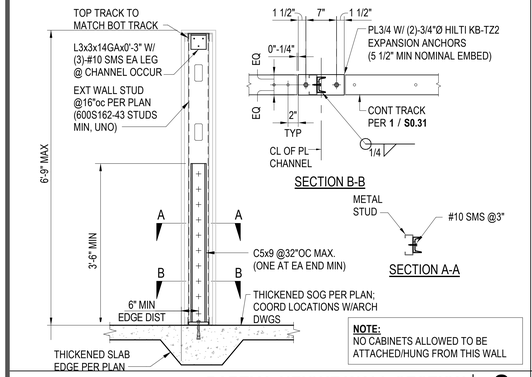
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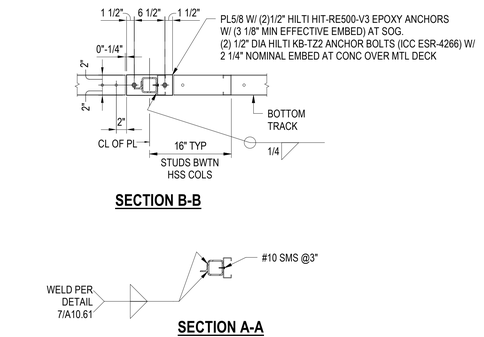
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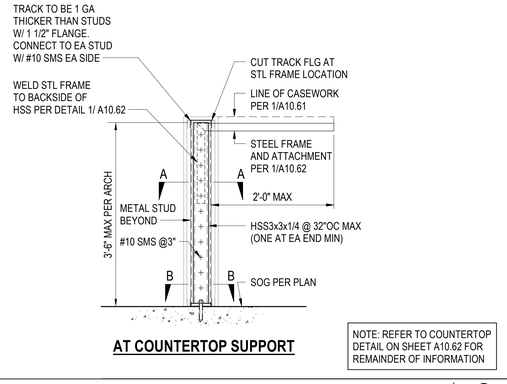
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED

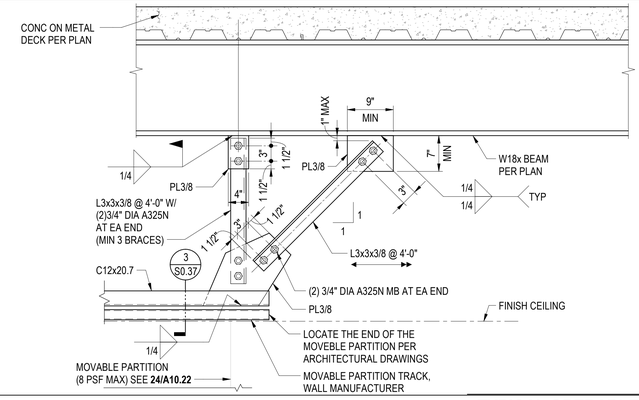



## PARTIAL HEIGHT WALL SECTION 8
1" = 1'-0"

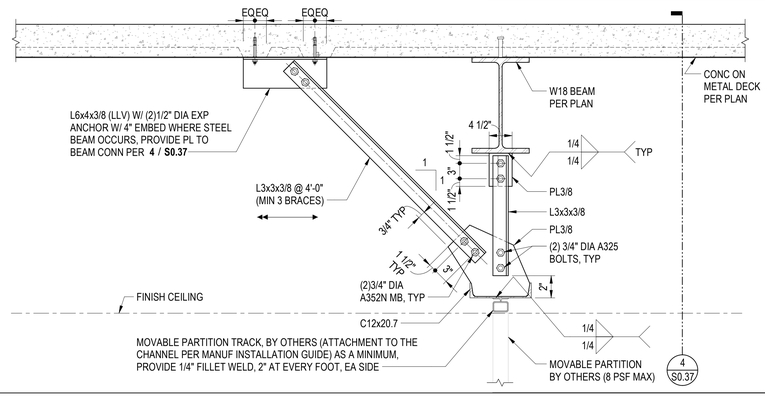


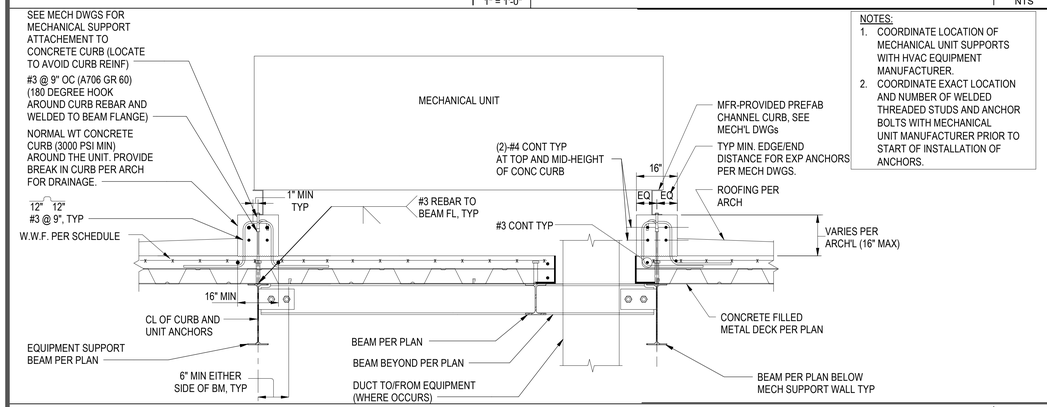

## TYPICAL COUNTERTOP SUPPORT DETAIL 6
NTS



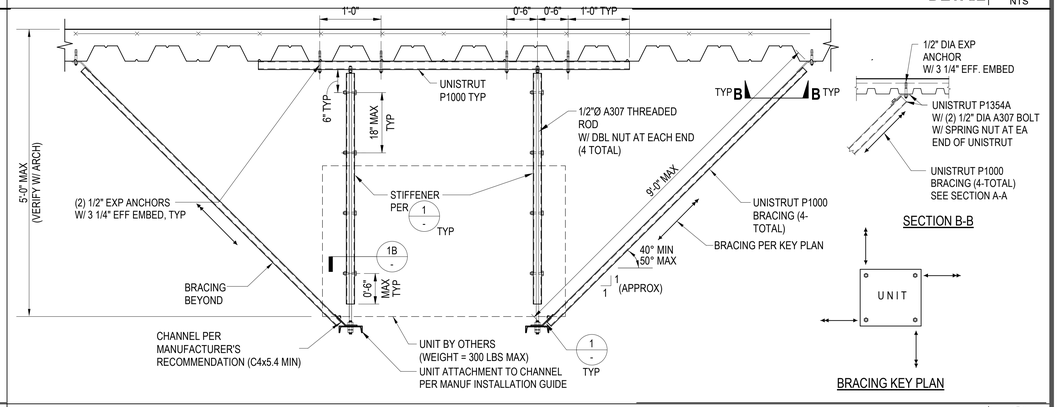

## TYPICAL OPERABLE WALL DOOR HANGER DETAIL 4
NTS



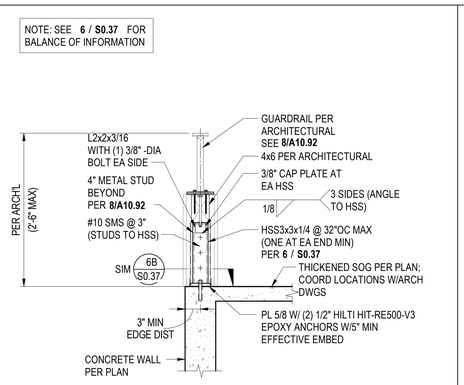

## TYPICAL OPERABLE WALL DOOR HANGER DETAIL 3
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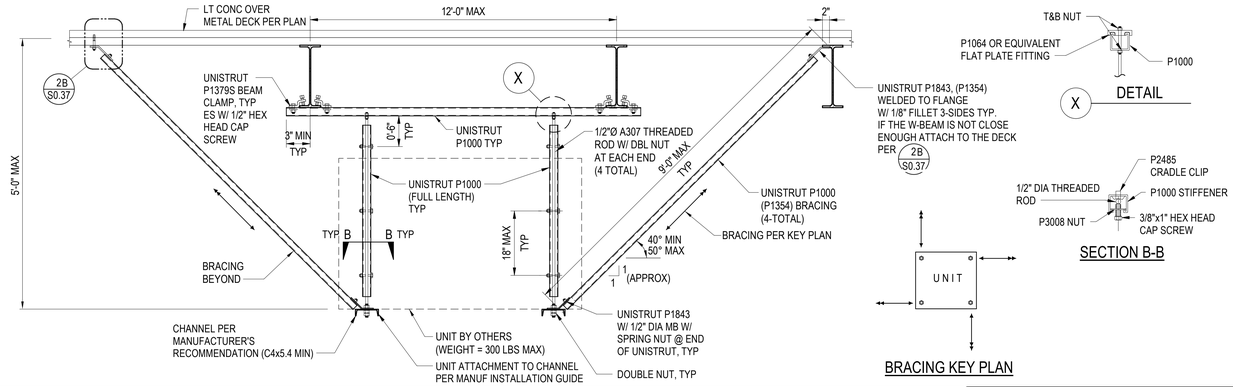

## TYPICAL MECHANICAL CONC CURB AT COMD 5
1" = 1'-0"




## COMPOSITE DECK FAN COIL UNIT SUPPORT DETAIL 2
NTS




## GUARDRAIL @ THEATER 7
1" = 1'-0"




## ROOF HUNG FAN COIL UNIT SUPPORT DETAIL 1
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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TYPICAL MISCELLANEOUS DETAILS**

**DSA SUBMITTAL**

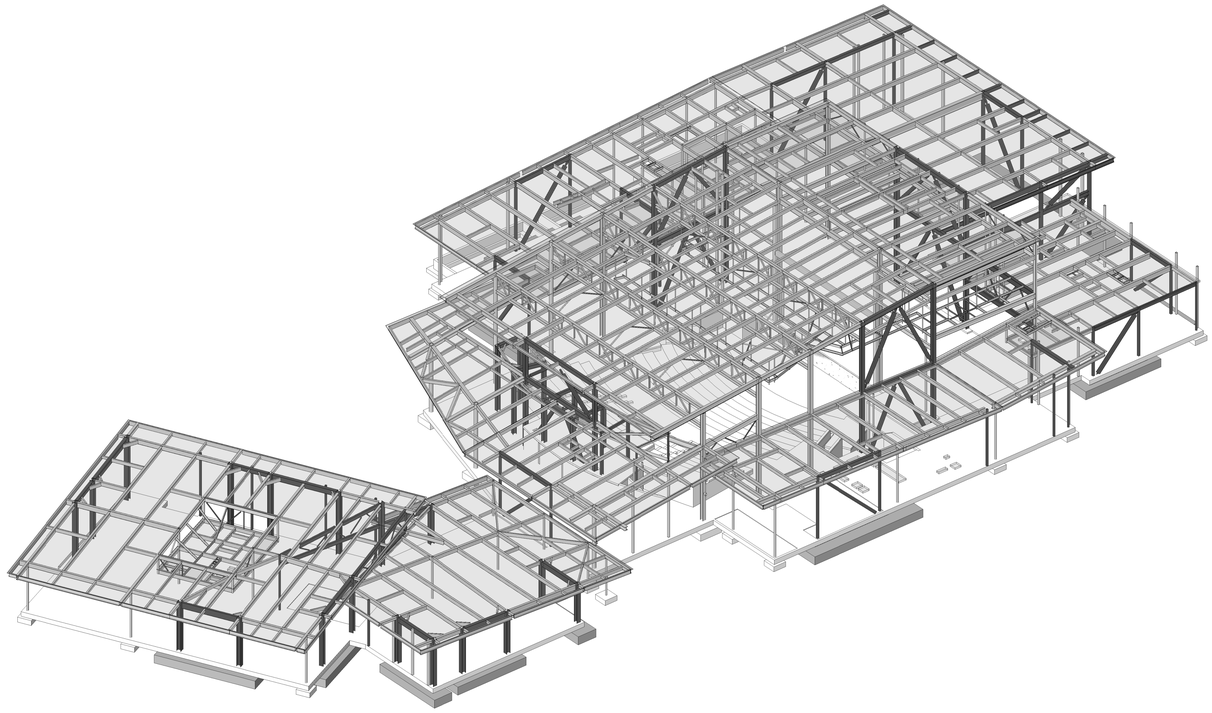
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |
| SHEET: | |

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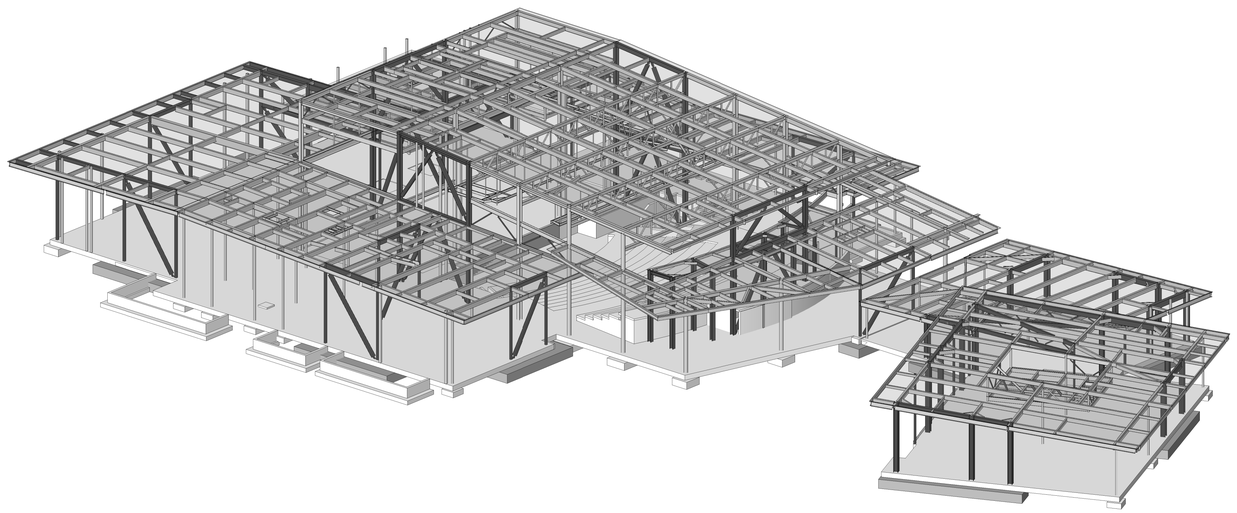
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET IF ORIGINAL SIZE IS 22"X34"



3D VIEW 2 | 2



3D VIEW 1 | 1

PLEASE RECYCLE

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ROBERT HALE RANDALL
S4882
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

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**EL MONTE, CALIFORNIA 91732**

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SHEET NAME:

**3D VIEWS**

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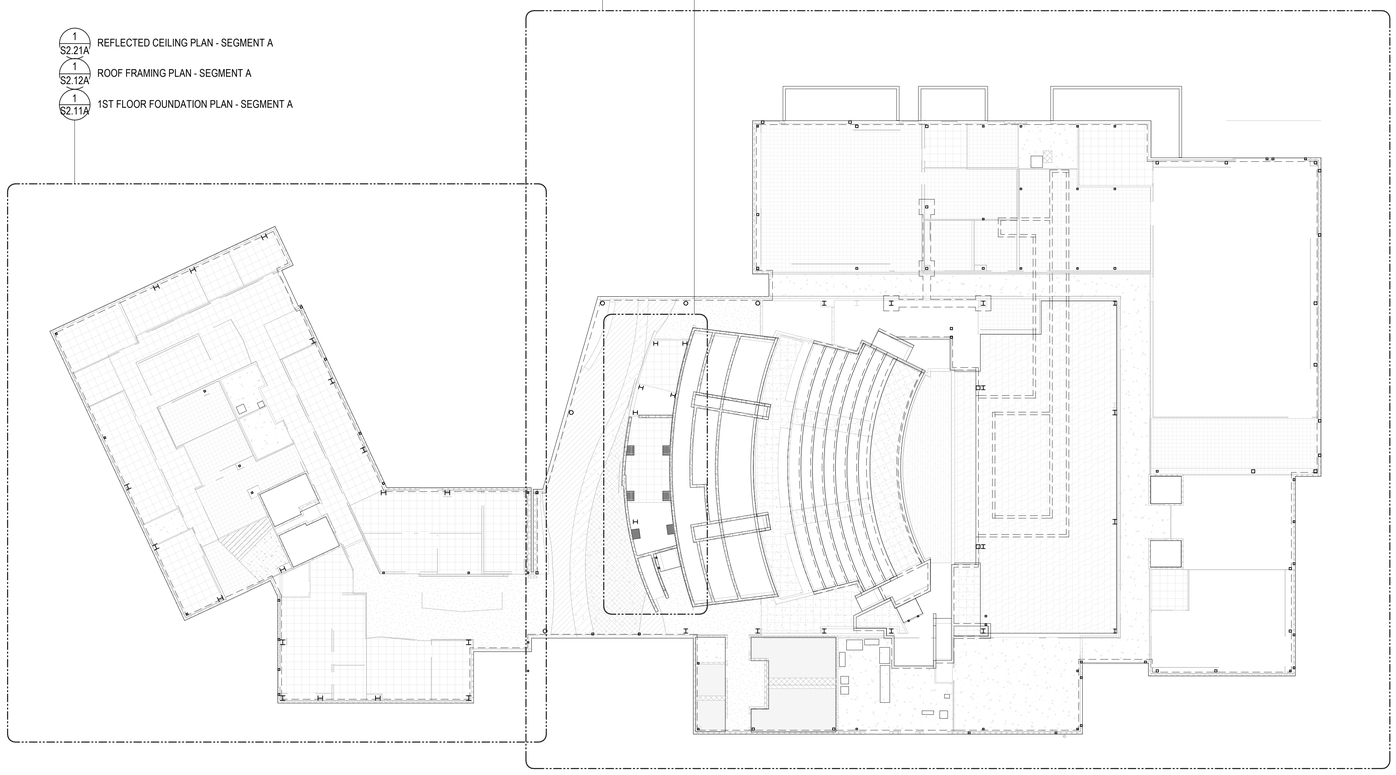
SHEET:

# S1.00

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 22X34 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY

1 S2.21B REFLECTED CEILING PLAN - SEGMENT B
1 S2.15B HIGH ROOF LEVEL FRAMING PLAN
1 S2.14B BOTTOM TRUSS ROOF THEATRE FRAMING PLAN
1 S2.13B CATWALK FRAMING PLAN
1 S2.12B ROOF FRAMING PLAN - SEGMENT B
1 S2.11B 1ST FLOOR FOUNDATION PLAN - SEGMENT B
2 S2.12C PROJECTION ROOM FRAMING PLAN
1 S2.12C PROJECTION ROOM FRAMING PLAN

1 S2.21A REFLECTED CEILING PLAN - SEGMENT A
1 S2.12A ROOF FRAMING PLAN - SEGMENT A
1 S2.11A 1ST FLOOR FOUNDATION PLAN - SEGMENT A



DRAWING SET KEY PLAN 1
1/16" = 1'-0"

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STRUCTURAL
STATE OF CALIFORNIA

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**DRAWING SET KEY PLAN**

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DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

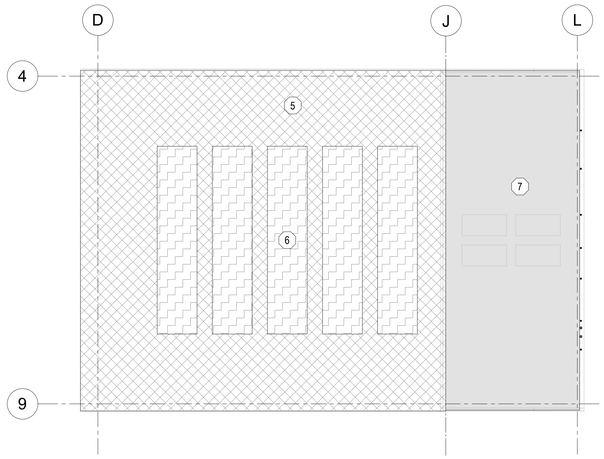
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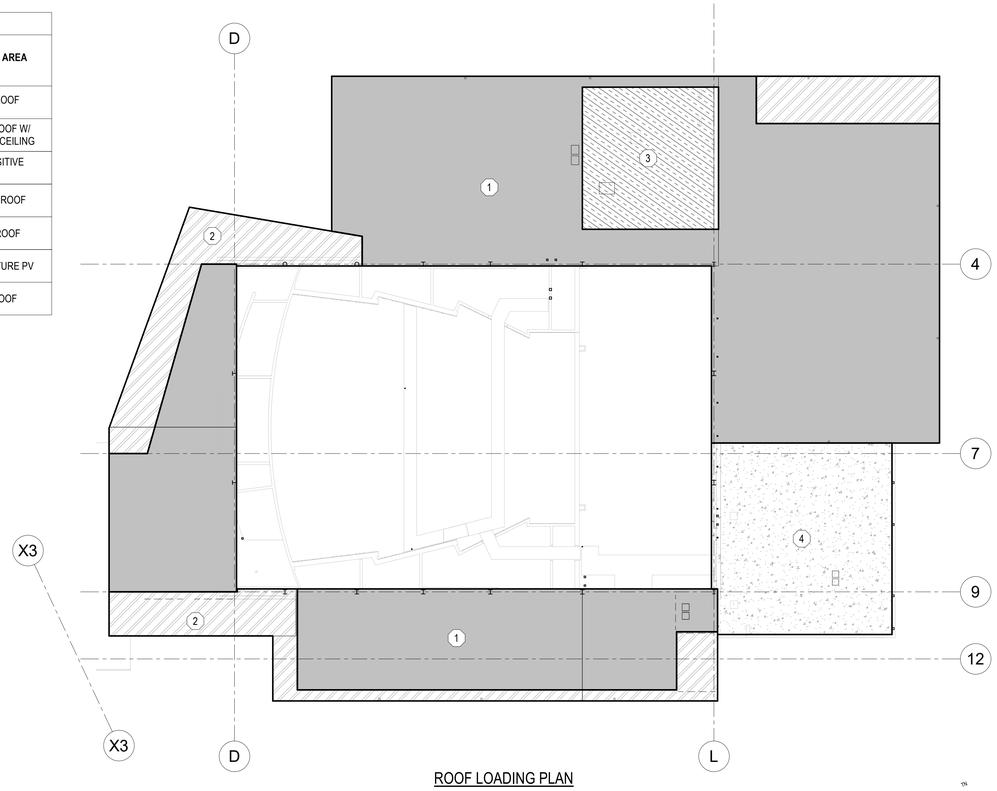
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL 24X36 SHEETS

| LOADING DIAGRAM TABLE | | | | |
|---|---|---|---|---|
| MARK | LIVE LOAD (PSF) | DEAD LOAD (PSF) | | DESCRIPTION OF AREA |
| | | DECK SELF WT. | SUPERIMPOSED DEAD LOAD | |
| 1 | 20 | 2.9 | 26 | TYPICAL LOW ROOF |
| 2 | 20 | 2.9 | 28 | EXTERIOR LOW ROOF W/ CEMENT PLASTER CEILING |
| 3 | 20 | 2.9 | 33.5 + MECH EQUIP WEIGHT | VIBRATION SENSITIVE LOW ROOF |
| 4 | 20 | 46.5 | 21.0 + MECH EQUIP WEIGHT | CONCRETE LOW ROOF |
| 5 | 20 | 4.3 | 26.0 + CATWALK WEIGHT | TYPICAL HIGH ROOF |
| 6 | 20 | 4.3 | 26.0 + CATWALK WEIGHT | HIGH ROOF W/ FUTURE PV |
| 7 | 20 | 4.3 | 28.5 + CATWALK WEIGHT | HEAVY HIGH ROOF |

**NOTE:**
WHERE PV PANELS OCCUR ON ROOF, LIVE LOAD OF 0 PSF CAN BE USED WHEN PV WEIGHT IS CONSIDERED IN DEAD LOAD. HOWEVER, IT IS CONSERVATIVE TO CONSIDER 20 PSF (REDUCIBLE) LIVE LOAD AND NO PV WEIGHT IN DEAD LOAD INSTEAD FOR THE ROOF GRAVITY DESIGN.




HIGH ROOF (THEATER) LOADING PLAN

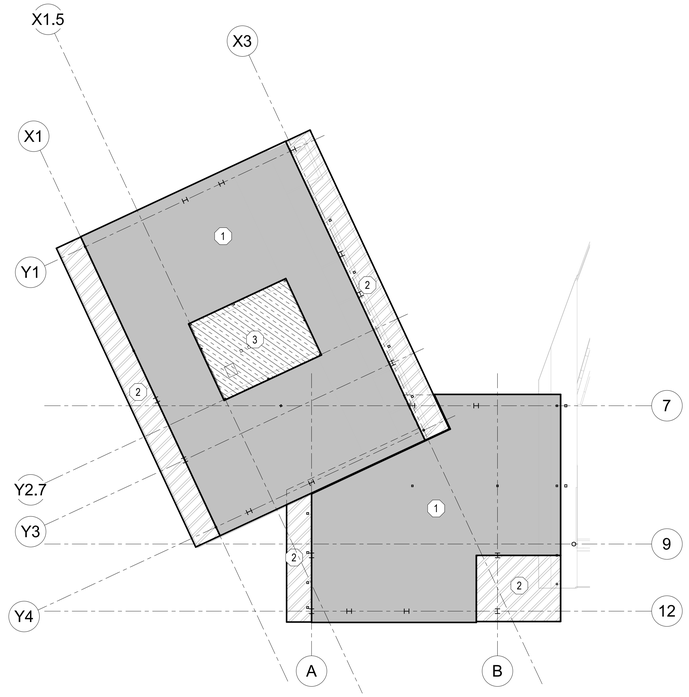



ROOF LOADING PLAN

PN

## ROOF LOADING PLAN - SEGMENT B | 6
1/16" = 1'-0"

| LOADING DIAGRAM TABLE | | | | |
|---|---|---|---|---|
| MARK | LIVE LOAD (PSF) | DEAD LOAD (PSF) | | DESCRIPTION OF AREA |
| | | DECK SELF WT. | SUPERIMPOSED DEAD LOAD | |
| 1 | 20 | 2.9 | 26 | TYPICAL ROOF |
| 2 | 20 | 2.9 | 28 | EXTERIOR ROOF W/ CEMENT PLASTER CEILING |
| 3 | 20 | 2.9 | 33.5 + MECH EQUIP WEIGHT | MECHANICAL WELL |




PN

## ROOF LOADING PLAN - SEGMENT A | 1
1/16" = 1'-0"

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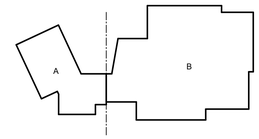
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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER ROBERT HALE BOUQUET 54892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**LOADING PLANS**

**DSA SUBMITTAL**

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**S1.02**

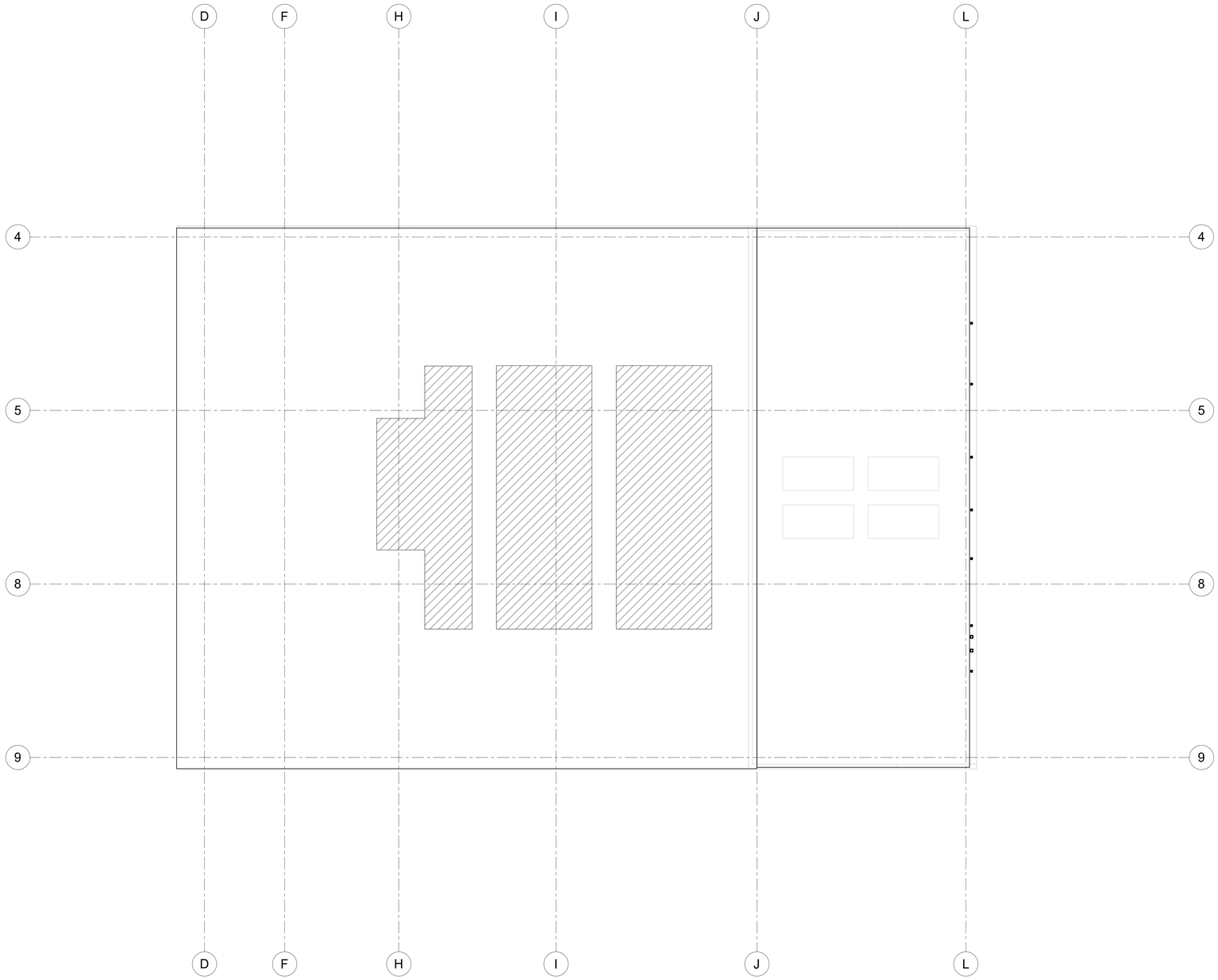
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY

## PV LAYOUT NOTES & LEGEND:

1. ▨ INDICATES PHOTOVOLATIC (PV) PANEL AREA ON THE ROOF. SEE ARCHITECTURAL ROOF PLANS.
2. THE DESIGNED SEISMIC MASS FOR THE PV SYSTEM AND FRAMING IS 6 PSF (INCLUDING WEIGHT OF SUPPORT FRAMING).
3. THE DESIGN ROOF LIVE LOAD OF 20 PSF HAS BEEN APPLIED UNIFORMLY OVER ENTIRE ROOF AREAS, INCLUDING PV SURFACE AREA.




ROOF THEATER - PV LAYOUT | 1 | 1/8" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — DANIEL R. HALE — No. S-4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

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**EL MONTE, CALIFORNIA 91732**

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SHEET NAME:

**PV LAYOUT PLAN**

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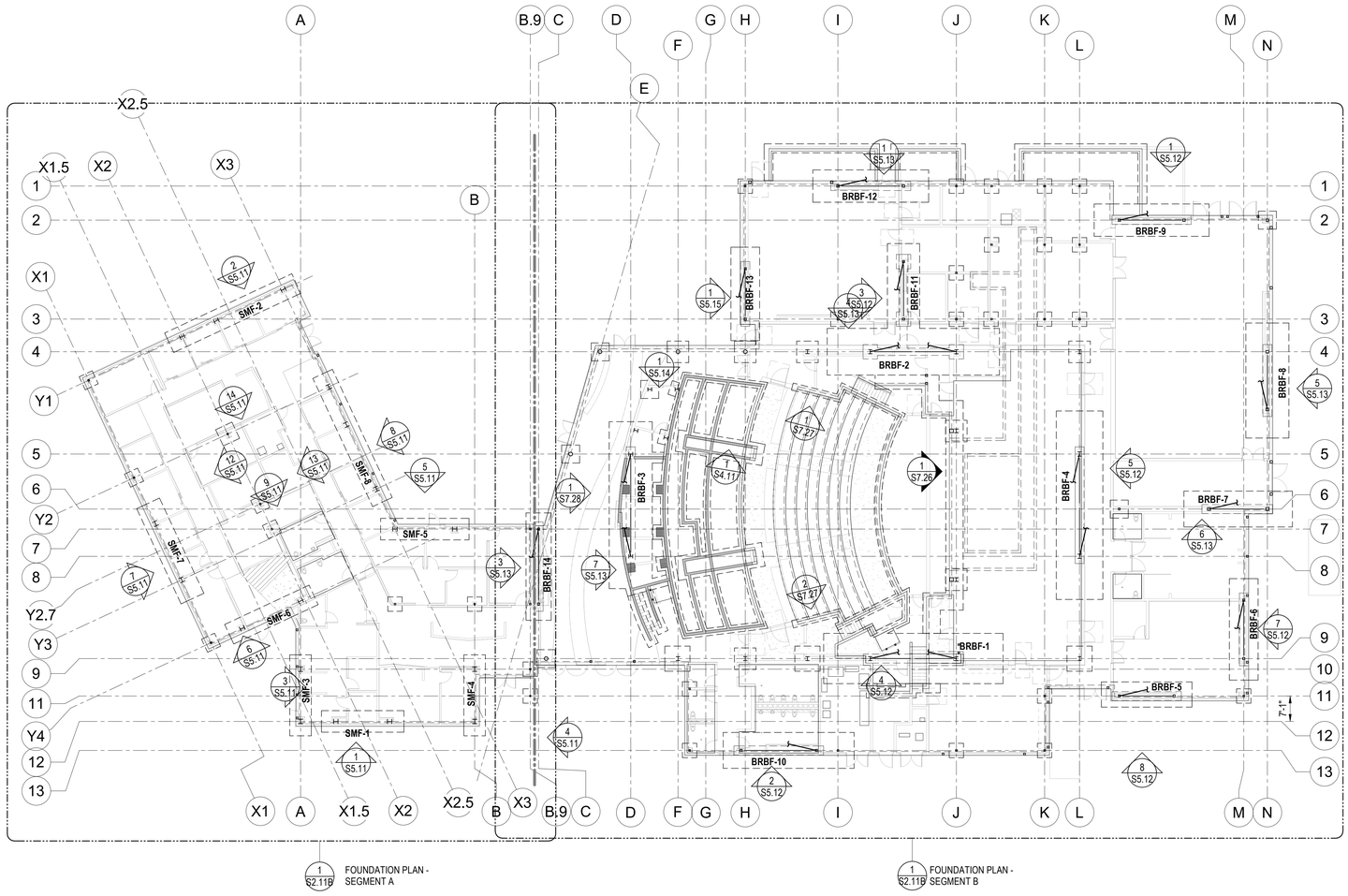
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1 S2.11B FOUNDATION PLAN - SEGMENT A

1 S2.11B FOUNDATION PLAN - SEGMENT B

PN

**OVERALL FIRST FLOOR - FOUNDATION PLAN** 1 1/16" = 1'-0"

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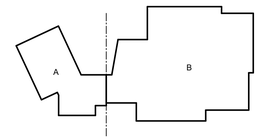
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## NOTES

KEY PLAN:




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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

**OVERALL FIRST FLOOR - FOUNDATION PLAN**

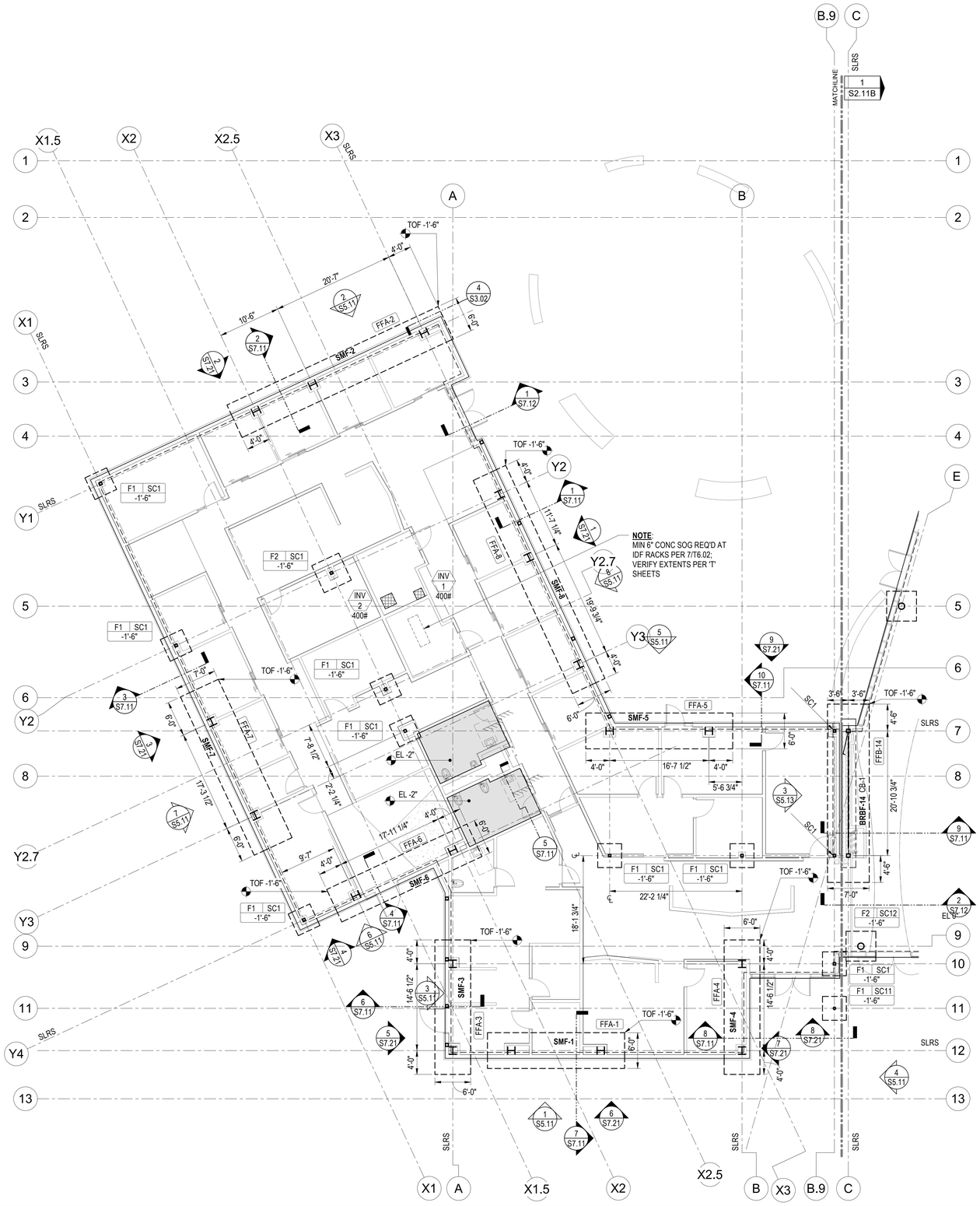
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SHEET:

**S2.11**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS




## FOUNDATION PLAN NOTES

1. FOR GENERAL NOTES SEE **S0.01** TO **S0.05** SERIES SHEETS. TYPICAL DETAILS OCCUR THROUGHOUT THESE STRUCT DWGS IN ADDITION TO THOSE ON **S0.11** TO **S0.37** SERIES SHEETS.
2. VERIFY CONC SLAB ELEVATIONS INCLUDING SLAB DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, & SLAB EDGE LOCATIONS; & WALL OVERALL DIMENSIONS INCLUDING LOCATIONS OF OPNGS WITH ARCHITECTURAL DWGS.
3. SEE ARCHITECTURAL DWGS FOR REMAINDER OF DIMENSIONS & ELEVATIONS NOT SHOWN ON STRUCT DWGS. VERIFY ALL DIMENSIONS & ELEVATIONS W/ ARCHITECTURAL DWGS PRIOR TO START OF WORK.
4. VERIFY EXTENT OF EXISTING UNDERGROUND UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
5. FOUNDATION EXCAVATIONS MUST BE OBSERVED AND APPROVED BY PROJECT GEOTECHNICAL CONSULTANT PRIOR TO PLACING REINFORCING STEEL.
6. CENTER COLUMNS ON GRIDLINES UNO.
7. LOCATE TOP OF FOOTINGS MIN 1'-6" BELOW LOWEST ADJACENT BUILDING SLAB ON GRADE ELEVATION OR TOP OF LOWEST ADJACENT EXTERIOR FINISH GRADE (OR FINISH PAVING) ELEVATION UNO.
8. TYPICAL SLAB ON GRADE SHALL BE AS FOLLOWS UNO:
   A. 5" CONCRETE SLAB W/ #4@18"OC EACH WAY AT CENTER OF SLAB OVER
   B. 15 MIL VAPOR BARRIER OVER 4" OF CONSOLIDATED CRUSHED AGGREGATE OR GRAVEL (WITH SE OF 30 OR MORE).
   C. COMPACTED FILL PER GEOTECHNICAL REPORT. PRIOR TO PLACEMENT OF CONDUITS UNDER SLAB, CONTRACTOR IS TO SUBMIT PROPOSED LAYOUT FOR SEOR REVIEW AND APPROVAL. CONDUITS SHALL BE BUNDLED/GROUPED SO AS TO ALLOW SLAB TO BEAR ON SOIL.
9. PROVIDE CONSTRUCTION JOINTS AND CONTROL JOINTS IN SLAB ON GRADE PER **1 / S0.12** AND AS REQD PER ARCHITECTURAL DWGS.
10. FINISH FLOOR ELEVATION IS 0'-0" PER CIVIL AND ARCH'L DRAWINGS.
11. VERIFY ALL SLAB F.F.ELEVATIONS AND SLAB DEPRESSIONS PER ARCH'L DRAWINGS.
12. FOR FLOOR MOUNTED ELECTRICAL BOXES REFER TO DETAIL **7 / S0.12**
13. UNDERGROUND UTILITIES SHALL NOT PENETRATE THROUGH FOOTINGS. REFER TO **3 / S0.13** FOR TYPICAL DETAIL OF PIPE THRU FOUNDATIONS & TRENCHES ADJACENT TO FOUNDATIONS.

## FOUNDATION LEGEND

- EL XXX'-XX" TOP OF SLAB ELEVATION - VERIFY W/ ARCHITECTURAL DWGS
- F1 | SC1 / X'-X" — INDICATES FOOTING MARK SEE SCHEDULE **2 / S3.01**; INDICATES STEEL NON-FRAME COLUMN MARK SEE **1 / S3.11**; INDICATES TOP OF FOOTING ELEVATION FROM REFERENCE DATUM OF SLAB ELEVATION AT 0'-0". SEE PLAN NOTE #7.
- FFB-X — INDICATES FRAME FOOTING PER SCHEDULE, SEE **3 / S3.02**.
- CB-1 — INDICATES CONCRETE DRAG BEAM. SEE DETAIL **1 / S6.14** UNO ON FRAME ELEVATIONS.
- STEP IN CONTINUOUS FOOTING PER **4 / S3.01** SYMBOL DENOTES LOCATION OF STEP AT TOP OF FOOTING
- TOF -X'-X" — TOP OF FOOTING ELEVATION RELATIVE TO TOP OF LOWEST ADJACENT BUILDING SLAB ON GRADE ELEVATION OR TOP OF LOWEST ADJACENT EXTERIOR FINISH GRADE (OR FINISH PAVING) ELEVATION, WHICHEVER IS LOWER - IF NO ELEVATION INDICATED, PLAN NOTE 7 APPLIES
- SCX — NON-FRAME STEEL COLUMN MARK - SEE **1 / S3.11**.
- X" — CHANGE IN TOP OF SLAB ON GRADE ELEVATION - VERIFY DROP DISTANCES (WHERE INDICATED) W/ ARCHITECTURAL DWGS
- DEPRESSED SLAB - SEE **1 / S0.12** UNO.
- BRBF-X — BRBF (BUCKLING RESTRAINED BRACED FRAME) MARK SEE BRBF ELEVATIONS ON SHEETS **S5.12**, **S5.13** & **S5.15**.
- SMF — SMF (SPECIAL MOMENT FRAME) MARK - SEE SMF ELEVATIONS ON SHEET **S5.11** & **S5.14** .
- CONC. WALL BELOW SLAB
- INDICATES AREA OF (N) STRUCTURAL CONC SLAB ON GRADE PER PLAN NOTE #8 THAT CANNOT BE SAWCUT OR DAMAGED ONCE INSTALLED (POST-CONSTRUCTION). ADD PERMANENT SIGNAGE ON THE SLAB STATING : "STRUCTURAL SLAB, DO NOT CUT, CORE OR DRILL"
- INDICATES EQUIPMANT FOOTPRINT. REFER TO "M, E, P, FS, & T" FOR EQUIPMENT. PROVIDE CONCRETE MECH PAD (WHERE INDICATED IN "M, E, P, FS, & T" SERIES DRAWINGS) PER **8 / S0.12** & **9 / S0.12**
- XX / XX / XXX# — INDICATES UNIT TYPE-SEE "M, E, P, FS, & T" SERIES DRAWINGS FOR ANCHORAGE; INDICATES UNIT NUMBER; INDICATES MAXIMUM DESIGN WEIGHT.

**LEVEL 01 - FOUNDATION PLAN - SEGMENT A** | **1** | 1/8" = 1'-0"

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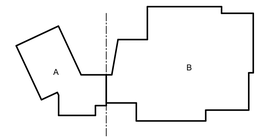
## KEYNOTES


saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER — ROBERT HALE RASSATI — No. S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - FOUNDATION PLAN - SEGMENT A**

**DSA SUBMITTAL**

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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

**S2.11A**

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY

REFER TO SHEET **S2.11A** FOR LEGENDS AND GENERAL NOTES.

RTNG WALL TYPE-1 PER 3 / **S0.15**

NO SOG, TYP AT RTNG WALLS

NO ATTACHMENT. MIN 1/2" GAP BTWN FTGS AND BTWN WALL & EDGE OF SLAB, TYP

T/WALL PER CIVIL

SIM TYP

TYP

SLRS

MATCHLINE

BRBF-12 CB-2 FFB-12 18'-3 1/4"

BRBF-9 CB-1 FFB-9 18'-0 1/4"

BRBF-13 CB-1 FFB-13 14'-0 1/2"

BRBF-11 CB-1A FFB-11 16'-0 1/2"

BRBF-2 FFB-2

BRBF-8 CB-2 FFB-8 16'-0 1/2"

BRBF-7 CB-1 FFB-7 16'-3"

BRBF-6 CB-2 FFB-6 16'-3 1/4"

BRBF-5 CB-1 FFB-5 15'-3 1/4"

BRBF-4 CB-1 FFB-4 28'-6"

BRBF-3 CB-1 FFB-3 9'-0"

BRBF-14 CB-1 FFB-14 20'-10 3/4"

BRBF-10 CB-2 FFB-10 21'-0"

BRBF-1 CB-1 FFB-1

TOF -1'-6"

TOF -5'-8"

TOF -1'-11"

TOF -7'-6"

TOF -3'-0"

T.O. PILASTER -2'-0"

HSS7x7x3/8 LADDER SUPPORT COL

HSS5x5x3/8 LADDER SUPPORT COL

HSS COL @ LIFT MAST, TYP OF 2, FOR ADD'L INFO SEE **A7.31**

8" THK DEPRESSED SLAB @ LIFT, FOR REINF SEE **6** / **S4.03**

BUILT-UP CONC SLAB OVER GEOFOAM PER **7** / **S0.13**

5" SOG W/ #4 @ 6"OC EW AT STAGE EXTENSION AREA

DCWP 1A/1B 1020#

ET 962#

XFR 4190#

MDP 800#

SWBD 2650#

FPC 460#

P 150#

P 500#

INV 800#

INV 400#

INV 400#

SWBD TH 800#

T2 4190#

XFR 4190#

**NOTE**:
MIN 6" CONC SOG REQ'D AT IDF RACKS PER 7/T6.02; VERIFY EXTENTS PER 'T' SHEETS

LEVEL 01 - FOUNDATION PLAN - SEGMENT B

1 1/8" = 1'-0"

PN

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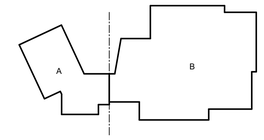
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REGISTERED PROFESSIONAL ENGINEER
JOSEPH MICHAEL HALE
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EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - FOUNDATION PLAN - SEGMENT B**

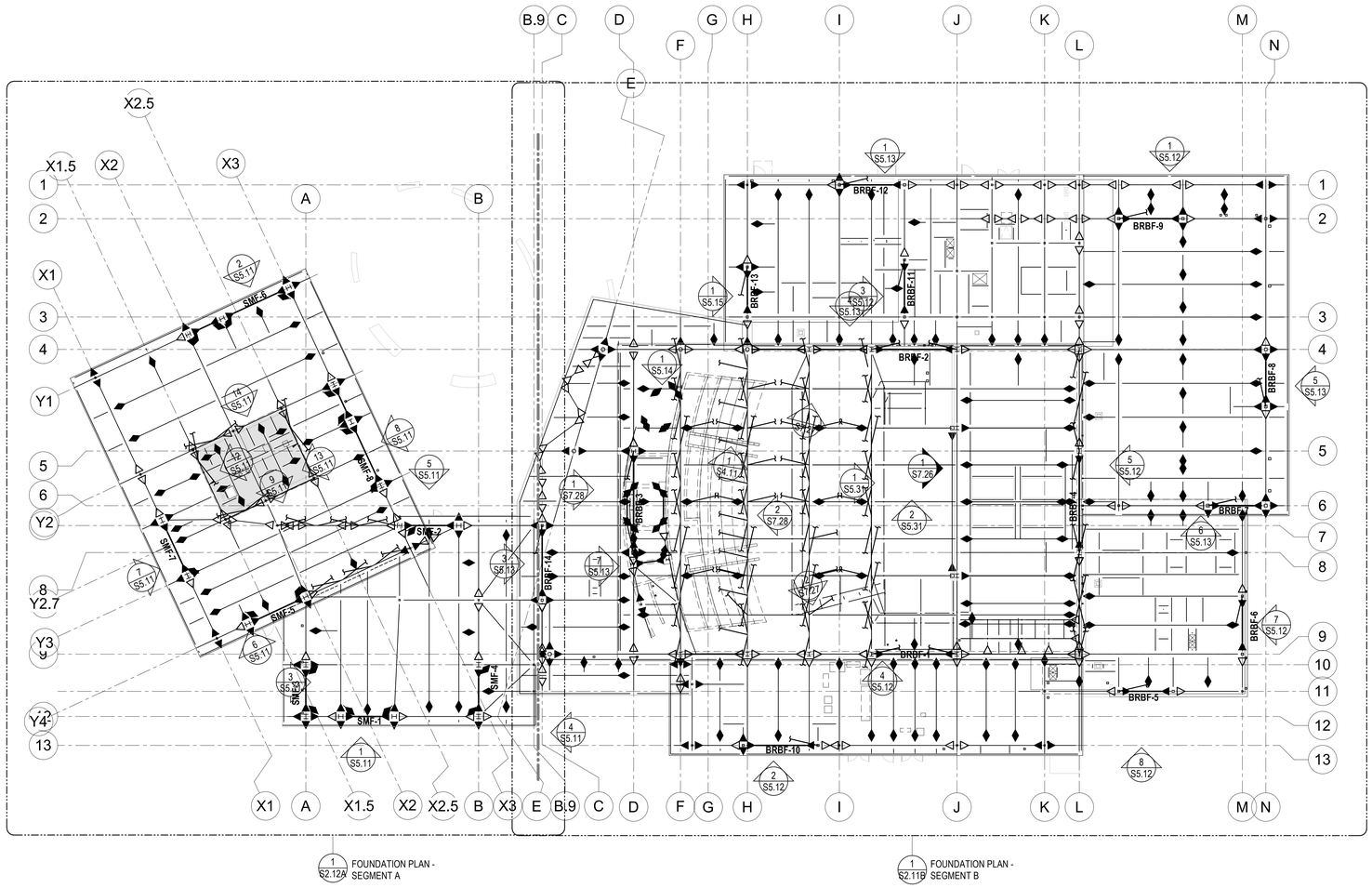
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SHEET:

**S2.11B**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWINGS. IF IT IS NOT, ADJUST SCALES ACCORDINGLY




ROOF ADMIN - OVERALL FRAMING PLAN | 1 | 1/16" = 1'-0"

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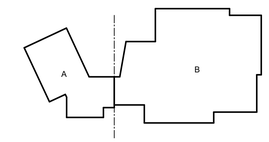
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## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - OVERALL FRAMING PLAN**

**DSA SUBMITTAL**

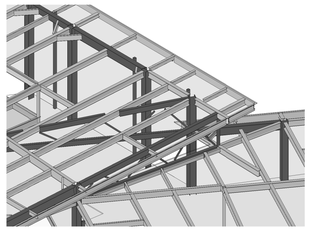
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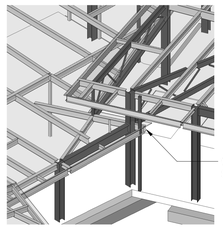
**S2.12**

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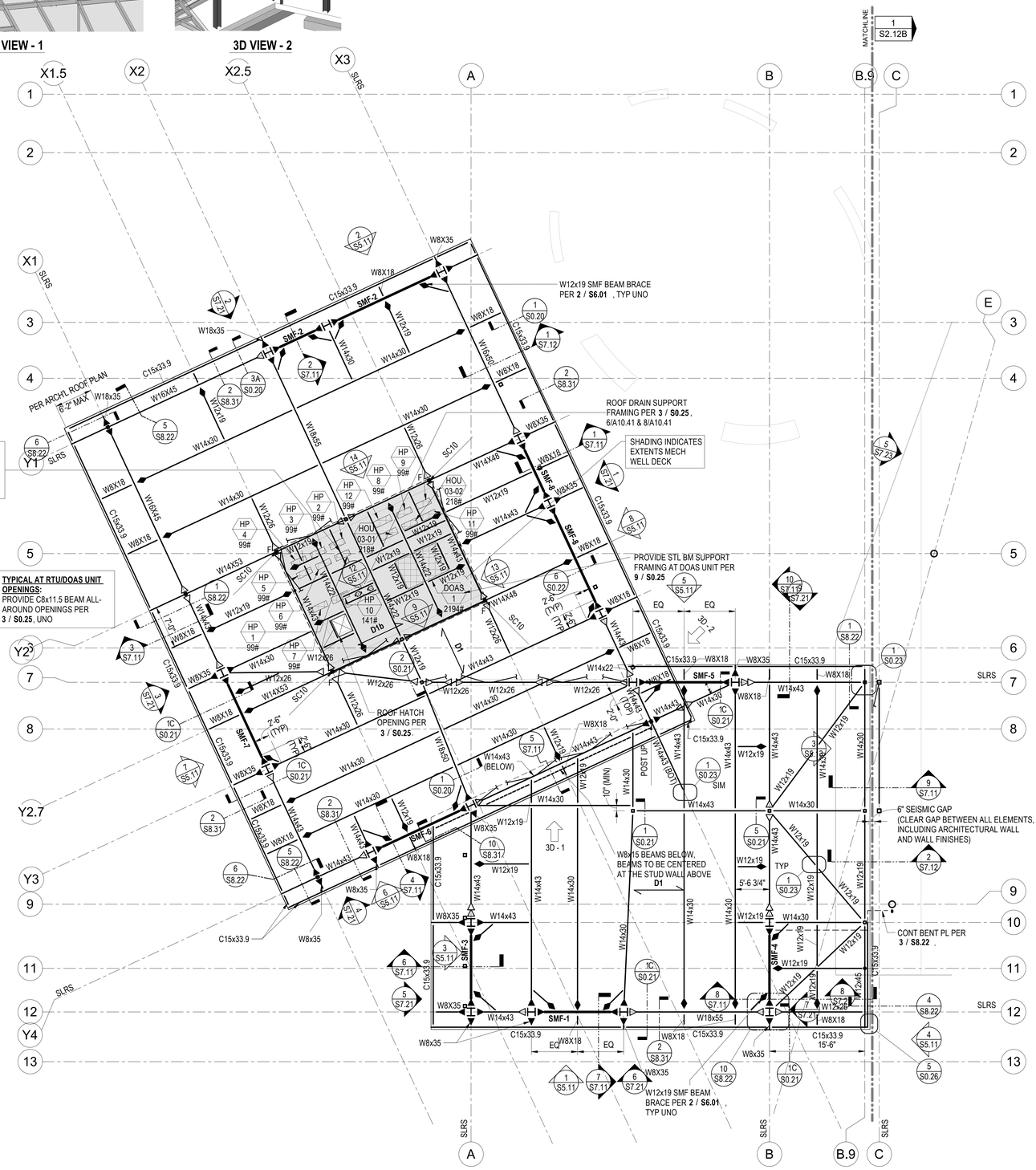
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS



3D VIEW - 1




3D VIEW - 2


MATCHLINE
1
S2.12B
X1.5
X2
X2.5
X3
SLRS
A
B
B.9
C
E
1
2
3
4
5
6
7
8
9
10
11
12
13
X1
Y1
Y2
Y2.3
Y2.7
Y3
Y4
W8X35
W8X18
W12x19 SMF BEAM BRACE PER 2 / S6.01 , TYP UNO
C15x33.9
SMF-2
W18X35
W16X45
W18X55
W14x30
W12x19
W12x26
W14x43
W14x48
W14x53
W14x22
W18x50
W16x50
W18x65
W14x61
W18x60
W14x82
W18x86
W14x90
W18x97
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W44x6240
W44x6354
W44x6467
W44x6581

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") WHEN SHEET ORIGINAL SIZE IS 30"X42"

REFER TO SHEET **S2.12A** FOR LEGENDS AND GENERAL NOTES.

(*) INDICATES ROOF DUCT FRAME SUPPORT BEAM, SEE MECH DWGS FOR LOCATIONS

**TYPICAL AT ALL RTUS ON BARE METAL DECK:** REFER TO DET **9** / **S0.25** FOR CURB DETAIL

**TYPICAL AT RTU/DOAS UNIT OPENINGS:** PROVIDE C8x11.5 BEAM ALL-AROUND OPENINGS PER **3** / **S0.25** , UNO

**TYPICAL AT RTU/DOAS UNIT OPENINGS:** PROVIDE C8x11.5 BEAM ALL-AROUND OPENINGS PER **3** / **S0.25** , UNO

**TYPICAL AT ALL RTUS ON COMD:** REFER TO DET FOR UNIT CURB DETAIL

SHADING INDICATES EXTENTS 'D3' DECK

OPERABLE WALL SUPPORT PER **3** / **S0.37**

SEE **2** / **S2.12C** FOR BEAM END LOCATION

HSS 7X7X3/8 BELOW PER ELEVATION **3** / **S5.13**

GLAZED OPERABLE PARTITION PER 14/A10.22

CONT BENT PL PER **3** / **S8.22**

CONT BENT PL PER **2** / **S8.22**

REDUCED DEPTH OF CANTILEVER PER **1** / **S8.22**

HSS POST PER WALL ELEVATION

## ROOF GUIDANCE - FRAMING PLAN - SEGMENT B

1 — 1/8" = 1'-0"

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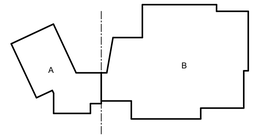
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**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF FRAMING PLAN - SEGMENT B**

**DSA SUBMITTAL**

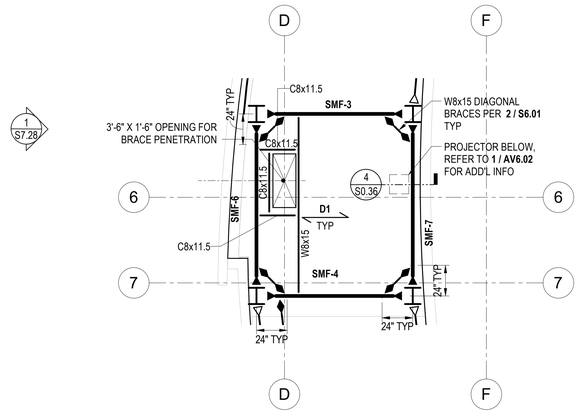
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SHEET:

# S2.12B

THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL 24X36 SHEETS

SEE SHEET **S2.12A** FOR TYPICAL FRAMING NOTES



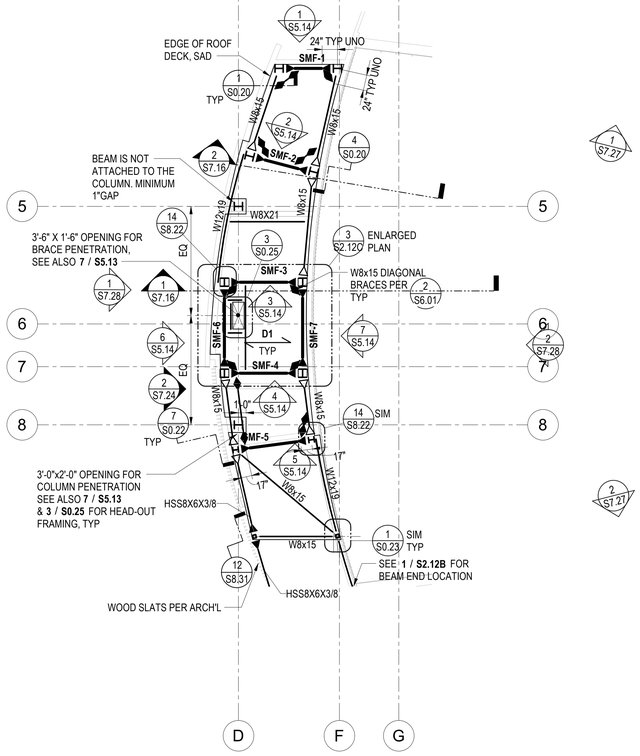




## ENLARGED PARTIAL FRAMING PLAN AT EL +20'-0" | 3

1/4" = 1'-0"

**NOTES**
1. SEE SHEET **S2.12A** FOR TYPICAL FRAMING NOTES AND LEGEND.
2. ALL BEAMS ALONG "SMF" LINES ARE CONSIDERED "SFRS" AND SHALL HAVE ONE SIZE LARGER BOLTS FOR THEIR CONNECTION AND BOLTS SHALL BE SLIP CRITICAL. REFER TO **1** / **S0.20** .



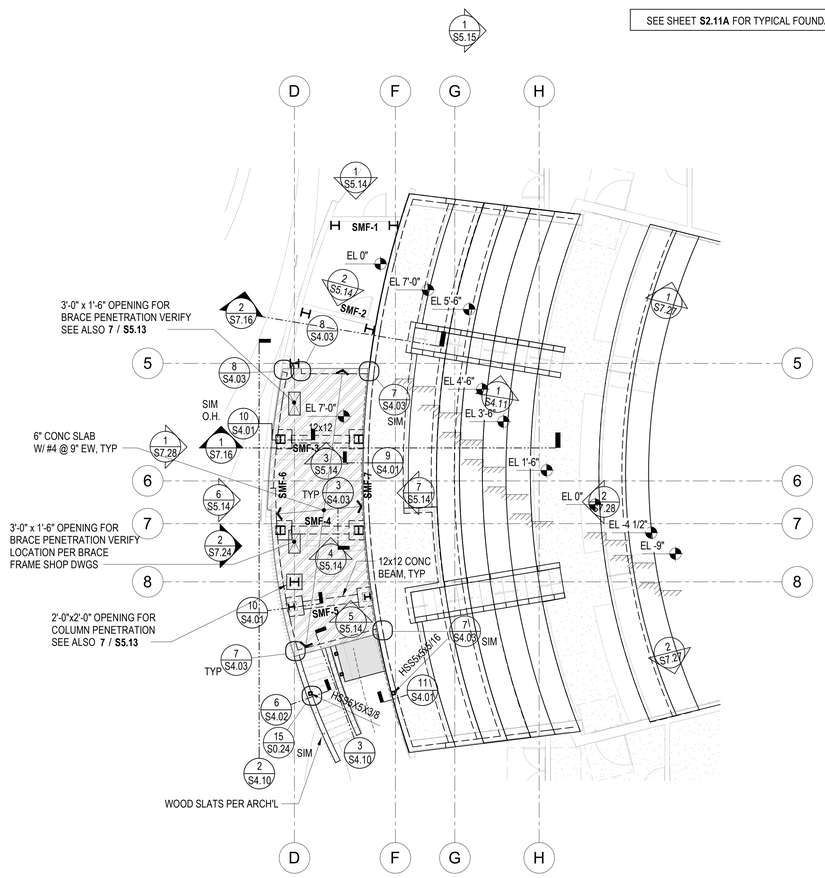




## PARTIAL FRAMING PLAN AT EL +20'-0" | 2

1/8" = 1'-0"

SEE SHEET **S2.11A** FOR TYPICAL FOUNDATION NOTES AND LEGEND







## PARTIAL FRAMING PLAN AT EL +7'-0" | 1

1/8" = 1'-0"

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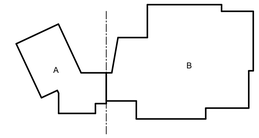
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REGISTERED PROFESSIONAL ENGINEER
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EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PROJECTION ROOM FRAMING PLANS**

**DSA SUBMITTAL**

| | |
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

# S2.12C

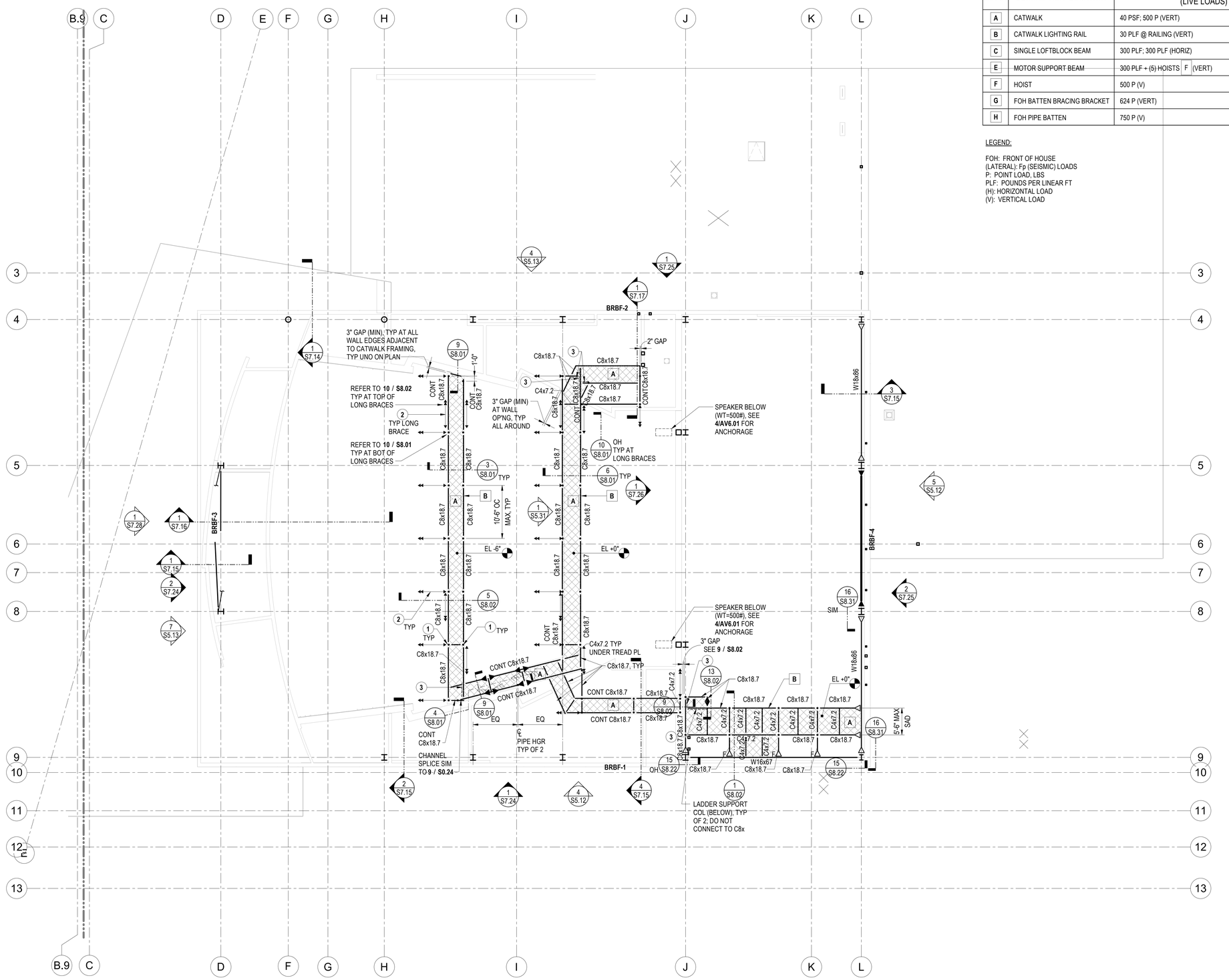
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SIZED DRAWINGS. ADJUST SCALES ACCORDINGLY IF PRINTED AT OTHER SIZES

| THEATER LOADS TABLE | | |
|---|---|---|
| MARK | DESCRIPTION/ LOCATION | MAXIMUM STRUCTURAL LOADING GUIDELINES (LIVE LOADS) |
| A | CATWALK | 40 PSF; 500 P (VERT) |
| B | CATWALK LIGHTING RAIL | 30 PLF @ RAILING (VERT) |
| C | SINGLE LOFTBLOCK BEAM | 300 PLF; 300 PLF (HORIZ) |
| E | MOTOR SUPPORT BEAM | 300 PLF + (5) HOISTS F (VERT) |
| F | HOIST | 500 P (V) |
| G | FOH BATTEN BRACING BRACKET | 624 P (VERT) |
| H | FOH PIPE BATTEN | 750 P (V) |

LEGEND:

FOH: FRONT OF HOUSE
(LATERAL): Fp (SEISMIC) LOADS
P: POINT LOAD, LBS
PLF: POUNDS PER LINEAR FT
(H): HORIZONTAL LOAD
(V): VERTICAL LOAD




1. (N) 2" DIA STD PIPE CATWALK HANGER, (11'-0" MAX LENGTH) SEE SHEET **S8.01** .
2. (N) 2 1/2" DIA STD PIPE CATWALK BRACE, (14'-6" MAX LENGTH) SEE SHEET **S8.01** .
3. NOTCH CHANNEL AS REQ'D FOR TREAD PL TO BE CONTINUOUS OVER TOP OF BM; REFER TO **12 / S8.02** FOR ADD'L INFO.

REFER TO SHEET **S2.15B** FOR LEGENDS AND GENERAL NOTES.

**CATWALK FRAMING PLAN** 1 1/8" = 1'-0"

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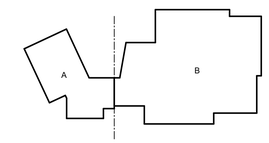
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**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**CATWALK FRAMING PLAN**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**S2.13B**

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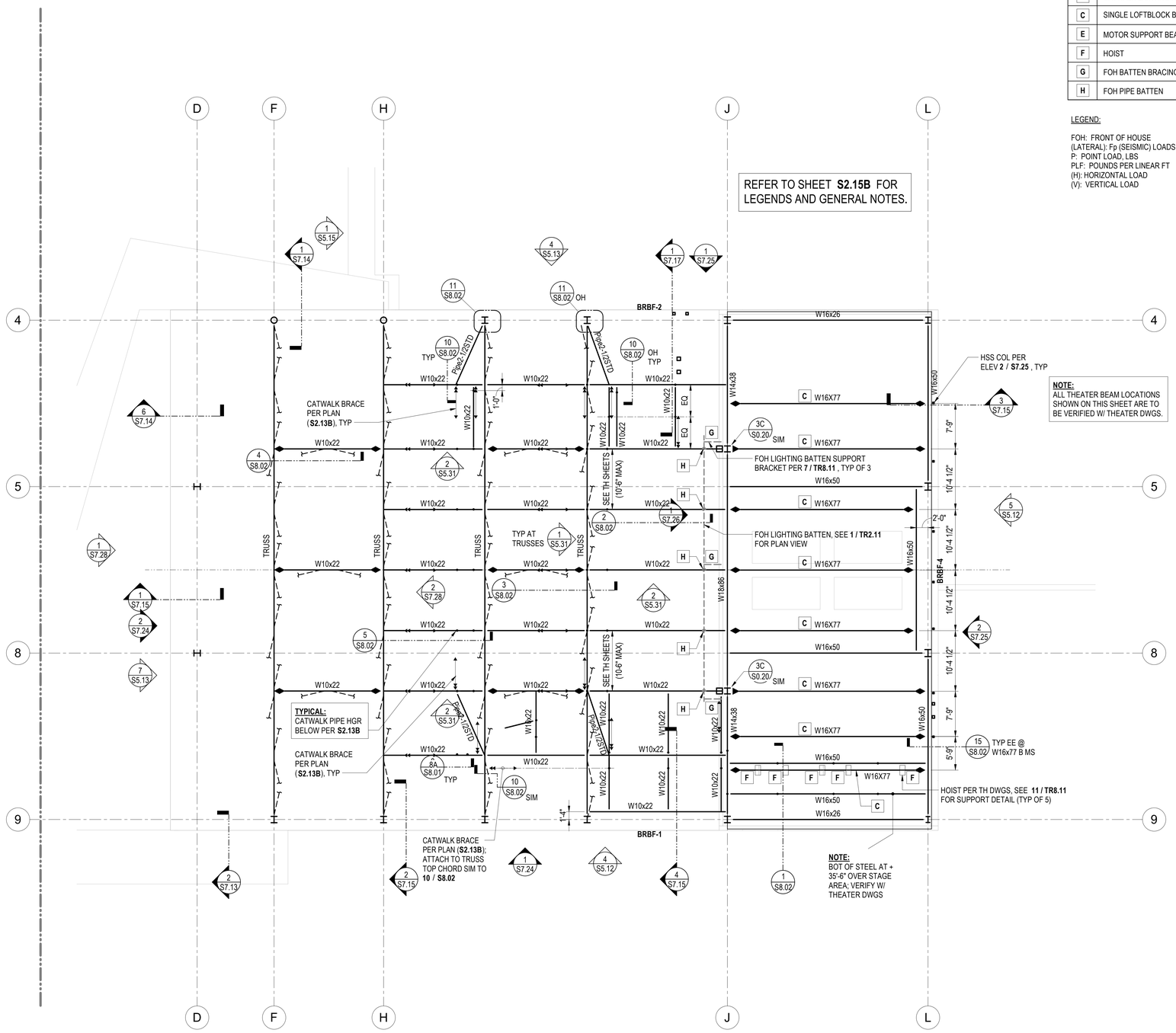
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ORIGINAL 24X36 SHEETS ORIGINAL 12X18 SHEETS

| THEATER LOADS TABLE | | |
|---|---|---|
| MARK | DESCRIPTION/ LOCATION | MAXIMUM STRUCTURAL LOADING GUIDELINES (LIVE LOADS) |
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| E | MOTOR SUPPORT BEAM | 300 PLF + (5) HOISTS F (VERT) |
| F | HOIST | 500 P (V) |
| G | FOH BATTEN BRACING BRACKET | 624 P (VERT) |
| H | FOH PIPE BATTEN | 750 P (V) |

LEGEND:

FOH: FRONT OF HOUSE
(LATERAL): Fp (SEISMIC) LOADS
P: POINT LOAD, LBS
PLF: POUNDS PER LINEAR FT
(H): HORIZONTAL LOAD
(V): VERTICAL LOAD

REFER TO SHEET **S2.15B** FOR LEGENDS AND GENERAL NOTES.




**NOTE:**
ALL THEATER BEAM LOCATIONS SHOWN ON THIS SHEET ARE TO BE VERIFIED W/ THEATER DWGS.

## KEYNOTES

## NOTES


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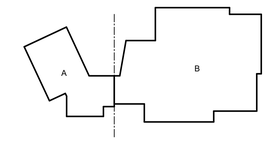
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STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**THEATER ROOF - BOTTOM OF TRUSS BRACING AND LOFT BEAM FRAMING PLAN**

DSA SUBMITTAL

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**S2.14B**

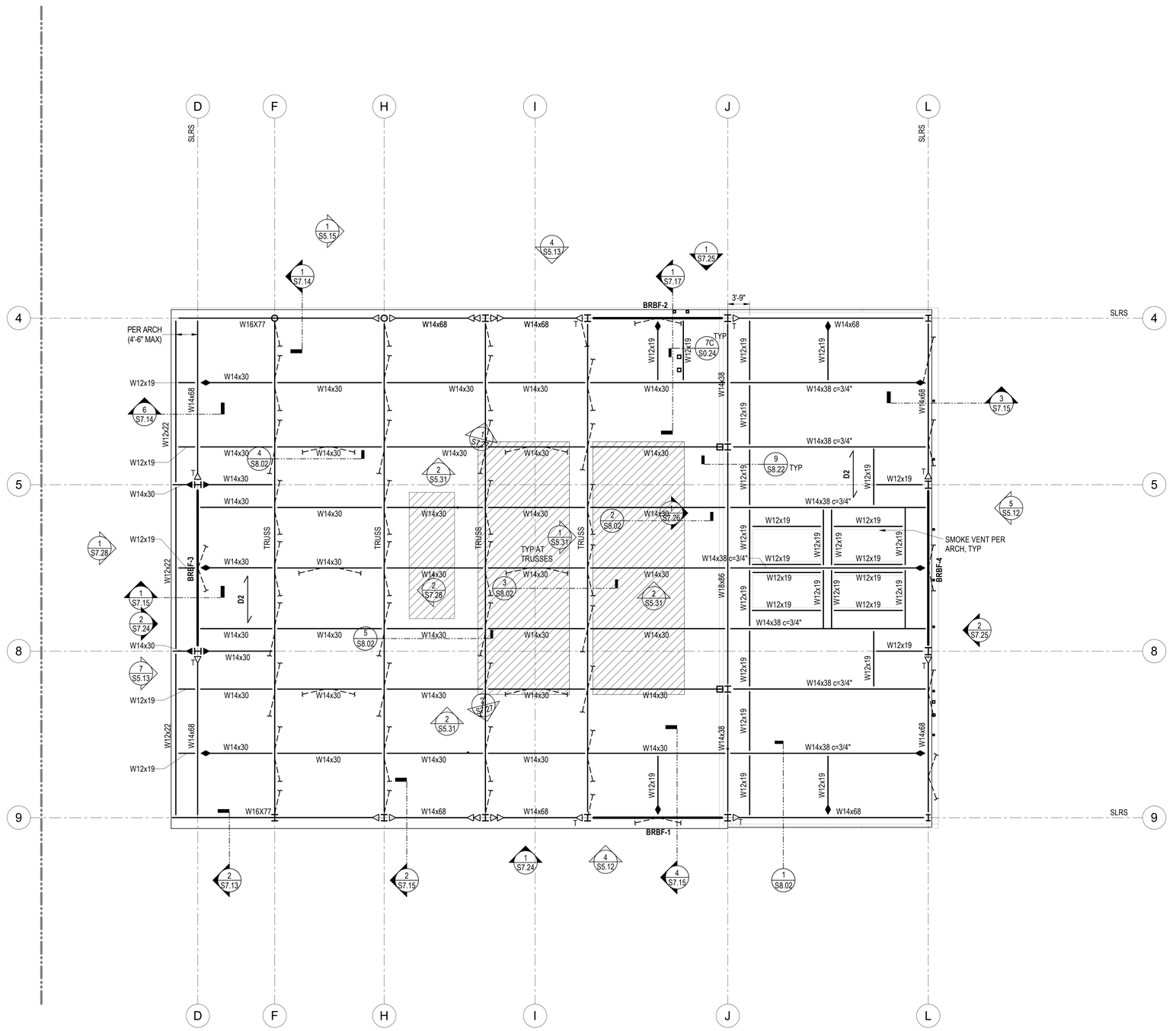
**THEATER ROOF - BOTTOM OF TRUSS BRACING AND LOFT BEAM FRAMING PLAN** 1 1/8" = 1'-0"

PN

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS




## ROOF FRAMING PLAN NOTES

1. FOR GENERAL NOTES SEE **S0.01** TO **S0.05** SERIES SHEETS. TYPICAL DETAILS OCCUR THROUGHOUT THESE STRUCT DWGS IN ADDITION TO THOSE ON **S0.11** TO **S0.37** SHEETS.
2. VERIFY DECK SLAB ELEVATIONS INCLUDING SLOPES, OPNGS, CURBS, DRAINS, TRENCHES, & DECK EDGE LOCATIONS; & WALL OVERALL DIMENSIONS INCLUDING LOCATIONS OF OPNGS WITH ARCHITECTURAL DWGS.
3. SEE ARCHITECTURAL DWGS FOR REMAINDER OF DIMENSIONS & ELEVATIONS NOT SHOWN ON STRUCT DWGS. VERIFY ALL DIMENSIONS & ELEVATIONS W/ ARCHITECTURAL DWGS PRIOR TO START OF WORK.
4. CENTER COLUMNS ON GRIDLINES UNO.
5. SPACE BEAMS EQUALLY BETWEEN COLUMNS & GIRDERS UNO.
6. CONTRACTOR TO LOCATE BOTTOM OF DECK ELEVATION (BOD) FROM DATUM TOP OF SLAB/ROOF ELEVATION MINUS TOTAL SLAB THICKNESS ("t") PER **1 / S0.25** UNO CONSIDERING ROOF SLOPE PER ARCHITECTURAL PLANS.
7. ALL EXTERIOR METAL STUD FRAMING TO BE 600S162-43 @ 16" OC (Fy = 33 KSI) MIN UNO ON ELEVATION SHEETS **S7.21** TO **S7.25** .
8. NOT ALL SUPPLEMENTAL STEEL FOR SUPPORT OF ARCHITECTURAL ELEMENTS AND MECHANICAL OR ELECTRICAL EQUIPMENT IS SHOWN ON THE FLOOR/ROOF FRAMING PLANS. LOCATE ALL REQUIRED SUPPLEMENTAL STEEL PER ARCHITECTURAL MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND VERIFY PER STRUCTURAL DETAILS.

## ROOF FRAMING LEGEND

- (-X") — TOP OF STRUCT SLAB ELEVATION OTHER THAN DATUM - VERIFY W/ ARCHITECTURAL DWGS.
- SCX — NON-FRAME STEEL COLUMN MARK FOR COLUMN OCCURRING ABOVE - SEE **1 / S3.11** , UNO.
- DX — DECK CONSTRUCTION MARK - ARROWS DENOTE DECK SPAN DIRECTION - SEE **1 / S0.25**.
- [X] — SHEAR STUD MARK - SEE **1 / S0.27** .
- c=X" — CAMBER AS INDICATED.
- ANGLE BRACE MARK (SINGLE ARROW DENOTES LOW END OF ANGLE BRACING BEAM BOTTOM FLANGE) - **3 / S0.26** AND **6 / S0.26** .
- BEAM STIFFENER SHEAR PLATE CONN MARK - SEE **1 / S0.20** DETAIL E.
- BEAM TO BEAM NON-FRAME CONNECTION PER **1 / S0.20** . SEE WHERE MULTIPLE BEAMS MEET AT THE SAME POINT.
- BEAM TO COLUMN NON-FRAME CONNECTION PER **2 / S0.20**
- BEAM TO HSS COLUMN NON-FRAME CONNECTION PER **2 / S0.21**
- DRAG BEAM CONNECTION MARK- SEE **4 / S0.22** AND **7 / S0.22**
- DRAG BEAM TO W-COLUMN CONNECTION MARK - SEE **4 / S0.20** .
- DRAG BEAM TO HSS COLUMN CONNECTION MARK - SEE **5 / S0.21** .
- BEAM TO COLUMN NON-FRAME MOMENT CONNECTION MARK - SEE **3 / S0.20** & **1 / S0.21** - CANTILEVER BEAM SIZE (IF NOT SHOWN) TO MATCH BACKSPAN BEAM SIZE, UNO.
- BEAM TO BEAM NON-FRAME MOMENT CONNECTION MARK - SEE **6 / S0.22** - CANTILEVER BEAM SIZE (IF NOT SHOWN) TO MATCH BACKSPAN BEAM SIZE UNO.
- BEAM TO BEAM END CONNECTION AT SPLICES - SEE **4 / S0.24** .
- **BRBF-X** — BRBF (BUCKLING RESTRAINED BRACED FRAME) MARK SEE BRBF ELEVATIONS ON SHEETS **S5.12** & **S5.13**.
- **SMF** — SMF (SPECIAL MOMENT FRAME) MARK - SEE SMF ELEVATIONS ON SHEET **S5.11 & S5.14** .
- XX / XX / XXX# — INDICATES MECH UNIT TYPE-SEE "M" SERIES DRAWINGS. INDICATES MECH UNIT NUMBER. INDICATES MAXIMUM DESIGN WEIGHT.
- INDICATES MECH UNIT FOOTPRINT. REFER TO "M" SERIES DRAWINGS FOR EQUIPMENT. PROVIDE CONCRETE MECH PAD & CONCRETE CURB OVER COMD (WHERE INDICATED IN ARCH & MEP DWGs) PER **8 / S0.26** & **5 / S0.37** , RESPECTIVELY.
- INDICATES OPENING IN DECK / SLAB. REFER TO DETAILS **5 / S0.25** & **3 / S0.25**. SEE MECH'L / ARCH'L DWGS FOR BALANCE OF LOCATIONS AND SIZES NOT INDICATED. HEREIN (SEE NOTE #3).
- PV PANELS INSTALLED PARALLEL TO ROOF, SEE **A4.11** AND **10/A10.44**

PN

**ROOF THEATER - FRAMING PLAN** | **1** 1/8" = 1'-0"

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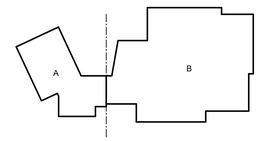

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## KEYNOTES

## NOTES

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**HIGH ROOF LEVEL - FRAMING PLAN**


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REGISTERED PROFESSIONAL ENGINEER — JOSEPH MICHAEL BANACH — 64892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

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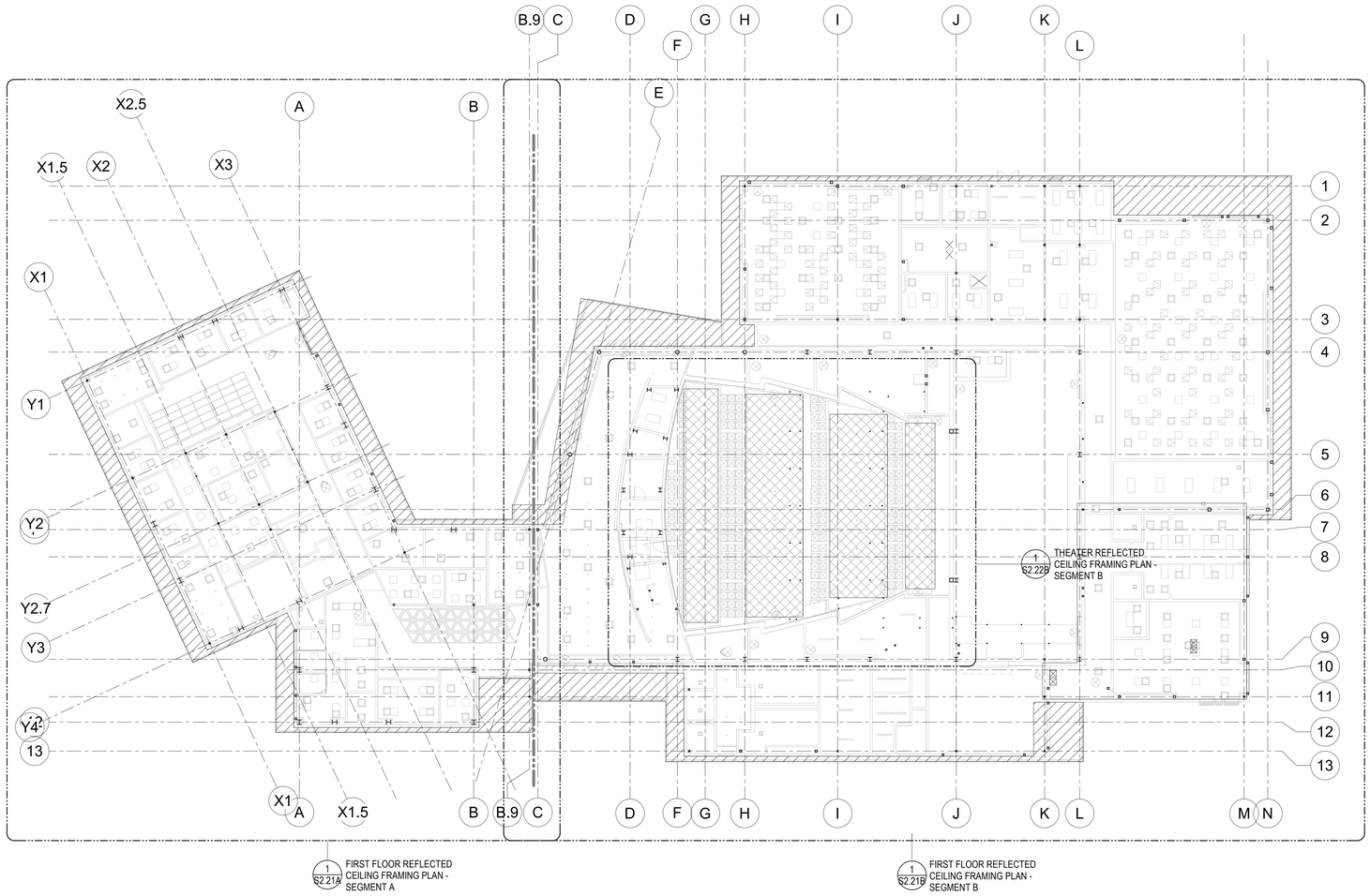
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**S2.15B**

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINALLY PLOTTED AT 24X36




PN

**OVERALL FIRST FLOOR REFLECTED CEILING FRAMING PLAN** | **1** 1/16" = 1'-0"

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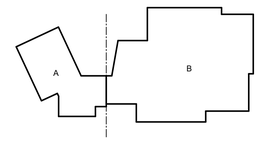
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REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**OVERALL FIRST FLOOR REFLECTED CEILING FRAMING PLAN**

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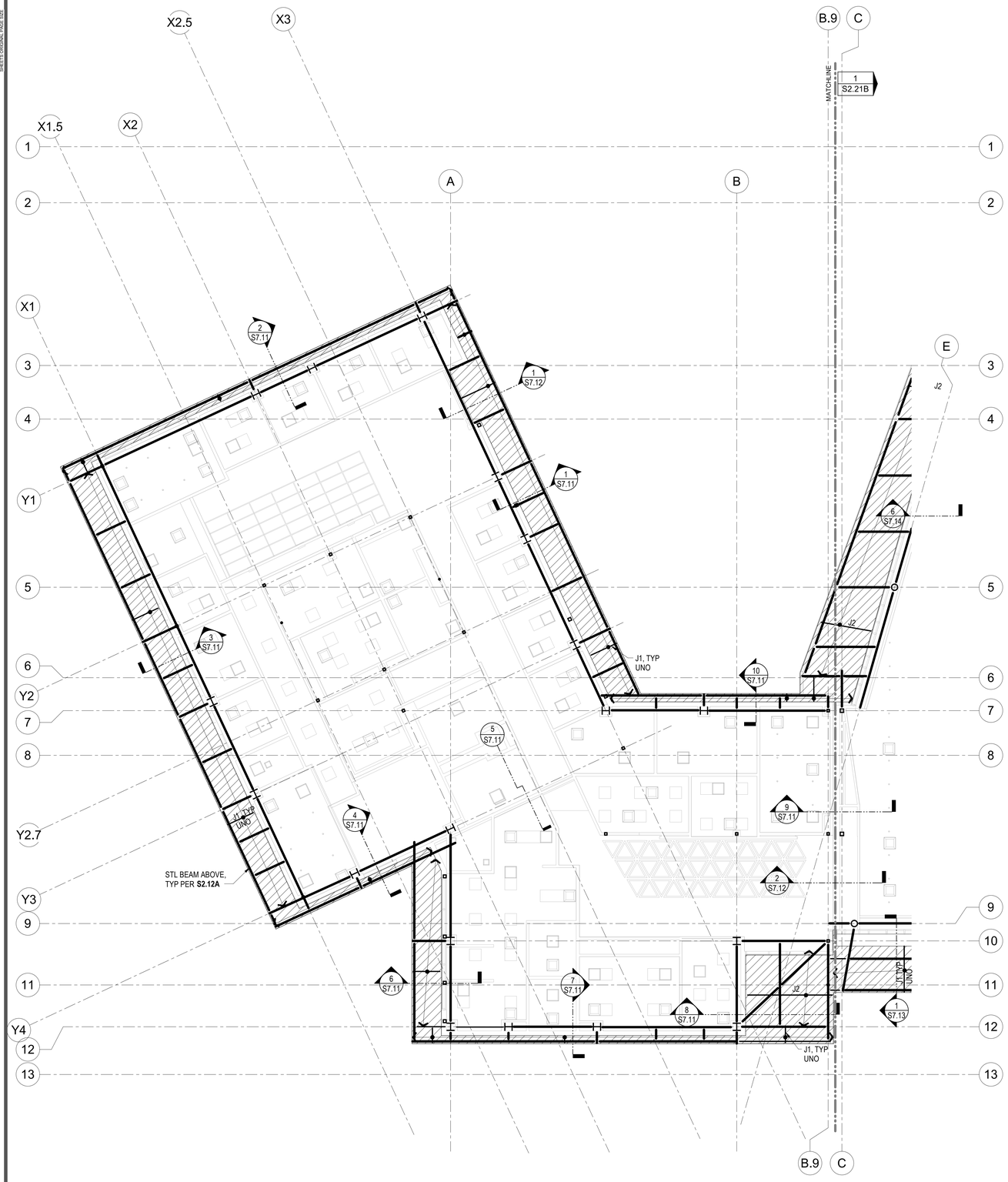
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THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




## CEILING FRAMING PLAN NOTES & LEGEND:

1. INDICATES AREA TO RECEIVE CEILING JOIST FRAMING. REFER TO TYPICAL FRAMING DETAILS & SCHEDULE ON **1 / S0.35**
2. INDICATES SPAN DIRECTION OF JOIST. JOIST, SEE NOTE #3.
3. "J" INDICATES LIGHT GAUGE METAL JOIST BASED ON SPAN TYPE PER SCHEDULE SEE **1 / S0.35** & **5 / S0.35**.
4. INDICATES AREA TO RECEIVE INTERIOR SOFFIT FRAMING REFER TO TYPICAL CEILING DETAIL **1 / S0.33** . PROVIDE HANGER AS SPECIFIED.
5. INDICATES AREA TO RECEIVE EXTERIOR SOFFIT FRAMING PER **5 / S0.35**
6. INDICATES CURVED ACOUSTIC CEILING REFLECTORS PER DETAILS ON **S8.02** ; SEE ARCH DWGS FOR DIMENSION AND HANGER LOCATIONS.

TN
PN

**FIRST FLOOR REFLECTED CEILING FRAMING PLAN - SEGMENT A** | **1** 1/8" = 1'-0"

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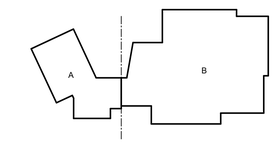
**KEYNOTES**


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EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FIRST FLOOR REFLECTED FRAMING CEILING PLAN - SEGMENT A**

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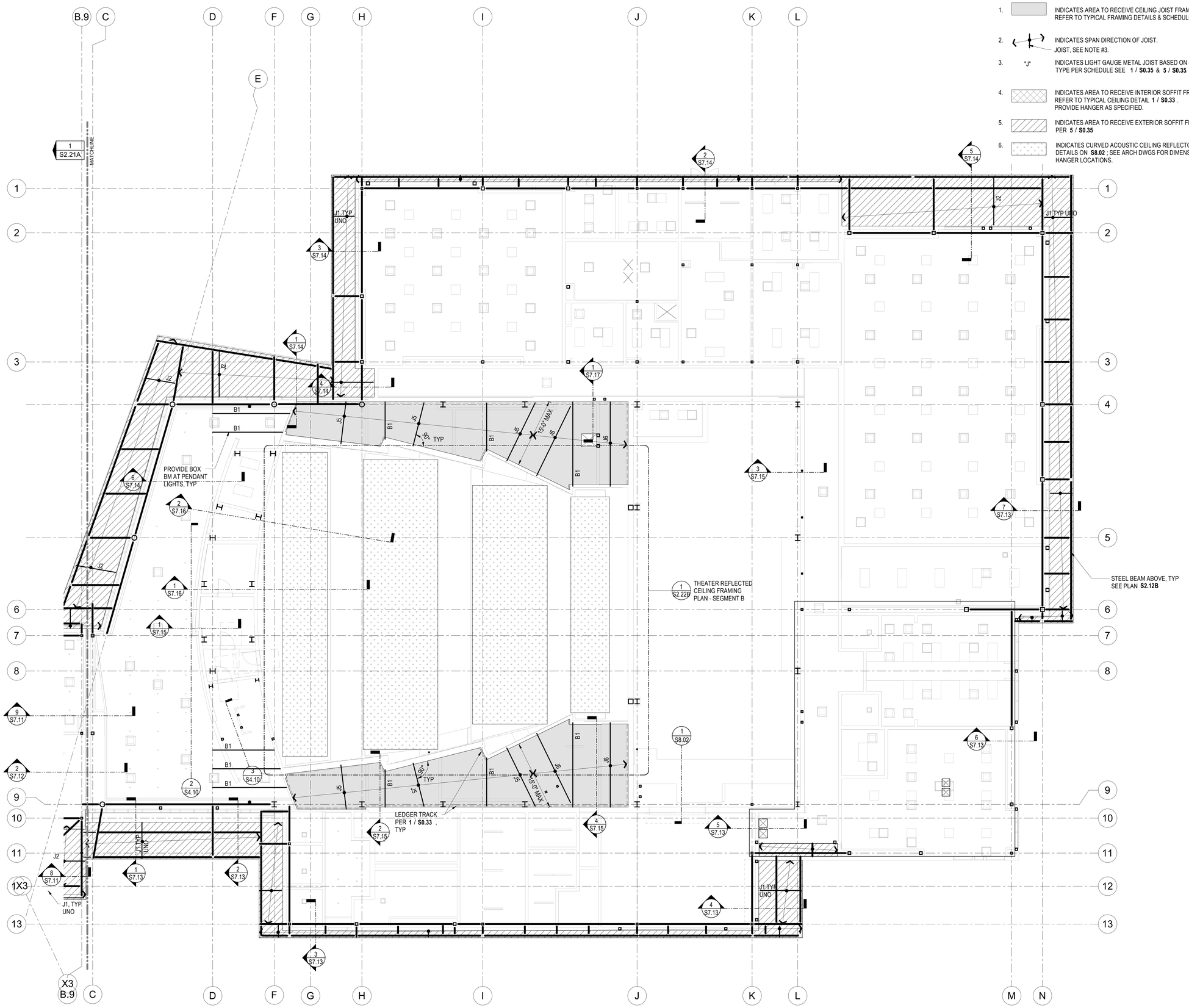
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## CEILING FRAMING PLAN NOTES & LEGEND:

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## FIRST FLOOR REFLECTED CEILING FRAMING PLAN - SEGMENT B

1 1/8" = 1'-0"

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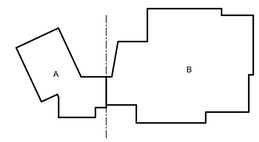
## KEYNOTES


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SB Job No:22576


REGISTERED PROFESSIONAL ENGINEER RUBEN "HALE" RANGEL S4892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

## NOTES

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FIRST FLOOR REFLECTED CEILING FRAMING PLAN - SEGMENT B**

**DSA SUBMITTAL**

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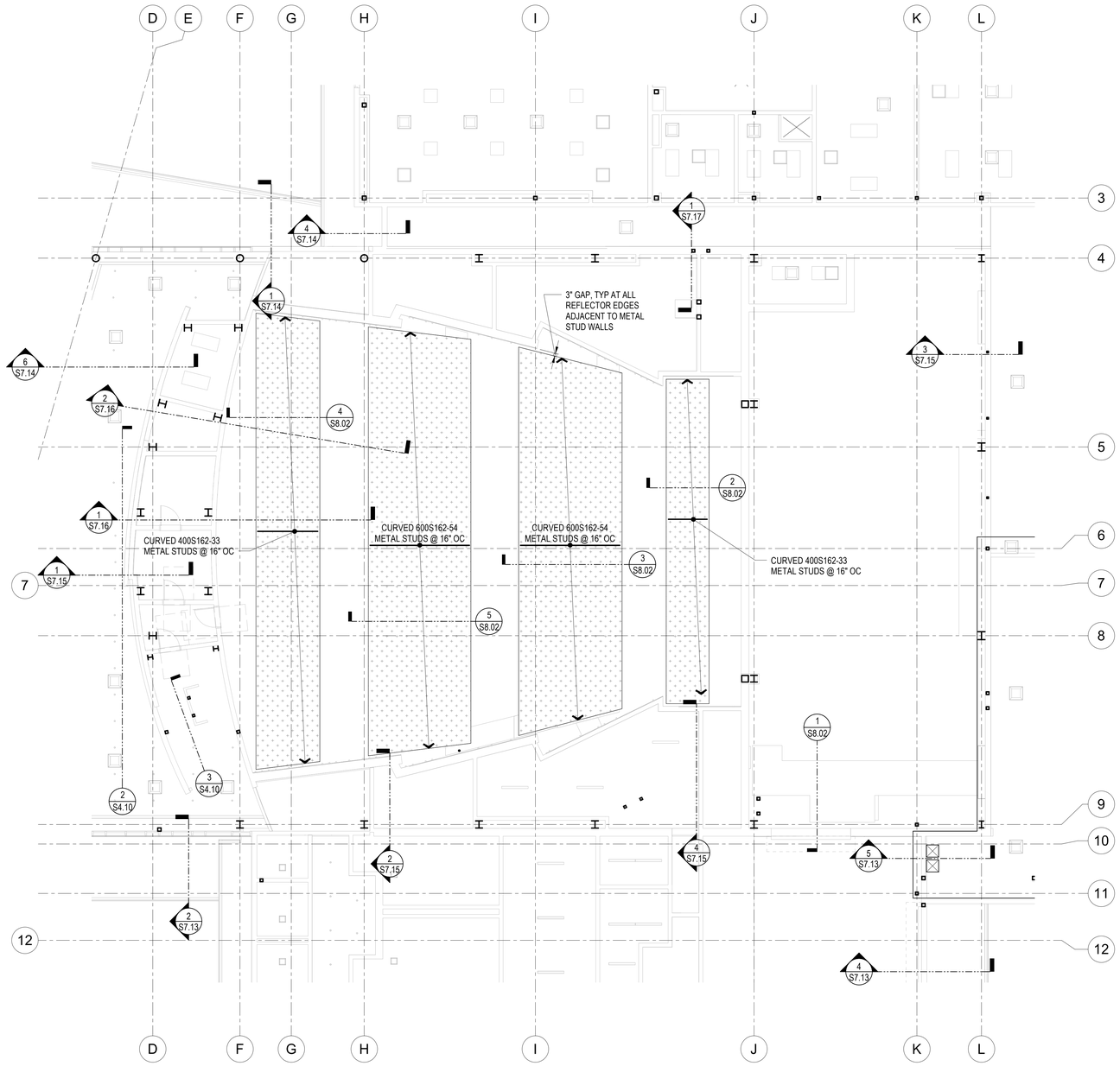
# S2.21B

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINALLY PLOTTED AT FULL SIZE

## CEILING FRAMING PLAN NOTES & LEGEND:

1. INDICATES AREA TO RECEIVE CEILING JOIST FRAMING. REFER TO TYPICAL FRAMING DETAILS & SCHEDULE ON **1 / S0.35**
2. INDICATES SPAN DIRECTION OF JOIST. JOIST, SEE NOTE #3.
3. "J" INDICATES LIGHT GAUGE METAL JOIST BASED ON SPAN TYPE PER SCHEDULE SEE **1 / S0.35** & **5 / S0.35**.
4. INDICATES AREA TO RECEIVE INTERIOR SOFFIT FRAMING REFER TO TYPICAL CEILING DETAIL **1 / S0.33** . PROVIDE HANGER AS SPECIFIED.
5. INDICATES AREA TO RECEIVE EXTERIOR SOFFIT FRAMING PER **5 / S0.35**
6. INDICATES CURVED ACOUSTIC CEILING REFLECTORS; SEE ARCH DWGS FOR DIMENSION AND HANGER LOCATIONS.




PN

**THEATER REFLECTED CEILING FRAMING PLAN - SEGMENT B** | **1** 1/8" = 1'-0"

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HMC Architects

3361008100

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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## KEYNOTES


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San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com


**SB Job No:**22576

REGISTERED PROFESSIONAL ENGINEER ROBERT K. HALE III No. S4982 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**THEATER REFLECTED CEILING FRAMING PLAN - SEGMENT B**

**DSA SUBMITTAL**

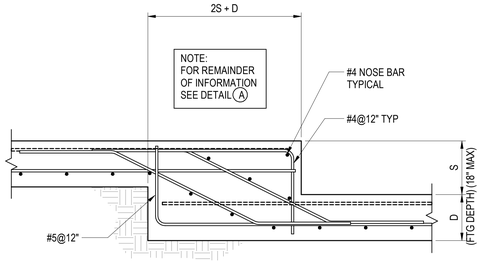
DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

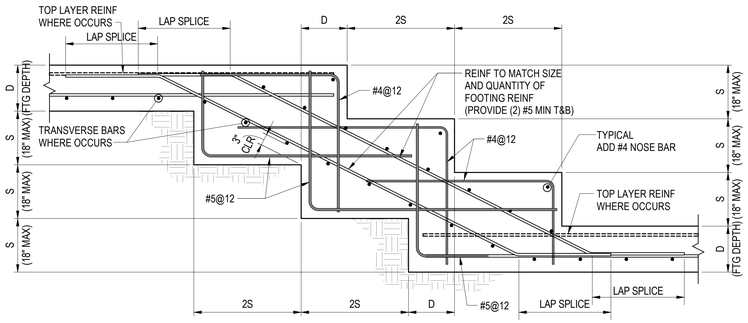
# S2.22B

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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET ORIGINALLY PLOTTED AT 24X36

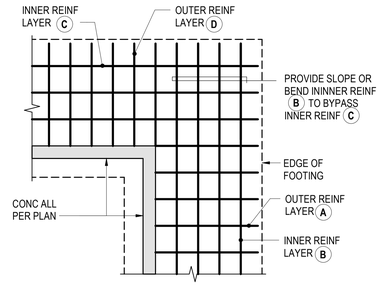



SHALLOW SLOPE CONDITION (B)




STEEP SLOPE CONDITION (A)

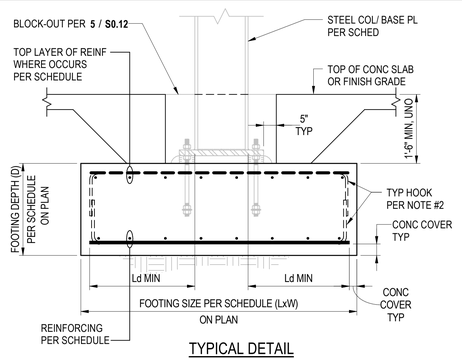
## TYPICAL STEPPED FOOTING DETAILS 4
NTS




PLAN

**NOTE:**
SEE WALL SECTIONS
FOR REINF & SPACING

## TYPICAL FOOTING REINFORCING CONDITON AT CORNER 3
NTS

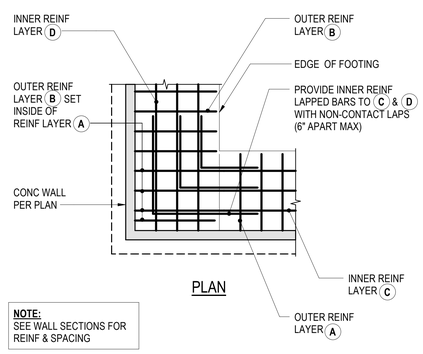



TYPICAL DETAIL

| SPREAD FOOTING SCHEDULE | | | | | | | |
|---|---|---|---|---|---|---|---|
| MARK | DEPTH (D) | SIZE (LxW) | REINFORCING | | | | REMARKS |
| | | | BOTTOM | | TOP | | |
| | | | SHORT | LONG | SHORT | LONG | |
| F1 | 18" | 4'-0"x4'-0" | (6)-#5 | (6)-#5 | - | - | |
| F2 | 24" | 5'-0"x5'-0" | (6)-#6 | (6)-#6 | - | - | |
| F3 | 24" | 6'-0"x6'-0" | (8)-#6 | (8)-#6 | - | - | |
| F4 | 24" | 7'-0"x7'-0" | (9)-#6 | (9)-#6 | - | - | |

NOTES:
1. EXTENT OF T&B FOOTING BARS TO MATCH AREA OF FOOTING FOOTPRINT MINUS CONCRETE COVER AT FOOTING PERIMETER.
2. PROVIDE STD 90° HOOKS AT ENDS OF SPREAD FOOTING REINF (EA DIRECTION) WHERE STRAIGHT BAR W/ MIN "Ld" CANNOT BE ATTAINED. FOR Ld SEE 1 / S0.11.

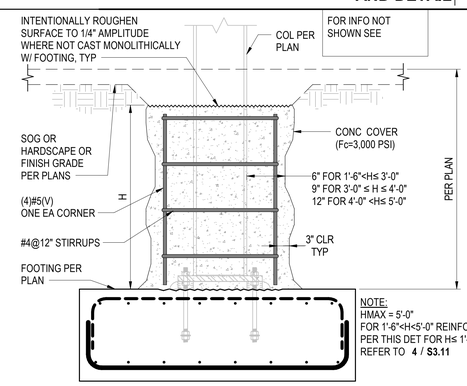
## TYPICAL SPREAD FOOTING SCHEDULE AND DETAIL 2
NTS




PLAN

**NOTE:**
SEE WALL SECTIONS FOR
REINF & SPACING

## TYPICAL FOOTING REINFORCING AT INSIDE CORNER 5
NTS




## TYPICAL COLUMN BASE COVER AT FOOTING 1
NTS

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REGISTERED PROFESSIONAL ENGINEER
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FOUNDATION SCHEDULE**

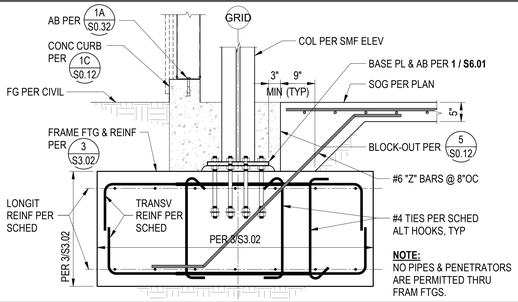
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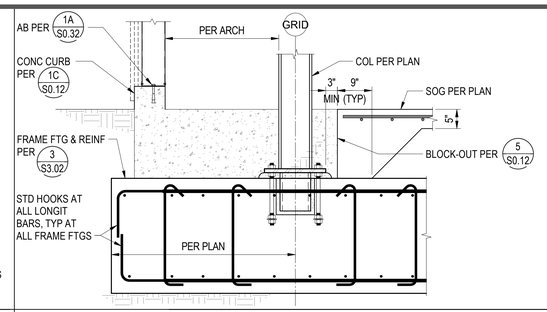
SHEET:

**S3.01**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 22X34 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY




**TYPICAL SMF FOOTING** 5 — 3/4" = 1'-0"




**DETAIL** 4 — NTS

### SMF FRAME FOOTING SCHEDULE (SEGMENT A)

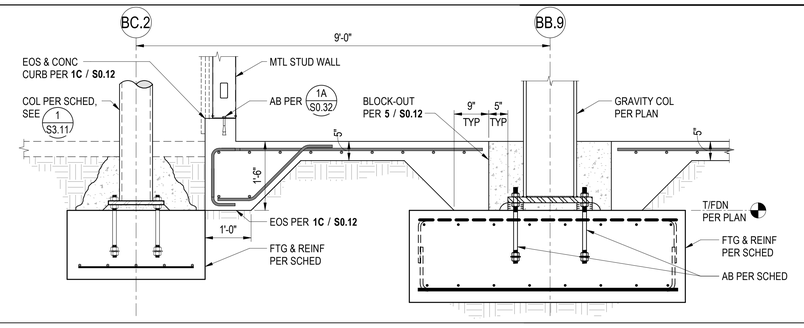
| FRAME FOOTING ID | L (LENGTH PER PLAN) | B (WIDTH) | D (DEPTH) | LONGITUDINAL REINF² (T) | LONGITUDINAL REINF² (B) | TRANSVERSE REINF(T&B) | TIES |
|---|---|---|---|---|---|---|---|
| FFA-1 | PER PLAN | 6'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFA-2 | PER PLAN | 6'-0" | 2'-6" | (8) #8 | (8) #8 | #6@12" | (2) #4@24" |
| FFA-3 | PER PLAN | 6'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFA-4 | PER PLAN | 6'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFA-5 | PER PLAN | 6'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFA-6 | PER PLAN | 6'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFA-7 | PER PLAN | 7'-0" | 2'-6" | (8) #8 | (8) #8 | #6@12" | (2) #4@24" |
| FFA-8 | PER PLAN | 6'-0" | 2'-6" | (8) #8 | (8) #8 | #6@12" | (2) #4@24" |

NOTE:
1. REFER TO DETAIL 1 S3.02 AND 5 S3.02 FOR TYPICAL FRAME FOOTING DETAILS.
2. WHERE INDICATED IN SCHEDULE, PROVIDE (2) ROWS OF T&B LONGITUDINAL REINFORCING (TOTAL OF 4 ROWS). SEE FOR CLEAR SPACING OF ROWS.
3. PROVIDE STD HOOK ON ALL LONGITUDINAL TOP AND BOTTOM BARS IF A STRAIGHT DEVELOPMENT LENGTH CANNOT BE ACHIEVED. SEE DETAIL **2 / S3.01** FOR DIMENSIONS CLARIFYING THE 'ld'.
4. AT FFB-11, PROVIDE ADDITIONAL SKIN REINF & STIRRUPS / CROSS TIES AS INDICATED IN **1 / S3.02**

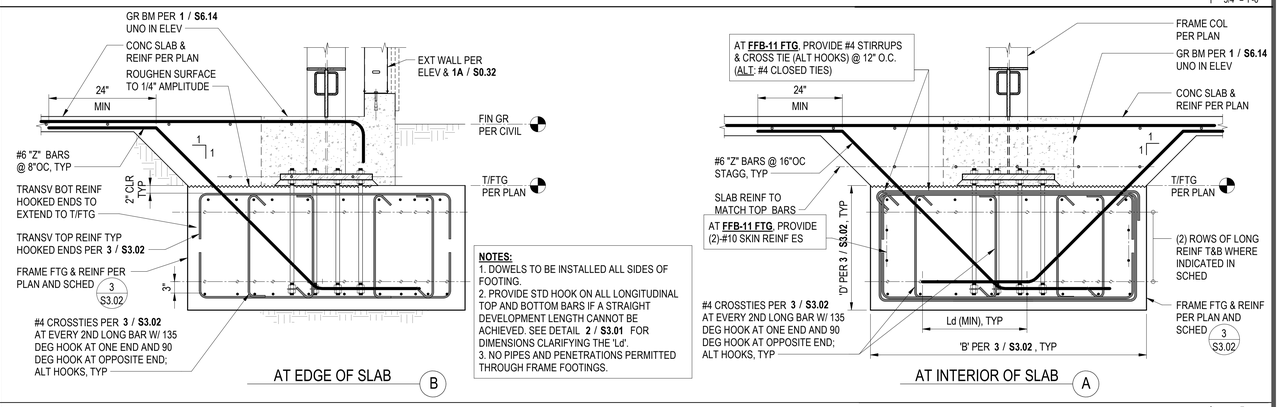
### BRBF FRAME FOOTING SCHEDULE (SEGMENT B)

| FRAME FOOTING ID | L (LENGTH PER PLAN) | B (WIDTH) | D (DEPTH) | LONGITUDINAL REINF² (T) | LONGITUDINAL REINF² (B) | TRANSVERSE REINF(T&B) | CROSSTIES |
|---|---|---|---|---|---|---|---|
| FFB-1 | PER PLAN | 14'-0" | 3'-6" | (16) #9 | (16) #9 | #7@12" | (6) #4@24" |
| FFB-2 | PER PLAN | 13'-0" | 3'-0" | (20) #10 | (20) #10 | #7@12" | (8) #4@24" |
| FFB-3 | PER PLAN | 12'-0" | 3'-0" | (16) #9 | (16) #9 | #6@12" | (6) #4@24" |
| FFB-4 | PER PLAN | 13'-0" | 3'-0" | (16) #10 | (16) #10 | #7@12" | (6) #4@24" |
| FFB-5 | PER PLAN | 7'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |
| FFB-6 | PER PLAN | 8'-0" | 2'-6" | (10) #7 | (10) #7 | #6@12" | (3) #4@24" |
| FFB-7 | PER PLAN | 10'-0" | 2'-6" | (14) #7 | (14) #7 | #6@12" | (5) #4@24" |
| FFB-8 | PER PLAN | 12'-0" | 3'-0" | (14) #8 | (14) #8 | #6@12" | (5) #4@24" |
| FFB-9 | PER PLAN | 9'-0" | 2'-6" | (12) #9 | (12) #9 | #6@12" | (4) #4@24" |
| FFB-10 | PER PLAN | 10'-0" | 2'-6" | (14) #10 | (14) #10 | #6@12" | (5) #4@24" |
| FFB-11 | PER PLAN | 9'-0" | 3'-0" | (12) #10 | (12) #10 | #8@12" | (4) #4@24" |
| FFB-12 | PER PLAN | 9'-0" | 2'-6" | (12) #9 | (12) #9 | #6@12" | (4) #4@24" |
| FFB-13 | PER PLAN | 8'-0" | 2'-6" | (10) #7 | (10) #7 | #6@12" | (3) #4@24" |
| FFB-14 | PER PLAN | 7'-0" | 2'-6" | (8) #7 | (8) #7 | #6@12" | (2) #4@24" |

**FRAME FOOTING SCHEDULE** 3 — NTS




**SECTION** 2 — 3/4" = 1'-0"




**TYPICAL FRAME FOOTING AND SOG TO BRBF CONNECTION DETAIL** 1 — 3/4" = 1'-0"

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## NOTES

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER JOSEPH MICHAEL BANACH 64892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FOUNDATION SCHEDULE AND DETAILS**

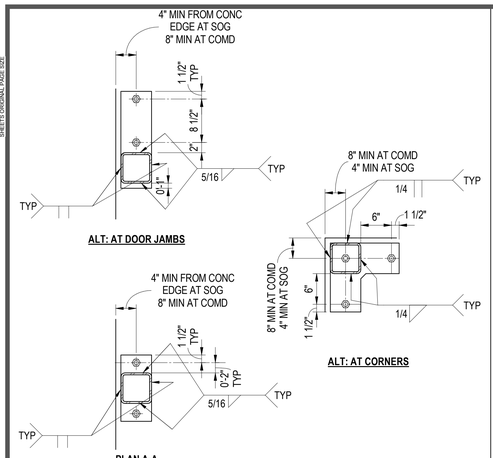
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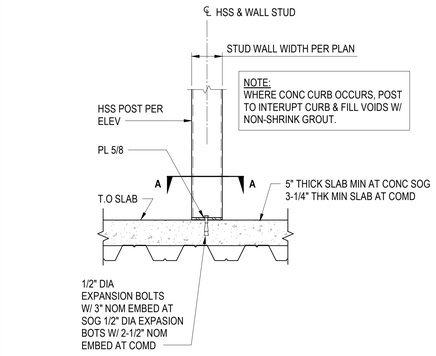
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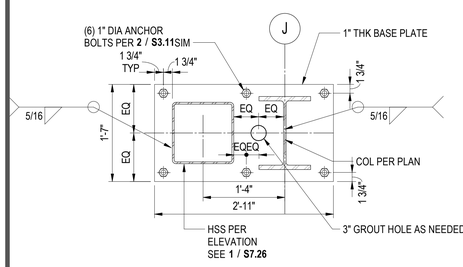
**S3.02**

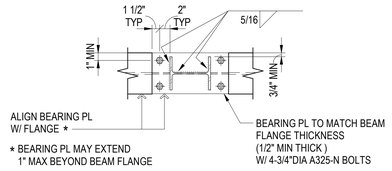



## TYPICAL WINDOD WALL HSS POST BASE PLATE DETAIL — 7 NTS

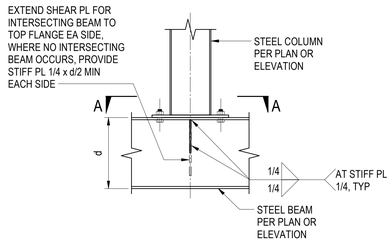



## DETAIL — 6 1" = 1'-0"



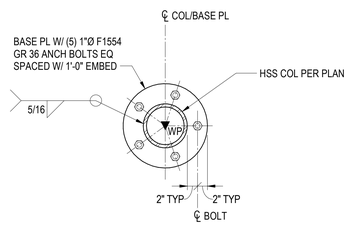




SECTION A-A

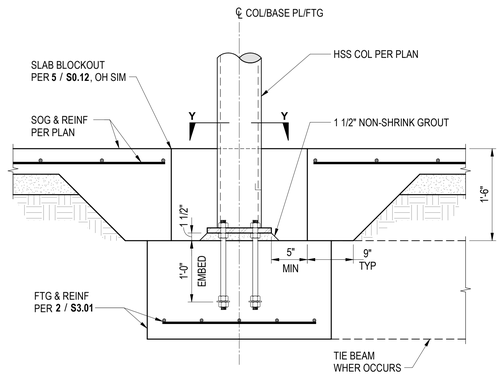



BASE BEARING PLATE ON STEEL BEAM (A)

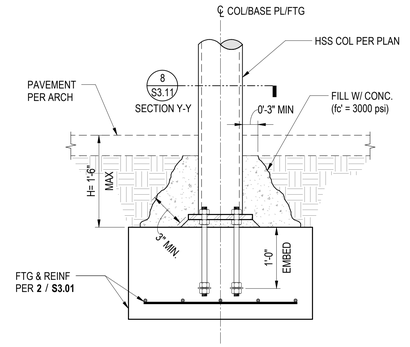
## TYPICAL NON-FRAME COLUMN BEARING PLATE DETAIL — 5 NTS



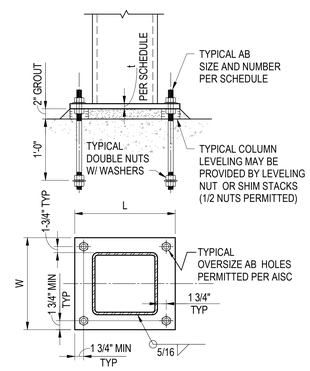

SECTION Y-Y



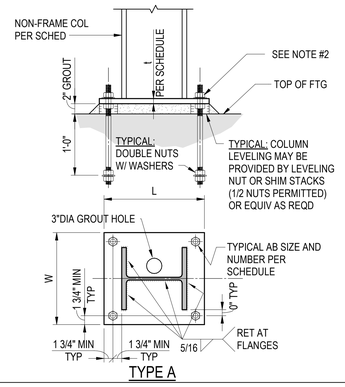

## TYPICAL WOOD ROOF TRUSS BEARING DETAIL — 8 NTS




## TYPICAL EXTERIOR NON-FRAME COL — 4 NTS




## TYPICAL NON-FRAME HSS COL BASE PLATE DETAILS — 3 NTS




TYPE A

NOTES:
1. FOR NON-FRAME COL BASE PL SCHED SEE **1 / S3.11**
2. PROVIDE STD SIZED HOLES. OVERSIZE AB HOLES ARE PERMITTED W/ REQUIRED PL WASHERS AS SPECIFIED AISC-360 TABLE 14-2

## TYPICAL NON-FRAME COLUMN BASE PLATE DETAILS — 2 NTS

**NOTE:**
VERIFY ALL COLUMN (T) AND (B) ELEVATIONS PER THE FOUNDATION PLANS **S2.11A** TO **S2.11B** AND ARCH'L DRAWINGS PRIOR FABRICATION OR START OF WORK

### STEEL COLUMN SCHEDULE

| COLUMN MARK / FLOOR LEVEL | SC12 | SC11 | SC10 | SC9 | SC8 | SC7 | SC6 | SC5 | SC4 | SC3 | SC2 | SC1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HIGH ROOF | | | | | | | | | | | | |
| LOW ROOF | HSS12.750x0.500 | HSS5.000x0.375 | HSS5x5x5/16 | W14x82 | W12x53 | W12x106 | HSS10.000x0.500 | HSS10.000x0.500 | HSS5x5x1/2 | HSS8x8x5/8 | HSS8x8x3/8 | HSS5x5x5/16 |
| BASE LEVEL | | | | | | | | | | | | |
| BASE PLATE ( L x W x t =1" UNO ) AND ANCHOR BOLTS [(4)- 1" DIA F1554, GR 36 UNO ] | SEE DETAIL 8 / S3.11 | SEE DETAIL 4 / S3.11 | SEE DETAIL 4B / S0.21 | SEE DETAIL 6 / S3.11 | SEE DETAIL 2A / S3.11 | SEE DETAIL 2A / S3.11 | SEE DETAIL 8 / S3.11 | SEE DETAIL 8 / S3.11 | SEE DETAIL 3 / S3.11 | SEE DETAIL 3 / S3.11 | SEE DETAIL 3 / S3.11 | SEE DETAIL 3 / S3.11 |
| REMARKS | | | HANGER COLUMN | | | | | | | | | |

STEL-WCOL-0000

## NON-FRAME STEEL COLUMN SCHEDULE — 1 NTS

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**NOTES**

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**EL MONTE, CALIFORNIA 91732**

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**STEEL COLUMN SCHEDULE AND DETAILS**

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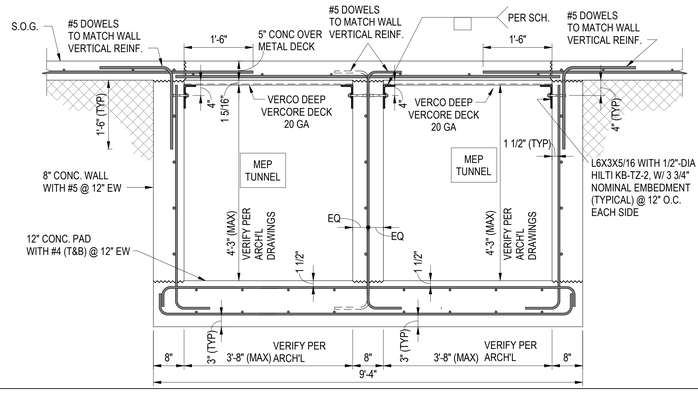
SHEET:

**S3.11**


THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED

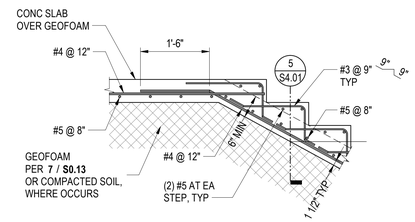
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED



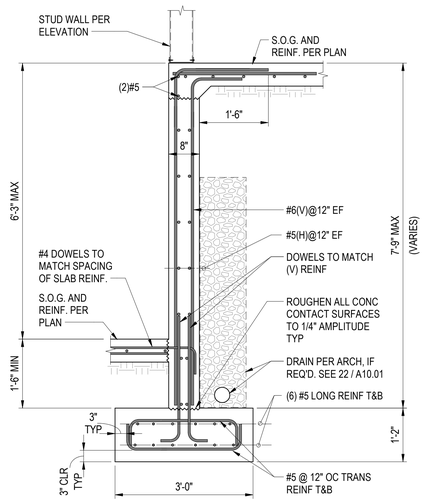

NOTE: FOR BALANCE OF INFORMATION SEE **7** / **S4.01**

**MEP UNDERGROUND TUNNEL** **8** 3/4" = 1'-0"

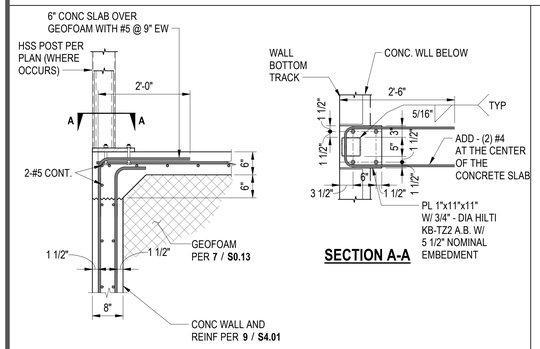



**NOTE:**
FOR TREAD & RISER SEE ARCH DRAWINGS.

**SECTION** **6** 3/4" = 1'-0"




**INTERIOR RETAINING WALL - TYPE 2** **3** 3/4" = 1'-0"

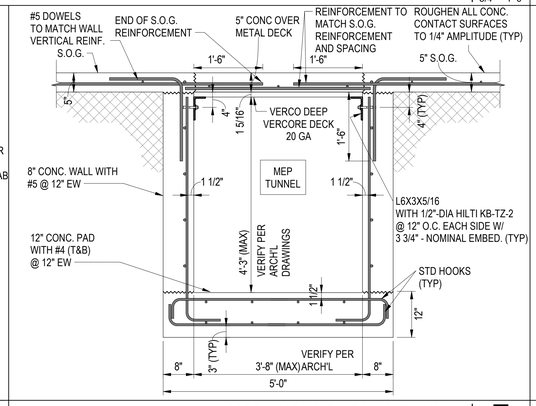




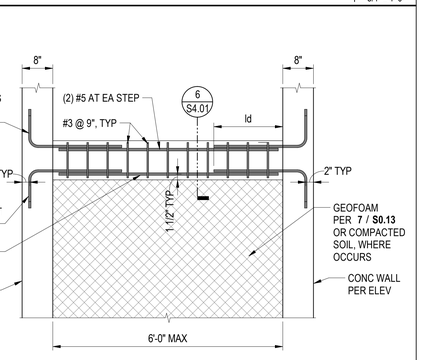


**SECTION A-A**

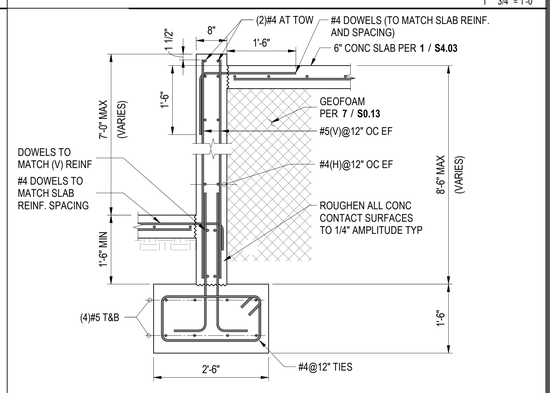
**DETAIL** **11** 3/4" = 1'-0"



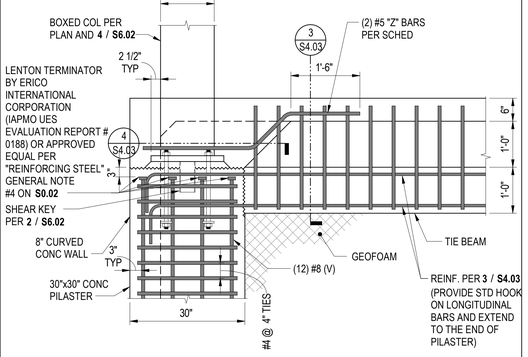

**MEP UNDERGROUND TUNNEL** **7** 3/4" = 1'-0"



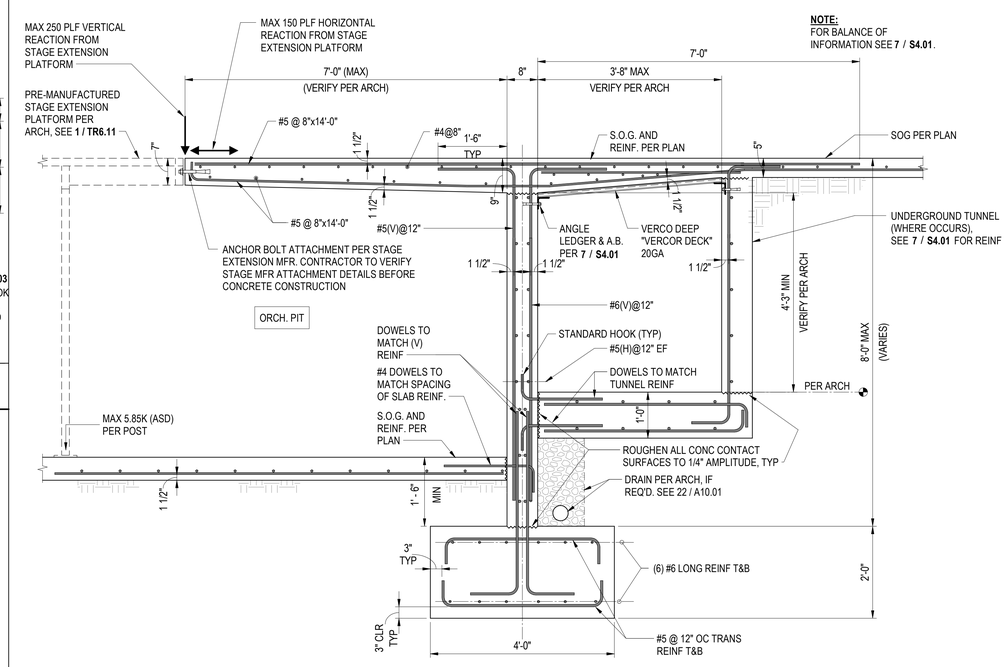

**TYPICAL CONCRETE STAIRS** **5** 3/4" = 1'-0"



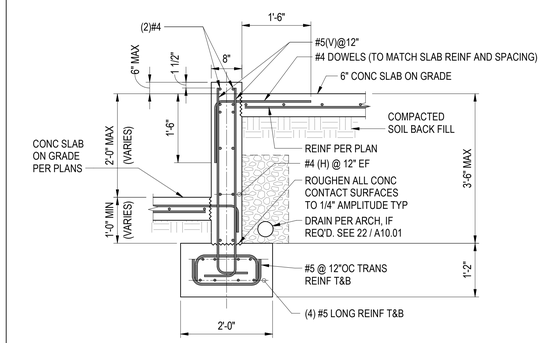

**CONC WALL AT SEATING AREA** **2** 3/4" = 1'-0"



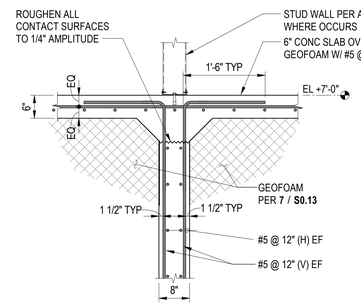

**CONC PILASTER AT PROJECTION ROOM** **10** 3/4" = 1'-0"




**INTERIOR RETAINING WALL - TYPE 3** **4** 3/4" = 1'-0"




**INTERIOR RETAINING WALL - TYPE 1** **1** 3/4" = 1'-0"




**DETAIL** **9** 3/4" = 1'-0"

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3361008100
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LOS ANGELES, CA, 90001
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**KEYNOTES**

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
FOR BY WHALEY, RANDALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**RETAINING WALL DETAILS**

**DSA SUBMITTAL**

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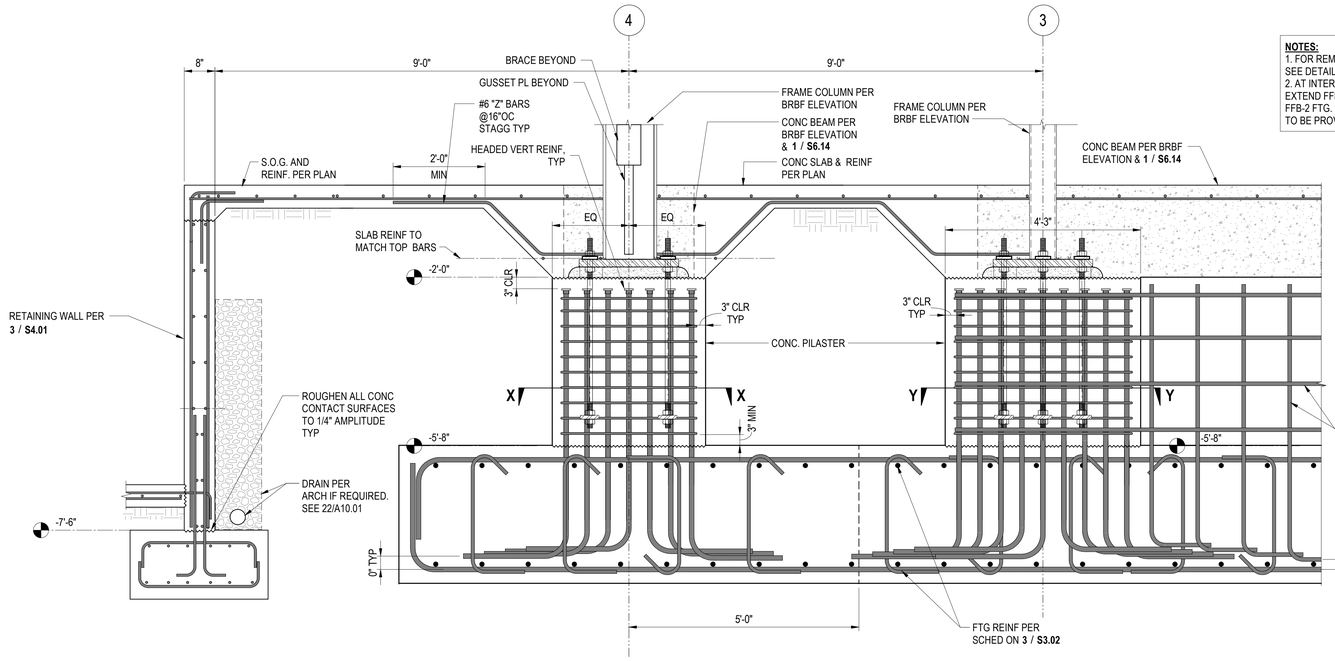
SHEET:

**S4.01**

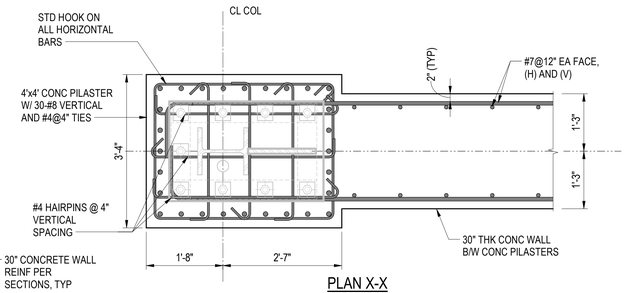
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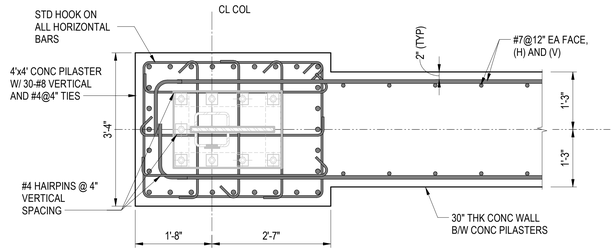
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




**NOTES:**
1. FOR REMAINDER OF INFORMATION, SEE DETAIL **1 / S6.12**. & **1 / S6.11**
2. AT INTERSECTION OF FRAME FTGs, EXTEND FFB-11 LONG REINF TO END OF FFB-2 FTG. NO FFB-2 TRANSVERSE REINF TO BE PROVIDED AT INTERSECTION .

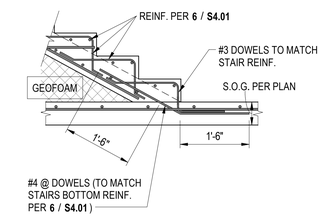



PLAN X-X

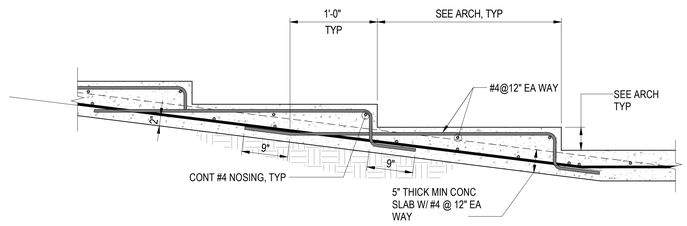



PLAN Y-Y

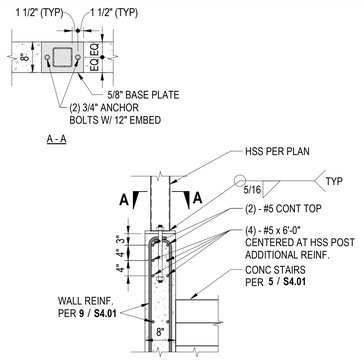
**SECTION 3** 3/4" = 1'-0"



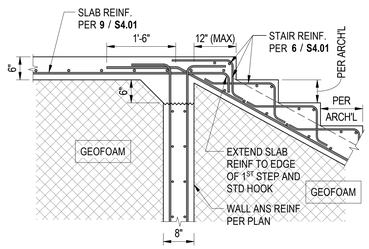

**DETAIL 5** 3/4" = 1'-0"



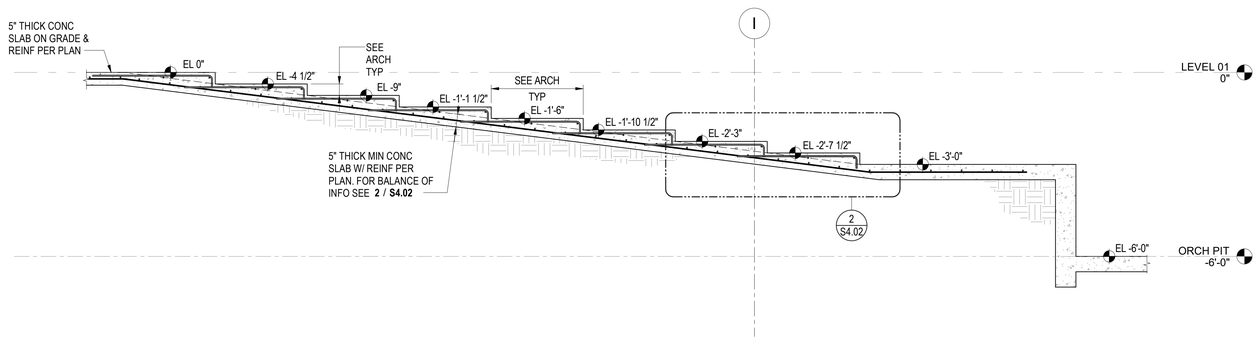

**SECTION 2** 1" = 1'-0"




**DETAIL 6** NTS




**DETAIL 4** 3/4" = 1'-0"




**TYPICAL SEATING -ON-GRADE SECTION 1** 1/2" = 1'-0"

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saiful•bouquet structural engineers
225 Broadway, Ste 1300
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Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — ROBERT WAYNE RANDALL — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**CONCRETE DETAILS**

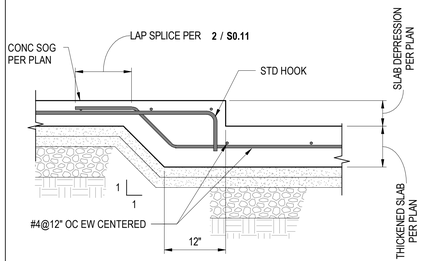
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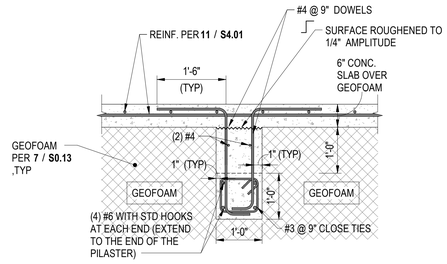
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**S4.02**

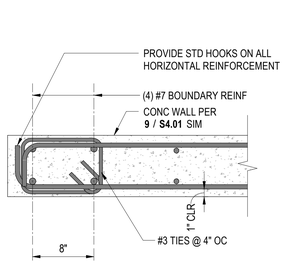
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




**DEPRESSED SLAB AT LIFT** | **6** | 1" = 1'-0"

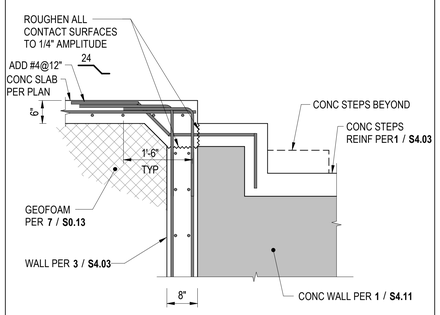



**DETAIL** | **3** | 3/4" = 1'-0"

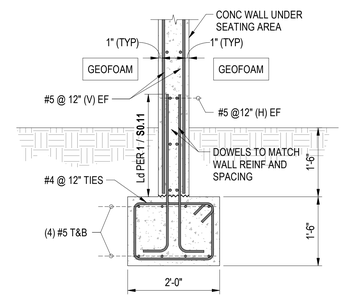



PLAN VIEW

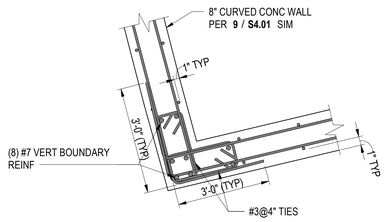
**DETAIL** | **8** | 1 1/2" = 1'-0"



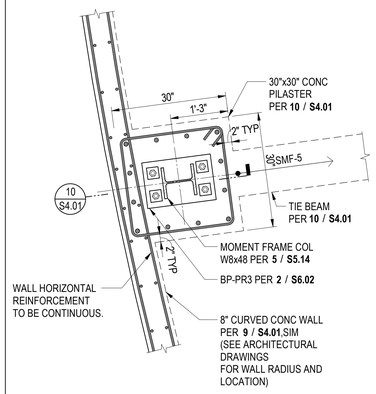

**DETAIL** | **5** | 3/4" = 1'-0"



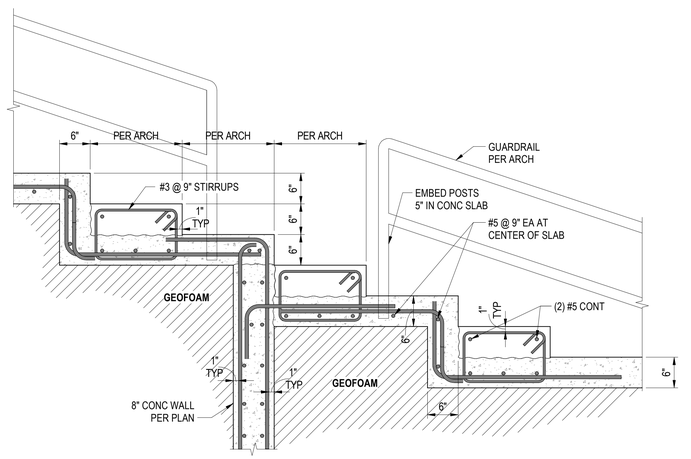

**TYPICAL WALL FOOTING SEATING AREA** | **2** | 3/4" = 1'-0"




**PLAN - DETAIL** | **7** | 1" = 1'-0"




**DETAIL** | **4** | 3/4" = 1'-0"




**DETAIL** | **1** | 1" = 1'-0"

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San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**DETAILS**

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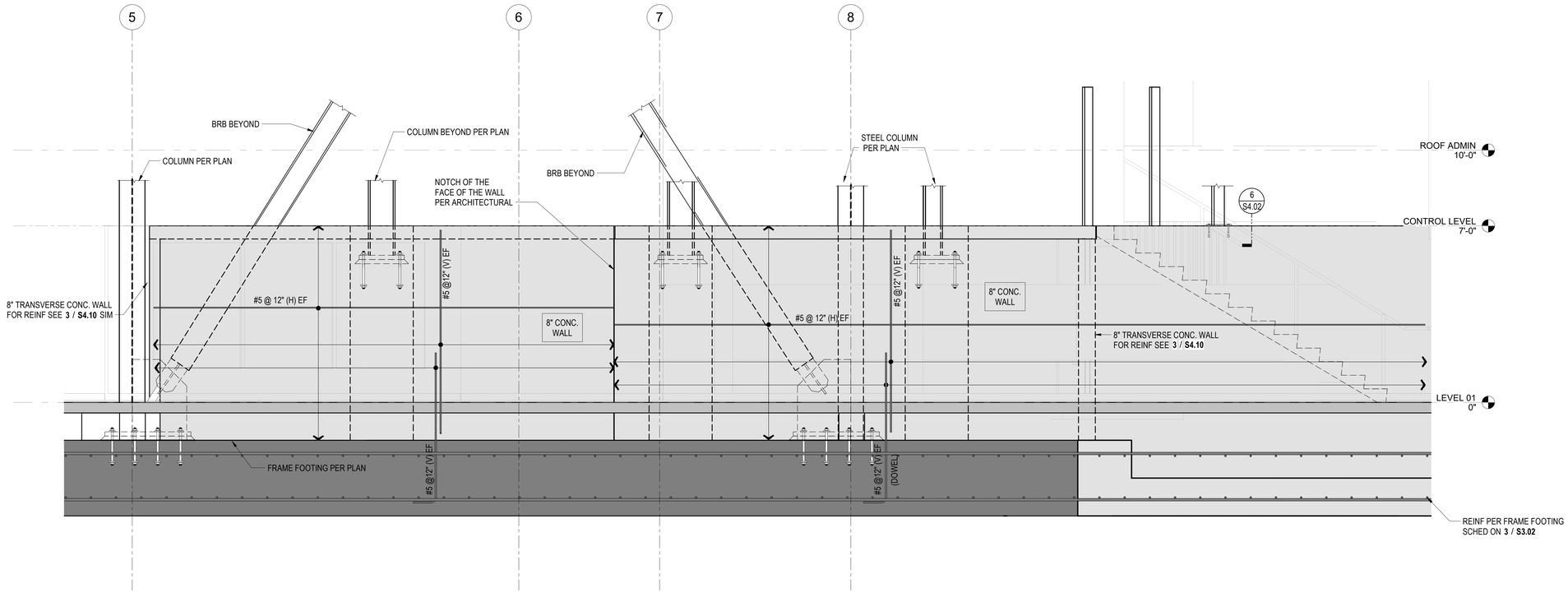
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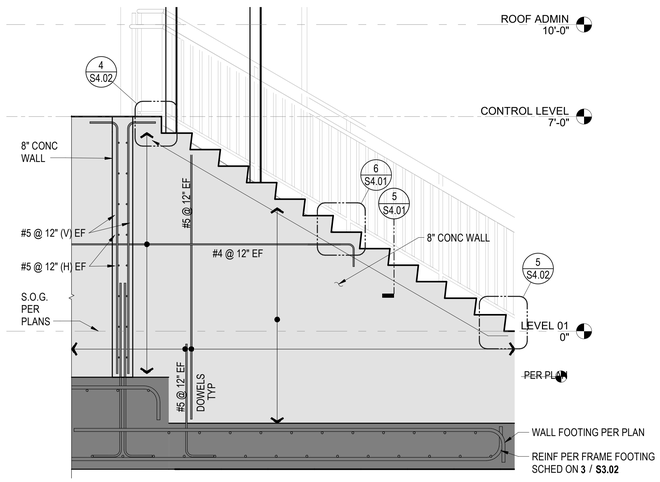
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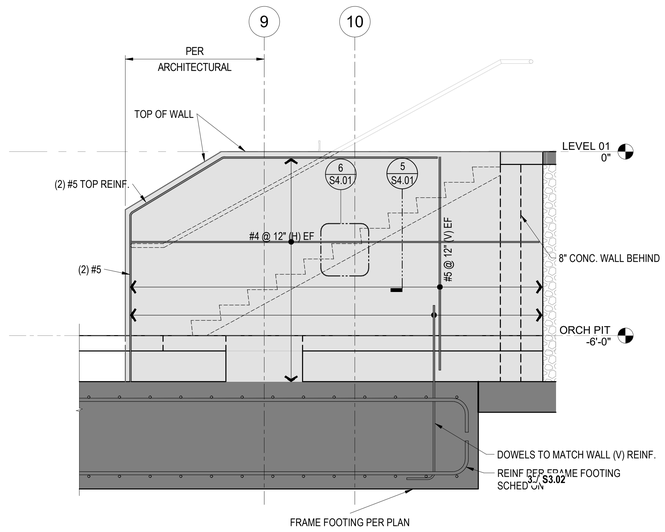
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 22X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




**CONCRETE WALL ELEVATION** **2**
1/2" = 1'-0"




**CONCRETE WALL ELEVATION** **3**
1/2" = 1'-0"




**CONCRETE WALL ELEVATION** **1**
1/2" = 1'-0"

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
TOFAEL R. SAIFUL
No. S4852
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**CONCRETE WALL ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# S4.10

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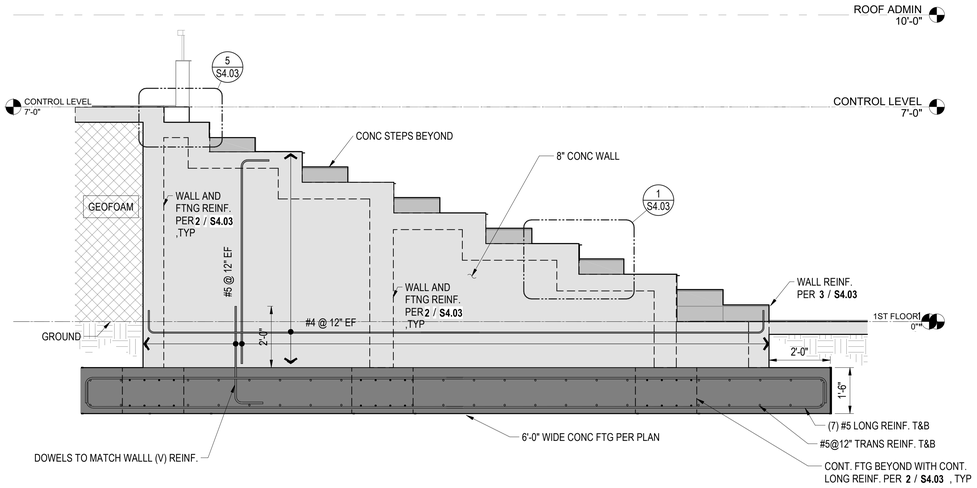
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**KEYNOTES**




**CONCRETE WALL ELEVATION** 1
1/2" = 1'-0"

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structural engineers
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Telephone 619.630.9199
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REGISTERED PROFESSIONAL ENGINEER
ROBERT HALE RANDALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

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**EL MONTE, CALIFORNIA 91732**

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**CONCRETE WALL ELEVATIONS**

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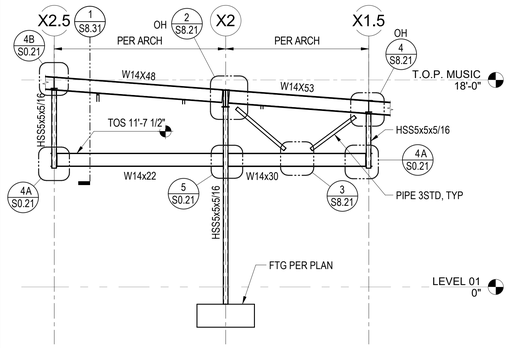
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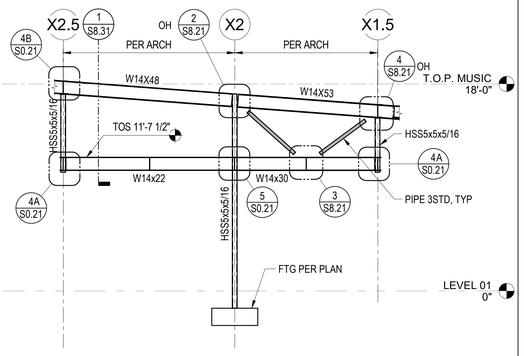
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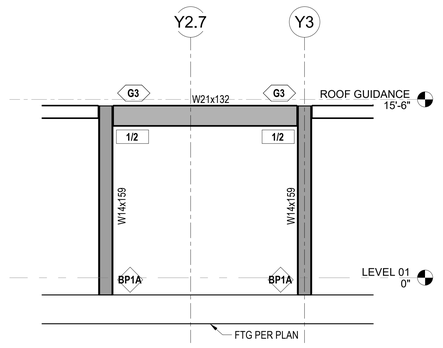
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG IF PLOTTED AT FULL SCALE. IF NOT, ADJUST SCALE ACCORDINGLY



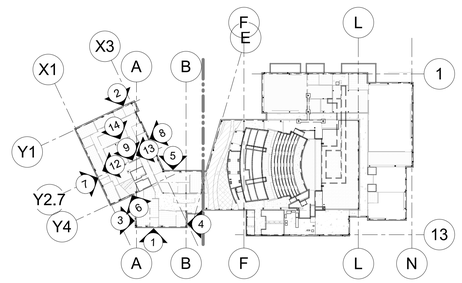

**WEBBING ELEVATION ALONG GL Y2** 14 — 3/16" = 1'-0"




**WEBBING ELEVATION ALONG GL Y2.7** 9 — 3/16" = 1'-0"



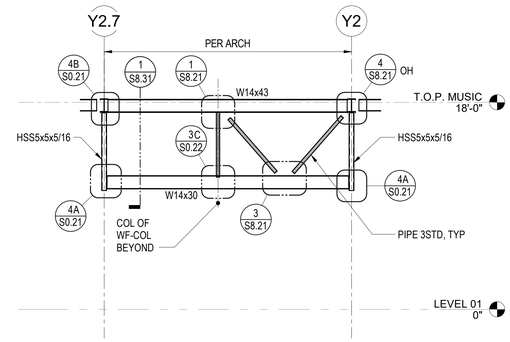

**SMF-7 ELEVATION AT GL X1** 7 — 3/16" = 1'-0"



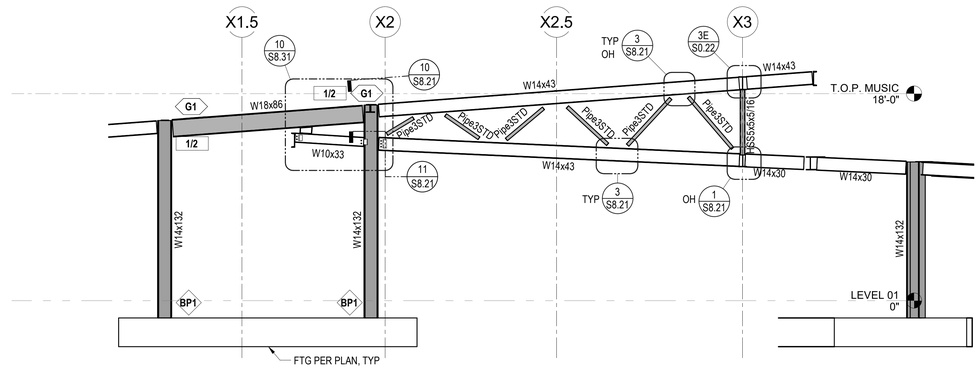

**KEYPLAN**

**SMF ELEVATION NOTES:**

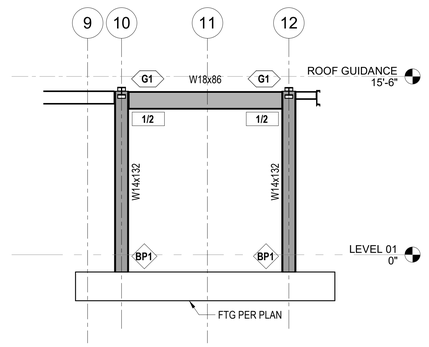
1. G1 INDICATES MOMENT FRAME GIRDER CONNECTION PER **2 / S6.01**
2. 1-3/8 INDICATES DOUBLER PLATE PER **2 / S6.01**
3. BP1 INDICATES BASE PL TYPE PER **1 / S6.01**
4. BOXED COLUMNS TO BE PROVIDED PER **1 / S6.02**



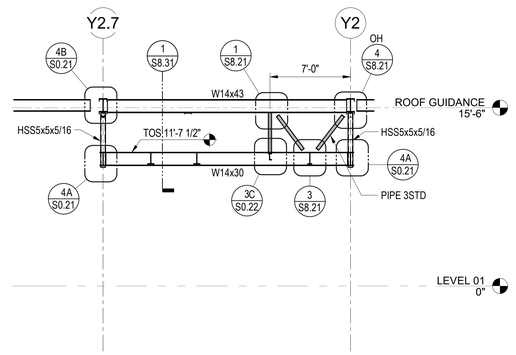

**WEBBING ELEVATION ALONG GL X2.5** 13 — 3/16" = 1'-0"



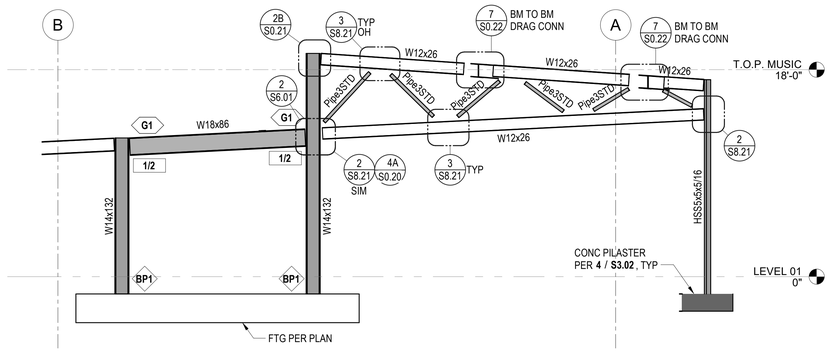

**SMF-6 ELEVATION AL GL Y4** 6 — 3/16" = 1'-0"



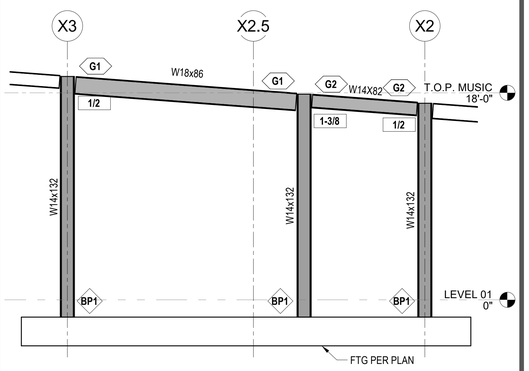

**SMF-3 ELEVATION AL GL A** 3 — 3/16" = 1'-0"



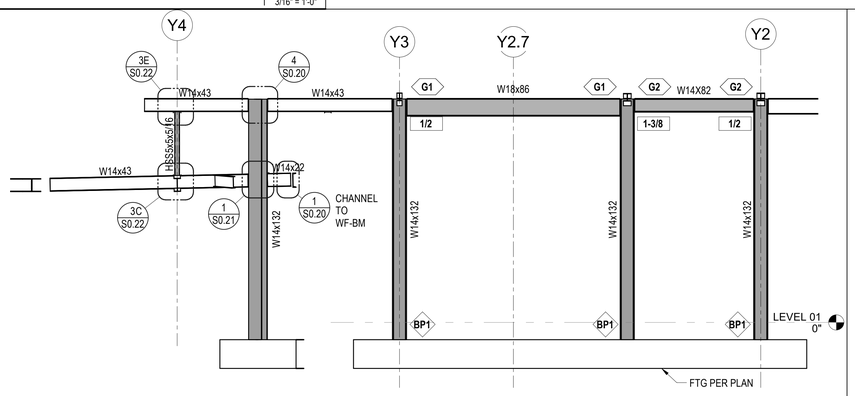

**WEBBING ELEVATION ALONG GL X1.5** 12 — 3/16" = 1'-0"



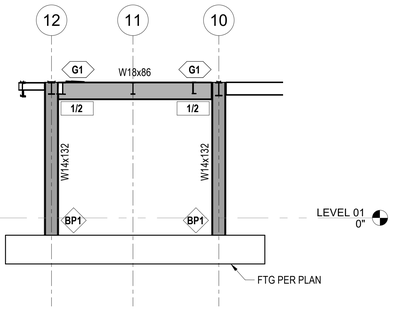

**SMF-5 ELEVATION AL GL 7** 5 — 3/16" = 1'-0"



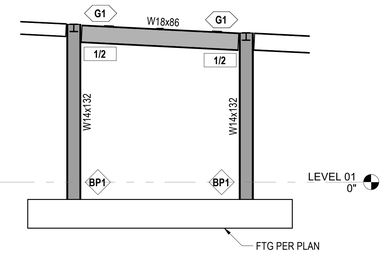

**SMF-2 ELEVATION AT GL Y1** 2 — 3/16" = 1'-0"




**SMF-8 ELEVATION AL GL X3** 8 — 3/16" = 1'-0"




**SMF-4 ELEVATION AT GL B** 4 — 3/16" = 1'-0"




**SMF-1 ELEVATION AT GL 12** 1 — 3/16" = 1'-0"

## KEYNOTES

## NOTES

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MOMENT FRAME ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

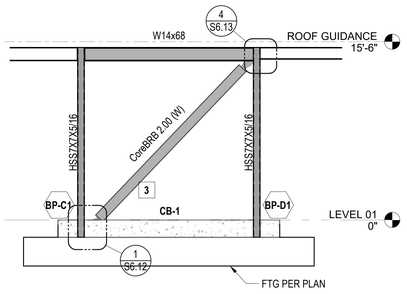
SHEET:

**S5.11**

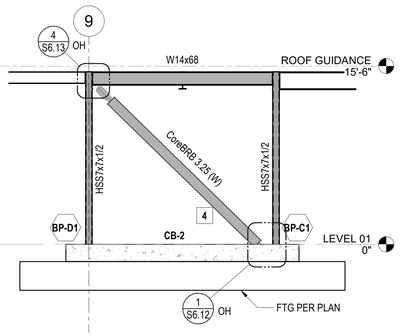
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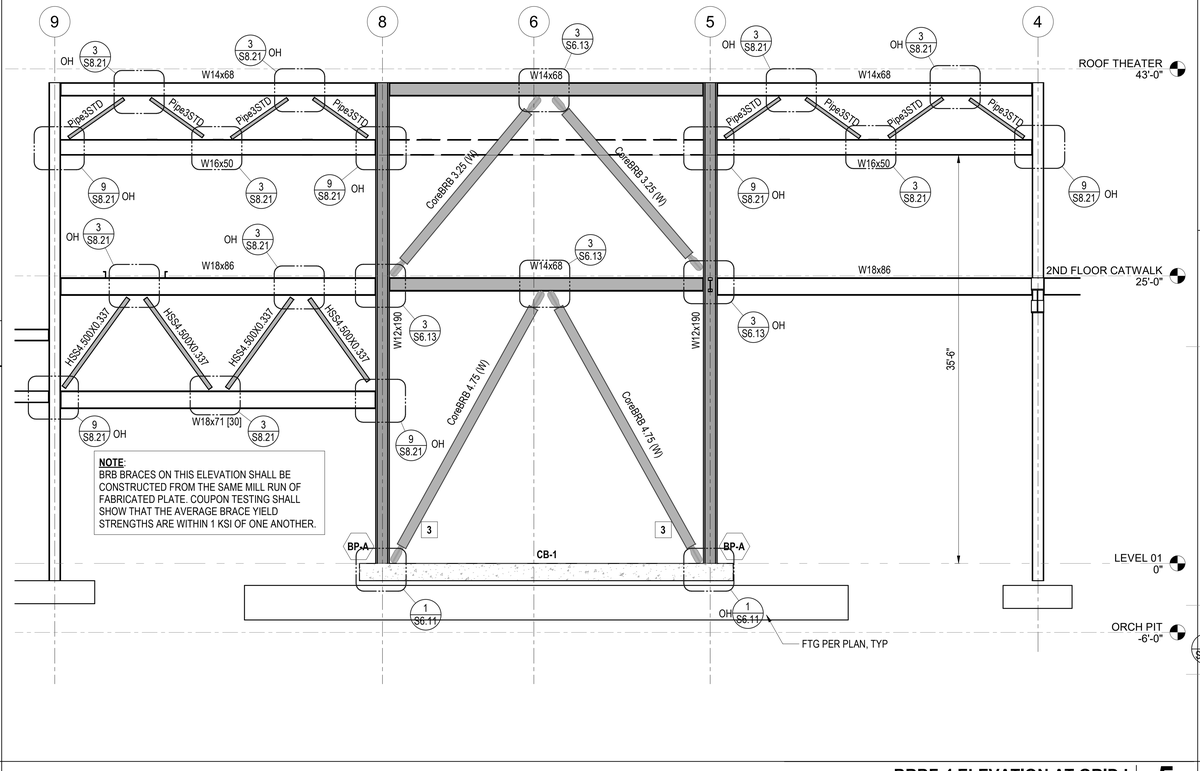
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWINGS. IF IT IS NOT, ADJUST SCALES ACCORDINGLY.



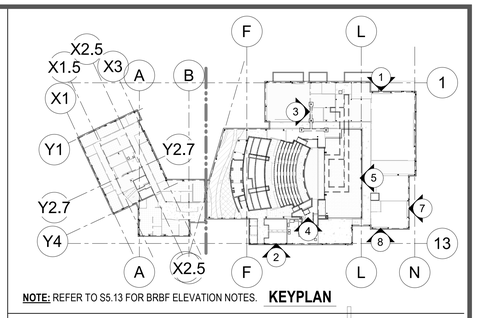

**BRBF-5 ELEVATION AT GRID 11** | **8** | 3/16" = 1'-0"



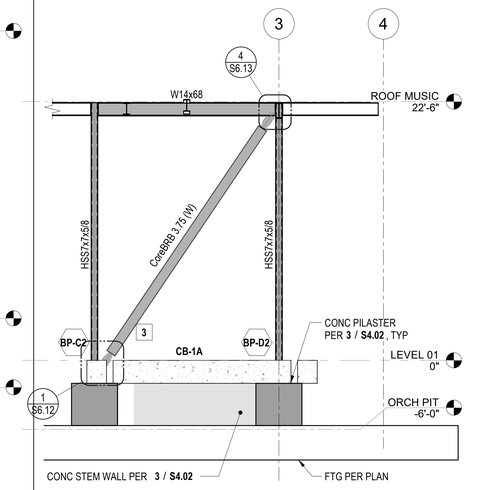

**BRBF-6 ELEVATION AT GRID M** | **7** | 3/16" = 1'-0"



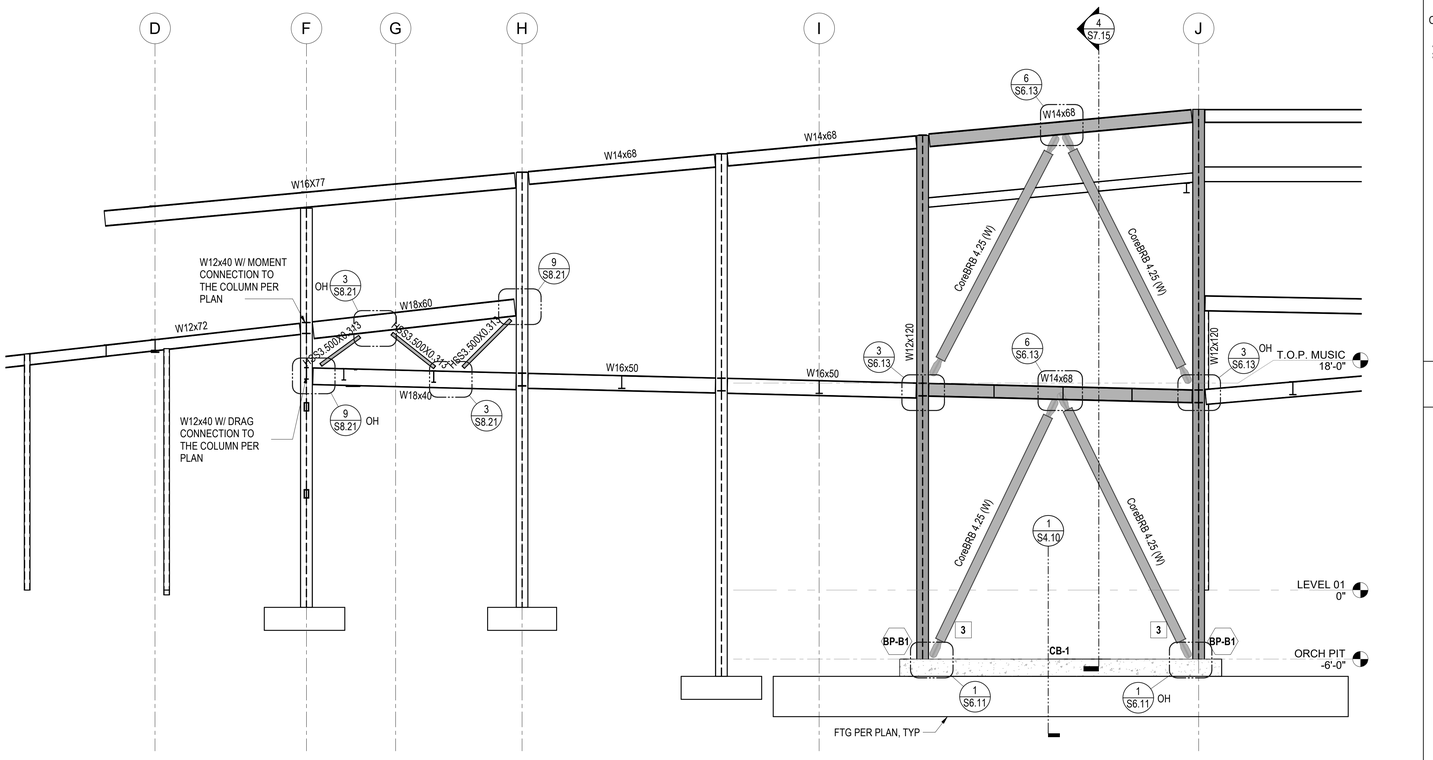

**BRBF-4 ELEVATION AT GRID L** | **5** | 3/16" = 1'-0"



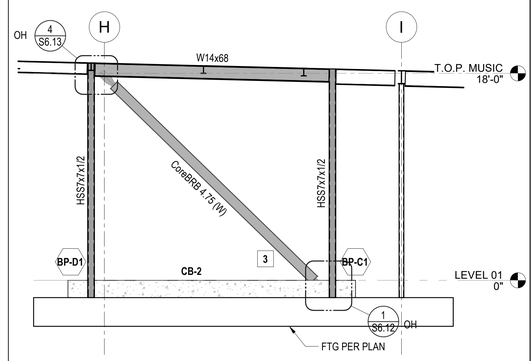

**NOTE:** REFER TO S5.13 FOR BRBF ELEVATION NOTES. **KEYPLAN**



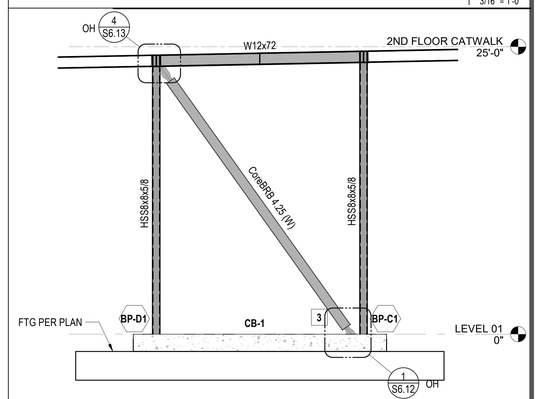

**BRBF-11 ELEVATION AT GRID I.5** | **3** | 3/16" = 1'-0"




**BRBF-1 ELEVATION AT GRID 9** | **4** | 3/16" = 1'-0"




**BRBF-10 ELEVATION AT GRID 13** | **2** | 3/16" = 1'-0"




**BRBF-9 ELEVATION AT GRID 2** | **1** | 3/16" = 1'-0"

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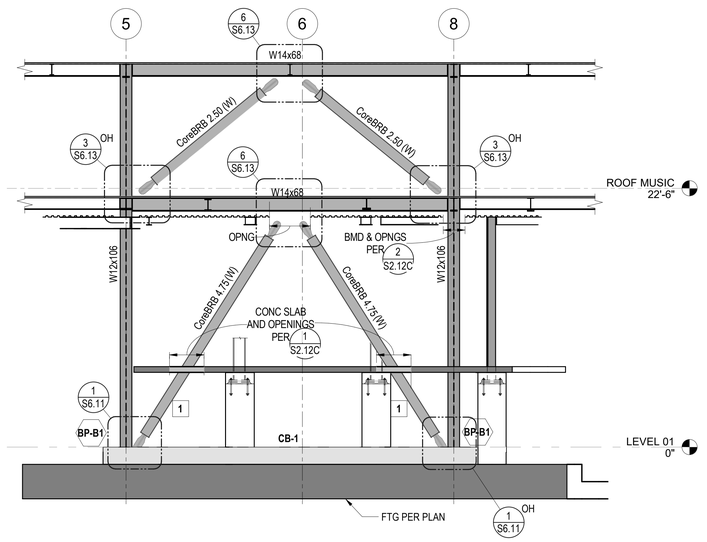
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# S5.12

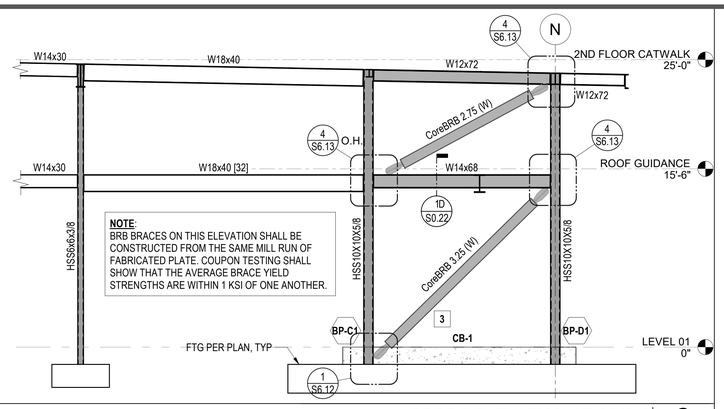
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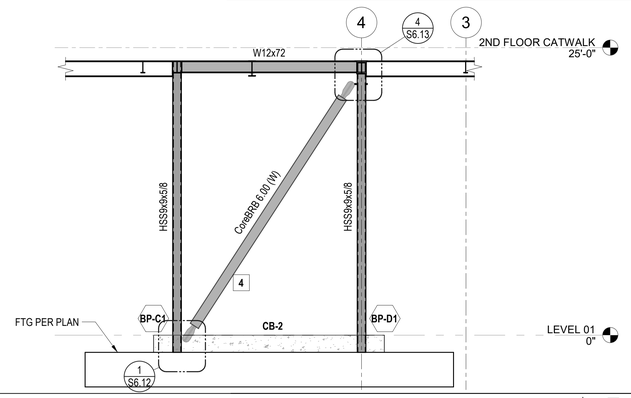
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINAL PAPER SIZE



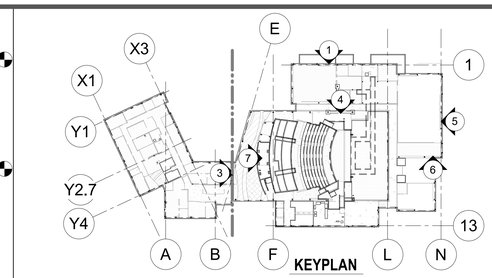

BRBF-3 ELEVATION AT GRID D **7** 3/16" = 1'-0"




BRBF-7 ELEVATION AT GRID 6 **6** 3/16" = 1'-0"

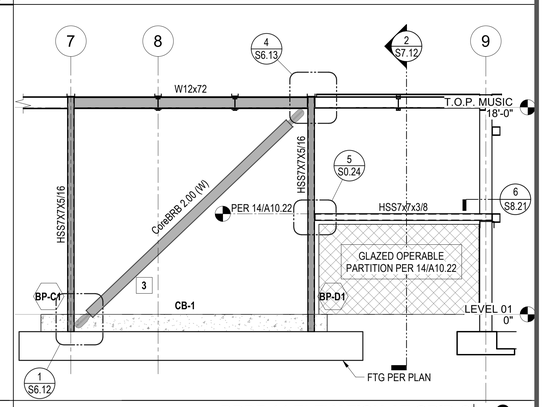



BRBF-8 ELEVATION AT GRID N **5** 3/16" = 1'-0"

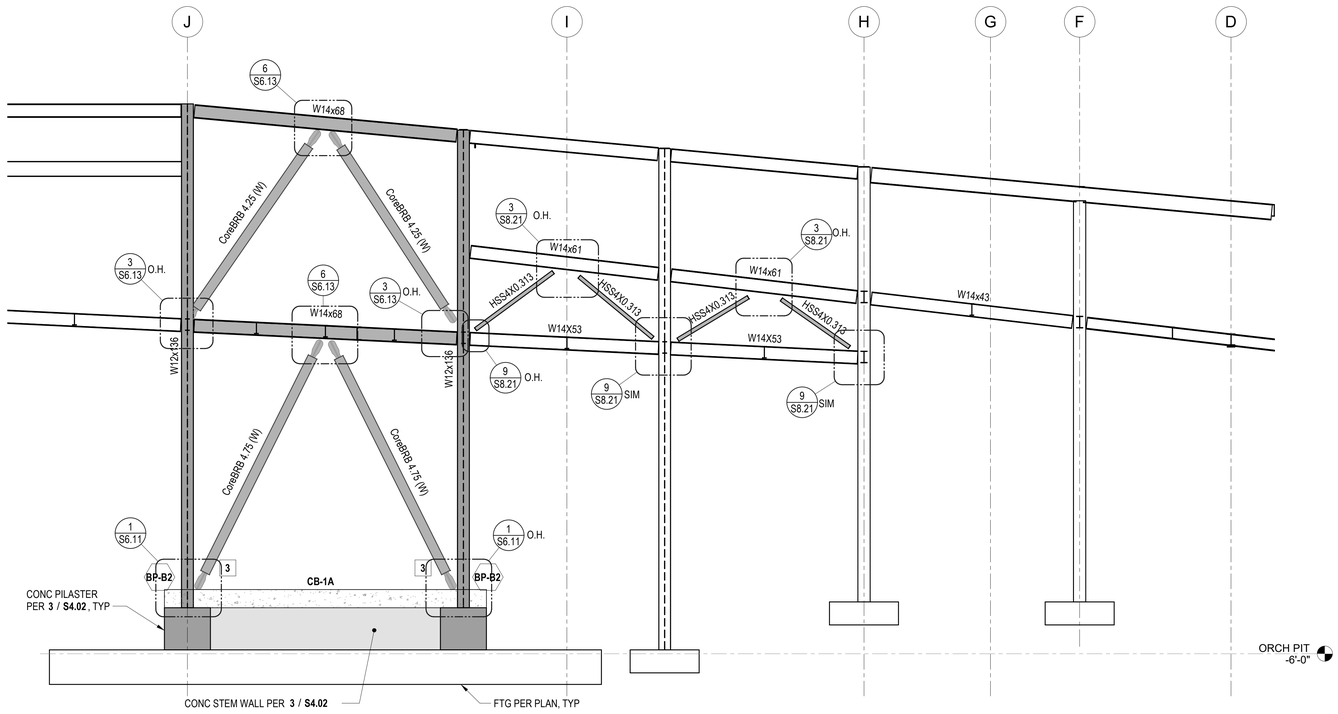



**BRBF ELEVATION NOTES:**

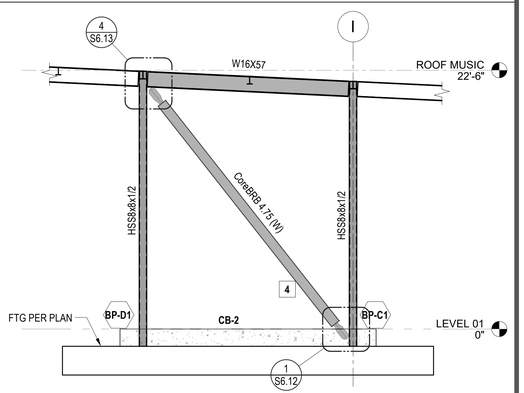
1. FOR TYPICAL BRBF DETAIL SCHEDULE, SEE SHEETS **S6.11** TO **S6.13** .
2. FOR COREBRACE CONNECTION DETAILS, SEE SHEETS **S6.21** TO **S6.23**.
3. X INDICATES REQUIRED NUMBER OF WELDED REBAR AT BRBF COL BASE PER **1** / **S6.11** & **1** / **S6.12**
4. BP-A INDICATES BASE PLATE TYPE PER **1** / **S6.11** & **1** / **S6.12**
5. **CB-X** INDICATES CONCRETE BEAM TYPE PER **1** / **S6.14**
6. NO PIPES AND PENETRATIONS SHALL BE PERMITTED THROUGH BRBF PILASTERS AND CONCRETE WALL BETWEEN THEM.




BRBF-14 ELEVATION AT GRID C **3** 3/16" = 1'-0"




BRBF-2 ELEVATION AT GRID 4 **4** 3/16" = 1'-0"




BRBF-12 ELEVATION AT GRID 1 **1** 3/16" = 1'-0"


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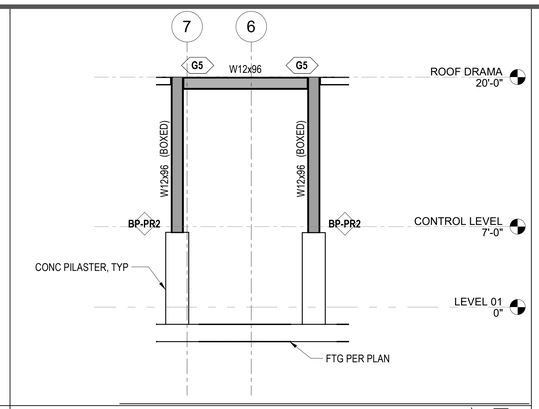
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**S5.13**

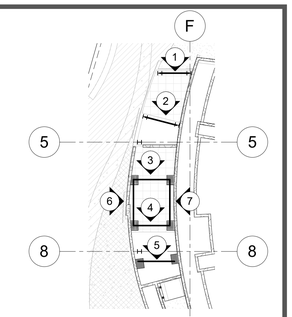
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI B SHEETS ORIGINALLY DRAWN AT FULL SCALE



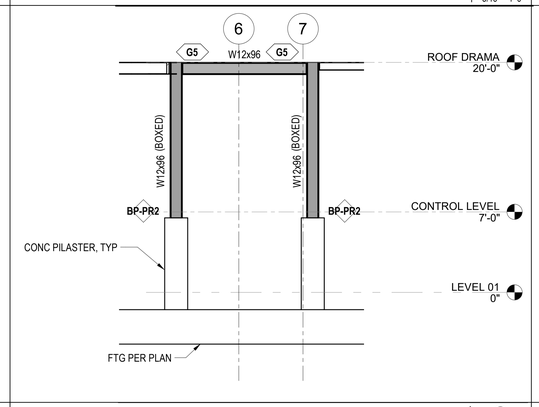

**SMF-7** 7
3/16" = 1'-0"



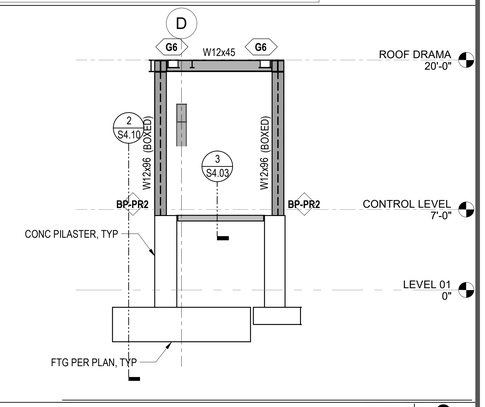

**KEYPLAN**

**SMF ELEVATION NOTES:**

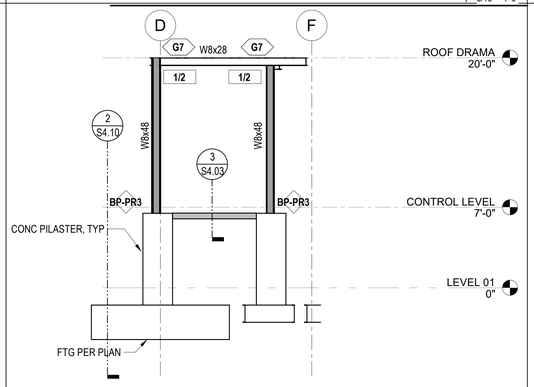
1. G1 INDICATES MOMENT FRAME GIRDER CONNECTION PER **2 / S6.01**
2. 1-3/8 INDICATES DOUBLER PLATE PER **2 / S6.01**
3. BP1 INDICATES BASE PL TYPE PER **1 / S6.01**
4. BOXED COLUMNS TO BE PROVIDED PER **1 / S6.02**



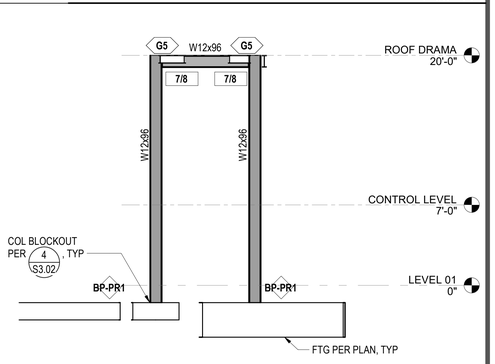

**SMF-6** 6
3/16" = 1'-0"



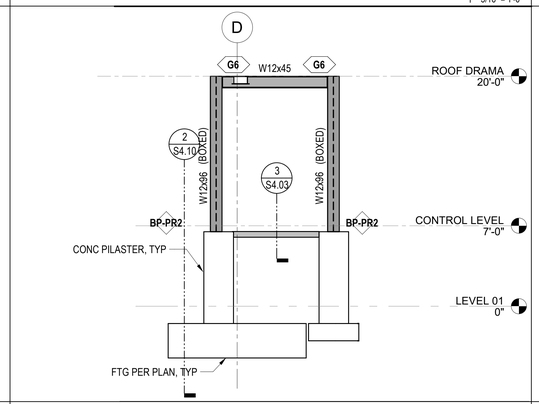

**SMF-3** 3
3/16" = 1'-0"



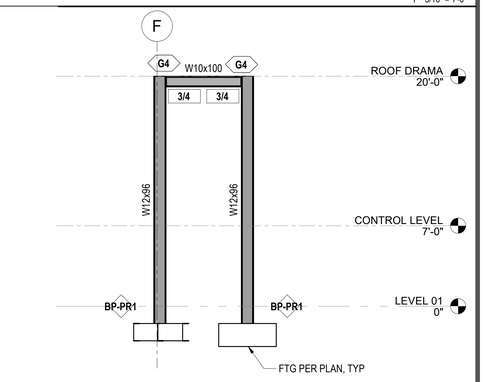

**SMF-5** 5
3/16" = 1'-0"




**SMF-2** 2
3/16" = 1'-0"




**SMF-4** 4
3/16" = 1'-0"




**SMF-1** 1
3/16" = 1'-0"

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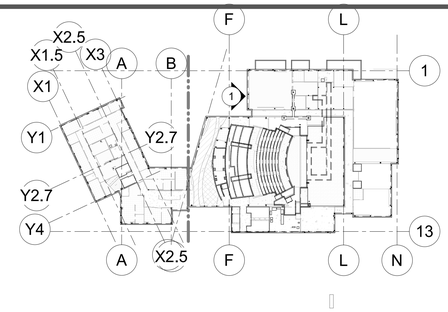
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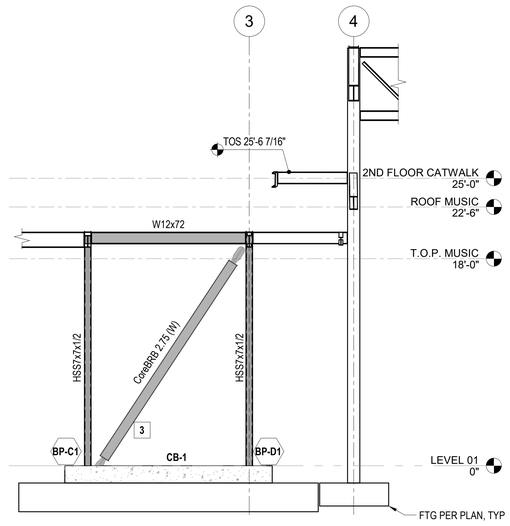
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SIZED ORIGINAL DRAWINGS




**NOTE:**
REFER TO S5.13 FOR BRBF ELEVATION NOTES.




**BRBF-13 ELEVATION AT GRID H** 1
3/16" = 1'-0"

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ROBERT HALE RANDALL
64892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**BRBF ELEVATIONS**

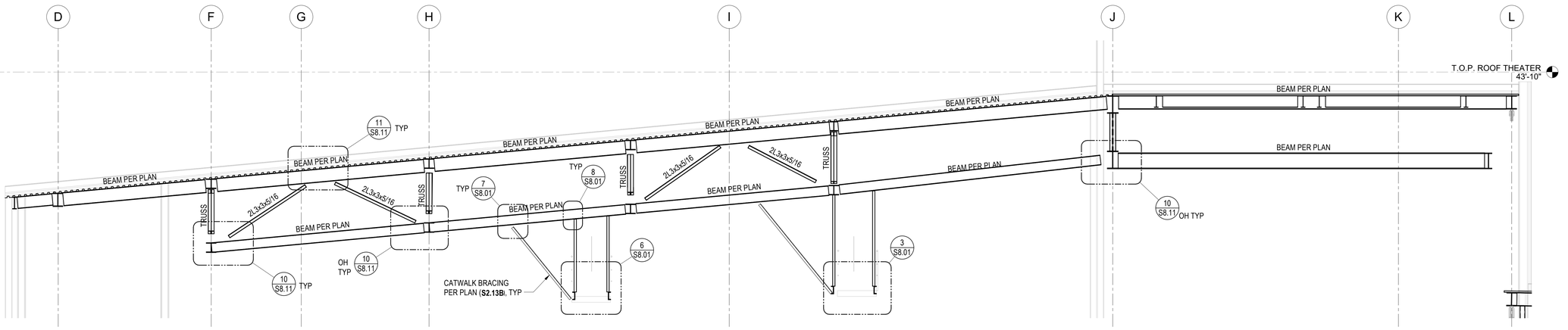
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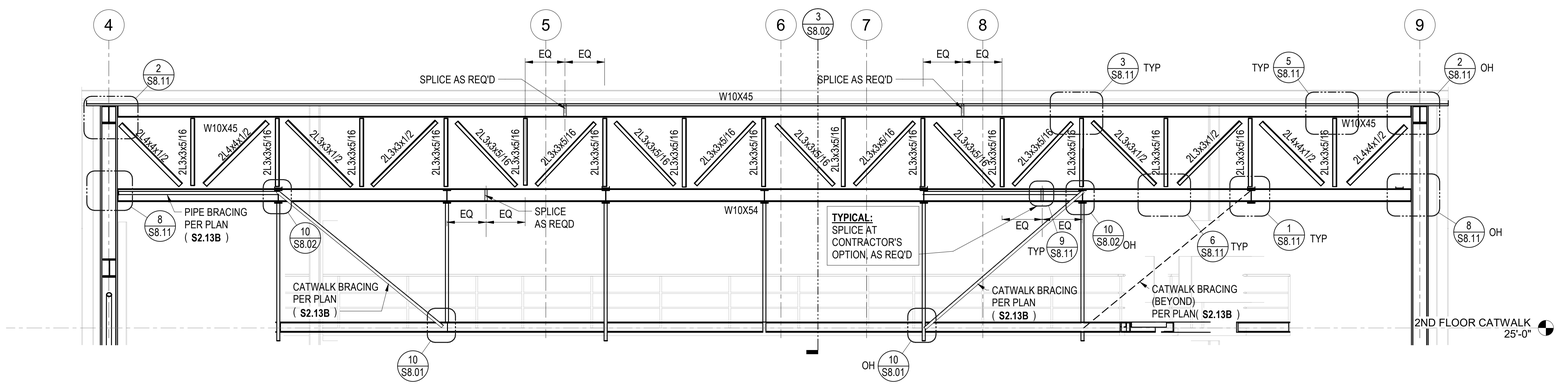
SHEET:

**S5.15**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON THIS SHEET. IF NOT, ADJUST SCALE ACCORDINGLY.




**TYPICAL TRUSS BRACING** 2
1/4" = 1'-0"




**TYPICAL TRUSS ELEVATION** 1
1/4" = 1'-0"

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SB Job No:22576

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## NOTES

FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TRUSS ELEVATIONS**

**DSA SUBMITTAL**

| | |
|---|---|
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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

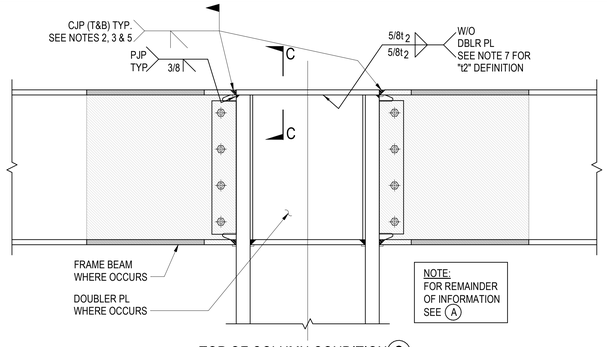
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**S5.31**

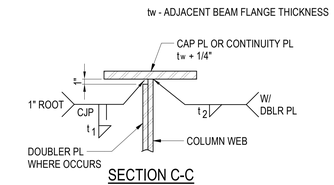
Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY

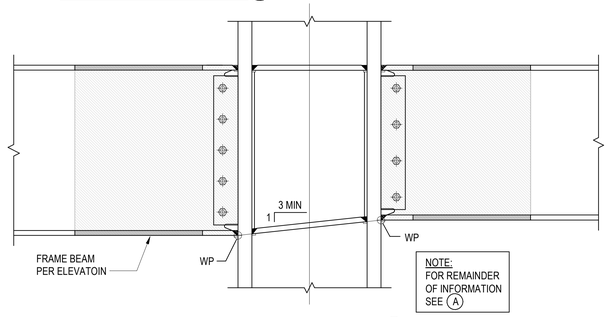



TOP OF COLUMN CONDITION (C)

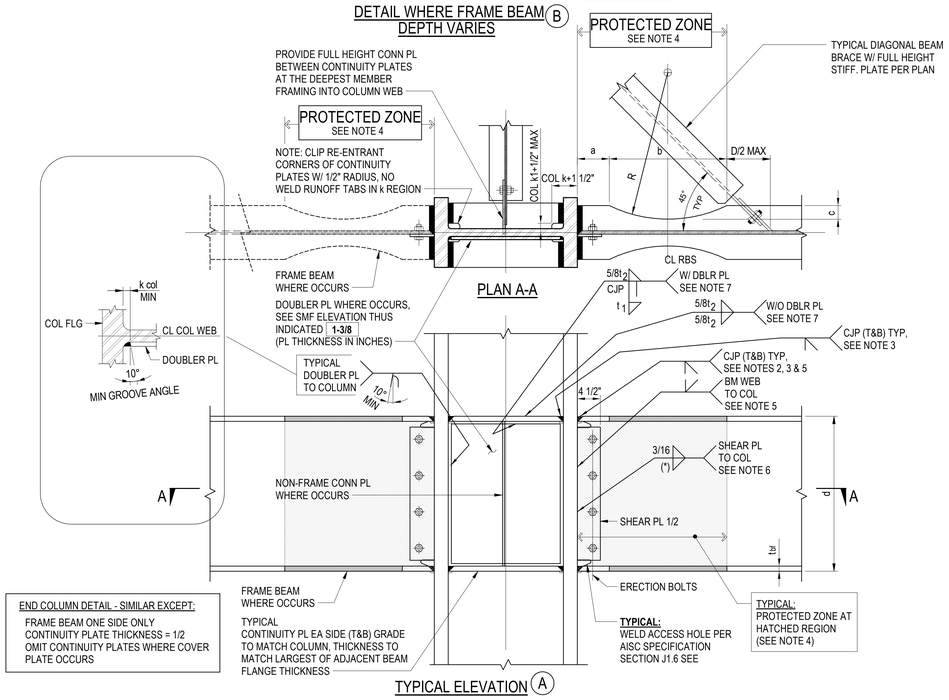



SECTION C-C

(WHERE DOUBLER PLATE OCCURS)




DETAIL WHERE FRAME BEAM DEPTH VARIES (B)

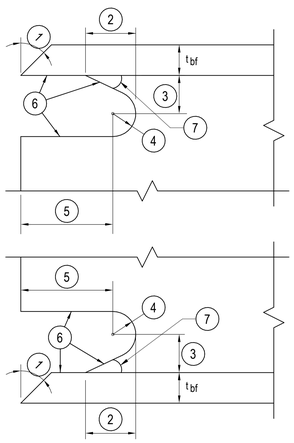



TYPICAL ELEVATION (A)

REFER TO AISC SPECIFICATION SECTION J1.6 AND AWS D1.8 FIGURE 6.2

NOTES:

1. BEVEL AS REQUIRED BY APPROVED WPS.
2. LARGER OF $t_{bf}$ OR 1/2" (+1/2 $t_{bf}$, -1/4 $t_{bf}$ )
3. 3/4 $t_{bf}$ TO $t_{bf}$, 3/4" MIN (±1/4")
4. 3/8" MIN RADIUS (+NOT LIMITED, -0)
5. 3 $t_{bf}$ (±1/2")
6. ACCESS HOLE SHALL HAVE A SURFACE ROUGHNESS VALUE NOT TO EXCEED 500 MICRO INCHES OR BETTER AND SHALL BE FREE OF NOTCHES AND GOUGES. NOTCHES AND GOUGES SHALL BE REPAIRED AS REQUIRED BY THE ENGINEERS OF RECORD.
7. TOLERANCE SHALL NOT ACCUMULATE TO THE EXTENT THAT THE ANGLE OF THE ACCESS HOLE CUT TO THE FLANGE SURFACE EXCEEDS 25°




TYPICAL FRAME WELD ACCESS HOLE DETAIL 3 NTS

## SMF GIRDER CONNECTION SCHEDULE

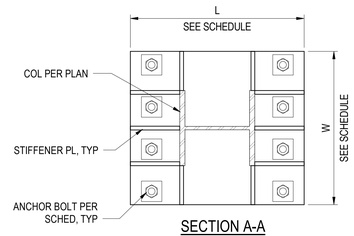
| MARK | GIRDER CUT - TOP AND BOTTOM FLANGE | | | | REMARKS |
|---|---|---|---|---|---|
| | a (in) | b (in) | c (in) | R (in) | |
| G1 | 5.75 | 12 | 1.625 | 10-1/2 | W18x86 |
| G2 | 5.25 | 9.5 | 1.75 | 7-1/3 | W14x82 |
| G3 | 6.25 | 14.25 | 2 | 13-2/3 | W21x132 |
| G4 | 5.25 | 7.25 | 2.5 | 3-7/8 | W10x100 |
| G5 | 6.25 | 8.5 | 2.5 | 4-6/7 | W12x96 |
| G6 | 4.25 | 8 | 1.5 | 6 | W12x45 |
| G7 | 3.5 | 5.25 | 1.25 | 3-3/8 | W8x28 |

**NOTE:**
1. FOR FRAME ELEVATION, SEE ELEVATION **S5.11** AND **S5.14**
2. FOR BOX COLUMNS, SEE **1** / **S6.02**

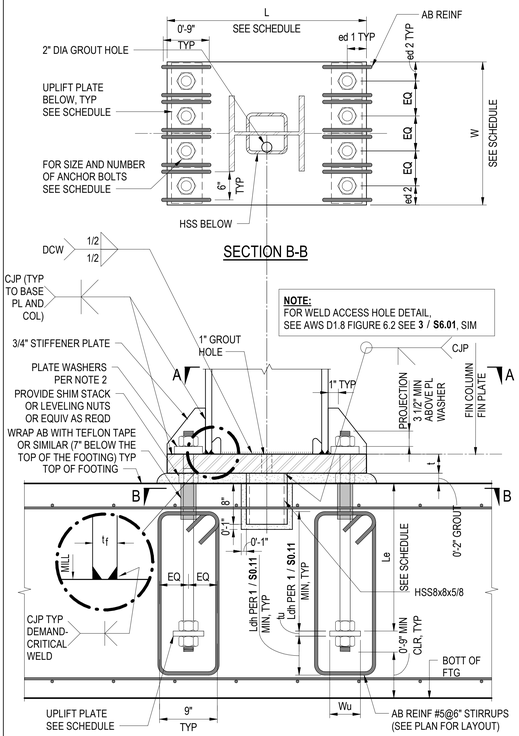
NOTES:

1. THE REDUCED BEAM SECTION SHALL BE MADE BY THERMAL CUTTING TO PRODUCE A SMOOTH CURVE HAVING A MAXIMUM ROUGHNESS OF 500 MICRO-INCHES MEASURED USING AWS C4.1-77.
2. WHERE STEEL BACKING IS USED AT THE BOTTOM FLANGE OF BEAM, THE BACKING SHALL BE REMOVED AND THEN THE ROOT BASE SHALL BE BACKGOUGED TO SOUND WELD METAL THEN BACKWELD WITH A 5/16 FILLET WELD.
3. WHERE STEEL BACKING IS USED AT THE TOP FLANGE OF BEAM OR AT CONTINUITY PLATES, THE BACKING NEED NOT BE REMOVED BUT ATTACHED TO THE COLUMN BY A CONTINUOUS 5/16 FILLET WELD.
4. PROTECTED ZONE: NO FASTENERS OR WELDS MAY BE MADE TO BEAM FLANGES OR WEB IN THIS REGION, EXCEPT METAL DECK PLUG WELDS. THE FABRICATOR SHALL PERMANENTLY MARK PROTECTED ZONES THAT ARE DESIGNATED ON THE STRUCTURAL DESIGN DOCUMENTS IN ACCORDANCE WITH ANSI/AISC 341 SECTION A4.1. IF THESE MARKINGS ARE OBSCURED IN THE FIELD, SUCH AS AFTER THE APPLICATION OF FIRE PROTECTION, THE OWNER'S DESIGNATED REPRESENTATIVE FOR CONSTRUCTION SHALL RE-MARK THE PROTECTED ZONES AS THEY ARE DESIGNATED ON THE STRUCTURAL DESIGN DOCUMENTS.
5. COMPLETE JOINT PENETRATION WELDS OF BEAM FLANGES, SHEAR PLATES AND BEAM WEBS TO COLUMNS SHALL BE **DEMAND CRITICAL WELDS**.
6. (*) SIZE WELD FOR ERECTION LOAD (5/16" FILLET MINIMUM)
7. $t_1$ = DOUBLER PLATE THICKNESS
   $t_2$ =CONTINUITY PLATE THICKNESS

TYPICAL SMF GIRDER TO COLUMN CONNECTION SCHEDULE AND DETAILS 2 NTS




SECTION A-A




| SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| MARK | BASE PLATE (ASTM A572 GR. 50 ) (t x L W, INCHES ) | ANCHOR BOLTS (F1554 GR.105 (HKD) /F1554 GR.105 AT 1A) | ANCHOR BOLTS EMBEDMENT LENGTH ( Le ) | UPLIFT PLATE (ASTM A572 GR. 50 ) ( Lu x Wu x tu ) | ed1 | ed2 |
| BP1 BP1A | 2-3/4x34x30 | (8) 1 3/8" DIA | 16" | 5"x5"x1 1/2" | 3 1/2" | 2 1/2" |

**NOTES:**
1. PROVIDE OVERSIZED HOLES IN BASE PLATE FOR ANCHOR BOLTS PER AISC STEEL CONSTRUCTION MANUAL - FIFTEENTH EDITION TABLE 14-2. [HOLE SIZE FOR 1-3/8" BOLT/ROD = 2-1/4"].
2. PROVIDE 4" DIA CIRCULAR OR 4" SQUARE WASHERS - 1/2" THICK AT EA ANCHOR BOLT/ROD.

TYPICAL SMF COLUMN BASE PLATE SCHEDULE & DETAIL 1 1" = 1'-0"

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## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MOMENT FRAME DETAILS (SLRS)**

**DSA SUBMITTAL**

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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

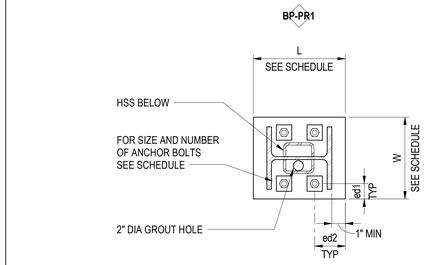
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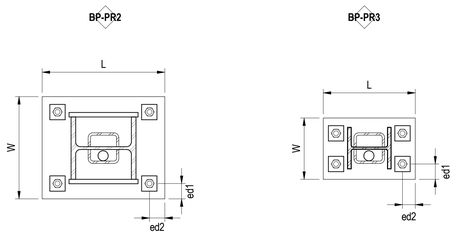
**S6.01**

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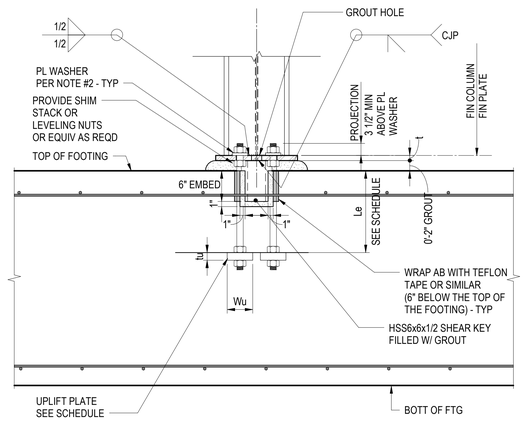
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINALLY PLOTTED AT FULL SIZE



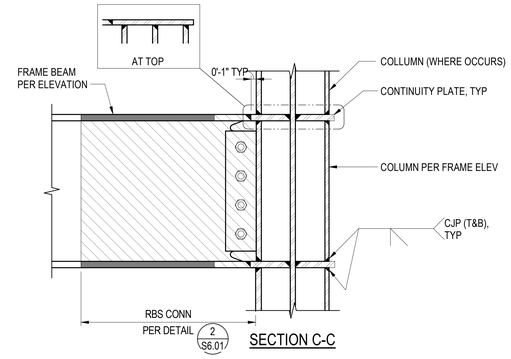

**NOTE:**
FOR WELD ACCESS HOLE DETAIL, SEE AWS D1.8 FIGURE 6.2



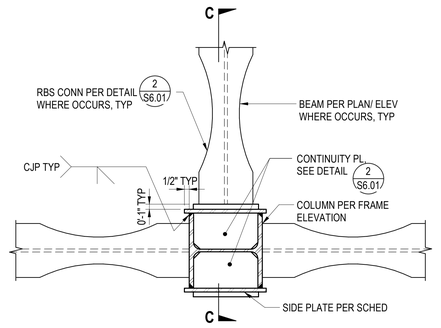

| SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| MARK | BASE PLATE (ASTM A572 GR. 50) (t x L x W, INCHES ) | ANCHOR BOLTS (F1554 GR. 55) | ANCHOR BOLTS EMBEDMENT LENGTH ( Le ) | UPLIFT PLATE (ASTM A572 GR. 50 ) ( Lu x Wu x tu ) | ed1 | ed2 |
| ~~BP-PR1~~ | 1x18x16 | (4) 1" DIA | 16" | 5"x5"x1 1/2" | 3" | 6" |
| ~~BP-PR2~~ | 1x24x20 | (4) 1" DIA | 24" | 5"x5"x1 1/2" | 3" | 3" |
| ~~BP-PR3~~ | 1x18x12 | (4) 1" DIA | 24" | 5"x5"x1 1/2" | 3" | 2.5" |

**NOTES:**
1. PROVIDE OVERSIZED HOLES IN BASE PLATE FOR ANCHOR BOLTS PER AISC STEEL CONSTRUCTION MANUAL - FIFTEENTH EDITION TABLE 14-2. [HOLE SIZE FOR 1" BOLT/ROD = 1 13/16"].
2. PROVIDE 3" DIA CIRCULAR OR Wu=3" SQUARE WASHERS - tu=1/2" THICK AT EA ANCHOR BOLT/ROD.

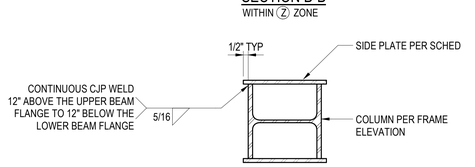
**SMF COLUMN BASE PLATE SCHEDULE AT PROJECTION ROOM** | **2** 1" = 1'-0"



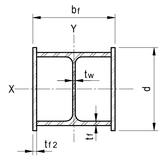

SECTION C-C




SECTION B-B
WITHIN (Z) ZONE

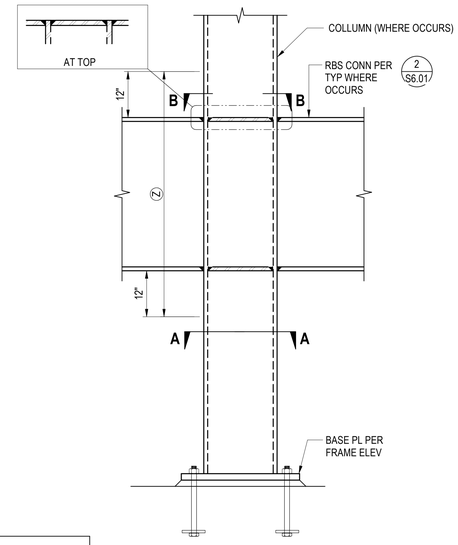



SECTION A-A
OUTSIDE (Z) ZONE




| BOXED COLUMN SCHEDULE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MARK* | GENERAL MEASUREMENTS | | | | | | STRONG-AXIS PROPERTIES | | | | WEAK-AXIS PROPERTIES | | | |
| | d (in) | $b_f$ (in) | $t_w$ (in) | $t_f$ (in) | $t_{f2}$ (in)* | A ($in^2$) | $r_x$ (in) | $S_x$ ($in^3$) | $Z_x$ ($in^3$) | $I_x$ ($in^4$) | $r_y$ (in) | $S_y$ ($in^3$) | $Z_y$ ($in^3$) | $I_y$ ($in^4$) |
| W12x96 | 13.5 | 13.95 | 0.55 | 0.90 | 0.875 | 52.0 | 4.796 | 177.2 | 227.4 | 1196 | 4.969 | 184.1 | 222.4 | 1,284 |

*NOTE: TABLE APPLIES TO COLUMNS DESIGNATED WITH "(BOXED)"
*NOTE: SIDE PLATES ARE A572 Gr.50




BOXED COLUMN PROFILE

**TYPICAL SMF BOXED COLUMN DETAIL** | **1** 1" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER SAIFUL HAQUE BOUQUET S-6892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

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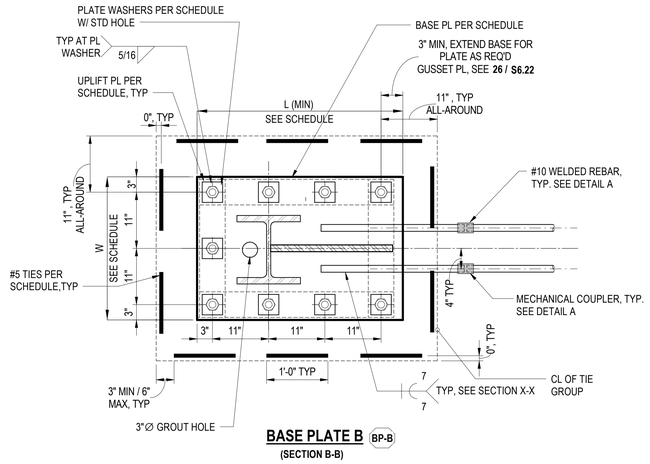
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**S6.02**

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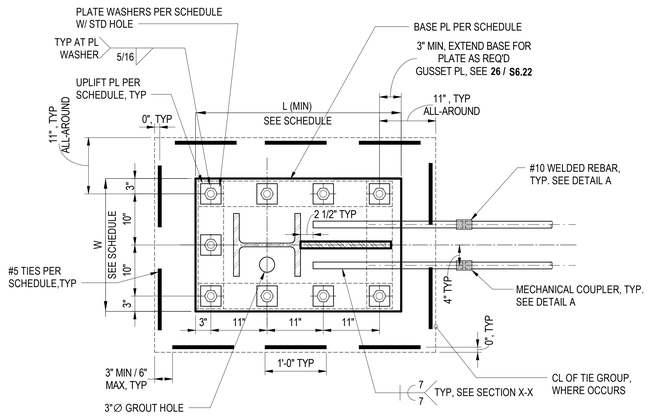
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




**BASE PLATE B** BP-B
**(SECTION B-B)**

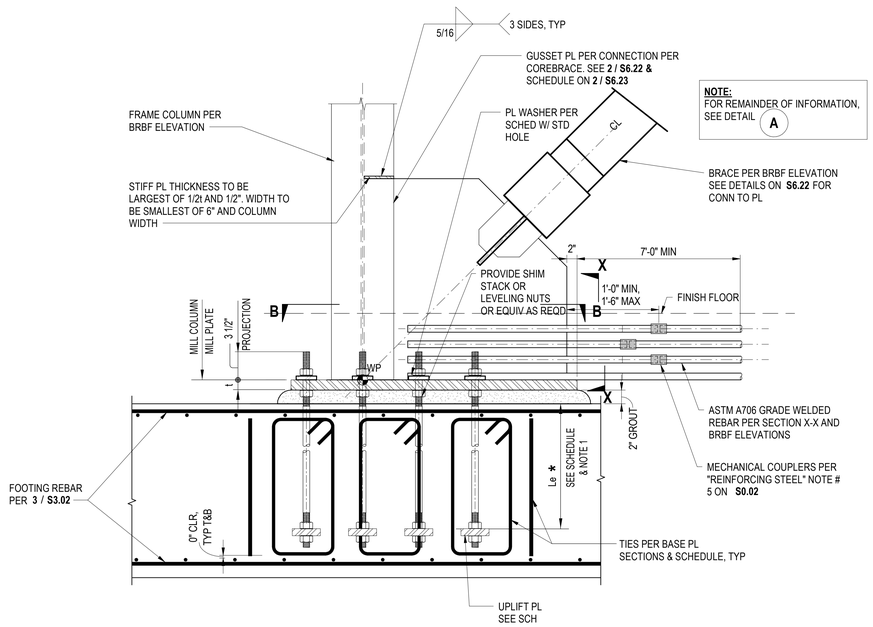
**NOTE:**
ANCHOR BOLTS AND UPLIFT PLATE PATTERN AND ORIENTATION SHALL FOLLOW ORIENTATION OF COLUMN FLANGE & SHALL BE PARALLEL TO COLUMN FLANGE .



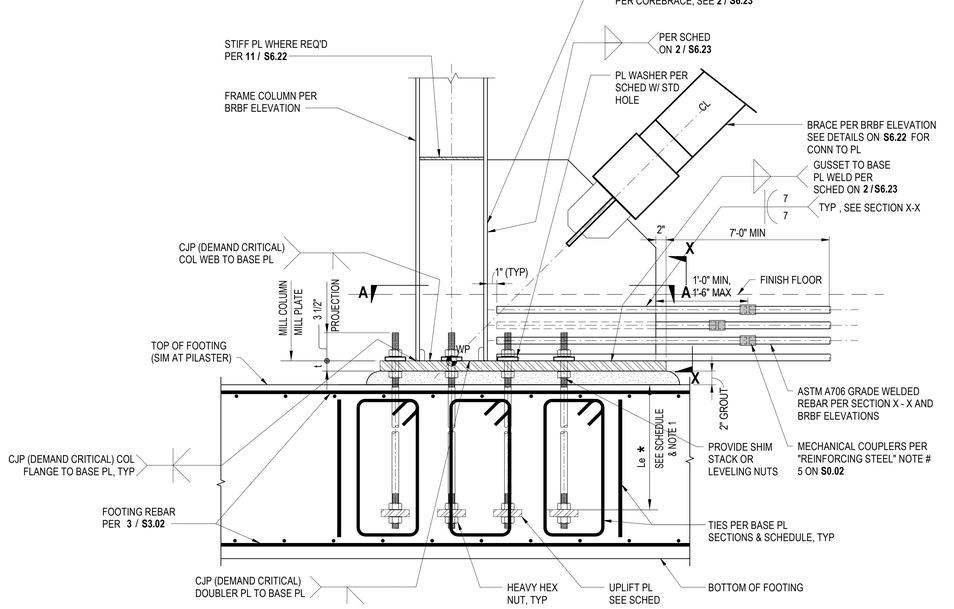

**BASE PLATE A** BP-A
**(SECTION A-A)**

| SCHEDULE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| COLUMN SIZE | MARK | BASE PLATE (ASTM A572 GR. 50) ( L x W x t ) SEE NOTE 2 | ANCHOR BOLTS (F1554, GR105) | ANCHOR BOLTS EMBEDMENT LENGTH * ( Le ) MIN SEE NOTE 1 | UPLIFT PLATE ( Wu x tu ) | PLATE WASHER (GR50) ( L x W x t | TIES | REMARK |
| W12x120, W12x190 | BP-A | 39"x26"x1 3/4" | (9)-1 1/4" DIA | 22" | 5 1/2"x1 1/4" | 3 1/2"x3 1/2"x1/2" | (10)-#5 TIES | SECTION A-A |
| W12x106 / W12x120 | BP-B1 | 39"x28"x1 3/4" | (9)-1 1/4" DIA | 22" | 5 1/2"x1 1/4" | 3 1/2"x3 1/2"x1/2" | (10)-#5 TIES | SECTION B-B |
| W12x136 | BP-B2 | 39"x28"x1 3/4" | (9)-1 1/4" DIA | 36" | 5 1/2"x1 1/4" | 3 1/2"x3 1/2"x1/2" | NONE | SECTION B-B |

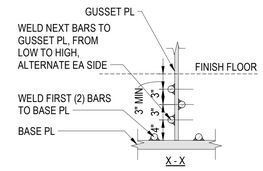
NOTES:
1. Le SHOWN IS MINIMUM EMBEDMENT LENGHT - EXTEND ANCHOR BOLTS AS SHOWN ON ELEVATION
2. BASE PLATES TO BE EXTENDED AS REQ'D TO ACCOMMODATE GUSSET PLATE LENGHTS. SEE PLAN VIEW OF BASE PLATE DETAILS AND GUSSET PLATE DIMS PER **2 / S6.23**
3. PLATE WASHER SHALL HAVE STANDARD HOLE.




TYPICAL BRACE CONDITION AT WF-COLUMN ORIENTED IN WEAK-AXIS (B)




TYPICAL BRACE CONDITION AT WF-COLUMN ORIENTED STRONG-AXIS (A)




**WELDED REBAR NOTES:**
1. SEE BRBF ELEVATIONS SHOWING ☒ REFERRING TO REQUIRED NUMBER OF #10 WELDED REBAR AT EACH BRBF COLUMN BASE.
2. WHERE WELDED REBAR LENGTH OVERLAPPING WITH GUSSET PL IS LONGER THAN REQD WELD LENGTH, PROVIDE WELD ALONG ENTIRE LENGTH TO WITHIN 3/4" OF END OF REBAR

## TYPICAL BRBF WIDE-FLANGE COLUMN BASE PLATE SCHEDULE AND DETAILS

1
1" = 1'-0"

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www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER ROBERT J. HALE III No. S4892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

## NOTES

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

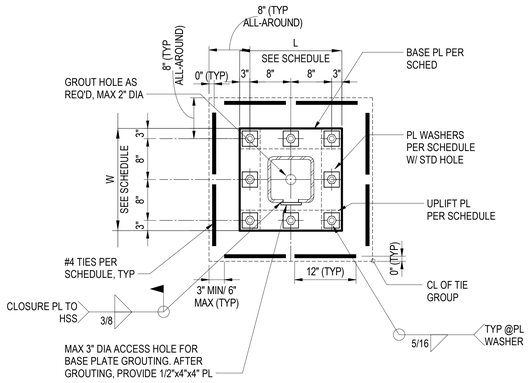
SHEET NAME:
**BRBF SCHEDULE AND DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

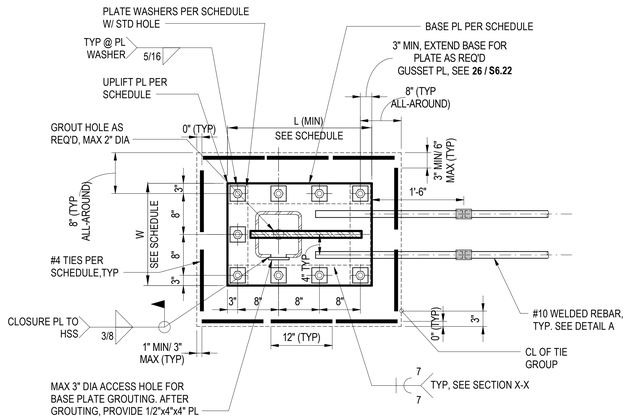
**S6.11**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY

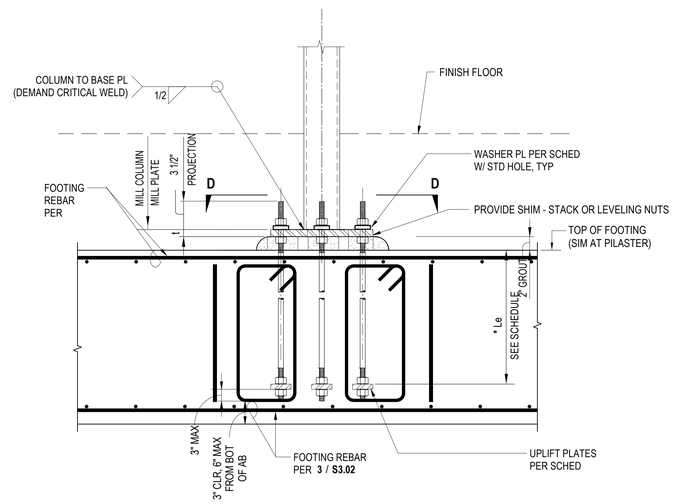



BASE PLATE D (SECTION D-D) BP-D

**NOTE:**
ANCHOR BOLTS AND UPLIFT PLATE PATTERN AND ORIENTATION SHALL FOLLOW ORIENTATION OF COLUMN FLANGE & SHALL BE PARALLEL TO COLUMN FLANGE



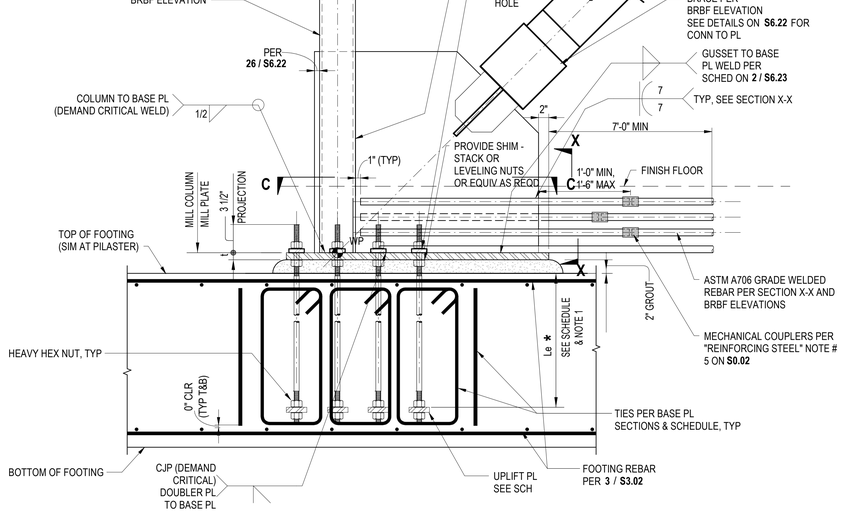

BASE PLATE C (SECTION C-C) BP-C



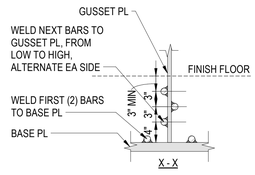

HSS COLUMN CONDITION
BRBF WHERE BRACE DOES NOT OCCUR D

| SCHEDULE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| COLUMN SIZE | MARK | BASE PLATE (ASTM A572 GR 50) L x W x t | ANCHOR BOLTS (F1554, GR105) | ANCHOR BOLTS EMBEDMENT LENGTH * Le ) MIN SEE NOTE 1 | UPLIFT PLATE ( Wu x tu ) | PLATE WASHER (GR50) L x W x t | TIES | REMARK |
| HSS7x7, HSS8x8, HSS9x9, HSS10x10 | BP-C1 | 30"x22"x1 3/4" | (9)-1 1/4" DIA | 22" | 5 1/2"x1" | 3 1/2"x3 1/2"x1/2" | (10)-#4 TIES | SECTION C-C |
| HSS7x7 | BP-C2 | 30"x22"x1 3/4" | (9)-1 1/4" DIA | 36" | 5 1/2"x1" | 3 1/2"x3 1/2"x1/2" | NONE | SECTION C-C |
| HSS7x7, HSS8x8, HSS9x9, HSS10x10 | BP-D1 | 22"x22"x1 3/4" | (8)-1 1/4" DIA | 22" | 5 1/2"x1" | 3 1/2"x3 1/2"x1/2" | (10)-#4 TIES | SECTION D-D |
| HSS7x7 | BP-D2 | 22"x22"x1 3/4" | (8)-1 1/4" DIA | 36" | 5 1/2"x1" | 3 1/2"x3 1/2"x1/2" | NONE | SECTION D-D |

NOTES:
1. Le SHOWN IS MINIMUM EMBEDMENT LENGHT - EXTEND ANCHOR BOLTS AS SHOWN ON ELEVATION
2. BASE PLATES TO BE EXTENDED AS REQ'D TO ACCOMMODATE GUSSET PLATE LENGHTS. SEE PLAN VIEW OF BASE PLATE DETAILS AND GUSSET PLATE DIMS PER **2 / S6.23**
3. PLATE WASHER SHALL HAVE STANDARD HOLE.




TYPICAL BRACE CONDITION AT HSS COLUMN C




**WELDED REBAR NOTES:**
1. SEE BRBF ELEVATIONS SHOWING ⓧ REFERRING TO REQUIRED NUMBER OF #10 WELDED REBAR AT EACH BRBF COLUMN BASE.
2. WHERE WELDED REBAR LENGTH OVERLAPPING WITH GUSSET PL IS LONGER THAN REQD WELD LENGTH, PROVIDE WELD ALONG ENTIRE LENGTH TO WITHIN 3/4" OF END OF REBAR

**TYPICAL BRBF HSS COLUMN BASE PLATE SCHEDULE AND DETAILS** | **1** 1" = 1'-0"

PLEASE RECYCLE

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SB Job No:22576
REGISTERED PROFESSIONAL ENGINEER ROBERT HALE KNIGHT S-6882 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA


**NOTES**

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**BRBF SCHEDULE AND DETAILS**

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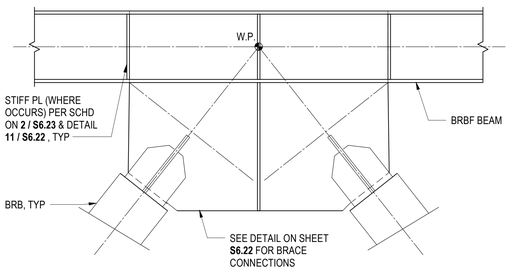
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SHEET:

**S6.12**

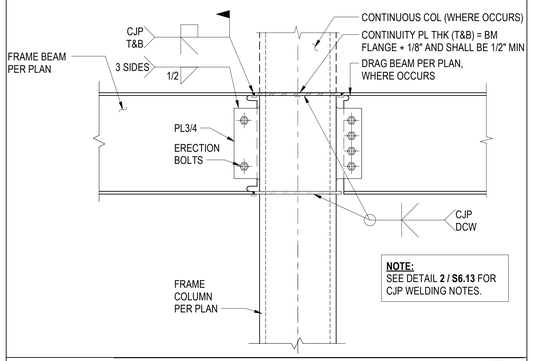
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THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE ACCORDINGLY

FOR TYPICAL CONNECTION SCHEDULE, SEE ELEVATIONS SHEET **S6.21**

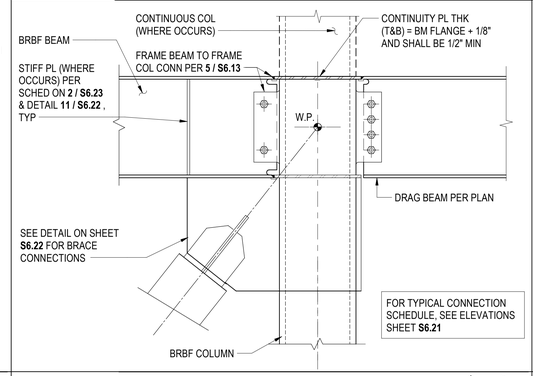



## BRBF INVERTED-V CONNECTION DETAIL 6 NTS




**NOTE:**
SEE DETAIL **2 / S6.13** FOR CJP WELDING NOTES.

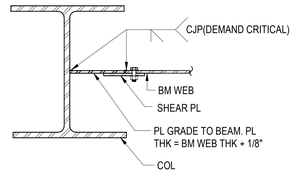
## TYPICAL BEAM TO HSS COLUMN MOMENT CONNECTION DETAIL 5 NTS



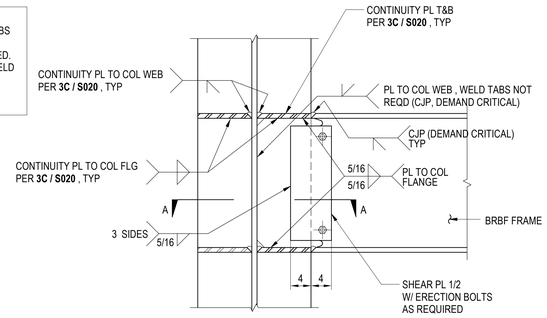

FOR TYPICAL CONNECTION SCHEDULE, SEE ELEVATIONS SHEET **S6.21**

## TYPICAL BRBF BRACE CONNECTION AT HSS COL DETAIL 4 NTS

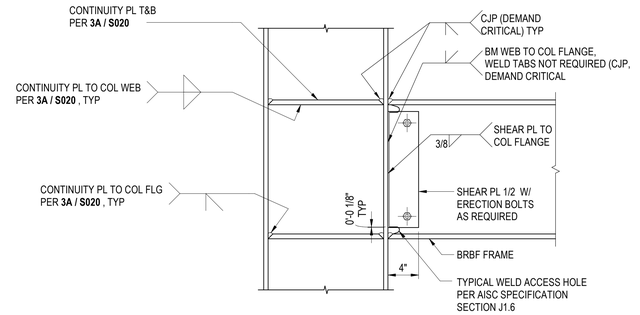
NOTES:
1. WHERE STEEL BACKING IS USED IN CJP BEAM FLANGE GROOVE WELDS, STEEL BACKING AND TABS SHALL BE REMOVED, EXCEPT THAT TOP FLANGE BACKING ATTACHED TO THE COLUMN BY A CONTINUOUS FILLET WELD ON THE EDGE BELOW THE CJP GROOVE WELD NEED NOT BE REMOVED.
2. FOLLOWING THE REMOVAL OF BACKING, THE ROOT PASS SHALL BE BACKGOUGED TO SOUND WELD METAL AND BACKWELDED WITH A 5/16" MINIMUM REINFORCING FILLET.
3. WELD TAB REMOVAL SHALL EXTEND TO WITHIN 1/8" OF THE BASE METAL.
4. CONTINUITY PLATE CLIPS SHALL COMPLY WITH AISC 341.




**SECTION AA**



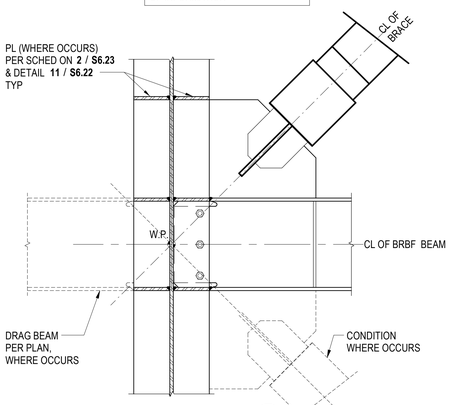

**BEAM TO COLUMN WEB** (B)




**BEAM TO COLUMN FLANGE** (A)

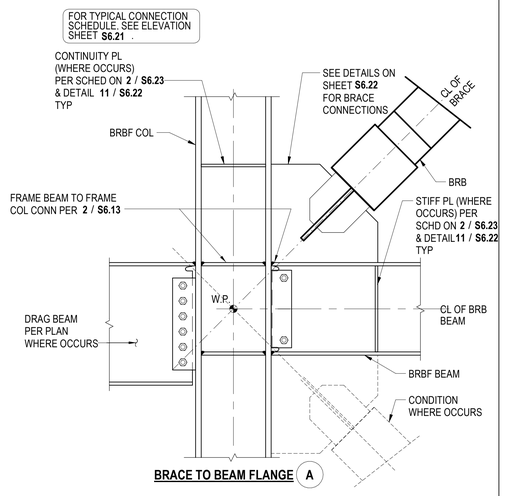
## TYP BRBF BEAM TO COLUMN MOMENT CONNECTION DETAILS 2 NTS

**NOTE:**
SEE **3A / S6.13** FOR REMAINDER OF INFORMATION




**BRACE TO COLUMN WEB** (B)

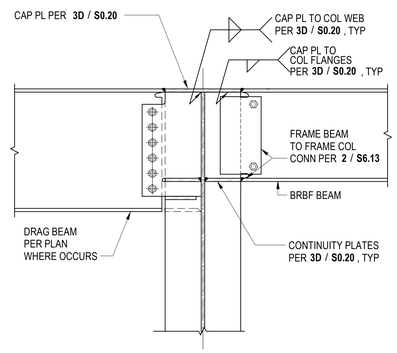
FOR TYPICAL CONNECTION SCHEDULE. SEE ELEVATION SHEET **S6.21** .



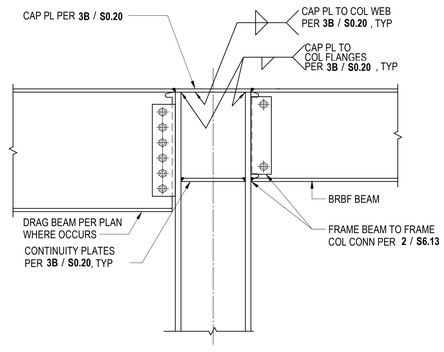

**BRACE TO BEAM FLANGE** (A)

**NOTE:**
AT TOP OF COLUMN CONDITION, REFER TO **1 / S6.13** SIM.

## TYPICAL BRBF BEAM AND COLUMN CONNECTIONS AT FLOOR LEVEL 3 NTS




BEAM TO COLUMN WEB (B)




**BEAM TO COLUMN FLANGE** (A)

## TYPICAL BRBF BEAM TO TOP OF COLUMN CONNECTORS 1 NTS

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER ROBERT HALE BRANCH 54892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**BRBF SECTION AND DETAILS**

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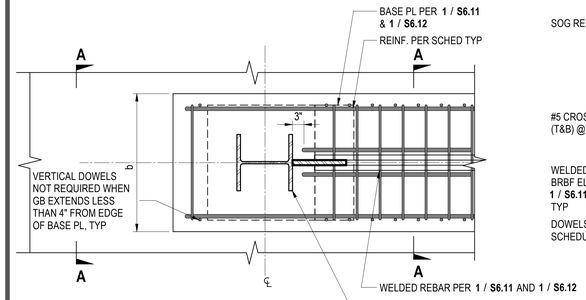
**S6.13**

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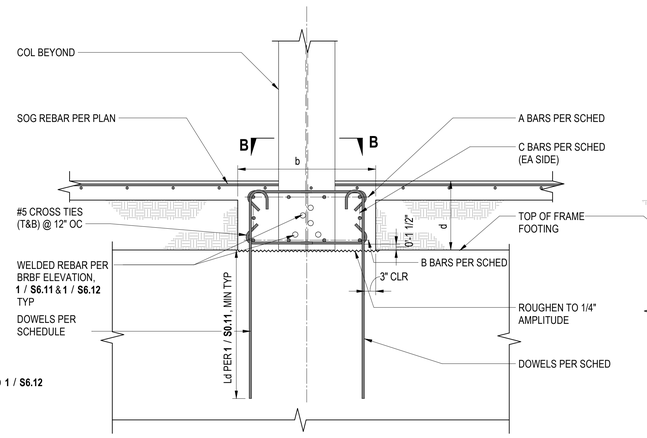
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY

## CONCRETE DRAG BEAM SCHEDULE

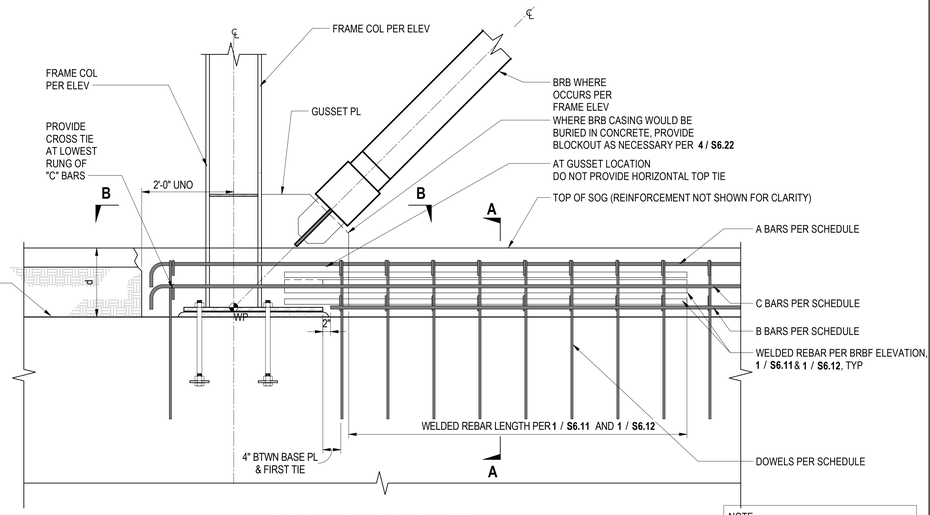
| MARK | SIZE (INCHES) DEPTH (d) | SIZE (INCHES) WIDTH (b) | PRIMARY LONGITUDINAL REINFORCING A BARS | PRIMARY LONGITUDINAL REINFORCING B BARS | PRIMARY LONGITUDINAL REINFORCING C BARS (EA SIDE) | DOWELS | REMARKS |
|---|---|---|---|---|---|---|---|
| CB-1 | 18" | 30" | (4)-#6 | (4)-#6 | (1)-#6 | 2 LEGS #5 @12" | SEE **1** / **S3.02**, SECTION A-A AND B-B |
| CB-1A | 24" | 30" | (4)-#6 | (4)-#6 | (1)-#6 | 2 LEGS #5 @12" | SEE **1** / **S3.02**, SECTION A-A AND B-B |
| CB-2 | 18" | 30" | (4)-#7 | (4)-#7 | (1)-#7 | 2 LEGS #5 @12" | SEE **1** / **S3.02**, SECTION A-A AND B-B |




SECTION B-B




SECTION A-A




TYPICAL COL CONC BEAM DETAIL

NOTE:
SOG AND FOOTING REINFORCEMENT NOT SHOWN FOR CLARITY.

NOTES:
1. SEE **1** / **S3.02** FOR BALANCE OF INFO
2. NO PIPES, CONDUIT, OR OTHER PENETRATIONS ARE ALLOWED THROUGH CONCRETE DRAG BEAMS.

**AT CB-1 AND CB-2 CONCRETE BEAMS**

**CONCRETE DRAG BEAM DETAIL** 1 NTS

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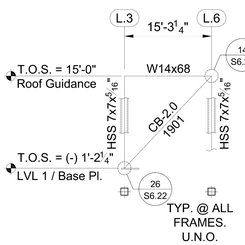
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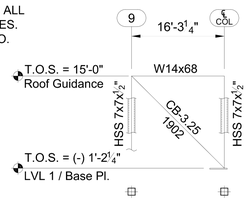
**S6.14**


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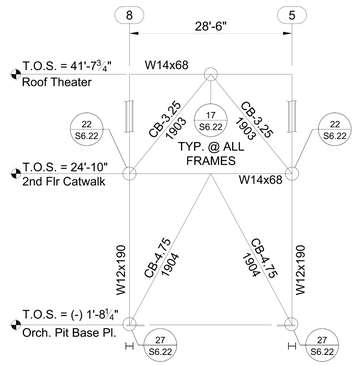
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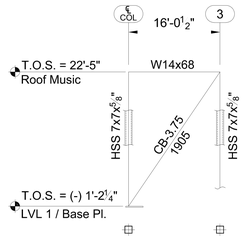

## GRID 11
(BRBF-5)



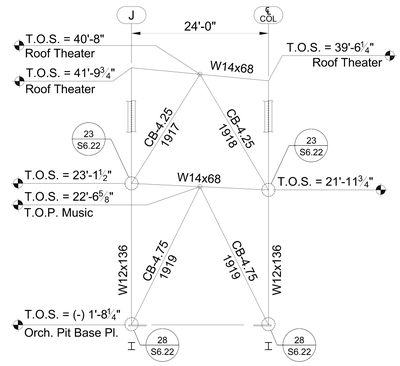

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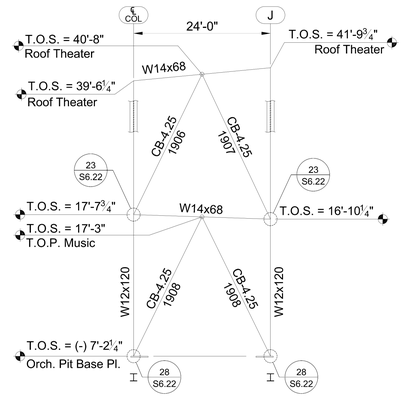

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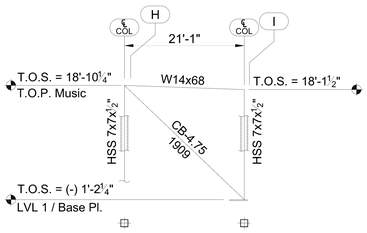

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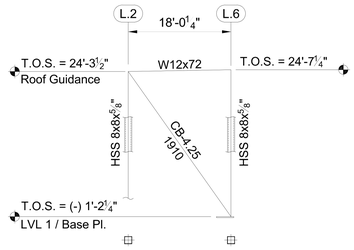

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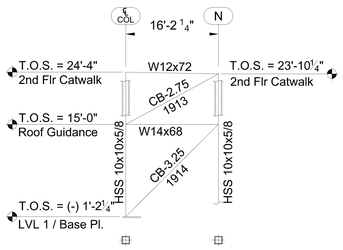

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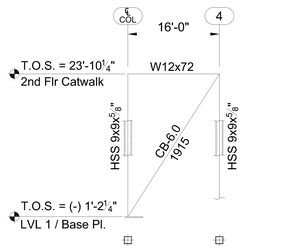

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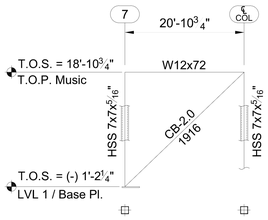

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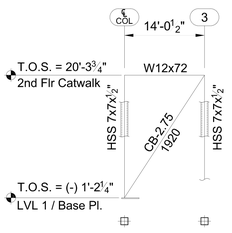

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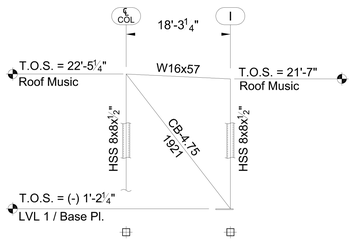

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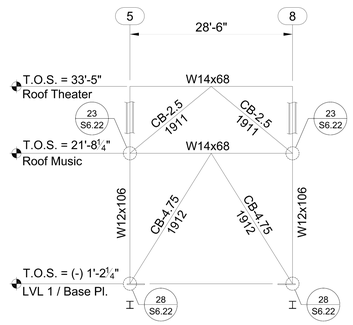

## GRID C±
(BRBF-14)




## GRID H
(BRBF-13)




## GRID 1
(BRBF-12)




## GRID D
(BRBF-3)

CoreBrace
20 YEARS 2003 - 2023
SUPERIOR SEISMIC PERFORMANCE
5789 W. Wells Park Rd.
West Jordan, Utah 84081

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CoreBrace Engineering Design Responsibilities are limited to the following:
- Complete BRB design based on $A_{sc}$ provided by E.O.R.
- Design connection of BRB to gusset.
- Design gusset connection to frame columns, beams and base plates.

General Notes:
1. See "Casing Buried in Concrete Detail" where concrete slab will interfere with required BRB stroke.
2. Structural steel detailer and erection team to consider erectability constraints when determining piece erection sequencing and field welding versus shop welding of stiffeners and gussets.
3. Detail callouts are typical at the given frame location, UNO. See "CB" sheets for typical details.
4. Single-line diagrams do not necessarily represent WP axis of members, see details.
5. Member sizes, dimensions, elevations, and work point locations on CB sheets are shown for coordination only. Project documents shall govern. Verify in field as necessary.
6. See project documents for additional information; more stringent requirements on project documents shall govern.

## Abbreviations

| | | | | | |
|---|---|---|---|---|---|
| Abt | About | DIA | Diameter | NTS | Not to Scale |
| Approx | Approximate | DIM | Dimension | PL | Plate |
| Asc | Area of Steel Core | dc | Depth of column | Req'd | Required |
| bfb | Width of flange of beam | (E) | Existing | Sched | Schedule |
| bfc | Width of flange of column | EQ | Equal | SIM | Similar |
| Bldg | Building | FF | Finished Floor | SYM | Symetrical |
| Bm | Beam | FHG | Full-Height Gusset | Stiff | Stiffener |
| Bot | Bottom | Flng | Flange | tfb | Thickness of flange of beam |
| B.P. | Base Plate | Galv | Galvanized | tfc | Thickness of flange of column |
| BRB | Buckling-Restrained Brace | Gsst | Gusset | T&B | Top and Bottom |
| CB | CoreBrace | Info | Information | T.O.F. | Top of Footing |
| CJP | Complete Joint Penetration | LVL | Level | T.O.C | Top of Concrete |
| $C_L$ | Centerline | MAX | Maximum | twb | Thickness of web of beam |
| Col | Column | MIN | Minimum | TYP | Typical |
| Conc | Concrete | N&FS | Near and Far Side | UNO | Unless Noted Otherwise |
| Conn | Connection | Nom | Nominal | WP | WORK POINT |

## Symbols Legend:

| | |
|---|---|
| X / Y | X = BASE PL THICKNESS<br>Y = GROUT THICKNESS |
| ⌶ | INDICATES FRAMING OF GUSSET PL TO COLUMN WEB (WEAK AXIS) |
| ⊢ | INDICATES FRAMING OF GUSSET PL TO COLUMN FLANGE (STRONG AXIS) |
| □ | INDICATES FRAMING OF GUSSET PL TO HSS COLUMN (SLOT GUSSET THROUGH) |
| CB-XX | INDICATES BRB WITH CORE AREA SIZE OF XX $in^2$ |
| T.O.S. = X'-X" | INDICATES TOP OF STEEL BEAM ELEVATION |
| 19## | BRACE MARK IDENTIFICATION |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

saiful•bouquet structural engineers
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LICENSED PROFESSIONAL ENGINEER — JOSEPH ALEXANDER — STRUCTURAL — STATE OF CALIFORNIA
EXP 12/2024

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**BRB ELEVATION SHEET**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

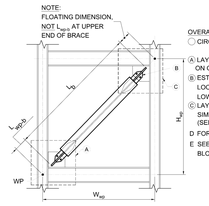
SHEET:

**S6.21**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

PLEASE RECYCLE

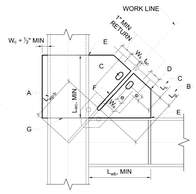
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH (1") ON ORIGINAL SHEET. ADJUST SCALES ON REMAINING SHEETS ACCORDINGLY



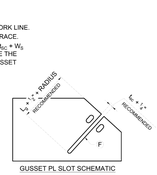

OVERALL PROCEDURE:
○ CIRCLED NOTES ARE KEYED ON DETAIL.

A LAYOUT BOTTOM BRACE CONNECTION ON GUSSET. (SEE DETAIL 2/-)
B ESTABLISH UPPER-MOST TIP OF BRACE, LOCATED AT DISTANCE $L_B$ FROM LOWER-MOST TIP OF BRACE.
C LAYOUT UPPER GUSSET CONNECTION SIMILAR TO LOWERGUSSET CONNECTION. (SEE DETAIL 2/-)
D FOR WELDING PROCEDURES SEE DETAIL 3/-.
E SEE DETAIL 4/- WHERE CONCRETE BLOCKOUT WILL BE REQUIRED.

**WELDED GUSSET OVERALL LAYOUT PROCEDURE** 1
SCALE: NTS



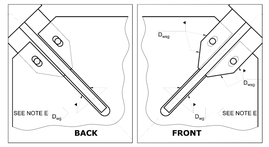

GUSSET LAYOUT PROCEDURE:
A ESTABLISH LOCATION OF BOTTOM TIP OF BRACE ALONG WORK LINE.
B ESTABLISH THE GUSSET EDGE DISTANCE $L_E$ FROM TIP OF BRACE.
C COME BACK DOWN ALONG THE WORK LINE $L_E$ AND OVER $\frac{1}{2}t_{wp}$ + $W_E$ TO ESTABLISH THE CORNER AND THEN BACK "e" TO LOCATE THE CENTER OF THE BOLT HOLE AS SHOWN. BOLT HOLES IN GUSSET ARE OVERSIZED OR LONG SLOTTED.
D ($t_{bf}$ + 2"$W_E$) + 2x MIN RETURN, GUSSET EDGE WIDTH PERPENDICULAR TO WORK LINE.
E RETURN TO BEAM AND/OR COLUMN AND VERIFY MIN WELD LENGTH (INCLUDING DEDUCTIONS FOR CLIP AND WELD START/STOP) IS MAINTAINED.
F ESTABLISH THE SLOT LENGTH AND WIDTH. RECOMMENDED WIDTH = $L_{BS}$ + $\frac{1}{8}$", RECOMMENDED LENGTH = $L_{BS}$ + $\frac{1}{2}$" + RADIUS
G SLOT GUSSET THROUGH COLUMN. INDICATED WELD SIZE REQUIRED ON BOTH SIDES OF COLUMN AND BOTH SIDES OF GUSSET (4 TOTAL WELDS)



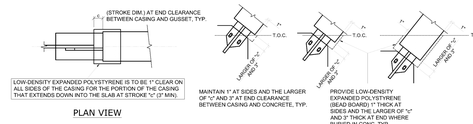

**WELDED HSS GUSSET LAYOUT PROCEDURE** 2
SCALE: NTS

GENERAL WELDING NOTES:
○ Circled notes are keyed on detail.

A All welding shall be in accordance with AWS D1.1 (latest edition) and the AWS D1.8 Seismic Supplement using a minimum 70XX electrode. Welding procedures shall be submitted for review and approval.
B The Welder shall be qualified in accordance with AWS D1.1 for the process and position of welding. Where welding conditions specified in AWS D1.8 apply, the Welder shall also be qualified with supplemental testing requirements found therein. All welder qualification and certification records shall be made available for review by the QA Agency Inspector and CoreBrace upon request.
C All welding shall be sequenced in a manner that will control distortion and eliminate undue loads or stresses in connections. The Installer shall maintain a welding and sequencing plan for BRB installation available for review. CoreBrace requires alternating from one side to the other side of the welded joint as part of sequencing the welding of the connection. Maintaining preheat and inter-pass temperatures with WPS specified values shall be strictly adhered to.
D Oversized welds shall be avoided. Welds over 25% of that specified in the drawings and contract documents shall be considered rejectable, CoreBrace shall be notified, and steps shall be taken to document and correct the issue.
E Upsize weld $D_{WD}$ as necessary to bridge slot as set forth in AWS D1.1.



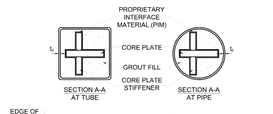

**BRB TO GUSSET WELDING PROCEDURE** 3
SCALE: NTS

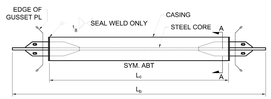



PLAN VIEW

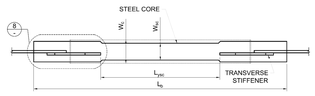
INDICATED CLEARANCES REPRESENT BLOCKOUT CONDITIONS REQUIRED FOR FINAL INSTALLED STATE OF BRB. LARGER BLOCKOUTS MAY BE REQUIRED FOR INSTALLATION. LOW-DENSITY EXPANDED POLYSTYRENE PROVIDED BY OTHERS.

**BRB CASING BURIED IN CONCRETE - TYPICAL DETAIL** 4
SCALE: NTS



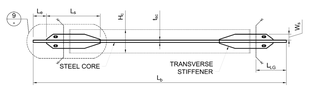




**TYPICAL CORE AND CASING CONFIGURATION** 5
SCALE: NTS



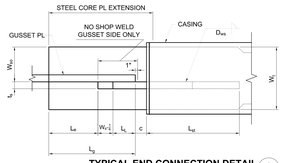

PLAN VIEW

**TYPICAL CORE PLATE DETAIL** 6
SCALE: NTS



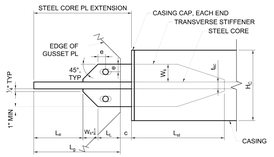

ELEVATION VIEW

**TYPICAL CORE PLATE DETAIL** 7
SCALE: NTS




PLAN VIEW

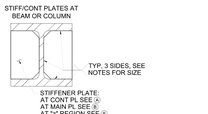
**TYPICAL END CONNECTION DETAIL** 8
SCALE: NTS




ELEVATION VIEW

**TYPICAL END CONNECTION DETAIL** 9
SCALE: NTS

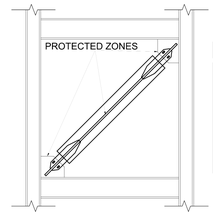
NOTE: BOLT HOLES IN STIFF ARE STANDARD HOLES.




NOTES:
A FOR CONTINUITY PLATE THICKNESS ($t_{cont}$) PROVIDE $t_s$ = $\frac{1}{4}$" MINIMUM THICKNESS USE $\frac{5}{16}$ FILLET WELD SIZE
B FOR STIFFENER THICKNESS REQUIREMENTS, SEE CONNECTION SCHEDULE (MAIN AND AT "z"): USE $\frac{5}{16}$" FILLET WELD FOR THICKNESSES < 1.25", $\frac{7}{16}$" FILLET WELD FOR THICKNESSES < 2.0", UNO FOR STIFF PLATES > 2" CONTACT COREBRACE FOR FILLET WELD SIZE.

**STIFF/CONT PL TO MEMBER** 11
SCALE: NTS

**NOT USED** 12
SCALE: NTS




SHADED REGIONS INDICATE PROTECTED ZONES

BRB PROTECTED ZONES SHALL INCLUDE THE STEEL CORE AND CONNECTION ELEMENTS AND SHALL SATISFY THE REQUIREMENTS OF SECTION F4.5c OF AISC 341. ADDITIONALLY, ATTACHMENTS WHICH PENETRATE THE CASING (SCREWS, PAF, ETC) OR ANY ATTACHMENT SUPPORTING OVER 50 LBS SHALL BE APPROVED BY THE ENGINEER OF RECORD AND COREBRACE.

**PROTECTED ZONES - AISC 341** 13
SCALE: NTS

GENERAL NOTES:
G1. SEE PROJECT DRAWINGS FOR ADDITIONAL INFORMATION
G2. DIMENSIONS AND WP LOCATIONS FROM PROJECT DRAWINGS GOVERN. CONTACT COREBRACE PRIOR TO DETAILING IF ANY DISCREPANCIES ARE NOTED.
G3. CORE PL A36 SPECIAL (FY RANGE PROVIDED ON COREBRACE SCHEDULE)
G4. CASING A500 GR B FOR HSS AND A53 GR B FOR PIPE
G5. BRB LUG PLATE (TRANSVERSE STIFFENER) A572 GR 50
G6. GUSSET PL, GUSSET STIFFENER AND REPAD PL A572 GR 50 U.N.O.
G7. ALL STIFFENERS AND DOUBLER PL TO MATCH BEAM AND COLUMN GRADE.
G8. ALL ERECTION BOLTS TO BE A307 GR A MIN. ERECTION BOLT HOLES IN GUSSET ARE OVERSIZED OR LONG SLOTTED. ERECTION BOLT HOLES IN STIFF ARE STANDARD.

CONNECTION NOTES:
○ CIRCLED NOTES ARE KEYED ON CONNECTION DETAILS.

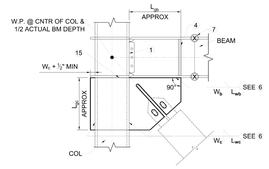
1 SEE STRUCTURAL DRAWINGS FOR BEAM/BASE PLATE CONNECTION, TYP.
2 SEE CONNECTION SCHEDULE FOR CONNECTION DIMENSIONS.
3 SEE COREBRACE SCHEDULE FOR BRB GEOMETRY DIMENSIONS.
4 MAIN STIFF PL EA SIDE AS REQ'D BY STRUCTURAL DRAWINGS OR AS INDICATED ON CONNECTION SCHEDULE. SEE DETAIL 11.
5 NOT USED
6 WELD BOTH SIDES. WHERE GUSSET PL IS LONGER THAN REQ'D WELD LENGTH, PROVIDE WELD ALONG ENTIRE LENGTH TO WITHIN $\frac{3}{4}$" OF EDGE OF PL.
7 TOP AND BOTTOM FLANGE LATERAL BRACING AS REQUIRED BY STRUCTURAL DRAWINGS.
8 NOT USED
9 PROVIDE $W_{S2}$ WELD IN "Z" REGION. IT IS ACCEPTABLE TO EXTEND THIS WELD OVER THE ENTIRE LENGTH OF THE GUSSET PLATE. ALTERNATIVELY, PROVIDE CJP GUSSET-TO-BEAM WELD. WHERE $W_{S2}$ IS NOT REQ'D, USE $W_S$.

11 THROUGH 14 NOT USED
15 SLOT GUSSET THROUGH COLUMN. INDICATED WELD SIZE REQUIRED ON BOTH SIDES OF COLUMN AND BOTH SIDES OF GUSSET (4 TOTAL WELDS).

BRB ENGINEERING DESIGN RESPONSIBILITY IS LIMITED TO THE FOLLOWING:
- COMPLETE BRB DESIGN BASED ON $A_{SC}$ PROVIDED IN STRUCTURAL DRAWINGS.
- DESIGN GUSSET PLATE AND CONNECTION OF BRB TO GUSSET PLATE.
- DESIGN CONNECTION OF GUSSET TO FRAME COLUMNS & BEAMS/BASE PLATES.

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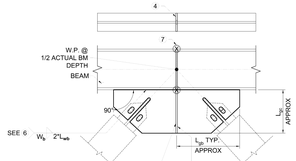



A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BRACE TOP** 14
SHOWN AT HSS COLUMN
SCALE: NTS

**NOT USED** 15
SCALE: NTS

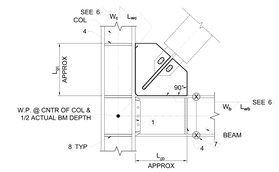
**NOT USED** 16
SCALE: NTS




A FOR STIFFENER THICKNESS REQUIREMENTS, SEE CONNECTION SCHEDULE (MAIN) USE $\frac{5}{16}$" FILLET WELD FOR THICKNESSES < 1.25", $\frac{7}{16}$" FILLET WELD FOR THICKNESSES < 2.0", UNO FOR STIFF PLATES > 2" CONTACT COREBRACE FOR FILLET WELD SIZE.

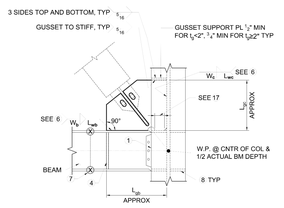
**TYPICAL CONNECTION AT CHEVRON TOP** 17
SCALE: NTS

**NOT USED** 18
SCALE: NTS




A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BRACE BOTTOM** 22
SHOWN AT STRONG AXIS COLUMN
SCALE: NTS



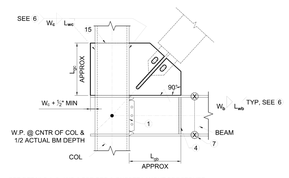

A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BRACE BOTTOM** 23
SHOWN AT WEAK AXIS COLUMN
SCALE: NTS

**NOT USED** 19
SCALE: NTS

**NOT USED** 20
SCALE: NTS

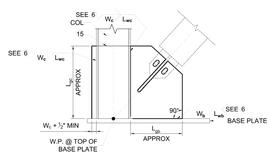
**NOT USED** 21
SCALE: NTS




A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

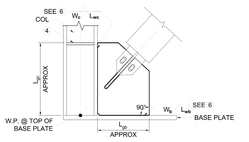
**TYPICAL CONNECTION AT BRACE BOTTOM** 24
(SHOWN AT HSS COLUMN)
SCALE: NTS

**NOT USED** 25
SCALE: NTS



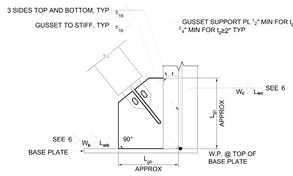

A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BASEPLATE** 26
SHOWN AT HSS COLUMN
WP AT TOP OF BASE PLATE
SCALE: NTS




A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BASEPLATE** 27
SHOWN AT STRONG AXIS COLUMN
WP AT TOP OF BASE PLATE
SCALE: NTS




A SEE DETAILS 1, 2, AND 3 FOR BRB & GUSSET LAYOUT PROCEDURE.

**TYPICAL CONNECTION AT BASEPLATE** 28
SHOWN AT WEAK AXIS COLUMN
WP AT TOP OF BASE PLATE
SCALE: NTS

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DATE: 10/15/2025

EXP 12/2024


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**ISSUE**

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES


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## NOTES

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**BRB AND CONNECTION DETAILS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

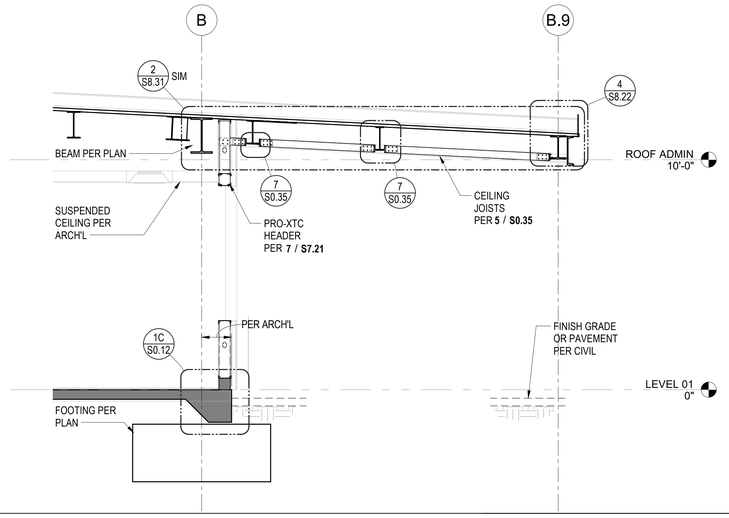
SHEET:
**S6.22**

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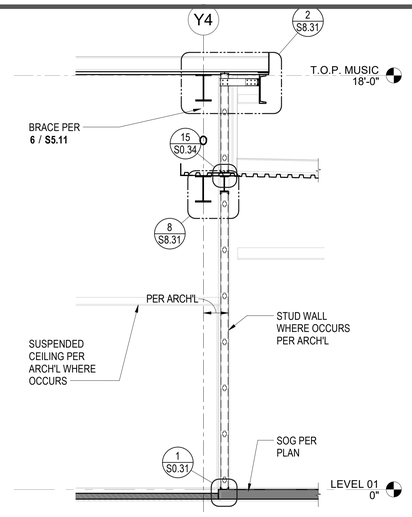
THE LINE SHOWN ABOVE IS EQUAL TO ONE INCH ON ORIGINAL DRAWINGS. ADJUST SCALES ACCORDINGLY

| | | |

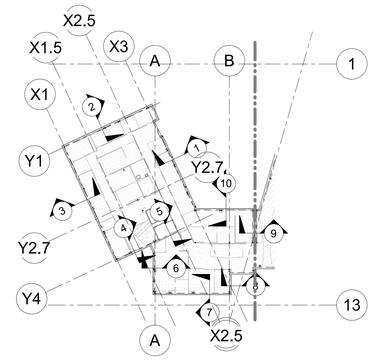
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWINGS. IF NOT ADJUST SCALES ACCORDINGLY



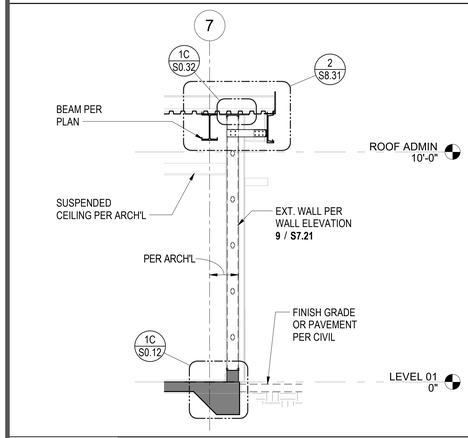

**WALL SECTION 8** 3/8" = 1'-0"



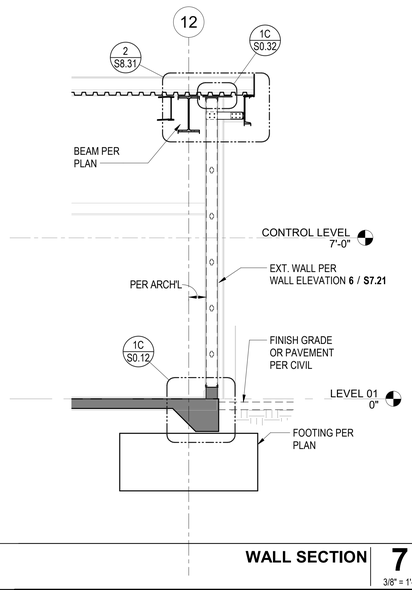

**WALL SECTION 5** 3/8" = 1'-0"



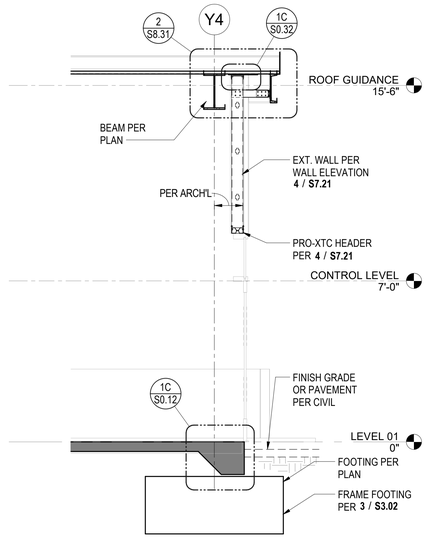

**KEYPLAN**



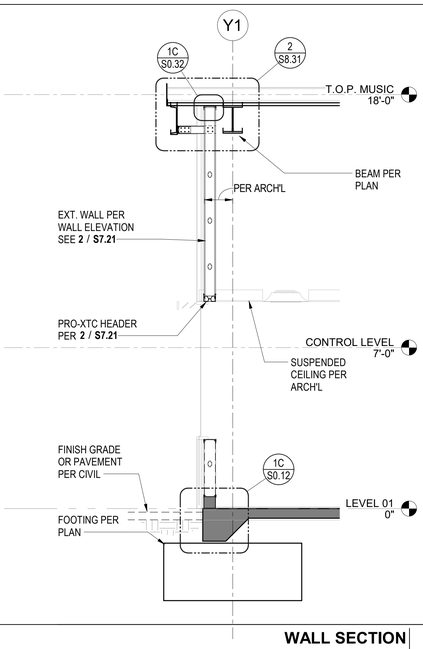

**WALL SECTION 10** 3/8" = 1'-0"



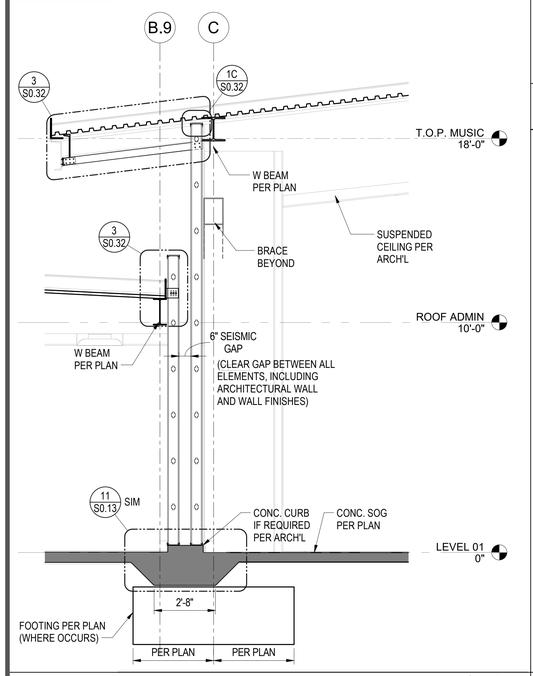

**WALL SECTION 7** 3/8" = 1'-0"



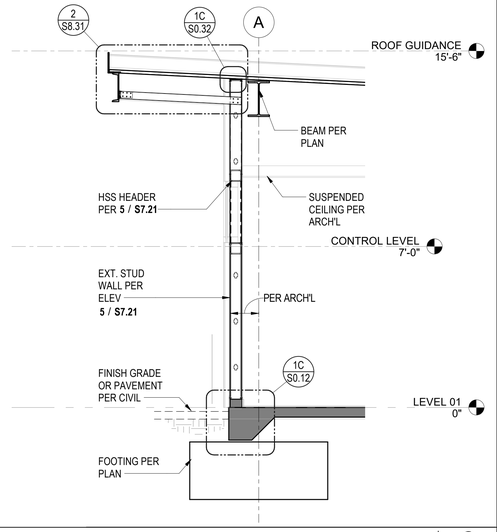

**WALL SECTION 4** 3/8" = 1'-0"



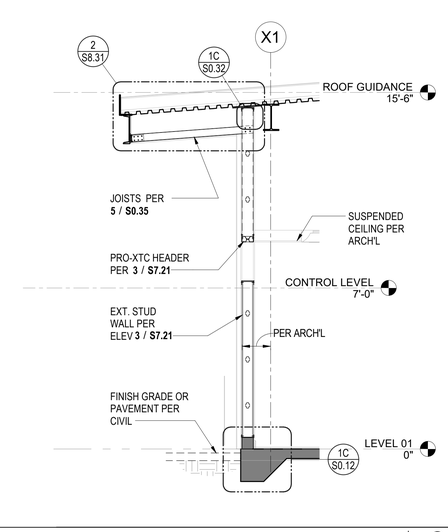

**WALL SECTION 2** 3/8" = 1'-0"



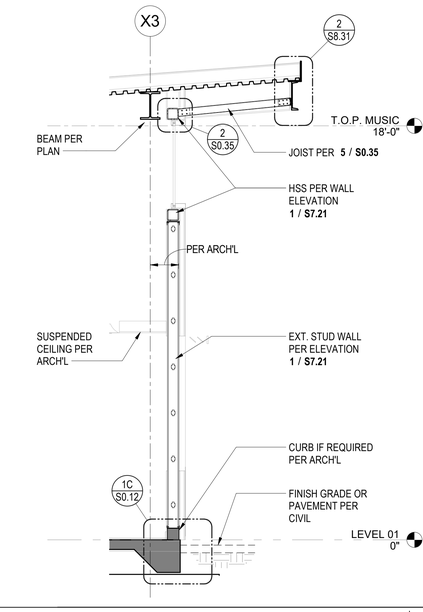

**WALL SECTION 9** 3/8" = 1'-0"




**WALL SECTION 6** 3/8" = 1'-0"




**WALL SECTION 3** 3/8" = 1'-0"




**WALL SECTION 1** 3/8" = 1'-0"

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## KEYNOTES

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Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

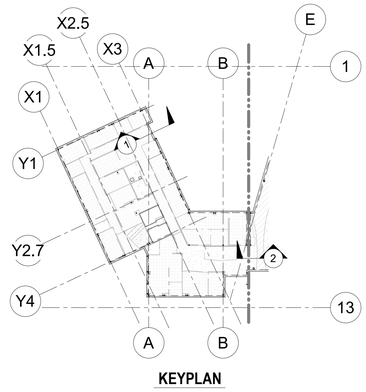
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**S7.11**

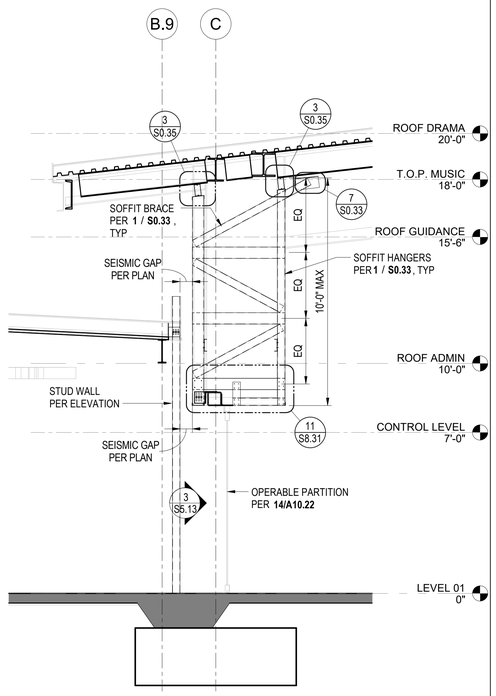
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PLEASE RECYCLE

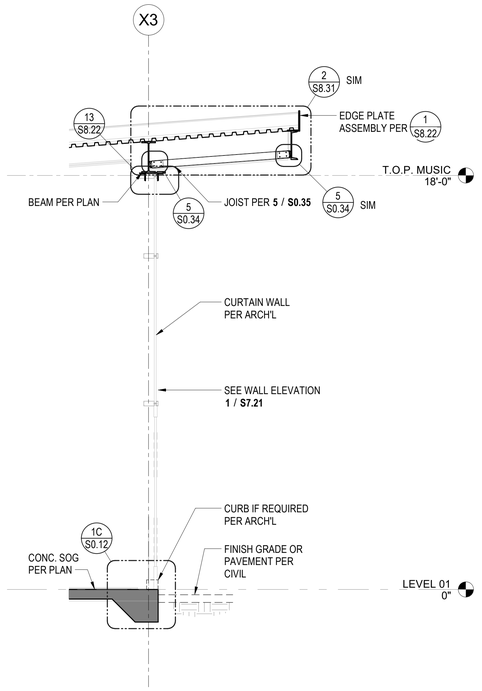
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




KEYPLAN




WALL SECTION 2 — 3/8" = 1'-0"




WALL SECTION 1 — 3/8" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — ROBERT MICHAEL RANDALL — 54892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

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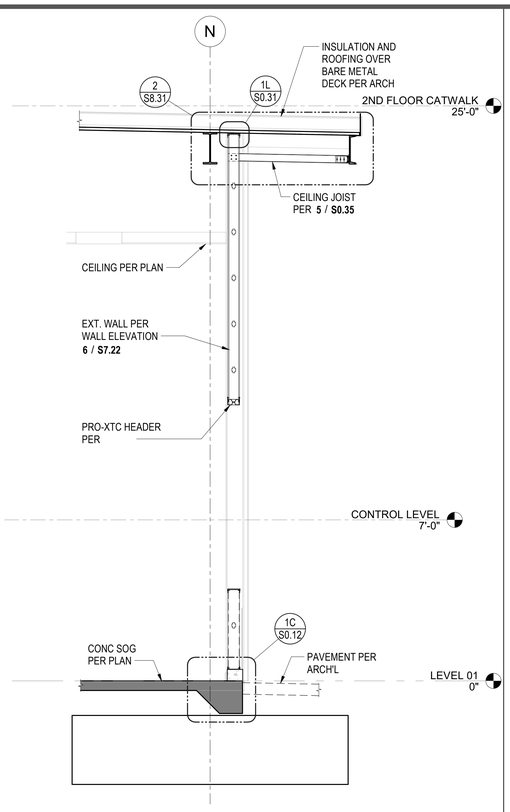
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**S7.12**

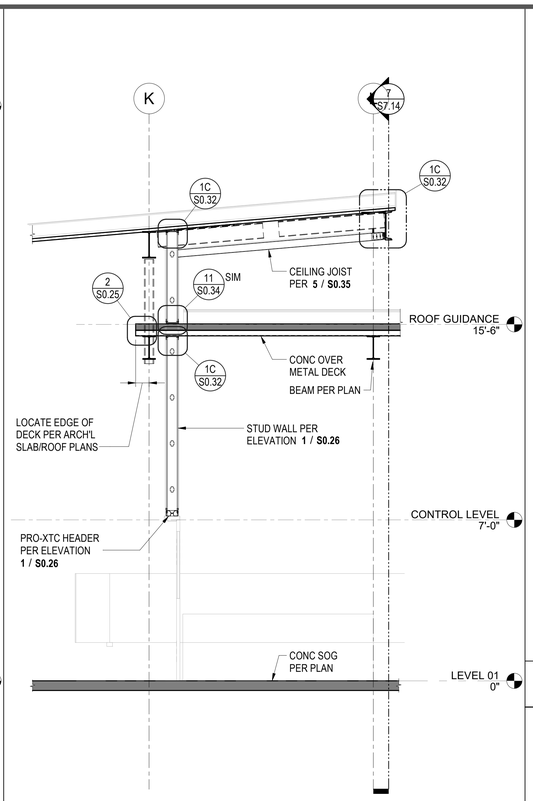
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PLEASE RECYCLE

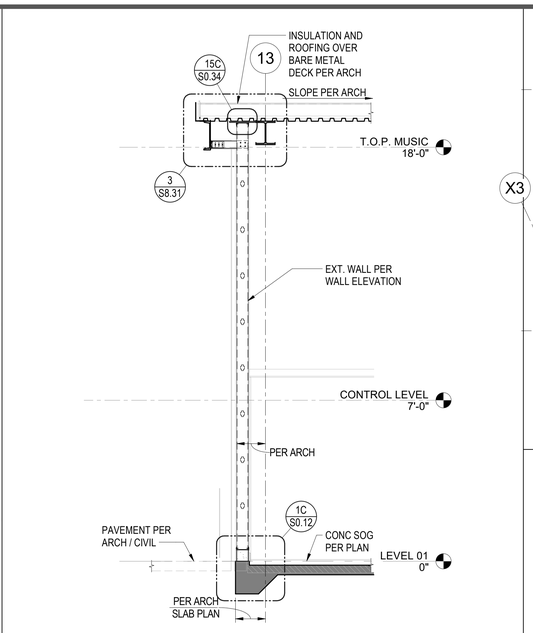
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED



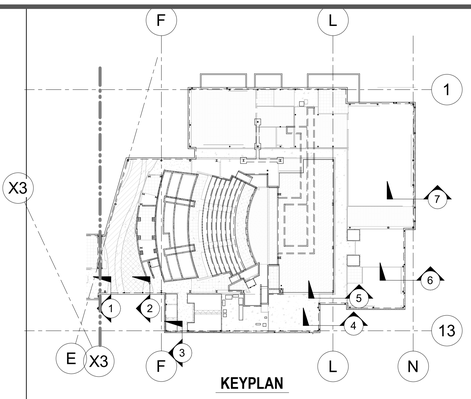

**WALL SECTION 7** 3/8" = 1'-0"



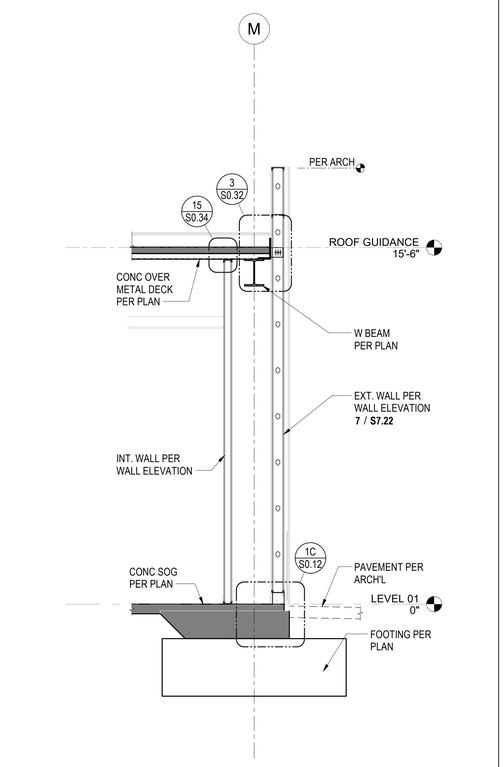

**WALL SECTION 5** 3/8" = 1'-0"



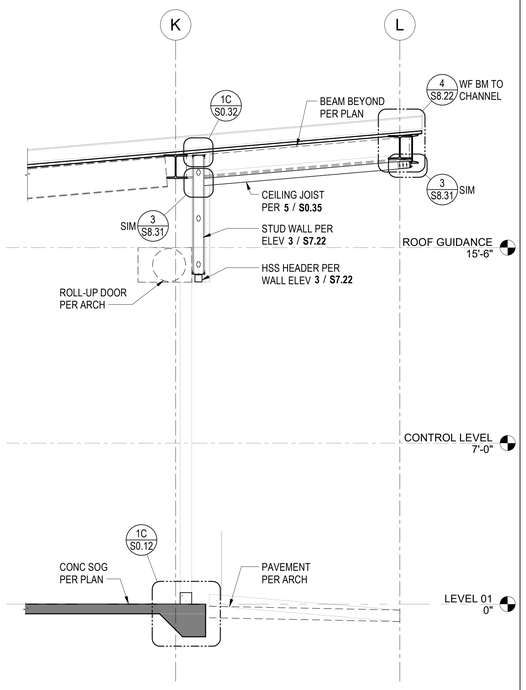

**WALL SECTION 3** 3/8" = 1'-0"



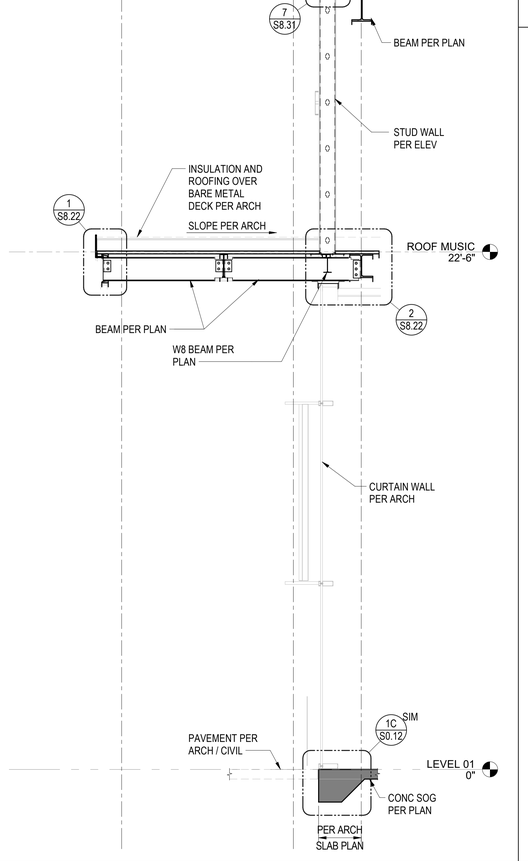

**KEYPLAN**



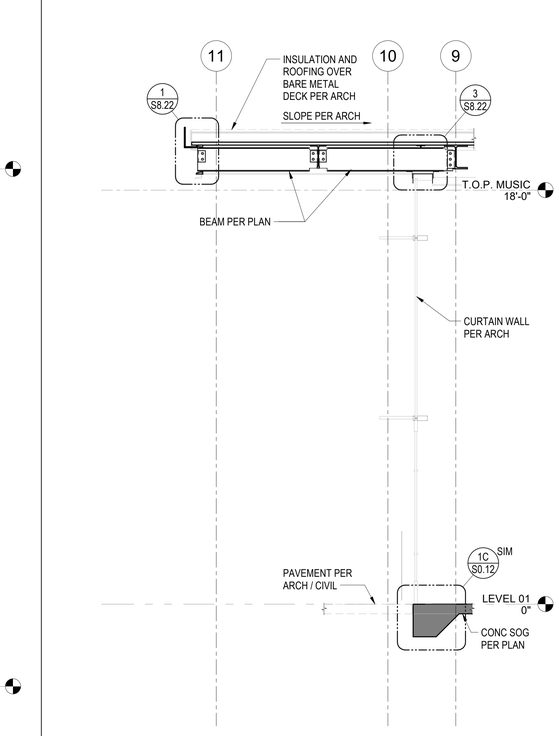

**WALL SECTION 6** 3/8" = 1'-0"




**WALL SECTION 4** 3/8" = 1'-0"




**WALL SECTION 2** 3/8" = 1'-0"




**WALL SECTION 1** 3/8" = 1'-0"

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SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — TOM ERIC HALE — No. S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

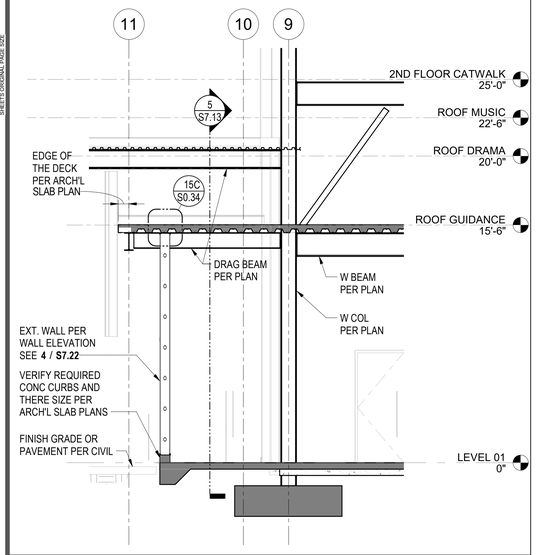
| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

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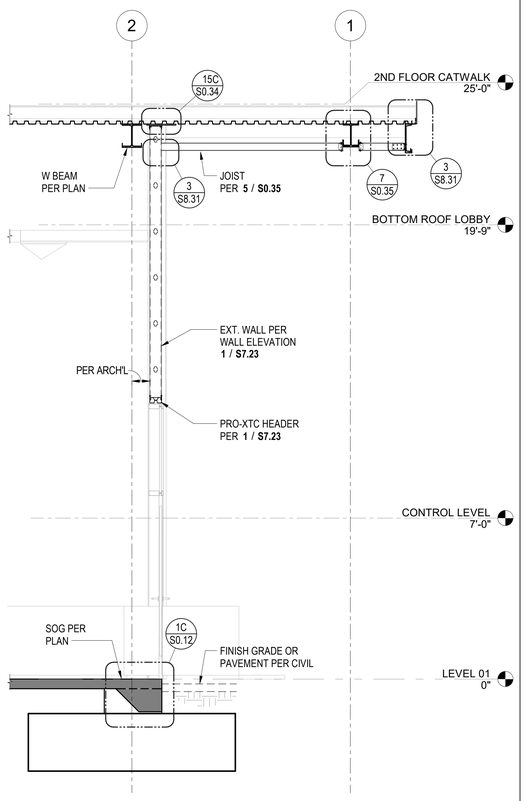
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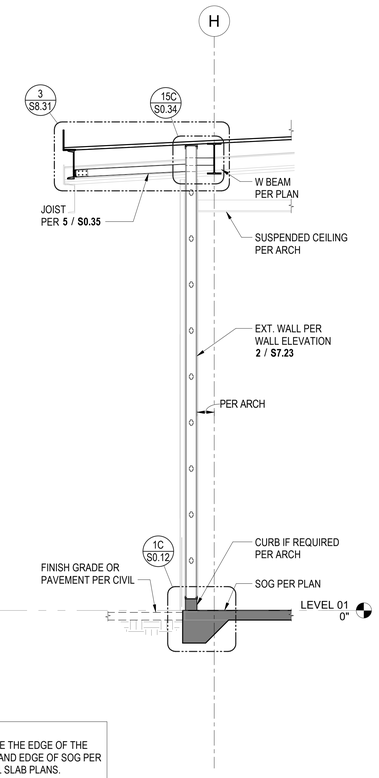
PLEASE RECYCLE




**WALL SECTION 7** 1/4" = 1'-0"

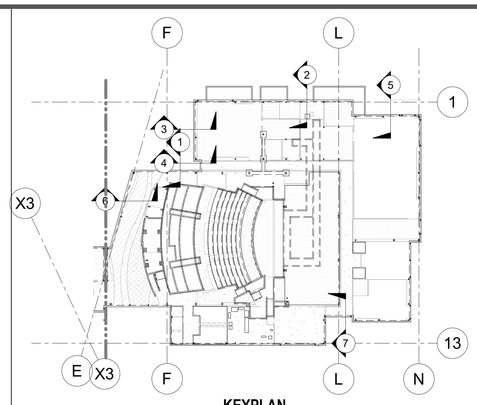



**WALL SECTION 5** 3/8" = 1'-0"

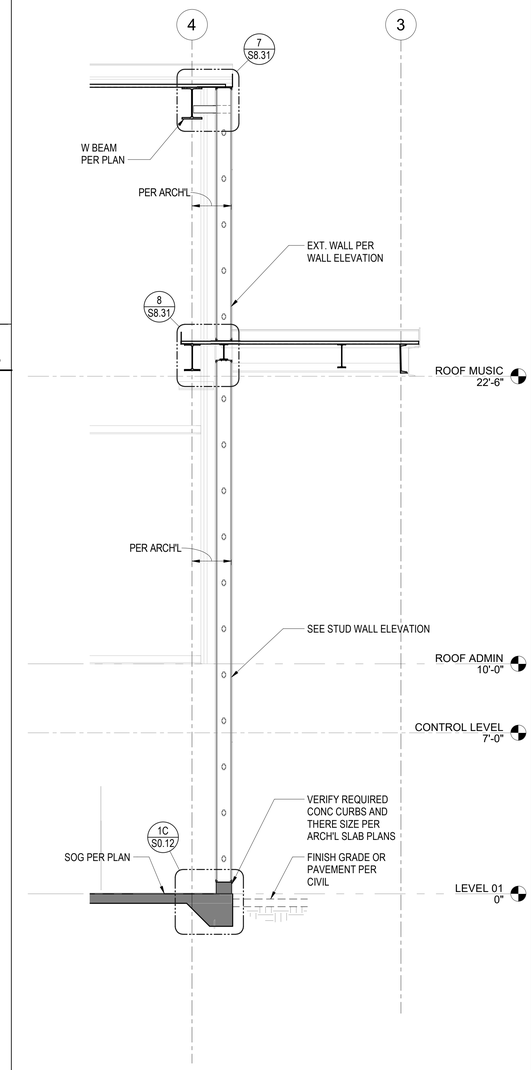


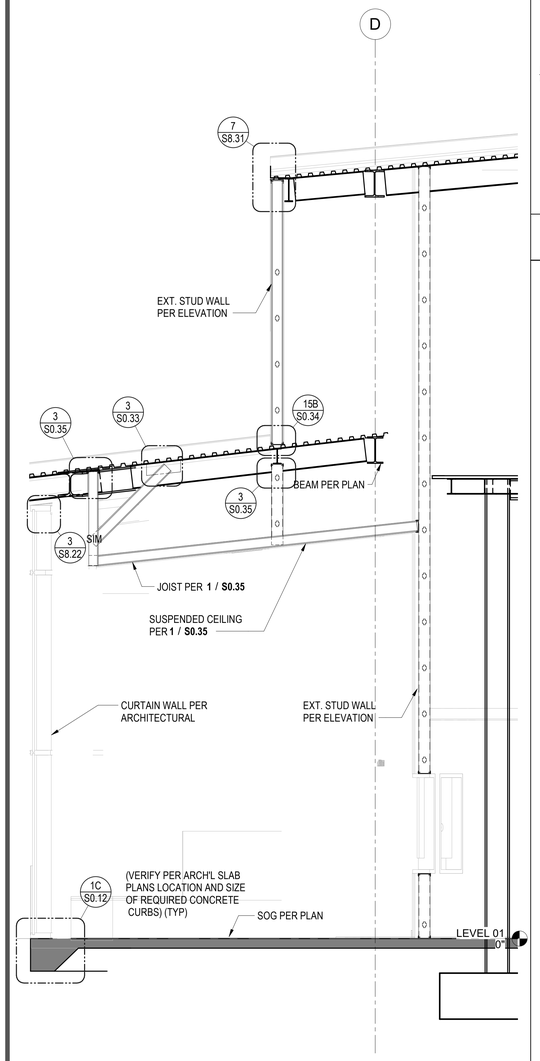

**NOTE:**
LOCATE THE EDGE OF THE ROOF AND EDGE OF SOG PER ARCH'L SLAB PLANS.

**WALL SECTION 3** 3/8" = 1'-0"

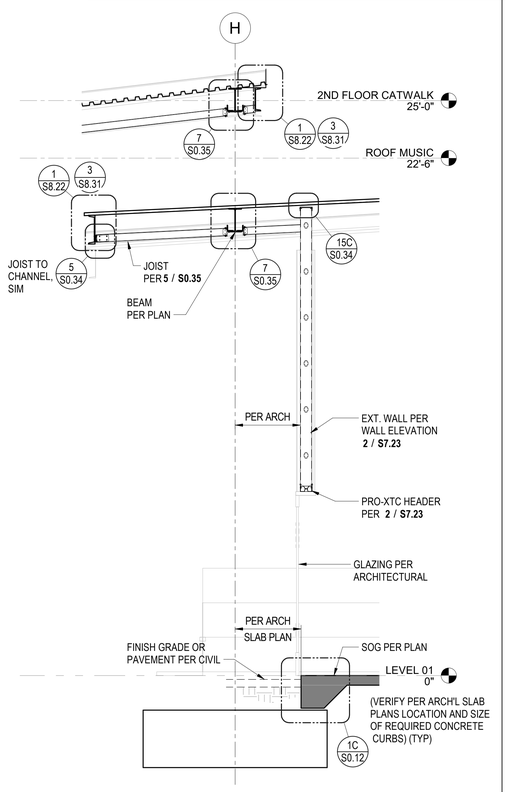



**KEYPLAN**

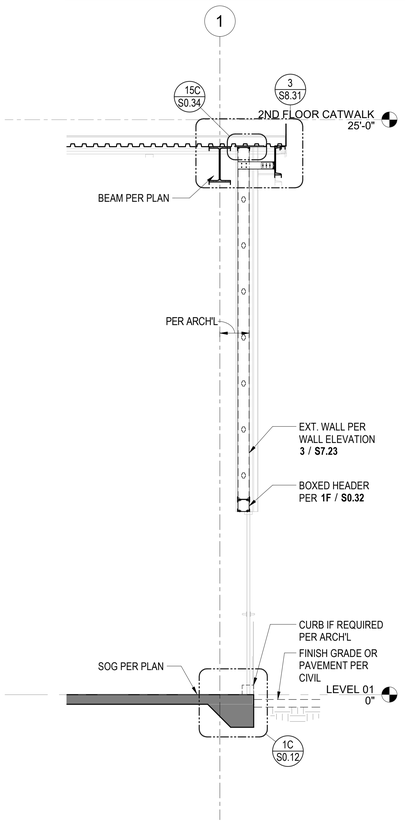



**WALL SECTION 6** 3/8" = 1'-0"




**WALL SECTION 4** 3/8" = 1'-0"




**WALL SECTION 2** 3/8" = 1'-0"

**WALL SECTION 1** 3/8" = 1'-0"

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Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
ROBERT WALTER HALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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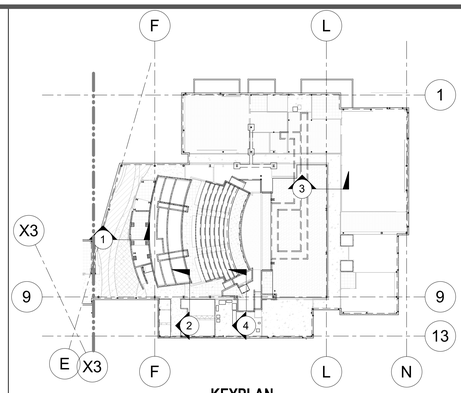
**S7.14**

THE LINE SHOWN ABOVE IS 6" LONG WHEN PRINTED ON SHEET ORIGINALLY 24x36. SCALE THIS DRAWING ACCORDINGLY.

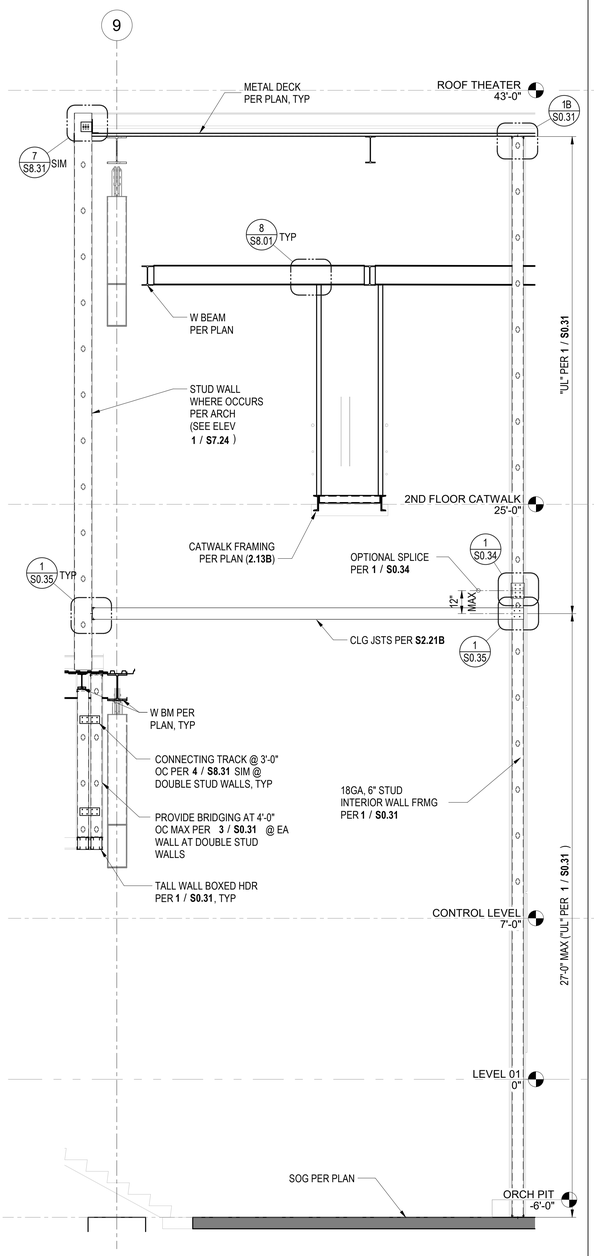
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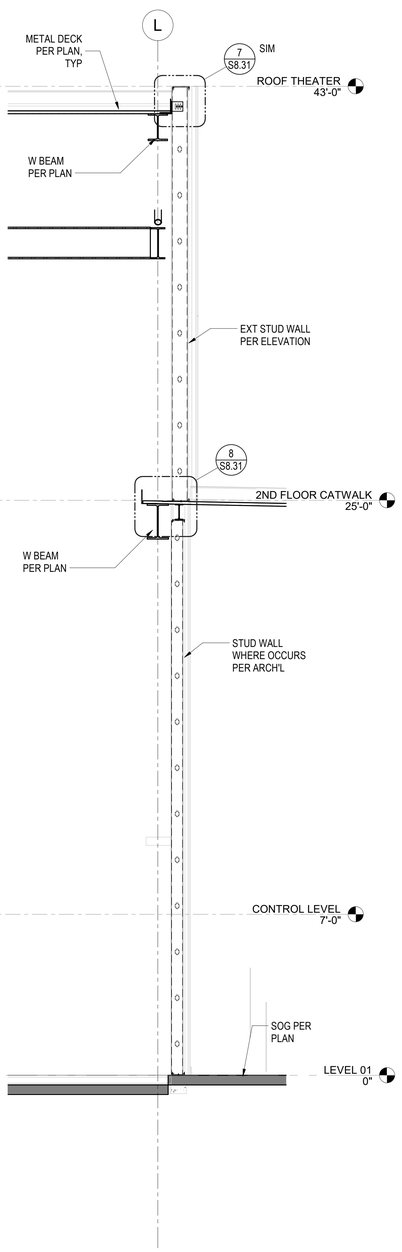
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SHEETS ORIGINAL PAPER SIZE



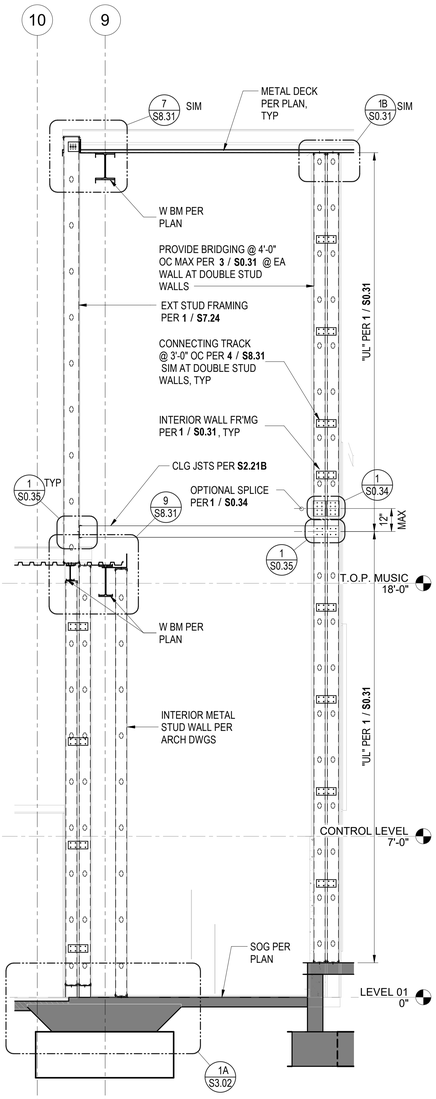

**KEYPLAN**



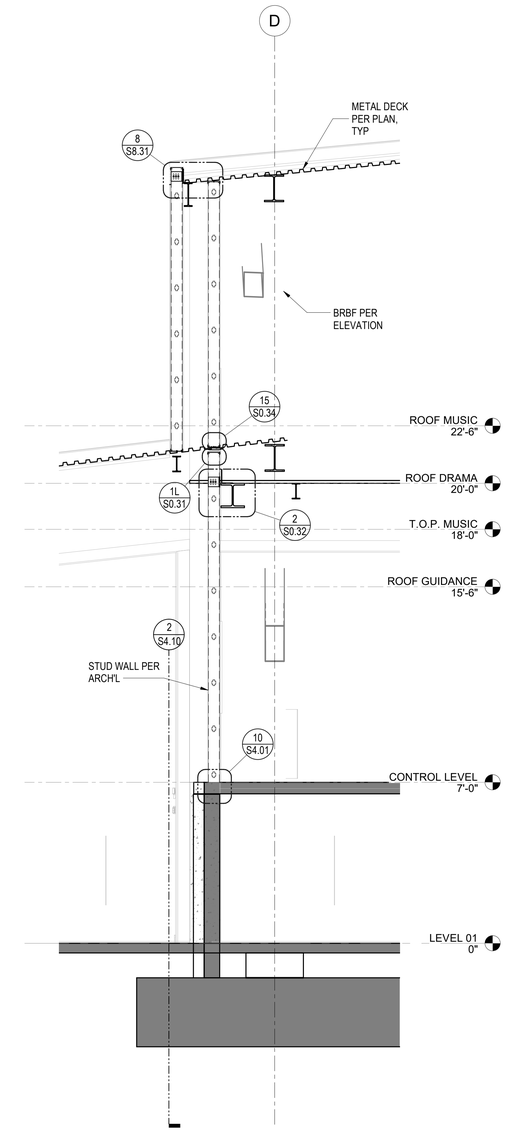

**WALL SECTION 4** 3/8" = 1'-0"




**WALL SECTION 3** 3/8" = 1'-0"




**WALL SECTION 2** 3/8" = 1'-0"




**WALL SECTION 1** 3/8" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — ROBERT MICHAEL BRANDT — 54892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

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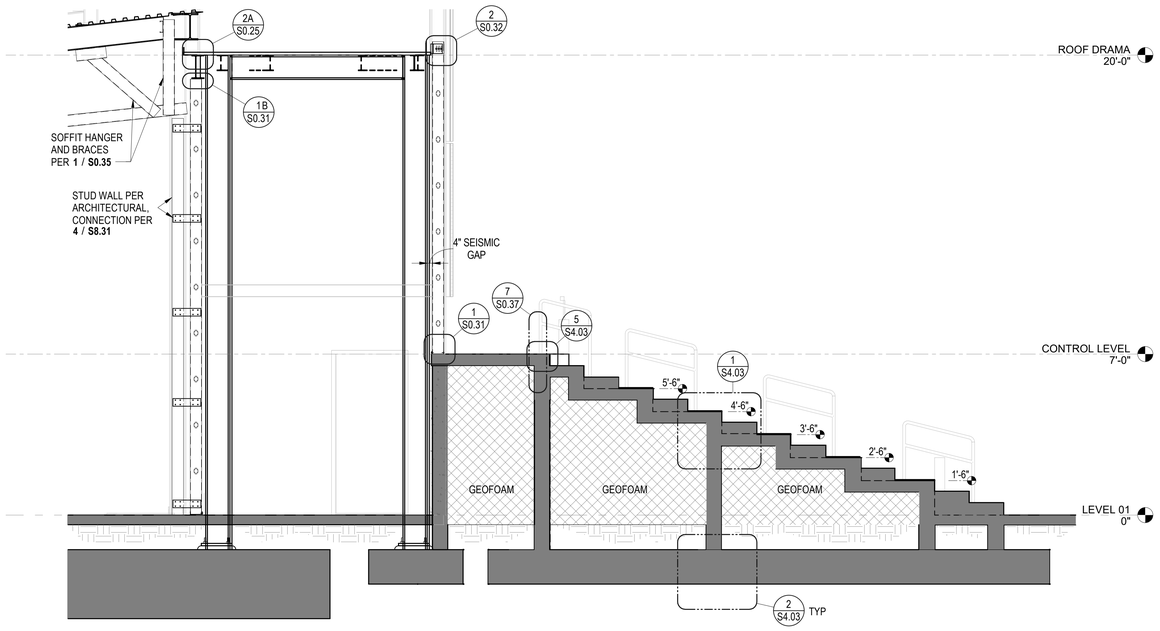
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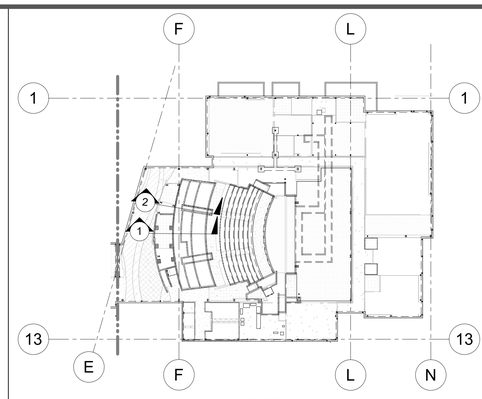
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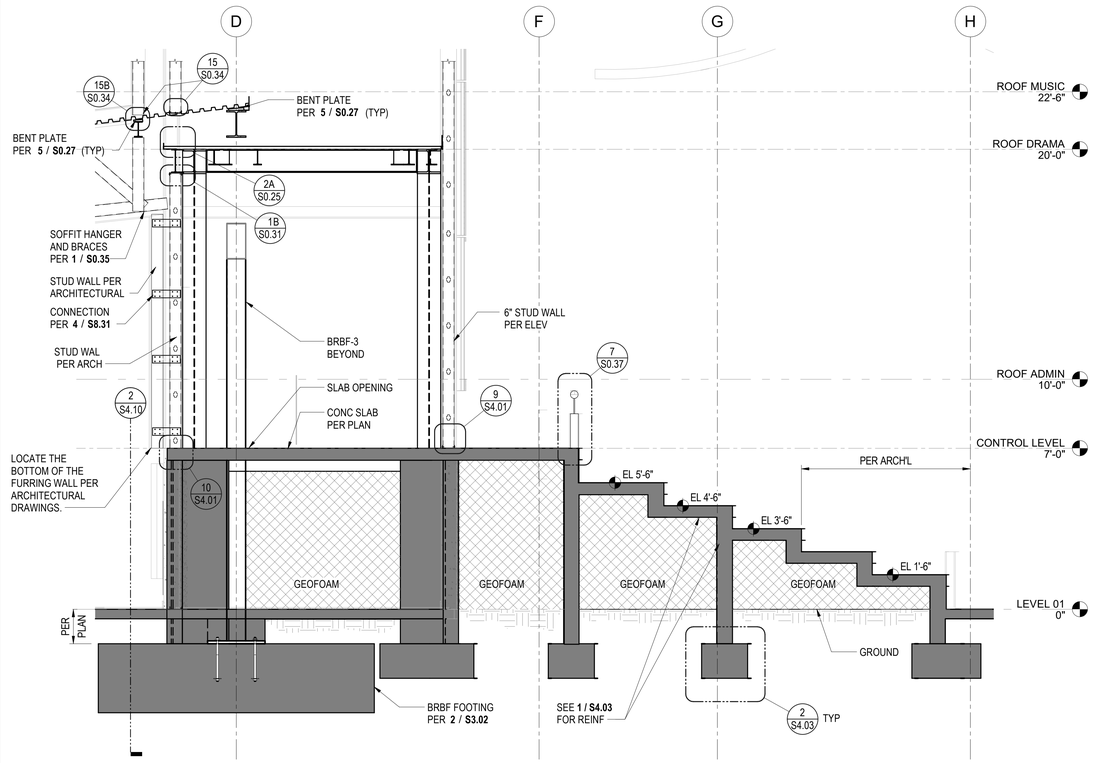
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SHEETS ORIGINALLY PRINTED AT 24X36




**WALL SECTION** **2**
3/8" = 1'-0"




**KEYPLAN**




**WALL SECTION** **1**
3/8" = 1'-0"

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San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER ROBERT WALTER RANDALL S4892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

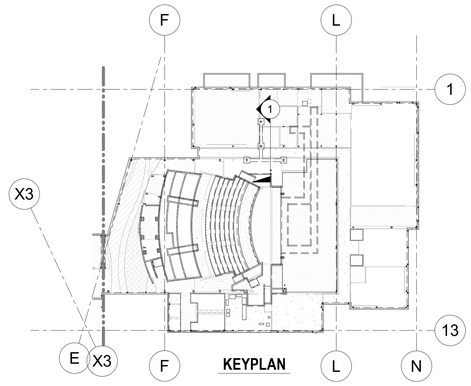
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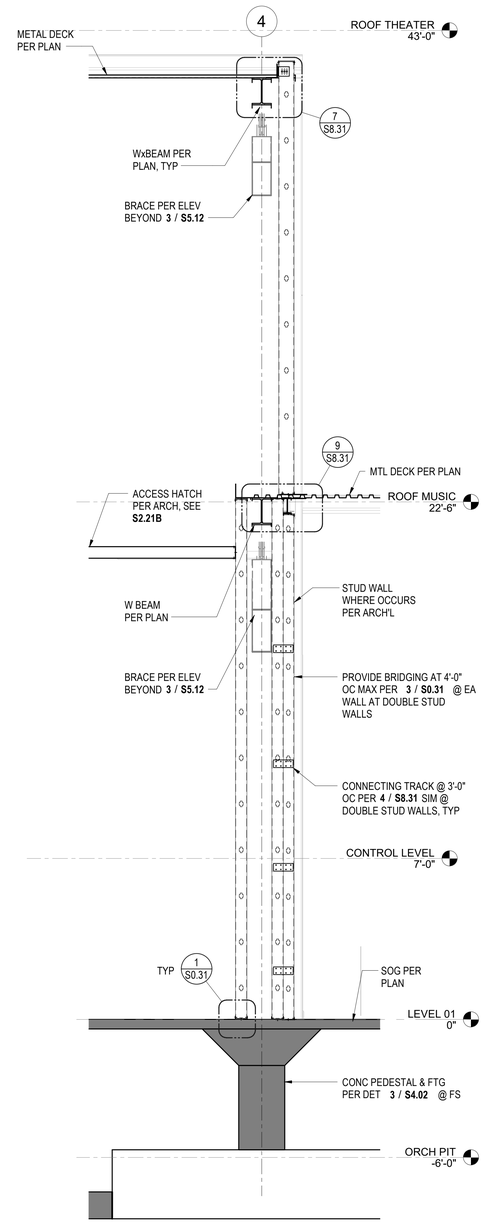
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|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

**S7.16**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY




**WALL SECTION** 1
3/8" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
ROBERT WALTER RANDALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL SECTIONS**

**DSA SUBMITTAL**

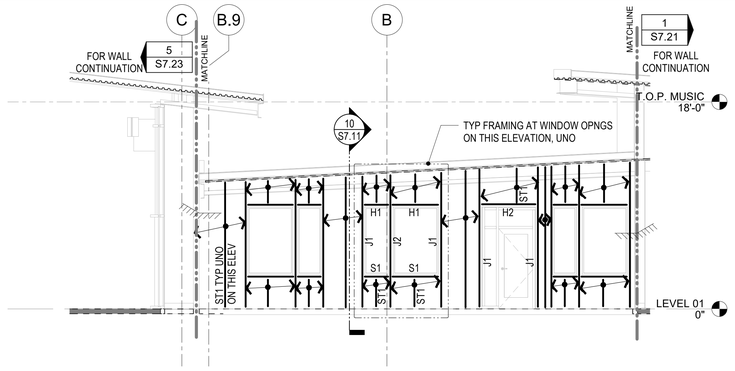
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

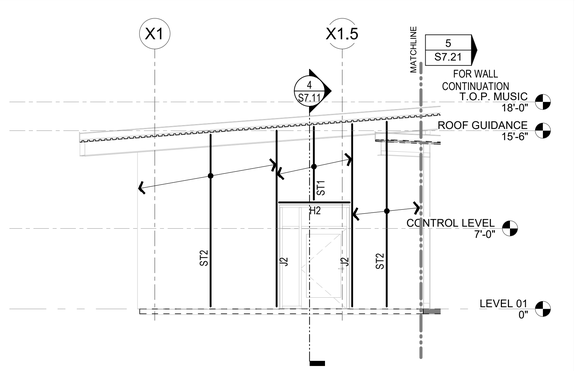
**S7.17**

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THE LINE SHOWN ABOVE IS EQUIVALENT TO ONE INCH (1") AT SIZE 24"X36" (ARCH D)




**EXTERIOR WALL ELEVATION** 9 — 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** 4 — 3/16" = 1'-0"

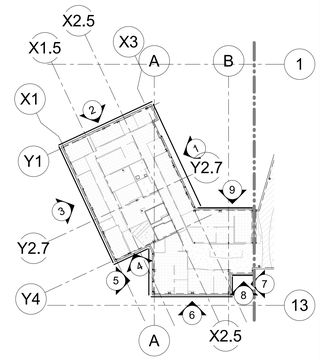
**METAL STUD ELEVATION NOTES/ LEGEND:**

FOR FRAMING SCHEDULE SEE 1 / S0.32

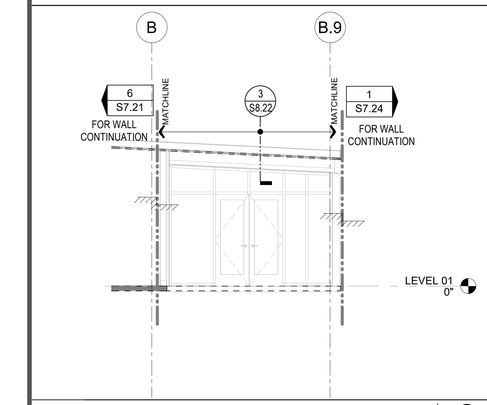
| | |
|---|---|
| TYPICAL STUD (UNO): | ST1 |
| TYPICAL JAMB (UNO): | J1 |
| TYPICAL HEADER (UNO): | H1 |
| FAR SIDE (BEYOND): | (FS) |
| NEAR SIDE (BEYOND): | (NS) |

FLOOR WALL PLANE STEP:

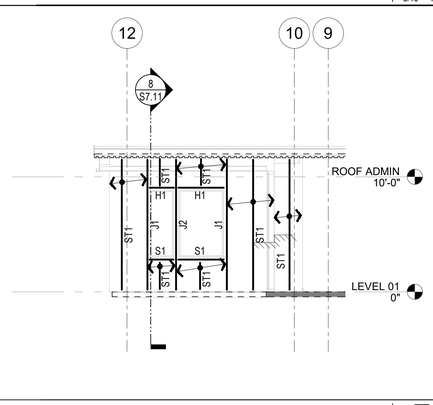
INT WALL FRMG PER **1 / S0.31**



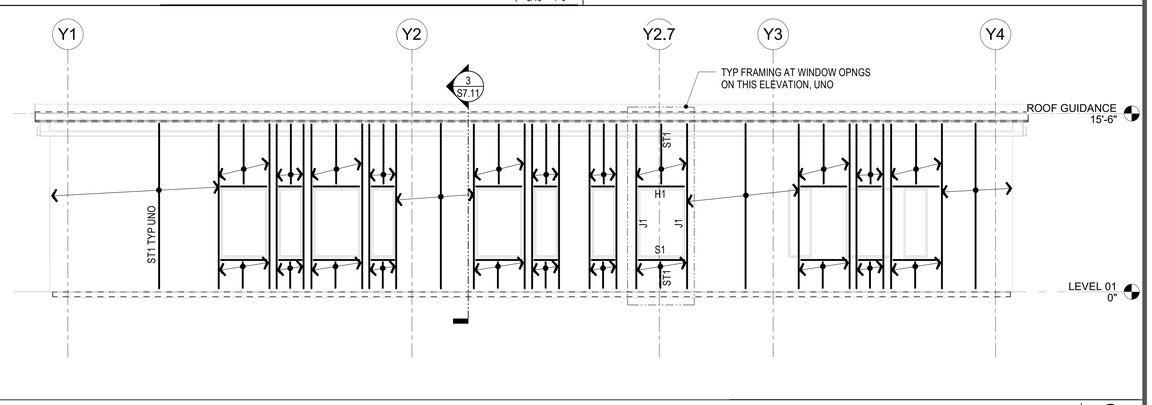

**KEYPLAN**



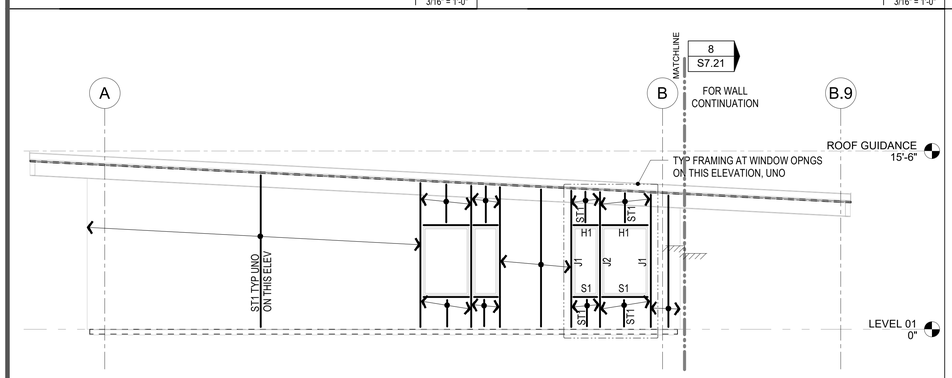

**EXTERIOR WALL ELEVATION** 8 — 3/16" = 1'-0"



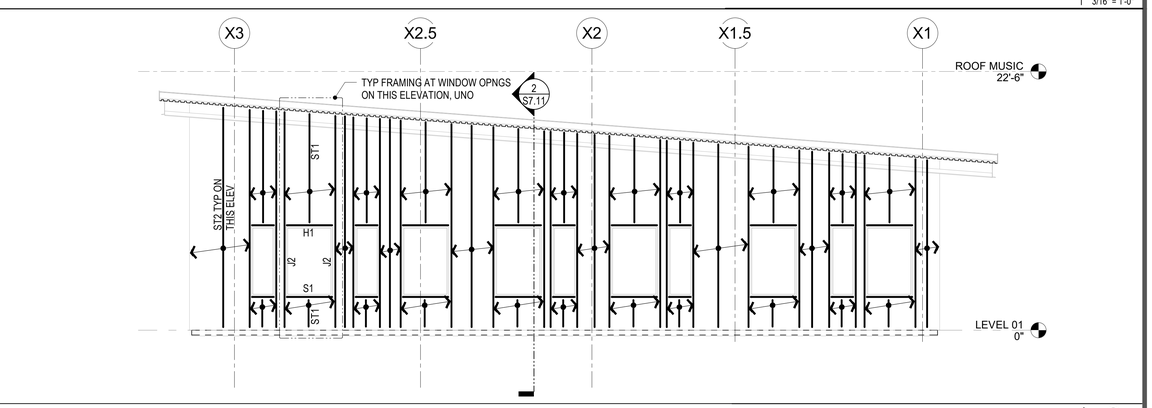

**EXTERIOR WALL ELEVATION** 7 — 3/16" = 1'-0"



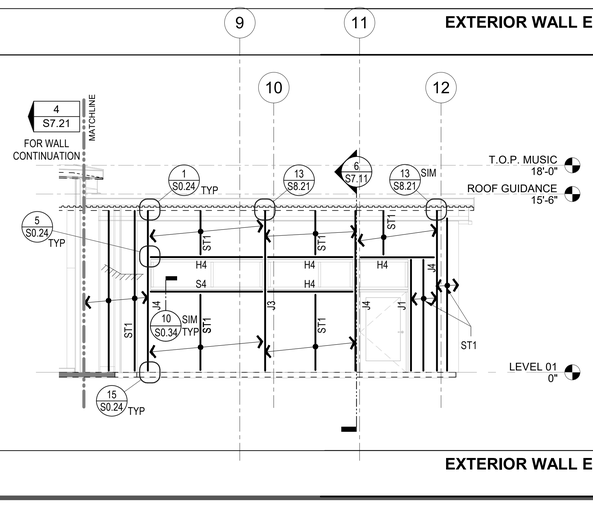

**EXTERIOR WALL ELEVATION** 3 — 3/16" = 1'-0"



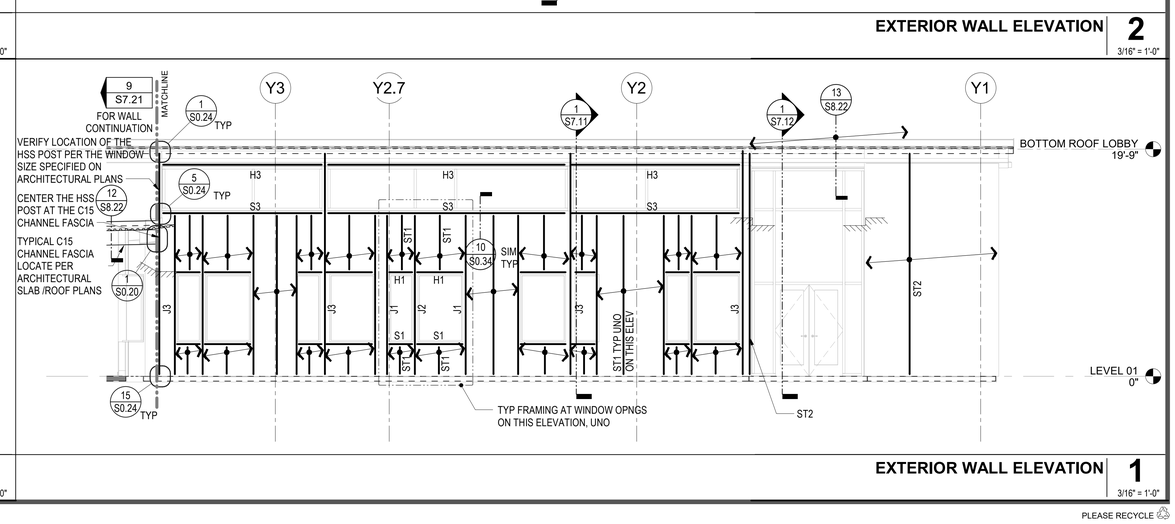

**EXTERIOR WALL ELEVATION** 6 — 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** 2 — 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** 5 — 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** 1 — 3/16" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — TOBY R. WHALEY — 54892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

**NOTES**

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL ELEVATIONS**

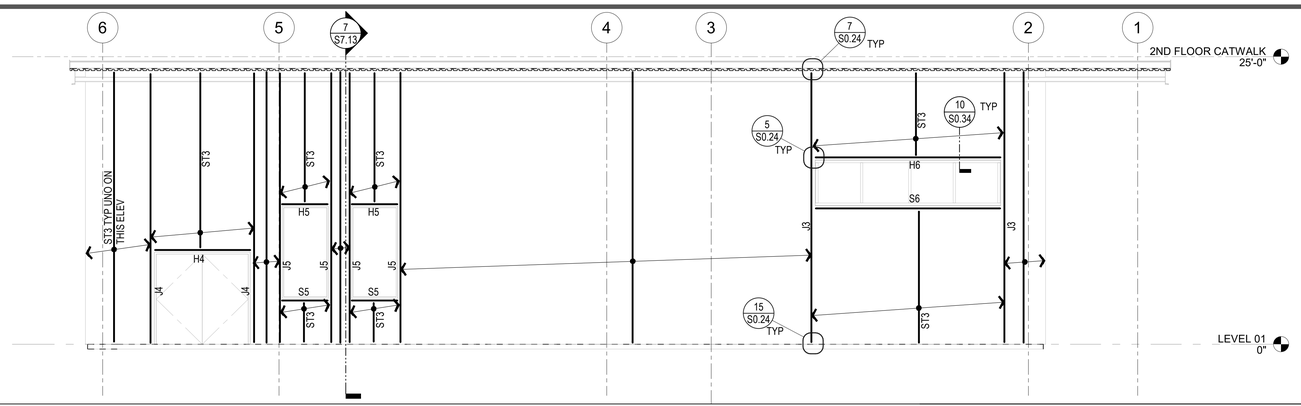
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
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SHEET:

**S7.21**

THE LINE SHOWN ABOVE IS EXACTLY ONE (1) INCH ON ORIGINAL 24X36 SHEETS ORIGINAL SIZE, ADJUST SCALES ACCORDINGLY IF PRINTED AT REDUCED SIZE




**EXTERIOR WALL ELEVATION** **6** 3/16" = 1'-0"

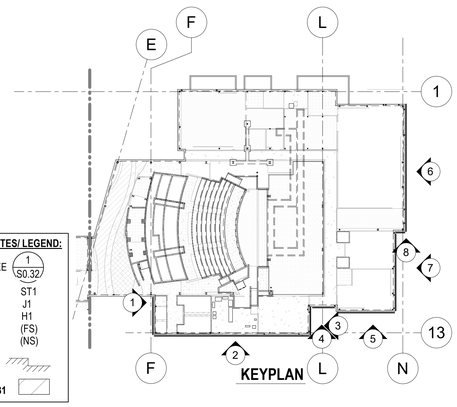
**METAL STUD ELEVATION NOTES/ LEGEND:**

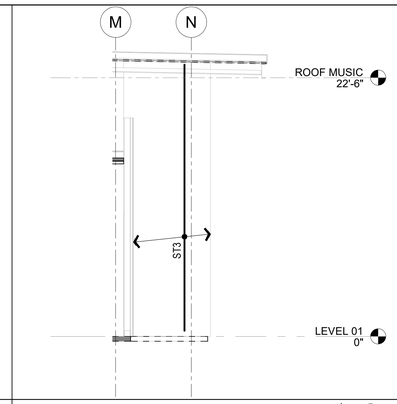
FOR FRAMING SCHEDULE SEE 1 S0.32

| | |
|---|---|
| TYPICAL STUD (UNO): | ST1 |
| TYPICAL JAMB (UNO): | J1 |
| TYPICAL HEADER (UNO): | H1 |
| FAR SIDE (BEYOND): | (FS) |
| NEAR SIDE (BEYOND): | (NS) |

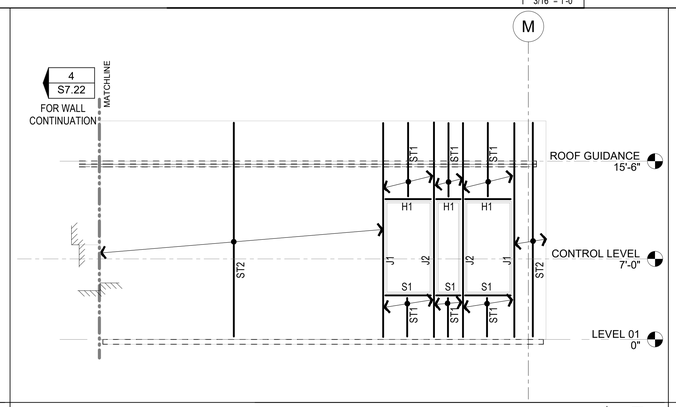
FLOOR WALL PLANE STEP:

INT WALL FRMG PER **1** / **S0.31**

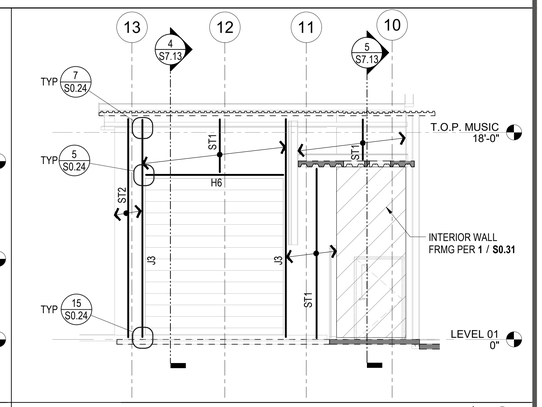


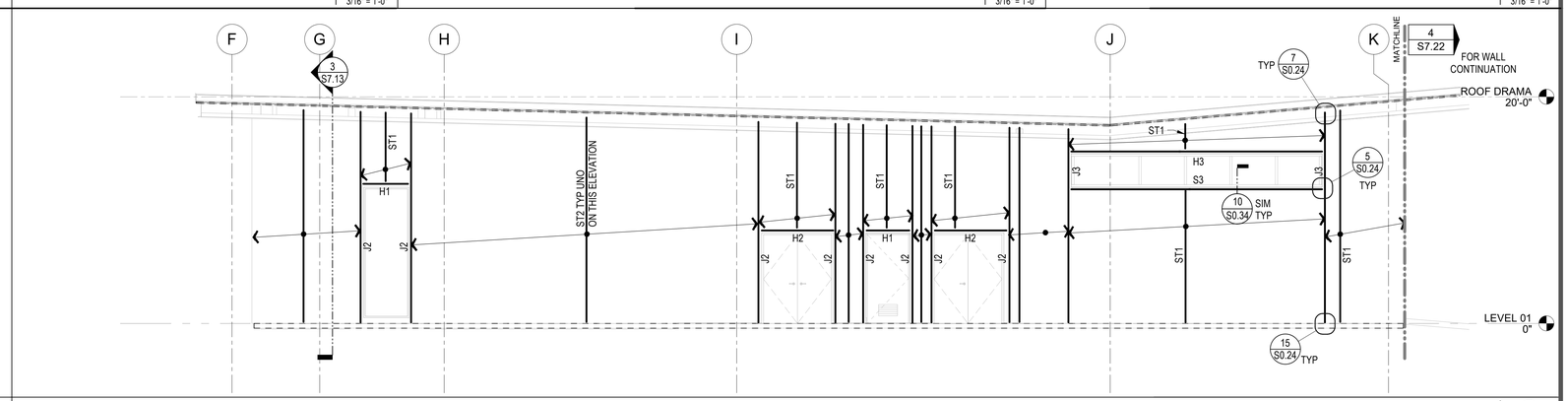

**EXTERIOR WALL ELEVATION** **8** 3/16" = 1'-0"



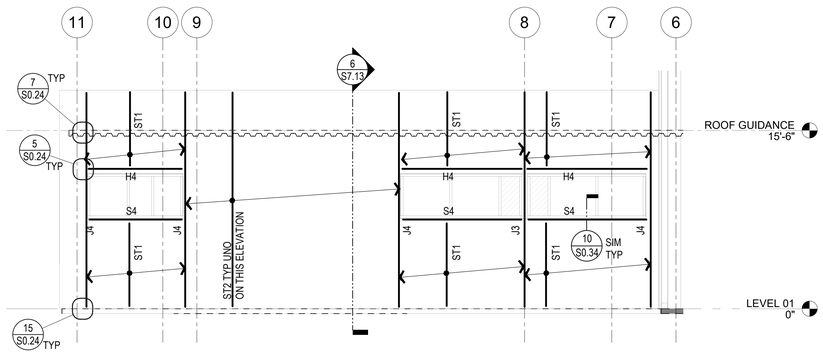

**EXTERIOR WALL ELEVATION** **5** 3/16" = 1'-0"



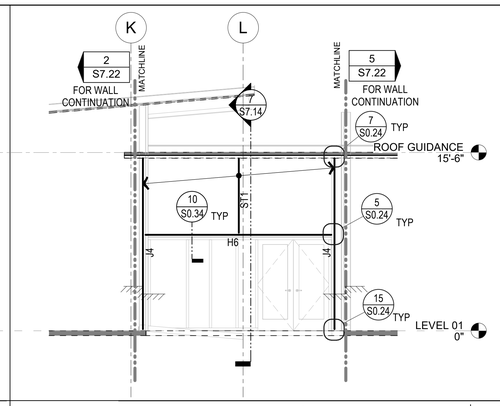

**EXTERIOR WALL ELEVATION** **3** 3/16" = 1'-0"



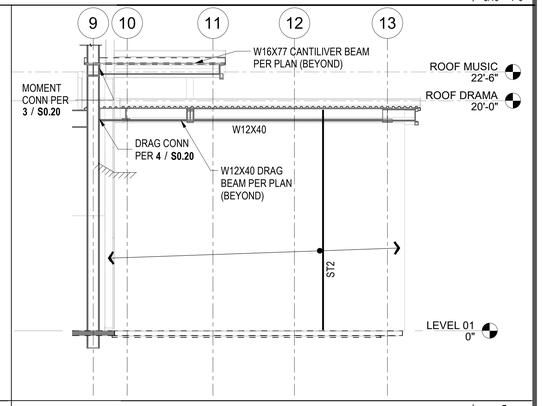

**EXTERIOR WALL ELEVATION** **2** 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** **7** 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** **4** 3/16" = 1'-0"




**EXTERIOR WALL ELEVATION** **1** 3/16" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL ELEVATIONS**

**DSA SUBMITTAL**

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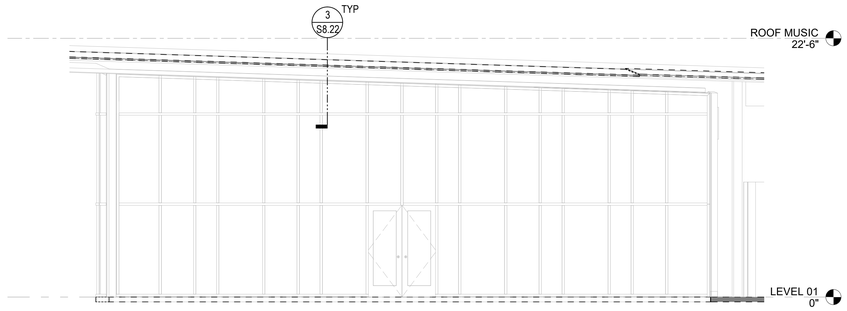
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**S7.22**

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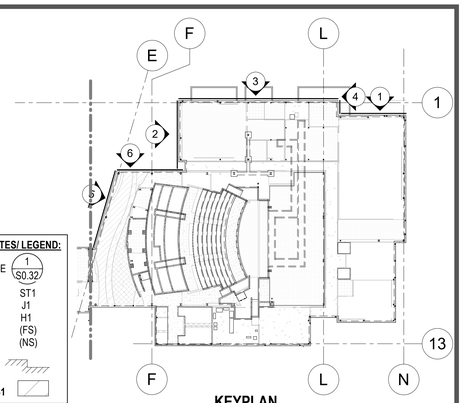
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH (1") LONG WHEN PLOTTED ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY.



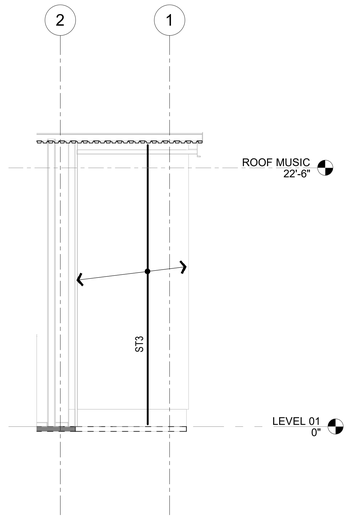

## EXTERIOR WALL ELEVATION 5
3/16" = 1'-0"

**METAL STUD ELEVATION NOTES/ LEGEND:**

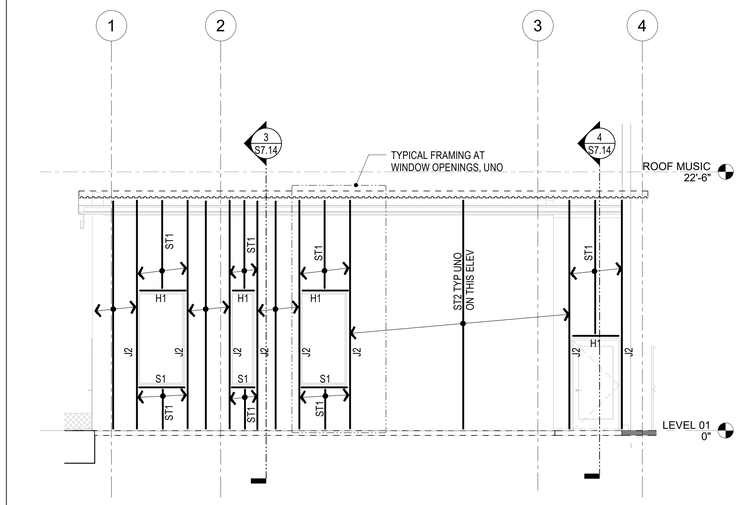
| | |
|---|---|
| FOR FRAMING SCHEDULE SEE | 1 / S0.32 |
| TYPICAL STUD (UNO): | ST1 |
| TYPICAL JAMB (UNO): | J1 |
| TYPICAL HEADER (UNO): | H1 |
| FAR SIDE (BEYOND): | (FS) |
| NEAR SIDE (BEYOND): | (NS) |
| FLOOR WALL PLANE STEP: | |
| INT WALL FRMG PER | 1 / S0.31 |



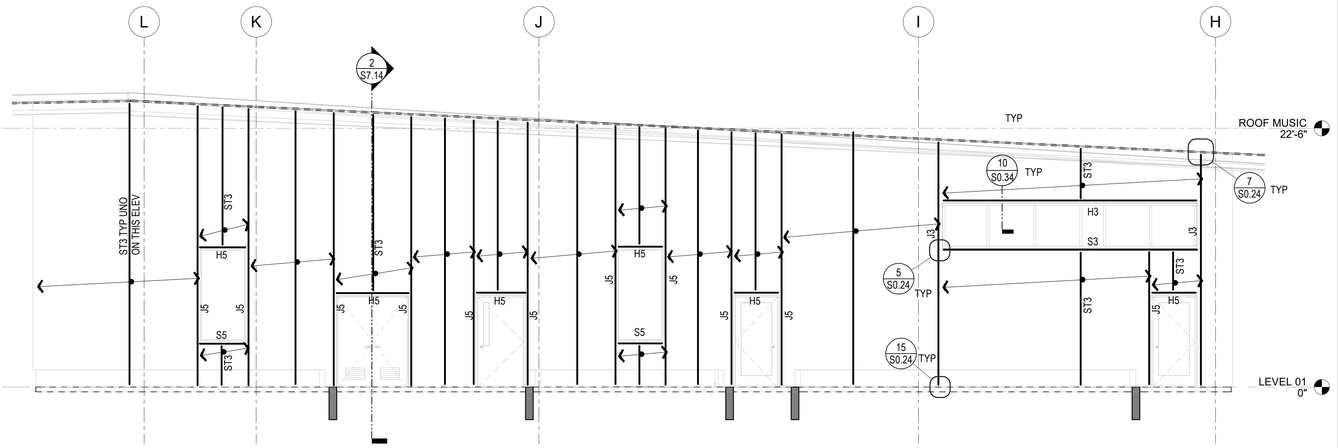

**KEYPLAN**



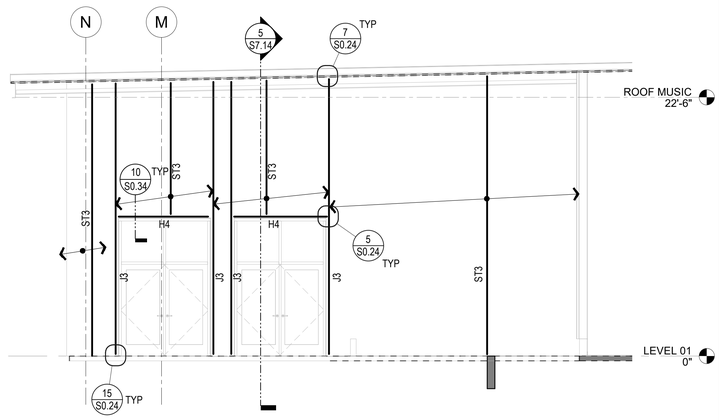

## EXTERIOR WALL ELEVATION 4
3/16" = 1'-0"




## EXTERIOR WALL ELEVATION 2
3/16" = 1'-0"




## EXTERIOR WALL ELEVATION 3
3/16" = 1'-0"




## EXTERIOR WALL ELEVATION 1
3/16" = 1'-0"

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JOSEPH MICHAEL BANACH
64892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

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**EL MONTE, CALIFORNIA 91732**

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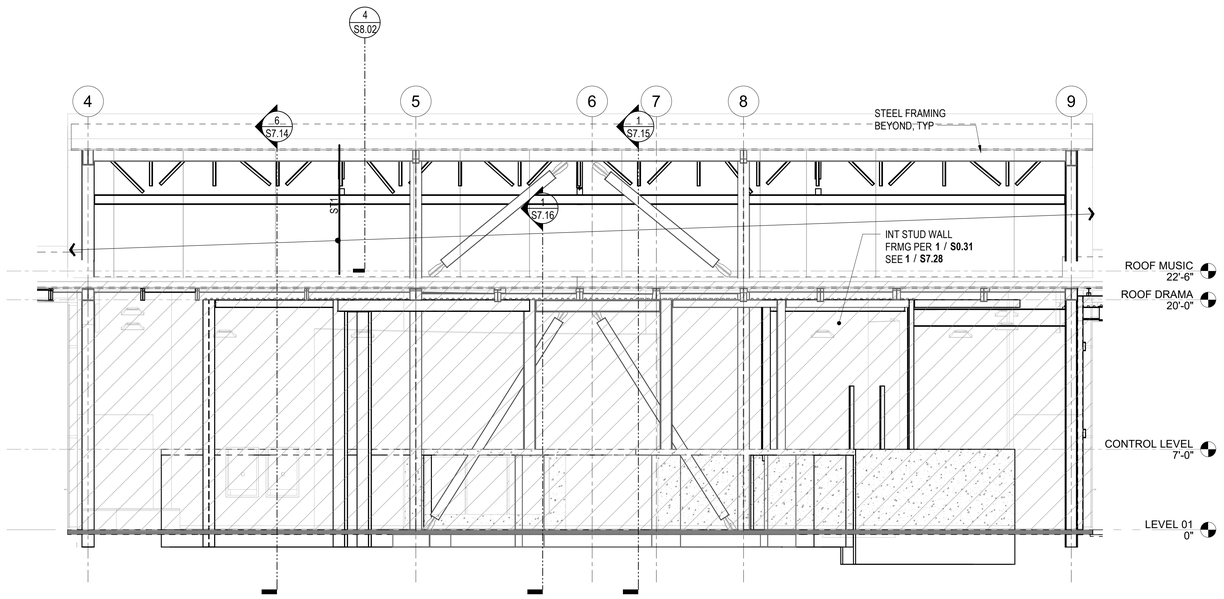
SHEET:

# S7.23

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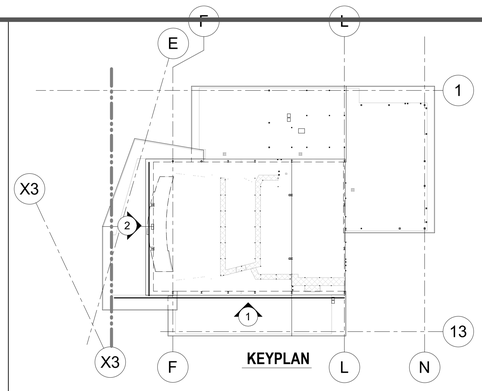
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THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL DRAWING. IF NOT SCALE DRAWING ACCORDINGLY




## EXTERIOR WALL ELEVATION 2

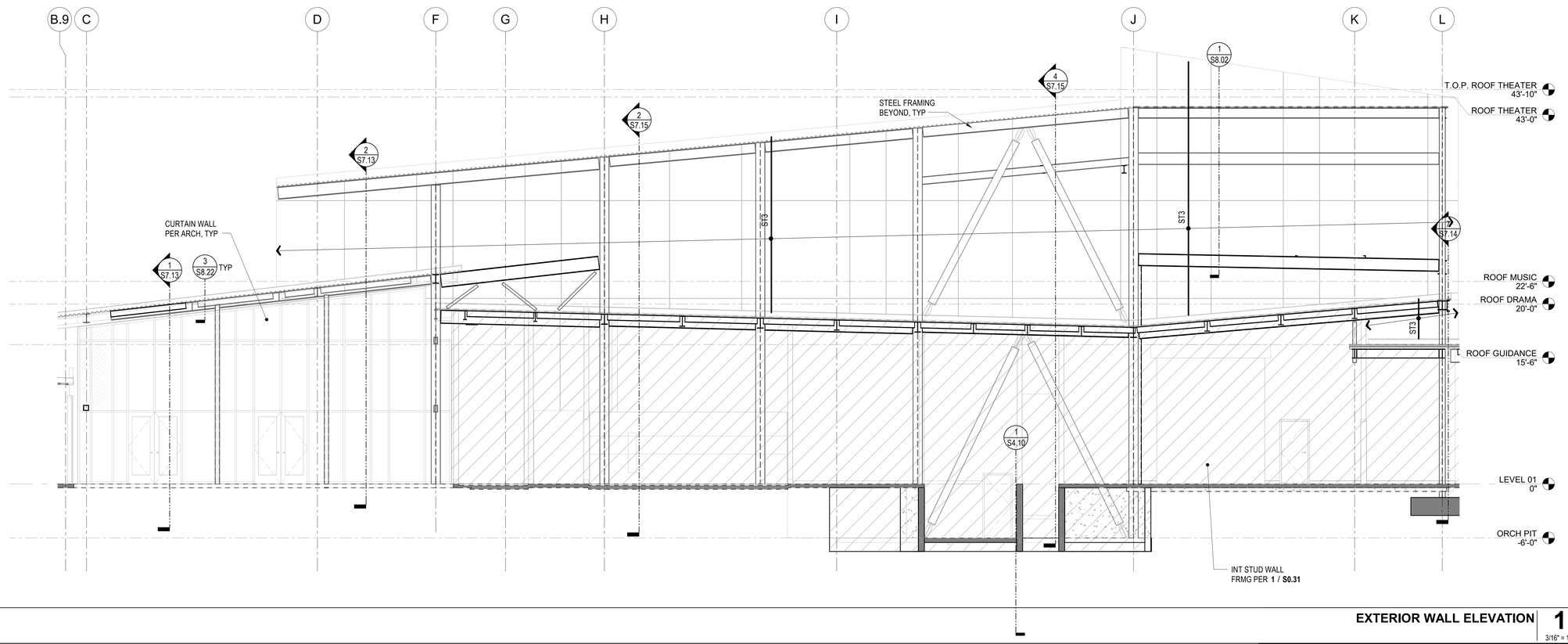
3/16" = 1'-0"




KEYPLAN

**METAL STUD ELEVATION NOTES/ LEGEND:**

| | |
|---|---|
| FOR FRAMING SCHEDULE SEE | 1 / S0.32 |
| TYPICAL STUD (UNO): | ST1 |
| TYPICAL JAMB (UNO): | J1 |
| TYPICAL HEADER (UNO): | H1 |
| FAR SIDE (BEYOND): | (FS) |
| NEAR SIDE (BEYOND): | (NS) |
| FLOOR WALL PLANE STEP: | |
| INT WALL FRMG PER 1 / S0.31 | |




## EXTERIOR WALL ELEVATION 1

3/16" = 1'-0"

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WALL ELEVATIONS**

**DSA SUBMITTAL**

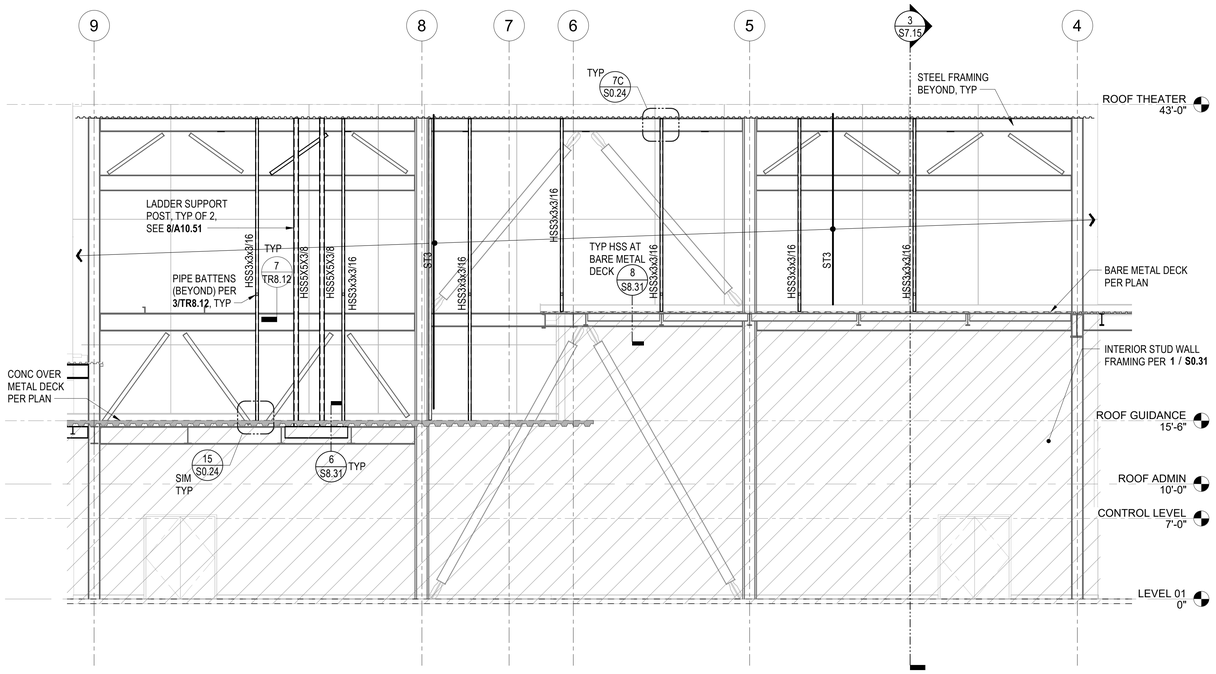
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| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

# S7.24

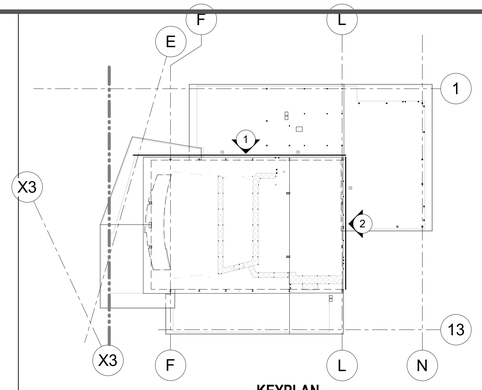
Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

THE LINE SHOWN ABOVE IS EXACTLY 1" LONG ON ORIGINAL 24X36 SHEETS OTHERWISE ADJUST SCALES




## EXTERIOR WALL ELEVATION 2

3/16" = 1'-0"




KEYPLAN

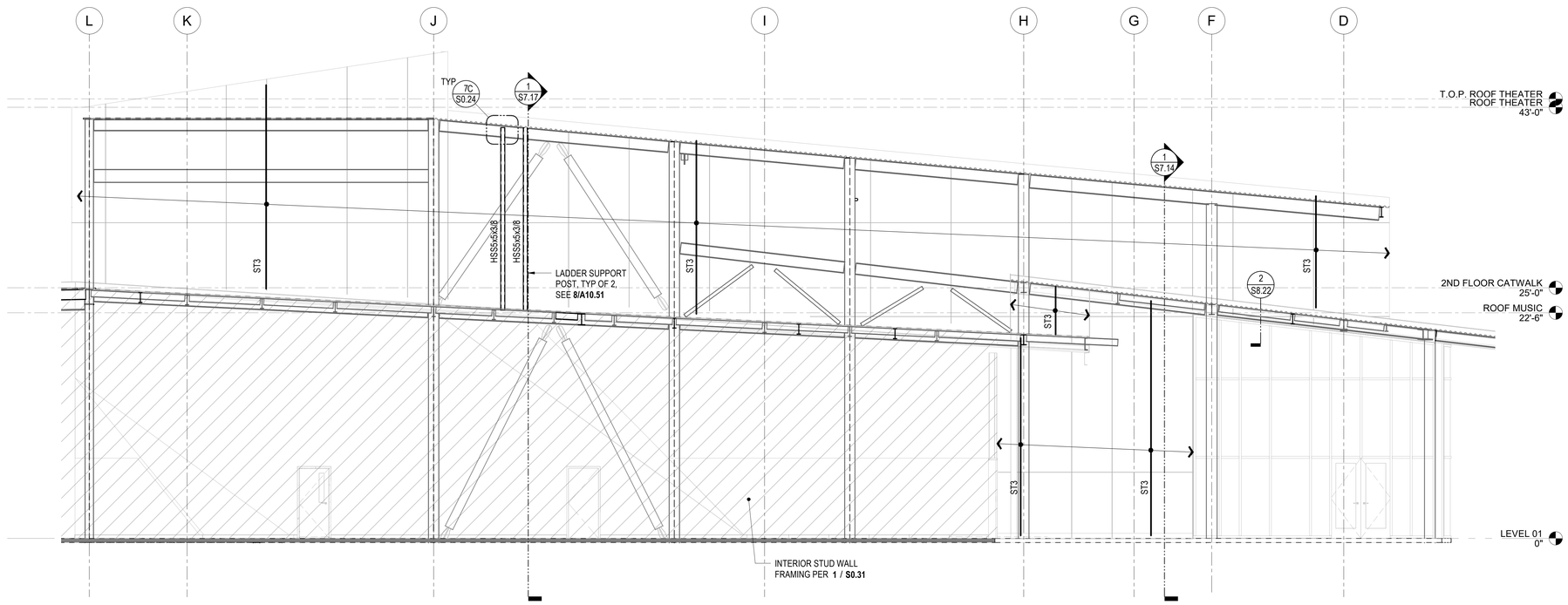
**METAL STUD ELEVATION NOTES/ LEGEND:**

FOR FRAMING SCHEDULE SEE 1 / S0.32

| | |
|---|---|
| TYPICAL STUD (UNO): | ST1 |
| TYPICAL JAMB (UNO): | J1 |
| TYPICAL HEADER (UNO): | H1 |
| FAR SIDE (BEYOND): | (FS) |
| NEAR SIDE (BEYOND): | (NS) |

FLOOR WALL PLANE STEP:

INT WALL FRMG PER 1 / S0.31




## EXTERIOR WALL ELEVATION 1

3/16" = 1'-0"

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213 542 8300 / www.hmcarchitects.com

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## KEYNOTES

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San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
ROBERT WALTER RANDALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

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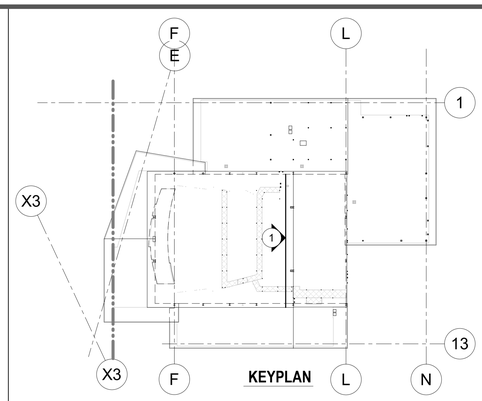
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

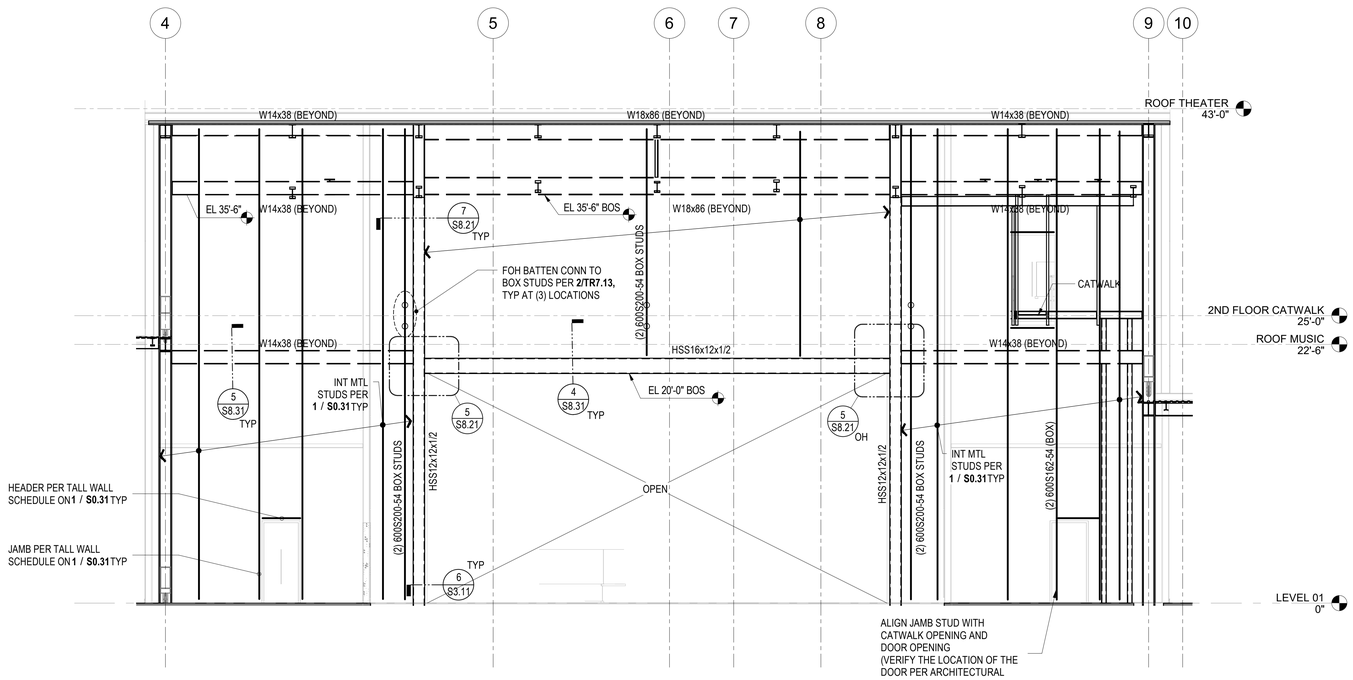
SHEET:

# S7.25

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ANSI D SIZED (24"X36") ORIGINAL DRAWINGS




NOTE: FOR INTERIOR FRAMING SCHEDULE, SEE **1 / S0.31**




## INTERIOR WALL ELEVATION GL "J"

1
3/16" = 1'-0"

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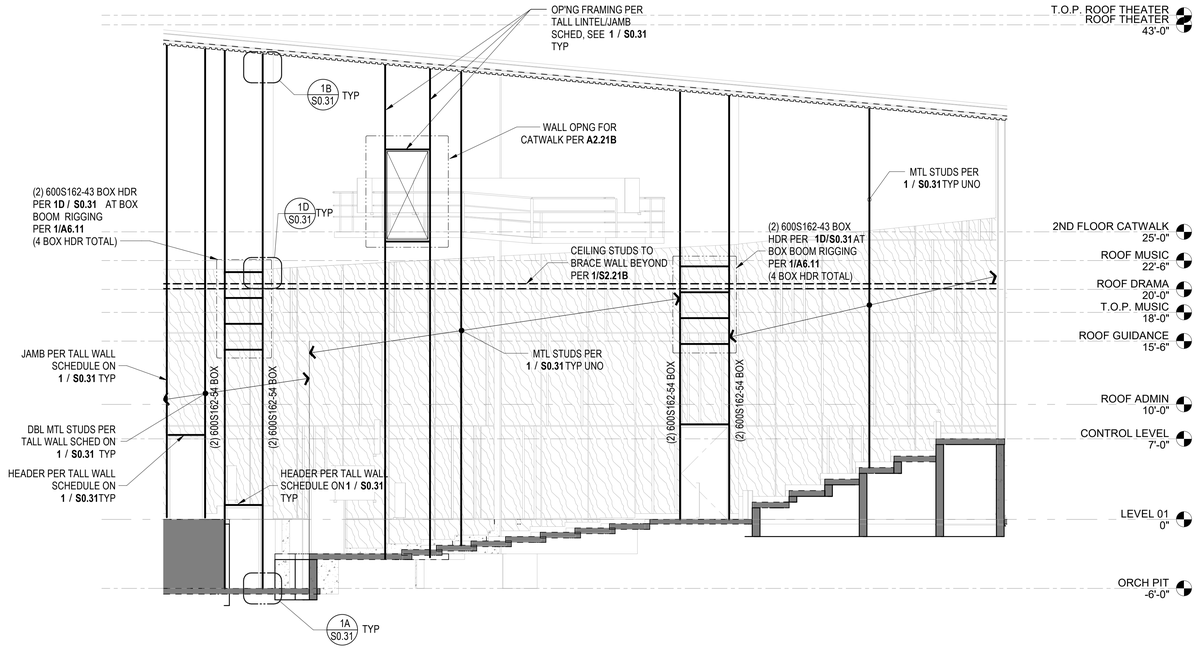
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**S7.26**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-S-BLDG.rvt

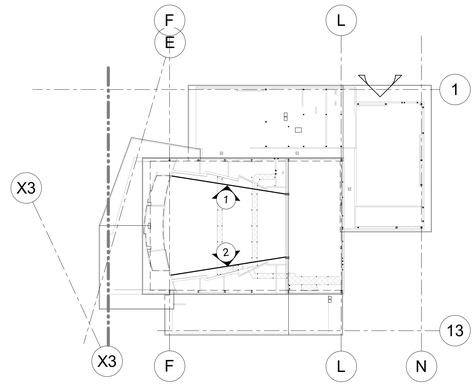
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY



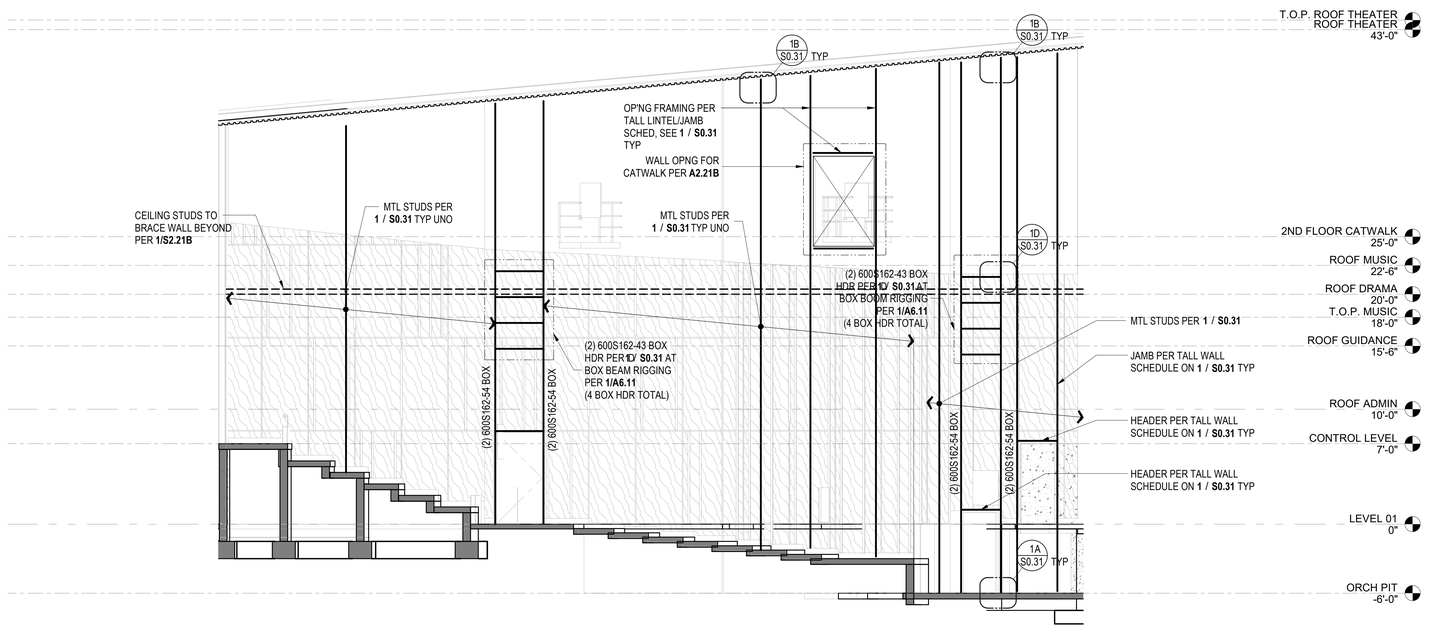

## INTERIOR WALL ELEVATION 2

3/16" = 1'-0"




**KEYPLAN**

NOTE: FOR INTERIOR FRAMING SCHEDULE, SEE 1 / S0.31




## INTERIOR WALL ELEVATION 1

3/16" = 1'-0"

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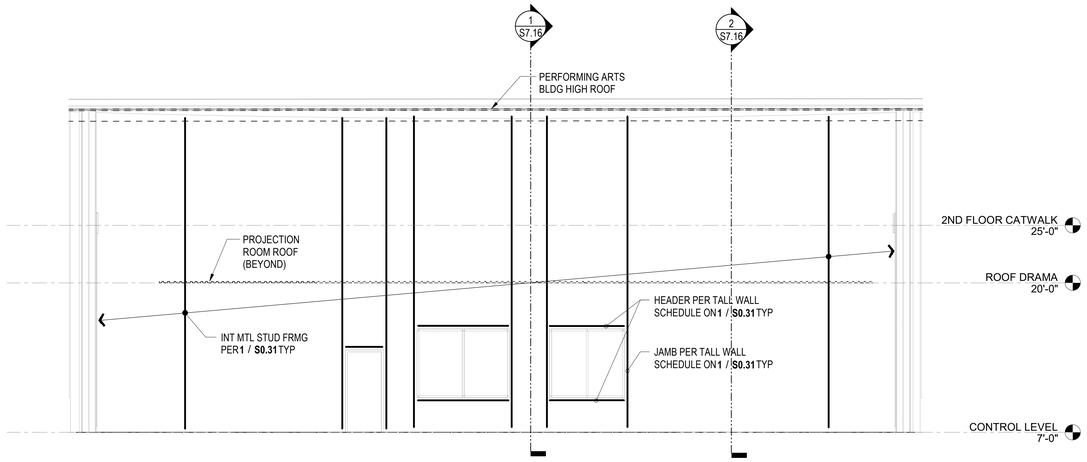
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# S7.27

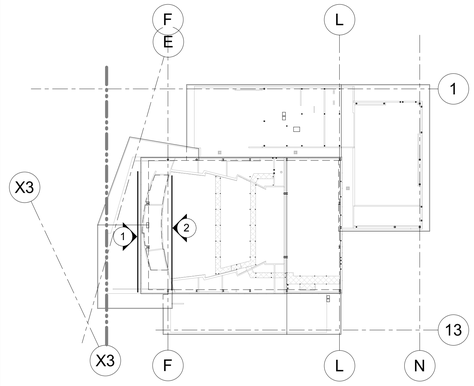
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY

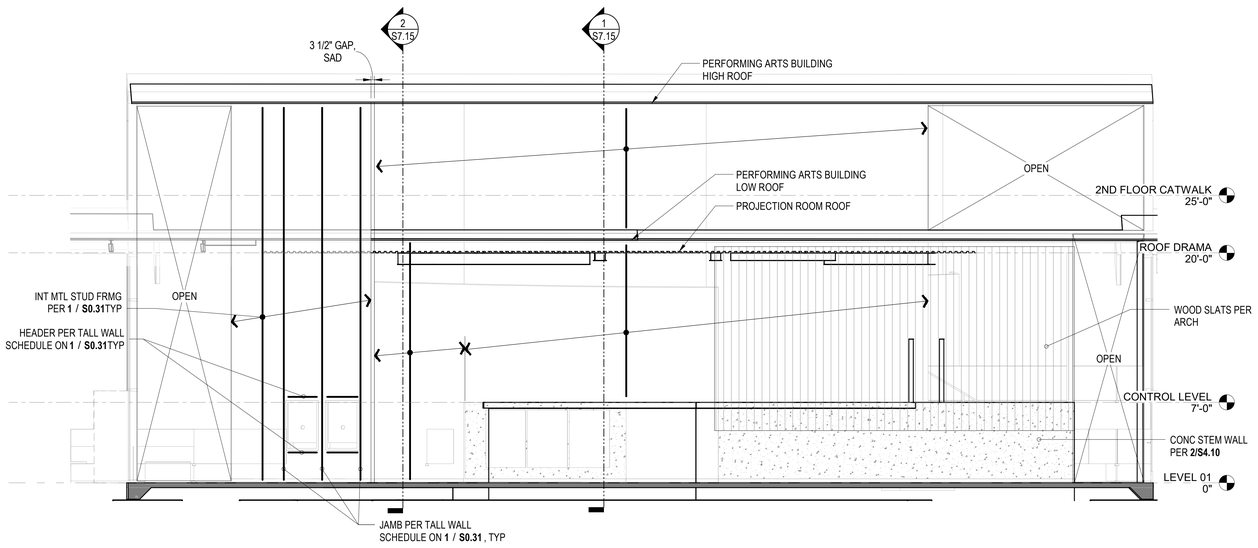



**INTERIOR WALL ELEVATION** **2**
3/16" = 1'-0"




**KEYPLAN**

NOTE: FOR INTERIOR FRAMING SCHEDULE, SEE **1 / S0.31**




**INTERIOR WALL ELEVATION** **1**
3/16" = 1'-0"

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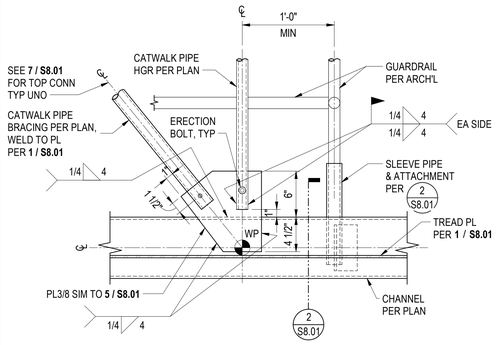
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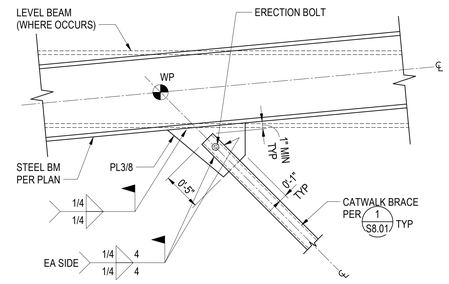
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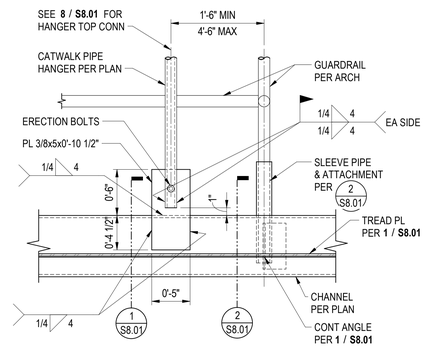
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN PLOTTED ON ORIGINAL 24X36 SHEETS. IF NOT, ADJUST SCALE ACCORDINGLY



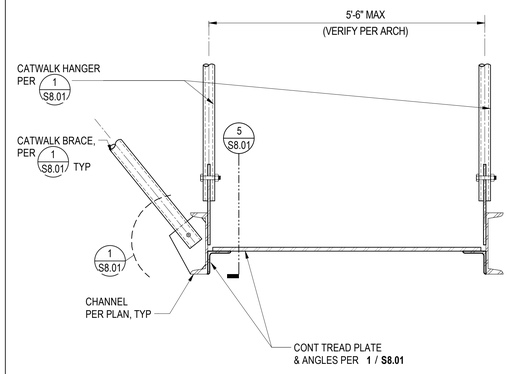

**TYPICAL CATWALK BRACING DETAIL** 10 NTS



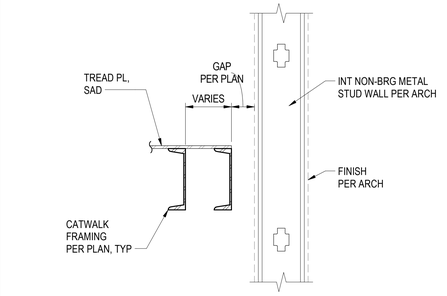

**TYPICAL CATWALK BRACE CONN DETAIL** 7 1 1/2" = 1'-0"



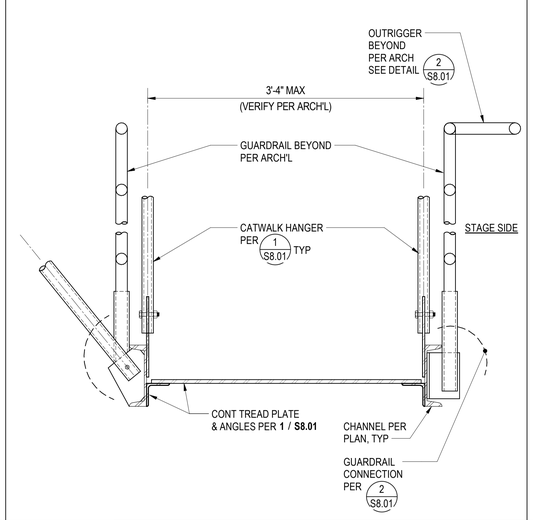

**TYPICAL CATWALK HANGER** 5 NTS



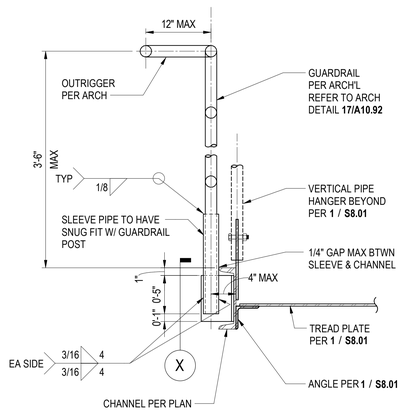

**TYPICAL CATWALK SECTION** 3 NTS



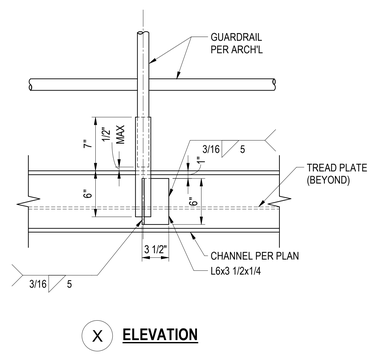

**CATWALK FRAMING AT EDGE OF STUD WALL** 9 1 1/2" = 1'-0"




**TYPICAL CATWALK GUARDRAIL SECTION** 6 NTS

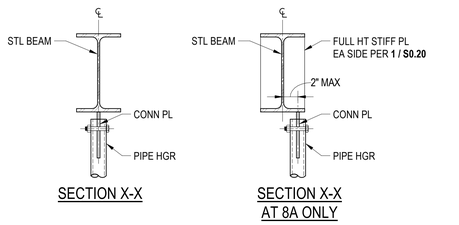


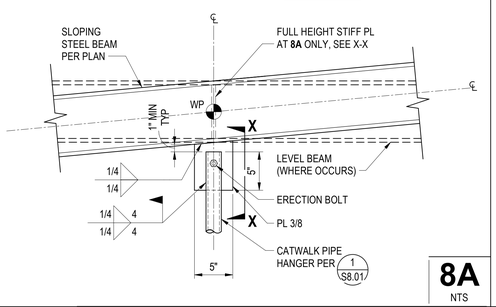

**TYPICAL CATWALK SECTION**




X **ELEVATION**

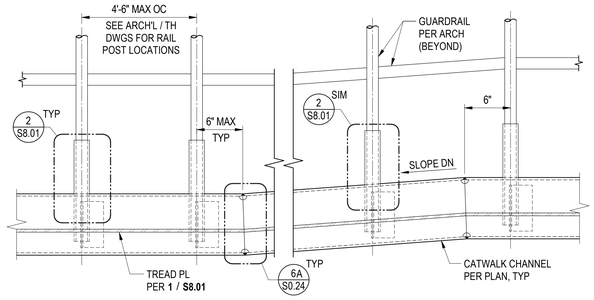
**TYPICAL CATWALK GUARDRAIL DETAIL** 2 NTS



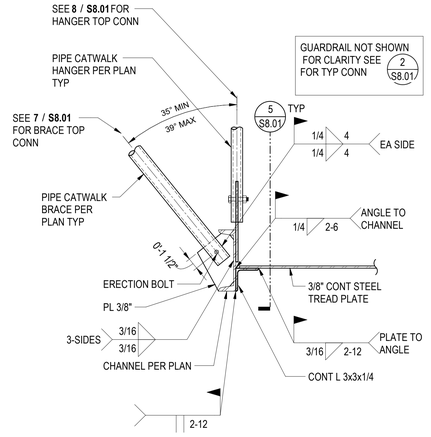




8A NTS

**TYPICAL CATWALK HGR CONN DETAIL** 8 NTS




**DETAIL** 4 1 1/2" = 1'-0"




**DETAIL** 1 NTS

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REGISTERED PROFESSIONAL ENGINEER — DAVID R. HALL — No. S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

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SHEET NAME:

**CATWALK DETAILS**

**DSA SUBMITTAL**

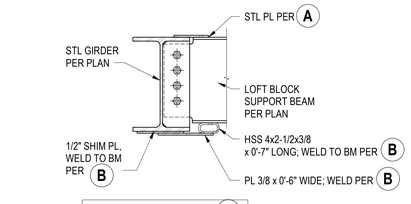
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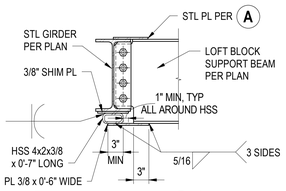
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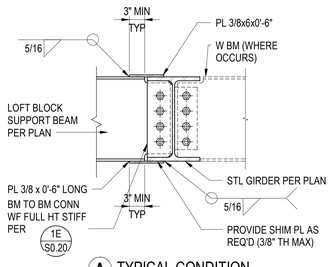
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG WHEN SHEET IS ORIGINAL SIZE. ADJUST SCALES ACCORDINGLY IF SHEET IS REDUCED




C CONDITION WITH SHALLOWER BEAM

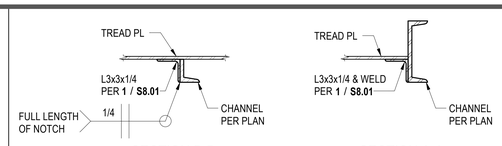



B CONDITION WITH SHALLOWER GIRDER

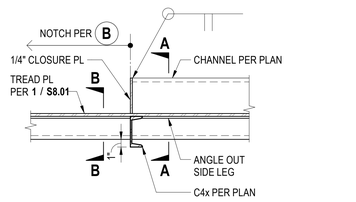



A TYPICAL CONDITION

**LOFT BLOCK STL BEAM CONN DETAILS** 15 — 1" = 1'-0"

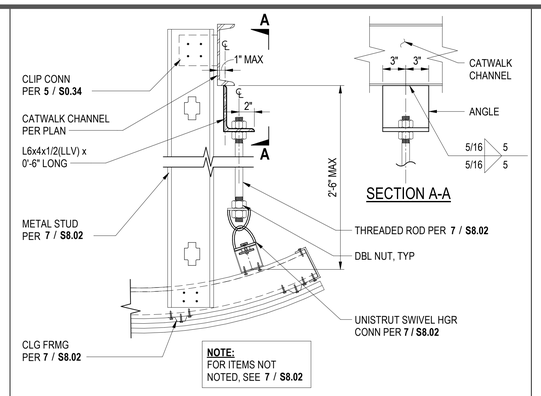



SECTION B-B SECTION A-A



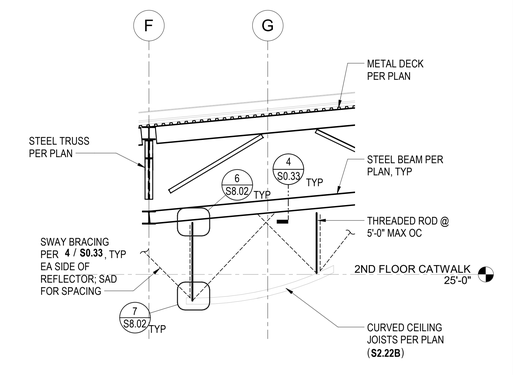

ELEVATION VIEW

**NOTCHED CHANNEL AT CATWALK FLOOR** 12 — 1 1/2" = 1'-0"

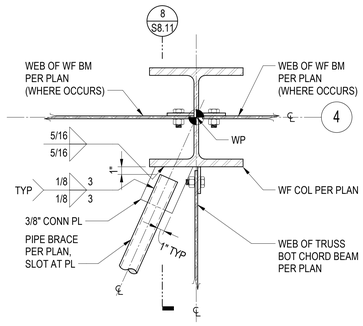



SECTION A-A

**CURVED REFLECTOR CEILING SUPPORT DETAIL AT CATWALK FRAMING** 8 — 1 1/2" = 1'-0"

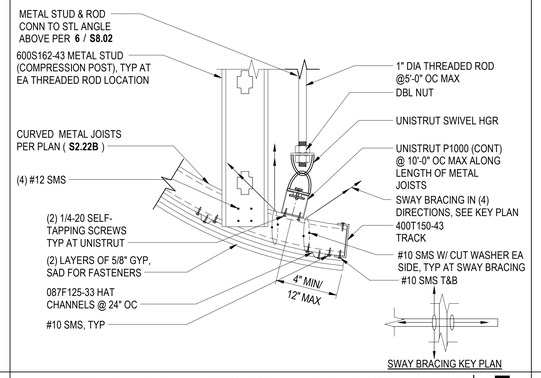



**SECTION** 4 — 1/4" = 1'-0"

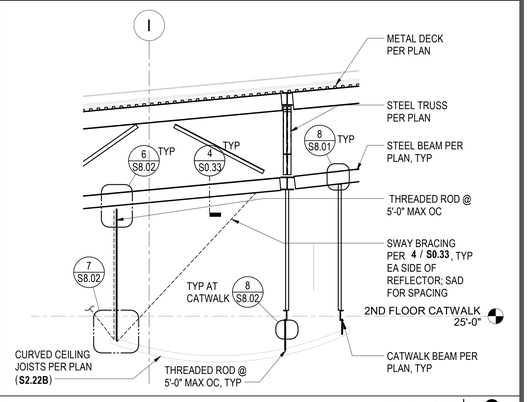



PLAN VIEW

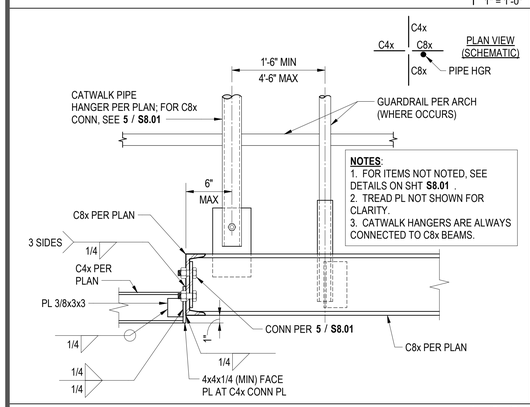
**CATWALK BRACING DETAIL** 11 — 1 1/2" = 1'-0"



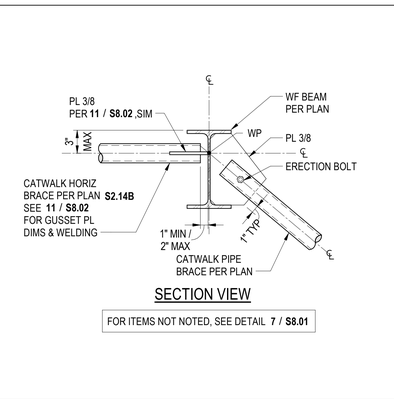

**CURVED REFLECTOR CEILING SUPPORT DETAIL** 7 — 1 1/2" = 1'-0"




**SECTION** 3 — 1/4" = 1'-0"



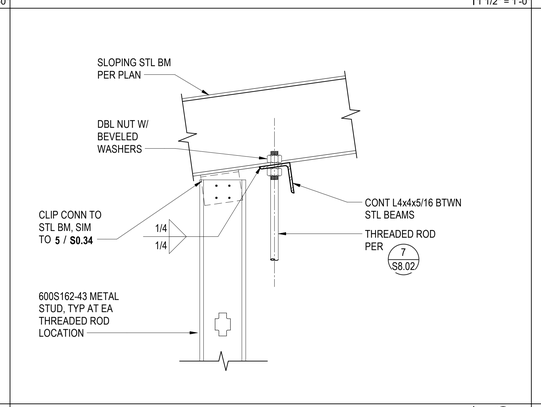

**TYP CATWALK FOUR-BEAM CONN AT HANGER DETAIL** 14 — 1 1/2" = 1'-0"



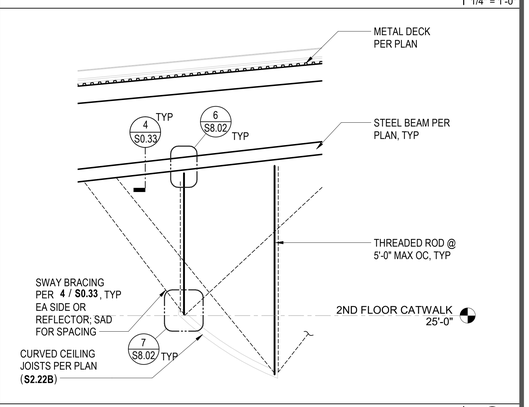

SECTION VIEW

FOR ITEMS NOT NOTED, SEE DETAIL 7 / S8.01

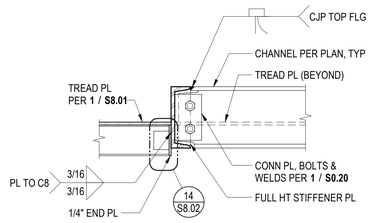
**CATWALK BRACING DETAIL** 10 — 1 1/2" = 1'-0"




**CURVED REFLECTOR CEILING SUPPORT DETAIL** 6 — 1 1/2" = 1'-0"

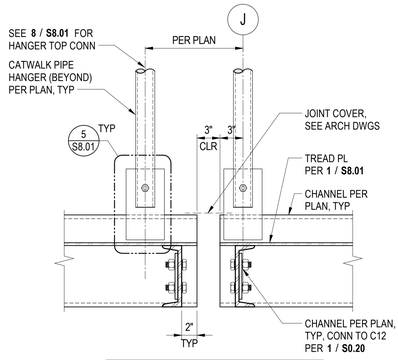



**SECTION** 2 — 1/4" = 1'-0"



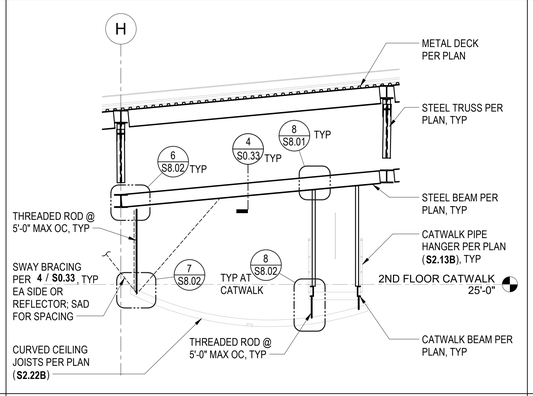

FOR ITEMS NOT NOTED, SEE DETAIL 14 / S8.02

**CATWALK DETAIL** 13 — 1 1/2" = 1'-0"

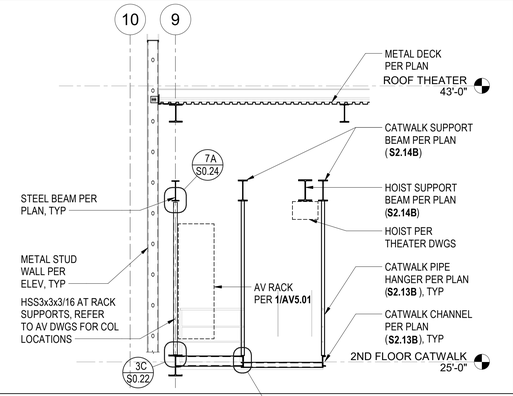



FOR ITEMS NOT NOTED, SEE DETAILS ON S8.01

**CATWALK DETAIL @ GRIDLINE J** 9 — 1 1/2" = 1'-0"




**SECTION** 5 — 1/4" = 1'-0"




**SECTION** 1 — 1/4" = 1'-0"

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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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**KEYNOTES**

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER S4892 EXP. 12/31/26 STRUCTURAL STATE OF CALIFORNIA

**NOTES**

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SECTIONS AND DETAILS**

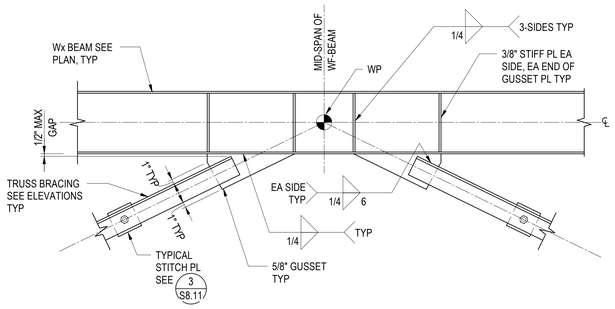
**DSA SUBMITTAL**

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| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

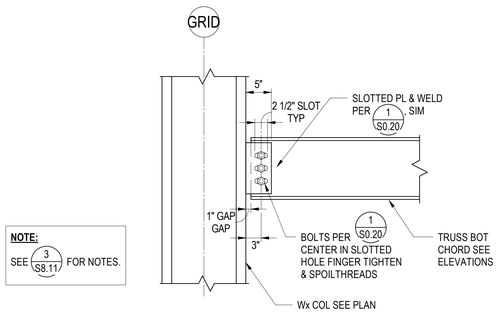
**S8.02**

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ORIGINAL 22X34 SHEETS. IF NOT, ADJUST SCALES ACCORDINGLY



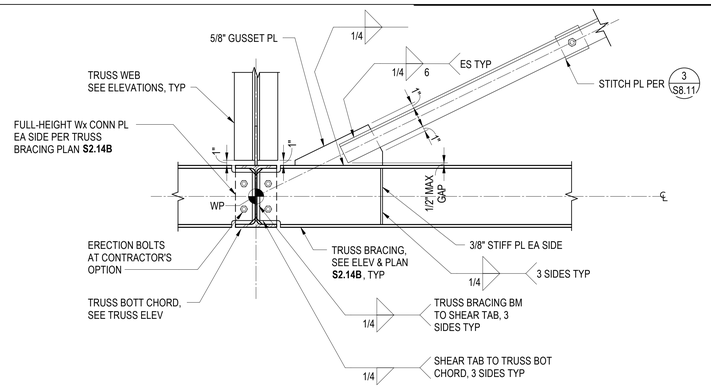

**NOTE:**
ROOF DECK NOT SHOWN FOR CLARITY.

## TRUSS BRACING DETAIL 11
NTS




**NOTE:**
SEE 3 S8.11 FOR NOTES.

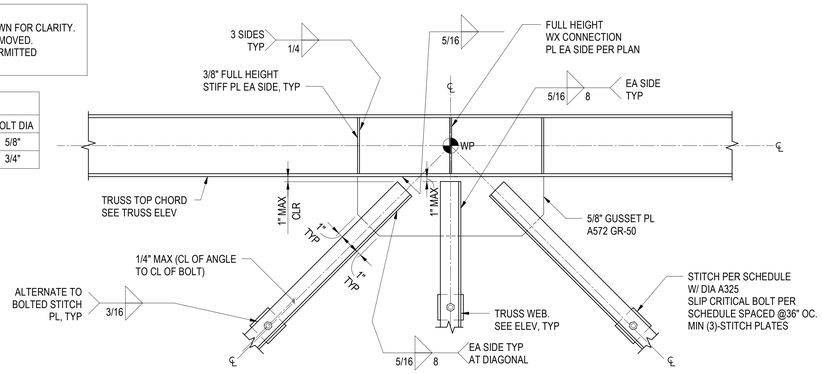
## TRUSS DETAIL 8
NTS



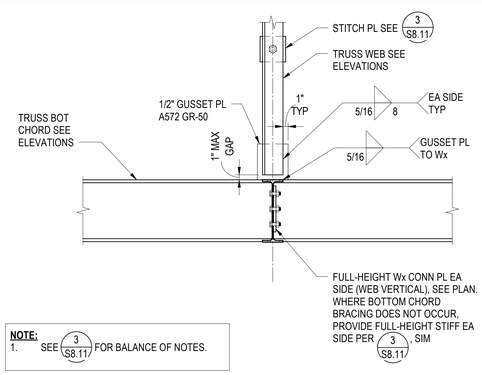

## TRUSS BRACING DETAIL 10
NTS

NOTE:
1. PERPENDICULAR BEAM NOT SHOWN FOR CLARITY.
2. ALL ERECTION AIDS SHALL BE REMOVED.
3. NO ERECTION AID HOLES ARE PERMITTED IN TRUSS MEMEBERS.

| STITCH PL CONN SCHEDULE | | |
|---|---|---|
| ANGLE WEBBING SIZE | PL SIZE | BOLT DIA |
| (2)-L3x3 | 1/2"x4"x4" | 5/8" |
| (2)-L4x4 | 1/2"x5"x5" | 3/4" |

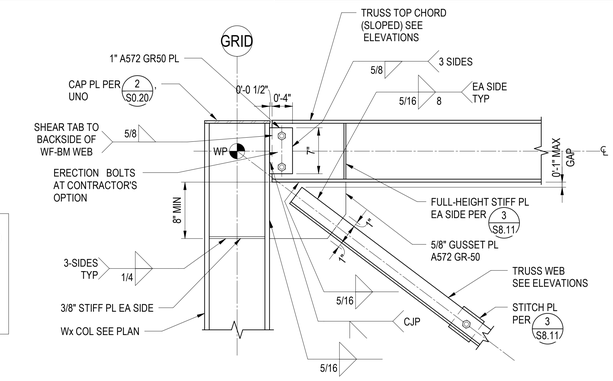



## TRUSS DETAIL 3
NTS



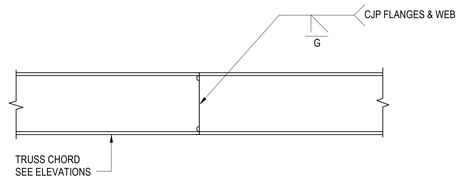

**NOTE:**
1. SEE 3 S8.11 FOR BALANCE OF NOTES.

## TRUSS DETAIL 6
NTS



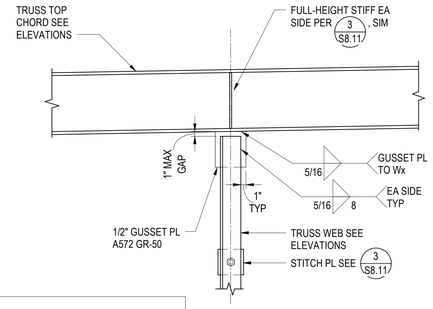

NOTES:
1. NON-FRAME PERP BEAM & PL (WHERE OCCURS) PER 2 S0.20 NOT SHOWN FOR CLARITY.
2. ROOF DECK NOT SHOWN FOR CLARITY
3. SEE 3 S8.11 FOR BALANCE OF NOTES.

## TRUSS TYPICAL DETAIL 2
NTS



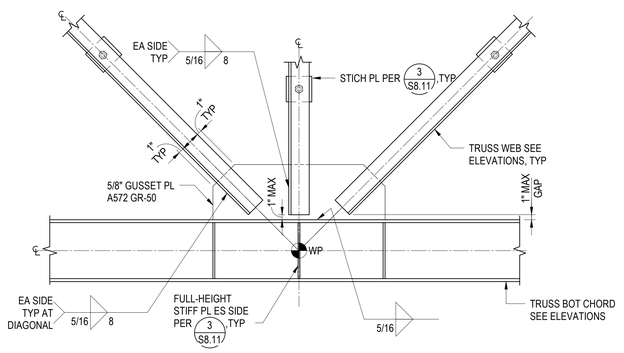

NOTE:
1. REFER TO TRUSS ELEVATION FOR SPLICE LOCATION DO NOT SPLICE CHORD AT ANY OTHER LOCATION UNLESS APPROVED BY SEOR.
2. DO NOT CONNECT ANY CROSS BEAM WITHIN A DISTANCE OF 1'-0" FROM SPLICE LOCATION.
3. SEE 3 S8.11 FOR ADD'L NOTES.

## TYPICAL TRUSS CHORD SPLICE DETAIL 9
NTS




NOTES:
1. ROOF DECK NOT SHOWN FOR CLARITY.
2. SEE 3 S8.11 FOR BALANCE OF NOTES.

## TRUSS DETAIL 5
NTS




NOTE:
SEE 3 S8.11 FOR NOTES.

## TYPICAL TRUSS DETAIL 1
NTS

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San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — KAZI S. SAIFUL ISLAM — S4892 — EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

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SHEET NAME:

**TRUSS DETAILS**

**DSA SUBMITTAL**

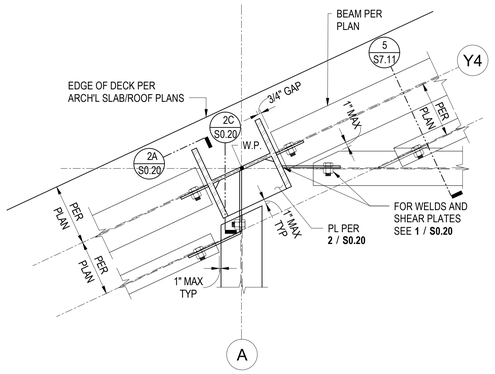
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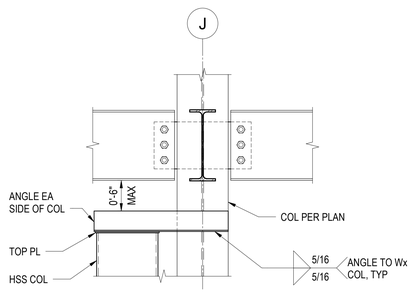
**S8.11**

PLEASE RECYCLE

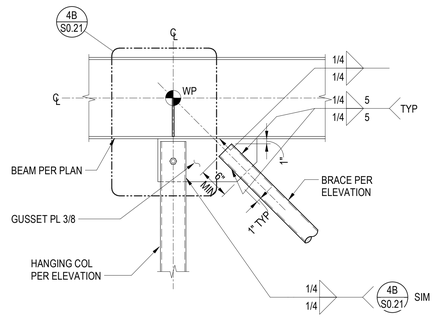
THE LINE SHOWN ABOVE IS EQUAL TO 1" ON ORIGINAL DRAWING. IF NOT SCALE DRAWING ACCORDINGLY



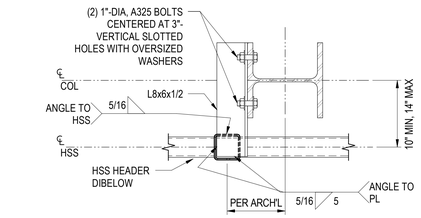

**DETAIL 11** 1" = 1'-0"



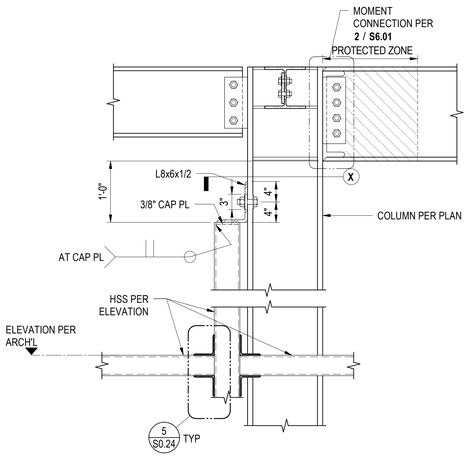

ELEVATION A-A



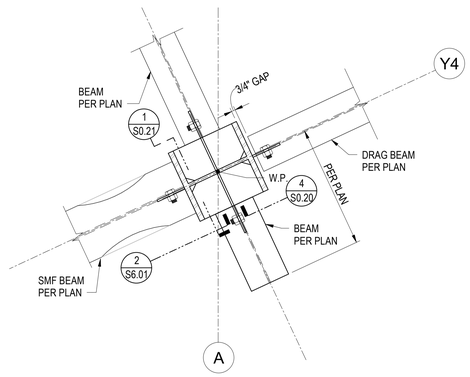

**DETAIL 4** 1" = 1'-0"



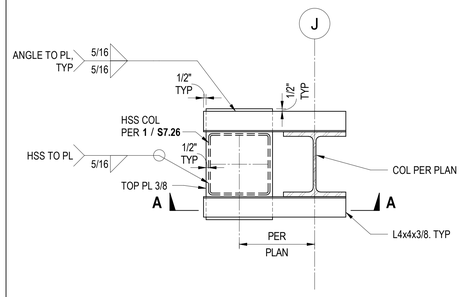

PLAN X-X




**DETAIL 13** 1" = 1'-0"



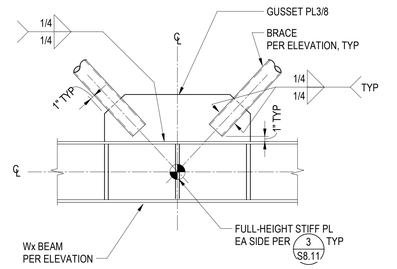

**DETAIL 10** 1" = 1'-0"



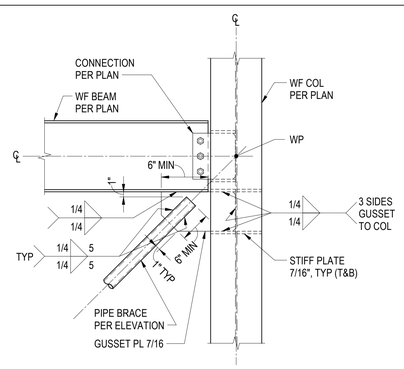

PLAN

**NOTE:**
REFER TO **6** / **S3.11** FOR BOTTOM CONNECTION.

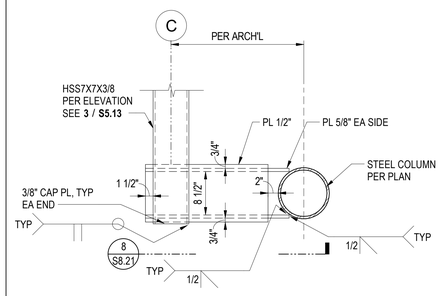
**DETAIL 7** 1" = 1'-0"



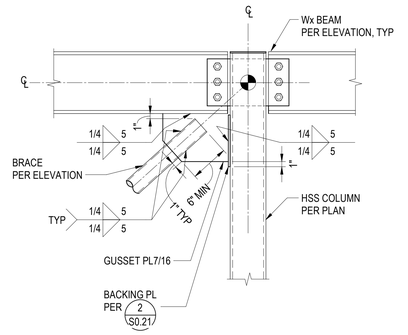

**DETAIL 3** 1" = 1'-0"



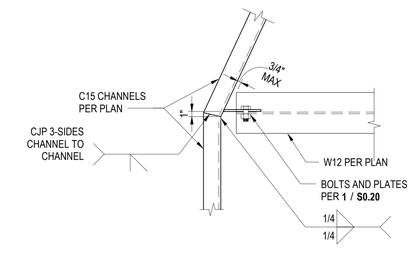

**DETAIL 9** 1" = 1'-0"



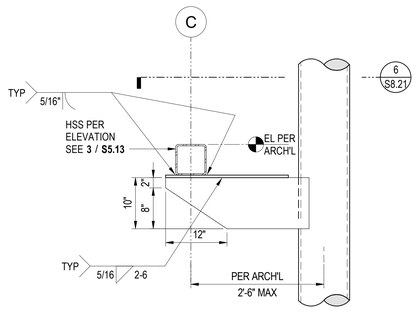

**PLAN 6** 1" = 1'-0"



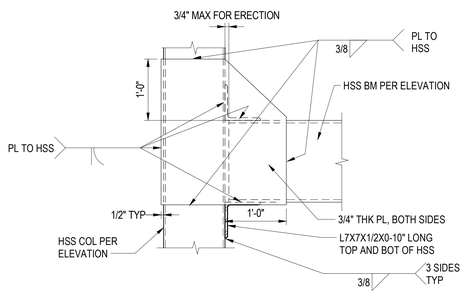

**DETAIL 2** 1" = 1'-0"



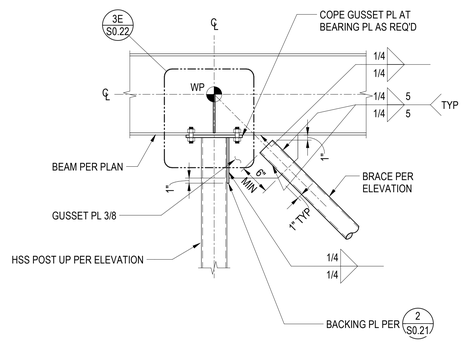

**DETAIL 12** 1" = 1'-0"




**SECTION 8** 1" = 1'-0"




**DETAIL 5** 1" = 1'-0"




**DETAIL 1** 1" = 1'-0"

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No. S 8492
EXP 12/31/26
STRUCTURAL
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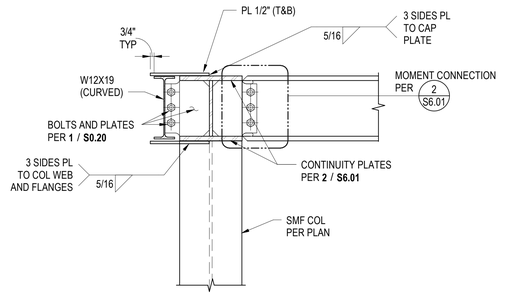
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**STEEL DETAILS**

**DSA SUBMITTAL**

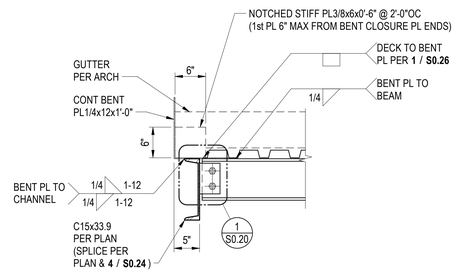
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DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**
SHEET:

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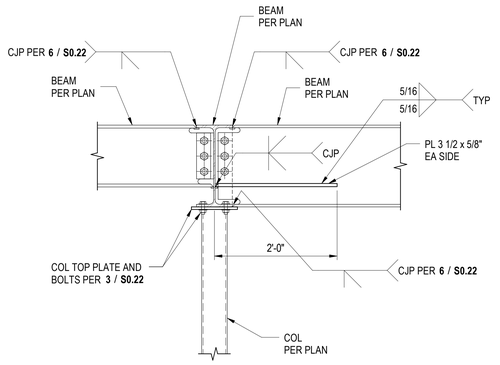
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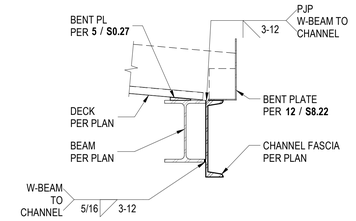

**DETAIL 16** 1" = 1'-0"



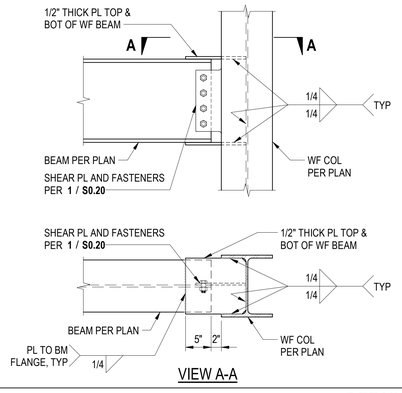

**DETAIL 12** 1" = 1'-0"



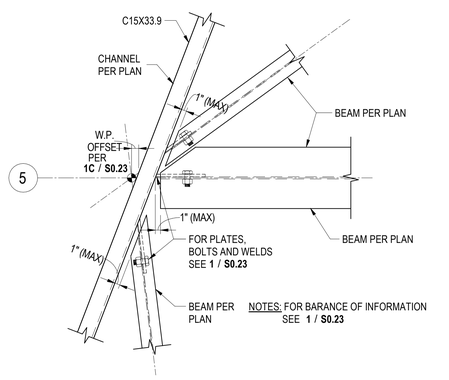

**DETAIL 8** 1" = 1'-0"



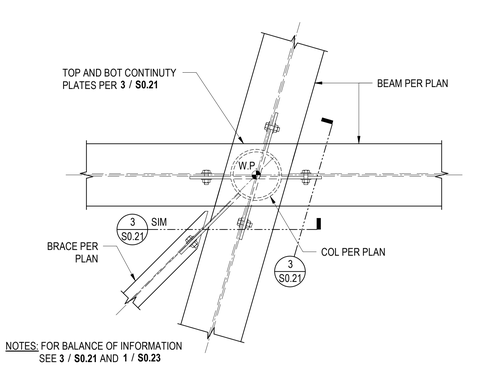

**DETAIL 4** 1" = 1'-0"



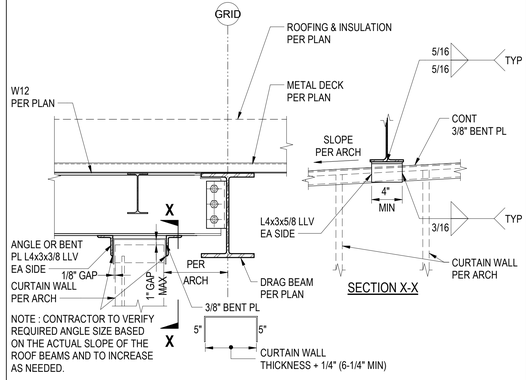

**DETAIL 15** 1" = 1'-0"



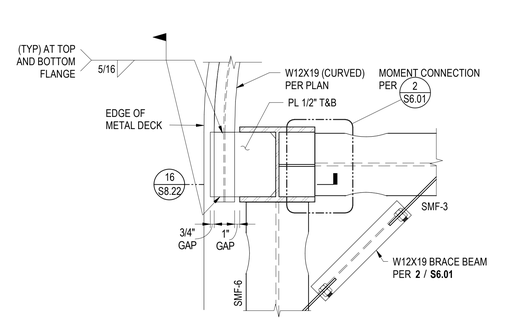

**DETAIL 11** 1" = 1'-0"



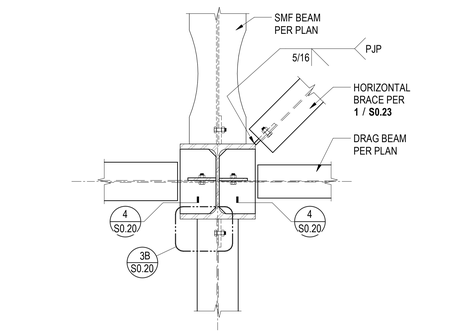

**DETAIL 7** 1" = 1'-0"



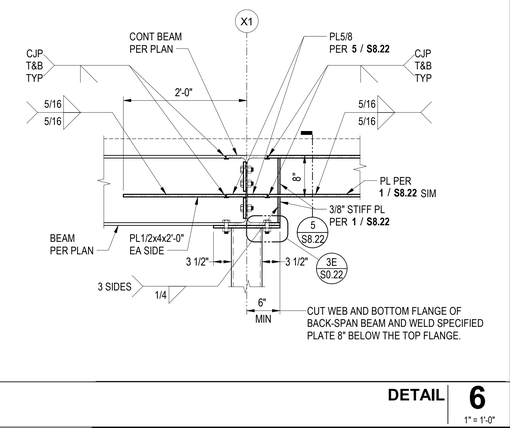

**DETAIL 3** 1" = 1'-0"



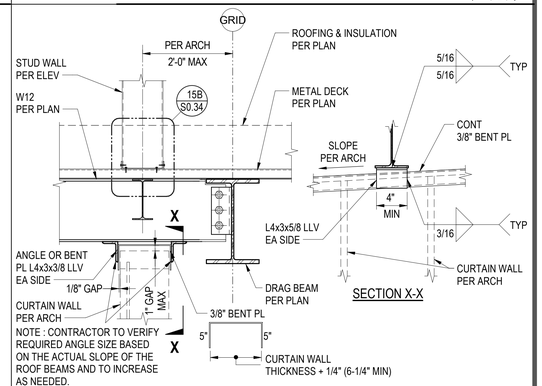

**DETAIL 14** 1" = 1'-0"



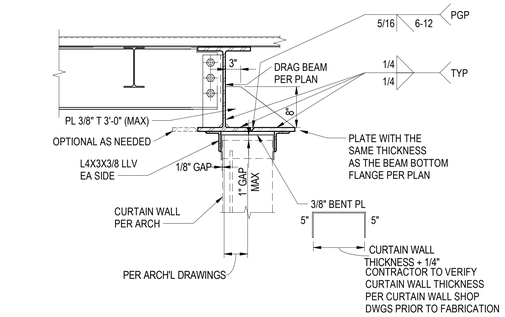

**DETAIL 10** 1" = 1'-0"



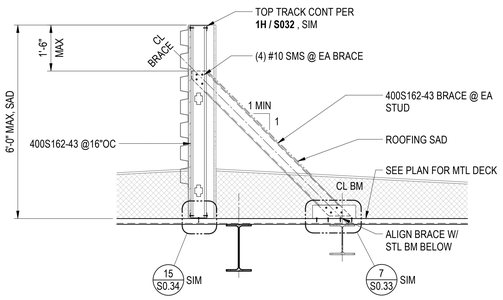

**DETAIL 6** 1" = 1'-0"



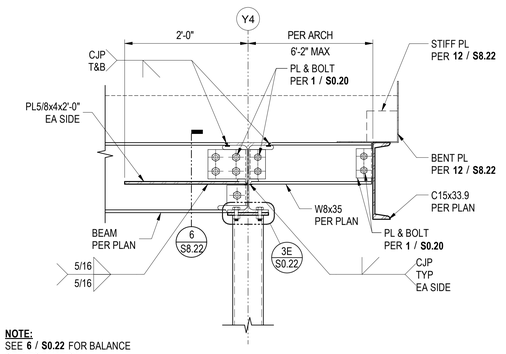

**DETAIL 2** 1" = 1'-0"



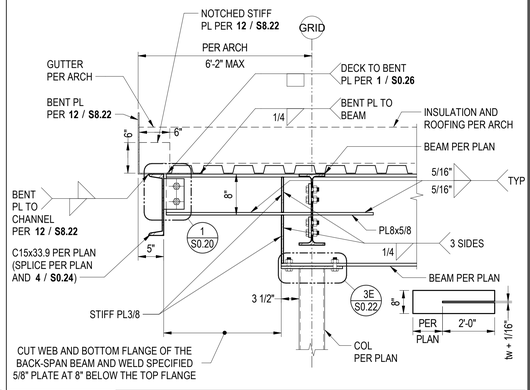

**DETAIL 13** 1" = 1'-0"




**ROOF PARAPET WALL 9** 3/4" = 1'-0"




**DETAIL 5** 1" = 1'-0"




**DETAIL 1** 1" = 1'-0"

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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER
TOBY WHALEY RANDALL
S4892
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**STEEL DETAILS**

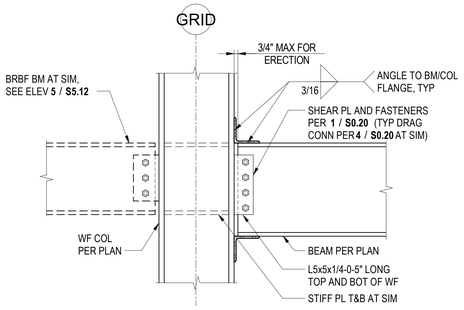
**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

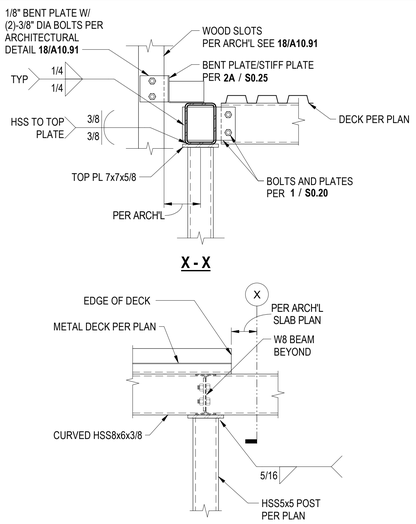
SHEET:

# S8.22

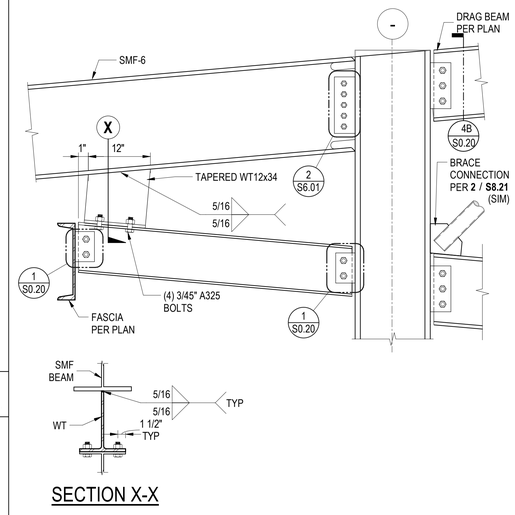
THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ARCH D SIZED SHEETS ORIGINALLY DRAWN AT FULL SCALE




**DETAIL 16** 1" = 1'-0"

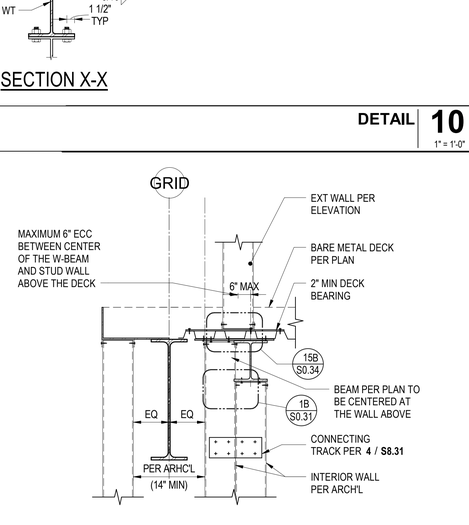



**DETAIL 12** 1" = 1'-0"




SECTION X-X

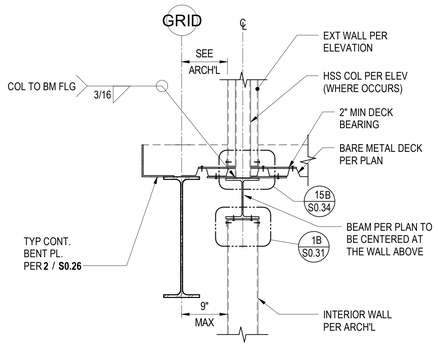
**DETAIL 10** 1" = 1'-0"



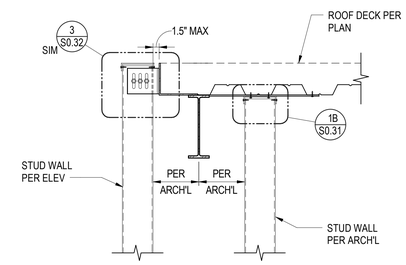

**DETAIL 9** 1" = 1'-0"



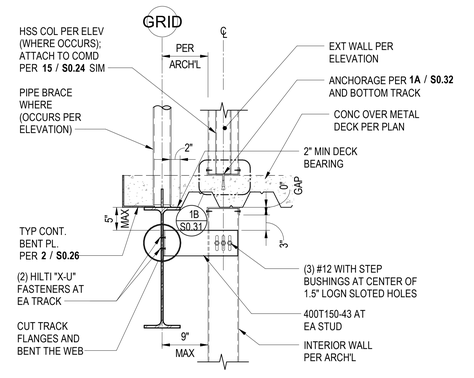

**DETAIL 11** 1" = 1'-0"



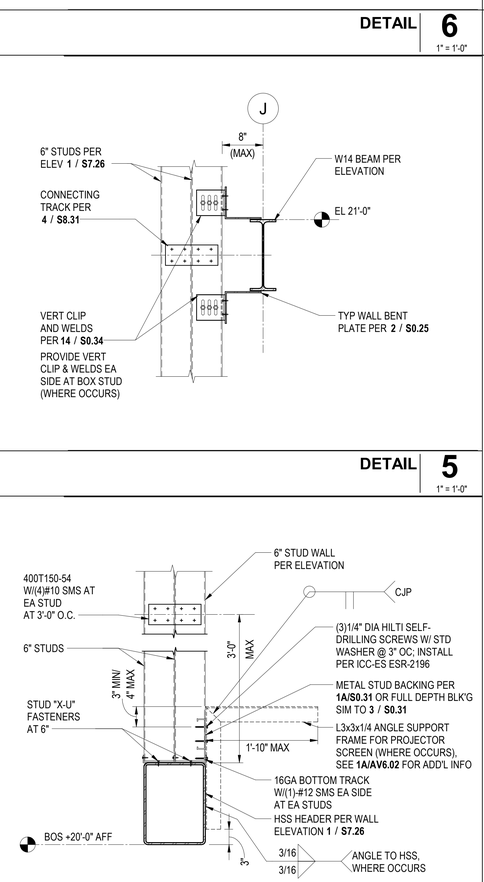

**DETAIL 8** 1" = 1'-0"




**DETAIL 7** 1" = 1'-0"



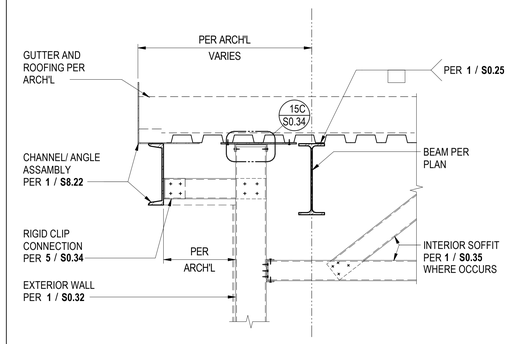

**DETAIL 6** 1" = 1'-0"



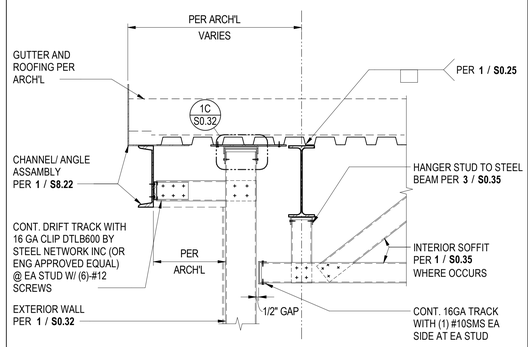

**DETAIL 4** 1" = 1'-0"



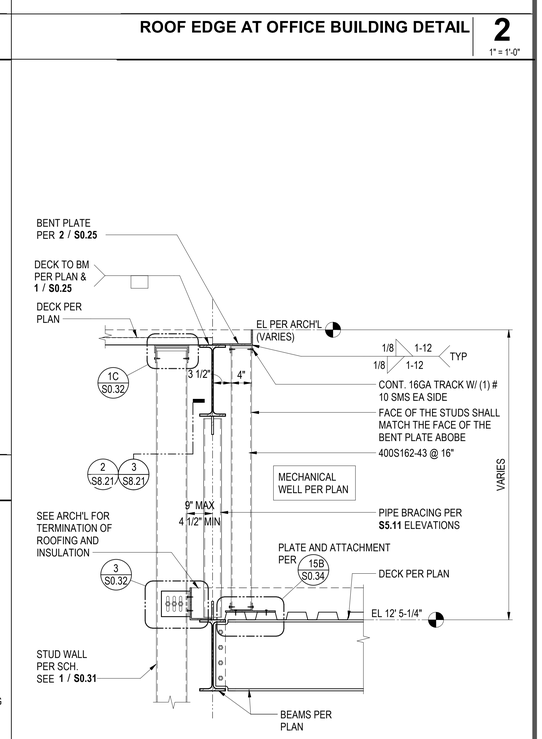

**DETAIL 5** 1" = 1'-0"




**ROOF EDGE AT THEATER BUILDING DETAIL 3** 1" = 1'-0"




**ROOF EDGE AT OFFICE BUILDING DETAIL 2** 1" = 1'-0"




**DETAIL 1** 1" = 1'-0"

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

saiful•bouquet structural engineers
225 Broadway, Ste 1300
San Diego, CA 92101
Telephone 619.630.9199
www.saifulbouquet.com
SB Job No:22576

REGISTERED PROFESSIONAL ENGINEER — S4892 EXP. 12/31/26 — STRUCTURAL — STATE OF CALIFORNIA

## NOTES

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**STEEL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**S8.31**

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL SHEET. IF NOT, SHEET IS ORIGINAL PAPER SIZE.

# ABBREVIATIONS

| | |
|---|---|
| AAV | AUTOMATIC AIR VENT |
| ABV | ABOVE |
| AC | AIR CONDITIONING |
| ACCEPT | ACCEPTANCE |
| ACU | AIR CONDITIONING UNIT |
| AD | ACCESS DOOR |
| ADD | ADDITION |
| AF | AFTER FILTER |
| AFF | ABOVE FINISHED FLOOR |
| AFMS | AIR FLOW MEASURING STATION |
| AFUE | ANNUAL FUEL UTILIZATION EFFICIENCY |
| AG | AIR GAP |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AHU | AIR HANDLING UNIT |
| AMB | AMBIENT |
| A | AMPERE |
| AP | ACCESS PANEL |
| APPROX | APPROXIMATELY |
| ARCH | ARCHITECT |
| ARI | AMERICAN REFIRGERATION INSTITUTE |
| AS | AIR SEPARATOR |
| AUTO | AUTOMATIC |
| AUX | AUXILIARY |
| B | BOILER |
| BAS | BUILDING MANAGEMENT SYSTEM |
| BDD | BACKDRAFT DAMPER |
| BEL | BELOW |
| BHP | BRAKE HORSEPOWER |
| BOD | BOTTOM OF DUCT |
| BOP | BOTTOM OF PIPE |
| BFP | BACKFLOW PREVENTER |
| BSMT | BASEMENT |
| BTU | BRITISH THERMAL UNIT |
| BTUH | BTU PER HOUR |
| BV | BALL VALVE OR BALANCING VALVE |
| BYV | BUTTERFLY VALVE |
| C | COMMON, CONDENSATE OR CONDUIT |
| CA | CONTROL AIR |
| CAP | CAPACITY |
| CAV | CONSTANT AIR VOLUME |
| CB | CHILLED BEAM |
| CC | COOLING COIL OR CONTROLS CONTRACTOR |
| CEG | CEILING EXHAUST GRILLE |
| CER | CEILING EXHAUST REGISTER |
| CFF | CAP FOR FUTURE |
| CFM | CUBIC FEET PER MINUTE |
| CFS | CUBIC FEET PER SECOND |
| CHWP | CHILLED WATER PUMP |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| CH | CHILLER |
| CHV | CHECK VALVE |
| CL | CENTERLINE |
| CLG | CEILING |
| CO | CLEANOUT |
| COL | COLUMN |
| COMP | COMPRESSOR |
| CONC | CONCRETE |
| COND | CONDENSATE |
| CONN | CONNECTION |
| CONT | CONTINUATION |
| CONTR | CONTRACTOR |
| COP | COEFFICIENT OF PERFORMANCE |
| CP | CONTROL PANEL OR CONDENSATE PUMP |
| CR | CONDENSATE RETURN |
| CRG | CEILING RETURN GRILLE |
| CRR | CEILING RETURN REGISTER |
| CSD | CEILING SUPPLY DIFFUSER |
| CTE | CONNECT TO EXISTING |
| CUFT | CUBIC FEET |
| CUIN | CUBIC INCHES |
| CV | CONSTANT VOLUME OR CONTROL VALVE |
| CW | COLD WATER |
| CWP | CONDENSER WATER PUMP |
| CWR | CONDENSER WATER RETURN |
| CWS | CONDENSER WATER SUPPLY |
| D | DROP OR DRAIN |
| DBT | DRY BULB TEMPERATURE |
| DDC | DIRECT DIGITAL CONTROL |
| DEFL | DEFLECTION |
| DIA | DIAMETER |
| DIFF | DIFFERENCE |
| DN | DOWN |
| DP | DIFFERENTIAL PRESSURE |
| DPT | DEW POINT TEMPERATURE |
| DSD | DUCT SMOKE DETECTOR |
| DV | DIAPHRAGM VALVE |
| DWG(S) | DRAWINGS(S) |
| DX | DIRECT EXPANSION |
| (E) | EXISTING |
| EA | EXHAUST AIR OR EACH |
| EAD | EXHAUST AIR DAMPER |
| EAT | ENTERING AIR TEMPERATURE |
| EC | ELECTRICAL CONTRACTOR |
| ECON | ECONOMIZER |
| EDB | ENTERING DRY BULB TEMPERATURE |
| EWT | ENTERING WATER TEMPERATURE |
| EER | ENERGY EFFICIENCY RATING |
| EF | EXHAUST FAN |
| EFF | EFFICIENCY |
| EJ | EXPANSION JOINT |
| EL | ELEVATION |
| ELEC | ELECTRICAL |
| EQUIP | EQUIPMENT |
| (ER) | EXISTING RELOCATED |
| ESP | EXTERNAL STATIC PRESSURE |
| ET | EXPANSION TANK |
| EWB | ENTERING WET BULB TEMPERATURE |
| EXH | EXHAUST |
| EXT | EXTERNAL |
| F | FAHRENHEIT |
| FPB | FAN POWERED BOX |
| FC | FLEXIBLE CONNECTION OR FAIL CLOSED |
| FCU | FAN COIL UNIT |
| FD | FIRE DAMPER |
| FF | FINAL FILTER OR FINISHED FLOOR |
| FFA/FFB | FROM FLOOR ABOVE/BELOW |
| FLR | FLOOR |
| FO | FAIL OPEN |
| FPI | FINS PER INCH |
| FPM | FEET PER MINUTE |
| FPS | FEET PER SECOND |
| FSD | FIRE/SMOKE DAMPER |
| FT | FOOT OR FEET |
| G | GAS |
| GA | GAUGE, GAGE |
| GAL | GALLONS |
| GALV | GLAVANIZED |
| GC | GAS COCK OR GENERAL CONTRACTOR |
| GLV | GLOBE VALVE |
| GN | GENERAL NOTE |
| GPM | GALLONS PER MINUTE |
| GND | GROUND |
| GV | GATE VALVE |
| H | HEIGHT |
| HB | HOSE BIBB |
| HC | HEATING COIL |
| HD | HEAD |
| HOR | HORIZONTAL |
| HP | HIGH PRESSURE |
| HP | HORSEPOWER |
| HP | HEAT PUMP |
| HPC | HIGH PRESSURE CONDENSATE |
| HPS | HIGH PRESSURE STEAM |
| HR | HOUR(S) |
| HRU | HEAT RECOVERY UNIT |
| HS | HUMIDITY SENSOR |
| HTR | HEATER |
| HV | HOSE VALVE |
| HVAC | HEATING, VENTILATING AND AIR CONDITIONING |
| HW | HEATING WATER |
| HWP | HEATING WATER PUMP |
| HWR | HEATING WATER RETURN |
| HWS | HEATING WATER SUPPLY |
| HZ | FREQUENCY (HERTZ) |
| ID | INSIDE DIAMETER |
| IN | INCH(ES) |
| INPLV | INTEGRATED PART LOAD VALUE |
| JB | JUNCTION BOX |
| KW | KILOWATT |
| KWH | KILOWATT HOUR |
| L | LENGTH |
| LAT | LEAVING AIR TEMPERATURE |
| LBS | POUNDS |
| LDB | LEAVING DRY BULB |
| LF | LINEAR FEET |
| LP | LOW PRESSURE |
| LPC | LOW PRESSURE CONDENSATE |
| LPS | LOW PRESSURE STEAM |
| LWB | LEAVING WET BULB |
| LWT | LEAVING WATER TEMPERATURE |
| M | MOTOR |
| MA | MIXED AIR |
| MAD | MIXED AIR DAMPER |
| MAX | MAXIMUM |
| MBH | THOUSAND BTU PER HOUR |
| MC | MECHANICAL CONTRACTOR |
| MCA | MINIMUM CIRCUIT AMPACITY |
| MCC | MOTORIZED CONTROL CENTER |
| MD | MOTORIZED DAMPER |
| MECH | MECHANICAL |
| MERV | MINIMUM EFFICIENCY RATING VALUE |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MOCP | MINIMUM OVER CURRENT PROTECTION |
| MPC | MEDIUM PRESSURE CONDENSATE |
| MPS | MEDIUM PRESSURE STEAM |
| MV | MANUAL AIR VENT |
| (N) | NEW |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN OR NUMBER |
| NOM | NOMINAL |
| NPSH | NET POSITIVE SUCTION HEAD |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OAD | OUTSIDE AIR DAMPER |
| OAT | OUTSIDE AIR TEMPERATURE |
| OBD | OPPOSED BLADE DAMPER |
| OC | ON CENTER |
| OD | OUTSIDE DAMPER |
| OFCI | OWNER FURNISHED CONTRACTOR INSTALLED |
| OFOI | OWNER FURNISHED OWNER INSTALLED |
| OPER | OPERATING |
| OV | OUTLET VELOCITY |
| P | PUMP OR PRESSURE OR POLE |
| PC | PUMPED CONDENSATE |
| PD | PRESSURE DROP |
| PF | PREFILTER |
| PG | PIPE GUIDE OR PRESSURE GAUGE |
| PH | PHASE (ELECTRICAL) |
| PHC | PREHEAT COIL |
| PLBG | PLUMBING |
| POC | POINT OF CONNECTION |
| POD | POINT OF DISCONNECTION |
| PRESS | PRESSURE |
| PRV | PRESSURE REDUCING VALVE |
| PS | PRESSURE SENSOR |
| PSI | POUNDS PER SQUARE INCH |
| PSIA | PSI ABSOLUTE |
| PSIG | PSI GAUGE |
| QTY | QUANTITY |
| R | RELOCATE, RISE, RISER |
| RA | RETURN AIR |
| RAD | RETURN AIR DAMPER |
| RD | REFRIGERANT DISCHARGE OR ROOF DRAIN |
| REF | ROOFTOP EXHAUST FAN |
| REFRIG | REFRIGERATION |
| REJ | REJECTION |
| REQ'D | REQUIRED |
| REV | REVISE, REVISION OR REVOLUTIONS |
| RF | RETURN FAN |
| RH | RELATIVE HUMIDITY |
| RHC | REHEAT COIL |
| RHT | RADIANT HEATER |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| RS | REFRIGERANT SUCTION |
| RTU | ROOFTOP UNIT |
| S | SUPPLY OR SLOPE |
| SA | SUPPLY AIR |
| SCFM | CFM, STANDARD CONDITIONS |
| SD | SMOKE DAMPER |
| SEER | SEASONAL ENERGY EFFICIENCY RATING |
| SEN | SENSIBLE |
| SF | SUPPLY FAN OR SQUARE FEET |
| SHC | SQUARE HEAD COCK |
| SIU | SPLIT INDOOR UNIT |
| SOU | SPLIT OUTDOOR UNIT |
| SP | STATIC PRESSURE |
| SPD | SPLITTER DAMPER |
| SPEC | SPECIFICATIONS |
| SQ IN | SQUARE INCH |
| ST | STRAINER OR SOUND TRAP |
| STD | STANDARD |
| STRUCT | STRUCTURAL |
| SV | STEAM VENT |
| T | THERMOSTAT OR THERMOMETER |
| TCP | TEMPERATURE CONTROL PANEL |
| TDH | TOTAL DYNAMIC HEAD |
| TEMP | TEMPERATURE |
| TFA/TFB | TO FLOOR ABOVE/BELOW |
| TI | TENANT IMPROVEMENT |
| TRG | TRANSFER GRILLE |
| TS | TEMPERATURE SENSOR |
| TSP | TOTAL STATIC PRESSURE |
| TT | TEST TAP OR TEST TEE |
| TXV | THERMAL EXPANSION VALVE |
| (TYP) | TYPICAL |
| U | HEAT TRANSFER COEFFICIENT |
| UC | UNDER CUT DOOR |
| UG | UNDERGROUND |
| UH | UNIT HEATER |
| UON | UNLESS OTHERWISE NOTED |
| V | VENT OR VOLUME OR VELOCITY |
| VAV | VARIABLE AIR VOLUME |
| VB | VACUUM BREAKER |
| BD | VOLUME DAMPER |
| VEL | VELOCITY |
| VERT | VERTICAL |
| VFD | VARIABLE FREQUENCY DRIVE |
| VFM | VENTURI FLOW METER |
| VOL | VOLUME |
| VTR | VENT THROUGH ROOF |
| W | WASTE OR WIDTH OR WATTS |
| W/ | WITH |
| W/O | WITHOUT |
| WB | WET BULB TEMPERATURE |
| WC | WATER COLUMN |
| WEG | WALL EXHAUST GRILLE |
| WG | WATER GAUGE |
| WP | WORKING PRESSURE |
| WPD | WATER PRESSURE DROP |
| WRR | WALL RETURN REGISTER |
| WSHP | WATER-SOURCE HEAT PUMP |
| WSR | WALL SUPPLY REGISTER |
| WT | WEIGHT |
| XFMR | TRANSFORMER |
| Z | ZONE |
| ZD | ZONE DAMPER |

# HVAC LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

## GENERAL

| SYMBOL | DESCRIPTION |
|---|---|
| | NEW WORK |
| (E) | EXISTING WORK TO REMAIN |
| (D) | EXISTING WORK TO BE REMOVED |
| (F) | FUTURE WORK |
| (ER) | EXISTING RELOCATED |
| ℄ | CENTER LINE |
| | POINT OF CONNECTION OR POINT OF DISCONNECTION |
| 1 / M-1 | DETAIL 1, DRAWING M-1 |
| A / M-1 | SECTION A, DRAWING M-1 |
| 1 / M-1 | ELEVATION 1, DRAWING M-1 |
| EXH / 1 | RISER IDENTIFICATION EXHAUST #1 |
| HP / 1 | EQUIPMENT IDENTIFICATION HEAT PUMP UNIT #1 |
| 1 | KITCHEN EQUIPMENT TAG |
| # | KEYED NOTE |
| 150 / 78°F | DIRECTION OF TRANSFER AIRFLOW (150 CFM) 78 DEGREES FAHRENHEIT |

## PIPING

| SYMBOL | DESCRIPTION |
|---|---|
| | DIRECTION OF SLOPE |
| | DIRECTION OF FLOW |
| | PIPE UP (OR UP & DOWN WITH NOTATION) |
| | PIPE DOWN |
| | PIPE DROP/PIPE RISE |
| | TOP CONNECTION - BRANCH LINE |
| | BOTTOM CONNECTION - BRANCH LINE |
| | PIPE ANCHOR |
| | TEE UP |
| | TEE DOWN |
| | STRAINER |
| | STRAINER WITH BLOW OFF |
| | INLINE PUMP |
| | BASE MOUNTED PUMP |
| | TEST TAP (PETE'S PLUG) |
| | MANUAL AIR VENT |
| | AUTOMATIC AIR VENT |
| | VACUUM BREAKER |
| | VENT THRU ROOF |
| | PIPE GUIDE |
| | EXPANSION JOINT |
| | FLEXIBLE CONNECTOR |
| | UNION |
| | CAPPED OR PLUGGED TEE |
| | BLIND FLANGE, CAP |
| | CONCENTRIC REDUCER |
| | EXPANSION LOOP |
| | VALVE ON RISE |
| 6" | PIPE SIZE (DIAMETER IN INCHES) |

## VALVES & GAUGES

| SYMBOL | DESCRIPTION |
|---|---|
| | BALL VALVE |
| | SOLENOID CONTROL VALVE |
| | PRESSURE AND TEMP. RELIEF VALVE |
| | BUTTERFLY VALVE |
| | MOTORIZED BUTTERFLY VALVE |
| | GATE VALVE |
| | BALANCING VALVE |
| | ANGLE GATE VALVE |
| | GLOBE VALVE |
| | ANGLE GLOBE VALVE |
| | CHECK VALVE |
| | 2-WAY CONTROL VALVE |
| | 3-WAY CONTROL VALVE |
| | NON-SLAM WAFER CHECK VALVE |
| | PRESSURE REDUCING VALVE (PRV) |
| | DIAPHRAGM VALVE |
| | LOCK SHIELD VALVE |
| | NEEDLE VALVE |
| | QUICK OPENING VALVE |
| | VENTURI FLOW METER |
| | PRESSURE GAUGE |
| | PRESS. GAUGE WITH COCK AND SNUBBER |
| | THERMOMETER |

## CONTROLS

| SYMBOL | DESCRIPTION |
|---|---|
| TS | TEMPERATURE SENSOR |
| T | THERMOSTAT OR THERMOMETER |
| CO2 | CARBON DIOXIDE SENSOR |
| OS | OCCUPANCY SENSOR |
| H | HUMIDITY SENSOR OR HUMIDISTAT |
| SP | STATIC PRESSURE SENSOR |
| RS | REFRIGERANT SENSOR |
| CO | CARBON MONOXIDE SENSOR |
| H | HYDROGEN SENSOR |
| DSD | DUCT SMOKE DETECTOR |
| TS | TEMPERATURE SENSOR |
| SP | STATIC PRESSURE SENSOR |
| PS | PRESSURE SENSOR OR SWITCH |
| DPS | DIFFERENTIAL PRESSURE SENSOR |
| AFMS | AIR FLOW MEASURING STATION |
| HS | HUMIDITY SENSOR |
| FS | FLOW SENSOR OR SWITCH |
| FM | FLOW METER |
| CS | CURRENT SENSOR |
| M | MOTOR |
| A | ACTUATOR |
| HM | HYDROGEN MONITOR |
| RM | REFRIGERANT MONITOR |

WALL / CEILING MOUNTED DEVICE

EQUIPMENT / SYSTEM MOUNTED DEVICE

| | |
|---|---|
| AI | ANALOG INPUT |
| AO | ANALOG OUTPUT |
| DI | DIGITAL INPUT |
| DO | DIGITAL OUTPUT |
| BAS | BUILDING AUTOMATION SYSTEM |
| PI | PULSING INPUT |

## MISCELLANEOUS

| SYMBOL | DESCRIPTION |
|---|---|
| RD | REFRIGERANT DISCHARGE |
| RS | REFRIGERANT SUCTION |
| | PNEUMATIC CONTROL VALVE |
| A | AIR LINE |
| ST | SOUND TRAP |
| CC | COOLING COIL |
| HC | HEATING COIL |
| RHT | RADIANT HEATER |
| BHT | BASEBOARD HEATER |
| CB | CHILLED BEAM |
| | THRUST BLOCK |

## DUCTWORK

| SYMBOL | DESCRIPTION |
|---|---|
| AD/AP | ACCESS DOOR / ACCESS PANEL |
| | FLEXIBLE CONNECTION |
| | FLEXIBLE DUCT RUNOUT TO DIFFUSER |
| 12x6 | RECTANGULAR DUCT SIZE (WIDTH x DEPTH IN INCHES) |
| 18ø | ROUND DUCT SIZE (DIAMETER IN INCHES) |
| 24x12ø | OVAL DUCT SIZE (WIDTH x DEPTH IN INCHES) |
| | DUCT THROUGH BEAM PENETRATION |
| R D | DUCT OFFSET (RISE OR DROP) |
| VD RVD | VOLUME DAMPER OR REMOTE VOLUME DAMPER |
| FD SD FSD | FIRE, SMOKE OR FIRE/SMOKE DAMPER |
| | SUPPLY DUCT UP |
| | SUPPLY DUCT DOWN |
| | EXHAUST DUCT UP |
| | EXHAUST DUCT DOWN |
| | RETURN DUCT UP |
| | RETURN DUCT DOWN |
| | CROSS SECTION OF SUPPLY DUCT |
| | CROSS SECTION OF EXHAUST AIR DUCT |
| | CROSS SECTION OF RETURN AIR DUCT |
| | CROSS SECTION OF ROUND DUCT |
| | DUCT ELBOW WITH TURNING VANES |
| | SMOOTH RADIUS DUCT ELBOW WITHOUT TURNING VANES |
| | CONICAL BRANCH FITTING |
| | 45 DEGREE BOOT LO-LOSS BRANCH FITTING |
| | WYE BRANCH FITTING |
| 12x6 / M | ACOUSTICAL LINING DUCT (DIMENSION IS INSIDE DIMENSION) MOTORIZED DAMPER INSIDE DUCT |
| TAG NECK SIZE-CFM | TRANSFER DUCT (WITH LINER) |
| 8' - 11" BOD | INDICATES 8'11" TO BOTTOM OF DUCT |
| TAG NECK SIZE-CFM | RECTANGULAR OR ROUND SUPPLY DIFFUSER OR REGISTER (SEE SCHEDULE). 4-WAY THROW UNLESS INDICATED OTHERWISE. EXAMPLE: SB12X12-400 REFERS TO TAG SB WITH 12"X12" NECK AND 400 CFM |
| TAG NECK SIZE-CFM | RECTANGULAR OR ROUND EXHAUST GRILLE OR REGISTER (SEE SCHEDULE) |
| TAG NECK SIZE-CFM | RECTANGULAR OR ROUND RETURN GRILLE OR REGISTER (SEE SCHEDULE) |
| TAG NECK SIZE-CFM | WALL SUPPLY GRILLE OR REGISTER (SEE SCHEDULE) |
| TAG NECK SIZE-CFM | WALL RETURN OR EXHAUST GRILLE OR REGISTER (SEE SCHEDULE) |
| TAG NECK SIZE-LENGTH-CFM | LINEAR SLOT DIFFUSER (SEE SCHEDULE FOR NUMBER OF SLOTS ). 2-WAY THROW UNLESS NOTED OTHERWISE. EXAMPLES: SN10-48-250 REFERS TO TAG SN WITH 10" ROUND NECK, 48" SLOT LENGTH AND 250 CFM. |

# HVAC DRAWING LIST

| SHEET NUMBER | SHEET NAME |
|---|---|
| M0.00 | MECHANICAL LEGEND AND ABBREVIATIONS |
| M0.01 | BASIS OF DESIGN AND GENERAL NOTES |
| M0.02 | MECHANICAL SCHEDULES |
| M0.03 | MECHANICAL SCHEDULES |
| M2.11 | LEVEL 1 - OVERALL HVAC PLAN |
| M2.11A | LEVEL 1 - HVAC PLAN - SEGMENT A |
| M2.11B | LEVEL 1 - HVAC PLAN - SEGMENT B |
| M2.12 | LEVEL 2 - HVAC PLAN - SEGMENT B |
| M2.21 | ROOF - OVERALL HVAC PLAN |
| M2.21A | ROOF - HVAC PLAN - SEGMENT A |
| M2.21B | ROOF - HVAC PLAN - SEGMENT B |
| M3.11 | LEVEL 1 - OVERALL HVAC ZONING PLAN |
| M3.11A | LEVEL 1 - HVAC ZONING PLAN - SEGMENT A |
| M3.11B | LEVEL 1 - HVAC ZONING PLAN - SEGMENT B |
| M3.12 | LEVEL 2 - ZONING PLAN - SEGMENT B |
| M4.11 | LEVEL 1 - OVERALL REFRIGERANT PIPING PLAN |
| M4.11A | LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT A |
| M4.11B | LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT B |
| M4.21 | ROOF - OVERALL REFRIGERANT PIPING PLAN |
| M4.21A | ROOF - REFRIGERANT PIPING PLAN - SEGMENT A |
| M4.21B | ROOF - REFRIGERANT PIPING PLAN - SEGMENT B |
| M5.01 | MECHANICAL SECTIONS |
| M6.01 | MECHANICAL EQUIPMENT SELECTIONS |
| M6.02 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.03 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.04 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M6.05 | MECHANICAL DUCTWORK RISER DIAGRAMS |
| M7.01 | MECHANICAL CONTROLS |
| M7.02 | MECHANICAL CONTROLS |
| M7.03 | MECHANICAL CONTROLS |
| M7.04 | MECHANICAL CONTROLS |
| M7.05 | MECHANICAL CONTROLS |
| M9.01 | MECHANICAL DETAILS |
| M9.02 | MECHANICAL DETAILS |
| M9.03 | MECHANICAL OPM DETAILS |
| M9.04 | MECHANICAL OPM DETAILS |
| M9.05 | MECHANICAL OPM DETAILS |
| M9.06 | MECHANICAL DETAILS |
| M9.07 | MECHANICAL OPM DETAILS |
| M9.08 | MECHANICAL OPM DETAILS |
| M10.01 | MECHANICAL TITLE-24 |
| M10.02 | MECHANICAL TITLE-24 |
| M10.03 | MECHANICAL TITLE-24 |
| M10.04 | MECHANICAL TITLE-24 |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


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| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
MECHANICAL
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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL LEGEND AND ABBREVIATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**M0.00**


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6/30/2025 10:50:46 AM


PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF IT IS NOT, ADJUST SCALE ACCORDINGLY

# DSA ANCHORAGE NOTES

APPLICABLE CODE: 2022 CBC REVISED: 04/21/2023

**MEP COMPONENT ANCHORAGE NOTE**

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7- 16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.

2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER, "PERMANENTLY ATTACHED SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.

3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.
THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

**PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE**

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A 1.24, 1617A.1.25 AND 1617A 1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP☐MD☐PP☐E☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☒MD☒PP☐E☐OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) # 0203-13.

# 2022 CALIFORNIA GREEN BUILDING CODE

PER THE 2022 CALIFORNIA GREEN BUILDING STANDARD CODE (CGBSC), THE FOLLOWING IS REQUIRED:

1. PER SECTION 5.504.1, THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING OR AREAS WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, FILTERS WITH A MINIMUM OF MERV 8 (ASHRAE 52.2-1999) SHALL BE USED. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY.
2. PER SECTION 5.504.5.3, ALL SPACES THAT ARE REGULARLY OCCUPIED AREAS OF THE BUILDING SHALL BE PROVIDED A MINIMUM MERV 13 FILTER FOR OUTSIDE AND RETURN AIR. REFER TO SCHEDULES FOR ADDITIONAL FILTRATION REQUIREMENTS. MERV 13 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.
3. PER SECTION 5.504.5.3.1, INSTALLED FILTERS SHALL BE CLEARLY LABELED BY THE MANUFACTURER INDICATING THE MERV RATING.
4. PER SECTION 5.505.1, BUILDINGS SHALL MEET OR EXCEED THE PROVISIONS OF CALIFORNIA BUILDING CODE, CCR TITLE 24, PART 2, SECTIONS 1203 (VENTILATION) AND CHAPTER 14 (EXTERIOR WALLS). FOR ADDITIONAL MEASURES, REFER TO ARCHITECTURAL AND LANDSCAPE AND SECTION 5.407.2.
5. PER SECTION 5.506.1, FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, THE MINIMUM VENTILATION SHALL MEET THE MINIMUM REQUIREMENTS OF SECTION 120.1 (REQUIREMENTS FOR VENTILATION OF THE CALIFORNIA ENERGY CODE, THE APPLICABLE LOCAL CODE, OR ASHRAE 62.1, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8.
6. PER SECTION 5.506.2, FOR BUILDINGS OR ADDITIONS EQUIPPER WITH DEMAND CONTROL VENTILATION, CO2 SENSORS AND VENTILATION CONTROLS SHALL MEET THE REQUIREMENTS AND BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY CODE, SECTION 120.1(c)(4).
7. PER SECTION 5.508.1, 5.508.1.1, AND 5.508.1.2, HVAC REFRIGERATION AND FIRE SUPPRESSION SYSTEMS SHALL NOT CONTAIN CHLOROFLOUROCARBONS (CFC'S) OR HALONS.

# GENERAL NOTES

1. CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DO NOT SCALE FOR MATERIAL QUANTITIES. ALL SCALING SHOULD BE REFERENCED TO ARCHITECTURAL PLANS ONLY.
2. GENERAL NOTES AND LEGEND APPLY TO ALL SHEETS.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED FEES, PERMITS AND INSPECTIONS. OBTAIN ALL FIELD APPROVALS ON WORK FROM REGULATING AGENCIES WHERE REQUIRED.
4. DURING ENTIRE CONSTRUCTION PERIOD MAINTAIN ADEQUATE FIRE EXTINGUISHERS READY FOR USE IN CASE OF FIRE.
5. PROTECTION OF PUBLIC: THE CONTRACTOR SHALL PROTECT THE PUBLIC FROM INJURY DURING PROGRESS OF THE WORK BY POSTING WARNING SIGNS, GUARD LIGHTS AND BARRICADES AS REQUIRED.
6. COORDINATE ALL WORK WITH VARIOUS TRADES IN INSTALLING ALL WORK TO CLEAR ARCHITECTURAL AND STRUCTURAL MEMBERS. NO WORK SUCH AS PIPE, DUCT, ETC., TO BE IN CONTACT WITH ANY EQUIPMENT OR BUILDING MEMBERS.
7. COORDINATE ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR AND OTHER DISCIPLINES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO HIS WORK.
8. OBTAIN WRITTEN PERMISSION OF STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS. DO NOT CUT ROOF FRAMING.
9. COORDINATE PENETRATION PROTECTION REQUIREMENTS WITH ALL DESIGN ELEMENTS (ELECTRICAL, MECHANICAL, PLUMBING, STRUCTURAL, FIRE ALARMS, SPRINKLERS, ETC).
10. REFER TO STRUCTURAL DESIGN FOR SEISMIC ATTACHMENT REQUIREMENTS PER THE BUILDING CODE. CONTRACTOR SHALL MAINTAIN ONE COPY ON SITE AT ALL TIMES FOR REVIEW AND ACCESS BY INSPECTORS AND OWNER'S REPRESENTATIVES.
11. THESE PLANS AND ACCOMPANYING SPECIFICATIONS HAVE BEEN DESIGNED TO SHOW SUBSTANTIAL COMPLIANCE WITH THE ENERGY STANDARDS. ALL EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE BUILDING ENERGY EFFICIENCY STANDARDS.
12. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
13. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
14. ALL DUCT HANGERS AND SUPPORTS SHALL COMPLY WITH THE MECHANICAL CODE.
15. ALL SUPPLY, RETURN AND EXHAUST AIR DUCTWORK SHALL BE GALVANIZED SHEET METAL IN ACCORDANCE WITH MECHANICAL CODE AND ASHRAE STANDARDS. DUCT GAUGE AND CONSTRUCTION SHALL BE SELECTED AT 1.5 TIMES THE DESIGN FAN SUPPLY STATIC. INSTALL SINGLE THICKNESS TURNING VANES AT EACH RECTANGULAR ELBOW OR PROVIDE 1.5X RADIUSED ELBOWS.
16. DIMENSIONS AND SHAPE OF THE DUCT MAY BE ALTERED, AS LONG AS THE SAME AIR VELOCITY AND FLOW RATE ARE MAINTAINED UP TO A MAXIMUM ASPECT RATIO OF 4:1, TO AVOID INTERFERENCES AND MAINTAIN ADEQUATE CLEARANCES.
17. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
18. SEAL ALL DUCT JOINTS, INCLUDING LONGITUDINAL JOINTS, WITH WATER BASED SEALANT. MAXIMUM ALLOWABLE DUCTWORK LEAKAGE SHALL NOT EXCEED 5% AND AS DEFINED ELSEWHERE IN DOCUMENTS.
19. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE INSULATED WITH NOT LESS THAN THE AMOUNT OF INSULATION INDICATED IN ACCORDANCE WITH THE MECHANICAL CODE AND ENERGY CODE. ALL DUCTWORK MOUNTED EXTERIOR TO THE BUILDING ENVELOPE SHALL BE SANDWICHED INSULATION WITH DOUBLE WALL SHEETMETAL CONSTRUCTION.
20. IDENTIFY ALL NEW MECHANICAL EQUIPMENT WITH NAMEPLATES PERMANENTLY ENGRAVED WITH 1/2 INCH HIGH WHITE LETTERS ON A BLACK BACKGROUND. IDENTIFY EQUIPMENT WITH SYMBOLS SHOWN ON THE PLANS AND AREA SERVED DESCRIPTION.
21. INSTALL VOLUME DAMPERS WHERE SHOWN AND AS REQUIRED FOR PROPER BALANCING OF EACH DIFFUSER/GRILLE/REGISTER, INCLUDING DEVICES WITH OPPOSED BLADE DAMPERS. VOLUME DAMPERS SHALL BE MOUNTED IMMEDIATELY DOWNSTREAM OF BRANCH CONNECTIONS. PROVIDE EXTENDED REGULATORS, WITH CONCEALED COVER PLATES, TO OPERATE DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS.
22. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.
23. PROVIDE FLASHING AND COUNTERFLASHING FOR ALL PENETRATIONS THROUGH WALLS OR ROOF TO MAKE WATERPROOF INSTALLATION.
24. OUTSIDE AIR FOR A HEATING OR COOLING SYSTEM SHALL NOT BE TAKEN FROM CLOSER THAN 10 FEET FROM AN APPLIANCE VENT OUTLET, VENT OPENING OF A PLUMBING SYSTEM, OR THE DISCHARGE OUTLET OF EXHAUST FAN, UNLESS THE OUTLET IS 3 FEET ABOVE THE OUTSIDE AIR INLET.
25. COORDINATE ALL SUPPLY DIFFUSERS AND RETURN GRILLES WITH CEILING GRID, LIGHTS, SPRINKLER HEADS, SEISMIC BRACING, TELEPHONE EQUIPMENT, AREA DETECTORS, ETC.
26. CEILING DIFFUSER SIZES SHOWN INDICATE NECK SIZES. PROVIDE FRAMES AS REQUIRED TO MATCH MOUNTING SURFACE.
27. DUCT SIZE SERVING DIFFUSERS AND GRILLES MUST BE EQUAL OR GREATER IN AREA UNLESS OTHERWISE NOTED ON THE DRAWINGS.

# GENERAL NOTES

28. SUPPORT ALL PIPING SO THAT IT IS FIRMLY HELD IN PLACE BY APPROVED IRON HANGERS AND SUPPORTS, IN ACCORDANCE WITH RECOMMENDATIONS OF AMERICAN PIPE FITTERS ASSOCIATION AND PIPE HANGER INSTITUTE.
29. MOTOR STARTERS AND VARIABLE FREQUENCY DRIVES, WHERE REQUIRED, SHALL BE PROVIDED AND MOUNTED BY THE MECHANICAL INSTALLER AND WIRING/CONDUIT BY ELECTRICAL INSTALLER.
30. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
31. IN CORRIDORS WHERE CEILING SPEAKERS AND AIR DIFFUSERS ARE INDICATED BETWEEN THE SAME LIGHT FIXTURES, INSTALL BOTH DEVICES AT THE QUARTER POINTS BETWEEN THE SAME FIXTURE.
32. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
33. ALL ROOFTOP UNITS AND FAN COIL UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.
34. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS AND VALVING. ACCESS CLEARANCE REQUIREMENTS SHALL BE PER MANUFACTURER RECOMMENDATIONS OR 30"x30"x30" PER 2022 CMC 304.1, WHICHEVER IS GREATER.
35. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS AND FANS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
36. INDIVIDUAL RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED FIVE (5) FEET. AND SHALL NOT BE USED IN LIEU OF RIGID ELBOWS PER 2019 CMC 603.4.1.
37. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
38. ALL EQUIPMENT ATTACHED AND ANCHORED PER THE APPLICABLE BUILDING CODE, MANUFACTURER'S INSTRUCTIONS AND STRUCTURAL DESIGN.
39. PROVIDE VIBRATION ISOLATION DEVICES FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
40. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
41. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL FANS, SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, HUMIDIFIERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK WHICH REQUIRE OPERATION, ADJUSTMENT AND MAINTENANCE.
42. DUCT MOUNTED PHOTOELECTRIC SMOKE DETECTORS SHALL BE INSTALLED WITH ONE REQUIRED FOR EACH HEATING OR COOLING SYSTEM SUPPLYING AIR IN EXCESS OF 2000 CFM (3400 CMH) AND IN SYSTEMS SERVING MORE THAN ONE OCCUPANCY TYPE. DETECTOR SHALL BE PROVIDED WITH METAL SAMPLING TUBE AND BE MOUNTED IN THE SUPPLY AIR DUCTWORK. DETECTOR SHALL SHUT DOWN THE AIR-MOVING EQUIPMENT WHEN SMOKE IS DETECTED. PROVIDE REMOTE TEST AND RESET STATION FOR MOUNTING AT THE CEILING OR WALL IN THE VICINITY OF THE SMOKE DETECTOR.
43. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL INSTALLER. THE MECHANICAL INSTALLER SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
44. THE EXACT LOCATION AND SIZE OF EQUIPMENT PADS, ROOF OPENINGS, WALL OPENINGS, WALL/FLOOR PENETRATIONS, AND MOUNTING FRAMES SHALL BE COORDINATED IN THE FIELD WITH FINAL EQUIPMENT FURNISHED AND BUILDING CONSTRUCTION.
45. EXTERIOR LOUVERS ARE INDICATED FOR INFORMATION ONLY. DETAILED DESCRIPTIONS ARE PROVIDED IN THE ARCHITECTURAL DOCUMENTS AND SHALL BE COORDINATED WITH GENERAL CONTRACTOR.
46. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
47. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
48. MAINTAIN A MINIMUM OF 6"&CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
49. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR RATED ACCURACY.
50. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM SENSORS AT 4'-0" TO TOP ABOVE FINISHED FLOOR. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY ROOMS WHERE THE ABOVE LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
51. COORDINATE ALL CONTROLS AND SEQUENCES OF OPERATION WITH THE BUILDING AUTOMATION SYSTEM (BAS). PROVIDE ALL DEVICES, CONTROLLERS, SENSORS, CONDUIT, WIRING AND LABOR TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM TO MEET THE OWNER'S PROJECT REQUIREMENTS.
52. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE ELECTRICAL CODE AND THE SPECIFICATION SECTIONS.
53. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
54. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL INSTALLER. MINIMUM CONCRETE PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.
55. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.
56. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
57. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. DO NOT SCALE DRAWINGS.
58. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
59. ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.
60. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.
61. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
62. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
63. ALL PENETRATIONS THROUGH FIRE AND SMOKE RATED WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE AND SMOKE STOPPED WITH A UL APPROVED SEALANT SYSTEM.
64. MECHANICAL DUCT PENETRATIONS OF A NON-FIRE RESISTANCE RATED FLOOR ASSEMBLY SHALL BE PROTECTED WITH A SHAFT ASSEMBLY IN ACCORDANCE WITH THE BUILDING CODE. OR, WHEN THE DUCT CONNECTS NOT MORE THAN TWO STORIES, THE ANNULAR SPACE AROUND THE PENETRATING DUCT MUST BE MATERIAL THAT RESISTS THE FREE PASSAGE OF FLAME AND PRODUCTS OF CONSTRUCTION.
65. PROVIDE 120 VOLT ELECTRICAL OUTLETS WITHIN 25 FEET OF ALL MECHANICAL EQUIPMENT.
66. EQUIPMENT AND APPLIANCES SHALL BE ACCESSIBLE FOR SERVICE, INSPECTION REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION. SUFFICIENT CLEARANCE SHALL BE MAINTAINED TO PERMIT CLEANING, REPLACEMENT OF FILTERS, BLOWERS, MOTORS CONTROLS AND LUBRICATION OF MOVING PARTS. MINIMUM OF 30 INCHES OF CLEARANCE IN DEPTH WIDTH AND HEIGHT SHALL BE PROVIDED TO SERVICE THE APPLIANCE OR EQUIPMENT.
67. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
68. BALANCE AIR FLOW AT ALL AIR INLETS AND OUTLETS TO AIR QUANTITIES SHOWN. MECHANICAL CONTRACTOR SHALL PROVIDE MOTORS, PULLEYS AND BELTS AS REQUIRED TO ACCOMMODATE THE REQUIRED AIR FLOWS. PROVIDE FIVE TYPED FINAL BALANCE REPORTS. BALANCING CONTRACTOR SHALL BE INDEPENDENT OF THE INSTALLING CONTRACTORS AND CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR ASSOCIATED AIR BALANCE COUNCIL (AABC) WITH AT LEAST THREE YEARS OF EXPERIENCE.
69. ALL EXPOSED PIPE, UNFINISHED EQUIPMENT AND DUCT SUPPORTS TO MATCH ADJACENT AREAS AS REQUIRED BY PAINTING SPECIFICATION. CONFIRM FINAL PAINT COLOR WITH ARCHITECT.
70. RESTORE ALL DAMAGE RESULTING FROM YOUR WORK AND LEAVE PREMISES IN CLEAN CONDITION WHEN FINISHED WITH WORK.
71. GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR (MINIMUM) FROM DATE OF CERTIFICATE OF OCCUPANCY.
72. AT COMPLETION OF CONSTRUCTION PROVIDE AS-BUILT MARK-UPS AND COPIES OF BOUND OPERATIONS AND MAINTENANCE MANUALS.
73. A COPY OF THE MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE PROVIDED AT THE LOCATION OF EACH PIECE OF EQUIPMENT.

# MECHANICAL BASIS OF DESIGN

1.1 MECHANICAL BASIS OF DESIGN

A.OVERVIEW

1.THE ARROYO HIGH SCHOOL PACKAGE 2 PROJECT SCOPE INCLUDES ADMINISTRATION AND MUSIC THEATRE WITH A TOTAL APPROXIMATE AREA OF 37,000 GSF.

2.THE NEW ADMINISTRATION PROGRAM WILL CONSIST OF THE FOLLOWING ROOMS: OFFICES, CONFERENCE ROOMS, RECEPTION, LOBBY, HEALTH CENTER, RESTROOMS, CUSTODIAN, STORAGE SPACES AND OTHER BOH SPACES.

3.THE NEW MUSIC THEATRE PROGRAM WILL CONSIST OF THE FOLLOWING ROOMS: 450 SEAT THEATRE, STAGE, LOBBY, TICKETS/CONCESSION, SCENE SHOP, CHORAL ROOM, MUSIC LIBRARY, BAND ROOM, DRAMA CLASSROOM, BOOSTER KITCHENETTE, RESTROOMS, CUSTODIAN, STORAGE SPACES AND OTHER BOH SPACES.

B. THE DESIGN INCLUDES THE FOLLOWING NOTABLE FEATURES, BUT IS NOT LIMITED TO THIS SCOPE. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS AND COORDINATING WITH ALL DISCIPLINES.

1. AIR DISTRIBUTION: SUPPLY AIR IS VARIABLE VOLUME AND DISTRIBUTED TO EACH UNIQUE THERMAL ZONE VIA LOW PRESSURE DUCTWORK. THE RETURN AIR UTILIZES THE CEILING SPACE AS A RETURN AIR PLENUM. REFER TO PLANS FOR SOUND SENSITIVE AREAS THAT REQUIRE SOUND TRAPS AND 1" ACOUSTICAL LINING FOR RETURN AIR TRANSFER DUCTS. FLEXIBLE DUCT WORK SHALL NOT BE USED IN SOUND SENSITIVE SPACES. REFER TO PLANS FOR MORE INFORMATION.

2. AIR HANDLING/HEATING/COOLING: RTUS, DOAS SYSTEM, VRF FAN COILS, SPLIT SYSTEMS, MULTI SPLIT SYSTEMS, AND RETURN FANS. EQUIPMENT SHALL BE PROVIDED WITH ACOUSTIAL ROOF CURB AND INTERNAL VIBRATION SPRING ISOLATORS.

3.HUMIDITY: HUMIDITY CONTROL SHALL BE PROVIDED BY LOCALIZED HUMIDIFIER FOR THE INSTRUMENT STORAGE ROOM. HUMIDITY SHALL BE MAINTAINED BETWEEN 45-55% RELATIVE HUMIDITY.

4.SPLIT SYSTEMS: SINGLE-ZONE AIR-COOLED SPLIT SYSTEMS SHALL BE 24/7 TO PROVIDE COOLING ONLY TO THE DATA ROOMS, SERVER ROOMS AND ELECTRICAL ROOMS.

5.CONTROLS: ALL EQUIPMENT WILL BE PROVIDED WITH DIRECT DIGITAL CONTROL (DDC) AND THE PROJECT INCLUDES A BUILDING AUTOMATION SYSTEM (BAS) TO OPERATE ALL SYSTEM FUNCTIONS AND SCHEDULES.

C. CODES AND STANDARDS (LATEST EDITIONS UNLESS OTHERWISE REQUIRED BY AHJ)
1. CALIFORNIA BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ):
   A) 2022 CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 4 (2021 UNIFORM MECHANICAL CODE (UMC) WITH STATE AND LOCAL AMENDMENTS).
   B) 2022 CALIFORNIA BUILDING CODE (CBC), CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 2 (2021 INTERNATIONAL BUILDING CODE WITH STATE AND LOCAL AMENDMENTS).
   C) 2022 CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 5 (2021 UNIFORM PLUMBING CODE (UPC) WITH STATE AND LOCAL AMENDMENTS).
   D) 2022 CALIFORNIA FIRE CODE (CFC), CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 9 (2021 INTERNATIONAL FIRE CODE WITH STATE AND LOCAL AMENDMENTS).
   E) 2022 CALIFORNIA ELECTRIC CODE (CEC) (2017 NATIONAL ELECTRICAL CODE WITH STATE AND LOCAL AMENDMENTS).
   F) 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS, CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 6.
   G) 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, CALIFORNIA CODE OF REGULATIONS, TITLE-24, PART 11.
2. AMERICANS WITH DISABILITIES ACT (ADA).
3. ASHRAE 2020 HANDBOOK, HVAC SYSTEMS AND EQUIPMENT.
4. ASHRAE 2019 HANDBOOK, HVAC APPLICATIONS.
5. ASHRAE 2018 HANDBOOK, REFRIGERATION.
6. ASHRAE 2017 HANDBOOK, FUNDAMENTALS.
7. ASHRAE 55-2020 THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY.
8. ASHRAE 62.1-2019 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY.
9. 

THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY. SHEETS ORIGINAL PAPER SIZE

# AIR CONDITIONING CONDENSING UNIT SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | AREA SERVED | LOCATION | NOM. CAP. (TONS) | EER | SEER | REFRIG TYPE | REFRIG (LBS) | VOLTAGE | PHASE | MCA | MOCP | EMERGENCY POWER | UNIT SIZE | OPERATING WEIGHT (LBS) | ANCHORAGE DETAIL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOU | 01-01 | Toshiba Carrier | RAV-SP122AT2P-UL | DIMMER | OUTSIDE SCENE SHOP | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| HOU | 01-02 | Toshiba Carrier | RAV-SP122AT2P-UL | FIRE PUMP ROOM | OUTSIDE SCENE SHOP | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| HOU | 03-01 | Toshiba Carrier | RAV-SP362AT2P-UL | ADMIN DATA | ROOF | 3 | 10.5 | 20.8 | R-410A | 6.8 | 208.00 V | 1 | 30 A | 40 A | No | 35-3/8"x52-3/4"x12-5/8" | 218 | 5/M9.04 | 1-4 |
| HOU | 03-02 | Toshiba Carrier | RAV-SP362AT2P-UL | ADMIN ELEC | ROOF | 3 | 10.5 | 20.8 | R-410A | 6.8 | 208.00 V | 1 | 30 A | 40 A | No | 35-3/8"x52-3/4"x12-5/8" | 218 | 5/M9.04 | 1-4 |
| HOU | 03-03 | Toshiba Carrier | RAV-SP362AT2P-UL | ELECTRICAL | OUTSIDE SCENE SHOP | 3 | 10.5 | 20.8 | R-410A | 6.8 | 208.00 V | 1 | 30 A | 40 A | No | 35-3/8"x52-3/4"x12-5/8" | 218 | 5/M9.04 | 1-4 |
| HOU | 03-04 | Toshiba Carrier | RAV-SP362AT2P-UL | DATA | OUTSIDE SCENE SHOP | 3 | 10.5 | 20.8 | R-410A | 6.8 | 208.00 V | 1 | 30 A | 40 A | No | 35-3/8"x52-3/4"x12-5/8" | 218 | 5/M9.04 | 1-4 |
| HP | 1 | Toshiba Carrier | RAV-SP182AT2P-UL | SW OFFICES | ADMIN ROOF | 1.5 | 11.5 | 20.1 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 2 | Toshiba Carrier | RAV-SP182AT2P-UL | A123 CONF | ADMIN ROOF | 1.5 | 11.5 | 20.1 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 3 | Toshiba Carrier | RAV-SP182AT2P-UL | SE OFFICES | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 4 | Toshiba Carrier | RAV-SP182AT2P-UL | A114 CLERC AND RECEP/A115 RECORD STORAGE | ADMIN ROOF | 1.5 | 11.5 | 20.1 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 5 | Toshiba Carrier | RAV-SP122AT2P-UL | A117 CONF | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 6 | Toshiba Carrier | RAV-SP122AT2P-UL | A116 STAFF LOUNGE/A111 STORAGE/A110 WORK MAIL | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 7 | Toshiba Carrier | RAV-SP182AT2P-UL | NW OFFICES | ADMIN ROOF | 1.5 | 11.5 | 20.1 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 8 | Toshiba Carrier | RAV-SP122AT2P-UL | A137 PRINCIPAL | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 9 | Toshiba Carrier | RAV-SP122AT2P-UL | A104 HEALTH CENTER | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 10 | Toshiba Carrier | RAV-SP242AT2P-UL | A100 LOBBY/A136 OFFICE/A134 OFFICE | ADMIN ROOF | 2 | 12.9 | 22.4 | R-410A | 5.5 | 208.00 V | 1 | 17 A | 25 A | No | 12-5/8" x 35-1/4" x 35" | 141 | 4/M9.04 | 1-4 |
| HP | 11 | Toshiba Carrier | RAV-SP122AT2P-UL | A103 ATTEND OFFICE/A102 ATTENDANCE | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| HP | 12 | Toshiba Carrier | RAV-SP122AT2P-UL | A138 CONF | ADMIN ROOF | 1 | 14.5 | 20.8 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 11-3/8" x 30-3/4" x 21-3/4" | 99 | 4/M9.04 | 1-4 |
| OU | 01-01 | Toshiba Carrier | RAV-SP122AT2P-UL | CONTROL ROOM | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-02 | Toshiba Carrier | RAV-SP122AT2P-UL | CONTROL ROOM | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-03 | Toshiba Carrier | RAV-SP122AT2P-UL | MUSIC LIBRARY | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-04 | Toshiba Carrier | RAV-SP122AT2P-UL | BAND OFFICE | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-05 | Toshiba Carrier | RAV-SP122AT2P-UL | CHORAL OFFICE & COLOR GUARD | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-07 | Toshiba Carrier | RAV-SP122AT2P-UL | BOOSTER KITCHENETTE | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-08 | Toshiba Carrier | RAV-SP122AT2P-UL | DRESSING | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-09 | Toshiba Carrier | RAV-SP122AT2P-UL | DRESSING | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-10 | Toshiba Carrier | RAV-SP122AT2P-UL | DRAMA OFFICE | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-11 | Toshiba Carrier | RAV-SP122AT2P-UL | CONTROL ROOM | ROOF | 1 | 15.6 | 25.2 | R-410A | 3.8 | 208.00 V | 1 | 14 A | 25 A | No | 30-3/4"x21-3/4"x11-3/8" | 99 | 4/M9.04 | 1-4 |
| OU | 01-12 | LIEBERT | PFH020A-L | PERCUSSION STORAGE | ROOF | 1.5 | 1.96 (SCOP) | 0 | R-407C | 8.375 | 208.00 V | 1 | 12 A | 25 A | No | 40"x23-1/2"x18" | 200 | 5/M9.04 | 1-4 |
| OU | 01-13 | LIEBERT | PFH020A-L | PERCUSSION STORAGE | ROOF | 1.5 | 1.96 (SCOP) | 0 | R-407C | 8.375 | 208.00 V | 1 | 12 A | 25 A | No | 40"x23-1/2"x18" | 200 | 5/M9.04 | 1-4 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. CAPACITY RATED AT ARI STANDARD CONDITIONS.
3. PROVIDE OPM RATED VIBRATION ISOLATORS. SEE 4/M9.03 AND 5/M9.04.
4. COORDINATE SCCR REQUIREMENTS WITH ELECTRICAL CONTRACTOR SHORT CIRCUIT STUDY.

# PACKAGED ROOFTOP HEAT PUMP UNIT SCHEDULE

| | | | | | | | SUPPLY | | | | | | | | ELECTRICAL | | | | | COOLING (AT 96°F AMBIENT) | | | | | | HEATING (AT 36°F AMBIENT) | | | | FILTER | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG | # | MANUFACTURER | MODEL NUMBER | AREA SERVED | LOCATION | NOMINAL CAPACITY (TONS) | AIR (CFM) | MIN OSA (CFM) | ESP (IN WG) | TSP (IN WG) | DRIVE | BHP | HP | VFD (Y/N) | AIR ECONOMIZER (Y/N) | RETURN (HP) | VOLTS | PH | MCA (A) | MOCP (A) | EMERG POWER (Y/N) | TOTAL (MBH) | SENS (MBH) | EAT DB/WB (°F) | LAT DB/WB (°F) | EER | SEER/ IEER | REFRIG TYPE | REFRIG (LBS) | OUTPUT (MBH) | AUX (KW) | COP | HSPF | TYPE | MERV | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | ANCHORAGE DETAIL | NOTES |
| RTU | 1 | Carrier | 50FCQM28AJA5-0A6A0 | THEATER LOBBY | ROOF | 25 | 10000 | 3905 | 1.0 | | DIRECT | 8.00 | 6.49 | Yes | Y | | 460 | 3 | 61.4 | 80 | No | 269.3 | 214.0 | 96F/70F | 61.9F/58.7F | 9.5 | 14 | R-410A | 48 | 274 | NO HEAT | 3.3 | | 4 INCH | 13 | 141.5"x86.4"x57.4" | 4553 | 2/M9.06, 6/M9.06 | 1-14 |
| RTU | 3 | Carrier | 50FCQA06A2A5-0A0A0 | SCENE SHOP | ROOF | 5 | 2000 | 400 | 1.0 | | DIRECT | 1.40 | 1.4 | Yes | Y | | 460 | 3 | 13.0 | 20 | No | 58.9 | 46.3 | 96F/70F | 58.6F/57.8F | 11.2 | 14.3 | R-410A | 16 | 56.5 | NO HEAT | 3.8 | | 4 INCH | 13 | 74.4"x46.6"x41.4" | 1674 | 4/M9.06, 6/M9.05 | 1-14 |
| RTU | 4 | Carrier | 50FCQA06A2A5-0A0A0 | DRAMA CLASSROOM | ROOF | 5 | 2000 | 575 | 1.0 | | DIRECT | 1.40 | 1.4 | Yes | Y | | 460 | 3 | 13.0 | 20 | No | 58.9 | 46.3 | 96F/70F | 58.6F/57.8F | 11.2 | 14.3 | R-410A | 16 | 56.5 | NO HEAT | 3.8 | | 4 INCH | 13 | 74.4"x46.6"x41.4" | 1674 | 4/M9.06, 6/M9.05 | 1-14 |
| RTU | 5 | Carrier | 50FCQM08A2A5-0A6A0 | BANDROOM | ROOF | 7 | 3000 | 900 | 1.0 | | DIRECT | 1.28 | | Yes | Y | | 460 | 3 | 19.0 | 20 | No | 85.0 | 62.7 | 96F/70F | 60.6F/58.2F | 11.2 | 15 | R-410A | 18 | 71.0 | NO HEAT | 3.4 | | 4 INCH | 13 | 88.1"x59.5"x49.4" | 2180 | 3/M9.06, 6/M9.05 | 1-14 |
| RTU | 6 | Carrier | 50FCQM08A2A5-0A6A0 | BANDROOM | ROOF | 7 | 3000 | 900 | 1.0 | | DIRECT | 1.28 | | Yes | Y | | 460 | 3 | 19.0 | 20 | No | 85.0 | 62.7 | 96F/70F | 60.6F/58.2F | 11.2 | 15 | R-410A | 18 | 71.0 | NO HEAT | 3.4 | | 4 INCH | 13 | 88.1"x59.5"x49.4" | 2180 | 3/M9.06, 6/M9.05 | 1-14 |
| RTU | 7 | Carrier | 50FCQM08A2A5-0A6A0 | CHORAL ROOM | ROOF | 7 | 3000 | 1200 | 1.0 | | DIRECT | 1.28 | | Yes | Y | | 460 | 3 | 19.0 | 20 | No | 85.0 | 62.7 | 96F/70F | 60.6F/58.2F | 11.2 | 15 | R-410A | 18 | 71.0 | NO HEAT | 3.4 | | 4 INCH | 13 | 88.1"x59.5"x49.4" | 2090 | 1/M9.06, 6/M9.06 | 1-14 |
| RTU | 8 | Carrier | 50FCQM24AJA5-0A6A0 | STAGE | ROOF | 20 | 8000 | 1500 | 1.0 | | DIRECT | 4.43 | | Yes | Y | | 460 | 3 | 51.0 | 60 | No | 225.0 | 166.4 | 96F/70F | 60.7F/58.2F | 9.8 | 14 | R-410A | 48 | 199.2 | NO HEAT | 3.3 | | 4 INCH | 13 | 141.5"x86.4"x49.4" | 4428 | 2/M9.06, 6/M9.06 | 1-14 |
| RTU | 9 | Carrier | 50FCQM24AJA5-0A6A0 | THEATER | ROOF | 20 | 8000 | 3500 | 1.0 | | DIRECT | 4.43 | | Yes | Y | | 460 | 3 | 51.0 | 60 | No | 225.0 | 166.4 | 96F/70F | 60.7F/58.2F | 9.8 | 14 | R-410A | 48 | 199.2 | NO HEAT | 3.3 | | 4 INCH | 13 | 141.5"x86.4"x49.4" | 4428 | 2/M9.06, 6/M9.06 | 1-14 |
| RTU | 10 | Carrier | 50FCQM24AJA5-0A6A0 | THEATER | ROOF | 20 | 8000 | 3500 | 1.0 | | DIRECT | 4.43 | | Yes | Y | | 460 | 3 | 51.0 | 60 | No | 225.0 | 166.4 | 96F/70F | 60.7F/58.2F | 9.8 | 14 | R-410A | 48 | 199.2 | NO HEAT | 3.3 | | 4 INCH | 13 | 141.5"x86.4"x49.4" | 4428 | 5/M9.05, 6/M9.05 | 1-14 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE INVERTER READY NEMA PREMIUM EFFICIENCY MOTOR WITH SHAFT GROUNDING SYSTEM.
3. PROVIDE AIR ECONOMIZER CAPABLE OF MODULATING OUTSIDE AIR AND RETURN AIR DAMPERS TO SUPPLY 100% OF DESIGN SUPPLY AIR.
4. PROVIDE VIBRATION ISOLATION 24" HIGH ROOF CURB.
5. UNIT TO HAVE HORIZONTAL DISCHARGE FOR SUPPLY AND RETURN.
6. PROVIDE SMOKE DETECTOR IN SUPPLY AIR FOR AUTOMATIC UNIT SHUTDOWN ABOVE 2000 CFM.
7. PROVIDE PROGRAMMABLE THERMOSTAT WITH TEMPERATURE SETPOINTS FOR AT LEAST FOUR SCHEDULING PERIODS WITHIN 24 HOURS.
8. PROVIDE MANUFACTURED MODULATING POWER EXHAUST FOR AIR ECONOMIZER ASSEMBLY CONTROLLED BY PRESSURE SENSOR. ELECTRICAL TO PROVIDE SEPARATE SUPPLY AND DISCONNECT FOR POWER EXHAUST.
9. PROVIDE CONDENSER COIL GUARD.
10. PROVIDE CONDENSATE PUMP WITH 120 V / 1PH CONNECTION.
11. FOR VIBRATION SENSITIVE LOCATION PROVIDE M.W.SAUSSE' ROOF SPRING ISOLATION CURB WITH 3" SPRING DEFLECTION.
12. PROVIDE ECONOMIZER FAULT DETECTION AND DIAGNOSTICS (FDD) WITH SENSORS TO PROVIDE MONITORING OF TEMPERATURES, REFRIGERANT PRESSURES, COMPRESSOR OPERATION AND DAMPER POSITION.
13. PROVIDE CONTROL TO PREVENT SIMULTANEOUS OPERATION FOR SUPPLEMENTAL ELECTRIC RESISTANCE HEATERS WHEN HEAT PUMP CYCLE IS OPERATIONAL.
14. PROVIDE DES CHAMPS CONDENSATE AIR TRAP WITH TRANSPARENT BODY FOR VISUAL INSPECTION. SIZE FOR CAPACITY AND STATIC PRESSURE REQUIREMENTS.

# DOAS SCHEDULE

| | | | | | | | SUPPLY | | | | | | | ELECTRICAL | | | | | | COOLING (AT 95°F AMBIENT) | | | | | | | HEATING (AT 47°F AMBIENT) | | | | FILTER | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG | # | MANUFACTURER | MODEL NUMBER | AREA SERVED | LOCATION | NOMINAL CAPACITY (TONS) | AIR (CFM) | MIN OSA (CFM) | ESP (IN WG) | TSP (IN WG) | DRIVE | BHP | HP | VFD (Y/N) | VOLTS | PH | MCA (A) | MOCP (A) | EMERG POWER (Y/N) | TOTAL (MBH) | SENS (MBH) | EAT DB/WB (°F) | LAT DB/WB (°F) | EER | SEER/ IEER | REFRIG TYPE | REFRIG (LBS) | OUTPUT (MBH) | AUX (KW) | COP | HSPF | TYPE | MERV | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | ANCHORAGE DETAIL | NOTES |
| DOAS | 1 | iAire | UPC-FC08MKT000 M00A-FHJLVY9 | ADMIN BUILDING | ROOF | 7.5 | 1650 | 1650 | 1 | | DIRECT | | 2.4 | No | 460 | 3 | 18 | 20 | No | 86.1 | 76 | 96F/70F | 53.2F/53F | 11.2 | 15 | R-410A | 6.3 | 86 | 0 | 0 | | 2" | 13 | 88x59x49 | 2194 | 1/M9.06, 6/M9.06 | 1-15 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE INVERTER READY NEMA PREMIUM EFFICIENCY MOTOR WITH SHAFT GROUNDING SYSTEM.
3. MOTORS SHALL BE DIRECT DRIVE
4. PROVIDE VIBRATION ISOLATION 24" HIGH ROOF CURB.
5. UNIT TO HAVE HORIZONTAL DISCHARGE FOR SUPPLY.
6. PROVIDE SMOKE DETECTOR IN SUPPLY AIR FOR AUTOMATIC UNIT SHUTDOWN.
7. PROVIDE PROGRAMMABLE THERMOSTAT WITH TEMPERATURE SETPOINTS FOR AT LEAST FOUR SCHEDULING PERIODS WITHIN 24 HOURS.
8. PROVIDE FACTORY INSTALLED 115V/1PH GFCI OUTLET.
9. PROVIDE CONDENSER COIL GUARD.
10. NOT USED.
11. PROVIDE FACTORY INSTALLED CONTROLS PACKAGE.
12. PROVIDE CONTROL TO PREVENT SIMULTANEOUS OPERATION FOR SUPPLEMENTAL ELECTRIC RESISTANCE HEATERS WHEN HEAT PUMP CYCLE IS OPERATIONAL.
13. PROVIDE DES CHAMPS CONDENSATE AIR TRAP WITH TRANSPARENT BODY FOR VISUAL INSPECTION. SIZE FOR CAPACITY AND STATIC PRESSURE REQUIREMENTS.
14. PROVIDE OSA INLET WITH WEATHER HOOD AND MOTIRIZED DAMPERS. SPRING RETURN TO CLOSE ON POWER FAILURE.
15. PROVIDE DIRTY FILTER SWITCH OPTION.

# SOUND TRAP SCHEDULE

| TAG | MANUFACTURER | MODEL NUMBER | EQUIPMENT SERVED | AIRFLOW (CFM) | PRESSURE DROP (IN. WG.) | DYNAMIC INSERTION LOSS (dB re: 10-12 W) PER OCTAVE BAND | | | | | | | | SIZE (L"xW"xH") | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 63 HZ | 125 HZ | 250 HZ | 500 HZ | 1000 HZ | 2000 HZ | 4000 HZ | 8000 HZ | | |
| ST-1S | VIBROACOUSTICS | RD-MVH-FD | RTU-1 | 10000 | 0.08 | 4 | 7 | 11 | 12 | 12 | 10 | 11 | 8 | 36"x38"x36" | 1-3 |
| ST-1R | VIBROACOUSTICS | RD-MVH-FD | RTU-1 | 10000 | 0.08 | 4 | 7 | 12 | 12 | 13 | 10 | 11 | 8 | 36"x38"x36" | 1-3 |
| ST-10S | VIBROACOUSTICS | RD-MVH-FC | RTU-10 | 8000 | 0.06 | 8 | 15 | 27 | 29 | 35 | 23 | 17 | 14 | 84"x36"x48" | 1-3 |
| ST-10R | VIBROACOUSTICS | RD-MVH-FC | RTU-10 | 8000 | 0.06 | 12 | 18 | 30 | 30 | 36 | 19 | 13 | 11 | 84"x48"x36" | 1-3 |
| ST-9S | VIBROACOUSTICS | RD-MVH-F9 | RTU-9 | 8000 | 0.06 | 8 | 15 | 27 | 29 | 35 | 2 | 17 | 14 | 72"x48"x36" | 1-3 |
| ST-9R | VIBROACOUSTICS | RD-MVH-FC | RTU-9 | 8000 | 0.06 | 12 | 18 | 30 | 30 | 36 | 19 | 13 | 11 | 84"x48"x36" | 1-3 |
| ST-8S | VIBROACOUSTICS | RD-MV-F4 | RTU-8 | 4000 | 0.07 | 13 | 18 | 33 | 32 | 43 | 24 | 14 | 12 | 72"x48"x36" | 1-3 |
| ST-8R1 | VIBROACOUSTICS | RED-MV-F9 | RTU-8 | 4000 | 0.08 | 10 | 16 | 29 | 32 | 36 | 25 | 18 | 15 | 73"x32"x26" | 1-3 |
| ST-8R2 | VIBROACOUSTICS | RD-MLV-FJ | RTU-8 | 4000 | 0.08 | 12 | 18 | 30 | 30 | 36 | 19 | 13 | 11 | 84"x24"x36" | 1-3 |
| ST-3S | VIBROACOUSTICS | RD-ULV-FJ | RTU-3 | 2000 | 0.08 | 10 | 18 | 21 | 15 | 18 | 14 | 11 | 11 | 36"x24"x20" | 1-3 |
| ST-3R | VIBROACOUSTICS | RED-MV-F9 | RTU-3 | 2000 | 0.09 | 10 | 19 | 27 | 42 | 50 | 46 | 35 | 27 | 54"x54"x20" | 1-3 |
| ST-4S | VIBROACOUSTICS | RED-MV-F6 | RTU-4 | 980 | 0.06 | 4 | 7 | 12 | 15 | 17 | 15 | 12 | 10 | 60"x20"x20" | 1-3 |
| ST-4R | VIBROACOUSTICS | RENM-MV-F6 | RTU-4 | 2000 | 0.08 | 6 | 11 | 16 | 14 | 17 | 11 | 12 | 10 | 60"x20"x20" | 1-3 |
| ST-IU8S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-08 | 395 | 0.06 | 9 | 15 | 27 | 35 | 44 | 35 | 24 | 18 | 60"x25"x7" | 1-3 |
| ST-IU9S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-09 | 395 | 0.06 | 9 | 15 | 27 | 35 | 44 | 35 | 24 | 18 | 60"x25"x7" | 1-3 |
| ST-IU5S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-05 | 395 | 0.05 | 7 | 13 | 18 | 21 | 27 | 24 | 17 | 14 | 36"x25"x7" | 1-3 |
| ST-IU6S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-06 | 395 | 0.05 | 7 | 13 | 18 | 21 | 27 | 24 | 17 | 14 | 36"x25"x7" | 1-3 |
| ST-IU7S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-07 | 395 | 0.05 | 7 | 13 | 18 | 21 | 27 | 24 | 17 | 14 | 36"x25"x7" | 1-3 |
| ST-IU10S | VIBROACOUSTICS | RD-ULV-F3 | IU 01-010 | 395 | 0.05 | 7 | 13 | 18 | 21 | 27 | 24 | 17 | 14 | 36"x25"x7" | 1-3 |
| ST-5S | VIBROACOUSTICS | RD-MLV-FE | RTU-5 | 3000 | 0.06 | 10 | 17 | 30 | 31 | 39 | 25 | 17 | 14 | 84"x40"x20" | 1-3 |
| ST-5R | VIBROACOUSTICS | RD-MV-FA | RTU-5 | 3000 | 0.07 | 10 | 16 | 29 | 32 | 36 | 25 | 18 | 15 | 84"x32"x20" | 1-3 |
| ST-6S | VIBROACOUSTICS | RD-MLV-FE | RTU-6 | 3000 | 0.06 | 10 | 17 | 30 | 31 | 39 | 25 | 17 | 14 | 84"x40"x20" | 1-3 |
| ST-6R | VIBROACOUSTICS | RD-MV-FA | RTU-6 | 3000 | 0.07 | 10 | 16 | 29 | 32 | 36 | 25 | 18 | 15 | 84"x32"x20" | 1-3 |
| ST-7S | VIBROACOUSTICS | RD-MV-F2 | RTU-7 | 3000 | 0.06 | 9 | 14 | 26 | 34 | 37 | 27 | 19 | 15 | 84"x28"x24" | 1-3 |
| ST-7R | VIBROACOUSTICS | RD-MV-F2 | RTU-7 | 3000 | 0.07 | 10 | 16 | 28 | 36 | 37 | 27 | 18 | 15 | 84"x28"x24" | 1-3 |

NOTES
1. DYNAMIC INSERTION LOSS VALUES PER NVLAP-ACCREDITED LABORATORY TESTS IN ACCORDANCE WITH ASTM E477-99 AT A FACE VELOCITY OF 1000 FPM.
2. PROVIDE SOUND TRAP WITH ENCAPSULATED LINING.
3. PROVIDE PACKLESS TYPE SOUND TRAP.

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/30/2025 10:59:52 AM

PLEASE RECYCLE

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DATE: 10/15/2025


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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |


REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
MECHANICAL
STATE OF CALIFORNIA

GLUMAC
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Project Manager: RM
Job No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**M0.02**

IF THIS LINE SHOWN ABOVE IS NOT EXACTLY ONE INCH LONG THIS SHEET IS ORIGINAL PAPER SIZE

# SPLIT SYSTEM AIR CONDITIONING FAN COIL SCHEDULE

| TAG | # | COND UNIT TAG | MANUFACTURER | MODEL NUMBER | AREA SERVED | LOCATION | OUTDOOR AIR (CFM) | SUPPLY AIR FLOW (CFM) | COOLING CAPACITY | | | | HEATING CAPACITY | | | ESP (IN WG) | ELECTRICAL | | | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES | Anchorage Detail |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | TOTAL (MBH) | SENSIBLE (MBH) | EAT (°F) | LAT (°F) | TOTAL (MBH) | EAT (°F) | LAT (°F) | | VOLTS | PH | FLA (A) | | | | |
| FC | 1 | HP-1 | Toshiba Carrier | RAV-SM182BTP-UL | SW OFFICES | A124 COUNS | 100 | 540 | 17.9 | 13.2 | 95 | 52.2 | 18 | 47 | 98.4 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 2 | HP-2 | Toshiba Carrier | RAV-SM182BTP-UL | A123 CONF | A122 STUDENT WAITING | 180 | 540 | 17.9 | 13.2 | 95 | 52.2 | 18 | 47 | 98.4 | 0.33 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 3 | HP-3 | Toshiba Carrier | RAV-SM122BTP-UL | SE OFFICES | A122 STUDENT WAITING | 100 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 4 | HP-4 | Toshiba Carrier | RAV-SM182BTP-UL | A114 CLERC AND RECEP/A115 RECORD STORAGE | A115 RECORD STORAGE | 180 | 540 | 17.9 | 13.2 | 95 | 52.2 | 18 | 47 | 98.4 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 5 | HP-5 | Toshiba Carrier | RAV-SM122BTP-UL | A117 CONF | A117 CONF CORRIDOR | 120 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 6 | HP-6 | Toshiba Carrier | RAV-SM122BTP-UL | A116 STAFF LOUNGE/A111 STORAGE/A110 WORK MAIL | A110 WORK MAIL | 200 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 7 | HP-7 | Toshiba Carrier | RAV-SM182BTP-UL | NW OFFICES | A133 COUNS | 120 | 540 | 17.9 | 13.2 | 95 | 52.2 | 18 | 47 | 98.4 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 8 | HP-8 | Toshiba Carrier | RAV-SM122BTP-UL | A137 PRINCIPAL | A101 RECEPTION SOUTH CORRIDOR | 100 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.48 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 9 | HP-9 | Toshiba Carrier | RAV-SM122BTP-UL | A104 HEALTH CENTER | A104 HEALTH CENTER | 100 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.33 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 10 | HP-10 | Toshiba Carrier | RAV-SM242BTP-UL | A100 LOBBY/A136 OFFICE/A134 OFFICE | A100 LOBBY | 200 | 775 | 23.9 | 19.5 | 95 | 51.4 | 24 | 47 | 96.8 | 0.43 | 208 | 1 | | 29-5/8" x 39-3/8" x 10-7/8" | | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 11 | HP-11 | Toshiba Carrier | RAV-SM122BTP-UL | A103 ATTEND OFFICE/A102 ATTENDANCE | A103 ATTEND OFFICE | 100 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.33 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| FC | 12 | HP-12 | Toshiba Carrier | RAV-SM122BTP-UL | A138 CONF | A138 CONF CORRIDOR | 120 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 29-5/8" x 27-5/8" x 10-7/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| HIU | 01-01 | HOU-01-01 | Toshiba Carrier | RAV-SM122KRTP-UL | DIMMER | DIMMER | | 477 | 12 | 10.8 | 95 | 53.8 | 12 | - | - | 0.6 | 208 | 1 | | 15-3/4"x16-3/8"x1/16" | 33 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| HIU | 01-02 | HOU-01-02 | Toshiba Carrier | RAV-SM122KRTP-UL | FIRE PUMP ROOM | FIRE PUMP ROOM | | 477 | 12 | 10.8 | 95 | 53.8 | 12 | - | - | 0.6 | 208 | 1 | | 15-3/4"x16-3/8"x1/16" | 44 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| HIU | 03-01 | HOU-03-02 | Toshiba Carrier | RAV-SM362KRTP-UL | ADMIN ELEC | ADMIN ELEC | | 970 | 35.9 | 25.4 | 95 | 50.5 | 36 | - | - | 0.6 | 208 | 1 | | 16-1/2"x19-5/8"x1/16" | 44 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| HIU | 03-02 | HOU-03-01 | Toshiba Carrier | RAV-SM362KRTP-UL | ADMIN DATA | ADMIN DATA | | 970 | 35.9 | 25.4 | 95 | 50.5 | 36 | - | - | 0.6 | 208 | 1 | | 16-1/2"x19-5/8"x1/16" | 44 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| HIU | 03-03 | HOU-03-03 | Toshiba Carrier | RAV-SM362KRTP-UL | ELECTRICAL | ELCTRICAL | | 970 | 35.9 | 25.4 | 95 | 50.5 | 36 | - | - | 0.6 | 208 | 1 | | 16-1/2"x19-5/8"x1/16" | 44 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| HIU | 03-04 | HOU-03-04 | Toshiba Carrier | RAV-SM362KRTP-UL | DATA | DATA | | 970 | 35.9 | 25.4 | 95 | 50.5 | 36 | - | - | 0.6 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 44 | 1,2,3,4,5,8,12,13,14 | 6/M9.02 |
| IU | 01-01 | OU-01-01 | Toshiba Carrier | RAV-SM122BTP-UL | CONTROL ROOM | CONTROL ROOM | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-02 | OU-01-02 | Toshiba Carrier | RAV-SM122BTP-UL | CONTROL ROOM | CONTROL ROOM | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-03 | OU-01-03 | Toshiba Carrier | RAV-SM122BTP-UL | BOOSTER KITCHENETTE | BOOSTER KITCHENETTE | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-04 | OU-01-04 | Toshiba Carrier | RAV-SM122BTP-UL | MUSIC LIBRARY | MUSIC LIBRARY | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.45 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-05 | OU-01-05 | Toshiba Carrier | RAV-SM122BTP-UL | CHORAL OFFICE | CHORAL OFFICE | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.49 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-06 | OU-01-06 | Toshiba Carrier | RAV-SM122BTP-UL | COLOR GUARD | COLOR GUARD | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.52 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-07 | OU-01-07 | Toshiba Carrier | RAV-SM122BTP-UL | BAND OFFICE | BAND OFFICE | 45 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.52 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-08 | OU-01-08 | Toshiba Carrier | RAV-SM122BTP-UL | DRESSING | DRESSING | 150 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.52 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-09 | OU-01-09 | Toshiba Carrier | RAV-SM122BTP-UL | DRESSING | DRESSING | 150 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.52 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-10 | OU-01-10 | Toshiba Carrier | RAV-SM122BTP-UL | DRAMA OFFICE | DRAMA OFFICE | 15 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.49 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-11 | OU-01-11 | Toshiba Carrier | RAV-SM122BTP-UL | FOLLOWSPOT BOOTH | B114 STORAGE | 30 | 395 | 12 | 10 | 95 | 51.3 | 12 | 47 | 97.2 | 0.43 | 208 | 1 | | 10-5/8"x27-5/8"x5/8" | 53 | 1,2,3,4,6,7,8,11,12,14,15,17 | 5/M9.05 |
| IU | 01-12 | OU-01-12 | LIEBERT | MMD18E | PERCUSSION STORAGE | PERCUSSION STORAGE | | 590 | 17 | 17 | 75 | 53 | 17 | 70 | 50 | 0.1 | 208 | 1 | | 58"x30"x20" | 225 | 1,2,3,4,8,9,15,16,18 | 5/M9.05 |
| IU | 01-13 | OU-01-13 | LIEBERT | MMD18E | INSTRUMENT STORAGE | INSTRUMENT STORAGE | | 590 | 17 | 17 | 75 | 53 | 17 | 70 | 50 | 0.1 | 208 | 1 | | 58"x30"x20" | 225 | 1,2,3,4,8,9,15,16,18 | 5/M9.05 |

NOTES
1. COOLING CAPACITY BASED ON 67°F ENTERING WET BULB AND 45°F COIL TEMPERATURE.
2. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
3. PROVIDE WALL MOUNTED TEMPERATURE SENSOR INTEGRATED TO BMS.
4. PROVIDE FACTORY INSTALLED BACNET CONTROLS PACKAGE.
5. WALL MOUNTED FAN COIL.
6. HORIZONTAL FAN COIL.
7. PROVIDE FILTER BOX OPTION WITH MERV-13 FILTER.
8. POWER FROM CONDENSING UNIT. REFER TO CONDENSING UNIT SCHEDULE FOR SYSTEM MCA AND MOCP.
9. PROVIDE CONDENSATE PUMP FLOAT SWITCH.
10. PROVIDE ELECTRIC REHEAT OPTION.
11. PROVIDE BOTTOM FILTER RETURN AIR GRILLE & ACCESS WITH MERV-13 FILTER.
12. PROVIDE CONTROL FOR OFF-HOURS OPERATION.
13. PROVIDE CONDENSATE PUMP HMAX TATTOO 10, TO BE POWERED THROUGH THE CONDENSING UNIT.
14. COORDINATE SCCR REQUIREMENTS WITH ELECTRICAL CONTRACTOR SHORT CIRCUIT STUDY.
15. FAN COIL UNIT COMPLETE WITH BUILT IN STEAM GENERATOR (5 LBS/HR).
16. PROVIDE LIEBERT IS-UNITY-DP CONNECTION TO TERMINALS 20 AND 21.
17. HEATING CAPACITY BASED ON 47°F OUTDOOR DRY BULB AND 70°F INDOOR DRY BULB TEMPERATURES.
18. PROVIDE FILTER BOX WITH 16" x 20" x 1" MERV 13 FILTER.

# EXHAUST FAN SCHEDULE

| TAG | MANUFACTURER | MODEL NUMBER | LOCATION | AREA SERVED | DISCH | TYPE | DRIVE | AIR FLOW (CFM) | SP (IN.WG.) | MIN. EFF. (%) | FAN RPM | MTR RPM | ELECTRICAL | | | | | UNIT SIZE (L"xW"xH") | OPER WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | BHP | HP | V/PH | VFD (Y/N) | EMERG POWER (Y/N) | | | |
| EF-1 | GREENHECK | CSP-A125 | ADMIN BUILDING - JANITOR'S CLOSET | CUST A118 | | CABINET | DIRECT | 100 | 0.26" | | 980 | | 0.03 | 0.07 | 115/60 | N | N | 9x13x11 | 16 | 1,3,4 |
| EF-2 | GREENHECK | SP-A190 | ADMIN BUILDING - TOILETS 1 | TOILETS A109 | | CABINET | DIRECT | 150 | 0.32" | | 1400 | | 0.03 | 0.06 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-3 | GREENHECK | SP-A190 | ADMIN BUILDING - TOILETS 2 | TOILETS A108 | | CABINET | DIRECT | 150 | 0.32" | | 1400 | | 0.03 | 0.06 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-4 | GREENHECK | CSP-A125 | THEATRE- TOILETS 1 | TOILET B143 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-5 | GREENHECK | CSP-A125 | THEATRE- TOILETS 2 | TOILET B142 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-6 | GREENHECK | CSP-A410 | THEATRE- WOMEN'S WASHROOM | WOMEN B140 | | CABINET | DIRECT | 350 | 0.26" | | 1000 | | 0.07 | 0.17 | 115/60 | N | N | 15x18x14 | 36 | 1,3,4 |
| EF-7 | GREENHECK | CSP-A410 | THEATRE- MEN'S WASHROOM | WOMEN B141 | | CABINET | DIRECT | 350 | 0.26" | | 1000 | | 0.07 | 0.17 | 115/60 | N | N | 15x18x14 | 36 | 1,3,4 |
| EF-8 | GREENHECK | CSP-A700-VG | BAND UNIFORM STORAGE | BAND UNIFORM STORAGE B124 | | CABINET | DIRECT | 510 | 0.25" | | 917 | | 0.09 | | 115/60 | N | N | 12x24x12 | 39 | 1,2,3,4 |
| EF-9 | GREENHECK | CSP-A125 | DRESSING ROOM - TOILET 1 | TOILET B130 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-10 | GREENHECK | CSP-A125 | MUSIC BUILDING - KITCHENETTE | KITCHENETTE B123 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-11 | GREENHECK | CSP-A125 | DRESSING ROOM - TOILET 2 | TOILET B129 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-12 | GREENHECK | CSP-A125 | ADMIN BUILDING - RESTROOM | RESTROOM A105 | | CABINET | DIRECT | 100 | 0.27" | | 1100 | | 0.01 | 0.03 | 115/60 | N | N | 9x13x11 | 17 | 1,3,4 |
| EF-13 | GREENHECK | CSP 200 | BOARD ROOM A123 | BOARD ROOM A123 | | CABINET | DIRECT | 180 | 0.31" | | 825 | | 0.07 | 0.18 | 115/60 | N | N | 11x14x12 | 23 | 1,3,4 |
| EF-14 | GREENHECK | CSP-A390-VG | BOARD ROOM 117 | BOARD ROOM 117 | | CABINET | DIRECT | 120 | 0.337" | | 1043 | | 0.03 | 0.03 | 115/60 | N | N | 11x14x12 | 24 | 1,3,4 |
| EF-15 | GREENHECK | CSP-A390-VG | BOARD ROOM A138 | BOARD ROOM A138 | | CABINET | DIRECT | 120 | 0.337" | | 1043 | | 0.03 | 0.03 | 115/60 | N | N | 11x14x12 | 24 | 1,3,4 |
| EF-16 | GREENHECK | CSP 200 | STAFF LOUNGE A116 | STAFF LOUNGE A116 | | CABINET | DIRECT | 180 | 0.31" | | 825 | | 0.07 | 0.18 | 115/60 | N | N | 11x14x12 | 23 | 1,3,4 |
| EF-17 | GREENHECK | CSP-A125 | ADMIN BUILDING - CUSTODIAN B144 | CUSTODIAN B144 | | CABINET | DIRECT | 100 | 0.26" | | 980 | | 0.03 | 0.07 | 115/60 | N | N | 9x13x11 | 16 | 1,3,4 |

NOTES:
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE ECM (ELECTRONICALLY COMMUTATED MOTOR) WITH FACTORY MOUNTED POTENTIOMETER FOR SPEED ADJUSTMENT.
3. PROVIDE BIRDSCREEN AT EXHAUST DISCHARGE.
4. PROVIDE CONNECTION TO BMS FOR SCHEDULE, START/STOP, STATUS, AND ALARMS.

# DIFFUSER AND GRILLE SCHEDULE

| TAG | MANUFACTURER | MODEL | DESCRIPTION | FACE TYPE | FACE SIZE | COLOR | MATERIAL | NOTES |
|---|---|---|---|---|---|---|---|---|
| EA | TITUS | 23RL | 45° DEFLECTION MODEL HAS BLADE ROW PARALLEL TO THE DUCT WIDTH | | AS NOTED | | | |
| RA | TITUS | 23RL | AEROBLADE RETURN GRILLE | 3/4" SPACING, 45 DEGREE DEFLECTION | AS NOTED | | | |
| RB | TITUS | 350RL | SIDEWALL RETURN | 3/4" BLADE SPACING, 35 DEGREE DEFLECTION, BLADES PARALLEL TO LONG DIMENSION | 24X24 | WHITE | STEEL | 1-4 6, 7 |
| RC | TITUS | 50F | EGGCRATE RETURN, ALUMINUM BORDER AND ALUMINUM GRID | | AS NOTED | | | |
| RD | ARCHITECTURAL GRILLE | | ARCHITECTURAL GRILLE CURVED GRILLES | | AS NOTED | | | |
| SA | TITUS | OMNI | SQUARE CEILING SUPPLY | SQUARE PLAQUE | 24X24 | | | 2,3,4,5,6,7 |
| SB | TITUS | FL-25 | ARCHITECTURAL LINEAR DIFFUSER | 1SLOT X 2.5" SLOT WIDTH | | | ALUMINUM | |
| SC | TITUS | 272RS | AEROBLADE SUPPLY GRILLE | 3/4" SPACING, DOUBLE DEFLECTION | AS NOTED | SEE NOTE 1 | STEEL | 1-8 |

NOTES:
1. ANY GRILLE/DIFFUSER SHALL MATCH THE COLOR OF CEILING. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR COLOR. ANY GRILLE/DIFFUSER MOUNTED DIRECTLY ON EXPOSED DUCT SHALL MATCH COLOR OF DUCT (IF PAINTED) OR SHALL HAVE CLEAR ANODIZED FINISH (IF DUCT IS UNPAINTED).
2. ALL VISIBLE SURFACES AND DUCTWORK BEHIND FACE SHALL BE PAINTED FLAT BLACK.
3. MAXIMUM TOTAL PRESSURE DROP SHALL NOT EXCEED 0.15" WG WITH DUCT TRANSITION.
4. MAXIMUM NC LEVEL SHALL BE 30. FOR SOUND SENSITIVE SPACES, REFER TO BASIS OF DESIGN FOR ADDITIONAL REQUIREMENTS.
5. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR BORDER TYPES.
6. NECK SIZE AND CFM SHOWN ARE ON PLANS (EXAMPLE: SA12x12-400 REFERS TO TAG "SA" WITH 12x12 NECK AND 400 CFM).
7. PROVIDE RECTANGULAR/SQUARE TO ROUND TRANSITION AS REQUIRED AND SIZED FOR MAXIMUM 0.01" WG TOTAL PRESSURE DROP.
8. ADJUSTABLE HORIZONTAL / VERTICAL DISCHARGE
9. PROVIDE BORDER TYPE (11 / 22 / xx) (WITH BORDER TYPE 2CRA FOR TWO-SLOT DIFFUSERS).
10. PLENUM CONNECTION SIZE, SLOT LENGTH, AND CFM SHOWN ON PLANS (EXAMPLE: SL8-120-2000 REFERS TO TAG "SL" WITH 8" ROUND CONNECTION, 120" CONTINUOUS SLOT LENGTH AND 2000 CFM)
11. PROVIDE MANUFACTURER'S INSULATED PLENUM.
12. PROVIDE LIGHT SHIELD FOR UNDUCTED RETURN GRILLES/DIFFUSERS/SLOTS.

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Job. No.: 150-23US00121

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**MECHANICAL SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

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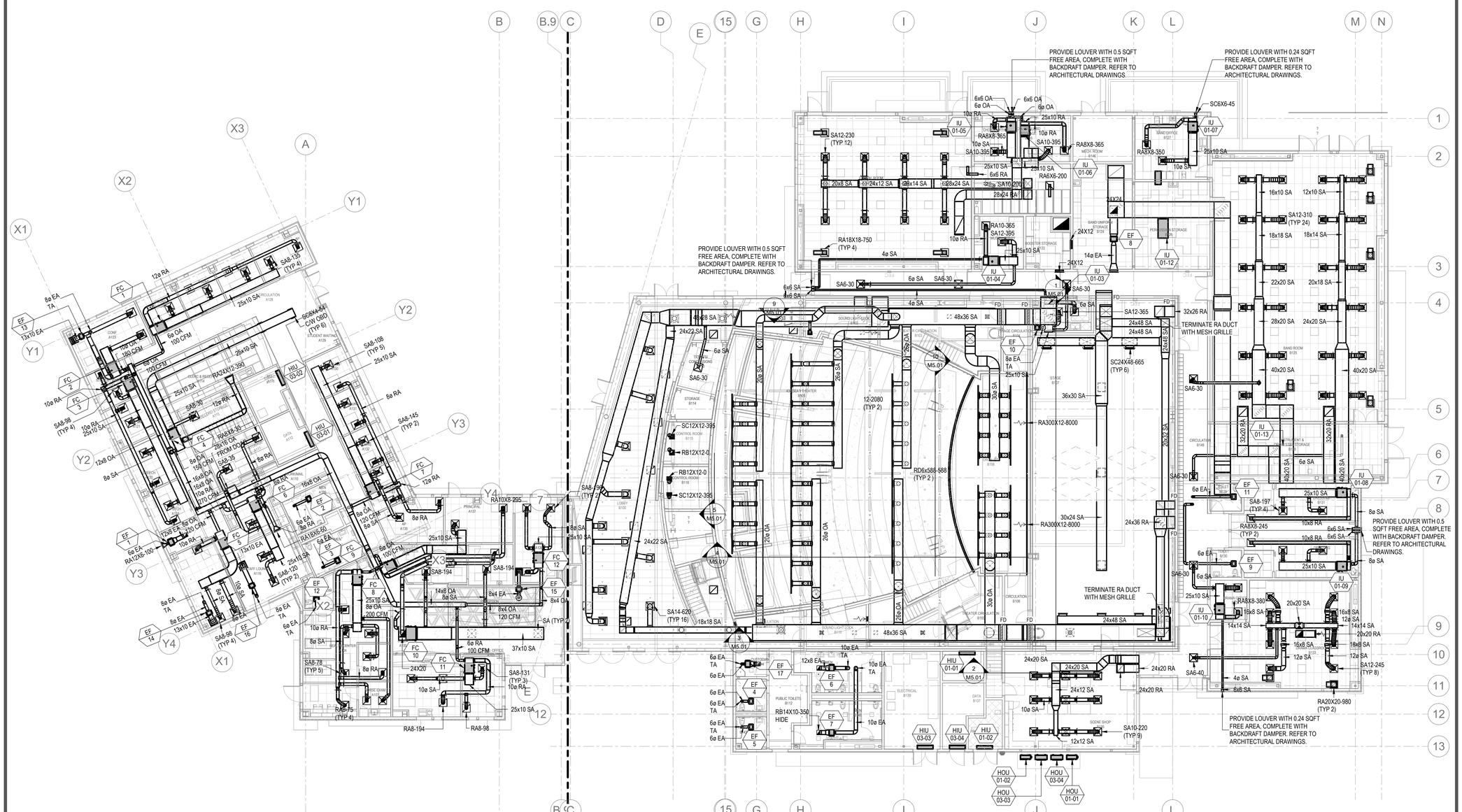
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2. PROVIDE 1" INTERNAL ACOUSTICAL LINER BETWEEN THE FAN COIL UNIT DISCHARGE AND THE DIFFUSER POINT OF CONNECTION. TYPICAL FOR ALL BRANCH DUCTWORK.
3. REFER TO ZONING PLANS FOR THERMOSTAT, C02, AND HUMIDISTAT SENSOR LOCATIONS.

## KEYED NOTES

1. TRANSFER DUCT MAX WITH 1" DUCT LINER. PROVIDE ADDITIONAL SOUND TRAP AS REQUIRED BY ACOUSTICAL CONSULTANT.
2. RETURN AIR DUCT OPENING WITH MESH SCREEN.




### LEVEL 1 - OVERALL HVAC PLAN

1
3/32" = 1'-0"

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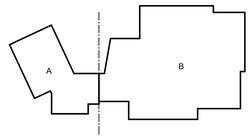

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Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - OVERALL HVAC PLAN**

**DSA SUBMITTAL**

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2. PROVIDE 1" INTERNAL ACOUSTICAL LINER BETWEEN THE FAN COIL UNIT DISCHARGE AND THE DIFFUSER POINT OF CONNECTION. TYPICAL FOR ALL BRANCH DUCTWORK.
3. REFER TO ZONING PLANS FOR THERMOSTAT, C02, AND HUMIDISTAT SENSOR LOCATIONS.
4. FAN COIL RA PLENUM LENGTH TO BE MINUMUM 1FT.

## KEYED NOTES

1. TRANSFER DUCT MAX WITH 1" DUCT LINER. PROVIDE ADDITIONAL SOUND TRAP AS REQUIRED BY ACOUSTICAL CONSULTANT.
2. RETURN AIR DUCT OPENING WITH MESH SCREEN.
3. PROVIDE BACKDRAFT DAMPER.
4. CONTRACTOR TO PROVIDE DRAIN PAN PIPED TO NEAREST STORM LINE IF UNIT IS LOCATED ABOVE ELECTRICAL EQUIPMENT.
5. DUCTWORK WITH UPPER ATTACHMENT AT STRUCTURAL TRAPEZE. REFER TO 7/S0.29 WITH MIN. 0.5" DIA. ALL THREAD RODS SUPPORT.
6. DUCTWORK WITH SIDEWALL ATTACHMENT AT STRUCTURAL STUD. REFER TO 8/M9.02, WITH MAX. 7'-0" OUT FROM WALL STUD.
7. DUCTWORK WITH UPPER ATTACHMENT AT STRUCTURAL TRAPEZE. 3'-0" MAX HANGER ROD LENGTH. REFER TO 1/S0.36 AND 1/M9.03.

PROVIDE LOUVER WITH 0.26 SQFT FREE AREA. COMPLETE WITH BACKDRAFT DAMPER. REFER TO ARCHITECTURAL DRAWINGS.

LEVEL 1 - HVAC PLAN - SEGMENT A

1/8" = 1'-0"

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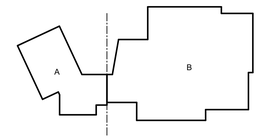
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SHEET NAME:

**LEVEL 1 - HVAC PLAN - SEGMENT A**

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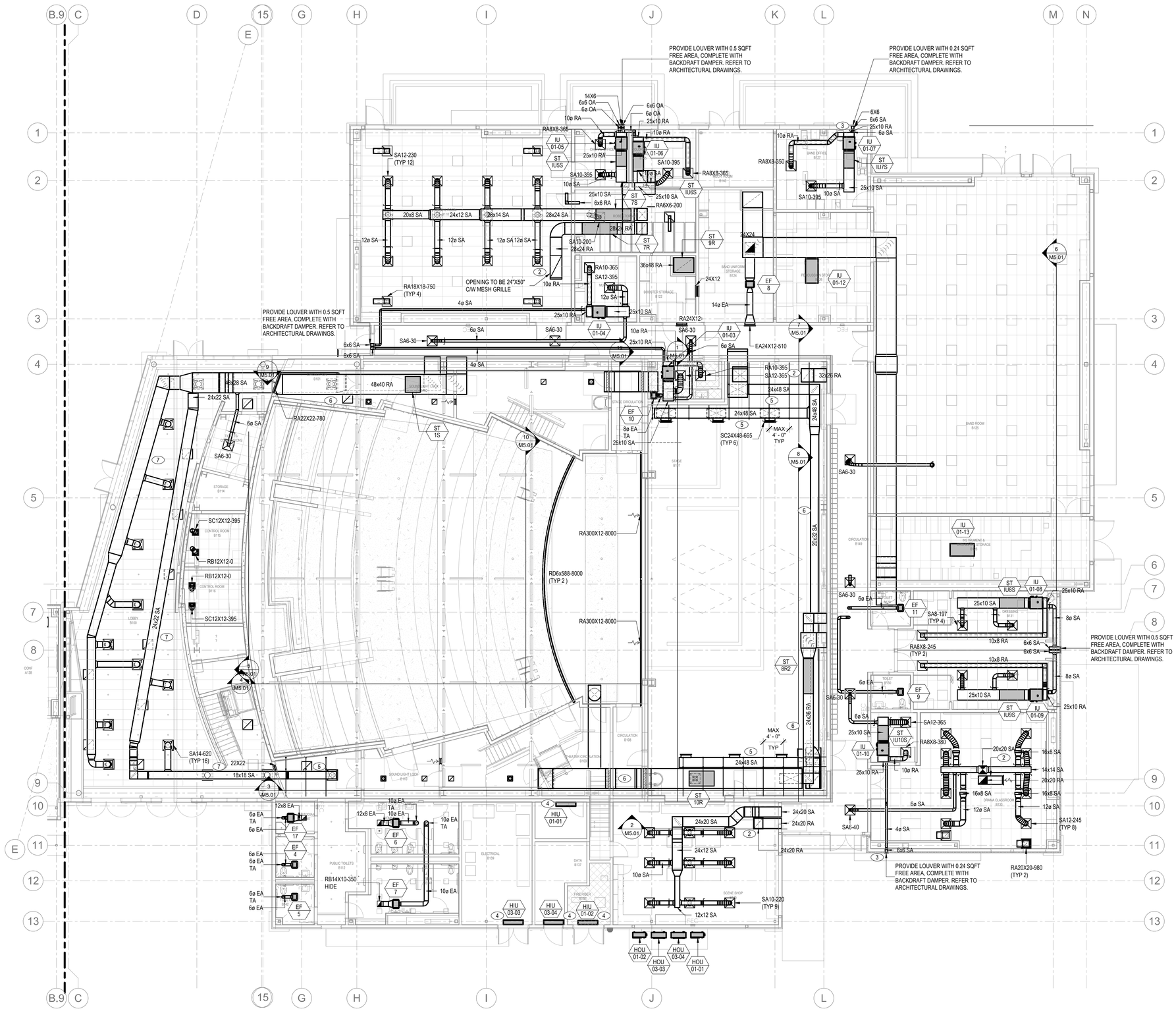
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3. REFER TO ZONING PLANS FOR THERMOSTAT, C02, AND HUMIDISTAT SENSOR LOCATIONS.

## KEYED NOTES (#)

1. TRANSFER DUCT MAX WITH 1" DUCT LINER. PROVIDE ADDITIONAL SOUND TRAP AS REQUIRED BY ACOUSTICAL CONSULTANT.
2. RETURN AIR DUCT OPENING WITH MESH SCREEN.
3. PROVIDE VENT COVER WITH BACKDRAFT DAMPER.
4. CONTRACTOR TO PROVIDE DRAIN PAN PIPED TO NEAREST STORM LINE IF UNIT IS LOCATED ABOVE ELECTRICAL EQUIPMENT.
5. DUCTWORK WITH UPPER ATTACHMENT AT STRUCTURAL TRAPEZE. REFER TO 7/S0.29 WITH MIN. 0.5" DIA. ALL THREAD RODS SUPPORT.
6. DUCTWORK WITH SIDEWALL ATTACHMENT AT STRUCTURAL STUD, REFER TO 8/M9.2, WITH MAX. 7'-0" OUT FROM WALL STUD.
7. DUCTWORK WITH UPPER ATTACHMENT AT STRUCTURAL TRAPEZE: 3'-0" MAX HANGER ROD LENGTH. REFER TO 1/S0.36 AND 1/M9.03.

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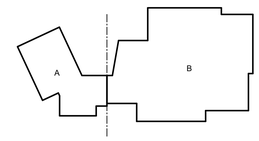

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Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - HVAC PLAN - SEGMENT B**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# M2.11B

**LEVEL 1 - HVAC PLAN - SEGMENT B** — **1** — 1/8" = 1'-0"

PN


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## SHEET NOTES

1. REFER TO SHEET M0.00 FOR LEGEND & ABBREVIATION AND SHEET M0.01 FOR GENERAL NOTES.
2. PROVIDE 1" INTERNAL ACOUSTICAL LINER BETWEEN THE FAN COIL UNIT DISCHARGE AND THE DIFFUSER POINT OF CONNECTION. TYPICAL FOR ALL BRANCH DUCTWORK.
3. REFER TO ZONING PLANS FOR THERMOSTAT, C02, AND HUMIDISTAT SENSOR LOCATIONS.

## KEYED NOTES (#)

1. TRANSFER DUCT MAX WITH 1" DUCT LINER. PROVIDE ADDITIONAL SOUND TRAP AS REQUIRED BY ACOUSTICAL CONSULTANT.
2. RETURN AIR DUCT OPENING WITH MESH SCREEN.
3. PROVIDE VENT COVER WITH BACKDRAFT DAMPER.
4. CONTRACTOR TO PROVIDE DRAIN PAN PIPED TO NEAREST STORM LINE IF UNIT IS LOCATED ABOVE ELECTRICAL EQUIPMENT.
5. DAMPERS TO BE ACCESSIBLE FOR GRILLES TO BE ADJUSTED MANUALLY BY STAGE CREW.

PROVIDE LOUVER WITH 0.24" SQFT FREE AREA, COMPLETE WITH BACKDRAFT DAMPER. REFER TO ARCHITECTURAL DRAWINGS.

PROVIDE LOUVER WITH 0.24" SQFT FREE AREA, COMPLETE WITH BACKDRAFT DAMPER. REFER TO ARCHITECTURAL DRAWINGS.

PROVIDE LOUVER WITH 0.24" SQFT FREE AREA, COMPLETE WITH BACKDRAFT DAMPER. REFER TO ARCHITECTURAL DRAWINGS.

SA-10-220 SERVES AV RACK ROOM


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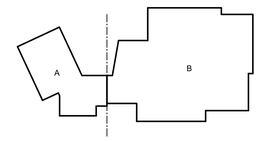

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Job. No.: 150-23US00121


REGISTERED PROFESSIONAL ENGINEER — CHI KUEN CHAN — No. M35338 Exp. 6-30-27 MECHANICAL — STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 2 - HVAC PLAN - SEGMENT B**

**DSA SUBMITTAL**

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**M2.12**

**LEVEL 2 - CEILING PLAN - HVAC - SEGMENT B** — 2 — 1/8" = 1'-0"

PN


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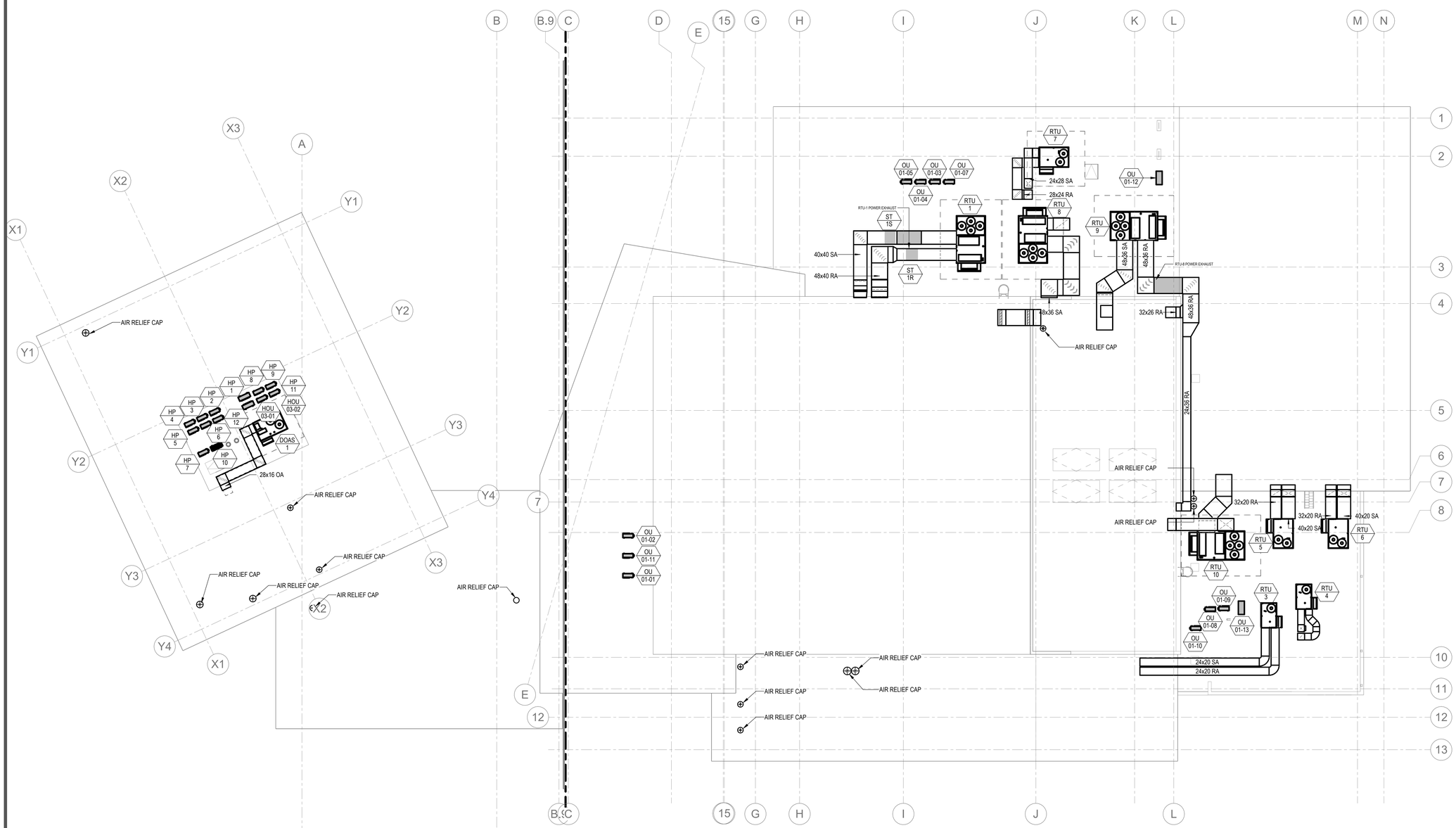
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## SHEET NOTES

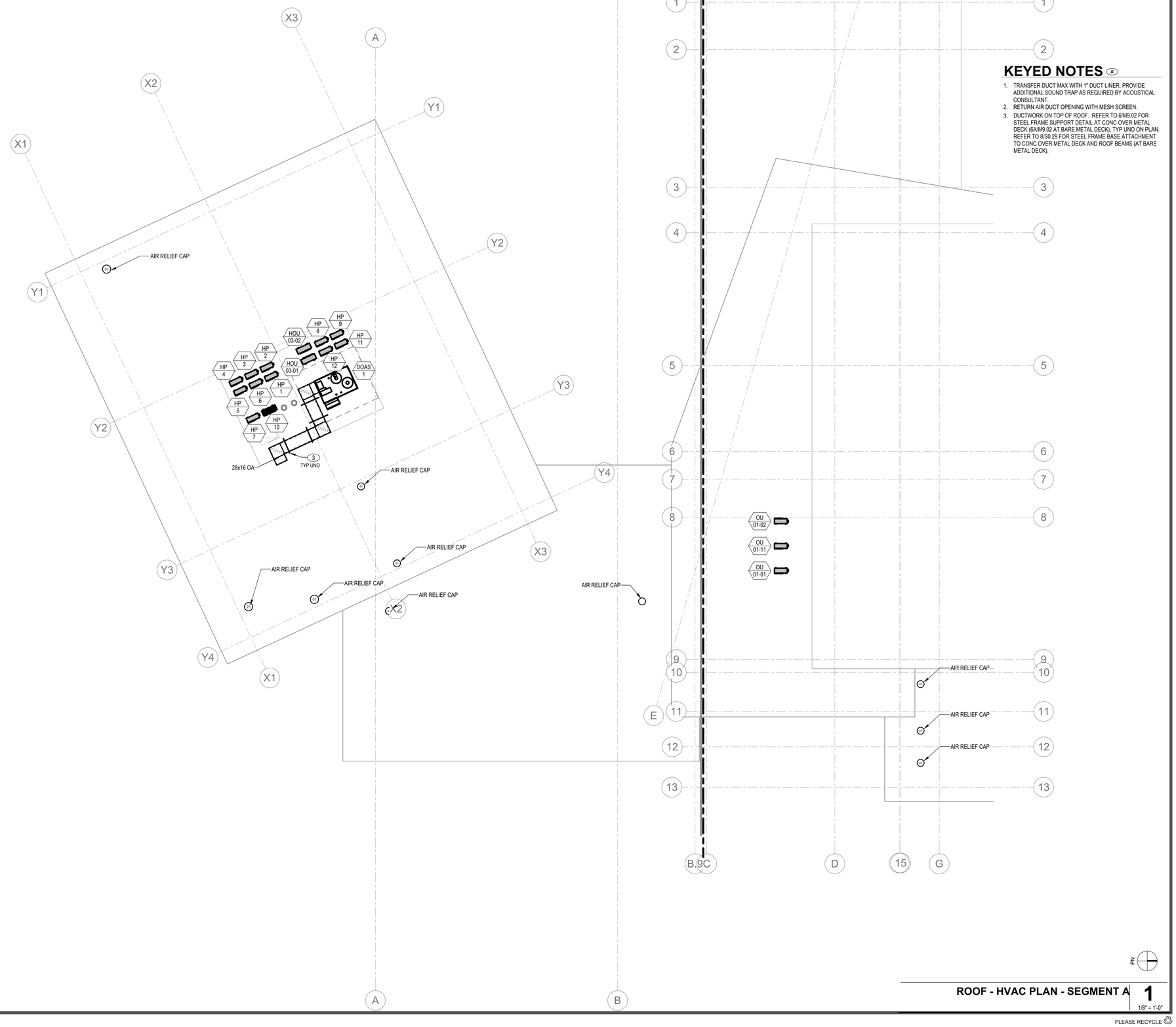
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## KEYED NOTES (#)

1. TRANSFER DUCT MAX WITH 1" DUCT LINER. PROVIDE ADDITIONAL SOUND TRAP AS REQUIRED BY ACOUSTICAL CONSULTANT.
2. RETURN AIR DUCT OPENING WITH MESH SCREEN.


RTU 7
OU 01-05
OU 01-03
OU 01-07
OU 01-04
RTU 1
RTU-1 POWER EXHAUST
ST 1S
ST 1R
40x40 SA
48x40 RA
24x28 SA
28x24 RA
RTU 8
OU 01-12
RTU 9
48x36 SA
48x36 RA
RTU-8 POWER EXHAUST
48x36 SA
32x26 RA
48x36 RA
AIR RELIEF CAP
24x36 RA
AIR RELIEF CAP
32x20 RA
32x20 RA
40x20 SA
40x20 SA
RTU 5
RTU 6
RTU 10
RTU 3
RTU 4
OU 01-09
OU 01-08
OU 01-13
OU 01-10
24x20 SA
24x20 RA
OU 01-02
OU 01-11
OU 01-01
AIR RELIEF CAP
AIR RELIEF CAP
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HP 1
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3. DUCTWORK ON TOP OF ROOF. REFER TO 6/M9.02 FOR STEEL FRAME SUPPORT DETAIL AT CONC OVER METAL DECK (6A/M9.02 AT BARE METAL DECK), TYP UNO ON PLAN. REFER TO 8/S0.29 FOR STEEL FRAME BASE ATTACHMENT TO CONC OVER METAL DECK AND ROOF BEAMS (AT BARE METAL DECK).

ROOF - HVAC PLAN - SEGMENT A

1
1/8" = 1'-0"

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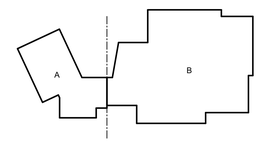
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REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
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Project Manager: RM
Job No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - HVAC PLAN - SEGMENT A**

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ROOF - HVAC PLAN - SEGMENT B | 1 | 1/8" = 1'-0"

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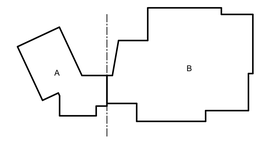

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REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - HVAC PLAN - SEGMENT B**

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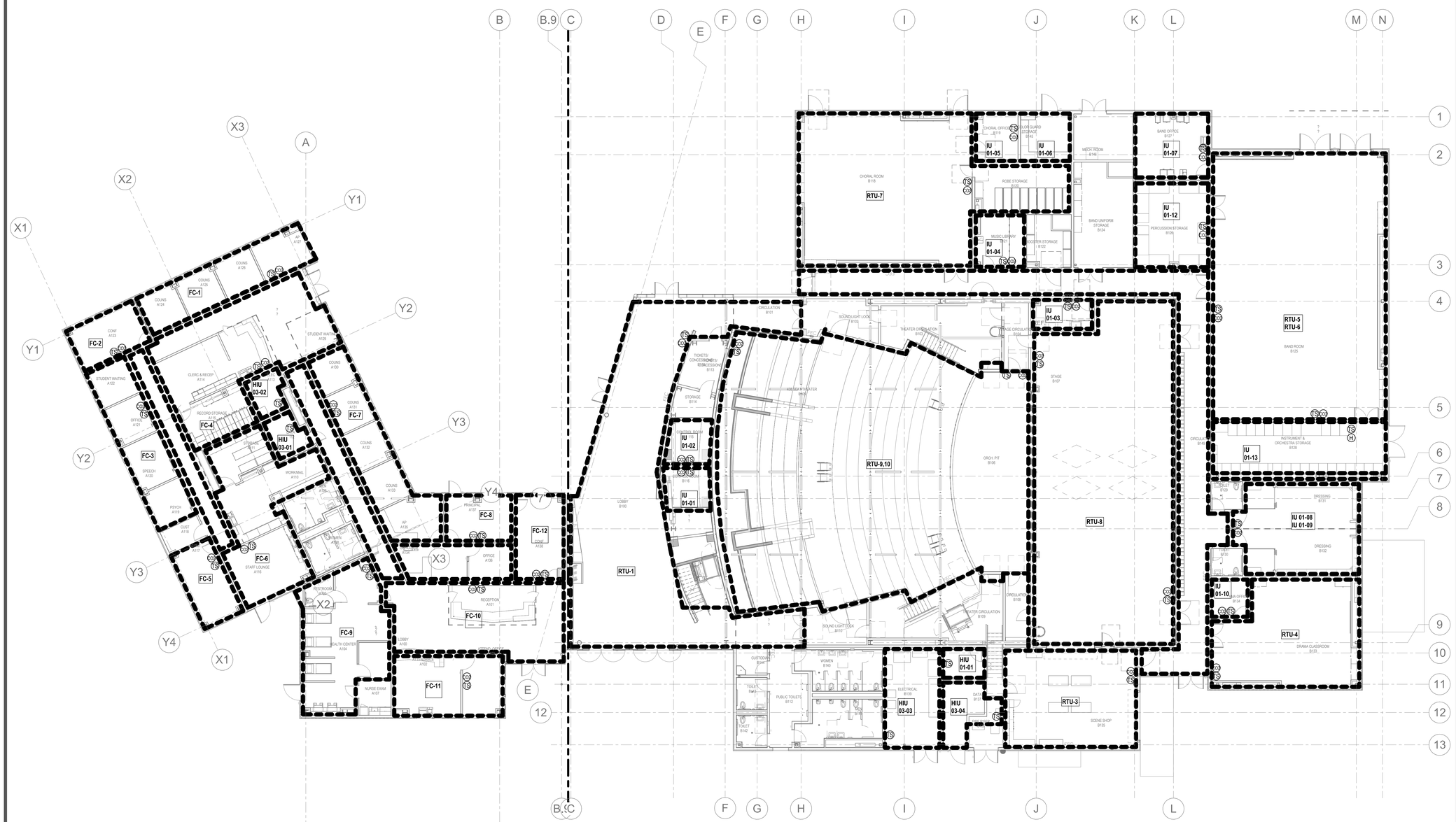
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3. COORDINATE WITH ELECTRICAL CONTRACTOR AND PROVIDE THERMOSTAT NEAR LIGHT CONTROLLER WALL STATION WHERE POSSIBLE.
4. LOCATE TOP OF ROOM THERMOSTAT AND CO2 SENSORS 48" MAX ABOVE FINISHED FLOOR.
5. IF MORE THAN ONE SENSOR SHOWN ON PLAN, TAKE AVERAGE READING.




## LEVEL 1 - OVERALL HVAC ZONING PLAN

1
3/32" = 1'-0"

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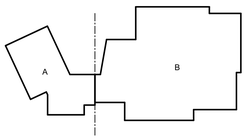

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Exp. 6-30-27
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Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - OVERALL HVAC ZONING PLAN**

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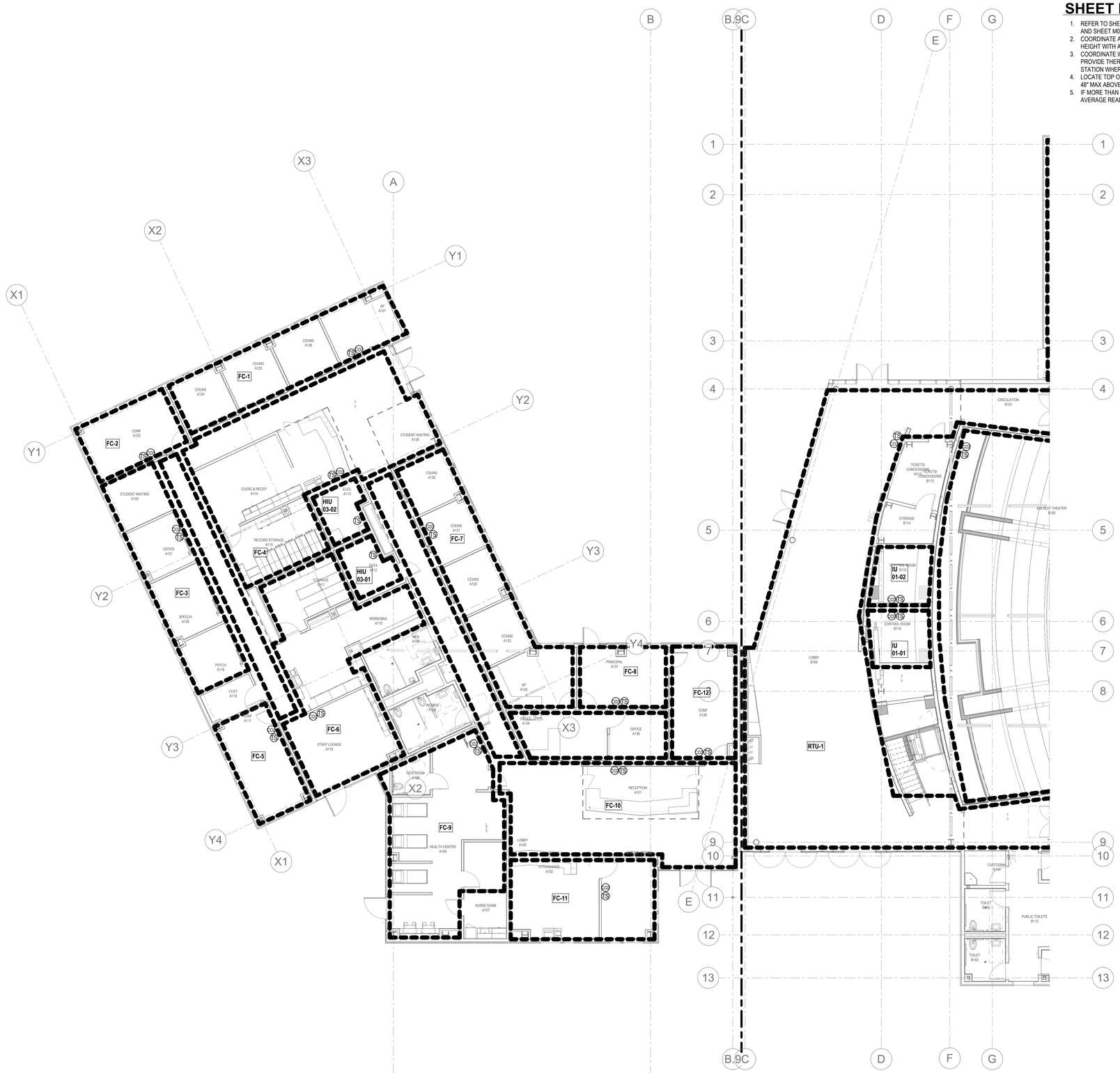
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## SHEET NOTES

1. REFER TO SHEET M0.00 FOR LEGEND & ABBREVIATION AND SHEET M0.01 FOR GENERAL NOTES.
2. COORDINATE ALL FINAL THERMOSTAT LOCATION AND HEIGHT WITH ARCHITECT.
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4. LOCATE TOP OF ROOM THERMOSTAT AND CO2 SENSORS 48" MAX ABOVE FINISHED FLOOR.
5. IF MORE THAN ONE SENSOR SHOWN ON PLAN, TAKE AVERAGE READING.




## LEVEL 1 - HVAC ZONING PLAN - SEGMENT A

1 — 1/8" = 1'-0"

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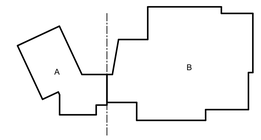

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - HVAC ZONING PLAN - SEGMENT A**

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LEVEL 1 - HVAC ZONING PLAN - SEGMENT B

1
1/8" = 1'-0"

PN

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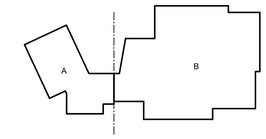

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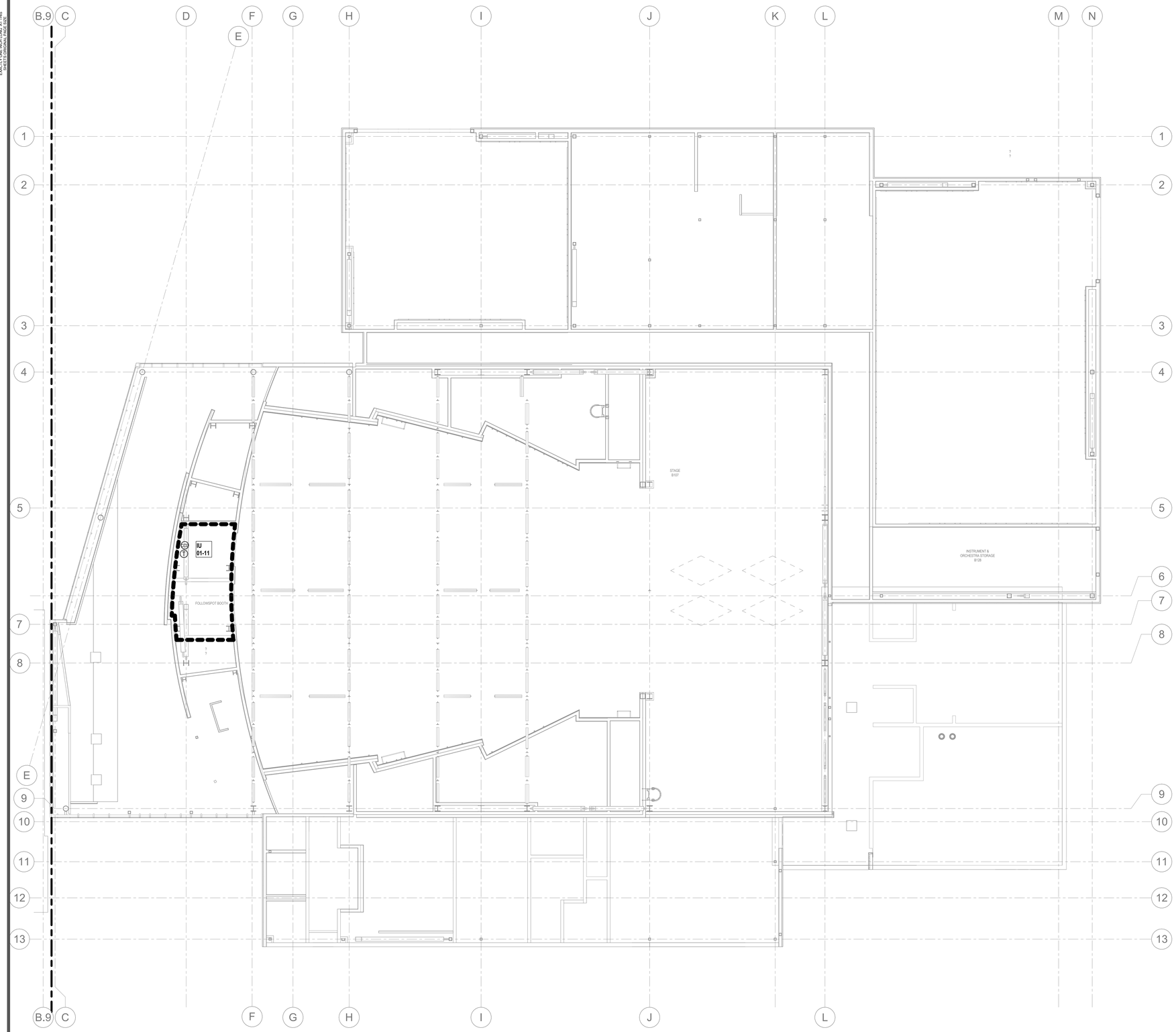
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5. IF MORE THAN ONE SENSOR SHOWN ON PLAN, TAKE AVERAGE READING.

LEVEL 2 - ZONING PLAN SEGMENT B | 1 | 1/8" = 1'-0"

PN

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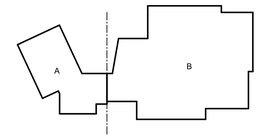

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 2 - ZONING PLAN - SEGMENT B**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**M3.12**

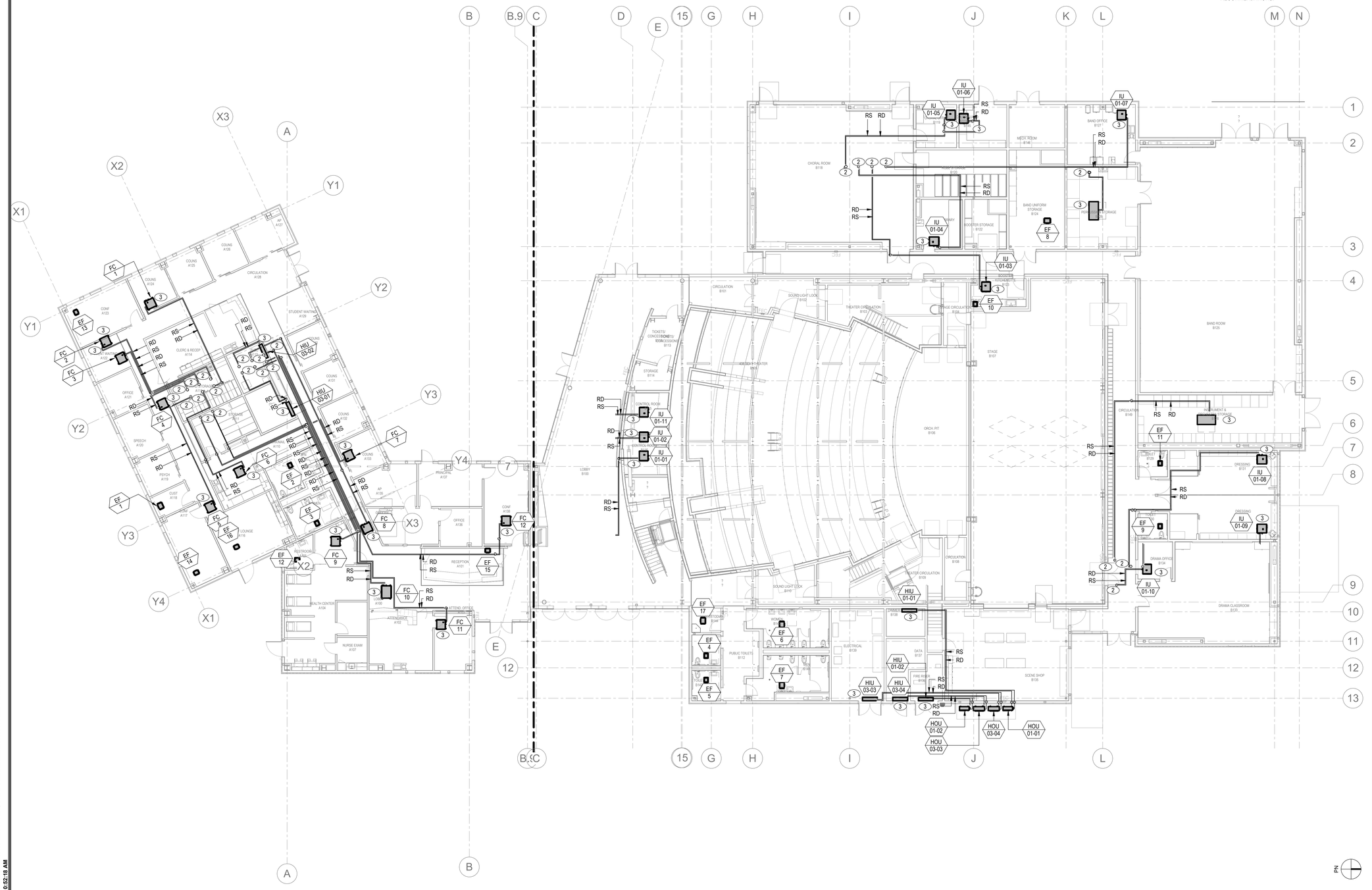
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PAPER SIZE. ADJUST SCALE ACCORDINGLY IF THIS SHEET'S ORIGINAL PAPER SIZE IS NOT 24" X 36"

## KEYED NOTES

1. REFRIGERANT PIPING UP IN SHAFT.
2. REFRIGERANT PIPING UP THRU ROOF.
3. PROVIDE CONDENSATE DRAIN PIPING AND TERMINATE TO APPROVED RECEPTOR. REFER TO PLUMBING DRAWINGS FOR CONDENSATE DRAIN PIPING LAYOUT AND DETAILS.

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10. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.




PN

## LEVEL 1 - OVERALL REFRIGERANT PIPING PLAN

1
3/32" = 1'-0"

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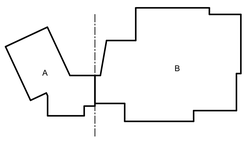

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REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
MECHANICAL
STATE OF CALIFORNIA


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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - OVERALL REFRIGERANT PIPING PLAN**

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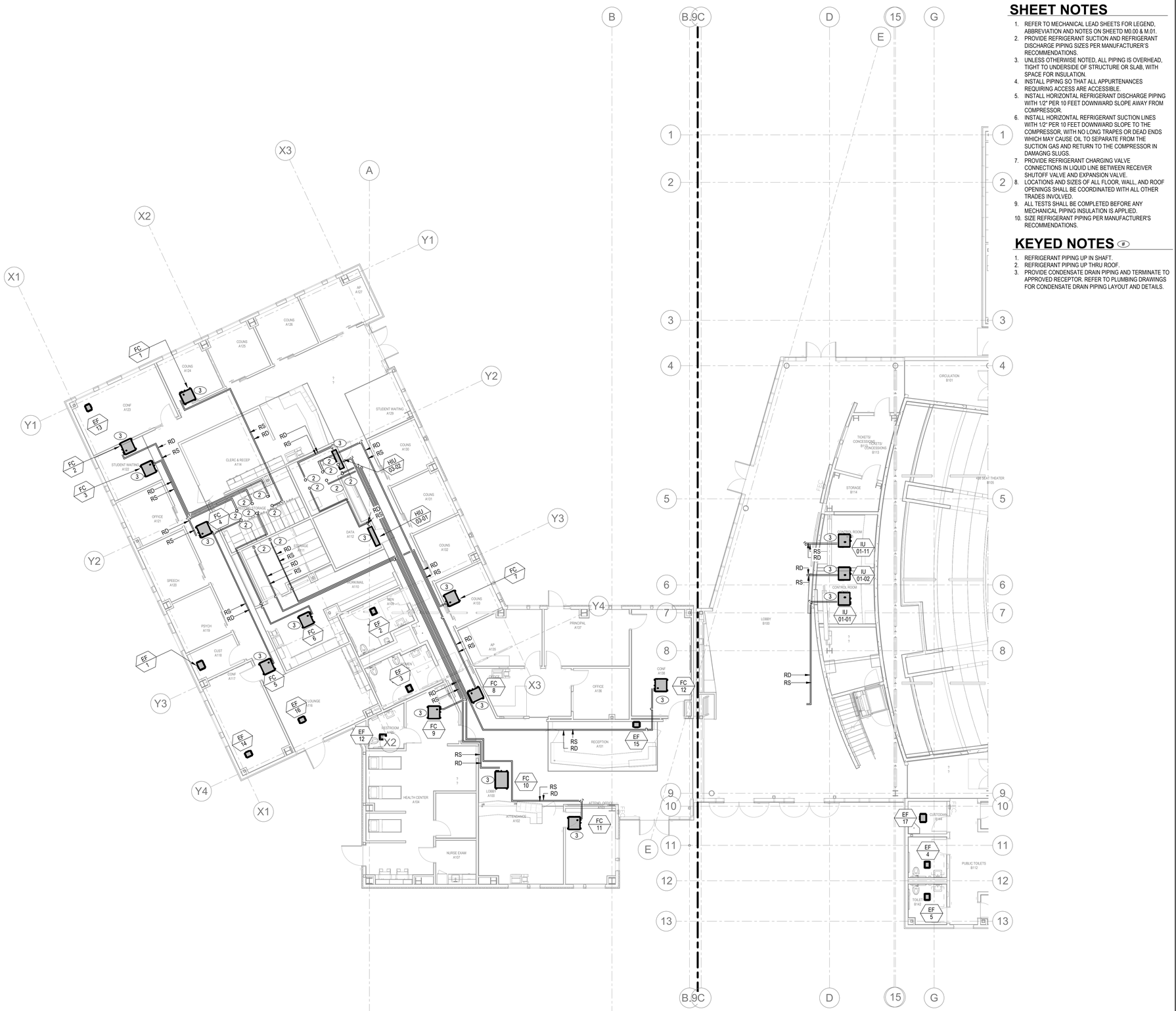
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PN

**LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT A** — 1 — 1/8" = 1'-0"

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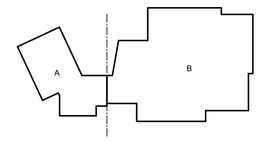

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT A**

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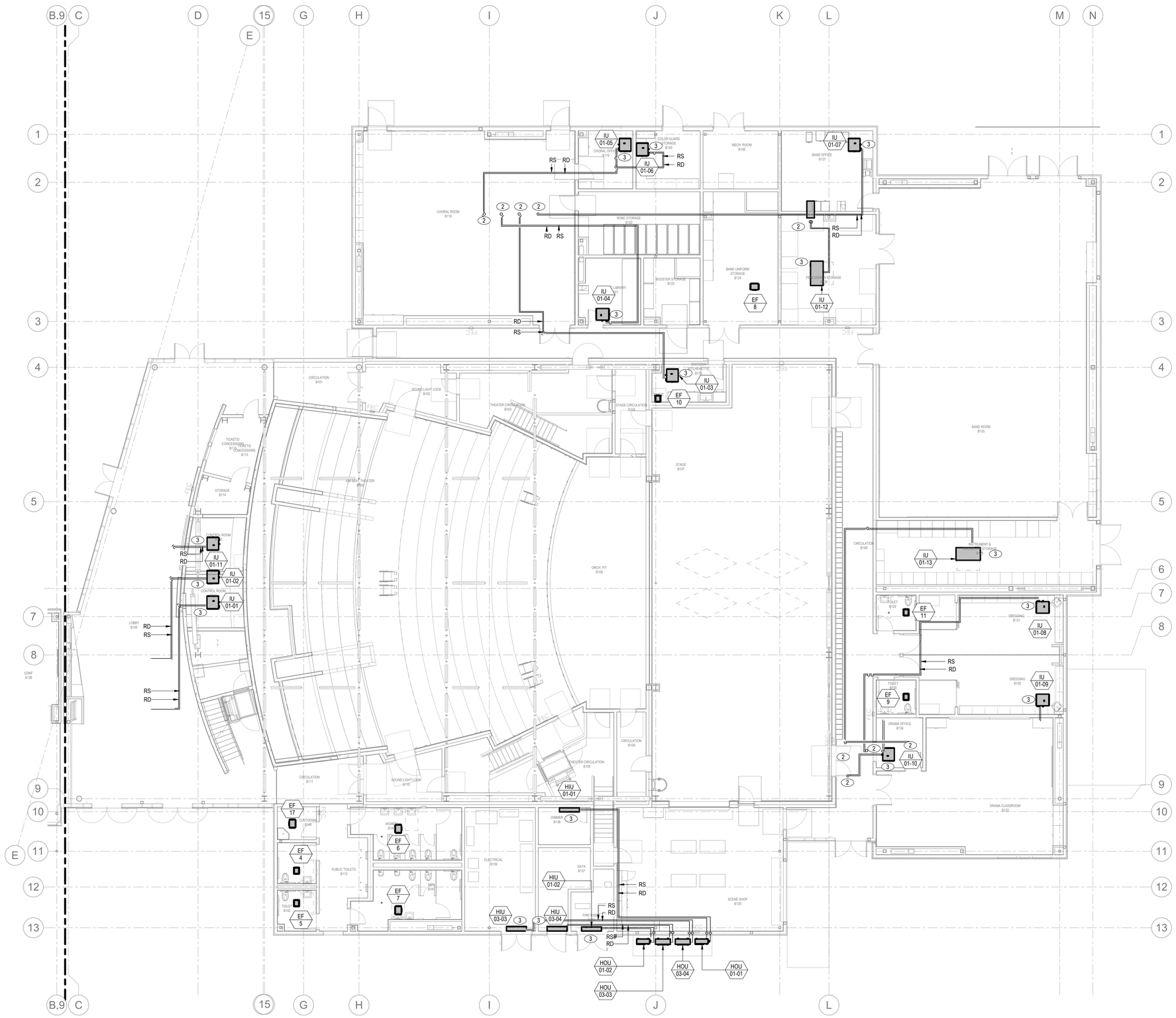
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PN

**LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT B** | **1** 1/8" = 1'-0"

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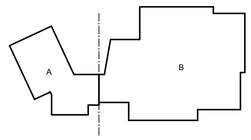

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REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-27
MECHANICAL
STATE OF CALIFORNIA


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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - REFRIGERANT PIPING PLAN - SEGMENT B**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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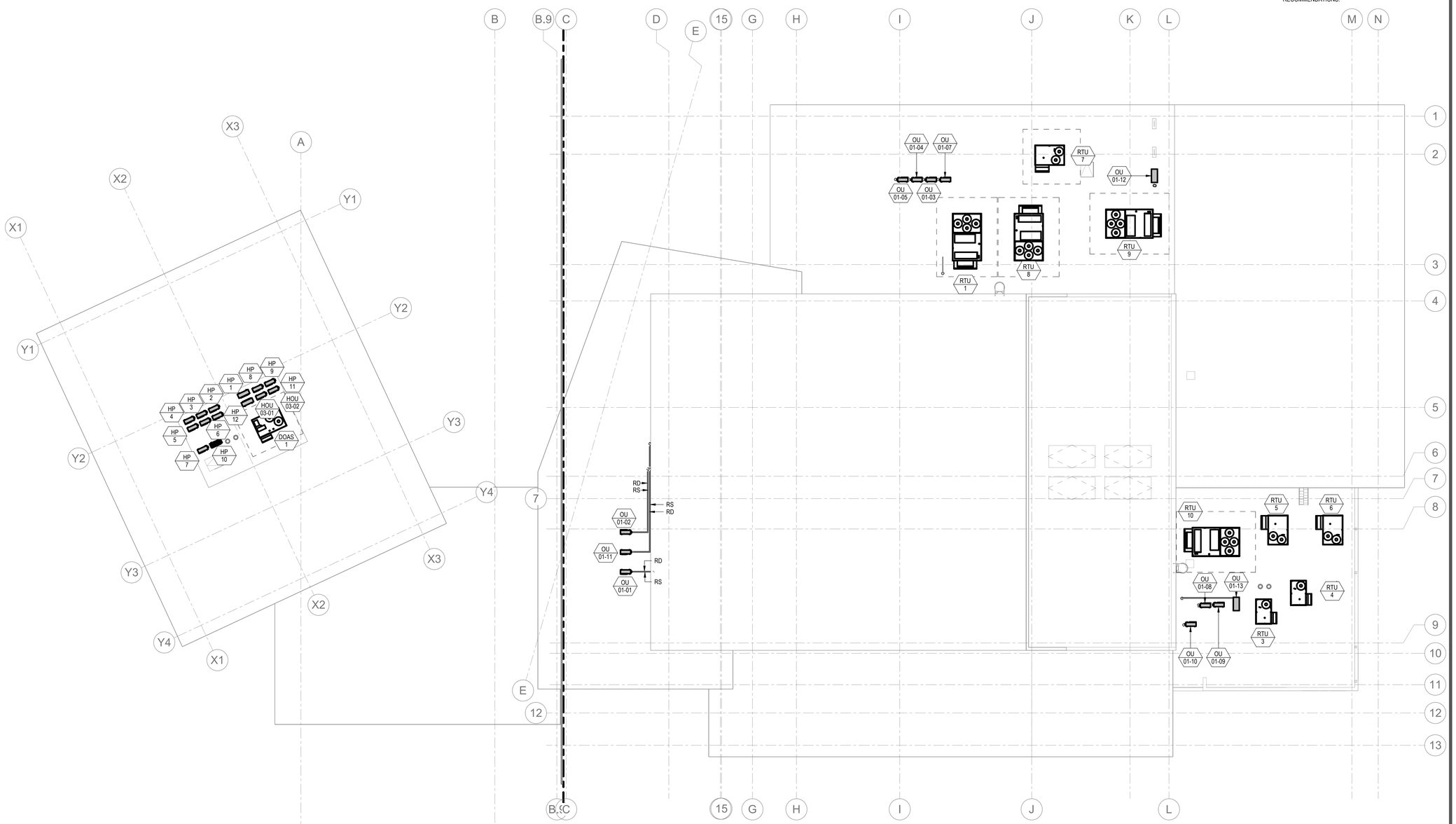
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**ROOF - OVERALL REFRIGERANT PIPING PLAN** 1 3/32" = 1'-0"

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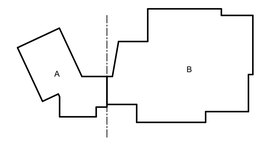
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - OVERALL REFRIGERANT PIPING PLAN**

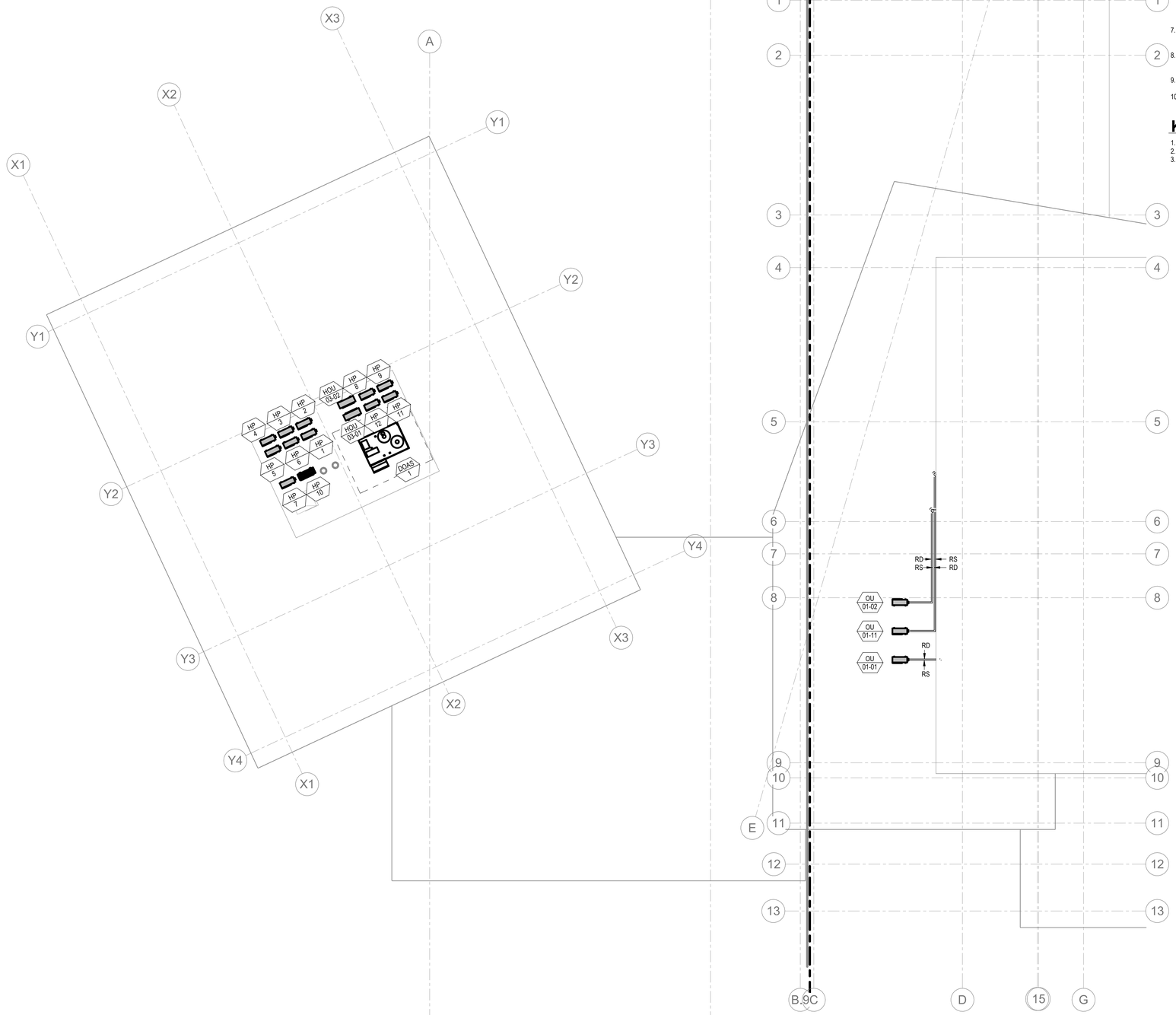
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**ROOF - REFRIGERANT PIPING PLAN - SEGMENT A** — 1 — 1/8" = 1'-0"

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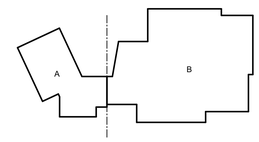

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**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - REFRIGERANT PIPING PLAN - SEGMENT A**

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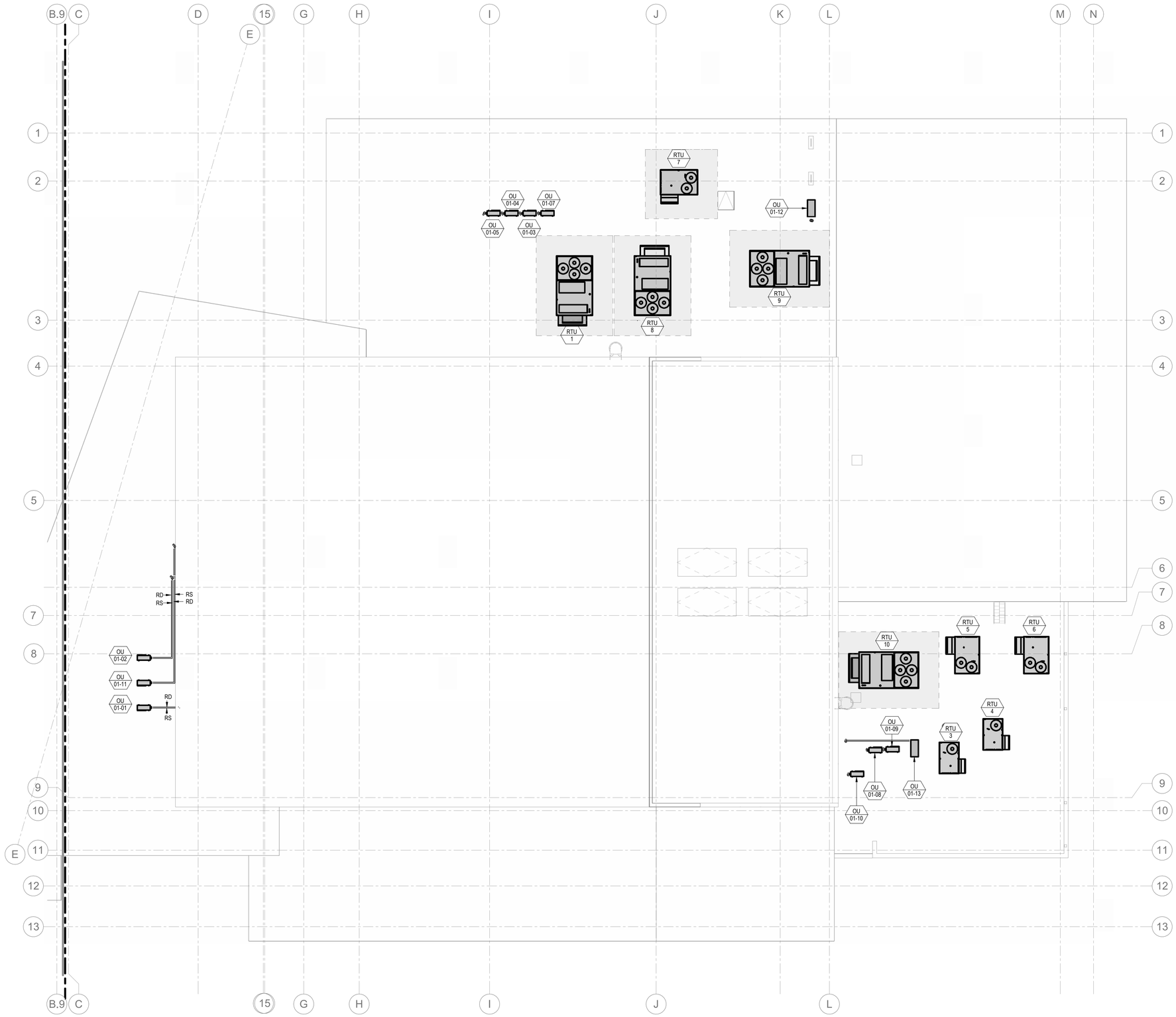
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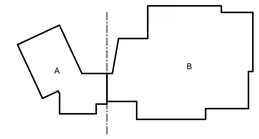

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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - REFRIGERANT PIPING PLAN - SEGMENT B**

**DSA SUBMITTAL**

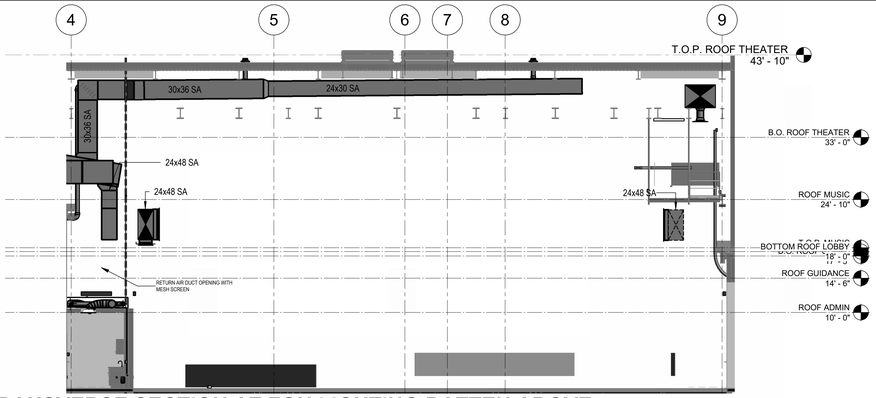
FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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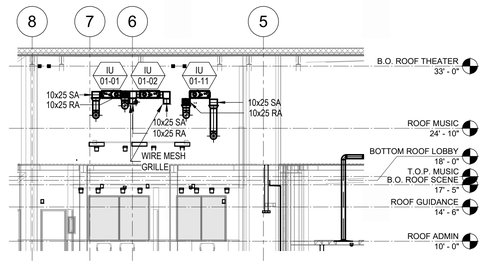
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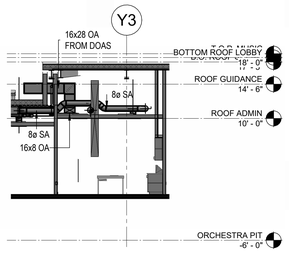

## 1 TRANSVERSE SECTION AT FOH LIGHTING BATTEN ABOVE FORESTAGE

SCALE: 1/8" = 1'-0"



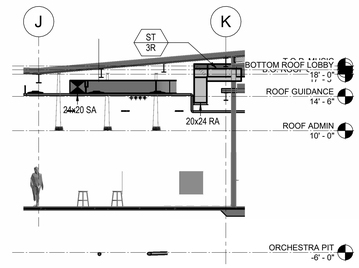

## 5 FAN COILS IN CONTROL BOOTHS AND FOLLOWSPOT BOOTHS

SCALE: 1/8" = 1'-0"



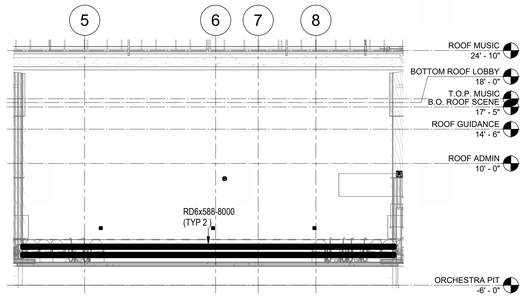

## 11 DUCTWORK FROM DOAS

SCALE: 1/8" = 1'-0"



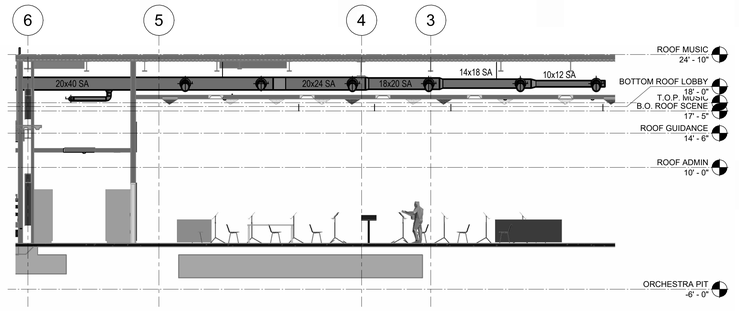

## 2 DUCTWORK FOR RTU3

SCALE: 1/8" = 1'-0"



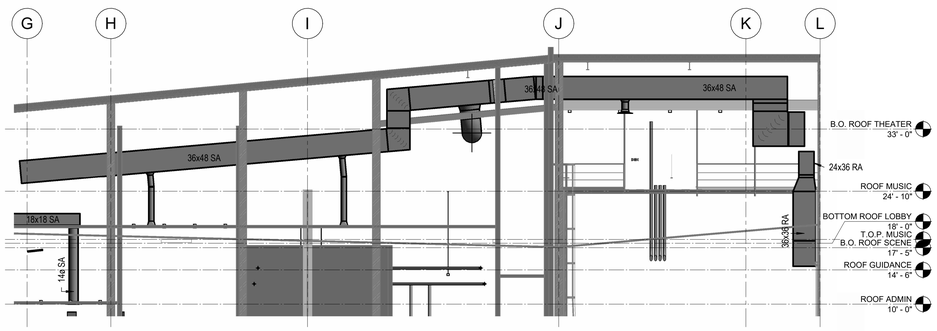

## 10 GRILLES ON FRONT OF ORCHESTRAL PIT

SCALE: 1/8" = 1'-0"



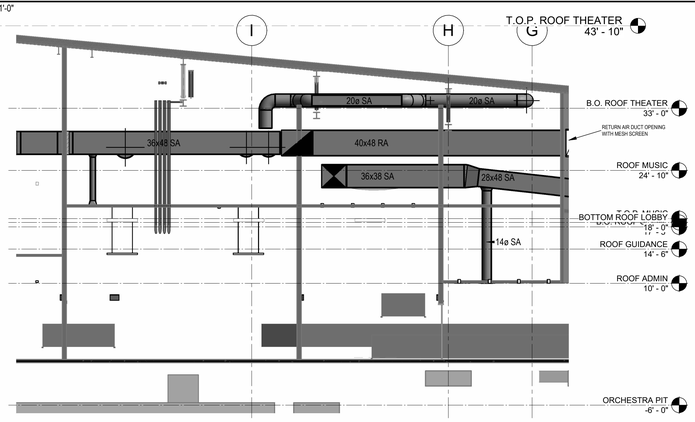

## 6 DUCTWORK FOR RTU6

SCALE: 1/8" = 1'-0"



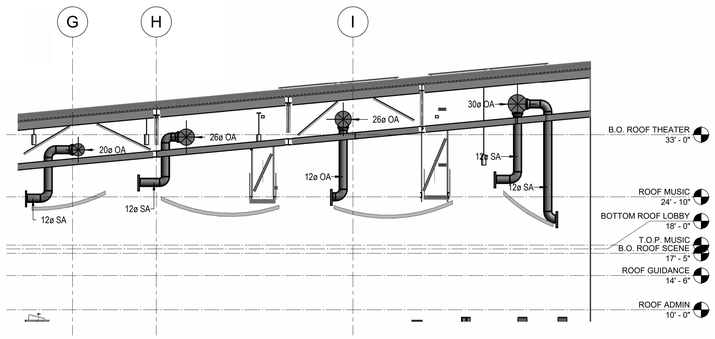

## 3 DUCTWORK IN CORRIDOR 2

SCALE: 1/8" = 1'-0"



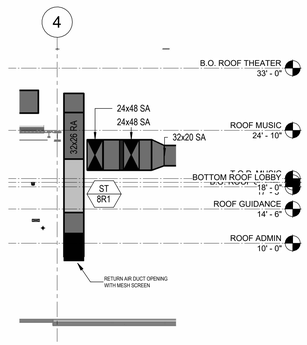

## 9 DUCTWORK IN CORRIDOR 1

SCALE: 1/8" = 1'-0"



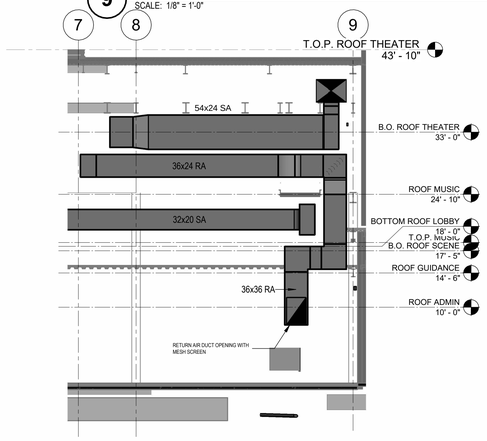

## 4 DUCTWORK RUNNING THROUGH STRUCTURAL BEAMS

SCALE: 1/8" = 1'-0"



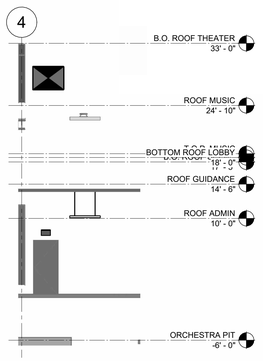

## 7 VERTICAL SILENCER

SCALE: 1/8" = 1'-0"




## 8 DUCTWORK AT BACK OF THEATRE

SCALE: 1/8" = 1'-0"




## 12 DUCTWORK FROM RTU 9

SCALE: 1/8" = 1'-0"

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Exp. 6-30-27
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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL SECTIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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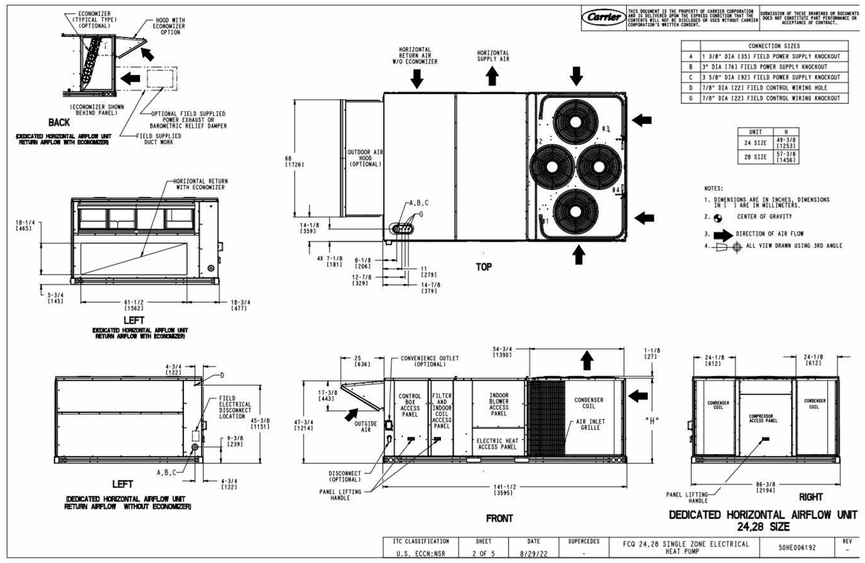
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**M5.01**

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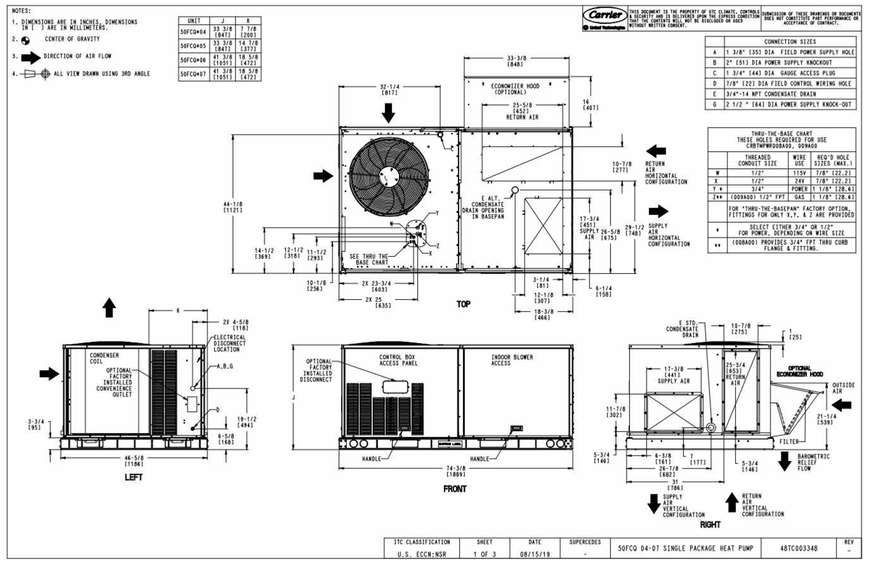

| | CONNECTION SIZES |
|---|---|
| A | 1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT |
| B | 3" DIA [76] FIELD POWER SUPPLY KNOCKOUT |
| C | 3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT |
| D | 7/8" DIA [22] FIELD CONTROL WIRING HOLE |
| G | 7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT |

| UNIT | H |
|---|---|
| 24 SIZE | 49-3/8 [1253] |
| 28 SIZE | 57-3/8 [1458] |

NOTES:
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

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|---|---|---|---|---|---|
| U.S. ECCN:NSR | 2 OF 5 | 8/29/22 | - | FCQ 24,28 SINGLE ZONE ELECTRICAL HEAT PUMP | 50HE006192 |

## 4 ROOF TOP UNIT - RTU-8, RTU-9, RTU-10
SCALE: NONE




| | CONNECTION SIZES |
|---|---|
| A | 1 3/8" [35] DIA FIELD POWER SUPPLY HOLE |
| B | 2" [51] DIA POWER SUPPLY KNOCKOUT |
| C | 1 3/4" [44] DIA GAUGE ACCESS PLUG |
| D | 7/8" [22] DIA FIELD CONTROL WIRING HOLE |
| E | 3/4"-14 NPT CONDENSATE DRAIN |
| G | 2 1/2 " [64] DIA POWER SUPPLY KNOCK-OUT |

| UNIT | J | K |
|---|---|---|
| 50FCQ*04 | 33 3/8 [847] | 7 7/8 [200] |
| 50FCQ*05 | 33 3/8 [847] | 14 7/8 [377] |
| 50FCQ*06 | 41 3/8 [1051] | 10 5/8 [472] |
| 50FCQ*07 | 41 3/8 [1051] | 10 5/8 [472] |

THRU-THE-BASE CHART
THESE HOLES REQUIRED FOR USE CBTWPRSUBASE, 009460

| | THREADED CONDUIT SIZE | WIRE USE | REQ'D HOLE SIZES (MAX.) |
|---|---|---|---|
| M | 1/2" | 115V | 7/8" [22.2] |
| X | 1/2" | 24V | 7/8" [22.2] |
| T * | 3/4" | | POWER [1 1/8" [28.6] |
| Z** | [009480D1] 1/2" FPT GAS | | [1 1/8" [28.6] |
| | FOR "THRU-THE-BASEPAN" FACTORY OPTION FITTINGS FOR ONLY L,T, & Z ARE PROVIDED | | |
| * | SELECT EITHER 3/4" OR 1/2" FOR POWER, DEPENDING ON WIRE SIZE | | |
| ** | [008AD0] PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING. | | |

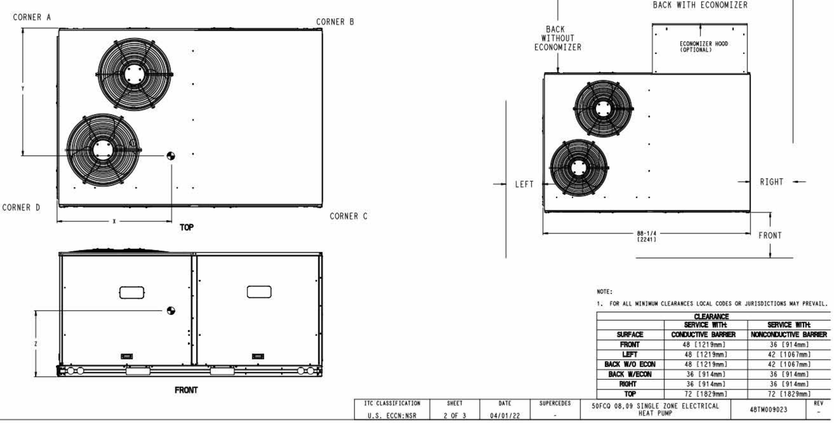
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|---|---|---|---|---|---|
| U.S. ECCN:NSR | 1 OF 3 | 08/15/19 | - | 50FCQ 04-07 SINGLE PACKAGE HEAT PUMP | 48TC003348 |

## 2 ROOF TOP UNIT - RTU-3 AND RTU-4
SCALE: NONE

| UNIT | OUTDOOR COIL TYPE | STD. UNIT WEIGHT *** | | CORNER WEIGHT (A) | | CORNER WEIGHT (B) | | CORNER WEIGHT (C) | | CORNER WEIGHT (D) | | C.G. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LBS. | KG. | LBS. | KG. | LBS. | KG. | LBS. | KG. | LBS. | KG. | X | Y | Z |
| 50FCQ-08 | RTPF | 805 | 365 | 163 | 74 | 209 | 95 | 243 | 110 | 190 | 86 | 49 1/2 [1257] | 32 [813] | 19 1/8 [486] |
| 50FCQ-09 | RTPF | 812 | 368 | 164 | 75 | 211 | 96 | 245 | 111 | 191 | 87 | 49 1/2 [1257] | 32 [813] | 19 1/8 [486] |

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)

*** STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

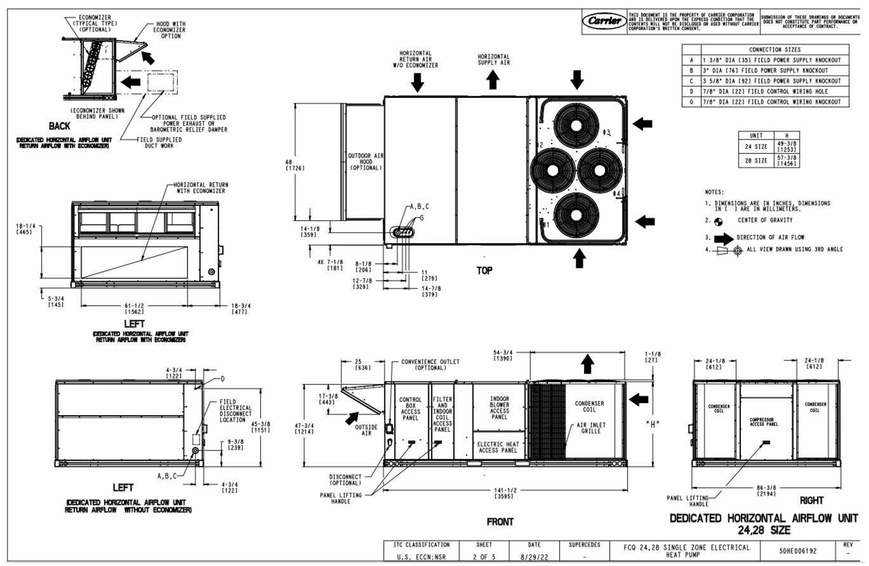



NOTE:
1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

| | CLEARANCE | |
|---|---|---|
| | SERVICE WITH | SERVICE WITH |
| SURFACE | CONDUCTIVE BARRIER | NONCONDUCTIVE BARRIER |
| FRONT | 48 [1219mm] | 36 [914mm] |
| LEFT | 48 [1219mm] | 42 [1067mm] |
| BACK W/O ECON | 48 [1219mm] | 42 [1067mm] |
| BACK W/ECON | 36 [914mm] | 36 [914mm] |
| RIGHT | 36 [914mm] | 36 [914mm] |
| TOP | 72 [1829mm] | 72 [1829mm] |

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|---|---|---|---|---|---|
| U.S. ECCN:NSR | 2 OF 3 | 04/01/22 | - | 50FCQ 08,09 SINGLE ZONE ELECTRICAL HEAT PUMP | 48TW009023 |

## 3 ROOF TOP UNIT - RTU-5, RTU-6, RTU-7
SCALE: NONE




| | CONNECTION SIZES |
|---|---|
| A | 1 3/8" DIA [35] FIELD POWER SUPPLY HOLE |
| B | 3" DIA [76] FIELD POWER SUPPLY KNOCKOUT |
| C | 3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT |
| D | 7/8" DIA [22] FIELD CONTROL WIRING HOLE |
| G | 7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT |

| UNIT | H |
|---|---|
| 24 SIZE | 49-3/8 [1253] |
| 28 SIZE | 57-3/8 [1458] |

NOTES:
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

| ITC CLASSIFICATION | SHEET | DATE | SUPERCEDES | | |
|---|---|---|---|---|---|
| U.S. ECCN:NSR | 2 OF 5 | 8/29/22 | - | FCQ 24,28 SINGLE ZONE ELECTRICAL HEAT PUMP | 50HE006192 |

## 1 ROOF TOP UNIT - RTU-1
SCALE: NONE

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REGISTERED PROFESSIONAL ENGINEER
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL EQUIPMENT SELECTIONS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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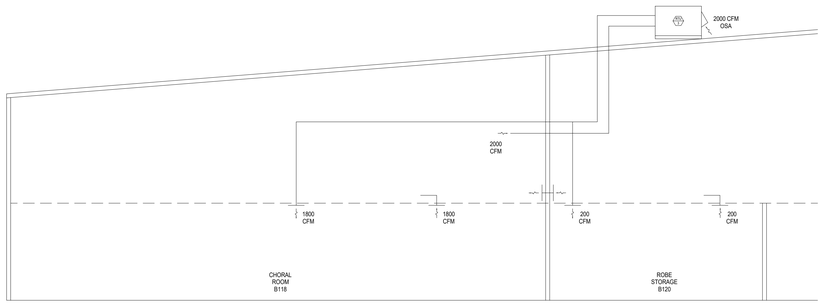
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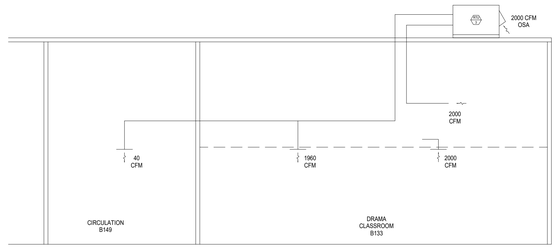
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## KEYED NOTES (#)

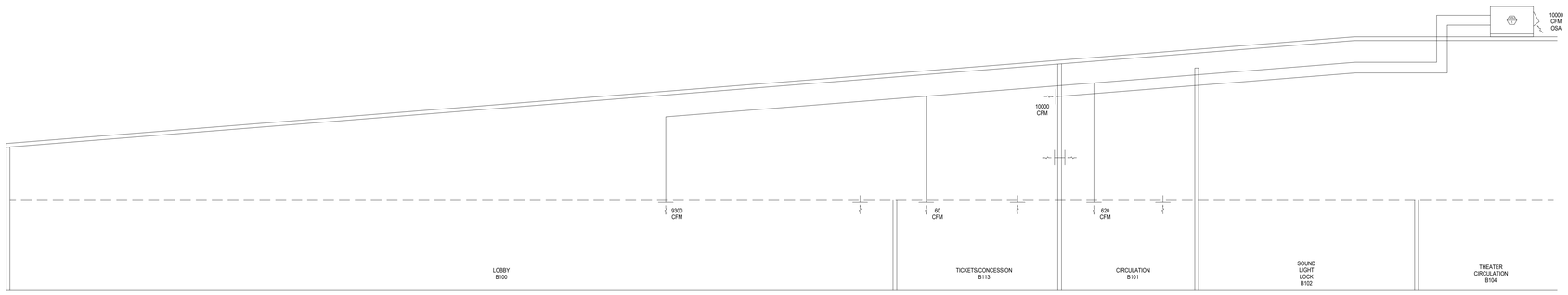
1. EXHAUST FAN DUCTED TO SIDE WALL.



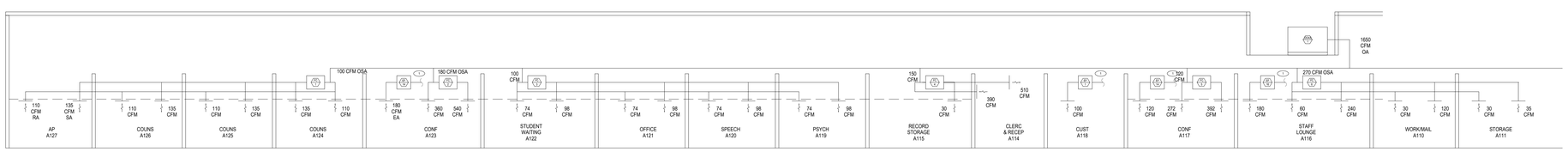

3 RTU-3 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE



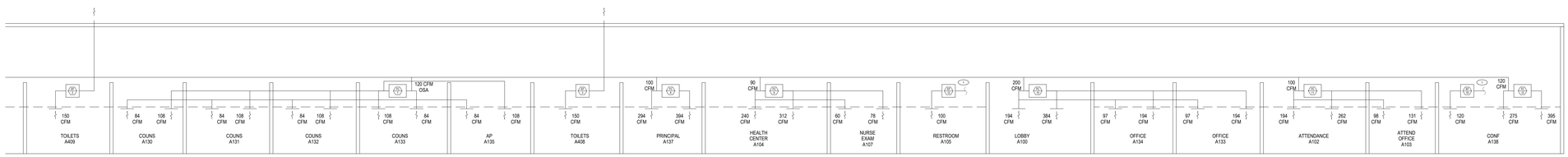

4 RTU-3 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE




2 RTU-1 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE




1A ADMIN AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE




1B ADMIN AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL DUCTWORK RISER DIAGRAMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

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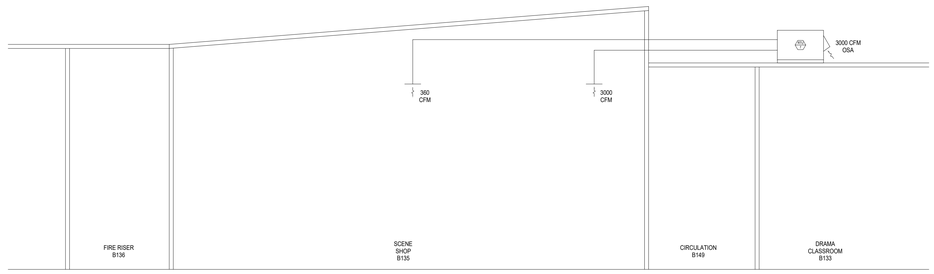
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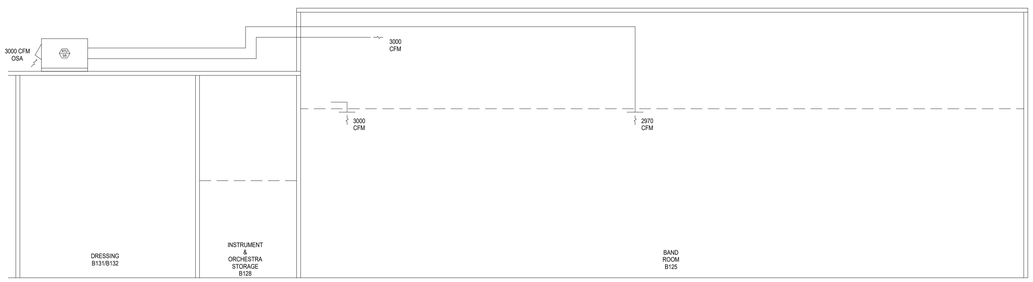
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3 RTU-8 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE




2 RTU-7 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE




1 RTU-5, RTU-6 AIRFLOW DUCT RISER DIAGRAM
SCALE: NOT TO SCALE

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SHEET NAME:

**MECHANICAL DUCTWORK RISER DIAGRAMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

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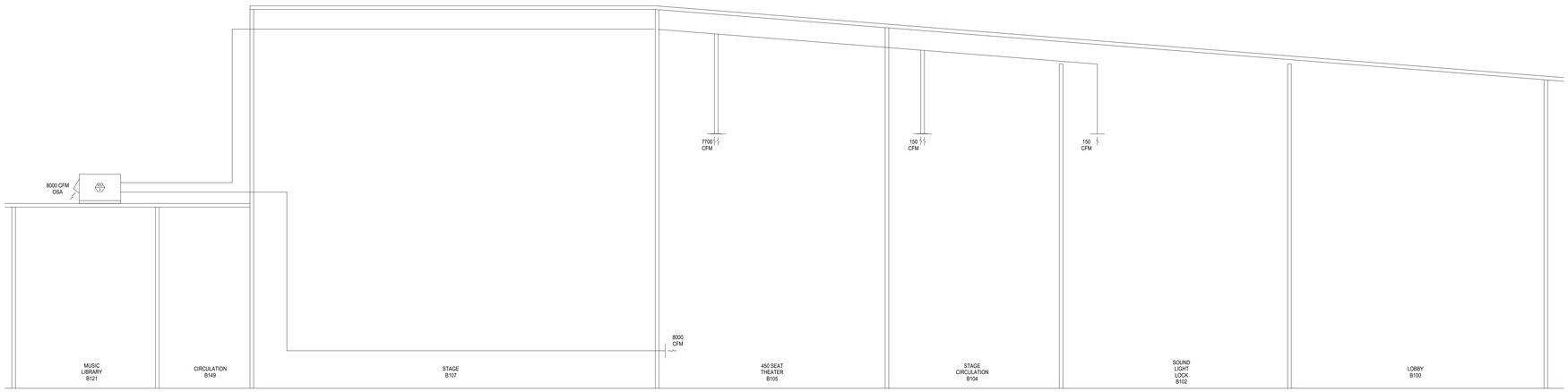
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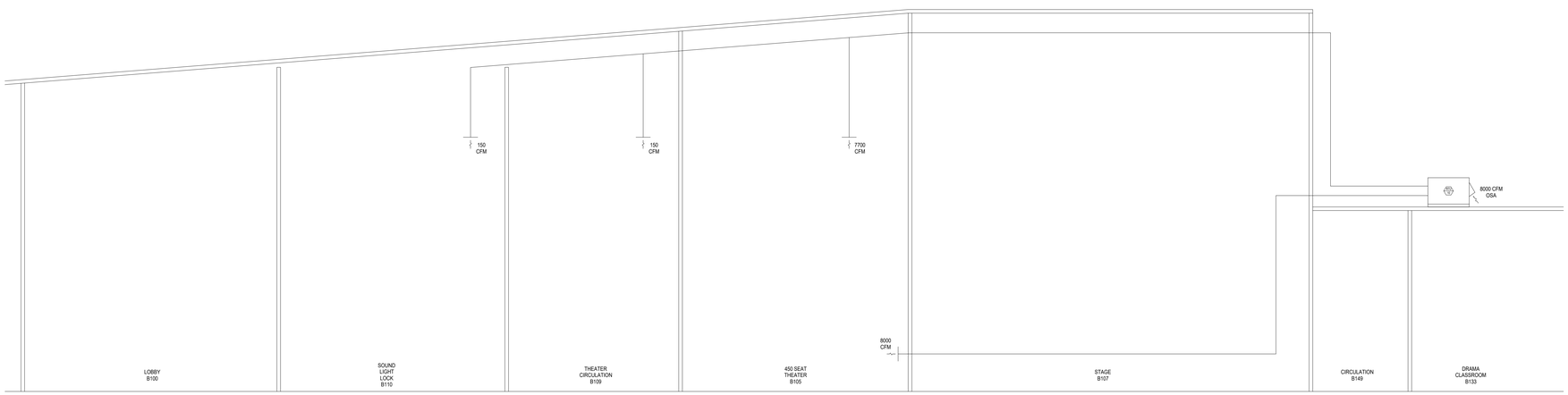
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2 RTU-9 AIRFLOW DUCT RISER DIAGRAM

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1 RTU-10 AIRFLOW DUCT RISER DIAGRAM

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL DUCTWORK RISER DIAGRAMS**

**DSA SUBMITTAL**

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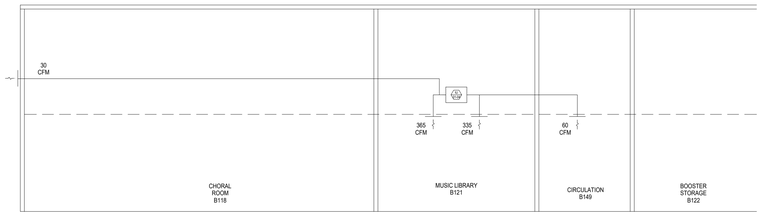
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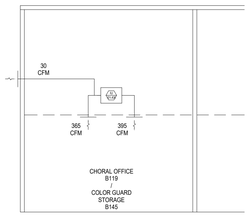
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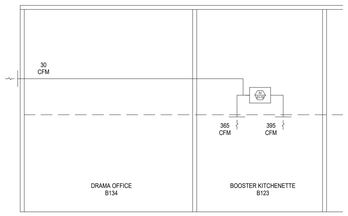
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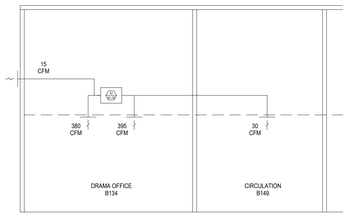

4 MUSIC LIBRARY AIRFLOW DUCT RISER DIAGRAM
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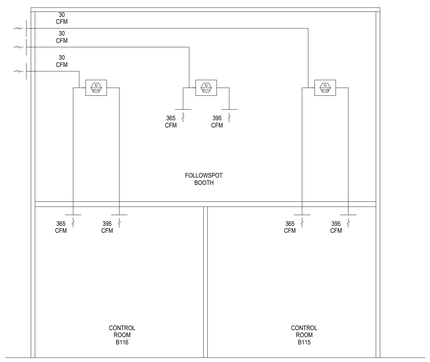

3 CHORAL OFFICE/COLOR GUARD STORAGE AIRFLOW DUCT RISER DIAGRAM
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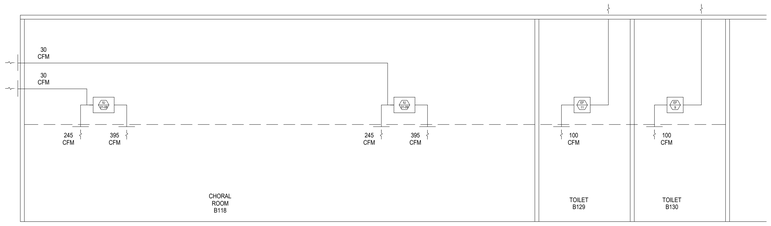

7 BOOSTER KITCHENETTE AIRFLOW DUCT RISER DIAGRAM
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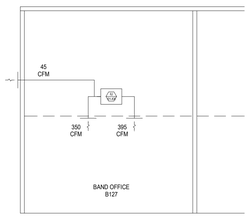

6 DRAMA OFFICE AIRFLOW DUCT RISER DIAGRAM
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5 CONTROL ROOM/FOLLOWSPOT BOOTH DUCT RISER DIAGRAM
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2 DRESSING ROOM AIRFLOW DUCT RISER DIAGRAM
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1 BAND OFFICE AIRFLOW DUCT RISER DIAGRAM
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**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDI TIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY

A. THIS SECTION INCLUDES CONTROL SEQUENCES FOR HVAC SYSTEMS, SUBSYSTEMS, AND EQUIPMENT.

1.3 ABBREVIATIONS

A. THE FOLLOWING ABBREVIATIONS MAY BE USED IN GRAPHICS, SCHEMATICS, POINT NAMES, AND OTHER APPLICATIONS WHERE SPACE IS AT A PREMIUM.
1. AC - AIR CONDITIONING
2. ACU - AIR CONDITIONING UNIT
3. AHU - AIR HANDLING UNIT
4. AI - ANALOG INPUT
5. AO - ANALOG OUTPUT
6. AUTO - AUTOMATIC
7. AUX - AUXILIARY
8. BI -BINARY INPUT
9. BO -BINARY OUTPUT
10. C -COMMON
11. DA - DISCHARGE AIR
12. EA - EXHAUST AIR
13. EF - EXHAUST FAN
14. FCU - FAN COIL UNIT
15. H0A - HAND / OFF / AUTO
16. HP - HEAT PUMP
17. HRU - HEAT RECOVERY UNIT
18. HTEX - HEAT EXCHANGER
19. HW - DOMESTIC HOT WATER
20. MAX - MAXIMUM
21. MIN - MINIMUM
22. MISC - MISCELLANEOUS
23. NC - NORMALLY CLOSED
24. NO - NORMALLY OPEN
25. OA - OUTDOOR AIR
26. RA - RETURN AIR
27. RF - RETURN FAN
28. RH - RELATIVE HUMIDITY
29. RTU - ROOF-TOP UNIT
30. SA - SUPPLY AIR
31. SF - SUPPLY FAN
32. SP - STATIC PRESSURE
33. TEMP - TEMPERATURE
34. UH - UNIT HEATER
35. VVTU - VARIABLE VOLUME TERMINAL UNIT
36. W/ - WITH
37. W/O - WITHOUT

1.4 BACNET COMMUNICATIONS INTERFACE

A. FOR ALL EQUIPMENT DESIGNATED WITH A BACNET COMMUNICATION INTERFACE MODULE, THE CONTROLS CON TRACTOR SHALL REVIEW THE SEQUENCE OF OPERATION IDENTIFIED BELOW AND COORDINATE WITH EACH AP PROVED EQUIPMENT MANUFACTURER TO PROVIDE THE DESIGNATED POINTS EITHER THROUGH THE INTERFACE OR A HARD WIRE CONNECTION (AT NO ADDITIONAL COST) WHERE CAPABILITY IS NOT AVAILABLE THROUGH INTER FACE.

B. THE CONTROLS CONTRACTOR SHALL IDENTIFY POINTS TO BE EITHER COMMANDED, TRENDED OR MONITORED THROUGH THE INTERFACE. AT A MINIMUM, THE BAS SHALL HAVE CAPABILITY TO ACCESS THE FOLLOWING FUNC TIONS FOR THE SYSTEM AND ALL SUBEQUIPMENT: SYSTEM ENABLE, EQUIPMENT ENABLE, STATUS, ALARM, TEMPERA TURE, PRESSURE, RESET SIGNALS, MAINTENANCE ALARM, OPERATION MODE, RUN TIME, FIRING/INPUT RATE, SET POINT ADJUSTMENT, DELAY AND SCHEDULING.

C. THE CONTROLS CONTRACTOR SHALL COORDINATE WITH EACH APPROVED EQUIPMENT MANUFACTURER TO PRO VIDE A FULL LIST OF AVAILABLE POINTS AVAILABLE THROUGH THE INTERFACE. ALL FUNCTIONS TO BE MAPPED THROUGH THE INTERFACE SHOULD BE SUBMITTED FOR ENGINEER APPROVAL.

D. COORDINATE WITH THE CAMPUS CONTROLLER. ALL CONTROLLERS THAT ARE PROVIDED SHALL BE PROGRAMMA- BLE FROM THE CAMPUS CENTRAL CONTROLLER USING A NIAGRA CONTROLS LANGUAGE. CONTROLLERS THAT REQUIRE SPECIALTY PROGRAMMING AND CANNOT BE PROGRAMMED FROM THE CAMPUS CENTRAL NIAGRA CON TROLLER USING NIAGRA CONTROLS LANGUAGE ARE PROHIBITED.

**PART 2 - SEQUENCE OF OPERATION**

2.1 SINGLE ZONE PACKAGED UNIT -2-STAGE ELECTRIC HEATING AND 2-STAGE DX COOLING - ECONOMIZER - DCV

A. FEATURES
1. SINGLE PACKAGE UNITARY UNIT.
2. 2-STAGE DIRECT EXPANSION COOLING WITH COMPRESSOR(S).
3. HEAT PUMP.
4. SUPPLY FAN WITH VFD.
5. FACTORY INSTALLED UNIT BAS WITH BACNET INTERFACE.
6. AIR ECONOMIZER SECTION WITH DAMPERS AND ACTUATORS, WITH FAC- TORY INSTALLED ECONOMIZER BAS WITH BACNET INTERFACE.
7. POWERED EXHAUST FAN WITH VFD FOR ECONOMIZER PRESSURE RELIEF.
8. ALL SETPOINTS SHALL BE USER ADJUSTABLE.
9. DEMAND RESPONSE READY.
10. CARBON DIOXIDE MONITORING.
11. CARBON MONOXIDE ALARM SHUT DOWN BY FIRE ALARM.
12. ECONOMIZER FAULT DETECTION AND DIAGNOSTICS.

B. RUN CONDITIONS - SCHEDULED:
1. THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
2. OCCUPIED MODE TEMPERATURES:
A. COOLING SETPOINT - REFER TO BUILDING SCHEDULE
B. HEATING SETPOINT - REFER TO BUILDING SCHEDULE
C. DEADBAND: MAINTAIN MINIMUM 5°F DEADBAND PER CALIFORNIA ENERGY CODE
3. UNOCCUPIED MODE TEMPERATURES (NIGHT SETBACK):
A. COOLING SETPOINT - 85°F COOLING SETPOINT FOR CLIMATE RE- GIONS WHERE THE SUMMER DESIGN DRY BULB 0.5 PERCENT TEMPERATURES IS GREATER THAN 100°.
B. HEATING SETPOINT - 55°F
4. STANDBY MODE TEMPERATURES (AFTER MORNING WARMUP AND PRIOR TO OCCUPANCY SENSED):
A. COOLING SETPOINT - REFER TO BUILDING SCHEDULE
B. HEATING SETPOINT - REFER TO BUILDING SCHEDULE
5. ZONE UNOCCUPIED OVERRIDE:
A. A TIMED LOCAL OVERRIDE CONTROL INTERFACE AT SENSOR SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR 4 HOURS. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.
6. ZONE SETPOINT ADJUSTMENT:
A. THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERA- TURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.
7. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A. HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 5°F.
B. LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5°F.
8. DEMAND RESPONSE
A. SHALL THE BAS RECEIVE A DEMAND RESPONSE SIGNAL, THE COOL- ING SETPOINT SHALL INCREASE BY 5°F AND THE HEATING SETPOINT SHALL DECREASE BY 5°F.
B. DEMAND RESPONSE MODE SHALL NOT ACCEPT TEMPERATURE SET- POINT ADJUSTMENTS UNTIL THE BAS NO LONGER RECEIVES THE DEMAND RESPONSE SIGNAL.

C. EMERGENCY SHUTDOWN:
1. SUPPLY AIR SMOKE DETECTION:
A. THE UNIT SHALL SHUTDOWN AND GENERATE A FAN STATUS ALARM UPON RECEIVING A SIGNAL FROM FIRE ALARM SYSTEM.

D. SUPPLY FAN:
1. THE SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED PERIODS, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME. DISABLE FAN AUTO OPTION.
2. SUPPLY FAN CONTROL: THE SUPPLY FAN SPEED SHALL BE INDEXED AS FOLLOWS:
A. LOW SPEED SHALL RUN ANYTIME THE FIRST STAGE OF COOLING OR HEATING IS ENABLED.
B. HIGH SPEED SHALL RUN ANYTIME THE SECOND STAGE OF COOLING OR SECOND STAGE OF HEATING IS ENABLED.
3. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A. SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
B. SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
C. SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS 6 MONTHS.

E. COOLING:
1. THE BAS SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CY- CLING, THERE SHALL BE A USER DEFINABLE DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME.
2. THE COOLING SHALL BE ENABLED WHENEVER:
A. THERE IS A CALL FOR COOLING.
B. AND, THE ECONOMIZER IS DISABLED OR FULLY OPEN.
C. AND, THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
D. AND, THE SUPPLY FAN STATUS IS ON.
E. AND, THE HEATING IS NOT ACTIVE.

F. HEATING
1. THE BAS SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME.
2. THE HEATING SHALL BE ENABLED WHENEVER:
A. THERE IS A CALL FOR HEATING.
B. AND, THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
C. AND, THE SUPPLY FAN STATUS IS ON.
D. AND, THE COOLING IS NOT ACTIVE.

G. SUPPLY AIR TEMPERATURE (INTEGRATED AND MODULATED ECONOMIZER OPERATION):
1. THE BAS SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND USE AS REQUIRED FOR INTEGRATED ECONOMIZER CONTROL.
2. ALARMS SHALL BE PROVIDED AS FOLLOWS WHEN IN ECONOMIZER OPER- ATION:
A. HIGH SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 72°F.
B. LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F.

H. SUPPLY AIR TEMPERATURE IN HEATING OR COOLING MODE:
1. THE BAS SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND USE AS REQUIRED FOR COOLING AND HEATING CONTROL:
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A. HIGH SUPPLY AIR TEMPERATURE IN COOLING MODE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 75°F.
B. LOW SUPPLY AIR TEMPERATURE IN COOLING MODE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F.
C. HIGH SUPPLY AIR TEMPERATURE IN HEATING MODE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 110°F.
D. LOW SUPPLY AIR TEMPERATURE IN HEATING MODE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 80°F.

I. RETURN AIR TEMPERATURE:
1. THE BAS SHALL MONITOR THE RETURN AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL.
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A. HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F.
B. LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F AIR ECONOMIZER (DRY BULB):
1. THE BAS SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODU- LATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SET- POINT 2°F LESS THAN THE ZONE COOLING SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF WHENEVER OCCUPIED TO MEET MINIMUM REQUIRED VENTILATION RATE.
2. THE ECONOMIZER SHALL BE ENABLED WHENEVER:
A. OUTSIDE AIR TEMPERATURE IS LESS THAN 72°F.
B. AND, THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE.
C. AND, THE SUPPLY FAN STATUS IS ON.
3. THE ECONOMIZER DAMPERS SHALL CLOSE WHENEVER:
A. MIXED AIR TEMPERATURE DROPS BELOW 40°F.
B. OR, ON LOSS OF SUPPLY FAN STATUS.
4. THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RE- TURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF OR WHEN CAM- PUS SHELTER-IN-PLACE IS ENABLED.

K. POWER EXHAUST FAN CONTROL:
1. SHALL MEASURE BUILDING STATIC PRESSURE AND MODULATE THE POWER EXHAUST FAN VFD AS REQUIRED TO MAINTAIN BUILDING STATIC PRESSURE AT THE MAIN ENTRANCE DOORS OF +0.02" WC WITH A RANGE OF +0.01" WC MINIMUM TO +0.08" WC MAXIMUM.

L. CARBON DIOXIDE (CO2) CONTROL:
1. THE BAS SHALL MEASURE THE ZONE CO2 LEVEL AND OUTDOOR AMBIENT CO2 LEVEL.
2. WHEN IN THE OCCUPIED MODE, THE BAS SHALL MEASURE THE ZONE CO2 LEVELS AND MODULATE THE OUTSIDE AIR DAMPERS OPEN ON RISING CO2 CONCENTRATIONS, OVERRIDING NORMAL DAMPER OPERATION TO MAIN- TAIN A CO2 SETPOINT NO GREATER THAN OUTSIDE AMBIENT CO2 CON- CENTRATION PLUS 600 PPM (APPROXIMATELY 1,000 PPM).
3. THE MIXED AIR TEMPERATURE SHALL NOT EXCEED 80°F WHEN IN CO2 CONTROL.
4. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A. HIGH ZONE CARBON DIOXIDE CONCENTRATION: IF THE ZONE AIR CO2 CONCENTRATION IS GREATER THAN 1000 PPM WHEN IN THE OC- CUPIED MODE.

M. CARBON MONOXIDE (CO) SHUT DOWN BY FIRE ALARM:
1. UPON BAS RECEIPT OF CO ALARM FROM FIRE ALARM SYSTEM, THE UNIT SHALL SHUT DOWN.

N. OCCUPANCY SENSOR OPERATION:
1. THE THERMOSTAT SHALL HAVE PASSIVE INFRARED OCCUPANT DETEC- TION TO DETERMINE OCCUPANCY.
2. WHEN SPACE IS OCCUPIED THE TERMINAL UNIT CONTROL SEQUENCE SHALL FUNCTION AS PREVIOUSLY STATED FOR THE OCCUPIED MODE.
3. WHEN SPACE IS UNOCCUPIED THE TERMINAL UNIT CONTROL SEQUENCE SHALL FUNCTION AS PREVIOUSLY STATED FOR UNOCCUPIED MODE.

O. ECONOMIZER FAULT DETECTION AND DIAGNOSTICS (FDD)
1. FDD IS REQUIRED TO ON ALL AIR-COOLED UNITARY DIRECT-EXPANSION UNITS WITH AHRI CAPACITY GREATER THAN 54,000 BTUH AND EQUIPPED WITH AIR ECONOMIZER.
2. THE FDD BAS SHALL HAVE A VISUAL DISPLAY WITH INPUT AND OUTPUT CAPABILITY.
3. TEMPERATURE SENSORS SHALL MONITOR:
A. OUTSIDE AIR TEMPERATURE (FROM CENTRAL OSA STATION)
B. SUPPLY AIR TEMPERATURE
C. RETURN AIR TEMPERATURE
4. BAS SHALL PROVIDE STATUS FOR:
A. FREE COOLING AVAILABILITY
B. ECONOMIZER ENABLED
C. COMPRESSOR ENABLED
D. HEATING ENABLED
E. MIXED AIR LOW LIMIT CYCLE ACTIVE
5. BAS SHALL BE CAPABLE OF MANUALLY INITIATING THE FOLLOWING MODES FOR INDEPENDENT TESTING AND VERIFICATION:
A. COMPRESSOR OPERATION
B. ECONOMIZERS
C. FANS
D. HEATING SYSTEM
6. FAULTS SHALL BE ANNUNCIATED LOCALLY AT BUILDING AUTOMATION SYSTEM.

2.2 EXHAUST FAN - ON/OFF

A. RUN CONDITIONS:
1. SCHEDULED: THE FAN SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE.

B. FAN STATUS: THE BAS SHALL MONITOR THE FAN STATUS.
1. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A) FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
B) FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
C) RUNTIME EXCEEDED: THE RUNTIME OF THE EQUIPMENT EXCEEDS A USER DEFINABLE LIMIT (ADJUSTABLE).

2.3 SPLIT SYSTEM AIR CONDITIONING UNIT

A. GENERAL:
1. THE SPLIT SYSTEM FAN COIL AND CONDENSING UNITS SERVING OCCUPIED SPACES SUCH AS OFFICES, CONFERENCE ROOMS, MEETING ROOMS, ETC.
2. ALL ASPECTS OF THE SYSTEM OPERATION SHALL BE CONTROLLED BY THE EQUIPMENT MANUFACTURER'S CONTROL PANEL.
3. THE BAS SHALL ENABLE THE EQUIPMENT AND MONITOR EQUIPMENT STATUS, ALARM AND ROOM TEMPERA TURE.

B. RUN CONDITIONS:
1. STANDARD MODE - THE UNIT SHALL MAINTAIN THE TEMPERATURES AS SPECIFIED IN THE BUILDING SCHED ULE
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A) HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJUSTABLE).
3. FAN: THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. DISABLE FAN AUTO OPTION.

C. COOLING: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE OR STAGE THE COMPRES SOR(S) TO MEET SETPOINT TEMPERATURE. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFIN ABLE (ADJUSTABLE) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.
1. THE COOLING SHALL BE ENABLED WHENEVER:
A) OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJUSTABLE).
B) AND, THE FAN IS ON.
C) AND, THE REVERSING VALVE IS IN COOL MODE.
2. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

D. HEATING: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE OR STAGE THE COMPRES SOR(S) TO MEET SETPOINT TEMPERATURE. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFIN ABLE (ADJUSTABLE) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS
1. THE HEATING SHALL BE ENABLED WHENEVER:
A) OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJUSTABLE).
B) AND, THE FAN IS ON.
C) AND, THE REVERSING VALVE IS IN HEAT MODE.
2. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

D. THE BAS SHALL MONITOR THE FOLLOWING:
1. FAN STATUS.
2. CONDENSING UNIT STATUS.

E. ALARMS SHALL BE PROVIDED AS FOLLOWS:
1. MOISTURE ALARM: BAS SHALL MONITOR MOISTURE AT FAN COIL UNIT SECONDARY DRAIN PAN AND ANNUNCI ATE ALARM IN EVENT OF CONTACT CLOSURE AT MOISTURE SWITCH.
2. COMPRESSOR RUNTIME EXCEEDED: THE COMPRESSOR RUNTIME EXCEEDS A USER DEFINABLE LIMIT (AD JUSTABLE).

2.4 ELECTRIC METER

A. ELECTRIC METER: THE BAS SHALL MONITOR THE ELECTRIC CONSUMPTION ON A CONTINUAL BASIS. THESE VAL UES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.
1. ALARM SHALL BE GENERATED AS FOLLOWS: METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE ELECTRIC METER.

B. PEAK DEMAND HISTORY: THE BAS SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE ELECTRIC METER. PEAK READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO- DATE BASIS.

C. USAGE HISTORY: THE BAS SHALL MONITOR AND RECORD ELECTRIC METER READINGS SO AS TO PROVIDE A POWER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

2.5 HUMIDIFIER

A. RUN CONDITIONS: THE HUMIDIFIER SHALL BE INTERLOCKED WITH THE AIR HANDLING UNIT.
1. THE HUMIDIFIER FAN SHALL BE ENABLED ANYTIME THE AIR HANDLING UNIT, SERVED BY THE HUMIDIFIER, IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

B. THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE HUMIDITY SETPOINT AT THE ZONE SENSOR.
1. THE HUMIDIFIER SHALL MAINTAIN A 30% RH (ADJUSTABLE) MINIMUM SETPOINT

C. ALARMS SHALL BE PROVIDED AS FOLLOWS:
1. HIGH HUMIDITY ALARM: IF THE ZONE HUMIDITY IS GREATER THAN 60% RH (ADJUSTABLE).
2. LOW HUMIDITY ALARM: IF THE ZONE HUMIDITY IS LOWER THAN 25% RH (ADJUSTABLE).
3. DUCT LOW AIR FLOW: HUMIDIFIER LOCKED OUT BY THE AIR FLOW SWITCH.
4. DUCT HIGH HUMIDITY ALARM: HUMIDIFIER LOCKED OUT BY DUCT HUMIDITY HIGH LIMIT SWITCH.

2.6 OUTSIDE AIR CONDITIONS

A. OUTSIDE AIR CONDITIONS: THE BAS SHALL MONITOR THE OUTSIDE AIR TEMPERATURE AND DEWPOINT (HUMIDITY) AND CALCULATE THE OUTSIDE AIR ENTHALPY ON A CONTINUAL BASIS. THE BAS SHALL MONITOR THE OUTSIDE AIR CO2 CONCENTRATION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES

B. SENSOR FAILURE: SENSOR READING INDICATES SHORTED OR DISCONNECTED SENSOR. IN THE EVENT OF A SEN SOR FAILURE, AN ALTERNATE OUTSIDE AIR CONDITIONS SENSOR SHALL BE MADE AVAILABLE TO THE SYSTEM WITHOUT INTERRUPTION IN SENSOR READINGS.
1. IF AN OA TEMP SENSOR CANNOT BE READ, A DEFAULT VALUE OF 65°F WILL BE USED.
2. IF AN OA HUMIDITY SENSOR CANNOT BE READ, A DEFAULT VALUE OF 50 % RH WILL BE USED.
3. IF A CO2 SENSOR CANNOT BE READ, A DEFAULT VALUE OF 400 PPM WILL BE USED.

C. OUTSIDE AIR TEMPERATURE HISTORY: THE BAS SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READINGS FOR THE OUTSIDE AIR. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

D. CO2 CONCENTRATION HISTORY: THE BAS SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READ INGS FOR THE OUTSIDE AIR. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

2.7 WATER FLOW METER

A. WATER METER: THE BAS SHALL MONITOR THE WATER CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.
1. ALARM SHALL BE GENERATED AS FOLLOWS: METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE WATER METER.

B. PEAK DEMAND HISTORY: THE BAS SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE WATER METER. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

C. USAGE HISTORY: THE BAS SHALL MONITOR AND RECORD WATER METER READINGS SO AS TO PROVIDE A WATER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

2.8 SHELTER-IN-PLACE WILDFIRE MODE

A. A MANUAL OVERRIDE SHALL BE PROVIDED WITH THREE MODES THAT CAN BE ACTIVATED BY THE BUILDING OPERA TOR BASED ON EXTERNAL CONDITIONS THAT MAY REQUIRE CRITICAL SYSTEM RECONFIGURATION AS FOLLOWS:
1. NORMAL OPERATION
2. EMERGENCY SHELTER IN PLACE MODE (NO OUTSIDE AIR/NO EXHAUST)
3. EMERGENCY WILDFIRE MODE (MINIMUM OUTSIDE AIR)
4. EMERGENCY OFF

B. RUN CONDITION-NORMAL OPERATION: ALL DAILY FUNCTIONS AND SCHEDULES ARE OPERATING NORMALLY.

C. RUN CONDITIONS-EMERGENCY SHELTER-IN-PLACE MODE: AS REQUIRED IF EXTERNAL HAZARDOUS ENVIRONMEN TAL CONDITIONS REQUIRE ISOLATING AND PROTECTING THE BUILDING OCCUPANTS. ALL PROGRAMMED SUPPLY FAN AND TEMPERATURE CONTROL FEATURES SHALL OPERATE AS NORMAL WITH THE FOLLOWING EXCEPTIONS:
1. ALL EXHAUST AIR FANS SHALL BE DEENERGIZED.
2. ALL OUTSIDE AIR INTAKE DAMPERS SHALL BE CLOSED.
3. ALL EXHAUST AIR DAMPERS SHALL BE CLOSED

D. RUN CONDITION-WILDFIRE MODE: AS REQUIRED IF EXTERNAL HAZARDOUS ENVIRONMENTAL CONDITIONS REQUIRE ISOLATING AND PROTECTING THE BUILDING OCCUPANTS DURING OCCUPIED HOURS. ALL PROGRAMMED FAN AND TEM PERATURE CONTROL FEATURES SHALL OPERATE AS NORMAL WITH THE FOLLOWING EXCEPTION:
1. THE EXHAUST AIR FANS AND DAMPERS SHALL MODULATE AS NECESSARY TO MAINTAIN BUILDING PRESSURE CONTROL.

E. RUN CONDITION-EMERGENCY OFF: ALL HVAC SYSTEMS SHALL BE DEENERGIZED, INCLUDING FANS, PUMPS, VFDS, ETC. ALL DAMPERS SHALL BE CLOSED.

2.3 SPLIT SYSTEM AIR CONDITIONING UNIT (COOLING ONLY - ELECTRICAL ROOMS, DATA ROOMS AND DIMMER ROOMS.

A. GENERAL:
1. THE SPLIT SYSTEM FAN COIL AND CONDENSING UNITS SERVE IDF ROOMS, MDF ROOM, MPOE ROOMS, ELECTRICAL ROOMS, AND/OR ELEVATOR MACHINE ROOMS.
2. ALL ASPECTS OF THE SYSTEM OPERATION SHALL BE CONTROLLED BY THE EQUIPMENT MANUFACTURER'S CONTROL PANEL.
3. THE BAS SHALL ENABLE THE EQUIPMENT AND MONITOR EQUIPMENT STATUS, ALARM AND ROOM TEMPERA TURE.

B. RUN CONDITIONS:
1. STANDARD MODE - THE UNIT SHALL MAINTAIN THE TEMPERATURES AS SPECIFIED IN THE BUILDING SCHEDULE
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
A) HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJUSTABLE).
3. FAN: THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

C. COOLING: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE OR STAGE THE COMPRES SOR(S) TO MEET SETPOINT TEMPERATURE. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFIN ABLE (ADJUSTABLE) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.
1. THE COOLING SHALL BE ENABLED WHENEVER:
A) OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJUSTABLE).
B) AND, THE FAN IS ON.
C) AND, THE REVERSING VALVE IS IN COOL MODE.
2. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

D. THE BAS SHALL MONITOR THE FOLLOWING:
1. FAN STATUS.
2. CONDENSING UNIT STATUS.

E. ALARMS SHALL BE PROVIDED AS FOLLOWS:
1. MOISTURE ALARM: BAS SHALL MONITOR MOISTURE AT FAN COIL UNIT SECONDARY DRAIN PAN AND ANNUNCI ATE ALARM IN EVENT OF CONTACT CLOSURE AT MOISTURE SWITCH.
2. COMPRESSOR RUNTIME EXCEEDED: THE COMPRESSOR RUNTIME EXCEEDS A USER DEFINABLE LIMIT (AD JUSTABLE).

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
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3361008100
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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL CONTROLS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**M7.01**

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PART 2 - SEQUENCE OF OPERATION (CONTINUED)

**2.9 DEDICATED OUTSIDE AIR UNIT - SINGLE ZONE PACKAGED UNIT - 2-STAGE ELECTRIC HEATING AND 2-STAGE DX COOLING - INTERLOCKED WITH FANCOILS**

A. FEATURES
1. SINGLE PACKAGE UNITARY UNIT.
2. 2-STAGE DIRECT EXPANSION COOLING WITH COMPRESSOR(S).
3. HEAT PUMP.
4. SUPPLY FAN WITH VFD.
5. FACTORY INSTALLED UNIT BAS WITH BACNET INTERFACE.
6. ALL SETPOINTS SHALL BE USER ADJUSTABLE.
7. DEMAND RESPONSE READY.
8. CARBON DIOXIDE MONITORING.
9. CARBON MONOXIDE ALARM SHUT DOWN BY FIRE ALARM.

B. RUN CONDITIONS - INTERLOCKED & SCHEDULED:
1. INTERLOCKED
   A. THE UNIT SHALL BE INTERLOCKED TO ADMIN FANCOILS.
2. THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
3. OCCUPIED MODE TEMPERATURES:
   A. COOLING SETPOINT - REFER TO BUILDING SCHEDULE
   B. HEATING SETPOINT - REFER TO BUILDING SCHEDULE
   C. DEADBAND: MAINTAIN MINIMUM 5°F DEADBAND PER CALIFORNIA ENERGY CODE
5. STANDBY MODE TEMPERATURES (AFTER MORNING WARM UP AND PRIOR TO OCCUPANCY SENSED):
   A. COOLING SETPOINT - REFER TO BUILDING SCHEDULE
   B. HEATING SETPOINT - REFER TO BUILDING SCHEDULE
6. ZONE UNOCCUPIED OVERRIDE:
   A. A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR 4 HOURS. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.
7. ALARMS SHALL BE PROVIDED AS FOLLOWS:
   A. SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 5°F.
   B. SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5°F.
8. DEMAND RESPONSE
   A. SHALL THE BAS RECEIVE A DEMAND RESPONSE SIGNAL, THE COOLING SETPOINT SHALL INCREASE BY 5°F AND THE HEATING SETPOINT SHALL DECREASE BY 5°F.
   B. DEMAND RESPONSE MODE SHALL NOT ACCEPT TEMPERATURE SETPOINT ADJUSTMENTS UNTIL THE BAS NO LONGER RECEIVES THE DEMAND RESPONSE SIGNAL.

C. EMERGENCY SHUTDOWN:
1. SUPPLY AIR SMOKE DETECTION:
   A. THE UNIT SHALL SHUTDOWN AND GENERATE A FAN STATUS ALARM UPON RECEIVING A SIGNAL FROM FIRE ALARM SYSTEM.

D. SUPPLY FAN:
1. THE SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED PERIODS, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME. DISABLE FAN AUTO OPTION.
2. SUPPLY FAN CONTROL: THE SUPPLY FAN SPEED SHALL BE INDEXED AS FOLLOWS:
   A. LOW SPEED SHALL RUN ANYTIME THE FIRST STAGE OF COOLING OR HEATING IS ENABLED.
   B. HIGH SPEED SHALL RUN ANYTIME THE SECOND OR THIRD STAGE OF COOLING OR SECOND STAGE OF HEATING IS ENABLED.
3. ALARMS SHALL BE PROVIDED AS FOLLOWS:
   A. SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
   B. SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
   C. SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS 6 MONTHS.

E. COOLING:
1. THE BAS SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME.
2. THE COOLING SHALL BE ENABLED WHENEVER:
   A. THERE IS A CALL FOR COOLING.
   B. AND, THE ECONOMIZER IS DISABLED OR FULLY OPEN.
   C. AND, THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
   D. AND, THE SUPPLY FAN STATUS IS ON.
   E. AND, THE HEATING IS NOT ACTIVE.

F. HEATING
1. THE BAS SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE MINIMUM RUNTIME.
2. THE HEATING SHALL BE ENABLED WHENEVER:
   A. THERE IS A CALL FOR HEATING.
   B. AND, THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
   C. AND, THE SUPPLY FAN STATUS IS ON.
   D. AND, THE COOLING IS NOT ACTIVE.

G. SUPPLY AIR TEMPERATURE IN HEATING OR COOLING MODE:
1. THE BAS SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND USE AS REQUIRED FOR COOLING AND HEATING CONTROL:
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
   A. HIGH SUPPLY AIR TEMPERATURE IN COOLING MODE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 75°F.
   B. LOW SUPPLY AIR TEMPERATURE IN COOLING MODE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F.
   C. HIGH SUPPLY AIR TEMPERATURE IN HEATING MODE: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 110°F.
   D. LOW SUPPLY AIR TEMPERATURE IN HEATING MODE: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 80°F.

H. CARBON MONOXIDE (CO) SHUT DOWN:
1. UPON BAS RECEIPT OF CO ALARM FROM FIRE ALARM SYSTEM, THE UNIT SHALL SHUT DOWN.

**2.3 SPLIT SYSTEM AIR CONDITIONING UNIT WITH HUMIDIFICATION**

A. GENERAL:
1. THE SPLIT SYSTEM FAN COIL AND CONDENSING UNITS SERVES INSTRUMENT STORAGE.
2. ALL ASPECTS OF THE SYSTEM OPERATION SHALL BE CONTROLLED BY THE EQUIPMENT MANUFACTURER'S CONTROL PANEL.
3. THE BAS SHALL ENABLE THE EQUIPMENT AND MONITOR EQUIPMENT STATUS, ALARM, HUMIDITY AND ROOM TEMPERATURE.

B. RUN CONDITIONS:
1. STANDARD MODE - THE UNIT SHALL MAINTAIN THE TEMPERATURE AND HUMIDITY AS SPECIFIED IN THE BUILDING SCHEDULE
2. ALARMS SHALL BE PROVIDED AS FOLLOWS:
   A) HIGH ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJUSTABLE).
   B) LOW ZONE TEMPERATURE: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJUSTABLE).
   C) HIGH HUMIDITY ALARM: IF THE ZONE HUMIDITY IS GREATER THAN 60% RH (ADJUSTABLE).
   D) LOW HUMIDITY ALARM: IF THE ZONE HUMIDITY IS LOWER THAN 40% RH (ADJUSTABLE).
   E) DUCT LOW AIR FLOW: HUMIDIFIER LOCKED OUT BY THE AIR FLOW SWITCH.
   F) DUCT HIGH HUMIDITY ALARM: HUMIDIFIER LOCKED OUT BY DUCT HUMIDITY HIGH LIMIT SWITCH.
3. FAN: THE FAN SHALL RUN CONTINOUSLY DURING OCCUPIED PERIODS, UNLESS SHUTDOWN ON SAFETIES. DISABLE FAN AUTO OPTION.

C. COOLING: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE OR STAGE THE COMPRES SOR(S) TO MEET SETPOINT TEMPERATURE. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFIN ABLE (ADJUSTABLE) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.
1. THE COOLING SHALL BE ENABLED WHENEVER:
   A) OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJUSTABLE).
   B) AND, THE FAN IS ON.
   C) AND, THE REVERSING VALVE IS IN COOL MODE.
2. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

D. HEATING: THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND CYCLE OR STAGE THE COMPRES SOR(S) TO MEET SETPOINT TEMPERATURE. TO PREVENT SHORT CYCLING, THE STAGE SHALL HAVE A USER DEFIN ABLE (ADJUSTABLE) MINIMUM RUNTIME. THE COMPRESSOR SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.
1. THE HEATING SHALL BE ENABLED WHENEVER:
   A) OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJUSTABLE).
   B) AND, THE FAN IS ON.
   C) AND, THE REVERSING VALVE IS IN HEAT MODE.
2. ON MODE CHANGE, THE COMPRESSOR SHALL BE DISABLED AND REMAIN OFF UNTIL AFTER THE REVERSING VALVE HAS CHANGED POSITION.

E. THE BAS SHALL MONITOR THE FOLLOWING:
1. FAN STATUS.
2. CONDENSING UNIT STATUS.
3. HUMIDIFIER STATUS.

F. ALARMS SHALL BE PROVIDED AS FOLLOWS:
1. MOISTURE ALARM: BAS SHALL MONITOR MOISTURE AT FAN COIL UNIT DRAIN PAN AND ANNUNCIATE ALARM IN EVENT OF CONTACT CLOSURE AT MOISTURE SWITCH.
2. COMPRESSOR RUNTIME EXCEEDED: THE COMPRESSOR RUNTIME EXCEEDS A USER DEFINABLE LIMIT (AD JUSTABLE).

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

COMMUNITY COLLEGES ARROYO HIGH SCHOOL DISTRICT
COMMITTED TO COLLEGE AND CAREER


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ISSUE

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-27
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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL CONTROLS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

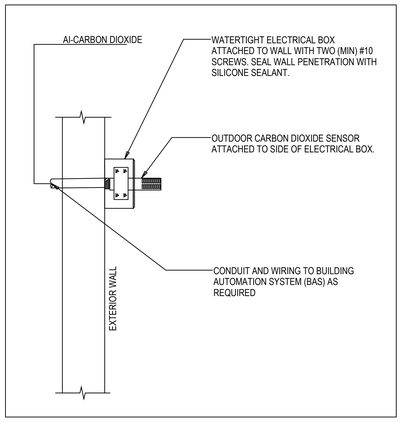
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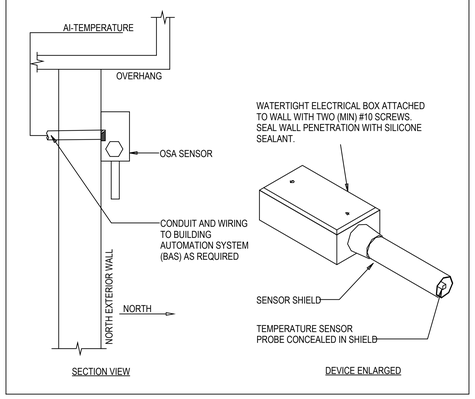
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IF THIS LINE (SHOWN ABOVE) IS NOT 1" LONG, THIS SHEET IS NOT AN EXACT REPRODUCTION OF THE ORIGINAL SHEET SIZE




## 6 OUTDOOR CARBON DIOXIDE SENSOR

SCALE: NONE




## 5 OUTDOOR TEMPERATURE SENSOR

SCALE: NONE

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| OUTSIDE AIR TEMPERATURE | X | | | | | | | X | X | | |
| OUTSIDE AIR HUMIDITY | X | | | | | | | X | X | | |
| OUTSIDE AIR CO2 | X | | | | | | | X | X | | |
| OUTSIDE AIR ENTHALPY | | | | | X | | | X | X | | |
| TEMPERATURE SENSOR FAILURE | | | | | | | | | | X | 5 |
| HUMIDITY SENSOR FAILURE | | | | | | | | | | X | 5 |
| CO2 SENSOR FAILURE | | | | | | | | | | X | 5 |
| OA TEMP PEAK TODAY | | | | | X | | | X | X | | |
| OA TEMP PEAK MONTH-TO-DATE | | | | | X | | | X | X | | |
| OA TEMP PEAK YEAR-TO-DATE | | | | | X | | | X | X | | |
| CO2 PEAK TODAY | | | | | X | | | X | X | | |
| CO2 PEAK MONTH-TO-DATE | | | | | X | | | X | X | | |
| CO2 PEAK YEAR-TO-DATE | | | | | X | | | X | X | | |
| OA TEMP LOW TODAY | | | | | X | | | X | X | | |
| OA TEMP LOW MONTH-TO-DATE | | | | | X | | | X | X | | |
| OA TEMP LOW YEAR-TO-DATE | | | | | X | | | X | X | | |
| CO2 LOW TODAY | | | | | X | | | X | X | | |
| CO2 LOW MONTH-TO-DATE | | | | | X | | | X | X | | |
| CO2 LOW YEAR-TO-DATE | | | | | X | | | X | X | | |

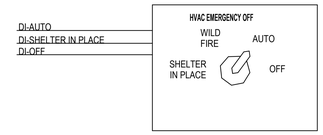
OUTSIDE AIR CONDITIONS

A. OUTSIDE AIR CONDITIONS: THE BAS SHALL MONITOR THE OUTSIDE AIR TEMPERATURE, CO2, AND DEWPOINT (HUMIDITY) AND CALCULATE THE OUTSIDE AIR ENTHALPY ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.
   1. ALARM SHALL BE GENERATED AS FOLLOWS:
      A) TEMPERATURE SENSOR FAILURE.
      B) HUMIDITY SENSOR FAILURE.
      C) CO2 SENSOR FAILURE.
B. SENSOR FAILURE: SENSOR READING INDICATES SHORTED OR DISCONNECTED SENSOR. IN THE EVENT OF A SEN SOR FAILURE, AN ALTERNATE OUTSIDE AIR CONDITIONS SENSOR SHALL BE MADE AVAILABLE TO THE SYSTEM WITHOUT INTERRUPTION IN SENSOR READINGS.
   1. IF AN OA TEMP SENSOR CANNOT BE READ, A DEFAULT VALUE OF 65°F WILL BE USED.
   2. IF AN OA HUMIDITY SENSOR CANNOT BE READ, A DEFAULT VALUE OF 50 % RH WILL BE USED.
   3. IF A CO2 SENSOR CANNOT BE READY, A DEFAULT VALUE OF 400 PPM WILL BE USED.
C. OUTSIDE AIR TEMPERATURE HISTORY: THE BAS SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READINGS FOR ALL THE OUTSIDE AIR CONDITIONS. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

## 4 OSA STATION - CONTROL

SCALE: NONE

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| AUTO | | X | | | | | | | X | | |
| SHELTER IN PLACE | | X | | | | | | | X | | |
| ALL OFF | | X | | | | | | | X | | |
| ALL OFF | | X | | | | | | | X | | |




NOTES:
1. REFER TO ZONING DIAGRAM FOR MASTER HVAC CONTROL LOCAITON.

## 3 MASTER HVAC CONTROL

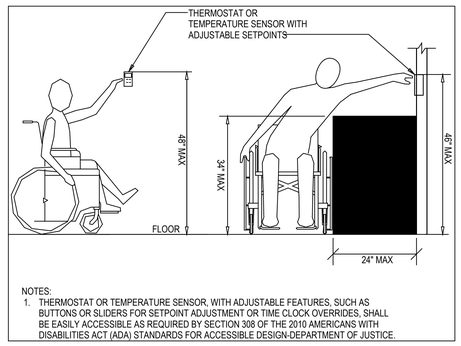
SCALE: NONE

| | BUILDING SCHEDULE | | | | | OCCUPIED (°F +/- 2°F) | | UNOCCUPIED (°F +/- 2°F) | | STANDBY (°F) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SPACE TYPE | START | END | WEEKDAY | WEEKEND | OVRD | COOL | HEAT | COOL | HEAT | COOL | HEAT |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| | 7AM | 7PM | X | - | X | 75 ± 2 | 70 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| RESTROOM / JANITOR ROOM | 7AM | 7PM | X | - | X | 78 ± 2 | 68 ± 2 | OFF | OFF | 80 ± 2 | 60 ± 2 |
| ELECTRICAL ROOM | 12AM | 12AM | X | X | - | 90 (MAX) | N/A | N/A | N/A | N/A | N/A |
| IDF & MDF ROOM | 12AM | 12AM | X | X | - | 74 (MAX) | N/A | N/A | N/A | N/A | N/A |

OVRD: SPACE SHALL ALLOW FOR AN UNOCCUPIED SYSTEM OVERRIDE FOR 4 HOURS.
OCCUPIED: PERIOD OF THE YEAR AND THE DAY WHICH EACH INDIVIDUAL SPACE IS SCHEDULED TO BE OCCUPIED BY SCHOOL.
UNOCCUPIED: PERIOD OF THE YEAR AND THE DAY WHICH EACH INDIVIDUAL SPACE IS NOT SCHEDULED TO BE OCCUPIED BY SCHOOL.
STANDBY: THE LACK OF OCCUPANCY WITHIN THE SCHEDULED OCCUPIED PERIOD, DETERMINED BY THE ZONE OCCUPANCY SENSORS. DURING THE STANDBY PERIOD THE RELATED HVAC SYSTEM SHALL DRIFT UP OR DOWN TO THE REQUIRED SETPOINTS FOR ENERGY CONSERVATION PURPOSES.

## 2 BUILDING SCHEDULE

SCALE: NONE




NOTES:
1. THERMOSTAT OR TEMPERATURE SENSOR, WITH ADJUSTABLE FEATURES, SUCH AS BUTTONS OR SLIDERS FOR SETPOINT ADJUSTMENT OR TIME CLOCK OVERRIDES, SHALL BE EASILY ACCESSIBLE AS REQUIRED BY SECTION 308 OF THE 2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN-DEPARTMENT OF JUSTICE.

## 1 ADA SENSOR MOUNTING HEIGHTS

SCALE: NONE

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL CONTROLS**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

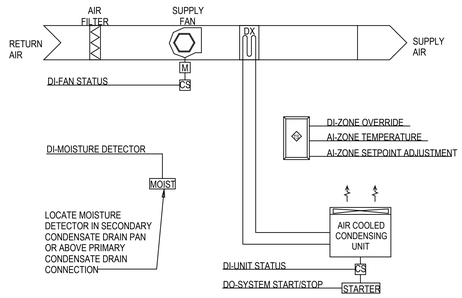
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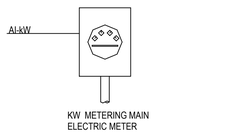
| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| SCHEDULE | | | | | | | X | | | | |
| ZONE UNOCCUPIED OVERRIDE | | X | | | | | | X | X | | |
| SYSTEM START/STOP | | | | X | | | | X | X | | |
| COOLING MODE | | | | X | | | | X | X | | |
| FAN STATUS | | X | | | | | | X | X | | |
| CONDENSING UNIT STATUS | | X | | | | | | X | X | | |
| MOISTURE SENSOR | | X | | | | | | | | X | 5 |
| SPACE TEMPERATURE | X | | | | | | | X | X | | |
| TEMPERATURE SETPOINT ADJUST | X | | | | | | | | X | | |
| SPACE TEMPERATURE SETPOINT | | | | | X | | | X | X | | |
| FAN RUNTIME EXCEEDED | | | | | | | | | | X | 0 |
| HIGH ZONE TEMPERATURE | | | | | | | | | | X | 5 |




NOTES:
1. REFER TO PLANS AND FAN COIL SCHEDULE FOR LOCATIONS AND SYSTEM COMPONENTS.
2. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE PROGRAMMABLE OVERRIDE BUTTON AT EACH TEMPERATURE SENSOR AS AN OVERRIDE TO ENERGIZE HVAC SYSTEM AFTER NORMAL OCCUPIED HOURS.

## 5 FAN COIL - CONTROL
SCALE: NONE

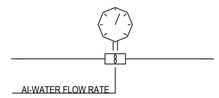
| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| KW | X | | | | | | | X | X | | |
| KWH | X | | | | | | | X | X | | |
| KVA | X | | | | | | | X | X | | |
| KVAR | X | | | | | | | X | X | | |
| POWER FACTOR | X | | | | | | | X | X | | |
| AMPS | X | | | | | | | X | X | | |
| PEAK TODAY | | | | | X | | | X | X | | |
| PEAK MONTH-TO-DATE | | | | | X | | | X | X | | |
| PEAK YEAR-TO-DATE | | | | | X | | | X | X | | |
| USAGE TODAY | | | | | X | | | X | X | | |
| USAGE MONTH-TO-DATE | | | | | X | | | X | X | | |
| USAGE YEAR-TO-DATE | | | | | X | | | X | X | | |
| METER FAILURE | | | | | | | | | | X | 5 |




NOTES:
1. ELECTRIC METER (REFER TO DRAWINGS FOR LOCATION/QUANTITY): THE CONTROLLER SHALL MONITOR THE ELECTRIC METER FOR ELECTRIC CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.
2. PEAK DEMAND HISTORY: THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE ELECTRIC METER. PEAK READINGS SHALL BE RECORDED ON A 1-MINUTE DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.
3. USAGE HISTORY: THE CONTROLLER SHALL MONITOR AND RECORD ELECTRIC METER READINGS SO AS TO PROVIDE A POWER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A 1-MINUTE DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.
4. SYSTEM SHALL BE BACNET IP.
5. SYSTEM SHALL HAVE A DATA CONNECTION AVAILABLE TO A 3RD PARTY INTEGRATOR AT THE NEAREST BDF/IDF ROOM.
6. ENTIRE BUILDING ELECTRICAL METERING SYSTEM SHALL BE PROVIDED BY OTHERS. THIS SYSTEM HAS NO TIE INTO THE BAS.

## 4 POWER - BUILDING
SCALE: NONE

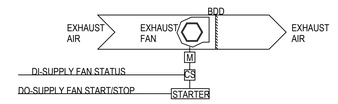
| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| WATER FLOW GPM | X | | | | | | | X | X | | |
| PEAK TODAY | | | | | X | | | X | X | | |
| PEAK MONTH-TO-DATE | | | | | X | | | X | X | | |
| PEAK YEAR-TO-DATE | | | | | X | | | X | X | | |
| USAGE TODAY | | | | | X | | | X | X | | |
| USAGE MONTH-TO-DATE | | | | | X | | | X | X | | |
| USAGE YEAR-TO-DATE | | | | | X | | | X | X | | |
| METER FAILURE | | | | | | | | | | X | 5 |




NOTES:
1. REFER TO DRAWINGS FOR LOCATION/QUANTITY.
2. THE CONTROLLER SHALL MONITOR THE WATER METER FOR WATER CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.
3. ALARM SHALL BE GENERATED IF SENSOR READING INDICATES A LOSS OF READING OR OUTPUT FROM THE WATER METER.
4. PEAK DEMAND HISTORY: THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE WATER METER. PEAK READINGS SHALL BE RECORDED ON A 1-MINUTE DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.
5. USAGE HISTORY: THE CONTROLLER SHALL MONITOR AND RECORD WATER METER READINGS SO AS TO PROVIDE A WATER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A 1-MINUTE DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.
6. SYSTEM SHALL BE BACNET IP.
7. SYSTEM SHALL HAVE A DATA CONNECTION AVAILABLE TO 3RD PARTY INTEGRATOR AT THE NEAREST BDF/IDF ROOM.

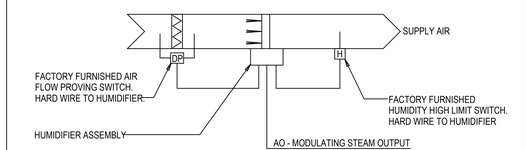
## 3 WATER - BUILDING
SCALE: NONE

| | HARDWARE POINTS | | | | SOFTWARE POINTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AI | DI | AO | DO | AV | DV | SCHED | TREND | GRAPHIC | ALARM | DELAY (MIN) |
| SCHEDULE | | | | | | | X | | | | |
| FAN START/STOP | | | | X | | | | X | X | | |
| FAN STATUS | | X | | | | | | X | X | | |
| RUNTIME EXCEEDED | | | | | | | | | | X | 0 |
| FAN FAILURE | | | | | | | | | | X | 5 |
| FAN IN HAND | | | | | | | | | | X | 5 |




NOTES:
1. REFER TO PLANS FOR DUCTWORK ARRANGEMENT.
2. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL REQUIREMENTS.

## 2 EXHAUST FAN - CONTROL
SCALE: NONE




NOTES:
1. RUN CONDITIONS: THE HUMIDIFIER SHALL BE INTERLOCKED WITH THE ROOF TOP UNIT.
   A. THE HUMIDIFIER FAN SHALL BE ENABLED ANYTIME THE ROOF TOP UNIT, SERVED BY THE HUMIDIFIER, IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.
2. THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE HUMIDITY SETPOINT AT THE ZONE SENSOR.
   A. THE HUMIDIFIER SHALL MAINTAIN A 30 PERCENT (ADJUSTABLE) MINIMUM SETPOINT.
3. ALARMS SHALL BE PROVIDED AS FOLLOWS:
   A. HIGH HUMIDITY ALARM: IF THE ZONE HUMIDITY IS GREATER THAN 60 PERCENT RH (ADJUSTABLE).
   B. LOW HUMIDITY ALARM: IF THE ZONE HUMIDITY IS LOWER THAN 25 PERCENT RH (ADJUSTABLE).
   C. DUCT AIRFLOW ALARM: HUMIDIFIER LOCKED OUT BY AIR FLOW SWITCH.
   D. DUCT HIGH HUMIDITY ALARM: HUMIDIFIER LOCKED OUT BY DUCT HUMIDITY HIGH LIMIT SWITCH.

## 1 HUMIDIFIER SCHEMATIC
SCALE: NONE

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL CONTROLS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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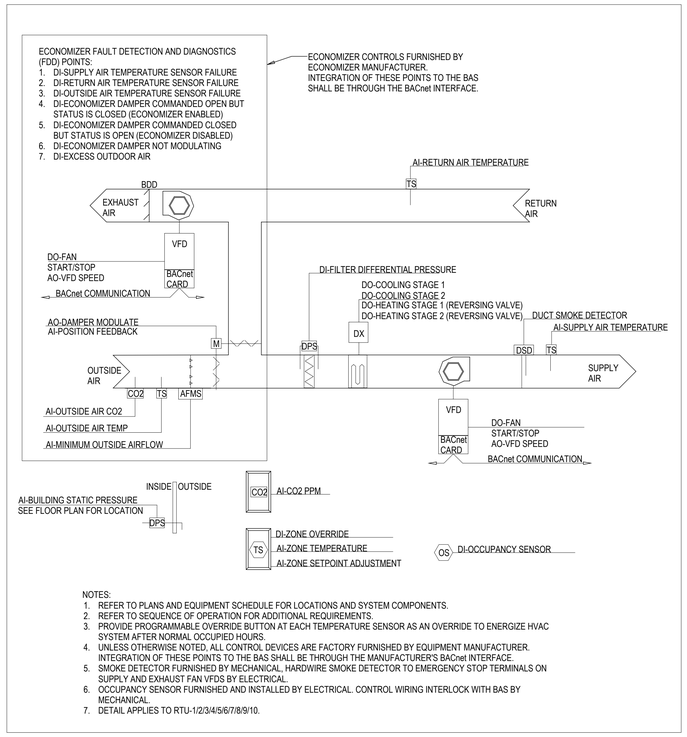
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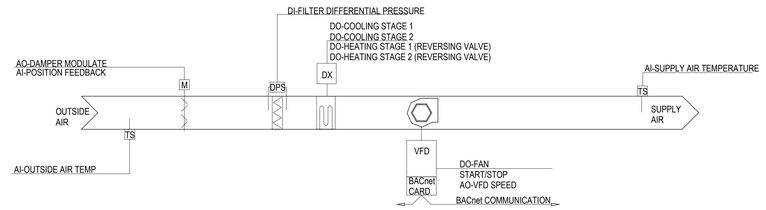



NOTES:
1. REFER TO PLANS AND EQUIPMENT SCHEDULE FOR LOCATIONS AND SYSTEM COMPONENTS.
2. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE PROGRAMMABLE OVERRIDE BUTTON AT EACH TEMPERATURE SENSOR AS AN OVERRIDE TO ENERGIZE HVAC SYSTEM AFTER NORMAL OCCUPIED HOURS.
4. UNLESS OTHERWISE NOTED, ALL CONTROL DEVICES ARE FACTORY FURNISHED BY EQUIPMENT MANUFACTURER. INTEGRATION OF THESE POINTS TO THE BAS SHALL BE THROUGH THE MANUFACTURER'S BACnet INTERFACE.
5. SMOKE DETECTOR FURNISHED BY MECHANICAL, HARDWIRE SMOKE DETECTOR TO EMERGENCY STOP TERMINALS ON SUPPLY AND EXHAUST FAN VFDS BY ELECTRICAL.
6. OCCUPANCY SENSOR FURNISHED AND INSTALLED BY ELECTRICAL. CONTROL WIRING INTERLOCK WITH BAS BY MECHANICAL.
7. DETAIL APPLIES TO RTU-1/2/3/4/5/6/7/8/9/10.

## 2 PACKAGED HEAT PUMP ECONOMIZER

SCALE: NONE

NOTE:
1. THE POINTS AND FUNCTIONS IN THE DIAGRAMS ARE PROVIDED AS A REFERENCE ONLY. POINTS AND FUNCTIONS PROVIDED BY THE MANUFACTURER ON FACTORY INSTALLED CONTROLLERS AS A STANDARD WILL BE CONSIDERED SUFFICIENT. PROGRAMMABLE CONTROLLER SHALL BE CAPABLE OF STAND ALONE OPERATION WITH MANUFACTURER'S RECOMMENDED STANDARD SEQUENCE. INPUT DEVICE INTERFACE WITH ECMS FOR OP/START/STOP REMOTE SETPOINT CONTROLS ALARM PROCESSING AND SERVICE SCHEDULING.




NOTES:
1. REFER TO PLANS AND EQUIPMENT SCHEDULE FOR LOCATIONS AND SYSTEM COMPONENTS.
2. REFER TO SEQUENCE OF OPERATION FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE PROGRAMMABLE OVERRIDE BUTTON AT EACH TEMPERATURE SENSOR AS AN OVERRIDE TO ENERGIZE HVAC SYSTEM AFTER NORMAL OCCUPIED HOURS.
4. UNLESS OTHERWISE NOTED, ALL CONTROL DEVICES ARE FACTORY FURNISHED BY EQUIPMENT MANUFACTURER. INTEGRATION OF THESE POINTS TO THE BAS SHALL BE THROUGH THE MANUFACTURER'S BACnet INTERFACE.
5. SMOKE DETECTOR TO EMERGENCY STOP TERMINALS ON SUPPLY AND EXHAUST FAN VFDS BY ELECTRICAL.

## 1 DEDICATED OUTSIDE AIR UNIT - CONTROL

SCALE: NONE

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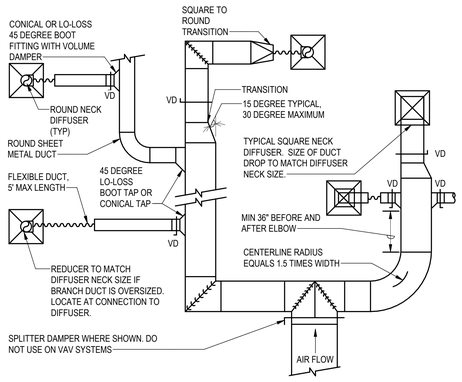
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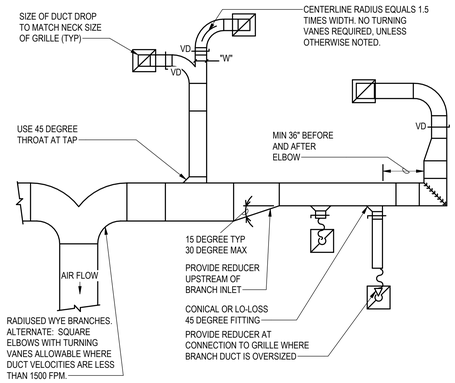
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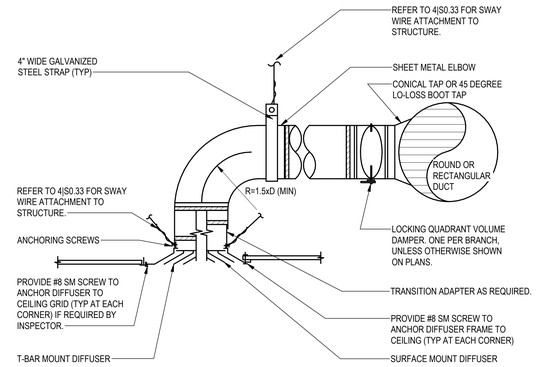

NOTES:
1. PROVIDE DUCT LINER AND/OR EXTERNAL DUCT INSULATION AS NOTED ON PLANS OR IN SPECIFICATIONS.
2. PROVIDE HANGERS AND SEISMIC BRACING PER BUILDING CODE REQUIREMENTS. REFER TO DETAILS ON M9.03, M9.04, M9.05.
3. LOCATE MANUAL BALANCING DAMPERS IMMEDIATELY DOWNSTREAM OF EACH DUCT TAP.
4. CUSHION HEADS OR BULLHEAD TEES ARE NOT ALLOWED
5. MAINTAIN MINIMUM 36" CLEARANCE BETWEEN LEADING OR TRAILING ELBOW JOINT AND DUCT TAP FITTINGS.
6. RADIUSED ELBOWS OR TURNING VANES REQUIRED ON RECTANGULAR DUCT SYSTEM ELBOWS. SINGLE THICKNESS VANES UP TO 25" HEIGHT AND DOUBLE THICKNESS VANES IN DUCTS GREATER THAN 25" HEIGHT.

## 9 SUPPLY DUCT FITTINGS ( TYPICAL)
SCALE: NONE



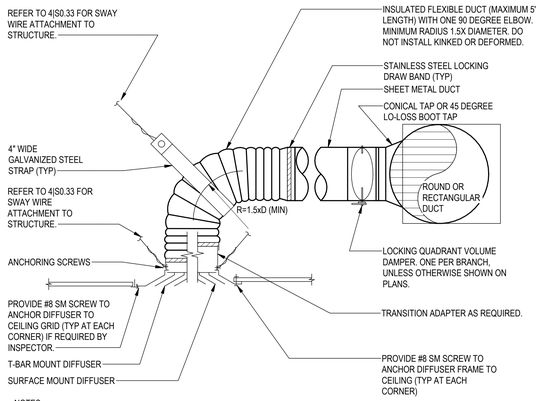

NOTES:
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2. PROVIDE HANGERS AND SEISMIC BRACING PER BUILDING CODE. REFER TO DETAILS ON M9.03, M9.04, M9.05.
3. LOCATE MANUAL BALANCING DAMPERS IMMEDIATELY DOWNSTREAM OF EACH DUCT TAP.
4. MAINTAIN MINIMUM 36" CLEARANCE BETWEEN LEADING OR TRAILING ELBOW JOINT AND DUCT TAP FITTINGS.
5. TURNING VANES REQUIRED ON RECTANGULAR DUCT SYSTEM ELBOWS. SINGLE THICKNESS VANES UP TO 25" HEIGHT AND DOUBLE THICKNESS VANES IN DUCTS GREATER THAN 25" HEIGHT. RADIUSED ELBOWS MAY BE USED AS AN ALTERNATE.
6. NO TURNING VANES REQUIRED ON DUCT SIZES LESS THAN 180 SQ. IN. IF DUCT VELOCITY IS LESS THAN 1500 FPM.

## 6 RETURN EXHAUST DUCT FITTINGS (TYPICAL)
SCALE: NONE



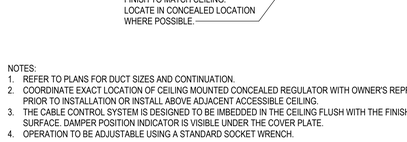

NOTES:
1. ACCESS TO BALANCING DAMPER MAY BE PROVIDED THRU REMOVABLE RETURN AIR REGISTER OR HINGED LIGHT FIXTURE.
2. FOR INACCESSIBLE CEILING USE REMOTE FLEXIBLE STEEL SHAFT DAMPER OPERATOR OR PROVIDE 18"x18" (MIN) ACCESS DOOR.
3. DIFFUSER FRAME SHALL MATCH ARCHITECTURAL CEILING TYPE.
4. IF FLEXIBLE DUCT SIZE INDICATED ON PLAN IS LARGER OR SMALLER THAN DIFFUSER NECK OR IF DIFFUSER NECK IS SQUARE OR RECTANGULAR PROVIDE TRANSITION FITTING AT DIFFUSER NECK.
5. RIGID ELBOW SHALL BE DIE-STAMPED, PRESSED, OR 5-GORE MINIMUM. PLEATED ELBOWS NOT ALLOWED.

## 3 CEILING DIFFUSER MOUNTING-RIGID FOR ACOUSTICS (TYPICAL)
SCALE: NONE



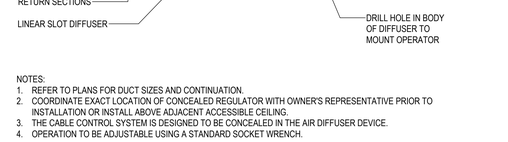

NOTES:
1. ACCESS TO BALANCING DAMPER MAY BE PROVIDED THRU REMOVABLE RETURN AIR REGISTER OR HINGED LIGHT FIXTURE.
2. FOR INACCESSIBLE CEILING USE REMOTE FLEXIBLE STEEL SHAFT DAMPER OPERATOR OR PROVIDE 18"x18" (MIN) ACCESS DOOR.
3. DIFFUSER FRAME SHALL MATCH ARCHITECTURAL CEILING TYPE.
4. IF FLEXIBLE DUCT SIZE INDICATED ON PLAN IS LARGER OR SMALLER THAN DIFFUSER NECK OR IF DIFFUSER NECK IS SQUARE OR RECTANGULAR PROVIDE TRANSITION FITTING AT DIFFUSER NECK.

## 8 CEILING DIFFUSER MOUNTING-FLEXIBLE (TYPICAL)
SCALE: NONE



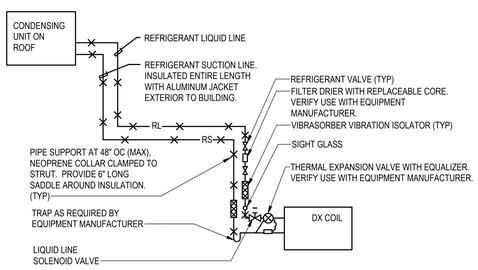

NOTES:
1. REFER TO PLANS FOR DUCT SIZES AND CONTINUATION.
2. COORDINATE EXACT LOCATION OF CEILING MOUNTED CONCEALED REGULATOR WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION OR INSTALL ABOVE ADJACENT ACCESSIBLE CEILING.
3. THE CABLE CONTROL SYSTEM IS DESIGNED TO BE IMBEDDED IN THE CEILING FLUSH WITH THE FINISHED SURFACE. DAMPER POSITION INDICATOR IS VISIBLE UNDER THE COVER PLATE.
4. OPERATION TO BE ADJUSTABLE USING A STANDARD SOCKET WRENCH.

## 5 REMOTE DAMPER REGULATOR-CEILING (TYPICAL)
SCALE: NONE



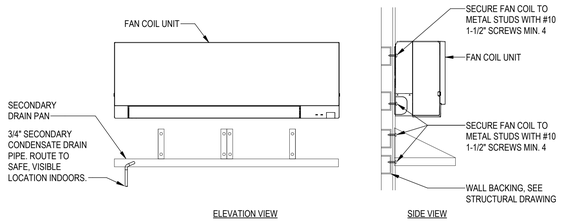

NOTES:
1. REFER TO PLANS FOR DUCT SIZES AND CONTINUATION.
2. COORDINATE EXACT LOCATION OF CONCEALED REGULATOR WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION OR INSTALL ABOVE ADJACENT ACCESSIBLE CEILING.
3. THE CABLE CONTROL SYSTEM IS DESIGNED TO BE CONCEALED IN THE AIR DIFFUSER DEVICE.
4. OPERATION TO BE ADJUSTABLE USING A STANDARD SOCKET WRENCH.

## 2 REMOTE DAMPER REGULATOR-DIFFUSER (TYPICAL)
SCALE: NONE



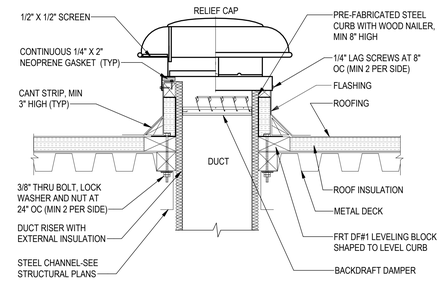

NOTES:
1. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE SPECIFIC DEVICES WITH MANUFACTURER'S RECOMMENDATIONS FOR EACH SYSTEM AND REFRIGERANT.

## 7 REFRIGERANT PIPING SCHEMATIC (TYPICAL)
SCALE: NONE




NOTES:
1. REFER TO PLANS FOR SIZES AND CONTINUATION.

## 4 WALL MOUNTED FAN COIL UNIT HANGING DETAIL
SCALE: NONE




NOTES:
1. COORDINATE ROOF OPENING, BLOCKING, CURBING, CANT STRIPS & FLASHING WITH ROOFING INSTALLER. ROOF PENETRATIONS SHALL NOT VOID ROOF WARRANTY.
2. MAINTAIN 15' CLEARANCE BETWEEN OUTSIDE AIR INTAKE AND EXHAUST/RELIEF, PLUMBING VENT OPENINGS. MAINTAIN MINIMUM 25' CLEARANCE AT CRITICAL AREAS AND HEALTHCARE SPACES.
3. PROVIDE PACKING AND SEALING MATERIALS AS REQUIRED BY ROOF RATING.
4. ALL SIZING, LOCATION, AND ANCHORING SHALL BE COORDINATED WITH STRUCTURAL DESIGN.

## 1 AIR RELIEF CAP-METAL ROOF
SCALE: 1/8" = 1'-0"

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

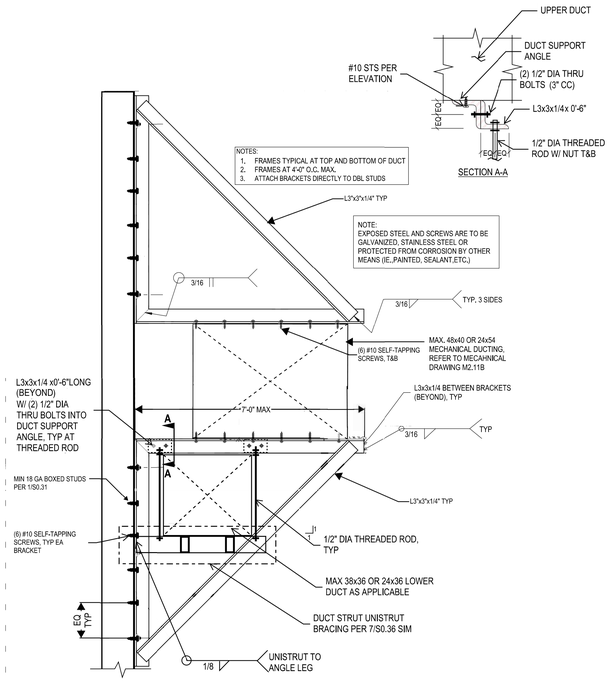
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# M9.01

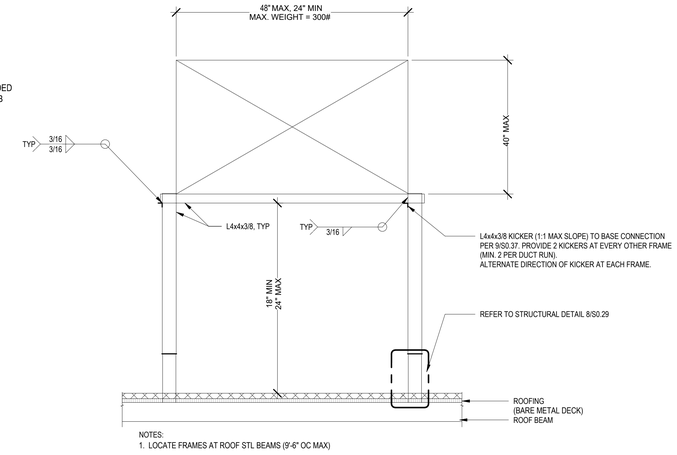
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IF THIS LINE IS NOT 1" LONG THE DRAWING IS NOT AN EXACT SCALE. ADJUST ACCORDINGLY. SHEETS ORIGINALLY PAGE SIZE



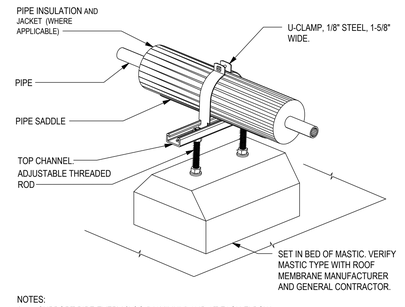

NOTE:
1. TOTAL COMBINED DUCT WEIGHT 200 LBS MAX.

## 8 RECTANGULAR DUCT SUPPORT 2 (TYPICAL)
SCALE: NONE



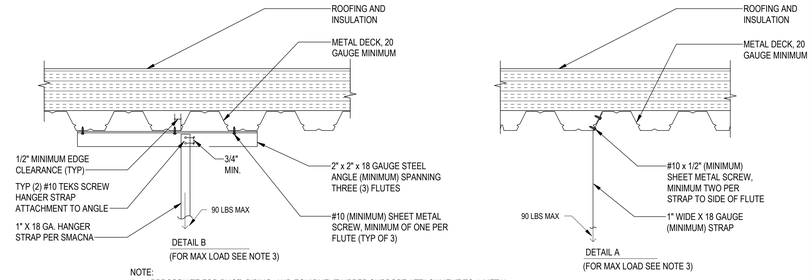

NOTES:
1. LOCATE FRAMES AT ROOF STL BEAMS (9'-6" OC MAX)

## 6A ROOF - RECTANGULAR DUCT SUPPORT 2
SCALE: NONE



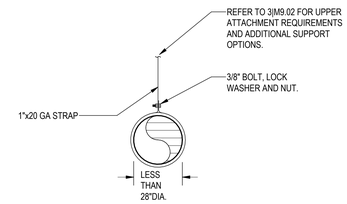

NOTES:
1. SUPPORT PIPE EVERY 6' OC (MAXIMUM) AND AT EACH ELBOW.
2. PIPE SUPPORT ON ROOF SHALL BE DURA-BLOK ROOFTOP SUPPORT MODEL WITH LOAD DISTRIBUTION PLATE.
3. THREE (3) PIPES ALLOWED ON ONE SUPPORT W/ 2" MAX PIPE SIZE. MAX 200 LBS. TOTAL LOAD PER SUPPORT AND COMBINED WEIGHT OF 10 LBS/FT TOP CHANNEL.
4. CONSTRUCTION: BASE WITH (2) 1/2" ELECTRO ZINC ALL THREADED ROD RISERS WITH 1" TALL TOP CHANNEL. BASE SHALL BE UV RESISTANT 100% RECYCLED RUBBER
5. ROOF SLOPE = 1:12. VERIFY SLOPE IN FIELD.
6. 12" MAX HIGH FROM CENTER OF PIPE.
7. MIN LENGTH OF DURABLOCK SHALL BE 2 TIMES THE HEIGHT OR 24".
8. PIPES WITH THE COMPONENT RESPONSE MODIFICATION FACTOR, Rp, LESS THAN 4.5 SHALL NOT BE INSTALLED [ASCE 7-16, SECTION 13.6, TABLE 13.6-1].
9. NO CHANGE IN VERTICAL DIRECTION IS ALLOWED.
10. PROVIDE FLEXIBLE COUPLING AT THE END OF THE PIPE AND THE CONNECTION TO THE EQUIPMENT IT IS SERVING.

## 4 ROOF - REFRIGERANT PIPE SUPPORT (TYPICAL)
SCALE: NONE



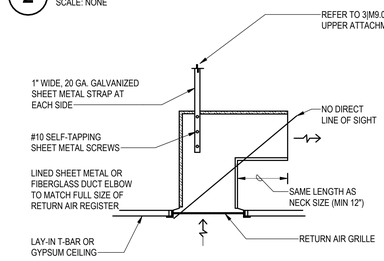

NOTE:
1. APPROPRIATE FOR DUCT, PIPING, AND EQUIPMENT UPPER SUPPORT ATTACHMENT TO A METAL DECK WITHOUT CONCRETE FILL.
2. MAXIMUM LOAD PER METAL STRAP SHALL NOT EXCEED AS NOTED WHEN ATTACHED TO SIDE OF DECK FLUTE. DO NOT ATTACHED TO BOTTOM OF FLUTE.
3. REFER TO DETAIL S/S0.29 "MAX POINT LOAD SCHEDULE FOR TYPICAL FLOOR/ROOF BARE-METAL DECK" FOR MAX LOADS IMPOSED ON BARE METAL DECK.

## 3 UPPER METAL STRAP TO METAL DECK (TYPICAL)
SCALE: NONE



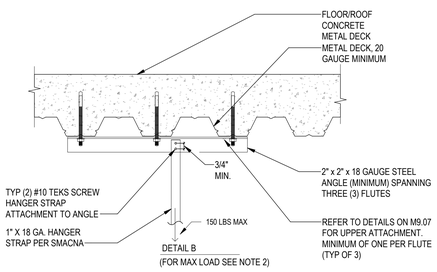

NOTES:
1. HANGERS SHALL BE INSTALLED AT EVERY CHANGE OF DIRECTION AND NO MORE THAN 10'-0" APART.
2. WHERE SEISMIC RESTRAINTS ARE REQUIRED USE OPM DETAILS FOR DUCT SUPPORT. SEE SHEET M9.01 TO M9.06 FOR DETAIL.

## 2 ROUND DUCT SUPPORT (TYPICAL)
SCALE: NONE



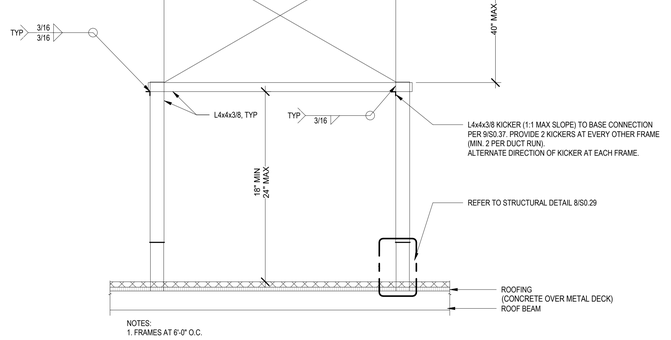

NOTES:
1. REFER TO PLANS FOR SIZES AND CONTINUATION.

## 1 RETURN PLENUM BOOT - LINED (TYPICAL)
SCALE: NONE



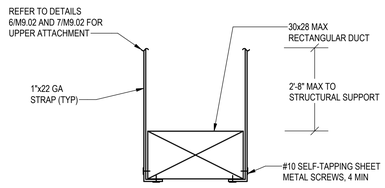

NOTE:
1. APPROPRIATE FOR DUCT, PIPING, AND EQUIPMENT UPPER SUPPORT ATTACHMENT TO A METAL DECK WITH CONCRETE FILL.
2. REFER TO DETAIL 2/S0.29 "TYPICAL HANGING LOAD CONNECTION DETAIL AT FLOOR/ROOF CONCRETE METAL DECK" FOR MAX LOADS IMPOSED ON CONC OVER METAL DECK.

## 7 UPPER METAL STRAP TO CONCRETE FILLED METAL DECK (TYPICAL)
SCALE: NONE




NOTES:
1. FRAMES AT 6'-0" O.C.

## 6 ROOF - RECTANGULAR DUCT SUPPORT
SCALE: NONE




MAX DUCT SIZE = 30x28 WITH LESS THAN 6 SQUARE FEET
MAX WT. = 20 LBS/LF

NOTES:
1. MAXIMUM SPACING OF HANGERS SHALL BE 5'-0".
2. RECTANGULAR DUCT MORE THAN 6 SQUARE FEET IN AREA OR DUCT OF ANY SIZE IS SUPPORTED MORE THAN 12" BELOW STRUCTURE AS MEASURED FROM THE TOP OF DUCT TO THE BOTTOM OF STRUCTURE REQUIRES SEISMIC RESTRAINTS. REFER TO OPM DETAILS ON SHEET M9.01 THRU M9.06 FOR DUCT SUPPORT AND SEISMIC BRACING DETAILS.
3. PROVIDE 4 WAY SPLAY CABLE OR STEEL ANGLE BRACING AT 30'-0" O.C. OR SMALLER TO AVOID HITTING ADJACENT COMPONENTS AS REQUIRED AND IN EVERY CHANGE OF DIRECTION. BRACING NOT REQUIRED AT EVERY SUPPORT.

## 5 RECTANGULAR DUCT SUPPORT (TYPICAL)
SCALE: NONE

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Job. No.: 150-23US00121

FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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# M9.02

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THE LINE SHOWN ABOVE IS 1" LONG ON THE ORIGINAL SHEET. EXAMINE ORIGINAL SHEET SIZE

## SHEET NOTES

1. PROVIDE TRANSVERSE AND LONGITUDINAL SEISMIC BRACING SUPPORT FOR DUCT THAT HAVE CROSS-SECTIONAL AREA OF 6 SQ.FT. OR MORE OR WEIGHS MORE THAN 17 LB/FT PER OPM DETAIL.
2. FOR MAXIMUM POINT LOADING, SEE STRUCTURAL DRAWINGS.

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**EL MONTE, CALIFORNIA 91732**

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SHEET NAME:

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**M9.03**

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## TRAPEZE MEMBER FOR ALL SYSTEMS

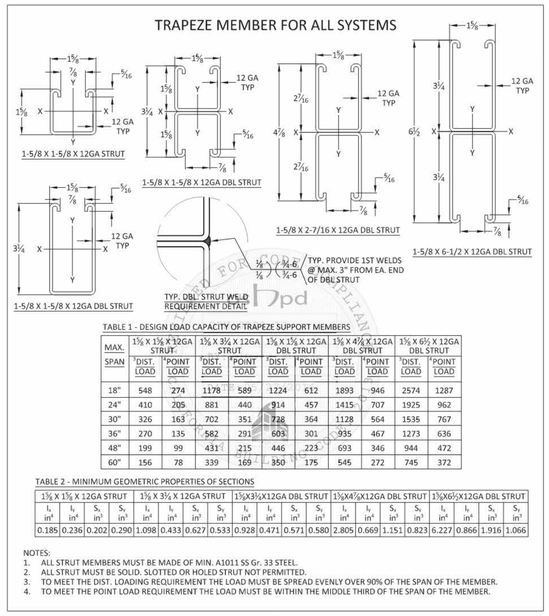



TABLE 1 - DESIGN LOAD CAPACITY OF TRAPEZE SUPPORT MEMBERS

| MAX. SPAN | 1⅝ X 1⅝ X 12GA STRUT | | 1⅝ X 3¼ X 12GA STRUT | | 1⅝ X 1⅝ X 12GA DBL STRUT | | 1⅝ X 4⅛ X 12GA DBL STRUT | | 1⅝ X 6½ X 12GA DBL STRUT | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [1]DIST. LOAD | [2]POINT LOAD | [1]DIST. LOAD | [2]POINT LOAD | [1]DIST. LOAD | [2]POINT LOAD | [1]DIST. LOAD | [2]POINT LOAD | [1]DIST. LOAD | [2]POINT LOAD |
| 18" | 548 | 274 | 1178 | 589 | 1224 | 612 | 1893 | 946 | 2574 | 1287 |
| 24" | 410 | 205 | 881 | 440 | 914 | 457 | 1415 | 707 | 1925 | 962 |
| 30" | 326 | 163 | 702 | 351 | 728 | 364 | 1128 | 564 | 1535 | 767 |
| 36" | 270 | 135 | 582 | 291 | 603 | 301 | 935 | 467 | 1273 | 636 |
| 48" | 199 | 99 | 431 | 215 | 446 | 223 | 693 | 346 | 944 | 472 |
| 60" | 156 | 78 | 339 | 169 | 350 | 175 | 545 | 272 | 745 | 372 |

TABLE 2 - MINIMUM GEOMETRIC PROPERTIES OF SECTIONS

| 1⅝ X 1⅝ X 12GA STRUT | | | | 1⅝ X 3¼ X 12GA STRUT | | | | 1⅝X3¼X12GA DBL STRUT | | | | 1⅝X4⅛X12GA DBL STRUT | | | | 1⅝X6½X12GA DBL STRUT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $I_x$ in⁴ | $I_y$ in⁴ | $S_x$ in³ | $S_y$ in³ | $I_x$ in⁴ | $I_y$ in⁴ | $S_x$ in³ | $S_y$ in³ | $I_x$ in⁴ | $I_y$ in⁴ | $S_x$ in³ | $S_y$ in³ | $I_x$ in⁴ | $I_y$ in⁴ | $S_x$ in³ | $S_y$ in³ | $I_x$ in⁴ | $I_y$ in⁴ | $S_x$ in³ | $S_y$ in³ |
| 0.185 | 0.236 | 0.202 | 0.290 | 1.098 | 0.433 | 0.627 | 0.533 | 0.928 | 0.471 | 0.571 | 0.580 | 2.805 | 0.669 | 1.151 | 0.823 | 6.227 | 0.866 | 1.916 | 1.066 |

NOTES:
1. ALL STRUT MEMBERS MUST BE MADE OF MIN. A1011 SS Gr. 33 STEEL.
2. ALL STRUT MUST BE SOLID. SLOTTED OR HOLED STRUT NOT PERMITTED.
3. TO MEET THE DIST. LOADING REQUIREMENT THE LOAD MUST BE SPREAD EVENLY OVER 90% OF THE SPAN OF THE MEMBER.
4. TO MEET THE POINT LOAD REQUIREMENT THE LOAD MUST BE WITHIN THE MIDDLE THIRD OF THE SPAN OF THE MEMBER.

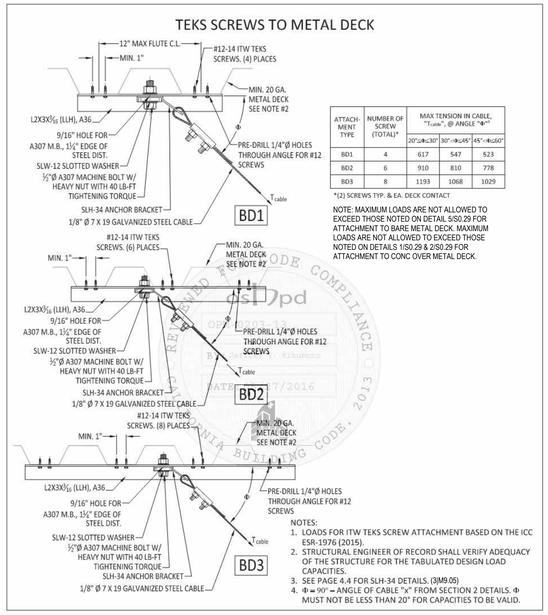
Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 2.79
Date: May 9, 2016

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 128 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING IMPOSED ON BARE METAL DECK TO BE PER S/S0.29.

## 5 TRAPEZE MEMBER FOR ALL SYSTEMS
SCALE: NONE

## TEKS SCREWS TO METAL DECK




| ATTACH-MENT TYPE | NUMBER OF SCREW (TOTAL)* | MAX TENSION IN CABLE, "$T_{cable}$", @ ANGLE "$\Phi$"° | | |
|---|---|---|---|---|
| | | 20°≤Φ≤30° | 30°<Φ≤45° | 45°<Φ≤60° |
| BD1 | 4 | 617 | 547 | 523 |
| BD2 | 6 | 910 | 810 | 778 |
| BD3 | 8 | 1193 | 1068 | 1029 |

*(2) SCREWS TYP. & EA. DECK CONTACT

NOTE: MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 & 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

NOTES:
1. LOADS FOR ITW TEKS SCREW ATTACHMENT BASED ON THE ICC ESR-1976 (2015).
2. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOAD CAPACITIES.
3. SEE PAGE 4.4 FOR SLH-34 DETAILS. (3)M9.05)
4. Φ = 90° – ANGLE OF CABLE "x" FROM SECTION 2 DETAILS. Φ MUST NOT BE LESS THAN 20° FOR CAPACITIES TO BE VALID.

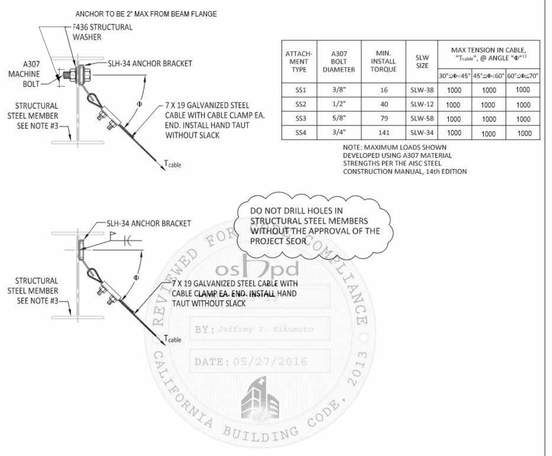
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M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
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Civil Engineer: P.K. Sachdeva
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Date: May 9, 2016

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NOTE:
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## 3 TEKS SCREWS TO METAL DECK
SCALE: NONE

## BOLT OR WELD TO STEEL




| ATTACH-MENT TYPE | A307 BOLT DIAMETER | MIN. INSTALL TORQUE | SLW SIZE | MAX TENSION IN CABLE, "$T_{cable}$", @ ANGLE "$\Phi$"[1] | | |
|---|---|---|---|---|---|---|
| | | | | 30°≤Φ<45° | 45°≤Φ<60° | 60°≤Φ≤70° |
| SS1 | 3/8" | 16 | SLW-38 | 1000 | 1000 | 1000 |
| SS2 | 1/2" | 40 | SLW-12 | 1000 | 1000 | 1000 |
| SS3 | 5/8" | 79 | SLW-58 | 1000 | 1000 | 1000 |
| SS4 | 3/4" | 141 | SLW-34 | 1000 | 1000 | 1000 |

NOTE: MAXIMUM LOADS SHOWN DEVELOPED USING A307 MATERIAL STRENGTHS PER THE AISC STEEL CONSTRUCTION MANUAL, 14th EDITION

NOTES:
1. ALL STRUCTURAL STEEL SHALL BE MINIMUM A36.
2. INSTALL SLH-34 BRACKET WITHIN TOP 1/3 OF BEAM HEIGHT
3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOAD CAPACITIES.
4. WELDING SHALL BE DONE BY ELECTRIC SHIELDED ARC PROCESS USING E-70XX ELECTRODES.
5. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.
6. ALL WELDING SHALL BE PERFORMED WITH SPECIAL INSPECTION.
7. ALL WELDING SHALL BE IN COMPLIANCE WITH 2013 CALIFORNIA BUILDING CODE.
8. WELDED ATTACHMENT TO STEEL BEAM SHALL NOT BE PLACED WITHIN PROTECTED ZONE AS DEFINED IN AISC 341.
9. SEE PAGE 2.15 FOR STRUT DETAILS.
10. SEE PAGE 4.3 FOR SLH-34 DETAILS (2)M9.05)
11. Φ = 90° – ANGLE OF CABLE "x" FROM SECTION 2 DETAILS. Φ MUST NOT BE GREATER THAN 70° FOR CAPACITIES TO BE VALID.

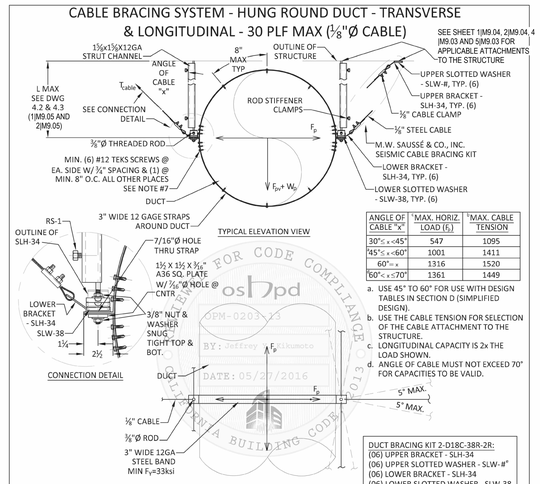
Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 3.24
Date: May 9, 2016

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 164 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LATERAL LOAD TO STEEL BEAM TO BE 1000 #.

## 4 BOLT OR WELD TO STEEL
SCALE: NONE

## CABLE BRACING SYSTEM - HUNG ROUND DUCT - TRANSVERSE & LONGITUDINAL - 30 PLF MAX (⅛"Ø CABLE)




| ANGLE OF CABLE "x" | [1]MAX. HORIZ. LOAD ($F_h$) | [1]MAX. CABLE TENSION |
|---|---|---|
| 30°≤ x <45° | 547 | 1095 |
| 45°≤ x <60° | 1001 | 1411 |
| 60°= x | 1316 | 1520 |
| 60°< x ≤70° | 1361 | 1449 |

a. USE 45° TO 60° FOR USE WITH DESIGN TABLES IN SECTION D (SIMPLIFIED DESIGN).
b. USE THE CABLE TENSION FOR SELECTION OF THE CABLE ATTACHMENT TO THE STRUCTURE.
c. LONGITUDINAL CAPACITY IS 2x THE LOAD SHOWN.
d. ANGLE OF CABLE MUST NOT EXCEED 70° FOR CAPACITIES TO BE VALID.
e. UPPER SLOTTED WASHER TO MATCH SELECTED ATTACHMENT.

DUCT BRACING KIT 2-D18C-3BR-2R:
(06) UPPER BRACKET - SLH-34
(06) UPPER SLOTTED WASHER - SLW-#"
(06) LOWER BRACKET - SLH-34
(06) LOWER SLOTTED WASHER - SLW-38
(04) ROD STIFFENER CLAMPS - RS-1
(06) ½" CABLE - 10 FT.
(12) ½" CABLE CLAMPS

NOTES:
1. CABLE IS 7 X 19 GALVANIZED STEEL CABLE. SEE PAGE 4.5. (4)M9.05)
2. CABLES TO BE INSTALLED TAUT W/O SLACK. CAUTION - CABLE MUST NOT SUSTAIN ANY DEAD LOAD.
3. SEE PAGE 4.2 & 3 FOR ROD STIFFENER DETAIL & REQUIREMENTS. (1)M9.05 AND 2)M9.05)
4. SEE PAGE 4.4 FOR BRACKET - SLH-34 AND SLOTTED WASHER - SLW-XX DETAIL. (3)M9.05)
5. SEE PAGE 4.5 FOR CABLE CLAMP DETAIL. (4)M9.05)
6. TEKS SCREWS MUST BE PER ICC ESR-1976.
7. RDP SHALL CONSIDER THE ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE $F_h$ VALUE USED IN THE DESIGN.
8. USE SHORTEST SMS POSSIBLE WHEN PENETRATING DUCTWORK TO MINIMIZE AIRFLOW NOISE INSIDE THE DUCT (FEMA 414).

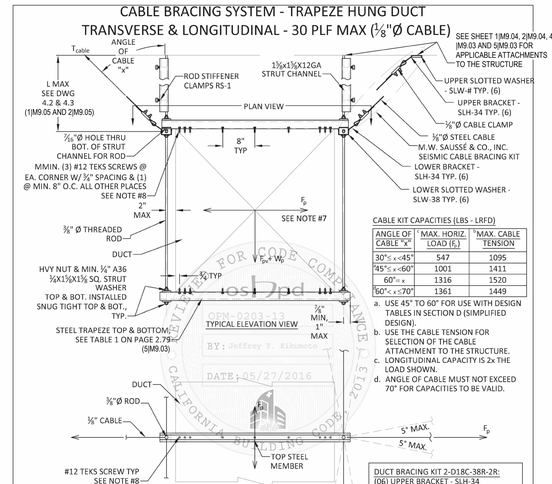
Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 2.50
Date: May 9, 2016

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 99 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING IMPOSED ON BARE METAL DECK TO BE PER S/S0.29.

## 2 CABLE BRACING SYSTEM - HUNG ROUND DUCT
SCALE: NONE

## CABLE BRACING SYSTEM - TRAPEZE HUNG DUCT TRANSVERSE & LONGITUDINAL - 30 PLF MAX (⅛"Ø CABLE)




CABLE KIT CAPACITIES (LBS - LRFD)

| ANGLE OF CABLE "x" | [1]MAX. HORIZ. LOAD ($F_h$) | [1]MAX. CABLE TENSION |
|---|---|---|
| 30°≤ x <45° | 547 | 1095 |
| 45°≤ x <60° | 1001 | 1411 |
| 60°= x | 1316 | 1520 |
| 60°< x ≤70° | 1361 | 1449 |

a. USE 45° TO 60° FOR USE WITH DESIGN TABLES IN SECTION D (SIMPLIFIED DESIGN).
b. USE THE CABLE TENSION FOR SELECTION OF THE CABLE ATTACHMENT TO THE STRUCTURE.
c. LONGITUDINAL CAPACITY IS 2x THE LOAD SHOWN.
d. ANGLE OF CABLE MUST NOT EXCEED 70° FOR CAPACITIES TO BE VALID.
e. UPPER SLOTTED WASHER TO MATCH SELECTED ATTACHMENT.

DUCT BRACING KIT 2-D18C-3BR-2R:
(06) UPPER BRACKET - SLH-34
(06) UPPER SLOTTED WASHER - SLW-#"
(06) LOWER BRACKET - SLH-34
(06) LOWER SLOTTED WASHER - SLW-38
(04) ROD STIFFENER CLAMPS - RS-1
(06) ½" CABLE - 10 FT.
(12) ½" CABLE CLAMPS

NOTES:
1. CABLE IS 7 X 19 GALVANIZED STEEL CABLE. SEE PG 4.5 (4)M9.05)
2. CABLES TO BE INSTALLED TAUT W/O SLACK. CAUTION - CABLE MUST NOT SUSTAIN ANY DEAD LOAD.
3. SEE PAGE 4.2 & 3 FOR ROD STIFFENER DETAIL & REQUIREMENTS. (1)M9.05 AND 2)M9.05)
4. SEE PAGE 4.4 FOR BRACKET - SLH-34 AND SLOTTED WASHER - SLW-XX DETAIL. (3)M9.05)
5. SEE PAGE 4.5 FOR CABLE CLAMP DETAIL. (4)M9.05)
6. TEKS SCREWS MUST BE PER ICC ESR-1976.
7. RDP SHALL CONSIDER THE ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE $F_h$ VALUE USED IN THE DESIGN.
8. USE SHORTEST SMS POSSIBLE WHEN PENETRATING DUCTWORK TO MINIMIZE AIRFLOW NOISE INSIDE THE DUCT (FEMA 414).

Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 2.38
Date: May 9, 2016

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 87 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING IMPOSED ON BARE METAL DECK TO BE PER S/S0.29.

## 1 CABLE BRACING SYSTEM - TRAPEZE HUNG DUCT
SCALE: NONE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT EXACTLY 1" ADJUST SCALE ACCORDINGLY

## SHEET NOTES

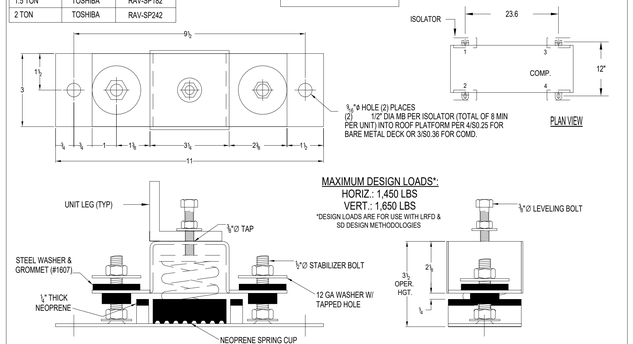
1. PROVIDE TRANSVERSE AND LONGITUDINAL SEISMIC BRACING SUPPORT FOR DUCT THAT HAVE CROSS-SECTIONAL AREA OF 6 SQ.FT. OR MORE OR WEIGHS MORE THAN 17 LB/FT PER OPM DETAIL.
2. FOR MAXIMUM POINT LOADING, SEE STRUCTURAL DRAWINGS.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

| MARK | MAKE | MODEL |
|---|---|---|
| 1 TON | TOSHIBA | RAV-SP122 |
| 1.5 TON | TOSHIBA | RAV-SP182 |
| 2 TON | TOSHIBA | RAV-SP242 |

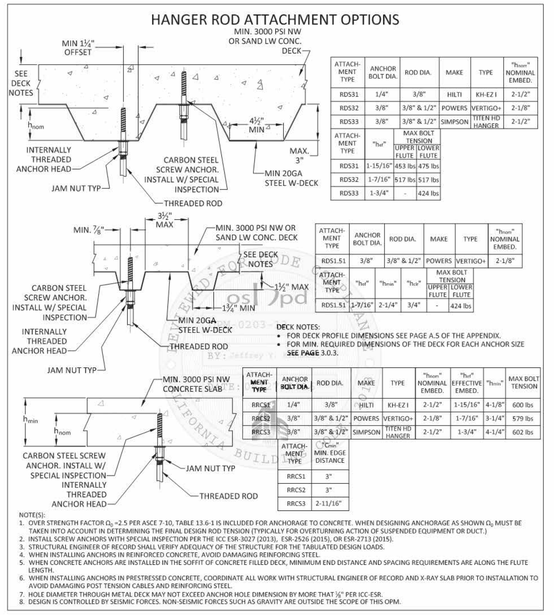
ISOLATOR H.C.A.I.
PRE-APPROVAL PENDING
No. OPM-0203-22

| MTS | SPRING O.D. | DEFL. |
|---|---|---|
| 1-4 | 2.5" | 2" |




| | | | |
|---|---|---|---|
| M.W. SAUSSÉ & CO., INC. VALENCIA, CALIFORNIA 91355 | JOB NAME: ARROYO HS EMUSD | REVISIONS: | DRN: TDT |
| | CUST.: | A: 1 TO 2" DEFLN (7-17-24) | DATE: 3-29-24 |
| VIBREX TYPE RMU-EQ-2 | CUST. P.O.: | B: | SHEET NO.: -6A |
| | MECH. ENGR.: NDY | C: | |
| | MARK: 1 TON, 1.5 TON, 2 TON | D: | |

## HANGER ROD ATTACHMENT OPTIONS




| ATTACH-MENT TYPE | ANCHOR BOLT DIA. | ROD DIA. | MAKE | TYPE | "hnom" NOMINAL EMBED. |
|---|---|---|---|---|---|
| RDS31 | 1/4" | 3/8" | HILTI | KH-EZ I | 2-1/2" |
| RDS32 | 3/8" | 3/8" & 1/2" | POWERS | VERTIGO+ | 2-1/8" |
| RDS33 | 3/8" | 3/8" & 1/2" | SIMPSON | TITEN HD HANGER | 2-1/2" |

| ATTACH-MENT TYPE | "hst" | MAX BOLT TENSION UPPER FLUTE | MAX BOLT TENSION LOWER FLUTE |
|---|---|---|---|
| RDS31 | 1-15/16" | 453 lbs | 475 lbs |
| RDS32 | 1-7/16" | 517 lbs | 517 lbs |
| RDS33 | 1-3/4" | - | 424 lbs |

| ATTACH-MENT TYPE | ANCHOR BOLT DIA. | ROD DIA. | MAKE | TYPE | "hnom" NOMINAL EMBED. |
|---|---|---|---|---|---|
| RDS1.51 | 3/8" | 3/8" & 1/2" | POWERS | VERTIGO+ | 2-1/8" |

| ATTACH-MENT TYPE | "hst" | "hnom" | "hch" | MAX BOLT TENSION UPPER FLUTE | MAX BOLT TENSION LOWER FLUTE |
|---|---|---|---|---|---|
| RDS1.51 | 1-9/16" | 2-1/4" | 3/4" | - | 424 lbs |

DECK NOTES:
- FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 OF THE APPENDIX.
- FOR MIN. REQUIRED DIMENSIONS OF THE DECK FOR EACH ANCHOR SIZE SEE PAGE 3.0.3.

| ATTACH-MENT TYPE | ANCHOR BOLT DIA. | ROD DIA. | MAKE | TYPE | "hnom" NOMINAL EMBED. | "hef" EFFECTIVE EMBED. | "hmin" | MAX BOLT TENSION |
|---|---|---|---|---|---|---|---|---|
| RRCS1 | 1/4" | 3/8" | HILTI | KH-EZ I | 2-1/2" | 1-15/16" | 4-1/8" | 600 lbs |
| RRCS2 | 3/8" | 3/8" & 1/2" | POWERS | VERTIGO+ | 2-1/8" | 1-7/16" | 3-1/4" | 579 lbs |
| RRCS3 | 3/8" | 3/8" & 1/2" | SIMPSON | TITEN HD HANGER | 2-1/2" | 1-3/4" | 4-1/4" | 602 lbs |

| ATTACH-MENT TYPE | "Cmin" MIN. EDGE DISTANCE |
|---|---|
| RRCS1 | 3" |
| RRCS2 | 3" |
| RRCS3 | 2-11/16" |

NOTE(S):
1. OVER STRENGTH FACTOR $\Omega_0$ =2.5 PER ASCE 7-10, TABLE 13.6-1 IS INCLUDED FOR ANCHORAGE TO CONCRETE. WHEN DESIGNING ANCHORAGE AS SHOWN $\Omega_0$ MUST BE TAKEN INTO ACCOUNT IN DETERMINING THE FINAL DESIGN ROD TENSION (TYPICALLY FOR OVERTURNING ACTION OF SUSPENDED EQUIPMENT OR DUCT.)
2. INSTALL SCREW ANCHORS WITH SPECIAL INSPECTION PER THE ICC ESR-3027 (2013), ESR-2526 (2015), OR ESR-2713 (2015).
3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOADS.
4. WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
5. WHEN CONCRETE ANCHORS ARE INSTALLED IN THE SOFFIT OF CONCRETE FILLED DECK, MINIMUM END DISTANCE AND SPACING REQUIREMENTS ARE ALONG THE FLUTE LENGTH.
6. WHEN INSTALLING ANCHORS IN PRESTRESSED CONCRETE, COORDINATE ALL WORK WITH STRUCTURAL ENGINEER OF RECORD AND X-RAY SLAB PRIOR TO INSTALLATION TO AVOID DAMAGING POST TENSION CABLES AND REINFORCING STEEL.
7. HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIMENSION BY MORE THAT ¼" PER ICC-ESR.
8. DESIGN IS CONTROLLED BY SEISMIC FORCES. NON-SEISMIC FORCES SUCH AS GRAVITY ARE OUTSIDE THE SCOPE OF THIS OPM.

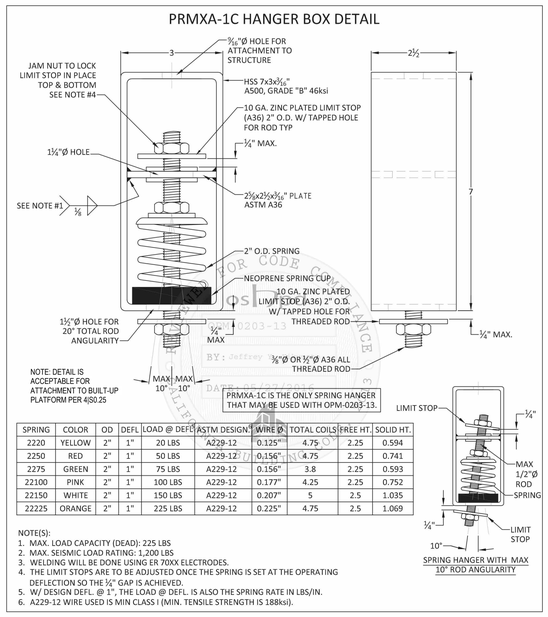
| | | | |
|---|---|---|---|
| Vibrex vibration & seismic control systems | M.W. Saussé & Co., Inc. 28744 Witherspoon Parkway \| Valencia, CA 91355 Ph: (661) 257-3311 \| Fax: (661) 257-6050 | Civil Engineer: P.K. Sachdeva California PE No. C59644 | Page No.: 3.37 Date: May 9, 2016 |

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 177 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## 4 OUTDOOR CONDENSING UNIT ANCHORAGE DETAIL (1/1.5/2 TON)
SCALE: NTS

## 2 HANGER BOX ATTACHMENT OPTIONS
SCALE: NONE



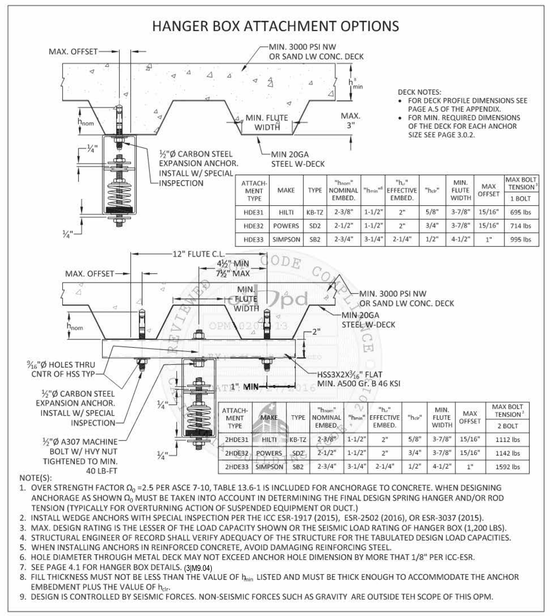

| SPRING | COLOR | OD | DEFL | LOAD @ DEFL | ASTM DESIGN | WIRE Ø. | TOTAL COILS | FREE HT. | SOLID HT. |
|---|---|---|---|---|---|---|---|---|---|
| 2220 | YELLOW | 2" | 1" | 20 LBS | A229-12 | 0.125" | 4.75 | 2.25 | 0.594 |
| 2250 | RED | 2" | 1" | 50 LBS | A229-12 | 0.156" | 4.75 | 2.25 | 0.741 |
| 2275 | GREEN | 2" | 1" | 75 LBS | A229-12 | 0.156" | 3.8 | 2.25 | 0.593 |
| 22100 | PINK | 2" | 1" | 100 LBS | A229-12 | 0.177" | 4.25 | 2.25 | 0.752 |
| 22150 | WHITE | 2" | 1" | 150 LBS | A229-12 | 0.207" | 5 | 2.5 | 1.035 |
| 22225 | ORANGE | 2" | 1" | 225 LBS | A229-12 | 0.225" | 4.75 | 2.5 | 1.069 |

NOTE(S):
1. MAX. LOAD CAPACITY (DEAD): 225 LBS
2. MAX. SEISMIC LOAD RATING: 1,200 LBS
3. WELDING WILL BE DONE USING ER 70XX ELECTRODES.
4. THE LIMIT STOPS ARE TO BE ADJUSTED ONCE THE SPRING IS SET AT THE OPERATING DEFLECTION SO THE ¼" GAP IS ACHIEVED.
5. W/ DESIGN DEFL. @ 1", THE LOAD @ DEFL. IS ALSO THE SPRING RATE IN LBS/IN.
6. A229-12 WIRE USED IS MIN CLASS I (MIN. TENSILE STRENGTH IS 188ksi).

| | | | |
|---|---|---|---|
| Vibrex vibration & seismic control systems | M.W. Saussé & Co., Inc. 28744 Witherspoon Parkway \| Valencia, CA 91355 Ph: (661) 257-3311 \| Fax: (661) 257-6050 | Civil Engineer: P.K. Sachdeva California PE No. C59644 | Page No.: 4.1 Date: May 9, 2016 |

05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 179 of 211

## HANGER BOX ATTACHMENT OPTIONS




DECK NOTES:
- FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 OF THE APPENDIX.
- FOR MIN. REQUIRED DIMENSIONS OF THE DECK FOR EACH ANCHOR SIZE SEE PAGE 3.0.2.

| ATTACH-MENT TYPE | MAKE | TYPE | "hnom" NOMINAL EMBED. | "hef" EFFECTIVE EMBED. | "hst" | MIN. FLUTE WIDTH | MAX OFFSET | MAX BOLT TENSION[1] 1 BOLT |
|---|---|---|---|---|---|---|---|---|
| HDE31 | HILTI | KB-TZ | 2-3/8" | 1-1/2" | 2" | 5/8" | 3-7/8" | 15/16" | 695 lbs |
| HDE32 | POWERS | SD2 | 2-1/2" | 1-1/2" | 2" | 3/4" | 3-7/8" | 15/16" | 714 lbs |
| HDE33 | SIMPSON | SB2 | 2-3/4" | 2-1/4" | 1/2" | 4-1/2" | 1" | 15/16" | 995 lbs |

| ATTACH-MENT TYPE | MAKE | TYPE | "hnom" NOMINAL EMBED. | "hef" EFFECTIVE EMBED. | "hst" | MIN. FLUTE WIDTH | MAX OFFSET | MAX BOLT TENSION[1] 2 BOLT |
|---|---|---|---|---|---|---|---|---|
| 2HDE31 | HILTI | KB-TZ | 2-3/8" | 1-1/2" | 2" | 5/8" | 3-7/8" | 15/16" | 1112 lbs |
| 2HDE32 | POWERS | SD2 | 2-1/2" | 1-1/2" | 2" | 3/4" | 3-7/8" | 15/16" | 1142 lbs |
| 2HDE33 | SIMPSON | SB2 | 2-3/4" | 2-1/4" | 1/2" | 4-1/2" | 1" | | 1592 lbs |

NOTE(S):
1. OVER STRENGTH FACTOR $\Omega_0$ =2.5 PER ASCE 7-10, TABLE 13.6-1 IS INCLUDED FOR ANCHORAGE TO CONCRETE. WHEN DESIGNING ANCHORAGE AS SHOWN $\Omega_0$ MUST BE TAKEN INTO ACCOUNT IN DETERMINING THE FINAL DESIGN SPRING HANGER AND/OR ROD TENSION (TYPICALLY FOR OVERTURNING ACTION OF SUSPENDED EQUIPMENT OR DUCT.)
2. INSTALL WEDGE ANCHORS WITH SPECIAL INSPECTION PER THE ICC ESR-1917 (2015), ESR-2502 (2016), OR ESR-3037 (2015).
3. MAX. DESIGN RATING IS THE LESSER OF THE LOAD CAPACITY SHOWN OR THE SEISMIC LOAD RATING OF HANGER BOX (1,200 LBS).
4. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOAD CAPACITIES.
5. WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
6. HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIMENSION BY MORE THAT 1/8" PER ICC-ESR.
7. SEE PAGE 4.1 FOR HANGER BOX DETAILS. (3M9.04)
8. FILL THICKNESS MUST NOT BE LESS THAN THE VALUE OF $h_{min}$ LISTED AND MUST BE THICK ENOUGH TO ACCOMMODATE THE ANCHOR EMBEDMENT PLUS THE VALUE OF $h_{nom}$.
9. DESIGN IS CONTROLLED BY SEISMIC FORCES. NON-SEISMIC FORCES SUCH AS GRAVITY ARE OUTSIDE TEH SCOPE OF THIS OPM.

| | | | |
|---|---|---|---|
| Vibrex vibration & seismic control systems | M.W. Saussé & Co., Inc. 28744 Witherspoon Parkway \| Valencia, CA 91355 Ph: (661) 257-3311 \| Fax: (661) 257-6050 | Civil Engineer: P.K. Sachdeva California PE No. C59644 | Page No.: 3.28 Date: May 9, 2016 |

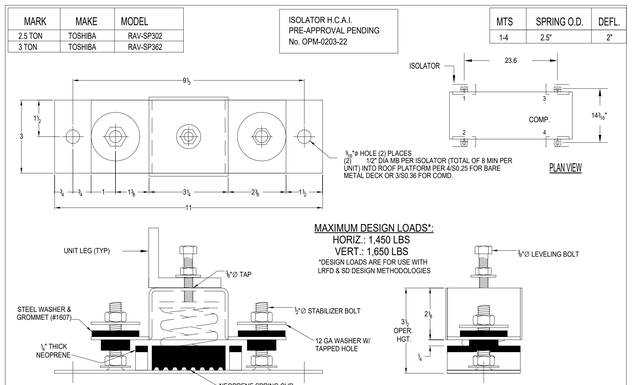
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 168 of 211

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

| MARK | MAKE | MODEL |
|---|---|---|
| 2.5 TON | TOSHIBA | RAV-SP302 |
| 3 TON | TOSHIBA | RAV-SP362 |

ISOLATOR H.C.A.I.
PRE-APPROVAL PENDING
No. OPM-0203-22

| MTS | SPRING O.D. | DEFL. |
|---|---|---|
| 1-4 | 2.5" | 2" |




| | | | |
|---|---|---|---|
| M.W. SAUSSÉ & CO., INC. VALENCIA, CALIFORNIA 91355 | JOB NAME: ARROYO HS EMUSD | REVISIONS: | DRN: TDT |
| | CUST.: | A: 1 TO 2" DEFLN (7-17-24) | DATE: 3-29-24 |
| VIBREX TYPE RMU-EQ-2 | CUST. P.O.: | B: | SHEET NO.: -7A |
| | MECH. ENGR.: NDY | C: | |
| | MARK: 2.5 TON, 3 TON | D: | |

## 5 OUTDOOR CONDENSING UNIT ANCHORAGE DETAIL (2.5/3 TON)
SCALE: NTS

## 3 PRMXA-1C HANGER BOX DETAIL
SCALE: NONE

## 1 HANGER BOX ATTACHMENT OPTIONS
SCALE: NONE


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER CHI KUEN CHAN No. M35338 Exp. 6-30-27 MECHANICAL STATE OF CALIFORNIA

GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T: 213.239.8806
Project Manager: RM
Job. No.: 150-23JS00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL OPM DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

# M9.04

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/20/2025 10:53:26 AM

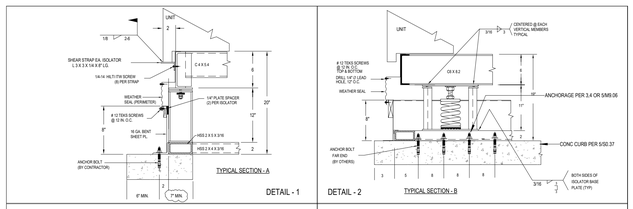
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL SHEETS. IF NOT EXACTLY 1" ON THIS SHEET IT IS NOT ORIGINAL PAPER SIZE

## SHEET NOTES

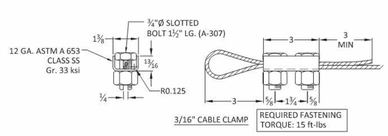
1. PROVIDE TRANSVERSE AND LONGITUDINAL SEISMIC BRACING SUPPORT FOR DUCT THAT HAVE CROSS-SECTIONAL AREA OF 6 SQ.FT. OR MORE OR WEIGHS MORE THAN 17 LB/FT PER OPM DETAIL.
2. FOR MAXIMUM POINT LOADING, SEE STRUCTURAL DRAWINGS.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025




| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| VALENCIA, CALIFORNIA 91355 | CUSTOMER: | A: | DATE: 6-26-24 |
| VIBREX TYPE VIC-EQ-SS | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -5.1B |
| | MARK: RTU-3,4,5,6,10,11 | D: | |

## CABLE CLAMP DETAILS




### CABLE INFORMATION

| CABLE Ø | CLASSIFICATION/ CONSTRUCTION | BREAKING STRENGTH |
|---|---|---|
| ¼" | 7X19 | 2,000 LBS |
| 3/16" | 7X19 | 4,200 LBS |

CABLE IS SMALL DIA. (GALVANIZED) SPECIALTY CORD & MEETS ASTM A1023/A1023M STANDARDS & FEDERAL U.S. SPECIFICATION RR-W-410G, TYPE VI, CLASS 3.

## RS-1 - ROD STIFFENER DETAILS & REQUIREMENTS

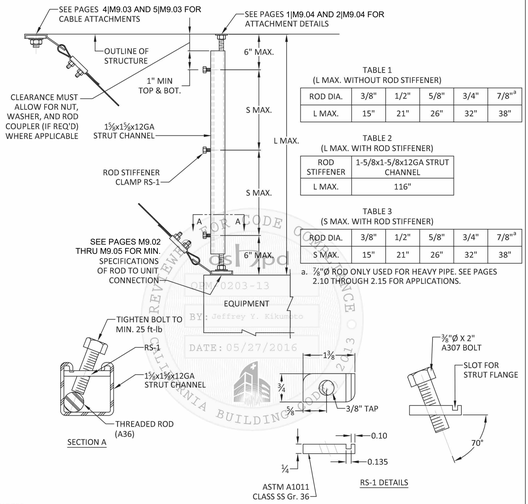



TABLE 1
(L MAX. WITHOUT ROD STIFFENER)

| ROD DIA. | 3/8" | 1/2" | 5/8" | 3/4" | 7/8"[a] |
|---|---|---|---|---|---|
| L MAX. | 15" | 21" | 26" | 32" | 38" |

TABLE 2
(L MAX. WITH ROD STIFFENER)

| ROD STIFFENER | 1-5/8x1-5/8x12GA STRUT CHANNEL |
|---|---|
| L MAX. | 116" |

TABLE 3
(S MAX. WITH ROD STIFFENER)

| ROD DIA. | 3/8" | 1/2" | 5/8" | 3/4" | 7/8"[a] |
|---|---|---|---|---|---|
| S MAX. | 15" | 21" | 26" | 32" | 38" |

a. ⅞"Ø ROD ONLY USED FOR HEAVY PIPE. SEE PAGES 2.10 THROUGH 2.15 FOR APPLICATIONS.

NOTES:
1. SEE TABLE 1 FOR MAXIMUM LENGTH OF ⅜" THRU ⅞"Ø RODS WITHOUT ROD STIFFENER.
2. SEE TABLE 2 FOR MAXIMUM LENGTH OF ⅜" THRU ⅞"Ø RODS WITH ROD STIFFENER.
3. SEE TABLE 3 TO DETERMINE NUMBER OF ROD STIFFENER CLIPS REQUIRED.
4. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD.
5. SEE SECTION 3 FOR STRUCTURAL ATTACHMENTS FOR HANGER BOX AND CABLE BRACING


Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 4.5
Date: May 9, 2016
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 183 of 211



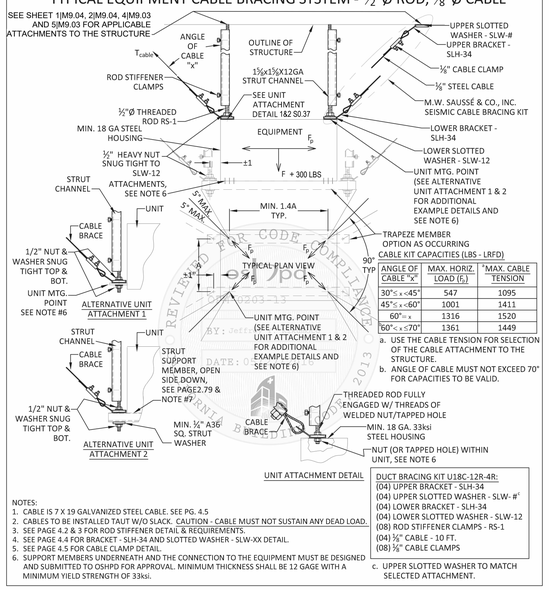
Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
Civil Engineer: P.K. Sachdeva
California PE No. C59644
Page No.: 4.3
Date: May 9, 2016
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 181 of 211


## 6 RTU 3,4,5,6,10 SHEAR STRAP DETAIL
SCALE: NTS

## 4 CABLE CLAMP DETAILS
SCALE: NONE

## 2 RS-1 ROD STIFFENER DETAILS & REQUIREMENTS
SCALE: NONE

## TYPICAL EQUIPMENT CABLE BRACING SYSTEM - ½"Ø ROD, ⅛"Ø CABLE




| ANGLE OF CABLE "X" | MAX. HORIZ. LOAD ($F_h$) | *MAX. CABLE TENSION |
|---|---|---|
| 30°≤ x <45° | 547 | 1095 |
| 45°≤ x <60° | 1001 | 1411 |
| 60°= x | 1316 | 1520 |
| 60°< x ≤70° | 1361 | 1449 |

a. USE THE CABLE TENSION FOR SELECTION OF THE CABLE ATTACHMENT TO THE STRUCTURE.
b. ANGLE OF CABLE MUST NOT EXCEED 70° FOR CAPACITIES TO BE VALID.

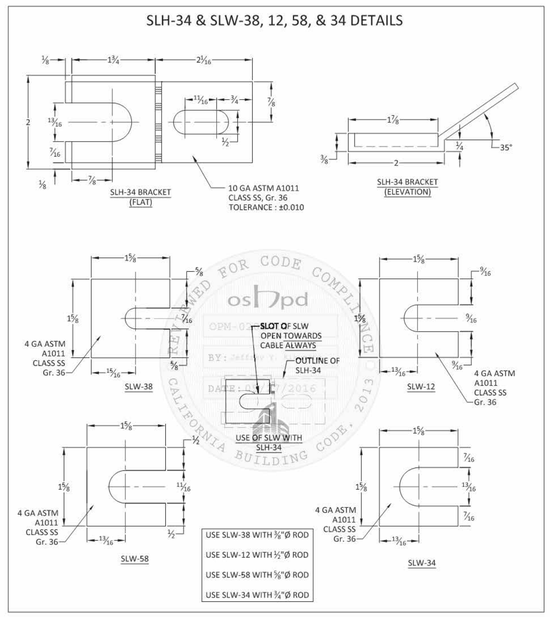
DUCT BRACING KIT U18C-12R-4R:
(04) UPPER BRACKET - SLH-34
(04) UPPER SLOTTED WASHER - SLW- #[c]
(04) LOWER BRACKET - SLH-34
(04) LOWER SLOTTED WASHER - SLW-12
(08) ROD STIFFENER CLAMPS - RS-1
(04) ⅛" CABLE - 10 FT.
(08) ⅛" CABLE CLAMPS

c. UPPER SLOTTED WASHER TO MATCH SELECTED ATTACHMENT.

NOTES:
1. CABLE IS 7 X 19 GALVANIZED STEEL CABLE. SEE PG. 4.5
2. CABLES TO BE INSTALLED TAUT W/O SLACK. CAUTION - CABLE MUST NOT SUSTAIN ANY DEAD LOAD.
3. SEE PAGE 4.2 & 3 FOR ROD STIFFENER DETAIL & REQUIREMENTS.
4. SEE PAGE 4.4 FOR BRACKET - SLH-34 AND SLOTTED WASHER - SLW-XX DETAIL.
5. SEE PAGE 4.5 FOR CABLE CLAMP DETAIL.
6. SUPPORT MEMBERS UNDERNEATH AND THE CONNECTION TO THE EQUIPMENT MUST BE DESIGNED AND SUBMITTED TO OSHPD FOR APPROVAL. MINIMUM THICKNESS SHALL BE 12 GAGE WITH A MINIMUM YIELD STRENGTH OF 33ksi.


Vibrex vibration & seismic control systems
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California PE No. C59644
Page No.: 2.75
Date: May 9, 2016
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 124 of 211


## SLH-34 & SLW-38, 12, 58, & 34 DETAILS





Vibrex vibration & seismic control systems
M.W. Saussé & Co., Inc.
28744 Witherspoon Parkway | Valencia, CA 91355
Ph: (661) 257-3311 | Fax: (661) 257-6050
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California PE No. C59644
Page No.: 4.4
Date: May 9, 2016
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 182 of 211


## RS-1 - ROD STIFFENER DETAILS & REQUIREMENTS

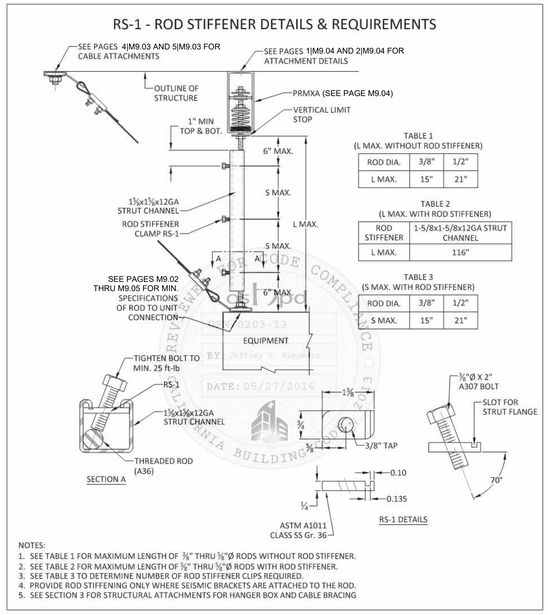



TABLE 1
(L MAX. WITHOUT ROD STIFFENER)

| ROD DIA. | 3/8" | 1/2" |
|---|---|---|
| L MAX. | 15" | 21" |

TABLE 2
(L MAX. WITH ROD STIFFENER)

| ROD STIFFENER | 1-5/8x1-5/8x12GA STRUT CHANNEL |
|---|---|
| L MAX. | 116" |

TABLE 3
(S MAX. WITH ROD STIFFENER)

| ROD DIA. | 3/8" | 1/2" |
|---|---|---|
| S MAX. | 15" | 21" |

NOTES:
1. SEE TABLE 1 FOR MAXIMUM LENGTH OF ⅜" THRU ½"Ø RODS WITHOUT ROD STIFFENER.
2. SEE TABLE 2 FOR MAXIMUM LENGTH OF ⅜" THRU ½"Ø RODS WITH ROD STIFFENER.
3. SEE TABLE 3 TO DETERMINE NUMBER OF ROD STIFFENER CLIPS REQUIRED.
4. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD.
5. SEE SECTION 3 FOR STRUCTURAL ATTACHMENTS FOR HANGER BOX AND CABLE BRACING


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California PE No. C59644
Page No.: 4.2
Date: May 9, 2016
05/27/2016 OPM-0203-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 180 of 211


## 5 TYPICAL EQUIPMENT CABLE BRACING SYSTEM
SCALE: NONE

## 3 SLH-34 & SLW-38, 12, 58, & 34 DETAILS
SCALE: NONE

## 1 RS-1 ROD STIFFENER DETAILS & REQUIREMENTS
SCALE: NONE

CHI KUEN CHAN
No. M35338
Exp. 6-30-27
MECHANICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T: 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**MECHANICAL OPM DETAILS**

**DSA SUBMITTAL**

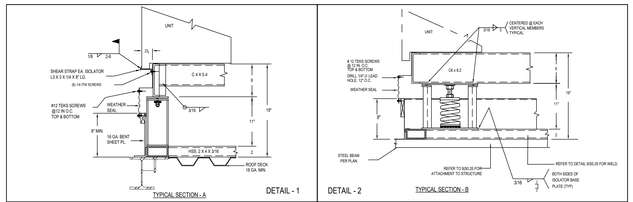
FILE NO.: 19-H10 A NO.: 03-123641
DATE: 06/23/2025 CLIENT PROJ NO: 3361008100
SHEET:

**M9.05**

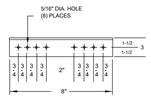
Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/30/2025 10:33:30 AM

PLEASE RECYCLE

IF THIS LINE IS NOT 1" AS SHOWN ABOVE, THEN THIS SHEET IS NOT AN EXACT ORIGINAL PAGE SIZE




DETAIL - 3




SHEAR STRAP SIDE VIEW

DETAIL - 4

LEFT BLANK

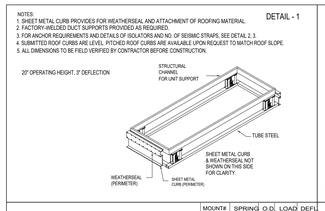
| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. VALENCIA, CALIFORNIA 91355 VIBREX TYPE VIC-EQ-SS | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| | CUSTOMER: | A: | DATE: 6-26-24 |
| | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -2.1B |
| | MARK: DOAS-1, RTU-1,7,8,9 | D: | |

## 6 RTU 1,7,8,9 AND DOAS 1 SHEAR STRAP DETAIL

SCALE: NONE

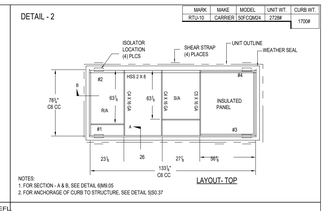
NOTES:
1. SHEET METAL CURB PROVIDES FOR WEATHERSEAL AND ATTACHMENT OF ROOFING MATERIAL.
2. FACTORY-WELDED DUCT SUPPORTS PROVIDED AS REQUIRED.
3. FOR ANCHOR REQUIREMENTS AND DETAILS OF ISOLATORS AND NO. OF SEISMIC STRAPS, SEE DETAIL 2, 3.
4. SUBMITTED ROOF CURBS ARE LEVEL. PITCHED ROOF CURBS ARE AVAILABLE UPON REQUEST TO MATCH ROOF SLOPE.
5. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.

DETAIL - 1



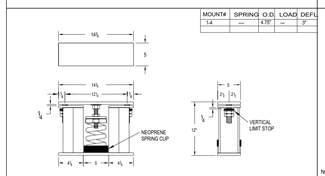

DETAIL - 2

| MARK | MAKE | MODEL | UNIT WT. | CURB WT. |
|---|---|---|---|---|
| RTU-10 | CARRIER | 50FCQA024 | 272lbf | 1700lf |




NOTES:
1. FOR SECTION - A & B, SEE DETAIL 6/M9.05
2. FOR ANCHORAGE OF CURB TO STRUCTURE, SEE DETAIL S/SO.37

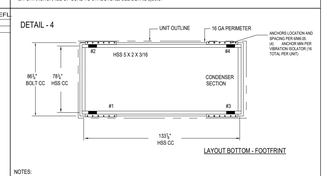
| MOUNT# | SPRING | O.D. | LOAD | DEFL |
|---|---|---|---|---|
| 1-4 | --- | 4.75" | --- | 3" |




VIBREX RMLS-EQ VIBRATION ISOLATOR

DETAIL - 3

DETAIL - 4




NOTES:
1. FOR ANCHORAGE, USE 1/2" DIA. HILTI KB TZ2 ANCHORS WITH 3-3/4" NOMINAL EMBEDMENT, INTO CONCRETE CURB PER S/SO.37. INSTALL ANCHORS WITH SPECIAL INSPECTION PER ICC ESR-4266.

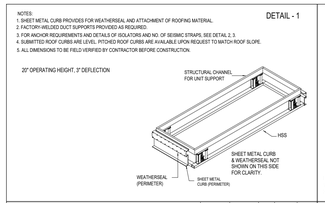
| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. VALENCIA, CALIFORNIA 91355 VIBREX TYPE VIC-EQ-SS | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| | CUSTOMER: | A: 1" TO 3" DEFLN (6-26-24) | DATE: 4-14-23 |
| | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -5B |
| | MARK: RTU-10, 11 | D: | |

## 5 RTU-10 ROOF CURB DETAILS AND REQUIREMENTS

SCALE: NONE

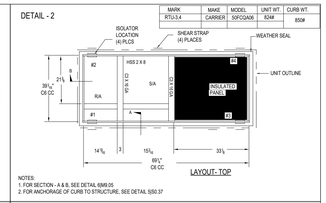
NOTES:
1. SHEET METAL CURB PROVIDES FOR WEATHERSEAL AND ATTACHMENT OF ROOFING MATERIAL.
2. FACTORY-WELDED DUCT SUPPORTS PROVIDED AS REQUIRED.
3. FOR ANCHOR REQUIREMENTS AND DETAILS OF ISOLATORS AND NO. OF SEISMIC STRAPS, SEE DETAIL 2, 3.
4. SUBMITTED ROOF CURBS ARE LEVEL. PITCHED ROOF CURBS ARE AVAILABLE UPON REQUEST TO MATCH ROOF SLOPE.
5. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.

DETAIL - 1



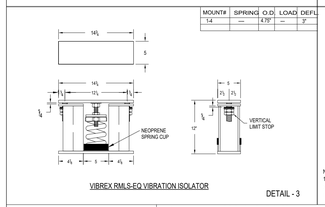

DETAIL - 2

| MARK | MAKE | MODEL | UNIT WT. | CURB WT. |
|---|---|---|---|---|
| RTU-3,4 | CARRIER | 50FCQA036 | 324lbf | 805lf |




NOTES:
1. FOR SECTION - A & B, SEE DETAIL 6/M9.05
2. FOR ANCHORAGE OF CURB TO STRUCTURE, SEE DETAIL S/SO.37

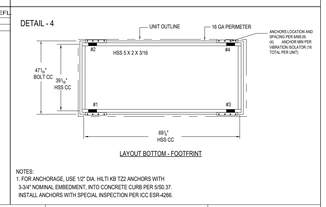
| MOUNT# | SPRING | O.D. | LOAD | DEFL |
|---|---|---|---|---|
| 1-4 | --- | 4.75" | --- | 3" |




VIBREX RMLS-EQ VIBRATION ISOLATOR

DETAIL - 3

DETAIL - 4




NOTES:
1. FOR ANCHORAGE, USE 1/2" DIA. HILTI KB TZ2 ANCHORS WITH 3-3/4" NOMINAL EMBEDMENT, INTO CONCRETE CURB PER S/SO.37. INSTALL ANCHORS WITH SPECIAL INSPECTION PER ICC ESR-4266.

| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. VALENCIA, CALIFORNIA 91355 VIBREX TYPE VIC-EQ-SS | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| | CUSTOMER: | A: 1" TO 3" DEFLN (6-26-24) | DATE: 4-14-23 |
| | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -3A |
| | MARK: RTU-3,4 | D: | |

## 4 RTU-3, RTU-4 ROOF CURB DETAILS AND REQUIREMENTS

SCALE: NONE

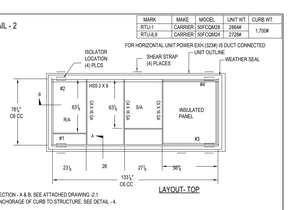
NOTES:
1. SHEET METAL CURB PROVIDES FOR WEATHERSEAL AND ATTACHMENT OF ROOFING MATERIAL.
2. FACTORY-WELDED DUCT SUPPORTS PROVIDED AS REQUIRED.
3. FOR ANCHOR REQUIREMENTS AND DETAILS OF ISOLATORS AND NO. OF SEISMIC STRAPS, SEE DETAIL 2, 3.
4. SUBMITTED ROOF CURBS ARE LEVEL. PITCHED ROOF CURBS ARE AVAILABLE UPON REQUEST TO MATCH ROOF SLOPE.
5. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.

DETAIL - 1



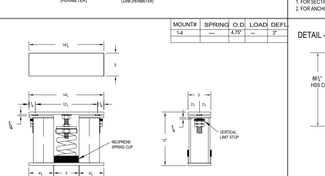

DETAIL - 2

| MARK | MAKE | MODEL | UNIT WT. | CURB WT. |
|---|---|---|---|---|
| RTU-1 | CARRIER | 50FCQA036 | 286lbf | 1,700lf |
| RTU-6,9 | CARRIER | 50FCQA024 | 272lbf | |




NOTES:
1. FOR SECTION - A & B, SEE ATTACHED DRAWING -2.1
2. FOR ANCHORAGE OF CURB TO STRUCTURE, SEE DETAIL - 4

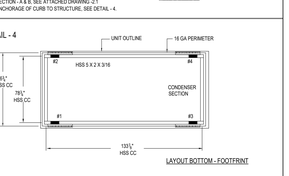
| MOUNT# | SPRING | O.D. | LOAD | DEFL |
|---|---|---|---|---|
| 1-4 | --- | 4.75" | --- | 3" |




VIBREX RMLS-EQ VIBRATION ISOLATOR

DETAIL - 3

DETAIL - 4




NOTES:
1. REFER TO DETAIL 9/SO.25 FOR ROOF ATTACHMENT.

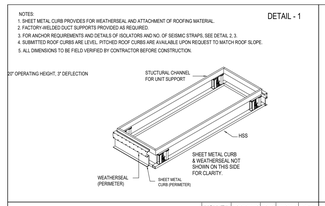
| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. VALENCIA, CALIFORNIA 91355 VIBREX TYPE VIC-EQ-SS | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| | CUSTOMER: | A: 1" TO 3" DEFLN (6-26-24) | DATE: 4-14-23 |
| | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -2A |
| | MARK: RTU-1, 8, 9 | D: | |

## 2 RTU-1, RTU-8,RTU-9 ROOF CURB DETAILS AND REQUIREMENTS

SCALE: NONE

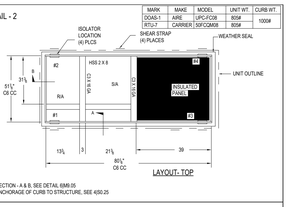
NOTES:
1. SHEET METAL CURB PROVIDES FOR WEATHERSEAL AND ATTACHMENT OF ROOFING MATERIAL.
2. FACTORY-WELDED DUCT SUPPORTS PROVIDED AS REQUIRED.
3. FOR ANCHOR REQUIREMENTS AND DETAILS OF ISOLATORS AND NO. OF SEISMIC STRAPS, SEE DETAIL 2, 3.
4. SUBMITTED ROOF CURBS ARE LEVEL. PITCHED ROOF CURBS ARE AVAILABLE UPON REQUEST TO MATCH ROOF SLOPE.
5. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.

DETAIL - 1



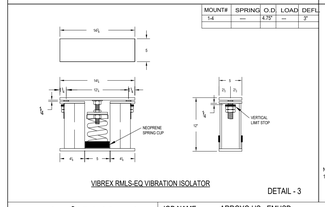

DETAIL - 2

| MARK | MAKE | MODEL | UNIT WT. | CURB WT. |
|---|---|---|---|---|
| DOAS-1 | AIRE | UPC-FC08 | 805lf | 1000lf |
| RTU-7 | CARRIER | 50FCQA036 | 805lf | |




NOTES:
1. FOR SECTION - A & B, SEE DETAIL 6/M9.05
2. FOR ANCHORAGE OF CURB TO STRUCTURE, SEE 4/SO.25

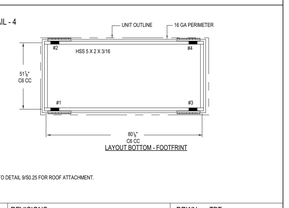
| MOUNT# | SPRING | O.D. | LOAD | DEFL |
|---|---|---|---|---|
| 1-4 | --- | 4.75" | --- | 3" |




VIBREX RMLS-EQ VIBRATION ISOLATOR

DETAIL - 3

DETAIL - 4




NOTES:
1. REFER TO DETAIL 9/SO.25 FOR ROOF ATTACHMENT.

| | | | |
|---|---|---|---|
| M.W. SAUSSE & CO., INC. VALENCIA, CALIFORNIA 91355 VIBREX TYPE VIC-EQ-SS | JOB NAME: ARROYO HS - EMUSD | REVISIONS | DRWN: TDT |
| | CUSTOMER: | A: 1" TO 3" DEFLN (6-26-24) | DATE: 4-14-23 |
| | CUST. PO: | B: | SHEET NO.: |
| | MECH. ENGR.: NDY | C: | -1A |
| | MARK: DOAS-1, RTU-7 | D: | |

## 1 DOAS-1, RTU-7 ROOF CURB DETAILS AND REQUIREMENTS

SCALE: NONE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
CHI KUEN CHAN
No. M35338
Exp. 6-30-27
MECHANICAL
STATE OF CALIFORNIA


GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T: 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# M9.06

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/30/2025 10:53:32 AM

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG WHEN PLOTTED AT FULL SIZE. IF IT IS NOT, THIS SHEET IS ORIGINAL PAPER SIZE

n. Bracing may be omitted for short runs of pipe if its tributary seismic load can be transferred to an adjacent run of pipe that is braced and can properly restrain the additional seismic loads.

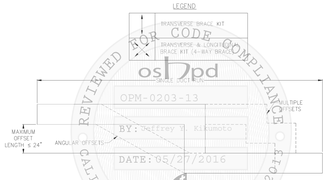
o. Splicing of the pipe may be achieved with the following methods:

i. UL Listed rigid grooved couplings for horizontal runs and flexible grooved couplings in vertical risers (to accommodate inter-story drift movement of the surrounding structure). Couplings must meet UL Standard 213. Non-listed couplings are not permitted.

ii. Welding of pipe must conform to the ASME B31 and AWS D1.1 standards.

**V. Duct Systems bracing distances and requirements:**

a. A run of duct is defined as a continuous straight length, or one with allowable offsets, that are less than 24". If the offset is 24" or greater, each straight segment shall be treated as an independent run and shall be braced. Refer to partial plan under item "f" on page 1.16.




Note: When a run of duct that requires bracing transitions down to a size that does not, the point of transition is considered the end of the run and will require a transverse brace. For an offset less than 24", this is still considered a single run of duct.

b. Each run of duct requires a minimum of two transverse bracing kits, one at each end of the run.

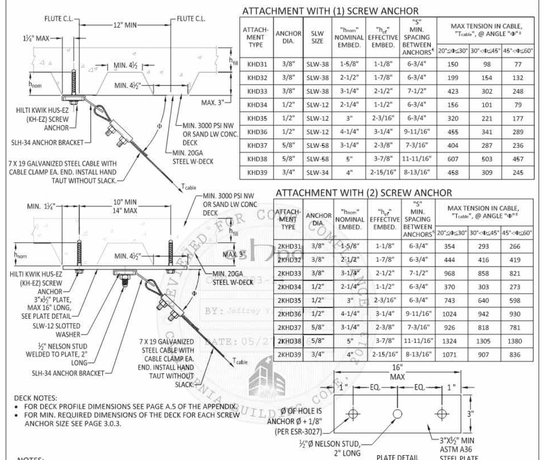





## 6 DUCT SYSTEMS BRACING DISTANCES AND REQUIREMENTS

SCALE: NONE

## HILTI KWIK HUS-EZ (KH-EZ) SCREW ANCHOR IN 3000 PSI NORMAL OR SAND LIGHT WEIGHT CONCRETE OVER MAX. 3" DEEP MIN. 20GA METAL DECK




ATTACHMENT WITH (1) SCREW ANCHOR

| ATTACH-MENT TYPE | ANCHOR DIA. | SLW SIZE | "$h_{nom}$" NOMINAL EMBED. | "$h_{ef}$" EFFECTIVE EMBED. | "S" MIN. SPACING BETWEEN ANCHORS" | MAX TENSION IN CABLE, "$T_{cable}$", @ ANGLE "$\Phi$" | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 20°≤Φ≤30° | 30°<Φ≤45° | 45°<Φ≤60° |
| KH031 | 3/8" | SLW-38 | 1-5/8" | 1-1/8" | 6-3/4" | 150 | 98 | 77 |
| KH032 | 3/8" | SLW-38 | 2-1/2" | 1-7/8" | 6-3/4" | 199 | 164 | 132 |
| KH033 | 3/8" | SLW-38 | 3-1/4" | 2-1/2" | 7-1/2" | 423 | 302 | 248 |
| KH034 | 1/2" | SLW-12 | 2-1/4" | 1-1/2" | 6-3/4" | 156 | 101 | 79 |
| KH035 | 1/2" | SLW-12 | 3" | 2-3/16" | 6-3/4" | 320 | 221 | 177 |
| KH036 | 1/2" | SLW-12 | 4-1/4" | 3-1/4" | 9-11/16" | 455 | 341 | 289 |
| KH037 | 5/8" | SLW-58 | 3-1/4" | 2-3/8" | 7-3/16" | 404 | 287 | 236 |
| KH038 | 5/8" | SLW-58 | 5" | 3-7/8" | 11-11/16" | 607 | 503 | 467 |
| KH039 | 3/4" | SLW-34 | 4" | 2-15/16" | 8-13/16" | 458 | 309 | 245 |

ATTACHMENT WITH (2) SCREW ANCHOR

| ATTACH-MENT TYPE | ANCHOR DIA. | "$h_{nom}$" NOMINAL EMBED. | "$h_{ef}$" EFFECTIVE EMBED. | "S" MIN. SPACING BETWEEN ANCHORS" | MAX TENSION IN CABLE, "$T_{cable}$", @ ANGLE "$\Phi$" | | |
|---|---|---|---|---|---|---|---|
| | | | | | 20°≤Φ≤30° | 30°<Φ≤45° | 45°<Φ≤60° |
| 2KH031 | 3/8" | 1-5/8" | 1-1/8" | 6-3/4" | 354 | 293 | 266 |
| 2KH032 | 3/8" | 2-1/2" | 1-7/8" | 6-3/4" | 444 | 416 | 419 |
| 2KH033 | 3/8" | 3-1/4" | 2-1/2" | 7-1/2" | 968 | 858 | 821 |
| 2KH034 | 1/2" | 2-1/4" | 1-1/2" | 6-3/4" | 370 | 303 | 273 |
| 2KH035 | 1/2" | 3" | 2-3/16" | 6-3/4" | 743 | 640 | 598 |
| 2KH036 | 1/2" | 4-1/4" | 3-1/4" | 9-11/16" | 1024 | 942 | 930 |
| 2KH037 | 5/8" | 3-1/4" | 2-3/8" | 7-3/16" | 926 | 818 | 781 |
| 2KH038 | 5/8" | 5" | 3-7/8" | 11-11/16" | 1324 | 1305 | 1380 |
| 2KH039 | 3/4" | 4" | 2-15/16" | 8-13/16" | 1071 | 907 | 836 |

DECK NOTES:
- FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 OF THE APPENDIX.
- FOR MIN. REQUIRED DIMENSIONS OF THE DECK FOR EACH SCREW ANCHOR SIZE SEE PAGE 3.0.3.

NOTES:
1. THE OVER STRENGTH FACTOR $\Omega_0$ =2.5 PER ASCE 7-10, TABLE 13.6-1 IS USED IN DETERMINING THE MAXIMUM DESIGN CABLE TENSION VALUES SHOWN. TO OBTAIN THE DESIGN LOAD ON THE ANCHORS MULTIPLY THE TABULATED VALUES BY 2.5..
2. INSTALL SCREW ANCHORS WITH SPECIAL INSPECTION PER THE ICC ESR-3027 (2015).
3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOAD CAPACITIES.
4. WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
5. WHEN CONCRETE ANCHORS ARE INSTALLED IN THE SOFFIT OF CONCRETE FILLED DECK, MINIMUM END DISTANCE AND SPACING REQUIREMENTS TABULATED ABOVE ARE ALONG THE FLUTE LENGTH.
6. HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIMENSION BY MORE THAT 1/8" PER ICC-ESR.
7. SEE PAGE 4.4 FOR SLH-34 DETAILS.
8. $\Phi$ = 90° – ANGLE OF CABLE "x" FROM SECTION 2 DETAILS. $\Phi$ MUST NOT BE LESS THAN 20° FOR CAPACITIES TO BE VALID.



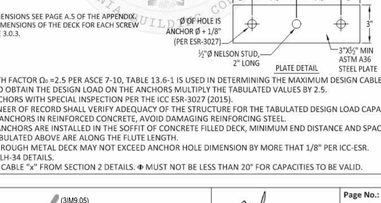
## 4 SCREW ANCHOR IN COMD

SCALE: NONE

## MINIMUM COMPOSITE DECK DIMENSIONS FOR POST-INSTALLED EXPANSION ANCHORS

| MAKE & MODEL | ANCHOR DIAMETER (in) | NOMINAL EMBED. "$h_{nom}$" (in) | EFFECTIVE EMBED. "$h_{ef}$" (in) | HOLE DEPTH "$h_o$" (in) | 3" DECK W/ 4½" WIDE FLUTES | | | 3" DECK W/ 3⅛" WIDE FLUTES | | | 1-1/2" DECK W/ 1⅛" WIDE FLUTES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | |
| | | | | | | TO LOWER FLUTE | TO UPPER FLUTE | | TO LOWER FLUTE | TO UPPER FLUTE | | TO LOWER FLUTE | TO UPPER FLUTE |
| HILTI KB-TZ (SEE NOTE BELOW) | 3/8 | 2-5/16 | 2 | 2-5/8 | 5/8 | 1-1/2 | 3-1/4 | 5/8 | 2-1/2 | 3-1/4 | 5/8 | 2-1/4 | 3-1/4 |
| | 1/2 | 2-3/8 | 2 | 2-5/8 | 5/8 | 1-1/2 | 3-1/4 | 5/8 | 2-1/2 | 3-1/4 | 5/8 | 2-1/4 | 3-1/4 |
| | 1/2 | 3-5/8 | 3-1/4 | 4 | 5/8 | 1-5/8 | 4-5/8 | 5/8 | 2-1/2 | 4-5/8 | 5/8 | 3-1/8 | 4-5/8 |
| | 5/8 | 3-9/16 | 3-1/8 | 3-3/4 | 5/8 | 1-1/2 | 4-3/8 | 5/8 | 2-1/2 | 4-3/8 | 5/8 | 2-7/8 | 4-3/8 |
| | 5/8 | 4-7/16 | 4 | 4-3/4 | 5/8 | 2-3/8 | 5-3/8 | 5/8 | 3-1/4 | 5-3/8 | 5/8 | | |
| | 3/4 | 4-5/16 | 3-3/4 | 4-1/2 | 5/8 | 2-1/8 | 5-1/8 | 5/8 | 3-1/4 | 5-1/8 | 5/8 | | |
| POWERS SD2 | 3/8 | 2-3/8 | 2 | 2-5/8 | 3/4 | 3-1/4 | 3-3/8 | 1 | 2-1/2 | 3-5/8 | 1 | 2-1/4 | 3-5/8 |
| | 1/2 | 2-1/2 | 2 | 2-3/4 | 3/4 | 3-1/4 | 3-1/2 | 1 | 2-1/2 | 3-3/4 | 1 | 2-1/4 | 3-3/4 |
| | 1/2 | 3-3/4 | 3-1/4 | 4 | 3/4 | 3-1/4 | 4-3/4 | 1 | 2-1/2 | 5 | | | |
| | 5/8 | 3-7/8 | 3-1/4 | 4-1/4 | 3/4 | 3-1/4 | 5 | | | | | | |
| | 5/8 | 4-7/8 | 4-1/4 | 4-3/4 | 3/4 | 3-1/4 | 5-1/2 | | | | | | |
| | 3/4 | 4-1/2 | 3-3/4 | 5 | 3/4 | 3-1/4 | 5-3/4 | | | | | | |
| SIMPSON STRONG-BOLT 2 | 3/8 | 2 | 1-5/8 | 2-1/8 | 1/2 | 1-1/2 | 2-5/8 | | | | | | |
| | 1/2 | 3-3/8 | 3 | 3-1/2 | 1/2 | 1-1/2 | 3 | | | | | | |
| | 1/2 | 2-3/4 | 2-1/4 | 3 | 1/2 | 1-1/2 | 3-1/2 | | | | | | |
| | 1/2 | 4-1/2 | 4 | 4-3/4 | 1/2 | 2-1/4 | | | | | | | |
| | 5/8 | 3-3/8 | 2-3/4 | 3-5/8 | 1/2 | 1-1/2 | | | | | | | |
| | 5/8 | 5-5/8 | 5 | 5-7/8 | 1/2 | 3-3/8 | | | | | | | |
| | 3/4 | 4-1/8 | 3-3/8 | 4-3/8 | 1/2 | 1-7/8 | | | | | | | |

NOTES:
1. FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 IN THE APPENDIX.(1JM9.07)
2. ANCHOR CENTERLINE OFFSETS FROM THE FLUTE CENTERLINE ARE SHOWN IN THE SPECIFIC DETAILS WITHIN SECTION 3.

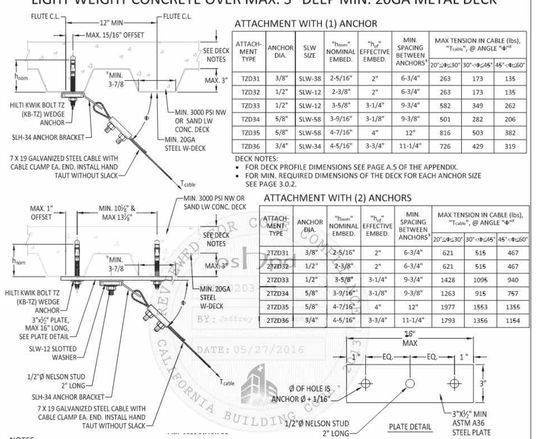





## 3 MINIMUM COMPOSITE DECK DIMENSIONS FOR POST-INSTALLED SCREW ANCHORS

SCALE: NONE

## HILTI KWIK BOLT TZ (KB-TZ) WEDGE ANCHOR IN 3000 PSI NORMAL OR SAND LIGHT WEIGHT CONCRETE OVER MAX. 3" DEEP MIN. 20GA METAL DECK




ATTACHMENT WITH (1) ANCHOR

| ATTACH-MENT TYPE | ANCHOR DIA. | SLW SIZE | "$h_{nom}$" NOMINAL EMBED. | "$h_{ef}$" EFFECTIVE EMBED. | MIN. SPACING BETWEEN ANCHORS" | MAX TENSION IN CABLE (lbs), "$T_{cable}$", @ ANGLE "$\Phi$" | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 20°≤Φ≤30° | 30°<Φ≤45° | 45°<Φ≤60° |
| TZD31 | 3/8" | SLW-38 | 2-5/16" | 2" | 6-3/4" | 263 | 173 | 135 |
| TZD32 | 1/2" | SLW-12 | 2-3/8" | 2" | 6-3/4" | 263 | 173 | 135 |
| TZD33 | 1/2" | SLW-12 | 3-5/8" | 3-1/4" | 9-3/4" | 582 | 349 | 262 |
| TZD34 | 5/8" | SLW-58 | 3-9/16" | 3-1/8" | 9-3/8" | 501 | 282 | 206 |
| TZD35 | 5/8" | SLW-58 | 4-7/16" | 4" | 12" | 816 | 503 | 382 |
| TZD36 | 3/4" | SLW-34 | 4-5/16" | 3-3/4" | 11-1/4" | 726 | 429 | 319 |

DECK NOTES:
- FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 OF THE APPENDIX.
- FOR MIN. REQUIRED DIMENSIONS OF THE DECK FOR EACH ANCHOR SIZE SEE PAGE 3.0.2.

ATTACHMENT WITH (2) ANCHORS

| ATTACH-MENT TYPE | ANCHOR DIA. | "$h_{nom}$" NOMINAL EMBED. | "$h_{ef}$" EFFECTIVE EMBED. | MIN. SPACING BETWEEN ANCHORS" | MAX TENSION IN CABLE (lbs), "$T_{cable}$", @ ANGLE "$\Phi$" | | |
|---|---|---|---|---|---|---|---|
| | | | | | 20°≤Φ≤30° | 30°<Φ≤45° | 45°<Φ≤60° |
| 2TZD31 | 3/8" | 2-5/16" | 2" | 6-3/4" | 621 | 515 | 467 |
| 2TZD32 | 1/2" | 2-3/8" | 2" | 6-3/4" | 621 | 515 | 467 |
| 2TZD33 | 1/2" | 3-5/8" | 3-1/4" | 9-3/4" | 1428 | 1095 | 940 |
| 2TZD34 | 5/8" | 3-9/16" | 3-1/8" | 9-3/8" | 1263 | 915 | 767 |
| 2TZD35 | 5/8" | 4-7/16" | 4" | 12" | 1977 | 1663 | 1356 |
| 2TZD36 | 3/4" | 4-5/16" | 3-3/4" | 11-1/4" | 1793 | 1356 | 1154 |

NOTES:
1. THE OVER STRENGTH FACTOR $\Omega_0$ = 2.5 PER ASCE 7-10, TABLE 13.6-1 IS USED IN DETERMINING THE MAXIMUM DESIGN CABLE TENSION VALUES SHOWN. TO OBTAIN THE DESIGN LOAD ON THE ANCHORS MULTIPLY THE TABULATED VALUES BY 2.5.
2. INSTALL WEDGE ANCHORS WITH SPECIAL INSPECTION PER THE ICC ESR-1917 (2015).
3. STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED DESIGN LOAD CAPACITIES.
4. WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
5. WHEN CONCRETE ANCHORS ARE INSTALLED IN THE SOFFIT OF CONCRETE FILLED DECK, MINIMUM END DISTANCE AND SPACING REQUIREMENTS TABULATED ABOVE ARE ALONG THE FLUTE LENGTH.
6. HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIMENSION BY MORE THAT 1/8" PER ICC-ESR.
7. SEE PAGE 4.4 FOR SLH-34 DETAILS.
8. $\Phi$ = 90° – ANGLE OF CABLE "x" FROM SECTION 2 DETAILS. $\Phi$ MUST NOT BE LESS THAN 20° FOR CAPACITIES TO BE VALID.
9. FOR THE ⅜" ANCHOR WITH 4-7/16" NOMINAL EMBEDMENT AND THE ½" ANCHOR, THE MIN. FLUTE WIDTH IS 4-1/2". SEE PAGE 3.0.2 FOR ALL MINIMUM REQUIRED DIMENSIONS OF THE DECK.



NOTE:
REFER TO STRUCT DETAIL 2B/S0.29 FOR ATTACHMENTS AND MAX LOADS IMPOSED TO STRUCTURE USING HILTI KB-TZ2 EXP ANCHORS

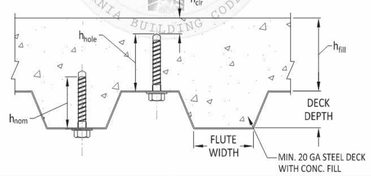
## 5 EXPANSION ANCHOR IN COMD

SCALE: NONE

## MINIMUM COMPOSITE DECK DIMENSIONS FOR POST-INSTALLED EXPANSION ANCHORS

| MAKE & MODEL | ANCHOR DIAMETER (in) | NOMINAL EMBED. "$h_{nom}$" (in) | EFFECTIVE EMBED. "$h_{ef}$" (in) | HOLE DEPTH "$h_o$" (in) | 3" DECK W/ 4½" WIDE FLUTES | | | 3" DECK W/ 3⅛" WIDE FLUTES | | | 1-1/2" DECK W/ 1⅛" WIDE FLUTES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | | CLEARANCE ABOVE HOLE "$h_{cla}$" (in) | MIN. FILL THICKNESS "$h_{fill}$" (in) | |
| | | | | | | TO LOWER FLUTE | TO UPPER FLUTE | | TO LOWER FLUTE | TO UPPER FLUTE | | TO LOWER FLUTE | TO UPPER FLUTE |
| HILTI KH-EZ | 3/8 | 1-5/8 | 1-1/8 | 1-7/8 | 1-1/4 | 3-1/4 | 3-1/4 | | | | | | |
| | 3/8 | 2-1/2 | 1-7/8 | 2-3/4 | 1-1/4 | 3-1/4 | 4 | | | | | | |
| | 3/8 | 3-1/4 | 2-1/2 | 3-1/2 | 1-1/4 | 3-1/4 | 4-3/4 | | | | | | |
| | 1/2 | 2-1/4 | 1-1/2 | 2-5/8 | 1-1/4 | 3-1/4 | 3-7/8 | | | | | | |
| | 1/2 | 3 | 2-3/16 | 3-3/8 | 1-1/4 | 3-1/4 | 4-5/8 | | | | | | |
| | 1/2 | 4-1/4 | 3-1/4 | 4-5/8 | 1-1/4 | 3-1/4 | 6-7/8 | | | | | | |
| | 5/8 | 3-1/4 | 2-3/8 | 3-5/8 | 1-1/4 | 3-1/4 | 4-7/8 | | | | | | |
| | 5/8 | 5 | 3-7/8 | 5-3/8 | 1-1/4 | 3-1/4 | 3-5/8 | | | | | | |
| | 3/4 | 4 | 2-15/16 | 4-3/8 | 1-1/4 | 3-1/4 | 5-5/8 | | | | | | |
| HILTI KH-EZ I (ROD HANGER) | 1/4 | 2-1/2 | 1-15/16 | 2-7/8 | 1-1/4 | 2-1/2 | 4-1/8 | 1-1/4 | 2-1/2 | 4-1/8 | | | |
| POWERS WEDGE-BOLT+ | 3/8 | 2-1/8 | 1-7/16 | 2-1/4 | 3/4 | 3-1/4 | 3-1/4 | | | | | | |
| | 1/2 | 2-1/2 | 1-11/16 | 2-3/4 | 3/4 | 3-1/4 | 3-1/2 | | | | | | |
| | 1/2 | 3-1/2 | 2-1/2 | 4 | 3/4 | 3-1/4 | 4-3/4 | | | | | | |
| | 5/8 | 3-1/4 | 2-3/16 | 4 | 3/4 | 3-1/4 | 4-3/4 | | | | | | |
| | 5/8 | 4-3/8 | 3-1/8 | 5 | 3/4 | 3-1/4 | 5-3/4 | | | | | | |
| POWERS VERTIGO+ (ROD HANGER) | 3/8 | 2-1/8 | 1-7/16 | 2-1/2 | 3/4 | 3-1/4 | 3-1/4 | | | | | | |
| SIMPSON TITEN HD | 3/8 | 1-7/8 | 1-1/4 | 2-1/8 | 3/4 | 1-1/2 | 3-1/4 | | | | | | |
| | 3/8 | 2-1/2 | 1-3/4 | 2-3/4 | 3/4 | 1-1/2 | | | | | | | |
| | 1/2 | 2 | 1-5/16 | 2-1/2 | 3/4 | 1-1/2 | 3-1/4 | | | | | | |
| | 1/2 | 3-1/2 | 2-9/16 | 4 | 3/4 | 1-3/4 | | | | | | | |
| SIMPSON TITEN HD (ROD HANGER) | 3/8 | 2-1/2 | 1-3/4 | 3 | 3/4 | 1-1/2 | | | | | | | |

NOTES:
1. FOR DECK PROFILE DIMENSIONS SEE PAGE A.5 IN THE APPENDIX. (1JM9.07)
2. ANCHOR CENTERLINE OFFSETS FROM THE FLUTE CENTERLINE ARE SHOWN IN THE SPECIFIC DETAILS WITHIN SECTION 3.

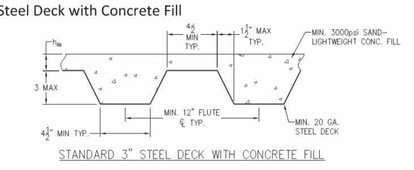




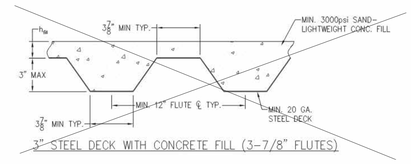

## 2 MINIMUM COMPOSITE DECK DIMENSIONS FOR POST-INSTALLED EXPANSION ANCHORS

SCALE: NONE

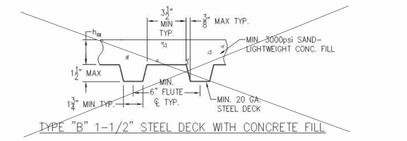
## Steel Deck with Concrete Fill




STANDARD 3" STEEL DECK WITH CONCRETE FILL




3" STEEL DECK WITH CONCRETE FILL (3–7/8" FLUTES)




TYPE "B" 1-1/2" STEEL DECK WITH CONCRETE FILL

Notes:
- The details above are typical for all concrete anchor bolts with ICC Evaluation Service Reports (ESR's) where applicable. See section 3 for deck profiles specific to each anchor (not all anchors are approved for TYPE "B" decking). Units are in inches.
- See pages 3.0.2 & 3.0.3 for minimum concrete fill thickness ($h_{fill}$) required for all applicable concrete anchors. (2JM9.07 AND 3JM9.07)



## 1 STEEL DECK DETAILS

SCALE: NONE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

REGISTERED PROFESSIONAL ENGINEER — CHI KUEN CHAN — No. M35338 Exp. 6-30-27 — MECHANICAL — STATE OF CALIFORNIA

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Project Manager: RM
Job. No.: 150-23US00121

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**MECHANICAL OPM DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

**M9.07**

PLEASE RECYCLE

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
8/30/2025 10:53:34 AM

THE LINE SHOWN ABOVE IS 1" LONG WHEN PRINTED AT THIS SHEET'S ORIGINAL PAPER SIZE

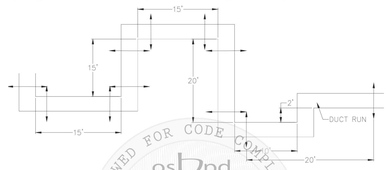
h. When duct crosses a building seismic separation or seismic joint it must be capable of accommodating the joint displacements as specified by the engineer of record.
i. A rigid duct shall not be braced to dissimilar parts of a building structure or two dissimilar building systems that may move different from one another during an earthquake. Bracing should be attached to the part of the building structure that is supporting the duct.
j. Transverse and longitudinal braces that project up to the structure above shall be installed as shown in this guideline up to 30°-70° from the vertical. However, the recommended brace angle range is equal to or greater than 45° & less than 60° from the vertical, or a 1:1 and up to but not including a 1:1.7 brace ratio which conforms to the **simplified design procedure.**
k. The seismic brace assemblies in this guideline consist of three important components; anchorage and connections to building structure including the A36 threaded rod with rod stiffeners as occurring, diagonal bracing members consisting of 7x19 cable, and seismic brace attachments. For details of cable brace assemblies see Section 2. For details and load information of structural attachments & spring hanger or rod attachments, see Section 3. The vertical hanger (A36 threaded rod) must be within 6" of the diagonal components to be considered part of the brace assembly.
l. Transverse bracing kit locations are required to be at or within 6 inches of a stiffened hanger rod to protect against vertical movement.
m. Steel bolt connections to structural steel members or components shall not have a diameter less than 1/16" than that of the mounting hole. Steel bolt connections to concrete structure shall not have a diameter less than 1/8" than that of the mounting hole.
n. Bracing may be omitted for short runs of duct if its tributary seismic load can be transferred to an adjacent run of duct that is braced and can properly restrain the additional seismic loads.
o. Wall penetrations may be considered transverse brace locations where duct is tightly blocked unless smoke dampers are installed in the wall, subject to approval by the SEOR.
p. Floor penetrations of vertical duct may be considered transverse and longitudinal brace locations where duct is tightly blocked, no smoke dampers are installed, and the distance from the floor penetration to the inside of the 90 degree turn horizontal is less than 2 feet.

REVIEWED FOR CODE COMPLIANCE
OSHPD
OPM-0203-13
CODE COMPLIANCE

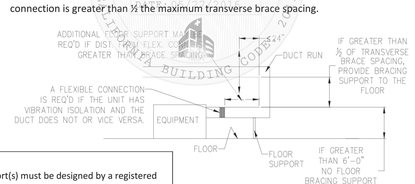


## 6 DUCT SYSTEMS BRACING DISTANCES AND REQUIREMENTS
SCALE: NONE

f. In some cases several short runs may occur in close proximity. By following the preceding guidelines, each run should have longitudinal and transverse bracing. Transverse bracing may be used as longitudinal bracing and vice versa on runs adjacent to each other as long as the total length of duct tributary to the brace does not exceed the maximum design spacing. In cases where it does, additional bracing kits are required.




g. At vertical pipe drop to equipment, where duct is connected to the equipment using a flexible connection, provide transverse bracing before the vertical drop. The total length from the transverse brace to the vertical drop should not be more than the design offset previously determined. Provide transverse bracing at the floor after the vertical drop if the total length of the duct from the transverse brace before the vertical drop to the flexible connection is greater than ½ the maximum transverse brace spacing.

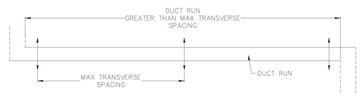



NOTE:
Floor support(s) must be designed by a registered Civil or Structural Engineer on a case by case basis to meet the existing or planned field conditions.



## 5 DUCT SYSTEMS BRACING DISTANCES AND REQUIREMENTS
SCALE: NONE

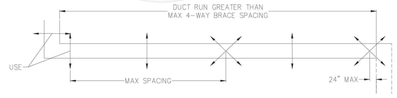
c. If the distance between the two transverse bracing kits exceeds the maximum allowable spacing, add lateral bracing kits as needed.




d. Each duct run must have at least one longitudinal bracing kit. If the maximum allowable longitudinal spacing is exceeded then add longitudinal bracing kits to meet the spacing requirement.




e. Each run of duct requires a minimum of one transverse & longitudinal (4-way ) bracing kit parallel to the run. However, a transverse bracing kit placed on the run section at the opposite side of an elbow or tee within 24" may act as a longitudinal bracing kit, and is labeled as "DUAL USE" bracing kit. See layout example below.
iii. Transverse "DUAL USE" bracing kits on a duct support shall be attached directly to the duct.
iv. Bracing installed to smaller duct shall not be used to brace larger duct.






## 4 DUCT SYSTEMS BRACING DISTANCES AND REQUIREMENTS
SCALE: NONE

### BRACING & HANGER/ROD ATTACHMENT DESIGNATION SELECTION FOR SHEET METAL DUCTWORK W/ INSULATION

CABLE BRACING ANGLE "x" AT 45° to 60° (1:1 to 1.7:1) SLOPE

| LINEAR DUCT WT. (PLF) | BRACING ATTACHMENT DESIGNATION BASED ON "g" VALUE OF Fp | | | | | | | | | | HANGER DESIGNATION ALL "g" VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | |
| 10 | B2 | B2 | B3 | B3 | B4 | B4 | B5 | B6 | B6 | B7 | B7 | H1/R1 |
| 20 | B2 | B3 | B4 | B4 | B6 | B7 | B7 | B7 | B7 | B7 | B7 | H1/R1 |
| 30 | B3 | B4 | B5 | B6 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | H1/R1 |
| 40 | B3 | B4 | B6 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | H1/R1 |
| 50 | B3 | B5 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R1 |
| 60 | B4 | B6 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R2 |
| 70 | B4 | B6 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R2 |
| 80 | B4 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R3 |
| 90 | B5 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R3 |
| 100 | B5 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | B7 | R4 |

| LINEAR DUCT WT. (PLF) | MAXIMUM TRANSVERSE BRACING SPACING IN FEET BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| 20 | 30 | 30 | 30 | 30 | 30 | 30 | 28.2 | 23.5 | 20.2 | 17.6 | 15.7 |
| 30 | 30 | 30 | 30 | 30 | 30 | 23.5 | 18.8 | 15.7 | 13.4 | 11.8 | 10.5 |
| 40 | 30 | 30 | 30 | 30 | 23.5 | 17.6 | 14.1 | 11.8 | 10.1 | 8.8 | 7.8 |
| 50 | 30 | 30 | 30 | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | 7.1 | 6.3 |
| 60 | 30 | 30 | 30 | 23.5 | 15.7 | 11.8 | 9.4 | 7.8 | 6.7 | 5.9 | 5.2 |
| 70 | 30 | 30 | 26.9 | 20.2 | 13.4 | 10.1 | 8.1 | 6.7 | 5.8 | 5.0 | 4.5 |
| 80 | 30 | 30 | 23.5 | 17.6 | 11.8 | 8.8 | 7.1 | 5.9 | 5.0 | 4.4 | 3.9 |
| 90 | 30 | 30 | 20.9 | 15.7 | 10.5 | 7.8 | 6.3 | 5.2 | 4.5 | 3.9 | n/a |
| 100 | 30 | 28.2 | 18.8 | 14.1 | 9.4 | 7.1 | 5.6 | 4.7 | 4.0 | n/a | n/a |

| LINEAR DUCT WT. (PLF) | MAXIMUM TRANSVERSE & LONGITUDINAL BRACING SPACING IN FEET BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| 20 | 60 | 60 | 60 | 60 | 60 | 60 | 56.4 | 47 | 40.3 | 35.3 | 31.4 |
| 30 | 60 | 60 | 60 | 60 | 60 | 47 | 37.6 | 31.4 | 26.9 | 23.5 | 20.9 |
| 40 | 60 | 60 | 60 | 60 | 47 | 35.3 | 28.2 | 23.5 | 20.2 | 17.6 | 15.7 |
| 50 | 60 | 60 | 60 | 56.4 | 37.6 | 28.2 | 22.6 | 18.8 | 16.1 | 14.1 | 12.5 |
| 60 | 60 | 60 | 60 | 47 | 31.4 | 23.5 | 18.8 | 15.7 | 13.4 | 11.8 | 10.5 |
| 70 | 60 | 60 | 53.8 | 40.3 | 26.9 | 20.2 | 16.1 | 13.4 | 11.5 | 10.1 | 9.0 |
| 80 | 60 | 60 | 47 | 35.3 | 23.5 | 17.6 | 14.1 | 11.8 | 10.1 | 8.8 | 7.8 |
| 90 | 60 | 60 | 41.8 | 31.4 | 20.9 | 15.7 | 12.5 | 10.5 | 9.0 | 7.8 | n/a |
| 100 | 60 | 56.4 | 37.6 | 28.2 | 18.8 | 14.1 | 11.3 | 9.4 | 8.1 | n/a | n/a |

NOTES:
1. SEE PAGES D.9 THRU D.12 FOR SELECTION OF SPECIFIC BRACING ATTACHMENT DETAILS BASED ON THE SPECIFIED BRACING ATTACHMENT DESIGNATION ABOVE.
2. SEE PAGES D.13 THRU D.16 FOR SELECTION OF SPECIFIC HANGER/ROD ATTACHMENT DETAILS BASED ON THE SPECIFIED HANGER/ROD ATTACHMENT DESIGNATION ABOVE.



## 3 BRACING & HANGER ROD ATTACH DESIGNATION SELECTION FOR SHEET METAL DUCT W/ INS
SCALE: NONE

### BRACING KIT DETAIL SELECTION ROUND SHEET METAL DUCTWORK W/ INSULATION

CABLE BRACING ANGLE "x" AT 45° to 60° (1:1 to 1.7:1) SLOPE

| LINEAR DUCT WT. (PLF) STD. SUPPORT SPACING 10'-0" O.C. | TRANSVERSE BRACING KIT DETAIL PAGE No. BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 | 2.51 | 2.51 | 2.51 |
| 20 | 2.49 | 2.49 | 2.49 | 2.49 | 2.49 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 30 | 2.49 | 2.49 | 2.49 | 2.49 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 | 2.51 |
| 40 | 2.53 | 2.53 | 2.53 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 50 | 2.53 | 2.53 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 60 | 2.53 | 2.53 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 | 2.55 |
| 70 | 2.57 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 |
| 80 | 2.57 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 |
| 90 | 2.57 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | n/a |
| 100 | 2.57 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | 2.59 | n/a | n/a |

| LINEAR DUCT WT. (PLF) STD. SUPPORT SPACING 10'-0" O.C. | TRANSVERSE & LONGITUDINAL BRACING KIT DETAIL PAGE No. BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.50 | 2.52 | 2.52 | 2.52 |
| 20 | 2.50 | 2.50 | 2.50 | 2.50 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 30 | 2.50 | 2.50 | 2.50 | 2.50 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| 40 | 2.54 | 2.54 | 2.54 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 50 | 2.54 | 2.54 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 60 | 2.54 | 2.54 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 |
| 70 | 2.58 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 |
| 80 | 2.58 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 |
| 90 | 2.58 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | n/a |
| 100 | 2.58 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | n/a | n/a |

NOTES:
1. BRACE SPACING MUST NOT EXCEED THE MAXIMUM BRACE SPACING SPECIFIED ON PAGE D.6.
2. SEE PAGE D.5 FOR BRACE AND HANGER/ROD ATTACHMENT DETAIL TABLES.
3. ▭ DENOTES CABLE KITS WITH ⅜₁₆"Ø CABLE.



## 2 BRACING KIT DETAIL SELECTION (ROUNDDUCT W/ INS)
SCALE: NONE

### BRACING KIT DETAIL SELECTION RECTANGULAR SHEET METAL DUCTWORK W/ INSULATION

CABLE BRACING ANGLE "x" AT 45° to 60° (1:1 to 1.7:1) SLOPE

| LINEAR DUCT WT. (PLF), SUPPORT SPACING 10'-0" O.C. | TRANSVERSE BRACING KIT DETAIL PAGE No. BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 | 2.39 | 2.39 | 2.39 | |
| 20 | 2.37 | 2.37 | 2.37 | 2.37 | 2.37 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 | |
| 30 | 2.37 | 2.37 | 2.37 | 2.37 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 | 2.39 | |
| 40 | 2.41 | 2.41 | 2.41 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | |
| 50 | 2.41 | 2.41 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | |
| 60 | 2.41 | 2.41 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | 2.43 | |
| 70 | 2.45 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | |
| 80 | 2.45 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | |
| 90 | 2.45 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | n/a | |
| 100 | 2.45 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | n/a | n/a | |

| LINEAR DUCT WT. (PLF), STD. SUPPORT SPACING 10'-0" O.C. | TRANSVERSE & LONGITUDINAL BRACING KIT DETAIL PAGE No. BASED ON "g" VALUE OF Fp | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.50 | 0.75 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| 10 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.40 | 2.40 | 2.40 | |
| 20 | 2.38 | 2.38 | 2.38 | 2.38 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | |
| 30 | 2.38 | 2.38 | 2.38 | 2.38 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | |
| 40 | 2.42 | 2.42 | 2.42 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | |
| 50 | 2.42 | 2.42 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | |
| 60 | 2.42 | 2.42 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | |
| 70 | 2.46 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | |
| 80 | 2.46 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | |
| 90 | 2.46 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | n/a | |
| 100 | 2.46 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | n/a | n/a | |

NOTES:
1. SUPPORT SPACING MUST NOT EXCEED THE MAXIMUM BRACE SPACING SPECIFIED ON PAGE D.6.
2. SEE PAGE D.6 FOR BRACE AND HANGER/ROD ATTACHMENT DETAIL TABLES.
3. ▭ DENOTES CABLE KITS WITH ⅜₁₆"Ø CABLE.



## 1 BRACING KIT DETAIL SELECTION (RECT DUCT W/ INS)
SCALE: NONE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER CHI KUEN CHAN No. M35338 Exp. 6-30-27 MECHANICAL STATE OF CALIFORNIA
GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
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T: 213.239.8806
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**MECHANICAL OPM DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

**M9.08**

Autodesk Docs://3361008100 EMI/SD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/20/2025 10:53:35 AM

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 1 of 29)

**Project Name:** Arroyo HS — **Date Prepared:** 2023-09-19

**A. General Information**

| | | | | | |
|---|---|---|---|---|---|
| 1 | Project Name | Arroyo HS | | | |
| 2 | Run Title | | | | |
| 3 | Project Location | 4921 Cedar Avenue | | | |
| 4 | City | El Monte | 5 | Standards Version | Compliance 2022 |
| 6 | Zip code | 91732 | 7 | Compliance Software (version) | CBECC 2022.3.0 (1302) |
| 8 | Climate Zone | 9 | 9 | Building Orientation (deg) | 270 |
| 10 | Building Type(s) | • Nonresidential | 11 | Weather File | HOLLYWOOD-BURBANK_STYP20.epw |
| 12 | Project Scope | • New complete scope | 13 | Number of Dwelling Units | 0 |
| 14 | Total Conditioned Floor Area in Scope (ft²) | 31713.3 | 15 | Total # of hotel/motel rooms | 0 |
| 16 | Total Unconditioned Floor Area (ft²) | 2922.27 | 17 | Fuel Type | Natural gas |
| 18 | Nonresidential Conditioned Floor Area | 31713.3 | 19 | Total # of Stories (Habitable Above Grade) | 1 |
| 20 | Residential Conditioned Floor Area | 0 | | | |



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 2 of 29)

**B. PROJECT SUMMARY**

*Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within the permit application.*

| Building Components Complying via Performance | | | | | | Building Components Complying Prescriptively | |
|---|---|---|---|---|---|---|---|
| Envelope (See Table G) | Nonres | Performance | Solar Thermal Water Heating (See Table I3) | ☐ | Performance | The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E). | |
| | MultiFam | Not Included | | ☒ | Not Included | | |
| Mechanical (See Table H) | Nonres | Performance | Covered Process: Commercial Kitchens (see Table J) | ☐ | Performance | Indoor Lighting (Unconditioned) 140.6 & 170.2(e) | NRCC-LTI-E is required |
| | MultiFam | Not Included | | ☒ | Not Included | Outdoor Lighting 140.7 & 170.2(e) | NRCC-LTO-E is required |
| Domestic Hot Water (See Table I) | Nonres | Performance | Covered Process: Laboratory Exhaust (see Table J) | ☐ | Performance | Sign Lighting 140.8 & 170.2(e) | NRCC-LTS-E is required |
| | MultiFam | Not Included | | ☒ | Not Included | **Building Components Complying with Mandatory Measures** | |
| Lighting (Indoor Conditioned, see Table K) | Nonres | Performance | Photovoltaics (see Table F) | ☒ | Performance | Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should be documented on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E.) | |
| | MultiFam | Not Included | | ☐ | Not Included | Electrical Power Distribution 110.11 | NRCC-ELC-E is required |
| | | | Battery (see Table F) | ☐ | Performance | Commissioning 120.8 | NRCC-CXR-E is required |
| | | | | ☒ | Not Included | Solar and Battery 110.10 | NRCC-SAB-E is required |



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 3 of 29)

**C1. COMPLIANCE SUMMARY**

**COMPLIES[1]**

| | Time Dependent Valuaton (TDV) | | Source Energy Use |
|---|---|---|---|
| | Efficiency[2] (kBtu/ft² - yr) | Total[2] (kBtu/ft² - yr) | Total[2] (kBtu/ft² - yr) |
| Standard Design | 276.2 | 249.07 | 19.19 |
| Proposed Design | 227.45 | 201.2 | 14.41 |
| **Compliance Margins** | **48.75** | **47.87** | **4.78** |
| | **Pass** | **Pass** | **Pass** |

*[1] Efficiency measures include improvements like a better building envelope and more efficient equipment*
*[2] Compliance Totals include efficiency, photovoltaics and batteries*
*[3] New Construction, Complete Addition Scope: Building complies when all efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded*
*Existing, Addition and Alteration Scope: Building complies when efficiency compliance margin is greater than or equal to zero and unmet load hour limits are not exceeded*



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 4 of 29)

**C2. TDV ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft² - yr)**

**COMPLIES[1]**

| Energy Component | Standard Design (TDV) | Proposed Design (TDV) | Compliance Margin (TDV)[1] |
|---|---|---|---|
| Space Heating | 11.21 | 24.88 | -13.67 |
| Space Cooling | 158.16 | 123.97 | 34.19 |
| Indoor Fans | 43.04 | 22.06 | 20.98 |
| Heat Rejection | 0 | 0 | 0 |
| Pumps & Misc. | 0.11 | 0 | 0.11 |
| Domestic Hot Water | 5.26 | 6.13 | -0.87 |
| Indoor Lighting | 58.42 | 50.41 | 8.01 |
| Flexibility | --- | --- | --- |
| **EFFICIENCY COMPLIANCE TOTAL** | **276.2** | **227.45** | **48.75 (17.7%)** |
| Photovoltaics | -27.13 | -26.25 | -0.88 |
| Batteries | --- | --- | --- |
| **TOTAL COMPLIANCE** | **249.07** | **201.2** | **47.87 (19.2%)** |

*[1] Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 5 of 29)

**C3. TDV ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]**

| Non-Regulated Energy Component | Standard Design (TDV) | Proposed Design (TDV) | Compliance Margin (TDV)[1] |
|---|---|---|---|
| Receptacle | 101.25 | 101.25 | --- |
| Process | --- | --- | --- |
| Other Ltg | 3.66 | 3.66 | --- |
| Process Motors | 0.98 | 0.98 | --- |
| **TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)** | **354.96** | **307.09** | **47.87 (13.5%)** |

*[1] Notes: This table is not used for Energy Code Compliance.*



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 6 of 29)

**C4. SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual SOURCE Energy Use, kBtu/ft² /yr)**

**COMPLIES[2]**

| Energy Component | Standard Design (SOURCE) | Proposed Design (SOURCE) | Compliance Margin (SOURCE)[1] |
|---|---|---|---|
| Space Heating | 3.72 | 2.49 | 1.23 |
| Space Cooling | 7.63 | 5.74 | 1.89 |
| Indoor Fans | 2.76 | 1.87 | 0.89 |
| Heat Rejection | 0 | 0 | 0 |
| Pumps & Misc. | 0.01 | 0 | 0.01 |
| Domestic Hot Water | 0.72 | 0.54 | 0.18 |
| Indoor Lighting | 5.37 | 4.71 | 0.66 |
| Flexibility | --- | --- | --- |
| **EFFICIENCY COMPLIANCE TOTAL** | **20.21** | **15.35** | **4.86 (24%)** |
| Photovoltaics | -1.02 | -0.94 | -0.08 |
| Batteries | --- | --- | --- |
| **TOTAL COMPLIANCE** | **19.19** | **14.41** | **4.78 (24.9%)** |

*[1] Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 7 of 29)

**C5. SOURCE ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]**

| Non-Regulated Energy Component | Standard Design (SOURCE) | Proposed Design (SOURCE) | Compliance Margin (SOURCE)[1] |
|---|---|---|---|
| Receptacle | 8.91 | 8.91 | --- |
| Process | --- | --- | --- |
| Other Ltg | 0.32 | 0.32 | --- |
| Process Motors | 0.09 | 0.09 | --- |
| **TOTAL ( TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)** | **28.51** | **23.73** | **4.78 (16.8%)** |

*[1] Notes: This table is not used for Energy Code Compliance.*

**C6. 'ABOVE CODE' QUALIFICATIONS**

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 8 of 29)

**C7. ENERGY USE SUMMARY**

| Energy Component | Standard Design Site (MWh) | Proposed Design Site (MWh) | Margin (MWh) | Standard Design Site (MBtu) | Proposed Design Site (MBtu) | Margin (MBtu) |
|---|---|---|---|---|---|---|
| Space Heating | 0 | 27.8 | -27.8 | 128.4 | --- | --- |
| Space Cooling | 137.9 | 102.6 | 35.3 | --- | --- | --- |
| Indoor Fans | 43 | 24.2 | 18.8 | --- | --- | --- |
| Heat Rejection | --- | --- | --- | --- | --- | --- |
| Pumps & Misc. | 0.1 | --- | --- | --- | --- | --- |
| Domestic Hot Water | 5.2 | 7.5 | -2.3 | 12.6 | --- | --- |
| Indoor Lighting | 64.6 | 55.5 | 9.1 | --- | --- | --- |
| Flexibility | --- | --- | --- | --- | --- | --- |
| **EFFICIENCY TOTAL** | **250.8** | **217.6** | **33.2** | **141** | **0** | **141** |
| Photovoltaics | -39.7 | -37.7 | -2 | --- | --- | --- |
| Batteries | --- | --- | --- | --- | --- | --- |
| **ENERGY USE SUBTOTAL** | **211.1** | **179.9** | **31.2** | **141** | **0** | **141** |
| Receptacle | 113.4 | 113.4 | 0 | --- | --- | --- |
| Process | --- | --- | --- | --- | --- | --- |
| Other Ltg | 4.1 | 4.1 | 0 | --- | --- | --- |
| Process Motors | 1.1 | 1.1 | 0 | --- | --- | --- |
| **ENERGY USE TOTAL** | **329.7** | **298.5** | **31.2** | **141** | **0** | **141** |



**CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD** — NRCC-PRF-E

**Nonresidential Performance Compliance Method** — (Page 9 of 29)

**C8. ENERGY USE INTENSITY (EUI)**

| | Standard Design (kBtu/ft² / yr) | Proposed Design (kBtu/ft² / yr) | Margin (kBtu/ft² / yr) | Margin Percentage |
|---|---|---|---|---|
| GROSS EUI[1] | 40.46 | 33.12 | 7.34 | 18.14 |
| NET EUI[1] | 36.55 | 29.41 | 7.14 | 19.53 |

*[1] Notes: Gross EUI is Energy Use Total (not including PV)/Total Building Area. Net EUI is Energy Use Total (including PV)/Total Building Area.*

**D1. EXCEPTIONAL CONDITIONS**

• The aged solar reflectance and aged thermal emittance must be listed in the Cool Roof Rating Council database of certified products. For projects where initial reflectance is used, the initial reflectance must be listed, and the aged reflectance is calculated by the software program and used in the compliance model.
• The project includes windows which have been classified as clerestory windows. Please verify that clerestories are present, and that daylighting controls are present for these areas. Clerestory windows do not trigger mandatory daylighting control requirements, and may allow users to claim PAF credit for daylighting controls in areas illuminated by clerestories..
• This project has spaces with higher ventilation rates than required because of other codes or accreditation standards being applied.

**F1. REQUIRED PV SYSTEMS**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DC System Size (kWdc) | Exception[1] | Module Type | Array Type | Power Electronics | CFI | Azimuth (deg) | Tilt Input | Array Angle (deg) | Tilt: (x in 12) | Inverter Eff. (%) | Annual Solar Access (%) |
| 23.3 | n/a | Standard (14-17%) | Fixed | none | false | 180 | Degrees | 10 | 2.12 | 96 | 98 |

*[1]See Table D1 for any PV exceptions used.*



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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL TITLE-24**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** — **A NO.: 03-123641**

DATE: **06/23/2025** — CLIENT PROJ NO: **3361008100**

SHEET:

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**F1B. PV BATTERY BUILDING TYPE(S)**

| 01 | 02 | 03 |
|---|---|---|
| Building Occupancy Type* (From Table 140.10-A/B and 170.2-U/V) | Conditioned Floor Area (ft²) | Unconditioned Floor Area (ft²) |
| Grocery | 0 | 0 |
| High-Rise Multifamily | 0 | 0 |
| Office, Financial Institutions, Unleased Tenant Space | 2719.71 | 0 |
| Retail | 818.132 | 0 |
| School | 0 | 0 |
| Warehouse | 576.254 | 2123.85 |
| Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater | 27599.2 | 798.416 |
| None | 0 | 0 |

** Building Occupancy Types are defined in Section 100.1 of the Energy Code*

**G1. ENVELOPE GENERAL INFORMATION (conditioned spaces only)**

| 01 | 02 | 03 | 04 |
|---|---|---|---|
| Opaque Surfaces & Orientation | Total Gross Surface Area (ft²) | Total Fenestration Area (ft²) | Window to Wall Ratio (%) |
| North-Facing[1] | 7044.13 | 558.9 | 7.93 |
| East-Facing[2] | 7521.87 | 962.42 | 12.79 |
| South-Facing[3] | 5377.22 | 1028.95 | 19.14 |
| West-Facing[4] | 7376.9 | 1175.73 | 15.94 |
| **Total** | **27320.1** | **3726** | **13.64** |
| Roof | 31713.1 | 0 | 0 |

*Notes*
*[1]North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW),*
*[2]East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE),*
*[3]South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE),*
*[4]West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW).*





**G2A. ROOFING PRODUCT SUMMARY (NONRESIDENTIAL)**

| 01 | 02 | 03 | 04 | 05 | 06 |
|---|---|---|---|---|---|
| Assembly Name | Roof Pitch | Roof Rise (x in 12) | Aged Solar Reflectance | Thermal Emittance | SRI |
| Arroyo HS 4in LW concrete with R-24 U0.038 | LowSlope | N/A | 0.63 | 0.85 | N/A |

**G4. NONRESIDENTIAL AIR BARRIER**

| 01 | 02 |
|---|---|
| Building Story Name | Air Barrier |
| 2 LEVEL 1 | No air barrier |





**G5. OPAQUE SURFACE ASSEMBLY SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | | 07 | 08 | 09 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Surface Name | Construction Type | Area (ft²) | Framing Type | Cavity R-Value | Continuous R-Value | | Units | Value | Description of Assembly Layers | Status[1] |
| | | | | | Interior | Exterior | | | | |
| Arroyo HS 4in LW concrete with R-24 U0.038 | Roof | 34,635.4 | N/A | 0 | N/A | 24 | U-factor | 0.0378 | Compliance Insulation R24.00<br>Metal Deck - 1/16 in.<br>Concrete - 80 lb/ft3 - 4 in.<br>Gypsum Board - 5/8 in. | N |
| Arroyo HS Slab on grade | Underground Floor | 34,635.6 | N/A | 0 | N/A | N/A | F-factor | 0.73 | Slab Type =Unheated slab on grade<br>Insulation Orientation =None<br>Insulation R-Value =none | N |
| Arroyo HS 6in Exterior wall U0.087 | Exterior Wall | 28,402.5 | Metal | 19 | N/A | 5.56 | U-factor | 0.0873 | Gypsum Board - 5/8 in.<br>Expanded perlite - organic bonded - 2 in.<br>R5.6<br>6in Exterior wall Steel framing with R19<br>Gypsum Board - 5/8 in. | N |
| Arroyo HS 4in Interior Wall U0.140 | Interior Wall | 52,538.2 | Metal | 15 | N/A | 1.35 | U-factor | 0.1423 | Gypsum Board - 5/8 in.<br>4 in Metal Stud Interior Wall<br>Compliance Insulation R1.35<br>Gypsum Board - 5/8 in. | N |

*[1] Status: N - New, A - Altered, E - Existing*





**G7A. FENESTRATION ASSEMBLY SUMMARY (NONRESIDENTIAL)**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|---|---|---|---|---|---|---|---|---|
| Fenestration Assembly Name | Fenestration Type/ Product Type / Frame Type | Certification Method[1] | Assembly Method | Area (ft²) | Overall U-factor | Overall SHGC | Overall VT | Status[2] |
| Arroyo Glazing U0.450 | Vertical fenestration<br>Fixed window<br>N/A | NFRC | Manufactured | 3,726 | 0.45 | 0.23 | 0.6 | N |

*[1] Notes: Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.*
*[2] Status: N - New, A - Altered, E - Existing*

**H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Heating | | | | Cooling | | | | |
| Equipment Name | Equipment Type | Qty | Total Heating Output (kBtu/h) | Supp Heat Output (kBtu/h) | Efficiency Unit | Efficiency | Total Cooling Output (kBtu/h) | Efficiency Unit | Efficiency | Economizer Type (if present) | Status[1] |
| RTU-1 | Package SZ VAV Heat Pump Air System | 1 | 274 | 0 | COP | 3.3 | 278 | EER | 9.8 | Fixed DB | N |
| RTU-3 | Package SZ VAV Heat Pump Air System | 1 | 56.5 | 0 | COP<br>HSPF | 3.2<br>8 | 60 | EER<br>SEER | 11.8<br>14.3 | Fixed DB | N |
| RTU-4 | Package SZ VAV Heat Pump Air System | 1 | 56.5 | 0 | COP<br>HSPF | 3.2<br>8 | 60 | EER<br>SEER | 11.8<br>14.3 | Fixed DB | N |

*[1] Status: N - New, A - Altered, E - Existing*





**H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Heating | | | | Cooling | | | | |
| Equipment Name | Equipment Type | Qty | Total Heating Output (kBtu/h) | Supp Heat Output (kBtu/h) | Efficiency Unit | Efficiency | Total Cooling Output (kBtu/h) | Efficiency Unit | Efficiency | Economizer Type (if present) | Status[1] |
| RTU-5 & 6 | Package SZ VAV Heat Pump Air System | 1 | 166 | 0 | COP | 3.4 | 172 | EER | 11.2 | Fixed DB | N |
| RTU-7 | Package SZ VAV Heat Pump Air System | 1 | 83 | 0 | COP | 3.4 | 86 | EER | 11.2 | Fixed DB | N |
| RTU-8 & 9 | Package SZ VAV Heat Pump Air System | 1 | 468 | 0 | COP | 3.3 | 480 | EER | 9.8 | Fixed DB | N |
| RTU-10 | Package SZ VAV Heat Pump Air System | 1 | 234 | 0 | COP | 3.3 | 240 | EER | 9.8 | Fixed DB | N |
| DOAS | DOAS VAV Air System | 1 | 235.2 | 0 | COP | 3.3 | 224 | EER | 10.6 | No Economizer | N |
| FC 2 HP | Single Zone Heat Pump | 1 | 6.53 | 0 | COP<br>HSPF | 3.4<br>8.8 | 9.5 | EER<br>SEER | 13<br>20.1 | N/A | N |
| FC 5 HP | Single Zone Heat Pump | 1 | 7.49 | 0 | COP<br>HSPF | 3.4<br>8.8 | 7.14 | EER<br>SEER | 13<br>20.8 | N/A | N |
| FC 12 HP | Single Zone Heat Pump | 1 | 8.43 | 0 | COP<br>HSPF | 3.4<br>8.8 | 8.03 | EER<br>SEER | 13<br>20.8 | N/A | N |
| HIU 03-01 Split system | Single Zone Heat Pump | 1 | 3.86 | 0 | COP<br>HSPF | 3.4<br>8.8 | 3.67 | EER<br>SEER | 13<br>20.8 | N/A | N |
| HIU 03-03 Split system | Single Zone Heat Pump | 1 | 11.68 | 0 | COP<br>HSPF | 3.4<br>8.8 | 11.13 | EER<br>SEER | 13<br>20.8 | N/A | N |

*[1] Status: N - New, A - Altered, E - Existing*





**H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Heating | | | | Cooling | | | | |
| Equipment Name | Equipment Type | Qty | Total Heating Output (kBtu/h) | Supp Heat Output (kBtu/h) | Efficiency Unit | Efficiency | Total Cooling Output (kBtu/h) | Efficiency Unit | Efficiency | Economizer Type (if present) | Status[1] |
| HIU 03-02 Split system | Single Zone Heat Pump | 1 | 3.81 | 0 | COP<br>HSPF | 3.4<br>8.8 | 3.63 | EER<br>SEER | 13<br>20.8 | N/A | N |
| HIU 01-01& 03-04 Split system | Single Zone Heat Pump | 2 | 5.04 | 0 | COP<br>HSPF | 3.4<br>8.8 | 4.8 | EER<br>SEER | 13<br>25.2 | N/A | N |
| IU 01-04 Split system | Single Zone Heat Pump | 1 | 5.77 | 0 | COP<br>HSPF | 3.4<br>8.8 | 5.49 | EER<br>SEER | 13<br>25.2 | N/A | N |
| IU 01-08&09 Split system | Single Zone Heat Pump | 2 | 11.36 | 0 | COP<br>HSPF | 3.4<br>8.8 | 10.82 | EER<br>SEER | 13<br>25.2 | N/A | N |
| FC 9 HP | Single Zone Heat Pump | 1 | 23.8 | 0 | COP<br>HSPF | 3.4<br>8.8 | 22.66 | EER<br>SEER | 13<br>20.8 | N/A | N |
| FC 6 HP | Single Zone Heat Pump | 1 | 26.08 | 0 | COP<br>HSPF | 3.4<br>8.8 | 24.84 | EER<br>SEER | 13<br>20.8 | N/A | N |
| FC 1 HP | Single Zone Heat Pump | 1 | 15.3 | 0 | COP<br>HSPF | 3.4<br>8.8 | 14.58 | EER<br>SEER | 13<br>20.1 | N/A | N |
| FC 3 HP | Single Zone Heat Pump | 1 | 11.64 | 0 | COP<br>HSPF | 3.4<br>8.8 | 11.09 | EER<br>SEER | 13<br>20.8 | N/A | N |
| FC 7 HP | Single Zone Heat Pump | 1 | 17.87 | 0 | COP<br>HSPF | 3.4<br>8.8 | 17.02 | EER<br>SEER | 13<br>20.1 | N/A | N |
| FC 8 HP | Single Zone Heat Pump | 1 | 18.28 | 0 | COP<br>HSPF | 3.4<br>8.8 | 17.41 | EER<br>SEER | 13<br>20.8 | N/A | N |
| FC 11 HP | Single Zone Heat Pump | 1 | 5.28 | 0 | COP<br>HSPF | 3.4<br>8.8 | 5.03 | EER<br>SEER | 13<br>20.8 | N/A | N |

*[1] Status: N - New, A - Altered, E - Existing*





**H1. DRY SYSTEM EQUIPMENT (FURNACES, AIR HANDLING UNITS, HEAT PUMPS, VRF, ECONOMIZERS ETC.)**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Heating | | | | Cooling | | | | |
| Equipment Name | Equipment Type | Qty | Total Heating Output (kBtu/h) | Supp Heat Output (kBtu/h) | Efficiency Unit | Efficiency | Total Cooling Output (kBtu/h) | Efficiency Unit | Efficiency | Economizer Type (if present) | Status[1] |
| IU 01-05 Split system | Single Zone Heat Pump | 1 | 4.39 | 0 | COP<br>HSPF | 3.4<br>8.8 | 4.18 | EER<br>SEER | 13<br>25.2 | N/A | N |
| IU 01-07 Split system | Single Zone Heat Pump | 1 | 9.88 | 0 | COP<br>HSPF | 3.4<br>8.8 | 9.41 | EER<br>SEER | 13<br>25.2 | N/A | N |
| IU 01-10 Split system | Single Zone Heat Pump | 1 | 3.02 | 0 | COP<br>HSPF | 3.4<br>8.8 | 2.88 | EER<br>SEER | 13<br>25.2 | N/A | N |
| FC 4 HP | Single Zone Heat Pump | 1 | 58.5 | 0 | COP<br>HSPF | 3.4<br>8.8 | 55.72 | EER<br>SEER | 13<br>20.1 | N/A | N |
| FC 10 HP | Single Zone Heat Pump | 1 | 35.98 | 0 | COP<br>HSPF | 3.4<br>8.8 | 34.27 | EER<br>SEER | 13<br>22.4 | N/A | N |
| IU 01-06 Split system | Single Zone Heat Pump | 1 | 5.14 | 0 | COP<br>HSPF | 3.4<br>8.8 | 4.89 | EER<br>SEER | 13<br>25.2 | N/A | N |

*[1] Status: N - New, A - Altered, E - Existing*





**H3. NONRESIDENTIAL / COMMON USE AREA FAN SYSTEMS SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Supply Fan | | | | Return / Relief Fan | | | | | |
| Name or Item Tag | Qty | Design OA CFM | CFM | Power | Power Units | Control | Fan Type | CFM | Power | Power Units | Control | Status[1] |
| RTU-1 | 1 | 3793.77 | 12,500 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-3 | 1 | 204.53 | 2,500 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-4 | 1 | 492.25 | 2,500 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-5 & 6 | 1 | 3456.4 | 7,500 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-7 | 1 | 1859.47 | 3,750 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-8 & 9 | 1 | 1919.08 | 20,000 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| RTU-10 | 1 | 3778.62 | 10,000 | 2.1 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| DOAS | 1 | 2214.28 | 7,467 | 3.5 | InH2O | VSD | N/A | N/A | N/A | N/A | N/A | N |
| FC 2 HP | 1 | 0 | 207.4 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 5 HP | 1 | 0 | 237.9 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 12 HP | 1 | 0 | 267.69 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| HIU 03-01 Split system | 1 | 0 | 122.46 | 0.22 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| HIU 03-03 Split system | 1 | 0 | 370.87 | 0.22 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| HIU 03-02 Split system | 1 | 0 | 120.87 | 0.23 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| HIU 01-01& 03-04 Split system | 2 | 0 | 159.98 | 0.22 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-04 Split system | 1 | 27.47 | 183.13 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-08&09 Split system | 2 | 180.32 | 360.64 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 9 HP | 1 | 0 | 755.5 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 6 HP | 1 | 0 | 827.93 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 1 HP | 1 | 0 | 485.87 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 3 HP | 1 | 0 | 369.58 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 7 HP | 1 | 0 | 567.34 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |

*[1] Status: N - New, A - Altered, E - Existing*





**H3. NONRESIDENTIAL / COMMON USE AREA FAN SYSTEMS SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Supply Fan | | | | Return / Relief Fan | | | | | |
| Name or Item Tag | Qty | Design OA CFM | CFM | Power | Power Units | Control | Fan Type | CFM | Power | Power Units | Control | Status[1] |
| FC 8 HP | 1 | 0 | 580.25 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 11 HP | 1 | 0 | 167.67 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-05 Split system | 1 | 20.9 | 139.31 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-07 Split system | 1 | 47.07 | 313.79 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-10 Split system | 1 | 14.38 | 95.9 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 4 HP | 1 | 0 | 1,857.28 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| FC 10 HP | 1 | 0 | 1,142.38 | 0.45 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |
| IU 01-06 Split system | 1 | 0 | 163.04 | 0.22 | W/cfm | Constant Vol | N/A | N/A | N/A | N/A | N/A | N |

*[1] Status: N - New, A - Altered, E - Existing*

**H5. GENERAL EXHAUST FAN SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|---|---|---|---|---|---|---|---|
| System ID | Zone Name | Qty | CFM | Power | Power Units | Continuous Operation? | Status[1] |
| Exhaust system | L01PRNT01<br>L01TOIL01<br>L01TOIL02<br>L01TOIL03<br>L01TOIL04<br>L01TOIL05 | 1 | 1056 | 1 | InH2O | No | N |

*[1] Status: N - New, A - Altered, E - Existing*



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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL TITLE-24**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

**M10.02**

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**H8. SYSTEM SPECIAL FEATURES**

| 01 | 02 | 03 | 04 |
|---|---|---|---|
| System Name | Equipment Type | Interlocks per 140.4(n)[1] | Other Special Features and Controls |
| RTU-1 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| RTU-3 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| RTU-4 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| RTU-5 & 6 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| RTU-7 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| RTU-8 & 9 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |

*Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.*

*[1] Yes = interlocks are provided, No = interlocks are not provided, NA means no operable openings.*





**H8. SYSTEM SPECIAL FEATURES**

| 01 | 02 | 03 | 04 |
|---|---|---|---|
| System Name | Equipment Type | Interlocks per 140.4(n)[1] | Other Special Features and Controls |
| RTU-10 | Package SZ VAV Heat Pump Air System | N/A | DDC Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start<br>Fixed DB |
| DOAS | DOAS VAV Air System | N/A | DDC Controls<br>Single Maximum Reheat Controls<br>Zone(s) With CO2 Sensor Vent. Control<br>Optimum Start |
| DHW | Service Hot Water | N/A | Fixed Temperature Control |

*Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.*

*[1] Yes = interlocks are provided, No = interlocks are not provided, NA means no operable openings.*

**H9. NONRESIDENTIAL / COMMON USE AREA & HOTEL/MOTEL VENTILATION**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|---|---|---|---|---|---|---|
| Zone Name | Mechanical Ventilation | | | | Conditioned Area (sf) | DCV or Occupant Sensor Controls, or Both |
| | Ventilation Function | # of People | Supply OA CFM | Exhaust CFM | | |
| Zn L01AUDI01 RTU 10 | Assembly - Auditorium seating area | 252.25 | 3778.62 | 0 | 3531.42 | DCV |
| Zn L01AUDI02 RTU 7 | Assembly - Auditorium seating area | 124.13 | 1859.47 | 0 | 1737.82 | DCV |
| Zn L01AUDI03 RTU 5 & 6 | Assembly - Auditorium seating area General - Corridors | 222.72 | 3456.4 | 0 | 4605.71 | DCV |
| L01CONF01 | General - Conference/meeting | 6.91 | 103.7 | 0 | 207.4 | DCV |
| L01CONF02 | General - Conference/meeting | 7.93 | 118.95 | 0 | 237.9 | DCV |





**H9. NONRESIDENTIAL / COMMON USE AREA & HOTEL/MOTEL VENTILATION**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|---|---|---|---|---|---|---|
| Zone Name | Mechanical Ventilation | | | | Conditioned Area (sf) | DCV or Occupant Sensor Controls, or Both |
| | Ventilation Function | # of People | Supply OA CFM | Exhaust CFM | | |
| L01CONF03 | General - Conference/meeting | 8.92 | 133.85 | 0 | 267.69 | DCV |
| Zn L01CONF04 RTU 4 | General - Conference/meeting | 32.82 | 492.25 | 0 | 984.5 | DCV |
| L01ELEC01 No Occ per CBC ventilation | Misc - Telephone closets | 0.18 | 0 | 0 | 122.46 | N/A |
| L01ELEC02 No Occ per CBC ventilation | Misc - Telephone closets | 0.56 | 0 | 0 | 370.87 | N/A |
| L01DFF01 No Occ per CBC ventilation | Misc - Telephone closets | 0.18 | 0 | 0 | 120.87 | N/A |
| L01DFF03 No Occ per CBC ventilation | Misc - Telephone closets | 0.48 | 0 | 0 | 319.96 | N/A |
| L01LIBR01 | Assembly - Libraries (reading rooms and stack areas) | 1.83 | 27.47 | 0 | 183.13 | N/A |
| Zn L01LOBB01 RTU 1 | Assembly - Auditorium seating area Office - Main entry lobbies | 253.16 | 3793.77 | 0 | 4749.82 | DCV |
| L01DRESS02 | General - Break rooms | 24.04 | 360.64 | 0 | 721.27 | N/A |
| L01NURS01 | Misc - All others | 3.78 | 113.32 | 0 | 755.5 | N/A |
| L01PRNT01 | General - Break rooms Exhaust - Copy, printing rooms Misc - Warehouses | 12.09 | 185.64 | 156.49 | 827.93 | DCV |
| L01PVOF01 | Office - Office space | 2.43 | 72.88 | 0 | 485.87 | N/A |
| L01PVOF02 | Office - Office space | 1.85 | 55.44 | 0 | 369.58 | N/A |
| L01PVOF03 | Office - Office space | 2.84 | 85.1 | 0 | 567.34 | N/A |
| L01PVOF04 | Office - Office space | 2.9 | 87.04 | 0 | 580.25 | N/A |





**H9. NONRESIDENTIAL / COMMON USE AREA & HOTEL/MOTEL VENTILATION**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|---|---|---|---|---|---|---|
| Zone Name | Mechanical Ventilation | | | | Conditioned Area (sf) | DCV or Occupant Sensor Controls, or Both |
| | Ventilation Function | # of People | Supply OA CFM | Exhaust CFM | | |
| L01PVOF05 | Office - Office space | 0.84 | 25.15 | 0 | 167.67 | N/A |
| L01PVOF06 | Office - Office space | 0.7 | 20.9 | 0 | 139.31 | N/A |
| L01PVOF07 | Office - Office space | 1.57 | 47.07 | 0 | 313.79 | N/A |
| L01PVOF08 | Office - Office space | 0.48 | 14.38 | 0 | 95.9 | N/A |
| L01RECP01 | General - Corridors Office - Main entry lobbies Misc - Warehouses | 39.5 | 662.02 | 0 | 1857.28 | DCV |
| L01RECP02 | Office - Main entry lobbies | 38.08 | 571.19 | 0 | 1142.38 | DCV |
| Zn L01RETL01 RTU 3 | Retail - Sales | 6.82 | 204.53 | 0 | 818.13 | DCV |
| Zn L01STAG01 RTU-8 & 9 | Sports/Entertainment - Stages, studios | 274.16 | 1919.08 | 0 | 3838.16 | DCV |
| L01STOR04 No Occ per CBC ventilation | Misc - Warehouses | 0.16 | 0 | 0 | 163.04 | N/A |
| L01TOIL01 | Exhaust - Toilets, public | 1.46 | 0 | 100 | 291.27 | N/A |
| L01TOIL02 | Exhaust - Toilets, public | 0.34 | 0 | 100 | 68.12 | N/A |
| L01TOIL03 | Exhaust - Toilets, public | 4.73 | 0 | 600 | 946.57 | N/A |
| L01TOIL04 | Exhaust - Toilets, public | 0.32 | 0 | 50 | 64.42 | N/A |
| L01TOIL05 | Exhaust - Toilets, public | 0.3 | 0 | 50 | 59.94 | N/A |





**H11. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| System ID | System Type | Qty | Rated Capacity (kBtuh) | | Airflow (cfm) | | | Fan | | | VSD |
| | | | Heating | Cooling | Design | Min. | Min. Ratio | Power | Power Units | Cycles | |
| RTU-1 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 4,749.82 | 1,804.93 | 0.38 | N/A | N/A | N/A | ☐ |
| RTU-3 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 818.13 | 267.69 | 0.33 | N/A | N/A | N/A | ☐ |
| RTU-4 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 984.5 | 387.5 | 0.39 | N/A | N/A | N/A | ☐ |
| RTU-5&6 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 4,605.71 | 2,828.52 | 0.61 | N/A | N/A | N/A | ☐ |
| RTU-7 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 1,737.82 | 861.96 | 0.5 | N/A | N/A | N/A | ☐ |
| RTU-8 & 9 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 3,838.16 | 736.54 | 0.19 | N/A | N/A | N/A | ☐ |
| RTU-10 TerminalUnit | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 3,531.42 | 1,334.88 | 0.38 | N/A | N/A | N/A | ☐ |
| FC 2 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 104 | 31 | 0.3 | N/A | N/A | N/A | ☐ |
| FC 5 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 119 | 36 | 0.3 | N/A | N/A | N/A | ☐ |
| FC 12 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 134 | 40.2 | 0.3 | N/A | N/A | N/A | ☐ |
| FC 9 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 113 | 113 | 1 | N/A | N/A | N/A | ☐ |
| FC 6 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 186 | 124.2 | 0.67 | N/A | N/A | N/A | ☐ |
| FC 1 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 73 | 73 | 1 | N/A | N/A | N/A | ☐ |





**H11. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| System ID | System Type | Qty | Rated Capacity (kBtuh) | | Airflow (cfm) | | | Fan | | | VSD |
| | | | Heating | Cooling | Design | Min. | Min. Ratio | Power | Power Units | Cycles | |
| FC 3 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 55 | 55 | 1 | N/A | N/A | N/A | ☐ |
| FC 7 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 85 | 85 | 1 | N/A | N/A | N/A | ☐ |
| FC 8 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 87 | 87 | 1 | N/A | N/A | N/A | ☐ |
| FC 11 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 25 | 25 | 1 | N/A | N/A | N/A | ☐ |
| FC 4 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 662 | 279 | 0.42 | N/A | N/A | N/A | ☐ |
| FC 10 | Variable Air Volume No Reheat Box | 1 | N/A | N/A | 571 | 171.3 | 0.3 | N/A | N/A | N/A | ☐ |
| FC 2 HP | Single Zone Heat Pump | 1 | 6.53 | 9.5 | 207.4 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 5 HP | Single Zone Heat Pump | 1 | 7.49 | 7.14 | 237.9 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 12 HP | Single Zone Heat Pump | 1 | 8.43 | 8.03 | 267.69 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| HIU 03-01 Split system | Single Zone Heat Pump | 1 | 3.86 | 3.67 | 122.46 | N/A | N/A | 0.22 | W/cfm | Cycling | ☐ |
| HIU 03-03 Split system | Single Zone Heat Pump | 1 | 11.68 | 11.13 | 370.87 | N/A | N/A | 0.22 | W/cfm | Cycling | ☐ |
| HIU 03-02 Split system | Single Zone Heat Pump | 1 | 3.81 | 3.63 | 120.87 | N/A | N/A | 0.23 | W/cfm | Cycling | ☐ |
| HIU 01-01& 03-04 Split system | Single Zone Heat Pump | 2 | 5.04 | 4.8 | 159.98 | N/A | N/A | 0.22 | W/cfm | Cycling | ☐ |
| IU 01-04 Split system | Single Zone Heat Pump | 1 | 5.77 | 5.49 | 183.13 | N/A | N/A | 0.45 | W/cfm | Continuous | ☐ |
| IU 01-08&09 Split system | Single Zone Heat Pump | 2 | 11.36 | 10.82 | 360.64 | N/A | N/A | 0.45 | W/cfm | Continuous | ☐ |
| FC 9 HP | Single Zone Heat Pump | 1 | 23.8 | 22.66 | 755.5 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 6 HP | Single Zone Heat Pump | 1 | 26.08 | 24.84 | 827.93 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 1 HP | Single Zone Heat Pump | 1 | 15.3 | 14.58 | 485.87 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 3 HP | Single Zone Heat Pump | 1 | 11.64 | 11.09 | 369.58 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |





**H11. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| System ID | System Type | Qty | Rated Capacity (kBtuh) | | Airflow (cfm) | | | Fan | | | VSD |
| | | | Heating | Cooling | Design | Min. | Min. Ratio | Power | Power Units | Cycles | |
| FC 7 HP | Single Zone Heat Pump | 1 | 17.87 | 17.02 | 567.34 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 8 HP | Single Zone Heat Pump | 1 | 18.28 | 17.41 | 580.25 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 11 HP | Single Zone Heat Pump | 1 | 5.28 | 5.03 | 167.67 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| IU 01-05 Split system | Single Zone Heat Pump | 1 | 4.39 | 4.18 | 139.31 | N/A | N/A | 0.45 | W/cfm | Continuous | ☐ |
| IU 01-07 Split system | Single Zone Heat Pump | 1 | 9.88 | 9.41 | 313.79 | N/A | N/A | 0.45 | W/cfm | Continuous | ☐ |
| IU 01-10 Split system | Single Zone Heat Pump | 1 | 3.02 | 2.88 | 95.9 | N/A | N/A | 0.45 | W/cfm | Continuous | ☐ |
| FC 4 HP | Single Zone Heat Pump | 1 | 58.5 | 55.72 | 1,857.28 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| FC 10 HP | Single Zone Heat Pump | 1 | 35.98 | 34.27 | 1,142.38 | N/A | N/A | 0.45 | W/cfm | Cycling | ☐ |
| IU 01-06 Split system | Single Zone Heat Pump | 1 | 5.14 | 4.89 | 163.04 | N/A | N/A | 0.22 | W/cfm | Cycling | ☐ |

**I1. WATER HEATER EQUIPMENT SUMMARY**

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | Heater Element Type | Tank Type | Qty | Tank Vol (gal) | Rated Input | Rated Input Unit | Efficiency | Efficiency Unit | Tank Insulation R-value Int/Ext | Standby Loss Fraction | 1st Hr. Rating or Flow Rate (gal) | Heat Pump Type | Tank Location or Ambient Condition |
| WaterHeater 1 | Electricity | Instantaneous | 15 | 3.3 | 6.8 | kW | 0.99 | EF | N/A | N/A | N/A | N/A | N/A |





**K1. INDOOR CONDITIONED LIGHTING GENERAL INFO**

| 01 | 02 | 03 | 04 | 05 | 06 |
|---|---|---|---|---|---|
| Occupancy Type[1] | Conditioned Floor Area[2] (ft²) | Installed Lighting Power (Watts) | Lighting Control Credits (Watts) | Additional (Custom) Allowance | |
| | | | | Area Category Footnotes (Watts) | Area Category Footnotes (Watts) |
| Auditorium | 10764.5 | 6458.69 | 0 | 0 | 0 |
| Convention, Conference, Multipurpose and Meeting Center | 1697.5 | 1018.5 | 0 | 0 | 0 |
| Copy Room | 312.98 | 187.79 | 0 | 0 | 0 |
| Corridor | 2153.49 | 1292.09 | 0 | 0 | 0 |
| Electrical Mechanical Telephone Room | 934.16 | 560.5 | 0 | 0 | 0 |
| Hospital - Nurse Station | 755.5 | 453.3 | 0 | 0 | 0 |
| Library - Reading Area | 183.13 | 109.88 | 0 | 0 | 0 |
| Main Entry Lobby | 4498.49 | 2699.1 | 0 | 0 | 0 |
| Lounge | 1030.97 | 618.58 | 0 | 0 | 0 |
| Office ( 250 square feet) | 2580.41 | 1548.24 | 0 | 0 | 0 |
| Office ( 250 square feet) | 139.31 | 83.59 | 0 | 0 | 0 |
| Retail Merchandise Sales | 818.13 | 490.88 | 0 | 0 | 0 |
| Restroom | 1430.32 | 929.71 | 0 | 0 | 0 |
| Commercial Industrial Warehouse | 576.25 | 345.75 | 0 | 0 | 0 |
| Theater - Performance | 3838.16 | 2302.89 | 0 | 0 | 0 |
| **Building Totals:** | **31713.3** | **19099.5** | **0** | **0** | **0** |

*[1] See Table 140.6-C*
*[2] See NRCC-LTI-E for unconditioned spaces*
*[3] Lighting information for existing spaces modeled is not included in this table*





**K4. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROL**

See NRCC-LTI-E for mandatory controls

**L. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections made by Documentation Author indicate which Certificates of Installation must be submitted for the features to be recognized for compliance. These documents must be retained and provided to the building inspector during construction and can be found online

| Building Component | Form/Title |
|---|---|
| Envelope | NRCI-ENV-E - Envelope (for all buildings) |
| Mechanical | NRCI-MCH-E - For all buildings with Mechanical Systems |
| Plumbing | NRCI-PLB-E - For all buildings with Plumbing Systems |
| Indoor Lighting | NRCI-LTI-E - Indoor Lighting (for all buildings) |

**M. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

Selections made by Documentation Author indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP).

| Building Component | Form/Title |
|---|---|
| Envelope | NRCA-ENV-02-F - NRFC label verification for fenestration |
| Indoor Lighting | NRCA-LTI-02-A - Occupancy Sensors and Automatic Time Switch Controls. |
| Indoor Lighting | NRCA-LTI-03-A - Automatic Daylight Controls. |
| Indoor Lighting | NRCA-LTI-04-A - Demand Responsive Lighting Controls. |
| Mechanical | NRCA-MCH-02-A - Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap |
| Mechanical | NRCA-MCH-03-A - Constant Volume Single Zone HVAC |
| Mechanical | NRCA-MCH-05-A - Air Economizer Controls |
| Mechanical | NRCA-MCH-06-A Demand Control Ventilation Systems must be submitted for all systems required to employ demand controlled ventilation (refer to ) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints. |
| Mechanical | NRCA-MCH-07-A Supply Fan Variable Flow Controls |
| Mechanical | NRCA-MCH-11-A Automatic Demand Shed Controls |
| Mechanical | NRCA-MCH-12-A FDD for Packaged Direct Expansion Units |



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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**MECHANICAL TITLE-24**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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| CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD | NRCC-PRF-E |
|---|---|
| Nonresidential Performance Compliance Method | (Page 28 of 29) |

**M. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

**Selections made by Documentation Author indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP).**

| Building Component | Form/Title |
|---|---|
| Mechanical | NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance |
| Mechanical | NRCA-MCH-18-A Energy Management Control Systems |
| Mechanical | NRCA-MCH-19-A Occupancy Sensor Controls |

**N. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**

**Selections made by Documentation Author indicate which Certificates of Verification must be submitted for the features to be recognized for compliance. These documents must be retained and provided to the building inspector during construction and can be found online**

| Building Component | Form/Title |
|---|---|
| Mechanical | NRCV-MCH-27 Indoor Air Quality & Mechanical Ventilation |
| Mechanical | NRCV-MCH-32 Local Mechanical Exhaust |



| CERTIFICATE OF COMPLIANCE - NONRESIDENTIAL PERFORMANCE COMPLIANCE METHOD | NRCC-PRF-E |
|---|---|
| Nonresidential Performance Compliance Method | (Page 29 of 29) |

**Documentation Author's Declaration Statement**

**1. I certify that this Certificate of Compliance documentation is accurate and complete.**

| | |
|---|---|
| Documentation Author Name: Haotian Wu | Documentation Author Signature: Haotian Wu Digitally signed by Haotian Wu Date: 2023.09.21 12:33:59 -07'00' |
| Company: Glumac | Signature Date: |
| Address: 707 Wilshire Blvd 23rd floor | CEA/HERS Certification Identification (if applicable): |
| City/State/Zip: Los Angeles, CA 90017 | Phone: |

**Responsible Person's Declaration statement**

**I certify the following under penalty of perjury, under the laws of the State of California:**

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

| | | |
|---|---|---|
| Responsible Designer Name: Ryan L. Maglinao | Responsible Designer Signature: | |
| Company: Glumac | | |
| Address: 707 Wilshire Blvd., 23 Floor | Date Signed: 09/21/2023 | |
| City/State/Zip: , Los Angeles, CA, 90017 | License #: M35322 | |
| Phone: 213.239.8866 | Title: Mechanical Engineer | Scope: |

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220601 Report Generated: 2023-09-19 12:59:50

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# ELECTRICAL LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

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## DISTRIBUTION & EQUIPMENT

| SYMBOL | DESCRIPTION |
|---|---|
| | BRANCH CIRCUIT PANELBOARDS, SURFACE AND RECESS MOUNTED |
| | MOTOR CONTROL CENTER WITH CODE CLEARANCES SHOWN, DASHED EQUIP. = FUTURE |
| | TRANSFORMER WITH CODE CLEARANCES SHOWN |
| | SERVICE AND/OR DISTRIBUTION EQUIPMENT WITH CODE CLEARANCES SHOWN |
| | CONNECTION TO MOTOR PROVIDED BY OTHERS |
| VFD | CONNECTION TO VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT |
| | DISCONNECT SWITCH, SIZE AS NOTED OR IF NOT SHOWN SIZE PER CONNECTED MOTOR SIZE AND MOTOR DISCONNECT SCHEDULE |
| F | FUSED DISCONNECT SWITCH, SIZE AS NOTED. SIZE FUSE PER MANUFACTURER'S RECOMMENDATIONS |
| C | ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH, TRIP SIZE AS NOTED. |
| | DISCONNECT W/ MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM. |
| | MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM. |
| | CONNECTION TO EQUIPMENT PROVIDED BY OTHERS. SHADED = ON ALT. POWER SOURCE NOTED |
| | CONNECTION TO EQUIPMENT WITH INTEGRAL DISCONNECT PROVIDED BY OTHERS. SHADED = ON ALTERNATE POWER SOURCE NOTED |
| | EQUIPMENT OR TERMINAL ENCLOSURE AS NOTED, SURFACE AND RECESS MOUNTED |
| | FIRED-RATED EQUIPMENT OR TERMINAL ENCLOSURE AS NOTED, SURFACE AND RECESS MOUNTED |
| DM | DAMPER MOTOR |
| | BUSWAY RISER |
| C F | BUSWAY STAB-IN TYPE CIRCUIT BREAKER OR FUSE DISCONNECT. SIZE AS NOTED. |

## WIRING

| SYMBOL | DESCRIPTION |
|---|---|
| | NEW WORK |
| | WIRING CONCEALED IN FLOOR OR UNDER GRADE OR ROUTED IN CEILING SPACE OF FLOOR BELOW. |
| MV | MEDIUM VOLTAGE CONDUIT |
| G | BARE GROUNDING GRID OR CONDUCTORS, UON. |
| GC | GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED CONDUIT, UON. |
| L1A-1,3 | HOME RUN WIRING TO INDICATED DESTINATION, 3/4"C. MIN. OR AS OTHERWISE NOTED. CONTRACTOR SHALL USE CIRCUIT SIZES NOTED IN RESPECTIVE SCHEDULES AND INFORMATION IN THE FEEDER AND BRANCH CIRCUIT SCHEDULES TO PROVIDE REQUIRED CIRCUITING. |
| HD1A | CONDUIT RUN TURNED UP THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED. |
| | CONDUIT RUN TURNED DOWN THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED. |
| | CONDUIT STUBBED OUT AT LOCATION SHOWN. PROVIDE INSULATED BUSHING & PULLROPE. |
| | TELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS. (1) 1.25" CO UON. COORDINATE LOCATIONS WITH CABLE INSTALLER(S) PRIOR TO ROUGH-IN. |
| J J J | JUNCTION BOXES, WALL, CEILING AND FLUSH FLOOR MOUNTED. 4" SQ. BOX MIN., LARGER IF REQUIRED |
| T | THEATRICAL BOXES, REFER TO THEATRICAL DRAWINGS FOR TYPES AND ADDITIONAL DETAILS. |
| | WIRING EXTENSION POINT - CONDUIT TO MC CABLE OR MANUFACTURED WIRING SYSTEM J-BOX ABOVE ACCESSIBLE CEILINGS AREAS, OR EXTEND CONDUIT & WIRE IN EXPOSED OR "HARD" CEILING AREAS. SHADED= ON ALT. POWER SOURCE (EMERG,UPS,ETC.) |
| PB | PULL BOX, MIN. SIZE PER NEC., UON. |
| | FLEXIBLE CONDUIT CONNECTION |
| | POWER CONNECTION TO DIV 15 FIRE/SMOKE DAMPER. REFER TO FSD CONNECTION DETAIL IF NOT SHOWN |

## DIAGRAMS

| SYMBOL | DESCRIPTION |
|---|---|
| | AUTOMATIC TRANSFER SWITCH (ATS) |
| | AUTOMATIC TRANSFER SWITCH WITH MAINTENANCE BYPASS(BIATS) |
| | OVERLOADS |
| | NORMALLY CLOSED CONTACTOR OR RELAY CONTACTS |
| | NORMALLY OPEN CONTACTOR OR RELAY CONTACTS |
| | BUS DUCT |
| | BUS BAR |
| | BATTERY GENERAL |
| | RESISTOR |
| | CONNECTOR, FEMALE AND MALE RESPECTIVELY |
| | PIPE GROUND |
| C | CONTACTOR COIL |
| R | RELAY COIL |
| D | LIGHTNING SURGE ARRESTOR D = DISTRIBUTION CLASS I = INTERMEDIATE CLASS |
| SPD | SURGE PROTECTION DEVICE |
| | CURRENT TRANSFORMER |
| | POTENTIAL TRANSFORMER |
| | NORMALLY OPEN PUSH BUTTON |
| | NORMALLY CLOSED PUSH BUTTON |
| | FUSED VOLTAGE SENSE LEADS |
| PF | METER: POWER FACTOR |
| KWH | METER: KILOWATT HOUR |
| M M | UTILITY CO. APPROVED SOCKET WITH METER INSTALLED. SQUARE = REMOTE MOUNTED |
| DMU | DIGITAL METER UNIT. REFER TO SPECIFICATIONS. |
| STB | CURRENT TRANSFORMER SHORTING TERMINAL BLOCK. |
| | TERMINAL FOR FIELD CONNECT, SIZE & TYPE SUITABLE FOR CONDUCTOR INSTALLED. |
| | LED INDICATOR LIGHT, PUSH TO TEST, R=RED, G= GREEN, B= BLUE, Y= YELLOW, W= WHITE |
| | DELTA CONNECTION |
| | GROUNDED WYE CONNECTION |
| | CONNECTION TO GROUND |
| 100AT 225AF | CIRCUIT BREAKER, WITH TRIP & FRAME AMPERE RATING |
| 225AF 400AS | FUSED SWITCH, WITH FUSE AND SWITCH AMPERE RATING |
| | INDIVIDUALLY MOUNTED CIRCUIT BREAKER |
| 52 | CIRCUIT BREAKER, MEDIUM VOLTAGE, DRAWOUT |
| | DRAWOUT CIRCUIT BREAKER |
| GF | GROUND FAULT TRIP UNIT |
| BA | BELL ALARM TRIP MODULE CONTACTS |
| ST | SHUNT TRIP UNIT, 120VAC OR VOLTAGE AS NOTED |
| AM | INTEGRAL AMMETER DISPLAY |
| K | KEY INTERLOCK |
| 10 | CAPACITOR, POWER FACTOR CORRECTION, SIZE IN KVAR |
| | GENERATOR |
| | FUSE, HOLDER & PULLER |
| C | CONNECTION TO CHILLER |
| | SOLENOID |

## ELECTRICAL EQUIPMENT NAMING CONVENTION LEGEND

| EXAMPLES/LEGEND | EQUIPMENT TYPE | SYSTEM VOLTAGE | ADDITIONAL DESIGNATION | FLOOR |
|---|---|---|---|---|
| MSB- DP- T- SB- P- DS- ECB- (EQUIP. TYPE) | H L (SYSTEM VOLTAGE) | W E (ADDN'L DESIG.) | 1 2 3 (FLOOR) | A B C D E (SEQ. LETTERS) |
| | MSB - MAIN SWITCHBOARD<br>DP - DISTRIBUTION PANELBOARD<br>T - TRANSFORMER<br>SB - SWITCHBOARD<br>P - PANELBOARD<br>ECB - ENCLOSED CIRCUIT BREAKER<br>DS - DISCONNECT SWITCH<br>*E - EMERGENCY FROM INVERTER<br>* THIS WILL BE THE FIRST LETTER | H - 480/277 VOLT<br>L - 208/120 VOLT | (1st letter)<br>W - WEST BUILDING<br>E - EAST BUILDING | 1 - FIRST FLOOR<br>2 - SECOND FLOOR<br>3 - THIRD FLOOR<br>R - ROOF |

## POWER DEVICES

| SYMBOL | DESCRIPTION |
|---|---|
| | SIMPLEX RECEPTACLE - WALL, CEILING, ON ALT. |
| | DUPLEX RECEPTACLE - WALL, CEILING, ON ALT. |
| | DOUBLE DUPLEX RECEPTACLE - WALL, CLG, ON ALT. |
| | SPECIAL PURPOSE RECEPTACLE -WALL, CEILING ON ALT. POWER; NEMA CONFIGURATION AS NOTED |
| AB | RECEPTACLE TYPE SHOWN -WALL -ABOVE COUNTER BACKSPLASH. SEE ARCHITECTURAL DRAWINGS. |
| "ON ALT." | SHADED RECEPTACLES NOTED "ON ALT." ABOVE ARE CONNECTED TO ALTERNATE POWER SOURCE (EMERG., STANDBY, UPS, ETC.) PER CIRCUITING INDICATED |
| | DUPLEX RECEPTACLE - WALL - HALF SWITCHED |
| C C | CONTROLLED DUPLEX / DOUBLE DUPLEX RECEPTACLE |
| S | COMBINATION SWITCH/DUPLEX RECEPTACLE |
| GFI | DUPLEX RECEPTACLE - WALL - WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER |
| WP | RECEPTACLE TYPE SHOWN W/ WEATHERPROOF COVER AND INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER |
| +42" | RECEPTACLE TYPE SHOWN AT SPECIAL HEIGHT |
| T T T | THEATRICAL RECEPTACLE, REFER TO THEATRICAL DRAWINGS. WALL-DUPLEX/DOUBLE DUPLEX, CEILING |
| A/V A/V A/V | AUDIO/VISUAL RECEPTACLE, REFER TO A/V DRAWINGS. WALL-DUPLEX/DOUBLE DUPLEX, CEILING |
| | FLUSH FLOOR BOX DEVICE - DEVICE TYPE PER SYMBOLS ABOVE |
| | PEDESTAL FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE |
| | POKE THRU UNIT WITH DUPLEX RECEPTACLE - FLUSH, PEDESTAL MOUNTED. |
| | POKE THRU UNIT WITH DOUBLE DUPLEX RECEPTACLE - FLUSH, PEDESTAL MOUNTED. |
| | COMBO POKE THRU UNIT WITH DUPLEX RECEPTACLE AND TELEPHONE OUTLET - FLUSH, PEDESTAL MOUNTED. |
| | MULTI-SERVICE FLOOR BOX CAST IN CONC. OR IN RAISED FLOOR - SEE ARCH DWGS; WITH RECEPTACLES & SIGNAL OUTLETS AS NOTED. |
| | POKE THRU UNIT WITH JUNCTION BOX. RACEWAY COMPONENTS RC-700 SERIES. |
| | TELE/POWER POLE, POWER POLE |
| | TELE/POWER POLE WITH WHIP CONNECTION TO ELECTRIFIED FURNITURE |
| | TWO-PIECE SURFACE METAL RACEWAY WITH RECEPTACLES AS NOTED, BACK LENGTH AS INDICATED ON THE DRAWINGS AND WITH ALL FITTINGS AS REQUIRED. |
| | TWO OR THREE COMPARTMENT SURFACE METAL RACEWAY WITH RECEPTACLES AND OUTLETS AS INDICATED, LENGTH AS INDICATED ON THE DRAWINGS. PROVIDE ALL FITTINGS AS REQUIRED. |
| TX | REMOTE MOUNTED LINE TO LOW-VOLTAGE FUSED TRANSFORMER. CONCEAL FROM VIEW. |

## REFERENCE SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| XX | KEYED NOTE REFERENCE |
| 125.4 | BRANCH CIRCUIT OR FEEDER TAG; REFER TO BRANCH CIRCUIT AND FEEDER SCHEDULE FOR WIRE AND CONDUIT SIZES & QUANTITY. |
| 1 E4.1 | REFER TO DETAIL ON DRAWING INDICATED |
| 2 E4.1 | ELEVATION TAG: REFER TO ELEVATION NUMBER ON DRAWING INDICATED |
| A M-1 | SECTION TAG: REFER TO SECTION NUMBER ON DRAWING INDICATED |
| <K112> | KITCHEN EQUIPMENT TAG, REFER TO KITCHEN EQUIPMENT SCHEDULE |
| CH 1 | MECHANICAL EQUIPMENT IDENTIFICATION TAG |
| [EQUIP NAME] | EQUIPMENT BY OTHERS IDENTIFICATION TAG |

## GROUNDING SYSTEM

| SYMBOL | DESCRIPTION |
|---|---|
| G | BARE GROUNDING GRID OR CONDUCTORS, UON. |
| GC | GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED CONDUIT, UON. |
| | GROUND GRID BOND POINT |
| | GROUND GRID BOND POINT - MECHANICAL CONNECTION |
| | GROUND GRID BOND POINT - EXOTHERMIC WELD CONNECTION |
| | GROUND BAR, SEE PLANS AND SPECIFICATIONS FOR DIMENSIONS AND REQUIREMENTS |
| | GROUND ROD LOCATION |
| | GROUND ROD IN TEST WELL |
| | LIGHTNING PROTECTION PARAPET MOUNTED AIR TERMINAL |
| | LIGHTNING PROTECTION MID ROOF MOUNTED AIR TERMINAL |
| | LIGHTNING PROTECTION AIR TERMINAL |
| | LIGHTNING PROTECTION CONDUCTOR ROUTED DOWN |
| | LIGHTNING PROTECTION BOND PLATE |
| | LIGHTNING PROTECTION BIMETAL CONNECTION |

## SWITCHING CONTROLS

| SYMBOL | DESCRIPTION |
|---|---|
| NB | -NETWORK BRIDGE |
| RP | -RELAY POWER PACK |
| EM | -EMERGENCY RELAY POWER PACK<br>REFER TO LIGHTING CONTROL DIAGRAMS ON SHEETS E5.11 AND E5.12. |

## LIGHTING

| SYMBOL | DESCRIPTION |
|---|---|
| | RECESSED 2X4 LUMINAIRE |
| | SURFACE MOUNTED 2X4 LUMINAIRE |
| | RECESSED 1X4 LUMINAIRE |
| | SURFACE MOUNTED 1X4 LUMINAIRE |
| | RECESSED 2X2 LUMINAIRE |
| | SURFACE MOUNTED 2X2 LUMINAIRE |
| EM EM | SHADING OF ANY LUMINAIRE WITH 'EM' INDICATES CONNECTION TO ALTERNATE POWER SOURCE (EMERGENCY, UPS, STANDBY, ETC.) PER CIRCUITING INDICATED |
| | SUSPENDED LINEAR LUMINAIRE (SIZE VARIES) |
| | WALL MOUNTED LINEAR LUMINAIRE (SIZE VARIES) |
| | SUSPENDED PENDANT LUMINAIRE (SIZE VARIES) |
| | RECESSED DOWNLIGHT, CEILING MOUNTED |
| | SURFACE DOWNLIGHT, CEILING MOUNTED |
| WW DIRECTION | RECESSED WALLWASH |
| WW DIRECTION | SURFACE WALLWASH |
| | RECESSED LINEAR WALLWASH |
| | SURFACE LINEAR WALLWASH |
| | RECESSED WALL MOUNTED LUMINAIRE |
| | TRACK LIGHTING WITH HEADS AS INDICATED. |
| | RECESSED CEILING ADJUSTABLE POINT SOURCE |
| | SURFACE CEILING ADJUSTABLE POINT SOURCE |
| | WALL MOUNTED LUMINAIRE |
| | WALL MOUNTED DIRECTIONAL (SIZE VARIES) |
| | LED STRIPLIGHT - POWER FEED SECTION, FEED THROUGH SECTION. LENGTH AS SHOWN. |
| | WALL MOUNTED LED STRIPLIGHT |
| | UNDERCABINET LED STRIPLIGHT |
| | CONTINUOUS LINEAR SOURCE (LED, COLD CATHODE, NEON, FIBER OPTIC, ETC...) |
| | BATTERY LED BULLET LIGHTING FIXTURE (SEE LUMINAIRE SCHEDULE FOR QUANTITY OF HEADS) - WALL. |
| EXIT | ILLUMINATED EXIT SIGN, SHADED QUADRANT INDICATES FACES, ARROWS AS SHOWN |
| | BOLLARD |
| | POLE MOUNTED LUMINAIRE- SINGLE OR DUAL HEAD |
| | INDICATES ROTATED OPTICS |
| | POST TOP MOUNTED LUMINAIRE |
| | IN-GRADE POINT SOURCE |
| | SIDELIT DAYLIT PRIMARY ZONE BOUNDARY |
| | SIDELIT DAYLIT SECONDARY ZONE BOUNDARY |
| HA 3c | LUMINAIRE MARKING CONVENTION LEGEND:<br>HA = LUMINAIRE TYPE IDENTIFICATION. SEE LUMINAIRE SCHEDULE.<br>3c = CIRCUIT NUMBER VIA LOCAL SWITCH (LOWERCASE LETTER) THAT SERVES THE LUMINAIRE.<br>3A = CIRCUIT NUMBER/UPPERCASE LETTER COMBINATION INDICATES LOW VOLTAGE RELAY OR LIGHTING CONTACTOR THAT SERVES THE LUMINAIRE |
| HA 3A | |

## SWITCHING CONTROLS

| SYMBOL | DESCRIPTION |
|---|---|
| $S^a$ | SINGLE POLE SWITCH (SUPERSCRIPT DENOTES SIMILARLY MARKED LUMINAIRES CONTROLLED TOGETHER) |
| $S_2$ | TWO POLE SWITCH |
| $S_3$ | THREE WAY SWITCH |
| $S_K$ | KEY OPERATED SWITCH |
| $S_{OS}$ | WALL MOUNT OCC SENSOR SWITCH |
| D | DIMMER SWITCH. NUMBER INDICATES WATTAGE RATING. IF NOT SHOWN THEN EQUAL TO LOAD. |
| | LOW-VOLTAGE DIMMER SWITCH |
| $S_P$ | SWITCH WITH PILOT LIGHT (PILOT IS "ON WHEN SWITCH IS "ON"). |
| $S_{PL}$ | SWITCH WITH PILOT LIGHT (PILOT IS "ON WHEN SWITCH IS "OFF"). |
| $S_{TS}$ | TIMER SWITCH |
| $S^{LVA}$ | LOW VOLTAGE MOMENTARY CONTACT SWITCH, UPPER CASE LETTER SUPERSCRIPT INDICATES CONNECTION TO LOW VOLTAGE RELAY CONTROLLING SIMILARLY MARKED LUMINAIRES. |
| $S_{WP}$ | WEATHERPROOF SWITCH |
| $S_V$ | LINE VOLTAGE, VARIABLE SPEED FAN CONTROL SWITCH. LOCATE ADJACENT TO ADJACENT TO LIGHT SWITCHES. |
| $S_T$ | MOTOR-RATED THERMAL OVERLOAD SWITCH |
| $S_{OR1}$ | LIGHTING CONTROL OVERRIDE SWITCH. NUMBER = ZONE CONTROLLED |
| PC | PHOTOCELL |
| | EQUIPMENT OPERATOR PUSH BUTTON STATION. PROVIDED WITH EQUIPMENT, INSTALLED AND CONNECTED BY ELECTRICAL, UON. |
| | PUSHBUTTON OR PUSHBUTTONS. |
| TC | TIME CLOCK |
| OS | OCCUPANCY SENSOR - WALL MOUNTED |
| OS | 360 DEGREE OCCUPANCY SENSOR - CEILING MTD. |
| OS | 180 DEGREE OCCUPANCY SENSOR - CEILING MTD. |
| OS | CORRIDOR/AISLE OCCUPANCY SENSOR - CEILING MOUNTED |
| $S^a$ OS $^b$ | COMBINATION OCCUPANCY SENSOR & SWITCH GANGED UNDER A COMMON COVER PLATE. OCCUPANCY SENSOR TO CONTROL ALL LUMINAIRES IN ROOM WITH 1/2 LIGHT REDUCTION CONTROLLED BY SWITCH. |
| | LIGHTING CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE CONTROL POWER AS REQUIRED OR AS INDICATED. |

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| (E) | EXISTING TO REMAIN | KW | KILOWATTS |
| (F) | FUTURE | KVA | KILOVOLT-AMPERES |
| (R) | EXISTING TO BE REMOVED | LTG | LIGHTING |
| (RL) | EXISTING TO BE RELOCATED | LCP | LIGHTING CONTROL PANEL |
| AB | ABOVE COUNTER BACKSPLASH | MAX | MAXIMUM |
| ACU | AIR CONDITIONING UNIT | MCA | MINIMUM CIRCUIT AMPERES |
| AC | ALTERNATING CURRENT | MCB | MAIN CIRCUIT BREAKER |
| A, AMP | AMPERES | MFR | MANUFACTURER |
| ADJ | ADJACENT | MIN | MINIMUM |
| AF | AMPERE (RATED) FUSE OR CB FRAME | MISC | MISCELLANEOUS |
| AFF | ABOVE FINISHED FLOOR | MLO | MAIN LUGS ONLY |
| AFG | ABOVE FINISHED GRADE | MO | MANUAL OPERATOR |
| AHJ | AUTHORITY HAVING JURISDICTION | MSGB | MAIN SYSTEM GROUND BAR |
| AIC | EQUIPMENT SHORT CIRCUIT INTERRUPT RATING (RMS SYM. AMPS) | MTD | MOUNTED |
| | | MTR | MOTOR |
| AL | ALUMINUM (ALLOY) | MW | MICROWAVE |
| ALC | AUTOMATIC LIGHTING CONTROL | N | NEUTRAL (GROUNDED CONDUCTOR) |
| AS | AMPERE (RATED) SWITCH | NC | NORMALLY CLOSED |
| AT | CIRCUIT BRKR TRIP SETTING (AMPS) | NEC | NATIONAL ELECTRICAL CODE |
| ATS | AUTOMATIC TRANSFER SWITCH | -,NEG | NEGATIVE |
| AUTO | AUTOMATIC | NEMA | NATIONAL ELECTRICAL MFGR'S ASSOC. |
| AUX | AUXILIARY | NL | NIGHT LIGHT (UNSWITCHED) |
| AWG | AMERICAN WIRE GAUGE | NO | NORMALLY OPEN |
| BATT | BATTERY | NTS | NOT TO SCALE |
| BC | BARE COPPER | NP | NAMEPLATE |
| BG | BELOW GRADE | OC | ON CENTER |
| BRKR | CIRCUIT BREAKER | OCPD | OVERCURRENT PROTECTIVE DEVICE (CB, FUSE, ETC.) |
| C | CONDUIT (CIRCULAR RACEWAY) | OD | OUTSIDE DIAMETER |
| CAB | CABINET | OFCI | OWNER FURNISHED CONTRACTOR INSTALLED |
| CB | CIRCUIT BREAKER | | |
| CFM | CUBIC FEET PER MINUTE | ODOI | OWNER FURNISHED, OWNER INSTALLED |
| CKT | CIRCUIT | OS | OCCUPANCY SENSOR |
| CL | CLEANER RECEPTACLE | P | POLE |
| CLG | CEILING | PB | PUSHBUTTON |
| CO | CONDUIT ONLY | PH,Ø | PHASE |
| CPT | CONTROL POWER TRANSFORMER | PNL | PANEL |
| CT | CURRENT TRANSFORMER | +,POS | POSITIVE |
| CU | COPPER | PRI | PRIMARY |
| DC | DIRECT CURRENT | REF | REFRIGERATOR |
| DISC | DISCONNECT | REQD | REQUIRED |
| DIA | DIAMETER | RNC | RIGID NON-METALLIC CONDUIT (PVC) |
| DIV | DIVISION | RS | RAPID START |
| DP | DISTRIBUTION PANEL | RST | REMOTE STATION TRANSMITTER |
| DPDT | DOUBLE POLE DOUBLE THROW | SAD | SEE ARCHITECTURAL DRAWINGS |
| DPST | DOUBLE POLE SINGLE THROW | SEC | SECONDARY |
| DWG | DRAWING | SN | SHEET NOTE |
| E,EMER | EMERGENCY | SOL | SOLENOID |
| EF | EXHAUST FAN | SPD | SURGE PROTECTION DEVICE |
| EMT | ELECTRICAL METALLIC TUBING | SPDT | SINGLE POLE DOUBLE THROW |
| ENCL | ENCLOSURE | SPST | SINGLE POLE SINGLE THROW |
| EO | ELECTRICALLY OPERATED | SUB | SUBSTATION |
| EOL | END OF LINE | SWBD | SWITCHBOARD |
| EWC | ELECTRIC WATER COOLER | SWGR | SWITCHGEAR |
| EWH | ELECTRIC WATER HEATER | TB | TERMINAL BOARD |
| FA | FIRE ALARM | TDC | TIME DELAY CLOSING |
| FAA | FIRE ALARM ANNUNCIATOR | TDO | TIME DELAY OPENING |
| FACP | FIRE ALARM CONTROL PANEL | TEL | TELEPHONE |
| FBO | FURNISHED BY OTHERS | TYP | TYPICAL |
| FC | FOOT CANDLES | UF | UNDERFLOOR |
| FF | FLUSH FLOOR MOUNTED | UG | UNDERGROUND |
| FLA | FULL LOAD AMPERES | UL | UNDERWRITERS LAB |
| FLEX | FLEXIBLE | UON | UNLESS OTHERWISE NOTED |
| FPB | FAN POWERED BOX | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| FSD | FIRE/SMOKE DAMPER | UREF | UNDERBENCH REFRIGERATOR |
| FW | FLUSH WALL MOUNTED | USB | USB OUTLETS |
| FU | FUSE | UTX | UTILITY TRANSFORMER |
| GEN | GENERATOR | V | VOLTS |
| GFI | GROUND FAULT CIRCUIT INTERRUPTER | VA | VOLT-AMPERES |
| G,GND | GROUND | VFD | VARIABLE FREQUENCY DRIVE |
| GRAP | GENERATOR REMOTE ANNUNCIATOR PANEL | W | WATT |
| | | W/ | WITH |
| GRC | GALVANIZED RIGID STEEL CONDUIT | W/O | WITHOUT |
| HDRY | HAND DRYER | WP | WEATHERPROOF |
| HLO | HANDLE LOCK-ON(OFF) | XFR | TRANSFORMER |
| HP | HORSEPOWER | XP | EXPLOSION PROOF |
| HPF | HIGH POWER FACTOR | Z | ZONE |
| HTR | HEATER | " | INCHES |
| HZ | HERTZ (CYCLES PER SECOND) | ' | FEET |
| IES | ILLUMINATING ENGINEERING SOCIETY | Ø | PHASE |
| IBC | INDIVIDUAL BRANCH CIRCUIT | > | GREATER THAN |
| ID | INSIDE DIAMETER | < | LESS THAN |
| IG | ISOLATED GROUND | ≥ | GREATER THAN OR EQUAL TO |
| IMC | INTERMEDIATE METAL CONDUIT | | |
| KCMIL | THOUSAND CIRCULAR MILS | | |
| KN | KEYED NOTE | | |
| KO | KNOCK OUT | | |

## ELECTRICAL DRAWING LIST

| SHEET NUMBER | SHEET NAME |
|---|---|
| E0.00 | ELECTRICAL LEGEND AND ABBREVIATIONS |
| E0.01 | ELECTRICAL GENERAL NOTES |
| E0.02 | ELECTRICAL SCHEDULES |
| E0.03 | LUMINAIRE SCHEDULE |
| E0.04 | ELECTRICAL EQUIPMENTS SCHEDULE |
| E0.05 | LIGHTING SEQUENCE OF OPERATIONS |
| E0.06 | TITLE 24 FORMS |
| E0.07 | TITLE 24 FORMS |
| E0.08 | TITLE 24 FORMS |
| E0.09 | TITLE 24 FORMS |
| E0.10 | TITLE 24 FORMS |
| E0.11 | TITLE 24 FORMS |
| E1.10 | ELECTRICAL DEMO SITE PLAN |
| E1.11 | ELECTRICAL NEW SITE PLAN |
| E1.12 | SITE LIGHTING PLAN |
| E1.13 | SITE LIGHTING PHOTOMETRICS |
| E1.14 | SITE LIGHTING EMERGENCY PHOTOMETRICS |
| E2.11 | LEVEL 1 - OVERALL LIGHTING PLAN |
| E2.11A | LEVEL 1 - LIGHTING PLAN - SEGMENT A |
| E2.11B | LEVEL 1 - LIGHTING PLAN - SEGMENT B |
| E2.11C | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A |
| E2.11D | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT B |
| E2.11E | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A - EMERGENCY |
| E2.11F | LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT B - EMERGENCY |
| E2.12 | LEVEL 2 - LIGHTING PLAN - CATWALK |
| E2.13 | ROOF - OVERALL LIGHTING PLAN |
| E2.13A | ROOF - LIGHTING PLAN - SEGMENT A |
| E2.13B | ROOF - LIGHTING PLAN - SEGMENT B |
| E3.11 | LEVEL 1 - OVERALL POWER PLAN |
| E3.11A | LEVEL 1 - POWER PLAN - SEGMENT A |
| E3.11B | LEVEL 1 - POWER PLAN - SEGMENT B |
| E3.12 | LEVEL 2 - POWER PLAN - CATWALK |
| E3.13 | ROOF - OVERALL POWER PLAN |
| E3.13A | ROOF - POWER PLAN - SEGMENT A |
| E3.13B | ROOF - POWER PLAN - SEGMENT B |
| E4.11 | DEMO SINGLE LINE DIAGRAM |
| E4.12 | SINGLE LINE DIAGRAMS |
| E5.11 | PANELBOARD SCHEDULES |
| E5.12 | PANELBOARD SCHEDULES |
| E5.13 | PANELBOARD SCHEDULES |
| E5.14 | PANELBOARD SCHEDULES |
| E5.15 | ENLARGED PLANS |
| E6.10 | LIGHTING CONTROL DIAGRAMS |
| E6.11 | ELECTRICAL DIAGRAMS |
| E6.12 | ELECTRICAL DIAGRAMS |
| E6.13 | ELECTRICAL DETAILS |
| E6.14 | ELECTRICAL DETAILS |
| E6.15 | ELECTRICAL DETAILS |
| E6.16 | GENERATOR DETAILS |
| E6.17 | GENERATOR SEISMIC REPORT |
| E6.18 | GENERATOR SEISMIC DRAWINGS |
| E6.19 | LIGHTING DETAILS |
| E6.20 | ELECTRICAL DETAILS |
| E6.21 | ELECTRICAL DETAILS |
| E6.22 | ELECTRICAL DETAILS |
| E6.23 | ELECTRICAL DETAILS |
| E6.24 | ELECTRICAL DETAILS |
| E6.25 | ELECTRICAL DETAILS |

## ELECTRICAL BASIS OF DESIGN

PROJECT SCOPE

A. GENERAL PROGRAM
   1. THE PROGRAM INCLUDES APPROXIMATELY 39000 GSF OF ADMIN BUILDING, THEATRE AND MUSIC BUILDING.

B. THE DESIGN INCLUDES THE FOLLOWING NOTABLE FEATURES BUT IS NOT LIMITED TO THIS SCOPE. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS AND COORDINATING WITH ALL DISCIPLINES.
   1. POWER DISTRIBUTION INCLUDING TRANSFORMERS, FEEDERS, AND DISTRIBUTION PANELS.
   2. BRANCH CIRCUIT DISTRIBUTION INCLUDING ALL REQUIRED PANELBOARDS, CONDUIT, WIRING AND DEVICES.
   3. LIGHTING PANELBOARDS, LIGHTING SYSTEMS, INCLUDING CONTROLS AND DAYLIGHTING CONTROLS.
   4. CENTRALIZED LIGHTING INVERTER SYSTEM FOR EMERGENCY POWER FOR EGRESS ILLUMINATION AS REQUIRED BY CODE.

C. CODES AND STANDARDS
   1. AMERICANS WITH DISABILITIES ACT (ADA)
   2. NFPA 75; STANDARD FOR THE PROTECTION OF INFORMATION TECHNOLOGY EQUIPMENT 2021 EDITION.
   3. NFPA 101: LIFE SAFETY CODE: 2021 EDITION
   4. NFPA 110: STANDARD FOR EMERGENCY AND STAND-BY POWER SYSTEMS: 2021 EDITION
   5. CALIFORNIA BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ):
      A. 2022 CALIFORNIA BUILDING CODE (CBC), CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 2 (BASED ON THE 2021 INTERNATIONAL BUILDING CODE VOLUMES 1 & 2 AND 2022 CALIFORNIA AMENDMENTS).
      B. 2022 CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 4 (BASED ON THE 2021 UNIFORM MECHANICAL CODE AND 2022 CALIFORNIA AMENDMENTS).
      C. 2022 CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 5 (BASED ON THE 2021 UNIFORM PLUMBING CODE AND 2022 CALIFORNIA AMENDMENTS).
      D. 2022 CALIFORNIA FIRE CODE (CFC), CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 9 (BASED ON THE 2021 INTERNATIONAL FIRE CODE AND 2022 CALIFORNIA AMENDMENTS).
      E. 2022 CALIFORNIA ELECTRICAL CODE (CEC), (BASED ON PART 3, TITLE 24 C.C.R. (2020 NATIONAL ELECTRICAL CODE AND 2022 CALIFORNIA AMENDMENTS)).
      F. 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD FOR NON-RESIDENTIAL, CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 6.
      G. 2022 CALIFORNIA GREEN BUILDING STANDARDS, CALIFORNIA CODE OF REGULATIONS, TITLE 24 PART 11.

D. LIGHTING CONTROLS
   1. LOW-VOLTAGE CONTROLS FOR SWEEP-OFF FUNCTION INOFFICE AREAS.
   2. OCCUPANCY SENSORS IN CONFERENCE ROOMS, STORAGE ROOMS, RESTROOMS, SMALL OFFICES.
   3. EXTERIOR LIGHTING: PHOTOCELL ON & OFF, PHOTOCELL ON & TIME CLOCK OFF.
   4. DAYLIGHT HARVESTING CONTROLS (PHOTOSENSOR AND DIMMING EQUIPMENT) ARE USED IN AREAS REQUIRED PER ENERGY CODE.
   5. THEATRICAL DIMMING RACK/CONTROLS ARE USED IN AREAS DESIGNED BY SPECIALTY DESIGNERS.

E. POWER DESIGN
   1. THE POWER DISTRIBUTION SYSTEM WILL BE AS FOLLOWS FOR COMMON AREAS:
      A. 120V, SINGLE-PHASE FOR GENERAL RECEPTACLES.
      B. 277V, SINGLE-PHASE FOR INTERIOR AND EXTERIOR LIGHTING.
      C. 120V, SINGLE-PHASE FOR THEATRICAL AND OTHER SPECIALTY LIGHTING ONLY AS DIRECTED BY THEATRICAL AND LIGHTING CONSULTANT.
      D. 120V, SINGLE-PHASE FOR HVAC AND PLUMBING EQUIPMENT SMALLER THAN ¾ HORSEPOWER.
      E. 480V, THREE-PHASE FOR HVAC AND PLUMBINGEQUIPMENT ¾ HORSEPOWER AND LARGER.
      F. 480V, THREE-PHASE FOR ELEVATORS.
      G. 120/208V FOR AV EQUIPMENT AS DIRECTED BY THEATRICAL AND AV CONSULTANT.
   2. THE POWER DISTRIBUTION EQUIPMENT WILL BE DESIGNED FOR FLEXIBILITY AND LONGEVITY SWITCHBOARD WILL BE FLOOR MOUNTED DISTRIBUTION TYPE AND FULLY RATED FOR THE AVAILABL

THE LINE SHOWN ABOVE IS 1" LONG WHEN PRINTED AT FULL SHEETS ORIGINAL PAGE SIZE

# ELECTRICAL GENERAL NOTES

## GENERAL NOTES

1. GENERAL PROVISIONS

A. THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOREGOING ARCHITECTURAL GENERAL NOTES AND MECHANICAL NOTES SHALL APPLY TO ALL WORK HEREUNDER.
B. ALL WORK SHALL BE IN ACCORDANCE WITH CALIFORNIA ELECTRICAL CODE WITH LOCAL AMENDMENTS, THE LOCALLY ADOPTED ENERGY CODE, AND ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES, LAWS AND REGULATIONS.
C. CONTRACTOR IS DIRECTED TO OBTAIN AND REVIEW BUILDING CONSTRUCTION STANDARDS. WORK SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS WHETHER OR NOT SUCH ARE REPEATED HEREIN OR ON PLANS. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY CONFLICTS BETWEEN BUILDING STANDARDS AND THESE DRAWINGS.
D. FOR PURPOSES OF CLARITY AND LEGIBILITY, THE ELECTRICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. ALTHOUGH THE SIZE AND LOCATION OF ELECTRICAL EQUIPMENT IS DRAWN TO SCALE WHEREVER POSSIBLE, MAKE USE OF ALL DATA IN ALL OF THE CONTRACT DOCUMENTS, AND VERIFY THIS AT THE PROJECT SITE. DETERMINE THE EXACT LOCATION OF CONDUITS, OUTLETS AND EQUIPMENT BY THE STUDY OF DETAILS, SHOP DRAWINGS AND/OR THE ARCHITECT'S DIRECTIONS.
E. THE ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER THE ELECTRICAL DRAWINGS. SHOULD THERE BE A CONFLICT BETWEEN LOCATIONS SHOWN ON THE ARCHITECTURAL AND ELECTRICAL DRAWINGS, CONTACT THE ENGINEER FOR CLARIFICATION PRIOR TO ROUGH-IN.
F. PROVIDE EQUIPMENT AND MATERIALS WHICH CONFORM TO THE STANDARDS EFFECTIVE AS OF THE DATE OF THE CONTRACT DOCUMENTS AS PROMULGATED BY THE FOLLOWING BODIES:
   1. UNDERWRITERS' LABORATORIES (UL).
   2. NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA).
   3. ELECTRICAL TESTING LABORATORIES (ETL).
   4. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
   5. INSULATED CABLE ENGINEERS ASSOCIATION (ICEA).
   6. CALIFORNIA STATE FIRE MARSHAL (CSFM).
   7. CALIFORNIA ELECTRICAL CODE (CEC)
   8. TITLES 8, 19 AND 24 OF THE CALIFORNIA CODE OF REGULATIONS (CCR).
G. BEFORE SUBMITTING A BID, EXAMINE ALL PERTINENT CONTRACT DOCUMENTS FOR ELECTRICAL REQUIREMENTS WHICH ARE NOT NECESSARILY INDICATED ON THE ELECTRICAL DRAWINGS AND INCLUDE IN THE BID A SUM WHICH IS SUFFICIENT TO COVER THE COSTS OF THESE OTHER REQUIREMENTS.

2. SCOPE

A. FURNISH AND INSTALL COMPLETE ALL MATERIALS, EQUIPMENT AND LABOR AS SHOWN AND AS NECESSARY FOR COMPLETE WORKABLE SYSTEM.
B. OBTAIN AND PAY FOR ALL REQUIRED FEES, PERMITS AND INSPECTIONS.
C. GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR FROM DATE OF FILING NOTICE OF COMPLETION.
D. PROVIDE FIRE ALARM DEVICES (INITIATING AND INDICATING), CONNECT TO EXISTING SYSTEM. FIRE ALARM SYSTEM SHALL BE DESIGN/BUILT SUBMITTED SEPARATELY FOR PLAN CHECK AND PERMITTING.
E. REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION AND REQUIREMENT OF ALL EQUIPMENT REQUIRING ELECTRICAL POWER.
F. PROVIDE CONDUIT, SUPPORTS, WIRING ETC... PER CODE.
G. CONTRACTOR TO VERIFY MOUNTING HEIGHTS OF ALL DEVICES AND FINISHES WITH ARCHITECTURAL PLANS.
H. ALL LOW VOLTAGE WIRING SHALL BE PLENUM RATED.
I. LABEL ALL NEW RECEPTACLES & LIGHT SWITCHES/OCC SENSORS WITH PANEL & CIRCUIT NUMBER THEY ARE FED FROM. SEE ELECTRICAL IDENTIFICATION SPECIFICATION SECTION.

## GENERAL NOTES CONTINUED

J. PROVIDE TYPE-WRITTEN CIRCUIT DIRECTORIES FOR PANELBOARDS, DISTRIBUTION BOARDS SWITCHBOARDS.

3. COORDINATION

A. COORDINATE ALL WORK WITH ARCHITECTURAL, MECHANICAL AND STRUCTURAL DRAWINGS. INSTALL ALL WORK TO CLEAR NEW AND EXISTING ARCHITECTURAL AND STRUCTURAL MEMBERS. NO ITEM SUCH AS PIPE, DUCT, ETC. SHALL BE IN CONTACT WITH ANY ELECTRICAL EQUIPMENT.
B. EXAMINE MECHANICAL DRAWINGS WHICH FORM A PART OF THE CONTRACT DOCUMENTS. PROVIDE AND INSTALL ALL MATERIALS, (DISCONNECT, STARTER, CONDUIT, WIRING, ETC...) INDICATED ON MECHANICAL DRAWINGS TO BE PROVIDED BY ELECTRICAL (WHETHER SHOWN ON ELECTRICAL PLANS OR NOT). DO NOT ROUGH ELECTRICAL PRIOR TO VERIFICATION OF HVAC UNITS' EXACT LOCATION.

4. RELATED WORK

A. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR INSTALLATION OF HIS WORK.
B. OBTAIN WRITTEN PERMISSION FROM ARCHITECT AND GENERAL CONTRACTOR BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS, INCLUDING FLOOR SLABS. COORDINATE WITH STRUCTURAL ENGINEER AND/OR BUILDING OWNER AND X-RAY SLAB AS REQUIRED FOR FLOOR PENETRATIONS.
C. REFINISH MARRED OR DAMAGED FACTORY FINISHED EQUIPMENT.
D. CONNECT ALL CONTRACTOR AND OWNER FURNISHED EQUIPMENT AND PROVIDE AND INSTALL REQUIRED DISCONNECTING MEANS.
E. RESTORE ALL DAMAGE RESULTING FROM YOUR WORK AND LEAVE PREMISES IN CLEAN CONDITION WHEN FINISHED WITH WORK.
F. NUMBER OF CONDUCTORS IN A CONDUIT SHALL BE PROVIDE AS REQUIRED BY CODE, U.O.N.
G. INCLUDE GROUNDING WIRE(S) IN ALL CONDUIT. GROUNDING WIRE SIZE PER CODE REQUIREMENT.
H. CONDUCTORS OF A MULTI-WIRE BRANCH CIRCUIT SHALL ORIGINATE FROM THE SAME PANELBOARD. THE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. MULT-WIRE BRANCH CIRCUIT NOT ALLOWED FOR EMERGENCY CIRCUITS PER CODE REQUIREMENT.

## ANCHORAGE NOTES

APPLICABLE CODE: 2022 CBC REVISED: JULY 1, 2022

**MEP COMPONENT ANCHORAGE NOTE**

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

**PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTES**

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.8, AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G. OSHPD OPM FOR 2013 OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE IN THE JOBSITE PRIOR TO THE START AND DURING THE HANGING AND BRACING OF THE DISTRIBUTED SYSTEMS THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTING (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E)

| MP | MD | PP | E | |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | OPTION 1 : DETAILED ON THE APPROVED DRAWINGS WITH THE PROJECT SPECIFIC NOTES AND DETAILS. |
| MP☐ | ND☐ | PP☐ | E [X] | OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED OPM# 0052-13 . REFER TO SHEETS E6.20 THROUGH E6.25. |

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DATE: 10/15/2025

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ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
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E21403
EXP 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL GENERAL NOTES**

DSA SUBMITTAL

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY

# COPPER FEEDER SCHEDULE

| FEEDER TAG | CONDUITS MET | SETS | RNC | CONDUCTORS PER SET PHASE/NEUTRAL | GROUND | NOTES |
|---|---|---|---|---|---|---|
| 4000.4 | 3.50" | 11 | 4.00" | (4) 500 KCMIL | 500 KCMIL | - |
| 4000.3 | 3.00" | 11 | 4.00" | (3) 500 KCMIL | 500 KCMIL | - |
| 3500.4 | 3.50" | 10 | 4.00" | (4) 500 KCMIL | 500 KCMIL | - |
| 3500.3 | 3.00" | 10 | 4.00" | (3) 500 KCMIL | 500 KCMIL | - |
| 3000.4 | 3.50" | 8 | 4.00" | (4) 500 KCMIL | 400 KCMIL | - |
| 3000.3 | 3.00" | 8 | 4.00" | (3) 500 KCMIL | 400 KCMIL | - |
| 2500.4 | 3.50" | 7 | 4.00" | (4) 500 KCMIL | 350 KCMIL | - |
| 2500.3 | 3.00" | 7 | 4.00" | (3) 500 KCMIL | 350 KCMIL | - |
| 2000.4 | 3.00" | 6 | 4.00" | (4) 400 KCMIL | 250 KCMIL | - |
| 2000.3 | 3.00" | 6 | 4.00" | (3) 400 KCMIL | 250 KCMIL | - |
| 1600.4 | 3.00" | 5 | 4.00" | (4) 400 KCMIL | #4/0 | - |
| 1600.3 | 3.00" | 5 | 4.00" | (3) 400 KCMIL | #4/0 | - |
| 1200.4 | 3.00" | 4 | 4.00" | (4) 350 KCMIL | #3/0 | - |
| 1200.3 | 3.00" | 4 | 3.00" | (3) 350 KCMIL | #3/0 | - |
| 1000.4 | 3.00" | 3 | 4.00" | (4) 400 KCMIL | #2/0 | - |
| 1000.3 | 3.00" | 3 | 4.00" | (3) 400 KCMIL | #2/0 | - |
| 800.4 | 3.00" | 3 | 3.00" | (4) 300 KCMIL | #1/0 | - |
| 800.3 | 2.50" | 3 | 3.00" | (3) 300 KCMIL | #1/0 | - |
| 700.4 | 3.50" | 2 | 4.00" | (4) 500 KCMIL | #1/0 | - |
| 700.3 | 3.00" | 2 | 4.00" | (3) 500 KCMIL | #1/0 | - |
| 600.4 | 3.00" | 2 | 4.00" | (4) 350 KCMIL | #1 | - |
| 600.3 | 2.50" | 2 | 3.00" | (3) 350 KCMIL | #1 | - |
| 500.4 | 2.50" | 2 | 3.00" | (4) 250 KCMIL | #2 | - |
| 500.3 | 2.50" | 2 | 2.50" | (3) 250 KCMIL | #2 | - |
| 450.4 | 2.50" | 2 | 3.00" | (4) #4/0 | #2 | - |
| 450.3 | 2.00" | 2 | 2.50" | (3) #4/0 | #2 | - |
| 400.4 | 2.00" | 2 | 2.50" | (4) #3/0 | #2 | - |
| 400.3 | 2.00" | 2 | 2.50" | (3) 3/0 | #2 | - |
| 350.4 | 3.50" | 1 | 4.00" | (4) 500 KCMIL | #2 | - |
| 350.3 | 2.50" | 1 | 4.00" | (3) 500 KCMIL | #2 | - |
| 300.4 | 3.00" | 1 | 3.00" | (4) 350 KCMIL | #4 | - |
| 300.3 | 2.50" | 1 | 3.00" | (3) 350 KCMIL | #4 | - |

| FEEDER TAG | CONDUITS MET | SETS | RNC | CONDUCTORS PER SET PHASE/NEUTRAL | GROUND | NOTES |
|---|---|---|---|---|---|---|
| 250.4 | 2.50" | 1 | 3.00" | (4) 250 KCMIL | #4 | - |
| 250.3 | 2.50" | 1 | 3.00" | (3) 250 KCMIL | #4 | - |
| 225.4 | 2.50" | 1 | 3.00" | (4) #4/0 | #4 | - |
| 225.3 | 2.00" | 1 | 2.50" | (3) #4/0 | #4 | - |
| 200.4 | 2.00" | 1 | 2.50" | (4) #3/0 | #6 | - |
| 200.3 | 2.00" | 1 | 2.50" | (3) #3/0 | #6 | - |
| 175.4 | 2.00" | 1 | 2.50" | (4) #2/0 | #6 | - |
| 175.3 | 1.50" | 1 | 2.00" | (3) #2/0 | #6 | - |
| 150.4 | 2.00" | 1 | 2.00" | (4) #1/0 | #6 | - |
| 150.3 | 1.50" | 1 | 2.00" | (3) #1/0 | #6 | - |
| 125.4 | 1.50" | 1 | 1.50" | (4) #1 | #6 | - |
| 125.3 | 1.25" | 1 | 1.50" | (3) #1 | #6 | - |
| 110.4 | 1.25" | 1 | 1.50" | (4) #2 | #6 | - |
| 110.3 | 1.25" | 1 | 1.50" | (3) #2 | #6 | - |
| 100.4 | 1.25" | 1 | 1.50" | (4) #2 | #8 | - |
| 100.3 | 1.25" | 1 | 1.50" | (3) #2 | #8 | - |
| 90.4 | 1.25" | 1 | 1.50" | (4) #2 | #8 | - |
| 90.3 | 1.25" | 1 | 1.50" | (3) #2 | #8 | - |
| 80.4 | 1.25" | 1 | 1.50" | (4) #4 | #8 | - |
| 80.3 | 1.00" | 1 | 1.50" | (3) #4 | #8 | - |
| 70.4 | 1.25" | 1 | 1.50" | (4) #4 | #8 | - |
| 70.3 | 1.00" | 1 | 1.50" | (3) #4 | #8 | - |
| 60.4 | 1.00" | 1 | 1.00" | (4) #6 | #10 | - |
| 60.3 | 0.75" | 1 | 1.00" | (3) #6 | #10 | - |
| 50.4 | 1.00" | 1 | 1.00" | (4) #6 | #10 | - |
| 50.3 | 0.75" | 1 | 1.00" | (3) #6 | #10 | - |
| 40.4 | 0.75" | 1 | 1.00" | (4) #8 | #10 | - |
| 40.3 | 0.75" | 1 | 1.00" | (3) #8 | #10 | - |
| 30.4 | 0.75" | 1 | 1.00" | (4) #10 | #10 | - |
| 30.3 | 0.75" | 1 | 1.00" | (3) #10 | #10 | - |
| 20.4 | 0.75" | 1 | 1.00" | (4) #12 | #12 | - |
| 20.3 | 0.75" | 1 | 1.00" | (3) #12 | #12 | - |
| --.-K | | | | | | 7 |
| XFR | | | | | | 8 |
| SCHD | | | | | | 9 |

NOTES:
1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. THIS SCHEDULE SHALL BE USED ON ALL FEEDERS SERVING LOADS WHERE THE CIRCUIT BREAKER SIZE MATCHES THE AMPACITY OF ITS FEEDER. USE THE "MOTOR CIRCUIT SCHEDULE" FOR LOADS, SUCH AS MOTORS, PUMPS, FANS, CHILLERS, ETC., WHERE THE CIRCUIT BREAKER SIZE IS LARGER THAN THE AMPACITY OF ITS FEEDER.
3. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS AND BRANCH CIRCUITS. WHERE MULTIPLE CONDUITS ARE INDICATED PROVIDE NOTED GROUND WIRE IN EACH CONDUIT.
4. NOT ALL FEEDERS ARE NECESSARILY USED ON THIS PROJECT.
5. NOMINAL AMPACITIES GREATER THAN 100 AMPS ARE FOR 75 DEG..C TERMINALS.
6. "MET"= EMT, IMC, GRC, RAC, OR PVC COATED GRC TYPE CONDUITS. "RNC"= PVC 40, PVC 80 OR FIBERGLASS TYPE CONDUITS ROUTED UNDERGROUND. REFER TO SIZING ON DRAWINGS IF "RNC" CONDUITS ARE ROUTED ABOVEGROUND, CONDUIT SIZES NOTED ON SINGLE-LINE DIAGRAM OR ON PLANS SUPERSEDE SIZES NOTED ABOVE IF LARGER.
7. OVERSIZED (173% MIN.) NEUTRAL FOR FEEDERS CONNECTED TO A K-4 OR HIGHER RATED TRANSFORMER.
8. REFER TO TRANSFORMER SCHEDULE FOR STANDARD PRIMARY AND SECONDARY FEEDER SIZES.
9. REFER TO MCC OR PANEL SCHEDULES FOR FEEDER SIZES TO EQUIPMENT NOTED WITH THIS TAG.

# VOLTAGE DROP TABLE

| VOLT | AMP | MAXIMUM ALLOWED RUN LENGTH (FT) #12 | #10 | #8 | #6 | #4 |
|---|---|---|---|---|---|---|
| 120 | 2 | 500 | 800 | 1200 | 2000 | 3250 |
| | 4 | 250 | 400 | 600 | 1000 | 1625 |
| | 6 | 175 | 250 | 400 | 650 | 1100 |
| | 8 | 125 | 200 | 325 | 500 | 800 |
| | 10 | 100 | 150 | 250 | 400 | 650 |
| | 12 | 85 | 125 | 200 | 350 | 550 |
| | 14 | 75 | 110 | 175 | 300 | 450 |
| | 16 | 60 | 100 | 150 | 250 | 400 |
| 277 | 2 | 1100 | 1800 | 2750 | | |
| | 4 | 550 | 900 | 1375 | | |
| | 6 | 350 | 600 | 950 | | |
| | 8 | 275 | 450 | 700 | | |
| | 10 | 225 | 350 | 550 | | |
| | 12 | 175 | 300 | 475 | | |
| | 14 | 150 | 250 | 400 | | |
| | 16 | 140 | 225 | 360 | | |

**NOTES:**
1. THIS SCHEDULE APPLIES TO ALL BRANCH CIRCUITS. CONTRACTOR SHALL PROVIDE UPSIZED CONDUCTORS AND CONDUIT/ RACEWAYS AS REQUIRED FOR EACH SITUATION.
2. THIS SCHEDULE IS FOR 3% VOLTAGE DROP USING COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT ALLOWED TO SERVE BRANCH CIRCUITS.
3. USE 12-AMPS FOR ALL CIRCUITS SERVING ONE OR MORE RECEPTACLES, UNLESS HIGHER AMPACITY IS APPROPRIATE OR REQUIRED. USE FULL LOAD AMPS (FLA) OF EQUIPMENT SERVED X 125% FOR ALL OTHER CIRCUITS THAT SERVE A DEDICATED LOAD WITH NO PLANS FOR ADDING FUTURE EQUIPMENT OR A RECEPTACLE TO THAT CIRCUIT.
4. WHENEVER BRANCH CIRCUIT CONDUCTORS ARE UPSIZED THE ASSOCIATED GROUND CONDUCTOR SHALL ALSO BE UPSIZED, PER NEC 250.122.

# TRANSFORMER SCHEDULE (K-RATED)

| KVA | 480V PRIMARY C.B. | TAG | FEEDER + EGC | 208Y/120V SECONDARY C.B. | TAG | FEEDER + SSBJ | GEC | SBJ |
|---|---|---|---|---|---|---|---|---|
| 15 | 30/3 | XFR.K | 3#10+1#10 IN 3/4"C. | 50/3 | XFR.K | 5#6+1#6 IN 1"C. | #8, 1/2"C. | 1#8 |
| 30 | 50/3 | | 3#6+1#10 IN 1"C. | 100/3 | | 5#2+1#8 IN 1-1/2"C. | #8, 1/2"C. | 1#8 |
| 45 | 70/3 | | 3#4+1#8 IN 1-1/2"C. | 150/3 | | 5#1/0+1#6 IN 2"C. | #6, 3/4"C. | 1#6 |
| 75 | 125/3 | | 3#1+1#6 IN 1-1/2"C. | 225/3 | | 5#4/0+1#2 IN 2-1/2"C. | #4, 3/4"C. | 1#2 |
| 112.5 | 175/3 | | 3#2/0+1#6 IN 1-1/2"C. | 400/3 | | (2) SETS OF (5#3/0+1#2 IN 2"C.) | #2, 1C. | 1#2 |
| 150 | 225/3 | | 3#4/0+1#4 IN 2"C. | 500/3 | | (2) SETS OF (5#250+1#2 IN 2-1/2"C.) | #1/0, 1C. | 1#2 |
| 225 | 350/3 | | 3#500+1#2 IN 2-1/2"C. | 800/3 | | (3) SETS OF (5#300+1#1/0 IN 3"C.) | #1/0, 1C. | 1#1/0 |
| 300 | 450/3 | | (2) SETS OF (3#4/0+1#2 IN 2"C.) | 1000/3 | | (3) SETS OF (5#400+1#2/0 IN 3"C.) | #3/0, 1C. | 1#2/0 |
| 500 | 800/3 | | (3) SETS OF (3#300+1#1/0 IN 2-1/2"C.) | 1600/3 | | (5) SETS OF (5#400+1#250 IN 3"C.) | #3/0, 1C. | 1#250 |
| 750 | 1200/3 | | (4) SETS OF (3#350+1#3/0 IN 3"C.) | 2500/3 | | (7) SETS OF (5#500+1#500 IN 3-1/2"C.) | #3/0, 1C. | 1#500 |

NOTES:
1. THIS SCHEDULE APPLIES TO 3-PHASE, 480:480Y/277V AND 480:208Y/120V DRY-TYPE STEP-DOWN TRANSFORMERS ONLY.
2. ON ONE-LINE DIAGRAMS AND SCHEDULES WHERE FEEDERS AND CIRCUIT BREAKERS ARE SHOWN AS "XFR", PROVIDE FEEDERS, GROUND CONDUCTORS AND BREAKERS NOTED ABOVE. PROVIDE SECONDARY BREAKER NOTED ABOVE AS MAIN CIRCUIT BREAKER OF SERVED ELECTRICAL EQUIPMENT, UON.
3. THIS TABLE IS BASED ON THE USE OF COPPER CONDUCTORS.

ABBREVIATIONS:
SBJ SYSTEM BONDING JUMPER (NEC TABLE 250.102 (C)(1))
GEC GROUNDING ELECTRODE CONDUCTOR (NEC TABLE 250.66)
SSBJ SUPPLY SIDE BONDING JUMPER (NEC TABLE 250.102 (C)(1))
EGC EQUIPMENT GROUNDING CONDUCTOR (NEC TABLE 250.122)

# TRANSFORMER SCHEDULE

| KVA | 480V PRIMARY C.B. | TAG | FEEDER + EGC | 208Y/120V SECONDARY C.B. | TAG | FEEDER + SSBJ | GEC | SBJ |
|---|---|---|---|---|---|---|---|---|
| 15 | 30/3 | XFR | 30.3 | 50/3 | XFR | 4#6, 1#8, 1"C. | #8, 1/2"C. | 1#8 |
| 30 | 50/3 | | 50.3 | 100/3 | | 4#2, 1#8, 1.25"C. | #8, 1/2"C. | 1#8 |
| 45 | 70/3 | | 70.3 | 150/3 | | 4#1/0, 1#6, 2"C. | #6, 3/4"C. | 1#6 |
| 75 | 125/3 | | 125.3 | 225/3 | | 4#4/0, 1#2, 2.5"C. | #4, 3/4"C. | 1#2 |
| 112.5 | 175/3 | | 175.3 | 400/3 | | (2) SETS OF (4#3/0, 1#2, 2"C.) | #2, 1C. | 1#2 |
| 150 | 225/3 | | 225.3 | 500/3 | | (2) SETS OF (4#250+1#2 IN 2-1/2"C.) | #1/0, 1C. | 1#2 |
| 225 | 350/3 | | 350.3 | 800/3 | | (3) SETS OF (4#300+1#1/0 IN 3"C.) | #1/0, 1C. | 1#1/0 |
| 300 | 450/3 | | 450.3 | 1000/3 | | (3) SETS OF (4#400+1#2/0 IN 3"C.) | #3/0, 1C. | 1#2/0 |
| 500 | 800/3 | | 800.3 | 1600/3 | | (5) SETS OF (5#400+1#250 IN 3"C.) | #3/0, 1C. | 1#250 |
| 750 | 1200/3 | | 1200.3 | 2500/3 | | (7) SETS OF (4#500+1#500 IN 3-1/2"C.) | #3/0, 1C. | 1#500 |

NOTES:
1. THIS SCHEDULE APPLIES TO 3-PHASE, 480:480Y/277V AND 480:208Y/120V DRY-TYPE STEP-DOWN TRANSFORMERS ONLY.
2. ON ONE-LINE DIAGRAMS AND SCHEDULES WHERE FEEDERS AND CIRCUIT BREAKERS ARE SHOWN AS "XFR", PROVIDE FEEDERS, GROUND CONDUCTORS AND BREAKERS NOTED ABOVE. PROVIDE SECONDARY BREAKER NOTED ABOVE AS MAIN CIRCUIT BREAKER OF SERVED ELECTRICAL EQUIPMENT, UON.
3. THIS TABLE IS BASED ON THE USE OF COPPER CONDUCTORS.

ABBREVIATIONS:
SBJ SYSTEM BONDING JUMPER (NEC TABLE 250.102 (C)(1))
GEC GROUNDING ELECTRODE CONDUCTOR (NEC TABLE 250.66)
SSBJ SUPPLY SIDE BONDING JUMPER (NEC TABLE 250.102 (C)(1))
EGC EQUIPMENT GROUNDING CONDUCTOR (NEC TABLE 250.122)

# BRANCH CIRCUIT SCHEDULE

| CIRCUIT TAG | CONDUITS MET | SETS | RNC | CONDUCTORS PER SET PHASE/NEUTRAL | GROUND | WIRING CONFIG. | NOTES |
|---|---|---|---|---|---|---|---|
| 60.2N | 0.75" | 1 | 1.00" | (2) #6, (1) #6N | #10 | 1,2W,N | _ |
| 60.2 | 0.75" | 1 | 1.00" | (2) #6 | #10 | 1Ø,2W | _ |
| 60.1 | 0.75" | 1 | 1.00" | (1) #6, (1) #6N | #10 | 1Ø,1W,N | _ |
| 50.2N | 0.75" | 1 | 1.00" | (2) #6, (1) #6N | #10 | 1Ø,2W,N | _ |
| 50.2 | 0.75" | 1 | 1.00" | (2) #6 | #10 | 1Ø,2W | _ |
| 50.1 | 0.75" | 1 | 1.00" | (1) #6, (1) #6N | #10 | 1Ø,1W,N | _ |
| 40.2N | 0.75" | 1 | 1.00" | (2) #8, (1) #8N | #10 | 1Ø,2W,N | _ |
| 40.2 | 0.75" | 1 | 1.00" | (2) #8 | #10 | 1Ø,2W | _ |
| 40.1 | 0.75" | 1 | 1.00" | (1) #8, (1) #8N | #10 | 1Ø,1W,N | _ |
| 30.2N | 0.75" | 1 | 1.00" | (2) #10, (1) #10N | #10 | 1Ø,2W,N | _ |
| 30.2 | 0.75" | 1 | 1.00" | (2) #10 | #10 | 1Ø,2W | _ |
| 30.1 | 0.75" | 1 | 1.00" | (1) #10, (1) #10N | #10 | 1Ø,1W,N | _ |
| 20.2N | 0.50" | 1 | 1.00" | (2) #12, (1) #12N | #12 | 1Ø,2W,N | 7,8 |
| 20.2 | 0.50" | 1 | 1.00" | (2) #12 | #12 | 1Ø,2W | 7,8 |
| 20.1 | 0.50" | 1 | 1.00" | (1) #12, (1) #12N | #12 | 1Ø,1W,N | 7,8 |

NOTES:
1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.
2. THIS SCHEDULE SHALL BE USED ON ALL BRANCH CIRCUITS SERVING LOADS WHERE THE CIRCUIT BREAKER SIZE MATCHES THE AMPACITY OF ITS FEEDER. USE THE "MOTOR CIRCUIT SCHEDULE" FOR LOADS, SUCH AS MOTORS, PUMPS, FANS, CHILLERS, ETC., WHERE THE CIRCUIT BREAKER SIZE IS LARGER THAN THE AMPACITY OF ITS FEEDER.
3. PROVIDE GROUND WIRE NOTED ABOVE IN ALL BRANCH CIRCUITS.
4. NOT ALL BRANCH CIRCUITS SHOWN ABOVE ARE NECESSARILY USED ON THIS PROJECT.
5. "MET"= EMT, IMC, GRC, RAC, OR PVC COATED GRC TYPE CONDUITS. "RNC"= PVC 40, PVC 80 OR FIBERGLASS TYPE CONDUITS ROUTED UNDERGROUND. REFER TO SIZING ON DRAWINGS IF "RNC" CONDUITS ARE ROUTED ABOVEGROUND. CONDUIT SIZES NOTED ON SINGLE-LINE DIAGRAM OR ON PLANS SUPERSEDE SIZES NOTED ABOVE IF LARGER.
6. THIS SCHEDULE APPLIES TO STANDARD LENGTH CIRCUITS ONLY. CONTRACTOR TO UPSIZE WIRING AS REQUIRED TO MEET MINIMUM VOLTAGE DROP REQUIREMENTS INDICATED IN SPECIFICATIONS. GROUND CONDUCTOR WILL ALSO NEED TO BE INCREASED PROPORTIONATELY AS REQUIRED BY NEC.
7. THESE BRANCH CIRCUITS TAGS ARE TYPICALLY NOT SHOWN ON PLANS FOR CLARITY REASONS. CONTRACTOR SHALL USE THIS INFORMATION AS IT APPLIES FOR ALL CONDUITS CONTAINING ONE OR MORE 20A/1P CIRCUITS.
8. CONTRACTOR MAY COMBINE 20A 1 AND 2-POLE CIRCUITS, UP TO A MAXIMUM OF (3) PHASE CONDUCTORS, IN ONE CONDUIT. ALL 3-PHASE AND CIRCUITS LARGER THAN 20A SHALL BE IN DEDICATED CONDUITS, UON. PROVIDE DEDICATED NEUTRALS FOR EACH 1-POLE CIRCUIT.
9. ALL HOMERUNS SHALL USE 0.75" CONDUIT SIZE MINIMUM.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC
engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**ELECTRICAL SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

# E0.02

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008106-MEPT-BLDG.rvt
6/23/2025 2:49:33 PM

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PAGE SIZE

# LUMINAIRE SCHEDULE - BUILDING

| TAG | DESCRIPTION | FINISH | LAMP | | | CCT | MANUFACTURER | MODEL | POWER SUPPLY | | VOLTAGE | LOAD | MOUNTING | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYPE | LUMENS | CRI | | | | DRIVER | DIMMING TYPE | | | TYPE | |
| F-1A | 4ft LED LINEAR FIXTURE | REFER TO ID FOR FINISH | LED | 2815 LM | 90 | 3500K | FINELITE | HP-4-P-D-4ft-V-935-F-96LG-277-SC-FC-10%-FA100-C4-FE-T BC-TBC | | 0-10V DIMMING DRIVER | 277 V | 37.2 W | PENDANT | |
| F-3A | 2X2 RECESSED TROFFER | REFER TO ID FOR FINISH | LED | 4196 LM | 80 | 3500K | H.E. Williams | AT1-2-2-L50-835-D-DIM-277 | | 0-10V DIMMING | 277 V | 48.3 W | RECESSED | |
| F-3B | 2X4 RECESSED TROFFER | REFER TO ID FOR FINISH | LED | 5523 LM | 80 | 3500K | H.E. Williams | AT1-2-4-L55-835-D-DIM-277 | | 0-10V DIMMING | 277 V | 48.0 W | RECESSED | |
| F-4 | SUSPENDED LINEAR | REFER TO ID FOR FINISH | LED | 2233 LM | 90 | 3500K | STARFIRE | PDX1-L-9-35-M-S-DF-[LENGTH]-[FINISH] | | 0-10V DIMMING DRIVER | 277 V | 5.7 W / FT | PENDANT | |
| F-5 | 4' LED LINEAR FIXTURE | REFER TO ID FOR FINISH | LED | 5200 LM | 80 | 3500K | H.E. Williams | 76R-4'-L52-8-35-[OPTIONS]-[CONTROLS]-[VOLTAGE] | | 0-10V DIMMING DRIVER | 277 V | 35.8 W | PENDANT | |
| F-6 | 4" RECESSED DOWNLIGHT | REFER TO ID FOR FINISH | LED | 1640 LM | 90 | 3500K | H.E. Williams | 4DR-L20-9-35-DIM-UNV-O-W-CS-MWT | | 0-10V DIMMING DRIVER | 277 V | 19.8 W | RECESSED | AVAILABLE IN 2" AND 6" OPTIONS, WALLWASH/FIXED/ADJUSTABLE, TRIM/TRIMLESS, WET-RATED OPTIONS |
| F-7 | SMALL DECORATIVE PENDANT - 15.7" DIAMETER | REFER TO ID FOR FINISH | LED | 1680 LM | 80 | 3500K | LIGHTNET | 1MG1OBD-835H-D400-PG | | 0-10V DIMMING DRIVER | 277 V | 22.0 W | PENDANT | |
| F-8 | LARGE DECORATIVE PENDANT - 27.5" DIAMETER | REFER TO ID FOR FINISH | LED | 6440 LM | 80 | 3500K | LIGHTNET | 1MG3OBD-835H-D700-PB | | 0-10V DIMMING DRIVER | 277 V | 42.0 W | PENDANT | |
| F-9 | 4" WIDE DIRECT LINEAR PENDANT | REFER TO ID FOR FINISH | LED | 8360 LM | 90 | 3500K | FINELITE | HP-4-P-D-8ft-V-935-F-96LG-277-SC-FC-10%-FA100-C4-FE-T BC-TBC | | 0-10V DIMMING DRIVER | 277 V | 74.4 W | PENDANT | |
| F-10 | 1X1 RECESSED DOWNLIGHT | REFER TO ID FOR FINISH | LED | 1980 LM | 80 | 3500K | LUM-TECH | LEDH-S11-G2-22-35-UZTD-QT-1135-WH | | 0-10V DIMMING | 277 V | 22.0 W | RECESSED | |
| F-11 | CYLINDER DOWNLIGHT - 4" DIAMETER | REFER TO ID FOR FINISH | LED | 2350 LM | 90 | 3500K | PEACH TREE LIGHTING | CYR-4-DMLV10-W-35-90-WH-AG-C-04 | | 0-10V DIMMING DRIVER | 277 V | 12.0 W | PENDANT | |
| F-20 | EXIT SIGNS | | LED | | | | EMERGI-LITE | GREEN RUNNING MAN EXIT SIGN MODEL#CM-PS-AC-L | | | 277 V | 3.0 W | WALL/SURFACE/SUSPENDED | REFER TO ELECTRICAL DRAWINGS FOR ARROWA/SINGLE-SIDED/DOUBLE-SIDED FACE REQUIREMETNS |
| K | UNDER CABINET STRIPLIGHT | REFER TO ID FOR FINISH | LED | 440 LM | 90 | 3500K | HALO | HU30BSC18P | | 5% DIMMING | 277 V | 8.2 W | SURFACE | |
| SJ1 | WALL PACK FOR ROOF SPACES | REFER TO ID FOR FINISH | LED | 1587 LM | 80 | 4000K | LITHONIA LIGHTING | ARC2 LED P1 40K 277 PE DBLXD | | PHOTOCELL | 277 V | 11.0 W | WALL | |
| T | VANITY LIGHT | REFER TO ID FOR FINISH | LED | 110 LM | 90 | 3500K | WAC | BRINK | | 10% DIMMING | 277 V | 5.5 W | WALL | |
| T2 | SURFACE-MOUNTED STRIPLIGHT IDEAL FOR MIRROR/VANITY LIGHTING | REFER TO ID FOR FINISH | LED | 500 LM | 90 | 3500K | Celestial | AQR-R-DF-12-xxx-RLG | | 10% DIMMING | 277 V | 8.8 W | WALL | |

# LUMINAIRE SCHEDULE - STAGE

| TAG | DESCRIPTION | FINISH | LAMP | | | CCT | MANUFACTURER | MODEL | POWER SUPPLY | | VOLTAGE | LOAD | MOUNTING | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYPE | LUMENS | CRI | | | | DRIVER | DIMMING TYPE | | | TYPE | |
| F-1A | 4ft LED LINEAR FIXTURE | REFER TO ID FOR FINISH | LED | 2815 LM | 90 | 3500K | FINELITE | HP-4-P-D-4ft-V-935-F-96LG-120-SC-FC-10%-FA100-C4-FE-T BC-TBC | | 0-10V DIMMING DRIVER | 120 V | 37.2 W | PENDANT | |
| F-2 | CYLINDER DOWNLIGHT - 6" DIAMETER | REFER TO ID FOR FINISH | LED | 7000 LM | 90 | 3500K | H.E. Williams | 6CR-TL-L70-935-[FINISH]-[DMX]-UNV-O-M-[REFLECTOR]-PM[STEM LENGTH] | | DMX CONTROL TO 0% | 120 V | 58.2 W | PENDANT | FIXTURE WITH REMOTE DRIVER FOR FIXTURES OVER 2' FROM CATWALK TO SIMPLIFY REPAIRS IN THE FUTURE. DRIVERS CAN MOUNT TO OFFSTAGE SIDE OF CATWALKS. |
| F-5 | 4' LED LINEAR FIXTURE | REFER TO ID FOR FINISH | LED | 5200 LM | 80 | 3500K | H.E. Williams | 76R-4'-L52-8-35-[OPTIONS]-[CONTROLS]-[VOLTAGE] | | 0-10V DIMMING DRIVER | 120 V | 35.8 W | PENDANT | |
| F-6 | 4" RECESSED DOWNLIGHT | REFER TO ID FOR FINISH | LED | 1640 LM | 90 | 3500K | H.E. Williams | 4DR-L20-9-35-DIM-UNV-O-W-CS-MWT | | 0-10V DIMMING DRIVER | 120 V | 19.8 W | RECESSED | AVAILABLE IN 2" AND 6" OPTIONS, WALLWASH/FIXED/ADJUSTABLE, TRIM/TRIMLESS, WET-RATED OPTIONS |
| F-10 | 1X1 RECESSED DOWNLIGHT | REFER TO ID FOR FINISH | LED | 1980 LM | 80 | 3500K | LUM-TECH | LEDH-S11-G2-22-35-UZTD-QT-1135-WH | | 0-10V DIMMING | 120 V | 22.0 W | RECESSED | |
| F-12 | ROUND PENDANT | REFER TO ID FOR FINISH | LED | 2580 LM | 80 | 3500K | LIGHTNET | 1BG5O-[FINISH]-D-835H-D400-P | | 0-10V DIMMING DRIVER | 120 V | 21.0 W | PENDANT | |
| F-13 | 12" LONG VERTICAL PENDANT | REFER TO ID FOR FINISH | LED | 700 LM | 90 | 3500K | Cerchio | P47.12.20.B.[FINISH]-12.30.2 | | 0-10V DIMMING DRIVER | 120 V | 6.0 W | PENDANT | |
| F-14 | 24" LONG VERTICAL PENDANT | REFER TO ID FOR FINISH | LED | 1400 LM | 90 | 3500K | Cerchio | P47.12.20.B.[FINISH]-24.30.2 | | 0-10V DIMMING DRIVER | 120 V | 12.0 W | PENDANT | REFER TO ID FOR FINISH |
| F-15 | 36" LONG VERTICAL PENDANT | REFER TO ID FOR FINISH | LED | 2410 LM | 90 | 3500K | Cerchio | P47.12.20.B.[FINISH]-36.30.2 | | 0-10V DIMMING DRIVER | 120 V | 20.0 W | PENDANT | |
| F-17 | STAGE WALL WORKLIGHTS | REFER TO ID FOR FINISH | LED | 8100 LM | 80 | 3500K | HP WILLIAMS | 96-4-L81-835-HIAFR-WMB-UNV | | 0-10V DIMMING | 120 V | 65.0 W | WALL | LENSED INDUSTRIAL STRIP WITH 45° MOUNTING BRACKET |
| F-18 | CONTROL BOOTH AND FOLLOWSPOT BOOTH TASK LIGHTING | REFER TO ID FOR FINISH | LED | 900 LM | 92 | 3500K | TIMES SQUARE LIGHTING | BCR-9-92-27-B-120-40-<MTG>-TE | | ELV | 120 V | 6.4 W | TRACK | |
| F-19 | THEATRE CATWALK UTILITY STIP | REFER TO ID FOR FINISH | LED | 4000 LM | 80 | 3500K | LITHONIA LIGHTING | CSS-L48-AL03-MVOLT-35K-80 | | 0-10V DIMMING | 120 V | 35.8 W | PENDANT | |
| T | VANITY LIGHT | REFER TO ID FOR FINISH | LED | 110 LM | 90 | 3500K | WAC | BRINK | | 10% DIMMING | 120 V | 5.5 W | WALL | |
| TA1 | CONTROL BOOTH TASK LIGHTING | REFER TO ID FOR FINISH | LED | 900 LM | 92 | 3500K | TIMES SQUARE LIGHTING | BCR-9-90-27-B-120-40-<MTG>-TE | | ELV | 120 V | 6.4 W | TRACK | |
| WD1 | RECESSED STEPLIGHT | REFER TO ID FOR FINISH | LED | 330 LM | 85 | 3500K | FC LIGHTING | FCSL1014-120V-27K-CRI85-03L | INTEGRAL ELECTRONIC DIMMING DRIVER | 0-10V DIMMING | 120 V | 3.0 W | WALL | |

# LUMINAIRE SCHEDULE - SITE

| TAG | DESCRIPTION | FINISH | LAMP | | | CCT | MANUFACTURER | MODEL | POWER SUPPLY | | VOLTAGE | LOAD | MOUNTING | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYPE | LUMENS | CRI | | | | DRIVER | DIMMING TYPE | | | TYPE | |
| SJ3 | STEPLIGHT | REFER TO ID FOR FINISH | LED | 202 LM | 80 | 3500K | TRADEMARK | 10/L6.00 | | 0-10V DIMMING DRIVER | 277 V | 6.0 W | WALL | |
| SL1 | SITE POLE LIGHT FIXTURE | REFER TO ID FOR FINISH | LED | 7242 LM | 70 | 3500K | INVUE | LXS-VA3-730-U-ASW-S | | 0-10V DIMMING | 277 V | 100.0 W | POLE | |
| SL2 | SQUARE BOLLARD FIXTURE | REFER TO ID FOR FINISH | LED | 820 LM | 80 | 3500K | Landscape Forms Inc | BW101-T5-30K-UV1 | | 0-10V DIMMING | 277 V | 16.0 W | BOLLARD | |
| SL3 | WALL MOUNTED OUTDOOR LIGHT FIXTURE | REFER TO ID FOR FINISH | LED | 800 LM | 90 | 3500K | COOPER LIGHITNG | 9002-W1-R1-3000-90-F-BK-L1-UNV-WIS | | 0-10V DIMMING | 277 V | 10.0 W | WALL | |

# ELECTRICAL - LUMINAIRE SCHEDULE NOTES

A. FURNISH ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING ACCESSORIES TO MEET JOB REQUIREMENTS. VERIFY FIXTURE MOUNTING AND LOCATION AGAINST ARCHITECTS PLANS, ELEVATIONS AND DETAIL DRAWINGS. EXACT LOCATION OF ALL FIXTURES SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGHING IN.

B. SERIES FIXTURES SHALL SATISFY LENGTHS AS SHOWN ON THE DRAWINGS. FIXTURE LETTERS SHOWN ONCE ON A CONTINUOUS ROW OF FIXTURES SHALL BE TYPICAL FOR THAT ROW UNLESS OTHERWISE NOTED.

C. ALL FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, INDEPENDENT OF HUNG CEILING WITH ROD OR JACK CHAIN SUPPORT. STEM LENGTHS, STEM FINISHES AND STEM LOCATIONS OF ALL PENDANT FIXTURES TO BE VERIFIED AND CONFIRMED BY OWNER, ARCHITECT AND ENGINEER PRIOR TO ORDERING SYSTEMS.

D. ALL LIGHT FIXTURES ARE TO BE PROVIDED BY SPECIFIED MANUFACTURER OR APPROVED EQUAL. "ALTERNATE MANUFACTURER" AND "OR APPROVED EQUAL" MEAN EQUIVALENT OR SUPERIOR IN PERFORMANCE, MATERIALS, WORKMANSHIP AND APPEARANCE TO THE SPECIFIED EQUIPMENT.

E. CONTRACTOR SHALL PROVIDE AND INSTALL ALL DRIVERS REQUIRED TO OPERATE ALL LAMPS SPECIFIED, INCLUDING REMOTE DRIVERS AND THE ENCLOSURES FOR SAME. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF COMPATIBILITY BETWEEN LAMPS SPECIFIED, DRIVER SPECIFIED, DIMMING, AND OTHER CONTROL DEVICES SPECIFIED. NOTIFY ARCHITECT AND ENGINEER CONSULTANT OF ANY INCOMPATIBILITY PRIOR TO ORDERING EQUIPMENT.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE COORDINATION OF ALL LIGHTING EQUIPMENT AND CONTROL DEVICES WITH CEILING AND WALL TYPES SPECIFIED PRIOR TO ORDERING LIGHTING EQUIPMENT.

G. PRELIMINARY AIMING OF ALL ADJUSTABLE LIGHTING EQUIPMENT SHALL BE DONE DURING INSTALLATION BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE LIGHTING PLANS / AIMING DIAGRAM, WHERE SUCH A DIAGRAM IS INCLUDED IN CONTRACT DOCUMENTS OR AS AN ADDENDUM. FINAL AIMING OF ALL ADJUSTABLE LIGHTING EQUIPMENT SHALL BE DONE BY THE ELECTRICAL CONTRACTOR AS DIRECTED BY THE ARCHITECT.

H. IN ALL FIXTURES WITH ADJUSTABLE SOCKETS, SET SOCKETS DURING INSTALLATION TO LOCATE SPECIFIED LAMP IN CORRECT RELATIONSHIP TO REFLECTOR AS RECOMMENDED BY FIXTURE MANUFACTURER.

I. LIGHT FIXTURE COUNTS INDICATED ARE FOR COORDINATION AND CALCULATION PURPOSES ONLY AND SHOULD NOT BE USED FOR PRICING OR PURCHASING. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE QUANTITIES OF FIXTURES AND ACCESSORIES TO HAVE A COMPLETE INSTALLATION OF ALL LIGHTING SYSTEMS.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA


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Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LUMINAIRE SCHEDULE**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**E0.03**

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, THIS SHEET IS ORIGINAL PAGE SIZE

# MECHANICAL AND PLUMBING...

| TAG | | | LOAD | | | | | LOCATION |
|---|---|---|---|---|---|---|---|---|
| NAME | # | DESCRIPTION | HP | KVA | FLA | VOLTS | Ø | LEVEL |
| CP | 01 | CONDENSATE PUMPS | 0.00 hp | 0.27 kW | 4 A | 120.00 V | 1 | 1ST FLOOR |
| CP | 02 | CONDENSATE PUMPS | 0.00 hp | 0.27 kW | 4 A | 120.00 V | 1 | 1ST FLOOR |
| CP | 03 | CONDENSATE PUMPS | 0.00 hp | 0.27 kW | 4 A | 120.00 V | 1 | 1ST FLOOR |
| CP | 04 | CONDENSATE PUMPS | 0.00 hp | 0.27 kW | 4 A | 120.00 V | 1 | 1ST FLOOR |
| CP | 05 | CONDENSATE PUMPS | 0.00 hp | 0.27 kW | 4 A | 120.00 V | 1 | 1ST FLOOR |
| DCWP | 01A | BOOSTER PUMP | 3.00 hp | 3.80 kW | 5 A | 480.00 V | 3 | 1ST FLOOR |
| DCWP | 01B | BOOSTER PUMP | 3.00 hp | 3.80 kW | 5 A | 480.00 V | 3 | 1ST FLOOR |
| DOAS | 1 | HEAT PUMP UNIT | 0.00 hp | 11.50 kW | 18 A | 480.00 V | 3 | ROOF THEATER |
| EF | 1 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 2 | EXHAUST FAN | 0.06 hp | 0.01 kW | 0 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 3 | EXHAUST FAN | 0.06 hp | 0.01 kW | 0 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 4 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 5 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 6 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 7 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 8 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 9 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 10 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 11 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 12 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 13 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 14 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 15 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EF | 16 | EXHAUST FAN | 0.07 hp | 2.16 kW | 18 A | 120.00 V | 1 | 1ST FLOOR |
| EWC | 01 | ELECTRIC WATER COOLER | 0.00 hp | 1.80 kW | 15 A | 120.00 V | 1 | 1ST FLOOR |
| EWC | 02 | ELECTRIC WATER COOLER | 0.00 hp | 1.80 kW | 15 A | 120.00 V | 1 | 1ST FLOOR |
| EWC | 03 | ELECTRIC WATER COOLER | 0.00 hp | 1.80 kW | 15 A | 120.00 V | 1 | 1ST FLOOR |
| EWH1 | 01 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 02 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 03 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 04 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 05 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 06 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 07 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 08 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 09 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 10 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 11 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 12 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH1 | 13 | ELECTRIC WATER HEATER | 0.00 hp | 5.60 kW | 27 A | 208.00 V | 1 | 1ST FLOOR |
| EWH2 | 9 | ELECTRIC WATER HEATER | 0.00 hp | 8.00 kW | 43 A | 208.00 V | 1 | 1ST FLOOR |
| EWH2 | 10 | ELECTRIC WATER HEATER | 0.00 hp | 8.00 kW | 43 A | 208.00 V | 1 | 1ST FLOOR |
| EWH3 | 02 | ELECTRIC WATER HEATER | 0.00 hp | 13.00 kW | 63 A | 208.00 V | 1 | 1ST FLOOR |
| EWH3 | 03 | ELECTRIC WATER HEATER | 0.00 hp | 13.00 kW | 63 A | 208.00 V | 1 | 1ST FLOOR |
| EWH3 | 04 | ELECTRIC WATER HEATER | 0.00 hp | 13.00 kW | 63 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 1 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 2 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 3 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 4 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 5 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 6 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 7 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 8 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 9 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 10 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 17 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 11 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| FC | 12 | FAN COIL UNIT | 0.00 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 01-01 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 01-02 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 03-01 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 03-02 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 03-03 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |
| HIU | 03-04 | HEAT INDOOR UNIT | 1.50 hp | 0.00 kW | 18 A | 208.00 V | 1 | 1ST FLOOR |

# MECHANICAL AND PLUMBING...

| TAG | | | LOAD | | | | | LOCATION |
|---|---|---|---|---|---|---|---|---|
| NAME | # | DESCRIPTION | HP | KVA | FLA | VOLTS | Ø | LEVEL |
| HOU | 03-01 | HEAT OUTDOOR UNIT | 0.00 hp | 5.00 kW | 30 A | 208.00 V | 1 | ROOF THEATER |
| HOU | 03-02 | HEAT OUTDOOR UNIT | 0.00 hp | 5.00 kW | 30 A | 208.00 V | 1 | ROOF THEATER |
| HOU | 03-03 | HEAT OUTDOOR UNIT | 0.00 hp | 5.00 kW | 30 A | 208.00 V | 1 | 1ST FLOOR |
| HOU | 03-04 | HEAT OUTDOOR UNIT | 0.00 hp | 5.00 kW | 30 A | 208.00 V | 1 | 1ST FLOOR |
| HP | 1 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 2 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 3 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 4 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 5 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 6 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 7 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 8 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 9 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 10 | HEAT PUMP UNIT | 0.00 hp | 3.54 kW | 17 A | 208.00 V | 1 | ROOF THEATER |
| HP | 11 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| HP | 12 | HEAT PUMP UNIT | 0.00 hp | 2.33 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| IP | 01 | IRRIGATION PUMP | 15.00 hp | 17.46 kW | 21 A | 480.00 V | 3 | 1ST FLOOR |
| IU | 01-01 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-02 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 2ND FLOOR CATWALK |
| IU | 01-03 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-04 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-05 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-06 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-07 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-08 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-09 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-10 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-11 | INDOOR UNIT | 1.50 hp | 0.00 kW | 14 A | 208.00 V | 1 | 2ND FLOOR CATWALK |
| IU | 01-12 | INDOOR UNIT | 1.50 hp | 0.00 kW | 1 A | 208.00 V | 1 | 1ST FLOOR |
| IU | 01-13 | INDOOR UNIT | 1.50 hp | 0.00 kW | 1 A | 208.00 V | 1 | 1ST FLOOR |
| LIFT | 1 | TBC | 0.00 hp | 3.60 kW | 30 A | 120.00 V | 1 | 1ST FLOOR |
| LIFT | 2 | TBC | 0.00 hp | 3.60 kW | 30 A | 120.00 V | 1 | 1ST FLOOR |
| OU | 01-01 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-01 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| OU | 01-02 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | T.O.P. MUSIC |
| OU | 01-02 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| OU | 01-03 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-04 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-05 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-07 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-08 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-09 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-10 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | 1ST FLOOR |
| OU | 01-11 | OUTDOOR UNIT | 0.00 hp | 2.30 kW | 14 A | 208.00 V | 1 | ROOF THEATER |
| OU | 01-13 | OUTDOOR UNIT | 0.00 hp | 3.30 kW | 20 A | 208.00 V | 1 | ROOF THEATER |
| OU | 9 | OUTDOOR UNIT | 0.00 hp | 3.30 kW | 20 A | 208.00 V | 1 | ROOF THEATER |
| RTU | 1 | ROOF TOP UNIT | 0.00 hp | 39.14 kW | 61 A | 480.00 V | 3 | ROOF THEATER |
| RTU | 3 | ROOF TOP UNIT | 0.00 hp | 8.30 kW | 10 A | 480.00 V | 3 | 1ST FLOOR |
| RTU | 4 | ROOF TOP UNIT | 0.00 hp | 8.30 kW | 10 A | 480.00 V | 3 | ROOF THEATER |
| RTU | 5 | ROOF TOP UNIT | 0.00 hp | 12.10 kW | 15 A | 480.00 V | 3 | 1ST FLOOR |
| RTU | 6 | ROOF TOP UNIT | 0.00 hp | 12.10 kW | 15 A | 480.00 V | 3 | 1ST FLOOR |
| RTU | 7 | ROOF TOP UNIT | 0.00 hp | 12.10 kW | 15 A | 480.00 V | 3 | ROOF THEATER |
| RTU | 8 | ROOF TOP UNIT | 0.00 hp | 32.50 kW | 41 A | 480.00 V | 3 | ROOF THEATER |
| RTU | 9 | ROOF TOP UNIT | 0.00 hp | 32.50 kW | 41 A | 480.00 V | 3 | ROOF THEATER |
| RTU | 10 | ROOF TOP UNIT | 0.00 hp | 32.50 kW | 41 A | 480.00 V | 3 | ROOF THEATER |
| SMV | 02-01 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-02 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-03 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-04 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-05 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-06 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-07 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-08 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| SMV | 02-09 | TBC | 0.00 hp | 0.36 kW | 3 A | 120.00 V | 1 | ROOF THEATER |
| W/D | # | WASHER/DRYER | 0.00 hp | 1.80 kW | 15 A | 120.00 V | 1 | 1ST FLOOR |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA


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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL EQUIPMENTS SCHEDULE**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# E0.04

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 3" LONG WHEN PLOTTED AT FULL SHEETS ORIGINAL PAGE SIZE

| ROOM TYPE | OCC SENSOR: AUTO ON | OCC SENSOR: MANUAL ON | OCC SENSOR: AUTO OFF | OCC SENSOR: PARTIAL OFF AT NORMAL HOURS | OCC SENSOR: AUTO AUTO OFF AFTER HOURS | PHOTOCELL: AUTO OFF @ TARGET FC | PHOTOCELL: AUTO DIM @ TARGET FC | PHOTOCELL: SET LEVEL TO 50 FC | DIMMING: CONTINUOUS | DIMMING: STEP | DIMMING: MULTI ZONE | TIME CLOCK: TIME ON | TIME CLOCK: TIME OFF | TIME CLOCK: ASTRONOMICAL TIME CLOCK | SWITCHES: WALL SWITCH | SWITCHES: DIMMER SWITCH | SYSTEM: SCENE CONTROL | SYSTEM: PLUG LOAD | SYSTEM: NETWORK | SYSTEM: STAND-ALONE | SYSTEM: CURRENT MONITORING | SYSTEM: AUXILIARY RELAY | SYSTEM: REMOTE SIGNAL CONTROL | SYSTEM: DEMAND RESPONSE | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Commercial Bldg (> 10,000 sq ft) | | | | | | | | | | | | | | | | | ● | ● | | ● | | | | ● | Demand Response required. Total area will need to be broken down to be Title 24 compliant. Current monitoring is included into demand response products. Spaces with Total Lighting < .5W/Sqft are not included. |
| Areas w/ 1-2 lamp single luminaire (< 100 sq ft) | 100% | | 20 min | | | | | | | | | | | | ● | | | | | | | | | | Spaces with more than 100 sq ft will need either continuous dimming or 4 levels of step dimming, depending on lighting type. |
| Small Office (≤ 250 sq ft) | | ● | 20 min | | | | ● | | ● | ● | | | | | | ● | | ● | | ● | | | | | ● | Plug Load Required. Sensor required space. Partial On or Vacancy if space requires multilevel. |
| Large Office ( >250 sq ft) | | ● | 20 min | | | | ● | | ● | ● | ● | 7 AM | 7 PM | | | ● | | ● | | ● | | | | | ● | Can be either occupancy sensor or time clock or both Plug Load Required. |
| Open Office Area | | ● | 20 min | | | | ● | | ● | ● | ● | 7 AM | 7 PM | | | ● | | ● | | ● | ● | | | | ● | Can be either occupancy sensor or time clock or both Plug Load Required |
| Classroom (> .7 W per sq ft) | | ● | 20 min | | | | ● | | ● | ● | ● | | | | | ● | | | | ● | | | | | ● | Sensor required space. Classrooms ≤ 0.7W per sq ft are exempt from multi-level control, but require bilevel 30-70%. Partial On or Vacancy if space requires multilevel. |
| Conference Room | | ● | 20 min | | | | ● | | ● | ● | ● | | | | | ● | | ● | | ● | | | | | ● | Sensor required space<br>Plug Load Required. Partial On or Vacancy if space requires multilevel. |
| Copy Room | | ● | 20 min | | | | | | ● | ● | | | | | | ● | | ● | | ● | | | | | ● | Plug load control required. All other Title 24 options are needed per office size requirements. |
| Electrical Room (< 100 sq ft) | 100% | | 20 min | | | | | | | | | | | | ● | | | | | | | | | | DW-100 sourced<br>Cannot be solely Automatically Controlled |
| Janitor Closet | 100% | | 20 min | | | | | | | | | | | | ● | | | | | | | | | | DW-100 sourced |
| Restroom (≥ 100 sq ft) | 100% | | 20 min | | | | | | ● | ● | | | | | | ● | | | | ● | | | | | ● | Restrooms are exempt from multi-level, but require bilevel 30-70% |
| Office Kitchens | | ● | 20 min | | | | | | ● | ● | | | | | | ● | | ● | | ● | | | | | ● | |
| Corridor (STAGE) | 100% | | | 50% 10 min | 10 min | | | | ● | ● | | | | | | ● | | | | ● | | | | | ● | In corridor behind the stage, include a manual override that reduces lighting to 1-2 FC during performances. When the override is active, the auto-on should be to this reduced level. |
| Lobby | 100% | | 20 min | | | | ● | | ● | ● | | | | | | ● | | ● | | ● | | | | | ● | Plug load required only for reception lobby |
| Storage Room (< 100 sq ft) | 100% | | 20 min | | | | | | | | | | | | ● | | | | | | | | | | DW-100 sourced |
| Library Stacks | 100% | | | 50% 20 min | 20 min | | ● | | ● | ● | ● | | | | | ● | | | | ● | | | | | ● | Must have independent zones for each aisle. Full or Partial Off, and Off After Hours |
| Library Open Area | 100% | | 20 min | | | | ● | | ● | ● | | | | | | ● | | | | ● | | | | | ● | |
| Restaurant / Dining | | ● | 20 min | | | | ● | | ● | ● | ● | | | | | ● | | | | ● | | | | | ● | |
| Cafeteria / Gym Multipurpose (>1000 sq ft) | | | | | | | ● | | ● | ● | ● | 5 AM | 11:00 PM | | | ● | | | | ● | | | | | ● | Room Controller with dimming capabilities and dimming switch will be needed if a photocell is necessary. |
| Multipurpose (≤ 1000 sq ft) | 100% | | 20 min | | | | ● | | ● | ● | ● | | | | | ● | | | | ● | | | | | ● | |
| Stairwell | 100% | | | 50% 20 min | 20 min | | | | ● | ● | | | | | | ● | | | | ● | | | | | ● | Full or Partial Off, and Off After Hour<br>For residential and hotel applications, stairwells can be kept on during after hours. |
| Exterior / Wall | 100% | | | 50% 20 min | | ● | | | ● | ● | | | | ● | | ● | | | | ● | | | | | ● | Outdoor luminaires with bottoms ≤ 24' above ground need occupancy sensors. No more than 1,500W lighting controlled together. |
| Control Room | | ● | | | | | | | ● | | ● | | | | | ● | | | | | | | | | | In control rooms, please configure sensors with Automatic off with max allowed delay. Manual on with 10%-100% dimming for general lighting. Manual-on with a fader-style dimmer for task lighting to allow for intuitive presets for the person using the room, which may change from week-to-week. |

**NOTES:**

- CONTINUOUS DIMMING AND STEP DIMMING ARE CHOSEN BASED ON LIGHT SOURCE TYPE PER TITLE 24 130.1A. IF CONTINUOUS DIMMING IS NOT NECESSARY PER LIGHTING SOURCE, THEN LMSW-103 WILL BE PROVIDED WITH 50% FOR STEP DIMMING.
- MULTIZONE IS SHOWN CHOSEN DUE TO TYPICAL ROOMS. FOR EXAMPLE, IF THERE IS A PRIMARY DAYLIGHT ZONE AND A NON-DAYLIGHTING ZONE, THEN THESE ZONES MUST BE SEPARATED. THEREFORE, AN OPEN OFFICE WILL NEED SEPARATED ZONES.
- THERE ARE NO TITLE 24 REQUIREMENTS FOR MANUAL ON AND AUTO ON. THERE ARE ONLY REQUIREMENTS FOR PARTIAL OFF NH AND AUTO OFF AH.
- DAYLIGHTING IS NOT NECESSARY WHEN AREAS DO NOT INCLUDE SKYLIGHTS OR GLAZING < 24 SQ FT OR SKYLIT+PRIMARY SIDELIT ZONE IS LESS THAN 120W. LUMINAIRES IN OR AT LEAST 50% WITHIN DAYLIGHTING ZONES MUST BE CONTROLLED.
- TIMECLOCK SETTINGS CAN BE CHANGED TO HAVE DIFFERENT TIME ON/OFF SETTINGS. TYPICAL SCHEDULES WERE ADDED IN CHART ABOVE.
- SCENE CONTROL IS NOT NECESSARY PER TITLE 24 AS LONG AS DIMMING PROVIDED IS PER LIGHTING SOURCE STANDARDS. SCENE CONTROL CAN BE CHECKED OFF BY END USER IF NEEDED.
- CONTROLLED PLUG LOAD MUST BE WITHIN 6 FT OF UNCONTROLLED RECEPTACLE WHERE CONTROLLED PLUG LOADS ARE NEEDED.
- EXTERIOR NOTES:

  - EXCEPTIONS: SIGNS, FAÇADE LIGHTING, STATUTES, BRIDGES, HEALTH OR LIFE SAFETY LIGHTING.
  - LUMINAIRES THAT ILLUMINATE PUBLIC RIGHT OF WAY ROADS, SIDEWALKS, AND BIKEWAYS.
  - EXTERIOR WALL: OUTDOOR LUMINAIRES WITH BOTTOMS LESS THAN OR EQUAL TO 24' ABOVE THE GROUND NEED MOTION OR OTHER CONTROLS.
  - OUTDOOR LIGHTING NEEDS TO BE CONTROLLED BY ASTRONOMICAL TIME CLOCK AND AUTOMATICALLY SHUT OFF BY PHOTOCELL.

- OCCUPANCY SENSOR REQUIRED SPACES (INDIVIDUAL OFFICES <250SQFT, MULTIPURPOSE <1000SQFT, CLASSROOMS, & CONFERENCE ROOMS) THAT MEET MULTILEVEL REQUIREMENT ( >100SQFT AND GENERAL LIGHTING OVER .5W/SQFT) MUST BE VANCANCY OR PARTIAL ON HOSPITALS AND CORRECTIONAL FACILITY INSTITUTIONS ARE EXEMPT FROM TITLE 24. THIS INCLUDES HOSPITALITY LOBBIES AND WAITING ROOMS USED FOR 365 24 HOUR OPERATIONS.
- DAYLIGHTING IS NOT NECESSARY WHEN AREAS DO NOT INCLUDE SKYLIGHTS OR GLAZING < 24 SQ FT OR SKYLIT+PRIMARY SIDELIT ZONE IS LESS THAN 120W. LUMINAIRES IN OR AT LEAST 50% WITHIN DAYLIGHTING ZONES MUST BE CONTROLLED.
- AUTO DIM AND PHOTOCELL ARE ONLY APPLICABLE WHEN NOT JUST ON A TIME CLOCK AND HAS DIMMING CAPABILITIES.
- CONTROLLED PLUG LOAD MUST BE WITHIN 6 FT OF UNCONTROLLED RECEPTACLE WHERE CONTROLLED PLUG LOADS ARE NEEDED. SEPARATE SHUT OFF CONTROL FOR EACH 5,000 SQ FT
- EXIT LUMINAIRE IS NOT UNDER GENERAL LIGHTING AND MUST BE KEPT ON 24 HOURS 365 DAYS.
- TARGET FC FOR DAYLIGHTING IS 150% DESIGN ILLUMINANCE AND LIGHTING IS TO BE REDUCED AT LEAST 65% POWER IN NONRESIDENTIAL INTERIOR. TARGET FC FOR DAYLIGHTING IN A PARKING GARAGE IS 150% DESIGN ILLUMINANCE AND LIGHTS ARE TO BE TURNED OFF.
- AREA CONTROL EXCEPTIONS: MALLS, AUDITORIUM, INDUSTRIAL FACILITIES, COMMERCIAL CENTERS. THE PERSON NEEDS TO BE ABLE TO SEE THE AREA THAT IS BEING CONTROLLED. FOR EXAMPLE, A SECURITY GUARD SHOULD BE ABLE TO SEE THE CONTROL SWITCH FOR THE AREAS THROUGH A SECURITY CAMERA WHEN SWITCHING LIGHTS.
- BASIS OF DESIGN IS LEGRAND, WATTSTOPPER DIGITAL LIGHTING MANAGEMENT, AND/OR ANALOG LIGHTING CONTROLS WHERE INDICATED.
- PRODUCT OFFERING: THE DIGITAL LIGHTING CONTROL SYSTEM MUST INCLUDE THE FOLLOWING PRODUCT OFFERINGS; WIRED ROOM AND BUILDING NETWORK, WIRELESS ROOM AND BUILDING NETWORK, AND HYBRID SOLUTIONS OF WIRED AND WIRELESS DEVICES. THE IN-ROOM SYSTEM, ONCE CONNECTED AND POWERED, MUST "SELF-CONFIGURE" VIA PLUG N' GO TO OPERATE IN PRESCRIBED DEFAULT ENERGY EFFICIENT SEQUENCE OF OPERATIONS BASED ON DEVICES ATTACHED. NO ADDITIONAL SOFTWARE OR ADDITIONAL SOFTWARE REQUIRED FOR BASIC CODE COMPLIANT OPPERATION. DEVICE CONNECTION SHALL CONNECT VIA RJ45 OR SECURE WIRELESS CONNECTION NO ADAPTORS SHALL BE REQUIRED.

- DEVICES: THE RELAY/DIMMING DEVICES (LMRC) WILL BE AVAILABLE IN 1 ,2, OR, 3 LOAD CONFIGURATIONS TO MINIMIZE THE NUMBER OF DEVICES REQUIRED TO BE INSTALLED AND MAINTAINED. SWITCHING STATIONS (LMSW,LMDM) MUST BE CAPABLE OF CONTROLLING LOADS, SCENES, NETWORK GROUPS, AND NETWORK SCENES WITHOUT A CHANGE IN PART NUMBER. SWITCHES MUST BE FIELD CONFIGURABLE. DAYLIGHT SENSORS (LMLS,LMDL) SHALL BE CAPABLE OF OPEN OR CLOSED LOOP OPERATION OF UP TO 3 ZONES VIA A SINGLE SENSOR. OPERATION OF DAYLIGHT CONTROL SHALL BE ADJUSTABLE AND WILL INCLUDE SWITCHING, BI-LEVEL, TRI-LEVEL, OR CONTINUOUS DIMMING. OCCUPANCY SENSORS (LMPC, LMDC, LMDX, LMPX, LMUC) WILL USE PIR AND OR ULTRASONIC DETECTION TECHNOLOGY. DIGITAL SENSORS ARE NOT TO HAVE ANY DIP SWITCHES. THE DETECTION SENSITIVITY SHALL BE ADJUSTABLE REMOTELY FROM 0-100% IN 10% INCREMENTS.

**QUICK SPECIFICATIONS:**

- INTEGRATION: THE NETWORKED LIGHTING CONTROL SYSTEM SHALL BE CAPABLE TO COMMUNICATING WITH THIRD PARTY SYSTEMS VIA BACNET. AVAILABLE BACNET INFORMATION SHALL INCLUDE THE FOLLOWING; TOTAL ROOM LIGHTING AND PLUG LOADS WATTS, ELECTRICAL CURRENT, TOTAL WATTS PER CONTROLLER, TOTAL ROOM WATTS/SQ FT., FORCE ON/OFF ALL LOADS, LOAD STATUS, SCHEDULE STATE NORMAL OR AFTER-HOURS, DEMAND RESPONSE ENABLE AND DISABLE, ROOM OCCUPANCY STATUS, DETECTION STATE, OCCUPANCY SENSOR TIME DELAY, OCCUPANCY SENSOR SENSITIVITY PIR AND ULTRASONIC, BUTTON STATE, SWITCH LOCK CONTROL, SWITCH LOCK STATUS, LIGHT LEVEL, DAY AND NIGHT SETPOINTS, OFF TIME DELAY,ON AND OFF SETPOINTS, UP TO THREE ZONE SETPOINTS, OPERATING MODE – ON/OFF, BI-LEVEL, TRI-LEVEL OR DIMMING, ACTIVATE/RESTORE DEMAND RESPONSE MODE FOR THE ROOM, READ/WRITE ACTIVATION OF DEMAND RESPONSE MODE FOR THE ROOM, AND WRITE MAXIMUM LIGHT LEVEL PER LOAD FOR DEMAND RESPONSE MODE.

- SERVICES: THE LIGHTING CONTROL MANUFACTURE SHALL PROVIDE A FULL COMPLIMENT OF SERVICES TO THE US AND CANADIAN MARKET PLACE. THESE SERVICES SHALL INCLUDE QUOTATION, SUBMITTAL, STARTUP, AND POST STARTUP SUPPORT. THE NETWORKED LIGHTING CONTROL SYSTEM SHALL BE CAPABLE OF SUPPORTING REMOTE TECHNICAL SUPPORT THROUGH SECURE CELLULAR MODEM TECHNOLOGY. THE MANUFACTURE SHALL OFFER ONGOING SERVICE CONTRACT SUPPORT SHOULD THE OWNER ELECT TO PURCHASE IT. THE SERVICE CONTRACT OFFERING SHALL INCLUDE 24-HOUR TECHNICAL SUPPORT. ALL SERVICES SHALL BE PROVIDED BY EITHER FACTORY AUTHORIZED SERVICE PROVIDER IN THE LOCAL MARKET (FASP), MANUFACTURER EMPLOYED RESOURCES, OR THIRD-PARTY CERTIFIED CONTRACTORS.

# LIGHTING CONTROL INTENT BOD

A. **LIGHTING CONTROL INTENT**

CONTRACTOR TO SUBMIT SHOP DRAWINGS INCLUDING BUT NOT LIMITED TO EQUIPMENT, DEVICE LOCATIONS, QUANTITITES, ETC FOR ENGINEER, ARCHITECT AND OWNERSHIP REVIEW.

GENERAL NOTES

1. BASIS OF DESIGN BASED ON LEGRAND/WATTSTOPPER. MANUFACTURER TO PROVIDE A COMPLETE, FUNCTIONAL LIGHTING CONTROL SYSTEM AS DESCRIBED IN BASIS OF DESIGN DOCUMENTATION.

2. OCCUPANCY SENSORS TO BE SET TO VACANCY, MANUAL ON/AUTOMATIC OFF. OCCUPANCY SENSOR TIME DELAY FUNCTIONS TO BE SET AS FOLLOWS (CONFIRM TIME DELAY SETTINGS WITH OWNER. PROVIDE TEST REPORT FOR EACH SPACE):

   A. OFFICE - 30 MIN
   B. RESTROOM - 10 MIN
   C. BOH - 5 MIN
   D. STAFF- 10 MIN

3. LIGHTING IN CORRIDOR AND COMMON AREAS HAS BEEN DESIGNED TO MAINTAIN A MINIMUM OF 1 FOOT CANDLE IN THE PATH OF EGRESS TO BUILDING EXIT DURNING REGULAR OCCUPIED HOURS.

4. EMERGENCY LIGHTING IN THE CORRIDOR AND COMMON AREAS HAS BEEN DESIGNED TO MAINTAIN AN AVERAGE OF 1 FOOT CANDLE AND A MINIMUM OF 0.1 FOOT CANDLES FOR 90 MINUTES DURING POWER FAILURE.

5. ALL TESTS REPORTS TO BE PROVIDED PRIOR TO OCCUPANCY.

   A. CONTROLS INSTALLED TO OVERRIDE LIGHTING IN THE AUTOMATIC DAYLIGHT ZONES SHALL ALLOW THE LIGHTS TO REMAIN ON FOR NO MORE THEN 2 HOURS WHEN THE OVERRIDE IS INTIATED.
   B. MEASURE AVERAGE LIGHT LEVELS FOR DAYLIGHT SENSORS 2'-6" A.F.F.
   C. DAYLIGHT SENSORS TO BE SET AT NIGHT AND DAY. PROVIDE TEST REPORT FOR EACH SPACE.

6. PRIMARY AND SECONDARY DAYLIGHTING ZONES AS REQUIRED BY CODE. PROVIDE LOW VOLTAGE DIMMING DAYLIGHT SENSOR FOR EACH DAYLIGHT ZONE, EITHER SINGLE ZONE OR MULTIZONE.

   A. PRIMARY DAYLIGHTING ZONE - DAYLIGHTING ZONE EXTENDS TO INTERIOR OF SPACE EQUAL DISTANCE TO HEAD HEIGHT OF WINDOW AND 2'-0" TO EITHER SIDE OF WINDOW OPENING.
   B. SECONDARY DAYLIGHTING ZONE - DAYLIGHTING ZONE EXTENDS TO INTERIOR OF SPACE EQUAL DISTANCE TO TWICE HEAD HEIGHT OF WINDOW AND 2'-0" TO EITHER SIDE OF WINDOW OPENING.

7. PROVIDE LIGHTING CONTROLS AS REQUIRED BY CODE AND DESCRIBED BELOW. CONTRACTOR TO VERIFY NUMBER OF RELAYS AND ROOM CONTROLLERS REQUIRED IN EACH SPACE.

8. CONTRACTOR TO LOCATE ROOM CONTROLLERS ABOVE ACCESSIBLE CEILING IN SAME GENERAL LOCATION IN EACH ROOM FOR EASY MAINTENANCE. FOR ROOMS WITH HARD LID CEILINGS, LOCATE ABOVE NEAREST ADJACENT ACCESSIBLE CEILING.

9. OCCUPANCY SENSORS ARE TO BE PROVIDED WITH DUAL HARD CONTACTS. COORDINATE WITH DIV. 23 FOR USE OF AUX CONTACTS FOR UNOCCUPIED HOUR SETBACKS AND USE OF LIGHTING OCCUPANCY SENSORS FOR DIV. 23 CONTROLS.

EXTERIOR

1. BUILDING MOUNTED LIGHTING
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP) WITH PHOTOCELL CONTROL. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER
      a. DUSK - ON TO 100%
      b. 11PM - OFF
      c. 4AM - ON TO 100%
      d. DAWN - OFF

2. SITE LIGHTING
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP) WITH PHOTOCELL CONTROL. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER
      a. DUSK - ON TO 100%
      b. 11PM - OFF
      c. 4AM - ON TO 100%
      d. DAWN - OFF

3. EXTERIOR COURTYARD SPACE
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP) WITH PHOTOCELL CONTROL. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER
      a. DUSK - ON TO 100%
      b. 11PM - OFF
      c. 4AM - ON TO 100%
      d. DAWN - OFF

4. LANDSCAPE LIGHTING
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP) WITH PHOTOCELL CONTROL. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER
      a. DUSK - ON TO 100%
      b. 11PM - OFF
      c. 4AM - ON TO 100%
      d. DAWN - OFF

INTERIOR

1. CLASSROOMS
   A. LOW VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSORS WITH DAYLIGHT SENSORS FOR CONTINOUS DIMMING DAYLIGHT HARVESTING. LOW VOLTAGE ON/OFF LIGHTING CONTROL STATION TO BE LOCATED AT EACH DOOR INTO CLASSROOM. LOW VOLTAGE LIGHTING DIMMING SCENE CONTROLLER TO BE LOCATED AT TEACHING WALL AND BY TEACHER DESK. FUNCTION TO BE AS FOLLOWS (CONFIRM WITH OWNER):
      a. ON
      b. TEACH
      c. AV
      d. OFF
      e. DIM UP/DIM DOWN

2. STAIRWELLS
   A. LOW VOLTAGE OCCUPANCY SENSOR CONTROL TO REDUCE LIGHTING TO 50% LUMINAIRE OUTPUT WHEN NO OCCUPANCY IS SENSED AND INCREASE TO 100% LUMINAIRE OUTPUT WHEN OCCUPANCY IS SENSED. SINCE THIS IS A 24/7 FACILITY, LIGHTING IN THIS AREA SHOULD NOT REDUCE TO 0% AT ANY TIME.

3. CORRIDORS
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP), LOW VOLTAGE OVERRIDE SWITCHES LOCATED AT FLOOR ENTRY POINTS, AND LOW VOLTAGE DIMMING DAYLIGHT SENSORS FOR CONTINUOUS DAYLIGHT DIMMING WHERE REQUIRED IN CORRIDORS FOR COMPLIANCE WITH CALIFORNIA STATE ENERGY CODE. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER.

4. LOBBY
   A. TIMECLOCK SCHEDULE CONTROL VIA LIGHTING CONTROL PANEL (LCP), LOW VOLTAGE OVERRIDE SWITCHES LOCATED AT FLOOR ENTRY POINTS, AND LOW VOLTAGE DIMMING DAYLIGHT SENSORS FOR CONTINUOUS DAYLIGHT DIMMING WHERE REQUIRED IN CORRIDORS FOR COMPLIANCE WITH CALIFORNIA STATE ENERGY CODE. TIMECLOCK SCHEDULE TO BE CONFIRMED WITH OWNER.

5. MEDIA ROOM AND MUSIC/DANCE CLASSROOMS
   A. LOW VOLTAGE DIMMING SCENE CONTROL, LOW VOLTAGE DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSORS AND DIMMING DAYLIGHT SENSORS FOR CONTINUOUS DAYLIGHT DIMMING.
   B. THEATRICAL LIGHTING AND CONTROLS IN THIS SPACE BY OTHERS.

6. MAIN THEATER
   A. ARCHITECTRUAL LIGHTING TO BE CONTROLLABLE BY DMX CONTROL AND INTEGRATE WITH THEATRICAL CONTROLS.
   B. THEATRICAL LIGHTING AND CONTROLS IN THIS SPACE BY OTHERS.

7. CONTROL ROOM
   A. LOW VOLTAGE DUAL TECHNONOLOGY WALL MOUNT OCCUPANCY SENSORS, LOW VOLTAGE DIMMING SCENE CONTROL WALL STATIONS.
   B. THEATRICAL LIGHTING AND CONTROLS IN THIS SPACE BY OTHERS.

8. OFFICES
   A. LOW VOLTAGE DUAL TECHNOLOGY WALL-MOUNTED OCCUPANCY SENSORS.

9. BACK OF HOUSE SPACES (STORAGE, JANITOR ROOMS, ETC.)
   A. LOW VOLTAGE DUAL TECHNOLOGY WALL-MOUNTED OCCUPANCY SENSORS.

10. KITCHEN, ELECTRICAL, MECHANICAL AND ELEVATOR PIT
    A. LOCAL DIMMING/SWITCHING EXEMPT FROM AUTOMATIC CONTROL FOR OCCUPANCY SAFETY.

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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Los Angeles, CA 90017
www.glumac.com
T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LIGHTING SEQUENCE OF OPERATIONS**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

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STATE OF CALIFORNIA
## Indoor Lighting
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies in low-rise multifamily mixed-use buildings. It is also used to document compliance with requirements in §160.5, §170.2(e) and §180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 4 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### F. INDOOR LIGHTING FIXTURE SCHEDEULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Name or Item Tag | Complete Luminaire Description | Modular Track Fixture | Small Aperture & Color Change(1) | Watts per luminaire(2) | How Wattage is determined | Total number luminaires | Excluded per §140.6(a)3/ §170.2(e)2C | Design Watts | Field Inspector | |
| | | | | | | | | | Pass | Fail |
| F-1A | LED | ☐ | ☐ | 37.2 | Mfr. Spec[2] | 38 | ☐ | 1413.6 | ☐ | ☐ |
| F-1A Theater | LED | ☐ | ☐ | 37.2 | Mfr. Spec[2] | 9 | ☒ | | ☐ | ☐ |
| F-2 | LED | ☐ | ☐ | 58.2 | Mfr. Spec[2] | 23 | ☒ | | ☐ | ☐ |
| F-3A | LED | ☐ | ☐ | 48.3 | Mfr. Spec[2] | 130 | ☐ | 6279 | ☐ | ☐ |
| F-3B | LED | ☐ | ☐ | 48 | Mfr. Spec[2] | 29 | ☐ | 1392 | ☐ | ☐ |
| F-3B Dressing | LED | ☐ | ☐ | 48 | Mfr. Spec[2] | 8 | ☒ | | ☐ | ☐ |
| F-4 | LED | ☐ | ☐ | 22.8 | Mfr. Spec[2] | 22 | ☐ | 501.6 | ☐ | ☐ |
| F-5 | LED | ☐ | ☐ | 35.8 | Mfr. Spec[2] | 16 | ☐ | 572.8 | ☐ | ☐ |
| F-6 | LED | ☐ | ☐ | 19.8 | Mfr. Spec[2] | 118 | ☐ | 2336.4 | ☐ | ☐ |
| F-7 | LED | ☐ | ☐ | 22 | Mfr. Spec[2] | 4 | ☐ | 88 | ☐ | ☐ |
| F-8 | LED | ☐ | ☐ | 42 | Mfr. Spec[2] | 6 | ☐ | 252 | ☐ | ☐ |
| F-9 | LED | ☐ | ☐ | 74 | Mfr. Spec[2] | 3 | ☐ | 222 | ☐ | ☐ |
| | | | | | | | Total Designed Watts CONDITIONED SPACES: | 13057.4 | Plus pgs | |

1. FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B/§170.2(e)2D is adjusted to be 75%/80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

2. Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)/§160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

3. Notes: Per section 140.6 3C - the wattage of fixture (9)F1A, F2, (8)F3B, F17, T2 & WD1 for theatrical and/or live performances is excluded.



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 2 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

### E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction

### F. INDOOR LIGHTING FIXTURE SCHEDEULE

REFER TO CONTINUATION SHEET FOR TABLE F

### G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

### H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

REFER TO CONTINUATION SHEET FOR TABLE H

### I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

REFER TO CONTINUATION SHEET FOR TABLE I

### J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 3 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This Section Does Not Apply

### L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This Section Does Not Apply

### M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This Section Does Not Apply

### N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This Section Does Not Apply

### O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This Section Does Not Apply

### P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This Section Does Not Apply

### Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This Section Does Not Apply

### R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS
This Section Does Not Apply

### S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This Section Does Not Apply

### T. DWELLING UNIT LIGHTING
This Section Does Not Apply

### U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
REFER TO CONTINUATION SHEET FOR TABLE U

### V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
REFER TO CONTINUATION SHEET FOR TABLE V



STATE OF CALIFORNIA
## Indoor Lighting
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| | | | | | |
|---|---|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | | Enforcement Agency: | | Page 1 of 9 |
| Dwelling Address: | 4921 CEDAR AVENUE | | Permit Number: | | |
| City and Zip Code: | EL MONTE, CA 91732 | | Permit Application Date: | 9/19/2023 | |

### A. GENERAL INFORMATION

| | | | | | |
|---|---|---|---|---|---|
| 01 | Project Location (city) | EL MONTE | 04 | Total Conditioned Floor Area (sf) | |
| 02 | Climate Zone | 3 | 05 | Total Unconditioned Floor Area (sf) | |
| 03 | Occupancy Types Within Project (select all that apply): | | 06 | # of Stories (Habitable Above Grade) | |

| | | | | | |
|---|---|---|---|---|---|
| ☐ Office | ☐ Retail | ☐ Warehouse | ☐ Hotel/Motel | ☒ School | ☐ Support Areas |
| ☐ High-Rise Residential Multifamily/MF Mixed-use >= 4 stories (includes dormitory, senior living) | | ☐ Healthcare Facilities | ☐ Parking Garage | | |
| | | ☐ Relocatable | ☐ All Others | ☐ Theater | ☐ Sports Arena |
| ☐ Auditorium | ☐ Commercial/Industrial | ☐ Grocery Store | ☐ Religious Facility | ☐ Data Center | ☐ Convention Center |
| ☐ Classroom | ☐ Library | ☐ Gymnasium | ☐ Restaurant/Commercial Kitchen | ☐ Financial Institution | ☐ Medical Clinic |

### B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

| Scope of Work | Conditioned Spaces | | Unconditioned Spaces | |
|---|---|---|---|---|
| 01 | 02 | 03 | 04 | 05 |
| My Project Consists of (check all that apply): | Calculation Method | Area (sf) | Calculation Method | Area (sf) |
| ☒ New Lighting System | Area Category | 23190 | | |
| ☐ New Lighting System - Parking Garage | | 0 | | |
| ☐ Altered Lighting System | | 0 | | |
| Total Area of Work (sf) | 23190 | | 0 | |

ALERT! The Rated Power Reduction Method for alterations may only be used for one-for-one luminaire alterations within a building or tenant space of 5,000 ft2 or less per §141.0(b)2iiii/§180.2(b)4.

### C. COMPLIANCE RESULTS

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1/§170.2(e).
If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

| | Allowed Lighting Power per 140.6(b) (Watts) | | | | | | | Adjusted Lighting Power per 140.6(a) (Watts) | | | | Compliance Results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 01 | 02 | 03 | 04 | | 05 | | 06 | 07 | | 08 | 09 |
| Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1/170.2(e) | Complete Building 140.6(c)1 | Area Category §140.6(c)2/ §170.2(e)4 | Area Category Additional §140.6(c)2G/ §170.2(e)4Av (+) | Tailored §140.6(c)3/ §170.2(e)4B (+) | = | Total Allowed (Watts) | >= | Total Designed (Watts) | Adjustments: PAF Lighting Control Credits §140.6(a)2/ §170.2(e)1B (-) | = | Total Adusted (Watts) *Includes Adjustments | 05 Must be >=08 §140.6/§ 170.2(e) |
| | (See Table I) | (See Table I) | (See Table J) | (See Table K) | | | | (See Table F) | (See Table P) | | | |
| Conditioned: | 0 | 14807.6 | 0 | 0 | = | 14807.6 | >= | 14805.2 | 0 | = | 14805.2 | Complies |
| Unconditioned: | | | | | = | | >= | | | = | | |

| | |
|---|---|
| Controls Compliance (See Table H for Details) | |
| Rated Power Reduction Compliance (See Table Q for Details) | |



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DATE: 10/15/2025

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| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
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T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** — **A NO.: 03-123641**

DATE: **06/23/2025** — CLIENT PROJ NO: **3361008100**

SHEET:

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STATE OF CALIFORNIA
**Indoor Lighting**
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 9 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | September 19, 2023 |

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

| | | | |
|---|---|---|---|
| Documentation Author Name: | MICHAEL SHEPHERD, P.E. | Documentation Author Signature: | |
| Company: | GLUMAC | Signature Date: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | CEA/HERS Certification Identification (if applicable): | |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |

RESPONSIBLE PERSON'S DECLARATION STATEMENT

2. I certify the following under penalty of perjury, under the laws of the State of California:
   1. The information provided on this Certificate of Compliance is true and correct.
   2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
   3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
   4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
   5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
   6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

| | | | |
|---|---|---|---|
| Responsible Designer Name: | MICHAEL SHEPHERD, P.E. | Responsible Designer Signature: | |
| Company: | GLUMAC | Date Signed: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | License: | E20195 |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 8 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| X | | NRCI-LTI-01-E - Must be submitted for all buildings | | |

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP).

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| X | | NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls. | | |
| X | | NRCA-LTI-03-A - Must be submitted for automatic daylight controls. | | |
| X | | NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls. | | |
| | X | NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF). | | |
| | X | NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factor (PAF). | | |



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 7 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

| 01 Area Description | 02 Complete Building or Area Category / Primary Function Area | 03 Allowed Density (W/ft2) | 04 Area (ft2) | 05 Allowed Wattage (Watts) | 06 Additional Allowances / Adjustments: Area Category | 06 Additional Allowances / Adjustments: PAF |
|---|---|---|---|---|---|---|
| | MAIN ENTRY LOBBY | 0.7 | 2916 | 2041.2 | | |
| | LOUNGE, BREAKROOM, OR WAIT AREA | 0.55 | 1070 | 588.5 | | |
| | ELECT, MECH, TELE ROOMS | 0.4 | 1009 | 403.6 | | |
| | OFFICE; ≤ 250 SQUARE FEET | 0.65 | 2252 | 1463.8 | | |
| | OFFICE; > 250 SQUARE FEET | 0.6 | 641 | 384.6 | | |
| | HEALTH; PATIENT ROOM | 0.7 | 528 | 369.6 | | |
| | RESTROOMS | 0.65 | 1118 | 726.7 | | |
| | HEALTH; NURSE'S STATION | 0.85 | 72 | 61.2 | | |
| | HEALTH; EXAM/TREATMENT ROOM | 1.15 | 70 | 80.5 | | |
| | MULTIPURPOSE | 0.75 | 8490 | 6367.5 | | |
| | COPY ROOM | 0.5 | | | | |
| | CONFERENCE | 0.75 | 888 | 666 | | |
| | CORRIDOR AREA | 0.4 | 4136 | 1654.4 | | |
| | LOCKER ROOM | 0.45 | 696 | 313.2 | | |
| | AUDIENCE SEATING AREA | 0.5 | 3872 | 1936 | | |
| | THEATER; PERFORMANCE | 0.8 | 3842 | 3073.6 | | |
| | LIBRARY; STACKS AREA | 1 | 156 | 156 | | |
| | TOTAL: | | 23190 | 14807.6 | See Tables J or P for detail | |



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 6 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.

Building Level Controls

| 01 Mandatory Demand Response §110.12(c) | 02 Shut-Off Controls §130.1(c) | 03 Field Inspector Pass | 03 Field Inspector Fail |
|---|---|---|---|
| | | | |

Area Level Controls

| 04 Area Description | 05 Complete Building or Area Category / Primary Function Area | 06 Manual Area Controls §130.1( a)/ §160.5(b)4A | 07 Multi-Level Controls §130.1(b)/ § 160.5(b)4B | 08 Shuf-Off Controls § 130.1(c)/ § 160.5(b)4C | 09 Primary/Skylit Daylighting § 130.1(d)/ § 160.5(b)4D | 10 Secondary Daylighting § 130.1(d)/ § 160.5(b)4D | 11 Interlocked Systems § 140.6(a)1/ § 170.5(e)2A | 12 Field Inspector Pass | 12 Field Inspector Fail |
|---|---|---|---|---|---|---|---|---|---|
| LOBBY | MAIN ENTRY LOBBY | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| RECEPTION | LOUNGE, BREAKROOM, OR WAIT AREA | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| ELEC, MECH, AV, DATA | ELECT, MECH, TELE ROOMS | Readily accessible | NA:Enclosed Area < 0.5w/sf | NA: Elec. Equip. rm | NA:Not daylit zone | NA:Not daylit zone | | | |
| OFFICE | OFFICE; ≤ 250 SQUARE FEET | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| OFFICE | OFFICE; > 250 SQUARE FEET | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| HEALTH CENTER | HEALTH; PATIENT ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| RESTROOMS | RESTROOMS | Readily accessible | NA:Restrooms | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| NURSE OFFICE | HEALTH; NURSE'S STATION | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| NURSE EXAM | HEALTH; EXAM/TREATMENT ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| STORAGES, CUSTODIAN, CLASSROOMS | MULTIPURPOSE | Readily accessible | NA:Enclosed Area < 0.5w/sf | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| WORK/MAIL | COPY ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| CONFERENCE ROOMS | CONFERENCE | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| CIRCULATION | CORRIDOR AREA | Readily accessible | Dimmer | Partial Off 130.1(c)/160.5(b)4 C | Yes | Yes | | | |
| DRESSING | LOCKER ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| 450 SEAT THEATER | AUDIENCE SEATING AREA | Auth. Personel | Multi-Level Controls | See Bldg Lvl | NA:Not daylit zone | NA:Not daylit zone | | | |
| ORCH PIT & STAGE | THEATER; PERFORMANCE | Auth. Personel | Multi-Level Controls | See Bldg Lvl | NA:Not daylit zone | NA:Not daylit zone | | | |
| MUSIC LIBRARY | LIBRARY; STACKS AREA | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |

13

Plan Sheet Showing Daylit Zones:

Explain here why item with asterisk complies



STATE OF CALIFORNIA
**Indoor Lighting**
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies in low-rise multifamily mixed-use buildings. It is also used to document compliance with requirements in §160.5, §170.2(e) and §180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 5 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

F. INDOOR LIGHTING FIXTURE SCHEDEULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

| 01 Name or Item Tag | 02 Complete Luminaire Description | 03 Track Fixture | 04 Small Aperture & Color Change(1) | 05 Watts per luminaire(2) | 06 How Wattage is determined | 07 Total number luminaires | 08 Excluded per §140.6(a)3/ §170.2(e)2C | 09 Design Watts | 10 Field Inspector Pass | 10 Field Inspector Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| F-10 | LED | | | 22 | Mfr. Spec[2] | 28 | | 616 | | |
| F-11 | LED | | | 18 | Mfr. Spec[2] | 17 | | 306 | | |
| F-12 | LED | | | 21 | Mfr. Spec[2] | 12 | | 252 | | |
| F-13 | LED | | | 22 | Mfr. Spec[2] | 8 | | 176 | | |
| F-14 | LED | | | 12 | Mfr. Spec[2] | 13 | | 156 | | |
| F-15 | LED | | | 20 | Mfr. Spec[2] | 5 | | 100 | | |
| F17 | LED | | | 40 | Mfr. Spec[2] | 13 | X | | | |
| K | LED | | | 8.2 | Mfr. Spec[2] | 3 | | 24.6 | | |
| T | LED | | | 5.5 | Mfr. Spec[2] | 12 | | 66 | | |
| T2 | LED | | | 8.8 | Mfr. Spec[2] | 57 | x | | | |
| WD1 | LED | | | 3 | Mfr. Spec[2] | 90 | x | | | |
| TA1 | LED | | | 6.4 | Mfr. Spec[2] | 8 | | 51.2 | | |
| | | | | | | Total Designed Watts CONDITIONED SPACES: | | 1747.8 | Plus pgs | |

1. FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B/§170.2(e)2D is adjusted to be 75%/80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

2. Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)/§160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

3. Notes: Per section 140.6 3C - the wattage of fixture (9)F1A, F2, (8)F3B, F17, T2 & WD1 for theatrical and/or live performances is excluded.



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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC
A TETRA TECH COMPANY
engineers for a sustainable future™
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** — **A NO.: 03-123641**

DATE: **06/23/2025** — CLIENT PROJ NO: **3361008100**

SHEET:

**E0.07**

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STATE OF CALIFORNIA
**Indoor Lighting**
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies in low-rise multifamily mixed-use buildings. It is also used to document compliance with requirements in §160.5, §170.2(e) and §180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 9 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | September 19, 2023 |

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

| | | | |
|---|---|---|---|
| Documentation Author Name: | MICHAEL SHEPHERD, P.E. | Documentation Author Signature: | |
| Company: | GLUMAC | Signature Date: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | CEA/HERS Certification Identification (if applicable): | |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |

RESPONSIBLE PERSON'S DECLARATION STATEMENT

2. I certify the following under penalty of perjury, under the laws of the State of California:
   1. The information provided on this Certificate of Compliance is true and correct.
   2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
   3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
   4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
   5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
   6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

| | | | |
|---|---|---|---|
| Responsible Designer Name: | MICHAEL SHEPHERD, P.E. | Responsible Designer Signature: | |
| Company: | GLUMAC | Date Signed: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | License: | E20195 |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |



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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 8 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| X | | NRCI-LTI-01-E - Must be submitted for all buildings | | |

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP).

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| X | | NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls. | | |
| X | | NRCA-LTI-03-A - Must be submitted for automatic daylight controls. | | |
| X | | NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls. | | |
| | X | NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF). | | |
| | X | NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factor (PAF). | | |



STATE OF CALIFORNIA
**Indoor Lighting**
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 7 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per §140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

| 01 Area Description | 02 Complete Building or Area Category / Primary Function Area | 03 Allowed Density (W/ft2) | 04 Area (ft2) | 05 Allowed Wattage (Watts) | 06 Additional Allowances / Adjustments: Area Category | 06 Additional Allowances / Adjustments: PAF |
|---|---|---|---|---|---|---|
| | MAIN ENTRY LOBBY | 0.7 | 2916 | 2041.2 | | |
| | LOUNGE, BREAKROOM, OR WAIT AREA | 0.55 | 1070 | 588.5 | | |
| | ELECT, MECH, TELE ROOMS | 0.4 | 1009 | 403.6 | | |
| | OFFICE; ≤ 250 SQUARE FEET | 0.65 | 2252 | 1463.8 | | |
| | OFFICE; > 250 SQUARE FEET | 0.6 | 641 | 384.6 | | |
| | HEALTH; PATIENT ROOM | 0.7 | 528 | 369.6 | | |
| | RESTROOMS | 0.65 | 1118 | 726.7 | | |
| | HEALTH; NURSE'S STATION | 0.85 | 72 | 61.2 | | |
| | HEALTH; EXAM/TREATMENT ROOM | 1.15 | 70 | 80.5 | | |
| | MULTIPURPOSE | 0.75 | 8490 | 6367.5 | | |
| | COPY ROOM | 0.5 | | | | |
| | CONFERENCE | 0.75 | 888 | 666 | | |
| | CORRIDOR AREA | 0.4 | 4136 | 1654.4 | | |
| | LOCKER ROOM | 0.45 | 696 | 313.2 | | |
| | AUDIENCE SEATING AREA | 0.5 | 3872 | 1936 | | |
| | THEATER; PERFORMANCE | 0.8 | 3842 | 3073.6 | | |
| | LIBRARY; STACKS AREA | 1 | 156 | 156 | | |
| | TOTAL: | | 23190 | 14807.6 | See Tables J or P for detail | |



STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTI-E

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies in low-rise multifamily mixed-use buildings. It is also used to document compliance with requirements in §160.5, §170.2(e) and §180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 6 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces. When a control having a * is shown, the notes section of this table provides more detail on how compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.

Building Level Controls

| 01 Mandatory Demand Response §110.12(c) | 02 Shut-Off Controls §130.1(c) | 03 Field Inspector Pass | 03 Field Inspector Fail |
|---|---|---|---|
| | | | |

Area Level Controls

| 04 Area Description | 05 Complete Building or Area Category / Primary Function Area | 06 Manual Area Controls §130.1( a)/ §160.5(b)4A | 07 Multi-Level Controls §130.1(b)/ § 160.5(b)4B | 08 Shuf-Off Controls § 130.1(c)/ § 160.5(b)4C | 09 Primary/Skylit Daylighting § 130.1(d)/ § 160.5(b)4D | 10 Secondary Daylighting § 130.1(d)/ § 160.5(b)4D | 11 Interlocked Systems § 140.6(a)1/ § 170.5(e)2A | 12 Field Inspector Pass | 12 Field Inspector Fail |
|---|---|---|---|---|---|---|---|---|---|
| LOBBY | MAIN ENTRY LOBBY | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| RECEPTION | LOUNGE, BREAKROOM, OR WAIT AREA | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| ELEC, MECH, AV, DATA | ELECT, MECH, TELE ROOMS | Readily accessible | NA:Enclosed Area < 0.5w/sf | NA: Elec. Equip. rm | NA:Not daylit zone | NA:Not daylit zone | | | |
| OFFICE | OFFICE; ≤ 250 SQUARE FEET | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| OFFICE | OFFICE; > 250 SQUARE FEET | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| HEALTH CENTER | HEALTH; PATIENT ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| RESTROOMS | RESTROOMS | Readily accessible | NA:Restrooms | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| NURSE OFFICE | HEALTH; NURSE'S STATION | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| NURSE EXAM | HEALTH; EXAM/TREATMENT ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| STORAGES, CUSTODIAN, CLASSROOMS | MULTIPURPOSE | Readily accessible | NA:Enclosed Area < 0.5w/sf | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| WORK/MAIL | COPY ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| CONFERENCE ROOMS | CONFERENCE | Readily accessible | Dimmer | Occ. Sensor | Yes | Yes | | | |
| CIRCULATION | CORRIDOR AREA | Readily accessible | Dimmer | Partial Off 130.1(c)/160.5(b)4 C | Yes | Yes | | | |
| DRESSING | LOCKER ROOM | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |
| 450 SEAT THEATER | AUDIENCE SEATING AREA | Auth. Personel | Multi-Level Controls | See Bldg Lvl | NA:Not daylit zone | NA:Not daylit zone | | | |
| ORCH PIT & STAGE | THEATER; PERFORMANCE | Auth. Personel | Multi-Level Controls | See Bldg Lvl | NA:Not daylit zone | NA:Not daylit zone | | | |
| MUSIC LIBRARY | LIBRARY; STACKS AREA | Readily accessible | Dimmer | Occ. Sensor | NA:Not daylit zone | NA:Not daylit zone | | | |

13

Plan Sheet Showing Daylit Zones:

Explain here why item with asterisk complies



STATE OF CALIFORNIA
**Indoor Lighting**
NRCC-LTI-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

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| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 5 of 9 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

F. INDOOR LIGHTING FIXTURE SCHEDEULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Conditioned Spaces

| 01 Name or Item Tag | 02 Complete Luminaire Description | 03 Track Fixture | 04 Small Aperture & Color Change(1) | 05 Watts per luminaire(2) | 06 How Wattage is determined | 07 Total number luminaires | 08 Excluded per §140.6(a)3/ §170.2(e)2C | 09 Design Watts | 10 Field Inspector Pass | 10 Field Inspector Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| F-10 | LED | | | 22 | Mfr. Spec[2] | 28 | | 616 | | |
| F-11 | LED | | | 18 | Mfr. Spec[2] | 17 | | 306 | | |
| F-12 | LED | | | 21 | Mfr. Spec[2] | 12 | | 252 | | |
| F-13 | LED | | | 22 | Mfr. Spec[2] | 8 | | 176 | | |
| F-14 | LED | | | 12 | Mfr. Spec[2] | 13 | | 156 | | |
| F-15 | LED | | | 20 | Mfr. Spec[2] | 5 | | 100 | | |
| F17 | LED | | | 40 | Mfr. Spec[2] | 13 | X | | | |
| K | LED | | | 8.2 | Mfr. Spec[2] | 3 | | 24.6 | | |
| T | LED | | | 5.5 | Mfr. Spec[2] | 12 | | 66 | | |
| T2 | LED | | | 8.8 | Mfr. Spec[2] | 57 | x | | | |
| WD1 | LED | | | 3 | Mfr. Spec[2] | 90 | x | | | |
| TA1 | LED | | | 6.4 | Mfr. Spec[2] | 8 | | 51.2 | | |
| | | | | | | Total Designed Watts CONDITIONED SPACES: | | 1747.8 | Plus pgs | |

1. FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B/§170.2(e)2D is adjusted to be 75%/80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

2. Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)/§160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

3. Notes: Per section 140.6 3C - the wattage of fixture (9)F1A, F2, (8)F3B, F17, T2 & WD1 for theatrical and/or live performances is excluded.



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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** — **A NO.: 03-123641**

DATE: **06/23/2025** — CLIENT PROJ NO: **3361008100**

SHEET:

**E0.08**

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THE LINE SHOWN ABOVE IS 1" LONG WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY.

STATE OF CALIFORNIA

## Electrical Power Distribution

NRCC-LTC-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-ELC-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 6 of 7 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### J. ELECTRIC READY BUILDINGS

This table includes electrical system requirements that must be met when using gas or propane heating, cooking or clothes drying in multifamily occupancies to demonstrate compliance with §160.9.

| | | | | | | |
|---|---|---|---|---|---|---|
| 01 | Systems serving multifamily occupancy that use gas or propane include: | ☐ Furnaces serving individual dwelling units | ☐ Cooktops serving individual dwelling units | ☐ Clothes dryers serving individual dwelling units | ☐ Clothes dryers in common areas | ☒ None of these |

**Gas/ Propane Furnaces Serving Individual Dwelling Units (Heat Pump Space Heater Ready)**

| | YES | Requirement |
|---|---|---|
| 02 | ☐ | A dedicated 240 volt branch circuit shall be installed within 3 feet from the furnace and accessible to the furnace with no obstructions. The branch circuit shall be rated at 30 amps minimum. The blank cover shall be identified as "240V ready". All electrical components shall be installed in accordance with the California Electrical Code. |
| 03 | ☐ | The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future heat pump space heater installation. The reserved space shall be permanently marked as "For Future 240V use". |

**Gas/ Propane Cooktops Serving Individual Dwelling Units**

| | YES | Requirement |
|---|---|---|
| 04 | ☐ | A dedicated 240 volt branch circuit shall be installed within 3 feet from the cooktop and accessible to the cooktop with no obstructions. The branch circuit shall be rated at 50 amps minimum. The blank cover shall be identified as "240V ready". All electrical components shall be installed in accordance with the California Electrical Code. |
| 05 | ☐ | The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future electric cooktop installation. The reserved space shall be permanently marked as "For Future 240V use". |

**Gas/ Propane Clothes Dryers Serving Individual Dwelling Units**

| | YES | Requirement |
|---|---|---|
| 06 | ☐ | A dedicated 240 volt branch circuit shall be installed within 3 feet from the clothes dryer and accessible to the clothes dryer with no obstructions. The branch circuit shall be rated at 30 amps minimum. The blank cover shall be identified as "240V ready". All electrical components shall be installed in accordance with the California Electrical Code. |
| 07 | ☐ | The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future electric clothes dryer installation. The reserved space shall be permanently marked as "For Future 240V use". |

**Gas/ Propane Clothes Dryers In Common Areas**

| | YES | Requirement |
|---|---|---|
| 08 | ☐ | Conductors or raceway shall be installed with termination points at the main electrical panel, via subpanels panels if applicable, to a location no more than 3 feet from each gas outlet or a designated location of future electric replacement equipment. Both ends of the conductors or raceway shall be labelled "Future 240V Use." The conductors or raceway and any intervening subpanels, panelboards, switchboards, and busbars shall be sized to meet the future electric power requirements, at the service voltage to the point at which the conductors serving the building connect to the utility distribution system, as specified below. The capacity requirements may be adjusted for demand factors in accordance with the California Electric Code. Gas flow rates shall be determined in accordance with the California Plumbing Code. Capacity shall be one of the following:<br>- 24 amps at 208/240 volts per clothes dryer;<br>- 2.6 kVA for each 10,000 Btu per hour of rated gas input or gas pipe capacity; or<br>- The electrical power required to provide equivalent functionality of the gas-powered equipment as calculated by the responsible person. |



STATE OF CALIFORNIA

## Electrical Power Distribution

NRCC-LTC-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-ELC-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 7 of 7 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

| | | | |
|---|---|---|---|
| Documentation Author Name: | MICHAEL SHEPHERD, P.E. | Documentation Author Signature: | |
| Company: | GLUMAC | Date Signed: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | CEA/HERS Certification Identification (if applicable): | |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |

### RESPONSIBLE PERSON'S DECLARATION STATEMENT

2. I certify the following under penalty of perjury, under the laws of the State of California:
   1. The information provided on this Certificate of Compliance is true and correct.
   2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
   3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
   4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
   5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
   6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

| | | | |
|---|---|---|---|
| Responsible Designer Name: | MICHAEL SHEPHERD, P.E. | Responsible Designer Signature: | |
| Company: | GLUMAC | Date Signed: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | License: | E20195 |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |



STATE OF CALIFORNIA

## Electrical Power Distribution

NRCC-LTC-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-ELC-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 5 of 7 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

### I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(d)§160.6(d). Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | |
|---|---|---|---|---|---|---|---|
| Room Name or Description | Location/ Type of Controlled Receptacles1 | Shut-Off Controls | Demand Responsive Controls | Permanent Durable Marking Will be Used | Location of Requirements in Construction Documents | Field Inspector | |
| | | | | | | Pass | Fail |
| OFFICES | Split-wired receptacle | Occupancy Sensor | Included with capabilities per 110.12(e) | ☒ | SEE POWER PLANS | ☐ | ☐ |
| CONFERENCE ROOMS | Split-wired receptacle | Occupancy Sensor | Included with capabilities per 110.12(e) | ☒ | SEE POWER PLANS | ☐ | ☐ |
| CIRCULATIOON | Split-wired receptacle | Occupancy Sensor | Included with capabilities per 110.12(e) | ☒ | SEE POWER PLANS | ☐ | ☐ |
| LOBBY | Split-wired receptacle | Occupancy Sensor | Included with capabilities per 110.12(e) | ☒ | SEE POWER PLANS | ☐ | ☐ |
| | | | | ☐ | | ☐ | ☐ |
| | | | | ☐ | | ☐ | ☐ |

*NOTES: If "Other*" is selected under Shut-Off Controls above, please indicate how compliance has been achieved in the space provided below.
*NOTES: For all spaces listed, please confirm permanently durable marking(s) will be used to differentiate controlled receptacles from uncontrolled receptacles or circuits.

1 FOOTNOTES: Receptacles dedicated to refrigerators and water dispensers in kitchens, located a minimum of 6ft above the floor specifically for clocks, network copiers, fax machines, A/V and data equipment other than personal computers in copy rooms, circuits rated more than 20 Amps, or connected to a UPS that are intended to be in continuous use and are marked to differentiate them from other receptacles or circuits are excepted from the requirements.

### K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.

| YES | NO | Form/Title | Field Inspector | |
|---|---|---|---|---|
| | | | Pass | Fail |
| ☒ | ☐ | NRCI-ELC-E - Must be submitted for all buildings | ☐ | ☐ |

### L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to electrical power distribution requirements.



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
EXP 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** — **A NO.: 03-123641**

DATE: **06/23/2025** — CLIENT PROJ NO: **3361008100**

SHEET:

**E0.09**

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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOTS. IF IT IS NOT, ADJUST ACCORDINGLY.

STATE OF CALIFORNIA
**Outdoor Lighting**
NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | | | CEC-NRCC-LTO-E |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 4 of 6 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

I. LIGHTING POWER ALLOWANCE (per §140.7)

This table includes areas using the allowance calculations per §140.7/§170.2(e)6. General Hardscape Allowance is per Table 140.7-A/ Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B/Table 170.2-S. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.
Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

| | [X] General Hardscape Allowance | "Use it or lose it" Allowances (select all that apply) | | | |
|---|---|---|---|---|---|
| | | [ ] Per Application | [ ] Sales Frontage | [ ] Ornamental | [ ] Per Specific Area |
| | Table I (below) | Table J | Table K | Table L | Table M |

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

| 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|---|---|---|---|---|---|---|---|
| Area Description | Area Wattage Allowance (AWA) | | | Linear Wattage Allowance (LWA) | | | Total General AWA+LWA (Watts) |
| | Illuminated Area (sf) | Allowed Density (W/sf) | Area Allowance (W) | Perimeter Length (lf) | Allowed Density (W/lf) | Linear Allowance (W) | |
| BUILDING SITE | 102212 | 0.03 | 3066.36 | 1391 | 0.4 | 556.4 | 3622.76 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | 0 | | | 0 | 0 |
| | | | | | | | |
| | | | | | | Initial Wattage Allowance for Entire Site (Watts): | |
| | | | | | | Instances of Initial Wattage Allowance (LZ 0 only)1 Total General Hardscape: | |
| | | | | | | Total General Hardscape Allowance (Watts): | 3622.76 |

1 FOOTNOTES: Number of entrances to parking areas, trail heads, fee payment kiosks, outhouses and toilet facilities on site where lighting is within project scope.

Calculated General Hardscape Lighting Power Allowance per Table 170.2-R for Multifamily & Multifamily Mixed-Use

| 02 | 03 | 04 | 05 |
|---|---|---|---|
| Area Description | Area Wattage Allowance (AWA) | | |
| | Illuminated Area (sf) | Allowed Density (W/sf) | Area Allowance (Watts) |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| | | | |
| | | Initial Wattage Allowance for Entire Site (Watts): | |
| | | Instances of Initial Wattage Allowance (LZ 0 only)1 Total General Hardscape: | |
| | | Total General Hardscape Allowance (Watts): | 0 |

1 FOOTNOTES: Number of entrances to parking areas, trail heads, fee payment kiosks, outhouses and toilet facilities on site where lighting is within project scope.



STATE OF CALIFORNIA
**Outdoor Lighting**
NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | | | CEC-NRCC-LTO-E |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 3 of 6 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

F. OUTDOOR LIGHTING FIXTURE SCHEDEULE

For new or altered lighting systems demonstrating compliance with §140.7/§170.2(e)6 all luminaires being installed, and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L, only new luminaires being installed, and replacement luminaires being installed as part of the project scope are included (i.e., existing luminaires remaining, or existing luminaires being moved are not included).
Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

| 01 | 02 | | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name or Item Tag | Complete Luminaire Description | | Watts per luminaire (1)(2) | How Wattage is determined | Total number luminaires | Luminaire Status(3) | Excluded per §140.7(a)/ 170.2(e)6A | Design Watts | Cutoff Req. ≥ 6,200 initial lumen output §130.2(b)/ §160.5(c)14 | Field Inspector | |
| | | | | | | | | | | Pass | Fail |
| SJ3 | LED | [ ] Linear | 6 | Mfr. Spec[2] | 11 | Outdoor Status | [ ] | 66 | NA:<6,200 lumen | [ ] | [ ] |
| SL1 | LED | [ ] Linear | 100 | Mfr. Spec[2] | 9 | Outdoor Status | [ ] | 900 | NA:<6,200 lumen | [ ] | [ ] |
| SL2 | LED | [ ] Linear | 16 | Mfr. Spec[2] | 59 | Outdoor Status | [ ] | 944 | NA:<6,200 lumen | [ ] | [ ] |
| SL3 | LED | [ ] Linear | 10 | Mfr. Spec[2] | 6 | Outdoor Status | [ ] | 60 | NA:<6,200 lumen | [ ] | [ ] |
| | | [ ] Linear | | | | | [ ] | | | [ ] | [ ] |
| | | [ ] Linear | | | | | [ ] | | | [ ] | [ ] |
| | | [ ] Linear | | | | | [ ] | | | [ ] | [ ] |
| | | | | | | | Total Designed Watts: | 1970 | | | |

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)/§160.5(b).

[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet for the luminaire should be indicated in column 05 instead of number of luminaires.

[3] Select "New" for new luminaires in a new outdoor lighting project or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.

[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output ≥ 6,200 unless exempted by §130.2(b)/§160.5(c).



STATE OF CALIFORNIA
**Oudoor Lighting**
NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | | | CEC-NRCC-LTO-E |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 2 of 6 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction

F. OUTDOOR LIGHTING FIXTURE SCHEDEULE

REFER TO CONTINUATION SHEET FOR OUTDOOR TABLE F

G. CUTOFF REQUIREMENTS (BUG)

This Section Does Not Apply

H. OUTDOOR LIGHTING CONTROLS

REFER TO CONTINUATION SHEET FOR OUTDOOR TABLE H

I. LIGHTING POWER ALLOWANCE (per §140.7

REFER TO CONTINUATION SHEET FOR OUTDOOR TABLE I

J. LIGHTING ALLOWANCE: PER APPLICATION

This Section Does Not Apply

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL

This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This Section Does Not Apply

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This Section Does Not Apply



STATE OF CALIFORNIA
**Oudoor Lighting**
NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTO-E

This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in §160.5, §170.2(e)6, §180.1(a) and §180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Enforcement Agency: | Page 1 of 6 |
| Dwelling Address: | 4921 CEDAR AVENUE | Permit Number: | |
| City and Zip Code: | EL MONTE, CA 91732 | Permit Application Date: | 9/19/2023 |

A. GENERAL INFORMATION

| | | | | | |
|---|---|---|---|---|---|
| 01 | Project Location (city) | EL MONTE | 04 | Total Illuminated Hardscape Area (ft2) | 102212 |
| 02 | Climate Zone | 3 | | | |
| 03 | Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ): | | | | |
| [ ] LZ-0: Very Low - Undeveloped Parkland | | [ ] LZ-2: Moderate - Urban Clusters | | [ ] LZ-4: High - Must be reviewed by CA Energy Commission for Approval | |
| [ ] LZ-1: Low - Rural Areas | | [X] LZ-3: Moderately High - Urban Areas | | | |
| 05 | Occupancy Types within Project: | | | | |

[ ] Office [ ] Retail [ ] Warehouse [ ] Hotel/Motel [X] School [ ] Support Areas
[ ] High-Rise Residential Multifamily/MF Mixed-use >= 4 stories (includes dormitory, senior living) [ ] Healthcare Facilities [ ] Parking Garage
[ ] Relocatable [ ] All Others [ ] Theater [ ] Sports Arena
[ ] Auditorium [ ] Commercial/Industrial [ ] Grocery Store [ ] Religious Facility [ ] Data Center [ ] Convention Center
[ ] Classroom [ ] Library [ ] Gymnasium [ ] Restaurant/Commercial Kitchen [ ] Financial Institution [ ] Medical Clinic

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7/§170.2(e)6 or §141.0(b)2L/§180.2(b)4Bv for alterations.

My Project consists of:

| 01 | 02 |
|---|---|
| [X] New Lighting System | Must Comply with Allowances from §140.7/§170.2(e)6. |
| [ ] Altered Lighting System | Is your alteration increasing the connected lighting load (Watts)? [ ] Yes [ ] No |

| 03 | 04 | 05 |
|---|---|---|
| % of Existing Luminaires Being Altered(1) | Sum total of Luminaires Being Added or Altered | Calculation Method |
| [ ] <10% [ ] ≥ 10% and < 50% [ ] ≥ 50% | | |

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

(1) Foot Notes: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables G through N.
Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see the applicable Table referenced below.

| Calculation of Total Allowed Lighting Power (Watts) §140.7/§170.2(e)6 or §141.0(b)2L/§180.2(b)4Bv | | | | | | | | | | Compliance Results | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | | 02 | | 03 | | 04 | | 05 | 06 | 07 | 08 | 09 |
| General Hardscape Allowance §140.7(d)1 / §170.2(e)6 | + | Per Application §140.7(d)2 / §170.2(e)6 | + | Sales Frontage §140.7(d) 2 | + | Ornamenta l §140.7(d)2 / §170.2(e)6 | + | Per Specific Area §140.7(d)2 / §170.2(e)6 | OR Existing Power Allowance §141.0(b)2L/ §180.2(b)4B v | = Total Allowed (Watts) | => Total Actual (Watts) | 07 Must be >= 08 |
| (See Table I) | | (See Table J) | | (See Table K) | | (See Table L) | | (See Table M) | (See Table N) | | (See Table F) | |
| 3622.76 | + | 0 | + | 0 | + | 0 | + | 0 | OR 0 | = 3622.76 | => 1970 | Complies |
| | | | | | | | | | Shielding Compliance (See Table G for Details) | | | |
| | | | | | | | | | Controls Compliance (See Table H for Details) | | | |



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
EXP 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
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T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**E0.10**

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STATE OF CALIFORNIA

**Outdoor Lighting**

NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTO-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | 6 of 6 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

| | | | |
|---|---|---|---|
| Documentation Author Name: | MICHAEL SHEPHERD, P.E. | Documentation Author Signature: | |
| Company: | GLUMAC | Signature Date: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | CEA/HERS Certification Identification (if applicable): | |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |

RESPONSIBLE PERSON'S DECLARATION STATEMENT

2. I certify the following under penalty of perjury, under the laws of the State of California:
   1. The information provided on this Certificate of Compliance is true and correct.
   2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
   3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
   4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
   5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
   6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

| | | | |
|---|---|---|---|
| Responsible Designer Name: | MICHAEL SHEPHERD, P.E. | Responsible Designer Signature: | |
| Company: | GLUMAC | Date Signed: | January 25, 2020 |
| Address: | 707 WILSHIRE BLVD, 23RD FLOOR | License: | E20195 |
| City/State/Zip: | LOS ANGELES, CA 90017 | Phone: | (213) 239-8866 |



STATE OF CALIFORNIA

**Oudoor Lighting**

NRCC-LTO-E (Created 01/2023) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — CEC-NRCC-LTO-E

| | | | |
|---|---|---|---|
| Project Name: | ARROYO HIGH SCHOOL | Report Page: | Page 5 of 6 |
| Project Address: | 4921 CEDAR AVENUE, EL MONTE, CA 91732 | Date Prepared: | 9/19/2023 |

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online.

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| [X] | [ ] | NRCI-LTO-E - Must be submitted for all buildings. | [ ] | [ ] |

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in table e. Additional remarks. These documents must be provided to the building inspector during construction and must be completed through an acceptance test technician certification provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html.

| YES | NO | Form/Title | Field Inspector Pass | Field Inspector Fail |
|---|---|---|---|---|
| [X] | [ ] | NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires. | [ ] | [ ] |



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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
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HMC Architects

3361008100

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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E21403
EXP 03/31/26
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STATE OF CALIFORNIA

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707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T. 213.239.8866

Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TITLE 24 FORMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

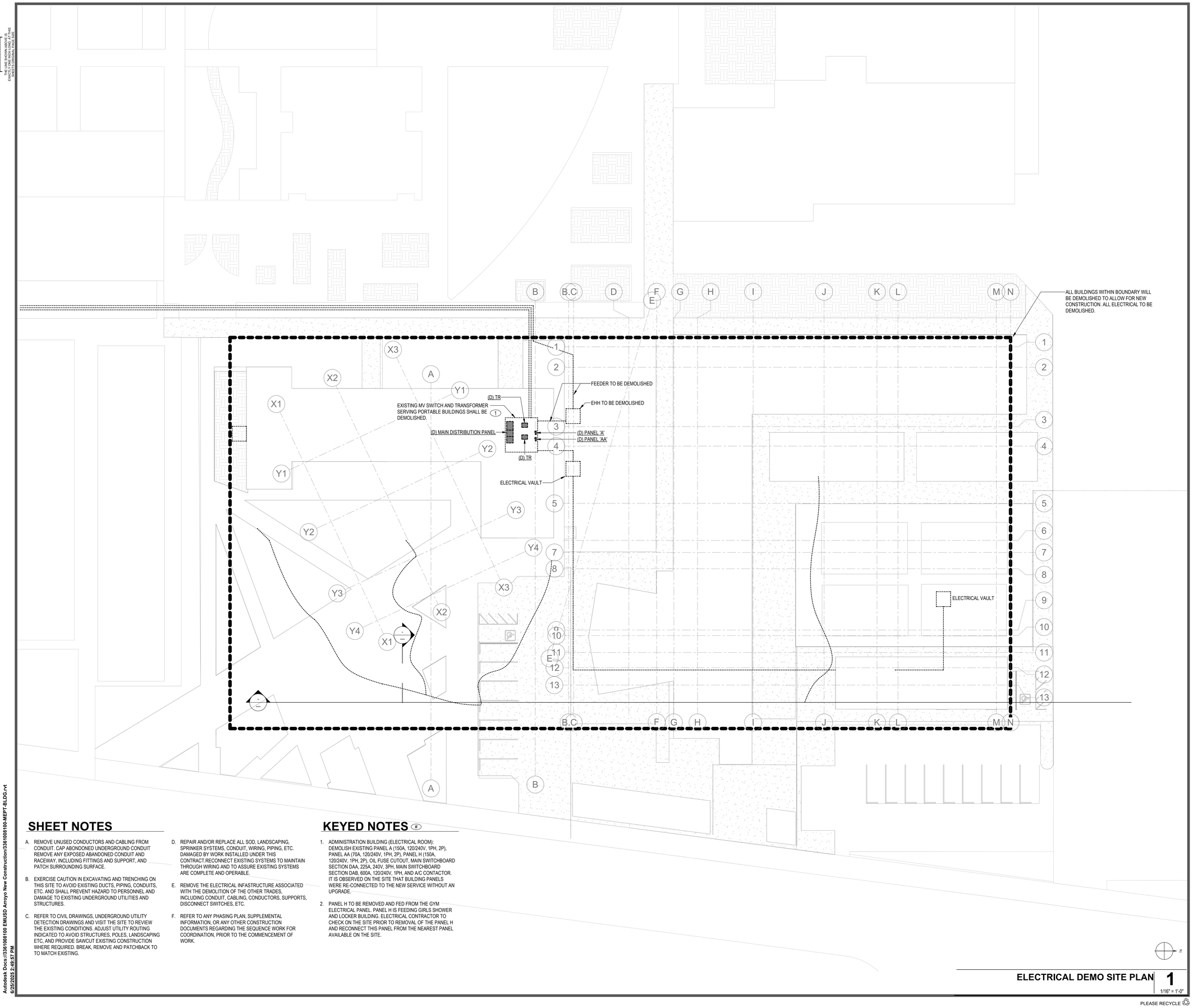
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## SHEET NOTES

A. REMOVE UNUSED CONDUCTORS AND CABLING FROM CONDUIT. CAP ABONDONED UNDERGROUND CONDUIT REMOVE ANY EXPOSED ABANDONED CONDUIT AND RACEWAY, INCLUDING FITTINGS AND SUPPORT, AND PATCH SURROUNDING SURFACE.

B. EXERCISE CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, CONDUITS, ETC. AND SHALL PREVENT HAZARD TO PERSONNEL AND DAMAGE TO EXISTING UNDERGROUND UTILITIES AND STRUCTURES.

C. REFER TO CIVIL DRAWINGS, UNDERGROUND UTILITY DETECTION DRAWINGS AND VISIT THE SITE TO REVIEW THE EXISTING CONDITIONS. ADJUST UTILITY ROUTING INDICATED TO AVOID STRUCTURES, POLES, LANDSCAPING ETC, AND PROVIDE SAWCUT EXISTING CONSTRUCTION WHERE REQUIRED. BREAK, REMOVE AND PATCHBACK TO TO MATCH EXISTING.

D. REPAIR AND/OR REPLACE ALL SOD, LANDSCAPING, SPRINKER SYSTEMS, CONDUIT, WIRING, PIPING, ETC. DAMAGED BY WORK INSTALLED UNDER THIS CONTRACT RECONNECT EXISTING SYSTEMS TO MAINTAIN THROUGH WIRING AND TO ASSURE EXISTING SYSTEMS ARE COMPLETE AND OPERABLE.

E. REMOVE THE ELECTRICAL INFASTRUCTURE ASSOCIATED WITH THE DEMOLITION OF THE OTHER TRADES, INCLUDING CONDUIT, CABLING, CONDUCTORS, SUPPORTS, DISCONNECT SWITCHES, ETC.

F. REFER TO ANY PHASING PLAN, SUPPLEMENTAL INFORMATION, OR ANY OTHER CONSTRUCTION DOCUMENTS REGARDING THE SEQUENCE WORK FOR COORDINATION, PRIOR TO THE COMMENCEMENT OF WORK.

## KEYED NOTES (#)

1. ADMINISTRATION BUILDING (ELECTRICAL ROOM): DEMOLISH EXISTING PANEL A (150A, 120/240V, 1PH, 2P), PANEL AA (70A, 120/240V, 1PH, 2P), PANEL H (150A, 120/240V, 1PH, 2P), OIL FUSE CUTOUT, MAIN SWITCHBOARD SECTION DAA, 225A, 240V, 3PH, MAIN SWITCHBOARD SECTION DAB, 600A, 120/240V, 1PH, AND A/C CONTACTOR. IT IS OBSERVED ON THE SITE THAT BUILDING PANELS WERE RE-CONNECTED TO THE NEW SERVICE WITHOUT AN UPGRADE.
2. PANEL H TO BE REMOVED AND FED FROM THE GYM ELECTRICAL PANEL. PANEL H IS FEEDING GIRLS SHOWER AND LOCKER BUILDING. ELECTRICAL CONTRACTOR TO CHECK ON THE SITE PRIOR TO REMOVAL OF THE PANEL H AND RECONNECT THIS PANEL FROM THE NEAREST PANEL AVAILABLE ON THE SITE.

ELECTRICAL DEMO SITE PLAN 1
1/16" = 1'-0"

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Project Manager: RM
Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DEMO SITE PLAN**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

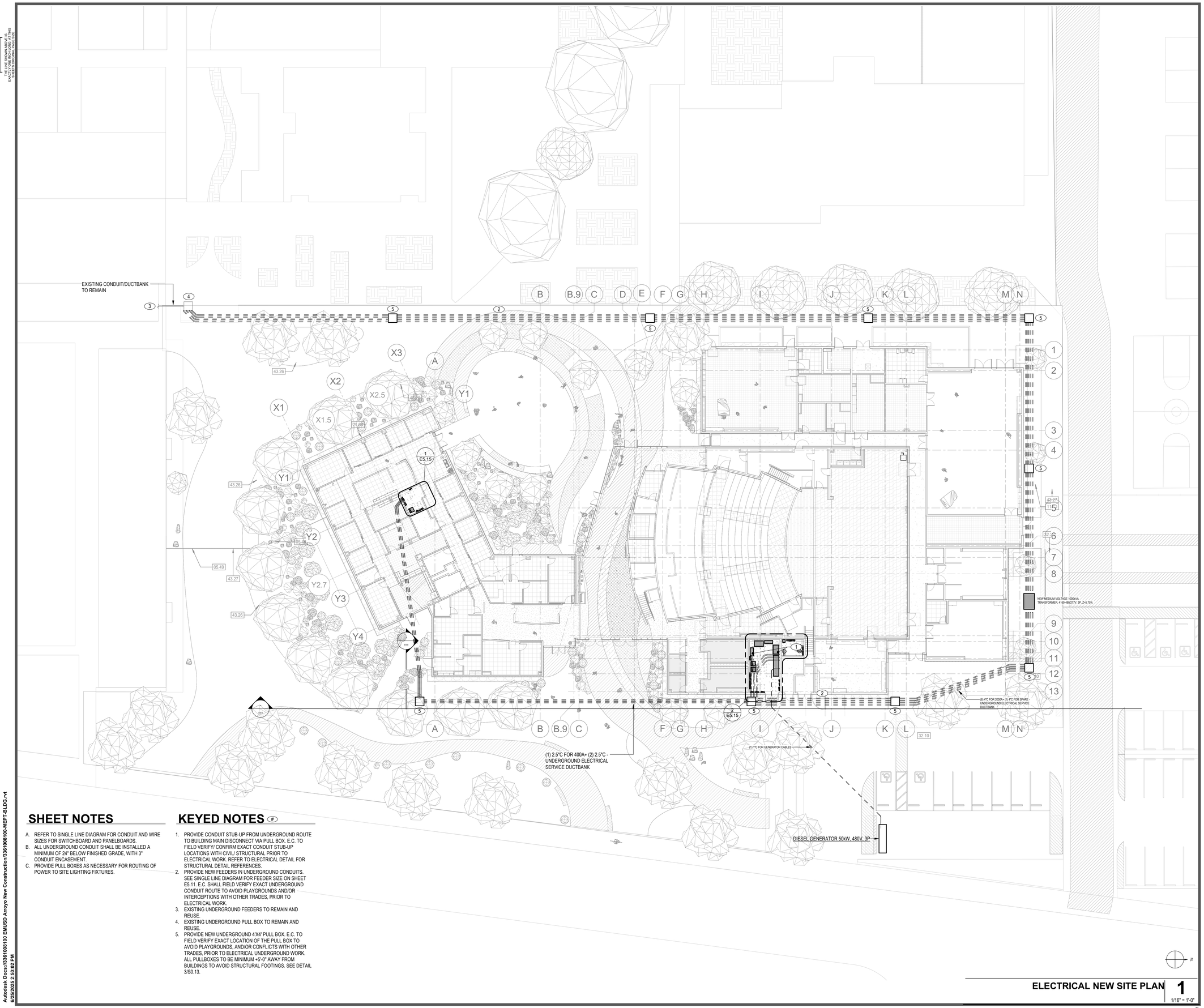
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## SHEET NOTES

A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE SIZES FOR SWITCHBOARD AND PANELBOARDS.
B. ALL UNDERGROUND CONDUIT SHALL BE INSTALLED A MINIMUM OF 24" BELOW FINISHED GRADE, WITH 3" CONDUIT ENCASEMENT.
C. PROVIDE PULL BOXES AS NECESSARY FOR ROUTING OF POWER TO SITE LIGHTING FIXTURES.

## KEYED NOTES

1. PROVIDE CONDUIT STUB-UP FROM UNDERGROUND ROUTE TO BUILDING MAIN DISCONNECT VIA PULL BOX. E.C. TO FIELD VERIFY/ CONFIRM EXACT CONDUIT STUB-UP LOCATIONS WITH CIVIL/ STRUCTURAL PRIOR TO ELECTRICAL WORK. REFER TO ELECTRICAL DETAIL FOR STRUCTURAL DETAIL REFERENCES.
2. PROVIDE NEW FEEDERS IN UNDERGROUND CONDUITS. SEE SINGLE LINE DIAGRAM FOR FEEDER SIZE ON SHEET E5.11. E.C. SHALL FIELD VERIFY EXACT UNDERGROUND CONDUIT ROUTE TO AVOID PLAYGROUNDS AND/OR INTERCEPTIONS WITH OTHER TRADES, PRIOR TO ELECTRICAL WORK.
3. EXISTING UNDERGROUND FEEDERS TO REMAIN AND REUSE.
4. EXISTING UNDERGROUND PULL BOX TO REMAIN AND REUSE.
5. PROVIDE NEW UNDERGROUND 4'X4' PULL BOX. E.C. TO FIELD VERIFY EXACT LOCATION OF THE PULL BOX TO AVOID PLAYGROUNDS, AND/OR CONFLICTS WITH OTHER TRADES, PRIOR TO ELECTRICAL UNDERGROUND WORK. ALL PULLBOXES TO BE MINIMUM +5'-0" AWAY FROM BUILDINGS TO AVOID STRUCTURAL FOOTINGS. SEE DETAIL 3/S0.13.

**ELECTRICAL NEW SITE PLAN** 1 — 1/16" = 1'-0"

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL NEW SITE PLAN**

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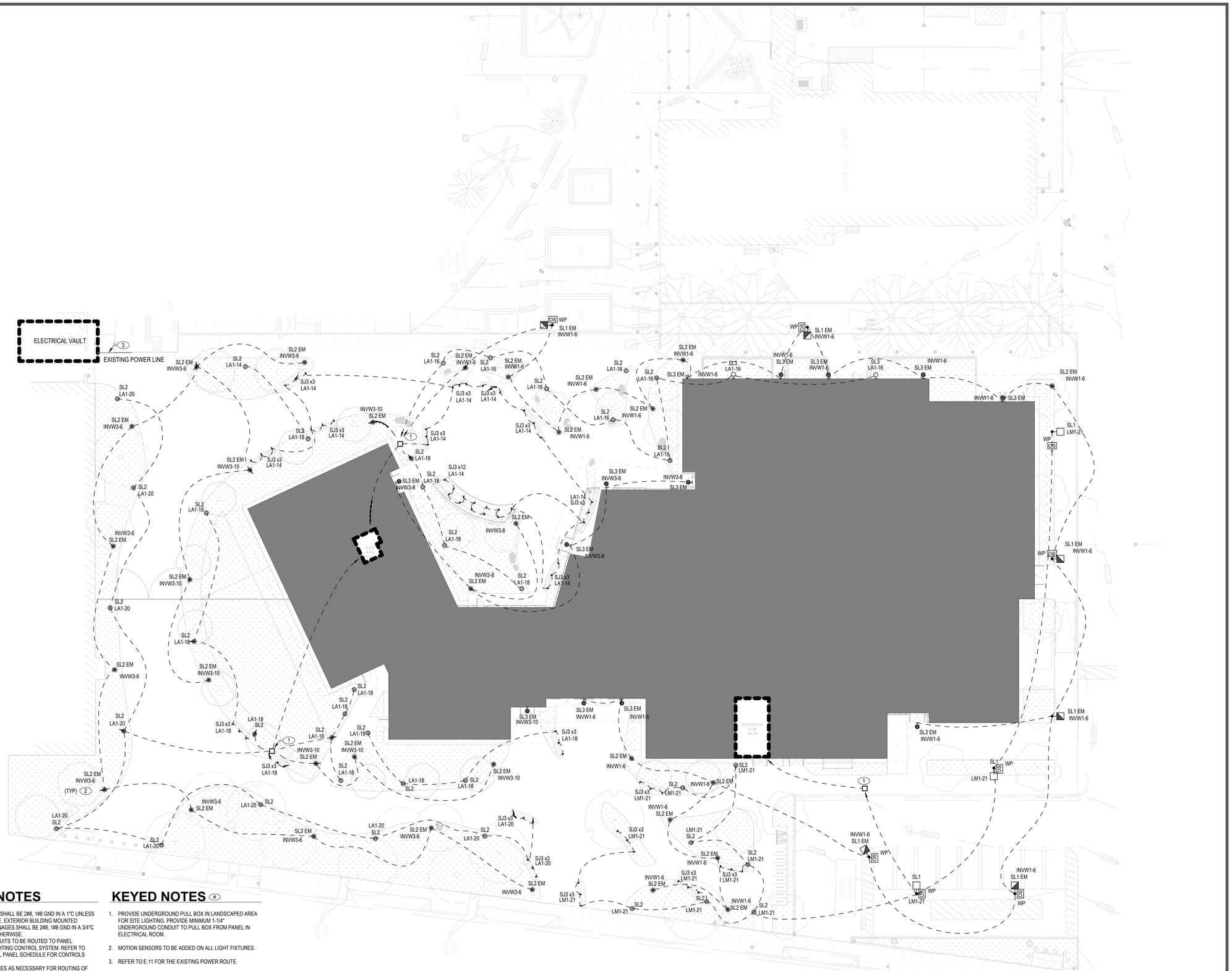
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ELECTRICAL VAULT
3
EXISTING POWER LINE
WP
SL1 EM
INVW1-6
SL2 EM
INVW3-6
SL2
LA1-14
SJ3 x3
LA1-14
SL2
LA1-20
SL2 EM
INVW3-6
SL3
LA1-18
SJ3 x3
LA1-14
INVW3-10
SL2 EM
1
SJ3 x3
LA1-14
SL2
LA1-18
SL2 EM
INVW3-10
SJ3 x3
LA1-14
SL2
LA1-18
SJ3 x12
LA1-14
SL3 EM
INVW3-8
SL2
LA1-18
SL2 EM
INVW3-8
SL2
LA1-18
SL2 EM
INVW3-10
SL2
LA1-20
SL2 EM
INVW3-6
SL2
LA1-18
SL2 EM
INVW3-10
SL2
LA1-20
SL2 EM
INVW3-6
(TYP) 2
SJ3 x3
LA1-18
SL2
LA1-18
SL2 EM
INVW3-10
SL2
LA1-18
SL2 EM
INVW3-10
SJ3 x3
LA1-18
SL2
LA1-18
SL2 EM
INVW3-10
SL3 EM
INVW3-10
SL3 EM
INVW1-6
SJ3 x3
LA1-18
SL2 EM
INVW1-6
SL2
LA1-16
SL2 EM
INVW1-6
SL2
LA1-16
SL2 EM
INVW1-6
SL2
LA1-16
SL2 EM
INVW1-6
SL2
LA1-16
SL2 EM
INVW1-6
SL2
LA1-16
SL3 EM
INVW1-6
SL3
LA1-16
SL3 EM
INVW1-6
SL3
LA1-16
SL3 EM
INVW1-6
SL2 EM
INVW1-6
SJ3 x3
LA1-14
SL2 EM
INVW1-6
SJ3 x3
LM1-21
SL2
LM1-21
INVW1-6
SL2 EM
INVW1-6
SL2
LM1-21
SJ3 x3
LM1-21
SJ3 x3
LM1-21
SJ3 x3
LM1-21
SJ3 x3
LM1-21
SJ3 x3
LM1-21
SL2
LM1-21
SL2
LM1-21
SL2

THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY

| Luminaire Schedule | | | | | |
|---|---|---|---|---|---|
| **Project: Arroyo HS_Siteplan** | | | | | |
| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
| | 9 | SL1 | 0.900 | 100 | 7242 |
| | 71 | SL2 | 1.800 | 16 | 470 |
| | 15 | SL3 | 0.900 | 10 | 814 |
| | 69 | SL3 | 1.000 | 10.6 | 219 |

| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Project: Arroyo HS_Siteplan** | | | | | | | |
| Room | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height |
| East Building Pathway | Fc | 3.93 | 7.7 | 1.2 | 3.28 | 6.42 | 0 |
| North Building - Safezone | Fc | 3.03 | 25.7 | 0.1 | 30.30 | 257.00 | 0 |
| North Building Pathway | Fc | 1.96 | 15.0 | 0.1 | 19.60 | 150.00 | 0 |
| North Building Pathway - 2 | Fc | 2.26 | 73.5 | 0.0 | N.A. | N.A. | 0 |
| Parking | Fc | 3.29 | 8.2 | 0.4 | 8.23 | 20.50 | 0 |
| South Building Pathway | Fc | 1.87 | 7.7 | 0.3 | 6.23 | 25.67 | 0 |
| South Pathway | Fc | 2.97 | 16.2 | 0.0 | N.A. | N.A. | 0 |
| South Segment A - Pathway | Fc | 4.02 | 76.7 | 0.0 | N.A. | N.A. | 0 |
| South Segment B - Pathway | Fc | 5.14 | 13.6 | 0.5 | 10.28 | 27.20 | 0 |
| South Segment B - Pathway _1 | Fc | 6.04 | 55.8 | 0.0 | N.A. | N.A. | 0 |
| West Pathway | Fc | 2.68 | 15.2 | 0.0 | N.A. | N.A. | 0 |

| Isoline Legend | |
|---|---|
| **Illuminance (Fc)** | |
| Color | Value |
| | 1 |
| | 1.5 |
| | 2 |
| | 2.75 |
| | 3.5 |
| | 4.5 |
| | 5.5 |




SITE LIGHTING PHOTOMETRICS 1
1/16" = 1'-0"

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Project Manager: RM
Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SITE LIGHTING PHOTOMETRICS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

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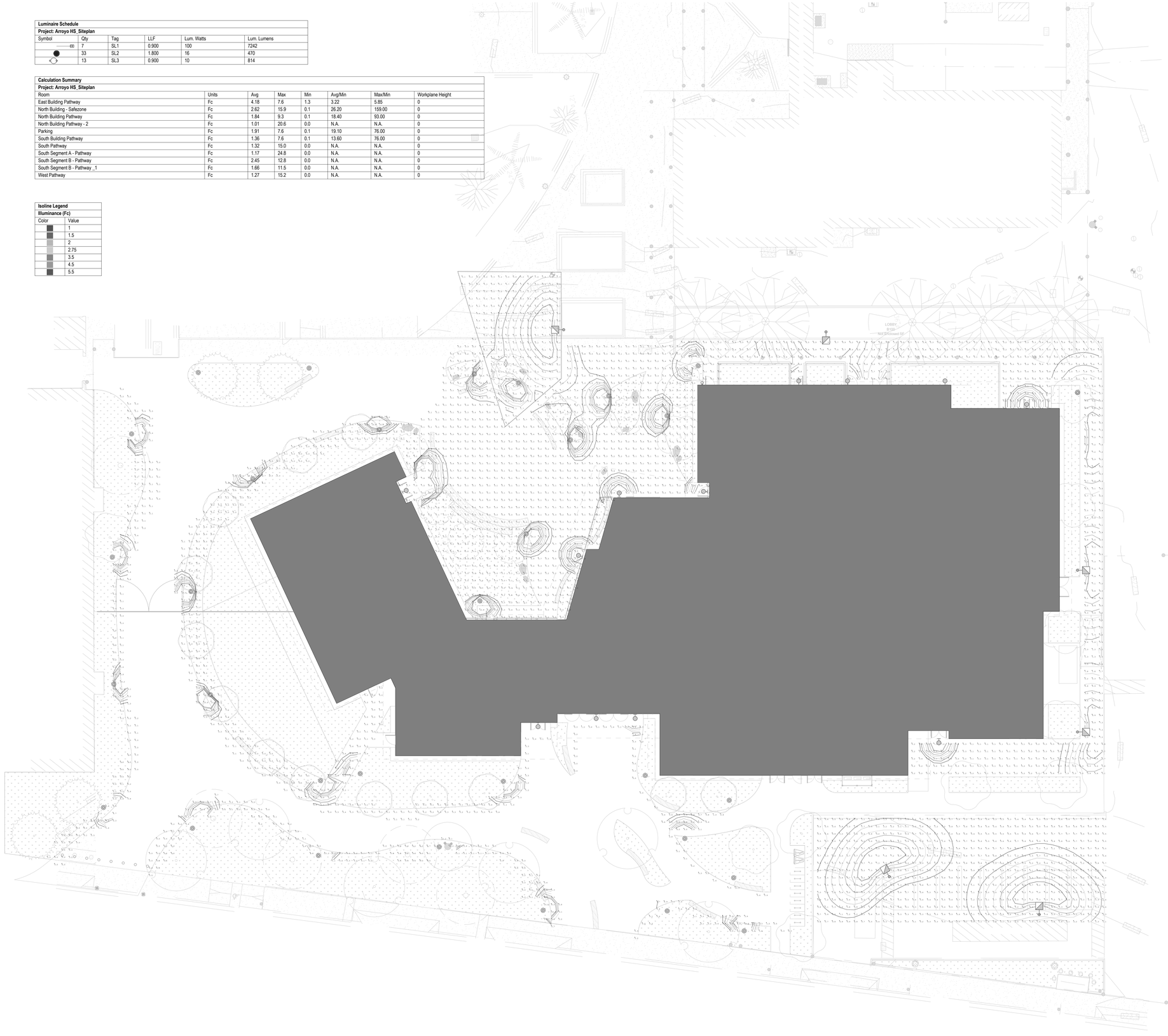
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| Luminaire Schedule | | | | | |
|---|---|---|---|---|---|
| **Project: Arroyo HS_Siteplan** | | | | | |
| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
| ——— | 7 | SL1 | 0.900 | 100 | 7242 |
| ● | 33 | SL2 | 1.800 | 16 | 470 |
| ◇ | 13 | SL3 | 0.900 | 10 | 814 |

| Calculation Summary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Project: Arroyo HS_Siteplan** | | | | | | | | |
| Room | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height | |
| East Building Pathway | Fc | 4.18 | 7.6 | 1.3 | 3.22 | 5.85 | 0 | |
| North Building - Safezone | Fc | 2.62 | 15.9 | 0.1 | 26.20 | 159.00 | 0 | |
| North Building Pathway | Fc | 1.84 | 9.3 | 0.1 | 18.40 | 93.00 | 0 | |
| North Building Pathway - 2 | Fc | 1.01 | 20.6 | 0.0 | N.A. | N.A. | 0 | |
| Parking | Fc | 1.91 | 7.6 | 0.1 | 19.10 | 76.00 | 0 | |
| South Building Pathway | Fc | 1.36 | 7.6 | 0.1 | 13.60 | 76.00 | 0 | |
| South Pathway | Fc | 1.32 | 15.0 | 0.0 | N.A. | N.A. | 0 | |
| South Segment A - Pathway | Fc | 1.17 | 24.8 | 0.0 | N.A. | N.A. | 0 | |
| South Segment B - Pathway | Fc | 2.45 | 12.8 | 0.0 | N.A. | N.A. | 0 | |
| South Segment B - Pathway _1 | Fc | 1.66 | 11.5 | 0.0 | N.A. | N.A. | 0 | |
| West Pathway | Fc | 1.27 | 15.2 | 0.0 | N.A. | N.A. | 0 | |

| Isoline Legend | |
|---|---|
| **Illuminance (Fc)** | |
| Color | Value |
| | 1 |
| | 1.5 |
| | 2 |
| | 2.75 |
| | 3.5 |
| | 4.5 |
| | 5.5 |




SITE LIGHTING PHOTOMETRICS - EMERGENCY

1
1/16" = 1'-0"

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EL MONTE UNION HIGH SCHOOL DISTRICT
ESTABLISHED 1991
COMMITTED TO COLLEGE AND CAREER


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**EL MONTE, CALIFORNIA 91732**

PROJECT:

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SHEET NAME:

**SITE LIGHTING EMERGENCY PHOTOMETRICS**

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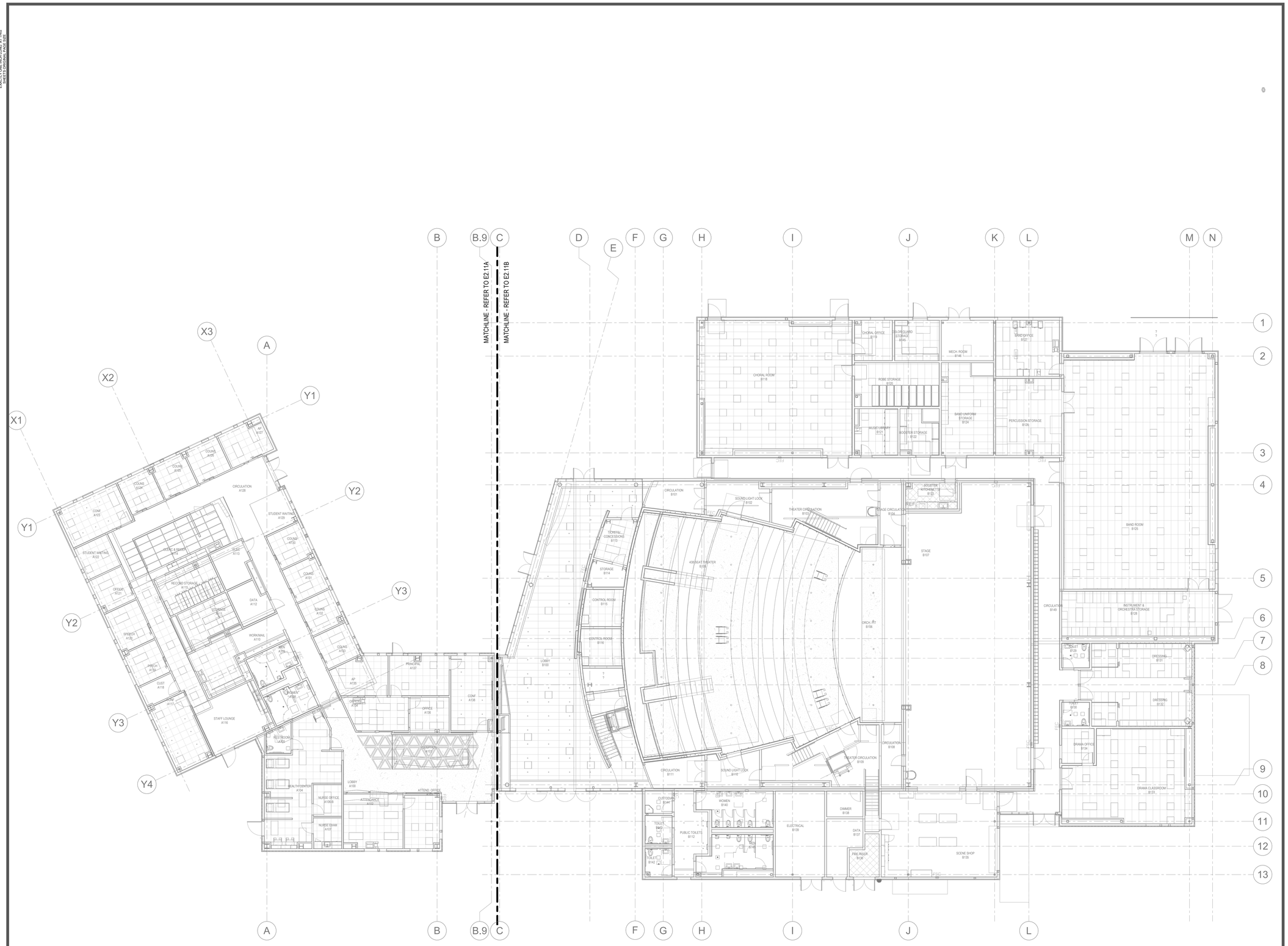
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## LEVEL 1 - OVERALL LIGHTING PLAN

1
3/32" = 1'-0"

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - OVERALL LIGHTING PLAN**

**DSA SUBMITTAL**

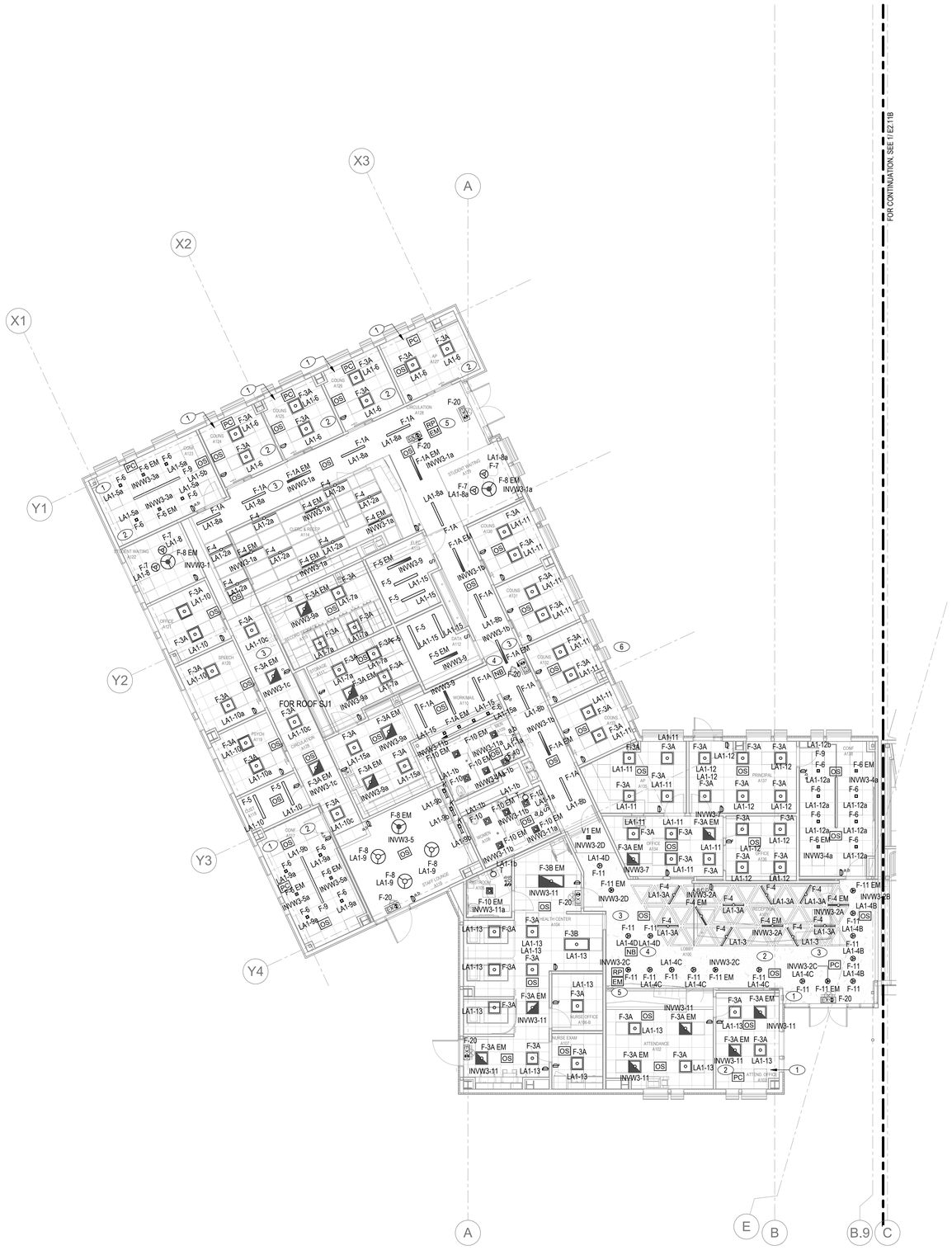
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E2.11

THE LINE SHOWN ABOVE IS 1" LONG WHEN PRINTED ON THIS SHEET'S ORIGINAL PAGE SIZE




## SHEET NOTES

A. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LUMINAIRES. INFORM ENGINEER OF CONFLICTS. COORDINATE ALL LOCATIONS WITH DUCTWORK AND PIPING.

B. CEILING SENSOR SWITCHES IN SAME SPACE WITH SAME SWITCH DESIGNATION ARE TO BE WIRED IN PARALLEL SUCH THAT EITHER SENSOR WILL ACTIVATE ALL DESIGNATED LIGHTS.

C. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED, OR "HARD") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL JUNCTION BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD" CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN" METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINIARE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

D. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER SCHEDULES.

E. ALL LOW VOLTAGE CABLING TO LIGHTING FIXTURES AND CONTROL DEVICES SHALL BE PLENUM RATED.

F. EXIT SIGNS TO BE CIRCUITED TO NEAREST EMERGENCY CIRCUIT SERVING THE SPACE.

G. CONTRACTOR SHALL CONFIRM ALL EXIT SIGN LOCATIONS AND DIRECTIONAL CHEVRONS WITH THE ARCHITECTURAL EGRESS PLANS AND REFLECTED CEILING PLANS.

## KEYED NOTES (#)

1. PRIMARY SIDELIT DAYLIT ZONE BOUNDARY. FIXTURES WITHIN ZONE BOUNDARY SHALL BE CONTROLLED IN ACCORDANCE WITH TITLE 24 CEC 130.1(D) AUTOMATIC DAYLIGHTING CONTROLS.

2. SECONDARY SIDELIT ZONE BOUNDARY. FIXTURES WITHIN ZONE BOUNDARY SHALL BE CONTROLLED IN ACCORDANCE WITH TITLE 24 CEC 130.1(D) AUTOMATIC DAYLIGHTING CONTROLS.

3. IN CORRIDORS AND STAIRWELLS, LIGHTING SHALL BE CONTROLLED BY OCCUPANT SENSING CONTROLS THAT SEPARATELY REDUCE THE LIGHTING POWER IN EACH SPACE BY AT LEAST 50 PERCENT WHEN THE SPACE IS UNOCCUPIED. THE OCCUPANT SENSING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY TURNING THE LIGHTING FULLY ON ONLY IN THE SEPARATELY CONTROLLED SPACE, AND SHALL BE AUTOMATICALLY ACTIVATED FROM ALL DESIGNED PATHS OF EGRESS.

4. PROVIDE NETWORK BRIDGE(S) AS REQUIRED. MAKE CONNECTION TO POWER SUPPLY FROM NEAREST LIGHTING CIRCUIT IN AREA. REFER TO LIGHTING CONTROL DIAGRAM ON SHEETS E5.11 AND E5.12.

5. INSTALLATION SHALL BE ACCESSIBLE FOR MAINTENANCE/TESTING.

6. ALL LIGHTING FIXTURES INDICATED ON PLANS AS EMERGENCY OR "EM" SHALL BE CONNECTED TO CENTRALIZED LIGHTING INVERTER.

PN

**LEVEL 1 - LIGHTING PLAN - SEGMENT A** **1** 1/8" = 1'-0"

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DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

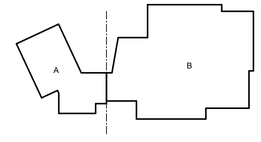
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REGISTERED PROFESSIONAL ENGINEER
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Project Manager: RM
Job. No.: 150-23US00121

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - LIGHTING PLAN - SEGMENT A**

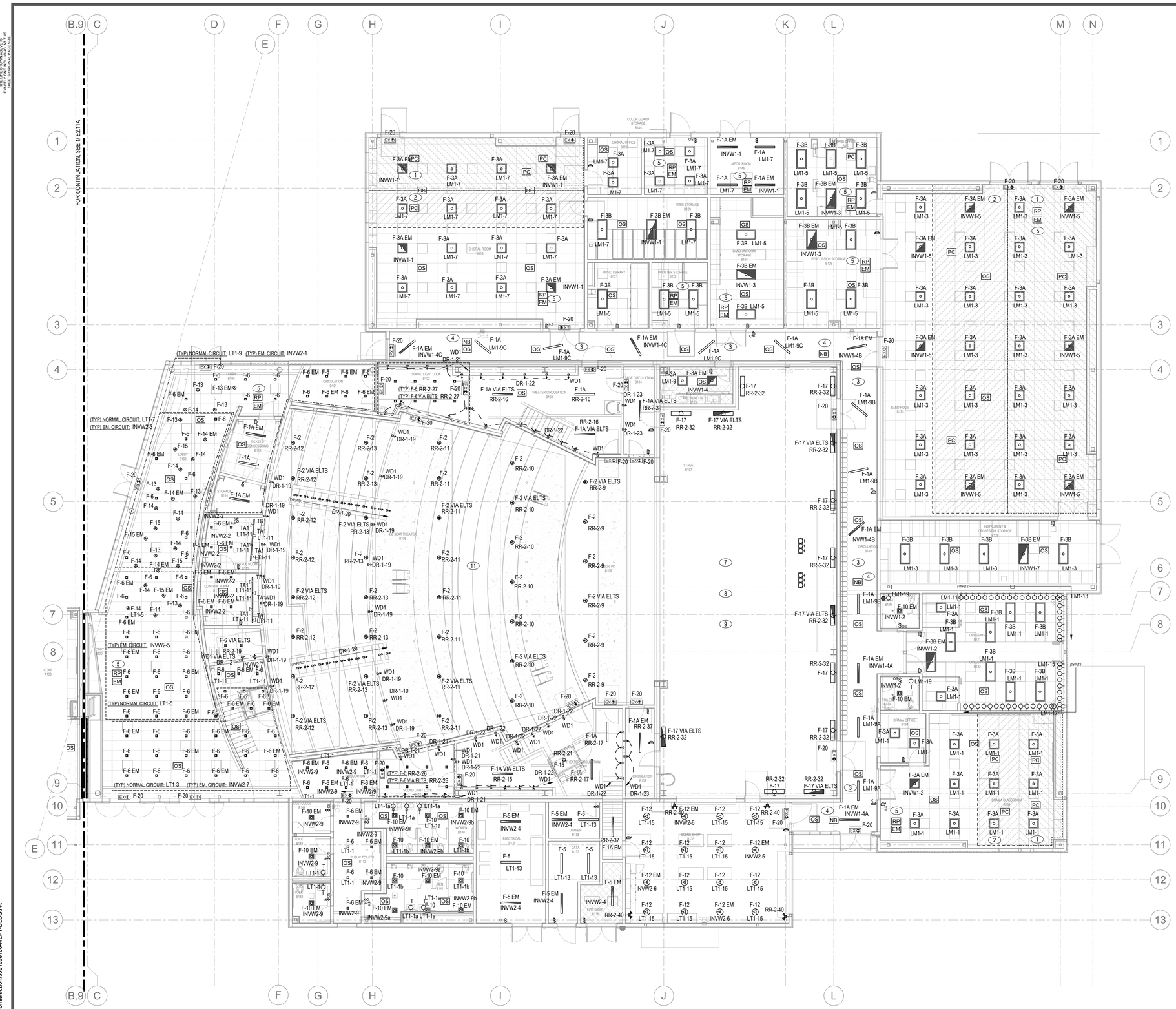
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**E2.11A**

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## SHEET NOTES

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6. ALL LIGHTING FIXTURES INDICATED ON PLANS AS EMERGENCY OR "EM" SHALL BE CONNECTED TO CENTRALIZED LIGHTING INVERTER.
7. REFER TO AV DRAWINGS FOR ADDITIONAL CONDUIT AND BACK BOX REQUIREMENTS FOR THEATER.
8. REFER TO THEATER DRAWINGS FOR THEATER LIGHTING AND POWER.
9. FOR THEATRE, THE REQUIRED ILLUMINATION TO BE AUTOMATICALLY RESTORED UPON ACTIVATION OF A PREMISES FIRE ALARM SYSTEM.
10. LIGHTING INVERTER SHALL PROVIDE POWER FOR A DUATION OF NOT LESS THAN 90 MINUTES. INSTALLATION SHALL BE DONE AS PER CBC SECTION 2702.
11. PROVIDE BELDEN 9729 DMX/RDM CONTROL WIRING IN CONDUIT FROM DMX BYPASS CONTROLLER 'DEBC', IN DAISY-CHAINED CONFIGURATION INSTALLED IN COMPLIANCE WITH ANSI E1-27-2. REFER TO TL9.21.

PN

**LEVEL 1 - LIGHTING PLAN - SEGMENT B** 1 — 1/8" = 1'-0"

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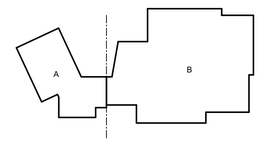

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KEY PLAN:




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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - LIGHTING PLAN - SEGMENT B**

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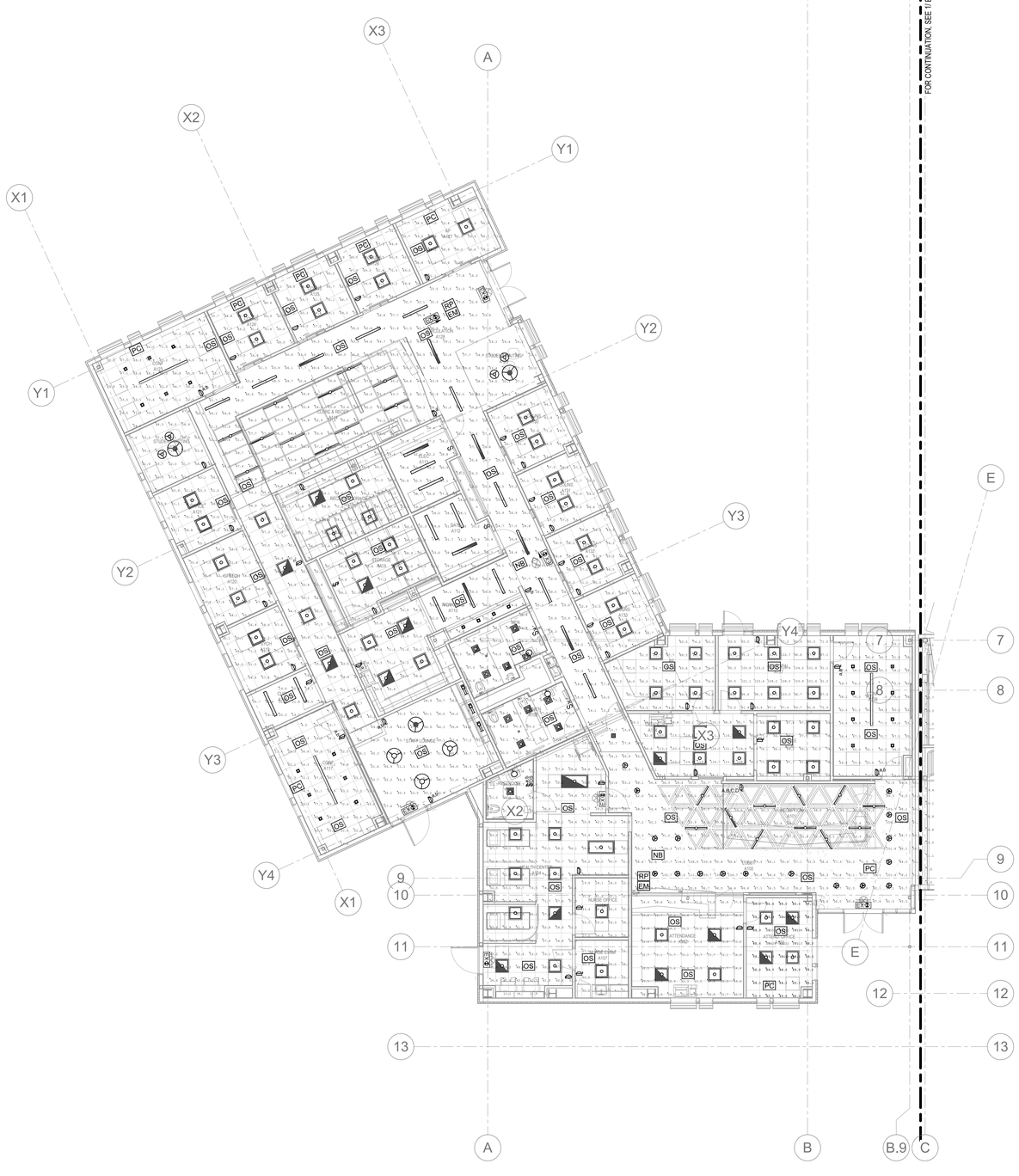
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**Luminaire Schedule**
**Project: Segment A**

| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
|---|---|---|---|---|---|
| | 17 | F-11 | 0.900 | 30.1 | 2089 |
| | 16 | F-1A | 0.900 | 37 | 3705 |
| | 77 | F-3A | 0.900 | 48.3 | 5057 |
| | 2 | F-3B | 0.900 | 62.3 | 5042 |
| | 32 | F-4 | 0.900 | 21.3 | 2798 |
| | 1 | F-5 | 0.900 | 30.43 | 5066 |
| | 24 | F-6 | 0.900 | 19.8 | 1924 |
| | 4 | F-7 | 0.900 | 42 | 3207 |
| | 6 | F-8 | 0.900 | 37 | 3207 |
| | 3 | F9 | 0.900 | 37 | 3350 |
| | 11 | F10 | 0.900 | 20.9 | 1806 |

**Calculation Summary**
**Project: Segment A**

| Room | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height |
|---|---|---|---|---|---|---|---|
| A100_LOBBY_Floor | Fc | 67.79 | 114.8 | 15.7 | 4.32 | 7.30 | 0 |
| A101_Reception Desk | Fc | 82.94 | 114.1 | 51.8 | 1.22 | 1.44 | 2.5 |
| A102_ATTENDANCE_Workplane | Fc | 58.64 | 79.7 | 29.9 | 1.96 | 2.62 | 2.5 |
| A103_ATTEND OFFICE_Floor | Fc | 62.03 | 85.0 | 32.3 | 1.94 | 2.67 | 0 |
| A103_ATTEND OFFICE_Workplane | Fc | 79.91 | 113.2 | 35.7 | 2.24 | 3.17 | 2.5 |
| A104_HEALTH CENTER_Floor | Fc | 48.66 | 71.4 | 19.6 | 2.47 | 4.00 | 0 |
| A105_NURSE OFFICE_Floor | Fc | 25.77 | 40.6 | 10.5 | 2.46 | 3.88 | 0 |
| A106_NURSE OFFICE_Workplane | Fc | 51.01 | 67.8 | 19.8 | 2.58 | 4.04 | 2.5 |
| A107_NURSE EXAM_Workplane | Fc | 41.78 | 60.1 | 26.7 | 1.56 | 2.37 | 2.5 |
| A108_TOILETS_Floor | Fc | 61.03 | 101.6 | 24.9 | 2.45 | 4.07 | 0 |
| A109_TOILETS_Floor | Fc | 61.79 | 100.4 | 26.5 | 2.33 | 3.79 | 0 |
| A110_WORKMAN_ | Fc | 62.55 | 71.6 | 45.7 | 1.37 | 1.57 | 0 |
| A111_STORAGE_Floor | Fc | 42.95 | 81.2 | 33.0 | 1.85 | 2.46 | 0 |
| A112_DATA_Floor | Fc | 34.51 | 41.7 | 19.4 | 1.78 | 2.15 | 0 |
| A113_ELEC_Floor | Fc | 36.24 | 44.2 | 24.0 | 1.51 | 1.84 | 0 |
| A114_CLERC & RECEP | Fc | 49.51 | 98.6 | 32.2 | 1.54 | 1.82 | 2.5 |
| A115_RECORD STORAGE_Floor | Fc | 53.88 | 71.3 | 27.1 | 1.99 | 2.63 | 0 |
| A116_STAFF LOUNGE_Floor | Fc | 40.00 | 59.4 | 17.4 | 2.33 | 3.18 | 0 |
| A117_CONF_Workplane | Fc | 49.09 | 90.7 | 7.1 | 6.91 | 12.77 | 2.5 |
| A118_CUST_Floor | Fc | 19.16 | 21.8 | 15.7 | 1.22 | 1.39 | 0 |
| A119_PSYCH_Workplane | Fc | 55.22 | 82.9 | 31.8 | 1.74 | 2.61 | 2.5 |
| A120_SPEECH_Workplane | Fc | 47.89 | 67.3 | 26.1 | 1.83 | 2.58 | 2.5 |
| A121_OFFICE_Workplane | Fc | 56.28 | 83.3 | 32.7 | 1.72 | 2.54 | 2.5 |
| A122_STUDENT WAITING_Workplane | Fc | 53.79 | 71.7 | 30.2 | 1.78 | 2.37 | 2.5 |
| A123_CONF_Workplane | Fc | 51.06 | 90.3 | 9.4 | 5.43 | 9.57 | 2.5 |
| A124_COUNS_Workplane | Fc | 53.99 | 81.4 | 30.7 | 1.76 | 2.65 | 2.5 |
| A125_COUNS_Workplane | Fc | 54.14 | 81.5 | 31.0 | 1.75 | 2.63 | 2.5 |
| A126_COUNS_Workplane | Fc | 54.06 | 81.4 | 30.8 | 1.76 | 2.64 | 2.5 |
| A127_AP_Workplane | Fc | 44.95 | 80.3 | 26.7 | 1.68 | 2.33 | 2.5 |
| A128_CHECK_ASSY | Fc | 38.27 | 101.6 | 9.9 | 3.87 | 10.26 | 0 |
| A129_CONF_Workplane | Fc | 49.37 | 90.5 | 6.9 | 7.16 | 13.12 | 2.5 |
| A130_STUDENT WAITING_ | Fc | 30.92 | 39.8 | 19.8 | 1.53 | 1.97 | 0 |
| A132_COUNS_Workplane | Fc | 54.97 | 82.6 | 31.3 | 1.76 | 2.64 | 2.5 |
| A133_COUNS_Workplane | Fc | 56.16 | 82.9 | 31.4 | 1.78 | 2.64 | 2.5 |
| A132_COUNS_Workplane | Fc | 55.51 | 81.9 | 31.1 | 1.78 | 2.63 | 2.5 |
| A133_COUNS_Workplane | Fc | 57.53 | 83.3 | 32.2 | 1.78 | 2.59 | 2.5 |
| A134_OFFICE_Workplane | Fc | 102.37 | 129.1 | 46.1 | 2.22 | 2.80 | 2.5 |
| A135_AP_Workplane | Fc | 72.67 | 94.5 | 28.8 | 2.52 | 3.28 | 2.5 |
| A136_OFFICE_Workplane | Fc | 86.61 | 99.2 | 68.6 | 1.26 | 1.45 | 2.5 |
| A137_PRINCIPAL_Workplane | Fc | 91.23 | 106.5 | 47.2 | 1.93 | 2.30 | 2.5 |
| A138_CONF_Workplane | Fc | 52.97 | 90.1 | 10.7 | 4.95 | 8.42 | 2.5 |

PN

**LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A**

**1**
1/8" = 1'-0"

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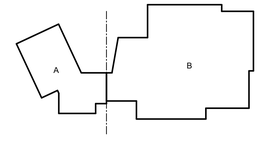
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SHEET NAME:

**LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A**

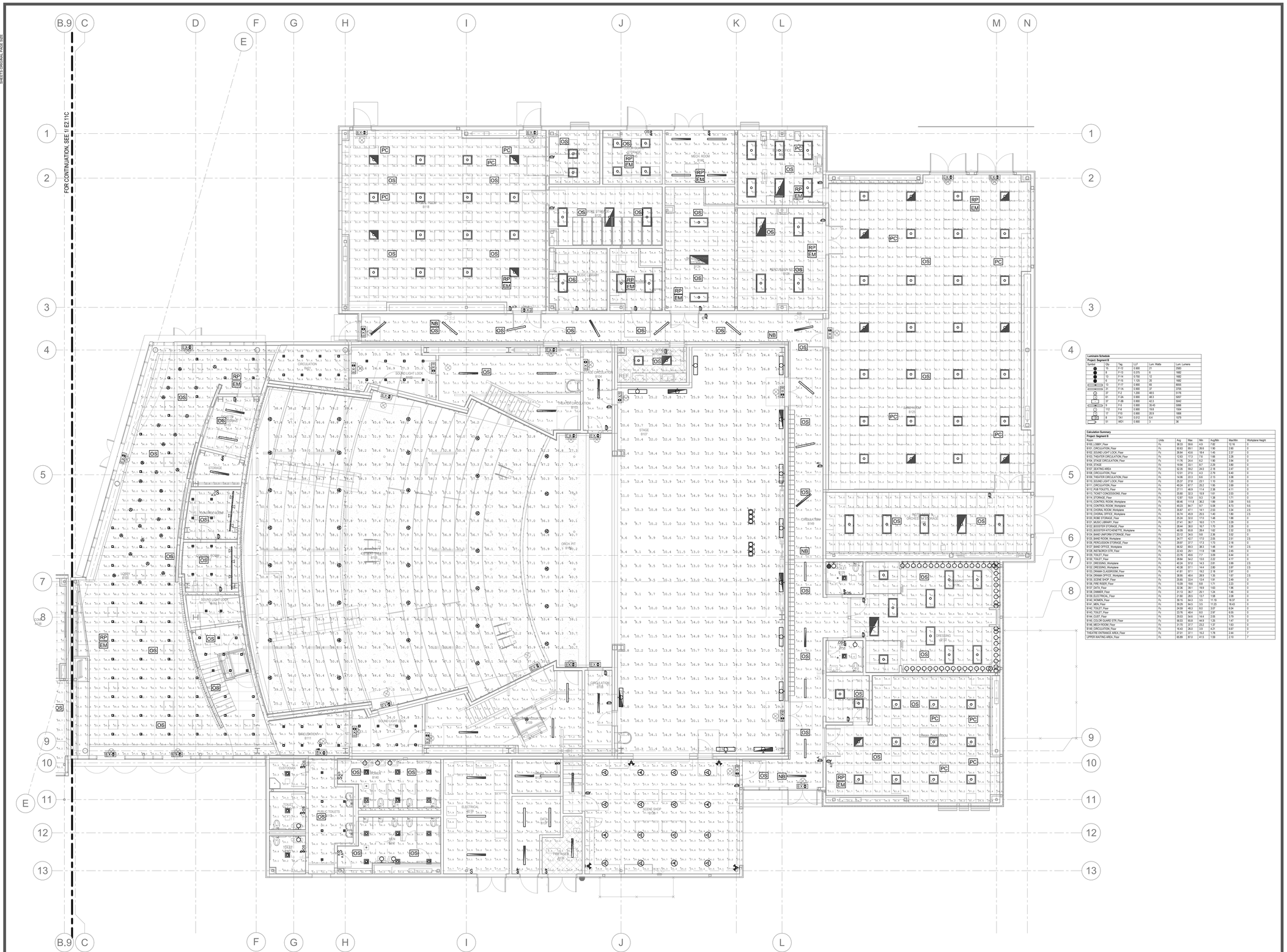
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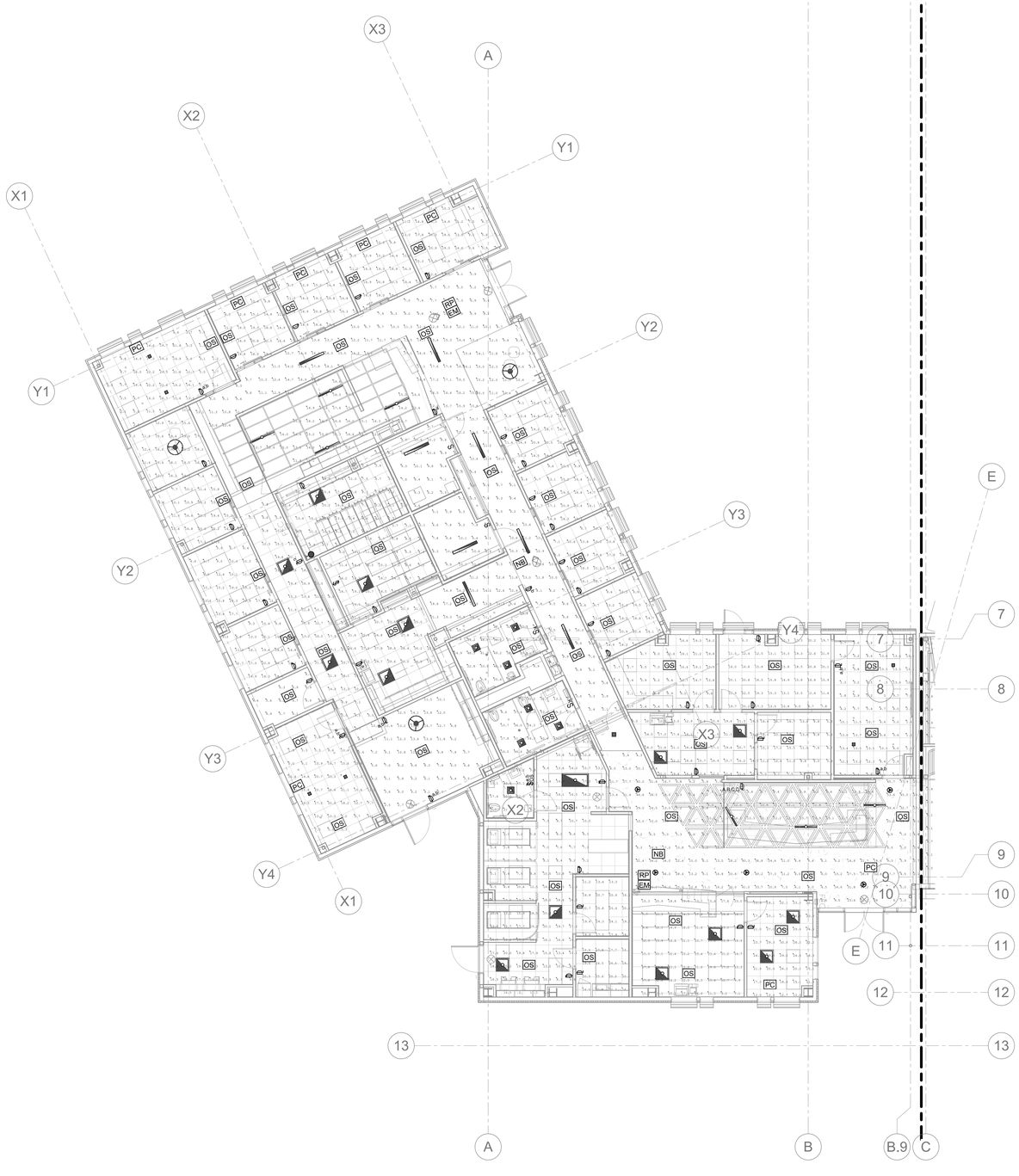

**Luminaire Schedule**
Project Segment B

| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
|---|---|---|---|---|---|
| | 15 | F-12 | 0.900 | 31 | 2563 |
| | 8 | F-13 | 0.375 | 6 | 1682 |
| | 13 | F-14 | 0.750 | 12 | 1682 |
| | 6 | F-15 | 1.125 | 20 | 1682 |
| | 13 | F-16 | 0.900 | 18 | 3026 |
| | 13 | F-17 | 0.900 | 31 | 5035 |
| | 37 | F-1 | 0.900 | 48.5 | 5716 |
| | 43 | F-2 | 0.900 | 48.5 | 5657 |
| | 37 | F-3B | 0.900 | 42.3 | 5042 |
| | 9 | F-5 | 0.900 | 30.45 | 3566 |
| | 112 | F-6 | 0.900 | 18.8 | 1504 |
| | 17 | F-10 | 0.900 | 20.9 | 1606 |
| | 8 | TA1 | 0.512 | 6.4 | 1279 |
| | 61 | WC1 | 0.900 | 3 | 36 |

**Calculation Summary**
Project Segment B

| | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height |
|---|---|---|---|---|---|---|---|
| B106_LOBBY_Floor | Fc | 36.33 | 59.6 | 4.9 | 7.82 | 12.16 | 0 |
| B107_CIRCULATION_Floor | Fc | 30.63 | 59.1 | 20.6 | 1.49 | 2.87 | 0 |
| B102_SOUND LIGHT LOCK_Floor | Fc | 26.64 | 43.6 | 18.4 | 1.45 | 2.37 | 0 |
| B103_THEATER CIRCULATION_Floor | Fc | 12.93 | 17.5 | 7.6 | 1.69 | 2.29 | 0 |
| B104_STAGE CIRCULATION_Floor | Fc | 11.76 | 34.4 | 6.2 | 1.90 | 3.54 | 0 |
| B105_STAGE | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 5.80 | 0 |
| B107_SEATING AREA | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B108_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B109_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B110_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B111_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B112_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B113_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B114_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B115_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B116_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B118_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B119_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B120_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B121_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B122_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B123_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B124_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B125_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B126_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B127_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B133_DRAMA CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B134_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B135_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B136_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B137_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B138_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B139_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B140_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B141_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B142_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B143_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B144_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B145_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B146_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B147_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B148_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B149_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B150_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B151_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B152_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B153_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B154_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B155_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B156_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B157_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B158_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B159_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B160_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B161_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B162_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B163_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B164_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B165_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B166_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B167_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B168_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B169_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B170_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B171_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B172_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B173_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B174_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B175_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B176_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B177_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B178_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B179_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B180_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B181_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B182_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B183_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B184_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B185_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B186_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B187_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B188_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B189_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B190_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B191_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B192_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B193_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B194_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B195_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B196_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B197_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B198_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B199_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B200_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B201_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B202_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B203_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B204_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B205_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B206_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B207_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B208_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B209_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B210_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B211_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B212_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B213_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B214_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B215_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B216_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B217_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B218_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B219_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B220_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B221_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B222_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B223_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B224_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B225_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B226_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B227_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B228_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B229_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B230_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B231_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B232_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B233_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B234_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B235_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B236_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B237_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B238_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B239_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B240_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B241_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B242_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B243_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B244_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B245_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B246_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B247_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B248_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B249_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B250_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B251_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B252_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B253_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B254_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B255_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B256_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B257_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B258_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B259_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B260_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B261_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B262_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B263_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B264_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B265_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B266_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B267_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B268_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B269_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B270_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B271_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B272_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B273_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B274_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B275_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B276_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B277_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B278_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B279_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B280_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B281_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B282_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B283_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B284_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B285_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B286_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B287_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B288_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B289_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B290_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B291_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B292_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B293_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B294_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B295_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B296_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B297_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B298_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B299_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B300_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B301_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B302_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B303_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B304_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B305_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B306_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B307_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B308_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B309_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B310_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B311_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B312_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B313_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B314_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B315_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B316_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B317_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B318_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B319_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B320_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B321_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B322_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B323_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B324_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B325_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B326_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B327_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B328_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B329_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B330_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B331_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B332_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B333_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B334_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B335_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B336_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B337_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B338_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B339_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B340_SOUND LIGHT LOCK_Floor | Fc | 26.37 | 27.8 | 23.1 | 1.10 | 1.20 | 0 |
| B341_CIRCULATION_Floor | Fc | 49.24 | 67.7 | 25.2 | 1.86 | 2.69 | 0 |
| B342_PUB TOILETS_Floor | Fc | 27.11 | 46.9 | 11.4 | 2.34 | 4.11 | 0 |
| B343_TICKET CONCESSIONS_Floor | Fc | 25.60 | 32.3 | 15.9 | 1.61 | 2.03 | 0 |
| B344_STORAGE_Floor | Fc | 12.97 | 15.9 | 9.3 | 1.39 | 1.71 | 0 |
| B345_CONTROL ROOM_Workplane | Fc | 68.46 | 111.8 | 36.2 | 1.89 | 3.09 | 9.5 |
| B346_CONTROL ROOM_Workplane | Fc | 45.23 | 64.7 | 5.7 | 7.93 | 11.35 | 9.5 |
| B347_CHORAL ROOM_Workplane | Fc | 35.67 | 47.1 | 14.1 | 2.53 | 3.34 | 2.5 |
| B348_CHORAL OFFICE_Workplane | Fc | 35.74 | 49.9 | 20.5 | 1.74 | 2.43 | 2.5 |
| B349_ROBE STORAGE_Floor | Fc | 25.24 | 32.0 | 17.0 | 1.48 | 1.88 | 0 |
| B350_MUSIC LIBRARY_Floor | Fc | 27.47 | 36.7 | 16.0 | 1.71 | 2.29 | 0 |
| B351_BOOSTER STORAGE_Floor | Fc | 28.44 | 38.0 | 16.7 | 1.70 | 2.28 | 0 |
| B352_BAND UNIFORM STORAGE_Workplane | Fc | 46.09 | 64.4 | 29.4 | 1.57 | 2.19 | 2.5 |
| B353_BAND UNIFORM STORAGE_Floor | Fc | 23.12 | 34.0 | 17.2 | 1.34 | 1.97 | 0 |
| B354_BAND ROOM_Workplane | Fc | 51.70 | 68.5 | 37.3 | 1.39 | 1.84 | 2.5 |
| B355_PERCUSSION STORAGE_Floor | Fc | 29.97 | 37.7 | 17.3 | 1.73 | 2.18 | 0 |
| B356_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B357_BAND OFFICE_Workplane | Fc | 56.52 | 69.3 | 38.3 | 1.48 | 1.81 | 2.5 |
| B358_CLASSROOM_Floor | Fc | 41.81 | 57.1 | 19.2 | 2.18 | 2.97 | 0 |
| B359_DRAMA OFFICE_Workplane | Fc | 36.60 | 48.4 | 28.9 | 1.26 | 1.67 | 2.5 |
| B360_STAGE HOUSE_Floor | Fc | 19.39 | 53.4 | 6.2 | 3.13 | 8.62 | 0 |
| B361_STAGE HOUSE_Floor | Fc | 19.94 | 53.1 | 8.7 | 2.29 | 6.09 | 0 |
| B362_SEATING AREA_Floor | Fc | 52.35 | 59.2 | 34.5 | 2.18 | 2.47 | 0 |
| B363_CIRCULATION_Floor | Fc | 10.91 | 37.5 | 4.3 | 2.79 | 6.40 | 0 |
| B364_THEATER CIRCULATION_Floor | Fc | 14.96 | 22.3 | 6.6 | 2.13 | 3.38 | 0 |
| B365_SOUND LIGHT LOCK_Floor |

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**Luminaire Schedule**
**Project: Segment A**

| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
|---|---|---|---|---|---|
| | 5 | F11 | 0.900 | 30.1 | 2089 |
| | 6 | F2A | 0.900 | 37 | 5000 |
| | 31 | F3A | 0.900 | 48.2 | 5052 |
| | 1 | F3B | 0.900 | 48.2 | 5042 |
| | 7 | F4 | 0.900 | 31.3 | 3798 |
| | 3 | F5 | 0.900 | 39.43 | 5866 |
| | 5 | F6 | 0.900 | 19.8 | 1004 |
| | 3 | F8 | 0.900 | 42 | 5377 |
| | 7 | F10 | 0.900 | 20.9 | 1806 |

**Calculation Summary**
**Project: Segment A**

| Name | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height |
|---|---|---|---|---|---|---|---|
| A102_LOBBY_Floor | Fc | 17.80 | 53.8 | 2.1 | 8.52 | 26.02 | 0 |
| A103_Reception Area | Fc | 12.32 | 30.8 | 7.5 | 1.64 | 4.09 | 0 |
| A102_ATTENDANCE_Floor | Fc | 17.87 | 25.4 | 7.1 | 2.52 | 3.58 | 0 |
| A103_ATTEND OFFICE_Floor | Fc | 21.70 | 30.8 | 10.6 | 2.05 | 2.91 | 0 |
| A104_HEALTH CENTER_Floor | Fc | 12.13 | 22.4 | 1.7 | 7.14 | 13.20 | 0 |
| A105_Toilet_Floor | Fc | 24.32 | 52.0 | 5.8 | 4.19 | 8.97 | 0 |
| A106_NURSE OFFICE_Floor | Fc | 18.72 | 30.8 | 11.2 | 1.67 | 2.75 | 0 |
| A107_NURSE EXAM_Floor | Fc | 19.87 | 35.0 | 14.5 | 1.37 | 2.41 | 0 |
| A108_TOILETS_Floor | Fc | 36.27 | 60.5 | 5.3 | 6.76 | 10.32 | 0 |
| A109_TOILETS_Floor | Fc | 34.28 | 64.1 | 2.2 | 15.58 | 29.14 | 0 |
| A110_WORKMAN_ | Fc | 24.93 | 29.7 | 16.5 | 1.51 | 1.80 | 0 |
| A111_STORAGE_Floor | Fc | 10.93 | 20.7 | 3.1 | 3.53 | 6.68 | 0 |
| A112_DATA_Floor | Fc | 8.16 | 11.0 | 4.5 | 1.81 | 2.44 | 0 |
| A113_ELEC_Floor | Fc | 8.04 | 11.1 | 4.5 | 1.79 | 2.47 | 0 |
| A114_CLEANED/SP_AREA | Fc | 14.95 | 18.6 | 11.9 | 1.25 | 1.56 | 0 |
| A115_RECORD STORAGE_Floor | Fc | 9.90 | 20.4 | 2.0 | 4.95 | 10.20 | 0 |
| A116_STAFF LOUNGE_Floor | Fc | 8.24 | 16.6 | 2.5 | 3.30 | 6.66 | 0 |
| A117_CONF_Floor | Fc | 11.18 | 24.8 | 0.9 | 12.42 | 27.56 | 0 |
| A118_DIST_Floor | Fc | 6.10 | 8.9 | 4.4 | 1.38 | 1.97 | 0 |
| A119_PSYCH_Floor | Fc | 13.84 | 20.9 | 6.3 | 2.20 | 3.32 | 0 |
| A120_SPEECH_Floor | Fc | 12.46 | 20.9 | 4.1 | 3.04 | 5.10 | 0 |
| A121_OFFICE_Floor | Fc | 13.72 | 20.6 | 6.6 | 2.08 | 3.12 | 0 |
| A122_STUDENT WAITING_Floor | Fc | 19.12 | 22.2 | 8.2 | 1.64 | 2.71 | 0 |
| A123_CONF_Floor | Fc | 16.95 | 34.5 | 5.1 | 3.95 | 6.77 | 0 |
| A124_COUNS_Floor | Fc | 13.42 | 20.6 | 6.6 | 2.04 | 3.12 | 0 |
| A125_COUNS_Floor | Fc | 13.82 | 20.8 | 6.9 | 2.16 | 3.30 | 0 |
| A126_COUNS_Floor | Fc | 13.81 | 20.8 | 6.2 | 2.23 | 3.35 | 0 |
| A127_AP_Floor | Fc | 12.16 | 20.9 | 3.4 | 3.58 | 6.15 | 0 |
| A128_CIRCULATION | Fc | 11.15 | 21.3 | 1.5 | 7.43 | 14.20 | 0 |
| A138_LOBBY_WEST | Fc | 13.24 | 27.7 | 2.0 | 6.62 | 13.85 | 0 |
| A129_STUDENT WAITING | Fc | 11.53 | 16.1 | 7.4 | 1.56 | 2.18 | 0 |
| A130_COUNS_Floor | Fc | 13.78 | 20.8 | 6.2 | 2.22 | 3.35 | 0 |
| A131_COUNS_Floor | Fc | 13.87 | 20.9 | 6.3 | 2.20 | 3.32 | 0 |
| A132_COUNS_Floor | Fc | 13.75 | 21.2 | 6.0 | 2.29 | 3.53 | 0 |
| A133_COUNS_Floor | Fc | 13.86 | 20.9 | 6.4 | 2.17 | 3.27 | 0 |
| A134_OFFICE_Floor | Fc | 16.75 | 23.5 | 8.0 | 2.09 | 2.94 | 0 |
| A135_AP_Floor | Fc | 9.25 | 21.2 | 1.3 | 8.17 | 14.13 | 0 |
| A136_OFFICE_Floor | Fc | 11.15 | 20.7 | 3.1 | 3.58 | 6.66 | 0 |
| A137_PRINCIPAL_Floor | Fc | 16.48 | 22.6 | 5.8 | 2.76 | 4.04 | 0 |
| A138_CONF_Floor | Fc | 17.0 | 13.7 | 0.7 | 11.03 | 19.57 | 0 |

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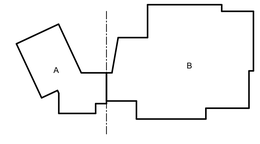

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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT A - EMERGENCY**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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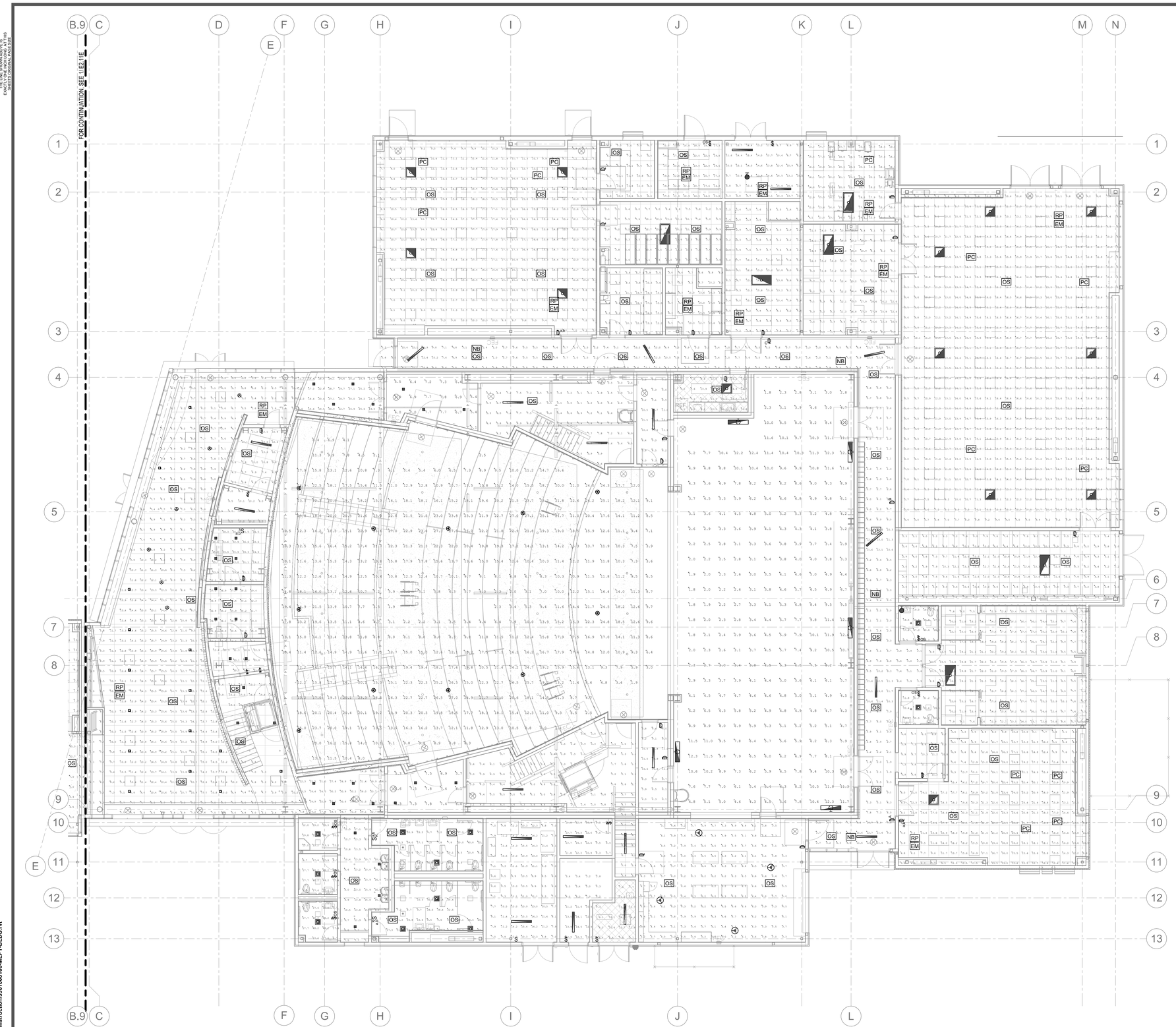
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**LEVEL 1 - EMERGENCY PHOTOMETRIC PLAN - SEGMENT A** **1** 1/8" = 1'-0"

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**Luminaire Schedule**
**Project: Segment B**

| Symbol | Qty | Tag | LLF | Lum. Watts | Lum. Lumens |
|---|---|---|---|---|---|
| | 4 | F-12 | 0.900 | 21 | 2583 |
| | 1 | F-13 | 0.370 | 8 | 1662 |
| | 3 | F-14 | 0.750 | 12 | 1662 |
| | 2 | F-15 | 1.000 | 37 | 1662 |
| | 16 | F-16 | 0.900 | 20 | 1662 |
| | 11 | F-1 | 0.900 | 43.65 | 5709 |
| | 30 | F-34 | 0.900 | 48.3 | 5857 |
| | 15 | F-36 | 0.900 | 42.3 | 5042 |
| | 5 | F-5 | 0.900 | 35.45 | 3995 |
| | 46 | F-6 | 0.900 | 18.8 | 1504 |
| | 11 | F10 | 0.900 | 20.9 | 1606 |
| | 5 | F-17 | 0.900 | 61.8 | 8055 |

**Calculation Summary**
**Project: Segment B**

| Label | Units | Avg | Max | Min | Avg/Min | Max/Min | Workplane Height |
|---|---|---|---|---|---|---|---|
| B102_LOBBY_Floor | Fc | 9.33 | 15.8 | 1.3 | 7.18 | 12.15 | 0 |
| B02_CIRCULATION_Floor | Fc | 20.37 | 35.0 | 8.6 | 2.36 | 3.49 | 0 |
| B102_SOUND LIGHT LOCK_Floor | Fc | 8.61 | 7.8 | 6.1 | 1.39 | 1.53 | 0 |
| B103_THEATER CIRCULATION_Floor | Fc | 9.99 | 7.9 | 2.6 | 2.30 | 3.04 | 0 |
| B04_STAGE CIRCULATION_Floor | Fc | 8.03 | 12.9 | 3.9 | 2.06 | 3.31 | 0 |
| B105_SEATING AREA | Fc | 14.62 | 27.5 | 1.3 | 7.69 | 14.47 | 0 |
| B107_STAGE | Fc | 6.01 | 12.7 | 1.8 | 3.34 | 7.06 | 0 |
| B108_CIRCULATION_Floor | Fc | 7.87 | 12.9 | 2.6 | 3.03 | 4.96 | 0 |
| B109_THEATER CIRCULATION_Floor | Fc | 3.83 | 7.0 | 0.6 | 6.06 | 11.67 | 0 |
| B110_SOUND LIGHT LOCK_Floor | Fc | 6.83 | 7.8 | 5.3 | 1.29 | 1.47 | 0 |
| B111_CIRCULATION_Floor | Fc | 21.38 | 34.0 | 7.8 | 2.74 | 4.36 | 0 |
| B112_PUB TOILETS_Floor | Fc | 12.58 | 26.0 | 7.5 | 1.68 | 3.47 | 0 |
| B113_TICKET CONCESSIONS_Floor | Fc | 8.40 | 14.2 | 7.8 | 1.08 | 1.82 | 0 |
| B14_STORAGE_Floor | Fc | 8.85 | 11.0 | 6.9 | 1.28 | 1.59 | 0 |
| B115_CONTROL ROOM_Floor | Fc | 30.26 | 58.9 | 12.5 | 2.42 | 4.71 | 7 |
| B116_CONTROL ROOM_Floor | Fc | 27.61 | 47.4 | 8.9 | 4.00 | 6.87 | 7 |
| B118_CHORAL ROOM_Floor | Fc | 12.50 | 17.8 | 3.9 | 3.21 | 4.58 | 0 |
| B119_CHORAL OFFICE_Floor | Fc | 8.71 | 11.8 | 4.7 | 1.85 | 2.51 | 0 |
| B120_ROBE STORAGE_Floor | Fc | 9.74 | 17.1 | 3.8 | 2.71 | 4.75 | 0 |
| B121_MUSIC LIBRARY_Floor | Fc | 9.74 | 17.1 | 3.8 | 2.71 | 4.75 | 0 |
| B122_BOOSTER KITCHEN_Floor | Fc | 11.23 | 16.9 | 4.2 | 2.68 | 4.02 | 0 |
| B124_BAND UNIFORM STORAGE_Floor | Fc | 11.43 | 16.9 | 4.2 | 2.74 | 4.05 | 0 |
| B125_BAND ROOM_Floor | Fc | 13.74 | 19.7 | 4.4 | 3.09 | 4.50 | 0 |
| B126_PERCUSSION STORAGE_Floor | Fc | 17.08 | 18.5 | 2.9 | 3.82 | 6.38 | 0 |
| B127_BAND OFFICE_Floor | Fc | 16.57 | 21.3 | 8.9 | 1.86 | 2.39 | 0 |
| B128_INSTBORCH STR_Floor | Fc | 7.64 | 13.4 | 1.8 | 4.24 | 7.44 | 0 |
| B129_TOILET_Floor | Fc | 22.50 | 49.4 | 8.2 | 2.83 | 7.97 | 0 |
| B130_TOILET_Floor | Fc | 27.47 | 54.3 | 11.2 | 2.45 | 4.85 | 0 |
| B131_DRESSING_Floor | Fc | 13.72 | 22.0 | 3.7 | 3.71 | 5.95 | 0 |
| B132_DRESSING_Floor | Fc | 13.76 | 22.0 | 3.7 | 3.72 | 5.95 | 0 |
| B133_DRAMA CLASSROOM_Floor | Fc | 14.60 | 24.2 | 3.4 | 4.31 | 7.12 | 0 |
| B134_DRAMA OFFICE_Floor | Fc | 8.70 | 11.9 | 4.6 | 1.89 | 2.59 | 0 |
| B135_SCENE SHOP_Floor | Fc | 5.64 | 14.7 | 1.2 | 4.74 | 11.89 | 0 |
| B136_FIRE RISER_Floor | Fc | 10.72 | 14.4 | 6.6 | 1.62 | 2.18 | 0 |
| B137_DATA_Floor | Fc | 8.86 | 14.5 | 2.8 | 3.16 | 5.18 | 0 |
| B138_DIMMER_Floor | Fc | 10.55 | 14.3 | 5.7 | 1.85 | 2.51 | 0 |
| B139_ELECTRICAL_Floor | Fc | 10.48 | 15.5 | 6.6 | 1.59 | 2.35 | 0 |
| B140_WOMEN_Floor | Fc | 23.63 | 60.2 | 2.2 | 10.74 | 27.36 | 0 |
| B141_MEN_Floor | Fc | 25.22 | 60.4 | 2.5 | 10.09 | 24.16 | 0 |
| B142_TOILET_Floor | Fc | 23.59 | 48.2 | 8.7 | 3.52 | 7.19 | 0 |
| B143_TOILET_Floor | Fc | 22.04 | 48.2 | 8.7 | 3.36 | 7.19 | 0 |
| B144_CUST_Floor | Fc | 27.45 | 54.2 | 12.0 | 2.29 | 4.52 | 0 |
| B145_COLOR GUARD STR_Floor | Fc | 18.06 | 23.8 | 11.3 | 1.72 | 2.19 | 0 |
| B146_MECH ROOM_Floor | Fc | 11.57 | 15.4 | 9.3 | 2.14 | 2.91 | 0 |
| B147_THEATRE ENTRANCE_Floor | Fc | 8.96 | 13.1 | 6.0 | 1.68 | 3.01 | 0 |
| THEATRE ENTRANCE AREA_Floor | Fc | 22.56 | 33.7 | 12.2 | 1.90 | 2.91 | 7 |
| UPPER WAITING AREA_Floor | Fc | 14.56 | 22.5 | 8.4 | 1.78 | 2.88 | 7 |

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**LEVEL 1 - EMERGENCY PHOTOMETRIC PLAN - SEGMENT B** | **1** 1/8" = 1'-0"

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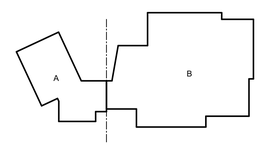
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Project Manager: RM
Job. No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - PHOTOMETRIC PLAN - SEGMENT B - EMERGENCY**

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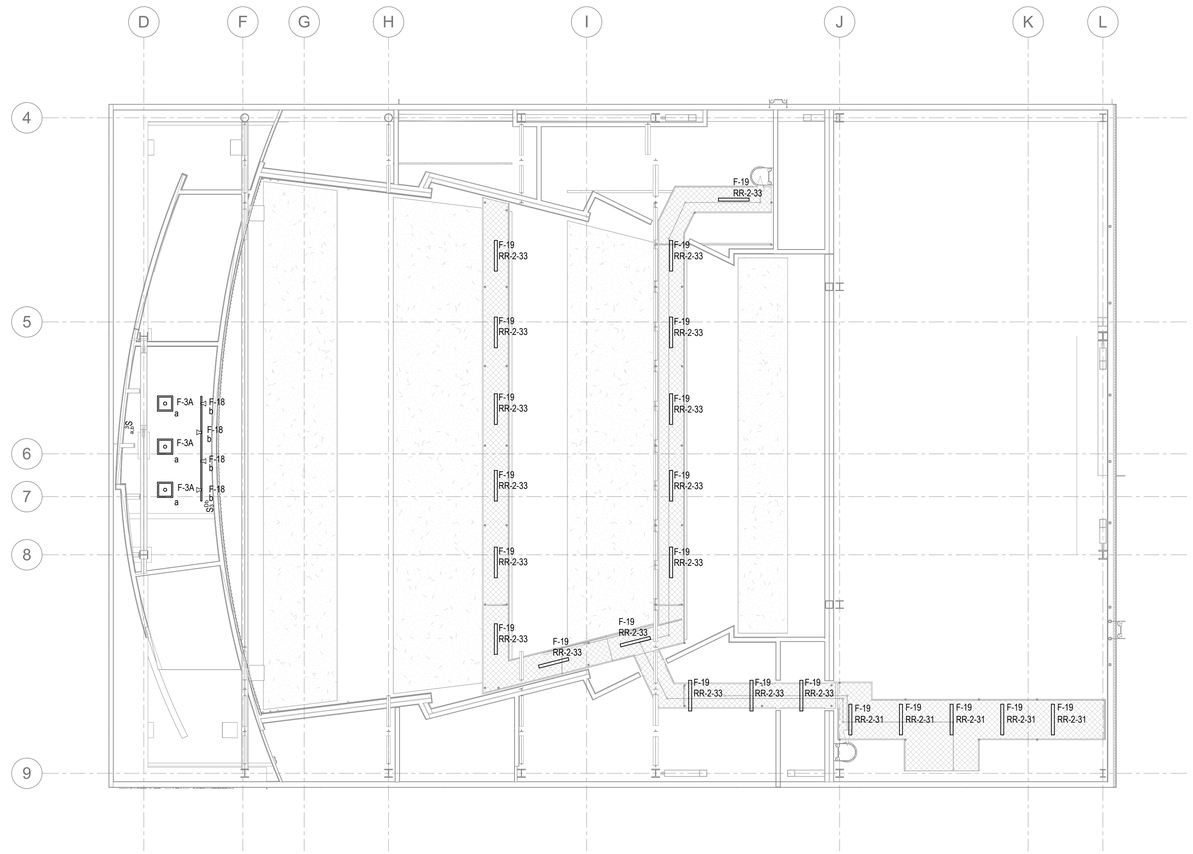
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LEVEL 2 - LIGHTING PLAN - CATWALK

1
1/8" = 1'-0"

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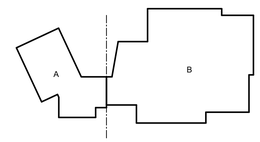
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**LEVEL 2 - LIGHTING PLAN - CATWALK**

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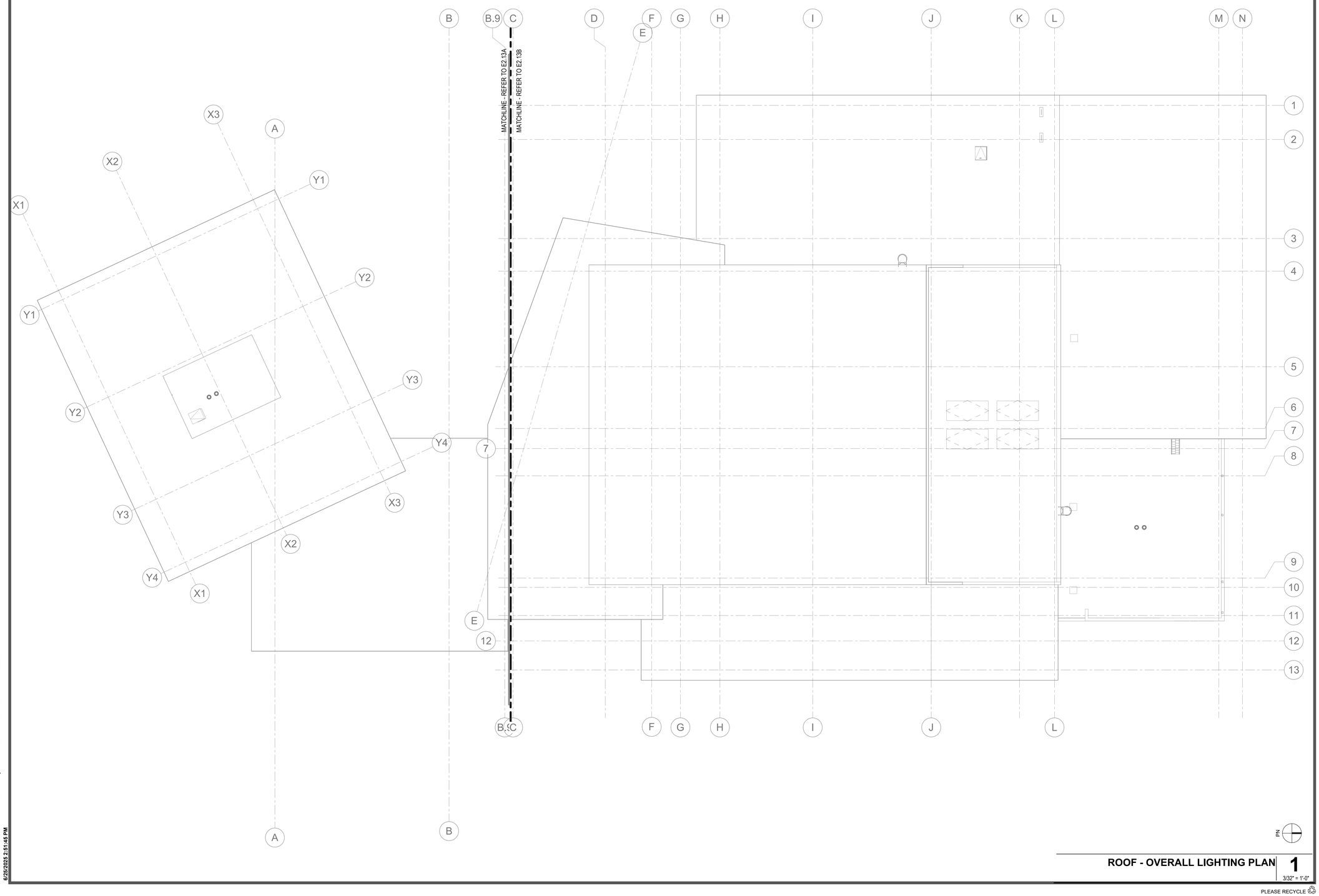
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## ROOF - OVERALL LIGHTING PLAN

1 3/32" = 1'-0"

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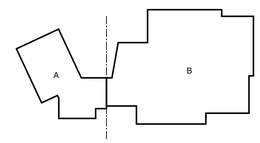
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KEY PLAN:




FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - OVERALL LIGHTING PLAN**

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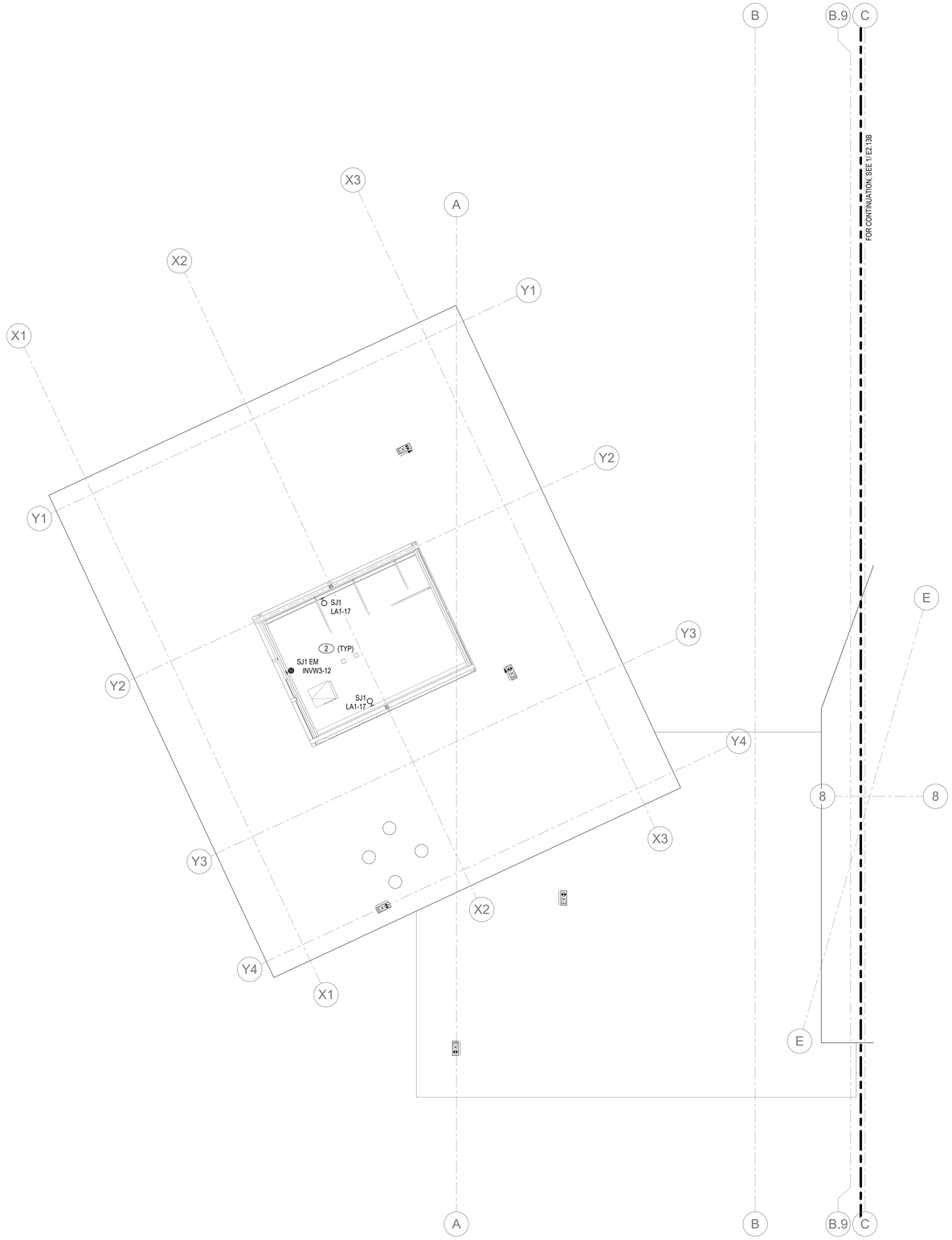
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## SHEET NOTES

A. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LUMINAIRES. INFORM ENGINEER OF CONFLICTS. COORDINATE ALL LOCATIONS WITH DUCTWORK AND PIPING.

B. CEILING SENSOR SWITCHES IN SAME SPACE WITH SAME SWITCH DESIGNATION ARE TO BE WIRED IN PARALLEL SUCH THAT EITHER SENSOR WILL ACTIVATE ALL DESIGNATED LIGHTS.

C. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED, OR "HARD") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL JUNCTION BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD" CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN" METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINIARE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

D. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER SCHEDULES.

E. ALL LOW VOLTAGE CABLING TO LIGHTING FIXTURES AND CONTROL DEVICES SHALL BE PLENUM RATED.

F. EXIT SIGNS TO BE CIRCUITED TO NEAREST EMERGENCY CIRCUIT SERVING THE SPACE.

G. CONTRACTOR SHALL CONFIRM ALL EXIT SIGN LOCATIONS AND DIRECTIONAL CHEVRONS WITH THE ARCHITECTURAL EGRESS PLANS AND REFLECTED CEILING PLANS.

## KEYED NOTES (#)

1. ARCHITECT TO CONFIRM MOUNTING LOCATIONS BASED ON MECHANICAL SCREEN STRUCTURE.
2. ALL SJ1 FIXTURES WILL BE CONTROLLED BY PHOTOCELL.

PN

**ROOF - LIGHTING PLAN - SEGMENT A** 1 1/8" = 1'-0"

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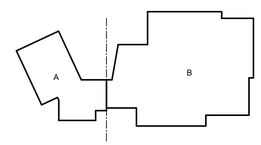

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - LIGHTING PLAN - SEGMENT A**

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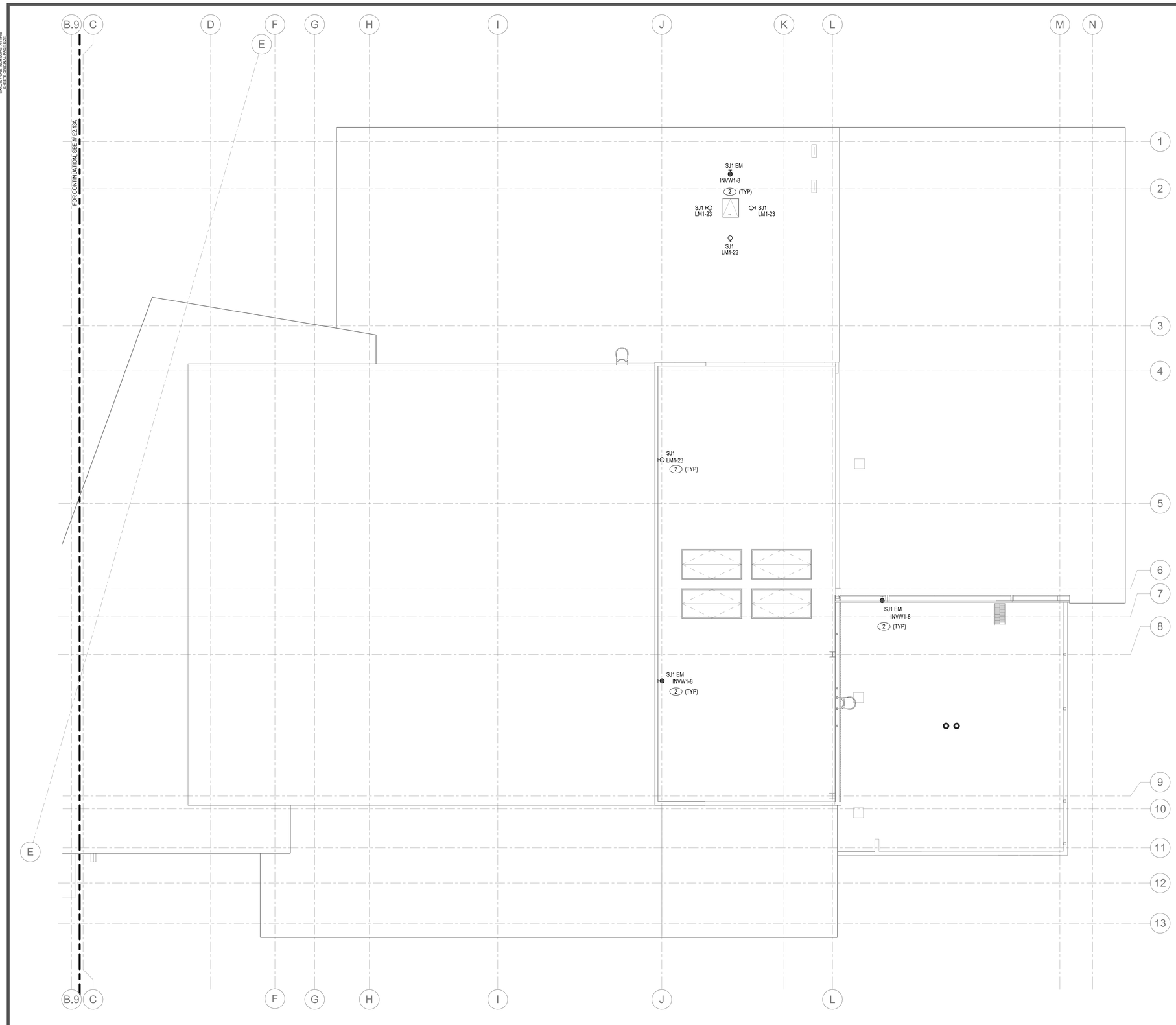
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## KEYED NOTES (#)

1. ARCHITECT TO CONFIRM MOUNTING LOCATIONS BASED ON MECHANICAL SCREEN STRUCTURE.
2. ALL SJ1 FIXTURES WILL BE CONTROLLED BY PHOTOCELL.

PN

**ROOF - LIGHTING PLAN - SEGMENT B** | **1** 1/8" = 1'-0"

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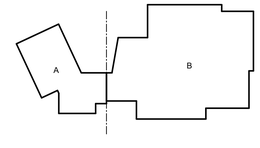

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KEY PLAN:




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**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**ROOF - LIGHTING PLAN - SEGMENT B**

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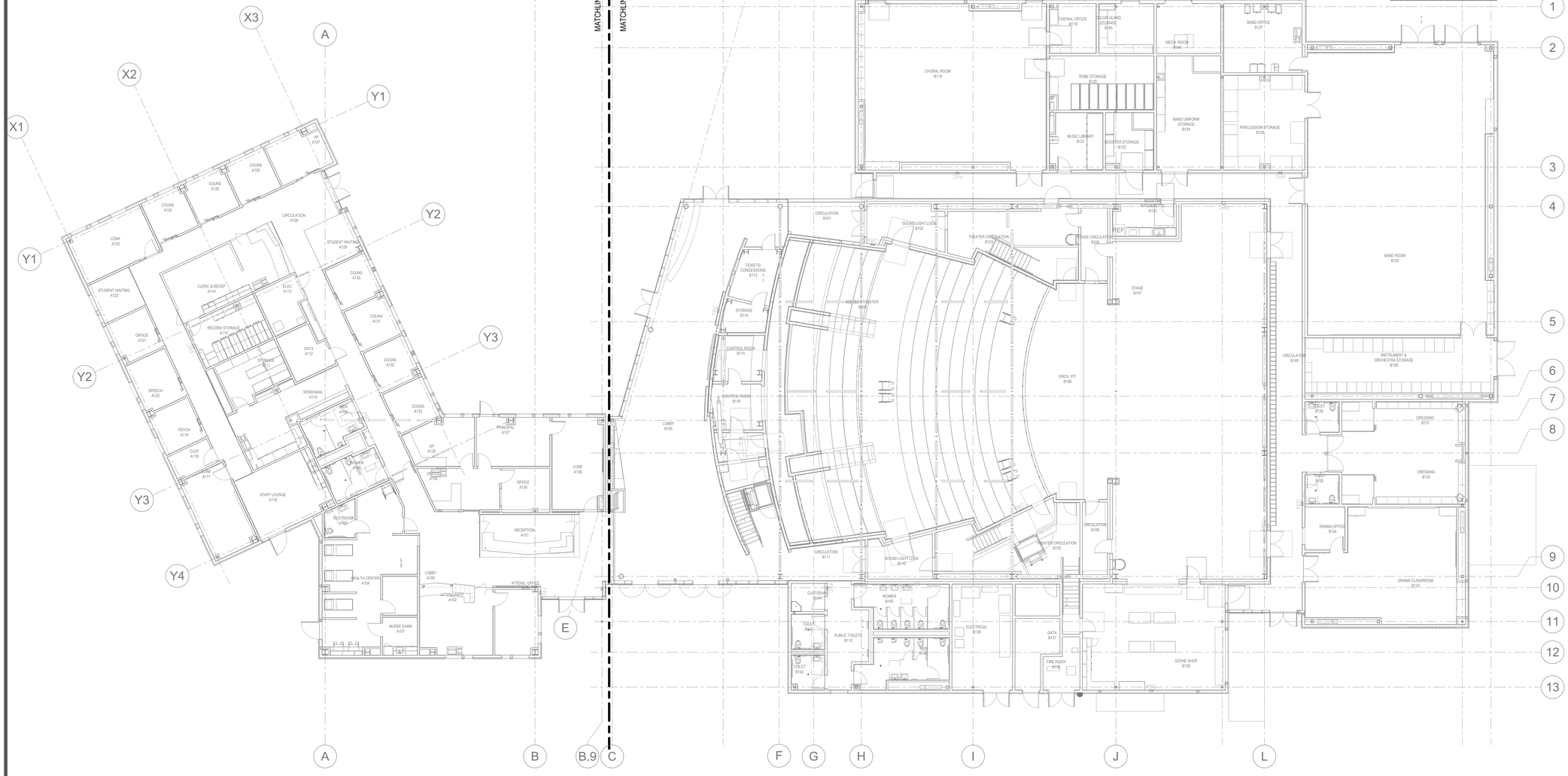
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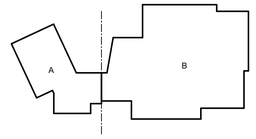
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**LEVEL 1 - OVERALL POWER PLAN**

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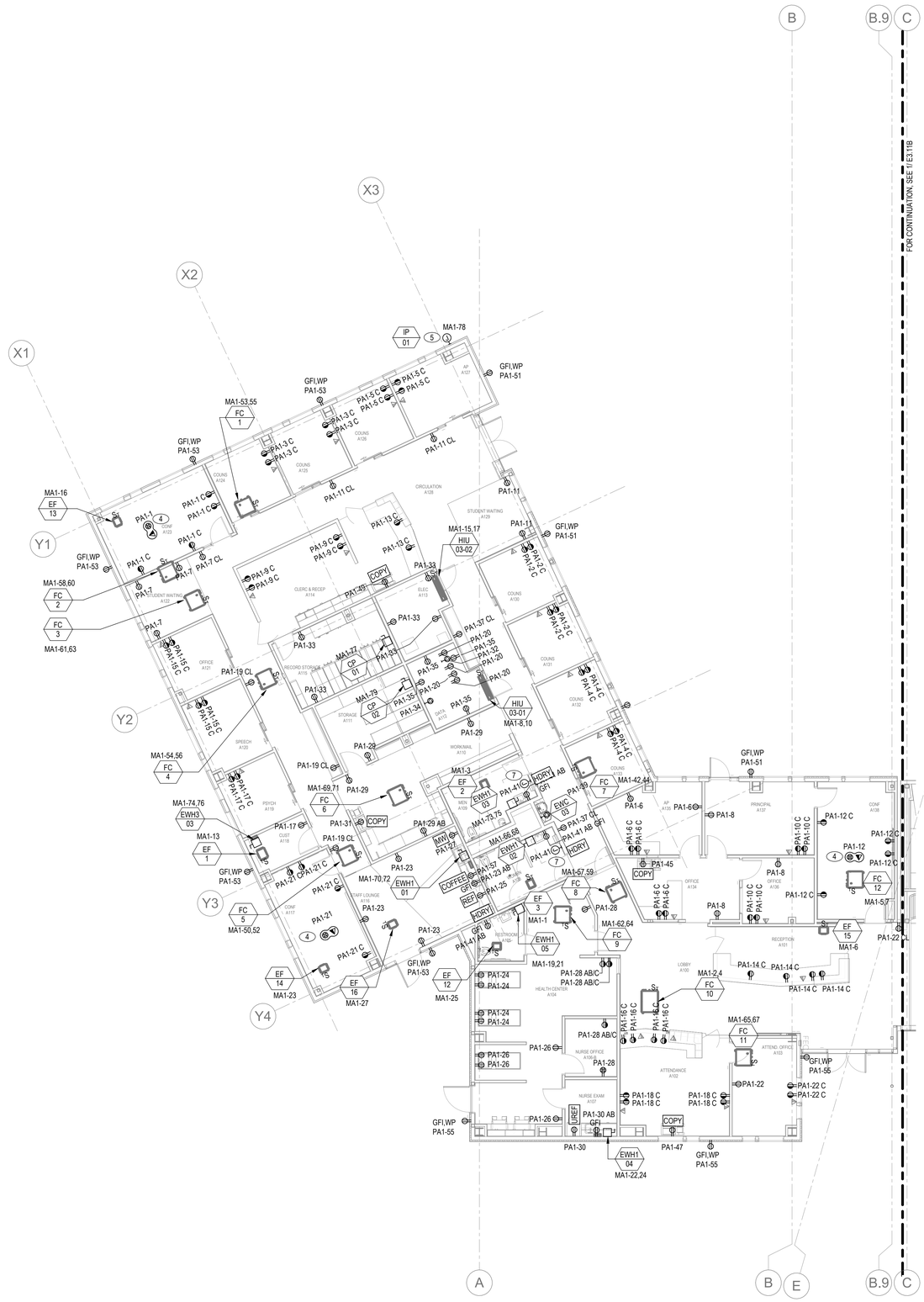
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## SHEET NOTES

A. WHERE POSSIBLE, BOXES SHALL BE IN SEPARATE STUD SPACES FROM BOXES SERVING OTHER ROOMS TO MINIMIZE SOUND TRANSFER.

B. PROVIDE 4" HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

C. REFER TO ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION ON NAMED ELECTRICAL EQUIPMENT SHOWN.

D. REFER TO ARCHITECTURAL FLOOR PLANS, INTERIOR ELEVATIONS AND DETAIL DRAWINGS PRIOR TO ROUGH-IN FOR EXACT LOCATION OF RECEPTACLES, FLOOR BOXES AND OUTLETS. INFORM ENGINEER OF CONFLICTS.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED, OR "HARD") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. ENSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD" CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH DEVICE ONLY IN "DAISY-CHAIN" METHOD OR WITH DEDICATED HOMERUNS TO EACH DEVICE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. FLOOR PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL DRAWINGS AND FIELD DETERMINE EXACT CONDUIT, PULL BOX, AND ROUTING REQUIREMENTS.

G. CIRCUIT SIZES ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER SCHEDULES.

## KEYED NOTES (#)

1. CODE REQUIRED WORKING CLEARANCES SHALL BE MAINTAINED IN FRONT OF ELECTRICAL EQUIPMENT.
2. POWER RECEPTACLE IN SEPARATE BOX SERVING AUDIO/VISUAL EQUIPMENT. LOCATE ADJACENT TO AUDIO/VISUAL BOX. REFER TO A/V DRAWINGS FOR EXACT LOCATION PRIOR TO ROUGH-IN
3. POWER RECEPTACLE IN AUDIO/VISUAL RACK. REFER TO A/V DRAWINGS FOR EXACT LOCATION AND REQUIRMENTS.
4. 6" FLOOR BOX WITH 2 DUPLEX RECPETACLES AND ONE DATA/ AV.
5. PROVIDE POWER TO IRRIGATION CONTROLLER AND PUMP CONTROL PANEL. REFER TO LANDSCAPE DRAWINGS FOR EXACT LOCATION PRIOR TO ROUGH-IN. PUMP IS APPROXIMATELY 100' FT TRUE SOUTH OF THIS LOCATION.

LEVEL 1 - POWER PLAN - SEGMENT A — 1 — 1/8" = 1'-0"

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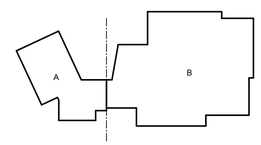

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PROJECT:

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**LEVEL 1 - POWER PLAN - SEGMENT A**

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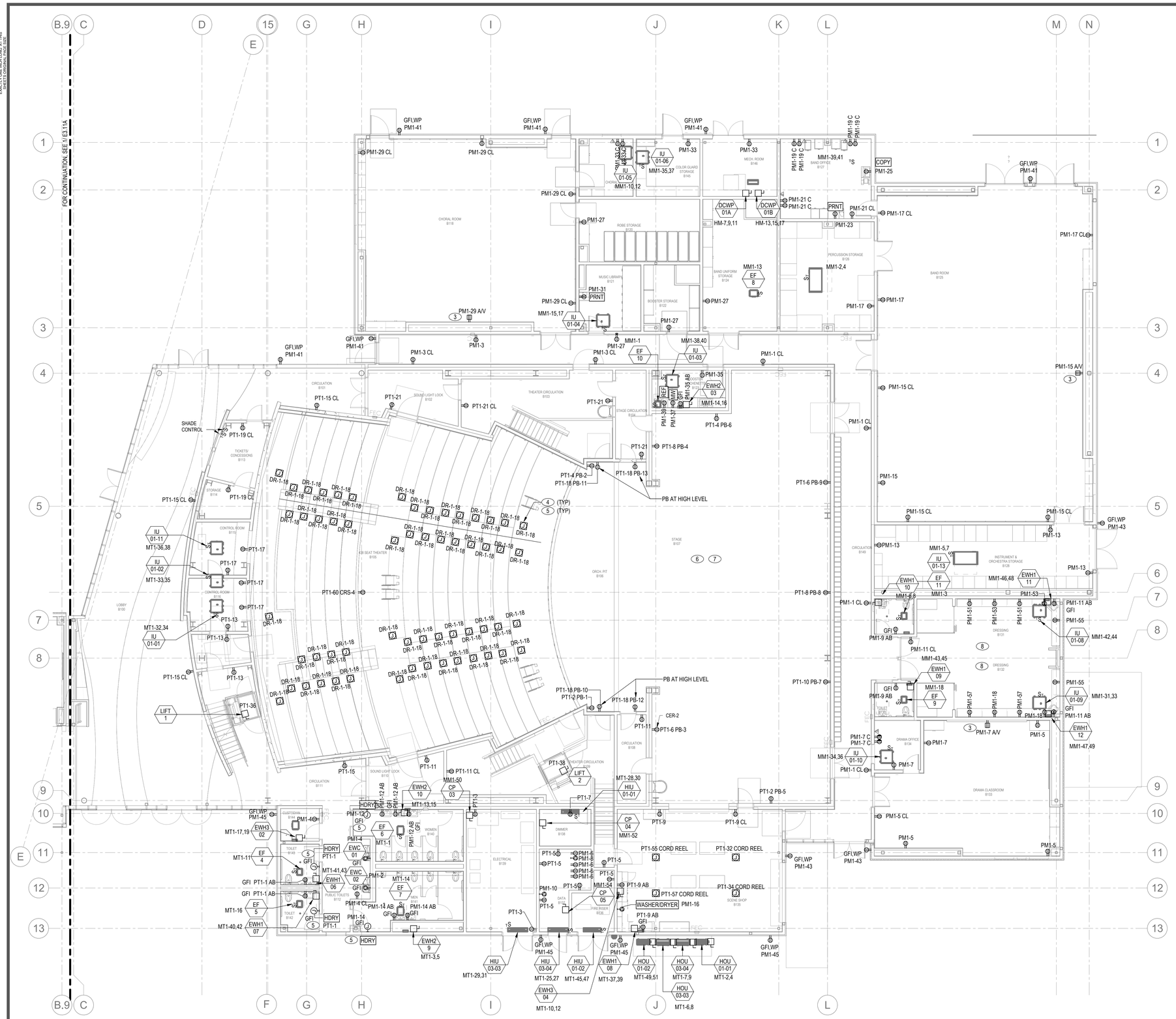
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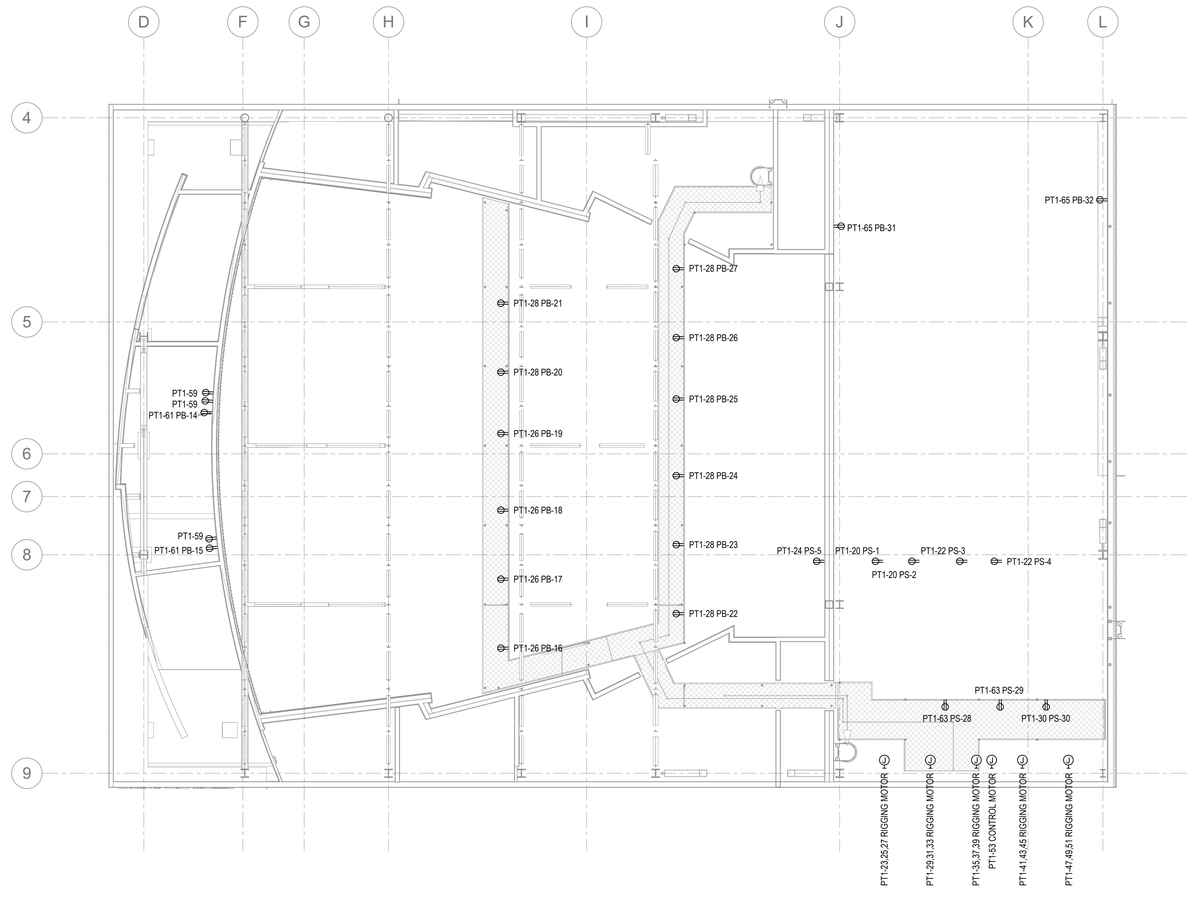
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PM1-27
HM-7,9,11
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PM1-2,4
PM1-31
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MM1-15,17
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PM1-43
MM1-5,7
MM1-46,48
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PT1-8 PB-4
PT1-4 PB-2
PT1-18 PB-11
PT1-18 PB-13
PB AT HIGH LEVEL
PT1-6 PB-9
PT1-8 PB-8
PT1-10 PB-7
PT1-2 PB-5
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**LEVEL 2 - POWER PLAN - CATWALK** **1** 1/8" = 1'-0"

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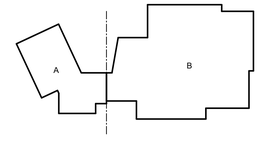
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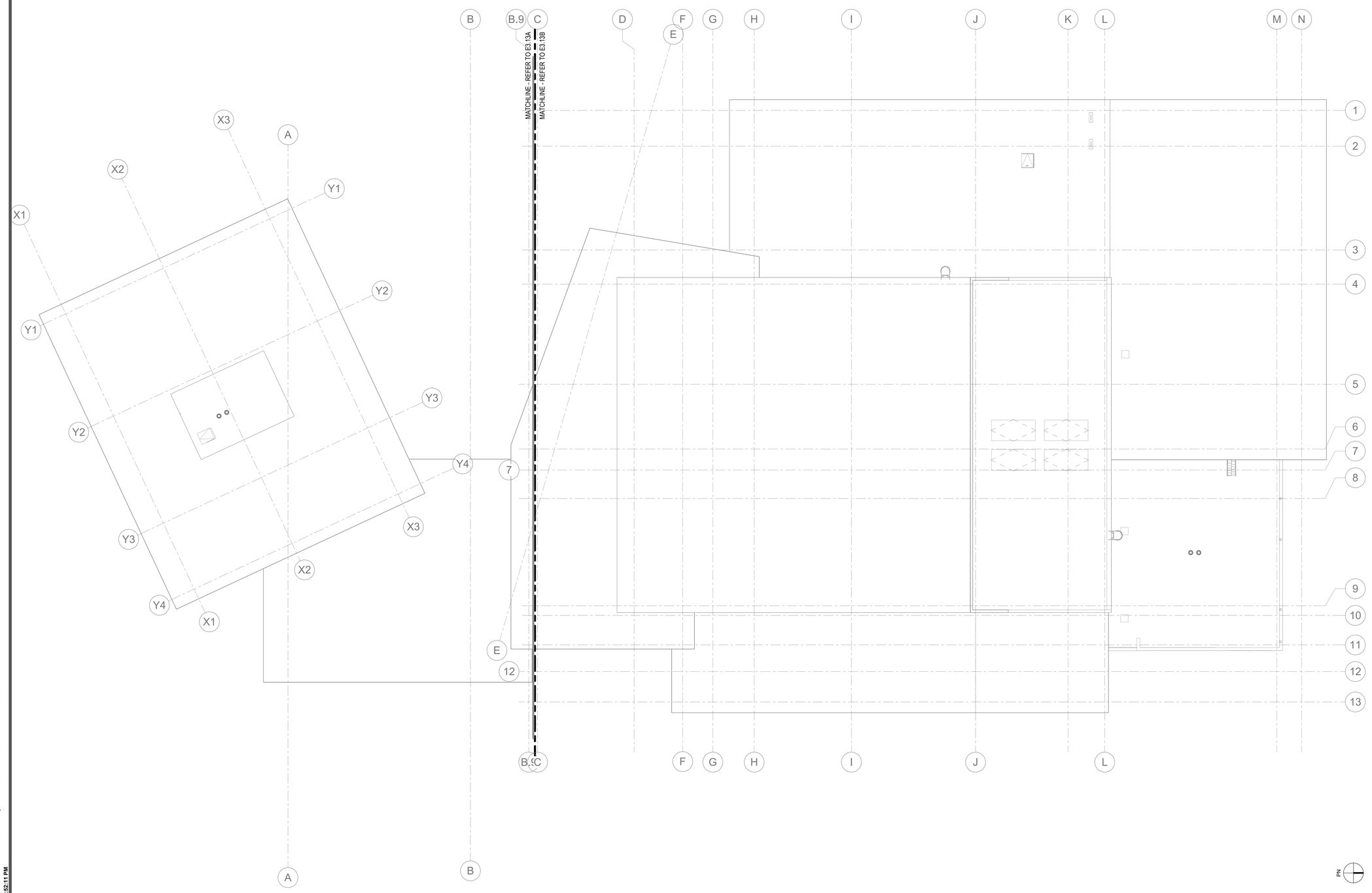
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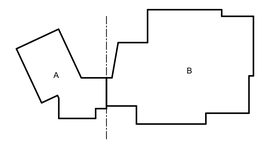

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - OVERALL POWER PLAN**

**DSA SUBMITTAL**

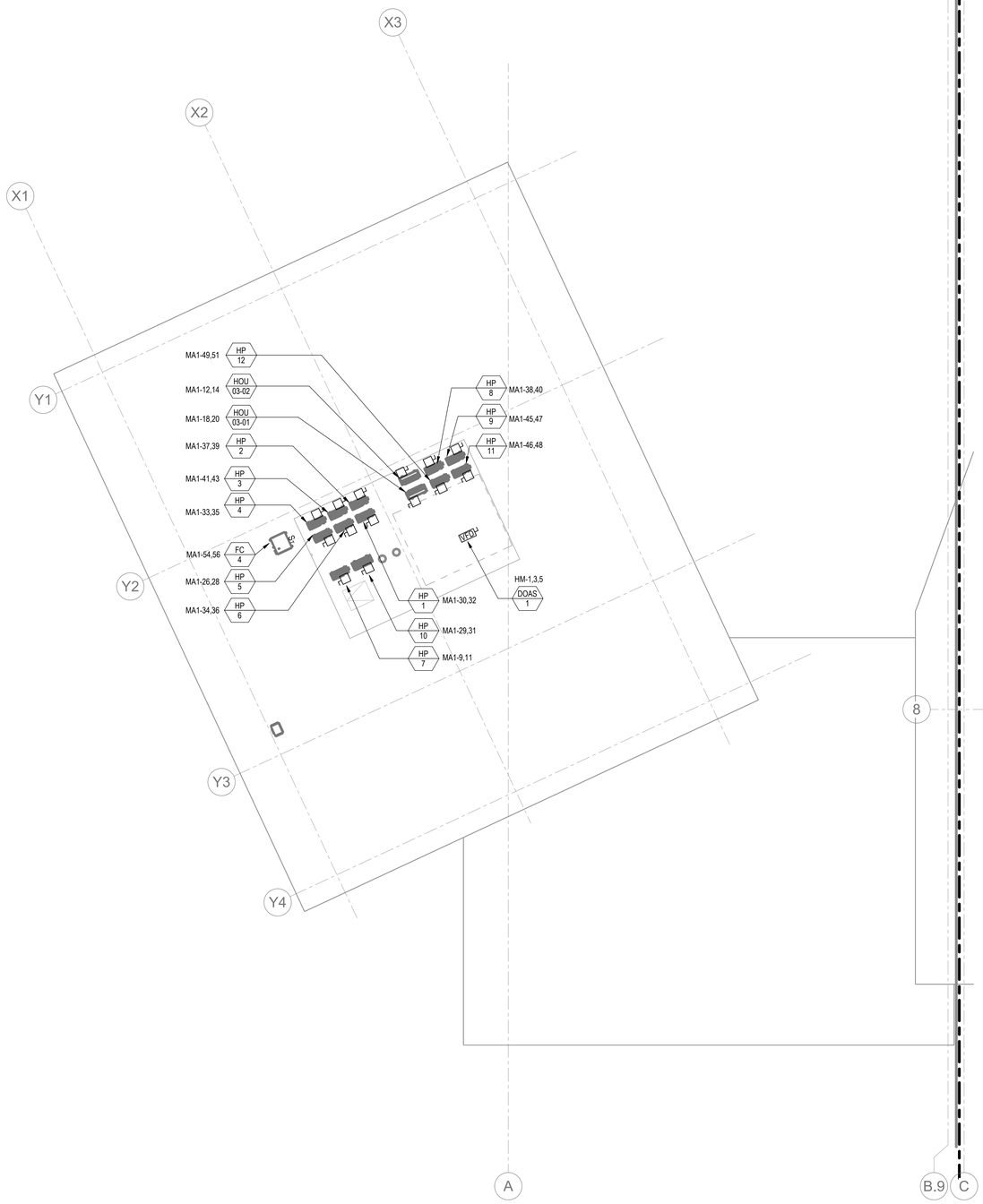
FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E3.13

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## SHEET NOTES

A. COORDINATE EXACT MECHANICAL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE CONDUIT REQUIREMENTS FOR ALL HVAC EQUIPMENT WITH CONTROLS CONTRACTOR.
B. PROVIDE 4" HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
C. REFER TO ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION ON NAMED ELECTRICAL EQUIPMENT SHOWN.
D. REFER TO DETAIL DRAWINGS FOR ADDITIONAL INFORMATION. ALL DETAILS APPLY FOR ALL APPLICABLE SITUATIONS WHETHER REFERENCED OR NOT, UON.
E. FLOOR PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL DRAWINGS AND FIELD DETERMINE EXACT CONDUIT, PULL BOX, AND ROUTING REQUIREMENTS.
F. CIRCUIT SIZES ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL USE CIRCUIT SIZES INDICATED IN NOTES OR RESPECTIVE SCHEDULES (PNL, MCC, ETC.) AND INFORMATION IN THE FEEDER SCHEDULES.
G. ADDITIONAL INFORMATION FOR ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT SHOWN ON THIS SHEET, REFER TO SINGLE LINE DIAGRAM AND SCHEDULES IN ELECTRICAL DRAWINGS.
H. WHERE NOTED AS OWNER-SUPPLIED ON DRAWINGS, CONTRACTOR SHALL RECEIVE, INSTALL AND CONNECT EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. PRIOR TO INSTALLATION OF OWNER-SUPPLIED EQUIPMENT, CONTRACTOR SHALL INSPECT/TEST EQUIPMENT AND INFORM PROJECT MANAGER OF ANY DEFECTS. FAILURE TO DO SO SHALL MEAN THAT THE EQUIPMENT IS IN GOOD WORKING CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND TESTING OF SUCH EQUIPMENT.
I. DO NOT ROUTE CONDUIT ON ROOF. RUN ALL HORIZONTAL CONDUIT BELOW ROOF.
J. REFER TO MECHANICAL DRAWINGS FOR MOUNTING AND EQUIPMENT DETAILS.
K. ALL EXTERIOR MOUNTED EQUIPMENT AND CONDUIT SHALL BE WEATHERPROOF RATED, MINIMUM NEMA 3R.
L. ROUTE ALL CONDUITS UP THROUGH EQUIPMENT CURBS. COORDINATE LOCATION TO AVOID CONFLICTS AND ALLOW FOR CODE CLEARANCES AND MAINTENANCE ACCESS.
M. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. THESE DRAWINGS ARE DIAGRAMMATIC.
N. DUCT SMOKE DETECTORS FURNISHED AND WIRED BY DIVISION 26, INSTALLED BY DIVISION 23. COORDINATE WITH MECHANICAL CONTRACTOR FOR SAMPLING TUBE LENGTHS. DIVISION 23 TO WIRE TO VFD SHUTDOWN TERMINALS.

PN

**ROOF - POWER PLAN - SEGMENT A** 1 1/8" = 1'-0"

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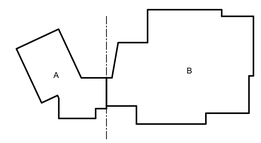

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Project Manager: RM
Job. No.: 150-23US00121


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SHEET NAME:

**ROOF - POWER PLAN - SEGMENT A**

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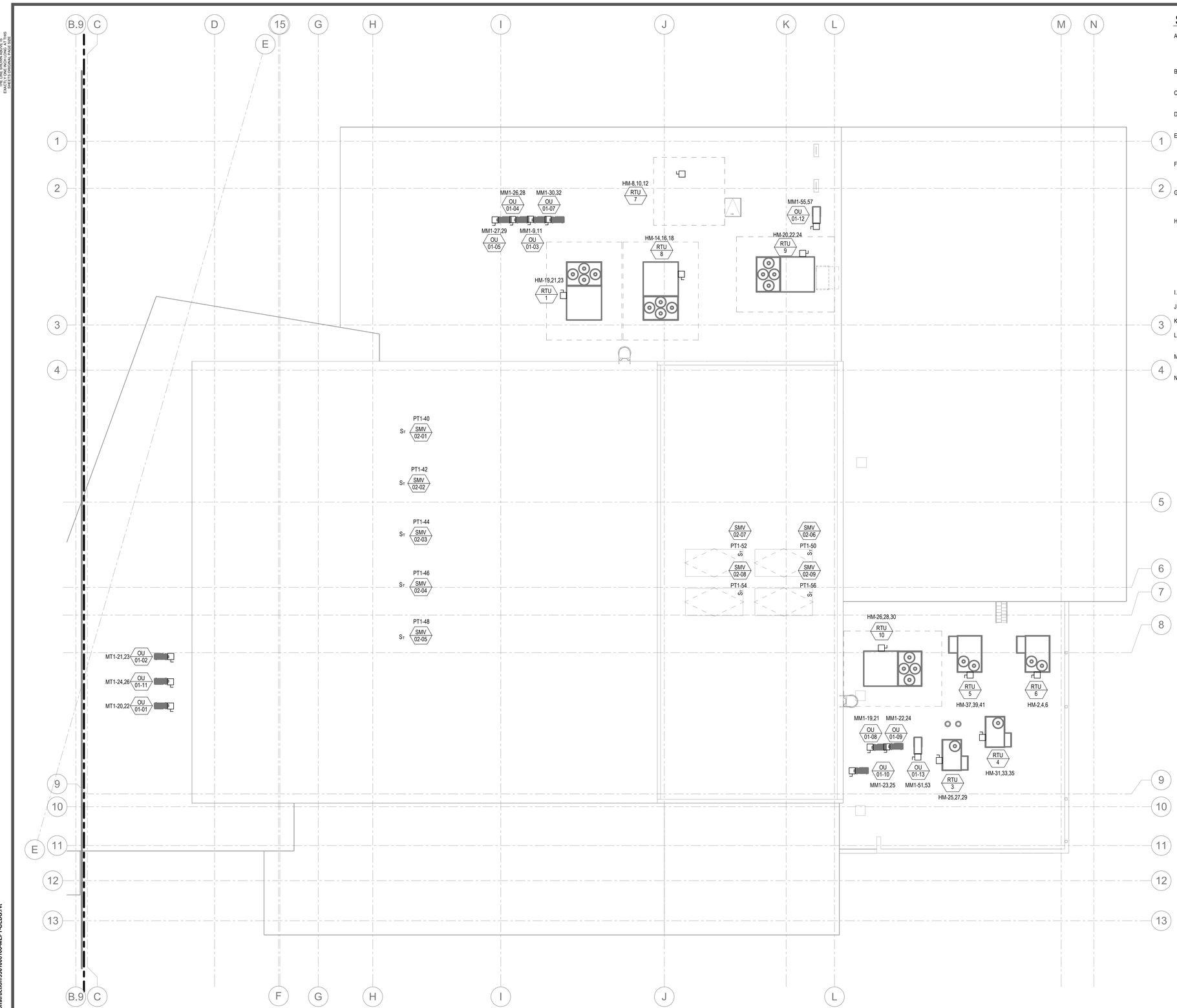
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PN

**ROOF - POWER PLAN - SEGMENT B** 1 1/8" = 1'-0"

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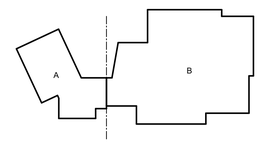

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SHEET NAME:

**ROOF - POWER PLAN - SEGMENT B**

**DSA SUBMITTAL**

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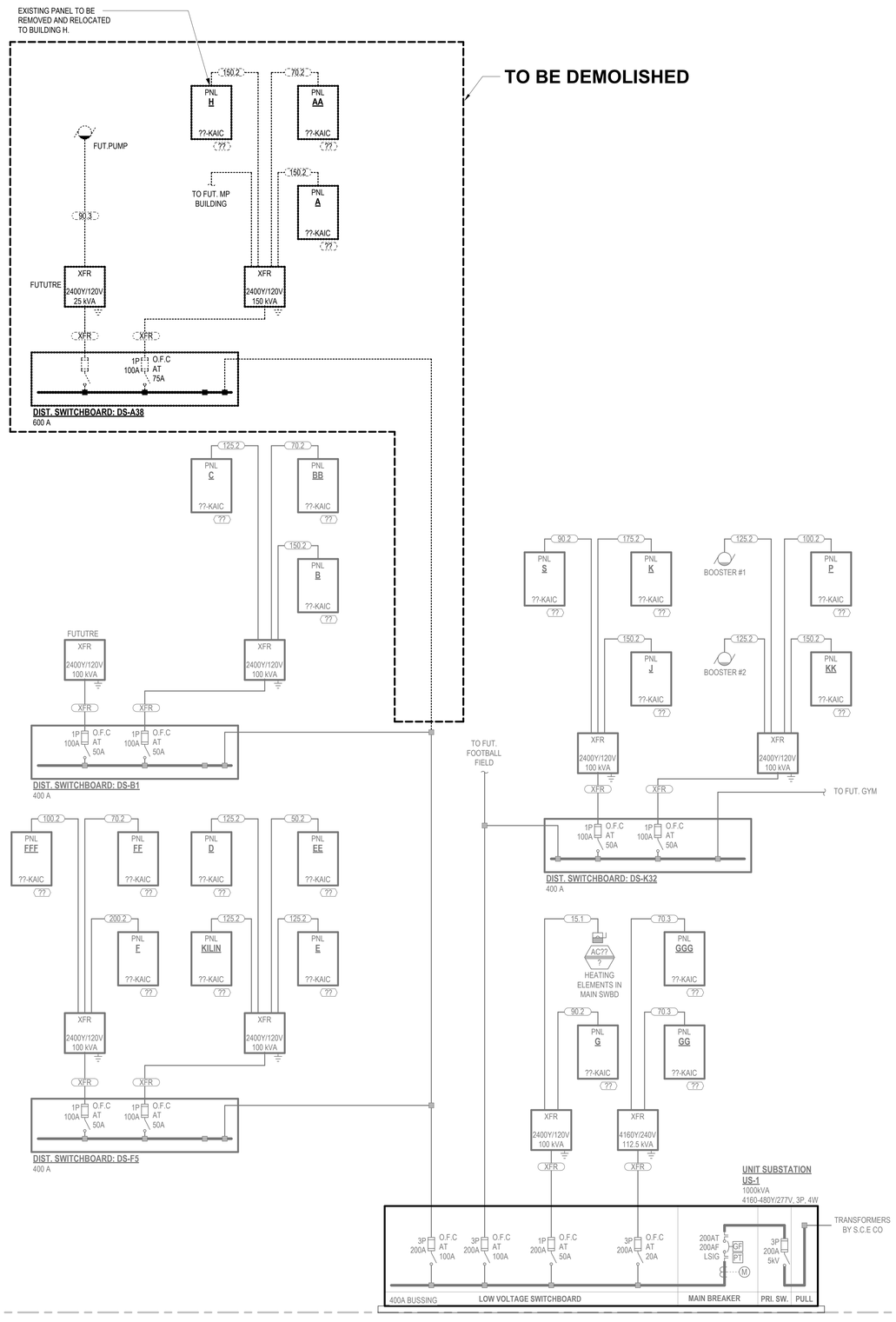
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## SHEET NOTES

A. ALL EXISTING ELECTRICAL INFORMATION AS SHOWN ON THE SINGLE LINE DIAGRAM IS BASED ON AS-BUILT DRAWINGS LIMITED ENGINEERING SITE SURVEY. IT IS SHOWN AS FOR REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SYSTEM RELATED TO THE PROJECT FOR ACCURACY, AND VERIFY THEIR EXISTING CONDITIONS. PRIOR TO ELECTRICAL WORK.

B. UNLESS OTHERWISE NOTED, ALL EXISTING ELECTRICAL SYSTEM IS TO REMAIN.




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SHEET NAME:

**DEMO SINGLE LINE DIAGRAM**

**DSA SUBMITTAL**

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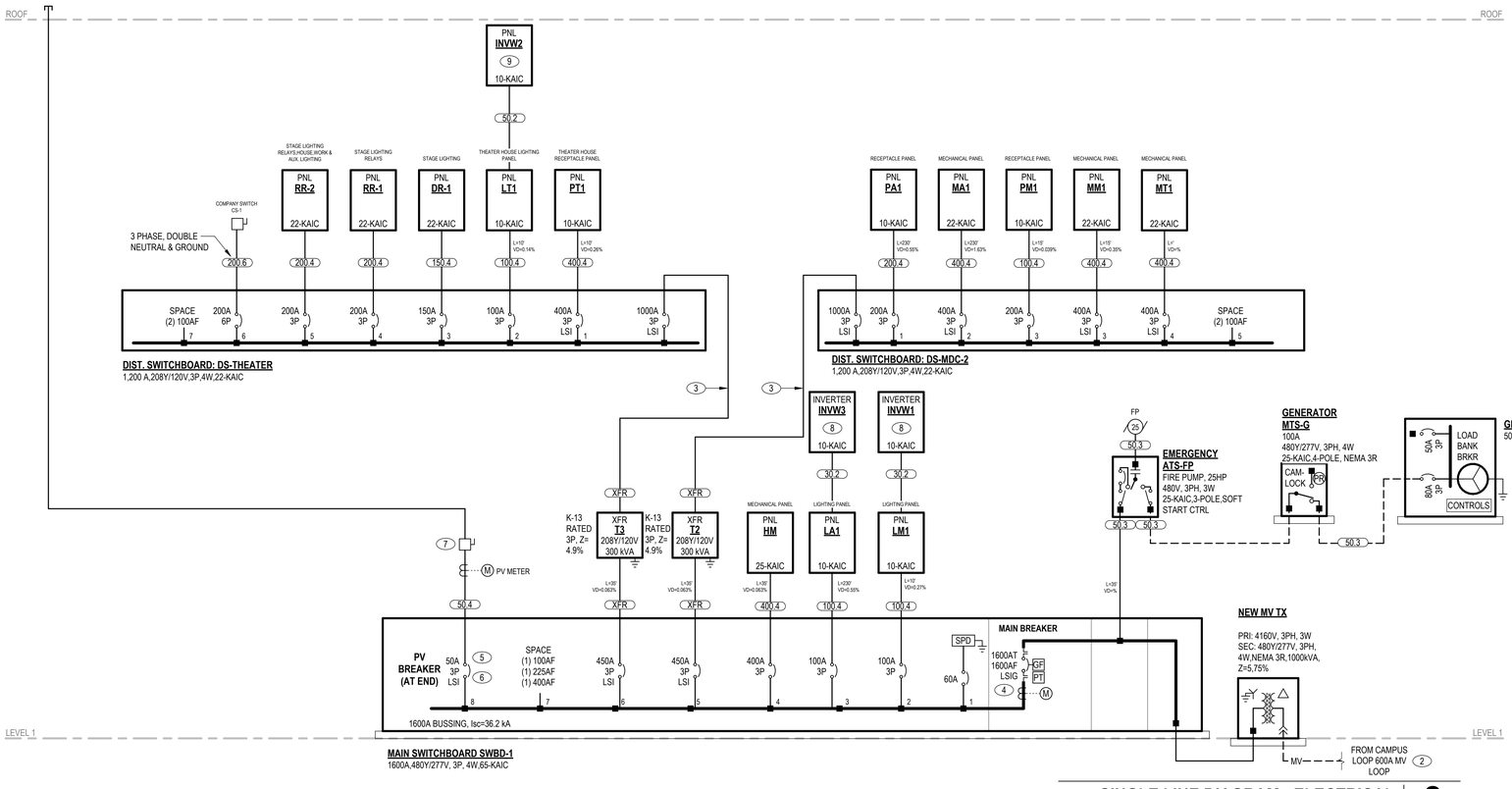
# E4.11

**SINGLE LINE DIAGRAM - ELECTRICAL - DEMOLITION** | 1 | NONE

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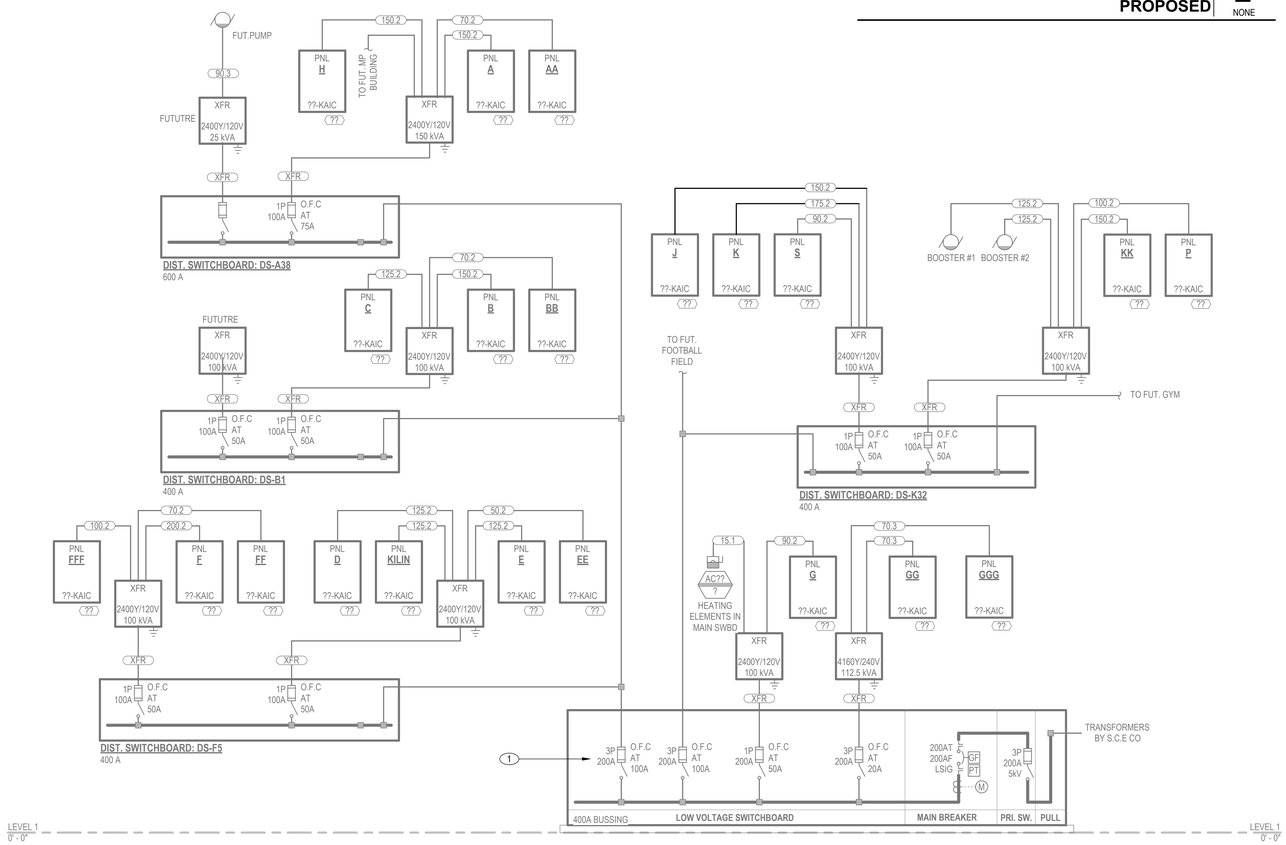
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY




## SINGLE LINE DIAGRAM - ELECTRICAL - PROPOSED

2

NONE




## SINGLE LINE DIAGRAM - ELECTRICAL - EXISTING

1

NONE

## SHEET NOTES

A. ALL CIRCUITS ARE 3-PHASE, UNLESS OTHERWISE NOTED.

B. REFER TO SCHEDULES ON SHEET E0.02 FOR FEEDER SIZES.

C. REFER TO ELECTRICAL DETAILS SHEETS FOR GROUNDING DETAILS.

D. ALL DISTRIBUTION EQUIPMENT SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT. SERIES RATED EQUIPMENT SHALL NOT BE PERMITTED. CONTRACTOR SHALL SUBMIT FAULT CURRENT, COORDINATION AND ARC FLASH STUDY AS PART OF PROJECT SUBMITTALS, PRIOR TO SUBMITTING EQUIPMENT FOR REVIEW.

E. ALL STEP-DOWN TRANSFORMERS ARE 480V DELTA PRIMARY TO 208Y/120V SECONDARY, 115 DEGREE C. RISE, U.O.N.

F. LOCATE ALL 208/120V PANELS WITHIN TEN FEET OF ASSOCIATED TRANSFORMER. OTHERWISE, PROVIDE DISCONNECT WITHIN TEN FEET TO PROTECT SECONDARY CONDUCTORS PER CEC 240.21(B)(1).

G. PROVIDE CABLE SUPPORTS FOR CONDUCTORS IN VERTICAL RACEWAYS PER CEC 300.19.

H. PROVIDE SURGE PROTECTION DEVICES IN ALL EMERGENCY EQUIPMENT PER CEC 700.8.

I. PROVIDE ARC ENERGY REDUCTION MAINTENANCE SWITCH AND INDICATING LIGHT ON ALL OCPD DEVICES RATED OR ABLE TO BE ADJUSTED TO 1200A OR HIGHER PER CEC 240.87.

J. PROVIDE GROUND FAULT PROTECTION ON ALL OCPD DEVICES RATED OR ABLE TO BE ADJUSTED TO 1000A OR LARGER FOR SYSTEMS OF MORE THAN 150V TO GROUND. CEC 210.13, 215.10; 230.95; 240.13; FOR FEEDERS SERVING EMERGENCY LOADS, PROVIDE ALARM-ONLY PER CEC 700.6 AND 700.31.

K. PROVIDE SELECTIVE COORDINATION OF ALL ELEVATOR, EMERGENCY AND LEGALLY-REQUIRED STANDBY DISTRIBUTION EQUIPMENT PER CEC 620.62; 645.27; 695.3(C)(3); 700.32; 701.27; 708.54. PROVIDE FUSED OCPD'S OR OVERSIZED CIRCUIT BREAKER FRAME SIZES, AS REQUIRED.

L. FEEDER LENGTHS SHOWN ARE FOR CALCULATION PURPOSES ONLY. CONTRACTOR SHALL NOT USE FEEDER LENGTHS FOR PRICING OR QUANTITY PURPOSES.

M. DASHED FEEDERS INDICATE UNDERGROUND OR CONCRETE-ENCASED CONDUIT.

N. 400 AMP OR LARGER CIRCUIT BREAKERS SHALL BE EQUIPPED WITH LONG TIME DELAY, SHORT TIME DELAY, GROUND FAULT SENSING AND INSTANTANEOUS PROTECTION AS NECESSARY TO PROVIDE A FULLY SELECTIVE COORDINATION SYSTEM.

O. ALL THEATRICAL AND MECHANICAL EQUIPMENT BY OTHERS SHALL BE PROVIDED WITH SUFFICIENT INTERRUPTING AND WITHSTANDING RATINGS. COORDINATE WITH AVAILABLE FAULT CURRENT PER SHORT CIRCUIT STUDY REPORT.

P. PANELBOARDS WITH MULTIPLE LOAD TYPES OVER 10% OF MONITORING READY FOR COMPLIANCE WITH CALIFORNIA ENERGY CODE 130.5 (B).

Q. ALL CONDUCTORS ARE COPPER. U.O.N.

R. ALL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION SHALL HAVE SUFFICIENT KAIC RATING AT THE EQUIPMENT FOR AVAILABLE FAULT CURRENT AT EQUIPMENT ELECTRICAL CONNECTION POINT.

S. REFER TO TRANSFORMER SCHEDULE SHEET E0.02 FOR FEEDER AND GROUNDING CONDUCTORS.

T. CONTRACTOR SHALL COORDINATE WITH THEATRICAL CONSULTANT FOR EMERGENCY LIGHTING SCOPE OF WORK AND PROVIDE TRANSFER SWITCHES AS REQUIRED.

## KEYED NOTES (#)

1. EXISTING CIRCUIT BREAKER TO BE TURN TO ON POSITION AFTER THE COMPLETE INSTALLATION OF DOWNSTREAM FEEDER AND ELECTRICAL DISTRIBUTION SYSTEM.
2. UN-CAP FEEDER CONDUCTORS, EXTEND FEEDER CONDUIT AND CONDUCTORS FROM UNDERGROUND PULL BOX, THROUGH UNDERGROUND DUCT BANK, TO NEW BUILDING TRANSFORMER. MAKE ALL REQUIRED CONNECTIONS.
3. PROVIDE WITH 200% NEUTRAL.
4. INDICATING COMPLIANCE WITH TABLE 130.5-A OF ELECTRICAL POWER DISTRIBUTION T24 CODE.
5. PULL BOX FOR PV SOURCE CONDUCTORS, SIZE AS REQUIRED PER CEC.
6. PV CIRCUIT BREAKER DESIGNATION SHALL BE AT OPPOSITE END OF MAIN CIRCUIT BREAKER PER CEC 705.12(B)(2)(3)(b).
7. PROVIDE RAPID SHUTDOWN DISCONNECT WITHIN 10' OF MAIN DISTRIBUTION SECTION. REFER TO PV SHEETS FOR COMPLETE PHOTOVOLTAIC SYSTEM DESIGN.
8. INVERTER FOR EGRESS LIGHTING. PROVIDE MYERS ILLUMINATOR SUPERNOVA SERIES, #6-I-03-S-BD2016-I-S-Z
9. INVERTER FOR THEATER HOUSE EGRESS LIGHTING. PROVIDE MYERS ILLUMINATOR SUPERNOVA SERIES, #1-I-03-S-BA2016-I-S-Z

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**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SINGLE LINE DIAGRAMS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

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## DIST.SWB- DS-THEATER

VOLTAGE: 208Y/120V, 3PH, 4W
INTEGRAL SPD: No
MOUNTING: FLOOR
NEMA RATING: NEMA 1
POWER SOURCE TYPE: NORMAL
MAIN AMPS/ TYPE: 1,000 A/MCB
AIC RATING: SEE 1-LINE
LOCATION:
BUS AMPS: 1,200 A
SUPPLY FROM: T3-TX

| CKT | CIRCUIT DESCRIPTION | NO.of POLES | LOAD TYPE | FRAME SIZE | TRIP RATING | FEEDER TAG | A | B | C | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PT1 - POWER THEATER PANEL 1 | 3 | M; R;.. | 400 A | 400 A | 400.4 | 35.76 kW | 32.18 kW | 31.94 kW | |
| 2 | LT1 - LIGHTING THEATER PANEL 1 | 3 | L; R;.. | 100 A | 100 A | 100.4 | 2.70 kW | 0.81 kW | 0.45 kW | |
| 3 | DR-1 - STAGE LIGHTING | 3 | L; N | 150 A | 150 A | 150.4 | 9.62 kW | 9.64 kW | 9.57 kW | |
| 4 | RR-1 - STAGE LIGHITNG RELAYS | 3 | L | 200 A | 200 A | 200.4 | 19.20 kW | 19.20 kW | 19.20 kW | |
| 5 | RR-2 - STAGE LIGHITNG RELAYS,HOUSE, WOR... | 3 | L | 200 A | 200 A | 200.4 | 19.46 kW | 19.47 kW | 18.71 kW | |
| 6 | CS-1 - COMPANY SWITCH | 3 | Power | 200 A | 200 A | 200.3 | 13.34 kW | 13.34 kW | 13.34 kW | |
| 7 | SPACE - 100AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 8 | SPACE - 100AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
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| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| SPECIAL SWITCHBOARD FEATURES: | | | | | Total Connected Load: | | 100.08 kW | 94.64 kW | 93.21 kW | |
| | | | | | Total Connected Amps: | | 835.8 A | 790.5 A | 776.7 A | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND/ ADJUSTED | LEGEND | PANEL TOTALS | | |
|---|---|---|---|---|---|---|---|
| E | 3.60 kW | 100% | 3.60 kW | C = CONTINUOUS | | KW | AMPS |
| L | 147.37 kW | 125% | 184.21 kW | K = KITCHEN | TOTAL CONNECTED LOAD: | 287.93 kW | 799.2 A |
| M | 13.90 kW | 100% | 13.90 kW | L = LIGHTING | TOTAL DEMAND LOAD: | 307.57 kW | 853.7 A |
| Motor | 3.60 kW | 125% | 4.50 kW | M=MECHANICAL | SPARE CAPACITY : | | |
| N | 18.24 kW | 100% | 18.24 kW | MOTOR = LARGEST MOTOR | **REQUIRED CAPACITY:** | **307.57 kW** | **854 A** |
| Power | 55.03 kW | 100% | 55.03 kW | N = NON-CONTINUOUS | | | |
| R | 46.20 kW | 61% | 28.10 kW | R = RECEPTACLE | | | |

## DIST.SWB- DS-MDC-2

VOLTAGE: 208Y/120V, 3PH, 4W
INTEGRAL SPD: No
MOUNTING: FLOOR
NEMA RATING: NEMA 1
POWER SOURCE TYPE: NORMAL
MAIN AMPS/ TYPE: 1,000 A/MCB
AIC RATING: SEE 1-LINE
LOCATION: ELECTRICAL B138
BUS AMPS: 1,200 A
SUPPLY FROM: T2-TX

| CKT | CIRCUIT DESCRIPTION | NO.of POLES | LOAD TYPE | FRAME SIZE | TRIP RATING | FEEDER TAG | A | B | C | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PA1 - POWER ADMIN PANEL 1 | 3 | M; R;.. | 200 A | 200 A | 200.4 | 11.46 kW | 25.38 kW | 10.78 kW | |
| 2 | MA1 - MECHANICAL ADMIN PANEL 1 | 3 | M; K;.. | 400 A | 400 A | 400.4 | 32.65 kW | 33.12 kW | 28.15 kW | |
| 3 | PM1 - POWER MUSIC PANEL 1 | 3 | M; R;.. | 100 A | 100 A | 100.4 | 10.91 kW | 12.96 kW | 7.61 kW | |
| 4 | MM1 - MECHANICAL MUSIC PANEL 1 | 3 | M; K;.. | 400 A | 400 A | 400.4 | 22.04 kW | 19.88 kW | 18.23 kW | |
| 5 | MT1 - MECHANICAL THEATER PANEL 1 | 3 | M; K | 400 A | 400 A | 400.4 | 30.02 kW | 29.36 kW | 29.56 kW | |
| 6 | SPACE - 100AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 7 | SPACE - 100AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| SPECIAL SWITCHBOARD FEATURES: | | | | | Total Connected Load: | | 107.08 kW | 120.7 kW | 94.33 kW | |
| | | | | | Total Connected Amps: | | 908.7 A | 1022.1 A | 786.1 A | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND/ ADJUSTED | LEGEND | PANEL TOTALS | | |
|---|---|---|---|---|---|---|---|
| C | 1.20 kW | 125% | 1.50 kW | C = CONTINUOUS | | KW | AMPS |
| K | 136.08 kW | 65% | 88.45 kW | K = KITCHEN | TOTAL CONNECTED LOAD: | 322.1 kW | 894.1 A |
| M | 140.64 kW | 100% | 140.64 kW | L = LIGHTING | TOTAL DEMAND LOAD: | 261.19 kW | 725 A |
| Motor | 1.88 kW | 107% | 2.01 kW | M=MECHANICAL | SPARE CAPACITY : | | |
| N | 4.86 kW | 100% | 4.86 kW | MOTOR = LARGEST MOTOR | **REQUIRED CAPACITY:** | **261.19 kW** | **725 A** |
| R | 37.44 kW | 63% | 23.72 kW | N = NON-CONTINUOUS | | | |
| | | | | R = RECEPTACLE | | | |

## MAIN.SWB - SWBD-1

VOLTAGE: 480Y/277V, 3PH, 4W
INTEGRAL SPD: Yes
MOUNTING: FLOOR
NEMA RATING: NEMA 1
POWER SOURCE TYPE: NORMAL
MAIN AMPS/ TYPE: 1,600 A/MCB
AIC RATING: SEE 1-LINE
LOCATION: ELECTRICAL B138
BUS AMPS: 1,600 A
SUPPLY FROM: 1000kVA TRANSFORMER

| CKT | CIRCUIT DESCRIPTION | NO.of POLES | LOAD TYPE | FRAME SIZE | TRIP RATING | FEEDER TAG | A | B | C | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FIRE PUMP | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 2 | LM1 | 3 | L; C;.. | 100 A | 100 A | 100.3 | 4.35 kW | 2.20 kW | 0.98 kW | |
| 3 | LA1 | 3 | L; C;.. | 100 A | 100 A | 100.3 | 3.99 kW | 1.63 kW | 2.31 kW | |
| 4 | HM | 3 | M;... | 400 A | 400 A | 400.4 | 75.37 kW | 75.37 kW | 75.37 kW | |
| 5 | T2 - TRANSFORMER T2 | 3 | M; R;.. | 400 A | 400 A | 400.3 | 107.08 kW | 120.70 kW | 94.33 kW | |
| 6 | T3 - TRANSFORMER T3 | 3 | L; M;... | 400 A | 400 A | 400.3 | 94.64 kW | 93.21 kW | 100.08 kW | |
| 7 | FOR PV SOLAR EQUIP. ON ROOF (30"X30"X34") | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 8 | SPACE - 100AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 9 | SPACE - 225AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 10 | SPACE - 400AF | 3 | -- | -- | -- | -- | -- | -- | -- | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| SPECIAL SWITCHBOARD FEATURES: | | | | | Total Connected Load: | | 285.42 kW | 293.1 kW | 273.05 kW | |
| | | | | | Total Connected Amps: | | 1037.3 A | 1065 A | 985.8 A | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND/ ADJUSTED | LEGEND | PANEL TOTALS | | |
|---|---|---|---|---|---|---|---|
| C | 1.20 kW | 125% | 1.50 kW | C = CONTINUOUS | | KW | AMPS |
| E | 7.20 kW | 95% | 6.84 kW | K = KITCHEN | TOTAL CONNECTED LOAD: | 851.57 kW | 1024.3 A |
| K | 136.08 kW | 65% | 88.45 kW | L = LIGHTING | TOTAL DEMAND LOAD: | 812.13 kW | 976.8 A |
| L | 162.81 kW | 125% | 203.51 kW | M=MECHANICAL | SPARE CAPACITY : | | |
| M | 356.11 kW | 100% | 356.11 kW | MOTOR = LARGEST MOTOR | **REQUIRED CAPACITY:** | **812.13 kW** | **977 A** |
| Motor | 26.41 kW | 117% | 30.77 kW | N = NON-CONTINUOUS | | | |
| N | 23.10 kW | 100% | 23.10 kW | R = RECEPTACLE | | | |
| Power | 55.03 kW | 100% | 55.03 kW | | | | |
| R | 83.64 kW | 56% | 46.82 kW | | | | |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
EXP 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC engineers for a sustainable future™
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Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**PANELBOARD SCHEDULES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**E5.11**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
6/25/2025 2:52:22 PM

PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY

## PANEL: LT1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 100 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: DS-THEATER

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A | | B | | C | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B111,112,140-143-LIGHTING | L | 0.29 | 1.97 | | | | | L; R | INVW2 - INVERTER | 1 | 50 A | 2 |
| 3 | 20 A | 1 | B101-LIGHTING | L | | | 0.32 | 0 | | | -- | SPARE | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B101-LIGHTING | L | | | | | 0.36 | 0 | -- | SPARE | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B100-LIGHTING | L | 0.29 | 0 | | | | | -- | SPARE | 1 | 20 A | 8 |
| 9 | 20 A | 1 | B100,101-LIGHTING | L | | | 0.24 | -- | | | -- | SPACE | 1 | -- | 10 |
| 11 | 20 A | 1 | B115,116-LIGHTING | L | | | | | 0.09 | -- | -- | SPACE | 1 | -- | 12 |
| 13 | 20 A | 1 | B137-139 - LTG | L | 0.14 | -- | | | | | -- | SPACE | 1 | -- | 14 |
| 15 | 20 A | 1 | B135-LIGHTING | L | | | 0.25 | -- | | | -- | SPACE | 1 | -- | 16 |
| 17 | 20 A | 1 | SPARE | -- | | | | | 0 | -- | -- | SPACE | 1 | -- | 18 |
| 19 | 20 A | 1 | SPARE | -- | 0 | -- | | | | | -- | SPACE | 1 | -- | 20 |
| 21 | 20 A | 1 | SPARE | -- | | | 0 | -- | | | -- | SPACE | 1 | -- | 22 |
| 23 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 24 |
| 25 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 26 |
| 27 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 28 |
| 29 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 30 |
| 31 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 32 |
| 33 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 34 |
| 35 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 36 |
| 37 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 38 |
| 39 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 40 |
| 41 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 42 |
| SPECIAL PANEL FEATURES | | | | | 2.7 kVA | | 0.81 kVA | | 0.45 kVA | | CIRCUIT NOTES | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND LOAD |
|---|---|---|---|
| L | 3.35 kW | 125% | 4.19 kW |
| R | 0.60 kW | 100% | 0.60 kW |

LOAD TYPE KEY: C = CONTINUOUS; E = ELEVATOR; K = KITCHEN; L = LIGHTING; M = MOTOR; MOTOR = LARGEST MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 3.95 kVA | 11 A |
| TOTAL DEMAND LOAD: | 4.79 kVA | 13.3 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **5.99 kW** | **17 A** |

## PANEL: LM1

VOLTAGE: 480Y/277V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 100 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: SWBD-1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A | | B | | C | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B131,132,133 - LTG | L | 1.01 | 2.2 | | | | | L | INVW1 - INVERTER | 1 | 30 A | 2 |
| 3 | 20 A | 1 | B125,128 - LTG | L | | | 1.21 | 0 | | | -- | SPARE | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B121,122,124,126,127 - LTG | L | | | | | 0.62 | 0 | -- | SPARE | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B118-120,145,146 - LTG | L | 1.04 | 0 | | | | | -- | SPARE | 1 | 20 A | 8 |
| 9 | 20 A | 1 | B149 - CIRCULATION - LTG | L | | | 0.38 | -- | | | -- | SPACE | 1 | -- | 10 |
| 11 | 20 A | 1 | B131 - LTG - T2 | L | | | | | 0.17 | -- | -- | SPACE | 1 | -- | 12 |
| 13 | 20 A | 1 | B131 - LTG - T2 | L | 0.1 | -- | | | | | -- | SPACE | 1 | -- | 14 |
| 15 | 20 A | 1 | B132 - LTG - T2 | L | | | 0.1 | -- | | | -- | SPACE | 1 | -- | 16 |
| 17 | 20 A | 1 | B132 - LTG - T2 | L | | | | | 0.14 | -- | -- | SPACE | 1 | -- | 18 |
| 19 | 20 A | 1 | B129,130 - LTG | L | 0.01 | -- | | | | | -- | SPACE | 1 | -- | 20 |
| 21 | 20 A | 1 | SITE - SL1 FIXTURES | L; C | | | 0.53 | -- | | | -- | SPACE | 1 | -- | 22 |
| 23 | 20 A | 1 | ROOF - SJ1 - SEG.A | L | | | | | 0.04 | -- | -- | SPACE | 1 | -- | 24 |
| 25 | 20 A | 1 | SPARE | -- | 0 | -- | | | | | -- | SPACE | 1 | -- | 26 |
| 27 | 20 A | 1 | SPARE | -- | | | 0 | -- | | | -- | SPACE | 1 | -- | 28 |
| 29 | 20 A | 1 | SPARE | -- | | | | | 0 | -- | -- | SPACE | 1 | -- | 30 |
| 31 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 32 |
| 33 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 34 |
| 35 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 36 |
| 37 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 38 |
| 39 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 40 |
| 41 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 42 |
| SPECIAL PANEL FEATURES | | | | | 4.35 kVA | | 2.2 kVA | | 0.98 kVA | | CIRCUIT NOTES | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND LOAD |
|---|---|---|---|
| L | 7.53 kW | 125% | 9.41 kW |

LOAD TYPE KEY: C = CONTINUOUS; E = ELEVATOR; K = KITCHEN; L = LIGHTING; M = MOTOR; MOTOR = LARGEST MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 7.53 kVA | 9.1 A |
| TOTAL DEMAND LOAD: | 9.41 kVA | 11.3 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **11.76 kW** | **14 A** |

## PANEL: LA1

VOLTAGE: 480Y/277V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 100 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELEC A113
SUPPLY FROM: SWBD-1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A | | B | | C | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | A105,108,109-LIGHTING | L | 0.1 | 0.16 | | | | | L | A114-LIGHTING | 1 | 20 A | 2 |
| 3 | 20 A | 1 | A101-LIGHTING | L | | | 0.15 | 0.14 | | | L | A100-LIGHTING | 1 | 20 A | 4 |
| 5 | 20 A | 1 | A123-LIGHTING | L | | | | | 0.15 | 0.39 | L | A124,A125, A126, A127-LIGHTING | 1 | 20 A | 6 |
| 7 | 20 A | 1 | A111,A115-LIGHTING | L | 0.29 | 0.39 | | | | | L | A122,128,129-LIGHTING | 1 | 20 A | 8 |
| 9 | 20 A | 1 | A117&A116-LIGHTING | L | | | 0.3 | 0.51 | | | L | A118,119,120,121,128-LIGHTING | 1 | 20 A | 10 |
| 11 | 20 A | 1 | A130,131,132,133,134,135-LIGHTING | L | | | | | 0.77 | 0.68 | L | A136,137,138-LIGHTING | 1 | 20 A | 12 |
| 13 | 20 A | 1 | A102,103,104-LIGHTING | L | 0.63 | 0.25 | | | | | L; C | SITE - SJ3 FIXTURES | 1 | 20 A | 14 |
| 15 | 20 A | 1 | A110,112,113-LIGHTING | L | | | 0.39 | 0.13 | | | L | SITE - SL2&SL3 FIXTURES | 1 | 20 A | 16 |
| 17 | 20 A | 1 | ROOF - SJ1 | L | | | | | 0.02 | 0.29 | L | SITE - SL2 & SJ3 FIXTURES | 1 | 20 A | 18 |
| 19 | 30 A | 1 | INVW3 - INVERTER | L | 2.01 | 0.17 | | | | | L | SITE - SL2 & SJ3 FIXTURES | 1 | 20 A | 20 |
| 21 | 20 A | 1 | SPARE | -- | | | 0 | 0 | | | -- | SPARE | 1 | 20 A | 22 |
| 23 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 24 |
| 25 | 20 A | 1 | SPARE | -- | 0 | 0 | | | | | -- | SPARE | 1 | 20 A | 26 |
| 27 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 28 |
| 29 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 30 |
| 31 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 32 |
| 33 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 34 |
| 35 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 36 |
| 37 | -- | 1 | SPACE | -- | -- | -- | | | | | -- | SPACE | 1 | -- | 38 |
| 39 | -- | 1 | SPACE | -- | | | -- | -- | | | -- | SPACE | 1 | -- | 40 |
| 41 | -- | 1 | SPACE | -- | | | | | -- | -- | -- | SPACE | 1 | -- | 42 |
| SPECIAL PANEL FEATURES | | | | | 3.99 kVA | | 1.63 kVA | | 2.31 kVA | | CIRCUIT NOTES | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND LOAD |
|---|---|---|---|
| L | 7.92 kW | 125% | 9.90 kW |

LOAD TYPE KEY: C = CONTINUOUS; E = ELEVATOR; K = KITCHEN; L = LIGHTING; M = MOTOR; MOTOR = LARGEST MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 7.92 kVA | 9.5 A |
| TOTAL DEMAND LOAD: | 9.9 kVA | 11.9 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **12.38 kW** | **15 A** |

## PANEL: INVW2

VOLTAGE: 120V, 1PH, 2W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 1 A MLO
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: LT1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kVA) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B101,113,114 - LTG - EM | L | 0.18 | 0.16 | L | B115,116 - CONTROL RM - LTG - EM | 1 | 20 A | 2 |
| 3 | 20 A | 1 | B101 - LTG - EM | L | 0.06 | 0.18 | L | B136 - B139 - LTG EM | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B100 - LTG - EM | L | 0.17 | 0.08 | L | B135 - LTG EM | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B100 - LTG - EM - SOUTH ENTRANCE | L | 0.18 | 0.6 | R | B138 - DIMMER - ELTS | 1 | 20 A | 8 |
| 9 | 20 A | 1 | B111 & TOILET AREA - LTG - EM | L | 0.36 | | | | | | 10 |
| 11 | | | | | | | | | | | 12 |
| 13 | | | | | | | | | | | 14 |
| 15 | | | | | | | | | | | 16 |
| SPECIAL PANEL FEATURES | | | | | 1.97 kVA | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| L | 1.37 kW | 125% | 1.71 kW |
| R | 0.60 kW | 100% | 0.60 kW |

LOAD TYPE KEY: C = CONTINUOUS; K = KITCHEN; L = LIGHTING; M = MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 1.97 kVA | 16.4 A |
| TOTAL DEMAND LOAD: | 2.31 kVA | 19.3 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **2.89 kW** | **24 A** |

## PANEL: INVW1

VOLTAGE: 277V, 1PH, 2W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 1 A MLO
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: LM1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kVA) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B118-120,145,146 - LTG - EM | L | 0.32 | 0.14 | L | B129-134 - LTG - EM | 1 | 20 A | 2 |
| 3 | 20 A | 1 | B121,122,124,126,127 - LTG - EM | L | 0.14 | 0.27 | L | B149 - CIRCULATION - LTG - EM | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B125-BAND RM-LTG-EM | L | 0.34 | 0.93 | L | SITE - LTG - EM | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B128-INSTR&ORCHES.-LTG-EM | L | 0.05 | 0.03 | L | ROOF - SJ1 - SEG.B | 1 | 20 A | 8 |
| 9 | | | | | | | | | | | 10 |
| 11 | | | | | | | | | | | 12 |
| 13 | | | | | | | | | | | 14 |
| 15 | | | | | | | | | | | 16 |
| SPECIAL PANEL FEATURES | | | | | 2.2 kVA | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| L | 2.20 kW | 125% | 2.75 kW |

LOAD TYPE KEY: C = CONTINUOUS; K = KITCHEN; L = LIGHTING; M = MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 2.2 kVA | 7.9 A |
| TOTAL DEMAND LOAD: | 2.75 kVA | 9.9 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **3.43 kW** | **12 A** |

## PANEL: INVW3

VOLTAGE: 277V, 1PH, 2W
MOUNTING: SURFACE
BUS RATING: 100 A
MAIN AMPS: 1 A MLO
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELEC A113
SUPPLY FROM: LA1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kVA) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | A114,122,128 - LTG - EM | L | 0.46 | 0.13 | L | A100,101 - LTG - EM | 1 | 20 A | 2 |
| 3 | 20 A | 1 | A123-127 - LTG - EM | L | 0.04 | 0.04 | L | A136-138 - LTG - EM | 1 | 20 A | 4 |
| 5 | 20 A | 1 | A118-121 - LTG - EM | L | 0.08 | 0.16 | L | SITE - LTG - EM | 1 | 20 A | 6 |
| 7 | 20 A | 1 | A130-135 - LTG - EM | L | 0.1 | 0.07 | L | SITE - LTG - EM | 1 | 20 A | 8 |
| 9 | 20 A | 1 | A110, A111, A115 - LTG -EM | L | 0.3 | 0.12 | L | SITE - LTG - EM | 1 | 20 A | 10 |
| 11 | 20 A | 1 | A102-109 - LTG - EM | L | 0.49 | 0.01 | L | ROOF - SJ1 | 1 | 20 A | 12 |
| 13 | | | | | | | | | | | 14 |
| 15 | | | | | | | | | | | 16 |
| SPECIAL PANEL FEATURES | | | | | 2.01 kVA | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| L | 2.01 kW | 125% | 2.51 kW |

LOAD TYPE KEY: C = CONTINUOUS; K = KITCHEN; L = LIGHTING; M = MOTOR; N = NON-CONTINUOUS; R = RECEPTACLE

| PANEL TOTALS | KVA | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 2.01 kVA | 7.2 A |
| TOTAL DEMAND LOAD: | 2.51 kVA | 9.1 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **3.13 kW** | **11 A** |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

ARROYO HIGH SCHOOL UNION HIGH SCHOOL DISTRICT ESTABLISHED 1991 COMMITTED TO COLLEGE AND CAREER


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
EXP 03/31/26
ELECTRICAL
STATE OF CALIFORNIA


GLUMAC engineers for a sustainable future™
A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
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T: 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PANELBOARD SCHEDULES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E5.12


Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF THIS SHEET IS ORIGINAL PAGE SIZE

## PANEL: MT1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 400 A
MAIN AMPS: 400 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: DS-MDC-2

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B140-WOMEN-EF 6 | M | 2.16 | 1.15 | | | | | M | B138-DIMMER-OU 01-01 | 2 | 60 A | 2 |
| 3 | | | | | | | 4 | 1.15 | | | | | | | 4 |
| 5 | 100 A | 2 | B141 - EWH PWR 9 | K | | | | | 4 | 2.5 | | | | | 6 |
| 7 | | | | | | | | | | | M | B139-HOU 03-03 | 2 | 60 A | 8 |
| 9 | 60 A | 2 | B137-HOU 03-04 | M | 2.5 | 2.5 | | | | | | | | | 10 |
| 11 | 20 A | 1 | B143-TOILET-EF 4 | M | | | 2.5 | 6.5 | | | K | B135 - EWH PWR 01 | 2 | 150 A | 12 |
| 13 | | | | | | | | | 2.16 | 6.5 | | | | | 14 |
| 15 | 100 A | 2 | B140 - EWH PWR 10 | K | 4 | 2.16 | | | | | M | B141-MEN-EF 7 | 1 | 20 A | 16 |
| 17 | | | | | | | 4 | 2.16 | | | M | B142-TOILET-EF 5 | 1 | 20 A | 18 |
| 19 | 150 A | 2 | B144 - EWH PWR 02 | K | | | | | 6.5 | | | | | | 20 |
| 21 | | | | | 6.5 | 1.15 | | | | | | | | | 22 |
| 23 | 25 A | 2 | ROOF - OU 01-02 | M | | | 1.15 | 1.15 | | | M | ROOF - OU 01-01 | 2 | 25 A | 24 |
| 25 | | | | | | | | | 1.15 | 1.15 | | | | | 26 |
| 27 | 20 A | 2 | B137-DATA-HIU 03-04 | M | 0 | 1.15 | | | | | M | ROOF - OU 01-11 | 2 | 25 A | 28 |
| 29 | | | | | | | 0 | 0 | | | | | | | 30 |
| 31 | 20 A | 2 | B139-ELECTRICAL-HIU 03-03 | M | | | | | 0 | 0 | M | B138-DIMMER-HIU 01-01 | 2 | 20 A | 32 |
| 33 | | | | | 0 | 0 | | | | | | | | | 34 |
| 35 | 15 A | 2 | B116-CONTROL RM-IU 01-01 | M | | | 0 | 0 | | | M | B115-CONTROL RM-IU 01-02 | 2 | 15 A | 36 |
| 37 | | | | | | | | | 0 | 0 | | | | | 38 |
| 39 | 60 A | 2 | B135 - EWH PWR 08 | K | 2.8 | 0 | | | | | M | ROOF - IU 01-11 | 2 | 20 A | 40 |
| 41 | | | | | | | 2.8 | 2.8 | | | | | | | 42 |
| 43 | 60 A | 2 | B143 - EWH PWR 07 | K | | | | | 2.8 | 2.8 | K | B142 - EWH PWR 06 | 2 | 60 A | 44 |
| 45 | | | | | 2.8 | | | | | | | | | | 46 |
| 47 | 20 A | 2 | B136-FIRE RISER-HIU 01-02 | M | | | 0 | | | | | | | | 48 |
| 49 | | | | | | | | | 0 | | | | | | 50 |
| 51 | 60 A | 2 | B136-FIRE RISER-HOU 01-02 | M | 1.15 | | | | | | | | | | 52 |
| 53 | | | | | | | 1.15 | | | | | | | | 54 |
| 55 | | | | | | | | | | | | | | | 56 |
| 57 | | | | | | | | | | | | | | | 58 |
| 59 | | | | | | | | | | | | | | | 60 |
| 61 | | | | | | | | | | | | | | | 62 |
| 63 | | | | | | | | | | | | | | | 64 |
| 65 | | | | | | | | | | | | | | | 66 |
| SPECIAL PANEL FEATURES | | | | | 30.02 kW | | 29.36 kW | | 29.56 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| K | 58.80 kW | 65% | 38.22 kW |
| M | 30.14 kW | 100% | 30.14 kW |
| | | | |
| | | | |
| | | | |
| | | | |

LOAD TYPE KEY
C = CONTINUOUS
K = KITCHEN
L = LIGHTING
M = MECHANICAL
N = NON-CONTINUOUS
R = RECEPTACLE

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 88.94 kW | 246.9 A |
| TOTAL DEMAND LOAD: | 68.36 kW | 189.7 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **85.45 kW** | **237 A** |

## PANEL: MM1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 400 A
MAIN AMPS: 400 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: DS-MDC-2

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B123-KITCHEN-EF 10 | M | 2.16 | 0 | | | | | M | B126-IU 01-12 | 2 | 15 A | 2 |
| 3 | 20 A | 1 | B129-TOIET-EF 11 | M | | | 2.16 | 0 | | | | | | | 4 |
| 5 | 15 A | 2 | B128-IU 01-13 | M | | | | | 0 | 2.8 | K | B129 - EWH PWR 10 | 2 | 60 A | 6 |
| 7 | | | | | 0 | 2.8 | | | | | | | | | 8 |
| 9 | 25 A | 2 | ROOF - OU 01-03 | M | | | 1.15 | 0 | | | M | B119-CHORAL OFFICE-IU 01-05 | 2 | 15 A | 10 |
| 11 | | | | | | | | | 1.15 | 0 | | | | | 12 |
| 13 | 20 A | 1 | B124-STOR.-EF 8 | M | 2.16 | 2.8 | | | | | K | B123 - EWH PWR 13 | 2 | 60 A | 14 |
| 15 | 15 A | 2 | B121-MUSIC LIB-IU 01-04 | M | | | 0 | 2.8 | | | | | | | 16 |
| 17 | | | | | | | | | 0 | 2.16 | M | B130-TOILET-EF 9 | 1 | 20 A | 18 |
| 19 | 25 A | 2 | ROOF - OU 01-08 | M | 1.15 | | | | | | | | | | 20 |
| 21 | | | | | | | 1.15 | 1.15 | | | M | ROOF - OU 01-09 | 2 | 25 A | 22 |
| 23 | 25 A | 2 | ROOF - OU 01-10 | M | | | | | 1.15 | 1.15 | | | | | 24 |
| 25 | | | | | 1.15 | 1.15 | | | | | M | ROOF - OU 01-04 | 2 | 25 A | 26 |
| 27 | 25 A | 2 | ROOF - OU 01-05 | M | | | 1.15 | 1.15 | | | | | | | 28 |
| 29 | | | | | | | | | 1.15 | 1.15 | M | ROOF - OU 01-07 | 2 | 25 A | 30 |
| 31 | 15 A | 2 | B132-DRESSING-IU 01-09 | M | 0 | 1.15 | | | | | | | | | 32 |
| 33 | | | | | | | 0 | 0 | | | M | B134-DRAMA OFFICE-IU 01-10 | 2 | 15 A | 34 |
| 35 | 15 A | 2 | B145-STOR.-IU 01-06 | M | | | | | 0 | 0 | | | | | 36 |
| 37 | | | | | 0 | 0 | | | | | M | B123-KITCHEN-IU 01-03 | 2 | 15 A | 38 |
| 39 | 15 A | 2 | B127-BAND OFFICE-IU | M | | | 0 | 0 | | | | | | | 40 |
| 41 | | | | | | | | | 0 | 0 | M | B131-DRESSING-IU 01-08 | 2 | 15 A | 42 |
| 43 | 60 A | 2 | B130 - EWH PWR 09 | K | 2.8 | 0 | | | | | | | | | 44 |
| 45 | | | | | | | 2.8 | 2.8 | | | K | B131 - EWH PWR 11 | 2 | 60 A | 46 |
| 47 | 60 A | 2 | B132 - EWH PWR 12 | K | | | | | 2.8 | 2.8 | | | | | 48 |
| 49 | | | | | 2.8 | 0.27 | | | | | Motor | B139 - CP-03 | 1 | 20 A | 50 |
| 51 | 40 A | 2 | ROOF - OU 03-01 | M | | | 1.65 | 0.27 | | | Motor | B138 - CP-04 | 1 | 20 A | 52 |
| 53 | | | | | | | | | 1.65 | 0.27 | Motor | B137 - CP-05 | 1 | 20 A | 54 |
| 55 | 40 A | 2 | ROOF - OU 01-12 | M | 1.65 | | | | | | | | | | 56 |
| 57 | | | | | | | 1.65 | | | | | | | | 58 |
| 59 | | | | | | | | | | | | | | | 60 |
| 61 | | | | | | | | | | | | | | | 62 |
| 63 | | | | | | | | | | | | | | | 64 |
| 65 | | | | | | | | | | | | | | | 66 |
| SPECIAL PANEL FEATURES | | | | | 22.04 kW | | 19.88 kW | | 18.23 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| K | 28.00 kW | 70% | 19.60 kW |
| M | 31.34 kW | 100% | 31.34 kW |
| Motor | 0.81 kW | 108% | 0.88 kW |
| | | | |
| | | | |
| | | | |

LOAD TYPE KEY
C = CONTINUOUS
K = KITCHEN
L = LIGHTING
M = MECHANICAL
N = NON-CONTINUOUS
R = RECEPTACLE

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 60.15 kW | 167 A |
| TOTAL DEMAND LOAD: | 51.82 kW | 143.8 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **64.77 kW** | **180 A** |

## PANEL: MA1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 400 A
MAIN AMPS: 400 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELEC A113
SUPPLY FROM: DS-MDC-2

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | A108-TOILETS-EF 3 | M | 0.01 | 0 | | | | | M | A100-LOBBY-FCU 10 | 2 | 20 A | 2 |
| 3 | 20 A | 1 | A109-TOILETS-EF 2 | M | | | 0.01 | 0 | | | | | | | 4 |
| 5 | 20 A | 2 | A100-LOBBY-FCU 12 | M | | | | | 0 | 2.16 | M | A138-CONF-EF 15 | 1 | 20 A | 6 |
| 7 | | | | | 0 | 0 | | | | | M | A112-DATA-FCU 03-02 | 2 | 20 A | 8 |
| 9 | 30 A | 2 | ROOF-HP 10 | M | | | 1.77 | 0 | | | | | | | 10 |
| 11 | | | | | | | | | 1.77 | 2.5 | M | ROOF - HOU 03-02 | 2 | 60 A | 12 |
| 13 | 20 A | 1 | A118-CUST-EF 1 | M | 2.16 | 2.5 | | | | | | | | | 14 |
| 15 | 20 A | 2 | A113-ELEC-HIU 03-01 | M | | | 0 | 2.16 | | | M | A123-CONF-EF 13 | 1 | 20 A | 16 |
| 17 | | | | | | | | | 0 | 2.5 | M | ROOF - HOU 03-01 | 2 | 60 A | 18 |
| 19 | 60 A | 2 | A105 - EWH1 PWR 05 | K | 2.8 | 2.5 | | | | | | | | | 20 |
| 21 | | | | | | | 2.8 | 2.8 | | | K | A107 - EWH3 PWR 04 | 2 | 60 A | 22 |
| 23 | 20 A | 1 | A117-CONF-EF 14 | M | | | | | 2.16 | 2.8 | | | | | 24 |
| 25 | 20 A | 1 | A105-RR-EF 12 | M | 2.16 | 1.17 | | | | | M | ROOF-HP 5 | 2 | 25 A | 26 |
| 27 | 20 A | 1 | A116-STAFF LOUNGE-EF 16 | M | | | 2.16 | 1.17 | | | | | | | 28 |
| 29 | | | | | | | | | 1.17 | 1.17 | | | | | 30 |
| 31 | 25 A | 2 | ROOF-HP 7 | M | 1.17 | 1.17 | | | | | M | ROOF-HP 1 | 2 | 25 A | 32 |
| 33 | 25 A | 2 | ROOF-HP 4 | M | | | 1.17 | 1.17 | | | | | | | 34 |
| 35 | | | | | | | | | 1.17 | 1.17 | M | ROOF-HP 6 | 2 | 25 A | 36 |
| 37 | 25 A | 2 | ROOF-HP 2 | M | 1.17 | 1.17 | | | | | | | | | 38 |
| 39 | | | | | | | 1.17 | 1.17 | | | M | ROOF - HP 8 | 2 | 25 A | 40 |
| 41 | 25 A | 2 | ROOF - HP 3 | M | | | | | 1.17 | 0 | | | | | 42 |
| 43 | | | | | 1.17 | 0 | | | | | M | A133-COUNS-FCU 7 | 2 | 20 A | 44 |
| 45 | 25 A | 2 | ROOF - HP 9 | M | | | 1.17 | 1.17 | | | | | | | 46 |
| 47 | | | | | | | | | 1.17 | 1.17 | M | ROOF - HP 11 | 2 | 25 A | 48 |
| 49 | 25 A | 2 | ROOF - HP 12 | M | 1.17 | 0 | | | | | | | | | 50 |
| 51 | | | | | | | 1.17 | 0 | | | M | A128-CIRCULATION-FCU | 2 | 20 A | 52 |
| 53 | 20 A | 2 | A124-COUNS-FCU 1 | M | | | | | 0 | 0 | | | | | 54 |
| 55 | | | | | 0 | 0 | | | | | M | A115-STOR-FCU 4 | 2 | 20 A | 56 |
| 57 | 20 A | 2 | A128-CIRCULATION-FCU 8 | M | | | 0 | 0 | | | | | | | 58 |
| 59 | | | | | | | | | 0 | 0 | M | A123-CONF-FCU 2 | 2 | 20 A | 60 |
| 61 | 20 A | 2 | A122-STU.WAITING-FCU 3 | M | 0 | 0 | | | | | | | | | 62 |
| 63 | | | | | | | 0 | 0 | | | M | A104-HEALTH CENTER-FCU 9 | 2 | 20 A | 64 |
| 65 | 20 A | 2 | A103-ATTEND. OFFICE-FCU 11 | M | | | | | 0 | 2.8 | | | | | 66 |
| 67 | | | | | 0 | 2.8 | | | | | K | A108 - EWH PWR 02 | 2 | 60 A | 68 |
| 69 | 20 A | 2 | A110-WORK/MAIL-FCU 6 | M | | | 0 | 2.8 | | | | | | | 70 |
| 71 | | | | | | | | | 0 | 2.8 | K | A116 - EWH PWR 01 | 2 | 60 A | 72 |
| 73 | 60 A | 2 | A109 - EWH PWR 03 | K | 2.8 | 6.5 | | | | | | | | | 74 |
| 75 | | | | | | | 2.8 | 6.5 | | | K | A118 - EWH3 PWR 03 | 2 | 60 A | 76 |
| 77 | 20 A | 1 | A115 - CP-01 | Motor | | | | | 0.27 | 0.24 | M | SITE - IRRIGATION CTRL | 1 | 20 A | 78 |
| 79 | 20 A | 1 | A111 - CP-02 | Motor | 0.27 | | | | | | | | | | 80 |
| 81 | | | | | | | | | | | | | | | 82 |
| 83 | | | | | | | | | | | | | | | 84 |
| 85 | | | | | | | | | | | | | | | 86 |
| 87 | | | | | | | | | | | | | | | 88 |
| 89 | | | | | | | | | | | | | | | 90 |
| 91 | | | | | | | | | | | | | | | 92 |
| 93 | | | | | | | | | | | | | | | 94 |
| 95 | | | | | | | | | | | | | | | 96 |
| 97 | 20 A | 1 | SPARE | -- | 0 | 0 | | | | | -- | SPARE | 1 | 20 A | 98 |
| 99 | 20 A | 1 | SPARE | -- | | | 0 | 0 | | | -- | SPARE | 1 | 20 A | 100 |
| 101 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 102 |
| 103 | 20 A | 1 | SPARE | -- | 0 | 0 | | | | | -- | SPARE | 1 | 20 A | 104 |
| 105 | 20 A | 1 | SPARE | -- | | | 0 | 0 | | | -- | SPARE | 1 | 20 A | 106 |
| 107 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 108 |
| SPECIAL PANEL FEATURES | | | | | 32.65 kW | | 33.12 kW | | 28.15 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| K | 41.00 kW | 65% | 26.65 kW |
| M | 52.38 kW | 100% | 52.38 kW |
| Motor | 0.54 kW | 113% | 0.61 kW |
| | | | |
| | | | |
| | | | |

LOAD TYPE KEY
C = CONTINUOUS
K = KITCHEN
L = LIGHTING
M = MECHANICAL
N = NON-CONTINUOUS
R = RECEPTACLE

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 93.92 kW | 260.7 A |
| TOTAL DEMAND LOAD: | 79.64 kW | 221.1 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **99.55 kW** | **276 A** |

## PANEL: HM

VOLTAGE: 480Y/277V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 400 A
MAIN AMPS: 400 A MCB
AIC RATING: SEE 1-LINE
NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No
LOCATION: ELECTRICAL B138
SUPPLY FROM: SWBD-1

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 3.83 | 4.03 | | | | | | | | | 2 |
| 3 | 35 A | 3 | ROOF - DOAS 1 | M | | | 3.83 | 4.03 | | | M | ROOF - RTU-6 | 3 | 35 A | 4 |
| 5 | | | | | | | | | 3.83 | 4.03 | | | | | 6 |
| 7 | | | | | 1.27 | 4.03 | | | | | | | | | 8 |
| 9 | 15 A | 3 | B146-DCWP-01-A | Motor | | | 1.27 | 4.03 | | | M | ROOF - RTU-7 | 3 | 35 A | 10 |
| 11 | | | | | | | | | 1.27 | 4.03 | | | | | 12 |
| 13 | | | | | 1.27 | 10.83 | | | | | | | | | 14 |
| 15 | 15 A | 3 | B146-DCWP-01-B | Motor | | | 1.27 | 10.83 | | | M | ROOF - RTU-8 | 3 | 100 A | 16 |
| 17 | | | | | | | | | 1.27 | 10.83 | | | | | 18 |
| 19 | | | | | 13.05 | 10.83 | | | | | | | | | 20 |
| 21 | 100 A | 3 | ROOF - RTU-1 | M | | | 13.05 | 10.83 | | | M | ROOF - RTU-9 | 3 | 100 A | 22 |
| 23 | | | | | | | | | 13.05 | 10.83 | | | | | 24 |
| 25 | | | | | 2.77 | 10.83 | | | | | | | | | 26 |
| 27 | 25 A | 3 | ROOF - RTU-3 | M | | | 2.77 | 10.83 | | | M | ROOF - RTU-10 | 3 | 100 A | 28 |
| 29 | | | | | | | | | 2.77 | 10.83 | | | | | 30 |
| 31 | | | | | 2.77 | 5.82 | | | | | | | | | 32 |
| 33 | 25 A | 3 | ROOF - RTU-4 | M | | | 2.77 | 5.82 | | | M | SITE - IRRIGATION PUMP | 3 | 30 A | 34 |
| 35 | | | | | | | | | 2.77 | 5.82 | | | | | 36 |
| 37 | | | | | 4.03 | | | | | | | | | | 38 |
| 39 | 35 A | 3 | ROOF - RTU-5 | M | | | 4.03 | | | | | | | | 40 |
| 41 | | | | | | | | | 4.03 | | | | | | 42 |
| SPECIAL PANEL FEATURES | | | | | 75.37 kW | | 75.37 kW | | 75.37 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| M | 201.04 kW | 100% | 201.04 kW |
| Motor | 25.06 kW | 117% | 29.42 kW |
| | | | |
| | | | |
| | | | |
| | | | |

LOAD TYPE KEY
C = CONTINUOUS
K = KITCHEN
L = LIGHTING
M = MECHANICAL
N = NON-CONTINUOUS
R = RECEPTACLE

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 226.1 kW | 272 A |
| TOTAL DEMAND LOAD: | 230.46 kW | 277.2 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **288.08 kW** | **347 A** |

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

CERTIFIED UNION HIGH SCHOOL DISTRICTS
COMMITTED TO COLLEGE AND CAREER
ESTABLISHED 1991


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA


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Project Manager: RM
Job. No.: 150-22US00121


FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PANELBOARD SCHEDULES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E5.13


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THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED ON EXACT ORIGINAL PAGE SIZE

## PANEL: PT1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 400 A
MAIN AMPS: 400 A MCB
AIC RATING: SEE 1-LINE

NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No

LOCATION: ELECTRICAL B138
SUPPLY FROM: DS-THEATER

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B142,B143-TOILETS-HAND DRYER | M; R | 1.42 | 2.4 | | | | | R | PB 1,5 (1) | 1 | 20 A | 2 |
| 3 | 20 A | 1 | B138-ELEC RM-R | R | | | 0.36 | 2.4 | | | R | PB 2,6 | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B137-DATA-R | R; N | | | | | 1.08 | 2.4 | R | PB 3,9 | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B138-DIMMER-R | R | 0.18 | 2.4 | | | | | R | PB 4,8 | 1 | 20 A | 8 |
| 9 | 20 A | 1 | B135-SCENE SHOP-R | R | | | 0.72 | 2.4 | | | R | PB 7 | 1 | 20 A | 10 |
| 11 | 20 A | 1 | B108,109,110-CIRCULATION-R | R | | | | | 0.72 | 2.4 | M | CES 1 | 1 | 20 A | 12 |
| 13 | 20 A | 1 | B115-CONTROLROOM-R | R | 0.54 | 2.4 | | | | | M | CES 2 | 1 | 20 A | 14 |
| 15 | 20 A | 1 | B100-LOBBY-CLEANER R | R | | | 0.72 | 2.4 | | | M | CES 3 | 1 | 20 A | 16 |
| 17 | 20 A | 1 | B115,B116-CONTROLROOM-R | R | | | | | 0.72 | 2.4 | R | PB 10,11,12,13 | 1 | 20 A | 18 |
| 19 | 20 A | 1 | B113-TIC/CONCESS-R | R | 0.36 | 2.4 | | | | | R | PS1,2 | 1 | 20 A | 20 |
| 21 | 20 A | 1 | B102,103,104-CIRCULATION-R | R | | | 0.72 | 2.4 | | | R | PS3,4, GUB 3,4 | 1 | 20 A | 22 |
| 23 | | | | | | | | | 1 | 2.4 | R | PS5, GUB 1,2 | 1 | 20 A | 24 |
| 25 | 20 A | 3 | B106 - RIGGING MOTOR | Power | 1 | 2.4 | | | | | R | PB 16,17,18,19 | 1 | 20 A | 26 |
| 27 | | | | | | | 1 | 2.4 | | | R | PB 20-27 | 1 | 20 A | 28 |
| 29 | | | | | | | | | 1 | 2.4 | R | PB 30 | 1 | 20 A | 30 |
| 31 | 20 A | 3 | B106 - RIGGING MOTOR | Power | 1 | 4.5 | | | | | N | B135 - CORD REEL 3 | 1 | 20 A | 32 |
| 33 | | | | | | | 1 | 4.5 | | | N | B135 - CORD REEL 4 | 1 | 20 A | 34 |
| 35 | | | | | | | | | 1 | 3.6 | E | LIFT - 1 | 1 | 30 A | 36 |
| 37 | 20 A | 3 | B106 - RIGGING MOTOR | Power | 1 | 3.6 | | | | | E | LIFT - 2 | 1 | 20 A | 38 |
| 39 | | | | | | | 1 | 0.36 | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 40 |
| 41 | | | | | | | | | 1 | 0.36 | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 42 |
| 43 | 20 A | 3 | B106 - RIGGING MOTOR | Power | 1 | 0.36 | | | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 44 |
| 45 | | | | | | | 1 | 0.36 | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 46 |
| 47 | | | | | | | | | 1 | 0.36 | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 48 |
| 49 | 20 A | 3 | B106 - RIGGING MOTOR | Power | 1 | 0.36 | | | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 50 |
| 51 | | | | | | | 1 | 0.36 | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 52 |
| 53 | 20 A | 1 | B106 - CONTROL RIGGING MOTOR | M | | | | | 2.4 | 0.36 | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 54 |
| 55 | 20 A | 1 | B135 - CORD REEL 1 | N | 4.5 | 0.36 | | | | | M | LEVEL 2 - CATWALK - VENT | 1 | 20 A | 56 |
| 57 | 20 A | 1 | B135 - CORD REEL 2 | N | | | 4.5 | 0.18 | | | R | B138-DIMMER-CER-1 | 1 | 20 A | 58 |
| 59 | 20 A | 1 | B136 - FOLLOW SPOT BOOTH -... | R | | | | | 0.54 | 2.4 | R | B105-SEATING AREA- CRS 4 | 1 | 20 A | 60 |
| 61 | 20 A | 1 | PB 14,15 | R | 2.4 | 0.18 | | | | | R | B138 DIMMER-DEBC | 1 | 20 A | 62 |
| 63 | 20 A | 1 | PB 28,29 | R | | | 2.4 | | | | | | | | 64 |
| 65 | 20 A | 1 | PB 31,32 | R | | | | | 2.4 | | | | | | 66 |
| SPECIAL PANEL FEATURES | | | | | 35.76 kW | | 32.18 kW | | 31.94 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| M | 13.90 kW | 100% | 13.90 kW |
| N | 18.18 kW | 100% | 18.18 kW |
| R | 45.60 kW | 61% | 27.80 kW |
| E | 3.60 kW | 100% | 3.60 kW |
| Motor | 3.60 kW | 125% | 4.50 kW |
| Power | 15.00 kW | 100% | 15.00 kW |

| LOAD TYPE KEY |
|---|
| C = CONTINUOUS |
| K = KITCHEN |
| L = LIGHTING |
| M = MECHANICAL |
| N = NON-CONTINUOUS |
| R = RECEPTACLE |

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 99.88 kW | 277.2 A |
| TOTAL DEMAND LOAD: | 82.98 kW | 230.3 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **103.72 kW** | **288 A** |

## PANEL: PM1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 200 A
MAIN AMPS: 200 A MCB
AIC RATING: SEE 1-LINE

NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No

LOCATION: ELECTRICAL B138
SUPPLY FROM: DS-MDC-2

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | B116-CIRCULATION-CLEANER R | R | 0.72 | 1.8 | | | | | K | B112- EWC-02 | 1 | 20 A | 2 |
| 3 | 20 A | 1 | B116-CIRCULATION-CLEANER R | R | | | 0.54 | 2.16 | | | R; K | B112- EWC-01 | 1 | 20 A | 4 |
| 5 | 20 A | 1 | B133-DRAMA.CLASSRM-R | R | | | | | 0.72 | 0.72 | R | B137-DATA-R | 1 | 20 A | 6 |
| 7 | 20 A | 1 | B133,B134-CLASSRM&OFFICE-WS&R | R | 0.9 | 3.6 | | | | | M | B137-DATA-SERVER RACK | 1 | 20 A | 8 |
| 9 | 20 A | 1 | B129,B130-TOILET-HAND DRYER | R | | | 0.36 | 3.6 | | | M | B137-DATA-HARDWIRE | 1 | 20 A | 10 |
| 11 | 20 A | 1 | B131,132-DRESSING-R | R | | | | | 0.54 | 1.07 | M; R | B140-TOILETS PWR | 1 | 20 A | 12 |
| 13 | 20 A | 1 | B128-INSTRUCTORCHES.-R | R | 0.54 | 0.89 | | | | | M; R | B141-TOILETS PWR | 1 | 20 A | 14 |
| 15 | 20 A | 1 | B125-BAND RM-R | R | | | 0.9 | 1.8 | | | K | B135-SCENE SHOP-WASHER/DRYER | 1 | 20 A | 16 |
| 17 | 20 A | 1 | B125,126-BAND RM&STOR.-R | R | | | | | 0.72 | 0.36 | R | B132 - MAKE UP - R | 1 | 20 A | 18 |
| 19 | 20 A | 1 | B127-BAND OFFICE-WS | R | 0.72 | | | | | | | | | | 20 |
| 21 | 20 A | 1 | B127-BAND OFFICE-WS&R | R | | | 0.54 | | | | | | | | 22 |
| 23 | 20 A | 1 | B127-BAND OFFICE-PRINTER | N | | | | | 0.18 | | | | | | 24 |
| 25 | 20 A | 1 | B127-BAND OFFICE-COPY | N | 0.18 | | | | | | | | | | 26 |
| 27 | 20 A | 1 | B120,121,122,124-R | R | | | 0.72 | | | | | | | | 28 |
| 29 | 20 A | 1 | B118-CHORAL RM-R | R | | | | | 0.9 | | | | | | 30 |
| 31 | 20 A | 1 | B121-PRINTER | N | 0.18 | | | | | | | | | | 32 |
| 33 | 20 A | 1 | B119,145,146-WS&R | R | | | 0.72 | | | | | | | | 34 |
| 35 | 20 A | 1 | B123-KITCHEN-R | R | | | | | 0.36 | | | | | | 36 |
| 37 | 20 A | 1 | B123-KITCHEN-MW | K | 0.18 | | | | | | | | | | 38 |
| 39 | 20 A | 1 | B123-KITCHEN-REF | K | | | 0.18 | | | | | | | | 40 |
| 41 | 20 A | 1 | SEG.B - OUTDOOR RECEPTS | N | | | | | 1.08 | | | | | | 42 |
| 43 | 20 A | 1 | SEG.B - OUTDOOR RECEPTS | N | 0.54 | | | | | | | | | | 44 |
| 45 | 20 A | 1 | SEG.B - OUTDOOR RECEPTS | N | | | 0.72 | | | | | | | | 46 |
| 47 | 20 A | 1 | B138 - FIRE ALARM POWER - RPS | C | | | | | 0.3 | 0.3 | C | B138 - FIRE ALARM POWER - FACU | 1 | 20 A | 48 |
| 49 | 20 A | 1 | B138 - FIRE ALARM POWER - FATC | C | 0.3 | | | | | | | | | | 50 |
| 51 | 20 A | 1 | B131 - MAKE UP - R | R | | | 0.36 | | | | | | | | 52 |
| 53 | 20 A | 1 | B131 - MAKE UP - R | R | | | | | 0.36 | | | | | | 54 |
| 55 | 20 A | 1 | B131,132 - MAKE UP - R | R | 0.36 | | | | | | | | | | 56 |
| 57 | 20 A | 1 | B132 - MAKE UP - R | R | | | 0.36 | | | | | | | | 58 |
| 59 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 60 |
| 61 | 20 A | 1 | SPARE | -- | 0 | 0 | | | | | -- | SPARE | 1 | 20 A | 62 |
| 63 | 20 A | 1 | SPARE | -- | | | 0 | 0 | | | -- | SPARE | 1 | 20 A | 64 |
| 65 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 66 |
| SPECIAL PANEL FEATURES | | | | | 10.91 kW | | 12.96 kW | | 7.61 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| C | 0.90 kW | 125% | 1.13 kW |
| K | 5.76 kW | 70% | 4.03 kW |
| M | 7.73 kW | 100% | 7.73 kW |
| N | 2.88 kW | 100% | 2.88 kW |
| R | 13.68 kW | 87% | 11.84 kW |
| Motor | 0.53 kW | 125% | 0.66 kW |

| LOAD TYPE KEY |
|---|
| C = CONTINUOUS |
| K = KITCHEN |
| L = LIGHTING |
| M = MECHANICAL |
| N = NON-CONTINUOUS |
| R = RECEPTACLE |

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 31.48 kW | 87.4 A |
| TOTAL DEMAND LOAD: | 28.27 kW | 78.5 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **35.33 kW** | **98 A** |

## PANEL: PA1

VOLTAGE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
BUS RATING: 200 A
MAIN AMPS: 200 A MCB
AIC RATING: SEE 1-LINE

NEMA RATING: Type 1
INTEGRAL SPD: No
ISOL GROUND BAR: No
FEED-THRU LUGS: No
DOUBLE-LUGS: No

LOCATION: ELEC A113
SUPPLY FROM: DS-MDC-2

| CKT | TRIP | POLE | DESCRIPTION | TYPE | A (kW) | | B (kW) | | C (kW) | | TYPE | DESCRIPTION | POLE | TRIP | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 A | 1 | A123-CONF-R | R; N | 1.08 | 0.72 | | | | | R | A130, A131-COUNS-WS | 1 | 20 A | 2 |
| 3 | 20 A | 1 | A124,125-COUNS-WS | R | | | 0.72 | 0.72 | | | R | A132, A133-COUNS-WS | 1 | 20 A | 4 |
| 5 | 20 A | 1 | A126,127-COUNS-WS | R | | | | | 0.72 | 1.08 | R | A134, A135-OFFICE-WS | 1 | 20 A | 6 |
| 7 | 20 A | 1 | A122-STU.WAITING-R | R | 0.72 | 0.54 | | | | | R | A134, A137, A136-OFFICE-COPY&R | 1 | 20 A | 8 |
| 9 | 20 A | 1 | A114-CLERC & RECEP-WS | R | | | 0.72 | 0.72 | | | R | A136, A137-OFFICE-WS | 1 | 20 A | 10 |
| 11 | 20 A | 1 | A128,129-CIR.STU.WAIT-R | R | | | | | 0.72 | 1.08 | R; N | A138-CONF-R | 1 | 20 A | 12 |
| 13 | 20 A | 1 | A114-CLERC&RECEP-COPY&R.DESK | R | 0.36 | 0.72 | | | | | R | A101-RECEPTION-WS&R | 1 | 20 A | 14 |
| 15 | 20 A | 1 | A120, A121-OFFICE-WS | R | | | 0.72 | 0.72 | | | R | A102-ATTENDANCE-WS | 1 | 20 A | 16 |
| 17 | 20 A | 1 | A118, A119-OFFICE&CUST-WS&R | R | | | | | 0.54 | 0.72 | R | A102-ATTENDANCE-WS | 1 | 20 A | 18 |
| 19 | 20 A | 1 | A128-CIRCULATION-CLEANER R | R | 0.54 | 0.72 | | | | | R | A112-DATA-R | 1 | 20 A | 20 |
| 21 | 20 A | 1 | A117-CONF-R | R; N | | | 1.08 | 0.72 | | | R | A103-ATTEND. OFFICE-WS&R | 1 | 20 A | 22 |
| 23 | 20 A | 1 | A116-STAFF LOUNGE-R | R | | | | | 0.72 | 0.72 | R | A104-HEALTH CENTER-TREAT.BEDS R | 1 | 20 A | 24 |
| 25 | 20 A | 1 | A116-STAFF LOUNGE-REF | K | 0.18 | 0.72 | | | | | R | A104-HEALTH CENTER-TREAT.BEDS R.. | 1 | 20 A | 26 |
| 27 | 20 A | 1 | A116-STAFF LOUNGE-MW | K | | | 0.18 | 0.9 | | | R | A104, A106-HEA.CEN&OFFICE-R | 1 | 20 A | 28 |
| 29 | 20 A | 1 | A110, A111-MAIL&STOR.-R | R | | | | | 0.72 | 0.36 | R; K | A107-NURSE EXAM-UREF&R | 1 | 20 A | 30 |
| 31 | 20 A | 1 | A110-COPY | N | 0.18 | 3.6 | | | | | M | A112-DATA-SERVER RACK | 1 | 20 A | 32 |
| 33 | 20 A | 1 | A113, A115-ELEC&STOR-R | R | | | 0.9 | 14.4 | | | M | A112-DATA-HARDWIRE | 1 | 20 A | 34 |
| 35 | 20 A | 1 | A112-DATA-R | R | | | | | 0.72 | | | | | | 36 |
| 37 | 20 A | 1 | A138-CIRCULATION-CLEANER R | R | 0.36 | | | | | | | | | | 38 |
| 39 | 20 A | 1 | A128- EWC-03 | K | | | 1.8 | | | | | | | | 40 |
| 41 | 20 A | 1 | A105,A108, A109-TOILETS-HAND... | M; ... | | | | | 1.6 | | | | | | 42 |
| 43 | 20 A | 1 | A113 - FIRE ALARM POWER | C | 0.3 | | | | | | C | | | | 44 |
| 45 | 20 A | 1 | A134-COPY | N | | | 0.18 | | | | | | | | 46 |
| 47 | 20 A | 1 | A102-COPY | N | | | | | 0.18 | | | | | | 48 |
| 49 | 20 A | 1 | A114-COPY | N | 0.18 | | | | | | | | | | 50 |
| 51 | 20 A | 1 | SEG.A - OUTDOOR RECEPTS | R | | | 0.72 | | | | | | | | 52 |
| 53 | 20 A | 1 | SEG.A - OUTDOOR RECEPTS | R | | | | | 0.9 | | | | | | 54 |
| 55 | 20 A | 1 | SEG.A - OUTDOOR RECEPTS | R | 0.54 | | | | | | | | | | 56 |
| 57 | 20 A | 1 | A116 - COFFE MAKER | K | | | 0.18 | | | | | | | | 58 |
| 59 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 60 |
| 61 | 20 A | 1 | SPARE | -- | 0 | 0 | | | | | -- | SPARE | 1 | 20 A | 62 |
| 63 | 20 A | 1 | SPARE | -- | | | 0 | 0 | | | -- | SPARE | 1 | 20 A | 64 |
| 65 | 20 A | 1 | SPARE | -- | | | | | 0 | 0 | -- | SPARE | 1 | 20 A | 66 |
| SPECIAL PANEL FEATURES | | | | | 11.46 kW | | 25.38 kW | | 10.78 kW | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND FACTOR | DEMAND... |
|---|---|---|---|
| C | 0.30 kW | 125% | 0.38 kW |
| K | 2.52 kW | 70% | 1.76 kW |
| M | 18.53 kW | 100% | 18.53 kW |
| N | 1.98 kW | 100% | 1.98 kW |
| R | 23.76 kW | 71% | 16.88 kW |
| Motor | 0.53 kW | 125% | 0.66 kW |

| LOAD TYPE KEY |
|---|
| C = CONTINUOUS |
| K = KITCHEN |
| L = LIGHTING |
| M = MECHANICAL |
| N = NON-CONTINUOUS |
| R = RECEPTACLE |

| PANEL TOTALS | kW | AMPS |
|---|---|---|
| TOTAL CONNECTED LOAD: | 47.62 kW | 132.2 A |
| TOTAL DEMAND LOAD: | 40.19 kW | 111.5 A |
| SPARE CAPACITY: | 25% | 25% |
| **DESIGNED CAPACITY:** | **50.23 kW** | **139 A** |

XX

1. REFER TO THEATRE DRAWINGS FOR MORE DETAILS.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
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Job. No.: 150-23US00121


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**PANELBOARD SCHEDULES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E5.14


Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
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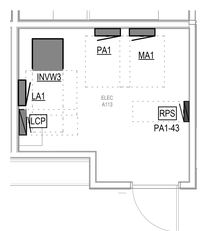
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG WHEN PRINTED AT FULL SIZE ON 24"x36" ORIGINAL SHEETS. IF THIS LINE IS NOT 1" LONG, THE SHEETS ORIGINAL PAGE SIZE HAS BEEN REDUCED OR ENLARGED.




## 2 LEVEL 1 - ENLARGED LAYOUT - ELEC RM B139

SCALE: 1/4" = 1'-0"




## 1 LEVEL 1 - ENLARGED LAYOUT - ELEC RM A113

SCALE: 1/4" = 1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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LOS ANGELES, CA, 90071
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| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

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Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ENLARGED PLANS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E5.15

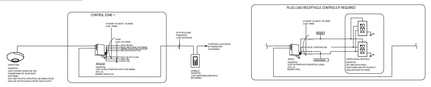
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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLANS SHEETS ORIGINAL PAGE SIZE

# nLIGHT POWER PACK TYPICALS

## 1PP 1-ZONE ROOM



NTS TYPICAL 1-ZONE ROOM USING nLIGHT POWER PACK
REFER TO PLANS FOR TYPES AND QUANTITIES

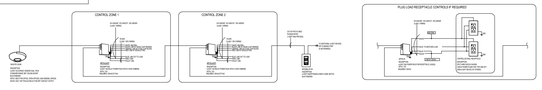
TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.

## 2PP 2-ZONE ROOM



NTS TYPICAL 2-ZONE ROOM USING nLIGHT POWER PACKS
REFER TO PLANS FOR TYPES AND QUANTITIES

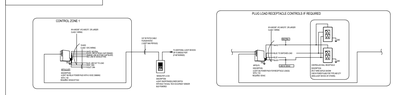
TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.

## 3PP 1-ZONE SMALL ROOM



NTS TYPICAL 1-ZONE SMALL ROOM USING nLIGHT POWER PACK
REFER TO PLANS FOR TYPES AND QUANTITIES

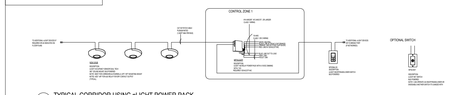
TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.

## 4PP CORRIDOR



NTS TYPICAL CORRIDOR USING nLIGHT POWER PACK
REFER TO PLANS FOR TYPES AND QUANTITIES

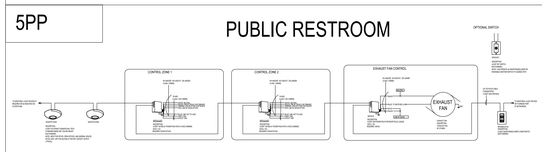
TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. LIGHTS SHALL AUTOMATICALLY GO TO 100% FULL BRIGHT WHEN SENSED BY ANY OCCUPANCY SENSOR IN THE ENCLOSED SPACE.
2. AFTER 30 MIN TIME OUT EXPIRES DUE TO VACANCY, LIGHTS SHALL GO TO 50% DIMMED (ON LEVEL TO OFF.
3. AUTOMATIC SCHEDULING CONTROLS ON TIME CLOCK AT NIGHT SO LITTLE CONTROLLED AREA'S SHALL ALLOW SCHEDULING OF A MINIMUM OF TWO NIGHTTIME PERIODS AT DIFFERENT LIGHTING LEVELS.
4. SWITCH MAY INCLUDE AN OVERRIDE FUNCTION WALL SWITCH THAT TURNS LIGHT ON FOR 2 HOURS WHEN DARKED ON OFF STATE.
5. ALTERNATE FOR 2ND TIME OUT: AUTOMATIC SHUT OFF VIA SCHEDULED TIME CLOCK, BUT NLIGHT SYSTEM MUST BE A NETWORKED ECLYPSE SYSTEM AND NOT STANDALONE.
6. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. TERMOR CORRIDORS TYPICALLY FOUND IN MULTI-TENTANT RESIDENTIAL AND COMMERCIAL BUILDINGS, HOTELS AND MOTELS ARE NOT REQUIRED TO DO FULL AUTO SHUT OFF.

## 5PP PUBLIC RESTROOM

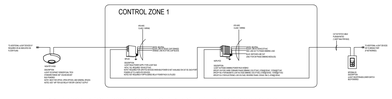


NTS TYPICAL PUBLIC RESTROOM USING nLIGHT POWER PACK CONTROLLING LIGHTS AND EXHAUST FAN
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS AND EXHAUST FAN BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).
3. MANUAL DIMMING OF LIGHTS IS OPTIONAL.

## 6PP ROOM W/ LINE VOLTAGE PHASE DIMMING



NTS TYPICAL 1-ZONE ROOM USING nLIGHT PHASE LINE VOLTAGE DIMMING PACK
REFER TO PLANS FOR TYPES AND QUANTITIES

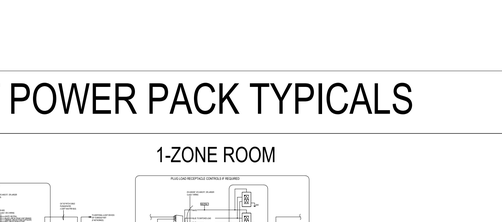
TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.

## 7PP MULTIPLE ZONE SPACE W/ DAYLIGHTING



NTS TYPICAL MULTIPLE ZONE ROOM WITH DAYLIGHTING USING nLIGHT POWER PACKS AND MULTI-ZONE SWITCH
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. DUAL ZONE PHOTOCELL SHALL AUTOMATICALLY REDUCE GENERAL LIGHTING IN BOTH PRIMARY AND SECONDARY DAYLIT ZONES BASED ON DAYLIGHT TO MAINTAIN DESIGN ILLUMINANCE.
3. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS.

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.
2. OCCUPANCY SENSORS ARE OPTIONAL IN DAYLIGHT ZONES WHERE THE SPACE IS ALSO EQUIPPED WITH WALL SWITCH OCCUPANCY SENSORS (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR). REFER TO SPEC SHEET.

## 8PP EXTERIOR LIGHTS W/ FEW ZONES



NTS EXTERIOR LIGHTS
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. PHOTOCELL OR ASTRONOMICAL TIME SWITCH CONTROL SHALL AUTOMATICALLY SHUT OFF EXTERIOR LIGHTING WHEN DAYLIGHT IS AVAILABLE.
2. AUTOMATIC SCHEDULING CONTROLS ON TIME CLOCK AT NIGHT SO LITTLE CONTROLLED AREA'S SHALL ALLOW SCHEDULING OF A MINIMUM OF TWO NIGHTTIME PERIODS AT DIFFERENT LIGHTING LEVELS.
3. AUTOMATIC SCHEDULING CONTROLS ON TIME CLOCK AT NIGHT SO LITTLE CONTROLLED AREA'S SHALL ALLOW SCHEDULING BY A MINIMUM OF TWO NIGHTTIME PERIODS AT DIFFERENT LIGHTING LEVELS.
4. SWITCH MAY INCLUDE AN OVERRIDE FUNCTION WALL SWITCH THAT TURNS LIGHT ON FOR 2 HOURS WHEN DURING DIMMED OR OFF STATE.

nLIGHT SYSTEM NOTE:

1. IF APPLICABLE, EXTERIOR LIGHTING MAY NEED TO COMPLY WITH TH 2019 PART 6 SECTION 130.2(I) MOTION SENSOR CONTROLS NOT SHOWN IN THIS DIAGRAM.

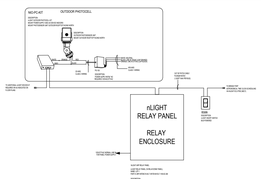
## 10PP EXTERIOR LIGHTS

32-RELAY NEMA 1 ENCLOSURE

EXTERIOR LIGHTING CONTROL PANEL 'LCP-W2' (WEST)

| RELAY NO. | CIRCUIT NO. | DIMMING | ZONE | VOLTAGE | SOURCE | DESCRIPTION | CONTROLLED BY |
|---|---|---|---|---|---|---|---|
| R1 | PHW3A-5 | NO | a | 277 | NORMAL | ROOF AREA LOW - WEST | OR |
| R2 | PHW3A-5 | NO | b | 277 | NORMAL | ROOF AREA HIGH - WEST | OR |
| R3 | PHW2A-5 | YES | h | 277 | NORMAL | LEVEL 2 - WEST - BUILDING WALKWAY | TC, OR |
| R4 | PHW2A-5 | YES | i | 277 | NORMAL | LEVEL 2 - WEST - BUILDING FACADE | TC, OR |
| R5 | PHW2A-5 | YES | j | 277 | NORMAL | LEVEL 2 - INNOV. CTR. TICKET OFFICE | TC, OR |
| R6 | PHW2A-5 | YES | k | 277 | NORMAL | LEVEL 2 - COUTYARD - LANDSCAPE | TC, OR |
| R7 | PHW2A-5 | YES | l | 277 | NORMAL | LEVEL 2 - COURT YARD | TC, OR |
| R8 | PHW2A-5 | YES | m | 277 | NORMAL | LEVEL 2 - WEST - LANDSCAPE | TC, OR |
| R9 | PHW2A-5 | YES | n | 277 | NORMAL | LEVEL 2 - WEST - WALKWAY | TC, OR |
| R10 | PHW2A-5 | YES | o | 277 | NORMAL | LEVEL 1 - BUILDING WALKWAY | TC, OR |
| R11 | PHW2A-7 | YES | p | 277 | NORMAL | LEVEL 1 - LANDSCAPE | TC, OR |
| R12 | PHW2A-7 | YES | q | 277 | NORMAL | LEVEL 1 - HANDSCAPE | TC, OR |
| R13 | PHW2A-7 | YES | y | 277 | NORMAL | RECITAL HALL - BUILDING FAÇADE | TC, OR |
| R14 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R15 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R16 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R17 | EPHW2A-7 | YES | h | 277 | EMERGENCY | LEVEL 2 - WEST WALKWAY | TC, OR |
| R18 | EPHW2A-7 | YES | i | 277 | EMERGENCY | LEVEL 2 - WEST - BUILDING FACADE | TC, OR |
| R19 | EPHW2A-7 | YES | n | 277 | EMERGENCY | LEVEL 2 - WEST- WALKWAY | TC, OR |
| R20 | EPHW2A-7 | YES | o | 277 | EMERGENCY | LEVEL 1 - BUILDING WALKWAY | TC, OR |
| R21 | EPHW2A-9 | YES | s | 277 | EMERGENCY | LEVEL 1 - WALKWAY | TC, OR |
| R22 | EPHW2A-9 | YES | t | 277 | EMERGENCY | LEVEL 1 - BUILDING FAÇADE | TC, OR |
| R23 | EPHW2A-9 | YES | u | 277 | EMERGENCY | LEVEL 1 - WALKWAY | TC, OR |
| R24 | EPHW2A-7 | YES | aa | 277 | EMERGENCY | LEVEL 2 - HAND RAIL | TC, OR |
| R25 | EPHW2A-9 | YES | v | 277 | EMERGENCY | LEVEL 1 - HAND RAIL | TC, OR |
| R26 | EPHW2A-9 | YES | w | 277 | EMERGENCY | LEVEL 2 - WEST - WALKWAY | TC, OR |
| R27 | EPHW2A-9 | YES | x | 277 | EMERGENCY | LEVEL 2 - WEST - HAND RAIL | TC, OR |
| R28 | EPHW2A09 | YES | r | 277 | EMERGENCY | LEVEL 1 - BUILDING ENTRANCE | TC, OR |
| R29 | -- | YES | -- | 277 | -- | SPARE RELAY - EMERGENCY | -- |
| R30 | -- | YES | -- | 277 | -- | SPARE RELAY - EMERGENCY | -- |
| R31 | -- | -- | -- | -- | -- | SPACE | -- |
| R32 | -- | -- | -- | -- | -- | SPACE | -- |
| | | | | | | TC= TIME CLOCK (ASTRONOMICAL) | |
| | | | | | | OR = OVERRIDE MANUAL SWITCH | |

FIELD CONFIGURABLE EM VOLTAGE BARRIER



NTS EXTERIOR LIGHTS
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. PHOTOCELL OR ASTRONOMICAL TIME SWITCH CONTROL SHALL AUTOMATICALLY SHUT OFF EXTERIOR LIGHTING WHEN DAYLIGHT IS AVAILABLE.
2. AUTOMATIC SCHEDULING CONTROLS ON TIME CLOCK AT NIGHT SO LITTLE CONTROLLED AREA'S SHALL ALLOW SCHEDULING OF A MINIMUM OF TWO NIGHTTIME PERIODS AT DIFFERENT LIGHTING LEVELS.
3. AUTOMATIC SCHEDULING CONTROLS ON TIME CLOCK AT NIGHT SO LITTLE CONTROLLED AREA'S SHALL ALLOW SCHEDULING BY A MINIMUM OF TWO NIGHTTIME PERIODS AT DIFFERENT LIGHTING LEVELS.
4. SWITCH MAY INCLUDE AN OVERRIDE FUNCTION WALL SWITCH THAT TURNS LIGHT ON FOR 2 HOURS WHEN DURING DIMMED OR OFF STATE.

nLIGHT SYSTEM NOTE:

1. IF APPLICABLE, EXTERIOR LIGHTING MAY NEED TO COMPLY WITH TH 2019 PART 6 SECTION 130.2(I) MOTION SENSOR CONTROLS NOT SHOWN IN THIS DIAGRAM.

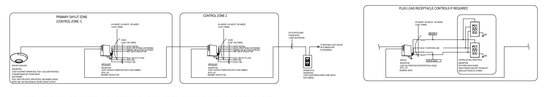
16-RELAY NEMA 1 ENCLOSURE

EXTERIOR LIGHTING CONTROL PANEL 'LCP-E2' (EAST)

| RELAY NO. | CIRCUIT NO. | DIMMING | ZONE | VOLTAGE | SOURCE | DESCRIPTION | CONTROLLED BY |
|---|---|---|---|---|---|---|---|
| R1 | PHE2A-7 | NO | z | 277 | NORMAL | ROOF AREA - EAST | OR |
| R2 | PHE2A-7 | YES | c | 277 | NORMAL | LEVEL 2 - EAST - BUILDING WALKWAY | TC, OR |
| R3 | PHE2A-7 | YES | d | 277 | NORMAL | LEVEL 2 - EAST - BUILDING FAÇADE | TC, OR |
| R4 | PHE2A-7 | YES | e | 277 | NORMAL | LEVEL 2 - EAST - BUILDING WALKWAY | TC, OR |
| R5 | PHE2A-7 | YES | f | 277 | NORMAL | LEVEL 2 - EAST - STAIRS | TC, OR |
| R6 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R7 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R8 | -- | YES | -- | 277 | -- | SPARE RELAY - NORMAL | -- |
| R9 | EPHE2A-5 | YES | c | 277 | EMERGENCY | LEVEL 2 - EAST - BUILDING WALKWAY | TC, OR |
| R10 | EPHE2A-5 | YES | d | 277 | EMERGENCY | LEVEL 2 - EAST - BUILDING FACADE | TC, OR |
| R11 | EPHE2A-5 | YES | e | 277 | EMERGENCY | LEVEL 2 - EAST - BUILDING WALKWAY | TC, OR |
| R12 | EPHE2A-5 | YES | g | 277 | EMERGENCY | LEVEL 2 - EAST - HAND RAIL | TC, OR |
| R13 | EPHE2A-5 | YES | bb | 277 | EMERGENCY | LEVEL 2 - EAST - BUILDING WALKWAY | TC, OR |
| R14 | -- | YES | -- | 277 | -- | SPARE RELAY - EMERGENCY | -- |
| R15 | -- | YES | -- | 277 | -- | SPARE RELAY - EMERGENCY | -- |
| R16 | -- | -- | -- | -- | -- | SPACE | -- |
| | | | | | | TC= TIME CLOCK (ASTRONOMICAL) | |
| | | | | | | OR = OVERRIDE MANUAL SWITCH | |

FIELD CONFIGURABLE EM VOLTAGE BARRIER

## 12PP CONFERENCE ROOM W/ DAYLIGHTING



NTS TYPICAL CONFERENCE ROOM WITH DAYLIGHTING USING nLIGHT POWER PACKS
REFER TO PLANS FOR TYPES AND QUANTITIES

TITLE 24 COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS (VIA BMS) BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).

nLIGHT SYSTEM NOTE:

1. OCCUPANCY SENSOR IS CAPABLE OF DOING PARTIAL ON 50% TRI-LIGHTING POWER AND FULL AUTO OFF. PROVIDE IN SPACES WHERE REQUIRED SUCH AS CONFERENCE ROOMS, OFFICES > 250SQFT, MULTIPURPOSE ROOMS > 1000SQFT, AND CLASSROOMS.

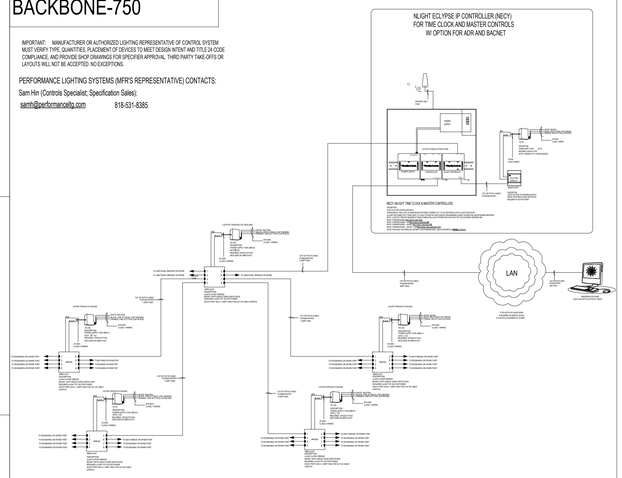
# nLIGHT BACKBONE SYSTEM

## BACKBONE-750

IMPORTANT: MANUFACTURER OR AUTHORIZED LIGHTING REPRESENTATIVE OF CONTROL SYSTEM MUST VERIFY TYPE, QUANTITIES, PLACEMENT OF DEVICES TO MEET DESIGN INTENT AND TITLE 24 CODE COMPLIANCE, AND PROVIDE SHOP DRAWINGS FOR SPECIFIER APPROVAL. THIRD PARTY TAKE-OFFS OR LAYOUTS WILL NOT BE ACCEPTED. NO EXCEPTIONS.

PERFORMANCE LIGHTING SYSTEMS (MFR'S REPRESENTATIVE) CONTACTS:

Sam Hin (Controls Specialist, Specification Sales):
samh@performanceltg.com 818-531-8385




## GENERAL SYSTEM NOTES:

ON DIGITAL SYSTEMS, ALL DEVICES TO BE CONNECTED IN A DAISY CHAIN PATTERN SO THAT THE FIRST AND LAST DEVICE IN THE CHAIN HAS AN OPEN PORT. NO T-TAP CONNECTIONS. EXCEPTIONS FOR NLIGHT "SUB" DEVICES UTILIZING THEIR INCLUDED RJ45 SPLITTER INSIDE PACKAGING.

ON DIGITAL SYSTEMS, CONTRACTOR SHALL NOTE AND LABEL ADDRESS AND LOCATION OF EACH DEVICE ON THE SYSTEM ONE-LINE DIAGRAMS OR SYSTEM LAYOUT DRAWINGS AT TIME OF INSTALLATION.

WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.

POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTMENT FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS ARE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR EACH DIMMED LOAD CIRCUIT.

FOR 0-10VDC DIMMING SYSTEMS, VIOLET AND GRAY CONDUCTORS ARE FOR 0-10VDC LOW VOLTAGE TERMINATIONS ONLY. NEVER TERMINATE LINE VOLTAGE (120/230/277VAC) TO VIOLET AND GRAY.

CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL TERMINATIONS. NO SPLICES ARE PERMITTED IN CONTROL WIRING.

POWER AND CONTROL CONDUCTORS MUST NOT SHARE THE SAME RACEWAY OR CONDUIT EXCEPT WHERE ALLOWED.

LIGHTING CONTROL EQUIPMENT MUST BE INSTALLED, MAINTAINED, AND OPERATED IN AN "OFFICE CLEAN" DRY ENVIRONMENT, INDOOR DRY LOCATIONS ONLY, 10% - 90% RELATIVE HUMIDITY, AMBIENT TEMPERATURE 0°- 40°C (32°- 104°F) (°- 35°C (32°- 95°F) RECOMMENDED.

SENSORS IN ELECTRICAL/MECHANICAL LOCATIONS NEED TO BE VERIFIED WITH AUTHORITY HAVING JURISDICTION. REFER TO NEC 110.26.D.

RELAY AND DIMMER PANEL SCHEDULES SHOULD CONTAIN BREAKER PANEL INPUTS AS WELL AS ZONES/AREAS CONTROLLED.

VERIFY MAXIMUM CABLE LENGTHS AND/OR RF COMMUNICATION DISTANCE BASED ON CONTROL SYSTEM PARAMETERS. MANUFACTURER IS NOT RESPONSIBLE FOR SYSTEMS EXCEEDING PARAMETERS.

LOW VOLTAGE CABLE MUST BE INSTALLED AT LEAST 12 INCHES FROM ALL LINE VOLTAGE CONDUCTORS EXCEPT TO CROSS OR MAKE TERMINATIONS. CAT. 5 CABLE MUST BE KEPT AWAY FROM ALL EMF DEVICES SUCH AS BALLASTS OR TRANSFORMERS.

## nLIGHT SYSTEM NOTES:

EVERY NLIGHT ENABLED DEVICE (INCLUDING NLIGHT EXANBLED FIXTURES) IS FURNISHED WITH (1) PERMANENTLY ADHERED ID TAG AND (1) MATCHING, PARTIALLY ADHERED ID TAG TO BE PLACED ON THE RISER DIAGRAM SHEET PROVIDED AS PART OF AN NLIGHT SUBMITTAL DURING INSTALLATION AND PRIOR TO FACTORY STARTUP. CONTRACTOR SHALL PLACE EACH ID TAG BELOW EACH CORRESPONDING DEVICE SHOWN ON RISER DIAGRAM TO FACILITATE FACTORY ASSISTED STARTUP. FAILURE TO COMPLY MAY RESULT IN STARTUP DELAYS AND ADDITIONAL COSTS AT THE CONTRACTOR'S EXPENSE. DO NOT PLACE DEVICE STICKERS ON FLOOR PLAN UNLESS REQUIRED TO EXECUTE NFL/CMP/LAN SERVICES. REFERENCE NFL/CMP/LAN SERVICE NOTES ON THIS SHEET FOR SPECIFIC REQUIREMENTS.

ONE RELAY PACK OR NLIGHT ENABLED FIXTURE IS NEEDED PER CIRCUIT/ZONE TO BE CONTROLLED AND CAN RESIDE WITHIN SENSORS, WALLPODS, OR RELAY PACKS. POWER PACK PLACEMENT ON DRAWINGS IS FOR COUNTING ONLY; FINAL PLACEMENT IS UP TO DISCRETION OF CONTRACTOR/INSTALLER. PLEASE RECHECK COUNTS TO VERIFY THE NUMBER OF RELAYS NEEDED TO SWITCH ALL DESIRED LOADS.

BRIDGES, RELAYS, POWER PACKS, WALLPODS, AND SENSORS ON DRAWINGS WERE PLACED WITH INFORMATION PROVIDED AT TIME OF DESIGN. ADDITIONAL BRIDGES AND/OR SENSORS MAY BE REQUIRED DEPENDING ON BUILDING CHANGES, FINAL PARTITION HEIGHT PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT PLACEMENT AND SHELVING HEIGHT PLACEMENT.

THE LAYOUT OF THE NETWORK BACKBONE (BRIDGES AND ECLYPSES) HAS BEEN PLACED IN A SEPARATE TREE DIAGRAM AND NOT ON THE ACTUAL LAYOUT. FINAL PLACEMENT OF THE BRIDGE(S) AND ECLYPSE(S) DEVICES SHALL BE AT THE CONTRACTOR/INSTALLER DISCRETION.

ALL DEVICES HAVE RJ-45 FEMALE PORTS. MAKING NETWORK CONTROL CABLES IS REQUIRED. T568B TERMINATIONS ARE RECOMMENDED. IT IS IMPERATIVE THAT ALL NETWORK CONTROL CABLES BE TESTED WITH A LAN CABLE TESTER TO VERIFY PROPER TERMINATIONS.

DAISY-CHAINED DEVICES SHOULD BE POWERED UP AND WORKING ON DEFAULT PROGRAMMING PRIOR TO CONNECTION TO BRIDGE OR ECLYPSES.

LOW VOLTAGE NETWORK CONTROL CABLE (CAT5/5E/6) RUNS FOR LOCAL ZONES, HOMERUNS AND BACKBONE SHOULD BE WHITE WITH CABLES LABELED.

CONTRACTOR TO VERIFY BLINK/DIAGNOSTIC CODES (VISIT HTTP://NLIGHTCONTROLS.COM/HP-CONTENT/UPLOADS/NLIGHT_POCKET_GUIDE.PDF) WHEN CONNECTING ECLYPSES/BRIDGES TO ZONES.

MAXIMUM CABLE LENGTH FROM START DEVICE TO END DEVICE IS 1500' INCLUDING HOMERUN TO BRIDGE DEVICE, IF PRESENT. MANUFACTURER IS NOT RESPONSIBLE FOR SYSTEMS EXCEEDING CABLING PARAMETERS.

SINGLE LINE DRAWING FOR DIAGRAMMATIC PURPOSES AND DETAIL REFERENCE ONLY. REFER TO PLANS FOR TYPES AND QUANTITIES.

CONTRACTOR/INSTALLER TO VERIFY WITH THE MANUFACTURER TYPE AND QUANTITY OF OCCUPANCY AND/OR PHOTOCELL SENSORS TO ENSURE 100% COVERAGE OF THE SPACE(S) WHERE SHOWN CONTROLLED BY OCCUPANCY SENSOR(S).

ONSITE SYSTEM STARTUP, PROGRAMMING AND END USER TRAINING SHALL BE PERFORMED BY FACTORY AUTHORIZED TECHICIAN/REPRESENTATIVE. CONTRACTOR SHALL INCLUDE THIS SERVICE LINE ITEM IN THEIR BID PACKAGE.

ELECTRICAL CONTRACTOR SHALL SEND ELECTRICAL PLANS/INFORMATION AND REQUEST FOR QUOTE TO ELECTRICAL DISTRIBUTOR/SUPPLIER(S). ELECTRICAL DISTRIBUTOR/SUPPLIER(S) SHALL CONTACT PERFORMANCE LIGHTING SYSTEM AT QUOTES@PERFORMANCELTG.COM FOR PRICING.

IMPORTANT: MANUFACTURER OR AUTHORIZED LIGHTING REPRESENTATIVE OF CONTROL SYSTEM MUST VERIFY TYPE, QUANTITIES, PLACEMENT OF DEVICES TO MEET DESIGN INTENT AND TITLE 24 CODE COMPLIANCE, AND PROVIDE SHOP DRAWINGS FOR SPECIFIER APPROVAL. THIRD PARTY TAKE-OFFS OR LAYOUTS WILL NOT BE ACCEPTED. NO EXCEPTIONS.

# SensorSwitch Line Voltage Switches

## SS1

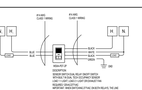


NTS TYPICAL UNISEX RESTROOM, IT ROOM, OR SIMILAR SMALL NON-DIMMING ROOM USING LINE VOLTAGE SENSORED SWITCH
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. WALL SWITCH (NO TOUCH) SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF.

## SS2



NTS TYPICAL UNISEX RESTROOM, IT ROOM, OR SIMILAR SMALL NON-DIMMING ROOM USING DUAL ZONE LINE VOLTAGE SENSORED SWITCH
REFER TO PLANS FOR TYPES AND QUANTITIES

TH COMPLIANT SEQUENCE OF OPERATION:

1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS AND EXHAUST FAN BASED ON ROOM OCCUPANCY (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR).
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS ON/OFF PANELS (NOTE).
3. MANUAL DIMMING OF LIGHTS IS OPTIONAL.


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DATE: 10/15/2025

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LIGHTING CONTROL DIAGRAMS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

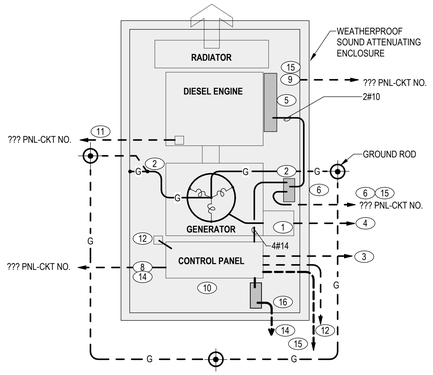
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**GENERAL NOTES:**

A. VERIFY CONDUIT STUB-UP AND INTERIOR CONDUIT TERMINATION LOCATIONS WITH ACTUAL EQUIPMENT SHOP DRAWINGS.

B. REFER TO FLOOR PLANS FOR EXACT LOCATION OF EQUIPMENT. THIS DETAIL IS DIAGRAMMATIC.

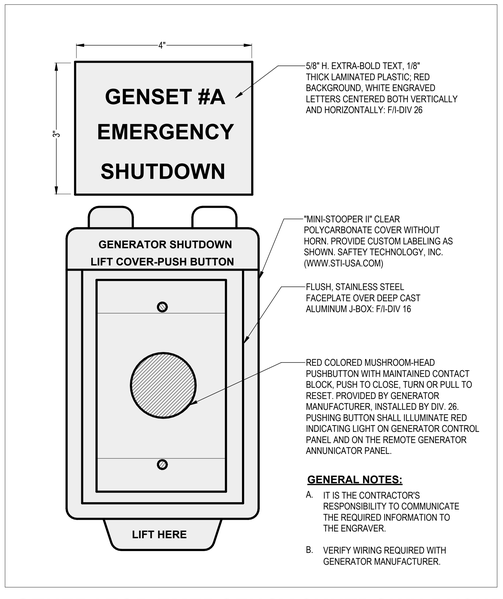
C. REVISE WIRING, AT NO COST TO OWNER, TO MATCH GENSET MANUFACTURER'S WIRING DIAGRAM.

**KEYED NOTES:** (#)

1. FACTORY INSTALLED LOAD AND ACCESSORY TERMINATION JUNCTION BOX WITH OR WITHOUT MAIN OUTPUT CIRCUIT BREAKER(S). SEE SINGLE LINE DIAGRAM.
2. FACTORY INSTALLED GROUNDING ELECTRODE CONDUCTOR LUG. CONNECT FROM GROUNDING RING OR (3) GROUND RODS TO GROUND LUG. STUB-UP PVC CONDUIT THROUGH FLOOR ADJACENT TO GENERATOR SLAB FOR GROUNDING CONDUCTOR.
3. CONTROL & MONITORING WIRING CONDUIT(S) TO ATS AND REMOTE EMERGENCY STOP SWITCH (EPO). REFER TO WIRING DETAILS FOR MORE INFORMATION..
4. GENERATOR OUTPUT FEEDER(S). REFER TO SINGLE-LINE DIAGRAM. VERIFY CONDUIT STUB-UP POINT (LEFT OR RIGHT SIDE) WITH SHOP DRAWINGS.
5. STARTING BATTERY, (24V DC). LOCATE AS CLOSE AS POSSIBLE TO GENERATOR SET TERMINATION POINT. CONNECT TO STARTERS, AND REDUNDANT CHARGERS.
6. BATTERY CHARGER WITH ALARM OUTPUT WIRING TO GENSET CONTROL PANEL AND TO STARTING BATTERIES. CONNECT EACH TO DEDICATED 20A, 120V, STANDBY POWER CIRCUIT.
7. NOT USED.
8. JUNCTION BOX FOR GENERATOR ANTI- CONDENSATION HEATER. CONNECT TO DEDICATED NORMAL POWER CIRCUIT.
9. JUNCTION BOX FOR BATTERY HEATER (50 - 60 DEGREES F. TEMPERATURE RANGE). CONNECT TO DEDICATED STANDBY POWER CIRCUIT.
10. (2) 24VDC DOME LIGHTS AND 0-60 MINUTE, NO-HOLD TIMER SWITCH. CONNECT TO STARTING BATTERIES.
11. FACTORY INSTALLED ENGINE JACKET WATER HEATER (SET AT 100 DEGREES F.) CONNECT TO DEDICATED ?? A, 208V?? 480V??, 1PH., NORMAL CIRCUIT.
12. 1" C. TO GENERATOR REMOTE ANNUNCIATOR PANEL (GRAP). REFER TO WIRING DETAIL. PROVIDE SIGNAL WIRING, INCLUDING 24VDC CONTROL POWER CONDUCTORS, AS REQUIRED.
13. SKID FUEL TANK - TWO LEVEL SENSORS, ONE LEAK SENSOR WIRING TO CONTROL PANEL
14. COMBINE STANDBY POWER CIRCUITS (6) (9) IN A SINGLE 1" CONDUIT.
15. TO MONITORING CONTACT IN TEMPORARY GENERATOR DOCKING MANUAL TRANSFER SWITCH
16. FUEL POLISHER. CONNECT TO DEDICATED 20A, 120V, 1PH., NORMAL CIRCUIT. CONNECT SUMMARY ALARM AND FAILURE CONTACTS WIRING TO GENERATOR CONTROLLER, REFER TO WIRING DIAGRAM.

## 2 EXTERIOR DIESEL GENERATOR WITH SKID TANK SCHEMATIC LAYOUT

SCALE: NONE



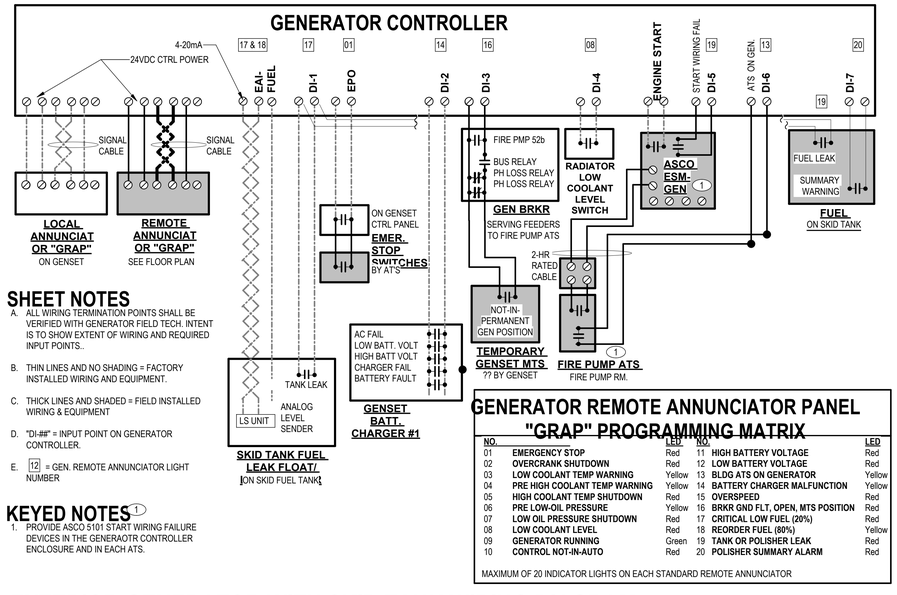

**GENERAL NOTES:**

A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMMUNICATE THE REQUIRED INFORMATION TO THE ENGRAVER.

B. VERIFY WIRING REQUIRED WITH GENERATOR MANUFACTURER.

## 3 GENERATOR EMERGENCY SHUTDOWN PUSHBUTTON

SCALE: NONE




## SHEET NOTES

A. ALL WIRING TERMINATION POINTS SHALL BE VERIFIED WITH GENERATOR FIELD TECH. INTENT IS TO SHOW EXTENT OF WIRING AND REQUIRED INPUT POINTS..

B. THIN LINES AND NO SHADING = FACTORY INSTALLED WIRING AND EQUIPMENT.

C. THICK LINES AND SHADED = FIELD INSTALLED WIRING & EQUIPMENT

D. "DI-##" = INPUT POINT ON GENERATOR CONTROLLER.

E. (12) = GEN. REMOTE ANNUNCIATOR LIGHT NUMBER

## KEYED NOTES (1)

1. PROVIDE ASCO 5101 START WIRING FAILURE DEVICES IN THE GENERAOTR CONTROLLER ENCLOSURE AND IN EACH ATS.

## GENERATOR REMOTE ANNUNCIATOR PANEL "GRAP" PROGRAMMING MATRIX

| NO. | | LED | NO. | | LED |
|---|---|---|---|---|---|
| 01 | EMERGENCY STOP | Red | 11 | HIGH BATTERY VOLTAGE | Red |
| 02 | OVERCRANK SHUTDOWN | Red | 12 | LOW BATTERY VOLTAGE | Red |
| 03 | LOW COOLANT TEMP WARNING | Yellow | 13 | BLDG ATS ON GENERATOR | Yellow |
| 04 | PRE HIGH COOLANT TEMP WARNING | Yellow | 14 | BATTERY CHARGER MALFUNCTION | Yellow |
| 05 | HIGH COOLANT TEMP SHUTDOWN | Red | 15 | OVERSPEED | Red |
| 06 | PRE LOW-OIL PRESSURE | Yellow | 16 | BRKR GND FLT, OPEN, MTS POSITION | Red |
| 07 | LOW OIL PRESSURE SHUTDOWN | Red | 17 | CRITICAL LOW FUEL (20%) | Red |
| 08 | LOW COOLANT LEVEL | Red | 18 | REORDER FUEL (80%) | Yellow |
| 09 | GENERATOR RUNNING | Green | 19 | TANK OR POLISHER LEAK | Red |
| 10 | CONTROL NOT-IN-AUTO | Red | 20 | POLISHER SUMMARY ALARM | Red |

MAXIMUM OF 20 INDICATOR LIGHTS ON EACH STANDARD REMOTE ANNUNCIATOR

## 1 EXTERIOR GENERATOR WITH SKID TANK WIRING DIAGRAM

SCALE: NONE

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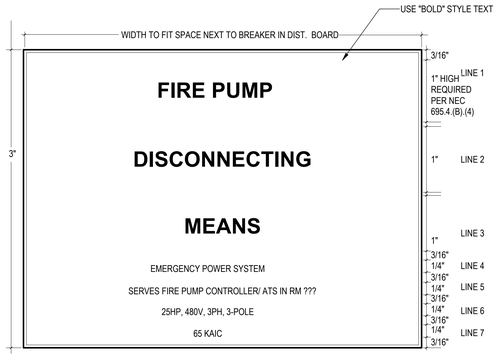
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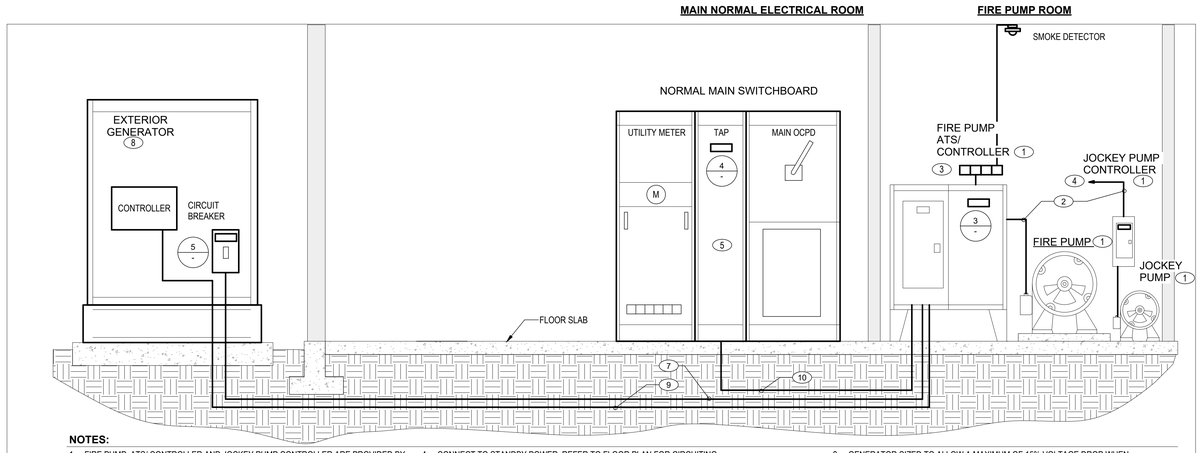



**NOTES**

1. SEE DRAWINGS FOR ADDITIONAL NAMEPLATE INFORMATION. COLOR TO BE RED WITH WHITE LETTERS
2. TEXT SHOWN ABOVE IS FOR EXAMPLE ONLY. MODIFY TEXT AS REQUIRED TO MATCH EQUIPMENT SPECIFICATIONS. REPLACE QUESTION MARKS WITH CORRECT NUMBERS.
3. CENTER ALL TEXT HORIZONTALLY
4. THIS DETAIL APPLIES TO ALL FIRE PUMPS

## 5 FIRE PUMP EMERG SOURCE NAMEPLATES

SCALE: NONE

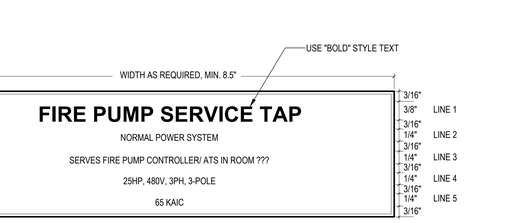



**NOTES:**

1. FIRE PUMP ATS/ CONTROLLER AND JOCKEY PUMP CONTROLLER ARE PROVIDED BY OTHERS AND INSTALLED AND CONNECTED BY DIVISION 26. FIRE PUMP AND JOCKEY PUMP ARE PROVIDED AND INSTALLED BY OTHERS AND CONNECTED BY DIVISION 26.
2. PROVIDE STANDARD EMT WIRING PER SINGLE LINE DIAGRAM AND FEEDER SCHEDULE FOR WIRING INSIDE THE FIRE PUMP ROOM.
3. PROVIDE FIRE ALARM SYSTEM MONITOR MODULES FOR THE FOLLOWING POINTS PER NFPA-2013, 10.4.7:
   A. PUMP RUNNING
   B. LOSS OF PHASE
   C. PHASE REVERSAL
   D. CONNECTED TO ALTERNATE SOURCE
4. CONNECT TO STANDBY POWER. REFER TO FLOOR PLAN FOR CIRCUITING.
5. DEDICATED VERTICAL SECTION FOR NORMAL POWER TAP, AHEAD OF MAIN BREAKER, PER NEC 230.82 & 695.3.(A).(1)
6. MOLDED CASE CIRCUIT BREAKER WITHOUT GROUND-FAULT PROTECTION [NEC 695.6.(G)] SIZED FOR 250% OF FIRE PUMP FULL LOAD AMPS. INCLUDE LOCKING HANDLE WITH PADLOCK. LOCK IN CLOSED POSITION PER NEC 695.4.(3).(B).(a).(4).(b) & (e).(3)
7. DEDICATED EMERGENCY FEEDER SIZED FOR MAXIMUM OF 0.5% VOLTAGE DROP PER NEC 695.7 AND INSTALLED IN PROTECTED MANNER PER NEC 695.6. CONSIDERED TO BE "OUTSIDE OF BUILDING." IF CAN'T BE ROUTED OUTSIDE OF BUILDING THEN PROVIDE 2-HOUR FIRE RATED CABLING IN EMT OR USING MULTI-CONDUCTOR MC CABLE.
8. GENERATOR SIZED TO ALLOW A MAXIMUM OF 15% VOLTAGE DROP WHEN STARTING OF FIRE PUMP WITH THE MAIN STARTER. VOLTAGE DROP WILL BE GREATER WHEN USING THE EMERGENCY STARTER CONTACTS (STARTED ACROSS-THE-LINE)
9. FIRE PUMP CONTROL WIRING TO GENERATOR. PROVIDE FAIL-SAFE CONNECTION SUCH THAT A BREAK OR SHORT SHALL START THE GENERATOR PER NEC 695.6 & 695.14. INSTALL IN A PROTECTED MANNER PER NEC 695.14 & NFPA 20-10.5.2.6 TO BE CONSIDERED TO BE "OUTSIDE OF BUILDING." IF CAN'T BE ROUTED OUTSIDE OF BUILDING THEN PROVIDE 2-HOUR FIRE RATED CABLING IN EMT OR USING MULTI-CONDUCTOR MC CABLE.
10. CONCRETE ENCASED OR CONSIDERED "ROUTED OUTSIDE" NORMAL FEEDER FROM A TAP CONNECTION PER NEC 230.6 & 695.6(C)

## 2 ELECTRIC FIRE PUMP INSTALLATION

SCALE: NONE

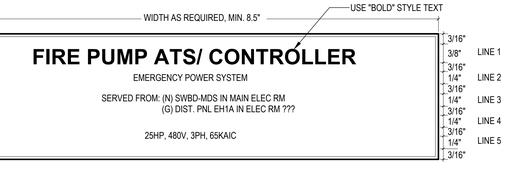



**NOTES**

1. SEE DRAWINGS FOR ADDITIONAL NAMEPLATE INFORMATION AND COLORS OF NAMEPLATES FOR DIFFERENT SYSTEMS.
2. TEXT SHOWN ABOVE IS FOR EXAMPLE ONLY. MODIFY TEXT AS REQUIRED TO MATCH EQUIPMENT SPECIFICATIONS. REPLACE QUESTION MARKS WITH CORRECT NUMBERS.
3. CENTER ALL TEXT HORIZONTALLY
4. THIS DETAIL APPLIES TO ALL FIRE PUMPS

## 4 FIRE PUMP NORMAL SOURCE NAMEPLATE

SCALE: NONE

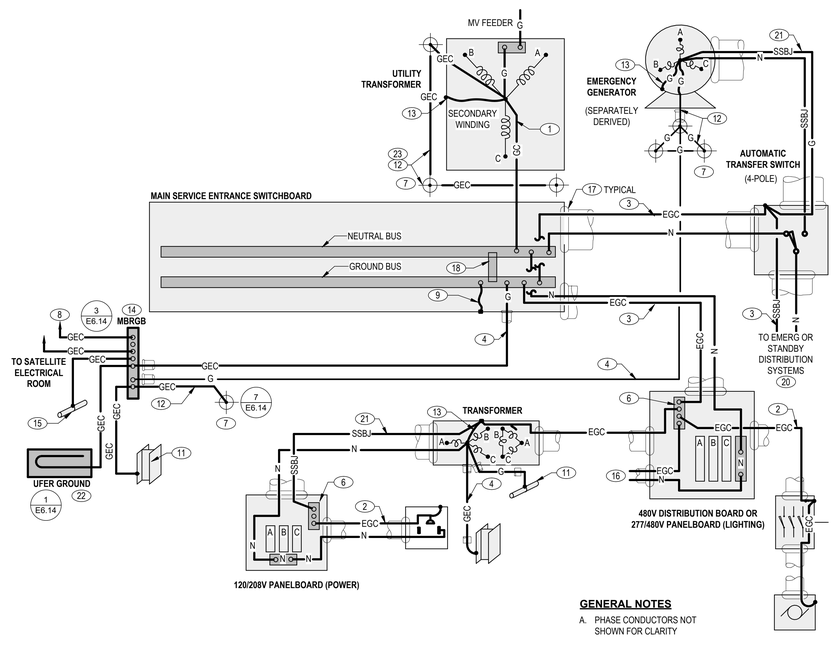



**NOTES**

1. SEE DRAWINGS FOR ADDITIONAL NAMEPLATE INFORMATION AND COLORS OF NAMEPLATES FOR DIFFERENT SYSTEMS.
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3. CENTER ALL TEXT HORIZONTALLY
4. THIS DETAIL APPLIES TO ALL FIRE PUMPS

## 3 FIRE PUMP NAMEPLATE

SCALE: NONE




**KEYED NOTES** (#)

1. GROUNDED CONDUCTOR BROUGHT TO SERVICE EQUIPMENT PER NEC 250.24(b), SIZED PER NEC TABLE 250.102.
2. ALL EQUIPMENT GROUNDING CONDUCTORS (EGC) FOR RECEPTACLE AND OTHER BRANCH CIRCUITS SHALL BE SIZED PER NEC TABLE 250.122. MULTIPLE BRANCH CIRCUITS IN EACH HOMERUN SHALL USE ONLY ONE EQUIPMENT GROUNDING CONDUCTOR, UON.
3. SIZE EQUIPMENT GROUNDING CONDUCTORS FOR FEEDER CIRCUITS PER FEEDER SCHEDULE OR IF NOT SHOWN, PER NEC TABLE 250.122.
4. SEPARATELY DERIVED ALTERNATING CURRENT SYSTEM GROUNDING ELECTRODE CONDUCTOR PER NEC 250-30. ROUTE ONE COPPER GROUNDING ELECTRODE CONDUCTOR (GEC), SIZED PER NEC TABLE 250.66, OR AS NOTED, IN CONDUIT TO GROUNDING ELECTRODES SHOWN OR CONNECT TO MAIN BUILDING REFERENCE GROUND BUS IF IN SAME ROOM OR TO BUILDING GROUNDING RISER.
5. TYPICAL RECEPTACLE WITH EQUIPMENT GROUNDING CONDUCTOR. GROUND PER NEC 250.146.
6. CONNECT EQUIPMENT GROUNDING CONDUCTORS TO GROUND LUG BONDED TO THE ENCLOSURE.
7. GROUND ROD OR OTHER MADE ELECTRODES PER NEC 250.52 & 54 AND AS SHOWN ON DRAWINGS AND SPECIFICATIONS. PROVIDE 10'-0" MINIMUM SPACING BETWEEN RODS.
8. COPPER GROUND CONNECTION TO COMMUNICATION BACKBOARDS OR TO BUILDING TELECOM GROUNDING RISER. REFER TO EACH SYSTEM FOR SIZE AND QUANTITY. IF NOT SHOWN, SIZE PER BICSI TABLE 5.4.4.1 TBB STANDARDS.
9. MAIN BONDING JUMPER: SIZE PER NEC 250.28 AND TABLE 250.102.
10. EQUIPMENT COPPER GROUNDING BAR BONDED TO ENCLOSURE.
11. BONDING CONDUCTOR TO NEAREST EFFECTIVELY GROUNDED BUILDING STEEL, METAL PIPING SYSTEMS AND METAL DUCTWORK PER NEC 250.104.
12. UNDERGROUND, BARE COPPER, 7-STRAND GROUNDING ELECTRODE CONDUCTOR: #4/0 AWG, U.O.N.
13. SYSTEM BONDING JUMPER PER NEC 250.28, 250.102(C) AND TABLE 250.102.
14. MAIN BUILDING REFERENCE GROUND BUS. REFER TO SPECIFICATIONS AND DETAIL NOTED.
15. COLD WATER PIPE AS GROUNDING ELECTRODE PER NEC 250.50(A) & 250.54(D).
16. TO LIGHTING OR OTHER 277/480 VOLT BRANCH CIRCUIT.
17. BOND PARALLEL METALLIC CONDUITS TOGETHER USING GROUNDING BUSHINGS AND ONE GROUNDING CONDUCTOR IDENTICAL IN SIZE TO GROUNDING CONDUCTOR IN EACH OF THE PARALLEL CONDUIT RUNS.
18. FACTORY NEUTRAL DISCONNECT LINK
19. COORDINATE WITH UTILITY COMPANY ON WHO DOES THE UTILITY GROUNDING SCOPE. ASSUME IN BID .
20. ALL GROUNDING FOR THE EMERGENCY POWER DISTRIBUTION SYSTEM SHALL CONFORM TO ALL REQUIREMENTS SHOWN FOR THE NORMAL POWER DISTRIBUTION SYSTEM.
21. SUPPLY SIDE BONDING JUMPER, SIZE PER NEC TABLE 250.102
22. UFER GROUND. REFER TO SPECIFICATIONS AND DETAIL NOTED.
23. DO NOT CONNECT TRANSFORMER GROUNDING ELECTRODE SYSTEM TO SWITCHBOARD GROUNDING ELECTRODE SYSTEM

**GENERAL NOTES**

A. PHASE CONDUCTORS NOT SHOWN FOR CLARITY

## 1 ELECTRICAL DISTRIBUTION SYSTEM GROUNDING SCHEMATIC - 480V WITH GENERATOR

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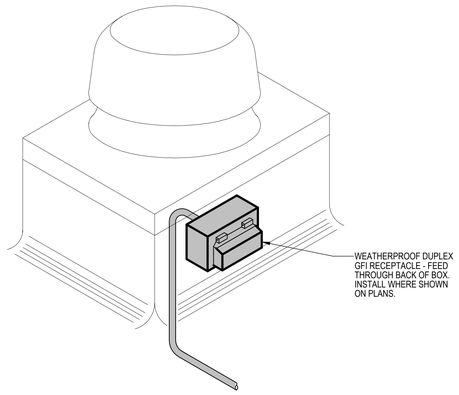
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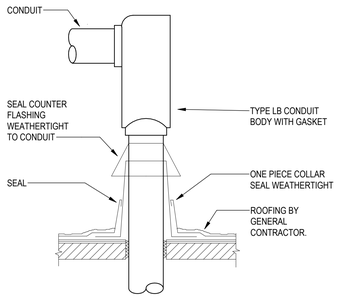
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## 9 ROOFTOP EQUIP MTD RECEPT (TYPICAL)
SCALE: NONE

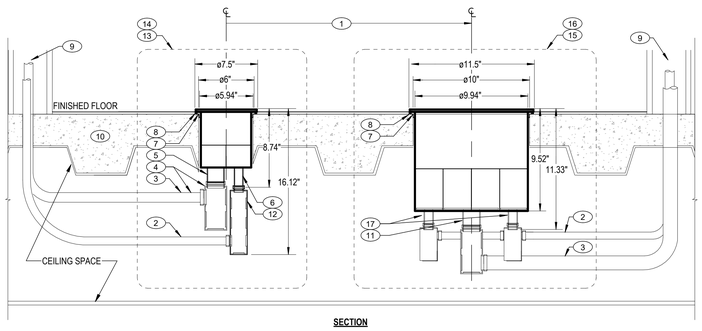



**NOTES**

A. ELECTRICAL CONTRACTOR TO PROVIDE ARCHITECT/ROOFING CONTRACTOR APPROVED CONDUIT COLLAR AND FLASHING.

B. USE THIS DETAIL ONLY WHERE REQUIRED. STUB-UP THROUGH MECHANICAL EQUIPMENT ROOF CURBS WHEREVER POSSIBLE.

## 8 CONDUIT ROOF PENETRATION TYPICAL
SCALE: NONE




**SECTION**

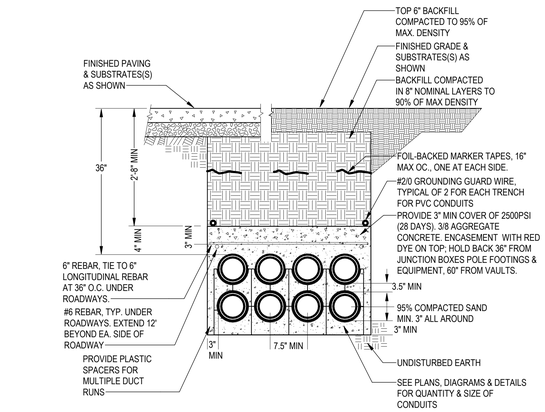
**GENERAL NOTES:**

A. REFER TO POWER PLANS FOR RECEPTACLE QUANITIES WITHIN POKE-THRU. REFER TO TELECOM DRAWINGS FOR DATA OUTLET QUANITIES AND REQUIREMENTS. PROVIDE POKE-THRU MOUNTING PLATE BASED ON REQUIRED RECEPTACLES AND DATA OUTLETS. PROVIDE 6" POKE-THRU OR 10" POKE-THRU BASED ON REQUIRED RECEPTACLES AND DATA OUTLETS.
B. USE EMT; NO FLEX OR MC CABLE FOR POWER WIRING.
C. SYSTEM SHOULD BE UL RATED TO MAINTAIN FIRE RATING OF FLOOR.
D. SEAL PENETRATION WITH FIRE-STOPPING MATERIAL PER SPEC SECTION 078100.
E. USE COPPER CONDUCTORS HAVING 90°C OR HIGHER RATED INSULATION PER EQUIPMENT REQUIREMENT.
F. PROVIDE BRUSHED ALUMINUM COVER. PROVIDE SAMPLE TO ARCHITECT FOR FINAL APPROVAL PRIOR TO PURCHASE.

**KEYED NOTES:**

1. POKE-THRU SPACING TO BE MINIMUM OF 2'-0" ON CENTER AND NOT MORE THAN ONE UNIT PER 65 SQUARE FEET OF FLOOR AREA EACH SPAN.
2. BRANCH CIRCUITS TO POKE-THRU'S MAY BE COMBINED BEFORE RISING UP INTO WALL OR COLUMN.
3. MAINTAIN DEDICATED TELECOM CONDUITS TO POKE-THRUS.
4. CONTRACTOR TO PROVIDE TELECOM JUNCTION BOX AND CONDUIT AS REQUIRED. REFER TO TELECOM DRAWINGS FOR TELECOM CONDUIT SIZING AND REQUIREMENTS.
5. FACTORY INSTALLED 2" EMT TELECOM CONDUIT STUB.
6. FACTORY INSTALLED 3/4" EMT POWER CONDUIT TO JUNCTION BOX.
7. BRACKETS TO SIT FLUSH AGAINST CONCRETE SLAB.
8. FOR CARPET, SEAL FLANGE USING 1/4" THICK CONTINUOUS BEAD OF ELECTRICAL TYPE RTV SILICON SEALANT COMPOUND FULLY AROUND THE PERIMETER OF UNDERSIDE OF FLANGE. FOR TILE FLOORS, MAKE TOP SURFACE OF TILES AND FLANGE FLUSH. SEAL ENTIRE PERIPHERY OF THE FLANGE WITH GROUT.
9. STUB-UP CONDUIT IN NEAREST FULL HEIGHT WALL OR FALSE COLUMN. PROVIDE 3/4" POWER CONDUIT UNLESS OTHER WISE NOTED ON DRAWING. COORDINATE TELECOM CONDUIT SIZING AND REQUIREMENTS WITH TELECOM DRAWINGS.
10. CONCRETE SLAB AND METAL DECK AS SHOWN ON STRUCTURAL DRAWINGS.
11. PROVIDE CENTER BOTTOM FEED PLATE AS REQUIRED FOR TELECOM REQUIREMENTS.
12. FACTORY INSTALLED JUNCTION BOX.
13. POKE-THRU DIMENSIONS AND CONFIGURATION SHOWN BASED ON HUBBELL #S1R6PTFIT. CONTRACTOR TO PROVIDE HUBBELL #S1R6PTFIT OR EQUIVALENT. CONTRACTOR TO PROVIDE COVER FROM HUBBELL #S1R6CVR COVER SERIES OR EQUIVALENT. COVER FINISH BY ARCHITECT. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE.
14. POKE-THRU FLOOR BOX MOUNTED IN 6" DIAMETER DRILLED HOLE OR A FORMED 6" DIAMETER HOLE. PROVIDE HUBBELL S1R6PPT 6-INCH PRE-POUR TUBE OR EQUIVALENT TO CREATE 6" DIAMETER FORMED HOLE IN DECKING.
15. POKE-THRU DIMENSIONS AND CONFIGURATION SHOWN BASED ON HUBBELL #S1R10PTFIT. CONTRACTOR TO PROVIDE HUBBELL #S1R10PTFIT OR EQUIVALENT. CONTRACTOR TO PROVIDE COVER FROM HUBBELL #S1R10CVR COVER SERIES OR EQUIVALENT. COVER FINISH BY ARCHITECT. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE.
16. POKE-THRU FLOOR BOX MOUNTED IN 10" DIAMETER DRILLED HOLE OR A FORMED 10" DIAMETER HOLE. PROVIDE HUBBELL S1R10PPT 10-INCH PRE-POUR TUBE OR EQUIVALENT TO CREATE 10" DIAMETER FORMED HOLE IN DECKING.
17. 3/4" EMT FROM PERIMETER BOTTOM FEED PLATE FOR POWER CONDUIT. PROVIDE BOTTOM FEED PLATE AS REQUIRED.

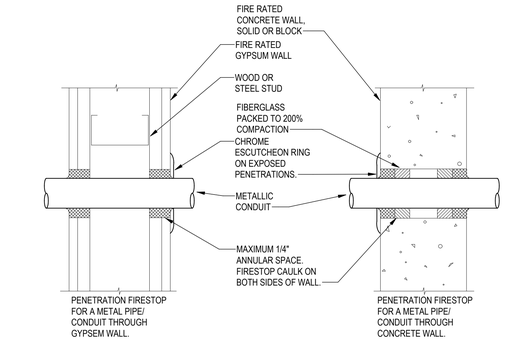
## 7 POWER & TELECOM POKE-THRU FLOOR BOX INSTALLATION IN ABOVE-GROUND CONCRETE FLOOR
SCALE: NONE




NOTES:

A. OMIT CONCRETE ENCASEMENT WHEN DUCT BANK IS ROUTED UNDER BUILDING SLAB.
B. OMIT GUARD WIRES ON DUCT BANKS THAT ARE ROUTED ENTIRELY UNDER BUILDING SLABS.
C. OMIT CONCRETE ENCASEMENT AND GUARD WIRES OVER SITE SECURITY AND SITE LIGHTING CONDUITS.

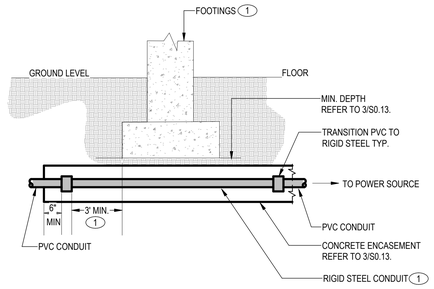
## 6 CONCRETE ENCASED DUCT BANK TYPICAL
SCALE: NONE




NOTES:

A. INSTALL FIRE STOP SYSTEMS IN STRICT CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE RATED WALLS AND FLOORS.
C. VERIFY UL APPROVED DETAIL REQUIRED FOR EACH CONDITION WITH ARCHITECT. SUBMIT FOR APPROVAL COPY OF DETAIL TO BE USED, PRIOR TO INSTALLATION.

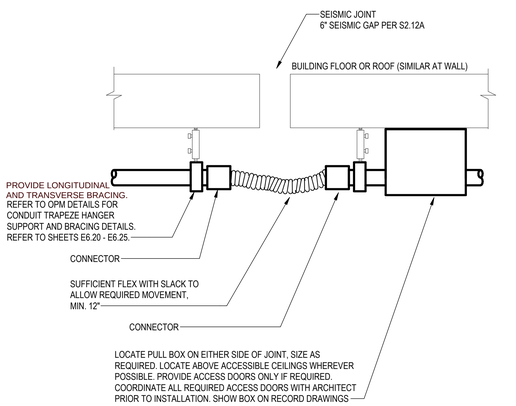
## 3 FIRE RATED WALL CONDUIT PENETRATION TYPICAL
SCALE: NONE




KEYED NOTES: XX

1. REFER TO STRUCTURAL TYPICAL DETAIL 3/S0.13 FOR PIPES THRU OR ADJACENT TO FOUNDATION.

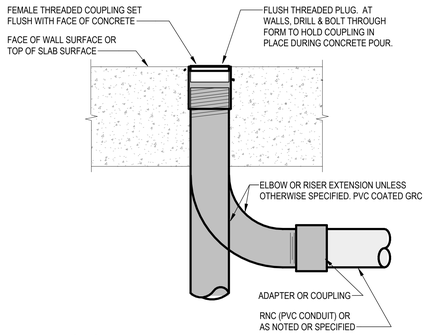
## 5 CONDUIT ENTRY BELOW FOOTING TYPICAL
SCALE: NONE




NOTES:

A. DETAIL IS DIAGRAMMATIC IN NATURE AND IS TYPICAL FOR CONDUITS CROSSING BUILDING SEISMIC AND EXPANSION JOINTS. REFER TO OPM DETAILS (SHEETS E6.20 - E6.25) FOR ALL CONDUIT SUPPORT/BRACING DETAILS.
B. NOT SHOWN ON ELECTRICAL PLANS. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF SEISMIC/EXPANSION JOINTS.
C. VERIFY POTENTIAL RANGE OF MOVEMENT WITH ARCHITECT & STRUCTURAL ENGINEER.
D. CONDUIT SUPPORT & BRACING REQUIRED ON BOTH SIDES OF SEISMIC / EXPANSION JOINT WITH FLEX CONNECTIONS BETWEEN SUPPORTS. BRACING SHALL NOT CROSS JOINT - SEE OPM GENERAL NOTES FOR ADD'L INFO.

## 4 CONDUIT CROSSING SEISMIC EXPANSION JOINT TYPICAL
SCALE: NONE

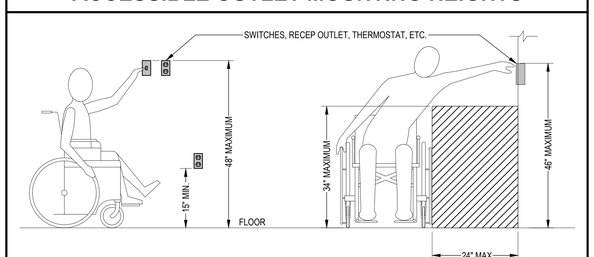



**NOTES:**

A. TYPICAL AT ALL POURED-IN-PLACE CONCRETE WALLS AND FLOORS UNLESS OTHERWISE NOTED (UON).
B. USE LONG RADIUS ELBOWS. MAKE RNC TRANSITION WITH THREADED RNC CONNECTOR TO EMBEDDED METAL FEMALE COUPLING. EXCEPTION: USE PVC COUPLING FOR GROUNDING.
C. METAL CONDUIT IN CONTACT WITH EARTH OR OTHER FILL SHALL BE PVC COATED GRC.
D. FOR GROUND CONDUCTORS ALL RACEWAY PARTS SHALL BE PVC PLASTIC. NO METAL SHALL BE INSTALLED WHICH WOULD ENCIRCLE GROUND LEAD.
E. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

## 2 CONDUIT STUB-UP AT CONCRETE SURFACE TYPICAL
SCALE: NONE

## ACCESSIBLE OUTLET MOUNTING HEIGHTS




## 1 ACCESSIBLE OUTLET MOUNTING HEIGHTS TYPICAL
SCALE: NONE

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

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Project Manager: RM
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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

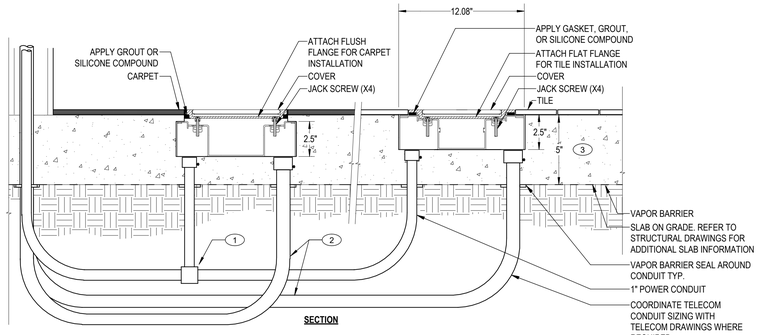
SHEET:

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 3" LONG WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY.




SECTION

**GENERAL NOTES:**

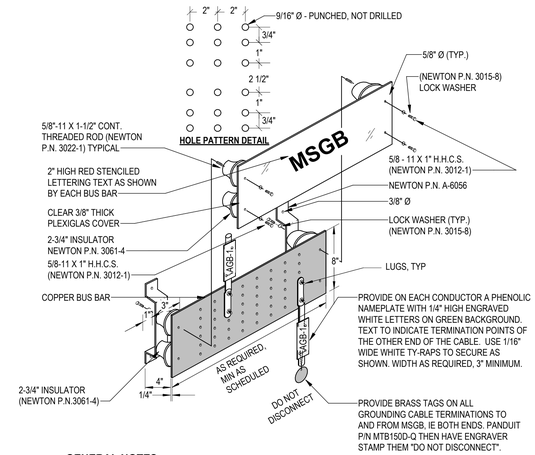
A. REFER TO POWER PLANS FOR RECEPTACLE QUANITIES WITHIN FLOOR BOX. REFER TO TELECOM DRAWINGS FOR DATA OUTLET QUANITIES AND REQUIREMENTS.
B. PROVIDE CARPET OR TILE, AS REQUIRED, COVER ASSEMBLY WITH DIE-CAST ZINC, PLATED BRASS FINISH. INSERT CARPER OR TILE IN LID.
C. ROUTE PVC COATED RIGID STEEL POWER AND TELECOM CONDUITS BELOW FLOOR SLAB AND STUB-UP IN WALL, USING PVC COATED RIGID STEEL ELBOWS AND RISERS; EXTEND EMT CONDUIT UP TO ACCESSIBLE CEILING SPACE OR RUN TO OTHER FLOOR BOX AS REQUIRED.
D. FLOOR BOX DIMENSIONS AND CONFIGURATION SHOWN BASED ON HUBBELL CFB4G25CR BOX. CONTRACTOR TO PROVIDE HUBBELL CFB4G25CR BOX OR EQUIVALENT. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE.
E. PROVIDE BRUSHED ALUMINUM COVER. PROVIDE SAMPLE TO ARCHITECT FOR FINAL APPROVAL PRIOR TO PURCHASE.

**KEYED NOTES:**

1. BRANCH CIRCUITS TO FLOOR BOXES MAY BE COMBINED BEFORE RISING UP INTO WALL OR COLUMN.
2. MAINTAIN DEDICATED TELECOM CONDUITS TO POKE-THRU'S.
3. CONCRETE SLAB AND METAL DECK AS SHOWN ON STRUCTURAL DRAWINGS.

## 6 POWER & TELECOM FLOOR BOX INSTALLATION SLAB ON GRADE (TYPICAL)

SCALE: NONE

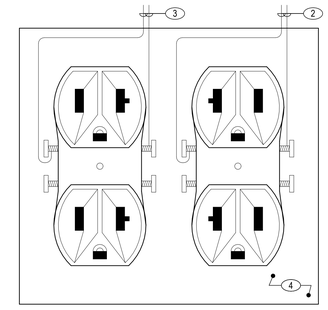



**GENERAL NOTES**

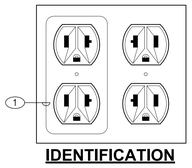
A. BUS BARS OVER 20" IN LENGTH REQUIRE AT LEAST ONE ADDITIONAL 2-3/4" INSULATOR (NEWTON P.N. 3061-4) SUPPORT.
B. MOUNT AT HEIGHT SCHEDULED ON GROUNDING DIAGRAMS, E5.12.
C. COORDINATE WITH ARCHITECT TO PROVIDE METAL BACKING BEHIND SHEET ROCK WALLS.
D. TERMINATE CONDUCTORS COMING FROM ABOVE ON TOP THREE ROWS OF HOLES AND USE BOTTOM THREE ROWS FOR CONDUCTORS COMING FROM BELOW.

## 3 MSGB & AGB GROUND BAR INSTALLATION TYPICAL

SCALE: NONE




WIRING




IDENTIFICATION

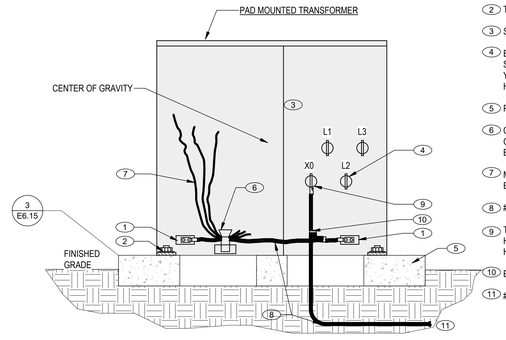
KEYED NOTES: (XX)

1. THIS PORTION OF RECEPTACLE TO BE OCCUPANCY SENSOR CONTROLLED.
2. TO UNSWITCHED POWER (HOT AND NEUTRAL SHOWN).
3. TO OCCUPANCY SENSOR CONTROLLED POWER. (HOT AND NEUTRAL SHOWN).
4. WHERE QUAD DEVICES ARE INDICATED TO HAVE OCCUPANCY SENSOR CONTROLLED POWER, PROVIDE (2) DUPLEXES WIRED IN THIS FASHION AT THE QUAD LOCATION.

## 5 OCC SENSOR CONTROLLED QUAD TYPICAL

SCALE: NONE

NOTE:
TRANSFORMER DIMENSIONS 64"(H) X 89"(W) X 59"(D). MAX WEIGHT 8,200 LB. COG IS CENTRALLY LOCATED.



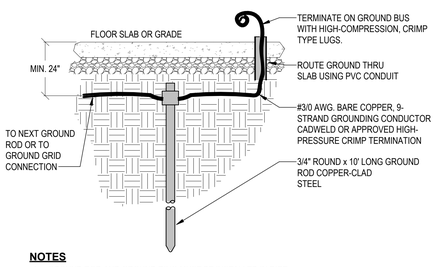

ELEVATION

**NOTES:**

1. TANK GROUND PAD. TERMINATE GROUND CONDUCTOR TO PAD WITH HI-PRESS, 2 HOLE, LONG BARREL COPPER LUGS. BURNDY YGA SERIES, AND SILICON BRONZE HARDWARE. (BOLT AND BELLVILLE WASHERS)
2. TRANSFORMER HOUSING BOLT DOWNS. REFER TO DETAIL 3/E6.15.
3. STEEL HIGH/LOW VOLTAGE COMPARTMENT BARRIER.
4. EXTERNALLY-CLAMPED LOW VOLTAGE EPOXY BUSHINGS WITH NEMA 8-HOLE SPADE. PROVIDE HI-PRESS, 2 HOLE, LONG BARREL COPPER LUGS, BURNDY YGA SERIES, AND TERMINATE WITH APPROPRIATE SIZE SILICON BRONZE HARDWARE. (BOLT, NUT, FLAT WASHER)
5. POURED IN PLACE TRANSFORMER PAD. REFER TO DETAIL 9/S0.12.
6. CONNECT ALL GROUND CONDUCTORS TOGETHER AS INDICATED. ALL GROUNDING COMPONENTS TO BE COPPER AND APPROPRIATE SIZE SILICON BRONZE HARDWARE. (BOLTS, NUTS AND BELLVILLE WASHERS)
7. MV CABLE SHIELD GROUND PIGTAILS, #6 BARE COPPER, BURNDY KS29 OR EQUAL.
8. #4/0 SOFT DRAWN COPPER.
9. TERMINATE GROUNDING ELECTRODE CONDUCTOR TO NEUTRAL SPADE WITH HI- PRESS, 2 HOLE, LONG BARREL, COPPER LUG, BURNDY YGA SERIES HARDWARE.
10. BURNDY YGL-C, HI-PRESS, HYGRID CROSS CONNECTOR OR EQUAL.
11. #4/0 COPPER LEAD TO THREE (3) GROUND RODS.

## 2 PAD MOUNTED TRANSFORMER GROUNDING TYPICAL

SCALE: NONE

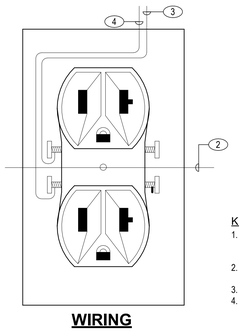



**NOTES**

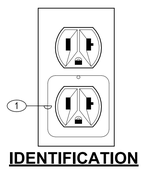
A. GROUND ROD AND GROUND RING MUST BE INSTALLED IN DIRT NOT IN GRAVEL.

## 7 GROUND ROD TYPICAL

SCALE: NONE




WIRING



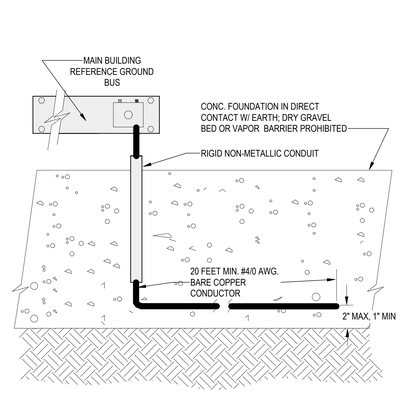

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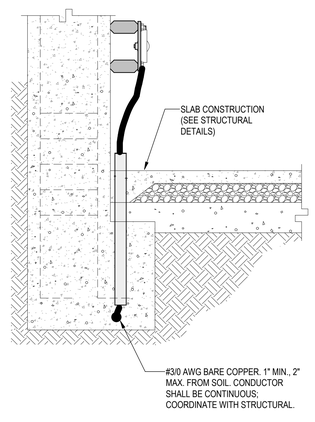
KEYED NOTES: (XX)

1. THIS PORTION OF RECEPTACLE TO BE OCCUPANCY SENSOR CONTROLLED. PROVIDE RECEPTACLE AS MANUFACTURED BY PASS & SEYMOUR WITH PRE-IDENTIFED RECEPTACLE CONTROL CAT#26352CHW BASE BUILDING STANDARD.
2. DEVICE CONDUCTIVELY BROKEN AT MIDPOINT BETWEEN WIRING TERMINALS. REMOVE ANY TABS THAT CONNECT UPPER AND LOWER PORTIONS.
3. TO UNSWITCHED POWER (HOT SHOWN).
4. TO OCCUPANCY SENSOR CONTROLLED POWER (HOT SHOWN).

## 4 OCC SENSOR CONTROLLED DUPLEX TYPICAL

SCALE: NONE




## 1 UFER GROUNDING ELECTRODE TYPICAL

SCALE: NONE

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APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

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E21403
Exp 03/31/26
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Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

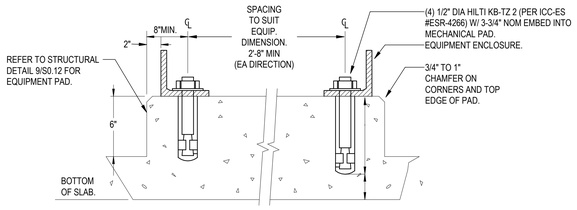
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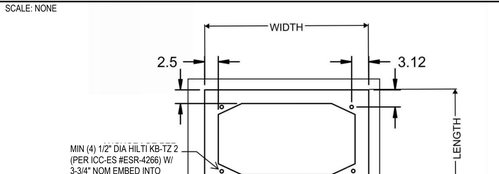



**NOTE:**

A. TRANSFORMER DIMENSIONS 66"(H) X 50.5"(W) X 32"(D). MAX WEIGHT 2,700 LB

## 12 *300 kVA TRANSFORMER ANCHORAGE DETAIL

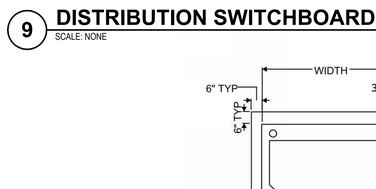
SCALE: NONE




## 11 FREE STANDING ELECTRICAL DISCONNECT MOUNTING TYPICAL

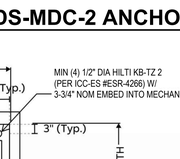
SCALE: NONE

**DIMENSIONAL ANCHOR BOLT PLACEMENT**




PLAN VIEW
OF CABINET TOP(S)

**ANCHOR BOLT DETAIL FOR SEISMIC BRACKETS**



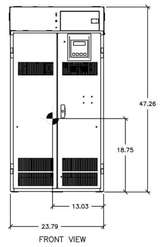

ANCHOR BOLT DETAIL 'A'
CABINET FRONT MOUNTS

| | | ANCHORAGE & CONCRETE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SYSTEM | SDS | ANCH. TYP | ANCH. DIA | MIN. EMBED | QTY | f' c (PSI) | MIN. EDGE DIST. | MIN. THICKNESS | MIN. PAD (L x W) |
| 1.75-5k | 0.8<br>1.6<br>2.5 | HILTI KB-TZ2 | 0.625 | 3.25 | 4 | 2500 | 5 | 6 | 31.48 X 30.05 |

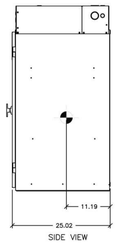
**SEISMIC INSTALLATION:**

1. POSITION INVERTER CABINET ON PAD AS SHOWN IN APPROPIATE PLAN VIEW.
2. SECURE CABINETS TO PAD USING SUPPLIED ANCHOR BOLTS & HARDWARE. REFER TO DETAIL 'A' FOR INTERNAL CABINET FRONT MOUNTS.
5. REMOVE SEISMIC BRACKETS FROM INSIDE OF BATTERY CABINET(S). REFER TO BATTERY INTERCONNECT DRAWING.
6. INSTALL BATTERIES IN CABINET(S). BATTERIES MUST BE BACK AGAINST REAR WALL OF BATTERY CABINET.
7. REINSTALL SEISMIC BRACKETS. REFER TO BATTERY INTERCONNECT DRAWING.
8. CONNECT BATTERIES PER SUPPLIED BATTERY INTERCONNECT DRAWING. SEE MANUAL FOR FURTHER BATTERY INSTALLATION INSTRUCTIONS.




**CENTER OF GRAVITY**




## 10 INVERTER MOUNTING DETAIL

SCALE: NONE




## 9 DISTRIBUTION SWITCHBOARD DS-MDC-2 ANCHORAGE DETAIL

SCALE: NONE




## 8 DISTRIBUTION SWITCHBOARD SERIES DP ANCHORAGE DETAIL

SCALE: NONE

| TAG | EQUIPMENT | DIMENSIONS (INCHES) | WEIGHT (LBS) | MOUNTING DETAIL | MOUNTING METHOD | HOUSE PAD |
|---|---|---|---|---|---|---|
| MV TX | MV TRANSFORMER | 89W X 59D X 64H | 8200 | 3/ E6.15 | FLOOR | Y |
| XFR-T3 | TRANSFORMER | 50.5W X 32D X 66H | 2700 | 12/ E6.15 | FLOOR | Y |
| XFR-T2 | TRANSFORMER | 50.5W X 32D X 66H | 2700 | 12/ E6.15 | FLOOR | Y |
| SWBD-1 | MAIN SWITCHBOARD | 36W X 30D X 90H (DIST)<br>30W X 30D X 90H (MAIN)<br>30W X 30D X 90H (PULL) | 773<br>535<br>540 | 4/ E6.15 | FLOOR | Y |
| HM | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| FIRE PUMP | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| LA1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| LM1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| INVW1 | INVERTER | 24W X 25D X 60H | 1000 | 10/ E6.15 | FLOOR | Y |
| DS-MDC-2 | DIST. SWITCHBOARD | 45W X 18D X 90H | 808 | 9/ E6.15 | FLOOR | Y |
| PA1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| MA1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| PM1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| MM1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| EV | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| INVW3 | INVERTER | 24W X 25D X 60H | 1000 | 10/ E6.15 | FLOOR | Y |
| DS-THEATER | DIST. SWITCHBOARD | 45W X 18D X 90H | 808 | 8/ E6.15 | FLOOR | Y |
| RR-2 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| RR-1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| DR-1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| MT1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| LT1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| PT1 | PANELBOARD | 20W X 6D X 62H | 200 | 5/ E6.15 | WALL | N |
| INVW2 | INVERTER | 24W X 25D X 60H | 1000 | 10/ E6.15 | FLOOR | Y |
| | | | | | | |
| GEN | GENERATOR | 159W X 42D X 90H | 8313 | 1/ E6.16 | FLOOR | Y |

## 7 ELECTRICAL EQUIPMENT ANCHORAGE SCHEDULE

SCALE: NONE




ELEVATION

## 5 SINGLE-SECTION PANEL BOARD MOUNTING DETAIL

SCALE: NONE

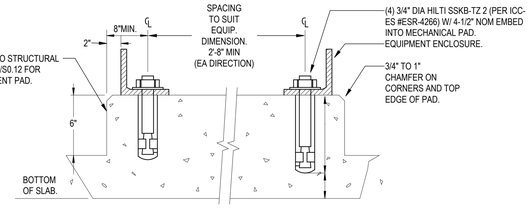



NOTES:

1. PROVIDE 6" CONCRETE PAD AND EXTEND BEYOND SWITCHBOARD A MININUM OF 6" ON ALL SIDES. U.O.N., PROVIDE 8" MINIMUM EDGE DISTANCE FOR ANCHORAGE PER STRUCTURAL DETAIL 8/S0.12.
VERIFY DIMENSIONS WITH EQUIPMENT SUPPLIED AND PHYSICAL CONSTRAINTS.

## 4 MAIN UTILITY SERVICE SWITCHBOARD SWBD-1

SCALE: NONE




**NOTE:**

A. TRANSFORMER DIMENSIONS 64"(H) X 89"(W) X 59"(D). MAX WEIGHT 8,200 LB

## 3 1,000 kVA TRANSFORMER ANCHORAGE DETAIL

SCALE: NONE




ELEVATION

## 2 DISCONNECT MOUNTING TYPICAL

SCALE: NONE




**NOTE:**

THIS DETAIL IS GENERIC. REFER TO FLOOR PLANS FOR ACTUAL INSTALLATION REQUIREMENTS.

## 1 DISCONNECT INSTALLATION TYPICAL

SCALE: NONE

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APP: 03-123641 INC:
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HMC Architects
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633 W. 5TH STREET, THIRD FLOOR,
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REGISTERED PROFESSIONAL ENGINEER
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Project Manager: RM
Job. No.: 150-23US000121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

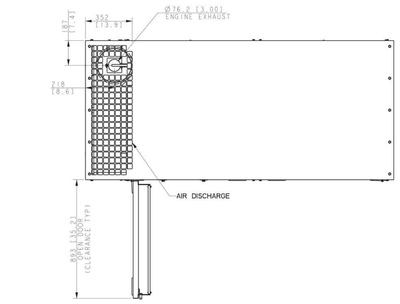
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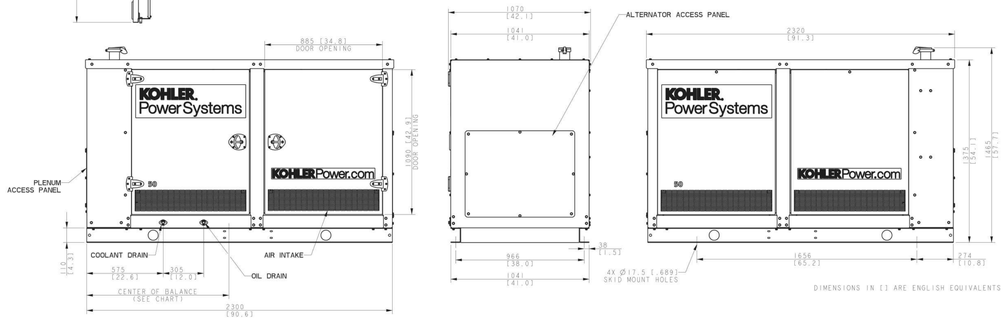
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**REFER TO SHEETS E6.17 AND E6.18 FOR FACTORY SEISMIC TESTING DOCUMENTS FOR COMPLETE ASSEMBLY (TANK, GENERATOR, ENCLOSURE)**

| MODEL | DESCRIPTION | ENCLOSURE WEIGHT KG [LBS] | ENCLOSED CENTER OF BALANCE |
|---|---|---|---|
| 4P5X | STEEL WEATHER, 40-60KW | 261 [575] | 50.3 |
| | STEEL SOUND, 40-60KW | 272 [600] | 50.3 |
| | ALUMINUM SOUND, 40-60KW | 170 [375] | 51.0 |
| 4P7BX | STEEL WEATHER, 40-60KW | 261 [575] | 51.1 |
| | STEEL SOUND, 40-60KW | 272 [600] | 51.1 |
| | ALUMINUM SOUND, 40-60KW | 170 [375] | 51.8 |
| 4P8X | STEEL WEATHER, 40-60KW | 261 [575] | 51.5 |
| | STEEL SOUND, 40-60KW | 272 [600] | 51.4 |
| | ALUMINUM SOUND, 40-60KW | 170 [375] | 52.2 |
| 4P10X | STEEL WEATHER, 40-60KW | 261 [575] | 52.2 |
| | STEEL SOUND, 40-60KW | 272 [600] | 52.1 |
| | ALUMINUM SOUND, 40-60KW | 170 [375] | 52.9 |

ALUMINUM SOUND ENCLOSURE IS CERTIFIED TO 186 MPH (299 KPH) WIND LOAD RATING.




NOTE:
1. IF TANK IS ORDERED, ENCLOSURE MOUNT DIRECTLY TO TANK.
2. TANK MAY EXTEND BEYOND ENCLOSURE (DISCHARGE END ONLY)

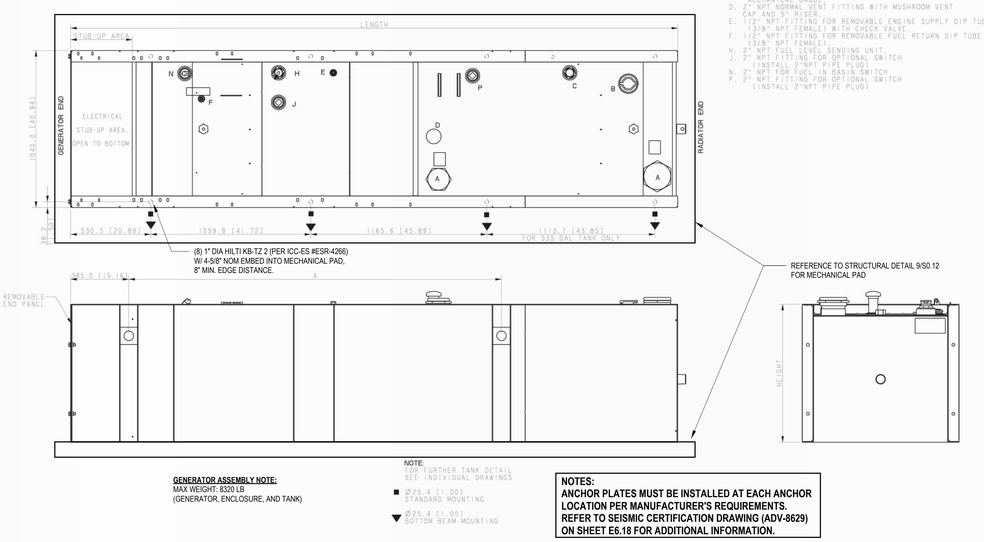
60HZ 4P5X, 4Q5X, 4P7BX, 4Q7BX, 4P8X, 4Q8X, 4P10X, 4Q10X, RECON. 600V ALTERNATORS 40,50,60 KW KOHLER DIESEL

DIMENSIONS IN [ ] ARE ENGLISH EQUIVALENTS

## 3 GENERATOR - ENCLOSURE DETAILS
SCALE: 12" = 1'-0"

| MODEL | CAPACITY | | WEIGHT | | LENGTH | | HEIGHT | | STUB-UP LENGTH | | LIFTING EYE DIM A | | MTG HOLES | EMERGENCY VENT (A) INNER/OUTER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LITERS | GAL | KG | LBS | MM | IN | MM | IN | MM | IN | MM | IN | QTY | IN |
| 50/60kW | 2028 | 535 | 978 | 2156 | 4019.6 | 158.3 | 914.4 | 36.0 | 408.0 | 16.1 | 2467.9 | 97.2 | 8 | 4/5 |

TANK FITTINGS
A. 4" NPT EMERGENCY VENT FITTING PER NFPA 30 WITH VENT CAPS (QTY 2)
B. 4" NPT FUEL FILL FITTING BUSHED TO 2" NPT WITH LOCKABLE FILL CAP AND 2" RISER
C. 2" NPT FUEL LEVEL GAUGE FITTING W/ DIRECT READING MECHANICAL GAUGE
D. 2" NPT NORMAL VENT FITTING WITH MUSHROOM VENT CAP AND 5" RISER
E. 1/2" NPT FITTING FOR REMOVABLE ENGINE SUPPLY DIP TUBE (3/8" NPT FEMALE) WITH CHECK VALVE
F. 1/2" NPT FITTING FOR REMOVABLE FUEL RETURN DIP TUBE (3/8" NPT FEMALE)
H. 2" NPT FUEL LEVEL SENDING UNIT
J. 2" NPT FITTING FOR OPTIONAL SWITCH (INSTALL 2"NPT PIPE PLUG)
N. 2" NPT FOR FUEL IN BASIN SWITCH
P. 2" NPT FITTING FOR OPTIONAL SWITCH (INSTALL 2"NPT PIPE PLUG)




**GENERATOR ASSEMBLY NOTE:**
MAX WEIGHT: 8320 LB
(GENERATOR, ENCLOSURE, AND TANK)

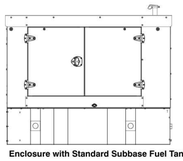
NOTE:
FOR FURTHER TANK DETAIL SEE INDIVIDUAL DRAWINGS
■ Ø25.4 [1.00] STANDARD MOUNTING
▼ Ø25.4 [1.00] BOTTOM BEAM MOUNTING

**NOTES:**
**ANCHOR PLATES MUST BE INSTALLED AT EACH ANCHOR LOCATION PER MANUFACTURER'S REQUIREMENTS.**
**REFER TO SEISMIC CERTIFICATION DRAWING (ADV-8629) ON SHEET E6.18 FOR ADDITIONAL INFORMATION.**

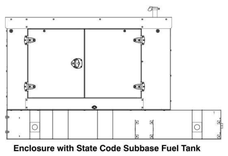
## 2 GENERATOR - TANK DETAILS
SCALE: NONE

**KOHLER.** **Industrial Generator Set Accessories**

**Weather/Sound Enclosure and Subbase Fuel Tank**



Enclosure with Standard Subbase Fuel Tank



Enclosure with State Code Subbase Fuel Tank

**Applicable to the following:**
**15- 60REOZK**

### Weather Enclosure Standard Features
- Internal-mounted silencer and flexible exhaust connector.
- Lift base or tank-mounted, steel construction with hinged doors on the service side and easily removable panels on the non-service side.
- Fade-, scratch-, and corrosion-resistant Kohler® Power Armor™ automotive-grade textured finish.
- Enclosure has four large access doors/panels which allow for easy maintenance.
- Lockable, flush-mounted door latches.
- Horizontal air inlet and vertical outlet discharge to redirect air and reduce noise.

### Sound Enclosure Standard Features
- Includes all of the weather enclosure features with the addition of acoustic insulation material.
- Lift base or tank-mounted, steel or aluminum construction. Aluminum enclosures are recommended for high humidity and/or high salt/ coastal regions.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- Sound attenuated enclosure that uses up to 51 mm (2 in.) of acoustic insulation.
- Aluminum sound enclosure is certified to 186 mph (299 kph) wind load rating.

### Subbase Fuel Tank Features
- The fuel tank has a Power Armor Plus™ textured epoxy-based rubberized coating.
- The above-ground rectangular secondary containment tank mounts directly to the generator set, below the generator set skid (subbase).
- Both the inner and outer tanks have emergency relief vents.
- Flexible fuel lines are provided with subbase fuel tank selection.
- The secondary containment generator set base tank meets UL 142 tank requirements. The inner (primary) tank is sealed inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.

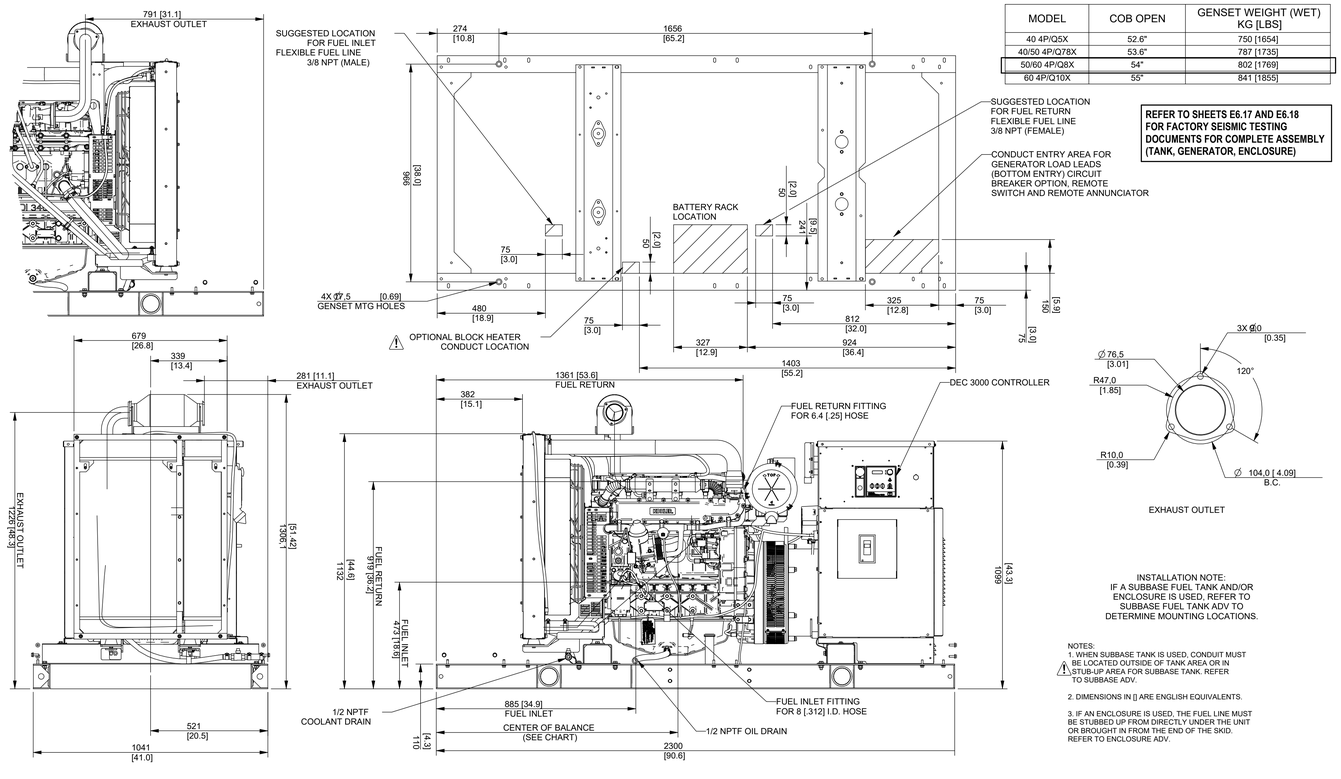
### Available Approvals and Listings
- ☐ UL 2200 Listing
- ☐ CSA Certified
- ☐ IBC Seismic Certification
- ☐ cUL Listing (fuel tanks only)

**NOTE:** Some models may have limited third-party approvals; see your local distributor for details.

**REFER TO SHEETS E6.17 AND E6.18 FOR FACTORY SEISMIC TESTING DOCUMENTS FOR COMPLETE ASSEMBLY (TANK, GENERATOR, ENCLOSURE)**

G6-141 9/19k Page 1

## 4 GENERATOR - ENCLOSURE CUTSHEET
SCALE: 12" = 1'-0"




| MODEL | COB OPEN | GENSET WEIGHT (WET) KG [LBS] |
|---|---|---|
| 40 4P/Q5X | 52.6" | 750 [1654] |
| 40/50 4P/Q78X | 53.6" | 787 [1735] |
| 50/60 4P/Q8X | 54" | 802 [1769] |
| 60 4P/Q10X | 55" | 841 [1855] |




INSTALLATION NOTE:
IF A SUBBASE FUEL TANK AND/OR ENCLOSURE IS USED, REFER TO SUBBASE FUEL TANK ADV TO DETERMINE MOUNTING LOCATIONS.

NOTES:
1. WHEN SUBBASE TANK IS USED, CONDUIT MUST BE LOCATED OUTSIDE OF TANK AREA OR IN STUB-UP AREA FOR SUBBASE TANK. REFER TO SUBBASE ADV.
2. DIMENSIONS IN [] ARE ENGLISH EQUIVALENTS.
3. IF AN ENCLOSURE IS USED, THE FUEL LINE MUST BE STUBBED UP FROM DIRECTLY UNDER THE UNIT OR BROUGHT IN FROM THE END OF THE SKID. REFER TO ENCLOSURE ADV.

## 1 GENERATOR DETAILS
SCALE: NONE

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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

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Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERATOR DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E6.16

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# CERTIFICATE OF COMPLIANCE
## SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

**Notes & Comments:**

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.
2. The following building codes are addressed under this certification:
   IBC 2018 referencing ASCE7-16 and ICC-ES AC-156
   IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2012 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2009 referencing ASCE7-05 and ICC-ES AC-156
   Italian Eurocode 8 Annex Published 2012 (Building Code Annex)
3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.
4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.
5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification makes no statements of compliance in regards to NEMA, IP, UL, CSA, or other relevant standards after a seismic event. For compliance to other relevant standards, please contact the manufacturer.
6. This certificate applies to units manufactured at:
   Kohler Power Systems, N7650 Lakeshore Road, Sheboygan, WI 53083
7. This certification follows the VMC Group's ISO-17065 Scheme.

John P. Giuliano, PE
President, VMC Group

IAS ACCREDITED Product Certification Agency

**VMA-50224-01C (Revision 3)**
Issue Date: Friday, October 30, 2015
Revision Date: Thursday, June 27, 2024
**Expiration Date: Wednesday, June 30, 2027**

VMC CERTIFIED VMC GROUP



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# CERTIFICATE OF COMPLIANCE
## SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

**Certified Product Table:**

| Model | Standby Rating [kW] | Max. Length [in.] | Max. Width [in.] | Max. Height [in.] | Max. Weight [lbs] | Certified Configuration | Certified Enclosures | Certified Tank Capacities [gal] |
|---|---|---|---|---|---|---|---|---|
| 15REOZK | 15 | 102 | 35 | 76 | 2365 | Open & Enclosed | Steel Sound, Steel Weather, Aluminum Sound, Aluminum Weather | 87-168 |
| | | 78 | 32 | 52 | 1310 | | | N/A |
| 20REOZK | 20 | 102 | 35 | 82 | 2625 | | | 87-221 |
| | | 78 | 32 | 53 | 1520 | | | N/A |
| 30REOZK | 30 | 102 | 35 | 84 | 2939 | | | 87-279 |
| | | 78 | 32 | 53 | 1520 | | | N/A |
| 40REOZK | 40 | 114 | 43 | 94 | 4491 | | | 124-401 |
| | | 92 | | 58 | 2335 | | | N/A |
| 50REOZK | 50 | 159 | | 94 | 4525 | | | 142-535 |
| | | 92 | | 58 | 2369 | | | N/A |
| 60REOZK | 60 | 159 | | 94 | 4611 | | | 142-535 |
| | | 92 | | 58 | 2455 | | | N/A |

| Type | $S_{DS}$ (z/h=0) | $S_{DS}$ (z/h=1) | $A_{Flex-H}$ | $A_{Rig-H}$ | $A_{Flex-V}$ | $A_{Rig-V}$ | $F_p/W_p$ |
|---|---|---|---|---|---|---|---|
| AC156 | 2.500 | 2.000 | 3.200 | 2.400 | 1.680 | 0.680 | 2.400 |

This certification includes the generator installed with or without an enclosure and fuel tank as limited by the table above. The generator and any included options shall be a catalogue design and factory supplied. The generator and applicable options shall be installed and attached to the building structure per the manufacturer supplied seismic installation instructions. This certificate excludes all non-factory supplied accessories, including but not limited to mufflers, isolation/restraint devices and electrical components.

VMC CERTIFIED VMC GROUP

**VMA-50224-01C (Revision 3)**
Issue Date: Friday, October 30, 2015
Revision Date: Thursday, June 27, 2024
**Expiration Date: Wednesday, June 30, 2027**



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# CERTIFICATE OF COMPLIANCE
## SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

VMC CERTIFIED VMC GROUP

Certification No.

**VMA-50224-01C** (Revision 3)

Expiration Date: 6/30/2027

**Certification Parameters:**
The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

**IBC 2018, 2015, 2012, 2009**

The following model designations, options, and accessories are included in this certification. Reference report number VMA-50224-01 as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

**Kohler**; Diesel Gensets
**REOZK Generator Sets**; 15-60 kW

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as $I_p$=1.5. The equipment is qualified by successful seismic shake table testing at the nationally recognized University of California Berkeley Pacific Earthquake Engineering Research Center under the witness of the ISO Accredited Product Certification Agency, the VMC Group.

| Certified Seismic Design Levels | | | |
|---|---|---|---|
| Certified **IBC** | **Importance $I_p \le 1.5$**<br>Soil Classes A-E<br>Risk Categories I-IV<br>Design Categories A-F | z/h ≤ 1.0 | z/h = 0.0 |
| | | $S_{DS} \le 2.000$ g | $S_{DS} \le 2.500$ g |

| Certified Seismic Installation Methods |
|---|
| Rigid Mounting From Unit Base To Rigid Structure |

**HEADQUARTERS**
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Bloomingdale, NJ 07403
Phone: 973.838.1780
Toll Free: 800.569.8423
Fax: 973.492.8430

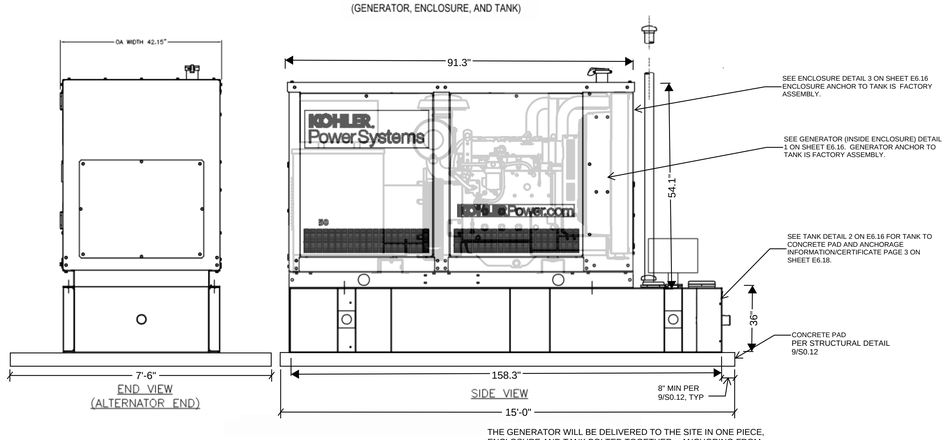
**CALIFORNIA**
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Phone: 916.634.7771

**TEXAS**
11930 Brittmoore Park Drive
Houston, TX 77041
Phone: 713.466.0003
Fax: 713.466.1555

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**GENERATOR ASSEMBLY NOTE:**
MAX WEIGHT: 8320 LB
(GENERATOR, ENCLOSURE, AND TANK)




**1 GENERATOR ELEVATION**
SCALE: NONE

THE GENERATOR WILL BE DELIVERED TO THE SITE IN ONE PIECE, ENCLOSURE AND TANK BOLTED TOGETHER. ANCHORING FROM THE TANK TO CONCRETE PAD IS THE ONLY FIELD SCOPE OF WORK.

IDENTIFICATION STAMP
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APP: 03-123641 INC:
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DATE: 10/15/2025

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERATOR SEISMIC REPORT**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

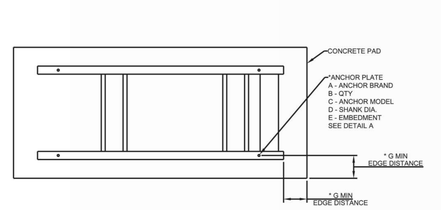
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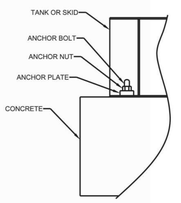
**E6.17**

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6/25/2025 2:53:01 PM

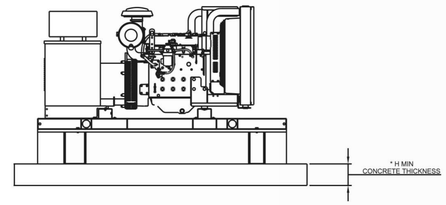
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PRINT. IF NOT, ADJUST SCALE ACCORDINGLY




**DETAIL A**




**60 REOZJC SHOWN**

NOTE:
1) SPECIAL INSPECTION PER IBC IS REQUIRED ON ALL INSTALLATIONS. ALL ANCHORS MUST BE INSTALLED TO MEET COMPLIANCE.

2) NO OTHER ANCHORS ARE ALLOWED WITHIN MINIMUM SPACING DISTANCE WITHOUT ADVANCED APPROVAL OF THE STRUCTURAL PROJECT ENGINEER OF RECORD.

3) *SEE NOTE 3 ON SHEETS 2, 3 & 4

DIMENSIONS IN [ ] ARE INCH EQUIVALENT

| REV | DATE | ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL □ INDICATES PART NUMBERS AFFECTED BY LATEST DRAWING REVISION | BY |
|---|---|---|---|
| T | 04OCT2021 | SEE SHEET 3 [CT215170] | RVM |
| U | 05APR2023 | CREO FORMAT WAS AUTOCAD & SEE SHEET 2, 3 & 4 | PAS |
| V | 12MAR2025 | SEE SHEET 4 | APM |

DO NOT SCALE.
THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001. REFERENCE CAD MODEL FOR UNSPECIFIED DIMENSIONS.

rehlko

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS GENERAL TOLERANCES: N/A

MAJOR ○ ± 0
CRITICAL ▲ ± 0
CHARACTERISTICS COMPLY WITH KPS-8022

THIRD ANGLE PROJECTION

SCALE: SHEET SIZE: B SHEET: 1 OF 5

DRAWN: SAM DATE:
APPROVED: SEE PLM SYSTEM 9-11-13

TITLE: **SEISMIC CERTIFICATION**
DWG NO.: **ADV-8629**

**SEISMIC INSTRUCTIONS**

THIS DRAWING IN DESIGN AND DETAIL IS DISCOVERY ENERGY, LLC PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH DISCOVERY ENERGY, LLC WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

SEISMIC INSTALLATION REQUIREMENTS:

THE FOLLOWING ARE REQUIREMENTS FOR SEISMIC INSTALLATION

1. THE DESIGN OF POST-INSTALLED ANCHORS IN CONCRETE USED FOR THE COMPONENT ANCHORAGE IS PRE-QUALIFIED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH ACI 355.2 AND DOCUMENTED IN A REPORT BY A REPUTABLE TESTING AGENCY, (EX. THE EVALUATION SERVICE REPORT ISSUED BY THE INTERNATIONAL CODE COUNCIL)
2. ANCHORS MUST BE INSTALLED TO AN EMBEDMENT DEPTH AS RECOMMENDED IN THE PRE-QUALIFICATION TEST REPORT AS DEFINED IN NOTE 1.
3. ANCHORS MUST BE INSTALLED IN MINIMUM 4000 PSI COMPRESSIVE STRENGTH NORMAL WEIGHT CONCRETE. CONCRETE AGGREGATE MUST COMPLY WITH ASTM C33. INSTALLATION IN STRUCTURAL LIGHTWEIGHT CONCRETE IS NOT PERMITTED UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
4. ANCHORS MUST BE INSTALLED TO THE TORQUE SPECIFICATION AS RECOMMENDED BY THE ANCHOR MANUFACTURER TO OBTAIN MAXIMUM LOADING
5. ANCHORS MUST BE INSTALLED IN THE LOCATIONS SPECIFIED THE REHLKO ADV DIMENSION PRINT.
6. ANCHOR BOLT DESIGN LOADS OR SPECIFIC ANCHORS ARE SPECIFIED ON SEISMIC REHLKO ADV.
7. ANCHOR PLATES FROM REHLKO MUST BE INSTALLED AT EACH ANCHOR LOCATION BETWEEN ANCHOR HEAD AND EQUIPMENT TO TENSION LOAD DISTRIBUTION.
8. CONCRETE FLOOR SLAB AND CONCRETE HOUSEKEEPING PADS MUST BE DESIGNED AND REBAR REINFORCED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH ACI 318.
9. ALL HOUSEKEEPING PAD THICKNESS MUST BE DESIGNED IN ACCORDANCE WITH PRE-QUALIFICATION TEST REPORT AS DEFINED IN NOTE 1 OR A MINIMUM OF 1.5X THE ANCHOR EMBEDMENT DEPTH, WHICHEVER IS LARGEST
10. ALL HOUSEKEEPING PADS MUST BE DOWELED OR CAST INTO THE BUILDING STRUCTURAL FLOOR SLAB AND DESIGNED FOR SEISMIC APPLICATION PER ACI 318 AND AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD
11. WALL MOUNTED EQUIPMENT MUST BE INSTALLED TO A REBAR REINFORCED STRUCTURAL CONCRETE WALL THAT IS SEISMICALLY DESIGNED AND APPROVED BY THE ENGINEER OF RECORD TO RESIST THE ADDED SEISMIC LOADS FROM THE COMPONENTS BEING ANCHORED TO THE WALL.
12. FLOOR MOUNTED EQUIPMENT (WITH OR WITHOUT HOUSEKEEPING PAD) MUST BE INSTALLED TO A REBAR REINFORCED STRUCTURAL CONCRETE FLOOR THAT IS SEISMICALLY DESIGNED AND APPROVED BY THE ENGINEER OF RECORD TO RESIST THE ADDED SEISMIC LOADS FROM COMPONENTS BEING ANCHORED TO THE FLOOR.
13. WHEN INSTALLING TO A FLOOR OR WALL, REBAR INTERFERENCE MUST BE CONSIDERED.
14. ATTACHING SEISMIC CERTIFIED EQUIPMENT TO ANY FLOOR OR WALL OTHER THAN THOSE CONSTRUCTED OF STRUCTURAL CONCRETE AND DESIGNED TO ACCEPT THE SEISMIC LOADS FORM SAID EQUIPMENT IS NOT PERMITTED BY THIS SPECIFICATION AND BEYOND THE SCOPE OF THIS CERTIFICATION.
16. ATTACHING SEISMIC CERTIFIED EQUIPMENT TO ANY CONCRETE BLOCK WALLS OR CINDER BLOCK WALLS IS NOT PERMITTED BY THIS SPECIFICATION AND BEYOND THE SCOPE OF THIS CERTIFICATION.
17. FOR INSTALLATIONS UPON ROOFTOP, STEEL DUNNAGE SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER OF RECORD.
18. INSTALLATION UPON ONLY ROOFTOP CURB SHALL BE COORDINATED WITH THE CURB MANUFACTURER AND THE STRUCTURAL ENGINEER OF RECORD. ANY CURB OR CONCRETE PAD THAT SUPPORTS THE RTU UNIT IS BEYOND THE SCOPE OF THIS CERTIFICATION.
19. ANCHOR LOCATIONS, SIZE, TYPE AND LOAD REQUIREMENTS ARE SPECIFIED ON THE INSTALLATION DRAWING. MOUNTING REQUIREMENTS DETAILS SUCH AS BRAND, TYPE, EMBEDMENT DEPTH, EDGE SPACING, ANCHOR SPACING, CONCRETE STRENGTH, WALL BRACING, AND SPECIAL INSPECTION MUST BE OUTLINED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD TO WITHSTAND THE SEISMIC ANCHOR LOADS AS DEFINED ON THE SEISMIC INSTALLATION DRAWING.
THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR THE PROPER INSTALLATION OF ALL ANCHORS AND MOUNTING HARDWARE, OBSERVING THE MOUNTING REQUIREMENT DETAILS OUTLINED BY THE ENGINEER OF RECORD. CONTACT REHLKO IF A DETAIL SEISMIC INSTALLATION CALCULATION PACKAGE IS REQUIRED.
20. ELECTRICAL WIRING, PIPING, DUCT AND OTHER CONNECTIONS TO THE EQUIPMENT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. IT IS NECESSARY THAT THESE REMAIN IN TACT, FUNCTIONAL AND DO NOT INHIBIT THE FUNCTIONALITY OF THE GENERATOR SET AFTER A SEISMIC EVENT. ADEQUATE SLACK SHALL BE ALLOWED CABLE AND PIPING TO ALLOW FOR MOTIONS OF SET DURING A SEISMIC EVENT.
*21. CONCRETE PAD DIMENSIONS ARE MINIMUM VALUES TO SATISFY ONLY THE ANCHOR BOLT REQUIREMENTS. THE PAD MUST BE DESIGNED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
*22 ANCHOR BOLT AND CONCRETE RECOMMENDATIONS ARE FOR THE MAXIMUM SEISMIC DESIGN LEVELS SHOWN. IF THE SPECIFIC APPLICATION HAS A LOWER LEVEL, THINNER CONCRETE OR ALTERNATE ANCHORS MAY BE ACCEPTABLE. CONSULT REHLKO.

| REV | DATE | ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL □ INDICATES PART NUMBERS AFFECTED BY LATEST DRAWING REVISION | BY |
|---|---|---|---|
| T | 04OCT2021 | SEE SHEET 3 [CT215170] | RVM |
| U | 05APR2023 | SEE SHEET 2, 3 & 4 | PAS |
| V | 12MAR2025 | SEE SHEET 4 | APM |

DO NOT SCALE.
THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001. REFERENCE CAD MODEL FOR UNSPECIFIED DIMENSIONS.

rehlko

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS GENERAL TOLERANCES: N/A

MAJOR ○ ± 0
CRITICAL ▲ ± 0
CHARACTERISTICS COMPLY WITH KPS-8022

THIRD ANGLE PROJECTION

SCALE: SHEET SIZE: B SHEET: 5 OF 5

DRAWN: SAM DATE:
APPROVED: SEE PLM SYSTEM 9-11-13

TITLE: **SEISMIC CERTIFICATION**
DWG NO.: **ADV-8629**

**SEISMIC INSTRUCTIONS**

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MAXIMUM SEISMIC DESIGN RATING APPLIES AS A SYSTEM TO GENSET, TANKS, ENCLOSURES AND ACCESSORIES

| GENSET MODELS | ENCLOSURE | ATTACHMENT METHOD | FUEL TANK CAPACITY LITERS | FUEL TANK CAPACITY GAL | $S_{ms}$ @Z/H=0.0 | $S_{ms}$ @Z/H=1.0 | ANCHORING PLACEMENT LOCATIONS | ANCHORING SYSTEMS A ANCHOR BRAND | B QTY | C ANCHOR MODEL | D SHANK DIA | E EMBEDMENT | G MIN EDGE DISTANCE | H MIN. THICKNESS | CONCRETE PRESSURE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350-500 REOZJB | OPEN UNITS | DIRECT TO CONCRETE | SET ONLY NO TANK | | 2.0 | 2.0 | FOR MTG. HOLES SEE GENSET/ENCLOSURE/ TANK ADVS RESPECTIVELY | HILTI | 10 | HY 200 + HAS | 19.05 [.75] | 304.8 [12.0] | 279.4 [11.0] | 355.6 [14.0] | _ |
| | ENCLOSED | DIRECT TO CONCRETE | NO TANK | | | | | | 14 | HY 200 + HAS | 19.05 [.75] | 381.0 [15.0] | 304.8 [12.0] | 431.8 [17.0] | _ |
| | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | 1529-4394 [404-1161] | | | | | | 18 | HDA-P | 20.0 [0.79] | 250 [9.84] | 330.2 [13.0] | 355.6 [14.0] | _ |
| | | | 5046 | 1333 | | | | | 20 | | | | | | _ |
| | | | 5765 | 1523 | | | | | 22 | | | | | | _ |
| | | | 6674 | 1763 | | | | | 24 | | | | | | _ |
| | | | 10008 | 2644 | | | | | 24 | | | | | | _ |
| 20 REOZK (FOR GM9422-5A1 & -SA2 ONLY) | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | 231-598 [61-158] | | | 2.0 | | | 8 | HY 200 + HAS | 16.0 [0.63] | 171 [6.75] | 254.0 [10.0] | 304.8 [12.0] | _ |
| 15-60 REOZK | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | SET ONLY NO TANK | | 2.0 | 2.0 | | KWIK BOLT | 4 | TZ | 16.0 [0.63] | 101.6 [4.0] | 152 [6.0] | 203.2 [8.0] | _ |
| 15-30 REOZK | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | UP THROUGH 1056 | 279 | 2.0 | 2.0 | | KWIK BOLT | 4 | | 16.0 [0.63] | 79.4 [3.125] | 152.4 [6.0] | 203.2 [8.0] | _ |
| 40-60 REOZK | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | UP THROUGH 1520 | 401 | 2.0 | 2.0 | | KWIK BOLT | 4 | (REFER TO NOTE 1) | 22.3 [.88] | 120.7 [4.75] | 203.2 [8.0] | 203.2 [8.0] | _ |
| 60 REOZK | OPEN OR ENCLOSED UNITS | DIRECT TO CONCRETE | 2028 | 535 | 2.0 | 2.0 | | | 6 | | 22.3 [.88] | 120.7 [4.75] | 203.2 [8.0] | 203.2 [8.0] | _ |
| KG40-KG60 | OPEN UNITS | DIRECT TO CONCRETE | _ | | 2.0 | 2.0 | | KWIK BOLT | 8 | | 22.3 [.88] | 120.7 [4.75] | 203.2 [8.0] | 203.2 [8.0] | _ |
| | ENCLOSED UNITS | DIRECT TO CONCRETE | | | | | | | 4 | TZ | 15.9 [.63] | 101.6 [4.0] | 228.6 [9.0] | 152.4 [6.0] | _ |
| KG80-125 | OPEN UNITS | DIRECT TO CONCRETE | _ | | 2.0 | 2.0 | | HILTI | 4 | HIT-RE 500 V3 | 15.9 [.63] | 146 [5.75] | 228.6 [9.0] | 203.2 [8.0] | _ |
| | ENCLOSED | DIRECT TO CONCRETE | | | | | | HILTI | 4 | HDA-P M16X190/40 | 16 [.63] | 190 [7.48] | 304.8 [12.0] | 304.8 [12.0] | _ |
| KG150-200 | OPEN UNITS | DIRECT TO CONCRETE | _ | | 2.0 | 2.0 | | HILTI | 6 | HDA-P M16X190/40 | 16 [.63] | 190 [7.48] | 304.8 [12.0] | 304.8 [12.0] | _ |
| | ALUMINUM ENCLOSED UNITS | DIRECT TO CONCRETE | | | | | | HILTI | 8 | KWIK BOLT TZ-CS | 15.9 [.63] | 92.0 [3.625] | 254.0 [10.0] | 254.0 [10.0] | _ |
| | STEEL ENCLOSED UNITS | DIRECT TO CONCRETE | | | | | | | 8 | KWIK BOLT TZ-CS | 15.9 [.63] | 101.6 [4.0] | 254.0 [10.0] | 254.0 [10.0] | _ |
| | | | | | | | | | 12 | KWIK BOLT TZ-CS | 15.9 [.63] | 79.4 [3.125] | 254.0 [10.0] | 254.0 [10.0] | _ |

**NOTES**

1. ALL ANCHORS SHALL BE HILTI KB-TZ2, SS TYPE FOR EXTERIOR APPLICATION.

DIMENSIONS IN [ ] ARE INCH EQUIVALENT

NOTE:
1) SPECIAL INSPECTION PER IBC IS REQUIRED ON ALL INSTALLATIONS. ALL ANCHORS MUST BE INSTALLED TO MEET COMPLIANCE.

2) NO OTHER ANCHORS ARE ALLOWED WITHIN MINIMUM SPACING DISTANCE WITHOUT ADVANCED APPROVAL OF THE STRUCTURAL PROJECT ENGINEER OF RECORD.

3) Z/H=0.0 EQUATES TO AT GRADE
Z/H=1.0 EQUATES TO AT ROOF TOP

| REV | DATE | ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL □ INDICATES PART NUMBERS AFFECTED BY LATEST DRAWING REVISION | BY |
|---|---|---|---|
| U | 05APR2023 | (D-6) 350-500REOZJB; VALUE 2.0 WAS 1.93; (B-8,C-8,D-8) 350-500 REOZJC/D, 125REOZJG, 150REOZJF REMOVED; (D-7,D-2) COLUMNS FOR "ATTACHMENT METHOD & CONCRETE PRESSURE" ADDED AND SEE SHEET 2 & 4 | PAS |
| V | 12MAR2024 | SEE SHEET 4 | APM |

DO NOT SCALE.
THIS ASSEMBLY OR PART MUST COMPLY WITH PEP-RML-001. REFERENCE CAD MODEL FOR UNSPECIFIED DIMENSIONS.

rehlko

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS GENERAL TOLERANCES: N/A

MAJOR ○ ± 0
CRITICAL ▲ ± 0
CHARACTERISTICS COMPLY WITH KPS-8022

THIRD ANGLE PROJECTION

SCALE: SHEET SIZE: B SHEET: 3 OF 5

DRAWN: SAM DATE:
APPROVED: SEE PLM SYSTEM 9-11-13

TITLE: **SEISMIC CERTIFICATION**
DWG NO.: **ADV-8629**

**SEISMIC INSTRUCTIONS**

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**NOTE: REFER TO DETAIL 2 ON SHEET E6.16 FOR GENERATOR ANCHORAGE.**

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC
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A TETRA TECH COMPANY
707 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90017
www.glumac.com
T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**GENERATOR SEISMIC DRAWINGS**

**DSA SUBMITTAL**

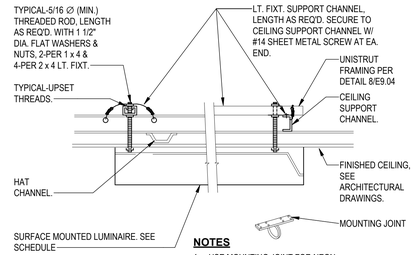
**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E6.18

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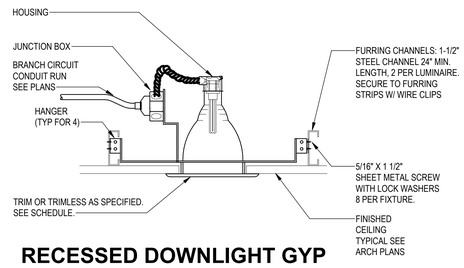



**NOTES**

1. USE MOUNTING JOINT FOR NEON FIXTURES; REFERENCE MANUFACTURER INSTALLATION GUIDES FOR MORE INFORMATION.

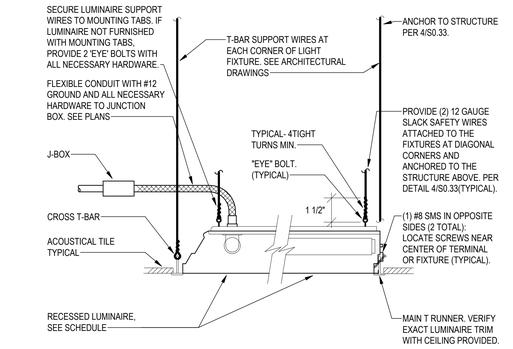
## 3 SURFACE MOUNTED LUMINAIRE

SCALE: NONE



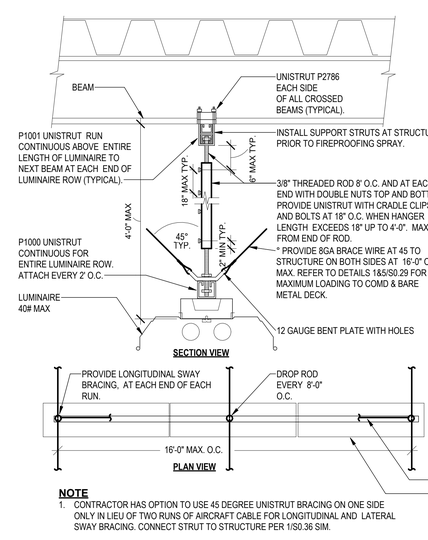

## 5 RECESSED DOWNLIGHT GYP CEILING

SCALE: NONE




## 2 RECESSED TROFFER LAY-IN CEILING MOUNTING

SCALE: NONE




**SECTION VIEW**

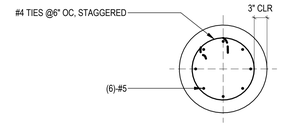
**PLAN VIEW**

**NOTE**

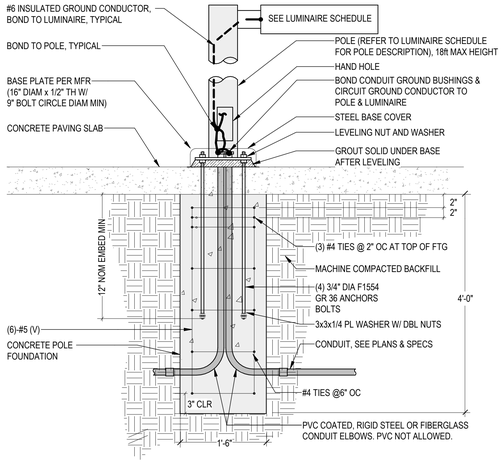
1. CONTRACTOR HAS OPTION TO USE 45 DEGREE UNISTRUT BRACING ON ONE SIDE ONLY IN LIEU OF TWO RUNS OF AIRCRAFT CABLE FOR LONGITUDINAL AND LATERAL SWAY BRACING. CONNECT STRUT TO STRUCTURE PER 1/S0.36 SIM.

## 4 SEISMIC ZONE RATED SUSPENDED LUMINAIRE

SCALE: NONE




**TOP ELEVATION**




## 1 SG1 LIGHT COLUMN POLE BASE INSTALLATION

SCALE: NONE

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DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA. 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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Los Angeles, CA 90017
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T. 213.239.6866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LIGHTING DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# E6.19

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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, SHEETS ORIGINAL PAGE SIZE

| RIGID BRACE TRAPEZE STEEL PIPE OR CONDUIT | RIGID BRACING INSTALLATION REQUIREMENTS | LATERAL FORCE $F_p$ = 0.50g (ASD) VERTICAL FORCE $F_{PV}$ = 0.41g (ASD) |
|---|---|---|

## RIDGE BRACE TRAPEZE STEEL PIPE OR CONDUIT

INSTALLATION DETAILS: 4-1, 4-2, 4-3, 4-4, 4-5, 4-6

$F_p$ = 0.50 G
$F_v$ = 0.41 G

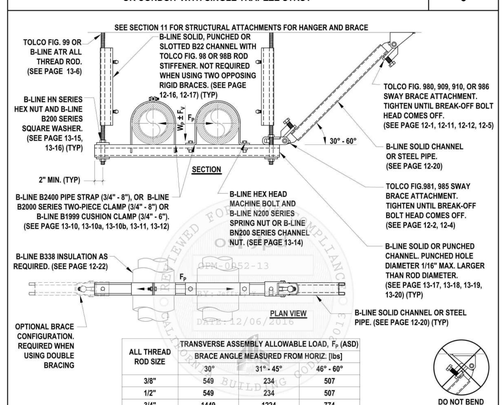
| MAX. TRAPEZE WEIGHT (PLF) | HANGER SPACING (FT) | RIDGE BRACING AT 45 DEG. BRACE ANGLE SAND LIGHTWEIGHT CONCRETE OVER METAL DECK | | | | | |
|---|---|---|---|---|---|---|---|
| | | SEISMIC BRACE SPACING - MAX | | SEISMIC BRACE ATTACHMENT | | HANGER ATTACHMENT | |
| | | TRANS.* (FT) | LONGIT. (FT)**** | DETAIL (PAGE)*** | ANCHOR**x EMBED (IN) | DETAIL (PAGE)*** | ANCHOR**x EMBED (IN) |
| TRAPEZE 5 LB/FT | 6 | 40 | 80 | 11-3 (S) | 0.50 x 3.25 | 11-4 (S) | 0.50 x 3.25 |
| TRAPEZE 10 LB/FT | 6 | 40 | 80 | 11-3 (S) | 0.50 x 3.25 | 11-4 (S) | 0.50 x 3.25 |
| TRAPEZE 20 LB/FT | 6 | 23 | 46 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 40 LB/FT | 6 | 11 | 23 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 55 LB/FT | 6 | 9 | 18 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 65 LB/FT | 6 | 9 | 18 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| | | | | | | | |
| TRAPEZE 5 LB/FT | 10 | 40 | 80 | 11-3 (S) | 0.50 x 3.25 | 11-4 (S) | 0.50 x 3.25 |
| TRAPEZE 10 LB/FT | 10 | 40 | 80 | 11-3 (S) | 0.50 x 3.25 | 11-4 (S) | 0.50 x 3.25 |
| TRAPEZE 20 LB/FT | 10 | 23 | 46 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 40 LB/FT | 10 | 11 | 23 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 55 LB/FT | 10 | 9 | 18 | 11-3 (S) | 0.625 x 4.0 | 11-4 (S) | 0.625 x 4.0 |
| TRAPEZE 65 LB/FT | 10 | 9 | 18 | 11-3 (S) | 0.625 x 4.0 | 11-4 (D) | 0.50 x 3.25 (2) |

* FOR ANY PIPE/CONDUIT ON TRAPEZE, SEISMIC BRACE SPACING MUST NOT EXCEED MAX. TRANSVERSE SPACING GIVEN IN TABLES IN SECTION 14, AND THIS TABLE
** BASED ON HILTI KB-TZ
*** (S) = SINGLE ANCHOR; (D) = DOUBLE ANCHOR
**** THE LONGITUDINAL SPACING IS VALID WHEN THE TRAPEZE IS LOADED CONCENTRICALLY

**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

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PAGE: 1-44
DATE: NOVEMBER 29, 2016

## TRANSVERSE RIGID BRACING FOR TRAPEZE SUPPORTED PIPE OR CONDUIT WITH SINGLE TRAPEZE STRUT — DETAIL 3




| ALL THREAD ROD SIZE | TRANSVERSE ASSEMBLY ALLOWABLE LOAD, $F_p$ (ASD) BRACE ANGLE MEASURED FROM HORIZ. [lbs] | | |
|---|---|---|---|
| | 30° | 31° - 45° | 46° - 60° |
| 3/8" | 549 | 234 | 507 |
| 1/2" | 549 | 234 | 507 |
| 3/4" | 1449 | 1224 | 774 |

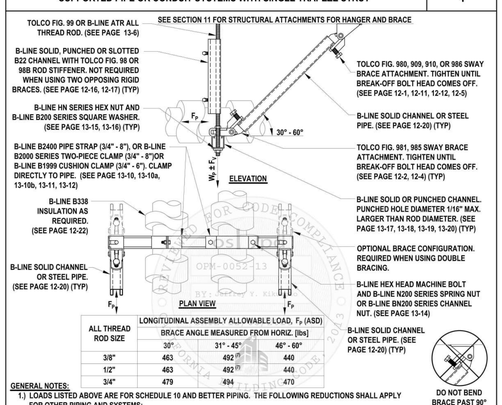
DO NOT BEND BRACE PAST 90°

GENERAL NOTES:
1.) LOADS LISTED ABOVE ARE FOR SCHEDULE 10 AND BETTER PIPING. THE FOLLOWING REDUCTIONS SHALL APPLY FOR OTHER PIPING AND SYSTEMS:
a.) PIPING WITH INSULATION - REDUCE LOADS BY 25% FOR 1"-2" PIPES, 32% FOR 2.5"-3.5" PIPES AND 43% FOR 4"-8" PIPES.
b.) THIN WALL PIPING - REDUCE LOADS BY 0%
c.) CONDUITS INCLUDING EMT - REDUCE LOADS BY 15%
2.) SEE PAGE 4-21, 4-22, 4-23, 4-24, 4-25 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.
3.) TRANSVERSE BRACE MAY BE INSTALLED IN OPPOSING DIRECTION.
4.) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13.
5.) THE FIG 909 AND FIG 910 ARE FOR USE ONLY WITH STEEL PIPE BRACES, PER PAGES 12-11 AND 12-12.

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California SE No. S3545
PAGE: 4-1
DATE: NOVEMBER 29, 2016

**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## LONGITUDINAL RIGID BRACING FOR TRAPEZE SUPPORTED PIPE OR CONDUIT SYSTEMS WITH SINGLE TRAPEZE STRUT — DETAIL 4




| ALL THREAD ROD SIZE | LONGITUDINAL ASSEMBLY ALLOWABLE LOAD, $F_p$ (ASD) BRACE ANGLE MEASURED FROM HORIZ. [lbs] | | |
|---|---|---|---|
| | 30° | 31° - 45° | 46° - 60° |
| 3/8" | 463 | 492 (7) | 440 |
| 1/2" | 463 | 492 (7) | 440 |
| 3/4" | 479 | 494 | 470 |

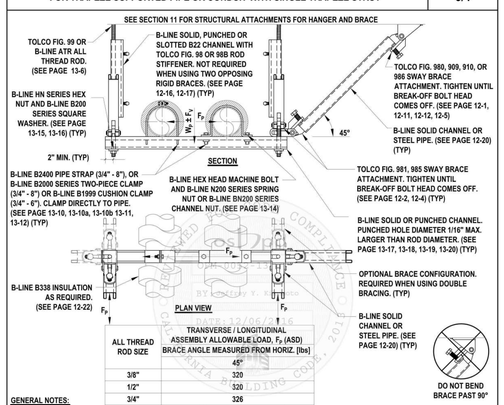
DO NOT BEND BRACE PAST 90°

GENERAL NOTES:
1.) LOADS LISTED ABOVE ARE FOR SCHEDULE 10 AND BETTER PIPING. THE FOLLOWING REDUCTIONS SHALL APPLY FOR OTHER PIPING AND SYSTEMS:
a.) PIPING WITH INSULATION - REDUCE LOADS BY 0%
b.) THIN WALL PIPING - REDUCE LOADS BY 0%
c.) CONDUITS INCLUDING EMT - REDUCE LOADS BY 0%
2.) SEE PAGE 4-21, 4-22, 4-23, 4-24, 4-25 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.
3.) LONGITUDINAL BRACE MAY BE INSTALLED IN OPPOSING DIRECTION.
4.) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13.
5.) THE FIG 909 AND FIG 910 ARE FOR USE ONLY WITH STEEL PIPE BRACES, PER PAGES 12-11 AND 12-12.
6.) DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE $F_p$ VALUE USED IN DESIGN.
7.) WHERE SEISMIC LOAD IS APPLIED FULLY ECCENTRIC, REDUCE $F_p$ BY 50%. LINEARLY INTERPOLATE FOR CONDITION BETWEEN CENTER LINE AND BRACE.

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Structural Engineer: Mohammad Hariri
California SE No. S3545
PAGE: 4-2
DATE: NOVEMBER 29, 2016

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## TRANSVERSE AND LONGITUDINAL COMBINATION RIGID BRACING FOR TRAPEZE SUPPORTED PIPE OR CONDUIT WITH SINGLE TRAPEZE STRUT — DETAIL 3/4




| ALL THREAD ROD SIZE | TRANSVERSE / LONGITUDINAL ASSEMBLY ALLOWABLE LOAD, $F_p$ (ASD) BRACE ANGLE MEASURED FROM HORIZ. [lbs] |
|---|---|
| | 45° |
| 3/8" | 320 |
| 1/2" | 320 |
| 3/4" | 326 |

DO NOT BEND BRACE PAST 90°

GENERAL NOTES:
1.) LOADS LISTED ABOVE ARE FOR SCHEDULE 10 AND BETTER PIPING. THE FOLLOWING REDUCTIONS SHALL APPLY FOR OTHER PIPING AND SYSTEMS:
a.) PIPING WITH INSULATION - REDUCE LOADS BY 0%
b.) THIN WALL PIPING - REDUCE LOADS BY 0%
c.) CONDUITS INCLUDING EMT - REDUCE LOADS BY 0%
2.) SEE PAGE 4-21, 4-22, 4-23, 4-24, 4-25 FOR OPTIONAL AND/OR ADDITIONAL BRACE CONFIGURATIONS.
3.) BRACES MAY BE INSTALLED IN OPPOSING DIRECTION.
4.) THE ABOVE ASSEMBLY ALLOWABLE LOADS CAN BE APPLIED CONCURRENTLY TO BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS WITHOUT REDUCTION.
5.) VERIFY THE ADEQUACY OF THE SYSTEM ATTACHMENT TO THE STRUT. THE ATTACHMENT MUST BE ADEQUATE TO TRANSFER TRANSVERSE, LONGITUDINAL AND VERTICAL SEISMIC LOADS TO STRUT AS PER SECTION 13.
6.) THE FIG 909 AND FIG 910 ARE FOR USE ONLY WITH STEEL PIPE BRACES, PER PAGES 12-11 AND 12-12.
7.) DESIGN PROFESSIONAL SHALL CONSIDER ECCENTRIC LOAD DISTRIBUTION WHEN DETERMINING THE $F_p$ VALUE USED IN DESIGN.

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Structural Engineer: Mohammad Hariri
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PAGE: 4-3
DATE: NOVEMBER 29, 2016

**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## TRAPEZE BRACE SPACING CHART FOR ATTACHMENT TO STEEL BEAM — 0.50 "G"



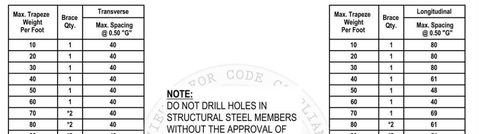

| Max. Trapeze Weight Per Foot | Brace Qty. | Transverse Max. Spacing @ 0.50 "G" | |
|---|---|---|---|
| | | Perpendicular | Parallel |
| 10 | 1 | 40 | 40 |
| 20 | 1 | 40 | 40 |
| 30 | 1 | 40 | 40 |
| 40 | 1 | 40 | 40 |
| 50 | 1 | 40 | 40 |
| 60 | 1 | 40 | 40 |
| 70 | 1 | 40 | 37 |
| 80 | 1 | 40 | 40 |
| 90 | *2 | 40 | 40 |
| 100 | *2 | 40 | 40 |
| 125 | *2 | 40 | 40 |
| 150 | *2 | 40 | 34 |
| 175 | *2 | 40 | 29 |
| 200 | *2 | 39 | 26 |

| Max. Trapeze Weight Per Foot | Brace Qty. | Longitudinal Max. Spacing @ 0.50 "G" | |
|---|---|---|---|
| | | Perpendicular | Parallel |
| 10 | 2 | 80 | 80 |
| 20 | 2 | 80 | 80 |
| 30 | 2 | 80 | 80 |
| 40 | 2 | 80 | 80 |
| 50 | 2 | 80 | 80 |
| 60 | 2 | 80 | 80 |
| 70 | 2 | 80 | 74 |
| 80 | *4 | 80 | 80 |
| 90 | *4 | 80 | 80 |
| 100 | *4 | 80 | 80 |
| 125 | *4 | 80 | 80 |
| 150 | *4 | 80 | 69 |
| 175 | *4 | 80 | 59 |
| 200 | *4 | 78 | 52 |

NOTES:
1.) SPACING ABOVE IS FOR WELDED STEEL PIPE, RIGID CONDUIT OR GROOVED PIPING WITH UL 213 LISTED CONNECTIONS. FOR OTHER PIPE TYPES CONSTRUCTED OF NON-DUCTILE MATERIAL (CAST IRON, NO HUB, PLASTIC, ETC.) SPACING SHALL NOT EXCEED 1/3 OF THAT LISTED IN THE ABOVE TABLES.
2.) BRACE SPACING FOR ANY HORIZONTAL FORCE FACTOR CAN BE DETERMINED BY DIVIDING THE SPACING GIVEN FOR 1g BY THE ACTUAL HORIZONTAL FORCE FACTOR. FOR EXAMPLE, IF THE ALLOWABLE SPACING IS 21FT FOR 1.0G, THE ALLOWABLE SPACING FOR 0.7G WILL BE: 21FT / 0.7G = 30FT (NOT TO EXCEED MAXIMUM ALLOWABLE SPACING FROM GENERAL NOTES SECTION).
3.) WEIGHTS ARE BASED ON WATER FILLED SCH. 40/30/20 STEEL PIPE WITH INSULATION. SEE PAGE 1-4 FOR DETAILS.
4.) FOR BRACING ANGLE FROM HORIZONTAL 0°-30° NO SPACING CHANGE REQUIRED, 31°-45° NO SPACING CHANGE REQUIRED, 46°-60° DIVIDE SPACING BY 2.0.
5.) "HALF THE NUMBER OF BRACES MAY BE USED AT HALF THE SPACING LISTED.
6.) THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THAT THE APPLIED LOADS ARE ACCEPTABLE.
7.) THE ADEQUACY OF OTHER SUPPORT COMPONENTS AND THE OVERALL SUPPORT SYSTEM FOR THE APPLIED LOADS, IF NOT INCLUDED IN THIS OPM, ARE TO BE VERIFIED BY THE RESPONSIBLE DESIGN PROFESSIONAL.
8.) WHEN USING TRANSVERSE BRACE AS "DUAL USE" BRACE, USE BRACE QUANTITY PER THE LONGITUDINAL BRACE TABLE.
9.) SPACING LISTED ABOVE SHALL BE REDUCED IF THE APPLICABLE SPACING LISTED IN SECTION 14 IS LESS THAN THE SPACING LISTED ABOVE BASED ON PIPE MATERIAL, CONSTRUCTION, JOINTS AND DIAMETER.
10.) NO ATTACHMENT SHALL BE MADE WITHIN PROTECTED ZONES. (SEE AISC 341 AND/OR STRUCTURAL DRAWINGS.)

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California SE No. S3545
PAGE: 5-13
DATE: NOVEMBER 29, 2016

## TRAPEZE BRACE SPACING CHART FOR WELDED ATTACHMENT TO STEEL BEAM — 0.50 "G"




| Max. Trapeze Weight Per Foot | Brace Qty. | Transverse Max. Spacing @ 0.50 "G" |
|---|---|---|
| 10 | 1 | 40 |
| 20 | 1 | 40 |
| 30 | 1 | 40 |
| 40 | 1 | 40 |
| 50 | 1 | 40 |
| 60 | 1 | 40 |
| 70 | *2 | 40 |
| 80 | *2 | 40 |
| 90 | *2 | 40 |
| 100 | *2 | 40 |
| 125 | *2 | 39 |
| 150 | *2 | 32 |
| 175 | *2 | 27 |
| 200 | *2 | 24 |

| Max. Trapeze Weight Per Foot | Brace Qty. | Longitudinal Max. Spacing @ 0.50 "G" |
|---|---|---|
| 10 | 1 | 80 |
| 20 | 1 | 80 |
| 30 | 1 | 80 |
| 40 | 1 | 61 |
| 50 | 1 | 48 |
| 60 | 1 | 40 |
| 70 | 1 | 69 |
| 80 | *2 | 61 |
| 90 | *2 | 54 |
| 100 | *2 | 48 |
| 125 | *2 | 39 |
| 150 | *2 | 32 |
| 175 | *2 | 27 |
| 200 | *2 | 24 |

**NOTE:**
DO NOT DRILL HOLES IN STRUCTURAL STEEL MEMBERS WITHOUT THE APPROVAL OF THE PROJECT SEOR.

NOTES:
1.) SPACING ABOVE IS FOR WELDED STEEL PIPE, RIGID CONDUIT OR GROOVED PIPING WITH UL 213 LISTED CONNECTIONS. FOR OTHER PIPE TYPES CONSTRUCTED OF NON-DUCTILE MATERIAL (CAST IRON, NO HUB, PLASTIC, ETC.) SPACING SHALL NOT EXCEED 1/3 OF THAT LISTED IN THE ABOVE TABLES.
2.) BRACE SPACING FOR ANY HORIZONTAL FORCE FACTOR CAN BE DETERMINED BY DIVIDING THE SPACING GIVEN FOR 1g BY THE ACTUAL HORIZONTAL FORCE FACTOR. FOR EXAMPLE, IF THE ALLOWABLE SPACING IS 21FT FOR 1.0G, THE ALLOWABLE SPACING FOR 0.7G WILL BE: 21FT / 0.7G = 30FT (NOT TO EXCEED MAXIMUM ALLOWABLE SPACING FROM GENERAL NOTES SECTION).
3.) WEIGHTS ARE BASED ON WATER FILLED SCH. 40/30/20 STEEL PIPE WITH INSULATION. SEE PAGE 1-4 FOR DETAILS.
4.) FOR BRACING ANGLE FROM HORIZONTAL 0°-30° NO SPACING CHANGE REQUIRED, 31°-45° NO SPACING CHANGE REQUIRED, 46°-60° DIVIDE SPACING BY 2.0.
5.) "HALF THE NUMBER OF BRACES MAY BE USED AT HALF THE SPACING LISTED.
6.) THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THAT THE APPLIED LOADS ARE ACCEPTABLE.
7.) THE ADEQUACY OF OTHER SUPPORT COMPONENTS AND THE OVERALL SUPPORT SYSTEM FOR THE APPLIED LOADS, IF NOT INCLUDED IN THIS OPM, ARE TO BE VERIFIED BY THE RESPONSIBLE DESIGN PROFESSIONAL.
8.) WHEN USING TRANSVERSE BRACE AS "DUAL USE" BRACE, USE BRACE QUANTITY PER THE LONGITUDINAL BRACE TABLE.
9.) SPACING LISTED ABOVE SHALL BE REDUCED IF THE APPLICABLE SPACING LISTED IN SECTION 14 IS LESS THAN THE SPACING LISTED ABOVE BASED ON PIPE MATERIAL, CONSTRUCTION, JOINTS AND DIAMETER.
10.) NO ATTACHMENT SHALL BE MADE WITHIN PROTECTED ZONES. (SEE AISC 341 AND/OR STRUCTURAL DRAWINGS.)

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California SE No. S3545
PAGE: 5-16
DATE: NOVEMBER 29, 2016

## TRAPEZE BRACE SPACING CHART FOR BOLTED ATTACHMENT TO STEEL BEAM — 0.50 "G"



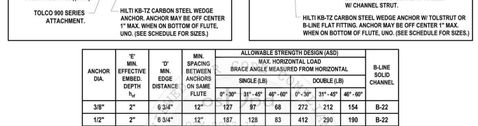

| Max. Trapeze Weight Per Foot | Bolt Dia. | Brace Qty. | Transverse Max. Spacing @ 0.50 "G" |
|---|---|---|---|
| 10 | 3/8" | 1 | 40 |
| 20 | 3/8" | 1 | 40 |
| 30 | 1/2" | 1 | 40 |
| 40 | 1/2" | 1 | 40 |
| 50 | 5/8" | 1 | 40 |
| 60 | 5/8" | 1 | 40 |
| 70 | 3/4" | 1 | 37 |
| 80 | 3/4" | *2 | 40 |
| 90 | 3/4" | *2 | 40 |
| 100 | 3/4" | *2 | 40 |
| 125 | 3/4" | *2 | 40 |
| 150 | 3/4" | *2 | 35 |
| 175 | 3/4" | *2 | 30 |
| 200 | 3/4" | *2 | 26 |

| Max. Trapeze Weight Per Foot | Bolt Dia. | Brace Qty. | Longitudinal Max. Spacing @ 0.50 "G" |
|---|---|---|---|
| 10 | 3/8" | 2 | 80 |
| 20 | 3/8" | 2 | 80 |
| 30 | 1/2" | 2 | 80 |
| 40 | 1/2" | 2 | 80 |
| 50 | 1/2" | 2 | 64 |
| 60 | 5/8" | 2 | 80 |
| 70 | 3/4" | 2 | 75 |
| 80 | 3/4" | *4 | 80 |
| 90 | 3/4" | *4 | 80 |
| 100 | 3/4" | *4 | 80 |
| 125 | 3/4" | *4 | 80 |
| 150 | 3/4" | *4 | 70 |
| 175 | 3/4" | *4 | 60 |
| 200 | 3/4" | *4 | 52 |

NOTES:
1.) SPACING ABOVE IS FOR WELDED STEEL PIPE, RIGID CONDUIT OR GROOVED PIPING WITH UL 213 LISTED CONNECTIONS. FOR OTHER PIPE TYPES CONSTRUCTED OF NON-DUCTILE MATERIAL (CAST IRON, NO HUB, PLASTIC, ETC.) SPACING SHALL NOT EXCEED 1/3 OF THAT LISTED IN THE ABOVE TABLES.
2.) BRACE SPACING FOR ANY HORIZONTAL FORCE FACTOR CAN BE DETERMINED BY DIVIDING THE SPACING GIVEN FOR 1g BY THE ACTUAL HORIZONTAL FORCE FACTOR. FOR EXAMPLE, IF THE ALLOWABLE SPACING IS 21FT FOR 1.0G, THE ALLOWABLE SPACING FOR 0.7G WILL BE: 21FT / 0.7G = 30FT (NOT TO EXCEED MAXIMUM ALLOWABLE SPACING FROM GENERAL NOTES SECTION).
3.) WEIGHTS ARE BASED ON WATER FILLED SCH. 40/30/20 STEEL PIPE WITH INSULATION. SEE PAGE 1-4 FOR DETAILS.
4.) FOR BRACING ANGLE FROM HORIZONTAL 0°-30° NO SPACING CHANGE REQUIRED, 31°-45° NO SPACING CHANGE REQUIRED, 46°-60° DIVIDE SPACING BY 2.0.
5.) "HALF THE NUMBER OF BRACES MAY BE USED AT HALF THE SPACING LISTED.
6.) THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THAT THE APPLIED LOADS ARE ACCEPTABLE.
7.) THE ADEQUACY OF OTHER SUPPORT COMPONENTS AND THE OVERALL SUPPORT SYSTEM FOR THE APPLIED LOADS, IF NOT INCLUDED IN THIS OPM, ARE TO BE VERIFIED BY THE RESPONSIBLE DESIGN PROFESSIONAL.
8.) WHEN USING TRANSVERSE BRACE AS "DUAL USE" BRACE, USE BRACE QUANTITY PER THE LONGITUDINAL BRACE TABLE.
9.) SPACING LISTED ABOVE SHALL BE REDUCED IF THE APPLICABLE SPACING LISTED IN SECTION 14 IS LESS THAN THE SPACING LISTED ABOVE BASED ON PIPE MATERIAL, CONSTRUCTION, JOINTS AND DIAMETER.
10.) NO ATTACHMENT SHALL BE MADE WITHIN PROTECTED ZONES. (SEE AISC 341 AND/OR STRUCTURAL DRAWINGS.)

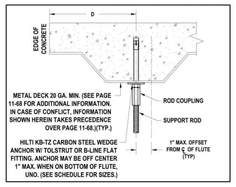
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California SE No. S3545
PAGE: 5-19
DATE: NOVEMBER 29, 2016

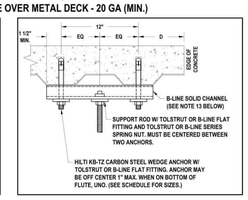
## HILTI KB-TZ WEDGE ANCHOR IN 3,000 PSI SAND LIGHTWEIGHT CONCRETE OVER METAL DECK - 20 GA (MIN.)


D
EDGE OF CONCRETE
METAL DECK 20 GA. MIN. (SEE PAGE 11-46 FOR ADDITIONAL INFORMATION. IN CASE OF CONFLICT, INFORMATION SHOWN HEREIN TAKES PRECEDENCE OVER PAGE 11-48.)(TYP.)
TOLCO 900 SERIES ATTACHMENT.
1" MAX. OFFSET FROM ℄ OF FLUTE (TYP)
HILTI KB-TZ CARBON STEEL WEDGE ANCHOR. ANCHOR MAY BE OFF CENTER 1" MAX. WHEN ON BOTTOM OF FLUTE, UNO. (SEE SCHEDULE FOR SIZES.)
1 1/2" MIN.
12"
EQ
B-LINE SOLID CHANNEL
B-LINE HEX HEAD MACHINE BOLT AND TOLSTRUT SPRA OR B-LINE N200 SPRING NUT. (SEE PAGE 13-16,13-14). MUST BE CENTERED BETWEEN TWO ANCHORS.
TOLCO 900 SERIES ATTACHMENT BRACE MUST BE ORIENTED PARALLEL W/ CHANNEL STRUT.
HILTI KB-TZ CARBON STEEL WEDGE ANCHOR W/ TOLSTRUT OR B-LINE FLAT FITTING. ANCHOR MAY BE OFF CENTER 1" MAX. WHEN ON BOTTOM OF FLUTE, UNO.

IF THIS LINE IS NOT 1" AS SHOWN ABOVE THEN SHEET IS NOT FULL SIZE

## HILTI KB-TZ WEDGE ANCHOR IN 3,000 PSI SAND LIGHTWEIGHT CONCRETE OVER METAL DECK - 20 GA (MIN.)




| ANCHOR DIA. | "E" MIN. EFFECTIVE EMBED. DEPTH $h_{ef}$ | "D" MIN. EDGE DISTANCE | MIN. SPACING BETWEEN ANCHORS ON SAME FLUTE | ALLOWABLE STRENGTH DESIGN (ASD) | | B-LINE SOLID CHANNEL |
|---|---|---|---|---|---|---|
| | | | | MAX. VERTICAL LOAD | | |
| | | | | SINGLE (LB) | DOUBLE (LB) | |
| 3/8" | 2" | 6 3/4" | 12" | 210 | 420 | B22 |
| 1/2" | 2" | 6 3/4" | 12" | 210 | 420 | B22 |
| 1/2" | 3 1/4" | 9 3/4" | 12" | 377 | 750 | B22A |
| 5/8" | 3 1/8" | 9 3/8" | 12" | 288 | 575 | B22A |
| 5/8" | 4" | 12" | 12" | 668 | 1335 | B22A |

MAX. LOAD INCLUDES OVER STRENGTH FACTOR Ω0=2.5 PER ASCE 7-10, TABLE 13.6-1 TO SATISFY ACI-318-11.

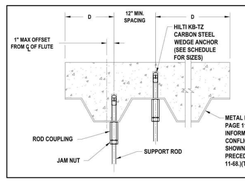
NOTES:
1.) ALLOWABLE LOADS ARE FOR ANCHORS INSTALLED IN SAND LIGHTWEIGHT CONCRETE HAVING A MIN. COMPRESSIVE STRENGTH OF 3,000 PSI AT THE TIME OF INSTALLATION AND DETERMINED PER ICC ESR-1917 (HILTI KB-TZ EXPANSION ANCHOR) FOR ANCHORS IN CRACKED CONCRETE, ALLOWABLE LOADS HAVE BEEN MULTIPLIED BY 0.75 FOR ALLOWABLE LOADS GOVERNED BY CONCRETE FAILURE MODES PER ACI 318-11 APPENDIX D, D3.3.3.3 AND INTERACTION BASED ON D.7.3.
2.) FOR ESSENTIAL FACILITIES, 55 PERCENT OF THE EXPANSION TYPE ANCHORS (ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED TO TWICE THE ALLOWABLE CAPACITY IN TENSION. IF ANY ANCHOR FAILS, 20 CONSECUTIVE ANCHORS INSTALLED BY THE SAME TRADE MUST THEN ALSO BE TESTED BEFORE RESUMING 55 PERCENT TESTING. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF ANCHOR. SEE PAGE 11-66 FOR TESTING REQUIREMENTS.
3.) FOLLOW ALL WEDGE ANCHOR INSTALLATION REQUIREMENTS PER ICC ESR-1917 (2013)

NOTES CONTINUED:
4.) MINIMUM CONCRETE THICKNESS SHALL COMPLY WITH ICC ESR-1917 (2013). REFER TO METAL DECK DIMENSIONS SHOWN ABOVE.
5.) WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
6.) WHEN INSTALLING ANCHORS IN PRESTRESSED CONCRETE. LOCATE PRESTRESSING STEEL AND AVOID DAMAGING PRESTRESSING STEEL.
7.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED ALLOWABLE LOADS.
8.) SPECIAL INSPECTION SHALL BE PROVIDED PER CBC. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE CONTINUOUSLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT AND TIGHTENING TORQUE. TEST REPORT OF THE RESULTS SHALL BE SUBMITTED TO OSHPD.
9.) HANGER ROD DIAMETER SHALL BE EQUAL TO OR GREATER THAN THE ANCHOR DIAMETER.
10.) IF ALLOWABLE LOAD FOR ONE ANCHOR IS USED, HANGER ROD MAY BE OFF CENTER WHEN USING TWO ANCHORS WITH STRUT.
11.) APPLIED LOADS INCLUDE VERTICAL GRAVITY LOADS PLUS VERTICAL SEISMIC LOADS.
12.) NOT USED.
13.) STRUT HOLE SIZE SHALL BE NO LARGER THAN BOLT DIAMETER PLUS 1/16" PER AISI.
14.) HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIAMETER BY MORE THAN 1/8" PER ICC-ESR.

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PAGE: 11-4
DATE: NOVEMBER 29, 2016

**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## SINGLE HILTI KB-TZ ANCHOR VERTICAL SUPPORT CONNECTION IN 3,000 PSI SAND LIGHTWEIGHT CONCRETE




| ANCHOR DIA. | "E" MIN. EFFECTIVE EMBED. DEPTH $h_{ef}$ | "D" MIN. EDGE DISTANCE | MIN. SPACING BETWEEN ANCHORS ON SAME FLUTE | ALLOWABLE STRENGTH DESIGN (ASD) |
|---|---|---|---|---|
| | | | | MAX. VERTICAL LOAD |
| | | | | SINGLE (LB) |
| 3/8" | 2" | 6 3/4" | 12" | 210 |
| 1/2" | 2" | 6 3/4" | 12" | 210 |
| 1/2" | 3 1/4" | 9 3/4" | 12" | 375 |
| 5/8" | 3 1/8" | 9 3/8" | 12" | 288 |
| 5/8" | 4" | 12" | 12" | 665 |

MAX. LOAD INCLUDES OVER STRENGTH FACTOR Ω0=2.5 PER ASCE 7-10, TABLE 13.6-1 TO SATISFY ACI-318-11.

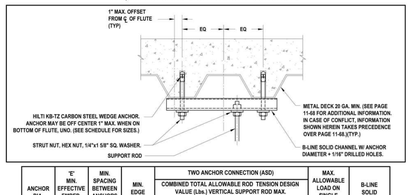
NOTES:
1.) ALLOWABLE LOADS ARE FOR ANCHORS INSTALLED IN SAND LIGHTWEIGHT CONCRETE HAVING A MIN. COMPRESSIVE STRENGTH OF 3,000 PSI AT THE TIME OF INSTALLATION AND DETERMINED PER ICC ESR-1917 (HILTI KB-TZ EXPANSION ANCHOR) FOR ANCHORS IN CRACKED CONCRETE, ALLOWABLE LOADS HAVE BEEN MULTIPLIED BY 0.75 PER ACI 318-11 APPENDIX D, D3.3.3.4 AND INTERACTION BASED ON D.7.3.
2.) FOR ESSENTIAL FACILITIES, 55 PERCENT OF THE EXPANSION TYPE ANCHORS (ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED TO TWICE THE ALLOWABLE CAPACITY IN TENSION. IF ANY ANCHOR FAILS, 20 CONSECUTIVE ANCHORS INSTALLED BY THE SAME TRADE MUST THEN ALSO BE TESTED BEFORE RESUMING 55 PERCENT TESTING. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF ANCHOR. SEE PAGE 11-66 FOR TESTING REQUIREMENTS.
3.) FOLLOW ALL WEDGE ANCHOR INSTALLATION REQUIREMENTS PER ICC ESR-1917 (2013)

NOTES CONTINUED:
4.) MINIMUM CONCRETE THICKNESS SHALL COMPLY WITH ICC ESR-1917 (2013). REFER TO METAL DECK DIMENSIONS SHOWN ABOVE.
5.) WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
6.) WHEN INSTALLING ANCHORS IN PRESTRESSED CONCRETE. LOCATE PRESTRESSING STEEL AND AVOID DAMAGING PRESTRESSING STEEL.
7.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED ALLOWABLE LOADS.
8.) SPECIAL INSPECTION SHALL BE PROVIDED PER CBC. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE CONTINUOUSLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT AND TIGHTENING TORQUE. TEST REPORT OF THE RESULTS SHALL BE SUBMITTED TO OSHPD.
9.) HANGER ROD DIAMETER SHALL BE EQUAL TO OR GREATER THAN THE ANCHOR DIAMETER.
10.) NOT USED.
11.) APPLIED LOADS INCLUDE VERTICAL GRAVITY LOADS PLUS VERTICAL SEISMIC LOADS.
12.) HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIAMETER BY MORE THAN 1/8" PER ICC-ESR.

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California SE No. S3545
PAGE: 11-7
DATE: NOVEMBER 29, 2016

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## DUAL HILTI KB-TZ ANCHOR VERTICAL SUPPORT CONNECTION IN 3,000 PSI SAND LIGHTWEIGHT CONCRETE




| ANCHOR DIA. | "E" MIN. EFFECTIVE EMBED. DEPTH $h_{ef}$ | MIN. SPACING BETWEEN ANCHORS ON SAME FLUTE | MIN. EDGE DISTANCE | TWO ANCHOR CONNECTION (ASD) | | | | MAX. ALLOWABLE LOAD ON SINGLE ANCHOR (LB) (ASD) | B-LINE SOLID CHANNEL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | COMBINED TOTAL ALLOWABLE ROD TENSION DESIGN VALUE (Lbs.) VERTICAL SUPPORT ROD MAX. OFFSET FROM C.L. (LB) | | | | | |
| | | | | CL ± 0". | CL ± 1" | CL ± 2" | CL ± 4" | | |
| 3/8" | 2" | 12" | 6 3/4" | 420 | 360 | 315 | 278 | 250 | B22 |
| 1/2" | 2" | 12" | 6 3/4" | 420 | 360 | 315 | 278 | 250 | B22 |
| 1/2" | 3 1/4" | 12" | 9 3/4" | 755 | 645 | 565 | 500 | 450 | B22A |
| 5/8" | 3 1/8" | 12" | 9 3/8" | 575 | 430 | 383 | 345 | 286 | B22A |
| 5/8" | 4" | 12" | 12" | 1335 | 1145 | 1000 | 885 | 600 | B22A |

MAX. LOAD INCLUDES OVER STRENGTH FACTOR Ω0=2.5 PER ASCE 7-10, TABLE 13.6-1 TO SATISFY ACI-318-11.

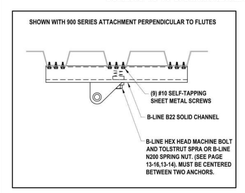
NOTES:
1.) ALLOWABLE LOADS ARE FOR ANCHORS INSTALLED IN SAND LIGHTWEIGHT CONCRETE HAVING A MIN. COMPRESSIVE STRENGTH OF 3,000 PSI AT THE TIME OF INSTALLATION AND DETERMINED PER ICC ESR-1917 (HILTI KB-TZ EXPANSION ANCHOR) FOR ANCHORS IN CRACKED CONCRETE, ALLOWABLE LOADS HAVE BEEN MULTIPLIED BY 0.75 PER ACI 318-11 APPENDIX D, D3.3.3.4 AND INTERACTION BASED ON D.7.3.
2.) FOR ESSENTIAL FACILITIES, 55 PERCENT OF THE EXPANSION TYPE ANCHORS (ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED TO TWICE THE ALLOWABLE CAPACITY IN TENSION. IF ANY ANCHOR FAILS, 20 CONSECUTIVE ANCHORS INSTALLED BY THE SAME TRADE MUST THEN ALSO BE TESTED BEFORE RESUMING 55 PERCENT TESTING. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF ANCHOR. SEE PAGE 11-66 FOR TESTING REQUIREMENTS.
3.) FOLLOW ALL WEDGE ANCHOR INSTALLATION REQUIREMENTS PER ICC ESR-1917 (2013)

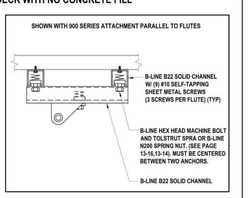
NOTES CONTINUED:
4.) MINIMUM CONCRETE THICKNESS SHALL COMPLY WITH ICC ESR-1917 (2013). REFER TO METAL DECK DIMENSIONS SHOWN ABOVE.
5.) WHEN INSTALLING ANCHORS IN REINFORCED CONCRETE, AVOID DAMAGING REINFORCING STEEL.
6.) WHEN INSTALLING ANCHORS IN PRESTRESSED CONCRETE. LOCATE PRESTRESSING STEEL AND AVOID DAMAGING PRESTRESSING STEEL.
7.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED ALLOWABLE LOADS.
8.) SPECIAL INSPECTION SHALL BE PROVIDED PER CBC. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE CONTINUOUSLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT AND TIGHTENING TORQUE. TEST REPORT OF THE RESULTS SHALL BE SUBMITTED TO OSHPD.
9.) HANGER ROD DIAMETER SHALL BE EQUAL TO OR GREATER THAN THE ANCHOR DIAMETER.
10.) NOT USED.
11.) APPLIED LOADS INCLUDE VERTICAL GRAVITY LOADS PLUS VERTICAL SEISMIC LOADS.
12.) NOT USED.
13.) STRUT HOLE SIZE SHALL BE NO LARGER THAN BOLT DIAMETER PLUS 1/16" PER AISI.
14.) HOLE DIAMETER THROUGH METAL DECK MAY NOT EXCEED ANCHOR HOLE DIAMETER BY MORE THAN 1/8" PER ICC-ESR.

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## SCREWS TO 18 GA. MIN. METAL DECK WITH NO CONCRETE FILL



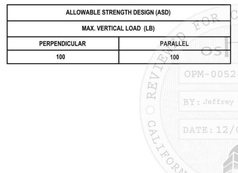

| ALLOWABLE STRENGTH DESIGN (ASD) | | | | | |
|---|---|---|---|---|---|
| MAX. HORIZONTAL LOAD | | | | | |
| BRACE ANGLE MEASURED FROM HORIZONTAL (LB) | | | | | |
| PERPENDICULAR | | | PARALLEL | | |
| 0° - 30° | 31° - 45° | 46° - 60° | 0° - 30° | 31° - 45° | 46° - 60° |
| 100 | 100 | 100 | 100 | 100 | 100 |

NOTES:
1.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED ALLOWABLE LOADS.
2.) STRUT NUTS MAY BE USED INSTEAD OF SPRING NUTS AS SHOWN.
3.) SCREWS SHALL BE 1" MIN. LONG.
4.) SCREWS SHALL BE SPACED AT 1/4" MINIMUM SPACING.
5.) STRUT HOLE SIZE SHALL BE NO LARGER THAN BOLT DIAMETER PLUS 1/16" PER AISI.

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## SCREWS TO 18 GA. MIN. METAL DECK WITH NO CONCRETE FILL







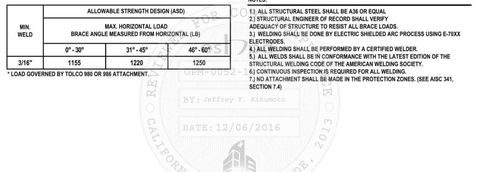
| ALLOWABLE STRENGTH DESIGN (ASD) | |
|---|---|
| MAX. VERTICAL LOAD (LB) | |
| PERPENDICULAR | PARALLEL |
| 100 | 100 |

NOTES:
1.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED ALLOWABLE LOADS.
2.) STRUT NUTS MAY BE USED INSTEAD OF SPRING NUTS AS SHOWN.
3.) SCREWS SHALL BE 1" MIN. LONG.
4.) SCREWS SHALL BE SPACED AT 5/8" MINIMUM SPACING WITH 3/8" MIN. EDGE DISTANCE.
5.) APPLIED LOADS INCLUDE VERTICAL GRAVITY LOADS PLUS VERTICAL SEISMIC LOADS.
6.) STRUT HOLE SIZE SHALL BE NO LARGER THAN BOLT DIAMETER PLUS 1/16" PER AISI.

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## WELD TO STEEL



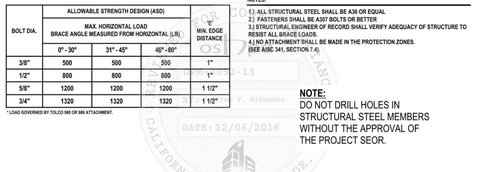

| MIN. WELD | ALLOWABLE STRENGTH DESIGN (ASD) | | |
|---|---|---|---|
| | MAX. HORIZONTAL LOAD BRACE ANGLE MEASURED FROM HORIZONTAL (LB) | | |
| | 0° - 30° | 31° - 45° | 46° - 60° |
| 3/16" | 1155 | 1220 | 1250 |

* LOAD GOVERNED BY TOLCO 980 OR 986 ATTACHMENT.

NOTES:
1.) ALL STRUCTURAL STEEL SHALL BE A36 OR EQUAL.
2.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF STRUCTURE TO RESIST ALL BRACE LOADS.
3.) WELDING SHALL BE DONE BY ELECTRIC SHIELDED ARC PROCESS USING E-70XX ELECTRODES.
4.) ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.
5.) ALL WELDS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY.
6.) CONTINUOUS INSPECTION IS REQUIRED FOR ALL WELDING.
7.) NO ATTACHMENT SHALL BE MADE IN THE PROTECTION ZONES. (SEE AISC 341, SECTION 7.4)

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## BOLT TO STEEL




| BOLT DIA. | ALLOWABLE STRENGTH DESIGN (ASD) | | | MIN. EDGE DISTANCE |
|---|---|---|---|---|
| | MAX. HORIZONTAL LOAD BRACE ANGLE MEASURED FROM HORIZONTAL (LB) | | | |
| | 0° - 30° | 31° - 45° | 46° - 60° | |
| 3/8" | 500 | 500 | 500 | 1" |
| 1/2" | 800 | 800 | 800 | 1" |
| 5/8" | 1200 | 1200 | 1200 | 1 1/2" |
| 3/4" | 1320 | 1320 | 1320 | 1 1/2" |

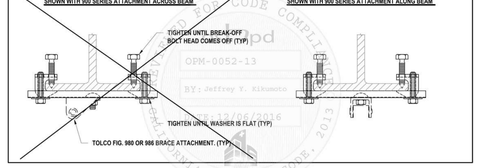
* LOAD GOVERNED BY TOLCO 980 OR 986 ATTACHMENT.

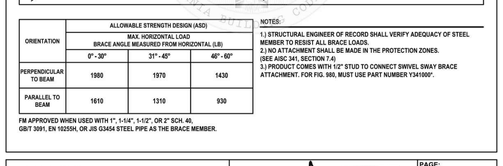
NOTES:
1.) ALL STRUCTURAL STEEL SHALL BE A36 OR EQUAL.
2.) FASTENERS SHALL BE A307 BOLTS OR BETTER
3.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF STRUCTURE TO RESIST ALL BRACE LOADS.
4.) NO ATTACHMENT SHALL BE MADE IN THE PROTECTION ZONES. (SEE AISC 341, SECTION 7.4)

**NOTE:**
DO NOT DRILL HOLES IN STRUCTURAL STEEL MEMBERS WITHOUT THE APPROVAL OF THE PROJECT SEOR.

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PAGE: 11-44
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## TOLCO FIG. 800 ATTACHMENT TO STEEL BEAM






| ORIENTATION | ALLOWABLE STRENGTH DESIGN (ASD) | | |
|---|---|---|---|
| | MAX. HORIZONTAL LOAD BRACE ANGLE MEASURED FROM HORIZONTAL (LB) | | |
| | 0° - 30° | 31° - 45° | 46° - 60° |
| PERPENDICULAR TO BEAM | 1980 | 1970 | 1430 |
| PARALLEL TO BEAM | 1610 | 1310 | 930 |

FM APPROVED WHEN USED WITH 1", 1-1/4", 1-1/2", OR 2" SCH. 40, GB/T 3091, EN 10255H, OR JIS G3454 STEEL PIPE AS THE BRACE MEMBER.

NOTES:
1.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF STEEL MEMBER TO RESIST ALL BRACE LOADS.
2.) NO ATTACHMENT SHALL BE MADE IN THE PROTECTION ZONES. (SEE AISC 341, SECTION 7.4)
3.) PRODUCT COMES WITH 1/2" STUD TO CONNECT SWIVEL SWAY BRACE ATTACHMENT. FOR FIG. 980, MUST USE PART NUMBER Y341000*.

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12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 390 of 501
12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 391 of 501
12/06/2016 OPM-0052-13: Reviewed for Code Compliance by Jeffrey Kikumoto Page 394 of 501

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR, LOS ANGELES, CA. 90071
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FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**ELECTRICAL DETAILS**

**DSA SUBMITTAL**
FILE NO.: 19-H10 A NO.: 03-123641
DATE: 06/23/2025 CLIENT PROJ NO: 3361008100
SHEET:

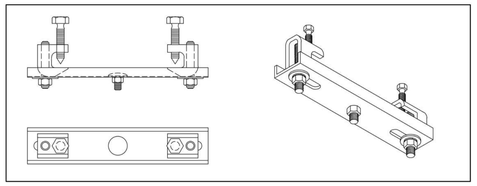
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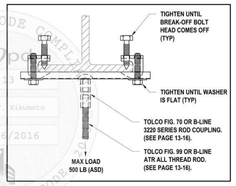
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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLANS SHEETS ORIGINAL PAGE SIZE

## TOLCO FIG. 800 ATTACHMENT TO STEEL BEAM






NOTES:
1.) STRUCTURAL ENGINEER OF RECORD SHALL VERIFY ADEQUACY OF STRUCTURE TO RESIST ALL BRACE LOADS.
2.) APPLIED LOADS INCLUDE VERTICAL GRAVITY LOADS PLUS VERTICAL SEISMIC LOADS.
3.) NO ATTACHMENT SHALL BE MADE IN THE PROTECTION ZONES. (SEE AISC 341, SECTION 7.4)

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Structural Engineer: Mohammad Hariri
California SE No. S3545

PAGE: 11-52
DATE: NOVEMBER 29, 2016

**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## BOLT AND STRUT NUT TIGHTENING REQUIREMENTS

**TORQUE FOR A307 AND A36 THREADED ROD**

| SIZE | TORQUE (FT-LB) |
|---|---|
| 1/4" | 6 |
| 3/8" | 20 |
| 1/2" | 49 |
| 5/8" | 97 |
| 3/4" | 173 |
| 7/8" | 200 |
| 1" | 250 |

**TORQUE FOR STRUT NUTS**

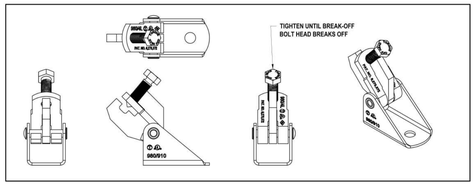
| SIZE | TORQUE (FT-LB) |
|---|---|
| 1/4" | 6 |
| 3/8" | 19 |
| 1/2" | 30 |
| 5/8" | 100 |
| 3/4" | 125 |
| 7/8" | 166 |
| 1" | 200 |

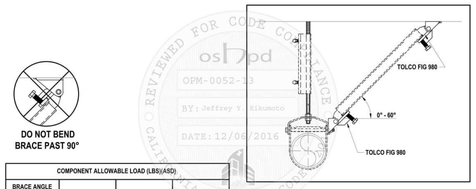
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DATE: NOVEMBER 29, 2016

## TOLCO FIG. 980 UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT




DO NOT BEND BRACE PAST 90°

| COMPONENT ALLOWABLE LOAD (LBS)(ASD) | | | |
|---|---|---|---|
| BRACE ANGLE MEASURED FROM HORIZ. | 0° - 30° | 31° - 45° | 46° - 60° |
| ALLOWABLE HORIZONTAL LOAD (LBS) | 1790 | 1819 | 1021 |

NOTES:
1.) MAX. ROD SIZE 3/4", FOR LARGER ROD DIAMETERS USE FIG. 980H.
2.) BRACE MAY BE B-LINE B22 SOLID CHANNEL, SCH. 40 STEEL PIPE, OR OTHER APPROVED MEMBER. SEE PAGE 12-20.
3.) MAY BE INSTALLED AT THE STRUCTURE OR AT THE HANGER LOCATION.

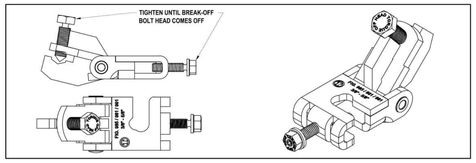
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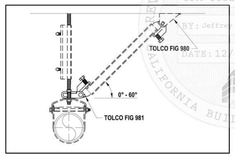
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**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

## TOLCO FIG. 981 "FAST ATTACH" UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT




| MINIMUM ROD SIZE | MAXIMUM ROD SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | | |
|---|---|---|---|---|
| | | 0° - 30° | 31° - 45° | 46° - 60° |
| 3/8" | 5/8" | 1840 | 1819 | 1384 |
| 3/4" | 3/4" | 1790 | 1891 | 1021 |

NOTES:
1.) MAX. ROD SIZE 7/8", FOR LARGER ROD DIAMETERS USE FIG. 980H.
2.) BRACE MAY BE B-LINE B22 SOLID CHANNEL, SCH. 40 STEEL PIPE, OR OTHER APPROVED MEMBER. SEE PAGE 12-20.
3.) MAY ONLY BE INSTALLED AT HANGER LOCATION, NOT TO THE STRUCTURE.

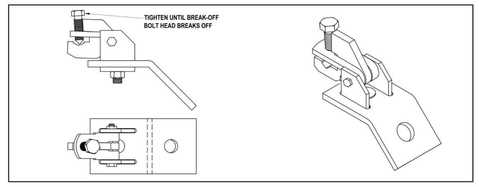
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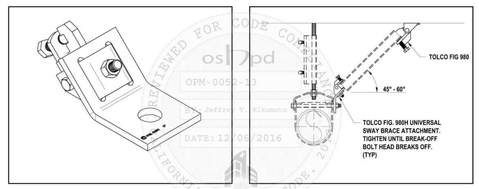
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## TOLCO FIG. 980H UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT




| MINIMUM ROD OR BOLT SIZE | MAXIMUM ROD OR BOLT SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | |
|---|---|---|---|
| | | 45° | 60° |
| 7/8" | 1-1/4" | 1401 | 1633 |

NOTES:
1.) FOR ROD SIZE 7/8" - 1 1/4", FOR SMALLER ROD DIAMETERS USE FIG. 980.
2.) BRACE MAY BE B-LINE B22 SOLID CHANNEL, SCH. 40 STEEL PIPE, OR OTHER APPROVED MEMBER. SEE PAGE 12-20.
3.) MAY BE INSTALLED AT THE STRUCTURE OR AT THE HANGER LOCATION.

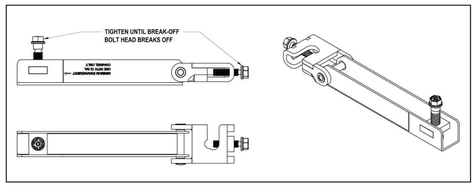
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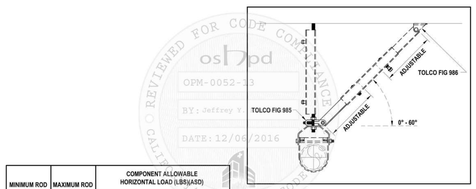
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## TOLCO FIG. 985 "FAST ATTACH" SWIVEL SWAY BRACE ATTACHMENT




| MINIMUM ROD SIZE | MAXIMUM ROD SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | | |
|---|---|---|---|---|
| | | 0° - 30° | 31° - 45° | 46° - 60° |
| 3/8" | 5/8" | 1268 | 1010 | 913 |
| 3/4" | 3/4" | 1493 | 1197 | 760 |

NOTES:
1.) FOR ROD SIZE 3/8" THRU 5/8" AND 3/4" THRU 7/8".
2.) FIG. 985 PROVIDES 6" OF ADJUSTABILITY; 12" WHEN USED IN COMBINATION WITH FIG. 986.
3.) BRACE MUST BE B-LINE B22 SOLID CHANNEL. SEE PAGE 12-20.
4.) MAY ONLY BE INSTALLED AT HANGER LOCATION, NOT TO THE STRUCTURE.

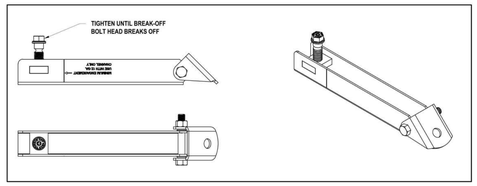
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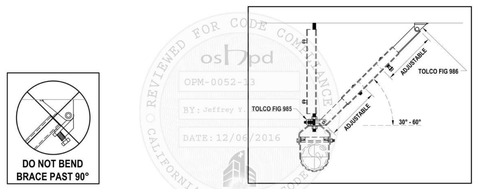
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## TOLCO FIG. 986 SWIVEL SWAY BRACE ATTACHMENT




DO NOT BEND BRACE PAST 90°

| MINIMUM ROD SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | | |
|---|---|---|---|
| | 30° | 31° - 45° | 46° - 60° |
| 1/2" | 1218 | 1347 | 788 |

NOTES:
1.) FOR ROD SIZE 1/2" THRU 3/4".
2.) FIG. 986 PROVIDES 6" OF ADJUSTABILITY; 12" WHEN USED IN COMBINATION WITH FIG. 985.
3.) BRACE MUST BE B-LINE B22 SOLID CHANNEL. SEE PAGE 12-20.
4.) MAY BE INSTALLED AT THE STRUCTURE OR AT THE HANGER LOCATION.
5.) HOLE FOR FIG. 986 MUST MATCH ROD SIZE.

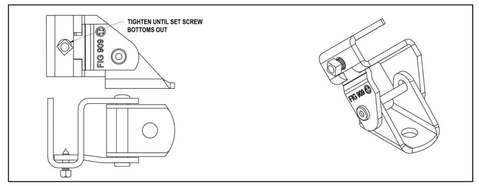
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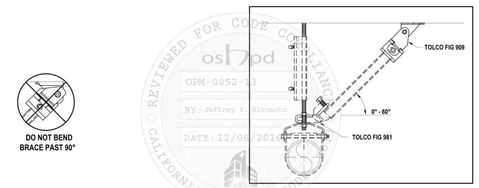
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## TOLCO FIG. 909 NO THREAD SWIVEL SWAY BRACE ATTACHMENT




DO NOT BEND BRACE PAST 90°

| MINIMUM ROD SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | | |
|---|---|---|---|
| | 0° - 30° | 31° - 45° | 46° - 60° |
| 1/2" | 1525 | 1286 | 886 |

NOTES:
1.) MAX. ROD SIZE 3/4", FOR LARGER ROD DIAMETERS USE FIG. 980H.
2.) BRACE MEMBER, 1" STEEL PIPE, MUST BE SCH10 OR SCH40. SEE PAGE 12-20

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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
VALERIA BALDERRAMA
E21403
Exp 03/31/26
ELECTRICAL
STATE OF CALIFORNIA

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Los Angeles, CA 90017
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Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

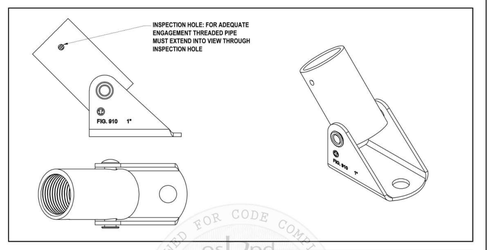
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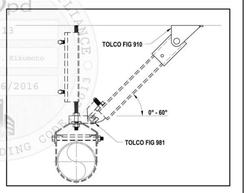
THE LINE SHOWN ABOVE IS 3/4" LONG ON ORIGINAL SHEETS ORIGINAL PAGE SIZE

## TOLCO FIG. 910 SWIVEL SWAY BRACE FITTING










| MINIMUM ROD SIZE | COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS)(ASD) | | |
|---|---|---|---|
| | 0° - 30° | 31° - 45° | 46° - 60° |
| 1/2" | 4137 | 3048 | 1845 |

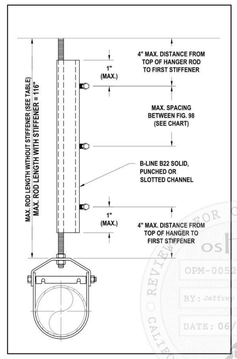
NOTES:
1.) MAX. ROD SIZE 3/4", FOR LARGER ROD DIAMETERS USE FIG. 980H.
2.) BRACE MEMBER, 1" OR 1-1/4" STEEL PIPE, MUST BE SCH10 OR SCH40 SEE PAGE 12-20.

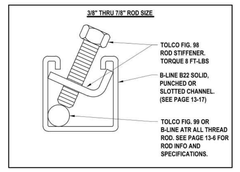


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## TOLCO FIG. 98 ROD STIFFENER



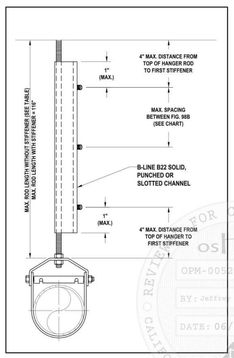

| ROD SIZE | MAX. ROD LENGTH WITHOUT ROD STIFFENER | MAX. COMPRESSION FORCE WITHOUT STIFFENER | MAX. SPACING BETWEEN TOLCO FIG. 98 | MAX. COMPRESSION FORCE WITH STIFFENER |
|---|---|---|---|---|
| 3/8" | 18" | 410 | 13" | 1246 |
| 1/2" | 25" | 730 | 18" | 2105 |
| 5/8" | 31" | 1160 | 23" | 3187 |
| 3/4" | 37" | 1690 | 28" | 4493 |
| 7/8" | 43" | 2320 | 33" | 6021 |

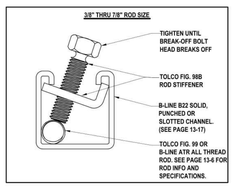
NOTES:
1.) ROD STIFFENERS ARE REQUIRED ONLY ON VERTICAL STRUT COMPONENT OF THE SEISMIC BRACE SYSTEM ON HANGER AND TRAPEZE ASSEMBLIES THAT HAVE SEISMIC BRACING BRACING ATTACHED AT OR WITHIN 6" OF THE ROD. A MINIMUM OF TWO ROD STIFFENERS (TOLCO FIG. 98) MUST BE INSTALLED.
2.) DETAIL APPLIES TO ALL HUNG UTILITIES INCLUDING SINGLE HUNG UTILITIES, TRAPEZE HUNG UTILITIES, AND HUNG EQUIPMENT.
3.) AN EXCEPTION IS THE USE OF TWO OPPOSING RIGID BRACES AT THE SAME LOCATION. FOR INDIVIDUALLY HUNG PIPE THE TWO OPPOSING RIGID BRACES MUST BE AT THE SAME HANGER ROD; TOTAL OF TWO (2) FOR TRANSVERSE, OR TWO (2) FOR LONGITUDINAL. FOR A TRAPEZE HANGER THE TWO OPPOSING RIGID BRACES MUST BE AT THE SAME HANGER ROD; TOTAL OF TWO (2) FOR TRANSVERSE, OR FOUR (4) FOR LONGITUDINAL. THE TWO OPPOSING BRACES MUST BE AT THE SAME ANGLE FROM HORIZONTAL AND WITHIN 5-DEGREES OF 180 DEGREES FROM EACH OTHER. IN THIS CASE NO STIFFENING OF VERTICAL ROD IS NECESSARY.
4.) MATERIAL SPECIFICATIONS FOR TOLCO FIG. 98, BODY: ASTM A-1011-CS TYPE B SAE 1006, BOLT: HEX BOLT GRADE 5





## TOLCO FIG. 98B ROD STIFFENER



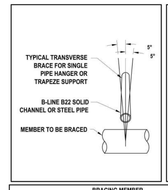

| ROD SIZE | MAX. ROD LENGTH WITHOUT ROD STIFFENER | MAX. COMPRESSION FORCE WITHOUT STIFFENER | MAX. SPACING BETWEEN TOLCO FIG. 98 | MAX. COMPRESSION FORCE WITH STIFFENER |
|---|---|---|---|---|
| 3/8" | 18" | 410 | 13" | 1246 |
| 1/2" | 25" | 730 | 18" | 2105 |
| 5/8" | 31" | 1160 | 23" | 3187 |
| 3/4" | 37" | 1690 | 28" | 4493 |
| 7/8" | 43" | 2320 | 33" | 6021 |

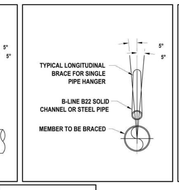
NOTES:
1.) ROD STIFFENERS ARE REQUIRED ONLY ON VERTICAL STRUT COMPONENT OF THE SEISMIC BRACE SYSTEM ON HANGER AND TRAPEZE ASSEMBLIES THAT HAVE SEISMIC BRACING BRACING ATTACHED AT OR WITHIN 6" OF THE ROD. A MINIMUM OF TWO ROD STIFFENERS (TOLCO FIG. 98B) MUST BE INSTALLED.
2.) DETAIL APPLIES TO ALL HUNG UTILITIES INCLUDING SINGLE HUNG UTILITIES, TRAPEZE HUNG UTILITIES, AND HUNG EQUIPMENT.
3.) AN EXCEPTION IS THE USE OF TWO OPPOSING RIGID BRACES AT THE SAME LOCATION. FOR INDIVIDUALLY HUNG PIPE THE TWO OPPOSING RIGID BRACES MUST BE AT THE SAME HANGER ROD; TOTAL OF TWO (2) FOR TRANSVERSE, OR TWO (2) FOR LONGITUDINAL. FOR A TRAPEZE HANGER THE TWO OPPOSING RIGID BRACES MUST BE AT THE SAME HANGER ROD; TOTAL OF TWO (2) FOR TRANSVERSE, OR FOUR (4) FOR LONGITUDINAL. THE TWO OPPOSING BRACES MUST BE AT THE SAME ANGLE FROM HORIZONTAL AND WITHIN 5-DEGREES OF 180 DEGREES FROM EACH OTHER. IN THIS CASE NO STIFFENING OF VERTICAL ROD IS NECESSARY.
4.) MATERIAL SPECIFICATIONS FOR TOLCO FIG. 98B, BODY: ASTM A-1011 CS TYPE B SAE; BREAK-OFF BOLT: 1035 (ASI-SAE) CASE HARDENED TO 0.015 MIN. DEPTH THRU HARDENED @ 45-55 RC FROM ANNEALED CONDITION.

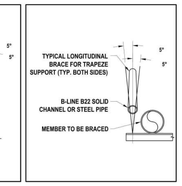




## MAXIMUM ALLOWABLE LENGTHS AND AXIAL LOADS FOR BRACE MEMBERS




| PIPE DIAMETER | MAXIMUM LENGTH | SCHED. | BRACING MEMBER ALLOWABLE HORIZ. SEISMIC LOAD (LBS)(ASD) BRACE ANGLE MEASURED FROM HORIZ. | | |
|---|---|---|---|---|---|
| | | | 0° - 30° | 31° - 45° | 46° - 60° |
| SEISMIC BRACING K/R = 200 | | | | | |
| 1" | 7'-0" | 40 | 970 | 792 | 560 |
| 1 1/4" | 9'-0" | 40 | 1387 | 1067 | 755 |
| 1 1/2" | 10'-4" | 40 | 1594 | 1301 | 920 |
| 2" | 13'-1" | 40 | 2126 | 1735 | 1227 |
| 3" | 19'-6" | 10 | 4330 | 3535 | 2500 |
| 3 1/2" | 22'-4" | 10 | 5264 | 4285 | 3030 |
| 4" | 25'-0" | 10 | 6235 | 5091 | 3600 |

| STRUT SIZE | MAXIMUM LENGTH | BRACING MEMBER ALLOWABLE HORIZ. SEISMIC LOAD (LBS)(ASD) BRACE ANGLE MEASURED FROM HORIZ. | | |
|---|---|---|---|---|
| | | 0° - 30° | 31° - 45° | 46° - 60° |
| SEISMIC BRACING K/R = 200 | | | | |
| B-LINE B22 | 9'-6" | 1900 | 1552 | 1097 |
| B-LINE B24 | 9'-6" | 1488 | 1215 | 859 |

| PRE STRETCHED GALVANIZED, 7X19 AIRCRAFT CABLE DIAMETER | MAXIMUM LENGTH | BRACING MEMBER ALLOWABLE HORIZ. SEISMIC LOAD (LBS)(ASD) BRACE ANGLE MEASURED FROM HORIZ. | | |
|---|---|---|---|---|
| | | 0° - 30° | 31° - 45° | 46° - 60° |
| SEISMIC BRACING K/R = N/A | | | | |
| 1/8" | ∞ | 873 | 689 | 487 |
| 3/16" | ∞ | 1774 | 1449 | 1024 |
| 1/4" | ∞ | 2727 | 2227 | 1574 |

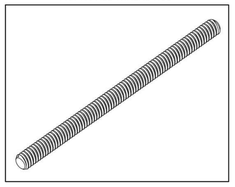
NOTES:
1.) ALL LONGITUDINAL AND TRANSVERSE BRACING UTILIZING PIPE OR CHANNEL AS THE BRACING MEMBER HAS A TOLERANCE OF 5° FROM CENTER IN ANY PLANE WITHOUT AFFECTING THE ALLOWABLE LOADS.
2.) TABULATED LOADS ARE SUBJECT TO LIMITS GOVERNED BY THE CAPACITY OF THE PRIMARY STRUCTURE, INCLUDING BUT NOT LIMITED TO, THE CONCRETE FILL OVER METAL DECK. CAPACITY PER THE CONTRACT DOCUMENTS.
3.) STEEL PIPE PER ASTM A53 TYPE E GRADE B.
4.) "MAXIMUM LENGTH" IS MEASURED FROM ENDS OF PIPE, OR ENDS OF STRUT, OR FROM ATTACHMENTS OF CABLE.
~~5.) PRE-STRETCHED GALVANIZED, 7 X19, AIRCRAFT CABLE SHALL BE IN COMPLIANCE WITH ASTM A1023.~~



**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.



## TOLCO FIG. 99 OR B-LINE ATR ALL THREAD ROD CUT-TO-LENGTH OR TOLCO FIG. 100 ALL THREAD ROD



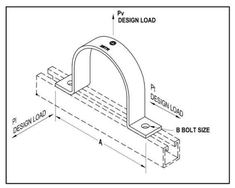
| ROD SIZE | DESIGN LOAD (ASD) (LBS) |
|---|---|
| 3/8" | 730 |
| 1/2" | 1350 |
| 5/8" | 2160 |
| 3/4" | 3230 |
| 7/8" | 4480 |

NOTES:
1.) ROD MEETS ASTM A307 SPECIFICATIONS.
2.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
3.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
4.) DESIGN LOAD (ASD) VALUES FROM MSS SP-58 (2009), TABLE 4 AND ARE INTENDED FOR USE IN DETERMINING VERTICAL HANGER SPACING WHEN CALCULATING MAXIMUM TRANSVERSE SPACING.
5.) SEISMIC CAPACITY GOVERNED BY ASSEMBLY. SEE SECTION 2 THRU 8 FOR APPROVED ASSEMBLIES.





## B-LINE B2400 2 HOLE PIPE STRAP (EMT CONDUIT)




| SCHEDULE EMT CONDUIT | | | | | | |
|---|---|---|---|---|---|---|
| PIPE SIZE | PIPE O.D. | A | B BOLT SIZE | DESIGN LOAD Pv (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) |
| 2 1/2" | 3.000 | 6 3/4" | 3/8" | 2799 | 1643 | 1409 |
| 3" | 3.500 | 6 3/4" | 3/8" | 2799 | 1643 | 1409 |
| 3 1/2" | 4.000 | 7 7/16" | 3/8" | 2418 | 1643 | 1409 |
| 4" | 4.500 | 7 13/16" | 1/2" | 2418 | 1659 | 1431 |

NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
3.) MOUNTING HARDWARE SEE BELOW.

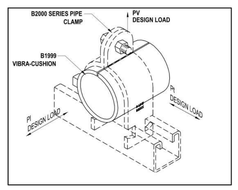
USE 3/8" x 1 1/4" HARDWARE ON 2 1/2" - 3 1/2" PIPE (TORQUE TO 19 FT./LBS).

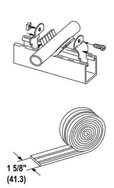
USE 1/2" x 1 1/4" HARDWARE ON 4" PIPE AND LARGER (TORQUE TO 50 FT./LBS).





## B-LINE B1999 SERIES CUSHION CLAMP



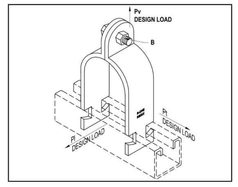

| FOR RIGID CONDUIT OR IRON PIPE | | | | UPWARD | LAT | LONG |
|---|---|---|---|---|---|---|
| NOMINAL SIZE | | LENGTH OF VIBRA-CUSHION | USE CLAMP NO. | LOAD Pv (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) |
| 3/4" | (20) | 3 1/4" (82.5) | B2031 | 2174 | 136 | 261 |
| 1" | (25) | 4 1/8" (104.8) | B2004 | 2174 | 136 | 261 |
| 1 1/4" | (32) | 5 3/16" (131.8) | B2012 | 2174 | 136 | 261 |
| 1 1/2" | (40) | 5 15/16" (150.8) | B2038 | 2174 | 70 | 261 |
| 2" | (50) | 7 1/2" (190.5) | B2042 | 2174 | 70 | 261 |
| 2 1/2" | (65) | 9" (228.6) | B2046 | 2433 | 70 | 287 |
| 3" | (80) | 11" (279.4) | B2051 | 2871 | 104 | 527 |
| 3 1/2" | (90) | 12 1/2 (317.5) | B2055 | 2871 | 57 | 484 |
| 4" | (100) | 14 1/2" (368.3) | B2059 | 2871 | 57 | 484 |
| 5" | (125) | 17 7/16" (442.9) | B2067 | 2871 | 57 | 484 |
| 6" | (150) | 20 3/4" (527.0) | B2116 | 3151 | 57 | 484 |

NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
3.) MAY BE USED ON SCHEDULE 40 OR THICKER WALLED PIPE.
4.) NOT INTENDED FOR USE WITH CALIUM-SILICATE INSULATION.





## B-LINE B2000 SERIES CLAMP




| PIPE SIZE | O.D. SIZE | B BOLT HOLE | BOLT SIZE | DESIGN LOAD Pv (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) | DESIGN LOAD Pl (LBS)(ASD) |
|---|---|---|---|---|---|---|
| 3/4" | 1.050 | 5/16" | 1/4" | 2195 | 353 | 612 |
| 1" | 1.315 | 5/16" | 1/4" | 2195 | 353 | 612 |
| 1 1/4" | 1.660 | 5/16" | 1/4" | 2195 | 353 | 612 |
| 1 1/2" | 1.900 | 3/8" | 5/16" | 2195 | 353 | 537 |
| 2" | 2.375 | 3/8" | 5/16" | 2195 | 353 | 537 |
| 2 1/2" | 2.875 | 3/8" | 5/16" | 2752 | 527 | 537 |
| 3" | 3.500 | 3/8" | 5/16" | 2533 | 573 | 504 |
| 3 1/2" | 4.000 | 3/8" | 5/16" | 2533 | 573 | 487 |
| 4" | 4.500 | 3/8" | 5/16" | 2533 | 573 | 487 |
| 5" | 5.563 | 3/8" | 5/16" | 2533 | 573 | 487 |
| 6" | 6.625 | 7/16" | 3/8" | 3695 | 573 | 497 |
| 8" | 8.625 | 7/16" | 3/8" | 3919 | 741 | 736 |

NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
3.) MOUNTING HARDWARE SEE BELOW.

USE 1/4" x 1" HARDWARE ON 1 1/4" PIPE AND SMALLER (TORQUE TO 6 FT./LBS).

USE 5/16" x 1 1/4" HARDWARE ON 1 1/2" - 5" PIPE (TORQUE TO 19 FT./LBS).

USE 3/8" x 1 1/4" HARDWARE ON 6" PIPE AND LARGER (TORQUE TO 50 FT./LBS).

4.) MAY BE USED ON SCHEDULE 40 OR THICKER WALLED PIPE.
5.) PIPE INSULATION SHALL BE INSTALLED AS SHOWN ON PAGE 12-22 AND SECTIONS 4 AND 8. USE REDUCTION FACTORS AS INDICATED IN SECTIONS 4 AND 8.






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DATE: 10/15/2025



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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

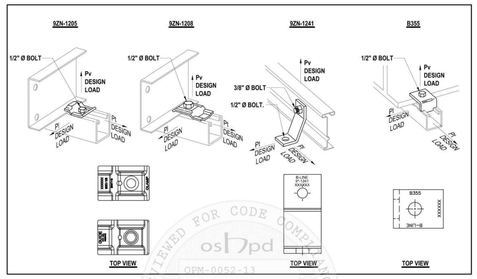
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL SHEETS ORIGINAL PAGE SIZE

## B-LINE 9ZN-1205, 9ZN-1208, 9ZN-1241 & B355 HOLD DOWN CLAMP




| PART NUMBER | CLAMP (ASD) ALLOWABLE LOAD Pv (LBS) | ALLOWABLE LOAD Pf (LBS) | ALLOWABLE LOAD Pf (LBS) |
|---|---|---|---|
| 9ZN-1205 | 1069 | 1527 | 407 |
| 9ZN-1208 | 791 | 1096 | 622 |
| 9ZN-1241 | 1831 | 949 | 441 |
| B355 | 3704 | 2869 | 1130 |

NOTES:
1.) LOADS ARE BASED ON CLAMPS BEING USED IN PAIRS
2.) LOADS APPLICABLE ONLY WITH B-LINE STRUT
3.) TIGHTEN 1/2" BOLTS TO FOLLOWING TORQUE VALUES:
   a.) FOR 9ZN-1205 TORQUE HARDWARE TO 50 FT. LBS.
   b.) FOR 9ZN-1208 TORQUE HARDWARE TO 50 FT. LBS.
   b.) FOR 9ZN-1241 TORQUE HARDWARE TO 50 FT. LBS.
   c.) FOR B355 TORQUE HARDWARE TO 50 FT. LBS.
4.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
5.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
6.) TO CHECK COMBINED TENSION AND SHEAR LOADS FOR UNITY, USE THE FOLLOWING:

$(Fv/Pv) + (Ft/Pt) + (Fl/Pl) \leq 1.0$

WHERE Fv, Ft & Fl ARE APPLIED LOADS.

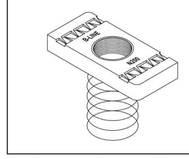


**NOTE:** LOADS INDICATED IN OPM DETAIL ARE FOR CONDUIT ONLY AND FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAIL 5/S0.29 FOR ATTACHMENT TO BARE METAL DECK. MAXIMUM LOADS ARE NOT ALLOWED TO EXCEED THOSE NOTED ON DETAILS 1/S0.29 AND 2/S0.29 FOR ATTACHMENT TO CONC OVER METAL DECK.

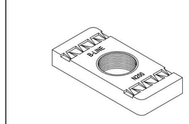


## B-LINE N200 SPRING NUT AND B-LINE BN200 CHANNEL NUT WITHOUT SPRING

B-LINE N200 SERIES SPRING NUT

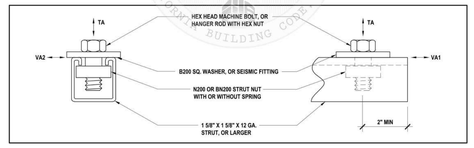


B-LINE BN200 SERIES CHANNEL NUT



| DIAMETER | DESIGN LOAD (ASD) RESISTANCE TO SLIP PARALLEL TO 12 GA. CHANNEL- VA1 (LBS) | DESIGN LOAD (ASD) RESISTANCE TO SLIP PERPENDICULAR TO 12 GA. CHANNEL -VA2 (LBS) | DESIGN LOAD (ASD) PULL-OUT STRENGTH 12GA. CHANNEL -TA (LBS) | TORQUE (FT. LBS) | METHOD OF ATTACHMENT |
|---|---|---|---|---|---|
| 3/8" | 1329 | 632 | 645 | 19 | BN/N00 SERIES ATTACHMENTS (WITH PRYING) |
| 1/2" - 3/4" | 1342 | 791 | 723 | 50 | |
| 3/8" | 2179 | 1261 | 3959 | 19 | DIRECT ATTACH (WITHOUT PRYING) |
| 1/2" - 3/4" | 3115 | 1412 | 3737 | 50 | |

NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
3.) TO CHECK COMBINED TENSION AND SHEAR LOADS FOR UNITY USE THE FOLLOWING:
   (a) FOR T & V1 USE $(V1/VA1)^{5/3} + (T/TA)^{5/3} \leq 1.0$
   (b) FOR T & V2 USE $(V2/VA2)^{5/3} + (T/TA)^{5/3} \leq 1.0$
   (c) FOR T, V1 & V2 USE $(V1/VA1)^{5/3} + (V2/VA2)^{5/3}, (T/TA)^{5/3} \leq 1.0$
4.) MATERIAL SPECIFICATIONS FOR B-LINE N200 SPRING NUT AND B-LINE BN200 CHANNEL NUT WITHOUT SPRING: ASTM A307, SAE J429, OR ASTM A563








## FASTENERS

TOLCO FIG. 126 OR B-LINE 3228 LAG BOLT



TOLCO FIG. 121 TEK SCREW



HEX HEAD MACHINE BOLT



TOLCO FIG. 70 OR B-LINE B655 SERIES ROD COUPLING



TOLCO FIG. 71 OR B-LINE B3220 SERIES ROD COUPLING



B-LINE HN SERIES HEX NUT



FLAT WASHER

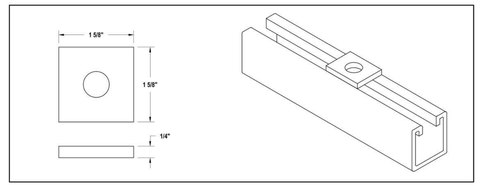


NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.





## B-LINE B200 SERIES FLAT FITTING




| PART NUMBER | BOLT SIZE | HOLE SIZE |
|---|---|---|
| B200 | 1/4" | 5/16" |
| B201 | 3/8" | 7/16" |
| B202 | 1/2" | 9/16" |
| B202-1 | 5/8" | 11/16" |
| B202-2 | 3/4" | 13/16" |

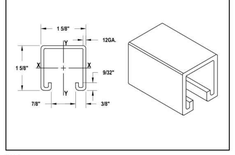
NOTES:
1.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
2.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.
3.) MATERIAL SPECIFICATIONS FOR B-LINE B200 SERIES FLAT FITTINGS: ASTM A307, SAE J429, OR ASTM A563



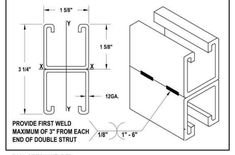


## B-LINE B22 AND B22A STITCH-WELDED CHANNEL

B-LINE B22




B-LINE B22A STITCH-WELDED




B-22

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 12" | 2,610 | .014 |
| 18" | 2,269 | .031 |
| 24" | 1,702 | .056 |
| 30" | 1,361 | .087 |
| 36" | 1,135 | .126 |
| 42" | 972 | .172 |
| 48" | 851 | .224 |
| 60" | 681 | .351 |
| 72" | 567 | .505 |
| 84" | 486 | .687 |
| 96" | 425 | .898 |
| 108" | 378 | 1.136 |
| 120" | 340 | 1.403 |

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-22 | 1.91 | .562 | .191 | .213 | .583 | .240 | .295 | .653 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

B22A STITCH-WELDED

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 12" | 2,610* | .002 |
| 18" | 2,610* | .007 |
| 24" | 2,610* | .017 |
| 30" | 2,610* | .033 |
| 36" | 2,610* | .057 |
| 42" | 2,610* | .091 |
| 48" | 2,405 | .125 |
| 60" | 1,924 | .195 |
| 72" | 1,603 | .281 |
| 84" | 1,374 | .383 |
| 96" | 1,202 | .500 |
| 108" | 1,069 | .633 |
| 120" | 962 | .782 |

* FAILURE DETERMINED BY WELD SHEAR

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-22ASW | 3.82 | 1.124 | .973 | .599 | .931 | .480 | .591 | .653 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

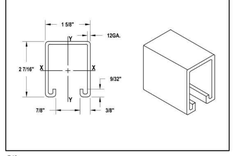
NOTES:
1.) BEAM LOADS: LOADS LISTED ARE UNIFORMLY DISTRIBUTED. FOR LOADS CONCENTRATED AT CENTER OF SPAN MULTIPLY UNIFORM LOAD AT TABLE BY .5 AND MULTIPLY THE DEFLECTION AT TABLE BY .8. WHEN DEFLECTION IS NOT A FACTOR USE ALLOWABLE STRESS OF 25,000 PSI. WHEN DEFLECTION IS A FACTOR USE DEFLECTION OF (SPAN / 480). ADEQUATE LATERAL BRACING IS PROVIDED BY SUPPORTED PIPES, DUCTS, CONDUITS, OR CABLE TRAYS (PIPES, DUCTS, CONDUITS OR CABLE TRAYS ARE MOUNTED DIRECTLY TO THE TOP OR BOTTOM OF THE STRUT CHANNEL BEAMS. FOR PIPES, DUCTS, CONDUITS OR CABLE TRAYS HANGING FROM STRUT CHANNEL BEAMS WITH HANGER RODS CONSULT FACTORY FOR LOADS).
2.) FOR (P) PUNCHED CHANNEL REDUCE LOAD BY 10%.
3.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
4.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.



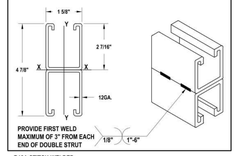


## B-LINE B12 AND B12A STITCH-WELDED CHANNEL

B-LINE B12




B-LINE B12A STITCH-WELDED




B12

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 24" | 3,273 | .038 |
| 36" | 2,182 | .086 |
| 48" | 1,636 | .153 |
| 60" | 1,309 | .240 |
| 72" | 1,091 | .345 |
| 84" | 935 | .470 |
| 96" | 818 | .614 |
| 108" | 727 | .777 |
| 120" | 655 | .959 |

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-12 | 2.48 | .731 | .535 | .406 | .856 | .350 | .416 | .680 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

B12A STITCH-WELDED

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 24" | 3,889* | .008 |
| 36" | 3,889* | .028 |
| 48" | 3,889* | .067 |
| 60" | 3,847* | .130 |
| 72" | 3,206 | .188 |
| 84" | 2,748 | .255 |
| 96" | 2,404 | .334 |
| 108" | 2,137 | .422 |
| 120" | 1,924 | .521 |

* FAILURE DETERMINED BY WELD SHEAR

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-12ASW | 4.97 | 1.462 | 2.904 | 1.192 | 1.409 | .676 | .832 | .680 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

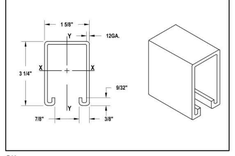
NOTES:
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3.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
4.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.



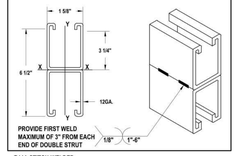


## B-LINE B11 AND B11A STITCH-WELDED CHANNEL

B-LINE B11




B-LINE B11A STITCH-WELDED




B11

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 24" | 5,130 | .029 |
| 36" | 3,488 | .065 |
| 48" | 2,616 | .117 |
| 60" | 2,093 | .183 |
| 72" | 1,744 | .263 |
| 84" | 1,495 | .358 |
| 96" | 1,308 | .468 |
| 108" | 1,163 | .592 |
| 120" | 1,046 | .731 |

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-11 | 3.06 | .900 | 1.120 | .647 | 1.116 | .436 | .536 | .696 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

B11A STITCH-WELDED

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 24" | 5,130* | .005 |
| 36" | 5,130* | .017 |
| 48" | 5,130* | .040 |
| 60" | 5,130* | .079 |
| 72" | 5,130* | .136 |
| 84" | 4,552 | .191 |
| 96" | 3,983 | .250 |
| 108" | 3,541 | .317 |
| 120" | 3,187 | .391 |

* FAILURE DETERMINED BY WELD SHEAR

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-11ASW | 6.12 | 1.800 | 6.393 | 1.967 | 1.885 | .871 | 1.073 | .696 |

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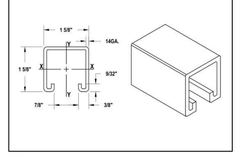
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3.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
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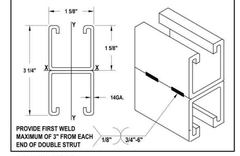


## B-LINE B24 AND B24A STITCH-WELDED CHANNEL

B-LINE B24




B-LINE B24A STITCH-WELDED




B-24

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 12" | 1,750 | .014 |
| 24" | 1,379 | .057 |
| 36" | 910 | .128 |
| 48" | 680 | .227 |
| 60" | 550 | .355 |
| 72" | 450 | .511 |
| 84" | 390 | .695 |
| 96" | 340 | .908 |
| 108" | 300 | 1.149 |
| 120" | 270 | 1.419 |

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-24 | 1.442 | .424 | .149 | .167 | .594 | .186 | .229 | .662 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

B24A STITCH-WELDED

| BEAM SPAN | UNIFORM BEAM LOAD AND DEFLECTION AXIS X-X LBS (ASD) | INCHES |
|---|---|---|
| 12" | 1,750* | .002 |
| 24" | 1,750* | .014 |
| 36" | 1,750* | .048 |
| 48" | 1,750* | .115 |
| 60" | 1,518 | .195 |
| 72" | 1,265 | .281 |
| 84" | 1,084 | .383 |
| 96" | 949 | .500 |
| 108" | 843 | .633 |
| 120" | 759 | .782 |

* FAILURE DETERMINED BY WELD SHEAR

| CHANNEL | WEIGHT LBS/FT. | AREA OF SECTION SQ. IN. | AXIS X-X I IN.$^4$ | AXIS X-X S IN.$^3$ | AXIS X-X R IN. | AXIS Y-Y I IN.$^4$ | AXIS Y-Y S IN.$^3$ | AXIS Y-Y R IN. |
|---|---|---|---|---|---|---|---|---|
| B-24ASW | 2.884 | .848 | .751 | .462 | .941 | .371 | .457 | .662 |

I = MOMENT OF INERTIA, S = SECTION MODULUS, R = RADIUS OF GYRATION

NOTES:
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DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025



HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER — VALERIA BALDERRAMA — E21403 — EXP. 03/31/26 — ELECTRICAL — STATE OF CALIFORNIA


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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ELECTRICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**E6.24**


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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF THIS SHEET IS ORIGINAL PAGE SIZE

## TOLCO FIG. 25 END-OF-LINE RESTRAINT ATTACHMENT




NOTES:
1.) CAN BE USED AS ALTERNATIVE TO RUNNING ROD TO PIPE ON FIRE PROTECTION BRANCH LINE RESTRAINTS.
2.) THIS SEISMIC HANGER COMPONENT HAS BEEN TESTED FOR SEISMIC APPLICATION AS SHOWN IN SECTION 2, 4, 6 AND 8.
3.) THIS COMPONENT CANNOT BE REPLACED BY ANY OTHER COMPONENT, OSHPD APPROVED OR OTHERWISE, UNLESS TESTED PER SECTION 2, 4, 6 AND 8 USING TOLCO SEISMIC COMPONENTS.

REVIEWED FOR CODE COMPLIANCE OSHPD OPM-0052-13 BY: Jeffrey Y. Kikumoto DATE: 12/06/2016 CALIFORNIA BUILDING CODE, 2013

EATON'S B-LINE BUSINESS
509 WEST MONROE STREET | HIGHLAND, IL 62249
P: (800) 851-7415 | F: (800) 356 1438
Structural Engineer: Mohammad Hariri
California SE No. S3545
PAGE: 13-37
DATE: NOVEMBER 29, 2016



## RIGID METAL CONDUIT (RMC) MAXIMUM SEISMIC BRACE SPACING (ASD)

| Pipe Diameter (in) | Max. Weight (plf) | Max Gravity Support Spacing (ft) | Max Transverse Spacing per Lateral g Force (ft) | | | |
|---|---|---|---|---|---|---|
| | | | 0.5g | 0.75g | 1.0g | 1.31g |
| 3/4 | 1.33 | 10 | 24 | 21 | 19 | 17 |
| 1 | 1.99 | 12 | 28 | 24 | 22 | 20 |
| 1-1/4 | 2.84 | 14 | 32 | 28 | 26 | 23 |
| 1-1/2 | 3.53 | 14 | 34 | 31 | 28 | 25 |
| 2 | 4.98 | 16 | 38 | 34 | 32 | 29 |
| 2-1/2 | 7.7 | 16 | 41 | 37 | 35 | 32 |
| 3 | 10.52 | 20 | 45 | 41 | 38 | 35 |
| 3-1/2 | 13.14 | 20 | 48 | 44 | 41 | 37 |
| 4 | 15.72 | 20 | 52 | 47 | 44 | 41 |
| 5 | 22.76 | 20 | 56 | 51 | 47 | 44 |
| 6 | 31.03 | 20 | 61 | 55 | 51 | 47 |

NOTES:
1. MAXIMUM BRACE SPACING IS BASED ON ASCE 7-10 SECTION 13.6.8, NOTE b, 70 PERCENT OF THE MATERIAL MINIMUM SPECIFIED TENSILE STRENGTH FOR STEEL TUBING WITH THREADED CONNECTIONS.
2. RMC CONSIDERED FULL OF WATER WHEN DETERMINING WEIGHT.
3. BRACE AND OR CONNECTION CAPACITY MAY GOVERN MAXIMUM SPACING IN SOME CASES. SEE SECTIONS 2, 3, 4, 5, 6, 7, 8, & 9.
4. BRACE SPACINGS ARE BASED ON RIGID METAL CONDUIT (RMC) CONSTRUCTED TO UL-6 OR ANSI C-80.1 WITH A MINIMUM YIELD STRENGTH OF 30,000 PSI.
5. FOR VALUES BETWEEN 0.5g, 0.75g,AND 1.0g, IT IS ACCEPTABLE TO INTERPOLATE FOR INTERMEDIATE VALUES. IT IS INTENDED THAT 1.31g BE THE MAXIMUM.

REVIEWED FOR CODE COMPLIANCE OSHPD OPM-0052-13 BY: Jeffrey Y. Kikumoto DATE: 12/06/2016 CALIFORNIA BUILDING CODE, 2013

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### 7.0 SEISMIC BRACING LAYOUT - GENERAL REQUIREMENTS

I. The Eaton B-Line TOLCO Seismic Restraint Guidelines provides for the protection of suspended pipe, ducts and electrical systems and equipment against excessive movement due to seismic forces.

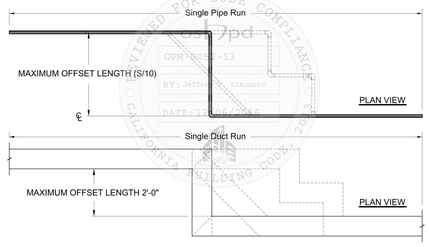
II. The seismic restraint assemblies in this guideline are designed to simultaneously resist vertical loads due to the weight of the component and its contents and both horizontal and vertical seismic loads.

III. Horizontal loads are braced with two types of seismic restraints;

A. Transverse Brace to protect pipe, duct, or electrical conduit and cable tray against movement perpendicular to its run.

B. Longitudinal Brace to protect pipe, duct, or electrical conduit and cable tray against movement parallel to its run.

IV. A run of pipe, duct or electrical system is defined as a straight length. If there occurs an offset(s) between changes of direction it may be neglected if the distance perpendicular to the run is less than the maximum offset length, S/10, where S is the maximum transverse brace spacing tabulated in Section 14 less any reductions from Sections 2 thru 13. For ductwork the maximum offset length shall be less than 2 feet (inside-to-inside). See detail below.



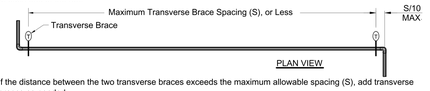

NOTE: When a run of pipe, duct or electrical system that requires bracing transitions down to a size that does not, the point of transition is considered the end of the run and will require a transverse brace.

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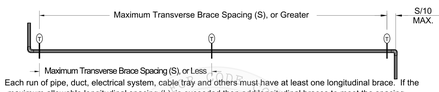


### 7.0 SEISMIC BRACING LAYOUT - GENERAL REQUIREMENTS (CONTINUED)

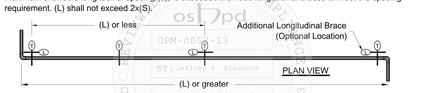
V. Each run of pipe, duct, electrical conduit, cable tray and others requires a minimum of two transverse braces one at each end of the run.




VI. If the distance between the two transverse braces exceeds the maximum allowable spacing (S), add transverse braces as needed.



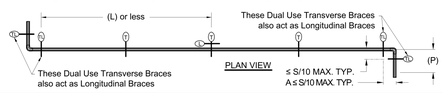

VII. Each run of pipe, duct, electrical system, cable tray and others must have at least one longitudinal brace. If the maximum allowable longitudinal spacing (L), is exceeded then add longitudinal braces to meet the spacing requirement. (L) shall not exceed 2x(S).




VIII. Each run of pipe, duct, electrical system, cable tray and others requires a minimum of one longitudinal brace. However, a transverse brace placed on the run section at the opposite side of an elbow or tee within S/10 MAX. may act as a longitudinal brace, and can be referred to as a "DUAL USE" brace. Dual Use Braces are to be designed for worst case of longitudinal or transverse loading. Distance to first longitudinal brace around corner (P) shall not exceed maximum longitudinal spacing (L), minus S/2, minus A. See layout example below.

A. Longitudinal and Longitudinal "DUAL USE" braces on single supported pipe or conduit shall be attached directly to the pipe or conduit.

B. Bracing installed to smaller piping shall not be used to brace larger piping.

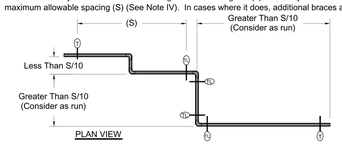



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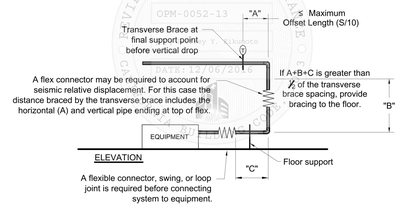


### 7.0 SEISMIC BRACING LAYOUT - GENERAL REQUIREMENTS (CONTINUED)

IX. In some cases several short runs may occur in close proximity. By following the preceding guidelines each run shall have longitudinal and transverse bracing. Transverse bracing may be used as longitudinal bracing and vice versa on runs adjacent to each other as long as the total length of pipe tributary to the brace does not exceed the maximum allowable spacing (S) (See Note IV). In cases where it does, additional braces are required.




X. At vertical pipe or conduit drop to equipment, where pipe or conduit is connected to the equipment using a flexible connection, provide transverse bracing before the vertical drop. The total length from the transverse brace to the vertical drop shall not be more than the allowable offset previously determined (S/10). Provide transverse bracing at the floor after the vertical drop if the total length of the pipe from the transverse brace before the vertical drop to the flexible connection is greater than ½ of the maximum transverse brace spacing (S/10).




XI. When systems cross a building seismic separation or seismic joint they must be capable of accommodating the joint displacements as specified by the engineer of record.

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DATE: NOVEMBER 29, 2016



### 7.0 SEISMIC BRACING LAYOUT - GENERAL REQUIREMENTS (CONTINUED)

XII. A system shall not be braced to dissimilar parts of a building structure or two dissimilar building systems that may move different from one another during an earthquake. Bracing shall be attached to the part of the building structure that is supporting the pipe, duct or electrical system.

XIII. Transverse and longitudinal braces shall be installed as shown in this guideline up to 60° from horizontal. However, the recommended brace ratio is 45° from horizontal, or 1 (vert.):1 (horiz.) brace ratio.

XIV. All transverse and longitudinal braces utilizing strut, steel pipe, or steel cable with Tolco Fig. 900 series fittings on both ends have an alignment tolerance of 5° from center without adversely affecting the given loads. This applies to single hanger supports as well as trapeze hanger support. See page 12-20 for more information.

XV. The seismic brace assemblies in this guideline consist of three important components; (a) supports and attachments to building structure; (b) brace member such as strut, pipe, angle iron, or cable; and (c) seismic brace attachments. For details and load information of structural attachments see Section 11, for details of brace assemblies see applicable "Brace Details" section(s).

XVI. Single Rigid Braces, where required, must be at or within 6 inches of a vertical hanger assembly to protect against vertical movement. When the vertical hanger assembly consists of threaded rod for support a stiffener is to be provided when required (see page 12-16, 12-17). An exception to this would be the use of two opposing rigid braces at the same location. The two opposing braces must be at the same angle from horizontal and within 5-degrees of perpendicular to the pipe. In this case no stiffening of vertical rod is necessary.

XVII. At a brace location, threaded rod and their building attachment components used in a vertical hanger assembly shall be increased in size when capacity is inadequate for loads due to the additional seismic tension loads placed upon them. The vertical hanger assembly is adequate if the maximum allowable load of its components is greater than or equal to the system gravity load plus any additional seismic loads.

XVIII. Steel bolt connections to steel structure or components shall not have a diameter less than 1/16" less than the mounting hole. Steel bolt connections to concrete structure shall not have a diameter less that 1/8" less than the mounting hole.

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**ELECTRICAL DETAILS**

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# GENERAL NOTES

1. PRIOR TO BIDDING, CONTRACTOR TO VISIT SITE AND VERIFY FIELD CONDITIONS, DIMENSIONS, SPACING AND ROUTING OF ALL PLUMBING PIPING. ANY DISCREPANCIES WITH FIELD CONDITIONS AND THESE DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR IMMEDIATE RESOLUTION. COORDINATE WITH OTHER TRADES FOR CLEARANCES AND TIMELY FINISH.
2. ALL WORK SHALL COMPLY WITH CURRENT CALIFORNIA PLUMBING CODES, CALIFORNIA STATE FIRE MARSHAL, CURRENT CALIFORNIA BUILDING CODES, CURRENT CALIFORNIA GREEN BUILDING STANDARDS CODES, CURRENT CALIFORNIA ADMINISTRATIVE CODE TITLES 17,20,24 AND AUTHORITIES HAVING JURISDICTION'S CODE AMENDMENTS. CONTRACTOR SHALL COMPLY WITH ALL SAFETY REQUIREMENTS SET FORTH BY THE LOCAL AUTHORITIES HAVING JURISDICTION.
3. 8½"x11" PROJECT MANUALS, INCLUDING SPECIFICATIONS, EQUIPMENT AND FIXTURES AND BUILDING STANDARDS SHALL BE A PART OF THIS WORK.
4. ALL SYMBOLS SHOWN ON SYMBOLS LIST ARE NOT NECESSARILY USED ON THIS PROJECT.
5. ALL EQUIPMENT, FIXTURES AND MATERIALS SHOWN ON PLANS SHALL BE NEW, BEST OF THEIR RESPECTIVE KIND, FREE FROM DEFECTS, IN GOOD CONDITIONS, OF THE MAKE AND QUALITY SPECIFIED, AND SHALL CONFORM TO ALL LOCAL APPLICABLE CODES AND REGULATIONS.
6. BEFORE STARTING ANY WORK, CONTRACTOR SHALL PREPARE COORDINATED SHOP DRAWINGS PER SPECIFICATIONS AND SUBMIT FOR ENGINEER'S REVIEW. THIS INCLUDES EXAMINING THE COMPLETE SET OF DRAWINGS FOR ALL TRADES, INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, AND ELECTRICAL. VERIFY ALL DIMENSIONS, SPACE REQUIREMENTS AND POINTS OF CONNECTION TO ALL FIXTURES AND EQUIPMENT. MAKE ALL REQUIRED ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE AND THE WORK OF OTHER TRADES AND TO PROVIDE A COMPLETE INSTALLATION.
7. SUBMISSION OF A PROPOSAL SHALL BE EVIDENCE THAT A CAREFUL EXAMINATION OF THE SITE, DRAWINGS & SPECIFICATIONS HAVE BEEN MADE AND THE CONTRACTOR IS FAMILIAR WITH THOSE ITEMS AND AREAS THAT WILL PRESENT DIFFICULTY TO THE PERFORMANCE OF THIS CONTRACT. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT, ETC. NECESSARY TO COMPLETE ALL WORK AS A RESULT OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN.
8. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE AND SAFE INSTALLATION OF PLUMBING AND FIRE PROTECTION IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION; ALL AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED FOR THE SYSTEMS INCLUDED. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATES, FILING AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
9. PLUMBING DRAWINGS AND LAYOUTS ARE DIAGRAMMATIC TO SHOW DESIGN INTENT, TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DUE TO STRUCTURAL, MECHANICAL DUCT OR PIPING INTERFERENCE, RETAINED EXISTING FACILITIES, OR FOR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING, AND THE RECORD DRAWINGS SHALL BE ACCURATELY REVISED TO SHOW THE CHANGES AS COMPLETED. DO NOT SCALE FOR MATERIAL QUANTITIES. ALL SCALING SHOULD BE REFERENCED TO ARCHITECTURAL PLANS ONLY.
10. IF ANY EQUIPMENT SUBMITTED BY THE CONTRACTOR IS DIFFERENT FROM THAT SPECIFIED OR REQUIRES CHANGES IN MATERIAL OR LABOR FROM THAT REQUIRED IN THE CONTRACT DOCUMENTS AFFECTING THIS AND/OR OTHER TRADES, SUCH CHANGES SHALL BE SUBMITTED AS SHOP DRAWINGS. SUBMITTALS SHALL INDICATE CREDIT DUE TO OWNER. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PAYMENT OF ALL CHARGES RESULTING FROM ADDITIONS OR CHANGES IN THE WORK OF OTHER TRADES NECESSARY TO ACCOMMODATE THE REQUESTED MODIFICATION. ALL CHANGES SHALL BE SHOWN ON CONTRACTOR'S RECORD AND AS-BUILT DRAWINGS. ALL REVISED EQUIPMENT SHALL BE APPROVED BY CITY INSPECTOR AND A.H.J. PRIOR TO START OF WORK.
11. UNLESS INSTRUCTED OTHERWISE, THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, INSPECTIONS, AND FEES REQUIRED FOR INSTALLATION OF ALL THE WORK AND ALL OTHER AGENCIES HAVING JURISDICTION OVER SERVICES TO THIS BUILDING. FURNISH FINAL CERTIFICATE OF INSPECTION OR WRITTEN EVIDENCE OF ACCEPTANCE BY INSPECTION AUTHORITIES FOR ALL WORK INSTALLED.
12. PROVIDE A COMPLETE PLUMBING SYSTEM FOR ALL AREAS IN SCOPE OF WORK INCLUDING PLUMBING FIXTURE ROUGH-INS AND ALL UTILITY PIPING. PROVIDE ROUGH-INS, EXTEND ALL PIPING (WASTE, VENT, COLD WATER, HOT WATER, ETC.) TO ALL FIXTURES AND APPLIANCES AS INDICATED ON THE ARCHITECTURAL DRAWINGS. PROVIDE ACCESSIBLE ISOLATION VALVES FOR CW AND HW AT EACH INDIVIDUAL PLUMBING FIXTURE (INCLUDING CHROME PLATED ANGLE STOPS AND P-TRAPS) AND EQUIPMENT.
13. SHUT OFF VALVES, WATER CONTROL DEVICES, ETC. SHALL BE THE SAME SIZE AS PIPING SERVED, UNLESS NOTED OTHERWISE. ALL BRANCH LINES FOR DOMESTIC HOT AND COLD WATER SHALL BE PROVIDED WITH LINE SIZED ISOLATION VALVE WITH ACCESS DOOR.
14. ALL CHROME PLATED ANGLE STOPS AT CW AND HW SUPPLY LINES SHALL BE INSTALLED AS CLOSE TO THE WALL AS POSSIBLE WITH CHROME PLATED ESCUTCHEON. ANY EXPOSED COPPER PIPING UPSTREAM OF ANGLE STOP SHALL HAVE CHROME FINISH.
15. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL LAYOUTS AND EXACT LOCATIONS OF PLUMBING FIXTURES, FLOOR DRAINS, DOWNSPOUT NOZZLES, AREA DRAINS, ETC. WHERE DIMENSIONS ARE NOT GIVEN CENTERLINE FIXTURE PLACEMENT, MOUNTING HEIGHTS, SPOUT HEIGHTS, ETC., SHALL BE IN COMPLIANCE WITH THE FEDERAL ADA REQUIREMENTS AND THE CURRENT BUILDING AND PLUMBING CODES.
16. ALL PLUMBING SYSTEM SHALL BE LISTED FOR ITS INTENDED USE AND SHALL COMPLY WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
17. UNLESS OTHERWISE SPECIFIED, ALL PLUMBING ITEMS SHALL BE THE PRODUCT OF MANUFACTURERS REGULARLY ENGAGED IN THEIR MANUFACTURE. ALL ITEMS OF A GIVEN TYPE SHALL BE THE PRODUCTS OF THE SAME MANUFACTURER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING CURRENT REQUIREMENTS WITH THE MANUFACTURER OF THE PRODUCTS USED ON THE PROJECT AND NOTIFY THE OWNER'S REPRESENTATIVE IF ANY DISCREPANCIES ARE FOUND BEFORE THE PURCHASE OF THE PRODUCT AND PRIOR TO INSTALLATION WORK OF ANY OWNER-FURNISHED PRODUCTS.
18. PROVIDE FULL PORT TYPE BALL VALVE FOR DOMESTIC WATER SYSTEM. BUTTERFLY VALVES SHALL NOT BE ALLOWED.
19. FURNISH EQUIPMENT AND ACCESSORIES NEW AND FREE FROM DEFECTS.
20. PLUMBING SYSTEM COMPONENTS, EQUIPMENT AND APPURTENANCES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS, RECOMMENDATIONS CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND ALL ACCESSORIES AND DEVICES REQUIRED FOR A COMPLETE OPTIMUM WORKABLE INSTALLATION.
21. PROVIDE MINIMUM 18" X 18" ACCESS PANELS IN WALLS FOR SHUT-OFF VALVES, TRAP PRIMERS, AND WATER HAMMER ARRESTORS, OR LOCATE ABOVE ACCESSIBLE CEILINGS. LOCATIONS SHALL BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION. ALL ITEMS REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE THE AREAS OF GYPSUM BOARD CEILINGS WITHOUT PERMISSION OF THE ARCHITECT. ALL REQUIRED SHUT-OFF AND CONTROL VALVES SHALL BE ACCESSIBLE. REFER TO ARCHITECTURAL SPECIFICATIONS AND DRAWINGS FOR ACCESS PANEL TYPE, AND LOCATION. ACCESS PANEL SIZE SHALL BE BASED ON CODE AND MANUFACTURER'S REQUIREMENTS.
22. PROVIDE SERVICE CLEARANCE FOR ALL VALVES, AND EQUIPMENTS PER MANUFACTURER'S RECOMMENDATIONS. ALL VALVES INCLUDING BEHIND ACCESS DOORS SHALL BE WITHIN 24" REACHABLE DISTANCE.
23. BARRIER FREE PLUMBING FIXTURES SHALL BE MOUNTED AT REQUIRED HEIGHTS AND INSTALLED WITH ALL RELATED ACCESSORIES AND SPACES AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND AMERICANS WITH DISABILITIES ACT (ADA). ALL FIXTURE TRAPS, PIPING AND VALVES UNDER THE FIXTURE SHALL BE INSULATED WITH A FACTORY PREFORMED INSULATION IN COMPLIANCE WITH ASTM E 84. REFER TO DIVISION 22 PLUMBING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
24. INSTALL A MANUFACTURER'S RECOMMENDED NEUTRALIZING KIT AS REQUIRED BY LOCAL CODES TO CONDENSATE DRAIN FROM EACH WATER HEATER. LOWER PH LEVELS ARE ACIDIC. DO NOT CONNECT A METAL CONDENSATE DRAIN LINE, SUCH AS COPPER PIPE, TO THE WATER HEATER FOR THIS REASON. THE FIELD INSTALLED CONDENSATE DRAIN LINE SHALL BE FULL SIZED EQUAL TO DRAIN OUTLET, AND SHALL NOT BE LESS THAN 1/2 INCH PVC IN SIZE. DO NOT REMOVE, MODIFY OR ALTER THE FACTORY CONDENSATE TRAP.
25. ALL CONDENSATE DRAIN PIPING (INCLUDING CNDS AND FOCD) SHALL BE INSULATED SIMILAR TO HOT WATER PIPING INSULATION'S MATERIALS AND WITH 1-INCH THICKNESS.
26. INSULATE INDIRECT DRAIN LINES FROM REFRIGERATORS, FREEZERS, ICE BINS, ETC., TO PREVENT CONDENSATION. INSULATE ALL WASTE PIPING RECEIVING CONDENSATE DRAIN INCLUDING THE RECEPTOR DRAIN BODY. INSULATION SHALL BE SIMILAR TO HOT WATER PIPING INSULATION'S MATERIALS AND WITH 1-INCH THICKNESS.
27. EACH DOMESTIC WATER PIPING CONNECTION TO KITCHEN/PANTRY EQUIPMENTS AND APPLIANCES INCLUDING ICE MAKERS, REFRIGERATORS, COFFEE MAKERS, WATER DISPENSERS, ETC., SHALL BE PROVIDED WITH APPROVED DOUBLE CHECK VALVE AND ISOLATION VALVE.
28. PROVIDE PIPING ISOLATION ON STUD WALL USING 1/4" FELT OR NEOPRENE ISOLATION, OR APPROVED SMWF ISOLATOR.
29. CIRCULATING HOT WATER SYSTEMS SHALL BE PROVIDED WITH CIRCULATING PUMP(S) AND CONTROLS EQUIPPED WITH A CONTROL (AQUASTAT) CAPABLE OF AUTOMATICALLY TURNING OFF THE CIRCULATING PUMP(S) WHEN HOT WATER TEMPERATURES ARE ACHIEVED. CIRCULATING PUMPS SHALL BE AUTOMATICALLY TURNED OFF DURING NON BUSINESS HOURS (TIME CLOCK).
30. ENSURE ALL ACCESSIBLE WATER CLOSET TRIP LEVERS SHALL BE MOUNTED ON THE WIDE SIDE.

# GENERAL NOTES CONTINUED

31. SHOWER VALVES SHALL BE PRESSURE BALANCED TYPE AND ADA COMPLIANT AS CALLED OUT IN THE ARCHITECTURAL PLANS. SHOWER VALVES SHALL EACH HAVE HOT AND COLD WATER CHECK STOPS AND MAXIMUM TEMPERATURE LIMIT STOPS.
32. HORIZONTAL SOIL, WASTE, AND TRAP PRIMER PIPING WITHIN THE BUILDING SHALL BE INSTALLED CONCEALED WITHIN WALLS, BELOW FINISH FLOOR, OR BELOW FINISH SLAB AS APPLICABLE UNLESS NOTED OTHERWISE. ALL OTHER HORIZONTAL PIPING WITHIN THE BUILDING SHALL BE INSTALLED CONCEALED ABOVE CEILING OR WITHIN WALLS AS APPLICABLE UNLESS NOTED OTHERWISE. ALL VERTICAL PIPING SHALL BE INSTALLED CONCEALED WITHIN WALLS UNLESS NOTED OTHERWISE. NO PIPING SHALL BE INSTALLED IN EXPOSED LOCATIONS UNLESS SPECIFICALLY NOTED AS SUCH ON PLANS.
33. NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD REQUIRED BY CURRENT CALIFORNIA PLUMBING CODE, DIVISION 22 AND AUTHORITIES HAVING JURISDICTION.
34. ALL VENTS THRU ROOF SHALL BE MINIMUM OF THREE FEET VERTICALLY AND TEN FEET HORIZONTALLY FROM AIR CONDITIONING EQUIPMENT FRESH AIR INTAKES, WINDOWS, DOORS OR OTHER OPENINGS, AND SHALL COMPLY WITH AUTHORITIES HAVING JURISDICTION'S REQUIREMENTS.
35. COORDINATE ALL EQUIPMENT WITH ELECTRICAL SECTION PRIOR TO START OF WORK FOR AVAILABLE VOLTAGES AT EQUIPMENT LOCATIONS.
36. PROVIDE PIPE SLEEVES TO ALL PIPING PASSING THROUGH NEW MASONRY, CONCRETE, STRUCTURAL WALL. PROVIDE FIRE RATED CAULKING OF SAME RATING AS THE WALL AND SHALL HAVE AUTHORITY HAVING JURISDICTION APPROVALS.
37. A MINIMUM 1/2" CLEARANCE SHALL BE PROVIDED AROUND PIPES AT ALL PENETRATIONS THROUGH WALLS AND ROOF. THE GAP SHALL BE PACKED TIGHTLY WITH LOOSE, LIGHTWEIGHT INSULATION THROUGH NON RATED WALLS, AND APPROVED U.L. LISTED FIRE SAFING MATERIAL FOR RATED WALLS AND FLOORS. WALL/FLOOR PENETRATIONS SYSTEMS SHALL MATCH OR EXCEED THE RATING OF THE WALL/FLOOR.
38. CONTRACTOR TO PROVIDE APPROVED WATER TIGHT SEAL AROUND ALL NEW PENETRATIONS THRU ROOF. REFER TO ARCHITECTURAL DWGS. FOR DETAILS OF ALL PENETRATIONS THRU ROOF.
39. PROVIDE AND INSTALL WATER HAMMER ARRESTORS WITH ACCESS PANELS OF REQUIRED SIZE NEAR ALL QUICK CLOSING VALVES. MANUFACTURER AND MODEL NUMBER SHALL BE PER SPECIFICATIONS AND SIZES PER MANUFACTURER REQUIREMENTS.
40. ALL CLEANOUTS SHALL BE ACCESSIBLE. CLEANOUTS SHALL BE INSTALLED PER CURRENT CPC AND AUTHORITIES HAVING JURISDICTION'S REQUIREMENTS. PROVIDE WALL CLEANOUT ACCESS COVERS SIMILAR TO JR SMITH 4700 SERIES. COORDINATE COLOR AND FINISH WITH ARCHITECT. PROVIDE A CLEANOUT FOR EVERY FIXTURE IN RESTROOM, AT EACH URINAL VENT ABOVE SANITARY TEE CONNECTION, AT START OF SANITARY SEWER RUN, AT EACH END OF SANITARY LINE SERVING PLUMBING FIXTURES, ON THE HORIZONTAL RUN OF WASTE PIPING, PROVIDE CLEANOUTS AT EVERY 75 FEET, OR FRACTION THEREOF.
41. ALL SANITARY DRAINAGE PIPING SHALL BE SLOPED NOT LESS THAN 2% UNLESS OTHERWISE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
42. ALL HOSE BIBBS, WALL HYDRANTS AND JANITORIAL SERVICE SINKS SHALL BE EQUIPPED WITH APPROVED, PERMANENTLY INSTALLED ATMOSPHERIC TYPE VACUUM BREAKER. HOSE BIBB SHALL BE INSTALLED 18" ABOVE FINISH FLOOR OR GRADE, UNLESS OTHERWISE NOTED.
43. PROVIDE APPROVED ACCESSIBLE SHUT OFF VALVE UPSTREAM OF EACH HOSE BIBB AND WALL HYDRANT.
44. NOT USED.
45. SUPPORT ALL PLUMBING WORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER UTILIZING PIPE SUPPORTS ETC. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL STEEL FRAMING.
46. ALL PIPING ON THE ROOF SHALL BE PROVIDED WITH PIPE SUPPORT EQUAL TO MIRO MODEL 2.5-CS-7 ROOFTOP SUPPORT WITH GALVANIZED CHANNEL AND CLAMP. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR ALL INSTALLATION.
47. PROVIDE FURRED-OUT GYPSUM BOARD WALL ENCLOSURE FOR PLUMBING AND PIPING OTHERWISE EXPOSED TO VIEW IN FINISHED SPACES.
48. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH CODE-APPROVED ACCESSIBLE TRAP PRIMERS. CONCEALED TRAP PRIMER VALVES SHALL BE PROVIDED WITH ACCESS PANELS.
49. STORM AND OVERFLOW DRAINS AND PIPING SHALL BE SIZED BASED ON RAINFALL INTENSITY PER HOUR PER AUTHORITIES HAVING JURISDICTION STANDARD AND SHALL BE TESTED IN ACCORDANCE WITH THE PROVISIONS OF CURRENT CPC. REFER TO ARCHITECTURAL DRAWINGS FOR DOWNPOUT AND GUTTER DESIGN AND DETAILS. GUTTER SIZING AND DOWNSPOUT SPACING SHALL STRICTLY COMPLY WITH CURRENT SMACNA ARCHITECTURAL MANUAL.
50. NO PIPING, LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE DATA AND TELECOMMUNICATION ROOMS, ELECTRICAL ROOM AND OVER THE ELECTRICAL EQUIPMENT PER NEC. ONLY SPRINKLER HEADS AND PIPING SERVING THE ELECTRICAL AND DATA ROOM IN ACCORDANCE WITH NFPA STANDARDS ARE ACCEPTED INSIDE.
51. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE THE ELEVATOR MACHINE ROOM AND ELEVATOR SHAFT PER ASME A17.1A RULE 102. ONLY SPRINKLER HEADS AND PIPING SERVING THESE ROOMS IN ACCORDANCE WITH NFPA STANDARDS ARE ACCEPTED INSIDE. REROUTE PLUMBING, FIRE MAIN LINES AND OTHER PIPING OUTSIDE THESE AREAS.
52. NO PLUMBING EQUIPMENT, SYSTEM, PIPING, DRAINS OR VENTS THAT DO NOT SERVE THE EXIT STAIR ENCLOSURE, EXIT STAIR VESTIBULE ENCLOSURE, OR EXIT PASSAGEWAY CAN BE ROUTED THROUGH, OR IN (INCLUDING THE WALLS) OF THE EXIT STAIR ENCLOSURE, STAIR VESTIBULE ENCLOSURE, AND EXIT PASSAGEWAYS PER CURRENT CALIFORNIA BUILDING CODE EDITION, EXCEPT FOR THOSE SERVING THE EXIT PASSAGEWAY SUCH AS FIRE SPRINKLER PIPING, AND STANDPIPES IN ACCORDANCE WITH CURRENT NFPA STANDARDS.
53. ALL BACKFLOW DEVICES SHALL BE TESTED BY A CERTIFIED BACKFLOW TESTING TECHNICIAN WITH THE RESULTS DOCUMENTED ON FORMS PROVIDED BY THE DEPT. OF HEALTH SERVICES CROSS CONNECTION CONTROL DIVISION. THE FORMS SHALL BE REGISTERED WITH THE ABOVE AGENCY AND COPIES OF THE FORMS SHALL BE PRESENTED TO THE CITY BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
54. TESTING AND COMMISSIONING CONTRACTOR SHALL BE INDEPENDENT OF THE INSTALLING CONTRACTORS WITH AT LAST THREE YEARS OF EXPERIENCE. TEST NEW EQUIPMENT CONTROLS FOR OPTIMUM PERFORMANCE AND MAKE NECESSARY ADJUSTMENTS IN THE PRESENCE OF A FACTORY-AUTHORIZED REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER. PERFORM ANY ADDITIONAL TESTS REQUIRED TO OBTAIN OPTIMUM WORKING PLUMBING SYSTEM PERFORMANCE. ALL TESTS ON THE PLUMBING SYSTEM SHALL BE PERFORMED TO THE SATISFACTION OF THE LOCAL PLUMBING INSPECTOR AND THE OWNER'S REPRESENTATIVE. SUBMIT TESTING REPORTS FOR RECORD.
55. ALL PIPING SHALL BE PROVIDED WITH SEISMIC JOINTS OR SEISMIC LOOP CONNECTIONS WHEN CROSSING STRUCTURAL SEISMIC JOINT. SEISMIC JOINTS SHALL BE ICBO LISTED AND OR APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
56. PROVIDE WEATHER-PROOF PAINTING FOR ALL EXPOSED EXTERIOR PIPING WITH PRIMER AND WEATHER-PROOF EXTERIOR PAINT PER ANSI A13.1, AND AS REQUIRED BY AUTHORITIES-HAVING-JURISDICTION. PAINT SHALL BE COMPATIBLE WITH METAL PIPING FOR GAS, AND COPPER FOR DOMESTIC WATER AND CONDENSATE DRAIN. COORDINATE PAINTING WITH ARCHITECT.
57. DOMESTIC WATER PIPING, FITTINGS, VALVES, AND APPURTENANCES SHALL BE LEAD-FREE IN COMPLIANCE WITH STATE AND A.H.J. REQUIREMENTS.
58. COORDINATE ALL POINTS-OF-CONNECTION TO MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
59. LAVATORIES SHALL HAVE A WATER TEMPERING DEVICE THAT COMPLIES WITH ASSE 1070 OR CSA B125.3. WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A CONTROL TO MEET THIS PROVISION.
60. PROVIDE A FIRE FLOW TEST REPORT, PERFORMED BY THE CITY OF EL MONTE WATER DEPARTMENT PRIOR TO START OF WORK.
61. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, RISER DIAGRAMS, FLOOR PLANS, CODES AND ORDINANCES, THE MORE STRINGENT, LARGER SIZE, AND THE HIGHEST STANDARD SHALL APPLY.
62. REFER TO ACOUSTICAL CONSULTANT'S GUIDELINES FOR ADDITIONAL INSTRUCTIONS AND LOCATIONS OF ACOUSTICALLY SENSITIVE ROOMS.

# ABBREVIATIONS

| | |
|---|---|
| ABV | ABOVE |
| AD | ACCESS DOOR |
| ADA | AMERICANS WITH DISABILITIES ACT |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AP | ACCESS PANEL |
| ARCH | ARCHITECT |
| ASR | AUTO FIRE SPRINKLER RISER |
| BAS | BUILDING AUTOMATION SYSTEM |
| BFV | BUTTERFLY VALVE |
| BHP | BRAKE HORSEPOWER |
| BTU | BRITISH THERMAL UNIT |
| BV | BALL VALVE |
| BWV | BACKWATER VALVE |
| CA | COMPRESSED AIR |
| CD | CONDENSATE DRAIN |
| CR | STEAM CONDENSATE RETURN |
| CFF | CAP FOR FUTURE |
| CFH | CUBIC FEET PER HOUR |
| CFM | CUBIC FEET PER MINUTE |
| CFS | CUBIC FEET PER SECOND |
| CI | CAST IRON |
| CLG | CEILING |
| CO | CLEANOUT |
| CONC | CONCRETE |
| CV | CHECK VALVE |
| C/W | COMPLETE WITH |
| CW | DOMESTIC COLD WATER |
| CWFU | COLD WATER FIXTURE UNIT |
| DN | DOWN |
| DCVA | DOUBLE CHECK VALVE ASSEMBLY |
| DDCVA | DOUBLE DETECTOR CHECK VALVE ASSEMBLY |
| DFU | DRAINAGE FIXTURE UNIT |
| DIA | DIAMETER |
| DSN | DOWNSPOUT NOZZLE |
| DWG | DRAWING |
| DWV | DRAINAGE WASTE AND VENT |
| E | EXISTING |
| ELEC | ELECTRICAL |
| FA | FLOW ALARM |
| FC | FLEXIBLE CONNECTION |
| FCO | FLOOR CLEANOUT |
| FDV | FIRE DEPARTMENT VALVE |
| FDVC | FIRE DEPARTMENT VALVE CABINET |
| FFA/FFB | FROM FLOOR ABOVE/BELOW |
| FFE | FINISHED FLOOR ELEVATION |
| FH | FIRE HYDRANT |
| FHV | FIRE HOSE VALVE |
| FIN | FINISHED |
| FO | FUEL OIL |
| FPS | FEET PER SECOND |
| FT | FEET |
| FT | FLUSH TANK |
| FU | FIXTURE UNIT |
| FV | FLUSH VALVE |
| G | GAS |
| GAL | GALLONS |
| GC | GAS COCK |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GV | GATE VALVE |
| HD | HUB DRAIN |
| HP | HORSEPOWER |
| HW | DOMESTIC HOT WATER |
| HWR | DOMESTIC HOT WATER RECIRCULATION |
| HWFU | HOT WATER FIXTURE UNIT |
| IAPMO | INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS |
| ICBO | INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS |
| IE | INVERT ELEVATION |
| IRR | IRRIGATION |
| LAV | LAVATORY |
| LBS | POUNDS (UNIT OF FORCE) |
| MAX | MAXIMUM |
| MBH | THOUSANDS BTU/HR |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MH | MANHOLE |
| NC | NORMALLY CLOSED |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| NO | NORMALLY OPEN OR NUMBER |
| NIC | NOT IN CONTRACT |
| OFCI | OWNER FURNISHED CONTRACTOR INSTALLED |
| OW | OIL WASTE |
| POC | POINT OF CONNECTION |
| POD | POINT OF DISCONNECTION |
| PRV | PRESSURE REDUCING VALVE |
| PS | PRESSURE SWITCH |
| PSI | POUNDS PER SQUARE INCH |
| RI&C | ROUGH IN AND CONNECT |
| R | RELOCATE, RISE, RISER |
| RP | REDUCED-PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY |
| RPM | REVOLUTIONS PER MINUTE |
| SD | STORM DRAIN |
| SF | SQUARE FEET |
| SHWR | SOLAR HOT WATER RETURN |
| SHWS | SOLAR HOT WATER SUPPLY |
| SOV | SHUT-OFF VALVE |
| SPR | SPRINKLER |
| SS | SANITARY SEWER |
| TFA/TFB | TO FLOOR ABOVE/BELOW |
| TP | TRAP PRIMER |
| TS | TAMPER SWITCH |
| TT | TEST TEE |
| TYP | TYPICAL |
| U | URINAL |
| VB | VACUUM BREAKER |
| V | VENT |
| VTR | VENT THROUGH ROOF |
| W | WASTE |
| WC | WATER CLOSET |
| WHA | WATER HAMMER ARRESTOR |
| WCO | WALL CLEANOUT |
| W/ | WITH |
| YB | YARD BOX |

# PLUMBING LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | TRAP PRIMER |
| | BALL VALVE |
| | BUTTERFLY VALVE |
| | GATE VALVE |
| | BALANCING VALVE |
| | SHUT OFF VALVE IN CONCRETE YARD BOX |
| | ANGLE GATE VALVE |
| | SOLENOID VALVE |
| | CHECK VALVE |
| | PRESSURE REDUCING VALVE |
| | MIXING VALVE |
| | PLUG VALVE / GAS COCK |
| | RELIEF VALVE |
| | VACUUM RELIEF VALVE |
| | PRESSURE & TEMPERATURE RELIEF VALVE |
| | AUTOMATIC AIR VENT |
| | BACKWATER VALVE |
| | REDUCED - PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RP) |
| | UNION |
| | STRAINER |
| | STRAINER WITH BLOW OFF HOSE BIBB |
| | PIPE ANCHOR |
| | PIPE ALIGNMENT GUIDE |
| | EXPANSION JOINT |
| | FLEXIBLE CONNECTOR |
| | CAP OR PLUG |
| | BLIND FLANGE |
| | CONCENTRIC REDUCER |
| | AQUASTAT |
| WHA | WATER HAMMER ARRESTOR |
| PG | PRESSURE GAUGE WITH COCK |
| T | THERMOMETER |
| CO/WCO | CLEANOUT / WALL CLEANOUT |
| FCO/COTG | FLOOR CLEANOUT / CLEANOUT TO GRADE |
| YCO/COTG | YARD CLEANOUT / CLEANOUT TO GRADE |
| TT | TEST TEE |
| WH | WALL HYDRANT |
| HB | HOSE BIBB |
| YH | YARD HYDRANT |
| | THRUST BLOCK |
| FD | FLOOR DRAIN |
| FS | FLOOR SINK W/ GRATE AS SHOWN |
| | HUB DRAIN |
| | ROOF RECEPTOR |
| | STORM DRAIN |
| | OVERFLOW DRAIN |
| | DECK DRAIN, PLANTER DRAIN |
| | DOWN SPOUT NOZZLE |
| M | SUB-METER |
| T | THERMOSTATIC MIXING VALVE |

| SYMBOL | DESCRIPTION |
|---|---|
| 1% SLOPE | DIRECTION OF SLOPE |
| | DIRECTION OF FLOW |
| | PIPE UP OR UP & DN |
| | PIPE DOWN |
| | PIPE DROP |
| | TOP CONNECTION - BRANCH LINE |
| | BOTTOM CONNECTION - BRANCH LINE |
| | COLD WATER |
| | HOT WATER |
| | HOT WATER RECIRCULATION |
| 140 | HOT WATER (140°F) |
| | VENT |
| | PIPING BELOW GRADE OR FLOOR |
| | PIPING ABOVE GRADE OR FLOOR |
| | SANITARY SEWER, WASTE OR SOIL |
| SS | STORM DRAIN, RAINWATER DRAIN PIPING |
| SD | OVERFLOW STORM DRAIN PIPING |
| OD | PUMPED DISCHARGE |
| PD | DRAIN LINE |
| D | INDIRECT WASTE |
| W | GREASE WASTE |
| GW | NATURAL GAS (7"W.C.) |
| G | MEDIUM PRESSURE GAS (2 PSIG TO 5 PSIG) |
| MG | LOW PRESSURE GAS |
| LG | COMPRESSED AIR |
| CA | EXISTING PIPE |
| (E) | TEMPERED WATER |
| TW | TEMPERED WATER RETURN |
| TWR | |
| 6" | PIPE SIZE (DIAMETER IN INCHES) |
| (E) | EXISTING WORK TO REMAIN |
| (D) | EXISTING WORK TO BE REMOVED |
| (F) | FUTURE WORK |
| (ER) | EXISTING RELOCATED |
| ℄ | CENTER LINE |
| | POINT OF CONNECTION OR POINT OF DISCONNECTION |
| SS | SANITARY SEWER STACK |
| V | VENT STACKS |
| CW | COLD WATER RISER |
| HW | HOT WATER RISER |
| HWC | HOT WATER RECIRC. RISER |
| G | GAS RISER |
| SD | STORM DRAIN RISER |
| OD | OVERFLOW DRAIN RISER |
| CA | COMPRESSED AIR RISER |
| XX / X | PLUMBING EQUIPMENT |
| XXX | MISCELLANEOUS EQUIPMENT |
| # | KEYED NOTE |
| 1 / P2 | DETAIL NO. / SHEET NO. |
| # | POUNDS OR NUMBER |

# COMPONENT ANCHORAGE NOTE

Applicable Code:2022 CBC 02/05/2020 Revised: 02/14/2020

**MEP Component Anchorage Note**

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA-approved construction documents. The following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2019 CBC Sections 1617A.1.18 through 1617A.1.26 and ASCE 7-16 Chapters 13, 26, and 30:

1. All permanent equipment and components.
2. Temporary, movable or mobile equipment that is permanently attached (e.g. hard wired) to the building utility services such as electricity, gas or water. "Permanently attached" shall include all electrical connections except plugs for 110/220 volt receptacles having a flexible cable.
3. Temporary, movable or mobile equipment which is heavier than 400 pounds or has a center of mass located 4 feet or more above the adjacent floor or roof level that directly support the component is required to be restrained in a manner approved by DSA.

The following mechanical and

THE LINE SHOWN ABOVE IS 1" WHEN PRINTED ON A FULL SIZE SHEET. IF NOT, SCALE ACCORDINGLY.

# PIPE MATERIAL SCHEDULE

| SERVICE | LOCATION OF USE | PIPE SIZE | PIPE MATERIALS: COPPER, TYPE "K", ASTM B88 | COPPER, TYPE "L", ASTM B88 | COPPER, TYPE "M", ASTM B88 | COPPER, DWV, ASTM B306 | CAST IRON, NO-HUB, ASTM A888 | BLACK STEEL, SCHEDULE 40, ASTM A53 | GALVANIZED STEEL, SCH 40, ASTM A53 | ABS, SCHEDULE 40, ASTM A53 | PEX-A TUBING, ASTM F876 / F877 | PVC, SCHEDULE 40, ASTM D2665 | STAINLESS STEEL, SCH 10, ASTM A312 | STAINLESS STEEL, SCH 40, ASTM A312 | DUCTILE IRON, ANSI A21.51 | POLYETHYLENE, ASTM 2513 | BLACK STEEL, SCHEDULE 10, ASTM A53 | UL LISTED FIBERGLASS, ASTM D-2996 | FITTINGS/JOINTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DOMESTIC HW<br>DOMESTIC CW<br>DOMESTIC HWC | BELOW GRADE | ALL | A | | | | | | | | | | | | | | | | WROUGHT COPPER, BRAZED, ANSI B16.22 |
| | ABOVE GRADE | ALL | | A | | | | | | | | | | | | | | | WROUGHT COPPER, 95-5 SOLDERED, ANSI B16.22 |
| | | | | B | | | | | | | | | | | | | | | COPPER PRESS FITTINGS, O-RING EPDM, ANSI B16.22 |
| | BRANCH RUNOUTS | 2" AND SMALLER | | | | | | | | | B | | | | | | | | ENGINEERED POLYMER (EP) FITTINGS, ASTM F1960 / F1807 |
| | ABOVE GRADE | 2-1/2" AND LARGER | | | | | | | | | | B | | | | | | | STAINLESS, SCHEDULE 10, ASTM A 312 / A 312M |
| | | | | | | | | | | | | | | B | | | | | STAINLESS, SCHEDULE 40, ASTM A 312 / A312M |
| CONDENSATE & INDIRECT DRAINS | ABOVE GRADE | ALL | | | A | | | | | | | | | | | | | | WROUGHT COPPER, SOLDERED FITTINGS, DWV, ANSI B16.22 |
| TRAP PRIMER | ABV & BEL GRADE | ALL | A | | | | | | | | | | | | | | | | NO JOINTS BELOW GRADE, DOUBLE WRAP BELOW GRADE |
| | | | | | | | | | | | B | | | | | | | | NO JOINTS BELOW GRADE |
| SANITARY WASTE | ABOVE GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON, NO-HUB, ASTM A888, HEAVY-DUTY COUPLINGS |
| | BELOW GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON, NO-HUB, ASTM A888, HEAVY-DUTY 4-BAND COUPLINGS |
| | | | | | | | | | | | | B | | | | | | | PVC, SCHEDULE 40, SOLVENT, SOLID WALL, ASTM D2665 / D331 |
| SANITARY VENT | ABOVE GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON NO-HUB, ASTM A888, HEAVY-DUTY COUPLINGS |
| | | | | | | | | | | | | B | | | | | | | PVC, SCHEDULE 40, SOLID WALL, SOLVENT, ASTM D2665 / D331 |
| | | | | | | | | | | B | | | | | | | | | ABS, SCHEDULE 40, SOLID WALL, SOLVENT, ASTM D2661 / D331 |
| | BELOW GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON, NO-HUB, ASTM A888, HEAVY-DUTY 4-BAND COUPLINGS |
| | | | | | | | | | | | | B | | | | | | | PVC, SCHEDULE 40, SOLID WALL, SOLVENT, ASTM D2665 / D331 |
| ROOF DRAIN<br>STORM DRAIN<br>OVERFLOW DRAIN | ABOVE GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON NO-HUB, ASTM A888, HEAVY-DUTY COUPLINGS |
| | ABOVE GRADE BUILDING EXTERIOR | | | | | | A | | | | | | | | | | | | CAST IRON NO-HUB, ASTM A888, HEAVY-DUTY COUPLINGS |
| | | | | | | B | | | | | | | | | | | | | BRONZE, ANSI B16.23 OR WROUGHT COPPER, SOLDERED,ANSI B16.29 |
| | BELOW GRADE | ALL | | | | | A | | | | | | | | | | | | CAST IRON, NO-HUB, ASTM A888, HEAVY-DUTY 4-BAND COUPLINGS |
| | | | | | | | | | | | | B | | | | | | | PVC, SCHEDULE 40, SOLID WALL, SOLVENT, ASTM D2665 / D331 |

PIPE SHEDULE LEGEND
A = ALLOWED MATERIAL PER BASIS OF DESIGN
B = ALLOWED AS AN ALTERNATE MATERIAL PER CODE AND AS APPROVED BY OWNER.

PIPE SCHEDULE NOTES
1. REFER TO SPECIFICATIONS FOR ADDITIONAL PIPING MATERIAL AND FITTING REQUIREMENTS.
2. ALL DOMESTIC HOT WATER SUPPLY AND RECIRCULATION PIPING SHALL BE THERMALLY INSULATED AS REQUIRED BY CODE.
3. ALL INTERIOR CONDENSATE PIPING SHALL BE INSULATED WITH 1/2" WALL MINIMUM, SELF SEALING, CLOSED CELL FOAM INSULATION.
4. ALTERNATE MATERIAL: PVC SANITARY VENT PIPING IS ALLOWED, BUT NOT ALLOWED IN AIR PLENUMS OR SHAFTS.
5. STAINLESS STEEL PIPING SHALL NOT BE INSTALLED IN ANY SYSTEM INTERCONNECTED WITH COPPER PIPING.

# PLUMBING FIXTURES SCHEDULE

| MARK NO. | DESCRIPTION | LOCATION | MIN. ROUGH-IN CONN. (INCHES) SS | V | CW | HW | SS (DFU) | CW (WSFU) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| WC-1 | WATER CLOSET, PUBLIC | SEE PLANS | 4 | 2 | 1-1/2 | - | 6 | 8 | TOTO CT708EG, VITREOUS CHINA, WALL MOUNT, ELONGATED BOWL, 1" INLET. PROVIDE TOTO TET1LA32#CP ECOPOWER HYDRO- POWER CHARGE FLUSHOMETER (1.28 GPF) FLUSH VALVE, TOTO SC534 TOILET SEAT. |
| U-1 | URINAL, PUBLIC | SEE PLANS | 2 | 2 | 3/4 | - | 5 | 6 | TOTO UT105U, VITREOUS CHINA, WALL MOUNT, FLUSH VALVE, MOUNT RIM AT 17" AFF. PROVIDE TEU1UA12#CP SELF-POWERED FLUSH VALVE. 0.125 GPF |
| L-1 | LAVATORY, PUBLIC, ADA | SEE PLANS | 2 | 2 | 1/2 | 1/2 | 1 | 1 | TOTO LT540G, MOLDED WITH THE COUNTER; PROVIDE HARD WIRED TOTO 105-D10ET SENSOR ACTIVATED FAUCET (0.35 GPM) WITH 10 SECOND AUTO SHUT OFF. |
| SS-1 | SERVICE SINK | SEE PLANS | 3 | 2 | 3/4 | 3/4 | 3 | 3 | ZURN Z5850 CAST IRON CORNER FLOOR MOUNTED, FAUCET: PROFLO PF1119 WITH VACUUM BREAKER, INTEGRAL STOPS, ADA, UPC LISTED, DRAIN: SS GRIDS. |
| S-1 | HAND SINK, ADA | SEE PLANS | 2 | 2 | 3/4 | 3/4 | 2 | 1.5 | KOHLER, STACCATO SERIES, MODEL K-3363-1-NA. 16-1/8"x13-9/16"x8". TOP-MOUNTED, STAINLESS STEEL.<br>FAUCET: MOEN, KARIS SERIES, MODEL 84346. ADA. MAX FLOW 1.2 GPM. |
| S-2 | KITCHEN SINK | SEE PLANS | 2 | 2 | 3/4 | 3/4 | 2 | 2 | MOEN, 1800 SERIES, MODEL GS18157. 23.13"x17.99"x9". UNDERMOUNTED, STAINLESS STEEL.<br>FAUCET: KOHLER CRUE SERIES K-22972-VS. ADA. MAX FLOW 1.5 GPM. |
| TMV-1 | THERMOSTATIC MIXING VALVE | SEE PLANS | - | - | 1-1/4 | 1-1/4 | - | - | LEONARD LV-554-983LF. LEAD-FREE UPC LISTED, SET AT 125 DEG-F OUTLET TEMP. WITH SEISMIC BRACING, CHECK STOPS. |
| TMV-2 | THERMOSTATIC MIXING VALVE | SEE PLANS | - | - | 1/2 | 1/2 | - | - | TOTO TLE05701U THERMOSTATIC MIXING VALVE (IAPMO #6072), SET AT 104-DEG F OUTLET TEMP. FOR LAVATORY FAUCET WITH ACCESS DOOR, LEAD-FREE, WITH CHECK STOPS. |
| WHA-1 | WATER HAMMER ARRESTOR | SEE PLANS | - | - | - | - | - | - | PPP SC SERIES, SIZE PER MANUFACTURER'S RECOMMENDATIONS, PROVIDE ACCESS PANEL. COORDINATE LOCATION WITH ARCHITECT. |
| TP-1 | TRAP PRIMER | SEE PLANS | - | - | 1/2 | - | - | - | MIFAB MR-500 UPC LISTED, ACTIVATE AT 3 PSI PRESS. DROP, WITH FILTER SCREEN, BUILT-IN AIR GAP FITTING, PIPE DISTRIBUTION SYSTEM TO 6 DRAIN TRAPS. PROVIDE WITH ACCESS PANEL TO SERVE ALL FD, FS, AND INDIRECT DRAINS. INSTALL PER MFR'S. RECOMMENDATIONS |
| TP-2 | ELECTRONIC TP | SEE PLANS | - | - | 1/2 | - | - | - | PPP #MP-500. 115 VOLT, SINGLE PHASE. |
| FD-1 | FLOOR DRAIN | SEE PLANS | 2 | 2 | - | - | 2 | - | MIFAB MODEL NO. F1000-S (IAPMO #5162) WITH 6"X6" STAINLESS STEEL SQUARE HEAVY-DUTY VANDAL-RESISTANT STRAINER AND TRAP PRIMER CONNECTION, 1/2"TP TO TP-1 OR TP-2 VALVE. |
| FS-1 | FLOOR SINK | SEE PLANS | 2 | 2 | - | - | 2 | - | MIFAB MODEL NO. FS 1730-FL (IAPMO #4768), VANDAL-PROOF, W/ ANCHOR FLANGE, TRAP PRIMER CONNECTION, 1/2"TP TO TP-1 OR TP-2 VALVE. INSTALL FS WITH TOP OF GRATE FLUSHED WITH FINISH FLOOR |
| HB-1 | HOSE BIB | SEE PLANS | - | - | 3/4 | - | - | 2.5/1 | ARROWHEAD 353-LF-BFP-LK. PROVIDE ACCESSIBLE SOV UPSTREAM OF EACH HB. |
| WH-1 | WALL HYDRANT | SEE PLANS | - | - | 3/4 | - | - | 2.5/1 | WALL HYDRANT ACORN MODEL 8151-SSLF LEAD FREE WITH WALL FLANGE, DOOR AND VACUUM BREAKER. |
| HUD-1 | HUB DRAIN | SEE PLANS | 4 | 2 | - | - | - | 2.5/1 | 6" HUB WITH 4" P-TRAP, 4" VENT, TP-1 WITH 1/2"TP PIPING TO HUB. |
| RD-1 | ROOF DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 1015, CAST IRON VANDAL PROOF LOW PROFILE DOME, UNDERDECK CLAMP |
| OD-1 | ROOF DRAIN OVERFLOW | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 1045, CAST IRON VANDAL PROOF LOW PROFILE DOME WITH WATER DAM 2" HIGHER THAN FINISH ROOF LEVEL, UNDERDECK CLAMP |
| GD-1 | GUTTER DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 1830, CAST IRON VANDAL PROOF LOW PROFILE DOME, UNDERDECK CLAMP |
| GDO-1 | GUTTER OVERFLOW DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 1830, CAST IRON VANDAL PROOF LOW PROFILE DOME WITH WATER DAM 2" HIGHER THAN FINISH ROOF LEVEL, UNDERDECK CLAMP |
| GD-2 | GUTTER DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 9785, CAST IRON VANDAL PROOF LOW PROFILE DOME, UNDERDECK CLAMP |
| GDO-2 | GUTTER OVERFLOW DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 9785, CAST IRON VANDAL PROOF LOW PROFILE DOME WITH WATER DAM 2" HIGHER THAN FINISH ROOF LEVEL, UNDERDECK CLAMP |
| AD-1 | AREA DRAIN | SEE PLANS | - | - | - | - | - | - | JR SMITH FIG. 1470, VANDAL PROOF GRATE, UNDERDECK CLAMP. COORDINATE COLOR FINISH WITH ARCHITECT. SEE FLOOR PLANS FOR OUTLET SIZE. |
| EWC-1 | BOTTLE FILLER | SEE PLANS | 2 | 1-1/2 | 3/4 | - | 1 | 0.75 | ELKAY EZH20 BOTTLE FILLING STATION & VERSATILE BI-LEVEL, ADA, COOLER NON-REFRIGERATED. MODEL EZSTLDDWSLK, ADA, INDOOR, WALL MOUNTED, 1.5 GPM, STAINLESS STEEL.<br>ELECTRICAL: 115V/60HZ, 1.1 FLA, 15W.<br>STANDARD LEFT-HAND HIGH, BOTTLE FILLER LOW MODEL. |
| FS-2 | ROOF RECEPTOR | SEE PLANS | 2 | 2 | - | - | - | - | J.R. SMITH 3980YC, ROUND CAST IRON BODY WITH DOME BOTTOM STRAINER, UNDERDECK CLAMP 2" HIGH WATER DAM NO TRAP PRIMER CONNECTION. |
| WMB-1 | WASHING MACHINE SUPPLY BOX | SEE PLANS | 2 | 2 | 1-1/2 | 3/4 | 3.0 | 4.0 | GUY GRAY #MWB3, 20 GAUGE BOX, WHOTE POWDER COAT ON SHEEL FINISH, 1/2" QUARTER TURN VALVES, PROVIDE WITH WATER HAMMER ARRESTORS. |
| WMB-2 | ICE MAKER SUPPLY BOX | SEE PLANS | - | - | 1/2 | | 0.75 | - | GUY GRAYMB1HAAB 20 GAUGE BOX, WHOTE POWDER COAT ON SHEEL FINISH, 1/2 QUARTER TURN VALVES, PROVIDE WITH WATER HAMMER ARRESTORS |

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE SPECS., LOCATIONS, ADDITIONAL INSTRUCTIONS, AND COLOR FINISHES.
2. INSTALL ALL ITEMS PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE ACCESSIBLE WHA-1 TO ALL QUICK CLOSING VALVES, INCLUDING FLUSH VALVES, ETC.
4. COORDINATE ACC (ACCESS CODE COLLABORATION) REQUIREMENTS WITH ARCHITECT.

# DOMESTIC WATER STREET PRESSURE SYSTEM:

| | | | |
|---|---|---|---|
| A. | EQUIVALENT COLD WATER FLOW RATE (GPM): | | 108 |
| B. | ADDITIONAL DEMAND LOAD MECH. (GPM): | | 20 |
| C. | ADDITIONAL DEMAND LOAD MISC., IRRIG. (GPM): | | - |
| D. | SYSTEM DEMAND FLOW (GPM): | | 88 |
| E. | STREET PRESSURE AVAILABLE (PSI MIN.): | | 40 |
| F. | STREET PRESSURE AVAILABLE (PSI MAX.): | | 55 |
| G. | PRESSURE AVAILABLE DOWNSTREAM OF PRV (PSI): | | 19 |
| H. | RESIDUAL PRESSURE REQUIRED AT REMOTE FIXTURE (PSI): | | 35 |
| I. | ELEVATION RISE AT 25 FT. (PSI): | | 9 |
| J. | METER LOSS 5' (PSI): | | 2.2 |
| K. | BACKFLOW PREVENTER LOSS 3' ZURN 975XL2U (PSI): | | 4.3 |
| L. | WATER SOFTENER | | - |
| M. | PRV LOSS (PSI): | | - |
| N. | TOTAL SYSTEM PRESSURE LOSSES (PSI): | | 12.5 |
| O. | PRESSURE AVAILABLE FOR FRICTION LOSS (PSI): | | 10 |
| P. | EQUIVALENT PIPE LENGTH FROM METER TO MOST REMOTE FIXTURE (FT): | | 460 |
| Q. | MAXIMUM ALLOWABLE PIPE FRICTION LOSS (PSI/100 FT): | | 3 |
| R. | CALCULATED FRICTION HEAD LOSS (PSI/100 FT): | | 1.93 |

NOTES:
(1) STREET WATER PRESSURE WAS BASED ON FIRE FLOW TEST DATED 2023-02-13
(2) BOOSTED WATER PRESSURE SHALL SERVE ALL LEVELS.

# DOMESTIC WATER PIPING SIZING

PIPE SIZES CALCULATED BASED ON 3PSI/100-FT CPC APPENDIX A

| SIZE: TYPE L COPPER | CW MAX FLOW | | CW FIXTURE UNIT VALUES | | HW MAX FLOW | | HWFU |
|---|---|---|---|---|---|---|---|
| NOMINAL DIAMETER | GPM | FPS | FLUSH TANK | FLUSH VALVE | GPM | FPS | HOT WATER |
| 1/2" | | | 0 | 0 | | | 0 |
| 3/4" | 4 | 3.1 | 4 | 0 | 4 | 2.7 | 4 |
| 1" | 9 | 3.7 | 12 | 0 | 9 | 3.5 | 12 |
| 1-1/4" | 18 | 4.3 | 24 | 0 | 18 | 5.0 | 24 |
| 1-1/2" | 27 | 5.0 | 46 | 10 | 27 | 5.0 | 46 |
| 2" | 56 | 5.9 | 155 | 50 | 48 | 5.0 | 119 |
| 2-1/2" | 87 | 6.0 | 305 | 156 | 74 | 5.0 | 245 |
| 3" | 140 | 6.0 | 665 | 596 | 105 | 5.0 | 406 |

| | |
|---|---|
| CW Max Vel | 5 |
| HW Max Vel | 5 |

NOTES:
1. THE FOLLOWING MAXIMUM ALLOWABLE WATER FLOW RATE FOR TYPE L COPPER PIPING BASED ON DESIGN PIPE FRICTION LOSS OF 3PSI PER 100 FEET PER 2019 CPC CHART A 105.1:
   a. FOR 1/2": 1.6 GPM
   b. FOR 3/4": 4.1 GPM

# PLUMBING BASIS OF DESIGN

A. This building is a new two-story high school building.
B. The design includes the following notable features but is not limited to this scope. Contractor is responsible for reviewing all contract documents and coordinating with all disciplines.
   1. Domestic hot water distribution: Domestic hot water is provided by the point of use electrical water heater right at the fixtures.
   2. Domestic water booster system: Available utility water service pressure is inadequate to serve building a duplex cold water distribution pumping system with a pneumatic storage tank will be installed to increase the available water pressure to 4
psi.
   3. Duplex sewage ejector pumps are provided for sanitary sewer and sump pumps are provided for stormwater drainage stormwater drainage where the city main sewer line is located above the building flow line.
C. Codes and standards (Latest editions unless otherwise required by AHJ)
   1. California Building Codes enforced by the Authority Having Jurisdiction (AHJ):
      a. 2022 California Building Code (CBC), California Code of Regulations, Title-24, Part 2 (2018 International Building Code with State and Local Amendments)
      b. 2022 California Plumbing Code (CPC), California Code of Regulations, Title-24, Part 5 (2018 Uniform Plumbing Code with State and Local Amendments)
      c. 2022 California Building Energy Efficiency Standard for Nonresidential Compliance, California Code of Regulations, Title-24, Part 6
      d. 2022 California Green Building Standards Code, California Code of Regulations, Title-24, Part 11
   2. Americans with Disabilities Act (ADA)
D. Outdoor design conditions (for insulation and gas firing criteria)
   1. Location: El Monte
   2. Winter: 7.3°F.
   3. Elevation: 323 feet.
E Water supply:
   1. Minimum available water pressure (static): 40 psi available from municipal water service.
   2. Cold water pipe size: 3 inches (minimum).
   3. Cold water meter size: 2 inches (minimum).
   4. Cold water demand: 85.0 gpm (design total).
   5. Cold water demand: 20.gpm (future total).
   6. Refer to plumbing calculations and schedules for additional criteria.
F. Domestic hot water:
   1. Domestic hot water heater set point temperature: 110°F.
   2. Domestic hot water supply temperature: 110°F (public areas).
   3. Domestic hot water supply temperature: 110°F (kitchen and non-public areas).
   4. Domestic incoming cold water temperature: 60°F (used for water heater sizing).
   5. The maximum allowable piping length for domestic hot water from the nearest source of heated water to the termination of the fixture supply pipe shall not exceed three feet for public lavatories and hand washing sinks. For other fixtures, such a
showers, kitchen sinks, and scrub sinks, the maximum piping length shall not exceed ten feet.
G. Sanitary sewer:
   1. Building sewer size 6 inches at 2% slope.
   2. Total capacity 242.0 drainage fixture units.
   3. Connected load 142.0 drainage fixture units.
H. Storm drain:
   1. Rainfall intensity 2 inches/hour (per local ordinance).
   2. Refer to plans for area served by roof drains.
I. Seismic:
   1. Anchorage and restraints must be coordinated with structural engineer and authority having jurisdiction.
J. The plumbing system includes the following sustainable design features:
   1. Low-flow water usage of 0.125 gallons per flush at each urinal.
   2. Low-flow water usage of 1.28 gallons per flush at each toilet.
   3. Point-of-use type electric hot water heater right at each fixture requiring hot water.
   4. Electronic sensor type lavatory faucets for reduced water flow.

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## KEYNOTES

## NOTES

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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING BASIS OF DESIGN AND CALCULATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**P0.01**

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## WATER HEATER SCHEDULE

| MARK NO. | LOCATION | DIMENSIONS | MIN ACTIVATION FLOW | MAXIMUM FLOW | TEMPERATURE | | KW | AMPS | VOLT | PHASE | OP. WT. (LBS) | MAKE | MODEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | IN (F) | OUT (F) | | | | | | | | |
| EWH1-01 | A108 \| TOILETS | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-02 | HEALTH CENTER | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-03 | A105 \| TOILET | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-04 | B141 \| TOILET<br>B143 \| TOILET | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-05 | B129 \| TOILET | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-06 | B130 \| TOILET | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-07 | B131 \| DRESSING | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH1-08 | B132 \| DRESSING | 6-1/4" (H) x 9-5/8" x 2-3/4" | 0.2 GPM | 1 GPM | 60 | 104 | 5.6 | 20 | 208 | 1 | 8 | CHRONOMITE | CM-20L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH2-01 | B140\| WOMEN | 7-5/16" (H) x 10-3/4" x 2-3/4" | 0.35 GPM | 2 GPM | 60 | 104 | 8 | - | 208 | 1 | 8 | CHRONOMITE | E-80L/208 | SERVING KITCHEN / HAND SINK, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH2-02 | A116 \| STAFF LOUNGE | 7-5/16" (H) x 10-3/4" x 2-3/4" | 0.35 GPM | 2 GPM | 60 | 104 | 8 | - | 208 | 1 | 8 | CHRONOMITE | E-20L/208 | SERVING MULTIPLE LAVATORIES, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31 |
| EWH2-03 | B123 \| BOOSTER KITCHENETTE | 7-5/16" (H) x 10-3/4" x 2-3/4" | 0.35 GPM | 2 GPM | 60 | 104 | 8 | - | 208 | 1 | 8 | CHRONOMITE | E-80L/208 | SERVING SINGLE LAVATORY, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH 3-01 | B135 \| SCENE SHOP | 10"Wx11"Hx5"D | 0.35 GPM | 5 GPM | 60 | 104 | 13.1 | - | 208 | 1 | 8 | CHRONOMITE | R-63L/208 | SERVING CLOTH WHASER, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH 3-02 | B144 \| CUST | 10"Wx11"Hx5"D | 0.35 GPM | 5 GPM | 60 | 104 | 13.1 | - | 208 | 1 | 8 | CHRONOMITE | R-63L/208 | SERVING JANITOR SINK, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH 3-03 | A118 \| CUST | 10"Wx11"Hx5"D | 0.35 GPM | 5 GPM | 60 | 104 | 13.1 | - | 208 | 1 | 8 | CHRONOMITE | R-63L/208 | SERVING JANITOR SINK, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |
| EWH3-04 | B134 \| SCENE SHOP | 10"Wx11"Hx5"D | 0.35 GPM | 5 GPM | 60 | 104 | 13.1 | - | 208 | 1 | 8 | CHRONOMITE | R-63L/208 | SERVING KITCHEN SINK, TANKLESS, UL LISTED, WALL MOUNTED, REFER TO TYPE A BACKING PER STRUCTURAL DETAIL ON S0.31. |

NOTES:
1. INSTALL ALL UNITS PER MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR PRIOR TO START OF WORK.
3. COORDINATE BMS MONITORING WITH BMS CONTRACTOR PRIOR TO START OF WORK.
4. PROVIDE LISTED MANUFACTURER OR EQUAL.

## PUMP SCHEDULE

| MARK NO. | DESCRIPTION | QTY. | LOCATION | MOTOR DATA | | | | | CAPACITY | HEAD (FT) | OP. WT. (LBS) | DIMENSIONS | MAKE | MODEL | ANCHORAGE DETAIL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | HP | KW | RPM | VOLTS | PHASE | | | | | | | | |
| DCWP-01A/01B | DOMESTIC COLD WATER PRESSURE BOOSTER PUMP | 2 | MECH ROOM | 3 HP x2 | - | - | 460 | 3 | 110 GPM | 70 | 1020 | 38" x 27" x 24" | GRUNDFOS | HYDRO MPCE 2CRE-20-2 | 7\|P9.02 | DUTY/STANDBY OPERATION COMPLETE WITH PNEUMATIC TANK C/W VFD |

NOTES:
1. INSTALL ALL UNITS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE APPROVED SEISMIC BRACING, 6"H HOUSE-KEEPING PAD.
3. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR PRIOR TO START OF WORK.
4. COORDINATE BMS MONITORING WITH BMS CONTRACTOR PRIOR TO START OF WORK.
5. PROVIDE LISTED MANUFACTURER OR EQUAL.

## CONDENSATE PUMP SCHEDULE

| MARK NO. | DESCRIPTION | QTY. | LOCATION | MOTOR DATA | | | | | CAPACITY | HEAD (FT) | OP. WT. (OZ) | DIMENSIONS | MAKE | MODEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | HP | KW | RPM | VOLTS | PHASE | | | | | | | |
| CDNP-1 | CONDENSATE PUMP (HIGH WALL) | 5 | MECHANICAL HIGH WALL UNITS | - | - | - | 120 | 1 | 1.8 GPH | 2 | 15.5 | 5.9" x 2.2" x 1.1" | HMAX | TATTOO 10 | - |

NOTES:
1. INSTALL ALL UNITS PER MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR PRIOR TO START OF WORK.
3. PROVIDE LISTED MANUFACTURER OR EQUAL.

## BACKFLOW PREVENTER SCHEDULE

| MARK NO. | DESCRIPTION | QTY. | LOCATION | PRESSURE DROP | MAX WORKING PRESSURE | MAX WORKING TEMP | DIMENSIONS | MAKE | MODEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| BFP-1 | BACKFLOW PREVENTER | 1 | MECH ROOM | 4.3 PSI | 175 PSI | 140 F | 42" x 18" x 12" | ZURN | 375AST | LEAD - FREE WITH NRS VALVES GATE |
| BFP-2 | BACKFLOW PREVENTER | 1 | MECH ROOM | 4.3 PSI | 175 PSI | 180 F | 13" x 7" x 6" | ZURN | 375 - 3/4" | LEAD - FREE WITH NRS VALVES GATE |

NOTES:
1. INSTALL ALL UNITS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE LISTED MANUFACTURER OR EQUAL.

## EXPANSION TANK SCHEDULE

| MARK NO. | DESCRIPTION | QTY. | LOCATION | NOMINAL VOLUME | ACCEPTANCE VOLUME | MAX WORKING PRESSURE | MAX WORKING TEMP | DIMENSIONS | MAKE | MODEL | OP. WT. (LBS) | ANCHORAGE DETAIL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ET-1 | EXPANSION TANK | 1 | MECH ROOM | 80 GAL | 80 GAL | 125 PSI | 240 F | 24"Ø x 59"H | AMTROL | WX-448C | 983 | 5\|P9.02 | ASME COMPLIANT |

NOTES:
1. INSTALL ALL UNITS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE LISTED MANUFACTURER OR EQUAL.

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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

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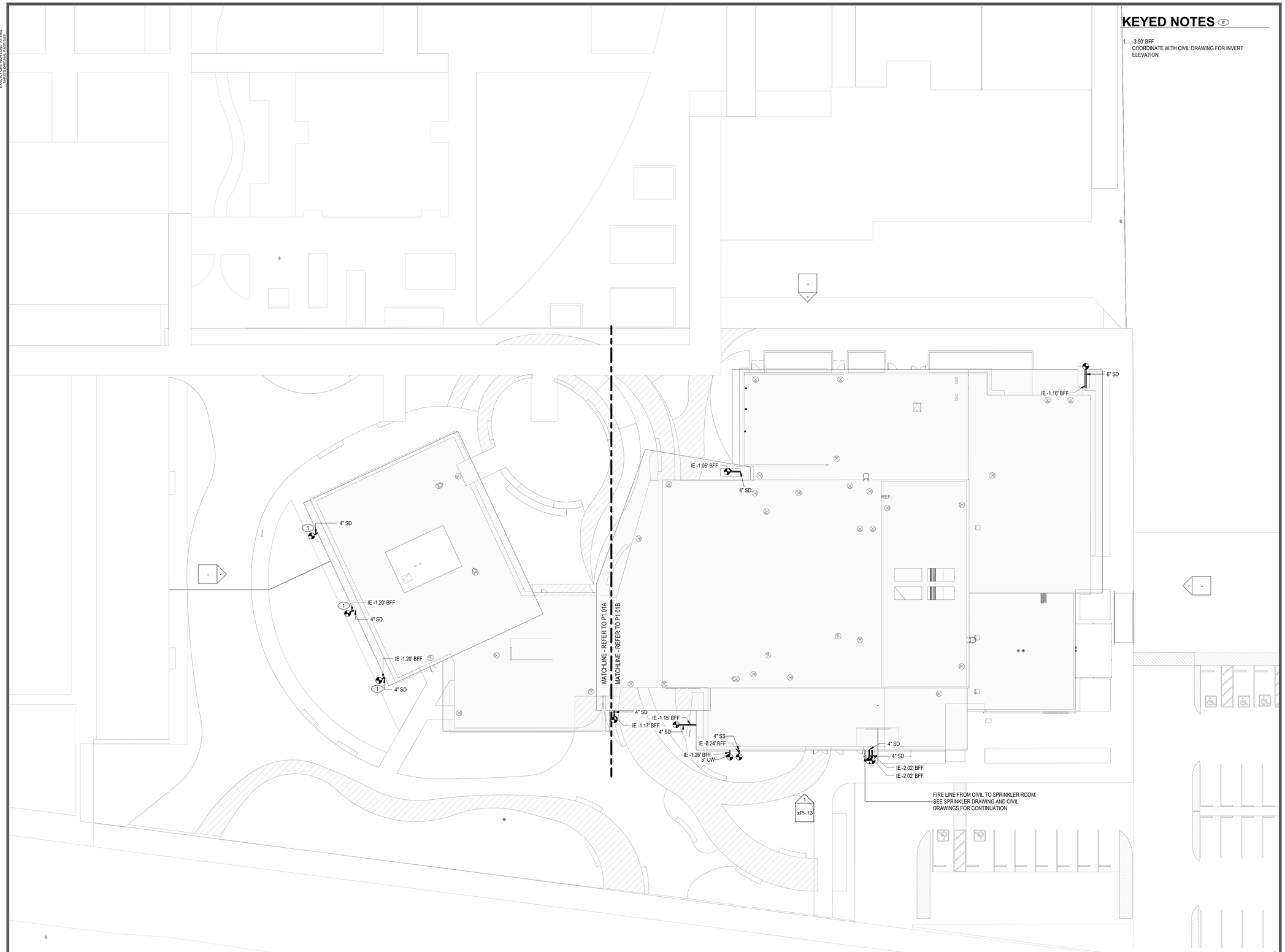
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## KEYED NOTES

1. -3.50' BFF
   COORDINATE WITH CIVIL DRAWING FOR INVERT ELEVATION.




## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.

**PLUMBING SITE PLAN** 1
1/16" = 1'-0"

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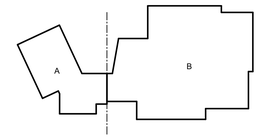
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**PLUMBING SITE PLAN**

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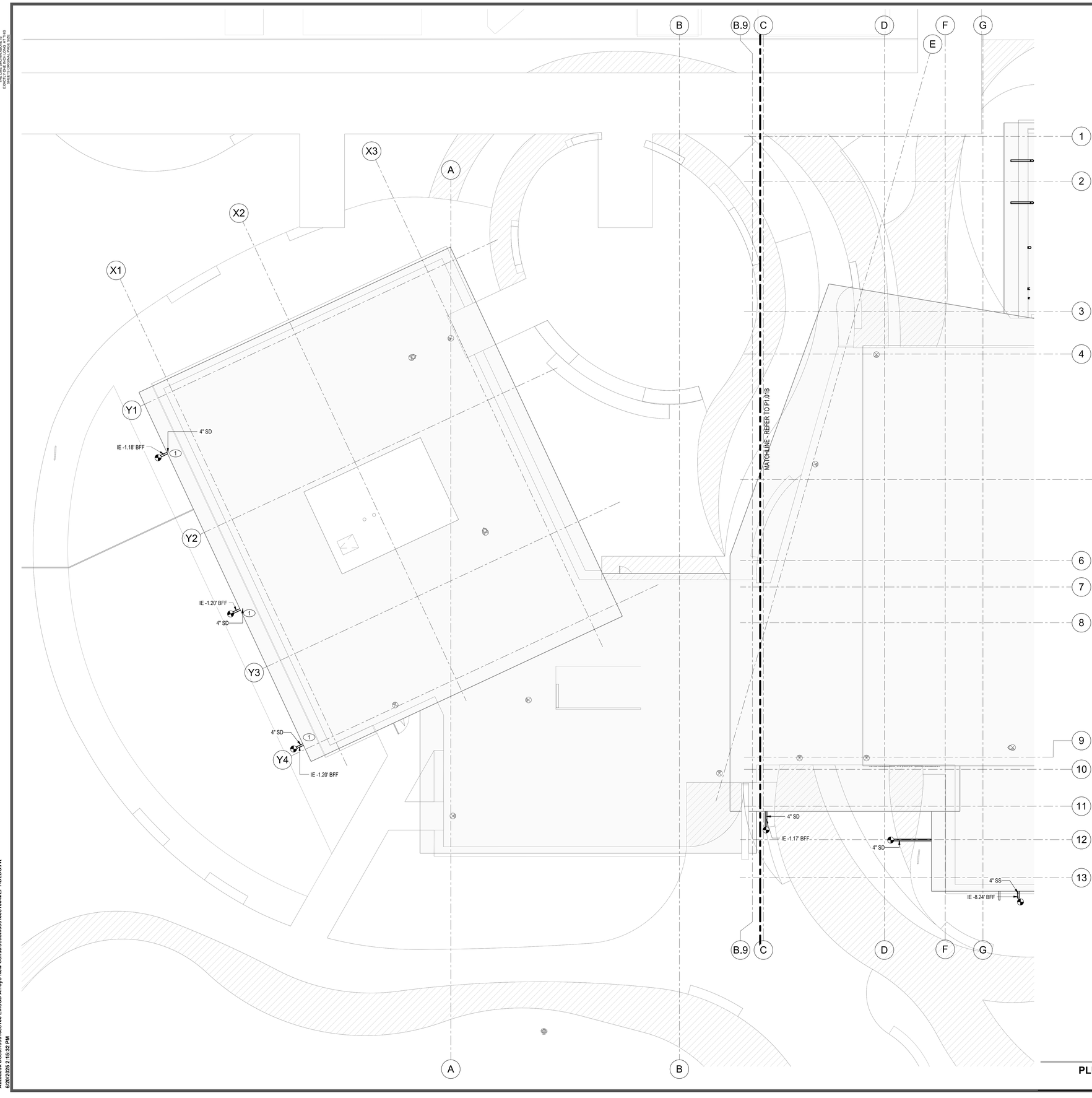
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## KEYED NOTES

1. -3.50' BFF
   COORDINATE WITH CIVIL DRAWING FOR INVERT ELEVATION.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

**PLUMBING SITE PLAN - SEGMENT A** 1 1/8" = 1'-0"

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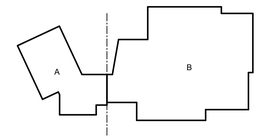
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PROJECT:

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SHEET NAME:

**PLUMBING SITE PLAN - SEGMENT A**

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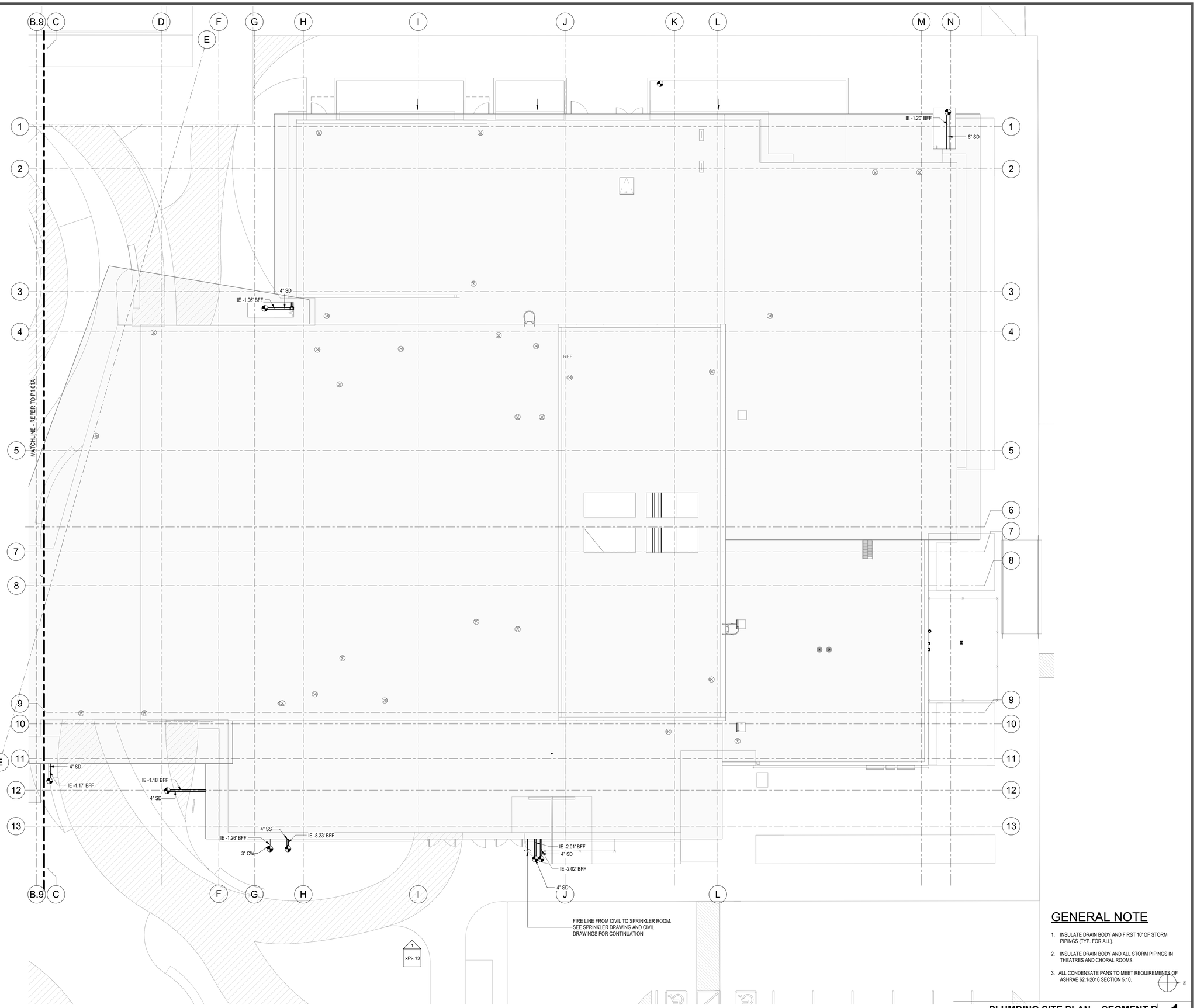
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## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

**PLUMBING SITE PLAN - SEGMENT B** 1
1/8" = 1'-0"

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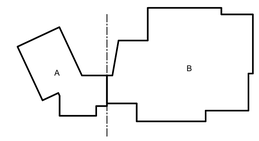
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## NOTES

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**PLUMBING SITE PLAN - SEGMENT B**

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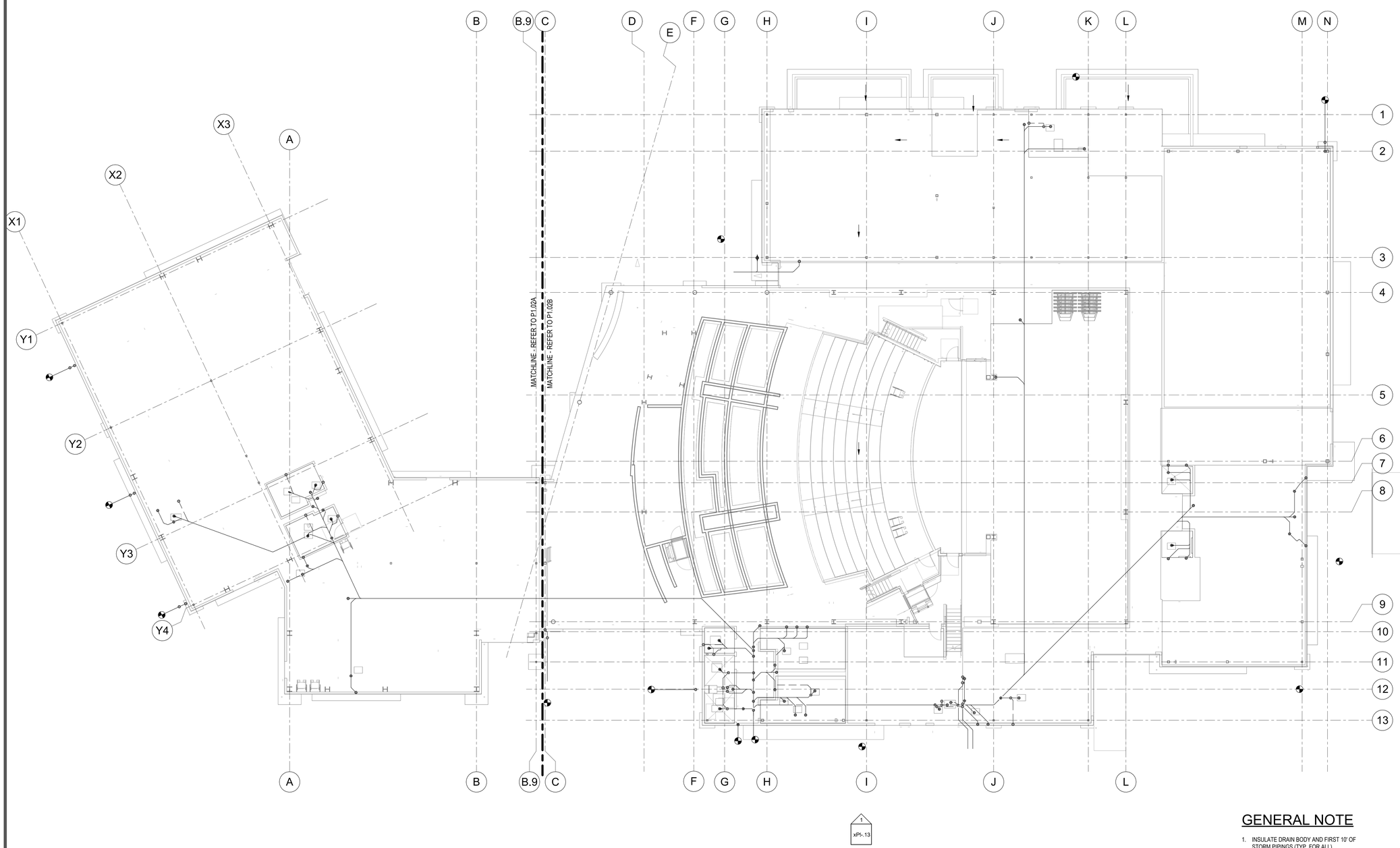
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## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

PN

**UNDERGROUND PLAN - PLUMBING** **1**
3/32" = 1'-0"

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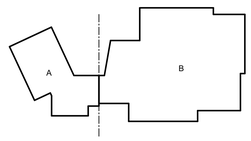
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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

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**UNDERGROUND PLAN - PLUMBING**

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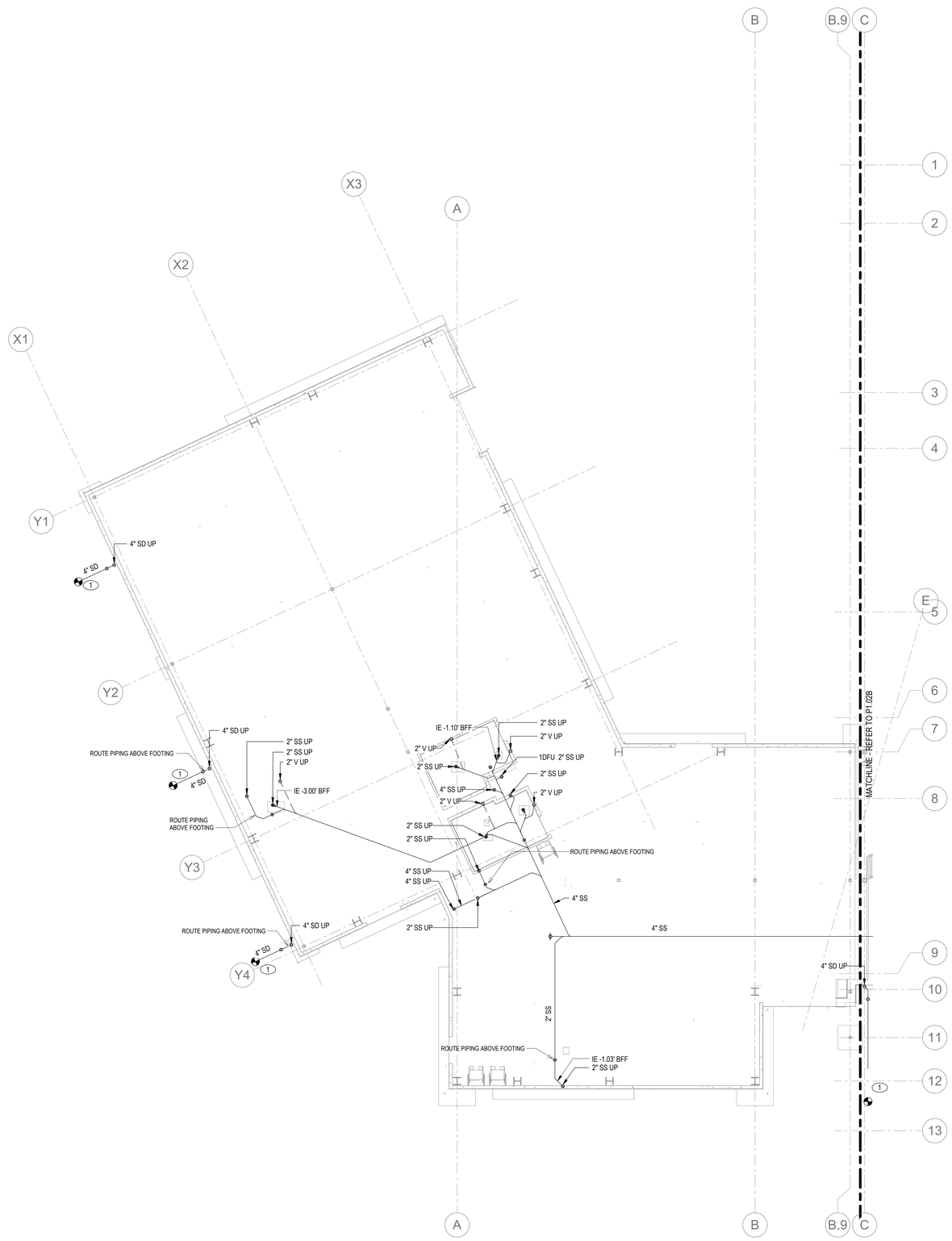
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## KEYED NOTES

1. TIE INTO CIVIL STORM CONNECTION.SEE CIVIL DRAWING FOR CONTINUATION.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

**UNDERGROUND PLAN - PLUMBING - SEGEMENT A** | **1** 1/8" = 1'-0"

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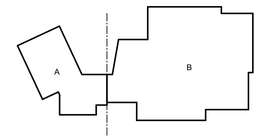
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Job No.: 150-23US00121


KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**UNDERGROUND PLUMBING PLAN - SEGMENT A**

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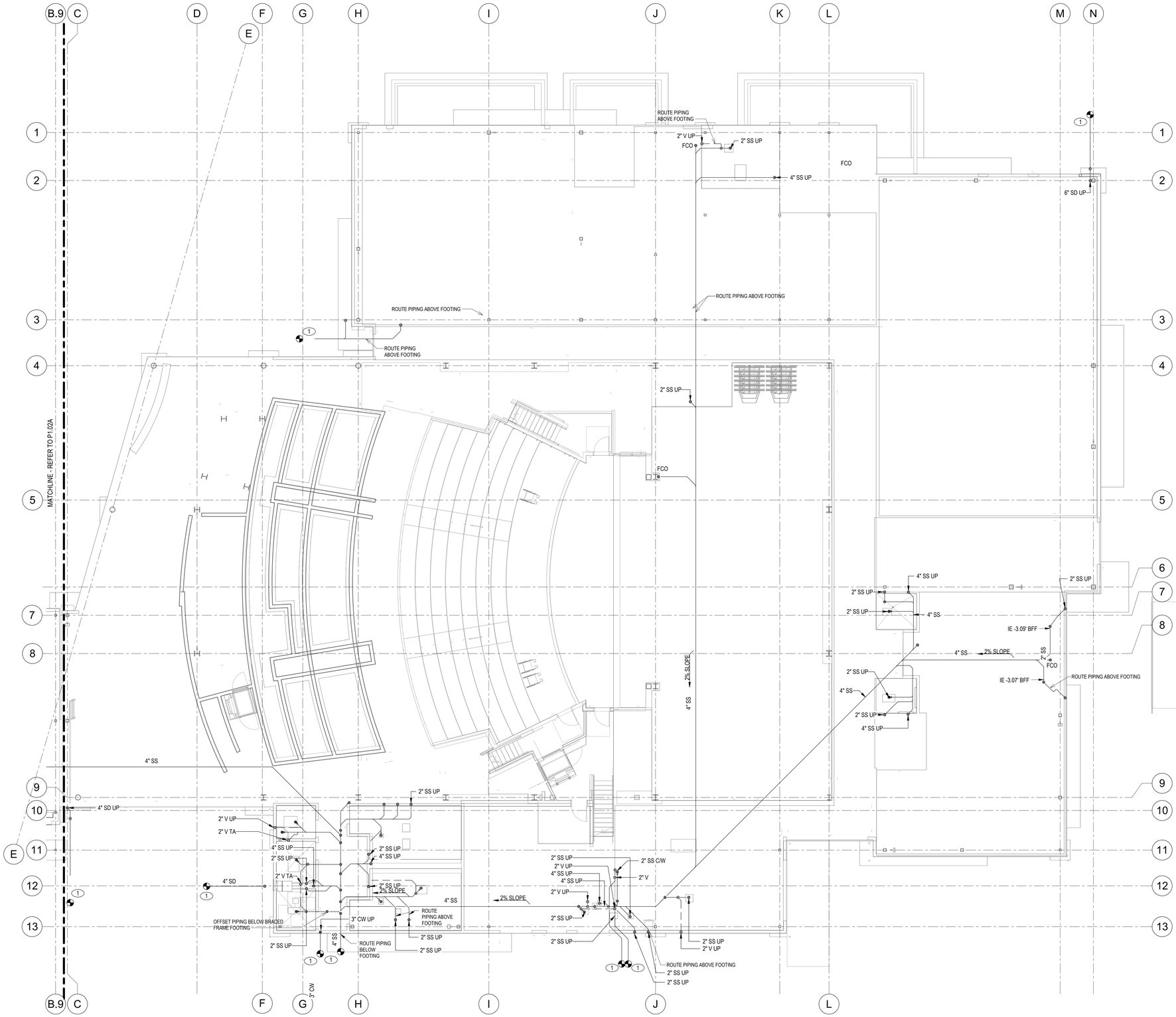
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## KEYED NOTES #

1. TIE INTO CIVIL STORM CONNECTION. SEE CIVIL DRAWING FOR CONTINUATION.
2. 6"Ø SD CONNECT TO CIVIL PUMPED SUMP. COORDINATE AND SEE CIVIL DRAWING FOR DETAILED LOCATION AND CONTINUATION.
3. CONNECT TO LID PLANTER OVERFLOW DRAIN. TYPICAL OF 3.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

**UNDERGROUND PLAN - PLUMBING - SEGEMENT B** 1 1/8" = 1'-0"

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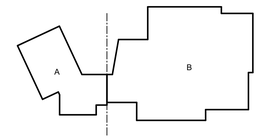
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KEY PLAN:




FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**UNDERGROUND PLUMBING PLAN - SEGMENT B**

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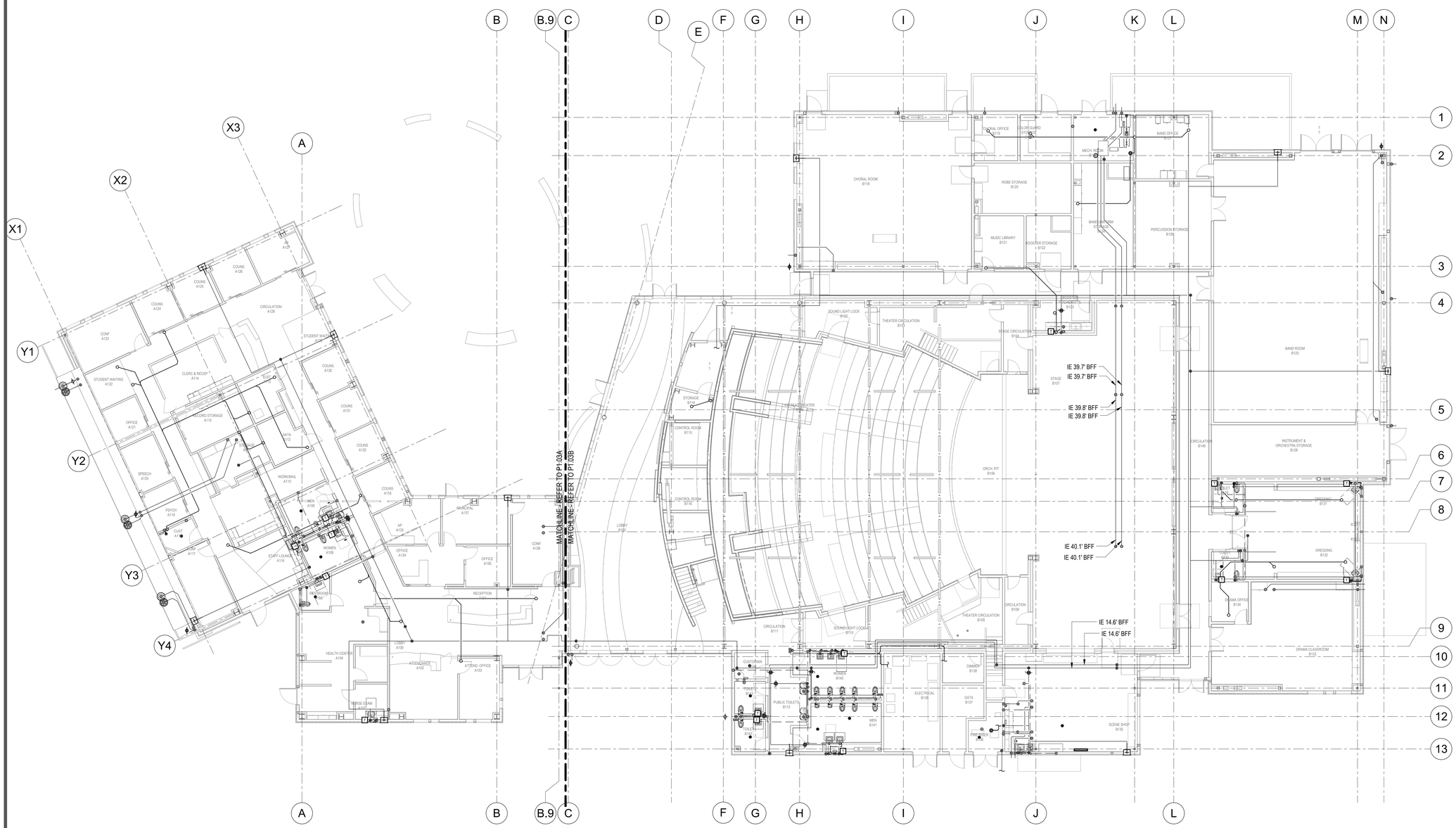
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## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

PN

**LEVEL 1 - OVERALL PLUMBING PLAN** 1 3/32" = 1'-0"

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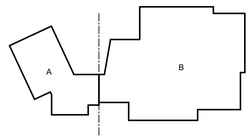
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**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - OVERALL PLUMBING PLAN**

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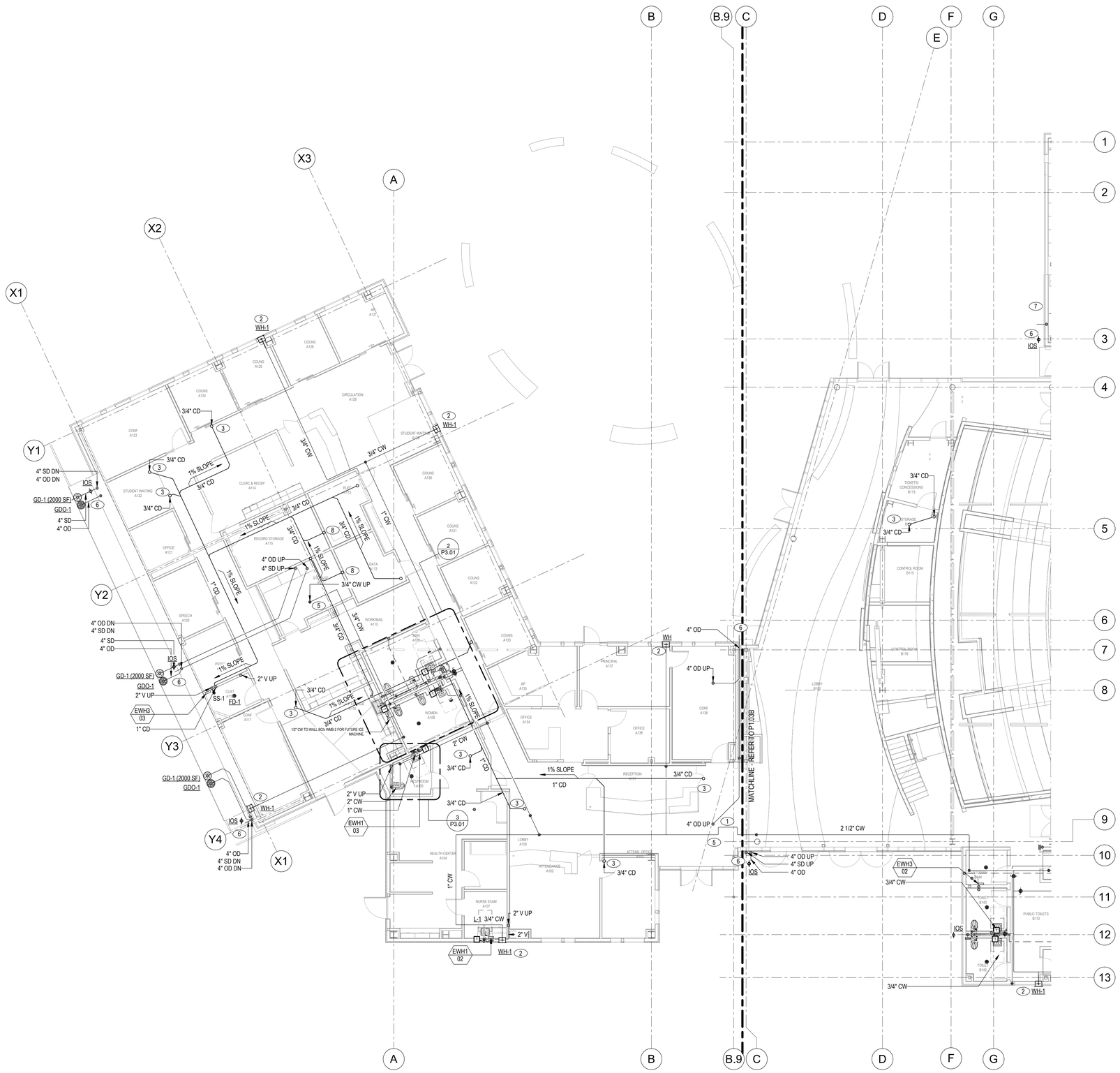
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## KEYED NOTES (#)

1. SEISMIC EXPANSION LOOP. REFER TO DETAIL 9.01/5 COORDINATE WITH STRUCTURAL FOR DISPLACEMENT REQUIREMENT.
2. 3/4Ø CW LINE TO WALL HYDRANT WH-1.
3. FCU CONDENSATE PIPE TO BE INSULATED AND COMPLETED WITH P-TRAP AND CHECK VALVE. ALLOW CONDENSATE PUMP AS NECESSARY. SIZE PIPES AS FOLLOWS U.N.O.:
   3/4"Ø = 2 TON & UNDER
   1"Ø = 3 - 5 TONS
   1 1/4"Ø = 7-25 TONS
4. 3/4" CW TO HB-1 ABOVE ON ROOF.
5. EXPANSION LOOP REFER TO DETAIL #5 ON DRAWING P9.01.
6. OVERFLOW DRAIN TERMINATION AT EXTERIOR WALL.
7. GUTTER DRAIN TO TERMINATE AT PLANTER.
8. 3/4 CONDENSATE LINE FROM MECHANICAL COOLING UNIT COMPLETE WITH CONDENSATE PUMP CDNP-1.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

PN

**LEVEL 1 - PLUMBING PLAN - SEGMENT A** | **1** | 1/8" = 1'-0"

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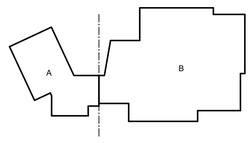
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**LEVEL 1 - PLUMBING PLAN - SEGMENT A**

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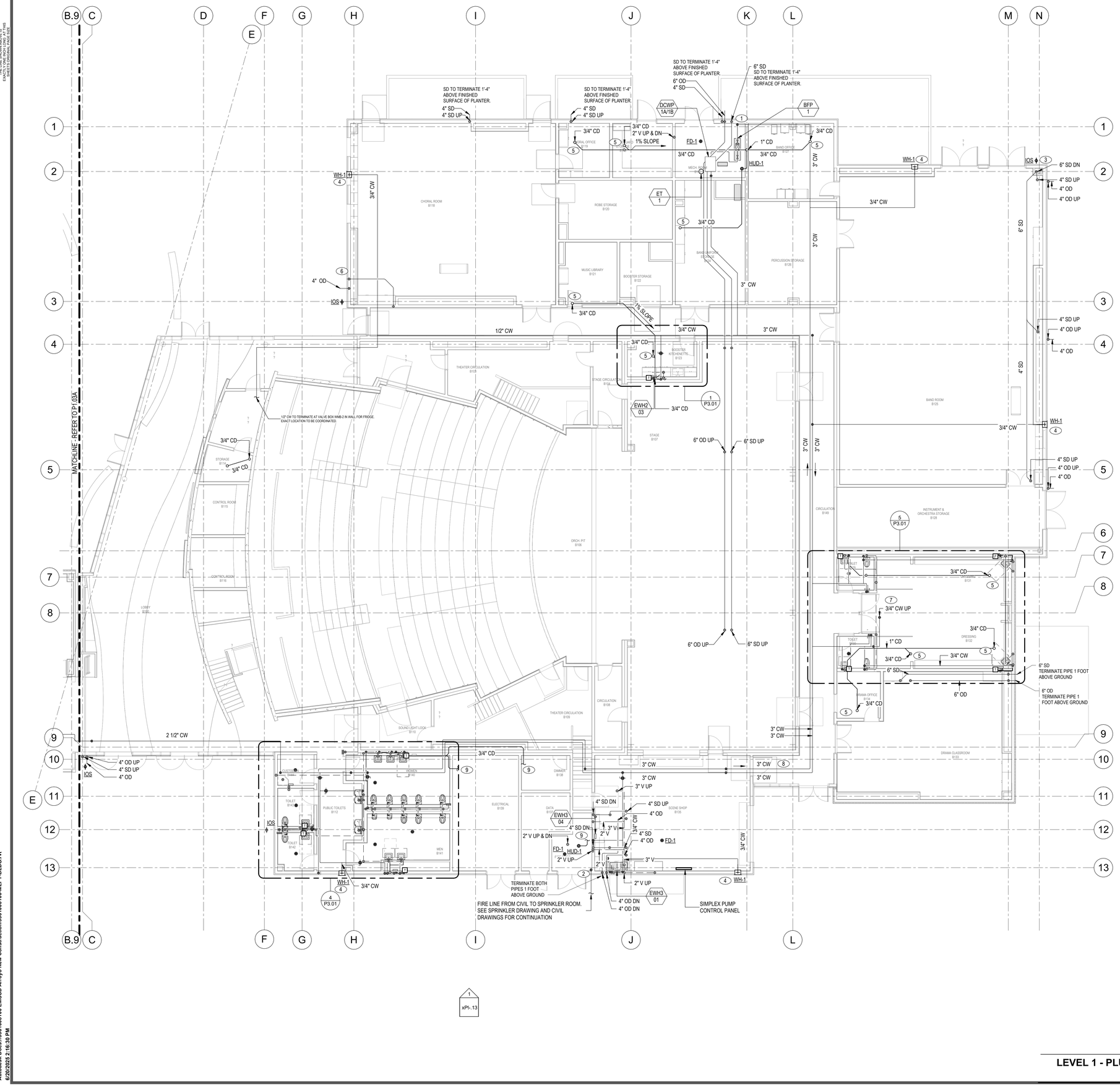
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## KEYED NOTES

1. NEW WATER LINE TO MECHANICAL ROOM.
2. MIN. 6" CONNECTION TO FIRE RISER ROOM MIN. 9" ABOVE FINISHED FLOOR WITH A BLIND FLANGE OR GROOVED CAP.
3. TIE INTO CIVIL STORM SYSTEM. SEE CIVIL DRAWINGS FOR CONTINUATION.
4. 3/4Ø CW LINE TO WALL HYDRANT WH-1.
5. FCU CONDENSATE PIPE TO BE INSULATED AND COMPLETED WITH P-TRAP AND CHECK VALVE. ALLOW CONDENSATE PUMP AS NECESSARY. SIZE PIPES AS FOLLOWS U.N.O.:
   3/4Ø = 2 TON & UNDER
   1"Ø = 3 - 5 TONS
   1 1/4"Ø = 7-25 TONS
6. GUTTER DRAIN TO TERMINATE AT PLANTER.
7. 3/4" CW TO HB-1 ABOVE ON ROOF.
8. 3" CW INCOMING LINE TO MECH ROOM.
9. 3/4 CONDENSATE LINE FROM MECHANICAL COOLING UNIT COMPLETE WITH CONDENSATE PUMP CDNP-1.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

**LEVEL 1 - PLUMBING PLAN - SEGMENT B** — 1 — 1/8" = 1'-0"

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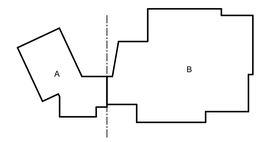
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## NOTES


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**LEVEL 1 - PLUMBING PLAN - SEGMENT B**

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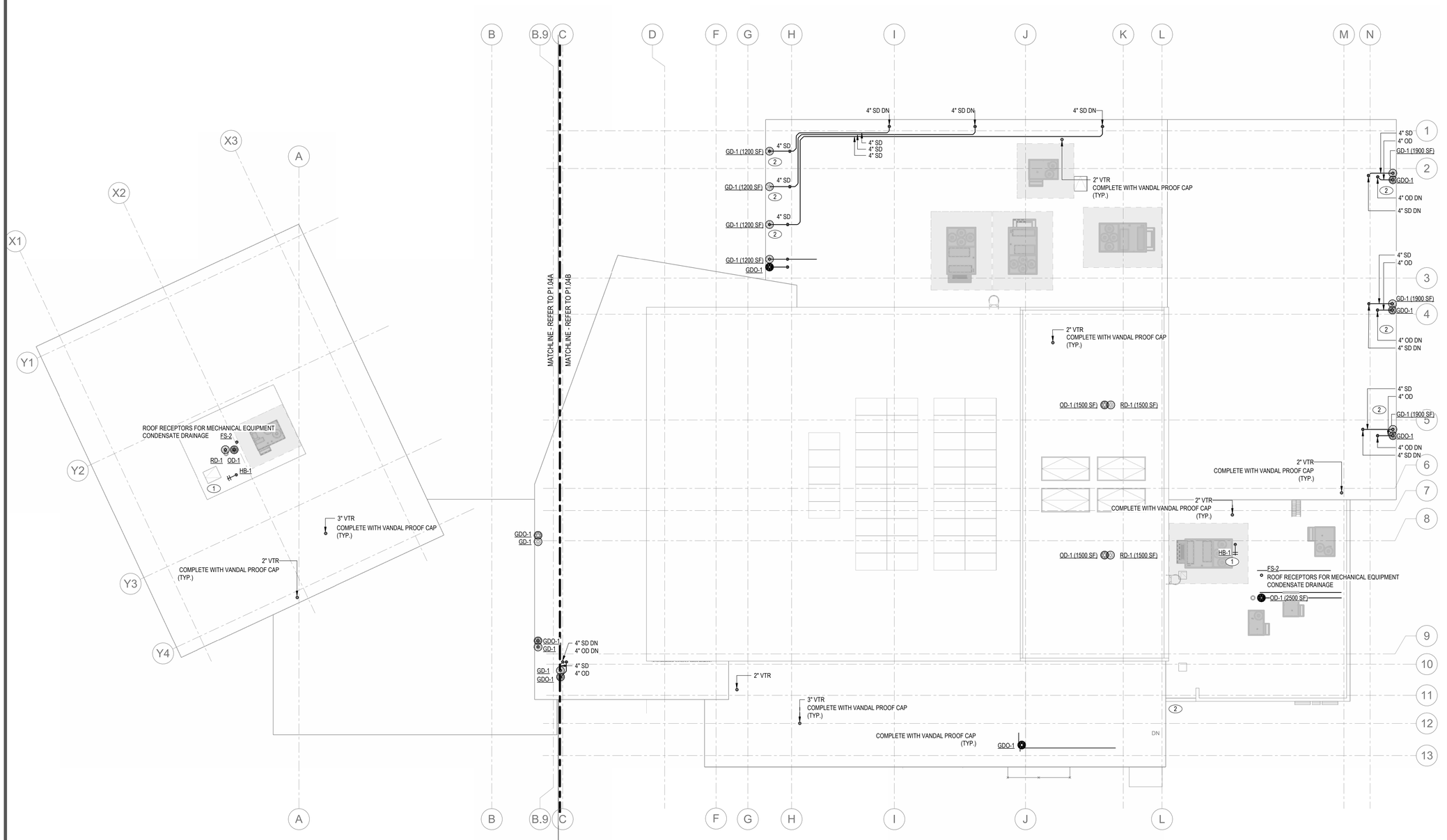
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## KEYED NOTES (#)

1. 3/4" CW TO HB-1 COORDINATE WITH MECHANICAL TO NOT CONFLICT WITH CLEARANCE REQUIREMENT.
2. DRAIN LINE FROM GUTTER DRAINS TO RUN BELOW ROOF.




## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

PN

**ROOF - OVERALL PLUMBING PLAN** 1
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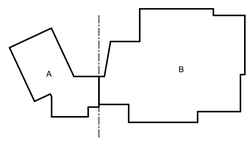
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## NOTES


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**ROOF - OVERALL PLUMBING PLAN**

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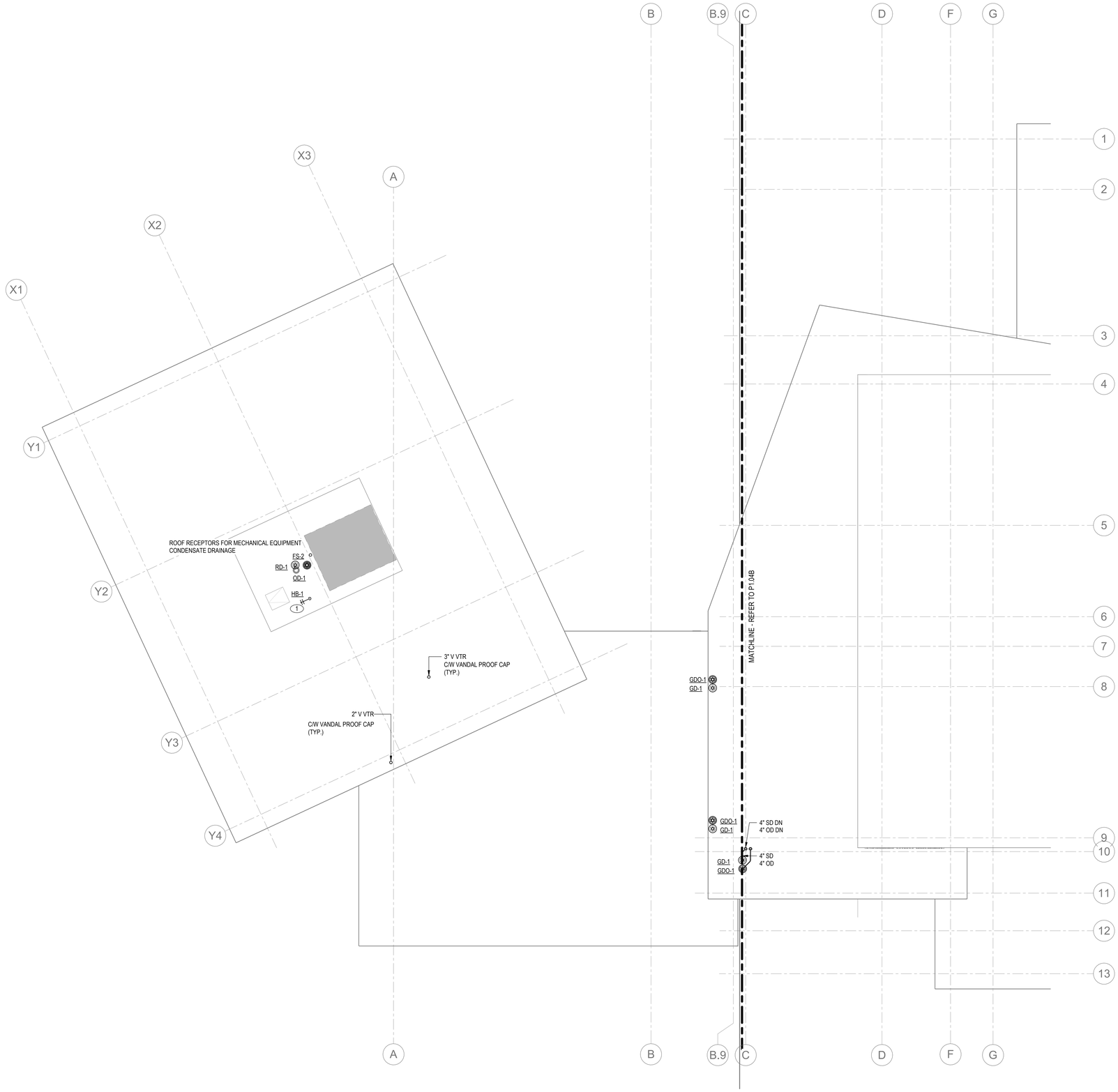
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## KEYED NOTES

1. 3/4" CW TO HB-1 COORDINATE WITH MECHANICAL TO NOT CONFLICT WITH CLEARANCE REQUIREMENT.

## GENERAL NOTE

1. INSULATE DRAIN BODY AND FIRST 10' OF STORM PIPINGS (TYP. FOR ALL).
2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

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**ROOF - PLUMBING PLAN - SEGMENT A** — 1 — 1/8" = 1'-0"

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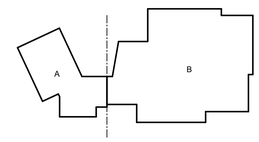
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**ROOF - PLUMBING PLAN - SEGMENT A**

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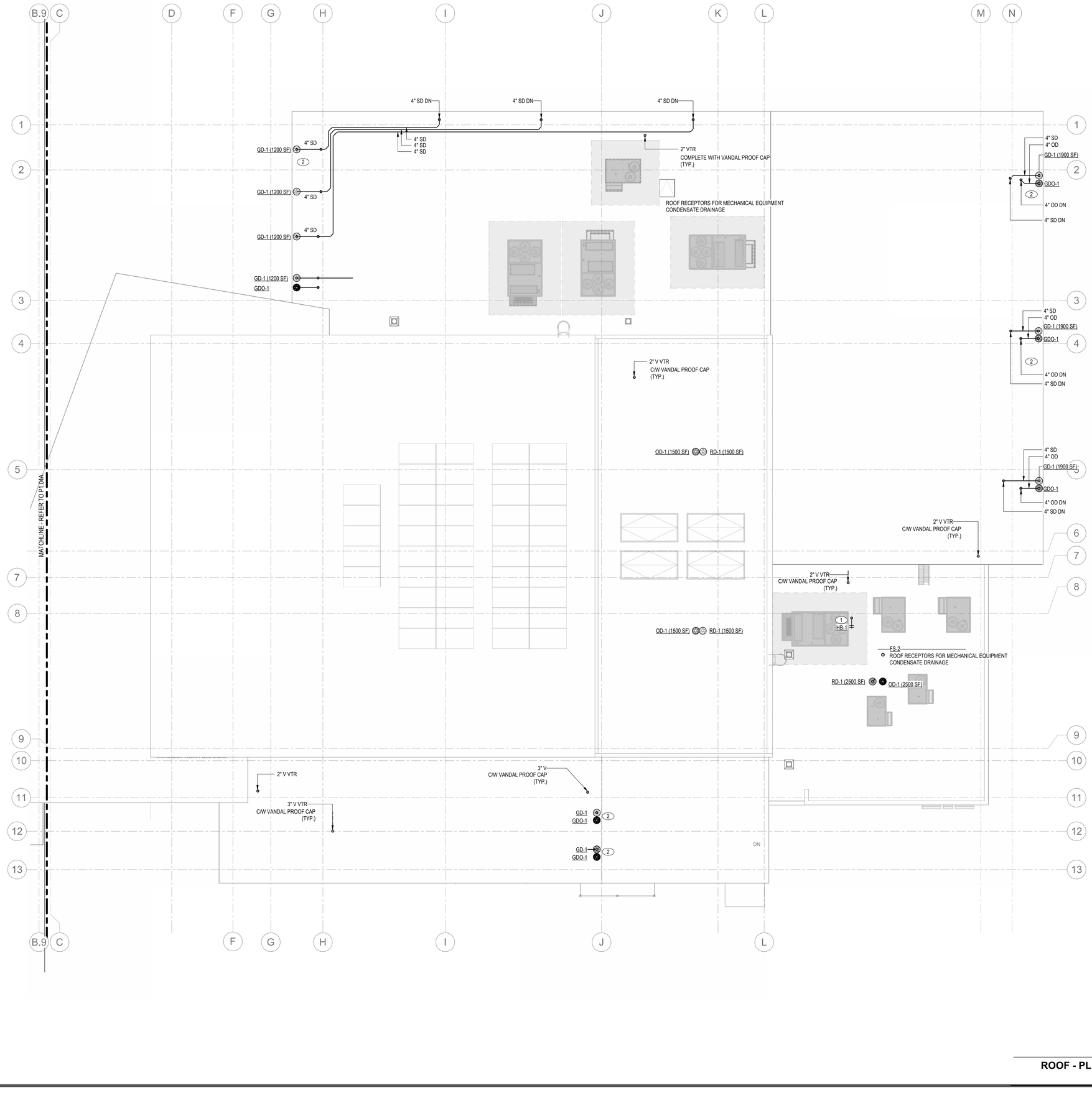
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## KEYED NOTES

1. 3/4" CW TO HB-1 COORDINATE WITH MECHANICAL TO NOT CONFLICT WITH CLEARANCE REQUIREMENT.
2. DRAIN LINE FROM GUTTER DRAINS TO RUN BELOW ROOF.

## GENERAL NOTE

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2. INSULATE DRAIN BODY AND ALL STORM PIPINGS IN THEATRES AND CHORAL ROOMS.
3. ALL CONDENSATE PANS TO MEET REQUIREMENTS OF ASHRAE 62.1-2016 SECTION 5.10.

PN

**ROOF - PLUMBING PLAN - SEGMENT B** — 1 — 1/8" = 1'-0"

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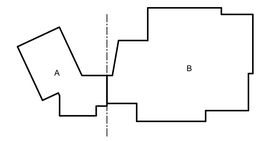
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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ROOF - PLUMBING PLAN - SEGMENT B**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

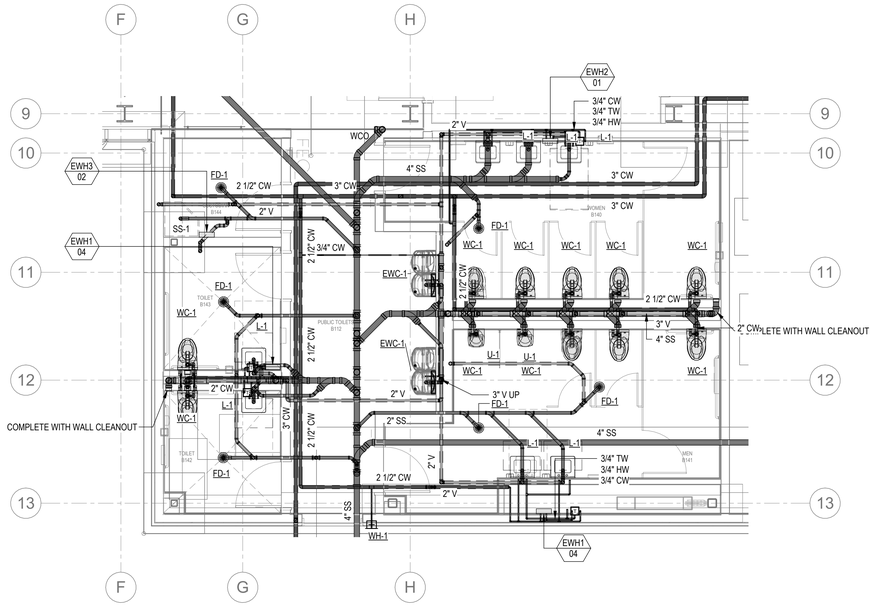
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SHEET:

**P1.04B**

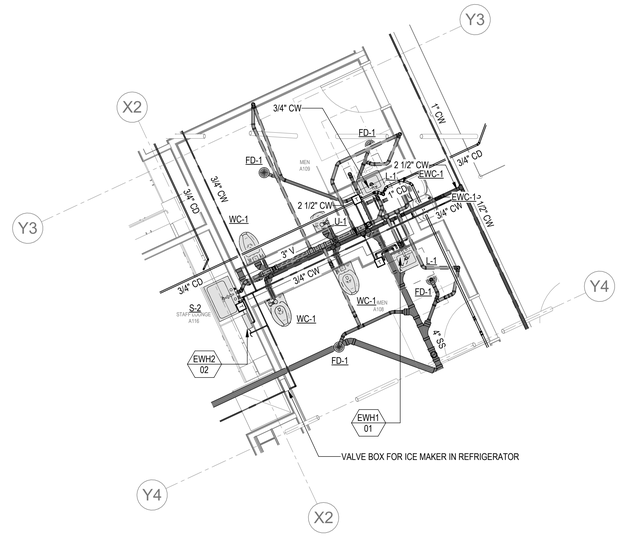
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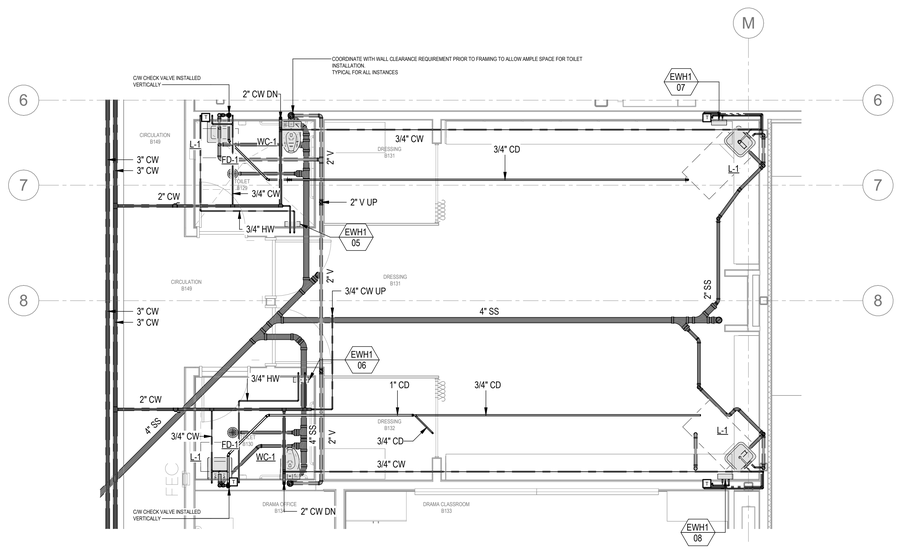

## 4 RESTROOMS B139, B140, B141, B142, PUBLIC ENLARGED PLAN

SCALE: 1/4" = 1'-0"



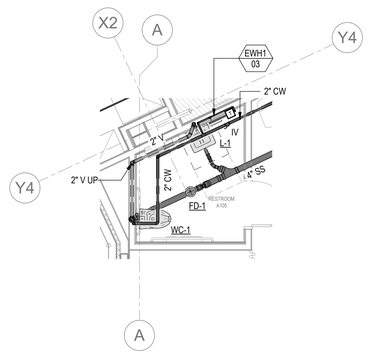

## 2 RESTROOMS A108, A109 ENLARGED PLAN

SCALE: 1/4" = 1'-0"



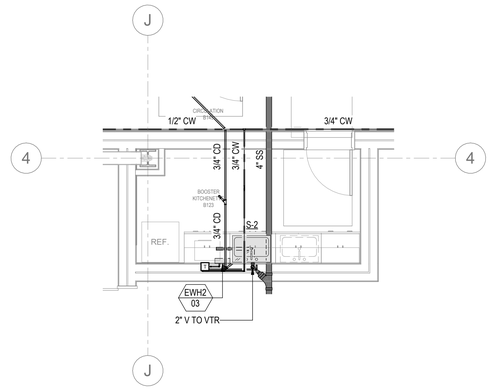

## 5 RESTROOMS B128, B131 ENLARGED PLAN

SCALE: 1/4" = 1'-0"




## 3 RESTROOMS A105 ENLARGED PLAN

SCALE: 1/4" = 1'-0"




## 1 BOOSTER KITCHENETTE B122 ENLARGED PLAN

SCALE: 1/4" = 1'-0"

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING ENLARGED PLANS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

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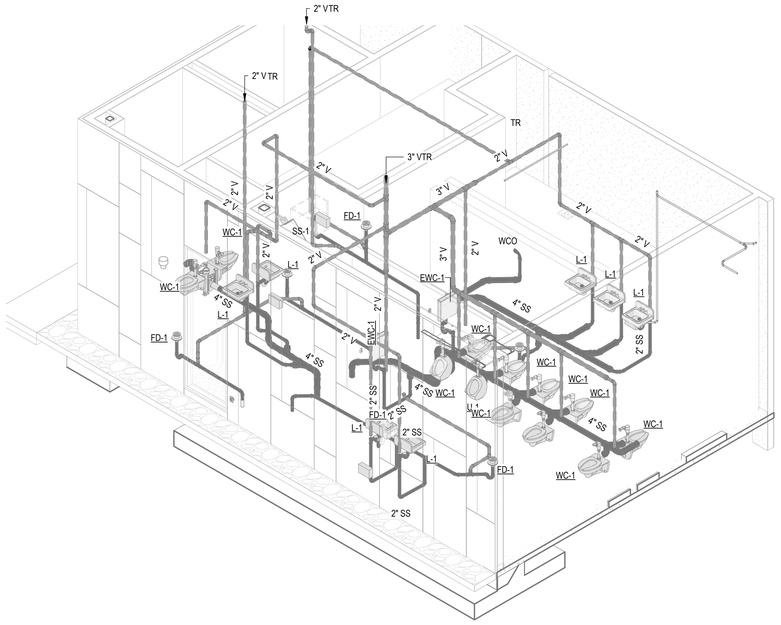
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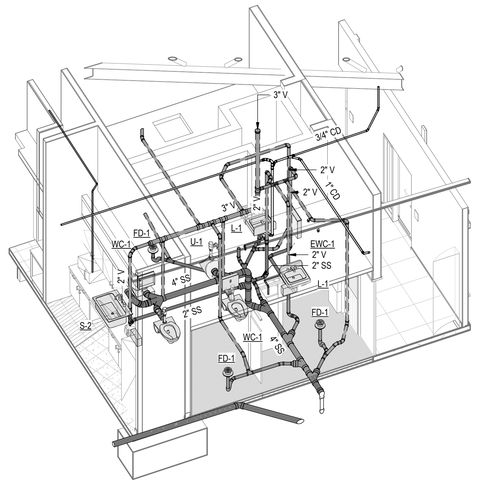
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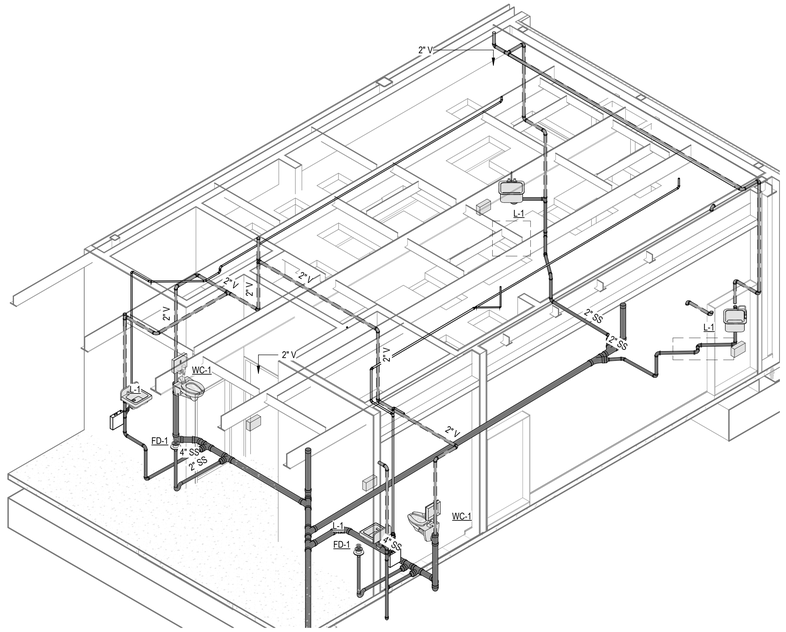

## 4 RESTROOMS B139, B140, B141, B142, PUBLIC GRAVITY PIPING ISOMETRIC DIAGRAM

SCALE: NONE



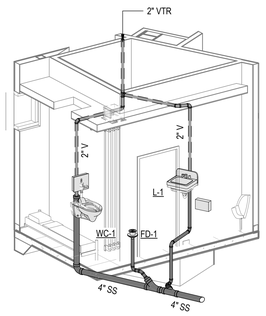

## 2 RESTROOMS A108, A109 GRAVITY PIPING ISOMETRIC DIAGRAM

SCALE: NONE



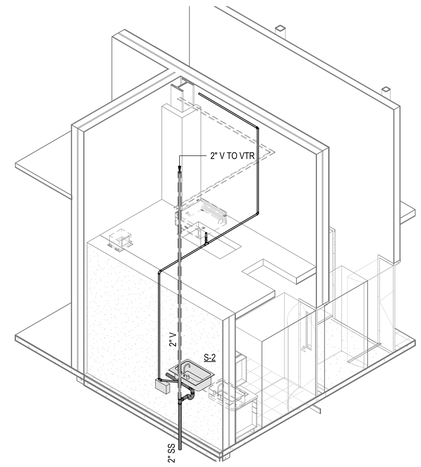

## 5 RESTROOMS B128, B131 GRAVITY PIPING ISOMETRIC DIAGRAM

SCALE: NONE




## 3 RESTROOMS A105 GRAVITY PIPING ISOMETRIC DIAGRAM

SCALE:




## 1 BK B123 GRAVITY PIPING ISOMETRIC DIAGRAM

SCALE: NONE

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBNG PIPING ISOMETRIC DIAGRAM**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

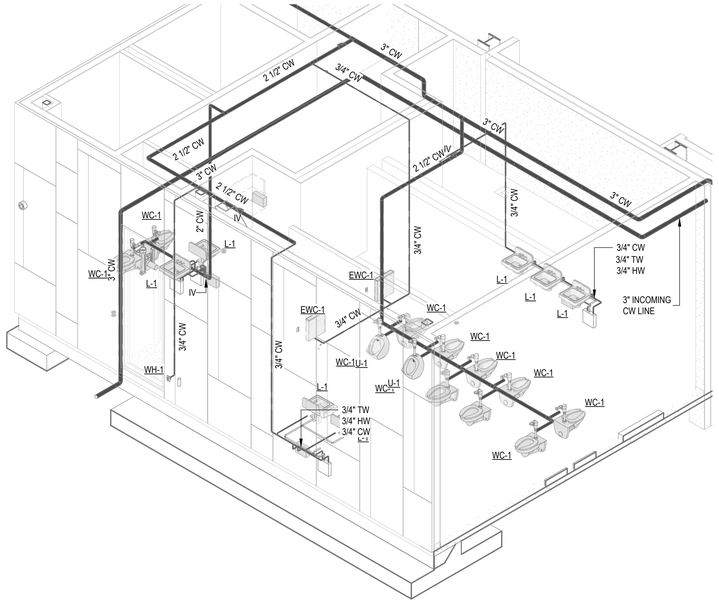
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**P4.01**

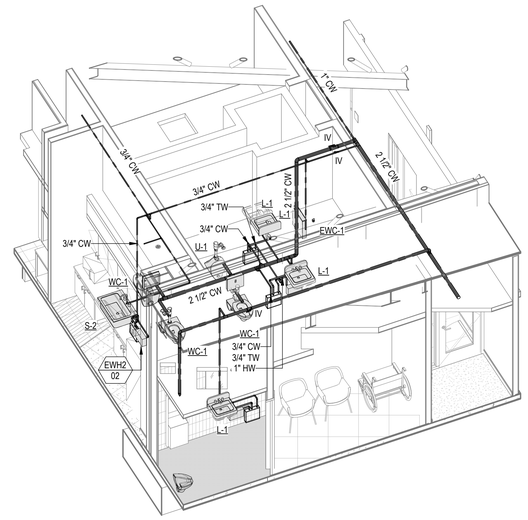
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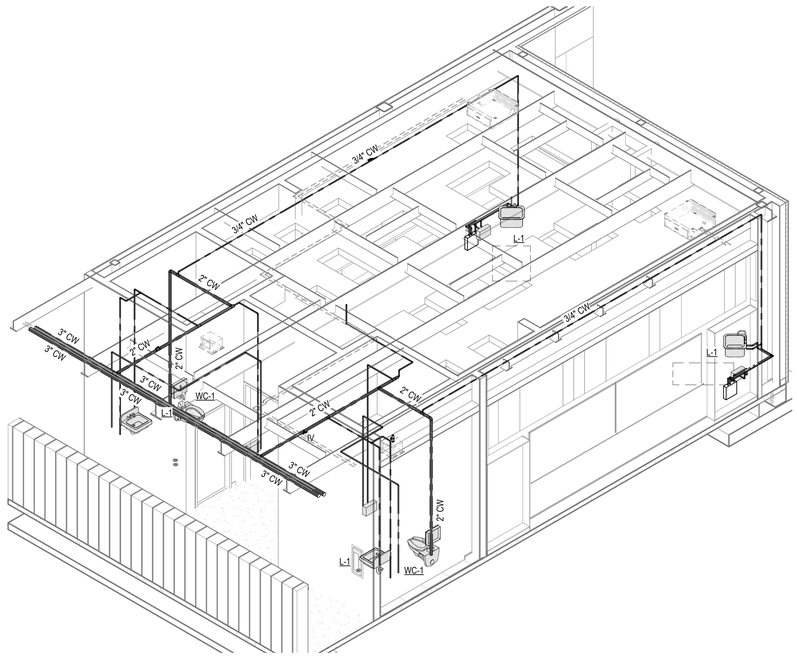

## 4 RESTROOMS B139, B140, B141, B142, PUBLIC PRESSURE PIPING ISOMETRIC DIAGRAM

SCALE:



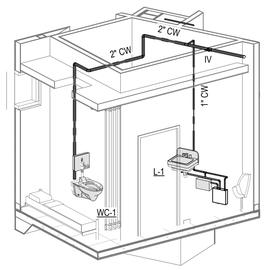

## 2 RESTROOMS A108, A109 PRESSURE PIPING ISOMETRIC DIAGRAM

SCALE:



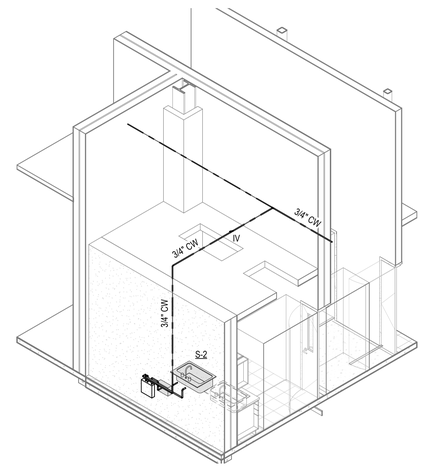

## 5 RESTROOMS B128, B131 PRESSURE PIPING ISOMETRIC DIAGRAM

SCALE:




## 3 RESTROOMS A105 PRESSURE PIPING ISOMETRIC DIAGRAM

SCALE:




## 1 BK B122 PRESSURE PIPING ISOMETRIC DIAGRAM

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBNG PIPING ISOMETRIC DIAGRAM**

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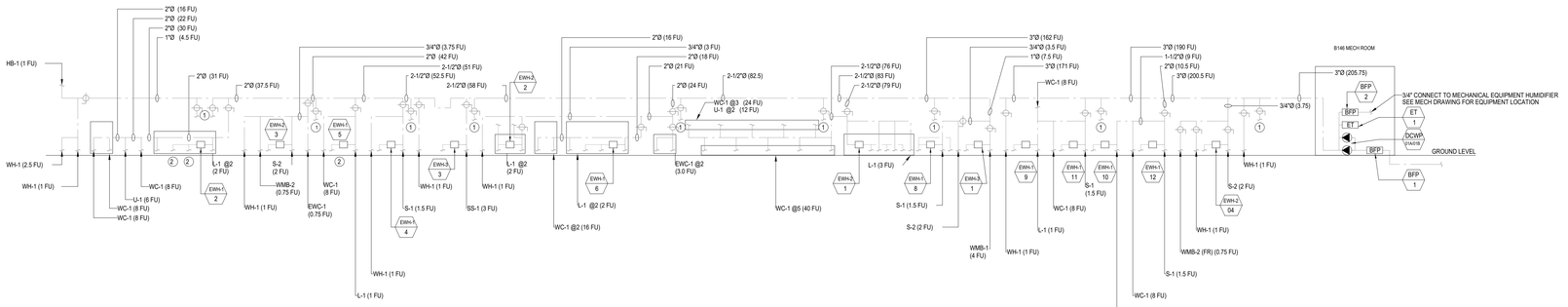
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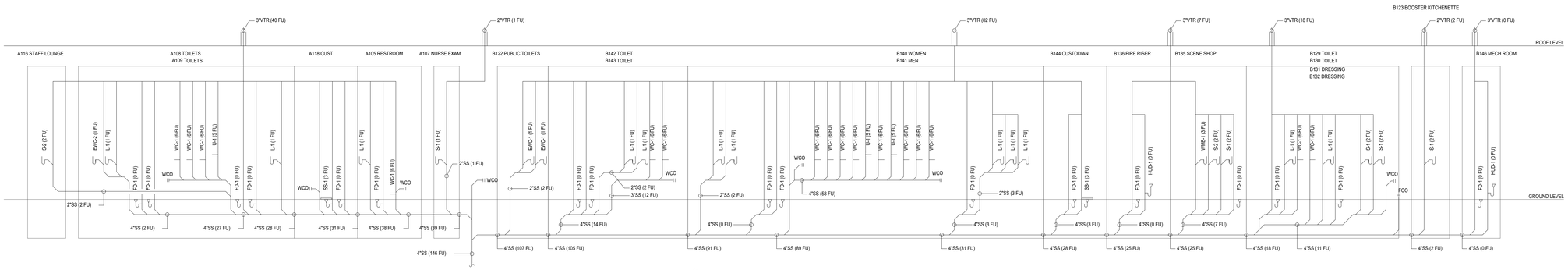
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KEYED NOTES

1. TP-1 (0.5 FU)
2. L-1 (1 FU)




1 WATER RISER DIAGRAM
SCALE: N.T.S.




2 SANITARY SEWER & VENT RISER DIAGRAM
SCALE: N.T.S.

## NOTES

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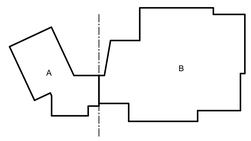

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KEY PLAN:




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PROJECT:

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SHEET NAME:

**DOMESTIC & DWV SCHEMATICS**

**DSA SUBMITTAL**

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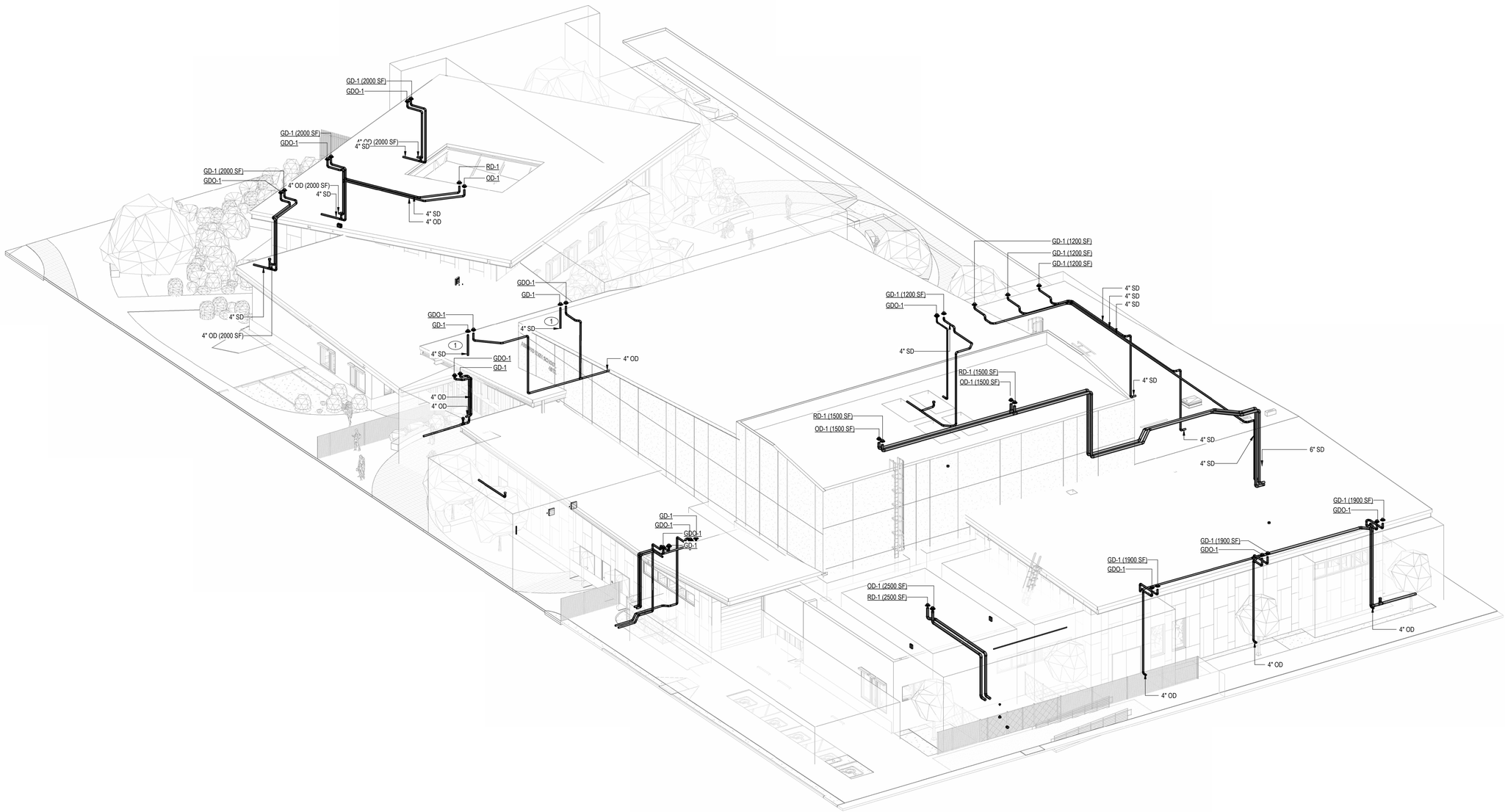
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## KEYED NOTES #

1. 4" SD TO TERMINATE AT LOWER ROOF ONTO SPLASH BLOCK.




## 1 STORM PIPING ISOMETRIC DIAGRAM

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## NOTES


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**STORM PIPING ISOMETRIC DIAGRAM**

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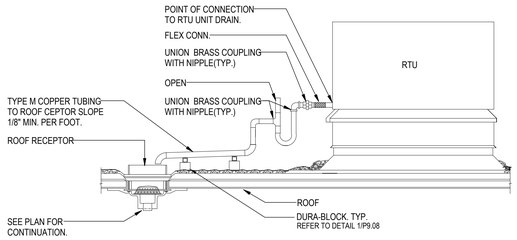
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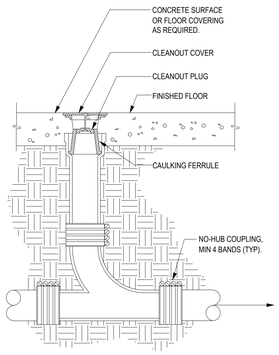
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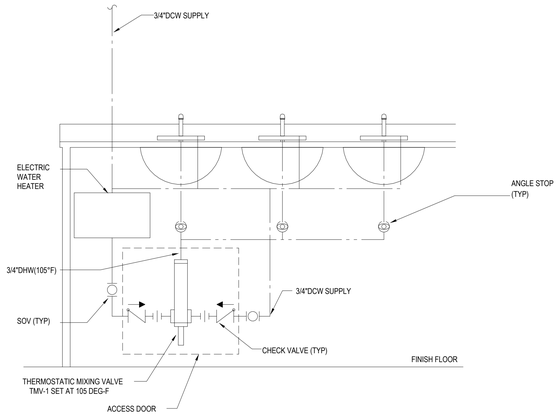



NOTES:
1. SEE ARCHITECTURAL DWG. FOR DETAIL ROOF PENETRATION.

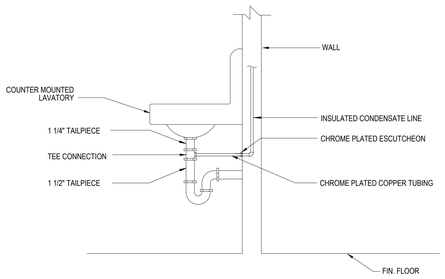
## 9 RTU CONDENSATE DRAIN
SCALE: N.T.S.



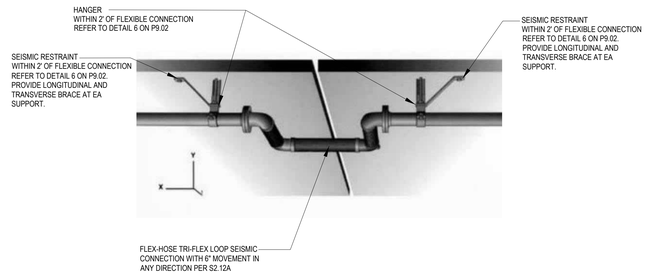

## 8 FLOOR CLEANOUT
SCALE: N.T.S.




## 6 LAVATORY PIPING DETAIL (TYP)
SCALE: N.T.S.

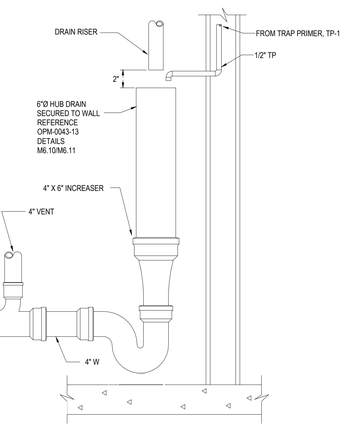



## 3 CD CONNECTION TO LAV TAILPIECE (TYO)
SCALE: N.T.S.




NOTES:
1. APPLICATIONS WHERE TRI-FLEX LOOPS ARE CONNECTED TO DOMESTIC WATER PIPING, THIS SHALL BE ALL STAINLESS STEEL AND SHALL BE LEAD-FREE FOR DOMESTIC WATER USE. PROVIDE WITH STRUCTURAL'S SPECIFIED MOVEMENT OF 6 INCHES IN ANY DIRECTION RATED AT 175 PSI EQUAL TO MODEL TFLASSM6 STAINLESS STEEL (IAPMO # N-7208).
2. ALL FLEXIBLE LOOPS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. ADEQUATE CLEARANCE SHALL BE MAINTAINED AROUND ALL FLEXIBLE LOOPS TO ALLOW FOR STRUCTURAL'S SPECIFIED MOVEMENT.
3. WHEN THE FLEXIBLE LOOP IS INSTALLED ABOVE OR BELOW THE HORIZONTAL CENTER OF THE PIPING RUN, THE FLEXIBLE LOOP SHALL INCLUDE A DRAIN PLUG INTO WHICH A VALVE CAN BE ADDED.

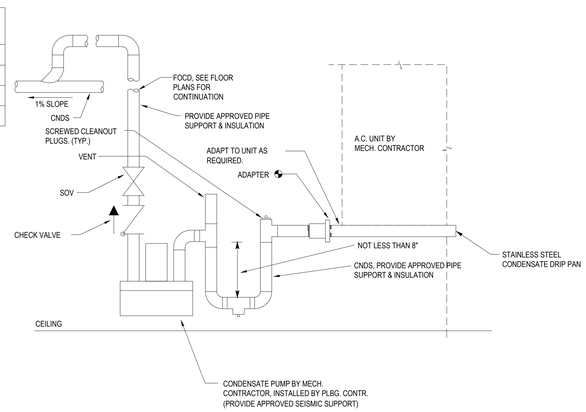
## 5 HORIZONTAL SEISMIC EXPANSION SYSTEM
SCALE: N.T.S.



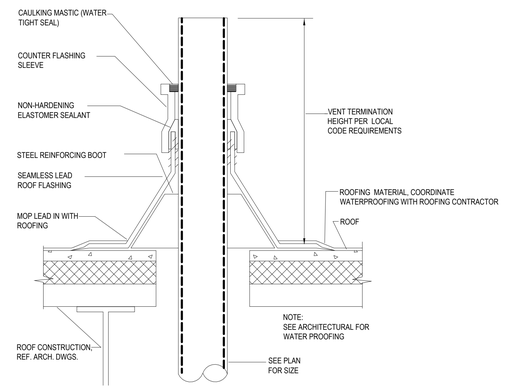

## 2 HUB DRAIN AT FIRE RISER (TYP)
SCALE: N.T.S.

| EQMT. CAP. (TONS REF.) | CD/FCD SIZE (IN.) |
|---|---|
| THRU 20 | 3/4" |
| THRU 40 | 1" |
| THRU 90 | 1 1/4" |
| THRU 125 | 1 1/2" |

NOTES:
1. PROVIDE SECONDARY CONDENSATE DRAIN (SCD) SAME SIZE AS THE PRIMARY DRAIN. TERMINATE SCD AT 1-INCH BELOW THE CEILING WITH DECORATIVE ESCUTCHEON. COORDINATE TERMINATION LOCATION WITH THE ARCHITECT.




## 7 PUMPED CONDENSATE DRAIN DETAIL (TYP)
SCALE: N.T.S.

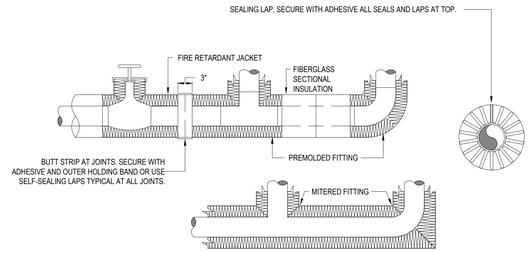



## 4 VENT THROUGH ROOF DETAIL (TYP)
SCALE: N.T.S.

1. PREMOLDED FIBERGLASS OR RADIAL MITERED

CONCEALED VALVES AND FITTINGS
1.WRAP WITH 1 INCH THICK, 1 POUND DENSITY TO
2. REQUIRED PIPE INSULATION THICKNESS.
3. SECURE WITH WIRE OR TAPE.
4. VAPOR SEAL HORIZONTAL COLD WATER PIPING.

EXPOSED VALVES AND FITTINGS
1. PREMOLDED FIBERGLASS OR RADIAL MITERED
2. PIPE INSULATION.
3. SKIM COAT OF INSULATION CEMENT.
4. COAT OF MASTIC.
5. WRAP WITH FIBERGLASS REINFORCING CLOTH.
6. FINISH COAT OF MASTIC
7. OVERLAP 2 INCHES ON PIPE INSULATION.




## 1 INSULATION OF PIPING, VALVES AND FITTINGS (TYP)
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APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

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| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

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Exp. 6-30-26
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06/20/2025
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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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**P9.01**

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| PIPE | COPPER PIPE TYPE K OR L MAXIMUM SEISMIC BRACE SPACINGS | VERTICAL FORCE Fpv = 0.375g (ASD) |
|---|---|---|

**PIPE W/WATER AND INSULATION**

| NPS | WT/FT | MAX GRAVITY SUPPORT SPACING (FT) | MAX TRANSVERSE BRACE SPACING BASED ON PIPE SIZE AND g FORCE (FT) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | g FORCE | | | | | | |
| | | | 0.25 | 0.375 | 0.5 | 0.625 | 0.75 | 0.875 | 1 |
| 1 1/4 | 2.50 | 7 | 24 | 21 | 18 | 16 | 15 | 14 | 12 |
| 1 1/2 | 2.80 | 8 | 27 | 23 | 20 | 18 | 16 | 15 | 14 |
| 2 | 4.20 | 8 | 32 | 28 | 24 | 22 | 20 | 18 | 17 |
| 2 1/2 | 5.80 | 9 | 36 | 32 | 27 | 24 | 22 | 21 | 19 |
| 3 | 7.60 | 10 | 39 | 35 | 30 | 27 | 25 | 23 | 21 |
| 4 | 13.4 | 10 | 45 | 41 | 36 | 33 | 30 | 28 | 26 |
| 5 | 18.6 | 10 | 49 | 45 | 40 | 36 | 33 | 31 | 29 |
| 6 | 26.1 | 10 | 54 | 49 | 43 | 39 | 36 | 33 | 30 |
| 8 | 43.4 | 10 | 61 | 55 | 48 | 43 | 40 | 37 | 34 |
| 10 | 65.7 | 10 | 71 | 64 | 56 | 51 | 47 | 44 | 41 |
| 12 | 88.6 | 10 | 78 | 70 | 62 | 56 | 52 | 48 | 45 |

**PIPE ONLY (GAS)**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 1/4 | 1.04 | 7 | 12 | 11 | 10 | 9 | 8 | 8 | 7 |
| 1 1/2 | 1.28 | 8 | 14 | 13 | 11 | 10 | 9 | 9 | 8 |
| 2 | 1.75 | 8 | 17 | 15 | 13 | 12 | 11 | 10 | 9 |
| 2 1/2 | 2.33 | 9 | 19 | 17 | 15 | 14 | 13 | 12 | 11 |
| 3 | 3.06 | 10 | 21 | 19 | 17 | 16 | 15 | 14 | 13 |
| 4 | 4.41 | 10 | 25 | 23 | 20 | 19 | 17 | 16 | 15 |
| 5 | 6.11 | 10 | 28 | 26 | 23 | 21 | 20 | 18 | 17 |
| 6 | 7.85 | 10 | 31 | 28 | 25 | 24 | 22 | 21 | 19 |
| 8 | 13.0 | 10 | 37 | 34 | 31 | 28 | 27 | 25 | 24 |
| 10 | 18.9 | 10 | 43 | 39 | 35 | 33 | 31 | 29 | 28 |
| 12 | 27.0 | 10 | 47 | 43 | 39 | 37 | 35 | 33 | 31 |

NOTES:
1. MAXIMUM BRACE SPACING IS BASED ON ASME B31E DESIGN BY ANALYSIS. PIPE SIZE, MATERIALS, PRESSURES, ETC. NOT USED TO DETERMINE THESE TABLES MAY USE ASME B31E DESIGN BY ANALYSIS TO DETERMINE THE MAXIMUM SEISMIC BRACE SPACING FOR THEIR SPECIFIC PIPING SYSTEM.
2. MAXIMUM GRAVITY SPACING IS BASED ON NSS SP-58 TABLE 4.1 LIMITED TO 10 FEET.
3. FOR LONGITUDINAL AND ALL-DIRECTIONAL BRACE SPACING, TRIPLE THE VALUES IN THE ABOVE TABLE. BRACE AND OR CONNECTION CAPACITY MAY GOVERN MAXIMUM SPACINGS IN SOME CASES.
4. BRACE SPACINGS ARE BASED ON PIPE CONFORMING TO ASTM SPECIFICATION B88 TYPE K OR L COPPER PIPE WITH MINIMUM TENSILE STRENGTH OF 30,000 PSI AT A TEMPERATURE OF 150 PSI AND 200°F, RESPECTIVELY. PIPING MAY BE DRAWN OR ANNEALED WITH SOLDERED OR BRAZED JOINTS.

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PAGE S1.2.1

Note: "g" Force, or Fp is 0.85 roudned up to 1 for this table.
Fp = (0.4*Ap*Sds*[(z/1+2*z/h)/Rp] ^ 0.7 ,
Fp = (0.4*2.5*1.213*1.0(1+2*1/1)/3.0) ^ 0.7 = 0.85



| PIPE | CAST IRON SOIL PIPE FILLED WITH WATER MAXIMUM SEISMIC BRACE SPACINGS | VERTICAL FORCE Fpv = 0.375g (ASD) |
|---|---|---|

| NPS | MAX WEIGHT PER FOOT (LBS/FT) | MAX GRAVITY SUPPORT SPACING (FT) | MAX TRANSVERSE BRACE SPACING BASED ON PIPE SIZE AND g FORCE (FT) | | | | MAX LONGITUDINAL BRACE SPACING BASED ON PIPE SIZE AND g FORCE (FT) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | g FORCE | | | | g FORCE | | | | |
| | | | 0.25 | 0.375 | 0.5 | 0.75 | 1 | 0.25 | 0.375 | 0.5 | 0.75 | 1 |
| 2 | 9.4 | 8 | 32 | 28 | 25 | 21 | 11 | 40 | 35 | 30 | 20 | 10 |
| 3 | 13.6 | 8 | 39 | 34 | 30 | 25 | 20 | 40 | 40 | 35 | 30 | 20 |
| 4 | 18.5 | 8 | 45 | 39 | 35 | 29 | 20 | 40 | 40 | 40 | 29 | 20 |
| 6 | 23.4 | 8 | 49 | 43 | 37 | 30 | 20 | 40 | 40 | 40 | 29 | 20 |
| 8 | 40.2 | 6 | 57 | 49 | 43 | 35 | 20 | 40 | 40 | 35 | 25 | 17 |
| 10 | 60.0 | 6 | 67 | 57 | 49 | 40 | 20 | 35 | 31 | 27 | 20 | 13 |
| 12 | 82.1 | 6 | 65 | 55 | 47 | 38 | 19 | 30 | 26 | 23 | 17 | 11 |

NOTES:
1. MAXIMUM BRACE SPACING IS BASED ON ASTM C1540, FM 1680 CLASS 1 AND ASCE 7-10 SECTION 13.6.8, NOTE c, 10 PERCENT OF THE MATERIAL MINIMUM SPECIFIED TENSILE STRENGTH FOR CAST IRON.
2. MAXIMUM GRAVITY SPACING IS BASED ON SUPPORT OF STANDARD 10 FOOT MAXIMUM PIPE LENGTH SEGMENTS SUPPORTED WITHIN 18 INCHES IN EACH DIRECTION FROM JOINT CONNECTION. TRIBUTARY LENGTH FOR EACH SUPPORT SHALL NOT EXCEED 5 FEET OF PIPE FULL OF WATER. PIPE WEIGHTS CONSIDERED FULL OF WATER (REFER TO APPENDIX).
3. BRACE SPACING SHALL BE 10 FEET MINIMUM AND 40 FEET MAXIMUM. BRACE AND OR CONNECTION CAPACITY MAY GOVERN MAXIMUM SPACING IN SOME CASES.
4. BRACE SPACINGS ARE BASED ON CAST IRON PIPE CONSTRUCTED TO ASTM A 888 OR CISPI 301 STANDARDS WITH A MINIMUM TENSILE STRENGTH OF 21,000 PSI.
5. CAST IRON PIPE (NO-HUB PIPE) BRACE SPACINGS SHALL NOT EXCEED THE TABULATED SPACINGS. NO-HUB COUPLINGS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C1540, SHALL BE CERTIFIED IN ACCORDANCE WITH FM 1680 CLASS 1, AND GRAVITY HANGERS SHALL BE SPACED PER THE REQUIREMENTS OF TABLE 313.1 OF THE 2013 CALIFORNIA PLUMBING CODE (CPC 2013) FOR NO-HUB CAST IRON PIPE.

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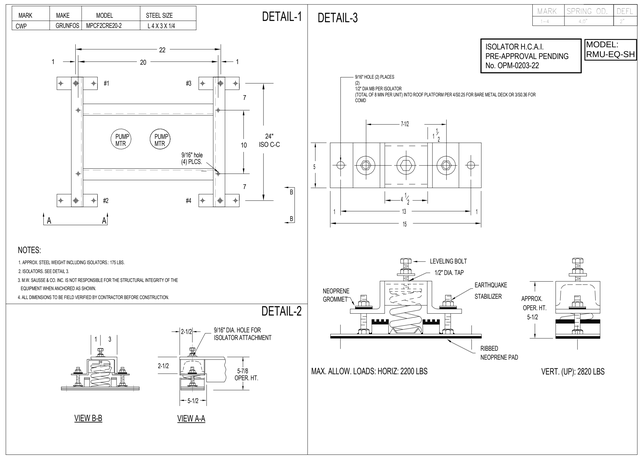
PAGE S1.4

Note: "g" Force, or Fp is 0.85 roudned up to 1 for this table.
Fp = (0.4*Ap*Sds*[(z/1+2*z/h)/Rp] ^ 0.7 ,
Fp = (0.4*2.5*1.213*1.0(1+2*1/1)/3.0) ^ 0.7 = 0.85



## 6 SEISMIC BRACING SUMMARY FOR INDIVIDUALLY SUSPENDED PLUMBING PIPING

SCALE: N.T.S.




| MARK | MAKE | MODEL | STEEL SIZE |
|---|---|---|---|
| CWP | GRUNFOS | MPCF2CRE20-2 | L 4 X 3 X 1/4 |

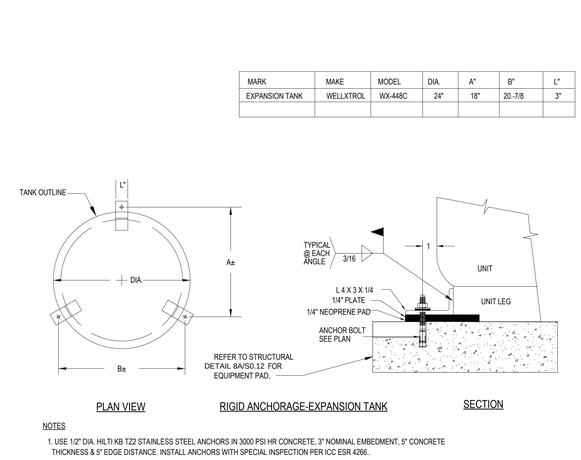
| MARK | SPRING CO. | DEFL |
|---|---|---|
| 1 | 1.5" | 1" |

NOTES:
1. APPROX. STEEL WEIGHT INCLUDING ISOLATORS: 175 LBS.
2. ISOLATORS: SEE DETAIL 3.
3. M.W. SAUSSE & CO. INC. IS NOT RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF THE EQUIPMENT WHEN ANCHORED AS SHOWN.
4. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.

NOTES:
1. PROVIDE 6" DEEP PAD. REFERENCE STRUCTURAL DETAIL 9/S0.12 FOR CONCRETE PAD INFORMATION.

## 7 DOMESTIC COLD WATER BOOSTER PUMP ATTACHMENT DETAIL

SCALE: N.T.S.

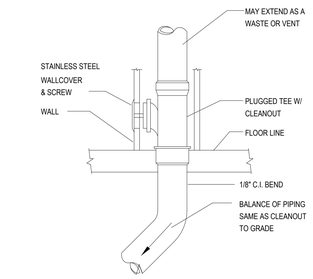



| MARK | MAKE | MODEL | DIA. | A" | B" | L" |
|---|---|---|---|---|---|---|
| EXPANSION TANK | WELLXTROL | WX-448C | 24" | 18" | 20 -7/8 | 3" |
| | | | | | | |

NOTES
1. USE 1/2" DIA. HILTI KB TZ2 STAINLESS STEEL ANCHORS IN 3000 PSI HR CONCRETE. 3" NOMINAL EMBEDMENT, 5" CONCRETE THICKNESS & 5" EDGE DISTANCE. INSTALL ANCHORS WITH SPECIAL INSPECTION PER ICC ESR 4266.
2. M.W. SAUSSE & CO. INC. IS NOT RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF THE EQUIPMENT WHEN ANCHORED AS SHOWN.
3. ALL DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR BEFORE CONSTRUCTION.
4. REFERENCE STRUCTURAL DETAIL 9/S0.12 FOR CONCRETE PAD INFORMATION.
5. REFER TO STRUCTURAL APPENDIX B FOR CALCULATIONS.

## 5 EXPANSION TANK ATTACHMENT DETAIL

SCALE: N.T.S.

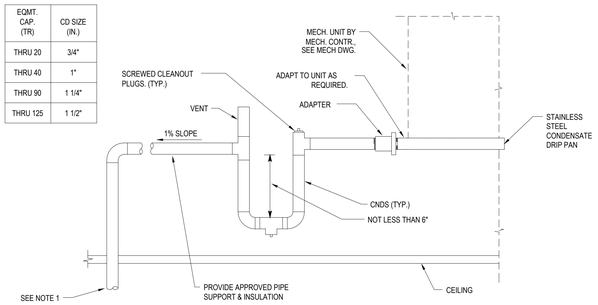



## 4 WALL CLEANOUT (TYP)

SCALE: N.T.S.

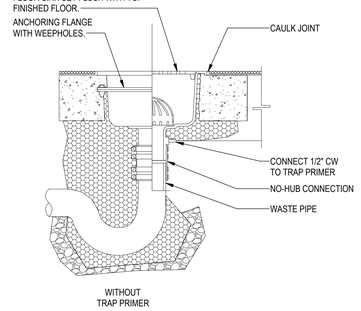
NOTES:
1. TERMINATE CD PIPING TO APPROVED RECEPTOR WITH APPROVED AIR GAP. SEE FLOOR PLANS FOR TERMINATION LOCATIONS.

| EQMT. CAP. (TR) | CD SIZE (IN.) |
|---|---|
| THRU 20 | 3/4" |
| THRU 40 | 1" |
| THRU 90 | 1 1/4" |
| THRU 125 | 1 1/2" |




## 3 CONDENSATE DRAIN FOR CLG. MTD. UNITS

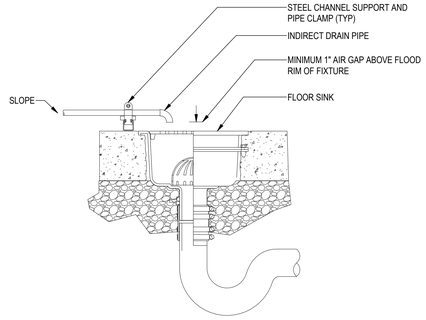
SCALE: N.T.S.




NOTES:
1. REFER TO PLANS FOR LOCATION ADN CONTINUATION.
2. PROVIDE 2" FOR SIZES UNTIL OTHERWISED SPECIFIED.

## 2 FLOOR SINK DETAIL

SCALE: N.T.S.




NOTE:
1. REFER TO PLANS FOR LOCATIONS AND CONTINUATION.
2. PROVIDE 2" FOR SIZES UNTIL OTHERWISED SPECIFIED.

## 1 INDIRECT DRAIN AIR GAP DETAIL

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**KEYNOTES**

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Registered Professional Engineer — Scott R. Roberts — No. M35000 Exp. 6-30-26 — Mechanical — State of California — 06/20/2025

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING DETAILS**

**DSA SUBMITTAL**

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## PIPING GENERAL NOTES

1) This OSHPD Preapproval of Manufacturer's Certification (OPM) is based on the 2013 CBC. The demand (design forces) for use with this OPM shall be based on the 2013 CBC.

2) Per ASCE 7-10, Section 13.3.1, restraints and their anchorages must be capable of restraining horizontal, $F_p$, and vertical, $F_{PV}$, seismic accelerations as follows.

$F_p = (0.7)\frac{0.4a_pS_{DS}W_p}{R_p/I_p}(1+2\frac{z}{h})$ (ASD) (ASCE 7-10 EQ 13.3-1)

is not required to be taken greater than $(0.7)1.6S_{DS}I_pW_p$ (ASD) (ASCE 7-10 EQ 13.3-2)

shall not be taken less than $(0.7)0.3S_{DS}I_pW_p$ (ASD) (ASCE 7-10 EQ 13.3-3)

$F_{PV} = (0.7)0.2S_{DS}W_p$ (ASD)

Where:
- $S_{DS}$ = short period spectral acceleration - up to 2.5g. Values of $S_{DS}$ indicated in the general notes of the structural drawing take precedence over those calculated per ASCE 7-10, 11.4.4.
- $W_p$ = component (or tributary length of pipe) operating weight (lbs/ft).
- $I_p$ = component importance factor
  - = 1.5 for OSHPD 1 & 4 in accordance with 2013 CBC, Section 1616A.1.17 and for OSHPD 2 & 3, where required by ASCE 7, Section 13.1.3.;
  - = 1.0 for OSHPD 2 & 3, when permitted by ASCE 7, Section 13.1.3.
- $a_p$ = component amplification factor (Ref. ASCE 7-10, Table 13.6-1)
  - = 1.0 for gravity waste, vent and drain cast iron plumbing pipe.
  - = 2.5 for all other piping and tubing.
- $R_p$ = component response modification factor (Ref. ASCE 7-10, Table 13.6-1)
  - = 2.5 for gravity, waste, vent and drain cast iron plumbing pipe.
  - = 3.0 for piping and tubing constructed of low-deformability materials such as cast iron, glass, and nonductile plastics.
  - = 4.5 for piping and tubing not in accordance with ASME B31, including in-line components, constructed of high- or limited-deformability materials, with joints made by threading, bonding, compression couplings, or grooved couplings.
  - = 6.0 for piping in accordance with ASME B31, including in-line components, constructed of high- or limited-deformability materials, with joints made by threading, bonding, compression couplings, or grooved couplings.
  - = 9.0 for piping and tubing not in accordance with ASME B31, including in-line components, constructed of high-deformability materials, with joints made by welding or brazing.
  - = 12.0 for piping in accordance with ASME B31, including in-line components with joints made by welding or brazing.
  - **NOTE: Per ASCE 7-10, Section 13.4.1, do not use an Rp factor greater than 6.0 when calculating Fp and Fpv for design of the attachment.**
- $z$ = height in structure of point of connection of component with respect to base (ft).
- $h$ = average roof height of structure with respect to base (ft).

3) For systems anchored to concrete only, the anchorage to concrete overstrength factor, Ωo, must be applied. Sections M & N provide alternate allowable load tables with and without Ωo applied. For cases where Ωo is applicable, use the appropriate tables in Sections M & N so it is not necessary to apply this factor when calculating $F_p$ and $F_{PV}$. Ωo is not applicable if a yielding steel element is considered in the load path. Refer to ACI 318-11 Appendix D, Section D.3.3.4.3 or ACI 318-14 Chapter 17, Section 17.2.3.4.3 for a list of qualifying conditions. The Registered Design Professional (RDP) shall use the allowable vertical loads under overstrength factor Ωo = 2.0 unless the vertical support complies with one of the qualifying conditions.

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PAGE A10.0

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.



## PIPING GENERAL NOTES (continued)

4) A complete description on how to use these guidelines is provided in Section A11. It includes specific examples for both using the enclosed details/charts and a layout procedure for bracing of suspended pipe systems.

**Notes on Seismic Bracing:**

1) These guidelines list installations which may be exempt from seismic bracing under the 2013 CBC. The RDP shall be responsible for determining whether to allow these exceptions, subject to approval by the SEOR and OSHPD.

2) Each straight run of a pipe system requires a minimum of two transverse braces (perpendicular to the run). (Option: A longitudinal brace located at any point of the straight run on the opposite side of an elbow or tee may act as a transverse brace. Refer to the layout examples detailed in Section A12.)

3) Each straight run of a pipe system requires a minimum of one longitudinal brace (parallel to the run). (Option: A transverse brace on the opposite side of an elbow or tee can act as a longitudinal brace. Refer to the layout examples detailed in Section A12.)
   Note: For items 2) and 3) above, a short run of piping may not require seismic bracing if its tributary seismic load transfers to an adjacent run of pipe that is sufficiently seismically braced that can accept the additional seismic loads, when approved by OSHPD for a specific project.

4) Transverse and longitudinal braces that project to the overhead structure shall be installed between 30 and 60 degrees from horizontal. Braces that project to an adjacent wall may be installed directly horizontal (zero degrees) or between 30 and 60 degrees from the horizontal. However, this is limited depending on the capacity of the brace and method of connection to structure.

5) Seismic bracing may consist of solid bracing designed to accept loads in tension and compression or cable bracing designed to accept tension loads only. Each brace method requires a vertical hanger within close proximity of their connection to the distribution system. (Refer to the specific limits for limitations). The vertical hanger may or may not require stiffening or additional anchorage to the structure (Refer to Notes on Supports 1 and 2).

6) Avoid mixing solid bracing with cable bracing in the same direction on any run of a distribution system unless specifically engineered and approved by the enforcement agency.

7) Avoid bracing a system to two different parts of a building which may act differently in response to an earthquake (i.e. separated by a seismic joint). In cases where this may occur, the pipe run must be designed to accept the seismic relative displacement.

8) Systems with significant thermal motion shall be designed on a case by case basis by a professional engineer tasked with both seismic loading and thermal expansion.

9) Seismic brace details for suspended pipe systems include maximum allowable horizontal seismic load, $F_p$, at different brace angle ratios. The details include Mason Industries N.Y. seismic brace component size, aircraft cable or solid brace member size, acceptable hanger rod diameter(s) and hanger rod stiffening requirements. Trapeze member sizes and connection to structure for both hanger rods and seismic braces are tabulated and/or detailed in Sections B, T, M, and N, respectively.

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PAGE A10.1

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.



## PIPING GENERAL NOTES (continued)

10) Seismic brace requirements for seismic accelerations ranging from 0.25 to 1.0g (ASD) are tabulated in Sections B1. Each schedule is designed to a specific seismic acceleration and provides maximum transverse, longitudinal and all-directional brace spacings based on operating weight per lineal foot of the pipe system. In addition, the schedules provide hanger rod and seismic brace connection options that meet the same criteria. For systems that require design for over 1.0g, the brace spacing is reduced (Refer to Page A10.6, note 3).

11) Multi-layer piping systems that share support rods must be braced independently from one another or as specifically engineered by the RDP. Layers supporting loads ≤ 10 lbs/ft need not be braced, provided that the load is accounted for in the nearest braced layer. Each section of threaded rod between trapezes and/or the building structure is subject to vertical stiffening requirements.

12) Vertical drops from suspended pipe systems to equipment (or flexible connectors where applicable) may be braced using the transverse and longitudinal braces in this manual. Note: Do not exceed $\frac{1}{3}$ of the maximum brace spacing as measured from the seismic brace to the equipment or flexible connector when bracing vertical drops. (Refer to the Figures on Page A12.2.) If the transverse or longitudinal brace cannot accept the full vertical drop, a seismic floor support designed for the applicable loads is required. Design of this support shall account for seismic relative displacement between floors and may require a flexible connection between the floor support and the first seismic brace location above.

13) Any system which crosses a building separation or seismic joint must be designed to accommodate the seismic relative displacement per ASCE 7-10, Section 13.3.2, 13.3.2.1, and 13.3.2.2, or as specified by the engineer of record for approval by the enforcement agency.

**Notes on Supports:**

1) Where the seismic brace system incorporates the use of a threaded vertical hanger rod designed to carry gravity loads only, additional anchorage and/or stiffening may be required as detailed. General support of suspended pipe systems and equipment to carry gravity loads shall be determined by the engineer of record and/or mechanical code requirements. However, hanger rod connection details in this manual may be used as a guide for these supports. ASTM A307 threaded rods may be used in lieu of ASTM A36 threaded rods as called out in this manual. The use of "C-Clamps" designed to attach threaded rod to one side of a steel beam flange shall not be used unless they are provided with a restraining strap or hook to the opposite beam flange, equivalent to those specified in NFPA 13, Section 9.3.7 and approved by OSHPD.

2) Support rod capacity and its anchorage to the structure is an important part of a solid bracing system. Solid braces shall not be attached to existing systems or support rods designed for gravity loads unless they are checked for increased loads.

3) Threaded vertical hanger rods where seismic sway bracing is attached may require stiffening if the length of the rod exceeds the maximum unbraced rod length indicated on the kit installation detail in Sections C and F. However, if the calculated compression on the rod due to combined gravity, the vertical brace component of the bracing system as a result of $F_p$, and $F_{PV}$ loads is less than or equal to zero, no rod stiffening is required, regardless of rod length. A vertical rod stiffener using a 1½"x1½"x12ga strut channel or steel angle cut to the appropriate length and attached to the threaded rod with a minimum of two Mason Ind. N.Y. Type UCC or SRC clamps is required, as detailed in Sections C and F. The contractor may substitute a break-off bolt set to a minimum of 10 ft-lbs (Ref. X3.0). Rod stiffening strut may be solid, slotted or punched. Ref. X7.0 and X7.1 for strut member data.

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PAGE A10.2

NOTE:
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## PIPING GENERAL NOTES (continued)

4) Trapeze supports shall consist of 12 gauge single or double channel strut, steel angles or tube steel as tabulated in Sections B and T. For gravity only trapeze supports and trapeze supports where transverse seismic braces are installed, the acceptable size of the trapeze member is provided in the same sections. For trapeze supports where longitudinal seismic braces are installed, the acceptable size of the trapeze member is also provided. Trapeze members may be provided with round holes sized for hanger rods. Ref. X7.0 and X7.1 for strut member data. In all cases, for analysis purposes, the following information is required: a) seismic 'g' coefficient, b) pipe weight per foot and c) maximum span between threaded rod supports. The trapezes shall be supported by threaded rods, with nuts and washers as detailed in Section F and with rod stiffeners as required per Note 3.

5) Concrete overstrength factor, $\Omega_o$, is not required for hanger supports designed for gravity only or hanger supports at seismic cable brace locations where seismic forces do not exceed 20% of the total forces.

**Notes on Seismic Cable Bracing:**

1) Cables shall be prestretched galvanized 7x19 strand core aircraft cable, with no limit to their installed length. Cables meet the following specifications: MIL-DTL-83420M with Amendment 2, Type 1 non-jacketed cable.

2) Cables shall be installed slightly slack, so as not to support gravity loads.

3) Cable shall connect the braced item to a building structural element. Cable shall have at each end a bracket to make the connections. The cable assembly, with connection brackets, shall be Mason Ind. N.Y. SCB or SCBH, refer to pages X1.0 & X1.1. Cable is held to end brackets with one or two bolts. Cable bolts shall be tightened to the torque values stated in the details or, in the case where break off nuts are provided, until the nut breaks off. Break off nuts are as manufactured by Mason West, Inc. (Refer to page X4.0).

4) The Mason Ind. N.Y. SCBH component can be used for connection directly to the threaded vertical hanger rod used for supporting system gravity loads as detailed in Sections C and F.

5) The SCB bracket and cable (Ref. X1.0), SCBH bracket and cable (Ref. X1.1), UCC rod stiffener clamp (Ref. X3.0), and SRC rod stiffener clamp (Ref. X3.1) are manufactured by Mason Ind. N.Y. and are included (with accompanying hardware) in the kit options provided in Sections C and F.

**Notes on Seismic Solid (Rigid) Bracing:**

1) Solid bracing members shall be 12 gauge channel strut or steel angle. Strut members may be solid, slotted or punched. The details in Sections C and F indicate the minimum solid brace size based on a maximum solid brace length. The charts on pages X2.0, X2.1, and X2.2 tabulate different solid brace member sizes for maximum installed lengths of 5'-0", 9'-4" or 14'-0". Ref. X7.0 and X7.1 for strut member data.

2) Solid brace members shall be connected to both the distribution system and the structure using the seismic solid brace components (Mason Ind. N.Y. Type SSBS, SHB, or SSB. Refer to pages X2.0, X2.1, or X2.2, respectively).

3) The attachment between the solid brace component and the 12 gauge channel strut shall consist of (1) or (2) ½" bolt and strut nut connections torqued to 50 ft-lbs or, in the case where break off nuts are provided, until the nut breaks off. Refer to Sections C and F to determine the quantity of bolt/strut nut combinations required. Break off nuts are as manufactured by Mason West, Inc. (Refer to page X4.0).

4) The SSBS bracket (Ref. X2.0), SHB bracket (Ref. X2.1), SSB bracket (Ref. X2.2), UCC rod stiffener clamp (Ref. X3.0), and SRC rod stiffener clamp (Ref. X3.1) are manufactured by Mason Ind. N.Y. and are included (with accompanying hardware) in the kit options provided in Sections C and F.

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PAGE A10.3

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## PIPING GENERAL NOTES (continued)

**Notes on Seismic Brace Attachment to Building Structure:**

1) Attachment methods and hardware (connectors) used for seismic bracing attachment to the building structural element is the critical factor in the design of seismic sway-bracing. Lightweight structures may limit the maximum spacing between seismic braces. The structural engineer of record shall determine the maximum allowable seismic loads that may be imposed on the building structure.

2) Attachment to different types of structures are addressed in these guidelines. Attachment types include reinforced normal or sand lightweight concrete (flat slabs, slabs poured in steel decking, walls or columns), fully grouted reinforced concrete masonry, hollow steel decking, steel framing, timber framing, and metal stud wall framing. Attachments may be made with pre- or post-installed concrete anchors, machine bolts, self-drilling and self-tapping screws, lag bolts, nails or in cases of steel on steel connections, by arc-welding. Use of attachment methods not detailed in these guidelines must be engineered on an individual job basis subject to approval by the enforcement agency. Note: The structural engineer of record shall verify that attachment details specified by the RDP are in accordance with the design concept for the primary structure.

3) Expansion anchors shall be Hilti Kwik Bolt TZ, Powers Power-Stud+ SD1, Mason Ind. N.Y. SAS(E) or Powers Power-Stud+ SD2 for minimum 3000 psi concrete slabs, beams, or walls and concrete filled decks (sand light or normal weight) installed in accordance with ICC Reports ICC ESR 1917, 2818, 3037 or 2502, respectively. Hilti Kwik Bolt 3 expansion anchors shall be used to resist static & transient seismic tension & shear loads in uncracked, grout-filled concrete masonry. Expansion anchors designed to ICC-ES AC01 are limited to allowable stress design only in accordance with AC01 1.2. SEOR shall verify that: (1) masonry is not cracked as defined in ICC-ES AC01 Section 2.3; calculation required to show masonry wall would not crack under the design earthquake loads under all service load conditions; wall has to remain elastic; (2) masonry wall shall be fully grouted in accordance with ESR-1385 Section 3.2; (3) condition of use requirements in accordance with ESR-1385 Section 5.0 is satisfied. When expansion anchors are used, 50 percent of alternate bolts in a group shall be tension tested or torque tested per 2013 CBC, Section 1913A.7. Testing shall be done in the presence of the special inspector and a report of the test results shall be submitted to the enforcement agency. If any anchors fail, test all previously untested anchors installed by the same trade until 20 consecutive anchors pass. Then resume the original test frequency. Refer to page A0.4 for test loads.

4) Concrete inserts shall be Mason West Type MW-PAL-A for installation in normal or sand lightweight concrete slabs or MW-CDI for installation in normal or sand lightweight concrete filled metal decks.

5) All welded attachments shall be minimum 70xx electrode welds. Minimum 60xx electrode welds may be used for steel thicknesses that are 12 gauge or less.

6) Metal decks for expansion anchor attachments and MW-CDI inserts shall be minimum 20 gauge with either a maximum 3 inch flute and minimum 1-1/2 inch cover or a maximum 1-1/2 inch flute and minimum 2-1/4 inch cover. Metal decks for MW-PAL-A insert shall be minimum 20 gauge with 3" flute and 3-1/4" cover. Refer to appropriate M2 and N2 pages for allowable deck anchor attachments. Concrete fill shall be minimum 3000 psi sand lightweight concrete. Note: Metal decks with minimum 3000 psi stone aggregate concrete fill may use the sand lightweight concrete deck charts.

7) Concrete attachments are based on specified anchor bolts or inserts. Substitution of alternate anchors must be approved by Mason West and the enforcement agency on a job by job basis.

8) When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging reinforcing bars. When installing them in existing prestressed concrete, locate the prestressed tendons by using a non-destructive method and do not cut or damage the tendons during installation.

9) Attachments are provided for wide flange structural steel members, open web steel trusses as well as wood trusses, joists and beams in Section N3.11-3.13, N4.10-4.13.

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PAGE A10.4

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## PIPING GENERAL NOTES (continued)

10) Screw anchors shall be Powers Screw-Bolt+/Hangermate+, Mason Ind. N.Y. SAST, or Hilti Kwik HUS-EZ/HUS-EZ I for minimum 3000 psi concrete slabs, beams, or walls and concrete filled decks (sand light or normal weight) installed in accordance with ICC Reports ICC ESR 3889, 2713 or 3027, respectively. Testing shall be done in the presence of the special inspector and a report of the test results shall be submitted to the enforcement agency. If any anchors fail, test all previously untested anchors installed by the same trade until 20 consecutive anchors pass. Then resume the original test frequency. Screw anchors shall not be tested using a torque wrench. Screw anchors may be loosened a maximum of one full turn to facilitate the positioning of a tension test collar. Following the tension test, the anchor shall be re-torqued in accordance with the manufacturer's installation instructions. Refer to page A0.5 for test loads.

**Notes on Suspended Piping:** (Refer to Page A10.7 for Fire Protection Pipe Brace Requirements)

1) Per 2013 CBC Sections 1616A.1.18 and 1616A.1.26, ASCE 7-10 Sections 13.1.4 and 13.6.8 design of piping systems and attachments for the seismic forces are not required for piping where any of the following are satisfied:
   a) The component is positively attached to structure; and the project is designated as Seismic Design Category D, E or F*; flexible connections are provided between the distributed system and the component/equipment*; and the distributed system weighs 5 lbs/ft or less; or
   b) Piping that is restrained using a torque wrench. Screw anchors may be loosened a maximum of one full turn to facilitate the positioning of a tension test collar. Following the tension test, the anchor shall be re-torqued in accordance with the manufacturer's installation instructions. Refer to page A0.5 for test loads.

Notes on Suspended Piping: (Refer to Page A10.8 for Fire Protection Pipe Brace Requirements)

1) Per 2019 CBC Sections 1604.11, 1616A.1.18 & 1617A.1.18 applicable only to OSHPD-1,2,4,5 and 1R designated projects, distributed piping systems weighing 5 lbs/ft or less are exempt from design for the seismic forces of ASCE 7-16 Section 13.3. For remaining piping systems, per 2019 CBC Section 1617A1.26, design for the seismic forces and relative displacements shall not be required for piping systems where flexible connections or other assemblies are provided to accommodate the relative displacement between components and piping, where the piping system is positively attached to the structure, and where any of the following apply:
   a) Trapeze assemblies are supported by $\frac{3}{8}$" or $\frac{1}{2}$" diameter rod hangers not exceeding 12" in length from the point support to the connection at the supporting structure, do not support piping with lp greater than 1.0, and no single pipe exceeds the diameter limits set forth in item b.i below or 2" for Seismic Design Category D, E, or F where lp is greater than 1.0 and the total weight supported by any single trapeze is 100 lbs or less; or
   b) Piping that has an Rp of 4.5 or greater is either supported by rod hangers and provisions are made to avoid impact with other structural or nonstructural components or to protect the piping in the event of such impact, or pipes with lp = 1.0 supported by individual rod hangers $\frac{3}{8}$" or $\frac{1}{2}$" in diameter, where each hanger in the pipe run is 12" or less in length from the pipe support point to the connection at the supporting structure; and the total weight supported by any single hanger is 50 pounds or less. In addition, the following limitations on the size of piping shall be observed:
      i. In structures assigned to Seismic Design Category D, E, or F where lp = 1.0, the nominal pipe size shall be 3" or less.
      ii. In structures assigned to Seismic Design Category D, E, or F where lp = 1.0, the nominal pipe size shall be 3" or less.
   c) Pneumatic tube systems supported with trapeze assemblies using $\frac{3}{8}$" diameter rod hangers not exceeding 12" in length from the tube support point to the connection at the supporting structure and the total weight supported by any single trapeze is 100 lbs or less.
   d) Pneumatic tube systems supported by individual rod hangers $\frac{3}{8}$" or $\frac{1}{2}$" in diameter, and each hanger in the run is 12" or less in length from the tube support point to the connection at the supporting structure, and the total weight supported by any single rod is 50 lbs or less.

2) Flexible connections in piping required in Note 1 above are not required where pipe is rigidly attached to the same floor or wall that provides vertical and lateral support for the equipment, or to a fixture. Flexible connections in piping are required at seismic separation joints and shall be detailed to accommodate the seismic relative displacements at connections.

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PAGE A10.5

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## PIPING GENERAL NOTES FOR 2019 CBC (continued)

10) Screw anchors shall be Powers Screw-Bolt+/Hangermate+, Mason Ind. N.Y. SAST, or Hilti Kwik HUS-EZ/HUS-EZ I for minimum 3000 psi concrete slabs, beams, or walls and concrete filled decks (sand light or normal weight) installed in accordance with ICC Reports ICC ESR 3889, 2713 or 3027, respectively. Testing shall be done in the presence of the special inspector and a report of the test results shall be submitted to the enforcement agency. If any anchors fail, test all previously untested anchors installed by the same trade until 20 consecutive anchors pass. Then resume the original test frequency. Screw anchors shall not be tested using a torque wrench. Screw anchors may be loosened a maximum of one full turn to facilitate the positioning of a tension test collar. Following the tension test, the anchor shall be re-torqued in accordance with the manufacturer's installation instructions. Refer to page A0.5 for test loads.

Notes on Suspended Piping: (Refer to Page A10.8 for Fire Protection Pipe Brace Requirements)

1) Per 2019 CBC Sections 1604.11, 1616A.1.18 & 1617A.1.18 applicable only to OSHPD-1,2,4,5 and 1R designated projects, distributed piping systems weighing 5 lbs/ft or less are exempt from design for the seismic forces of ASCE 7-16 Section 13.3. For remaining piping systems, per 2019 CBC Section 1617A1.26, design for the seismic forces and relative displacements shall not be required for piping systems where flexible connections or other assemblies are provided to accommodate the relative displacement between components and piping, where the piping system is positively attached to the structure, and where any of the following apply:
   a) Trapeze assemblies are supported by $\frac{3}{8}$" or $\frac{1}{2}$" diameter rod hangers not exceeding 12" in length from the point support to the connection at the supporting structure, do not support piping with lp greater than 1.0, and no single pipe exceeds the diameter limits set forth in item b.i below or 2" for Seismic Design Category D, E, or F where lp is greater than 1.0 and the total weight supported by any single trapeze is 100 lbs or less; or
   b) Piping that has an Rp of 4.5 or greater is either supported by rod hangers and provisions are made to avoid impact with other structural or nonstructural components or to protect the piping in the event of such impact, or pipes with lp = 1.0 supported by individual rod hangers $\frac{3}{8}$" or $\frac{1}{2}$" in diameter, where each hanger in the pipe run is 12" or less in length from the pipe support point to the connection at the supporting structure; and the total weight supported by any single hanger is 50 pounds or less. In addition, the following limitations on the size of piping shall be observed:
      i. In structures assigned to Seismic Design Category D, E, or F where lp = 1.0, the nominal pipe size shall be 3" or less.
      ii. In structures assigned to Seismic Design Category D, E, or F where lp = 1.0, the nominal pipe size shall be 3" or less.
   c) Pneumatic tube systems supported with trapeze assemblies using $\frac{3}{8}$" diameter rod hangers not exceeding 12" in length from the tube support point to the connection at the supporting structure and the total weight supported by any single trapeze is 100 lbs or less.
   d) Pneumatic tube systems supported by individual rod hangers $\frac{3}{8}$" or $\frac{1}{2}$" in diameter, and each hanger in the run is 12" or less in length from the tube support point to the connection at the supporting structure, and the total weight supported by any single rod is 50 lbs or less.

2) Flexible connections in piping required in Note 1 above are not required where pipe is rigidly attached to the same floor or wall that provides vertical and lateral support for the equipment, or to a fixture. Flexible connections in piping are required at seismic separation joints and shall be detailed to accommodate the seismic relative displacements at connections.

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PAGE A10.5a

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## PIPING GENERAL NOTES (continued)

**Plumbing Pipe Gravity, Waste, Vent and Similar Systems (Rp < 4.5, Refer to Page A10.0, Note 2)**

| SYSTEM (e.g.) - Non-Ductile Cast Iron Material | Ip* | EXEMPTIONS |
|---|---|---|
| Sanitary Waste Vent<br>Storm and Overflow Drain<br>Grease Waste Vent | 1.0<br>or<br>1.5 | 1. The following pipes where a flexible connection is provided between the pipes and components*.<br>a. No-Hub cast iron vent pipes ≤ 3" diameter.<br>b. No-Hub cast iron pipes ≤ 2" diameter.<br>c. Any other piping with an operating weight ≤ 5 lbs/ft. |

* Notes: 1) Seismic Design Category and $I_p$ can be found in the general notes of the contract structural drawings for a specific project under Design Criteria. Piping not detailed to accommodate the seismic relative displacement at connections to other components shall be provided with connections having sufficient flexibility to avoid failure of the connection between the components.
2) Flexible connections are not required in cases where pipe is rigidly attached to the same floor or wall system that provides vertical and lateral support for the equipment as there is no relative motion between pipe and equipment.
3) Flexible connections are required at switch separation joints.

2) Section A13 of these guidelines details the "12 Inch Rule" exception described in Note 1.c for Suspended Piping.

3) Steel and copper pipe shall be braced at the spacings tabulated in Section S. Brace spacings vary based on the value of Ip, pipe material, service (water filled or vapor) and pipe connection method. Longitudinal brace spacings shall not exceed 3 times the tabulated transverse brace spacings. For cases where multiple pipes with varying brace spacings are supported on a trapeze, the smallest brace spacing shall govern. The seismic design engineer may design brace spacings for trapezed pipe based on combined pipe sections and/or by adding steel strengthening sections on a job by job basis subject to approval by the enforcement agency.

4) Cast iron pipe (no-hub pipe) brace spacings shall not exceed the spacings tabulated in Section S. No-hub couplings shall be manufactured in accordance with ASTM C1540, shall be certified in accordance with FM 1680 Class 1 and gravity hangers shall be spaced per the requirements of Table 313.1 of the 2013 California Plumbing Code (CPC 2013) for no-hub cast iron pipe.

   **Exception**: Cast iron (no-hub) pipe joined by couplings not satisfying ASTM C1540 or not certified in accordance with FM 1680 Class 1 shall be designed on a project by project basis, and shall require project specific OSHPD approval.

5) Rigid grooved coupling listed for UL Standard 213 shall be permitted in horizontal run of pipe. Flexible grooved coupling listed for UL Standard 213 shall be permitted in vertical risers (to accommodate drift) and other locations (e.g. seismic separation, equipment nozzle, etc.) to accommodate small movement and/or rotation. Non-UL listed groove couplings shall not be used unless approved on project specific basis.

6) Seismic restraints for individually supported pipes shall be attached directly to the pipe using a Mason West, Inc. Type WPL, welded pipe lug (Refer to page X8.4) for standard schedule or larger steel pipe or a Mason West, Inc. Type SPC seismic pipe clamp (Refer to page X8.3) for steel and cast iron pipe utilizing details in Section C. In addition, a Mason West, Inc. Type SSC strut steel clamp (Refer to page X8.0) for steel pipe or Type SCC strut copper clamp (Refer to page X8.1) or Type SCCI strut copper clamp with insulation (Refer to pages X8.6 - X8.6.3) for copper pipe may be used utilizing detail pages A18.0 - A18.2.

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PAGE A10.6

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## PIPING GENERAL NOTES FOR 2019 CBC (continued)

**SUMMARY OF PIPING SYSTEMS THAT ARE EXEMPT FROM DESIGN FOR SEISMIC FORCES AND SEISMIC RELATIVE DISPLACEMENTS (PER PAGE A10.5a, NOTE 1)**

The following pipes (≤ 5 lbs/ft) without hazardous contents are exempt from seismic design:
a. ≤ 2" diameter vent, gas or empty SCH 40 steel pipe.
b. ≤ 1-1/2" diameter SCH 40 steel pipe.
c. ≤ 3" diameter vent, gas or empty copper pipe.
d. ≤ 2" diameter copper pipe.
e. No-Hub cast iron vent and storm drain pipes ≤ 3" diameter.
f. No-Hub cast iron waste pipes ≤ 2" diameter.
g. Any other piping with an operating weight ≤ 5 lbs/ft.
h. Trapezed piping with combined operating weight ≤ 5 lbs/ft.

Notes:
1. Refer to system weights in the appendix
2. Hazardous - Including, but not limited to, medical gases, fuel oil, natural gas.
3. Non-hazardous - Including, but not limited to, medical vacuum, compressed air, water.

3) Steel and copper pipe shall be braced at the spacings tabulated in Section S. Brace spacings vary based on the value of Ip, pipe material, service (water filled or vapor) and pipe connection method. Longitudinal brace spacings shall not exceed 3 times the tabulated transverse brace spacings. For cases where multiple pipes with varying brace spacings are supported on a trapeze, the smallest brace spacing shall govern. The seismic design engineer may design brace spacings for trapezed pipe based on combined pipe sections and/or by adding steel strengthening sections on a job by job basis subject to approval by the enforcement agency.

4) Cast iron pipe (no-hub pipe) brace spacings shall not exceed the spacings tabulated in Section S. No-hub couplings shall be manufactured in accordance with ASTM C1540, shall be certified in accordance with FM 1680 Class 1 and gravity hangers shall be spaced per the requirements of Table 313.1 of the 2013 California Plumbing Code (CPC 2013) for no-hub cast iron pipe.

   **Exception**: Cast iron (no-hub) pipe joined by couplings not satisfying ASTM C1540 or not certified in accordance with FM 1680 Class 1 shall be designed on a project by project basis, and shall require project specific OSHPD approval.

5) Rigid grooved coupling listed for UL Standard 213 shall be permitted in horizontal run of pipe. Flexible grooved coupling listed for UL Standard 213 shall be permitted in vertical risers (to accommodate drift) and other locations (e.g. seismic separation, equipment nozzle, etc.) to accommodate small movement and/or rotation. Non-UL listed groove couplings shall not be used unless approved on project specific basis.

6) Seismic restraints for individually supported pipes shall be attached directly to the pipe using a Mason West, Inc. Type WPL, welded pipe lug (Refer to page X8.4) for standard schedule or larger steel pipe or a Mason West, Inc. Type SPC seismic pipe clamp (Refer to page X8.3) for steel and cast iron pipe utilizing details in Section C. In addition, a Mason West, Inc. Type SSC strut steel clamp (Refer to page X8.0) for steel pipe or Type SCC strut copper clamp (Refer to page X8.1) or Type SCCI strut copper clamp with insulation (Refer to pages X8.6 - X8.6.3) for copper pipe may be used utilizing detail pages A18.0 - A18.2.

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PAGE A10.6a

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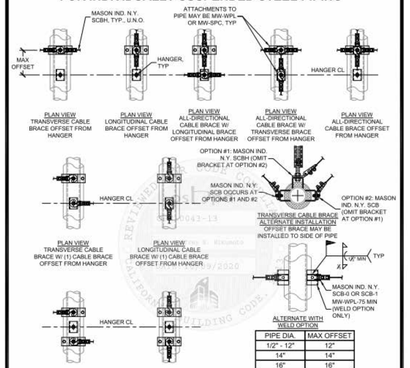


## PIPING GENERAL NOTES (continued)

7) Seismic restraints for trapeze supported pipe shall be attached to the trapeze member at the hanger locations as detailed in Section F. Pipes supported by trapezes at seismic brace locations shall utilize Mason West,

IF THIS LINE DOES NOT MEASURE 1" THEN DRAWING ABOVE IS NOT AN EXACT REPLICA OF THE SHEET'S ORIGINAL PAPER SIZE

## ALTERNATE ARRANGEMENT OF SEISMIC BRACES FOR INDIVIDUALLY SUSPENDED STEEL PIPING




| PIPE DIA. | MAX OFFSET |
|---|---|
| 1/2" - 12" | 12" |
| 14" | 14" |
| 16" | 16" |
| 18" | 18" |
| 20" | 20" |
| 24" | 22" |

NOTES:
1) REFER TO APPROPRIATE DETAIL C PAGES FOR DIMENSIONS AND NOTATIONS NOT SHOWN.
2) MAX OFFSETS ARE BASED ON STEEL PIPE CONFORMING TO ASTM SPECIFICATION A53, TYPE E, GRADE B WITH MINIMUM Fy = 35 ksi AND $S_h$ = 14.4 ksi AT MAXIMUM OPERATING PRESSURE AND TEMPERATURE OF 400 psi and 650°F, RESPECTIVELY.

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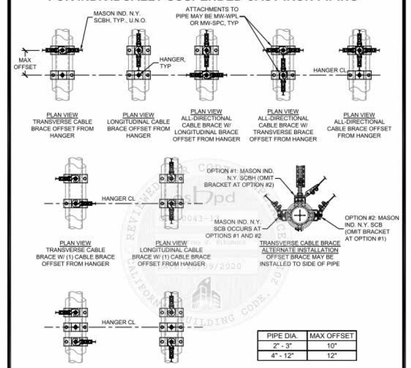
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PAGE **A15.3**

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## ALTERNATE ARRANGEMENT OF SEISMIC BRACES FOR INDIVIDUALLY SUSPENDED CAST IRON PIPING




| PIPE DIA. | MAX OFFSET |
|---|---|
| 2" - 3" | 10" |
| 4" - 12" | 12" |

NOTES:
1) REFER TO APPROPRIATE DETAIL C PAGES FOR DIMENSIONS AND NOTATIONS NOT SHOWN.
2) MAX OFFSETS ARE BASED ON CAST IRON PIPE CONSTRUCTED TO ASTM A 888 OR CISPI 301 STANDARDS WITH A MINIMUM TENSILE STRENGTH OF 21,000 PSI.

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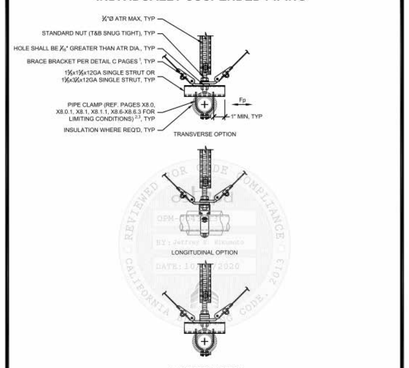
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PAGE **A15.5**

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## SEISMIC CABLE BRACING PIPE CLAMP OPTION FOR INDIVIDUALLY SUSPENDED PIPING




NOTES:
1) REFER TO APPROPRIATE DETAIL C PAGES FOR CALL-OUTS, DIMENSIONS AND NOTATIONS NOT SHOWN.
2) CLAMP RATING MAY LOWER MAX ALLOWABLE Fp.
3) MASON WEST TYPE MW-WSC PIPE CLAMPS MAY ONLY BE USED AT TRANSVERSE LOCATIONS.

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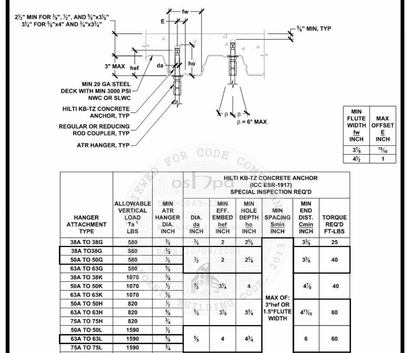
Jiafu "Jeff" Zhang, SE
California SE No. S5270

PAGE **A19.1**

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.



## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) HILTI KB-TZ CONCRETE ANCHOR




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1 LBS | MIN ATR HANGER DIA. INCH | HILTI KB-TZ CONCRETE ANCHOR (ICC ESR-1917) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN END DIST. Cmin INCH | TORQUE REQ'D FT-LBS |
| 38A TO 38G | 580 | ⅜ | ½ | 2 | 2½ | MAX OF: 3"hef OR 1.5*FLUTE WIDTH | 3½ | 25 |
| 38A TO39G | 580 | ⅜ | | | | | | |
| 50A TO 50G | 580 | ½ | ½ | 2 | 2½ | | 3½ | 40 |
| 63A TO 63G | 580 | ½ | | | | | | |
| 38A TO 38K | 1070 | ⅜ | ⅝ | 3½ | 4 | | 4½ | 40 |
| 50A TO 50K | 1070 | ½ | | | | | | |
| 50A TO 50H | 820 | ½ | ½ | 3¼ | 3¼ | | 4¹¹⁄₁₆ | 60 |
| 63A TO 63H | 820 | ½ | | | | | | |
| 75A TO 75H | 820 | ⅝ | | | | | | |
| 50A TO 50L | 1590 | ½ | ⅝ | 4 | 4¼ | | 6 | 60 |
| 63A TO 63L | 1590 | ⅝ | | | | | | |
| 75A TO 75L | 1590 | ¾ | | | | | | |
| 63A TO 63L | 1300 | ⅝ | ¾ | 3¾ | 4½ | | 9⅛ | 110 |
| 75A TO 75L | 1300 | ¾ | | | | | | |
| 88A TO 88L | 1300 | ⅞ | | | | | | |

SEE DETAIL M6.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_o$

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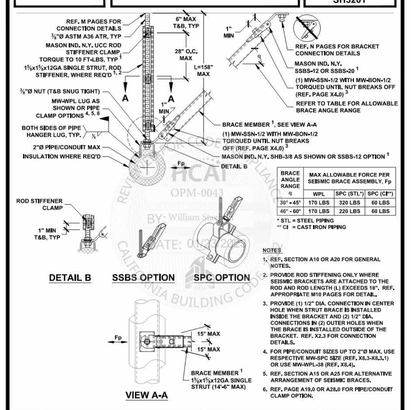
PAGE **M2.20**

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.



## HANGER ROD DIAMETER = ⅜" — PIPING/CONDUIT TRANSVERSE SEISMIC SOLID BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX

KIT OPTIONS: S12T, S1220T, SH312T, SH320T




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | SPC (STL*) | | SPC (CI**) | | |
| | TRAN. | LONG. | TRAN. | LONG. | TRAN. | LONG. |
| 30°-45° | 170 LBS | 320 LBS | 320 LBS | 60 LBS | 60 LBS | 290 LBS |
| 46°-60° | 170 LBS | 320 LBS | 220 LBS | 60 LBS | 60 LBS | 220 LBS |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES
1. REF., SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) 1/2" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) 1/2" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET. REF. X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX. USE RESPECTIVE MW-SPC SIZE (REF., X8.3-X8.3.1) OR USE MW-WPL-40 (REF., X8.4).
5. REF. SECTION A15 OR A25 FOR ALTERNATIVE ARRANGEMENT OF SEISMIC BRACES.
6. REF., PAGE A19.0 OR A28.0 FOR PIPE/CONDUIT CLAMP OPTION.

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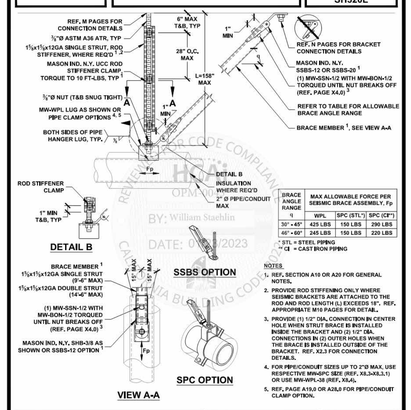
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California SE No. S5270

PAGE **C1.10**



## HANGER ROD DIAMETER = ⅜" — PIPING/CONDUIT LONGITUDINAL SEISMIC SOLID BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX

KIT OPTIONS: S12L, S1220L, SH312L, SH320L




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | SPC (STL*) | | SPC (CI**) | | |
| | TRAN. | LONG. | TRAN. | LONG. | TRAN. | LONG. |
| 30°-45° | 425 LBS | 150 LBS | 290 LBS | 150 LBS | 150 LBS | 220 LBS |
| 46°-60° | 245 LBS | 150 LBS | 150 LBS | 150 LBS | 150 LBS | 150 LBS |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES
1. REF., SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) 1/2" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) 1/2" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET. REF. X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX. USE RESPECTIVE MW-SPC SIZE (REF., X8.3-X8.3.1) OR USE MW-WPL-40 (REF., X8.4).
5. REF. SECTION A15 OR A25 FOR ALTERNATIVE ARRANGEMENT OF SEISMIC BRACES.
6. REF., PAGE A19.0 OR A28.0 FOR PIPE/CONDUIT CLAMP OPTION.

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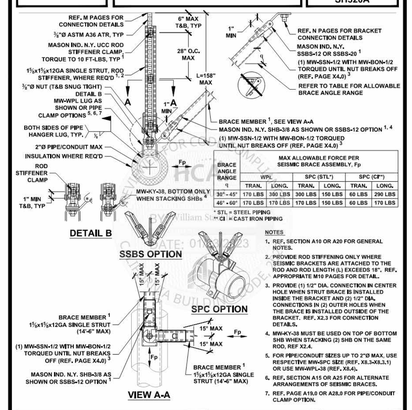
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PAGE **C1.11**



## HANGER ROD DIAMETER = ⅜" — PIPING/CONDUIT ALL-DIRECTIONAL SEISMIC SOLID BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX

KIT OPTIONS: S12A, S1220A, SH312A, SH320A




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | SPC (STL*) | | SPC (CI**) | | |
| | TRAN. | LONG. | TRAN. | LONG. | TRAN. | LONG. |
| 30°-45° | 170 LBS | 380 LBS | 380 LBS | 60 LBS | 60 LBS | 290 LBS |
| 46°-60° | 170 LBS | 170 LBS | 150 LBS | 60 LBS | 60 LBS | 170 LBS |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES
1. REF., SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) 1/2" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) 1/2" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET. REF. X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX. USE RESPECTIVE MW-SPC SIZE (REF., X8.3-X8.3.1) OR USE MW-WPL-40 (REF., X8.4).
5. REF. SECTION A15 OR A25 FOR ALTERNATIVE ARRANGEMENTS OF SEISMIC BRACES.
6. REF., PAGE A19.0 OR A28.0 FOR PIPE/CONDUIT CLAMP OPTION.

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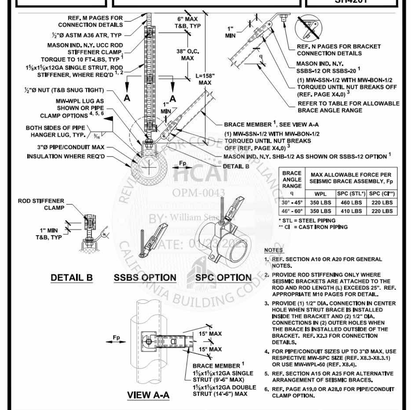
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PAGE **C1.12**



## HANGER ROD DIAMETER = ½" — PIPING/CONDUIT TRANSVERSE SEISMIC SOLID BRACING SYSTEM 3"Ø PIPE/CONDUIT MAX

KIT OPTIONS: S12T, S1220T, SH412T, SH420T




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | SPC (STL*) | | SPC (CI**) | | |
| | TRAN. | LONG. | TRAN. | LONG. | TRAN. | LONG. |
| 30°-45° | 350 LBS | 410 LBS | 220 LBS | | | |
| 46°-60° | 350 LBS | 410 LBS | 220 LBS | | | |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

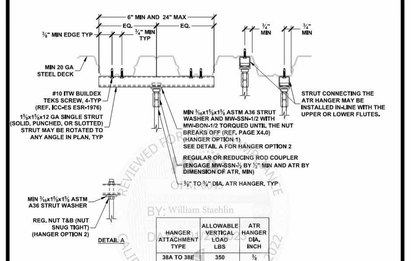
NOTES
1. REF., SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25", REF. APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) 1/2" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) 1/2" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET. REF. X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE/CONDUIT SIZES UP TO 3"Ø MAX. USE RESPECTIVE MW-SPC SIZE (REF., X8.3-X8.3.1) OR USE MW-WPL-60 (REF., X8.4).
5. REF., SECTION A15 OR A25 FOR ALTERNATIVE ARRANGEMENT OF SEISMIC BRACES.
6. REF., PAGE A19.0 OR A28.0 FOR PIPE/CONDUIT CLAMP OPTION.

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PAGE **C1.20**

## HANGER ATTACHMENT TO NON-CONCRETE FILLED METAL DECK




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA., INCH |
|---|---|---|
| 38A TO 38E | 350 | ⅜ |
| 50A TO 50E | 350 | ½ |
| 63A TO 63E | 350 | ⅝ |
| 75A TO 75E | 350 | ¾ |

1 - SEE DETAIL M6.00 FOR SECTION NOTES
2 - THE DISTANCE FROM THE CENTER OF ANY SHEET METAL SCREW TO ANY STEEL EDGE SHALL BE ½" MIN. INCLUDING PUNCHED AND SLOTTED HOLE EDGES.

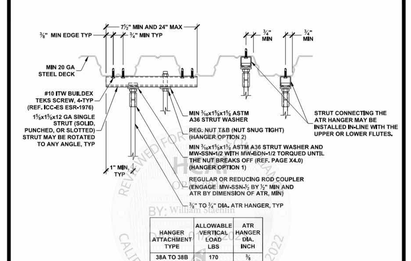
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California SE No. S5270

PAGE **M7.10**



## HANGER ATTACHMENT TO NON-CONCRETE FILLED METAL DECK




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA., INCH |
|---|---|---|
| 38A TO 38B | 170 | ⅜ |
| 50A TO 50B | 170 | ½ |
| 63A TO 63B | 170 | ⅝ |
| 75A TO 75B | 170 | ¾ |

1 - SEE DETAIL M6.00 FOR SECTION NOTES
2 - THE DISTANCE FROM THE CENTER OF ANY SHEET METAL SCREW TO ANY STEEL EDGE SHALL BE ½" MIN. INCLUDING PUNCHED AND SLOTTED HOLE EDGES.

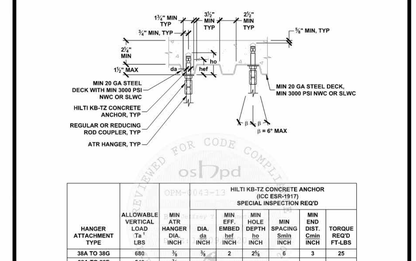
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PAGE **M7.11**



## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) HILTI KB-TZ CONCRETE ANCHOR




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1 LBS | MIN ATR HANGER DIA. INCH | HILTI KB-TZ CONCRETE ANCHOR (ICC ESR-1917) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN END DIST. Cmin INCH | TORQUE REQ'D FT-LBS |
| 38A TO 38G | 680 | ⅜ | ½ | 2 | 2½ | 6 | 3 | 25 |
| 38A TO 38F | 540 | ⅜ | | | | | | |
| 50A TO 50F | 540 | ½ | ½ | 2 | 2½ | 6 | 3 | 40 |
| 63A TO 63F | 540 | ½ | | | | | | |
| 38A TO 38K | 1230 | ⅜ | ⅝ | 3½ | 4 | 9½ | 4½ | 40 |
| 50A TO 50K | 1230 | ½ | | | | | | |
| 63A TO 63K | 1230 | ½ | | | | | | |
| 50A TO 50K | 1180 | ½ | ⅝ | 3½ | 3½ | 9½ | 4½ | 60 |
| 63A TO 63K | 1180 | ½ | | | | | | |
| 75A TO 75K | 1180 | ¾ | | | | | | |

SEE DETAIL M6.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_o$ PER ASCE 7-10 SEC. 12.4.3.3.

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PAGE **M2.23**

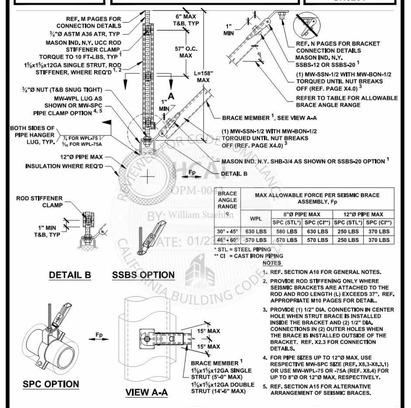
NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.



## HANGER AT

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL DRAWING. IF NOT EXACTLY 1" ADJUST SCALE ACCORDINGLY

| HANGER ROD DIAMETER = ⅜" | PIPING TRANSVERSE SEISMIC SOLID BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS S20T S2012T SH612T SH620T |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 2"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 630 LBS | 580 LBS | 630 LBS | 250 LBS | 370 LBS |
| 46° - 60° | 570 LBS | 570 LBS | 570 LBS | 250 LBS | 370 LBS |

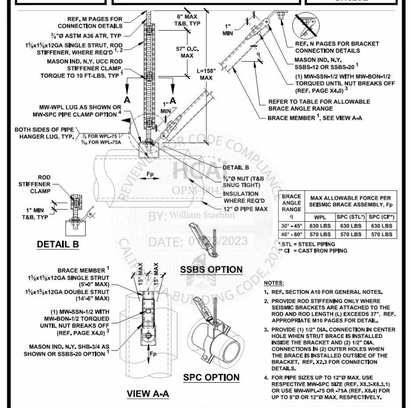
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A16 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37", REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) ½" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) ½" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET, REF, X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY.
5. REF, SECTION A15 FOR ALTERNATIVE ARRANGEMENT OF SEISMIC BRACES.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 239 of 792

| HANGER ROD DIAMETER = ¾" | PIPING LONGITUDINAL SEISMIC SOLID BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS S20L S2012L SH612L SH620L |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 2"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 630 LBS | 580 LBS | 630 LBS | 250 LBS | 370 LBS |
| 46° - 60° | 570 LBS | 570 LBS | 570 LBS | 250 LBS | 370 LBS |

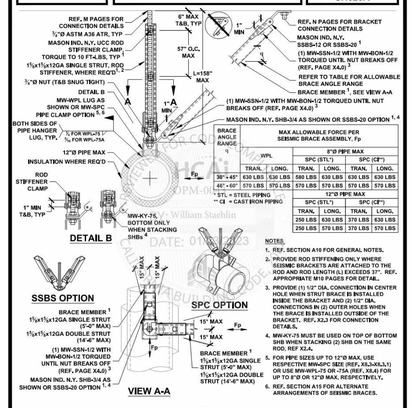
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A16 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37", REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) ½" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) ½" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET, REF, X2.3 FOR CONNECTION DETAILS.
4. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 241 of 792

| HANGER ROD DIAMETER = ¾" | PIPING ALL-DIRECTIONAL SEISMIC SOLID BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS S20A S2012A SH612A SH620A |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 8"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 630 LBS | 530 LBS | 590 LBS | 630 LBS | 630 LBS |
| 46° - 60° | 570 LBS | 570 LBS | 570 LBS | 570 LBS | 570 LBS |

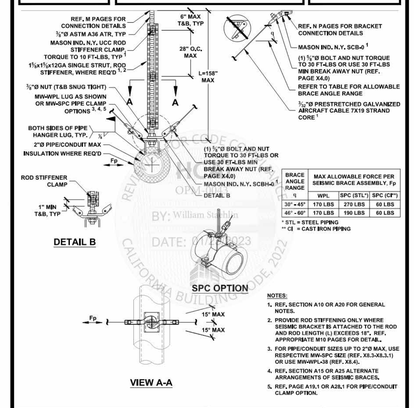
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A16 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKETS ARE ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. PROVIDE (1) ½" DIA. CONNECTION IN CENTER HOLE WHEN STRUT BRACE IS INSTALLED INSIDE THE BRACKET AND (2) ½" DIA. CONNECTIONS IN (2) OUTER HOLES WHEN THE BRACE IS INSTALLED OUTSIDE OF THE BRACKET, REF, X2.3 FOR CONNECTION DETAILS.
4. MW-KY-75 MUST BE USED ON TOP OF BOTTOM SHB WHEN STACKING (2) SHB ON THE SAME ROD, REF X2.4.
5. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY.
6. REF, SECTION A15 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 243 of 792

| HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT TRANSVERSE SEISMIC CABLE BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX | KIT OPTIONS C0T |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 2"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 170 LBS | 270 LBS | 60 LBS | | |
| 46° - 60° | 170 LBS | 190 LBS | 60 LBS | | |

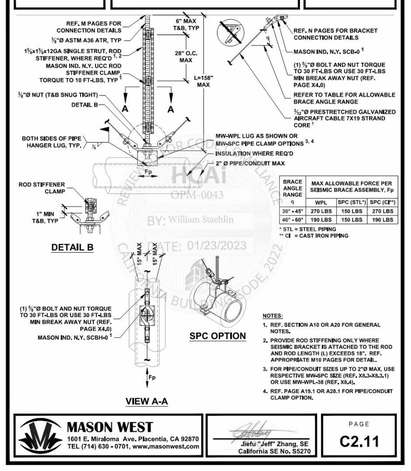
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-38 (REF, X6.4).
4. REF, PAGE A15.1 OR A20.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 266 of 792

| HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT LONGITUDINAL SEISMIC CABLE BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX | KIT OPTIONS C0L |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 2"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 270 LBS | 150 LBS | 270 LBS | | |
| 46° - 60° | 190 LBS | 150 LBS | 190 LBS | | |

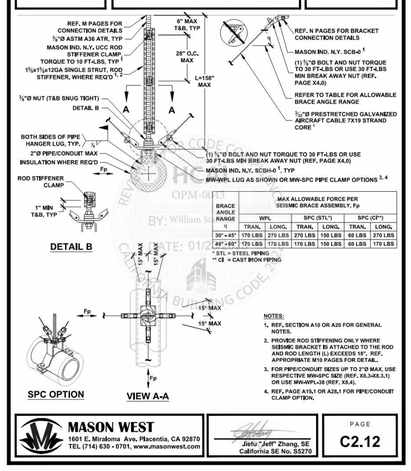
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-38 (REF, X6.4).
4. REF, PAGE A15.1 OR A20.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 267 of 792

| HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT ALL-DIRECTIONAL SEISMIC CABLE BRACING SYSTEM 2"Ø PIPE/CONDUIT MAX | KIT OPTIONS C0A |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 2"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 170 LBS | 270 LBS | 170 LBS | 60 LBS | 170 LBS |
| 46° - 60° | 170 LBS | 170 LBS | 170 LBS | 60 LBS | 170 LBS |

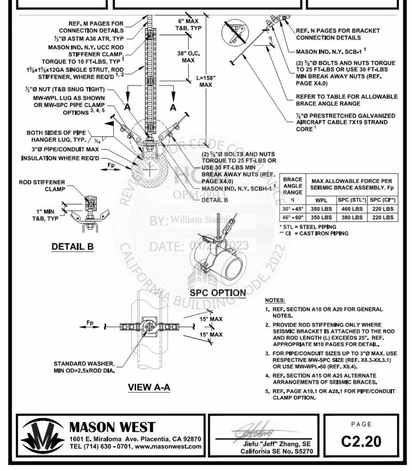
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 18". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 2"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-38 (REF, X6.4).
4. REF, PAGE A15.1 OR A20.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 268 of 792

| HANGER ROD DIAMETER = ⅜" | PIPING/CONDUIT TRANSVERSE SEISMIC CABLE BRACING SYSTEM 3"Ø PIPE/CONDUIT MAX | KIT OPTIONS C1T |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 3"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 350 LBS | 460 LBS | 220 LBS | | |
| 46° - 60° | 350 LBS | 380 LBS | 220 LBS | | |

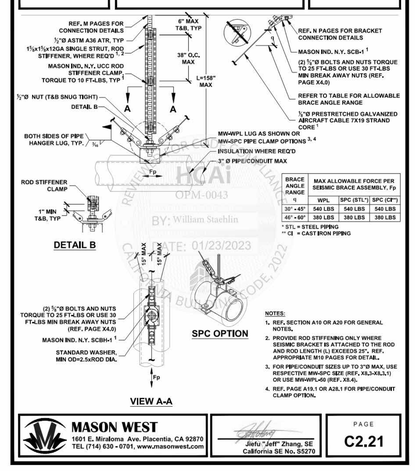
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 3"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-60 (REF, X6.4).
4. REF, SECTION A15 OR A25 ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.
5. REF, PAGE A15.1 OR A25.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 269 of 792

| HANGER ROD DIAMETER = ½" | PIPING/CONDUIT LONGITUDINAL SEISMIC CABLE BRACING SYSTEM 3"Ø PIPE/CONDUIT MAX | KIT OPTIONS C1L |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 3"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 540 LBS | 540 LBS | 540 LBS | | |
| 46° - 60° | 380 LBS | 380 LBS | 380 LBS | | |

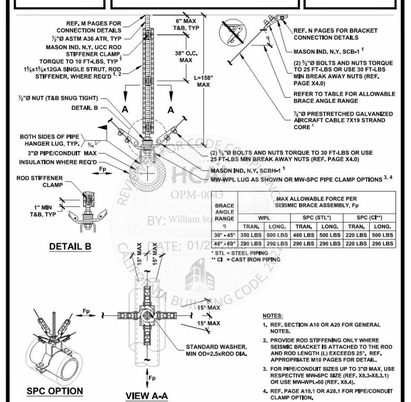
* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 3"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-60 (REF, X6.4).
4. REF, PAGE A15.1 OR A25.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 270 of 792

| HANGER ROD DIAMETER = ½" | PIPING/CONDUIT ALL-DIRECTIONAL SEISMIC CABLE BRACING SYSTEM 3"Ø PIPE/CONDUIT MAX | KIT OPTIONS C1A |
|---|---|---|




| BRACE ANGLE RANGE | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | |
|---|---|---|---|---|---|
| | WPL | 3"Ø PIPE MAX | | 12"Ø PIPE MAX | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) |
| 30° - 45° | 350 LBS | 500 LBS | 460 LBS | 500 LBS | 220 LBS | 500 LBS |
| 46° - 60° | 290 LBS | 290 LBS | 290 LBS | 290 LBS | 220 LBS | 290 LBS |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 OR A20 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET IS ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 25". REF, APPROPRIATE M10 PAGES FOR DETAIL.
3. FOR PIPE/CONDUIT SIZES UP TO 3"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X6.3-X6.3.1) OR USE MW-WPL-60 (REF, X6.4).
4. REF, PAGE A15.1 OR A25.1 FOR PIPE/CONDUIT CLAMP OPTION.

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|---|---|---|

1/23/2023 OPM-0043: Reviewed for Code Compliance by William Staehlin 271 of 792

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

ARROYO HIGH SCHOOL NEW THEATER & ADMINISTRATION BUILDING
COMMITTED TO EXCELLENCE

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

Registered Professional Engineer — Robert Glumac — No. M35000 — Exp. 6-30-26 — Mechanical — State of California
06/20/2025

GLUMAC engineers for a sustainable future™
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Los Angeles, CA 90017
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T. 213.239.8866
Project Manager: RM
Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

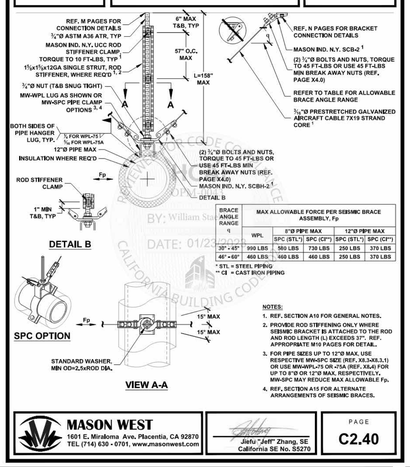
**P9.05**

Autodesk Docs://3361008100 EWUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL DRAWING. IF IT IS NOT, THEN THE DRAWING IS NOT AN EXACT SIZE SHEET. ORIGINAL PAGE SIZE

| HANGER ROD DIAMETER = ¾" | PIPING TRANSVERSE SEISMIC CABLE BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS C2T |
|---|---|---|



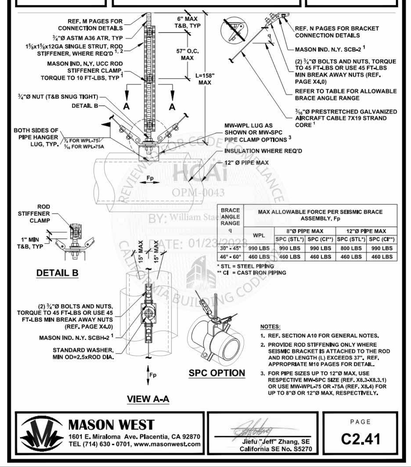

| BRACE ANGLE RANGE ¶ | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | 8"Ø PIPE MAX | | 12"Ø PIPE MAX | | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) | |
| 30° - 45° | 990 LBS | 580 LBS | 730 LBS | 250 LBS | 370 LBS | |
| 46° - 60° | 460 LBS | 460 LBS | 460 LBS | 250 LBS | 370 LBS | |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET BI ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37". REF, APPROPRIATE M10 PAGES FOR DETAR..
3. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X5.3-X6.3,1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY, MW-SPC MAY REDUCE MAX ALLOWABLE Fp.
4. REF, SECTION A15 FOR ALTERNATE ARRANGEMENTS OF SEISMIC BRACES.

| MASON WEST | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE C2.40 |
|---|---|---|

| HANGER ROD DIAMETER = ¾" | PIPING LONGITUDINAL SEISMIC CABLE BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS C2L |
|---|---|---|



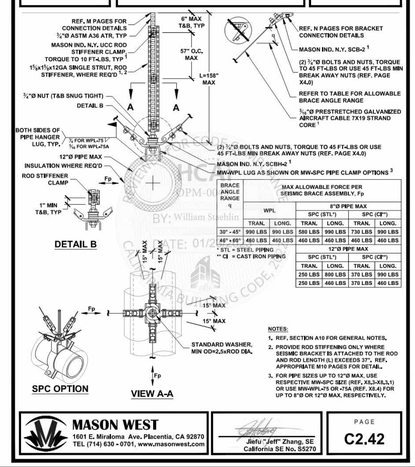

| BRACE ANGLE RANGE ¶ | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | 8"Ø PIPE MAX | | 12"Ø PIPE MAX | | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) | |
| 30° - 45° | 990 LBS | 990 LBS | 990 LBS | 800 LBS | 990 LBS | |
| 46° - 60° | 460 LBS | 460 LBS | 460 LBS | 460 LBS | 460 LBS | |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET BI ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37", REF, APPROPRIATE M10 PAGES FOR DETAIL..
3. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X5.3-X6.3,1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY.

| MASON WEST | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE C2.41 |
|---|---|---|

| HANGER ROD DIAMETER = ¾" | PIPING ALL-DIRECTIONAL SEISMIC CABLE BRACING SYSTEM 12"Ø PIPE MAX | KIT OPTIONS C2A |
|---|---|---|




| BRACE ANGLE RANGE ¶ | MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp | | | | | |
|---|---|---|---|---|---|---|
| | WPL | 8"Ø PIPE MAX | | 12"Ø PIPE MAX | | |
| | | SPC (STL*) | SPC (CI**) | SPC (STL*) | SPC (CI**) | |
| 30° - 45° | 990 LBS | 990 LBS | 990 LBS | 730 LBS | 990 LBS | |
| 46° - 60° | 460 LBS | 460 LBS | 460 LBS | 460 LBS | 460 LBS | |

* STL = STEEL PIPING
** CI = CAST IRON PIPING

NOTES:
1. REF, SECTION A10 FOR GENERAL NOTES.
2. PROVIDE ROD STIFFENING ONLY WHERE SEISMIC BRACKET BI ATTACHED TO THE ROD AND ROD LENGTH (L) EXCEEDS 37", REF, APPROPRIATE M10 PAGES FOR DETAIL..
3. FOR PIPE SIZES UP TO 12"Ø MAX, USE RESPECTIVE MW-SPC SIZE (REF, X5.3-X6.3,1) OR USE MW-WPL-75 OR -75A (REF, X6.4) FOR UP TO 8"Ø OR 12"Ø MAX, RESPECTIVELY.

| MASON WEST | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE C2.42 |
|---|---|---|

## HANGER DESIGNATION, ATTACHMENT AND SECTION NOTES

| PIPE OR CONDUIT SIZE | HANGER ROD SIZE DESIGNATION | DIAMETER (INCH) |
|---|---|---|
| UP TO 2" | 38 | ⅜ |
| 2½" TO 3" | 50 | ½ |
| 4" TO 5" | 63 | ⅝ |
| 6" TO 18" | 75 | ¾ |
| 19" TO 12" | 88 | ⅞ |
| 14" TO 18" | 100 | 1 |
| 20" TO 24" | 125 | 1¼ |

LEGEND (HANGER ATTACHMENT TYPE)
### X
### = DENOTES ATR HANGER SIZE
X = DENOTES VERTICAL LOAD RATING

| DISTRIBUTION SYSTEM | | | HANGER ROD SIZE | |
|---|---|---|---|---|
| PIPE-CONDUIT | DUCTWORK | CABLE TRAY | DESIGNATION | DIAMETER (INCH) |
| 30 LBS/FT | 30 LBS/FT | 20 LBS/FT | 38 | ⅜ |
| 60 LBS/FT | 60 LBS/FT | 45 LBS/FT | 50 | ½ |
| 100 LBS/FT | 100 LBS/FT | 85 LBS/FT | 63 | ⅝ |
| 300 LBS/FT | | | 75 | ¾ |
| 500 LBS/FT | | | 100 | 1 |
| 500 LBS/FT | | | 125 | 1¼ |

| VERTICAL LOAD RATING | |
|---|---|
| DESIGNATION | MAXIMUM ALLOWABLE LOAD (LBS) |
| A | 75 |
| B | 125 |
| C | 175 |
| D | 250 |
| E | 350 |
| F | 400 |
| G | 575 |
| H | 700 |
| J | 850 |
| K | 1000 |
| L | 1250 |
| M | 1600 |
| N | 2000 |
| P | 2500 |
| Q | 3500 |
| R | 5000 |
| S | 7500 |
| T | 11000 |

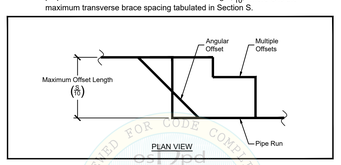
NOTES:
1 - "M" SERIES PAGES ARE COMPRISED OF HANGER ANCHORAGE CAPACITIES FOR VARIOUS TYPES OF ANCHORAGE CONDITIONS AT SEISMIC BRACE LOCATIONS ONLY, EACH HANGER ATTACHMENT TYPE IS DESIGNATED BY A SET OF NUMBERS AND A LETTER. THE NUMBERS REPRESENTS THE HANGER ROD SIZE (FOUND IN THE HANGER ROD SIZE TABLE) AND THE LETTER REPRESENTS THE MAXIMUM ALLOWABLE LOAD (FOUND IN THE VERTICAL LOAD RATING TABLE).
EXAMPLE: 38R REPRESENTS HANGER ROD SIZE OF ⅜"Ø WITH A MAXIMUM ALLOWABLE VERTICAL LOAD RATING OF 700 LBS.
2 - HANGER ANCHORAGE ATTACHMENTS TO STRUCTURE MAY BE USED WITH ANY ONE OF "M" SERIES PAGES, PROVIDED HANGER ATTACHMENT SIZE IS APPROPRIATE FOR THE APPLICATION AND THE ALLOWABLE VERTICAL LOAD CAPACITY IS MET.
3 - STRUCTURAL ENGINEER OF RECORD TO VERIFY ADEQUACY OF THE STRUCTURE FROM LOADING IMPOSED BY VERTICAL HANGER ATTACHMENT.
4 - WHERE ROD STIFFENER IS REQUIRED, SEE M10.02.
5 - NOT USED.
6 - HANGER ROD MAY BE INSTALLED UP TO 4 DEGREES FROM PERPENDICULAR TO CONCRETE SURFACE.
7 - WHERE CONCRETE ANCHORS ARE INSTALLED AT THE BOTTOM OF THE CONCRETE FILLED METAL DECK, MINIMUM END DISTANCE AND SPACING REQUIREMENTS ARE ALONG FLUTE LENGTH ONLY.
8 - SEE X7.2 AND X7.1 FOR STRUT MEMBER DATA, FOR CONDITIONS WHERE HOLES THROUGH STRUT MEMBERS ARE REQ'D, HOLES SHALL BE INTO SIDE WEB OF STRUT, TYP. U.N.O. WHERE PUNCHED STRUT OR HOLES ARE REQ'D, MIN. SPACING, EDGE, AND END DISTANCES SHALL BE MAINTAINED AS REQ'D PER DETAIL.
9 - ALL-THREAD RODS MUST BE MADE OF A36, A307 (GRADE A OR B), OR F554 GR36 STEEL. ROD COUPLERS MUST CONFORM TO ASTM A563 STEEL WITH A MINIMUM OF 58 KSI TENSILE STRENGTH. MINIMUM ENGAGEMENT INTO ROD COUPLER MUST BE EQUAL TO THE ATR DIAMETER. ATR HANGER IS PERMITTED FOR COMPRESSION AND TENSION LOADING CONDITIONS ONLY, NO SHEAR LOADING.
10 - ALL CONCRETE FLAT SLABS, WALLS, AND BEAMS MUST HAVE A MINIMUM OF #4 BAR OR GREATER BETWEEN THE ANCHOR AND THE EDGE OF CONCRETE.
11 - DESIGN IS CONTROLLED BY SEISMIC FORCES, NON-SEISMIC FORCES SUCH AS GRAVITY ARE OUTSIDE THE SCOPE OF THIS OPM.
12 - POST INSTALLED ANCHORS MAY BE INSTALLED A MINIMUM OF 3 SOLT DIAMETERS AWAY FROM ABANDONED HOLES, AND A MINIMUM OF 1.5 SOLT DIAMETERS AWAY FROM DRYPACK MORTAR FILLED HOLES. DRYPACK MORTAR SHALL HAVE A COMPRESSIVE STRENGTH EQUAL OR GREATER THAN THE CONCRETE STRENGTH IN WHICH IT IS BEING USED.
13 - THE HANGER AND ATTACHMENT AT SEISMIC BRACE LOCATIONS IS SUBJECTED TO GRAVITY LOADS AS WELL AS LATERAL AND VERTICAL SEISMIC LOADS AND HAS BEEN DESIGNED FOR SUCH COMBINED LOADING IN COMPLIANCE WITH THE CALIFORNIA BUILDING CODE, CALIFORNIA OSHPD AND STANDARD STRUCTURAL STEEL PRACTICES AND ARE NOT SUBJECT TO THE HANGER ROD DIAMETERS DESIGNED FOR GRAVITY LOADS ONLY THAT MAY BE OUTLINED IN PROJECT SPECIFICATIONS, CODE DOCUMENTS, TRADE GUIDELINES, ETC. IN ORDER TO ENSURE THE DELIVERY OF SEISMIC BRACE COMPONENTS THAT MATCH FIELD ERECTED HANGERS, ALL HANGER RODS FOR INDIVIDUAL PIPES AND TRAPEZED SYSTEMS AT SEISMIC BRACE LOCATIONS SHOULD ADHERE TO THE TABLES ABOVE.
14 - PER CBC SECTION 1905A.1.9, CONCRETE COMPRESSIVE STRENGTH, f'c, SHALL BE LIMITED TO 8,000 PSI MAX, BUT MAY BE INCREASED SUBJECT TO OSHPD REVIEW AND APPROVAL ON A PROJECT BY PROJECT BASIS.

| MASON WEST | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE M0.00 |
|---|---|---|

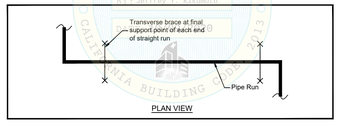
10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 275 of 792

## LAYOUT OF SEISMIC BRACES FOR INDIVIDUALLY SUSPENDED PIPING

Step 1. Separate the layout of the system into individual straight runs. A straight run is defined as a section of the utility between changes in direction. If an offset(s) occurs between changes of direction it may be neglected if the distance perpendicular to the run is less than the offset length, $\frac{S}{10}$, where S is the maximum transverse brace spacing tabulated in Section S.




Step 2. Each straight run must be braced in the transverse direction (perpendicular to the run) at each end.

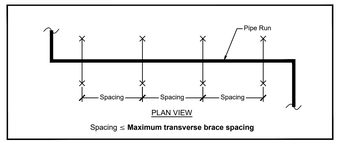



| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE A12.0 |
|---|---|---|

1/23/2023 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 276 of 792

## LAYOUT OF SEISMIC BRACES FOR INDIVIDUALLY SUSPENDED PIPING (continued)

Step 3. Add transverse braces, if required, to limit the spacing(s) to the maximum spacing indicated in Section S.

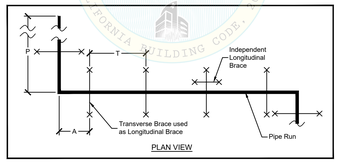



Spacing ≤ **Maximum transverse brace spacing**

Step 4. Each straight run must be braced in the longitudinal direction (parallel to the run) with at least one brace. Transverse braces within offset distance 'A' may be used in addition to or in lieu of independent longitudinal braces. The maximum length of pipe around a 50 degree turn (indicated as 'P' below) longitudinally braced from a transverse brace at offset distance 'A' is as follows:

When A ≤ 0.30"S, P = 0.5"S
When A ≤ 0.25"S, P = 0.75"S,
When A ≤ 0.20"S, P = S,
When A ≤ 0.15"S, P = 1.5"S, where:

S = Maximum Allowable Transverse Brace Spacing (From Section S)
T = The distance between Transverse Braces
A = Offset Distance

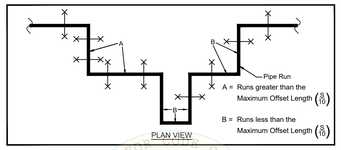



| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE A12.1 |
|---|---|---|

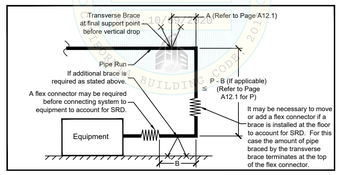
1/23/2023 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 277 of 792

## LAYOUT OF SEISMIC BRACES FOR INDIVIDUALLY SUSPENDED PIPING (continued)

Step 5. Multiple changes in direction may be treated as one complete system. Straight runs greater than the maximum offset length require 2 transverse braces. Straight runs less than the maximum offset length may require as few as one or no braces. (See layout below)




Step 6. Vertical drops to equipment must be restrained with a transverse brace at the final support point before the vertical drop. The distance from the transverse brace to the drop must be within the maximum offset distance 'A' as defined on Page A12.1. The maximum allowable length of the system braced from the transverse brace to the flexible connector is equal to 'P' as defined on Page A12.1. If this distance is greater than 'P', an additional brace is required at the end of the vertical drop by attaching to the floor. Consideration must be given to seismic relative displacements (SRD) imposed on pipe when braced to the floor.

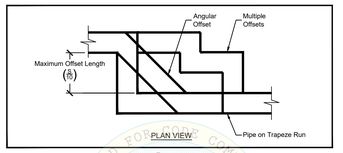



| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE A12.2 |
|---|---|---|

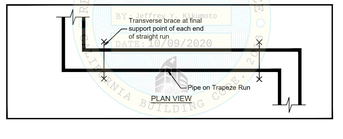
1/23/2023 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 278 of 792

## LAYOUT OF SEISMIC BRACES FOR TRAPEZE SUSPENDED PIPING (continued)

Step 1a. Separate the layout of the system into individual straight runs. A straight run is defined as a section of the utility between changes in direction. If an offset(s) occurs between changes of direction it may be neglected if the distance perpendicular to each pipe run is less than the offset length, $\frac{S}{10}$, where S is the maximum transverse brace spacing tabulated in Section S.



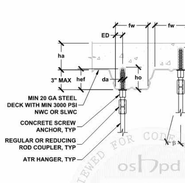

Step 2a. Each straight run must be braced in the transverse direction (perpendicular to the run) at each end.




| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE A12.3 |
|---|---|---|

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 63 of 846

## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) CONCRETE SCREW ANCHOR




| ANCHOR | MIN FLUTE WIDTH hw INCH | MIN EDGE DIST ED INCH | MIN CONC. COVER ha INCH | MIN HOLE CLEAR hc INCH |
|---|---|---|---|---|
| DEWALT/POWERS | 3½ | 1 | 2½ | ¾ |
| MASON | 4½ | 1½ | 1½ | ¾ |
| HILTI | 3½ | 1½ | 2½ | 1¼ |

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1,2 LBS | ATR HANGER DIA. INCH | DEWALT/POWERS HANGERMATE+ CONCRETE SCREW ANCHOR (ICC ESR-3899) SPECIAL INSPECTION REQ'D | | | | |
|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED. hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN EDGE Cmin INCH | MAX TORQUE FT-LBS |
| 38A TO 38E | 380 | ⅜ | ½ W/ ⅜"Ø HEAD | 2 | 2⅝ | 6 | 3 | 25 |
| 50A TO 50E | 380 | ½ | | | | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_0$, PER ASCE 7-16 SEC. 12.4.3.3.
2 SEE PAGE M2.70.1 FOR ADDITIONAL ALLOWABLE LOAD TABLES.

| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE M2.70 |
|---|---|---|

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 532 of 846

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 64 of 846

## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) CONCRETE SCREW ANCHOR

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1,2 LBS | ATR HANGER DIA. INCH | MASON IND. N.Y. SAST CONCRETE SCREW ANCHOR (ICC ESR-2713) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED. hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN EDGE Cmin INCH | MAX TORQUE FT-LBS |
| 38A TO 38E | 360 | ⅜ | ½ W/ ⅜"Ø HEAD | 1⅛ | 2½ | 6¼ | 3⅛ | 50 |
| 50A TO 50E | 360 | ½ | | | | | | |
| 38A TO 38E | 360 | ⅜ | ⅝ W/ ⅜"Ø HEAD | 1⅛ | 3 | 6¼ | 3⅛ | 50 |
| 50A TO 50E | 360 | ½ | | | | | | |
| 63A TO 63E | 360 | ⅝ | | | | | | |

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1,2 LBS | ATR HANGER DIA. INCH | HILTI KH-EZ-I CONCRETE SCREW ANCHOR (ICC ESR-3027) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED. hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN EDGE Cmin INCH | MAX TORQUE FT-LBS |
| 38A TO 38D | 250 | ⅜ | ½ W/ ⅜"Ø HEAD | 1½ | 2 | 6¼ | 3⅛ | 18 |
| 50A TO 50D | 250 | ½ | | | | | | |
| 38A TO 38E | 380 | ⅜ | ⅝ W/ ⅜"Ø HEAD | 2 | 2½ | 6¼ | 3⅛ | 18 |
| 50A TO 50E | 380 | ½ | | | | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_0$, PER ASCE 7-16 SEC. 12.4.3.3.

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1,2 LBS | ATR HANGER DIA. INCH | DEWALT/POWERS HANGERMATE+ CONCRETE SCREW ANCHOR (ICC ESR-3899) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED. hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN EDGE Cmin INCH | MAX TORQUE FT-LBS |
| 38A TO 38D | 310 | ⅜ | ½ W/ ⅜"Ø HEAD | 2 | 2⅝ | 6 | 3 | 25 |
| 50A TO 50D | 310 | ½ | | | | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_0$, PER ASCE 7-16 SEC. 12.4.3.3.

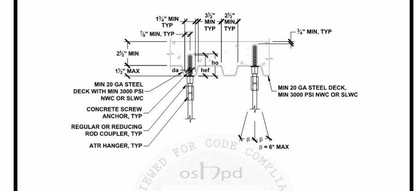
| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE M2.70.1 |
|---|---|---|

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 533 of 846

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 65 of 846

## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) CONCRETE SCREW ANCHOR




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1,2 LBS | ATR HANGER DIA. INCH | DEWALT/POWERS HANGERMATE+ CONCRETE SCREW ANCHOR (ICC ESR-3899) SPECIAL INSPECTION REQ'D | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DIA. da INCH | MIN EFF. EMBED. hef INCH | MIN HOLE DEPTH ho INCH | MIN SPACING Smin INCH | MIN EDGE Cmin INCH | MAX TORQUE FT-LBS |
| 38A TO 38D | 310 | ⅜ | ½ W/ ⅜"Ø HEAD | 2 | 2⅝ | 6 | 3 | 25 |
| 50A TO 50D | 310 | ½ | | | | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_0$, PER ASCE 7-16 SEC. 12.4.3.3.

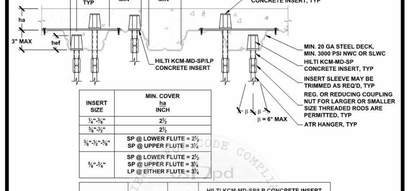
| MASON WEST, INC. | Jiefu "Jeff" Zhang, SE California SE No. S5270 | PAGE M2.72 |
|---|---|---|

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 540 of 846

10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 66 of 846

## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) HILTI KCM-MD-SP/LP CONCRETE INSERT




| INSERT SIZE | MIN. COVER ha INCH |
|---|---|
| ½"-⅝" | 2½ |
| ¾"-1" | 2½ |
| ¾"-⅞"-1" | SP @ LOWER FLUTE = 2½, SP @ UPPER FLUTE = 3½ |
| 1½"-2¼" | SP @ LOWER FLUTE = 2½, SP @ UPPER FLUTE = 3½, LP @ EITHER FLUTE = 3½ |

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta 1 LBS | ATR HANGER DIA. INCH | HILTI KCM-MD-SP/LP CONCRETE INSERT (ICC ESR-4145) SPECIAL INSPECTION REQ'D | | | | |
|---|---|---|---|---|---|---|---|
| | | | INSERT SIZE | MIN. EFF. EMBED hef INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH |
| 38A TO 38G | 660 | ⅜ | ½"-⅝" | 1½ | 6½ | 2½ |
| 38A TO 38J | 870 | ⅜ | | | | |
| 50A TO 50J | 870 | ½ | ¾"-1" | 2 | 6 | 3 |
| 63A TO 63J | 870 | ⅝ | | | | |
| 38A TO 38J | 990 | ⅜ | | | | |
| 50A TO 50J | 990 | ½ | | | | |
| 63A TO 63J | 990 | ⅝ | ¾"-⅞"-1" | 2½ | 7½ | 3¾ |
| 75A TO 75J | 990 | ¾ | | | | |
| 50A TO 50J | 990 | ½ | | | | |
| 63A TO 63J | 990 | ⅝ | 1¼"-1½" | 2½ | 7½ | 3¾ |
| 75A TO 75J | 990 | ¾ | | | | |
| 88A TO 88J | 990 | ⅞ | | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
1 ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_0$, PER ASCE 7-16 SEC. 12.14.3.2.3.
2 MIN. FLUTE WIDTH MAY BE REDUCED TO 3"; MIN. FOR INSERT INSTALLED OVER UPPER FLUTE OR KCM-MD-SP ¾"-1", KCM-MD-SP 1¼"-1½", KCM-MD-LP ¾"-1", OR KCM-MD-LP 1¼"-1½" INSTALLED OVER LOWER FLUTE.

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|---|---|---|

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/SO.29.

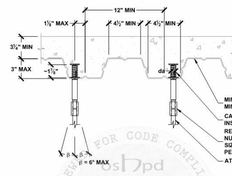
10/09/2020 OPM-0043-13: Reviewed for Code Compliance by Jeffrey Kikumoto 546 of 846

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DAT

IF THE LINE SHOWN ABOVE IS NOT 1" LONG, THIS SHEET IS NOT EXACTLY ORIGINAL PAPER SIZE

## HANGER ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) CADDY CRLM CONCRETE INSERT AT LOWER FLUTE




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD Ta [1] LBS | ATR HANGER DIA. INCH | CADDY CRLM CONCRETE INSERT (CC ESR-3864) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. SPACING Smin[2] INCH | MIN. END DIST. Cmin INCH |
|---|---|---|---|---|---|
| 38A TO 38M | 830 | ⅜ | 0.61 (⅝"Ø) | 6 | 3 |
| 38A TO 38M | 830 | ⅜ | | | |
| 50A TO 50N | 830 | ½ | 0.71 (¾"Ø) | 6 | 3 |
| 63A TO 63M | 830 | ⅝ | | | |

SEE DETAIL M0.00 FOR SECTION NOTES
[1] ALLOWABLE LOADS HAVE BEEN INCREASED BY A FACTOR OF 1.2 FOR LOAD COMBINATIONS INCLUDING OVERSTRENGTH, $\Omega_o$, PER ASCE 7-10 SEC. 12.4.3.3.
[2] AXIAL SPACING PARALLEL TO FLUTE DIRECTION

NOTE:
LOADS INDICATED IN OPM DETAIL ARE FOR THE ABOVE ASSEMBLY CAPACITY LOADS, NOT THE ALLOWABLE IMPOSED LOADS TO THE STRUCTURE. MAXIMUM LOADING TO CONCRETE OVER METAL DECK TO BE PER 1/S0.29.

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PAGE M2.110

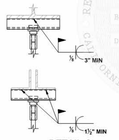


## HANGER ATTACHMENT TO STEEL BEAM OR OPEN WEB STEEL TRUSS WITH SELF-DRILLING SELF-TAPPING METAL SCREWS




DETAIL A

DETAIL B




DETAIL C
WELDING OPTION
NOTE: ALL WELDS TO BE MINIMUM 70ksi ELECTRODE WELDS

| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
|---|---|---|
| 38A TO 38M | 1700 | ⅜ |
| 50A TO 50M | 1700 | ½ |
| 63A TO 63M | 1700 | ⅝ |
| 75A TO 75M | 1700 | ¾ |

[1] SEE DETAIL M0.00 FOR SECTION NOTES
[2] ATTACHMENT TO STEEL BEAM SHALL NOT BE PLACED WITHIN THE PROTECTED ZONE AS DEFINED IN AISC 341.

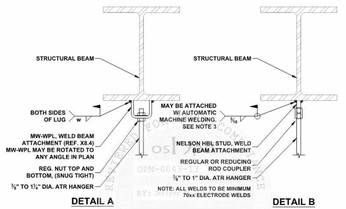
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PAGE M3.11



## ATR HANGER ATTACHMENT TO STEEL BEAM WITH WELDED BEAM ATTACHMENT




DETAIL A

DETAIL B

| HANGER ATTACHMENT TYPE | DETAIL A MW-WPL LUG | DETAIL A w. WELD SIZE INCH | DETAIL B NELSON HBL STUD DIA. INCH | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
|---|---|---|---|---|---|
| 38A TO 38H | MW-WPL-38 | ⅜ | ⅜ | 720 | ⅜ |
| 50A TO 50L | MW-WPL-50 | ½ | ½ | 1320 | ½ |
| 63A TO 63P | MW-WPL-63 | ⅝ | ⅝ | 2880 | ⅝ |
| 75A TO 75Q | MW-WPL-75 | ¾ | ¾ | 4800 | ¾ |
| 75A TO 75S | MW-WPL-75A | ¾ | N/A | 8000 | ¾ |
| 88A TO 88R | MW-WPL-88 | ⅞ | ⅞ | 6900 | ⅞ |
| 100A TO 100S | MW-WPL-100 | 1 | 1 | 8660 | 1 |
| 125A TO 125T | MW-WPL-125 | 1¼ | N/A | 11400 | 1¼ |

[1] SEE DETAIL M0.00 FOR SECTION NOTES
[2] WELDED ATTACHMENT TO STEEL BEAM SHALL NOT BE PLACED WITHIN THE PROTECTED ZONE AS DEFINED IN AISC 341.
[3] AUTOMATIC MACHINE WELDING OF NELSON HBL STUD SHALL COMPLY WITH AWS D1.1, SECTION 6: STUD WELDING.
[4] NELSON HBL STUD TO BE MINIMUM 61KSI TENSILE STRENGTH MILD STEEL CONFORMING TO ASTM A108.

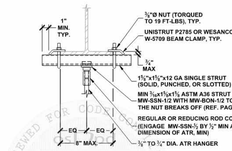
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PAGE M3.12



## ATR HANGER ATTACHMENT TO STEEL BEAM WITH STEEL BEAM CLAMPS




| HANGER CONNECTION TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
|---|---|---|
| 38A TO 38N | 2000 | ⅜ |
| 50A TO 50N | 2000 | ½ |
| 63A TO 63N | 2000 | ⅝ |
| 75A TO 75N | 2000 | ¾ |

[1] SEE DETAIL M0.00 FOR SECTION NOTES
[2] ATTACHMENT TO STEEL BEAM SHALL NOT BE PLACED WITHIN THE PROTECTED ZONE AS DEFINED IN AISC 341.

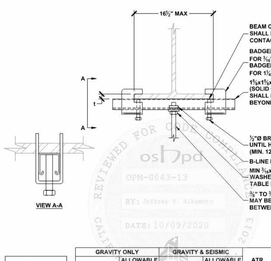
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California SE No. S5270

PAGE M3.14



## ATR HANGER ATTACHMENT TO STEEL BEAM WITH (2) BADGER INDUSTRIES SBC158 SERIES STEEL BEAM CLAMPS




VIEW A-A

| FASTENER WITH STRUT NUT | | GRAVITY ONLY | | GRAVITY & SEISMIC | | |
|---|---|---|---|---|---|---|
| DIA. INCH | TORQUE REQ'D FT-LBS | HANGER CONNECTION TYPE | ALLOWABLE VERTICAL LOAD LBS | HANGER CONNECTION TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
| ⅜ | 19 | 38A TO 38H | 730 | 38A TO 38M | 1840 | ⅜ |
| ½ - ⅝ | 50 | 50A TO 50J | 920 | 50A TO 50M | 1840 | ½ |
| | | 63A TO 63J | 920 | 63A TO 63M | 1840 | ⅝ |
| | | 75A TO 75J | 920 | 75A TO 75M | 1840 | ¾ |

[1] SEE DETAIL M0.00 FOR SECTION NOTES
[2] ATTACHMENT TO STEEL BEAM SHALL NOT BE PLACED WITHIN THE PROTECTED ZONE AS DEFINED IN AISC 341.
[3] WHEN USED FOR "GRAVITY & SEISMIC" LOADING, THE GRAVITY DEMAND SHALL NOT EXCEED THE "GRAVITY ONLY" ALLOWABLE LOAD.
[4] BEAM CLAMPS SHALL NOT BE USED ON SHAPES WITH SLOPED FLANGES.

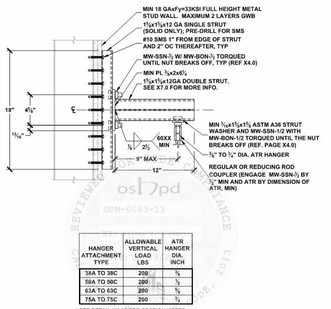
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PAGE M3.14.1



## HANGER ATTACHMENT TO FULL HEIGHT METAL STUD WALL




| HANGER ATTACHMENT TYPE | ALLOWABLE VERTICAL LOAD LBS | ATR HANGER DIA. INCH |
|---|---|---|
| 38A TO 38C | 200 | ⅜ |
| 50A TO 50C | 280 | ½ |
| 63A TO 63C | 200 | ⅝ |
| 75A TO 75C | 200 | ¾ |

SEE DETAIL M0.00 FOR SECTION NOTES

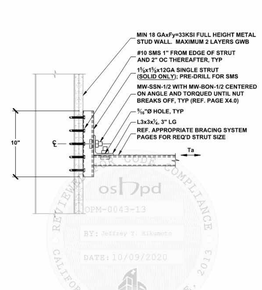
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PAGE M6.10



## ANGLE CLIP ATTACHMENT TO FULL HEIGHT METAL STUD WALL




| HANGER ATTACHMENT TYPE | ALLOWABLE TENSION LOAD LBS |
|---|---|
| 56A TO 50G | 580 |

SEE DETAIL M0.00 FOR SECTION NOTES

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PAGE M6.11



## BRACE BRACKET DESIGNATION, ATTACHMENT AND SECTION NOTES

| BRACE ANCHOR SIZE DESIGNATION | DIAMETER (mm) |
|---|---|
| 38 | ⅜ |
| 50 | ½ |
| 63 | ⅝ |
| 75 | ¾ |
| 88 | ⅞ |
| 100 | 1 |
| 125 | 1¼ |

| HORIZONTAL LOAD RATING DESIGNATION | MAXIMUM ALLOWABLE LOAD (LBS) |
|---|---|
| A | 75 |
| B | 125 |
| C | 175 |
| D | 250 |
| E | 350 |
| F | 450 |
| G | 575 |
| H | 700 |
| J | 850 |
| K | 1000 |
| L | 1250 |
| M | 1600 |
| N | 2000 |
| P | 2500 |
| Q | 3500 |
| R | 5000 |
| S | 7500 |
| T | 11000 |

NOTES:
1 - "K" SERIES PAGES ARE COMPRISED OF SEISMIC BRACE BRACKET ANCHORAGE CAPACITIES FOR VARIOUS TYPES OF ANCHORAGE CONDITIONS. EACH BRACE BRACKET ATTACHMENT TYPE IS DESIGNATED BY A SET OF NUMBERS AND A LETTER. THE NUMBERS REPRESENTS THE BRACE BRACKET ATTACHMENT SIZE (FOUND IN THE BRACE ANCHOR SIZE TABLE) AND THE LETTER REPRESENTS THE MAXIMUM ALLOWABLE HORIZONTAL LOAD CAPACITY (FOUND IN THE HORIZONTAL LOAD RATING TABLE).

LEGEND (HANGER ATTACHMENT TYPE):
88F X — DENOTES BRACE BRACKET ANCHOR SIZE
DENOTES HORIZONTAL LOAD RATING

EXAMPLE: 63L REPRESENTS BRACE BRACKET ANCHOR SIZE OF ⅝"Ø WITH A MAXIMUM HORIZONTAL LOAD RATING OF 1,250 LBS.

2 - BRACE BRACKET ANCHORAGE ATTACHMENTS TO STRUCTURE MAY BE USED WITH ANY ONE OF "K" SERIES PAGES, PROVIDED BRACE BRACKET ATTACHMENT SIZE IS APPROPRIATE FOR THE APPLICATION AND THE ALLOWABLE HORIZONTAL LOAD CAPACITY IS MET.

3 - STRUCTURAL ENGINEER OF RECORD TO VERIFY ADEQUACY OF THE STRUCTURE FOR THE TABULATED LOADS.

4 - THREADED ROD ENGAGEMENT INTO MW-PAL-A-CS AND MW-PAL-A-MD SHALL BE MINIMUM OF ONE ROD DIAMETER. ROD INSTALLATION TO MW-PAL-A-CS AND MW-PAL-A-MD SHALL BE SNUG TIGHT.

5 - WHEN CONCRETE ANCHORS ARE INSTALLED AT THE BOTTOM OF THE CONCRETE FILLED METAL DECK, MINIMUM END DISTANCE AND SPACING REQUIREMENTS ARE ALONG FLUTE LENGTH ONLY.

6 - SEE X7.0 AND X7.1 FOR STRUT MEMBER DATA.

7 - ALL CONCRETE FLAT SLABS, WALLS, AND BEAMS MUST HAVE A MINIMUM OF #4 BAR OR GREATER BETWEEN THE ANCHOR AND THE EDGE OF CONCRETE.

8 - ON PAGES N1.XX AND N2.XX, THE DESIGN PROFESSIONAL SHALL USE THE ALLOWABLE LATERAL LOADS UNDER OVERSTRENGTH FACTOR $\Omega_o$ =2.0 UNLESS THE LATERAL SUPPORT COMPLIES WITH ONE OF THE CONDITIONS LISTED IN ACI 318-14 CHAPTER 17, SECTION 17.2.3.4.3.

9 - POST-INSTALLED ANCHORS MAY BE INSTALLED A MINIMUM OF 3 BOLT DIAMETERS AWAY FROM ABANDONED HOLES, AND A MINIMUM OF 1.5 BOLT DIAMETERS FROM DRYPACK MORTAR FILLED HOLES. DRYPACK MORTAR SHALL HAVE A COMPRESSIVE STRENGTH EQUAL TO OR GREATER THAN THE CONCRETE STRENGTH IN WHICH IT IS BEING USED.

10 - ALL-THREAD RODS MUST BE MADE OF A36, A307 (GRADE A OR B), OF F1554 GR36 STEEL. ROD COUPLERS MUST CONFORM TO ASTM A563 STEEL WITH A MINIMUM OF 58 KSI TENSILE STRENGTH. MINIMUM ENGAGEMENT IN ROD COUPLER MUST BE EQUAL TO THE ATR DIAMETER.

11 - PER CBC SECTION 1905A.1.9, CONCRETE COMPRESSIVE STRENGTH, f'c, SHALL BE LIMITED TO 8,000 PSI MAX, BUT MAY BE INCREASED SUBJECT TO OSHPD REVIEW AND APPROVAL ON A PROJECT BY PROJECT BASIS.

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PAGE N0.00



## SEISMIC BRACKET ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (1) CONCRETE SCREW ANCHOR AT LOWER FLUTE ONLY

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | MASON IND. N.Y. SAST CONCRETE SCREW ANCHOR (CC ESR-2713) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 38A TO 38B | 130 | 38A TO 38B | 130 | 30°- 45° | ⅜ | 1⅛ | 2½ | 6½ | 3½ | 50 |
| 38A TO 38A | 80 | 38A TO 38A | 80 | 46°- 60° | | | | | | |
| 50A TO 50B | 140 | 50A TO 50B | 140 | 30°- 45° | ½ | 1⅝ | 2½ | 6½ | 3½ | 65 |
| 50A TO 50A | 80 | 50A TO 50A | 80 | 46°- 60° | | | | | | |
| 50A TO 50D | 300 | 50A TO 50D | 300 | 30°- 45° | ½ | 2⅝ | 4 | 7⅛ | 3⁹⁄₁₆ | 65 |
| 50A TO 50C | 180 | 50A TO 50C | 180 | 46°- 60° | | | | | | |

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | HILTI KH-EZ CONCRETE SCREW ANCHOR (CC ESR-3027) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 38A TO 38E | 350 | 38A TO 38D | 330 | 30°- 45° | ⅜ | 2½ | 3½ | 7⅞ | 3½ | 40 |
| 38A TO 38C | 220 | 38A TO 38C | 220 | 46°- 60° | | | | | | |
| 50A TO 50D | 260 | 50A TO 50D | 250 | 30°- 45° | ½ | 2¼ | 3¼ | 6½ | 3½ | 45 |
| 50A TO 50B | 160 | 50A TO 50B | 160 | 46°- 60° | | | | | | |
| 50A TO 50E | 400 | 50A TO 50E | 370 | 30°- 45° | ½ | 3½ | 4½ | 9½ | 4¼ | 45 |
| 50A TO 50D | 250 | 50A TO 50D | 250 | 46°- 60° | | | | | | |
| 63A TO 63D | 330 | 63A TO 63D | 320 | 30°- 45° | ⅝ | 2½ | 3⅝ | 7½ | 3½ | 85 |
| 63A TO 63C | 210 | 63A TO 63C | 210 | 46°- 60° | | | | | | |
| 63A TO 63G | 590 | 63A TO 63F | 500 | 30°- 45° | ⅝ | 3½ | 5½ | 11⅝ | 5⁹⁄₁₆ | 85 |
| 63A TO 63E | 400 | 63A TO 63E | 400 | 46°- 60° | | | | | | |
| 75A TO 75E | 360 | 75A TO 75E | 360 | 30°- 45° | ¾ | 3 | 4¼ | 9 | 4½ | 115 |
| 75A TO 75C | 220 | 75A TO 75C | 220 | 46°- 60° | | | | | | |

SEE DETAIL N0.00 FOR SECTION NOTES
[1] OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE.

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PAGE N2.70.1



## SEISMIC BRACKET ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (2) CONCRETE SCREW ANCHORS AT LOWER FLUTE ONLY

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | MASON IND. N.Y. SAST CONCRETE SCREW ANCHOR (CC ESR-2713) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A TO 50D | 290 | 50A TO 50C | 180 | 30°- 45° | ½ | 1⅝ | 2½ | 6½ | 3½ | 65 |
| 50A TO 50C | 200 | 50A TO 50A | 120 | 46°- 60° | | | | | | |
| 50A TO 50G | 620 | 50A TO 50E | 370 | 30°- 45° | ½ | 2⅝ | 4 | 7⅛ | 3⁹⁄₁₆ | 65 |
| 50A TO 50E | 420 | 50A TO 50D | 250 | 46°- 60° | | | | | | |

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | HILTI KH-EZ CONCRETE SCREW ANCHOR (CC ESR-3027) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A TO 50F | 490 | 50A TO 50D | 290 | 30°- 45° | ½ | 2¼ | 3½ | 6½ | 3½ | 45 |
| 50A TO 50E | 350 | 50A TO 50C | 210 | 46°- 60° | | | | | | |
| 50A TO 50G | 620 | 50A TO 50E | 430 | 30°- 45° | ½ | 3¼ | 4⅝ | 9⅛ | 4⅝ | 45 |
| 50A TO 50F | 530 | 50A TO 50D | 320 | 46°- 60° | | | | | | |

SEE DETAIL N0.00 FOR SECTION NOTES
[1] OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE.

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PAGE N2.71.1



## SEISMIC BRACKET ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (2) CONCRETE SCREW ANCHORS AT LOWER FLUTE ONLY

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | MASON IND. N.Y. SAST CONCRETE SCREW ANCHOR (CC ESR-2713) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A TO 50F | 560 | 50A TO 50C | 300 | 30°- 45° | ½ | 1⅝ | 2½ | 6½ | 3½ | 65 |
| 50A TO 50D | 340 | 50A TO 50C | 200 | 46°- 60° | | | | | | |
| 50A TO 50G | 620 | 50A TO 50G | 620 | 30°- 45° | ½ | 2⅝ | 4 | 7⅛ | 3⁹⁄₁₆ | 65 |
| 50A TO 50F | 530 | 50A TO 50E | 430 | 46°- 60° | | | | | | |

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE. BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | HILTI KH-EZ CONCRETE SCREW ANCHOR (CC ESR-3027) SPECIAL INSPECTION REQ'D DIA. da INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A TO 50G | 620 | 50A TO 50F | 500 | 30°- 45° | ½ | 2¼ | 3½ | 6½ | 3½ | 45 |
| 50A TO 50F | 530 | 50A TO 50E | 360 | 46°- 60° | | | | | | |
| 50A TO 50G | 620 | 50A TO 50G | 620 | 30°- 45° | ½ | 3¼ | 4⅝ | 9⅛ | 4⅝ | 45 |
| 50A TO 50F | 530 | 50A TO 50F | 530 | 46°- 60° | | | | | | |

SEE DETAIL N0.00 FOR SECTION NOTES
[1] OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE.

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PAGE N2.71.3



## SEISMIC BRACKET ATTACHMENT TO CONCRETE FILLED METAL DECK WITH (4) CONCRETE SCREW ANCHORS

| BRACE BRACKET ATTACHMENT TYPE | ALLOWABLE LATERAL LOAD Fp LBS | $\Omega_o$ = 2.0 BRACE BRACKET ATTACHMENT TYPE | $\Omega_o$ = 2.0 ALLOWABLE LATERAL LOAD Fp LBS | MAX BRACE RANGE ± | HILTI KH-EZ CONCRETE SCREW ANCHOR (CC ESR-3027) SPECIAL INSPECTION REQ'D BOLT DIA. INCH | MIN. EFF. EMBED. hef INCH | MIN. HOLE DEPTH ho INCH | MIN. SPACING Smin INCH | MIN. END DIST. Cmin INCH | MAX TORQUE FT-LBS |
|---|---|---|---|---|---|---|---|---|---|---|
| 63A TO 63N | 2130 | 63A TO 63L | 1280 | 30°- 45° | ⅝ | 2¼ | 3⅝ | 7½ | 3½ | 85 |
| 63A TO 63L | 1560 | 63A TO 63J | 940 | 46°- 60° | | | | | | |
| 63A TO 63P | 3080 | 63A TO 63N | 2010 | 30°- 45° | ⅝ | | | | | |
| 63A TO 63N | 2080 | 63A TO 63M | 1610 | 46°- 60° | | | | | | |
| 75A TO 75P | 3350 | 75A TO 75N | 2010 | 30°- 45° | ¾ | | | | | |
| 75A TO 75N | 2020 | 75A TO 75M | 1610 | 46°- 60° | | 1½ | 3½ | 5½ | 11⅛ | 5⁹⁄₁₆ | 85 |
| 100A TO 100P | 3350 | 100A TO 100N | 2010 | 30°- 45° | 1 | | | | | |
| 100A TO 100N | 2020 | 100A TO 100M | 1610 | 46°- 60° | | | | | | |

SEE DETAIL N0.00 FOR SECTION NOTES
[1] OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE.
[2] SEE PAGE N2.73.1 FOR ADDITIONAL ALLOWABLE LOAD TABLES.

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PAGE N2.73.1



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DATE: 10/15/2025

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## KEYNOTES

## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

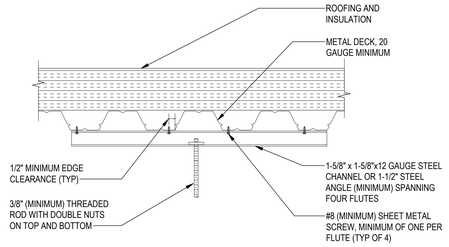
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FILE NO.: 19-H10 

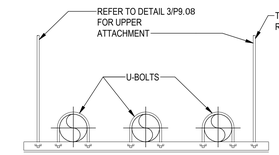
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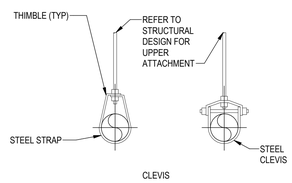

NOTE:
1. APPROPRIATE FOR DUCT, PIPING, AND EQUIPMENT UPPER SUPPORT ATTACHMENT TO A METAL DECK WITHOUT CONCRETE FILL.
2. MAXIMUM LOAD PER THREADED ROD SHALL NOT EXCEED 200 LBS (0.9 KN) WHEN ATTACHED TO BOTTOM OF DECK FLUTES.
3. REFER TO STRUCTURAL DESIGN FOR ATTACHMENT REQUIREMENTS AND ADDITIONAL SUPPORT OPTIONS.
4. FOR ALTERNATE HANGERS AND SUPPORT SYSTEMS REFER TO SMACNA MANUALS.

## 3 UPPER THREADED ROD TO METAL DECK

SCALE: NONE




TRAPEZE

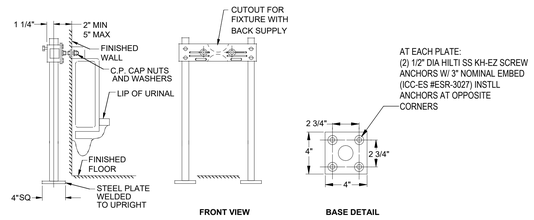



CLEVIS

NOTES:
1. PIPING SUPPORTS SHALL MEET ALL STATE AND LOCAL SEISMIC RESTRAINT REQUIREMENTS.
2. MAXIMUM ROD SPAN BETWEEN SUPPORTS IS 10'. CLOSER SPAN AS REQUIRED BY SPECIFICATIONS AND SMACNA.
3. WHERE SEISMIC RESTRAINTS ARE REQUIRED USE OPM DETAILS FOR DUCT SUPPORT. SEE SHEET P9.03 TO P9.13 FOR DETAIL.
4. REFER TO DETAIL 6/P9.02 FOR HANGER SPAN TABLE.

## 2 PIPE SUPPORTS

SCALE: NONE

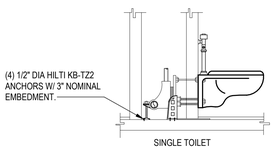



SIDE VIEW | FRONT VIEW | BASE DETAIL

NOTE: 40 LBS MAX

## 5 URINAL SUPPORT DETAIL

SCALE: 1/8" = 1'-0"

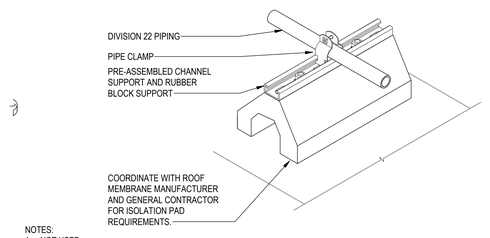



SINGLE TOILET

NOTES:
1. MAX LOAD 500 LB.
2. REFER TO SPECIFICATIONS FOR CARRIER INFORMATION.

## 4 PIPE CHASE WALL HUNG CLOSETS

SCALE: NONE




NOTES:
1. NOT USED.
2. REFER TO PLANS FOR SIZES AND CONTINUATION.
3. REFER TO DETAIL 9/P9.02 (OPM DETAILS S.1.2.1 AND S.1.4) FOR MAXIMUM SUPPORT SPACING .
4. DETAIL IS ONLY FOR Ip = 1.0 (NON-HAZARDOUS MATERIALS, Rp > OR = 4.5 (DUCTILE PIPING).
5. HEIGHT ABOVE ROOF SURFACE TO CENTER OF PIPE SHOULD NOT EXCEED 12" OR HALF THE LENGTH OF THE SUPPORTING BLOCK WIDTH, WHICHEVER IS SMALLER.

## 1 PIPE SUPPORT - ROOF

SCALE: NONE

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## KEYNOTES

## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**PLUMBING DETAILS**

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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL DRAWING. IF THIS SHEET IS SMALLER, PLEASE SCALE ACCORDINGLY

# TECHNOLOGY LEGEND

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT. REFER TO DETAILS AND NOTES FOR MOUNTING HEIGHTS.

## COMMUNICATIONS DEVICES

| SYMBOL | DESCRIPTION |
|---|---|
| X | COMMUNICATION OUTLET.<br>X INDICATES OUTLET TYPE<br>REFER TO COMMUNICATION SCHEUDLE ON T1.01 FOR QUANTITY OF CABLE/JACKS, UON. |
| AV | COMMUNICATION OUTLET FOR THEATER AV EQUIPMENT. SEE THEATER AV DRAWINGS FOR MORE INFORMATION<br>1 - CABLES, UON. |
| | COMMUNICATION OUTLET<br>2 - CABLES, UON. |
| P | COMMUNICATION OUTLET FOR VIDEO PROJECTOR - CEILING MOUNTED<br>2 - CABLES |
| | COMMUNICATION OUTLET IN FLOOR BOX<br>2 - CABLES |
| W | WIRELESS ACCESS POINT ANTENNA - CEILING MOUNTED<br>2 - CABLES |
| C C | OFCI WIRELESS SYNCHRONIZED CLOCK - WALL, CEILING<br>1 - CABLE |
| | **VIDEO SURVEILLANCE:** |
| | OFCI FIXED CAMERA - WALL/CEILING<br>1 - CABLE |
| P P | OFCI PAN, TILT AND ZOOM CAMERA - WALL/CEILING<br>1 - CABLE |

## SECURITY SYSTEM

| SYMBOL | DESCRIPTION |
|---|---|
| | **ACCESS CONTROL SYSTEM:** |
| ACP | COMMUNICATION OUTLET FOR ACCESS CONTROL PANEL(S)<br>1 - CABLE |
| PSP | POWER SUPPLY PANEL |
| CR | CARD READER |
| D | DOOR POSITION MONITOR ONLY WITH MAGNETIC SWITCH |
| S | STROBE / HORN |
| ER | EMERGENCY DOOR RELEASE BUTTON |
| | **INTRUSION DETECTION SYSTEM:** |
| DS | DURESS / ALARM STATION |

## AUDIOVISUAL SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| A1<br>A2<br>A3 | AUDIOVISUAL JUNCTION BOX, WALL-MOUNTED.<br>A1 - 72" AFF<br>A2 - 48" AFF<br>A3 - 18" AFF |
| X S # | SPEAKER - CEILING MOUNTED. X INDICATES ZONE. # INDICATES SPEAKER TYPE. REFERENCE AUDIOVISUAL EQUIPMENT SCHEDULE. |
| S X S | AUDIO SPEAKER - WALL, CEILING, X = WIRING ZONE |

## WIRING

| SYMBOL | DESCRIPTION |
|---|---|
| | NEW WORK |
| | WIRING CONCEALED IN FLOOR OR UNDER GRADE<br>OR ROUTED IN CEILING SPACE OF FLOOR BELOW. |
| (E) | EXISTING WORK TO REMAIN |
| (ER) | EXISTING RELOCATED |
| (D) | EXISTING WORK TO BE REMOVED |
| (F) | FUTURE WORK |
| | HOME RUN CONDUIT OR WIRING TO INDICATED DESTINATION |
| | CONDUIT RUN TURNED UP THROUGH FLOOR OR CEILING. CORE & FIREPROOF AS REQUIRED. |
| | CONDUIT STUBBED OUT AT LOCATION SHOWN.<br>PROVIDE INSULATED BUSHING & PULLROPE. |
| | TELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS. |
| | BASKET TYPE CABLE TRAY WITH 90 DEGREE ELBOW SHOWN |
| | LADDER TYPE CABLE TRAY WITH 90 DEGREE ELBOW SHOWN |
| J J J | JUNCTION BOXES, WALL, CEILING AND FLUSH FLOOR MOUNTED.<br>4" SQ. BOX MIN., LARGER IF REQUIRED |
| T | TELECOMMUNICATIONS J-BOX |
| T X | TELECOMMUNICATIONS J-BOX WITH FURNITURE FEED<br>X INDICATES QUANTITY OF CABLE |
| | PULL BOX, MIN. SIZE PER NEC., UON. |
| J | J-HOOK PATHWAY |

# ABBREVIATIONS

| | |
|---|---|
| (E) | EXISTING TO REMAIN |
| (F) | FUTURE |
| (R ) | EXISTING TO BE REMOVED |
| (RL) | EXISTING TO BE RELOCATED |
| AB | ABOVE COUNTER BACKSPLASH |
| AC | ALTERNATING CURRENT |
| A, AMP | AMPERES |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AHJ | AUTHORITY HAVING JURISDICTION |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE |
| AUX | AUXILIARY |
| AWG | AMERICAN WIRE GUAGE |
| BNC | VIDEO CONNECTOR |
| BG | BELOW GRADE |
| C | CONDUIT |
| CATV | COMMUNITY ACCESS TELEVISION |
| CLG | CEILING |
| CO | CONDUIT ONLY |
| CU | COPPER |
| DC | DIRECT CURRENT |
| DIA | DIAMETER |
| DIAG | DIAGONAL |
| DIV | DIVISION |
| DPDT | DOUBLE POLE DOUBLE THROW |
| DPST | DOUBLE POLE SINGLE THROW |
| DVI | DIGITAL VIDEO INTERFACE |
| DWG | DRAWING |
| EIA | ELECTRONICS INDUSTRY ALLIANCE |
| EMT | ELECTRICAL METALLIC TUBING |
| ENT | ELECTRICAL NONMETALLIC TUBING |
| EOL | END OF LINE |
| FA | FIRE ALARM |
| FACP | FIRE ALARM CONTROL PANEL |
| FBO | FURNISHED BY OTHERS |
| FC | FOOT CANDLES |
| FDU | FIBER DISTRIBUTION UNIT |
| FSD | FIRE SMOKE DAMPER |
| FTP | FOIL TWISTED PAIR |
| G, GND | GROUND |
| GRC | GALVANIZED RIGID STEEL CONDUIT |
| HDMI | HIGH DEFINITION MULTIMEDIA INTERFACE |
| HZ | HERTZ (CYCLES PER SECOND) |
| ID | INSIDE DIAMETER |
| IDF | INTERMEDIATE DISTRIBUTION FRAME |
| IG | ISOLATED GROUND |
| IMC | INTERMEDIATE METAL CONDUIT |
| IP | INTERNET PROTOCOL |
| IT | INFORMATION TECHNOLOGY |
| KCMIL | THOUSAND CIRCULAR MILS |
| KO | KNOCK OUT |
| LAN | LOCAL AREA NETWORKK |
| LC | LUCENT CONNECTOR (FIBER CONNECTOR) |
| LCD | LIQUID CRYSTAL DISPLAY |
| LED | LIGHT EMITTING DIODE |
| MAX | MAXIMUM |
| MDF | MAIN DISTRIBUTION FRAME |
| MDU | MEDIA DISTRIBUTION UNIT |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MTD | MOUNTED |
| MUTOA | MULTI-USER TELECOM. OUTLET ASSEMBLY |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEMA | NATIONAL ELECTRICAL MFGR'S ASSOC. |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OFCI | OWNER-FURNISHED CONTRACTOR-INSTALLED |
| OFNP | OPTICAL FIBER NONCONDUCTIVE PLENUM |
| OFNR | OPTICAL FIBER NONCONDUCTIVE RISER |
| OFOI | OWNER-FURNISHED OWNER-INSTALLED |
| OSP | OUTSIDE PLANT |
| PBX | PRIVATE BRANCH EXCHANGE |
| PNL | PANEL |
| POE | POWER OVER ETHERNET |
| PTZ | PAN TILT ZOOM |
| PVC | POLYVINYL CHLORIDE |
| QTY | QUANTITY |
| REQD | REQUIRED |
| RF | RADIO FREQUENCY |
| RFI | REQUEST FOR INFORMATION |
| RGB | RED GREEN BLUE |
| RNC | RIGID NON-METALLIC CONDUIT (PVC) |
| SATV | SATELLITE TELEVISION |
| SC | SUBSCRIBER CONNECTOR (FIBER CONNECTOR) |
| SciTP | SCREENED TWISTED PAIR |
| SPDT | SINGLE POLE DOUBLE THROW |
| SPST | SINGLE POLE SINGLE THROW |
| ST | STRAIGHT TIP (FIBER CONNECTOR) |
| STP | SHEILDED TWISTED PAIR |
| TBB | TELECOMMUNICATIONS BONDING BACKBONE |
| TBD | TO BE DETERMINED |
| TGB | TELECOMMUNICATIONS GROUNDING BUSBAR |
| TIA | TELECOMMUNICATIONS INDUSTRY ASSOCIATION |
| TMGB | TELECOMMUNICATIONS MAIN GROUNDING BUSBAR |
| TYP | TYPICAL |
| UF | UNDERFLOOR |
| UG | UNDERGROUND |
| UL | UNDERWRITER'S LAB |
| UON | UNLESS OTHERWISE NOTED |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| UTP | UNSHEILDED TWISTED PAIR |
| VGA | VIDEO GRAPHICS ARRAY |
| V | VOLTS |
| W | WATTS |
| W/ | WITH |
| W/O | WITHOUT |
| WAN | WIDE AREA NETWORK |
| WAO | WORK AREA OUTLET |
| WAP | WIRELESS ACCESS POINT |
| WP | WEATHERPROOF |
| XFR | TRANSFORMER |
| XLR | MICROPHONE CONNECTOR |
| ", IN | INCHES |
| ', FT | FEET |
| > | GREATER THAN |
| < | LESS THAN |
| ≥ | GREATER THAN OR EQUAL TO |

# GENERAL NOTES

**INFORMATION AND COMMUNICATION TECHNOLOGY SYSTEM GENERAL NOTES**

1. THE FOLLOWING NOTES APPLY TO THE "T" SERIES DRAWINGS. ADDITIONAL NOTES MAY BE INDICATED ON INDIVIDUAL SHEETS.
2. REFER TO SPECIFATIONS FOR ADDITIONAL REQUIRMENTS.
3. BECOME AWARE OF CONDITIONS RELATED TO THE SITE AND EXISTING BUILDING CONDITIONS THAT MAY AFFECT THE COST OR SCHEDULE OF CONSTRUCTION ACTIVITIES PRIOR TO SUBMITTING A BID. VERIFY DIMENSIONS AND CONDITIONS.
4. COMPLY WITH CURRENT STANDARDS, CODES AND INDUSTRY BEST PRACTICES AS REQUIRED BY TIA, BICSI, NFPA, NEC, NESC, NEMA, ANSI, IBC, UL, IEEE, FEDERAL, STATE, AND LOCAL ORDINANCES WHERE APPLICABLE.
5. OBTAIN AND PAY FOR REQUIRED FEES, PERMITS AND INSPECTIONS.
6. RESTORE DAMAGE RESULTING FROM WORK. LEAVE PREMISES IN CLEAN CONDITION WHEN FINISHED WITH WORK.
7. MAINTAIN A COMPLETE SET OF DIVISION 27 & 28 SPECIFICATIONS, DRAWINGS, SCHEDULES, AND REQUESTS FOR INFORMATION ON SITE. REFER TO SPECIFICATIONS 27 05 00 AND 28 05 00 FOR ADDITIONAL REQUIREMENTS.
8. SECURE THE REVIEWED SHOP DRAWINGS AND PRODUCT SUBMITTALS PRIOR TO THE COMMENCEMENT OF WORK. MAINTAIN A COMPLETE SET ON SITE. REFER TO SPECIFICATIONS 27 05 00 AND 28 05 00 FOR ADDITIONAL REQUIREMENTS.
9. VALIDATE DETAILS AND DIMENSIONS ASSOCIATED WITH THE WORK ON THESE DRAWINGS PRIOR TO THE COMMENCEMENT OF WORK THAT RELIES ON THIS INFORMATION.
10. CONDUITS AND BACK BOX LAYOUT ARE SHOWN AS DIAGRAMMATIC INDICATING GENERAL ARRANGEMENT. INSTALL CONDUITS TO AVOID INTERFERENCE WITH BUILDING STRUCTURAL MEMBERS, EQUIPMENT AND BUILDING OPENINGS. REFER TO SPECIFICATIONS 27 05 28 AND 28 05 28 FOR ADDITIONAL REQUIREMENTS.
11. LOCATIONS OF DEVICE BACK BOXES ON THE ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER REFER TO ARCHITECTURAL FOR ELEVATIONS OF DEVICES IN FINISHED AREAS. LOCATE DEVICES SO THAT THEY DO NOT CONFLICT WITH GENERAL CONSTRUCTION AND THE WORK OF OTHER DIVISIONS.
12. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF CEILING MOUNTED ITEMS. INSTALL CEILING MOUNTED ITEMS IN THE CENTER OF CEILING TILES OR WHERE INDICATED ON THE DRAWINGS. WHERE LOCATION OF ITEMS ARE NOT INDICATED ON THE DRAWINGS, OBTAIN DIRECTION FROM ARCHITECT PRIOR TO ROUGH IN AND INSTALLATION.
13. PROVIDE PULL BOXES AFTER 100-FEET OF CONDUIT RUN OR AFTER 180 DEGREES OF CONDUIT BENDS. LOCATE PULL BOXES TO PROVIDE CLEAR ACCESS IN FRONT OF OR BELOW FOR THE INSTALLATION OF CABLE. REFER TO PULL BOX SIZING SCHEDULES. REFER TO SPECIFICATIONS 27 05 28 AND 28 05 28 FOR ADDITIONAL REQUIREMENTS.
14. COORDINATE REQUIRMENTS FORE ACCESS PANEL WITH ARCHITECT WHEN PULL BOXES ARE IN WALL OR ABOVE INACCESSIBLE CEILINGS.
15. CONDUITS AND SLEEVES THROUGH FIRE/SMOKE RATED WALLS/FLOOR ARE SHOWN ON THESE DRAWINGS TO SUPPORT THE INSTALLATION OF CABLE. PROVIDE ADDITIONAL CONDUITS OR SLEEVES THROUGH FIRE/SMOKE RATED WALLS/FLOORS AS REQUIRED TO SUPPORT THE INSTALLATION OF CABLES THROUGH THE WALL OR FLOOR. REFER TO ARCHITECTURAL DRAWINGS FOR PARTITION TYPES AND WALL CONSTRUCTION DETAILS.
16. WHERE CONDUITS, CABLE TRAY FOR COMMUNICATIONS CABLE PASS THROUGH FIRE RATED WALLS, PROVIDE AND AFFIX ADHESIVE WALL LABEL IMMEDIATELY ADJACENT TO THE CABLE PATHWAY/DEVICE TO COMMUNICATE TO FUTURE CABLE TECHNICIANS, AUTHORITIES HAVING JURISDICTION AND OTHERS THE MANUFACTURER OF THE DEVICE AND THE CORRESPONDING UL SYSTEM NUMBER INSTALLED. REFER TO SPECIFICATION 27 05 28 FOR ADDITIONAL REQUIREMENTS.
17. CONDUITS AND SLEEVES THROUGH FULL HEIGHT WALLS ARE SHOWN ON THESE DRAWINGS TO SUPPORT THE INSTALLATION OF CABLE. PROVIDE ADDITIONAL (2-INCH MINIMAL) CONDUIT SLEEVES THROUGH FULL HEIGHT WALLS AS REQUIRED TO SUPPORT THE INSTALLATION OF CABLES THROUGH FULL HEIGHT WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR PARTITION TYPES AND WALL HEIGHTS.
18. CONDUITS ABOVE INACCESSIBLE CEILINGS ARE SHOWN ON THESE DRAWINGS TO SUPPORT THE INSTALLATION OF CABLE. PROVIDE ADDITIONAL (2-INCH MINIMAL) CONDUIT ABOVE INACCESSIBLE CEILINGS AS REQUIRED TO SUPPORT THE INSTALLATION OF CABLES ABOVE INACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
19. LOCATE CABLE TRAY TO PROVIDE CLEAR ACCESS TO AREAS IN FRONT AND ABOVE FOR THE INSTALLATION OF CABLE. REFER TO SPECIFICATION 27 05 30 FOR ADDITIONAL REQUIREMENTS.
20. MAINTAIN PROPER SEPARATION BETWEEN CABLES AND CABLE TRAY AND SOURCES OF ELECTROMAGNETIC INTERFERENCE. REFER TO SPECIFICATIONS 27 05 30, 27 13 00 AND 27 15 00 FOR ADDITIONAL REQUIREMENTS.
21. VALIDATE LOCATION OF CEILING PLENUM AREAS. INSTALL PLENUM RATED CABLES IN PLENUM AREAS. PROVIDE BACK BOXES FOR CEILING SPEAKERS IN PLENUM AREAS. PROVIDE ENCLOSURES FOR NON-PLENUM RATED DEVICES IN PLENUM AREAS. REFER TO MECHANICAL DRAWINGS FOR PLENUM CEILING LOCATIONS.
22. EXTEND CONDUIT STUB UPS SERVING DIVISION 27 & 28 BACK BOXES IN AREAS WITHOUT ACCESSIBLE CEILING TO AREAS WITH ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
23. VALIDATE LOCATION OF CONDUITS INSTALLED IN 'WET' AREAS, INCLUDING AREAS IN OR UNDER SLAB. INSTALL OUTDOOR RATED CABLES IN CONDUITS INSTALLED IN WET AREAS. INTERCONNECT OUTDOOR RATED CABLE TO INDOOR RATED CABLE WITHIN 50-FEET OF EXPOSURE INSIDE THE BUILDING. REFER TO SPECIFICATION 27 13 00 AND 27 15 00 FOR ADDITIONAL REQUIREMENTS.
24. PROVIDE SUPPORTS AND SEISMIC RESTRAINTS FOR DEVICES, COMPONENTS, CABLE TRAY, CONDUIT, PULL BOXES, ENCLOSURES AND ACCESSORIES. REFER TO SPECIFICATIONS 27 05 28 AND 28 05 28 FOR ADDITIONAL REQUIREMENTS.
25. PROVIDE IDENTIFICATION LABELS ON FACEPLATES, TERMINATION BLOCKS, PATCH PANELS, ENCLOSURES AND ON EACH END OF EACH CABLE. REFER TO DIVISION 27 AND 28 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
26. PROVIDE BONDING CONNECTIONS ON CABLE TRAYS, CONDUITS AND SLEEVES SERVING AS HORIZONTAL AND BACKBONE PATHWAYS FOR CABLE. REFER TO SPECIFICATION 27 05 26 FOR ADDITIONAL REQUIREMENTS
27. PROVIDE INDIVIDUAL BONDING CONNECTIONS ON EQUIPMENT RACKS AND CABINETS. REFER TO SPECIFICATION 27 05 26 FOR ADDITIONAL REQUIREMENTS. REFER TO SPECIFICATION 27 05 26 FOR ADDITIONAL REQUIREMENTS
28. PROVIDE COMMUNICATION BACKBONE BONDING CONDUCTORS THAT ARE CONTINUOUS IN LENGTH FROM THE PRIMARY BONDING BUSBAR TO THE LAST SECONDARY BONDING BUS. DO NOT DAISY CHAIN THE BONDING CONDUCTORS BETWEEN BUSBARS. REFER TO SPECIFICATION 27 05 26 FOR ADDITIONAL REQUIREMENTS.
29. CONFIRM THE FRAMED DIMENSIONS OF COMMUNICATION ROOM WITH THE ARCHITECTURAL DRAWINGS. REPORT DISCREPANCIES WITH THE ARCHITECT. REFER TO SPECIFCATION 27 10 00 FOR ADDITIONAL REQUIRMENTS.
30. COORDINATE THE LAYOUT OF EQUIPMENT, PANELS, CONDUIT, EQUIPMENT RACKS & CABINETS, ENCLOSURES POWER PANELS, COOLING UNITS, ETC. IN THE COMMUNICATION ROOMS SO THAT THEY FITS INTO THE SPACE ALLOTTED. REFER TO SPECIFICATION 27 11 00 FOR ADDITIONAL REQUIREMENTS. COORDINATE THE ROUTING OF SURFACE MOUNTED DIVISION 26, 27 & 28 CONDUITS SO THAT THEY DO NOT INTERFERE WITH MOUNTING OF EQUIPMENT ON THE WALL DURING INITIAL FUTURE INSTALLATION.
31. REFER TO BACK BOX AND CONDUIT SIZING SCHEDULE. REFER TO THE DRAWINGS AND SPECIFICATION 27 05 28 FOR ADDITIONAL REQUIREMENTS.
32. COORDINATE THE CONDUIT AND BACK BOX ROUGH-N REQUIREMENTS FOR DOORS FITTED WITH ACCESS CONTROL DEVICES WITH THE DIVISION 08 DOOR HARDWARE SCHEDULES AND THE ARCHITECTURAL DOOR DRAWINGS AND SCHEDULES. REFER TO SPECIFICATIONS 28 05 00 AND 28 05 30 FOR ADDITIONAL REQUIREMENTS.
33. COORDINATE CONDUIT AND BACK BOXES ROUGH-IN REQUIREMENTS FOR DEVICES LOCATED ON THE EXTERIOR OF THE BUILDING WITH THE ARCHITECT. PROVIDE WEATHERPROOF SEALS, GASKETS, FACEPLATES AND COVERS ON EXTERIOR DEVICES AND COMPONENTS.
34. COORDINATE THE METHOD OF INSTALLING AND SEALING CONDUIT AND THE PENETRATION OF EXTERIOR WALLS, CEILINGS AND ROOFS WITH THE ARCHITECT.
34. COORDINATE THE MEANS AND METHODS OF ANCHORING EQUIPMENT RACKS, EQUIPMENT CABINETS, ENCLSOURES TO FLOORS AND WALLS WITH THE ARCHITECT. REFER TO SPECIFICATION 27 11 00 FOR ADDITIONAL REQUIRMENTS.
35. COORDINATE THE CONDUIT AND BACK BOX ROUGH-N REQUIREMENTS FOR DOORS FITTED WITH ACCESS CONTROL DEVICES WITH THE DIVISION 08 DOOR HARDWARE SCHEDULES AND THE ARCHITECTURAL DOOR DRAWINGS AND SCHEDULES. REFER TO SPECIFICATIONS 28 05 00 AND 28 05 30 FOR ADDITIONAL REQUIREMENTS.
36. COORDINATE CONDUIT AND BACK BOXES ROUGH-IN REQUIREMENTS FOR DEVICES LOCATED ON THE EXTERIOR OF THE BUILDING WITH THE ARCHITECT. PROVIDE WEATHERPROOF SEALS, GASKETS, FACEPLATES AND COVERS ON EXTERIOR DEVICES AND COMPONENTS.
37. COORDINATE THE METHOD OF INSTALLING AND SEALING CONDUIT AND THE PENETRATION OF EXTERIOR WALLS, CEILINGS AND ROOFS WITH THE ARCHITECT.
38. COORDINATE THE MEANS AND METHODS OF ANCHORING EQUIPMENT RACKS, EQUIPMENT CABINETS, ENCLSOURES TO FLOORS AND WALLS WITH THE ARCHITECT. REFER TO SPECIFICATION 27 11 00 FOR ADDITIONAL REQUIRMENTS.
39. PROVIDE ADDITIONAL BACKING IN WORKSTATION OR DEVICE AREAS FOR WALL MOUNTED EQUIPMENT/DEVICE LOADS TO SUPPORT A MINIMUM OF 3 TIMES THE WEIGHT OF THE EQUIPMENT/DEVICE TO BE MOUNTED. COORDINATE LOCATION OF AND THE INSTALLATION OF BACKING METHODS AND MATERIAL WITH THE ARCHITECT. COORDINATE ATTACHMENT OF DEVICES TO WORKSTATION/WALL BACKING MATERIALS WITH THE ARCHITECT. REFER TO THE COORDINATED DIVISION 27 AND DIV 28 SPECIFICATION SUBMITTAL PRODUCT DATA FOR EQUIPMENT/DEVICE WEIGHTS.
40. PROVIDE SLAB PENETRATIONS IN ACCORDANCE WITH STRUCTURAL DRAWINGS AND THE FOLLOWING:
    A. X-RAY OR USE OTHER NON-DESTRUCTIVE TESTING METHODS TO LOCATE REINFORCING AND POST-TENSIONING TENDONS AT PROPOSED OPENINGS IN SLAB PRIOR TO CORING.
    B. DO NOT CUT EXISTING MILD REINFORCING AND POST TENSIONING TENDONS. COORDINATE LOCATIONS OF PROPOSED PENETRATION WITH STRUCTURAL ENGINEER.
41. DO NOT CUT EXISTING MILD REINFORCING AND POST TENSIONING TENDONS. COORDINATE LOCATIONS OF PROPOSED PENETRATION WITH STRUCTURAL ENGINEER.
42. PROVIDE NETWORK/TELEPHONY CABLES FROM THE RESPECTIVE COMMUNICATION ROOM TO THE FOLLOWING LOCATIONS UNLESS OTHERWISE NOTED:
    A. ELEVATOR CONTROL PANELS/ENCLOSURES, THREE CABLES FOR EACH ELEVATOR CAB.
    B. WALL PHONE NEAR THE DOOR IN THE STAIRWELL IN HIGH-RISE DESIGINATED BUILDINGS, EVERY 5TH FLOOR.
    C. BUILDING MANAGEMENT SYSTEM PANELS/ENCLOSURES.
    D. ENERGY MANAGEMENT SYSTEM PANELS/ENCLOSURES.
    E. LIGHTING CONTROL PANELS/ENCLOSURES.
    F. FIRE ALARM CONTROL SYSTEM PANELS/ENCLOSURES.
    G. ACCESS CONTROL SYSTEM PANELS/ENCLOSURES.
    H. PHOTOVOLTAIC INVERTERS/ENCLOSURES.
    I. IRRIGATION CONTROLLERS/ENCLOSURES.
43. COORDINATE WORK WITH THE WORK OF THE INSTALLERS OF THE FOLLOWING SYSTEM:
    A. AUDIOVISUAL SYSTEMS.
    B. ELECTRONIC SECURITY SYSTEMS.
    C. DOOR FRAMES AND DOORS.
    D. FIRE ALARM SYSTEMS.
    E. FURNITURE SYSTEMS.
    F. RADIO FREQUENCY COMMUNICATION SYSTEMS.

# TECHNOLOGY DRAWING LIST

| SHEET NUMBER | SHEET NAME | SHEET ISSUE, 09-22-2023 |
|---|---|---|
| T0.00 | TECHNOLOGY LEGEND AND ABBREVIATIONS | |
| T0.01 | TECHNOLOGY BASIS OF DESIGN AND RESPONSIBILITY MATRIX | |
| T1.01 | TECHNOLOGY SCHEDULES | |
| T1.11 | TECHNOLOGY SITE PLAN | |
| T2.01 | LEVEL 1 - OVERALL TECHNOLOGY PLAN | |
| T2.01A | LEVEL 1 - TECHNOLOGY PLAN - SEGMENT A | |
| T2.01B | LEVEL 1 - TECHNOLOGY PLAN - SEGMENT B | |
| T2.02 | LEVEL 2 - TECHNOLOGY PLAN - CATWALK | |
| T4.01 | TECHNOLOGY ENLARGED ROOM PLAN | |
| T4.02 | TECHNOLOGY ENLARGED ROOM PLAN | |
| T4.03 | AV ENLARGED ROOM PLAN | |
| T4.04 | AV ENLARGED ROOM PLAN | |
| T5.01 | COMMUNICATIONS BACKBONE CABLING DIAGRAM | |
| T6.01 | TECHNOLOGY DETAILS | |
| T6.02 | TECHNOLOGY DETAILS | |
| T6.03 | TECHNOLOGY DETAILS | |
| T6.04 | WIRELESS ACCESS POINT DETAILS | |
| T6.05 | CAMERA DETAILS | |
| T6.06 | ACCESS CONTROL ROUGH IN DETAILS | |

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
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213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

LICENSED PROFESSIONAL ENGINEER
ROHIT TANEJA
E 22131
ELECTRICAL
STATE OF CALIFORNIA

GLUMAC
A TETRA TECH COMPANY
engineers for a sustainable future ™
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Project Manager: RM
Job. No.: 150-23US001121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY LEGEND AND ABBREVIATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# T0.00

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY

# TECHNOLOGY BASIS OF DESIGN

**A. GENERAL:** THIS SECTION OF THE REPORT IS INTENDED TO DEFINE THE STANDARDS, CRITERIA AND ASSUMPTIONS USED FOR THE DESIGN, DOCUMENTATION AND SPECIFICATION OF AN INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SYSTEMS INFRASTRUCTURE.

**B.** THE DESIGN WILL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES, INCLUDING THE LATEST ADOPTED VERSION OF THE FOLLOWING:

1. NFPA 70 NATIONAL ELECTRICAL CODE.
2. CALIFORNIA BUILDING CODE.
3. CALIFORNIA FIRE CODE.
4. NFPA 72 NATIONAL FIRE ALARM CODE.
5. NFPA 101 LIFE SAFETY CODE.
6. UNDERWRITER'S LABORATORY REQUIREMENTS.
7. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
8. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
9. AMERICAN NATIONAL STANDARDS INSTITUTE / TELECOMMUNICATION INDUSTRY ASSOCIATION (ANSI/TIA):
   a. TIA- 568 - COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD.
   b. TIA- 569 - TELECOMMUNICATIONS PATHWAYS AND SPACES.
   c. TIA- 606 - ADMINISTRATIVE STANDARD FOR COMMERCIAL TELECOMMUNICATIONS INFRASTRUCTURE.
   d. TIA- 607 – GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES.
   e. BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL (BICSI).

**C.** EXISTING TELECOMMUNICATIONS SERVICE ENTRANCE

1. THE CAMPUS CURRENTLY HAS AN EXISTING TELECOMMUNICATION SERVICE. THE EXISTING SERVICE CURRENTLY FEEDS THE MDF ROOM LOCATED IN THE MEDIA CENTER. NO MODIFICATIONS TO THE EXISTING SERVICE ARE PLANNED AS PART OF THE SCOPE OF THIS PROJECT.

**D.** EXISTING MAIN DISTRIBUTION FRAME (MDF)

1. THE CAMPUS CURRENTLY HAS A MAIN COMMUNICATION ROOM KNOWN AS THE MAIN DISTRIBUTION FRAME (MDF) LOCATED IN THE NORTHWEST CORNER OF THE MEDIA CENTER BUILDING LOCATED IN THE CENTER OF CAMPUS. THE EXISTING MDF WILL BE UTILIZED TO CONNECT THE NEW ADMINISTRATION / THEATER BUILDING UTILIZING STAR TOPOLOGY.
2. RE-USE OF THE EXISTING FIBER ENCLOSURE'S LOCATED IN THE MDF IS TO BE COORDINATED WITH THE ARROYO IT TEAM.

**E.** OUTSIDE PLANT CABLING AND PATHWAY DEMOLITION

1. CURRENTLY AN EXTERIOR ENCLOSURE LOCATED TO THE SOUTH OF THE ADMINISTRATION BUILDING IS UTILIZED AS THE INTERMEDIATE DISTRIBUTION FRAME (IDF), WHICH CONTAINS THE COMMUNICATION AND NETWORK SWITCHES AND EQUIPMENT FOR THE ADMINISTRATION BUILDING. ALL SWITCHES AND IT EQUIPMENT IS TO BE SALVAGED BY ARROYO'S IT TEAM AND THE IDF OUTDOOR ENCLOSURE IS SCHEDULED TO BE DEMOLISHED PRIOR TO THE COMMENCEMENT OF THIS PROJECT.
2. ALL COMMUNICATION CABLES INSIDE THE ADMINISTRATION BUILDING ARE SCHEDULED TO BE DEMOLISHED BACK TO SOURCE PRIOR TO THE COMMENCEMENT OF THIS PROJECT.
3. CURRENTLY AN EXTERIOR ENCLOSURE LOCATED NEAR THE CENTER BEND OF THE SPEECH ARTS BUILDING ON THE NORTHEAST SIDE IS UTILIZED AS THE INTERMEDIATE DISTRIBUTION FRAME (IDF), WHICH CONTAINS THE TELECOMMUNICATION SWITCHES AND EQUIPMENT FOR THE SPEECH ARTS BUILDING. ALL SWITCHES AND IT EQUIPMENT IS TO BE SALVAGED BY ARROYO'S IT TEAM AND THE IDF OUTDOOR ENCLOSURE IS SCHEDULED TO BE DEMOLISHED PRIOR TO THE COMMENCEMENT OF THIS PROJECT.
4. ALL COMMUNICATION CABLES AND ASSOCIATED INFRASTRUCTURE INSIDE THE SPEECH ARTS BUILDING ARE SCHEDULED TO BE DEMOLISHED BACK TO SOURCE PRIOR TO THE COMMENCEMENT OF THIS PROJECT.

**F.** OUTSIDE PLANT CABLING AND PATHWAY DISTRIBUTION

1. AN EXISTING COMMUNICATION VAULT LOCATED ON THE CAMPUS IS PLANNED TO BE RE-USED TO ROUTE CABLES FROM THE NEW THEATER BUILDING'S IDF ROOM TO THE EXISTING MDF ROOM.
2. THREE COMMUNICATION VAULTS CURRENTLY EXIST IN THE CENTER PATHWAY LOCATED EAST OF THE ADMINISTRATION BUILDING AND SPEECH ARTS BUILDING. A NEW SET OF (4) 4" UNDERGROUND CONDUITS WILL BE ROUTED FROM THE NEW THEATER BUILDING'S IDF TO THE NEAREST EXISTING COMMUNICATION VAULT.
3. 12 STRANDS OF SINGLE MODE 9 MICRON/125 OS2 OPTICAL FIBER WILL BE ROUTED FROM THE NEW IDF ROOM TO THE EXISTING MDF ROOM LOCATED IN THE EXISTING MEDIA CENTER BUILDING. BOTH ENDS WILL BE TERMINATED USING LC CONNECTORS.
4. THE ARROYO IT TEAM VERIFIED THERE IS SUFFICIENT SPACE AVAILABLE TO RE-USE THE EXISTING CONDUITS AND VAULTS TO ROUTE THE NEW CABLE FORM THE MDF TO THE NEW THEATER BUILDING IDF.
5. AT A MINIMUM, A 25-PAIR CATEGORY 3 UTP CABLE SHALL BE PROVIDED BETWEEN THE MDF AND THE NEW THEATER BUILDING'S IDF TERMINATED ONTO 8-PIN MODULAR PATCH PANELS TERMINATED 1-PAIR PER PORT.

**G.** COMMUNICATION ROOMS

1. A MINIMUM OF TWO COMMUNICATION (IDF) ROOMS SHALL BE PROVIDED. ROOMS SHALL SUPPORT THE INITIAL AND LONG-TERM INSTALLATION OF:
   a. EQUIPMENT RACKS AND CABINETS FOR CABLE DISTRIBUTION.
   b. COMMUNICATION BACKBONE AND HORIZONTAL CABLE TERMINATION DEVICES.
   c. DISTRICT PROVIDED NETWORK SWITCHES.
   d. ELECTRONIC SECURITY SYSTEMS PANELS AND ENCLOSURES TO SUPPORT CREDENTIALED ACCESS CONTROL AND INTRUSION DETECTION SYSTEM.
   e. EQUIPMENT CABINET/RACK LEVEL UPS UNITS.

**H.** COMMUNICATION ROOM FIT OUT

1. A. ROOMS SHALL BE LOCATED AWAY FROM POTENTIAL SOURCES OF ELECTRO-MECHANICAL INTERFERENCE (EMI) AND SHALL BE ARRANGED SO THAT THEY ARE NOT SUSCEPTIBLE TO FLOODING FROM SOURCES INSIDE OR OUTSIDE THE BUILDING. WET PIPES THAT ARE NOT REQUIRED TO SUPPORT THE SYSTEMS LOCATED WITHIN THE ROOM SHALL BE ROUTED AROUND THE ROOMS
2. A SUSPENDED CEILING IS NOT REQUIRED AND SHALL NOT BE PROVIDED WITH THE ROOMS.
3. WALLS SHALL BE PROVIDED WITH 3/4-INCH FIRE RATED A/C PLYWOOD ON DESIGNATED WALLS INSTALLED 6-INCHES ABOVE FINISHED FLOOR (AFF). FINISHES IN THE ROOM SHALL BE WHITE TO ENHANCE LIGHTING, WITH FIRE RATING STAMP EXPOSED IN EACH SHEET. FINISHES SHALL BE APPLIED BEFORE ROOM FIT OUT.
4. CONCRETE FLOORS AND WALLS SHALL BE SEALED TO ELIMINATE DUST. FLOORS SHALL BE COVERED WITH ANTI-STATIC VINYL TILES.
5. LOCKABLE DOORS OF AT LEAST 36 INCHES WIDE BY 90 INCHES HIGH SHALL BE PROVIDED. CARD READERS SHALL BE PROVIDED ON THE CORRIDOR SIDE TO CONTROL AND RECORD ACCESS INTO THE ROOMS.
6. ENVIRONMENTAL CONDITIONED SHALL BE PROVIDED ON A 24 HOUR A DAY, 7 DAY A WEEK BASIS. ENVIRONMENTAL LIMITS FOR THE ROOMS SHALL BE 64 DEGREES TO 81 DEGREES F WITH A MAXIMUM 70% RELATIVE HUMIDITY, NON-CONDENSING. POSITIVE PRESSURE SHALL BE MAINTAINED WITHIN THE ROOM, WITH A MINIMUM OF ONE AIR CHANGE PER HOUR. SYSTEM AIR RETURNS SHALL BE FILTERED. SYSTEM SENSORS AND CONTROLS SHALL BE LOCATED WITHIN EACH ROOM WALL MOUNTED AT 60 INCHES AFF.
7. LIGHTING LEVELS SHALL BE A MINIMUM 50 FOOT-CANDLES MAINTAINED AT 36 INCHES AFF.
8. A UPS SHALL BE OWNER PROVIDED CONTRACTOR INSTALLED AND SHALL PROVIDE DISTRIBUTED POWER FOR THE RACK MOUNTED EQUIPMENT.
9. CIRCUITS SHALL BE BROUGHT TO THE EQUIPMENT RACKS AND CABINETS OVERHEAD STUBBING THE BRANCH CONDUITS DOWN AND ATTACHING THEM TO THE CABLE TRAY INSTALLED ABOVE THE EQUIPMENT RACKS AND CABINETS WITH THE RECEPTACLE FACING TO THE REAR OF THE RACK OR CABINET. ICT SYSTEM ENCLOSURES MOUNTED ON THE WALLS SHALL BE PROVIDED WITH DEDICATED CIRCUITS. A DEDICATED POWER PANEL SHALL BE PROVIDED TO SUPPORT THE ICT SYSTEM LOADS IN THE ROOMS.
10. IN ADDITION TO OUTLETS DEDICATED TO SYSTEM EQUIPMENT, ELECTRICAL CONVENIENCE OUTLETS (120V, 20A, DUPLEX, U-GROUND) SHALL BE PROVIDED ON EACH WALL OF THE ROOMS AT 18INCES ABOVE FINISHED FLOOR. ALL BRANCH CIRCUITING SHALL INCLUDE A GROUND WIRE FROM THE DISTRIBUTION PANEL'S GROUND BUSBAR TO ALL ELECTRICAL OUTLETS IN THE ROOM. THE OUTLETS SHALL BE USED FOR TESTING EQUIPMENT AND POWER TOOLS ONLY, AND NOT FOR NETWORK/SYSTEM EQUIPMENT.
11. LIGHTING LUMINARIES, MOTORS, AIR HANDLING UNITS, ETC. SHALL NOT BE POWERED FROM THE SAME ELECTRICAL DISTRIBUTION PANEL AS THE SYSTEM EQUIPMENT IN THE ROOMS. ELECTRICAL TRANSFORMERS SHALL NOT BE LOCATED WITHIN THE ROOMS.
12. A SOLID COPPER GROUND BAR SHALL BE PROVIDED IN EACH ROOM, FOR SIGNAL GROUND CONNECTIONS. THE GROUND BUSBARS SHALL BE BONDED TO THE APPROPRIATE GROUND CONDUCTOR, AS DESCRIBED HEREIN.
13. A VIDEO SURVEILLANCE CAMERA SHALL BE PROVIDED IN EACH ROOM.

**L.** COMMUNICATION CABLE PATHWAY SYSTEM

1. CABLE PATHWAYS SHALL BE DESIGNED TO PROVIDE THE CAPACITY AND CAPABILITY TO INSTALL HIGH PERFORMANCE UNSHIELDED TWISTED PAIR AND OPTICAL FIBER CABLES TO SUPPORT THE INITIAL AND SUBSEQUENT REQUIREMENTS OF THE BUILDING.
2. CABLE PATHWAY ROUTES SHALL BE COORDINATED WITH OTHER BUILDING SERVICES (ELECTRICAL, MECHANICAL, PLUMBING, ETC.) FOR PROPER CLEARANCES AND ACCESSIBILITY.
3. THE CABLE DISTRIBUTION PATHWAYS SHALL BE DESIGNED TO ACCOMMODATE CABLE CHANGES AS WELL AS MINIMIZE BUILDING OCCUPANT DISRUPTION WHEN SUCH PATHWAYS AND SPACES ARE ACCESSED.
4. THE PATHWAY SYSTEM SHALL BE COORDINATED WITH THE ELECTRICAL DISTRIBUTION SYSTEM TO MAINTAIN A MINIMUM:
   a. 48 INCHES SEPARATION FROM MOTORS OR TRANSFORMERS.
   b. 12 INCHES SEPARATION BETWEEN PARALLEL RUNS OF COMMUNICATION AND ELECTRICAL CABLING.
   c. 5 INCHES SEPARATION FROM LUMINARIES.
5. THE PATHWAY SYSTEM SHALL INCLUDE THE FOLLOWING:
   a. A MINIMUM OF FOUR 4-INCH FIR RATED SLEEVES SHALL BE PROVIDED IN THE SIDE WALLS OF IDF ROOMS TO SUPPORT THE ROUTING OF WORKSTATION AND DEVICE CABLES.
   b. 18-INCH CABLE RUNWAY (LADDER TYPE CABLE TRAY) SHALL BE PROVIDED IN THE CEILING AREAS OF THE IDF ROOM TO SUPPORT THE ROUTING OF CABLES WITHIN THE ROOMS. RUNWAY DROPOUTS WILL BE PROVIDED ABOVE THE EQUIPMENT RACKS AND CABINETS TO SUPPORT THE ROUTING CABLING OF CABLES INTO THE EQUIPMENT RACKS AND CABINETS.
   c. AT A MINIMUM, A 12" X 4" BASKET TYPE CABLE SHALL BE PROVIDED IN THE CEILING SPACES OF WORKSTATION AREAS.
   d. J-HOOKS SHALL BE PROVIDED IN THE CEILING SPACES TO SUPPORT THE DISTRIBUTION OF CABLES FROM THE CABLE TRAY TO THE INDIVIDUAL COMMUNICATION OUTLETS AND DEVICE LOCATIONS.
   e. 4-INCH CONDUIT SHALL BE PROVIDED ACROSS CEILINGS AREAS WHERE THE CEILING IS NOT ACCESSIBLE.
   f. 1-1/4-INCH CONDUITS SHALL BE PROVIDED DOWN COLUMNS INTO THE IN-FEED OF MODULAR FURNITURE CLUSTERS.
   g. WALL MOUNTED COMMUNICATIONS OUTLETS SHALL BE PROVIDED WITH A 4-11/16-INCH X 4- 11/16-INCH BACK BOX AT THE BOTTOM OF A 1-INCH CONDUIT STUBBED UP TO AN ACCESSIBLE CEILING AREA.
   h. BACK BOXES SUPPORTING AUDIOVISUAL DEVICES SHALL BE PROVIDED WITH A 1-1/4 CONDUIT OR 2" CONDUIT.
   i. WALL MOUNTED TELEPHONE OUTLETS (+48 INCHES AFF) SHALL BE PROVIDED WITH A 2-INCH X 4-INCH BACK BOX AT THE BOTTOM OF A 3/4-INCH CONDUIT STUBBED UP TO AN ACCESSIBLE CEILING AREA.
   j. FLOOR BOXES SERVING OPEN AREA WORKSTATIONS SHALL BE PROVIDED WITH A MINIMUM 1 -1/4 CONDUIT RUN TO AN ACCESSIBLE CEILING AREA CLOSEST TO THE DIRECTION OF THE SERVING COMMUNICATION ROOM.
   k. FLOOR BOXES SERVICING CONFERENCE ROOM TABLES, LECTERNS AND PODIA POSITIONS SHALL BE PROVIDED WITH A MINIMUM OF TWO 1 -1/4 CONDUCTS RUN TO AN ACCESSIBLE CEILING AREA AT THE HEAD WALL OF THE ROOM.
   l. DEVICE SPECIFIC CONDUIT AND BACK BOXES SHALL BE PROVIDED FOR DEVICES SUPPORTING THE AUDIOVISUAL, DISTRIBUTED ANTENNA AND ELECTRONIC SECURITY SYSTEM DEVICES.
   m. METALLIC PULL BOXES WILL BE PROVIDED WHERE A RUN OF CONDUIT EXCEEDS 100 FEET OR THERE ARE MORE THAN 180 DEGREES OF BENDS.

**J.** STRUCTURED COMMUNICATIONS CABLING SYSTEM

1. THE COMMUNICATIONS CABLING SYSTEM SHALL BE DESIGNED TO CONFORM TO THE REQUIREMENTS OF ANSI/TIA-568, GENERIC TELECOMMUNICATION CABLING FOR CUSTOMER PREMISES STANDARD. THE TELECOMMUNICATIONS CABLING SYSTEM SHALL BE DESIGNED IN A HIERARCHICAL STAR TOPOLOGY, WITH ALL CABLES MEETING OR EXCEEDING THE MECHANICAL AND PERFORMANCE REQUIREMENTS OF SECTION 10 OF THE STANDARD.
2. HORIZONTAL SYSTEM CABLE:
   a. 4-PAIR UNSHIELDED CATEGORY 6 BY BELDEN, PLENUM RATED CABLES SHALL BE PROVIDED BETWEEN THE SERVING COMMUNICATION ROOMS AND THE FOLLOWING COMMUNICATION OUTLETS OR DEVICES (TO BE CONFIRMED WITH ARROYO IT DEPARTMENT):
      1) WIRELESS ACCESS POINT (WAP) OUTLETS - 2 CABLES.
      2) STAFFED WORKSTATION OUTLETS - 2 CABLES.
      3) WALL PHONE OUTLETS - 1 CABLE.
      4) CONFERENCE ROOM OUTLETS - 2 CABLES.
      5) AUDIOVISUAL THEATER EQUIPMENT RACK/CABINET - 1 CABLE PER A/V CONSULTANT.
      6) VIDEO DISPLAY OUTLETS - 1 CABLES.
      7) COPIER/PRINTER OUTLETS - 2 CABLES.
      8) VIDEO SURVEILLANCE CAMERAS - 1 CABLE.
      9) CREDENTIALED ACCESS CONTROL MANAGEMENT SYSTEM CONTROL PANELS - 1 CABLE.
      10) BMS CONTROL PANELS - 1 CABLE.
      11) LIGHTING CONTROL PANELS - 1 CABLE.
   b. 4-PAIR CABLES SHALL BE TERMINATED WITH 8-PIN MODULAR CONNECTORS AT THE WORKSTATION/DEVICE LOCATIONS AND ONTO RACK MOUNTED 8-PIN MODULAR PATCH PANELS IN THE COMMUNICATION ROOMS.
   c. CONNECTION BETWEEN HORIZONTAL TERMINATION FIELDS AND TIE FIELDS, AND FROM PATCH PANELS TO EQUIPMENT PORTS SHALL BE MADE USING PRE-MANUFACTURED PATCH CORDS. PATCH CORDS TO BE OWNER FURNISHED OWNER INSTALLED.
   d. NON-STRUCTURED CABLE SYSTEM CABLE SHALL BE PROVIDED TO SUPPORT:
      1) AUDIOVISUAL SYSTEM SIGNAL DEVICES.
      2) ELECTRONIC SECURITY SYSTEM DEVICES.
      3) BUILDING MANAGEMENT SYSTEM (BMS)

**K.** UNIFORM TELECOMMUNICATIONS GROUNDING SYSTEM.

1. A UNIFORM TELECOMMUNICATIONS GROUNDING AND BONDING SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH ANSI/TIA-607 STANDARD GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING FOR CUSTOMER PREMISES. THIS SYSTEM SHALL BE DESIGNED IN CONJUNCTION WITH THE ELECTRICAL POWER GROUNDING SYSTEM. THE FOLLOWING GUIDELINES ARE PROVIDED FOR THE DESIGN OF THE SYSTEM.
2. THE TELECOMMUNICATIONS GROUNDING BACKBONE SHALL CONSIST OF SOLID COPPER BUSBAR AND COPPER CONDUCTORS INTERCONNECTED IN THE FOLLOWING MANNER:
   a. MAIN ELECTRICAL GROUND TO THE PRIMARY BONDING BUSBAR (PBB) LOCATED IN THE MAIN IDF ROOM.
   b. THE PRIMARY BONDING BUSBARS TO THE NEAREST POINT OF GROUNDING BUILDING STEEL.
   c. THE BONDING BUSBARS SHALL BE BONDED TO THE PANEL BOARD'S ALTERNATING CURRENT EQUIPMENT GROUND (ACEG) SERVICE THE COMMUNICATION ROOMS.
   d. THE BONDING BUSBARS SHALL BE BONDED TO EQUIPMENT RACKS, EQUIPMENT CABINETS AND ENCLOSURES INSTALLED WITH THE COMMUNICATION ROOMS.
   e. THE BONDING BUSBARS SHALL BE BONDED TO THE METALLIC CONDUITS ENTERING THE COMMUNICATION ROOMS.
   f. THE BONDING BUSBARS SHALL BE BONDED TO THE CABLE TRAYS INSTALLED WITHIN THE COMMUNICATION ROOMS.
   g. THE PBB SHALL BE PRE-DRILLED, A MINIMUM OF 20 INCHES LONG, 1/4-INCHES THICK, 4 INCHES WIDE SOLID COPPER BAR, ELECTROTIN PLATED, AND INSULATED FROM THEIR SUPPORTS BY A 2-INCH SEPARATION.
   h. BUS BARS SHALL BE DRILLED TO SUPPORT DOUBLE LUG ATTACHMENT
   i. THE CONDUCTOR JACKET SHALL BE GREEN IN COLOR OR MARKED APPROPRIATELY AND INSTALLED IN CONTINUOUS LENGTHS.
   j. BONDING CONDUCTOR LINEAR LENGTH & SIZE (FEET - AWG):

| | |
|---|---|
| <13 | 6 |
| 14-20 | 4 |
| 21-26 | 3 |
| 27-33 | 2 |
| 34-41 | 1 |
| 42-52 | 1/0 |
| 53-66 | 2/0 |
| 67-84 | 3/0 |
| 85-105 | 4/0 |
| 106-125 | 250KCMIL |
| 126-150 | 300KCMIL |
| 151-175 | 350KCMIL |
| 176-250 | 500KCMIL |
| 251-300 | 600KCMIL |
| >301 | 750KCMIL |

**L.** PATHWAYS, SPACE AND MEDIA IDENTIFICATION

1. AN IDENTIFICATION SYSTEM BASED ON ARROYO IT DEPARTMENT'S SCHEMAS SHALL BE DEVELOPED AND APPLIED TO UNIQUELY IDENTIFY EACH:
   a. EQUIPMENT RACK.
   b. EQUIPMENT CABINET.
   c. CABLE TERMINATION DEVICE.
   d. COMMUNICATION OUTLET/FACEPLATE.
2. COMMUNICATION BACKBONE AND HORIZONTAL CABLES (EACH END).
   a. DISTRICT COLOR CODE STANDARD
      1) STANDARD DATA = WHITE
      2) WIRELESS = GREEN
      3) SECURITY = BLACK
   b. DISTRICT LABELING
      1) STANDARD DATA = "IDF"-D-"NUMBER"
      2) WIRELESS = "IDF"-AP-"NUMBER"
      3) SECURITY = "IDF"-SC-"NUMBER"

**M.** WIRELESS NETWORK

1. INFRASTRUCTURE TO SUPPORT WIRELESS ACCESS POINTS (APS) SHALL BE PROVIDED THROUGHOUT THE SPACES AND WILL INCLUDE BACK BOXES AND NETWORK CABLES.
2. THE APS SHOULD PROVIDE SIGNAL COVERAGE IN 2.4 GHZ, 5 GH AND 6 GHZ BANDS.
3. THE DESIGN SHOULD BE BASED A PREDICTIVE MODEL OF THE RADIO FREQUENCY (RF) SPECTRUM OF THE APS, OTHER DEPLOYED RF DEVICES, THE BUILDING DESIGN LOGISTICS AND MANUFACTURERS RECOMMENDATIONS, AND SHALL BE PROVIDED BY ARROYO IT DEPARTMENT.
4. ACCESS POINTS SHALL BE PROVIDED BASED ON
   a. A GRID OF APS ON APPROXIMATE 50-FOOT INTERVALS ACROSS THE SPACES.
   b. ONE ACCESS POINT FOR EVERY 20 PEOPLE IN AN ASSEMBLY ROOM OR CONFERENCE ROOM.

**N.** NETWORK SWITCHES (ARROYO IT DEPARTMENT PROVIDED)

**O.** TELEPHONY SYSTEM (ARROYO IT DEPARTMENT PROVIDED)

**P.** ELECTRONIC SECURITY SYSTEM

1. AN ELECTRONIC SECURITY SYSTEM (ESS) TO COVER EXTERIOR GROUNDS, EXTERIOR/PERIMETER DOORS AND ENTRANCES, CORRIDORS AND LOBBIES WILL BE PROVIDED.
2. ELECTRONIC SECURITY SYSTEM SHALL TIE INTO THE EXISTING SYSTEM THROUGH THE NETWORK.
3. ACCESS TO AND FUNCTIONAL ABILITY WITHIN THE SYSTEM SHALL BE BASED ON CREDENTIALED/PERMISSION BASE PROGRAMMING.
4. CREDENTIALED ACCESS CONTROL AND ALARM MONITORING SYSTEM:
   a. AN ACCESS CONTROL AND ALARM MONITORING SYSTEM (CACAMS) SHALL BE PROVIDED. THE SYSTEM SHALL BE UNIFIED WITH THE INTRUSION DETECTION, VIDEO MANAGEMENT AND EMERGENCY DURESS AND ALARM SYSTEMS FOR SYSTEMS ADMINISTRATION, REPORTING AND RESPONSE.
   b. THE SYSTEM SHALL INTERFACE WITH THE FIRE ALARM REPORTING SYSTEM FOR AUTOMATIC UNLOCKING OF DESIGNATED DOOR.
   c. THE SYSTEM SHALL INTERFACE WITH THE DEFINED DOOR OPERATION FUNCTIONS INCLUDING:
      1) DOOR OPENING MOTORS AND ADA CONTROLS.
      2) DOOR RELEASE BUTTON.
      3) LOCK-DOWN BUTTONS.
   d. DOOR LOCKING HARDWARE WITH INTEGRATED WIRELESS LOCKS (SPECIFIED UNDER DIVISION 08) SHALL BE INTEGRATED INTO THE CREDENTIALED ACCESS CONTROL AND ALARM MONITORING SYSTEM FOR PROGRAMMING, CONTROL, AND REPORTING.
   e. ROUGH IN FOR DOORS WITH HARDWIRED CONNECTIONS CONSISTING OF CABLE, CONDUITS AND BACK BOXES SHALL BE PROVIDED TO THE FOLLOWING DEVICES:
      1) CARD READERS.
      2) MAGNETIC DOOR SENSORS (DOOR POSITION SWITCHES). THE SENSORS SHALL BE SINGLE POLE SINGLE THROW AS A BASE DESIGN WITH DOUBLE POLE/DOUBLE THROW SENSORS PROVIDED WHEN A DOOR INTERFACES WITH AN INTRUSION DETECTION SYSTEM AS WELL.
      3) REQUEST-TO-EXIT (REX) DEVICES ON THE SECURED SIDE OF DOORS WHEN THE DOOR'S LOCKING HARDWARE DOES NOT HAVE AN INTEGRATED REX DEVICE.
      4) RELAYS AT DOORS WITH AUTO DOOR OPERATORS.
      5) DOOR LOCKING HARDWARE (ELECTRIC LOCK, MAGNETIC LOCK, DOOR EXIT, ELECTRIC STRIKE, ETC. SPECIFIED UNDER DIVISION 08), AS DEFINED BY THE DOOR HARDWARE SCHEDULE.
      6) SOUNDERS WHERE APPLICABLE.
   f. THE FOLLOWING DOORS SHALL BE MONITORED WITH MAGNETIC DOOR SENSORS:
      1) DESIGNATED EXTERIOR DOORS.
   g. THE FOLLOWING DOORS SHALL BE CONTROLLED WITH CARD READERS:
      1) DESIGNATED EXTERIOR DOORS.
      2) DESIGNATED STORAGE ROOMS.
      3) AUDIOVISUAL CONTROL ROOMS.
      4) NURSING AREA
      5) BAND ROOM.
      6) OFFICES
      7) COMMUNICATION ROOMS.
      8) THE SLIDE DOOR BETWEEN THE
   h. CONTROL PANELS, POWER SUPPLIES AND BATTERY BACKUP UNITS SHALL BE PROVIDED IN THE COMMUNICATION ROOMS. SYSTEM ENCLOSURES SHALL BE LOCKABLE AND BE PROVIDED WITH TAMPER SWITCHES MONITORED BY THE SYSTEM.
5. CREDENTIALED PROXIMITY CARDS (OWNER PROVIDED)
6. INTRUSION PROTECTION SYSTEM (NOT INCLUDED)
7. EXTERIOR EMERGENCY CALL (BLUE) PHONES
   a. ONE BLUE LIGHT PHONE IS PROVIDED OUTSIDE THE THEATER BUILDING FOR EMERGENCIES.
8. VIDEO MANAGEMENT SYSTEM (OWNER PROVIDED & EXISTING):
   a. VIDEO SURVEILLANCE CAMERAS SHALL TIE INTO THE EXISTING VIDEO MANAGEMENT SYSTEM (VMS). ADDITIONAL NETWORK VIDEO RECORDERS SHALL BE PROVIDED FOR THE STORAGE AND VIEWING OF THE CAPTURED VIDEO IMAGES.
   b. SYSTEM STORAGE SHALL SUPPORT A MINIMUM OF 30 DAYS OF STORAGE. TIE INTO THE EXITING SYSTEM.
   c. ROUGH IN CONSISTING OF CONDUITS, BACK BOXES, ENCLOSURES (ON EXTERIOR CAMERAS) AND NETWORK CABLES SHALL BE PROVIDED FOR CAMERAS AT THE FOLLOWING LOCATIONS:
      1) EXTERIOR SIDES OF THE BUILDING INCLUDING ENTRANCES AND EXITS.
      2) RECEPTION AREA.
      3) THEATHER LOBBY.
      4) ACADEMIC CORRIDORS.
   d. VIDEO SURVEILLANCE CAMERAS (OWNER PROVIDEDCONTRACTOR INSTALLED) SHALL BE:
      1) INTERNET PROTOCOL (IP) BASED AND SHALL RECEIVE CONNECTION AND POWERED FROM THE NETWORK SWITCHES USING POWER OVER ETHERNET (POE) USING A COMMON NETWORK CABLE FROM A COMMUNICATION ROOM.
      2) CAMERAS SHALL BE VE FOR INTERIOR APPLICATIONS AND VERKADA FOR EXTERIOR APPLICATIONS.
      3) CAMERAS SHALL ALLOW FOR LOCAL STORAGE USING 64GB MICRO STORAGE CARD AND RECORD UP TO 30 FRAMES PER SECOND (FPS)
      4) INTERIOR CAMERA SINGLE-SENSOR, MINIMUM 5 MEGAPIXEL (MP).
      5) EXTERIOR CAMERA SINGLE-SENSOR - MINIMUM 5 MP, WIDE DYNAMIC RANGE (WDR).
      6) EXTERIOR CAMERAS SHALL BE IP66 RATED AND NEMA 4X RATED
      7) HDR, H264 AND H265 COMPLIANT.
      8) ON BOARD ANALYTICS INCLUDING (TO BE DETERMINED):

**Q.** PUBLIC ADDRESS AND CLOCK SYSTEM:

1. THE ALGO INFORMACAST SYSTEM WILL BE UTILIZED AS THE BASIS OF DESIGN FOR THE PROJECT.
2. A COMBINE OVERHEAD PAGING, CLOCK, AND BELL SYSTEM SHALL BE PROVIDED. SPEAKERS AND PAGING STATIONS SHALL BE IP BASED AND USE OF ENTERPRISE NETWORK FOR SIGNAL TRANSPORT.
3. ROUGH IN CONSISTING OF CONDUITS, BACK BOXES (IN PLENUM AREAS), AND NETWORK CABLES SHALL BE PROVIDED FOR SPEAKERS AND PAGING STATIONS.
4. PAGING STATIONS SHALL IP BASED AND WILL ALLOW USER TO PICKUP THE PHONE AND DIAL A CODE TO CREATE A PUBLIC ADDRESS.
5. SPEAKERS SHALL BE PROVIDED IN:
   1) LOBBIES.
   2) RECEPTION AREAS.
   3) COORIDORS
   4) BAND ROOM
   5) CHORAL ROOM

**Q.** AUDIOVISUAL SYSTEM

1. ROOM READY REQUIREMENTS:
   a. ARCHITECTURAL REQUIREMENTS:
      1) EQUIPMENT ON THE WALL IN PATH OF CIRCULATION SHALL NOT EXCEED 4" IN LENGTH TO ADHERE TO ADA REQUIREMENTS.
      2) CONFERENCE ROOM FINISHES SHALL AVOID SMALL PATTERN/STRIPES, SPECULAR FINISHES, BLACK, YELLOW, GREEN, AND RED TO BETTER SUPPORT VIDEO CAPTURE AND VIDEO CONFERENCING.
      3) CONFERENCE ROOM FINISHES SHALL BE GRAY, BLUE, AND MAUVE ARE TO BETTER SUPPORT VIDEO CAPTURE AND VIDEO CONFERENCING.
      4) VIDEO DISPLAYS SHALL BE POSITIONED IN THE FRONT OF THE ROOM AT A HEIGHT THAT ALLOWS VIEWERS TO SEE CONTENT COMFORTABLY.
   b. LIGHTING REQUIREMENTS:
      1) LIGHTING LEVELS SHALL BE 10-FOOT CANDLES TO ENHANCE VISIBILITY. A DIMMER SWITCH, AND MOTORIZED SHADES SHOULD BE CONSIDERED AS PART OF THE LIGHTING CONTROLS TO MANAGE LIGHTING FOOT CANDLE LEVELS.
2. CONFERENCE ROOMS:
   a. VIDEO SYSTEM (OWNER PROVIDED CONTRACTOR INSTALLED):
      1) OWNER FURNISHED CONTRACTOR INSTALLED FLAT PANEL VIDEO DISPLAY(S) WITH 4K/60 HIGH RESOLUTION, 16:9 ASPECT RATIO.
      2) BRING YOUR OWN DEVICE (BYOD) VIDEO PRESENTATION CAPABILITIES WITH WIRELESS CONNECTIVITY.
      3) WEB CONFERENCING USING AN OWNER PROVIDED OWL AT THE TABLE.
3. ACADEMIC ROOMS/CLASSROOMS:
   a. VIDEO SYSTEM / CONTROL SYSTEM:
      1) OPTOMA ZW403 PROJECTOR AND PROJECTOR SCREEN
      2) BRING YOUR OWN DEVICE (BYOD) VIDEO PRESENTATION CAPABILITIES THROUGH A WIRED CONNECTION USING A HALL RESEARCH DSCV-70-RZ AND DSCV2-70-TX-US TRANSMITTER AND RECEIVER WITH IN-BUILT CONTROLS.
   b. AUDIO SYSTEM:
      1) BELDEN 2' X 2' CEILING SPEAKERS WITH HALL RESEARCH AMP-7040 AMPLIFIER
   c. INFRASTRUCTURE:
      1) CEILING MOUNTED BOX WITH AMPLIFIER AND RECEIVER MOUNTED ABOVE PROJECTOR.
      2) CONDUITS FROM DEVICES/DEVICE BACK BOXES TO THE CEILING BOX.
      3) DEVICE CABLING.
4. RECEPTION AND PUBLIC AREA:
   a. VIDEO SYSTEM:
      1) OWNER PROVIDED FLAT PANEL VIDEO DISPLAY(S) WITH 4K/60 HIGH RESOLUTION, 16:9 ASPECT RATIO.
      2) CONNECTED TO NETWORK.
5. OVERHEAD PAGING (OWNER PROVIDED CONTRACTOR INSTALLED)
   a. AN OVERHEAD PAGING SYSTEM SHALL BE PROVIDED. SPEAKERS AND PAGING STATIONS SHALL BE IP BASED AND USE OF ENTERPRISE NETWORK FOR SIGNAL TRANSPORT.
   b. ROUGH-IN CONSISTING OF CONDUITS, BACK BOXES (IN PLENUM AREAS), AND NETWORK CABLES SHALL BE PROVIDED FOR SPEAKERS AND PAGING STATIONS.
   c. SPEAKERS SHALL BE ZONED ON A SPACE-BY-SPACE BASIS PER FUNCTION AND OPERATIONAL INTENT.
   d. PAGING STATIONS SHALL BE PROVIDED AT:
      1) DESIGNATED ADMINISTRATIVE OFFICES.
      2) RECEPTION.
   e. SPEAKERS SHALL BE PROVIDED IN:
      1) LOBBIES.
      2) CORRIDORS.
      3) BAND ROOM.
      4) CHORAL ROOM.
      5) THEATER
      6) DRESSING ROOMS.
      7) HEALTH CENTER.
      8) DRAMA CLASSROO

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# COMMUNICATIONS SCHEDULE

| DRAWING SYMBOL | NAME | BACKBOX SIZE | MOUNTING HEIGHT / LOCATION (AFF / UON) | CONDUIT SIZE | FACEPLATE TYPE | QUANTITIES | NOTES |
|---|---|---|---|---|---|---|---|
| | | | | | | 4-PAIR CABLES | |
| A | WORSTATION DATA OUTLET | SINGLE GANG | WALL | IN FURNITURE | 2-PORT FURNITURE HORIZONTAL | 2 | |
| B | CONFERENCE TABLE DATA OUTLET | SINGLE GANG | FLOOR BOX | 1" | 4-PORT WITH BLANKS | 2 | |
| V | CLASSROOM VOIP PHONE OUTLET | SINGLE GANG | WALL | IN FURNITURE | 4-PORT WITH BLANKS | 1 | COMBINE WITH WORKSTATION OUTLET WHERE APPLICABLE |
| EQ | EQUIPMENT OUTLET | SINGLE GANG | WALL | IN FURNITURE | 4-PORT WITH BLANKS | 1 | |
| AV | AUDIO VISUAL DATA OUTLET | SINGLE GANG | AV EQUIPMENT DETERMINED | IN FURNITURE | 4-PORT WITH BLANKS | 1 | |
| A | WIRELESS ALS TRANSCEIVER CONNECTION POINT | SINGLE GANG | AV EQUIPMENT DETERMINED | 1" | EQUIPMENT CONNECTION | | TO BE CONNECTED TO AUDIO DSP SERVING RESPECTIVE SPACE WHERE TRANSCEIVER IS BEING INSTALLED. |
| AV | AUDIO VISUAL FLOOR DATA OUTLET | SINGLE GANG | FLOOR BOX | 1" | 4-PORT WITH BLANKS | 1 | |
| C | DISPLAY DATA OUTLETS | 14" X 14" IN-WALL BOX | DISPLAY HEIGHT | 1" | 4-PORT WITH BLANKS | 1 | |
| E | COPIER/PRINTER DATA OUTLETS | 4S | STANDARD OUTLET HEIGHT | 1" | 4-PORT WITH BLANKS | 2 | |
| C | SIGNAL DEVICE SYSTEM CLOCK DATA OUTLET | SINGLE GANG | 92" AFF | 1" | EQUIPMENT CONNECTION | 1 | |
| S | SPEAKER CEILING | SINGLE GANG | | 1" | | | |
| W | WIRELESS ACCESS POINT DATA OUTLET | SINGLE GANG | | 1" | BISCUIT BLOCK | 2 | |
| | VIDEO SURVILLNACE CAMERA DATA OUTLET | SINGLE GANG | | 1" | BISCUIT BLOCK | 1 | |
| P | COMMUNICATION OUTLET FOR VIDEO PROJECTOR | SINGLE GANG | | 1" | 4-PORT WITH BLANKS IN CEILING BOX | 1 | |
| | EMERGENCY BLUE LIGHT PHONE | SINGLE GANG | | 1" | EQUIPMENT CONNECTION | 1 | |

ELECTRONIC SECURITY DOOR SCHEDULE

| DOOR | CARD READER | ELECTRONIC LOCK | DOOR CONTACT | ALARM | REQUEST TO EXIT | CENTRAL LOCKDOWN | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| A100 | Yes | Yes | Yes | No | Yes | Yes | |
| A104 | Yes | Yes | Yes | No | Yes | Yes | |
| A104.1 | Yes | Yes | Yes | No | Yes | Yes | |
| A111 | Yes | Yes | Yes | No | Yes | Yes | |
| A112 | Yes | Yes | Yes | No | Yes | Yes | |
| A113 | Yes | Yes | Yes | No | Yes | Yes | |
| A115 | Yes | Yes | Yes | No | Yes | Yes | |
| A116 | Yes | Yes | Yes | No | Yes | Yes | |
| A117 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| A123 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| A129 | Yes | Yes | Yes | No | Yes | Yes | |
| A137.1 | Yes | Yes | Yes | No | Yes | Yes | |
| A138 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B100 | Yes | Yes | Yes | Yes | Yes | Yes | |
| B100.1 | No | Yes | Yes | Yes | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B100.2 | Yes | Yes | Yes | Yes | Yes | Yes | |
| B100.4 | Yes | Yes | Yes | Yes | Yes | Yes | |
| B116 | Yes | Yes | Yes | No | Yes | Yes | |
| B118 | Yes | Yes | Yes | No | Yes | Yes | |
| B118.1 | Yes | Yes | Yes | No | Yes | Yes | |
| B118.2 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B119 | Yes | Yes | Yes | No | Yes | Yes | |
| B121 | Yes | Yes | Yes | No | Yes | Yes | |
| B122 | Yes | Yes | Yes | No | Yes | Yes | |
| B124 | Yes | Yes | Yes | No | Yes | Yes | |
| B125 | Yes | Yes | Yes | No | Yes | Yes | |
| B125.1 | Yes | Yes | Yes | No | Yes | Yes | |
| B125.2 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B126 | Yes | Yes | Yes | No | Yes | Yes | |
| B127 | Yes | Yes | Yes | No | Yes | Yes | |
| B128 | Yes | Yes | Yes | No | Yes | Yes | |
| B131 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B131.1 | No | Yes | Yes | No | Yes | Yes | DOOR MONITORING ONLY WITH CENTRAL LOCK DOWN CAPABILITIES |
| B133 | Yes | Yes | Yes | No | Yes | Yes | |
| B134 | Yes | Yes | Yes | No | Yes | Yes | |
| B135 | Yes | Yes | Yes | No | Yes | Yes | |
| B136 | Yes | Yes | Yes | No | Yes | Yes | |
| B137 | Yes | Yes | Yes | No | Yes | Yes | |
| B138 | Yes | Yes | Yes | No | Yes | Yes | |
| B139 | Yes | Yes | Yes | No | Yes | Yes | |
| B145 | Yes | Yes | Yes | No | Yes | Yes | |
| B146 | Yes | Yes | Yes | No | Yes | Yes | |
| B149 | Yes | Yes | Yes | No | Yes | Yes | |
| B149.1 | Yes | Yes | Yes | No | Yes | Yes | |

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## KEYNOTES

## NOTES

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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY SCHEDULES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

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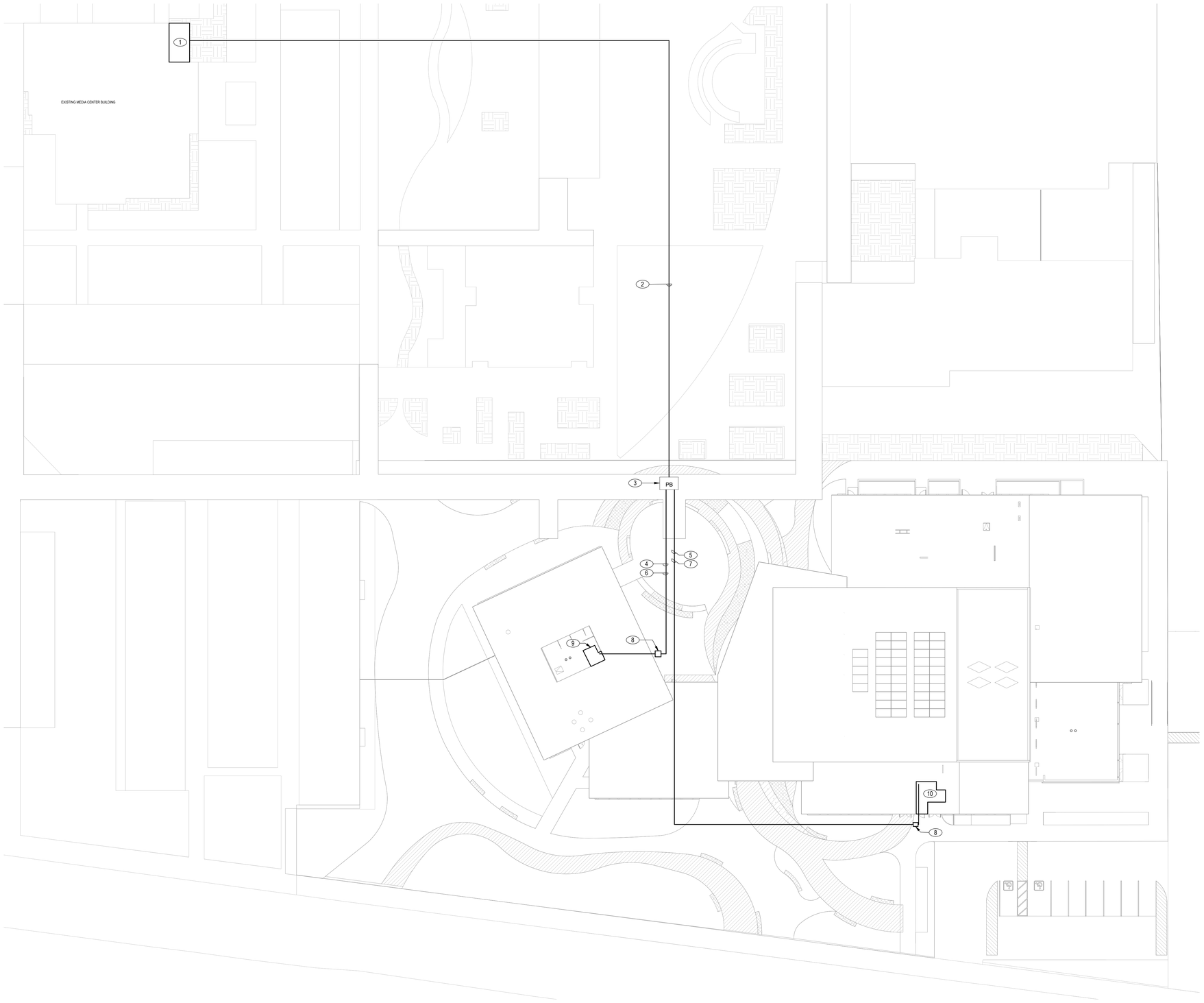
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**T1.01**

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## KEYED NOTES

1. EXISTING MDF. VERIFY LOCATION PRIOR TO THE COMMENCEMENT OF WORK.
2. REUSE EXISTING CONDUIT FROM MDF TO EXISTING TELECOMMUNICATIONS VAULT. VERFITY ROUTING PRIOR TO THE COMMENCEMENT OF WORK.
3. REUSE EXITING TELECOMMUNICATION VAULT. VERIFY EXACT LOCATION PRIOR TO THE COMMENCEMENT OF WORK.
4. PROVIDE NEW CONDUITS FROM EXISTING VAULT TO DATA ROOM A112. SEE T5.01 FOR CONDUIT SIZE AND QUANTITY.
5. PROVIDE NEW CONDUITS FROM EXISTING VAULT TO DATA ROOM B137. SEE T5.01 FOR CONDUIT SIZE AND QUANTITY.
6. PROVIDE NEW FIBER OPTIC CABLE FROM MEDIA CENTER MDF TO DATA ROOM A112. SEE T5.01 FOR TYPE AND QUANTITY.
7. PROVIDE NEW FIBER OPTIC CABLE FROM MEDIA CENTER MDF TO DATA ROOM B137. SEE T5.01 FOR TYPE AND QUANTITY.
8. PROVIDE 24" X 30" TELECOMMUNICATIONS CONCRETE PRE-FABRICATED HANDHOLE. FIELD COORDINATE EXACT LOCATION.
9. DATA ROOM A112 ON LEVEL 1
10. DATA ROOM B137 ON LEVEL 1

TECHNOLOGY SITE PLAN **1** 3/64" = 1'-0"

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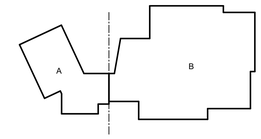
## KEYNOTES

## NOTES

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY SITE PLAN**

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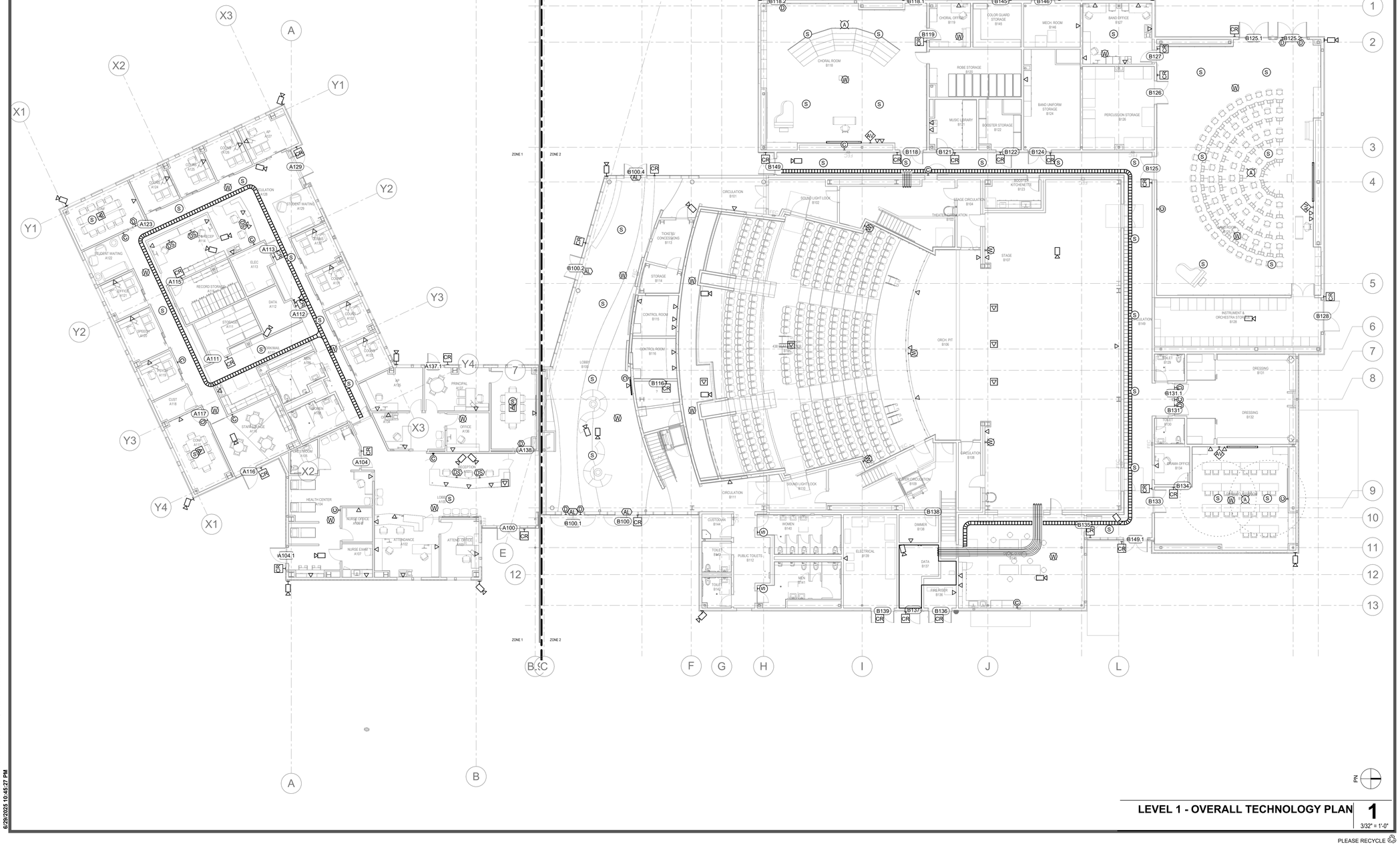
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3/32" = 1'-0"

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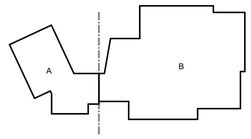
## KEYNOTES

## NOTES

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**LEVEL 1 - OVERALL TECHNOLOGY PLAN**

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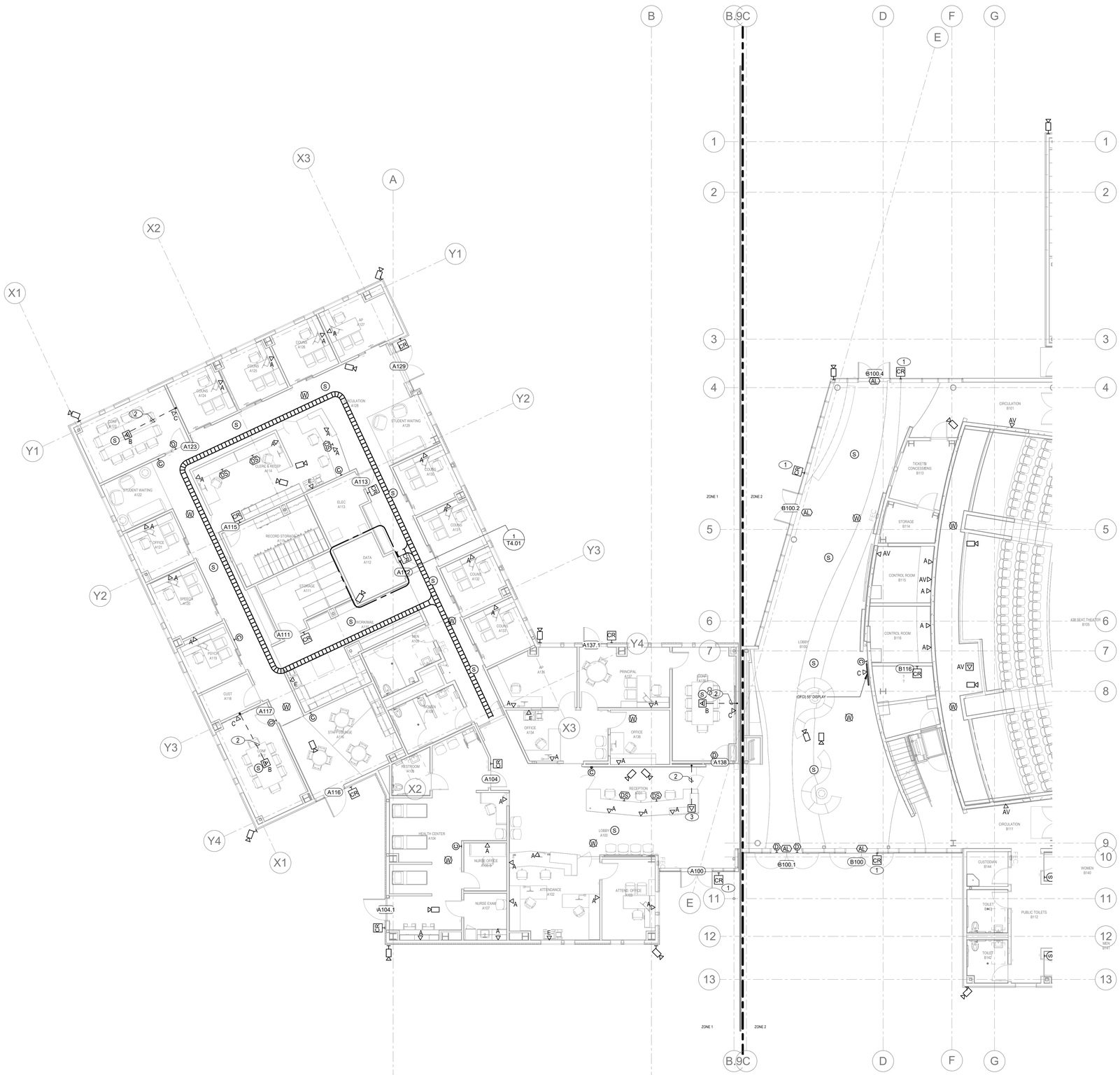
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## SHEET NOTES

ZONE 1:
ALL CABLES IN THIS ZONE ARE TO ROUTE TO DATA ROOM A112 UNLESS OTHERWISE NOTED.

1. FLOOR PATHWAYS:
   A. ROUTE ALL CABLES FOR FLOOR MOUNTED TECHNOLOGY DEVICES IN CONDUIT TO ACCESSIBLE CEILING THROUGH WALL. UNLESS OTHERWISE NOTED.
2. WALL PATHWAYS:
   A. ALL CABLES ROUTED UP WALL FOR TECHNOLOGY DEVICES ARE TO BE IN CONTINUOUS CONDUIT WITHIN WALL TO ACCESSIBLE CEILING SPACE. UNLESS OTHERWISE NOTED.
   C. PROVIDE ALL CONDUIT ENDS WITH BUSHINGS AND SPILLWAYS.
   D. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT FROM DEVICE TO SOURCE.
3. CEILING PATHWAYS (HARD LID CEILING):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES IN CONTINUOUS CONDUIT. PROVIDE CONDUIT SLEEVE FROM CORRIDOR INTO ROOM. PROVIDE A PULLBOX INSIDE THE ROOM WITH A CEILING ACCESS PANEL FOR MAINTENANCE. DISTRIBUTE ALL CABLES INSIDE THE ROOM IN CONDUIT FROM THE PULL BOX. J-HOOKS AND CABLE SUPPORTS ARE NOT ALLOWED WHERE THERE IS A HARD LID CEILING.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.
4. CEILING PATHWAYS (ACOUSTICAL CEILING TILES AND OPEN TO STRUCTURE):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES UTILIZING J-HOOKS, CABLE TRAYS AND CABLE SUPPORTS. MOUNT CABLE SUPPORTS TIGHT TO STRUCTURE. UNLESS OTHERWISE NOTED.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.
   C. REFER TO TECHNOLOGY DETAIL SHEETS FOR ALL SUPPORT AND BRACING DETAILS.

## KEYED NOTES

1. MULLION MOUNT CARD READERS
2. ROUTE 1-1/2" CONDUIT WITH 6 CABLES FROM FLOOR BOX TO ACCESSIBLE CEILING IN CONCRETE SLAB.
3. PROVIDE FLOOR BOX WITH FURNITURE FEED WHIP CONNECTION TO ALL DATA OUTLETS AT RECEPTION DESK.

PN

**LEVEL 1 - TECHNOLOGY PLAN - SEGMENT A** — 1 — 1/8" = 1'-0"

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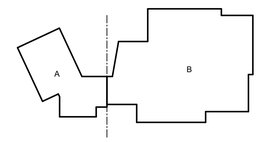
## KEYNOTES

## NOTES

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - TECHNOLOGY PLAN - SEGMENT A**

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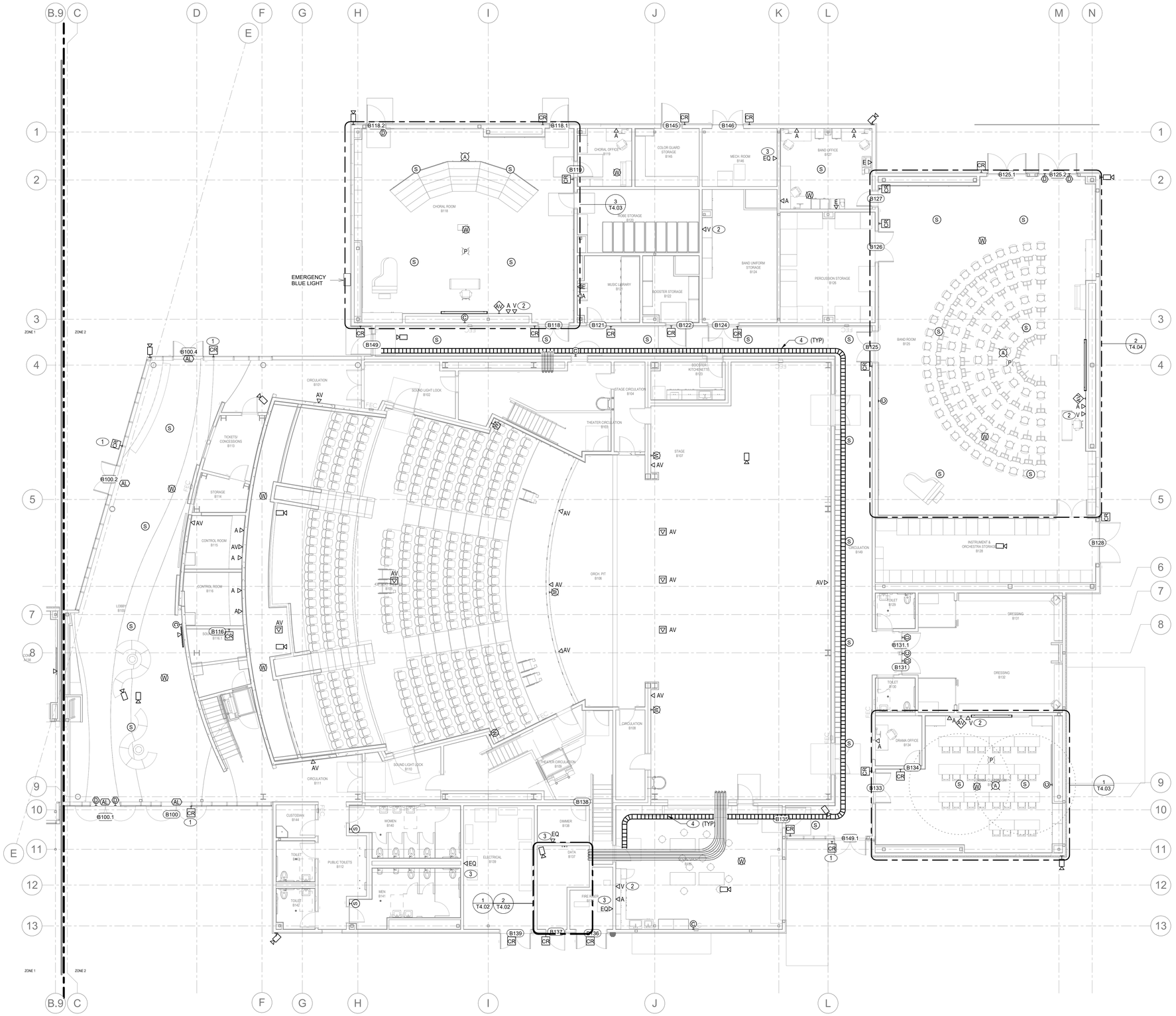
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## SHEET NOTES

ZONE 2:
ALL CABLES IN THIS ZONE ARE TO ROUTE TO DATA ROOM A112 UNLESS OTHERWISE NOTED.

1. FLOOR PATHWAYS:
   A. ROUTE ALL CABLES FOR FLOOR MOUNTED TECHNOLOGY DEVICES IN CONDUIT TO ACCESSIBLE CEILING THROUGH WALL. UNLESS OTHERWISE NOTED.

2. WALL PATHWAYS:
   A. ALL CABLES ROUTED UP WALL FOR TECHNOLOGY DEVICES ARE TO BE IN CONTINUOUS CONDUIT WITHIN WALL TO ACCESSIBLE CEILING SPACE. UNLESS OTHERWISE NOTED.
   C. PROVIDE ALL CONDUIT ENDS WITH BUSHINGS AND SPILLWAYS.
   D. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT FROM DEVICE TO SOURCE.

3. CEILING PATHWAYS (HARD LID CEILING):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES IN CONTINUOUS CONDUIT. PROVIDE CONDUIT SLEEVE FROM CORRIDOR INTO ROOM. PROVIDE A PULLBOX INSIDE THE ROOM WITH A CEILING ACCESS PANEL FOR MAINTENANCE. DISTRIBUTE ALL CABLES INSIDE THE ROOM IN CONDUIT FROM THE PULL BOX. J-HOOKS AND CABLE SUPPORTS ARE NOT ALLOWED WHERE THERE IS A HARD LID CEILING.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.

4. CEILING PATHWAYS (ACOUSTICAL CEILING TILES AND OPEN TO STRUCTURE):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES UTILIZING J-HOOKS, CABLE TRAYS AND CABLE SUPPORTS. MOUNT CABLE SUPPORTS TIGHT TO STRUCTURE. UNLESS OTHERWISE NOTED.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.
   C. REFER TO TECHNOLOGY DETAIL SHEETS FOR ALL SUPPORT AND BRACING DETAILS.

## KEYED NOTES

1. MULLION MOUNT CARD READERS
2. COORDINATE EXACT LOCATION OF VOIP PHONE WITH OWNER PRIOR TO ROUGH-IN. COMBINE PORT AND ROUGH-IN WITH WORKSTATION OUTLET IN THE EVENT THE OUTLET IS LOCATED AT THE SAME LOCATION.
3. COORDINATE EXACT LOCATION OF EQUIPMENT DATA CONNECTION WITH EQUIPMENT LAYOUT IN ROOM PRIOR TO ROUGH-IN.
4. REFER TO DETAIL 4/T6.03 FOR SEISMIC BRACING OF CABLE TRAY.

PN

**LEVEL 1 - TECHNOLOGY PLAN - SEGMENT B** — 1 — 1/8" = 1'-0"

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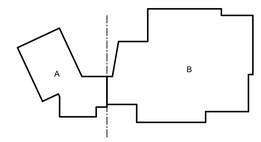
## KEYNOTES

## NOTES

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**LEVEL 1 - TECHNOLOGY PLAN - SEGMENT B**

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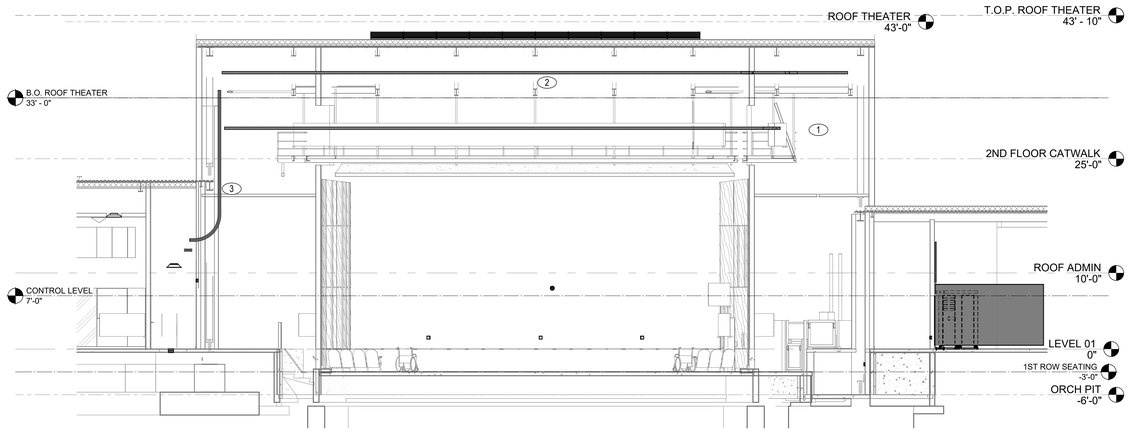
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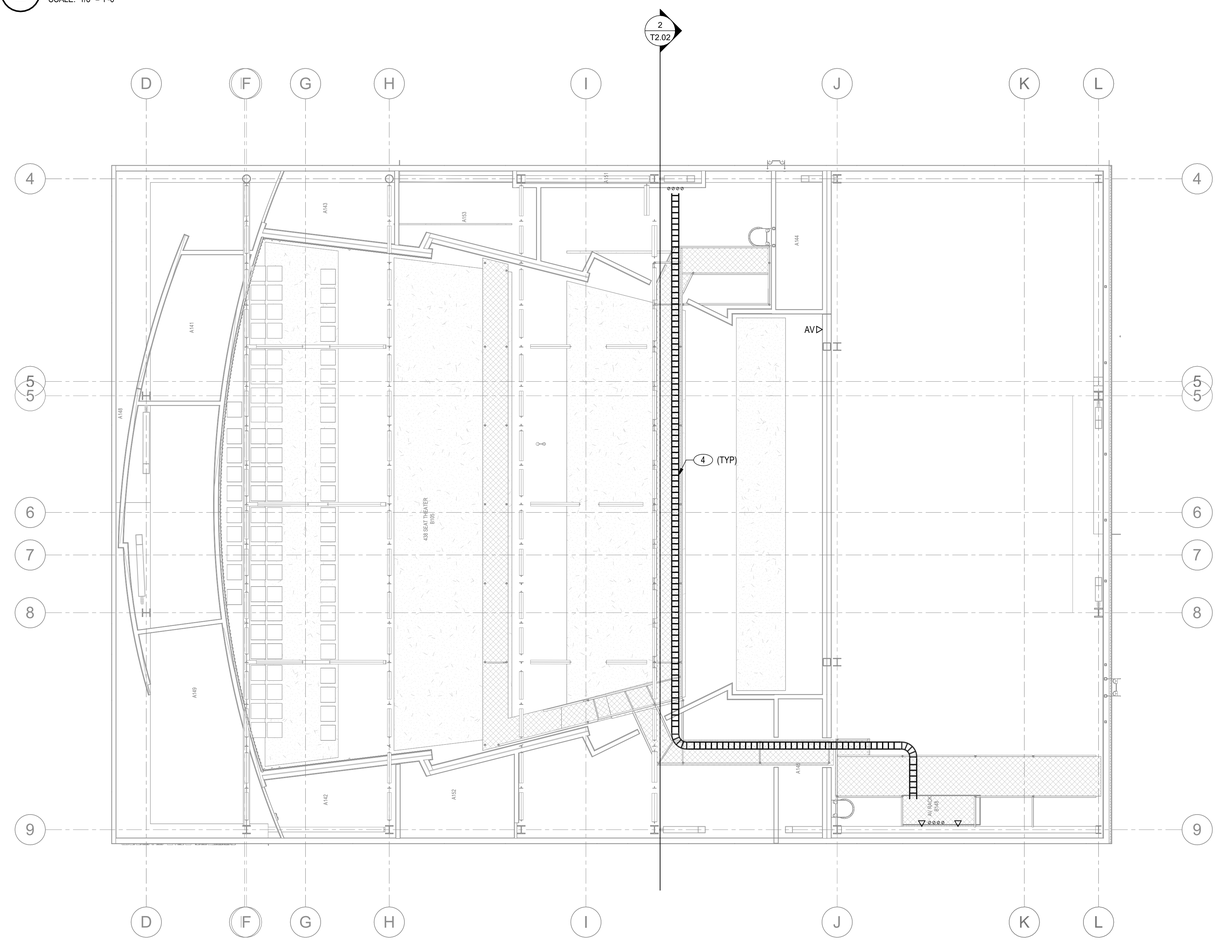
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## 2 CABLE PATHWAY - THEATER NORTH ELEVATION

SCALE: 1/8" = 1'-0"




## 1 2ND FLOOR CATWALK

SCALE: 1/8" = 1'-0"

## SHEET NOTES

ZONE 2:
ALL CABLES IN THIS ZONE ARE TO ROUTE TO DATA ROOM A112 UNLESS OTHERWISE NOTED.

1. FLOOR PATHWAYS:
   A. ROUTE ALL CABLES FOR FLOOR MOUNTED TECHNOLOGY DEVICES IN CONDUIT TO ACCESSIBLE CEILING THROUGH WALL. UNLESS OTHERWISE NOTED.
2. WALL PATHWAYS:
   A. ALL CABLES ROUTED UP WALL FOR TECHNOLOGY DEVICES ARE TO BE IN CONTINUOUS CONDUIT WITHIN WALL TO ACCESSIBLE CEILING SPACE. UNLESS OTHERWISE NOTED.
   C. PROVIDE ALL CONDUIT ENDS WITH BUSHINGS AND SPILLWAYS.
   D. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT FROM DEVICE TO SOURCE.
3. CEILING PATHWAYS (HARD LID CEILING):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES IN CONTINUOUS CONDUIT. PROVIDE CONDUIT SLEEVE FROM CORRIDOR INTO ROOM. PROVIDE A PULLBOX INSIDE THE ROOM WITH A CEILING ACCESS PANEL FOR MAINTENANCE. DISTRIBUTE ALL CABLES INSIDE THE ROOM IN CONDUIT FROM THE PULL BOX. J-HOOKS AND CABLE SUPPORTS ARE NOT ALLOWED WHERE THERE IS A HARD LID CEILING.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.
4. CEILING PATHWAYS (ACOUSTICAL CEILING TILES AND OPEN TO STRUCTURE):
   A. ROUTE ALL CABLES FOR TECHNOLOGY DEVICES UTILIZING J-HOOKS, CABLE TRAYS AND CABLE SUPPORTS. MOUNT CABLE SUPPORTS TIGHT TO STRUCTURE. UNLESS OTHERWISE NOTED.
   B. ROUTE ALL CABLES FOR SECURITY DEVICES IN CONTINUOUS CONDUIT IN CEILING.
   C. REFER TO TECHNOLOGY DETAIL SHEETS FOR ALL SUPPORT AND BRACING DETAILS.

## KEYED NOTES

1. CONDUITS ROUTED TO AV RACK ROOM B148 OF THEATER FROM IDF ROOM FOR HORIZONTAL DISTRIBUTION.
2. 12" CABLE TRAY ROUTED IN THEATER CEILING ABOVE CATWALK.
3. CONDUITS ROUTED FROM CEILING OF THEATER TO COORIDOR FOR HORIZONTAL DISTRIBUTION.
4. REFER TO DETAIL 4/T6.03 FOR SEISMIC BRACING OF CABLE TRAY.

PN

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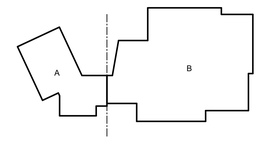
## KEYNOTES

## NOTES

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Project Manager: RM
Job. No.: 150-23US00121

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**LEVEL 2 - TECHNOLOGY PLAN - CATWALK**

**DSA SUBMITTAL**

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# T2.02

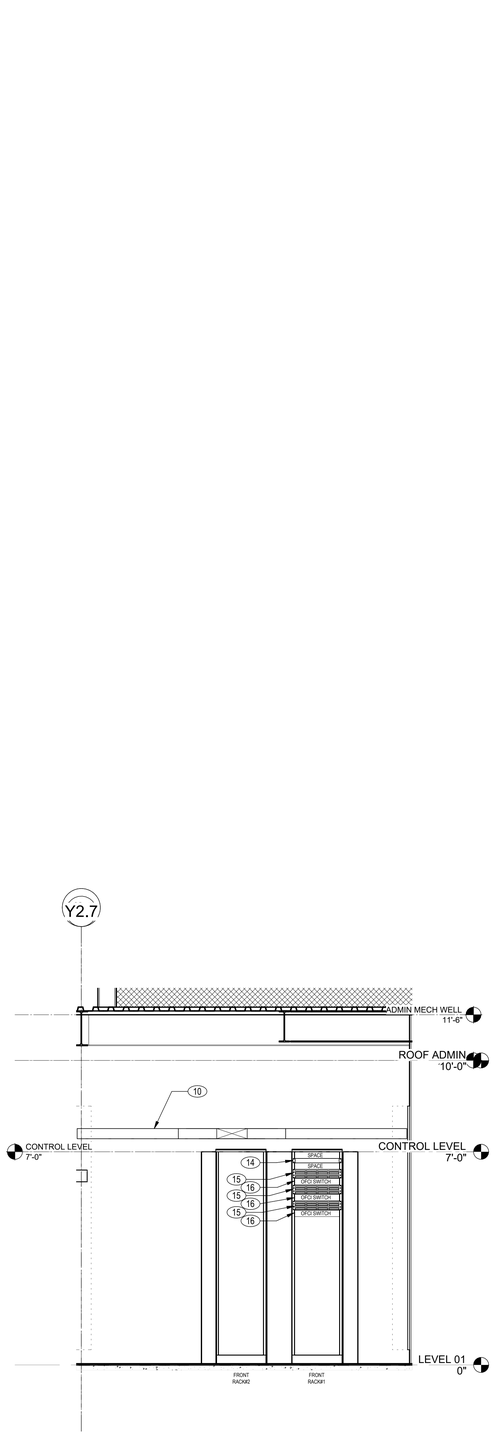
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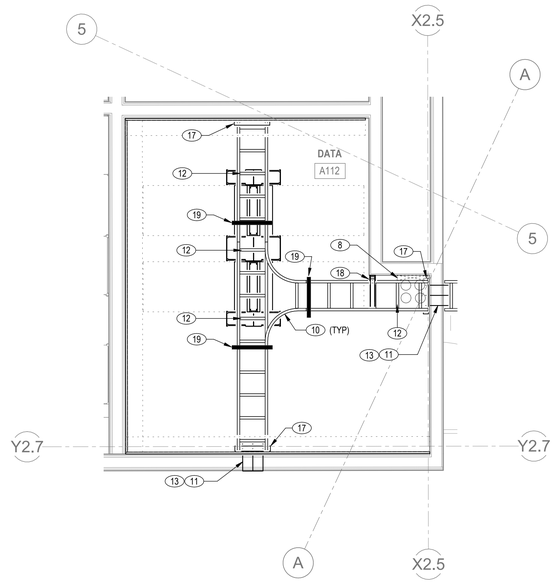
## KEYED NOTES

1. 2-POST RACK. REFER TO DETAIL 7/T6.02 FOR ANCHORING ATTACHMENT INFORMATION.
2. 6" VERTICAL WIRE MANAGER
3. 10" VERTICAL WIRE MANAGER
4. INCOMING CONDUIT. SEE T1.11 AND T5.01 FOR MORE INFORMATION.
5. SPACE FOR ACCESS CONTROL PANEL
6. PRIMARY BONDING BUSBAR
7. 110 PUNCH DOWN BLOCK. PROVIDE CROSS-CONNECT TO RACK MOUNTED PATCH PANEL.
8. 12" VERTICAL CABLE LADDER RUNWAY
9. PLYWOOD BACKBOARD
10. 12" CABLE LADDER RUNWAY
11. HORIZONTAL RE-ENTARABLE FIRE RATED SLEEVES.
12. CABLE WATERFALL.
13. CONDUITS FOR HORIZONTAL CABLING
14. FIBER DISTRIBUTION UNIT. PROVIDE 1RU SPACE ABOVE AND BELOW.
15. TELECOMMUNICATIONS PATCH PANEL
16. OFCI SWITCH
17. WALL ANGLE SUPPORT FOR CABLE RUNWAY. REFER TO 2/T6.03 FOR MOUNTING DETAILS.
18. TRIANGULAR SUPPORT BRACKET FOR CABLE RUNWAY. REFER TO 2/T6.03 FOR MOUNTING DETAILS.
19. PROVIDE TRAPEZE FOR CABLE TRAY SUPPORT. SEE DETAIL 4/T6.03 FOR MORE INFORMATION.



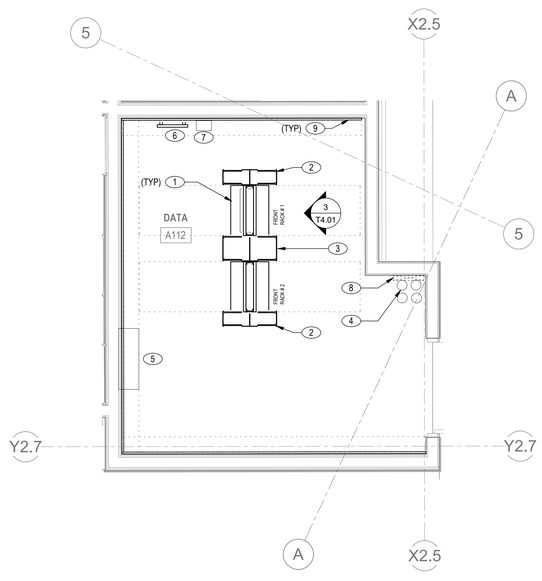

### 3 LEVEL 1- DATA ROOM A112 - RACK ELEVATION

SCALE: 1/2" = 1'-0"




### 2 LEVEL 1 - DATA ROOM A112 - CABLE PATHWAY PLAN

SCALE: 1/2" = 1'-0"




### 1 LEVEL 1 - DATA ROOM A112 - EQUIPMENT PLAN

SCALE: 1/2" = 1'-0"

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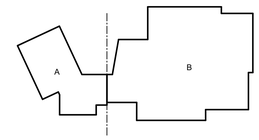
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY ENLARGED ROOM PLAN**

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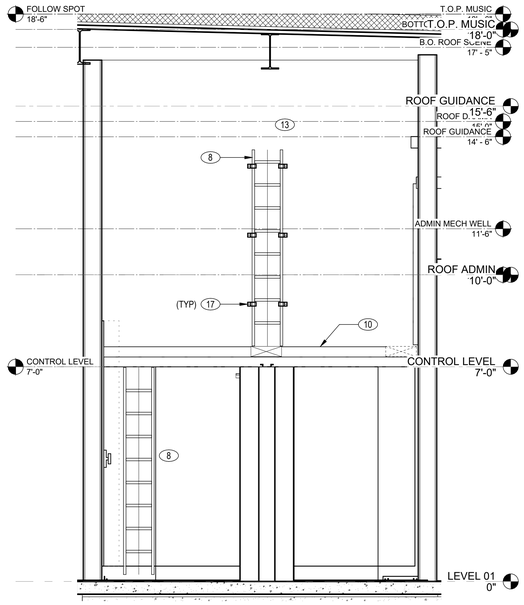
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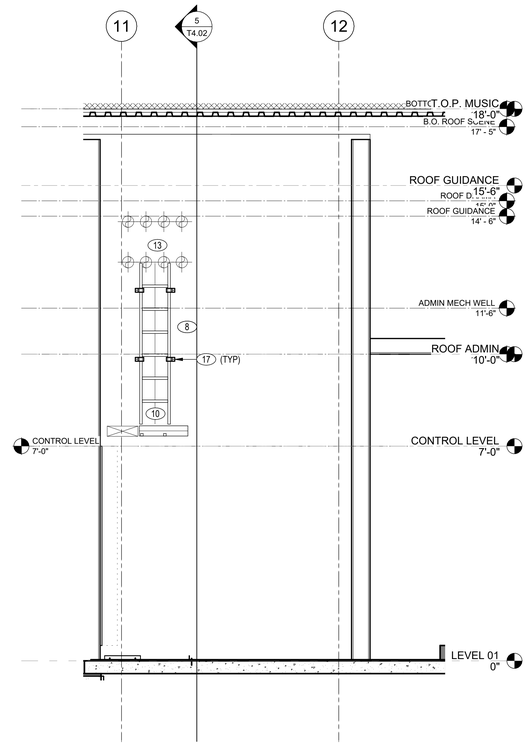
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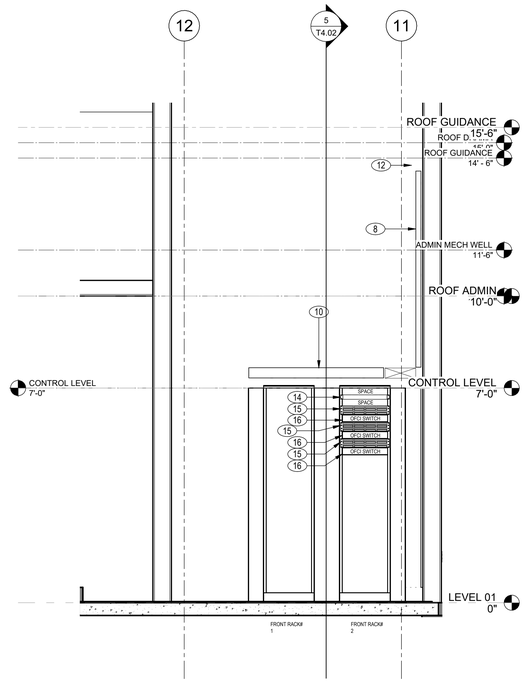

## 5 DATA ROOM B137 - WEST ELEVATION

SCALE: 1/2" = 1'-0"



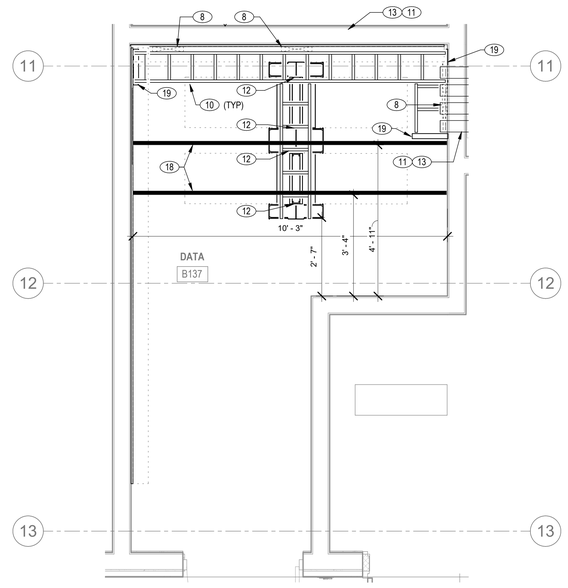

## 4 DATA ROOM B137 - NORTH ELEVATION

SCALE: 1/2" = 1'-0"



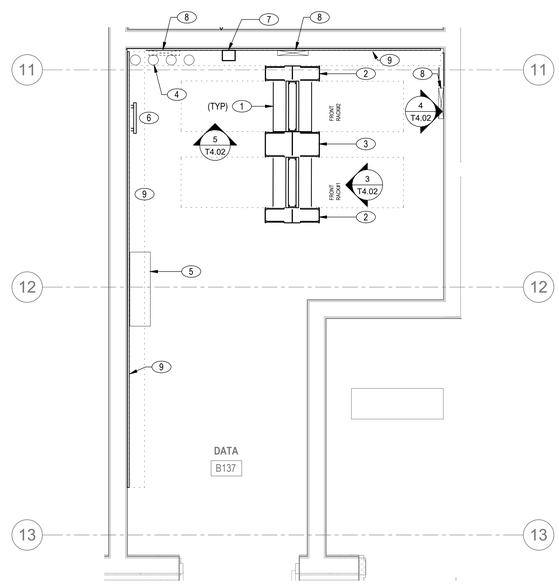

## 3 LEVEL 1- DATA ROOM B137 - RACK ELEVATION

SCALE: 1/2" = 1'-0"




## 2 LEVEL 1 - DATA ROOM B137 - CABLE PATHWAY PLAN

SCALE: 1/2" = 1'-0"




## 1 LEVEL 1 - DATA ROOM B137 - EQUIPMENT PLAN

SCALE: 1/2" = 1'-0"

## KEYED NOTES (#)

1. 2-POST RACK
2. 6" VERTICAL WIRE MANAGER
3. 10" VERTICAL WIRE MANAGER
4. INCOMING CONDUIT. SEE T1.11 AND T5.01 FOR MORE INFORMATION.
5. SPACE FOR ACCESS CONTROL PANEL
6. PRIMARY BONDING BUSBAR
7. 110 PUNCH DOWN BLOCK. PROVIDE CROSS-CONNECT TO RACK MOUNTED PATCH PANEL.
8. 12" VERTICAL CABLE LADDER RUNWAY
9. PLYWOOD BACKBOARD
10. 12" CABLE LADDER RUNWAY
11. HORIZONTAL RE-ENTARABLE FIRE RATED SLEEVES.
12. CABLE WATERFALL.
13. CONDUITS FOR HORIZONTAL CABLING
14. FIBER DISTRIBUTION UNIT. PROVIDE 1RU SPACE ABOVE AND BELOW.
15. TELECOMMUNICATIONS PATCH PANEL
16. OFCI SWITCH
17. VERTICAL MOUNTING BRACKET. REFER TO 3/T6.03 FOR MOUNTING DETAILS.
18. PROVIDE UNISTRUT. REFER TO DETAIL 4/T6.03 FOR ATTACHMENT OF CABLE TRAY TO UNISTRUT AND TO 7/S0.35 SHEET FOR MORE INFORMATION.
19. WALL ANGLE SUPPORT FOR CABLE RUNWAY. REFER TO 2/T6.03 FOR MOUNTING DETAILS.

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PROJECT:
ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING

SHEET NAME:
TECHNOLOGY ENLARGED ROOM PLAN

**DSA SUBMITTAL**

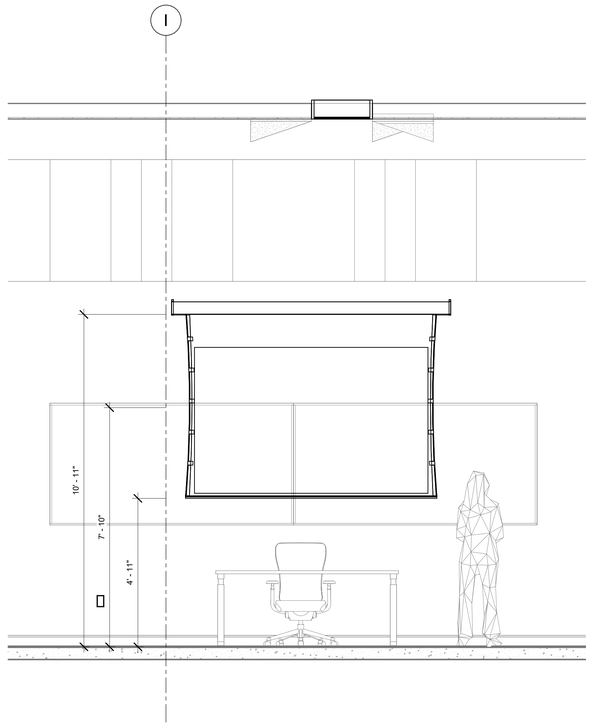
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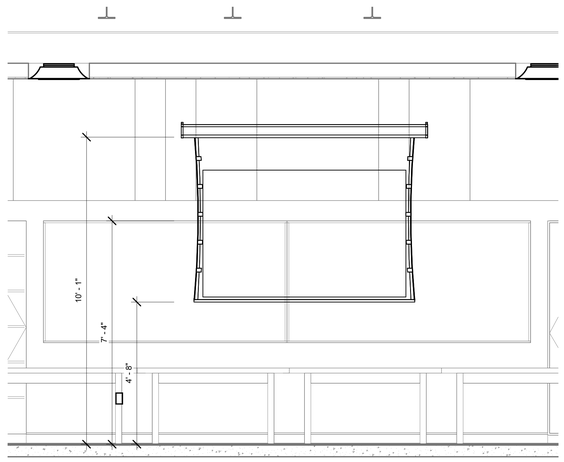
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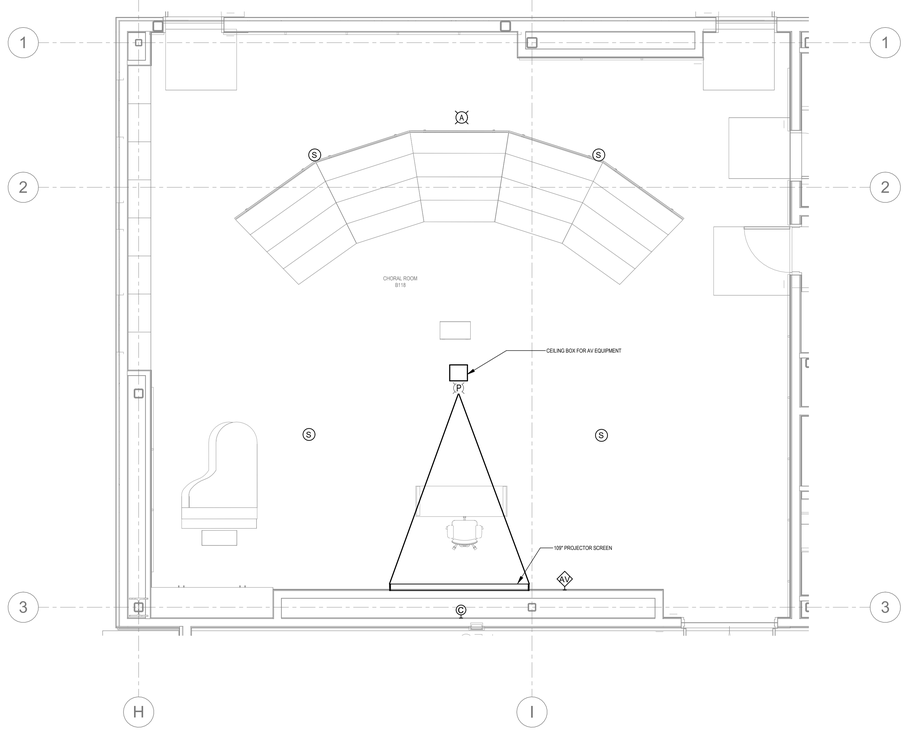
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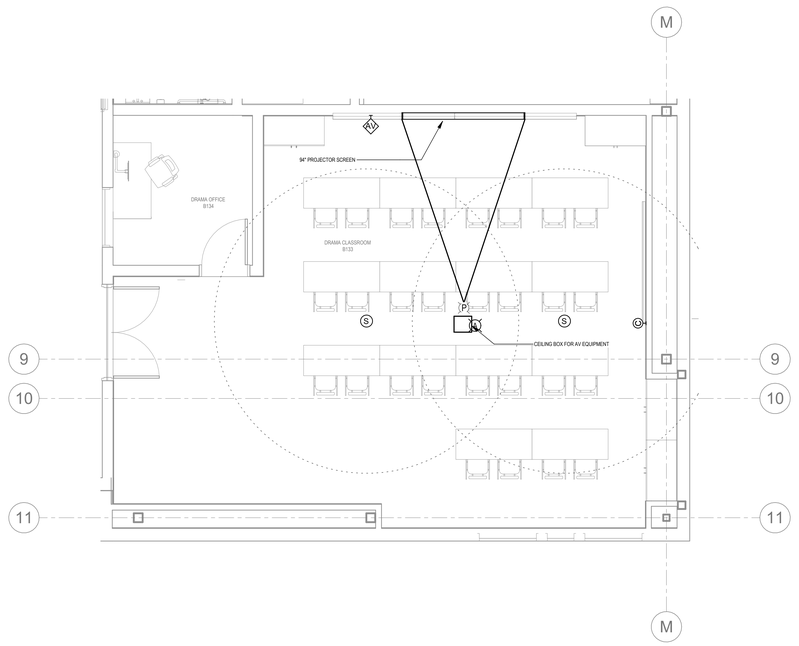

## 4 AUDIOVISUAL EAST ELEVATION - CHORAL ROOM
SCALE: 1/2" = 1'-0"




## 2 AUDIOVISUAL WEST ELEVATION - DRAMA CLASSROOM
SCALE: 1/2" = 1'-0"




## 3 LEVEL 1 - TECHNOLOGY PLAN - CHORAL ROOM
SCALE: 1/4" = 1'-0"




## 1 LEVEL 1 - TECHNOLOGY PLAN - DRAMA CLASSROOM
SCALE: 1/4" = 1'-0"

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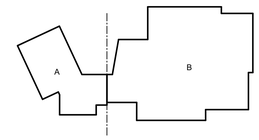
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Job. No.: 150-23US00121

KEY PLAN:




FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**AV ENLARGED ROOM PLAN**

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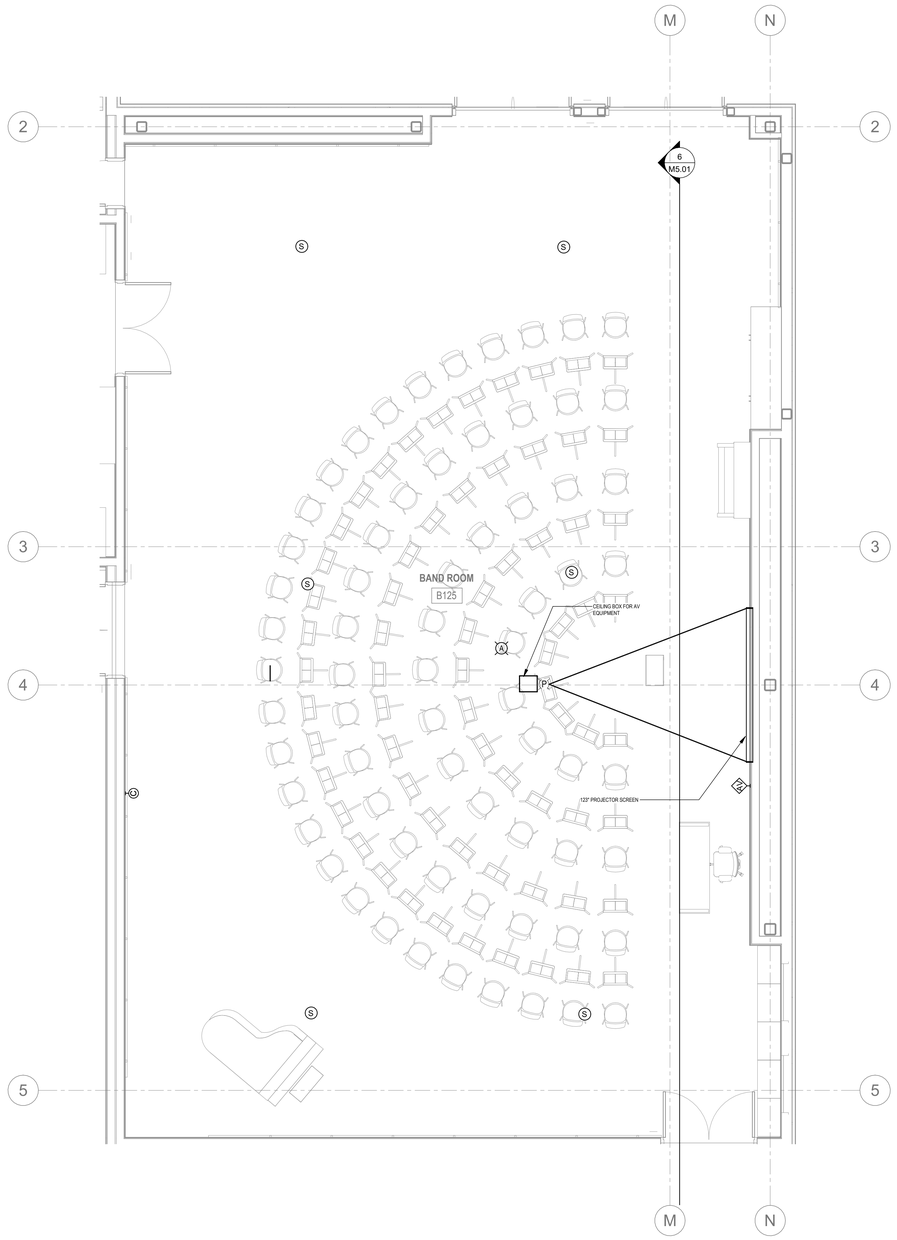
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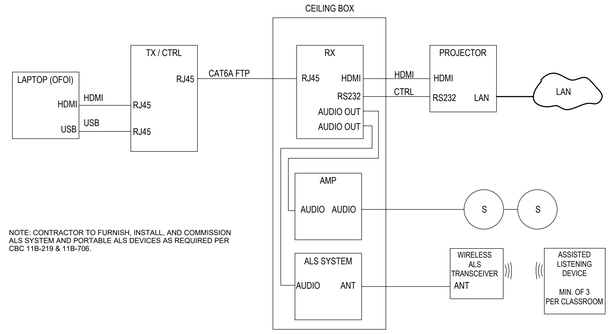
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## 2 LEVEL 1 - AUDIOVISUAL PLAN - BAND ROOM

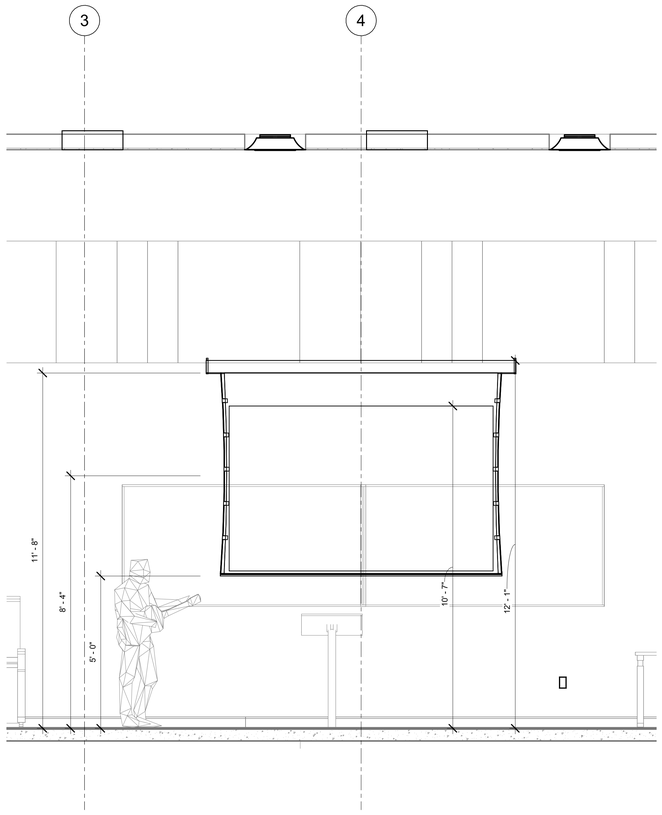
SCALE: 1/4" = 1'-0"




NOTE: CONTRACTOR TO FURNISH, INSTALL, AND COMMISSION ALS SYSTEM AND PORTABLE ALS DEVICES AS REQUIRED PER CBC 11B-219 & 11B-706.

## 3 TYPICAL CLASSROOMS - AV BLOCK DIAGRAM

SCALE: 12" = 1'-0"




## 1 AUDIOVISUAL NORTH ELEVATION - BAND ROOM

SCALE: 1/2" = 1'-0"

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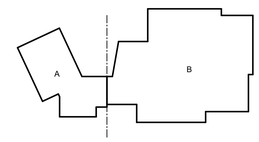
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**T4.04**

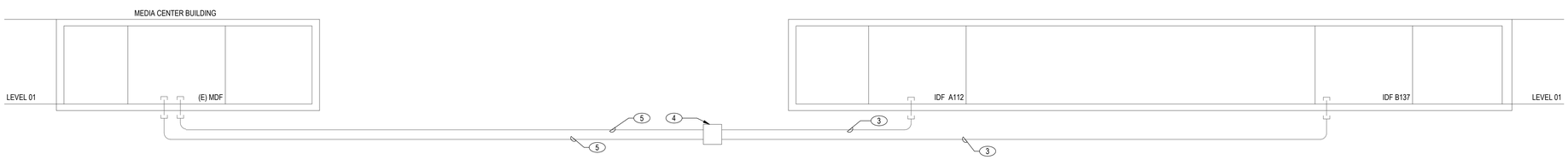
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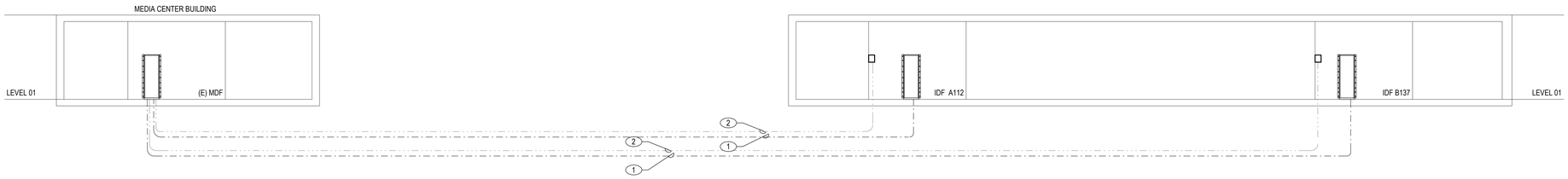
## KEYED NOTES

1. 12 STRAND OS2 SINGLE MODE FIBER OPTICAL CABLE. TERMINATE ON FIBER DISTRIBUTION UNIT ON RACK.
2. 25-PAIR CATEGORY 3 UTP CABLE. TERMINATE ON 110-BLOCK ON WALL. PROVIDE BUILDING ENTRANCE PROTECTOR BY CIRCA OR APPROVED EQUAL.
3. (4) 4" UNDERGROUND CONDUITS TO EXISTING VAULT
4. EXISTING VAULT
5. EXISTING CONDUIT




## 2 COMMUNICATIONS BACKBONE PATHWAY DIAGRAM

SCALE: NONE




## 1 COMMUNICATIONS BACKBONE CABLING DIAGRAM

SCALE: NONE

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SHEET NAME:

**COMMUNICATIONS BACKBONE CABLING DIAGRAM**

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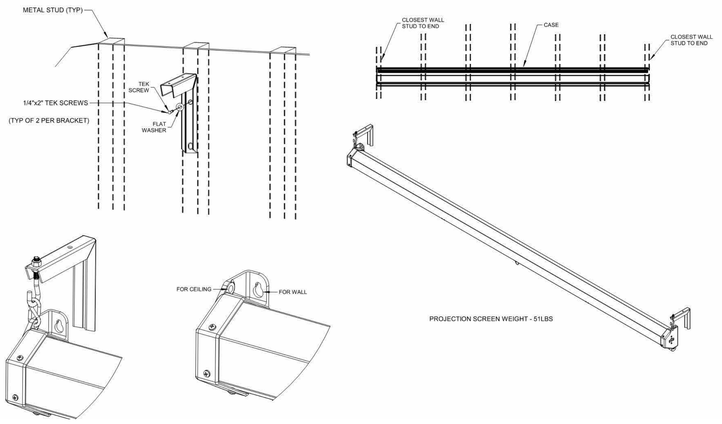
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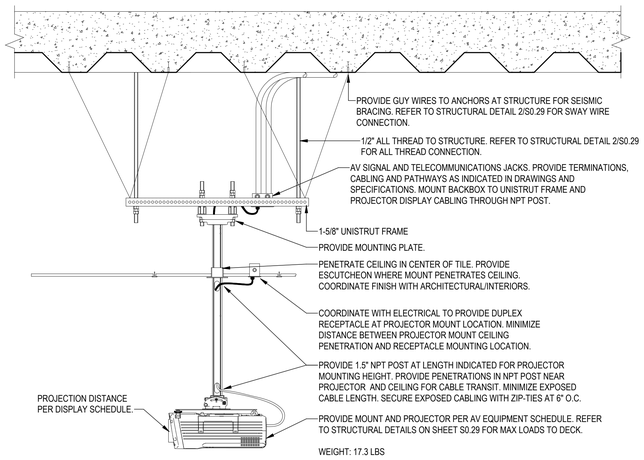
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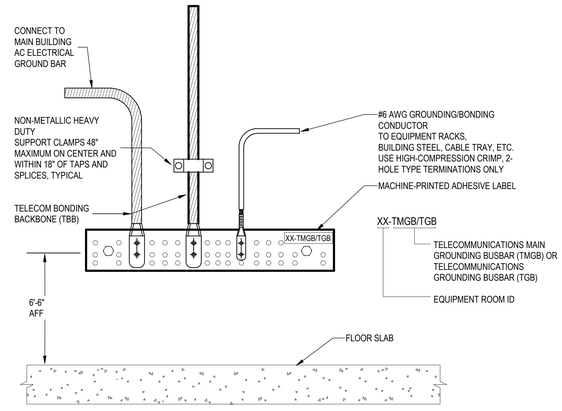

## 4 PROJECTOR SCREEN STRUCTURAL DETAIL

SCALE: NONE




## 3 (TA-MD.12) PROJECTOR CEILING MOUNT - DROP CEILNG

SCALE: NONE




DETAIL NOTES:

A THIS DETAIL APPLIES FOR EACH FLOOR OF THE BUILDING

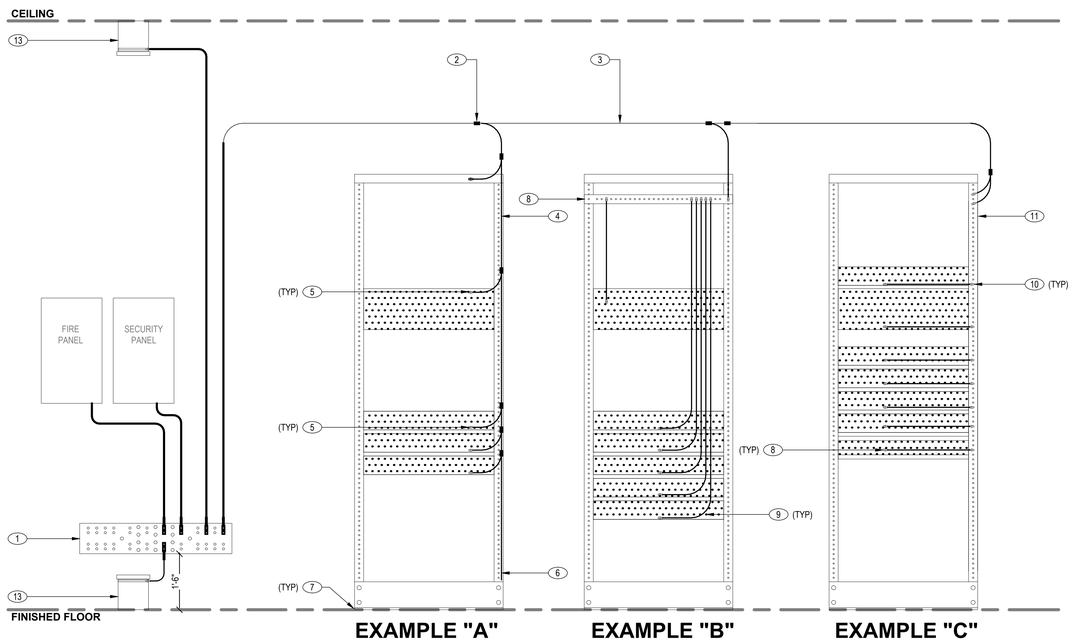
B AVOID INCIDENTAL CONTACT WITH METALLIC BUILDING STRUCTURE, PIPING, DUCTS, CONDUITS, BOND IF NOT AVOIDABLE OR IF METAL IS WITHIN 6" OF RISER CONDITIONS.

C PROVIDE HIGH-COMPRESSION CRIMP TYPE SPLICE. PROVIDE MINIMUM NUMBER POSSIBLE

D REFER TO 27 05 26 FOR ADDITIONAL REQUIREMENTS

## 2 COMMUNICATION EQUIPMENT ROOMS - GROUNDING & BONDING

SCALE: NONE




## 1 EQUIPMENT RACK GROUNDING DETAIL

SCALE: NONE

## DETAIL NOTES

1. GENERAL DETAIL ONLY. SCS CONTRACTOR SHALL COORDINATE WITH PLANS AND PROVIDE A COMPLETE SYSTEM. SCS CONTRACTOR SHALL COMPLY WITH ALL ANSI/ TIA STANDARDS.
2. ALL ITEMS SHALL BE PROVIDED BY SCS CONTRACTOR UNLESS OTHERWISE NOTED.
3. PROVIDE THREAD-FORMING BONDING SCREWS TO ATTACH ALL PATCH PANELS, HORIZONTAL CABLE MANAGERS, FIBER ENCLOSURES, ETC.
4. PROVIDE THREAD FORMING GROUNDING SCREWS TO ATTACH EQUIPMENT GROUND CONDUCTOR TO RACK BUSBARS.
5. ALL CONNECTIONS TO GROUND BUSBARS SHALL BE 2-HOLE COMPRESSION LUGS, UNLESS OTHERWISE NOTED.

## KEYED NOTES

1. ANSI COMPLIANT TELECOMMUNICATIONS MAIN GROUND BUSBAR (TMGB) / TELECOMMUNICATION GROUNDING BUSBAR (TGB) PER SPECIFICATIONS. SEE GENERAL TELECOMMUNICATIONS GROUNDING NOTES. PROVIDED AND INSTALLED BY E.C.
2. IRREVERSIBLE COMPRESSION CONNECTOR.
3. TELECOMMUNICATION EQUIPMENT BONDING CONDUCTOR (TEBC). #6 AWG GREEN INSULATED GROUND CONDUCTOR. TYPICAL U.O.N.
4. RACK BONDING CONDUCTOR. ALL CONDUCTORS ROUTED TO TMGB/TGB.
5. INDIVIDUAL EQUIPMENT BONDING CONDUCTORS FROM EACH PIECE OF EQUIPMENT AND RACK TO THE RACK BONDING CONDUCTOR.
6. RACK BONDING CONDUCTOR EXTENDED TO BOTTOM OF RACK TO ACCOMMODATE FUTURE GROWTH.
7. RACK ISOLATION GROUND PLATES (IF APPLICABLE).
8. TOP MOUNTED RACK GROUNDING BUSBAR (RGB).
9. MINIMUM BENDING RADIUS MUST BE MAINTAINED ON ALL CONDUCTORS.
10. UNIT BONDING CONDUCTOR.
11. VERTICALLY MOUNTED RACK GROUNDING BUSBAR.
12. INDIVIDUAL EQUIPMENT GROUNDING TERMINAL. TYPICAL EACH PIECE OF EQUIPMENT.
13. CONDUIT RISER.

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## KEYNOTES

## NOTES

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Job. No.: 150-23US00121

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY DETAILS**

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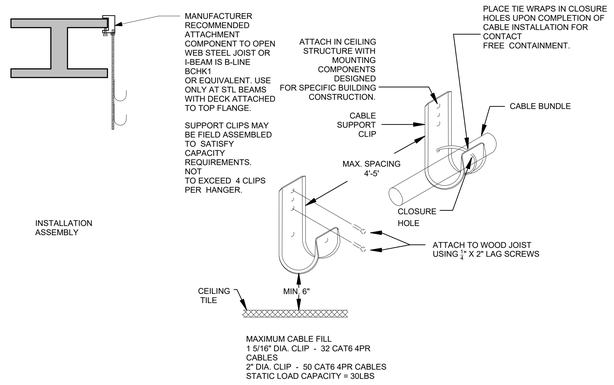
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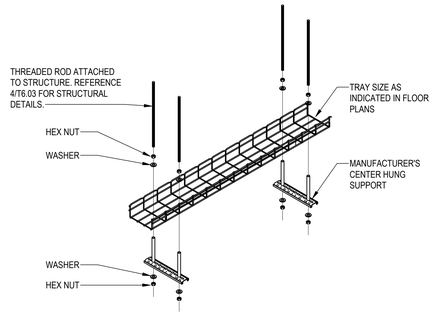
SHEET:

**T6.01**

THIS LINE (SHOWN ABOVE IF PLOTTED) SHOULD BE 1" LONG ON EXACTLY ORIGINAL PAPER SIZE

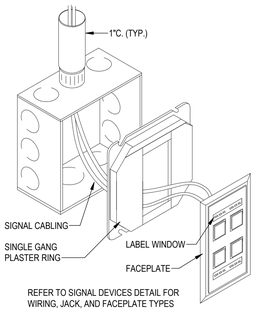



## 1 J-HOOK CABLING SUPPORT DETAIL
SCALE: NONE




DETAIL NOTES:
A. FOR ANY THREADED ROD IN CONTACT WITH CABLING, PROVIDE A PROTECTIVE SLEEVE OVER IT.

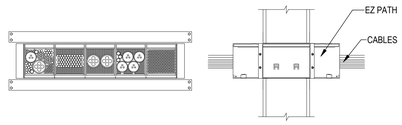
## 2 CABLE TRAY CENTER HUNG SUPPORT
SCALE: NONE




REFER TO SIGNAL DEVICES DETAIL FOR WIRING, JACK, AND FACEPLATE TYPES

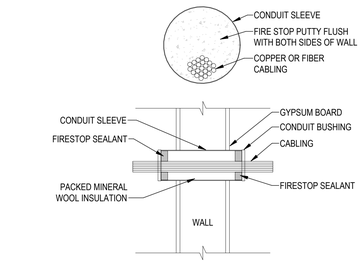
ISOMETRIC

## 4 WAO - CONDUIT STUB-UP / BACKBOX DETAIL
SCALE: 1/8" = 1'-0"

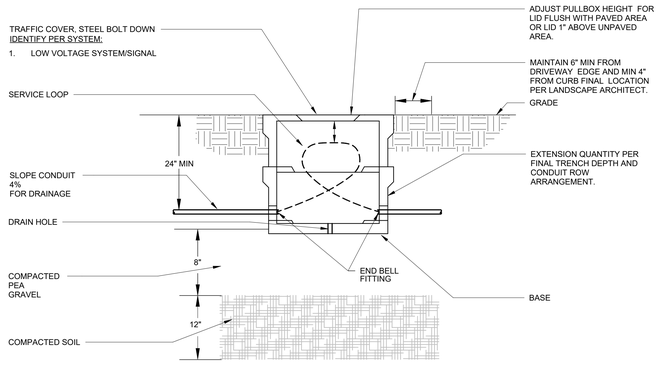



SECTION VIEW SIDE VIEW

## 5 EZ PATH FIRESTOP SLEEVES
SCALE: NONE




## 3 CONDUIT SLEEVE THRU WALL
SCALE: NONE




PULL BOX NOTES

1. ALL BOXES SHALL BE SET ON A GRAVEL BASE WITH GRAVEL. DEPTHS PER DETAIL.
2. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
3. PROVIDE WATERTIGHT SPLICES AND CAPS FOR POWER CONDUCTORS.
4. PROVIDE SEALING GEL IN ALL CONDUITS (BOTH W/ CONDUCTORS AND IN EMPTY SPARE CONDUITS.) GEISHALL BE INSERTED IN THE CONDUIT TO A DEPTH OF 6" AND FLUSH W/ THE END OF THE CONDUIT. THE GEL SHALL BE MANUFACTURED BY 3M #4442 RE-ENTERABLE ENCAPSULANT.
5. PROVIDE IDENTIFYING TAGS ON ALL POWER AND COMMUNICATION CONDUCTORS IN PULL-BOXES.
6. PULLBOX SHALL BE SIZED PER N.E.C. REQUIREMENTS.
7. SEE PULL-BOX/MAN-HOLE GROUNDING DETAIL FOR ADDITIONAL GROUNDING INFORMATION.

## 6 (TN-OP.11) UNDERGROUND MAINTANCEHOLE/HANDHOLE INSTALLATION DETAIL
SCALE: NONE

## 7 CPI 2 POST RACK MANUFACTURER STRUCTURAL DETAILS
SCALE: NTS

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**PREAPPROVAL OF MANUFACTURER'S CERTIFICATION**

**OPM-0261**

**THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE**

MANUFACTURER: CHATSWORTH PRODUCTS, INC — Sheet: 1 of 15
EQUIPMENT NAME: STANDARD & UNIVERSAL RACKS — Date: 8/7/23

**GENERAL NOTES**

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2022 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2022 CBC.
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE WHERE Sds IS NOT GREATER THAN 2.30. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE Sds = 2.30, $\beta_p$ = 2.5, $I_p$ = 1.5, $R_p$ = 6.0, z/h = 0 AT CONCRETE SLAB & z/h < 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω.
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (I.e. z/h ≤ 1)
8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (I.e. z/h = 0)
9. **RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**
   - A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
   - B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2022 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.
   - C. VERIFY THAT PROJECT SPECIFIC VALUES OF Sds & z/h RESULT IN SEISMIC FORCES ($E_h$, $E_v$) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
   - D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR REPORT. AND THIS OPM.
   - E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS. (SEE TYPICAL DETAIL ON SHEET 2).
   - F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR 6hef FROM THIS UNITS ANCHORS.

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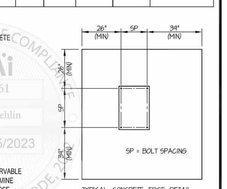
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CHATSWORTH PRODUCTS, INC — DES. J. ROBERSON — SHEET 2
STANDARD & UNIVERSAL RACKS — JOB NO. 11-2314 — DATE 8/7/23 — OF 15 SHEETS

10. **EXPANSION ANCHORS:**
   - A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

| Anchor Diameter | Concrete Type | Min. f'c (psi) | Anchor Type | ICC Report No. | Min. Embed. | Min. Spacing | Min. Edge Dist. | Min. Conc. Thickness | Torque Test | Direct Tension Test |
|---|---|---|---|---|---|---|---|---|---|---|
| 3/8" | Sand Light Weight | 3000 | Hilti Kwik Bolt TZ2 (CARBON STEEL) | ESR-4266 | 2" | 6.75" | 12" | See Detail "A" | 30 FT-LB | N/A |
| 5/8" | Normal Weight | 3000 | Hilti Kwik Bolt TZ2 (CARBON STEEL) | ESR-4266 | 6" | 12" | 26" | 6" | 40 FT-LB | 4538 lb |

   - B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 26" AWAY MINIMUM (i.e. - CORNER) SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.
   - C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC 7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.
     - (i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.
     - (ii) ACCEPTANCE CRITERIA:
       - DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
       - TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE - 1/2 TURN OF THE NUT.
     - (iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.
   - D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.
   - E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.
11. BOLTS THROUGH CONCRETE ON METAL DECK
   - A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.
   - B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
   - C. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.




TYPICAL CONCRETE EDGE DETAIL (SLAB ON GRADE ONLY)

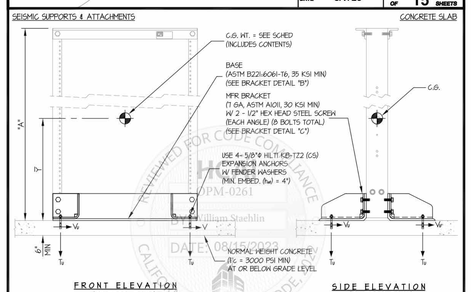
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CHATSWORTH PRODUCTS, INC — DES. J. ROBERSON — SHEET 3
STANDARD & UNIVERSAL RACKS — JOB NO. 11-2314 — DATE 8/7/23 — OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS — CONCRETE SLAB




FRONT ELEVATION (UNIVERSAL RACK) — SIDE ELEVATION (UNIVERSAL RACK)

NOTES:
1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: Sds = 2.30, $\beta_p$ = 2.5, $I_p$ = 1.5, $R_p$ = 6.0, $\Omega_s$ = 2.0, z/h = 0)
   - HORIZONTAL FORCE ($E_h$) = 1035Wp
   - HORIZONTAL FORCE ($E_{mh}$) = 2.07 $W_p$ (FOR CONCRETE ANCHORAGE)
   - VERTICAL FORCE ($E_v$) = 0.46 $W_p$
2. THIS CALCULATION ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.
3. THIS CALCULATION WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEETS 1 AND 2

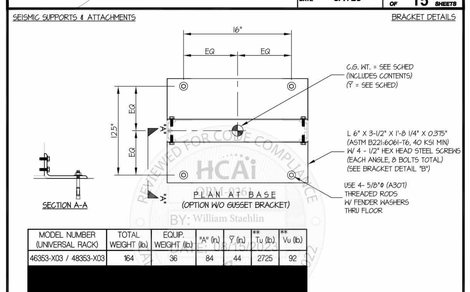
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CHATSWORTH PRODUCTS, INC — DES. J. ROBERSON — SHEET 9
STANDARD & UNIVERSAL RACKS — JOB NO. 11-2314 — DATE 8/7/23 — OF 15 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS — BRACKET DETAILS




| MODEL NUMBER (UNIVERSAL RACK) | TOTAL WEIGHT (lb) | EQUIP. WEIGHT (lb) | "A" (in) | Y (in) | Tu (lb) | Vu (lb) |
|---|---|---|---|---|---|---|
| 46353-X03 / 48353-X03 | 164 | 36 | 84 | 44 | 2725 | 92 |
| [redacted] | | | | | | |

** (VALUES DO NOT INCLUDE Ω)

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**TECHNOLOGY DETAILS**

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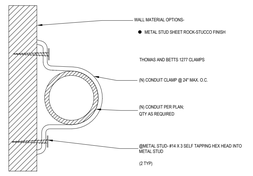
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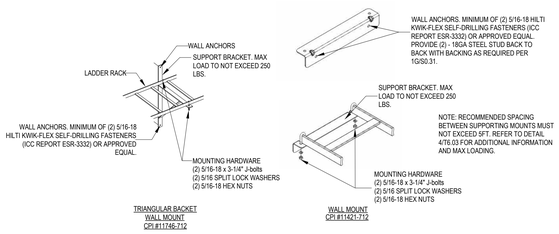
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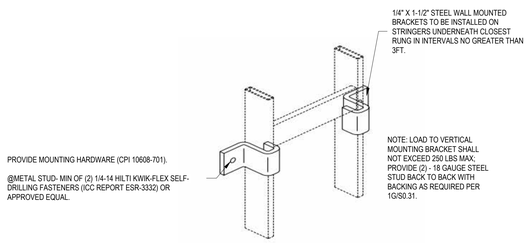



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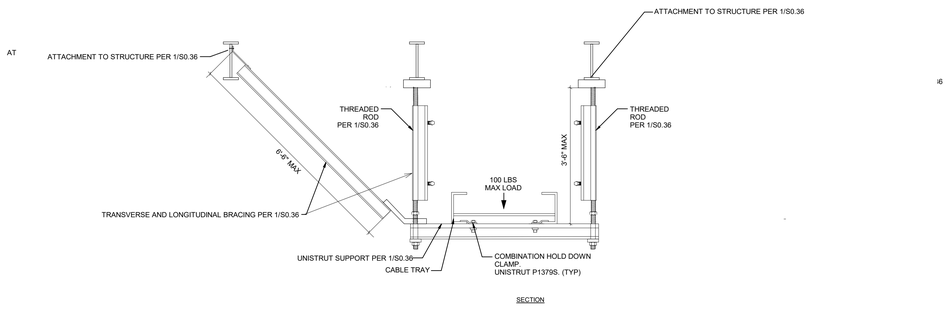
## 1 CONDUIT MOUNTING DETAIL
SCALE: NTS




## 2 LADDER RACK MOUNTING
SCALE: NTS



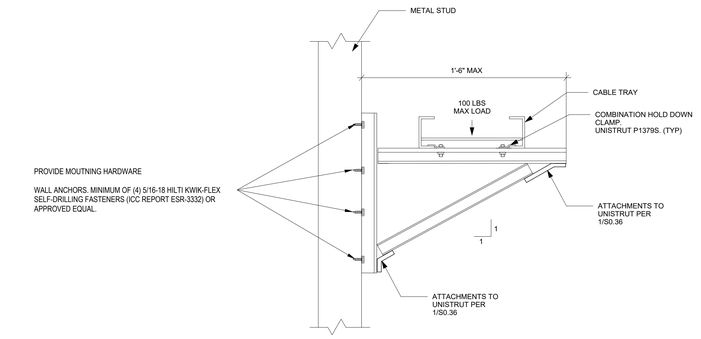

## 3 VERTICAL MOUNTING BRACKET
SCALE: NTS




SECTION

NOTES:
1. REFER TO DETAIL 1/S0.36 FOR MAXIMUM LOADS ON TRAPEZE.
2. MAXIMUM OF 5 FEET FOR SPACING OF SUPPORTS PER MANUFACTURER RECOMMENDATION CONSIDERING THE CABLE TRAY CAPACITY OF 100LBS/FT. LONGITUDINAL AND TRANSVERSE BRACING EVERY 5 FEET.

## LONGITUDINAL RIGID BRACING FOR TRAPEZE SUPPORTED CABLE TRAY
## 4
SCALE: NTS




NOTES:
1. REFER TO DETAIL 1/S0.36 FOR MAXIMUM LOADS.
2. MAXIMUM OF 5 FEET FOR SPACING OF SUPPORTS PER MANUFACTURER RECOMMENDATION CONSIDERING THE CABLE TRAY CAPACITY OF 100LBS/FT.

## WALL MOUNTED CABLE TRAY DETAIL
## 5
SCALE: NTS

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DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

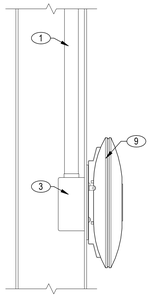
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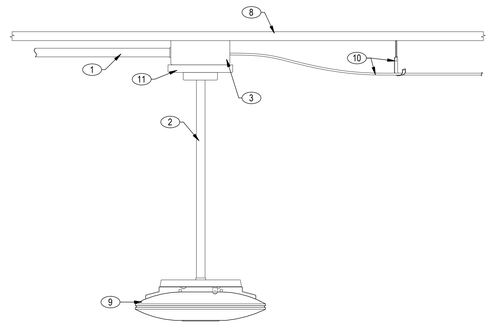
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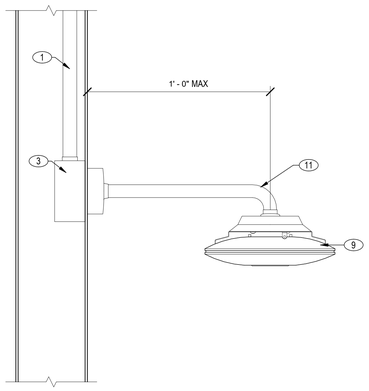
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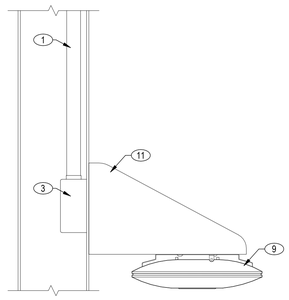

## 3 WALL MOUNT
SCALE: NONE



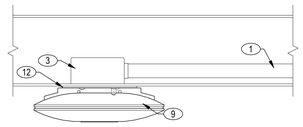

## 4 PENDANT MOUNT
SCALE: NONE




## 5 WALL MOUNT PENDANT
SCALE: NONE




## 6 WALL MOUNT WITH BRACKET
SCALE: NONE




## 7 UNDERSIDE CANOPY MOUNT
SCALE: NONE

## SHEET NOTES

A. WIRELESS ACCESS POINT MOUNT DETAILS SHOW DESIGN AND INSTALLATION INTENT. CUSTOMIZE FOR ACTUAL FIELD CONDITIONS.

B. PROVIDE REQUIRED COMPONENTS, FITTINGS, ADAPTERS AND COUPLERS TO ATTACH THE WIRELESS ACCESS POINTS TO THE MOUNTS AND TO ATTACH THE MOUNTS TO THE BUILDING OR STRUCTURE. WAP IS OWNER FURNISHED CONTRACTOR INTALLED AND WEIGHT IS NOT TO EXCEED MORE THAN 20 LBS.

C. MODIFY WIRELESS ACCESS POINT MOUNTS TO ACCOMMODATE FIELD CONDITIONS.

D. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING CONSTRUCTION DETAILS AND FOR COORDINATION OF EXACT PLACEMENT OF WIRELESS ACCESS POINTS.

*E. COORDINATE REQUIREMENTS FOR CONDUIT AND BACK BOX ROUGH-IN INSIDE ELEVATOR CAB AND ELEVATOR MACHINE ROOM WITH THE ELEVATOR INSTALLER.*

*F. COORDINATE REQUIREMENTS FOR TRAVELING CABLE TO SUPPORT CAMERAS IN ELEVATOR CABS WITH THE ELEVATOR INSTALLER.*

*G. COORDINATE CAMERA VIEWS WITH OWNER, OPERATOR AND ARCHITECT PRIOR TO INSTALLATION TO CONFIRM EXPECTED VIEWS AND THEIR OPERATIONAL REQUIREMENTS. SELECT, COORDINATE AND PROVIDE THE APPROPRIATE CAMERA AND LENS TO MEET OWNER AND OPERATOR NEEDS.*

H. PROVIDE WATERPROOF GASKETS BETWEEN BACK BOXES AND WIRELESS ACCESS POINTS.

*I. PROVIDE BIRD SPIKES ON THE TOP OF EXTERIOR CAMERAS.*

J. PROVIDE OUTDOOR RATED COMPONENTS WHERE ANY PART OF THE COMPONENT COULD BE OR IS EXPOSED TO THE ELEMENTS.

K. PROVIDE STAINLESS STEEL FITTINGS WHERE ANY PART OF THE COMPONENT COULD BE OR IS EXPOSED TO THE SALT WATER OR SALT WATER MOISTURE.

L. PROVIDE MATERIAL AND SYSTEMS TO MAINTAIN FIRE RATING OF WALLS, FLOORS AND CEILINGS WHERE CONDUITS, CABLES, WIRELESS ACCESS POINT AND WIRELESS ACCESS POINT MOUNTS PASS THROUGH OR ARE ATTACHED TO.

*M. LIGHT POLE DETAILS SHOWN FOR DESIGN INTENT. COORDINATE CONDUIT, PULL BOX AND CAMERA MOUNT DETAILS WITH THE LIGHT POLE INSTALLER AND THE ARCHITECT.*

*N. UPSIZE CONDUIT DIAMETER WHEN CONDUIT MAXIMUM RUN LENGTHS AND MAXIMUM NUMBER OF BENDS ARE EXCEEDED WITHOUT THE INSTALLATION OF ADDITIONAL HANDHOLE OR PULL BOXES.*

O. PROVIDE GASKETS ON EXTERIOR BACKBOXES.

## KEYED NOTES (#)

1. MINIMUM 1" EMT CONDUIT TO NEAREST CABLE TRAY OR ACCESSIBLE CEILING SPACE. FIRE STOPPED AND/OR CEILING SEALED AS REQUIRED.
2. THREADED PIPE (PENDANT), PAINTED TO PATCH COLOR OR WIRELESS ACCESS POINT HOUSING. COORDINATE LENGTH IN FIELD TO MATCH DESIRED HEIGHT.
3. BACK BOX (4-11/16 BY 4--11/16 BY 2-1/2 UNLESS OTHERWISE NOTED)
4. NOT USED.
5. NOT USED.
6. ACCESSIBLE CEILING TILE
7. GYPSUM BOARD/WOOD PANEL CEILING
8. EXPOSED STRUCTURE
9. WIRELESS ACCESS POINT
10. EXPOSED CABLE (SUPPORT WITH J-HOOKS ANCHORED TO STRUCTURE ON MAXIMUM 48" INTERVALS IN THE CEILING AREAS.)
11. WIRELESS ACCESS POINT BRACKET
12. WATERPROOF GASKET BETWEEN BACK BOX AND WIRELESS ACCESS POINT/WIRELESS ACCESS POINT BRACKET ON ALL EXTERIOR WIRELESS ACCESS POINTS.
13. SAFETY SLACK WIRE / CABLE SECURED TO STRUCTURE

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**KEYNOTES**

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**WIRELESS ACCESS POINT DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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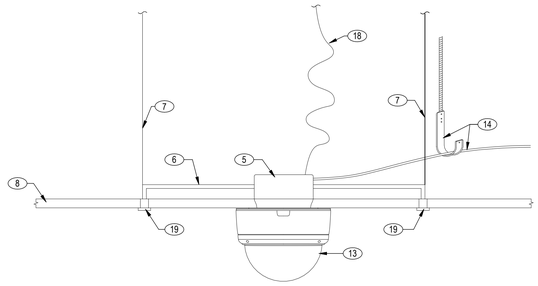
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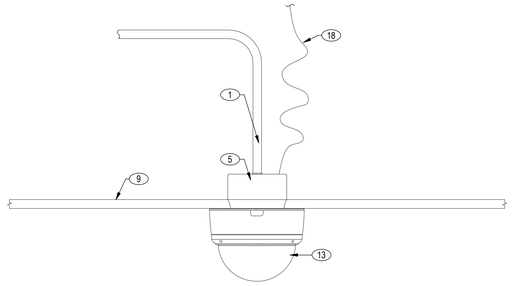


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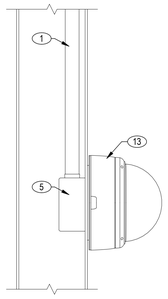
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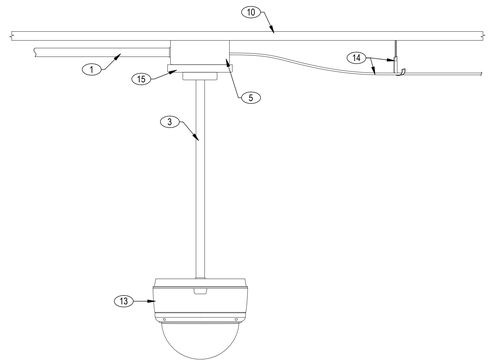

## 1 ACCESSIBLE CEILING TILE
SCALE: NONE



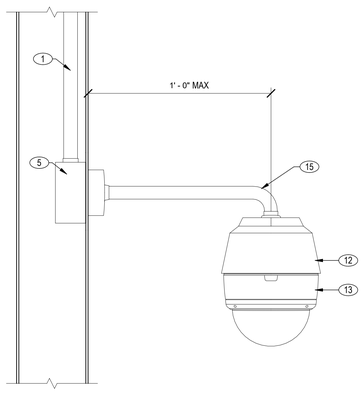

## 2 HARD CEILING
SCALE: NONE



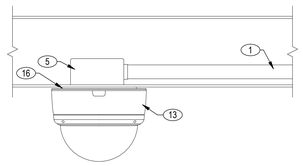

## 3 WALL MOUNT
SCALE: NONE




## 4 PENDANT MOUNT
SCALE: NONE




## 5 WALL MOUNT PENDANT
SCALE: NONE




## 6 UNDERSIDE CANOPY MOUNT
SCALE: NONE

## SHEET NOTES

A. CAMERA MOUNT DETAILS SHOW DESIGN AND INSTALLATION INTENT. CUSTOMIZE FOR ACTUAL FIELD CONDITIONS.

B. PROVIDE COMPONENTS, FITTINGS, ADAPTERS AND COUPLERS TO ATTACH THE CAMERAS TO THE MOUNTS AND TO ATTACH AND SECURE THE MOUNTS TO THE BUILDING OR STRUCTURE. CAMERAS ARE OWNER PROVIDED CONTRACTOR INSTALLED WITH A MAXIMUM WEIGHT NOT TO EXCEED 20LBS.

C. ADJUST CAMERA MOUNTS TO ACCOMMODATE FIELD CONDITIONS.

D. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING CONSTRUCTION DETAILS AND FOR COORDINATION OF EXACT PLACEMENT OF CAMERAS.

E. COORDINATE REQUIREMENTS FOR CONDUIT AND BACK BOX ROUGH-IN INSIDE ELEVATOR CAB AND ELEVATOR MACHINE ROOM WITH THE ELEVATOR INSTALLER.

F. COORDINATE REQUIREMENTS FOR TRAVELING CABLE TO SUPPORT CAMERAS IN ELEVATOR CABS WITH THE ELEVATOR INSTALLER.

G. COORDINATE CAMERA VIEWS WITH OWNER, OPERATOR AND ARCHITECT PRIOR TO INSTALLATION TO CONFIRM EXPECTED VIEWS AND THEIR OPERATIONAL REQUIREMENTS. SELECT, COORDINATE AND PROVIDE THE APPROPRIATE CAMERA AND LENS TO MEET OWNER AND OPERATOR NEEDS. REFER TO SPECIFICATION 282300 FOR ADDITIONAL REQUIREMENTS.

H. PROVIDE WATERPROOF GASKETS BETWEEN BACK BOXES AND CAMERAS AND BETWEEN BACK BOXES AND EXTERIOR WALLS.

I. PROVIDE BIRD SPIKES ON THE TOP OF EXTERIOR CAMERAS.

J. PROVIDE OUTDOOR RATED COMPONENTS WHERE ANY PART OF THE COMPONENT COULD BE OR IS EXPOSED TO THE ELEMENTS.

K. PROVIDE STAINLESS STEEL FITTINGS WHERE ANY PART OF THE COMPONENT COULD BE OR IS EXPOSED TO THE SALT WATER OR SALT WATER MOISTURE.

L. PROVIDE MATERIAL AND SYSTEMS TO MAINTAIN FIRE RATING OF WALLS, FLOORS AND CEILINGS WHERE CONDUITS, CABLES, CAMERA AND CAMERA MOUNTS PASS THROUGH OR ARE ATTACHED TO FIRE RATED WALLS OR CEILING.

M. UPSIZE CONDUIT DIAMETER WHEN CONDUIT MAXIMUM RUN LENGTHS AND MAXIMUM NUMBER OF BENDS ARE EXCEEDED WITHOUT THE INSTALLATION OF ADDITIONAL HANDHOLE OR PULL BOXES.

## KEYED NOTES

1. 1" MINIMUM CONDUIT TO NEAREST CABLE TRAY OR ACCESSIBLE CEILING SPACE. FIRE STOPPED AND/OR CEILING SEALED AS REQUIRED.
2. MINIMUM 1-1/2" RMC OR SCHEDULE 40 CONDUIT TO PULLBOX, UTILITY VAULT OR ACCESSIBLE SPACE IN BUILDING.
3. 1" MAXIMUM, END THREADED CONDUIT, PAINTED TO MATCH SURROUNDING COLOR OR CAMERA HOUSING. COORDINATE LENGTH IN FIELD TO MATCH DESIRED HEIGHT.
4. LOCKABLE, CONTINUOUS HINGE, NEMA 4X RATED ENCLOSURE - 12"H x 12"W x 6"D UON.
5. BACK BOX - 4-11/16" x 4-11/16" x 2-1/2" UON.
6. SUPPORT FRAME/SUPPORT BRACKET. ATTACHED TO CEILING GRID SUPPORTS CHANNEL. MINIMUM (2) #8 MINIMUM SELF TAPPING SCREWS TO GRID.
7. CEILING CHANNEL SUPPORT WIRE
8. ACCESSIBLE CEILING TILE
9. GYPSUM BOARD/WOOD PANEL CEILING
10. EXPOSED STRUCTURE
11. ROOF LINE PARAPET
12. CAMERA ENCLOSURE
13. CAMERA. REFER TO CAMERA SCHEDULE FOR REQUIREMENTS.
14. EXPOSED CABLE (SUPPORT WITH J-HOOKS ANCHORED TO STRUCTURE ON MAXIMUM 48" INTERVALS IN THE CEILING AREAS.)
15. CAMERA MOUNT BRACKET.
16. WATERPROOF GASKET BETWEEN BACK BOX AND CAMERA/CAMERA BRACKET ON ALL EXTERIOR CAMERAS.
17. BRACKET AND SWING OUT PARAPET MOUNT ARM.
18. 12 GAUGE SAFTETY SLAK WIRE/CABLE SECURED TO STRUCTURE AS PER STRUCTURAL DETAIL 4/S0.33.
19. CELING GRID CHANNEL

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## KEYNOTES

## NOTES

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**CAMERA DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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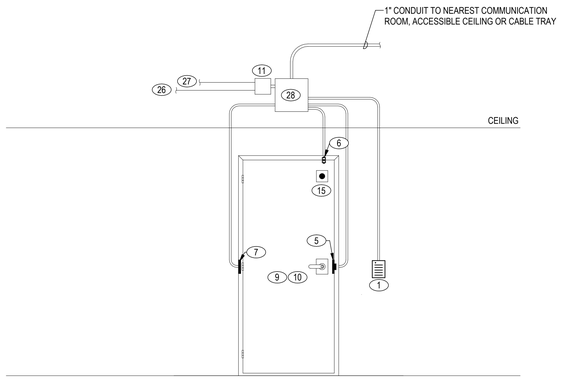
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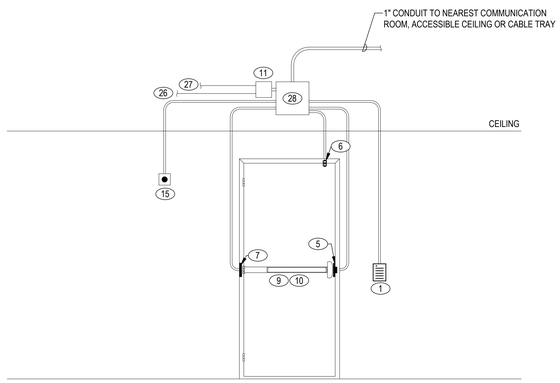

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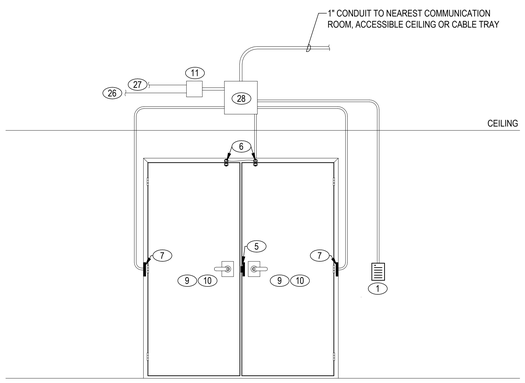
| DEVICE | DIVISION 28 ROUGH-IN | DIVISION 8 & 26 WORK | DIVISION 28 |
|---|---|---|---|
| CARD READER(S) | LOCATION AND QUANTITY PER PLAN DRAWINGS. 2-GANG BACKBOX WITH SINGLE GANG MUD RING AND 1/2" CONDUIT AT EACH CONNECTION. | | CARD READER, WIRING AND FINAL CONNECTIONS. |
| KEY PAD | 1/2" CONDUIT AND SINGLE GANG BACKBOX. | | KEY PAD, WIRING AND FINAL CONNECTIONS. |
| KEY SWITCH | SINGLE-GANG BACKBOX AND 1/2" CONDUIT TO JUNCTION BOX. | KEY SWITCH BY DIV 8. WIRING BY DIV 26. FINAL CONNECTIONS BY FIRE ALARM INSTALLER. | |
| ELECTRIC STRIKE | 1/2" CONDUIT AND GROUT BOX FOR GROUTED FRAMES. | ELECTRIC STRIKE BY DIV 8. | POWER SUPPLY IN NEAREST IDF ROOM, WIRING AND FINAL CONNECTION. |
| DOOR POSITION SWITCH | 1/2" CONDUIT AND GROUT BOX FOR GROUTED FRAMES. | DOOR POSITION SWITCH BY DIV 8. | WIRING AND FINAL CONNECTIONS. |
| REQUEST-TO-EXIT MOTION DETECTOR | 1/2" CONDUIT AND SINGLE GANG BACKBOX. MOUNT BACKBOX HORIZONTALLY APPROX. 7" ABOVE DOOR FRAME ON SECURE SIDE OF DOOR. | | INFRARED REX, WIRING AND FINAL CONNECTIONS |
| POWER TRANSFER OR ELECTRIC HINGE | 1/2" CONDUIT AND GROUT BOX FOR GROUT FRAMES. | POWER TRANSFER/HINGE AND WIRING IN DOOR BY DIV 8. | WIRING AND FINAL CONNECTIONS. |
| | | | |
| | | | |
| ELECTRIC LOCK OR LATCH RETRACTION | NONE. | ELECTRIC LOCK OR LATCH RETRACTION AND WIRING IN DOOR BY DIV 8. | WIRING AND FINAL CONNECTIONS. |
| ELECTRIC EXIT DEVICE | NONE. | REQUEST TO EXIT CONTACT AND WIRING IN DOOR BY DIV 8. | WIRING AND FINAL CONNECTIONS. |
| REQUEST-TO-EXIT CONTACT IN ELECTRIC LOCK OR EXIT DEVICE | 1/2" CONDUIT AND GROUT BOX FOR GROUTED FRAMES. | REQUEST-TO-EXIT CONTACT IN ELECTRIC LOCK OR EXIT DEVICE AND WIRING IN DOOR BY DIV 8. POWER SUPPLY BY DIV 26. | WIRING AND FINAL CONNECTIONS. |
| POWER SUPPLY | | POWER SUPPLY(S) AND/OR 120V/24V CONTROL TRANSFORMERS BY DIV 8. 120V POWER CIRCUIT AND 120V CONNECTION TO POWER SUPPLY BY DIV 26. | LOW VOLTAGE WIRING AND FINAL CONNECTIONS. |
| DELAYED EGRESS OVERRIDE | | SUPERVISED RELAY FOR FIRE ALARM OVERRIDE BY DIV 26. | LOW VOLTAGE WIRING AND FINAL CONNECTIONS OPERATION: ACCESS CARD AND FA OVERRIDE DELAYED EGRESS (ACCESS CONTROL DOORS ONLY). |
| EXIT ALARM | 120 VOLT CONNECTION FOR POWER SUPPLY. | HARDWARE, POWER SUPPLY, AND ALARM BY DIV 8. | LOW VOLTAGE WIRING AND FINAL CONNECTIONS (ACCESS CONTROL DOORS ONLY). |
| | | | |
| MAGNETIC LOCK(S) | | MAGNETIC LOCKS BY DIV 8. POWER SUPPLY BY DIV 8. | MAGNETIC LOCK RELEASE FOR ISS LOCKDOWN OR CARD ACCESS PROGRAMMING. |
| DOOR HOLDER - MAGNETIC | 1/2" CONDUIT TO DOOR HOLDERS FOR CARD ACCESS SYSTEM INTERLOCK. | DOOR HOLDERS BY DIV 8 OR 26 INSTALLATION AND FIRE ALARM SYSTEM INTERLOCK BY DIV 26. | |
| AUTO DOOR OPERATOR CONTROLLER | 1/2" CONDUIT TO DOOR OPERATOR CONTROLLER FOR CARD ACCESS SYSTEM INTERLOCK. | DOOR OPERATOR AND CONTROLLER BY DIV 8. 120V WIRING BY DIV 26. | ACCESS CONTROL INTERLOCK WIRING AND FINAL CONNECTIONS OPERATION: CARD READER OPERATES AUTO DOOR IF NO PUSH PAD. |
| AUTO DOOR PUSH PAD | TWO-GANG BACKBOX AND 1/2" CONDUIT TO JUNCTION BOX FOR ACCESS CONTROL INTERLOCK. | PUSH PAD BY DIV 8. ALL DOOR CONTROL WIRING BY DIV 26. | LOW VOLTAGE WIRING AND FINAL CONNECTIONS OPERATION: CARD READER PERMITS DOOR PUSH PAD EXCEPT WHEN DOOR LOCKED BY CARD ACCESS SYSTEM PROGRAMMING. |
| JUNCTION BOX | 12"X12"X4" J-BOX W/COVER LOCATED ABOVE CEILING AT ACCESSIBLE POINT CLOSE TO DOORWAY ON SECURE SIDE OF DOOR. | WIRING DIAGRAM BY DIV 8. | FINAL CONNECTIONS PER WIRING DIAGRAM. |
| JUNCTION BOX | 4"X4"X4" J-BOX W/COVER LOCATED ABOVE CEILING AT ACCESSIBLE POINT CLOSE TO DOORWAY ON SECURE SIDE OF DOOR. | WIRING DIAGRAM BY DIV 8. | FINAL CONNECTIONS PER WIRING DIAGRAM. |
| CONNECTION TO CABLE TRAY | CONDUIT FROM JUNCTION BOX TO NEAREST CABLE TRAY. | | WIRING TO ACCESS CONTROL SYSTEM CONTROL PANELS. |



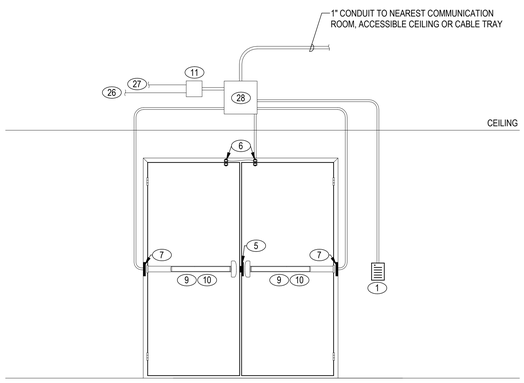

## 5 SINGLE DOOR ROUGH-IN ELECTRIC LOCK
SCALE: NONE




## 4 SINGLE DOOR ROUGH-IN EXIT DEVICE
SCALE: NONE




## 2 DOUBLE DOOR ROUGH-IN ELECTRIC LOCK
SCALE: NONE




## 1 DOUBLE DOOR ROUGH-IN EXIT DEVICE
SCALE: NONE

| DOOR HARDWARE SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 5 | 6 | 10 | | | 7 | 8 | 9 | 11 | 12 | 13 | 14 | | 15 | 10 | 17 | 17A | 16 | 16A | 21 | 22 | 23 | 23A | 24 | 25 | 26 | 27 | 28 |
| CARD READER | KEY PAD / BIOMETRIC | KEY SWITCH | ELECTRIC STRIKE | RECESSED DOOR CONTACTS | REQUEST TO EXIT | INTEGRATED REQUEST TO EXIT DEVICE | WAVE TO EXIT DEVICE | POWER TRANSFER HINGE | ELECTRIC LOCK/LATCH RETRACTION | ELECTRIC EXIT DEVICE / PANIC | LOCAL POWER SUPPLY FOR LOCKING DEVICE | DELAYED EGRESS (SECONDS | SOUNDER EXIT ALARM | MAGNETIC LOCK | DELAYED EGRESS RESET KEY SWITCH | DOOR HOLDER | EXIT MOTION SENSOR | AUTO DOOR PUSH PAD | AUTO DOOR TOUCHLESS | AUTO DOOR POWER / OPERATOR INSIDE | AUTO DOOR POWER / OPERATOR OUTSIDE | REMOTE UNLOCK | POWER CLOSER | INTEGRATED VIDEO INTERCOM | INTEGRATED CARD READER / VIDEO INTERCOM STATION | TAILGATE DETECTION | DOOR RELEASE BUTTON | FIRE ALARM INTERFACE CABLE | 120V POWER | JUNCTION BOX |

## SHEET NOTES

A. DETAILS ARE DIAGRAMATIC ONLY.

B. REFER TO TECHNOLOGY DRAWINGS FOR DEVICE LOCATIONS.

C. REFER TO DIVISION 08 AND DIVISION 28 FOR MORE INFORMATION.

## KEYNOTES

## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**ACCESS CONTROL ROUGH IN DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# T6.06


Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-MEPT-BLDG.rvt
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THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF THIS SHEET IS LESS THAN 1" LONG, THIS SHEET IS ORIGINAL PAGE SIZE

## APPLICABLE CODES AND STANDARDS

2022 CALIFORNIA FIRE CODE (CFC)

2022 CALIFORNIA BUILDING CODE (CBC)

2022 CALIFORNIA MECHANICAL CODE

2022 CALIFORNIA ELECTRICAL CODE

2022 CALIFORNIA EXISTING BUILDING CODE

2022 NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE

2021 NFPA 190A - STANDARD FOR INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS

2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN

## SCOPE OF WORK

THE NEW EMUSD ARROYO BUILDING WILL BE PROVIDED WITH THE FOLLOWING:

- NEW FIRE ALARM SYSTEM WITH EMERGENCY VOICE COMMUNICATION
- ADDRESSABLE SMOKE DETECTORS
- ADDRESSABLE HEAT DETECTORS
- ADDRESSABLE MANUAL FIRE ALARM BOXES AT ALL EXITS AND ONE (1) ADDITIONAL MANUAL FIRE ALARM BOX IN THE ATTENDENCE OFFICE.
- ADDRESSABLE MONITOR MODULES FOR FIRE SPRINKLER WATERFLOW DETECTOR
- ADDRESSABLE MONITOR MODULES FOR MONITORING FIRE SPRINKLER CONTROL VALVE TAMPER SWITCHES
- ADDRESSABLE MONITOR MODULES FOR ELECTRIC FIRE PUMP
- ADDRESSABLE CONTROL RELAYS FOR AUXILIARY FUNCTIONS
- ADDRESSABLE BEAM DETECTORS IN AUDITORIUM AREA.

THE NEW FIRE ALARM SYSTEM WITH EMERGENCY VOICE COMMUNICATION WILL BE PROVIDED WITH THE FOLLOWING:

- SPEAKER NOTIFICATION APPLIANCES THROUGHOUT THE BUILDING
- ADA COMPLIANT STROBE LIGHTS IN ALL COMMON USE AND PUBLIC AREAS, INCLUDING ROOMS DESIGNATED FOR HEARING IMPAIRED.

NEW FIRE ALARM SYSTEM WILL BE CONNECTED TO THE EXISTING CAMPUS FIRE ALARM SYSTEM, DSA A#03-107693 WHICH IS MONITORED OFFSITE.

## DSA NOTES

1. APPLICABLE STANDARD NFPA 72, as adopted and amended in CBC Chapter 35
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF SYSTEM INSTALLATION, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND /OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR LENS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
10. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.
12. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
13. VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
15. ALL FIRE ALARM WIRING SHALL BE FPL OR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
17. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
18. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
19. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
20. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 17.8.2.21)
21. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
22. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
23. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
24. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
25. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

## GENERAL NOTES

1. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH C.E.C. ARTICLE 760. POWER LIMITED FIRE PROTECTION SIGNALING CIRCUITS.
2. CONTROL CIRCUITS ARE NON POWER LIMITED. MINIMUM RECOMMEND WIRE SIZE TO BE DETERMINED BY CIRCUIT LOAD.
3. WIRING SHALL BE LOOPED THROUGH DEVICES UPON TERMINATION. (WIRE MUST BE CUT FOR IN AND OUT RUNS PRIOR TO DEVICE TERMINATION.
4. T-TAPPING OR PARALLELING BRANCHING OF NOTIFICATION APPLIANCE DEVICE CIRCUITS IS NOT PERMITTED.
5. ELECTRICAL CONTRACTOR IS REQUIRED TO USE: COLOR CODE, WIRE NUMBERS, OR AS SPECIFIED IN THE PROJECT SPECIFICATIONS ON ALL CIRCUITS AND SHALL BE CONTINUOUS, OTHERWISE, NO FINAL CONNECTIONS OR TESTING SHALL BE PERFORMED. IF WIRE COLOR CODING IS USED, GREEN WILL BE USED FOR GROUND BONDING ONLY.
6. ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANELS SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. (FIRE ALARM CONTROL PANEL(S) TO SUPERVISE ANNUNCIATOR PANEL(S), SUB-PANEL(S), ALL CIRCUITS AND INITIATING DEVICES).
7. SURGE PROTECTION SHALL BE PROVIDED AT ALL NEW FIRE ALARM CONTROL PANELS, POWER SUPPLIES AND ALL CIRCUITS ENTERING AND LEAVING THE BUILDING.
8. FIRE ALARM VISIBLE NOTIFICATION APPLIANCES SHALL BE PROVIDED IN ALL PUBLIC AND COMMON USE AREAS PER CODE
9. ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
10. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTIVE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME WORK IS NOT ACTIVELY BEING PERFORMED.
11. THE ENTIRE CONDUIT SYSTEM INCLUDING ALL NON-CURRENT CARRYING METAL SHALL BE GROUNDED AS REQUIRED BY NEC.
12. SIZES OF GROUNDING CONDUCTORS AND CONDUCTOR ENCLOSURES: SIZE SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
13. AUDIBILITY WILL BE CHECKED BY THE DSA INSPECTOR.
14. ALL FIRE ALARM CIRCUITS SHALL BE LABELED AT CONNECTIONS AND AT JUNCTION BOXES.
15. SILENT KNIGHT SYSTEM IS BOTH UNDERWRITERS LABORATORIES (UL) AND CALIFORNIA STATE FIRE MARSHAL LISTED (CSFM).
16. ALL DEVICES OF THE FIRE ALARM SYSTEM SHALL BE APPROVED AND LISTED BY THE CSFM AND SUBMITTED WITH THE CURRENT CSFM LISTING.
17. ALL WIRING CONDUCTORS SHALL BE POWER LIMITED COPPER WIRING AND INSTALLED WITHIN A METALLIC CONDUIT, 3/4 INCH MINIMUM. CONDUIT SHALL BE RED.
18. ALL RACEWAY RUNS INDICATED WITHIN THE DRAWING PACKAGE ARE SHOWN DIAGRAMMATICALLY AND ARE FOR CIRCUITING PURPOSES ONLY. ALL CONDUIT RUNS SHOWN SHOULD NOT SERVE IN ANY WAY AS AN ACTUAL ROUTING GUIDE FOR INSTALLATION OF RACEWAYS. EXACT CONDUIT INSTALLATION SHALL BE FIELD DETERMINED.
19. ADDITIONAL JUNCTION BOXES MAY BE REQUIRED TO ACCOMMODATE PROPER RACEWAY INSTALLATIONS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL JUNCTION BOXES REQUIRED.
20. SUBMITTED DRAWING PACKAGE INCLUDING CUSTOM ANNUNCIATOR SHALL BE REVIEWED BY EMUSD REPRESENTATIVE AND APPROVED PRIOR TO SUBMITTING TO GAMEWELL FOR FINAL FABRICATION.
21. DO NOT APPLY POWER TO FIRE ALARM CONTROL PANEL(S) UNTIL A MANUFACTURERS APPROVED SERVICE TECHNICIAN HAS CHECKED THE SYSTEM INSTALLATION. POWER SHALL BE APPLIED UPON SATISFACTORY COMPLETION OF THE INSPECTION HAS BEEN COMPLETED. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE SHOULD DAMAGE TO EQUIPMENT IF INSPECTION HAS NOT BEEN PERFORMED.
22. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED AT A MINIMUM OF 48 HOURS PRIOR TO FINAL INSPECTIONS AND TESTING.
23. A RECORD OF COMPLETION AS PER NFPA 72 SHALL BE PREPARED BY THE FIRE ALARM CONTRACTOR AND PROVIDED TO THE CAMPUS ENGINEER UPON COMPLETION OF THE INSTALLATION.
24. THE POWER CIRCUIT TO THE FIRE ALARM CONTROL UNIT (FACU) AND THE FIRE ALARM REMOTE POWER SUPPLIES (RPS) SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT EACH FACU AND RPS.
25. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACU ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLICABLE ELECTRICAL CODES, REFER TO "APPLICABLE CODES & STANDARDS" FOR SPECIFIC CODE REFERENCES.
26. 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
27. FIRE ALARM INSTALLER TO MAINTAIN MAXIMUM CONDUIT FILL RATIO AS PER APPLICABLE ELECTRICAL CODE REQUIREMENTS.
28. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER ALL CONSTRUCTION TRADES HAVE COMPLETED CLEANUP.
29. ALL VOLTAGE DROP AND BATTERY CALCULATIONS ARE TO BE FIELD VERIFIED UPON COMPLETION OF PROJECT TO ENSURE THAT ALL CIRCUITS ARE WITHIN LIMITATIONS AND ADEQUATE BACKUP POWER IS MAINTAINED.
30. SMOKE DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIRFLOW NOR CLOSER THAN 3' FROM AN AIR SUPPLY DIFFUSER OR RETURN AIR OPENING AND 1' FROM ANY LIGHT FIXTURE.
31. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICES. DO NOT SPLICE THE WIRE. WIRE NUTS ARE PROHIBITED.
32. ALL DEVICES IN THE FIRE ALARM SYSTEM SHALL ALSO BE INSTALLED IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF NFPA 72.
33. ALL SMOKE AND HEAT DETECTOR LOCATION ARE BASED ON SMOOTH CEILING UNLESS OTHER WISE NOTED.
34. ALL HOME RUNS ARE TO THE FIRE ALARM TERMINAL CABINETS (FATC) LOCATED IN THE ELECTRICAL ROOM, UNLESS OTHER WISE NOTED. NEW A.D.A. STROBES SHALL CONNECT TO THE RPS POWER SUPPLY LOCATED ADJACENT TO THE FATC.
35. THE FIRE ALARM PANEL SHALL BE MONITORED 24/7 VIA THE EXISTING AES WIRELESS TRANSMITTER.
36. REFER TO THE SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS
37. NFPA 72 - 10.7.2:
FIRE ALARM SIGNALS SHALL TAKE PRECEDENCE OVER ALL OTHER SIGNALS, EXCEPT AS PERMITTED BY 10.7.1 OR 10.7.3.

## FIRE ALARM SYSTEM LEGEND

ALL DEVICES SHALL BE SILENT KNIGHT MFT, UNLESS OTHERWISE SPECIFIED

| SYMBOL | QTY | DESCRIPTION | MODEL | ELEVATION | CSFM # | ROUGH IN |
|---|---|---|---|---|---|---|
| FACU | 01 | FIRE ALARM CONTROL UNIT | 6820-EVS | 6'-0" TOP OF CAB | 7165-0559:0500 | * FIRE ALARM ENCLOSURE |
| | 01 | MAIN BOARD ASSEMBLY | - | | - | MOUNTED IN CABINET |
| | 01 | CABINET ENCLOSURE | - | 6'-0" TOP OF CAB | - | MOUNT TO WALL |
| | 01 | VOICE CONTROL MODULE | EVS-VCM | | 7165-0559:0500 | MOUNTS ON IN CABINET |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | 01 | 100 WATT ZONED AMPLIER | EVS-100W | INSIDE CABINET | 7165-0559:0500 | MOUNTS IN CABINET |
| | 01 | SERIAL/PARRALELL PRINTER INTERFACE | 5824 | INSIDE CABINET | 7165-0559:0500 | MOUNTS IN CABINET |
| | 01 | FIBER MODULE | SK-FML | INSIDE CABINET | 7165-0559:0500 | MOUNTS IN CABINET |
| | | | | | | |
| LOC | 01 | LOCAL OPERATOR CONSOLE | EVS-LOC | 6'-0" TOP OF CAB | 7165-0559:0500 | MOUNT TO WALL |
| DOC | 01 | FIRE ALARM DOCUMENTS | ACE-11 | ---- | 7300-0553:0110 | BACKBOX PROVIDED |
| RPS | 02 | POWER SUPPLY | SK-PS10 | ---- | 7315-0559:0522 | - |
| FATC | 02 | FIRE ALARM TERMINAL CABINET | - | CUSTOM | - | CUSTOM |
| S | 123 | OPTICA PHOTOELECTRIC DETECTOR WITH STANDARD BASE | SK-PHOTO | CEILING | 7272-0559:0149 | 4S DEEP W/SINGLE GANG SWITCH RING |
| H | 03 | FIXED TEMPERATURE HEAT DETECTOR WITH STANDARD BASE | SK-HEAT | CEILING | 7254-0559:0511 | 4S DEEP W/SINGLE GANG SWITCH RING |
| S BT S R | 03 | REFLECTIVE BEAM SMOKE DETECTOR W/REMOTE TEST SWITCH | OSI-RI-SK RST151KEY | WALL | 7260-0559:0515 | WALLBOX PROVIDED |
| F | 20 | MANUAL FIRE ALARM BOX (DOUBLE ACTION) ADDRESSABLE | SK-PULL-DA | +48" A.F.F. | 7150-0559:0161 | 4S DEEP W/SINGLE GANG SWITCH RING |
| M | 14 | SINGLE INPUT MONITOR MODULE ADDRESSABLE | SK-MONITOR | ---- | 7300-0559:0155 | 4S DEEP W/4S EXTENSION |
| CR | 12 | CONTROL RELAY ADDRESSABLE | SK-RELAY | ---- | 7300-0559:0155 | 4S DEEP W/4S EXTENSION |
| — | - | - - | ---- | ---- | - | - |
| IM | 01 | ISOLATOR MODULE | SK-ISO | ---- | 7300-0559:0153 | 4S DEEP W/4S EXTENSION |
| — | - | NOT USED | ---- | ---- | - | ---- |
| CD | 08 | STROBE (ADA) - CEILING MOUNTED - WHITE | SCWL | ---- | 7125-1653:0504 | 4S DEEP W/4S EXTENSION |
| CD | 12 | STROBE (ADA) - WALL MOUNTED | SWL | +80" - 96" A.F.F. | 7125-1653:0504 | 4S DEEP W/4S EXTENSION |
| | 05 | SPEAKER - WALL MOUNTED | SPWL | +90" A.F.F. | 7320-1653:0505 | 4S DEEP W/4S EXTENSION |
| C | 25 | SPEAKER - CEILING MOUNTED | SPCWL | CEILING | 7320-1653:0505 | 4S DEEP W/4S EXTENSION |
| xxxcd WP | 01 | WEATHERPROOF SPEAKER STROBE - WALL MOUNTED WITH BACK BOX | SPSWK | +80"-96" A.F.F. | 7320-1653:0201 | WALLBOX PROVIDED |
| xW xxxcd | 34 | SPEAKER STROBE (ADA) - WALL MOUNTED | SPSWL | +80" - 96" A.F.F. | 7320-1653:0505 | 4S DEEP W/4S EXTENSION |
| C xxxcd | 26 | SPEAKER STROBE (ADA) - CEILING MOUNTED - WHITE | SPSCL | +80"- 96" A.F.F. | 7320-1653:0505 | 4S DEEP W/4S EXTENSION |
| | 01 | 10" - 24V BELL WITH WEATHERPROOF BACK BOX | 439D-10AW-449 | +90" A.F.F. | 7136-1657:0150 | WALLBOX PROVIDED |
| T | 10 | FIRE SPRINKLER CONTROL VALVE TAMPER SWITCH | VALVE | ---- | INSTALLED BY OTHERS | ---- |
| WF | 01 | SPRINKLER WATERFLOW SWITCH | FLOW | ---- | INSTALLED BY OTHERS | ---- |
| J | AS REQD | JUNCTION BOX | - | ---- | - | ---- |
| SP | 04 | SURGE PROTECTOR | DTK-120SRD | CUSTOM | 7300-2105:0105 | CUSTOM |
| C | | CEILING | - | ---- | - | ---- |
| A | | ABOVE CEILING | - | ---- | - | ---- |

## FIRE ALARM WIRE & CABLE SCHEDULE

| CABLE SYMBOL | SOLID OR STRANDED AWG WIRE | # OF CONDUCTORS | MANUFACTURER'S REQUIREMENT | APPLICATION | TYPE |
|---|---|---|---|---|---|
| L | 16 | 2 | 18 TO 14 AWG WIRE | Signal Line Circuit (SLC) | 2#16 UTP/FPLR |
| V | 14 | 2 | 16 TO 12 AWG WIRE | Visual Notification Circuit | 2#14 THHN |
| S | 16 | 2 | 16 TO 12 AWG WIRE | Speaker Notification Circuit | 2#16 FPLR |
| P | 14 | 2 | 16 TO 14 AWG WIRE | 24 Volt Power Circuit | THHN |
| I | 14 | 2 | 16 TO 14 AWG WIRE | Initiating Circuit | THHN/THWN |
| N | 16 | 4 | 16 TO 14 AWG WIRE | Network (RS485) Circuit | THHN |

UTP UNSHIELDED TWISTED PAIR
FPLR FIRE POWER LIMITED RISER

| SHEET INDEX | |
|---|---|
| Sheet Number | Sheet Name |
| FA0.00 | COVER SHEET |
| FA0.01 | Riser Diagram |
| FA0.02 | Riser Diagram |
| FA0.03 | Sequence of Operation |
| FA0.04 | Calculations |
| FA0.05 | Calculations |
| FA0.06 | Details |
| FA0.07 | Details |
| FA0.08 | Details |
| FA0.09 | Details |
| FA1.00 | Fire Alarm - Panel Relocation Site Plan |
| FA1.01 | Fire Alarm - Overall Site plan |
| FA1.11 | Fire Alarm - Site plan |
| FA3.11A | 1ST FLOOR - SEGMENT A - FIRE ALARM PLAN |
| FA3.11B | 1ST FLOOR - SEGMENT B - FIRE ALARM PLAN |
| FA3.21A | ROOF PLAN - SEGMENT A - FIRE ALARM PLAN |
| FA3.21B | ROOF PLAN - SEGMENT B - FIRE ALARM PLAN |

## CIRCUIT/DEVICE LABELING

| | |
|---|---|
| L#D# | LOOP # DEVICE # |
| S#-# | AUDIBLE NOTIFICATION CIRCUIT # - APPLIANCE # |
| V#-#-# | REMOTE POWER SUPPLY #-VISUAL NOTIFICATION CIRCUIT # - APPLIANCE # |
| | |

*ALL CONDUIT SHALL BE 3/4" MINIMUM

## BUILDING SUMMARY

### ARROYO BUILDING

| | |
|---|---|
| BUILDING AREA: | 34,754 SQ FT |
| BUILDING HEIGHT: | 1 STORY |
| CONSTRUCTION: | II-B |
| SPRINKLERED: | YES |
| OCCUPANCY: | E |
| PRIMARY USE: | ADMINISTRATION AND ASSEMBLY |

## DSA ANCHORAGE NOTE

PLEASE REFER TO SHEET FA0.08 FOR MEP COMPONENT ANCHORAGE NOTE.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

NICET BOX

Jorge Velasco, CET
FIRE ALARM SYSTEMS
LEVEL III
NICET #92448
EXPIRES 12-1-2026

03/28/2025
SIGNATURE DATE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**COVER SHEET**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641

DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

SHEET:

**FA0.00**

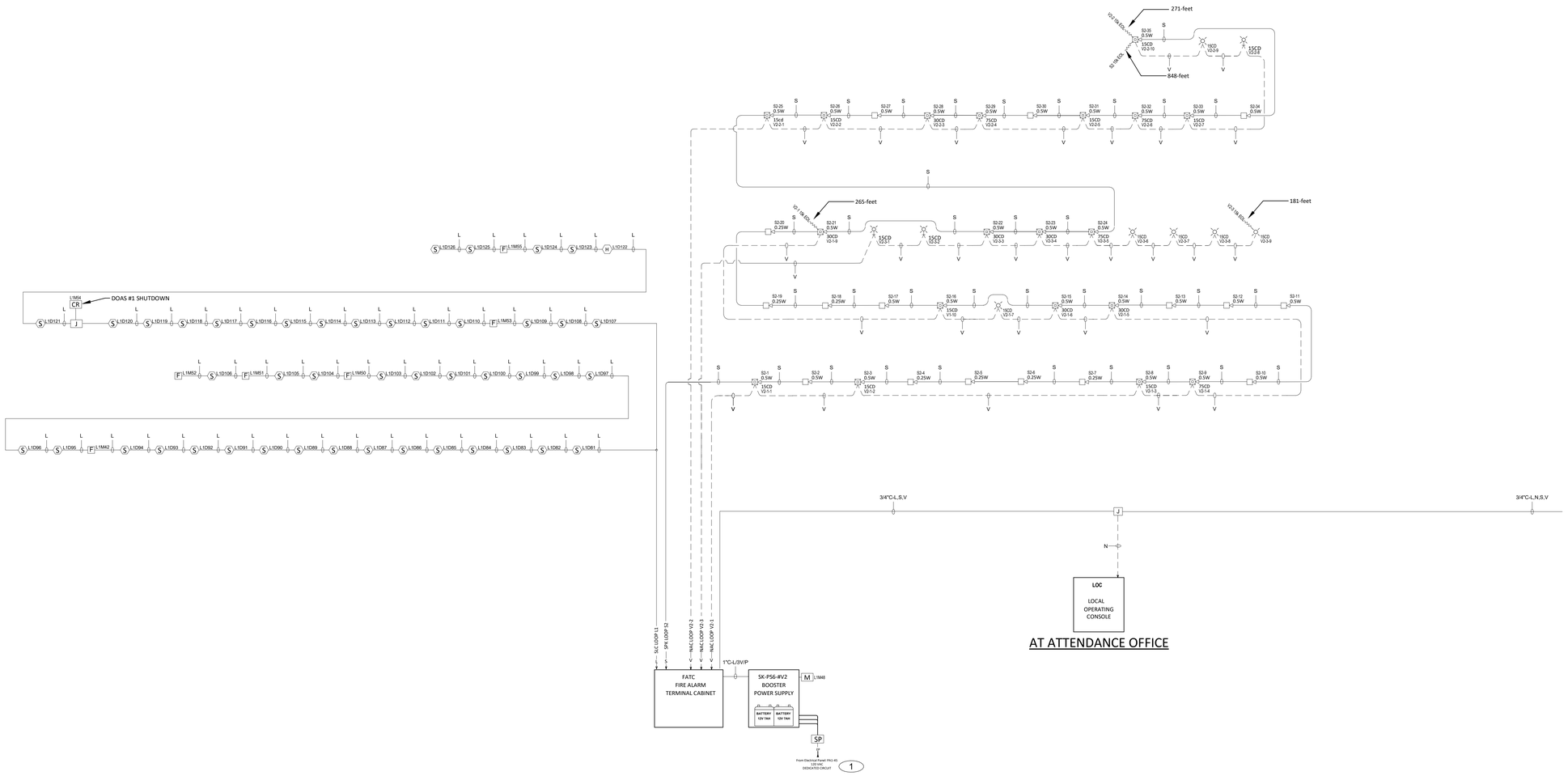
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PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 3/4" LONG ON ORIGINAL. IF THIS IS NOT THE CASE, ADJUST SCALES ACCORDINGLY

## SHEET NOTES

1 FIRE ALARM CONTROL PANEL AND BOOSTER POWER SUPPLY POWER WILL BE DEDICATED, MECHANICALLY PROTECTED (LOCKOUT), MARKED RED, PANEL TO BE ACCESSILBE ONLY TO AUTHORIZED PERSONNEL, CIRCUIT WILL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". LOCATION OF THE PANEL AND CIRCUIT BREAK WILL BE PERMANENTLY IDENTIFIED IN THE FIRE ALARM CONTROL PANEL.




AT ATTENDANCE OFFICE

ADMINISTRATION ELECTRICAL ROOM

FIRST FLOOR

ADMINISTRATION

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**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

NICET BOX

Jorge Velasco, CET
FIRE ALARM SYSTEMS
LEVEL III
NICET #92448
EXPIRES 12-1-2026

03/28/2025
SIGNATURE DATE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Riser Diagram**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# FA0.01

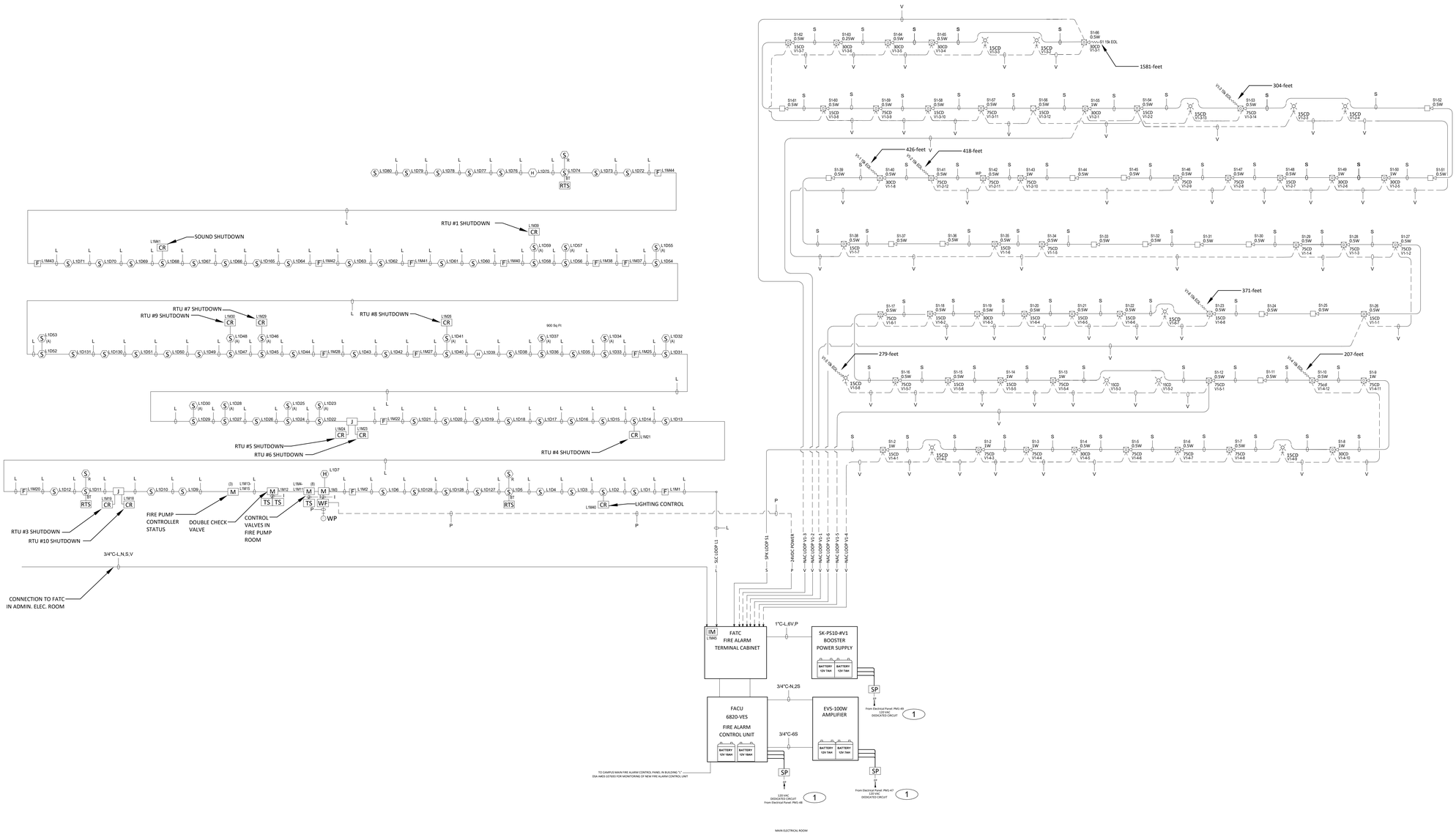
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FIRST FLOOR

AUDITORIUM

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HMC Architects

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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

NICET BOX

Jorge Velasco, CET
FIRE ALARM SYSTEMS
LEVEL III
NICET #92448
EXPIRES 12-1-2026

SIGNATURE 03/28/2025 DATE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Riser Diagram**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# FA0.02

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-FA-BLDGS.rvt
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# SEQUENCE OF OPERATION(S)

1 CENTRAL STATION MONITORING IS EXISTING AND NOT CONNECTED DIRECTLY TO THE NEW FIRE ALARM CONTROL PANEL INSTALLED UNDER THIS PROJECT.

| | | CONTROL UNIT ANNUNCIATION | | | | | | | | | | | NOTIFICATION | | | | | | | | | | SUPPLEMENTARY | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ACTUATE COMMON ALARM SIGNAL INDICATOR AT FACP & LOC | INDICATE DEVICE LOCATION AT FACP & LOC | ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR AT FACP & LOC | INDICATE DEVICE LOCATION AT FACP & LOC | ACTUATE COMMON TROUBLE SIGNAL INDICATOR AT FACP & LOC | INDICATE TROUBLE CONDITION AT FACP & LOC | STORE EVENT IN FACP HISTORY LOG | NOT USED | ACTUATE NOTIFICATION APPLIANCES THROUGHOUT THE BUILDING | ACTUATE FIRE SPRINKLER WATER FLOW BELL | TRANSMIT FIRE ALARM SIGNAL TO MAIN CAMPUS FIRE ALARM SYSTEM | TRANSMIT SUPERVISORY SIGNAL TO MAIN CAMPUS FIRE ALARM SYSTEM | TRANSMIT TROUBLE SIGNAL TO MAIN CAMPUS FIRE ALARM SYSTEM | TRANSMIT WATER FLOW SIGNAL TO MAIN CAMPUS FIRE ALARM SYSTEM | NOT USED | NOT USED | NOT USED | NOT USED | NOT USED | NOT USED | SHUT DOWN ALL AV | SHUT DOWN HVAC UNIT ON ROOF | NOT USED | NOT USED | NOT USED | NOT USED |
| | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 1 | SMOKE DETECTOR | ○ | ○ | | | | | ○ | | ○ | | ○ | | | | | | | | | | ○ | ○ | | | | |
| 2 | HEAT DETECTOR | ○ | ○ | | | | | ○ | | ○ | | ○ | | | | | | | | | | ○ | ○ | | | | |
| 3 | MANUAL PULL STATION | ○ | ○ | | | | | ○ | | ○ | | ○ | | | | | | | | | | ○ | ○ | | | | |
| 4 | SPRINKLER WATERFLOW SWITCH | ○ | ○ | | | | | ○ | | ○ | ○ | ○ | | | ○ | | | | | | | ○ | ○ | | | | |
| 5 | SPRINKLER TAMPER SWITCH | | | ○ | ○ | | | | | | | | ○ | | | | | | | | | | | | | | |
| 6 | REFLECTIVE BEAM SMOKE DETECTOR | ○ | ○ | | | | | ○ | | ○ | | ○ | | | | | | | | | | ○ | ○ | | | | |
| 7 | 120VAC POWER FAILURE | | | | | ○ | ○ | | | | | | | ○ | | | | | | | | | | | | | |
| 8 | FIRE ALARM CONTROL UNIT EQUIPMENT TROUBLE | | | | | ○ | ○ | | | | | | | ○ | | | | | | | | | | | | | |
| 9 | FIRE ALARM CIRCUIT TROUBLE | | | | | ○ | ○ | | | | | | | ○ | | | | | | | | | | | | | |
| 10 | REMOTE POWER SUPPY TROUBLE | | | | | ○ | ○ | | | | | | | ○ | | | | | | | | | | | | | |
| 11 | FIRE PUMP RUNNING | | | ○ | ○ | | | | | | | | ○ | | | | | | | | | | | | | | |
| 12 | FIRE PUMP OUT OF AUTO | | | ○ | ○ | | | | | | | | ○ | | | | | | | | | | | | | | |
| 13 | FIRE PUMP PHASE REVERSAL | | | ○ | ○ | | | | | | | | ○ | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Party Site No.: **583167**
Expires: **31-Dec-2025**

## CERTIFICATE OF COMPLIANCE

**THIS IS TO CERTIFY** that the Alarm / Service Company identified below is included by - UL Solutions (UL) in its UL Product iQ directories as eligible to use the UL Listing Mark in connection with Certificated Systems. The only evidence of compliance with UL's requirements is the issuance of a UL Certificate for the System and the Certificate is active under UL's Certificate Verification Service. This Certificate does not apply in any way to the communication channel between the protected property and any facility that monitors signals from the protected property.

**Listed Service From: ANAHEIM , CALIFORNIA**

**Alarm / Service Company: (583167)**

SECURITY SIGNAL DEVICES INC
1740 N LEMON ST
ANAHEIM , California 92801-1007 UNITED STATES

The Alarm / Service Company is Listed in the following Certificate Service Categories:

| File | Vol No. | CCN | Listing Category |
|---|---|---|---|
| S1545 | 1 | UUFX | Central-station Protective Signaling Services |
| BP8505 | 1 | CVSG | Mercantile Burglar Alarm Systems |

*****THIS CERTIFICATE EXPIRES ON 31-DEC-25*****

"LOOK FOR THE UL ALARM / SYSTEM CERTIFICATE"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Sequence of Operation**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**FA0.03**

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## SK-PS10 Battery Calculation

### Secondary Power Source Requirements

| Device Type | Standby Current (amps) Qty | | Current Draw | | Total | Secondary Alarm Current (amps) Qty | | Current Draw | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Main Circuit Board | | | | | | | | | | |
| Choose EOLR used ↓ | | | | | | | | | | |
| 4.7k | 1 | X | 0.1560 | = | 0.1560 | 1 | X | 0.1850 | = | 0.1850 |
| Main Circuit Board with ZNAC-PS Class A card | 0 | X | 0.1490 | = | 0.0000 | 0 | X | 0.1590 | = | 0.0000 |
| NAC / Output # 1 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.0000 | = | 0.0000 |
| NAC / Output # 2 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.9630 | = | 0.9630 |
| NAC / Output # 3 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.7750 | = | 0.7750 |
| NAC / Output # 4 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 1.0320 | = | 1.0320 |
| NAC / Output # 5 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.5480 | = | 0.5480 |
| NAC / Output # 6 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.5680 | = | 0.5680 |
| NAC / Output # 7 | 1 | X | 0.0000 | = | 0.0000 | 1 | X | 0.0000 | = | 0.0000 |
| | | | Total Standby Load | | 0.1560 | | | Total Alarm Load | | 4.0710 |

## SK-PS10 Battery Calculation

Note 1: You are **fully responsible for verifying these calculations**.
Note 2: You only need to make entries in the **yellow** cells

### Calculation in Total Sheet

| | | | | |
|---|---|---|---|---|
| | | Required Standby Time in Hours | | |
| | | 24 Hours | | |
| Standby Load Current (Amps) | 0.1560 Amps | X 24 | = | 3.744 AH |
| | | Required Alarm Time in Hours | | |
| | | 15 Minutes | | |
| Alarm Load Current (Amps) | 4.0710 Amps | X 0.25 | = | 1.018 AH |
| | | | Total Current Load | 4.76 AH |
| | *Multiply by the Derating Factor | 1.3 | = | x 1.30 |
| | | | Total Ampere Hours Required | 6.19 AH |

| | |
|---|---|
| Recommended Batteries: | BAT-1270 - 7AH Batteries |

* Derating Factor required to compensate for the non-linear discharge characteristic of a battery.

## SK-PS10 Circuit Detail

**NAC / Output # 1**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 3 | x 0.000000 = | 0.000000 | 3 | x 0.043000 = | 0.129000 |
| 30 candela | 1 | x 0.000000 = | 0.000000 | 1 | x 0.063000 = | 0.063000 |
| 75 candela | 4 | x 0.000000 = | 0.000000 | 4 | x 0.111000 = | 0.444000 |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.636000 |

**NAC / Output # 2**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 4 | x 0.000000 = | 0.000000 | 4 | x 0.043000 = | 0.172000 |
| 30 candela | 3 | x 0.000000 = | 0.000000 | 3 | x 0.063000 = | 0.189000 |
| 75 candela | 4 | x 0.000000 = | 0.000000 | 4 | x 0.111000 = | 0.444000 |
| 75 candela WP | 1 | x 0.000000 = | 0.000000 | 1 | x 0.158000 = | 0.158000 |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.963000 |

**NAC / Output # 3**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 7 | x 0.000000 = | 0.000000 | 7 | x 0.043000 = | 0.301000 |
| 30 candela | 4 | x 0.000000 = | 0.000000 | 4 | x 0.063000 = | 0.252000 |
| 75 candela | 2 | x 0.000000 = | 0.000000 | 2 | x 0.111000 = | 0.222000 |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.775000 |

**NAC / Output # 4**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 3 | x 0.000000 = | 0.000000 | 3 | x 0.043000 = | 0.129000 |
| 30 candela | 2 | x 0.000000 = | 0.000000 | 2 | x 0.063000 = | 0.126000 |
| 75 candela | 7 | x 0.000000 = | 0.000000 | 7 | x 0.111000 = | 0.777000 |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 1.032000 |

**NAC / Output # 5**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 5 | x 0.000000 = | 0.000000 | 5 | x 0.043000 = | 0.215000 |
| 30 candela | 0 | x 0.000000 = | | 0 | x 0.063000 = | |
| 75 candela | 3 | x 0.000000 = | 0.000000 | 3 | x 0.111000 = | 0.333000 |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.548000 |

**NAC / Output # 6**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| 15 candela | 4 | x 0.000000 = | 0.000000 | 4 | x 0.043000 = | 0.172000 |
| 30 candela | 1 | x 0.000000 = | 0.000000 | 1 | x 0.063000 = | 0.063000 |
| 75 candela | 3 | x 0.000000 = | 0.000000 | 3 | x 0.111000 = | 0.333000 |
| | 0 | x 0.000000 = | | 0 | x 2.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.568000 |

**NAC / Output # 7**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | 0 | x 0.000000 = | | 0 | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 0.000000 |

SILENT KNIGHT

EVS-100W Amplifier Calculations
Version 08.04.14

Global Project Values:
Project Name: ARROYO HS - NEW CONST.
Project ID: 22.3076
Prepared By: SAM
Date: 9/20/2023
Standby Hours: 24
Alarm Mins: 15
Derating: 1.25

Panel ID: EVS-100W
Location: MAIN ELECTRICAL ROOM
Model: EVS-100W Amplifier

| Ckt.# | Circuit Name | Qty | Current Draw Standby | Alarm |
|---|---|---|---|---|
| EVS-100W | EVS-100W Amplifier - 25VRMS | | 0.000 | 0.000 |
| EVS-100W | EVS-100W Amplifier - 70.7VRMS | 1 | 0.110 | 1.400 |
| EVS-100VBU | External Backup Amplifier | 1 | 0.040 | 0.110 |
| Watts | Enter Number of Watts | 515 | N/A | 2.060 |
| | Total Standby Current (AMPS) | | 0.150 | 3.570 |
| | Standby Time In Hours | | 24 | 0.250 |
| | Total Standby AH Required | | 3.600 | 0.893 |
| | Total Combined AH Required | | 4.49 | |
| | Multiply By The Derating Factor | | 1.25 | |
| | Minimum Battery AmpHours Required | | 5.62 | |

Honeywell / SILENT KNIGHT

## IntelliKnight 6820-EVS Battery Calculation

### Secondary Power Source Requirements

| Device Type | Standby Current (amps) Qty | | Current Draw | | Total | Secondary Alarm Current (amps) Qty | | Current Draw | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Control Panel** | | | | | | | | | | |
| 6820 Control Panel | 1 | x | 0.190000 | = | 0.190000 | 1 | x | 0.250000 | = | 0.250000 |
| **2. Addressable SLC Devices** | | | | | | | | | | |
| SK-PHOTO (-T) | 123 | x | 0.000300 | = | 0.024300 | 81 | x | 0.000300 | = | 0.024300 |
| SK-HEAT(-HT) (-ROR) | 3 | x | 0.000300 | = | 0.000900 | 3 | x | 0.000300 | = | 0.000900 |
| SK-MONITOR | 14 | x | 0.000375 | = | 0.005250 | 14 | x | 0.000375 | = | 0.005250 |
| SK-PULL-DA | 20 | x | 0.000375 | = | 0.007500 | 20 | x | 0.000375 | = | 0.007500 |
| SK-RELAY | 12 | x | 0.000255 | = | 0.003060 | 12 | x | 0.000255 | = | 0.003060 |
| **3. SLC Accessory Bases** | | | | | | | | | | |
| RTS151KEY | 3 | x | 0.000000 | = | 0.000000 | 3 | x | 0.007500 | = | 0.022500 |
| **4. SLC Isolator Devices** | | | | | | | | | | |
| SK-ISO | 1 | x | 0.000450 | = | 0.000450 | 1 | x | 0.000450 | = | 0.000450 |
| **6. Accessory Modules** | | | | | | | | | | |
| EVS-VCM | 1 | x | 0.070000 | = | 0.070000 | 1 | x | 0.100000 | = | 0.100000 |
| EVS-LOC | 1 | x | 0.100000 | = | 0.100000 | 1 | x | 0.150000 | = | 0.150000 |
| OSI-RI-SK | 3 | x | 0.014000 | = | 0.042000 | 3 | x | 0.015000 | = | 0.045000 |
| **8. Output Circuits** | | | | | | | | | | |
| I/O 6 | 1 | | 0.000000 | = | | 1 | | 0.925000 | = | 0.925000 |
| | | | | | Total Standby Load 0.443460 | | | | | Total Alarm Load 1.533960 |

Honeywell / SILENT KNIGHT

## IntelliKnight 6820-EVS Battery Calculation

Note 1: You are fully responsible for verifying these calculations.
Note 2: Use the dropdowns in the **yellow** cells to enter values.

### Calculation in Total Sheet

| | | | | |
|---|---|---|---|---|
| | | Required Standby Time in Hours | | |
| | | 24 Hours | | |
| Standby Load Current | 0.44346 Amps | x 24 | = | 10.643 AH |
| | | Required Alarm Time in Minutes | | |
| | | 15 Minutes | | |
| Alarm Load Current (Amps) | 1.53396 Amps | x 0.25 | = | 0.383 AH |
| | | | Total Current Load | 11.027 AH |
| | Multiply by the Derating Factor | 1.25 | = | x 1.25 |
| | | | Total Ampere Hours Required | 13.78 AH |

| | |
|---|---|
| Recommended Batteries: | BAT12180 - 18AH Batteries |

Honeywell / SILENT KNIGHT

## IntelliKnight 6820-EVS Circuit Detail

**I/O 6**

| Device | Qty | Non-Alarm Draw | Total | Qty | Alarm Draw | Total |
|---|---|---|---|---|---|---|
| | | x 0.000000 = | | 1 | x 3.000000 = | 3.000000 |
| | | x 0.000000 = | | | x 0.000000 = | |
| | | Total Standby Load | 0.000000 | | Total Alarm Load | 3.000000 |

Honeywell / SILENT KNIGHT

## IntelliKnight 6820-EVS EOL Voltage Drop

| | |
|---|---|
| Starting Voltage | 20.4 Volts |
| Minimum Voltage @ EOL | 16 Volts |
| Voltage Drop Warning % | 10.00% |

| Circuit Name | Current Draw Amps | Wire Type AWG | Resistance Ohms/1000 ft. | Length Feet (One Way) | Actual Resistance Ohms | Voltage @ EOL Volts | Percent Drop Percent |
|---|---|---|---|---|---|---|---|
| NAC 1 | 0.000 | #14 Solid | 3.07 | 0 | 0.00 | 20.40 | 0.00% |
| NAC 2 | 0.000 | #12 Solid | 1.93 | 0 | 0.00 | 20.40 | 0.00% |
| NAC 3 | 0.000 | #12 Solid | 1.93 | 0 | 0.00 | 20.40 | 0.00% |
| NAC 4 | 0.000 | #12 Solid | 1.93 | 0 | 0.00 | 20.40 | 0.00% |
| I/O 5 | 0.000 | #12 Solid | 1.93 | 0 | 0.00 | 20.40 | 0.00% |
| I/O 6 | 3.000 | #12 Solid | 1.93 | 0 | 0.00 | 20.40 | 0.00% |

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Calculations**

**DSA SUBMITTAL**

FILE NO.: 19-H10 A NO.: 03-123641
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SHEET:

# FA0.04

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DAA2 #1

## SPEAKER CIRCUIT LOAD CALCULATION

MAXIMUM -3 dB DROP PER CIRCUIT

| SPEAKER CIRCUIT DESCRIPTION | PANEL CIRCUIT NUMBER | WIRE GAUGE (18, 16, 14 12) | CIRCUIT VOLTAGE (25 OR 70 VRMS) | APPLIANCES QUANTITIES / TAP VALUES: SPEAKER TAPPED AT 0.25 Watts | SPEAKER TAPPED AT 0.5 Watts | SPEAKER TAPPED AT 1 Watts | SPEAKER TAPPED AT 2 Watts | SPEAKER TAPPED AT 4 Watts | SPEAKER TAPPED AT 0.125 Watts | SPEAKER TAPPED AT 0 Watts | TOTAL CIRCUIT LOAD (WATTS) | ESTIMATED CIRCUIT LENGTH (FEET) | ACTUAL WIRE/LOSS (dB) | MAXIMUM ALLOWABLE CKT. LENGTH (FEET) | TOTAL CIRCUIT RESISTANCE (OHMS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Address | S1 | 16 awg | 70 vrms | 0 | 64 | 2 | 0 | 0 | 0 | 0 | 34.00 Watts | 1581 ft. | -0.75 dB | 7,284 ft. | 13.0 Ohms |
| Address | S2 | 16 awg | 70 vrms | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 17.50 Watts | 848 ft. | -0.21 dB | 14,151 ft. | 7.0 Ohms |
| | | awg | vrms | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 Watts | 0 ft. | 0.00 dB | 0 ft. | #VALUE! Ohms |
| | | awg | vrms | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 Watts | 0 ft. | 0.00 dB | 0 ft. | #VALUE! Ohms |
| | | | | Appliance Summary | | | | | | | Total Load (Watts) | | | | |
| | | | | 0 | 99 | 2 | 0 | 0 | 0 | 0 | 51.50 | | | | |

**NOTE:**
**LUMP SUM METHOD WAS USED TO CALCULATE MAXIMUM ALLOWABLE CIRCUIT LENGTH. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS.**

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-1
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.618
Wire Gauge: 14
Distance from source to 1st device: 223 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.618 | 426 | **1.08** | 0.618 | 426 | **1.537** |
| End of Line Voltage | | | **19.32** | End of Line Voltage | | **18.86** |
| Percent Drop | | | 5.30% | Percent Drop | | 7.54% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.043 | 223 | 19.60 | 0.805 | 3.95% |
| Device 2 | 0.107 | 16 | 19.54 | 0.859 | 4.21% |
| Device 3 | 0.107 | 21 | 19.48 | 0.916 | 4.49% |
| Device 4 | 0.107 | 35 | 19.41 | 0.990 | 4.85% |
| Device 5 | 0.107 | 20 | 19.38 | 1.019 | 5.00% |
| Device 6 | 0.043 | 17 | 19.37 | 1.034 | 5.07% |
| Device 7 | 0.041 | 53 | 19.33 | 1.066 | 5.23% |
| Device 8 | 0.063 | 41 | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| END | | | 19.32 | 1.081 | 5.30% |
| Totals | | 426 | End of Line Voltage | **19.32** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-2
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.963
Wire Gauge: 14
Distance from source to 1st device: 140 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.963 | 418 | **1.68** | 0.963 | 418 | **2.351** |
| End of Line Voltage | | | **18.72** | End of Line Voltage | | **18.05** |
| Percent Drop | | | 8.25% | Percent Drop | | 11.52% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.063 | 140 | 19.61 | 0.787 | 3.86% |
| Device 2 | 0.043 | 10 | 19.56 | 0.840 | 4.12% |
| Device 3 | 0.043 | 20 | 19.46 | 0.940 | 4.61% |
| Device 4 | 0.043 | 12 | 19.40 | 0.997 | 4.89% |
| Device 5 | 0.063 | 45 | 19.20 | 1.200 | 5.88% |
| Device 6 | 0.063 | 30 | 19.08 | 1.324 | 6.49% |
| Device 7 | 0.043 | 10 | 19.04 | 1.361 | 6.67% |
| Device 8 | 0.111 | 33 | 18.92 | 1.477 | 7.24% |
| Device 9 | 0.111 | 16 | 18.88 | 1.523 | 7.47% |
| Device 10 | 0.111 | 49 | 18.77 | 1.632 | 8.00% |
| Device 11 | 0.158 | 19 | 18.74 | 1.662 | 8.15% |
| Device 12 | 0.111 | 34 | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| END | | | 18.72 | 1.684 | 8.25% |
| Totals | | 418 | End of Line Voltage | **18.72** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | CEILING | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-3
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.769
Wire Gauge: 14
Distance from source to 1st device: 22 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.769 | 304 | **0.69** | 0.769 | 304 | **1.365** |
| End of Line Voltage | | | **19.71** | End of Line Voltage | | **19.03** |
| Percent Drop | | | 3.37% | Percent Drop | | 6.69% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.063 | 22 | 20.30 | 0.099 | 0.48% |
| Device 2 | 0.043 | 32 | 20.17 | 0.231 | 1.13% |
| Device 3 | 0.043 | 6 | 20.15 | 0.254 | 1.24% |
| Device 4 | 0.063 | 14 | 20.10 | 0.305 | 1.49% |
| Device 5 | 0.063 | 27 | 20.01 | 0.392 | 1.92% |
| Device 6 | 0.063 | 25 | 19.94 | 0.465 | 2.28% |
| Device 7 | 0.043 | 3 | 19.93 | 0.472 | 2.31% |
| Device 8 | 0.041 | 22 | 19.88 | 0.522 | 2.56% |
| Device 9 | 0.111 | 27 | 19.82 | 0.577 | 2.83% |
| Device 10 | 0.041 | 39 | 19.77 | 0.630 | 3.09% |
| Device 11 | 0.111 | 35 | 19.73 | 0.670 | 3.29% |
| Device 12 | 0.041 | 18 | 19.72 | 0.679 | 3.33% |
| Device 13 | 0.043 | 34 | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| END | | | 19.71 | 0.688 | 3.37% |
| Totals | | 304 | End of Line Voltage | **19.71** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-4
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 1.032
Wire Gauge: 14
Distance from source to 1st device: 28 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 1.032 | 207 | **0.66** | 1.032 | 207 | **1.248** |
| End of Line Voltage | | | **19.74** | End of Line Voltage | | **19.15** |
| Percent Drop | | | 3.24% | Percent Drop | | 6.12% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.043 | 28 | 20.23 | 0.169 | 0.83% |
| Device 2 | 0.043 | 2 | 20.22 | 0.180 | 0.88% |
| Device 3 | 0.111 | 16 | 20.13 | 0.269 | 1.32% |
| Device 4 | 0.111 | 17 | 20.05 | 0.352 | 1.72% |
| Device 5 | 0.063 | 3 | 20.04 | 0.364 | 1.79% |
| Device 6 | 0.111 | 26 | 19.94 | 0.465 | 2.28% |
| Device 7 | 0.111 | 7 | 19.91 | 0.487 | 2.39% |
| Device 8 | 0.111 | 36 | 19.82 | 0.579 | 2.84% |
| Device 9 | 0.043 | 6 | 19.81 | 0.591 | 2.90% |
| Device 10 | 0.063 | 14 | 19.79 | 0.614 | 3.01% |
| Device 11 | 0.111 | 19 | 19.76 | 0.639 | 3.13% |
| Device 12 | 0.111 | 33 | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| END | | | 19.74 | 0.660 | 3.24% |
| Totals | | 207 | End of Line Voltage | **19.74** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-5
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.548
Wire Gauge: 14
Distance from source to 1st device: 160 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.548 | 279 | **0.71** | 0.548 | 279 | **0.893** |
| End of Line Voltage | | | **19.69** | End of Line Voltage | | **19.51** |
| Percent Drop | | | 3.49% | Percent Drop | | 4.38% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.111 | 160 | 19.89 | 0.512 | 2.51% |
| Device 2 | 0.043 | 22 | 19.83 | 0.568 | 2.79% |
| Device 3 | 0.043 | 11 | 19.81 | 0.592 | 2.91% |
| Device 4 | 0.111 | 28 | 19.75 | 0.651 | 3.19% |
| Device 5 | 0.043 | 22 | 19.72 | 0.682 | 3.34% |
| Device 6 | 0.043 | 7 | 19.71 | 0.690 | 3.38% |
| Device 7 | 0.111 | 23 | 19.69 | 0.710 | 3.48% |
| Device 8 | 0.043 | 6 | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| END | | | 19.69 | 0.712 | 3.49% |
| Totals | | 279 | End of Line Voltage | **19.69** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V1-6
Area Covered: 1ST FLOOR - SEGMENT B
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.568
Wire Gauge: 14
Distance from source to 1st device: 240 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.568 | 371 | **0.98** | 0.568 | 371 | **1.231** |
| End of Line Voltage | | | **19.42** | End of Line Voltage | | **19.17** |
| Percent Drop | | | 4.81% | Percent Drop | | 6.03% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.111 | 240 | 19.60 | 0.796 | 3.90% |
| Device 2 | 0.043 | 13 | 19.57 | 0.831 | 4.07% |
| Device 3 | 0.063 | 3 | 19.56 | 0.853 | 4.18% |
| Device 4 | 0.111 | 37 | 19.49 | 0.914 | 4.48% |
| Device 5 | 0.043 | 28 | 19.45 | 0.953 | 4.67% |
| Device 6 | 0.111 | 13 | 19.43 | 0.968 | 4.75% |
| Device 7 | 0.043 | 12 | 19.43 | 0.974 | 4.78% |
| Device 8 | 0.043 | 25 | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| END | | | 19.42 | 0.980 | 4.81% |
| Totals | | 371 | End of Line Voltage | **19.42** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V2-1
Area Covered: 1ST FLOOR - SEGMENT A
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.515
Wire Gauge: 14
Distance from source to 1st device: 21 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.515 | 265 | **0.47** | 0.515 | 265 | **0.797** |
| End of Line Voltage | | | **19.93** | End of Line Voltage | | **19.60** |
| Percent Drop | | | 2.28% | Percent Drop | | 3.91% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.043 | 21 | 20.34 | 0.063 | 0.31% |
| Device 2 | 0.043 | 27 | 20.26 | 0.138 | 0.67% |
| Device 3 | 0.043 | 47 | 20.14 | 0.255 | 1.25% |
| Device 4 | 0.111 | 33 | 20.07 | 0.330 | 1.62% |
| Device 5 | 0.063 | 37 | 20.01 | 0.389 | 1.91% |
| Device 6 | 0.063 | 26 | 19.98 | 0.421 | 2.07% |
| Device 7 | 0.043 | 22 | 19.96 | 0.440 | 2.16% |
| Device 8 | 0.043 | 25 | 19.94 | 0.456 | 2.24% |
| Device 9 | 0.063 | 27 | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| END | | | 19.93 | 0.466 | 2.28% |
| Totals | | 265 | End of Line Voltage | **19.93** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V2-2
Area Covered: 1ST FLOOR - SEGMENT A
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.586
Wire Gauge: 14
Distance from source to 1st device: 86 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.586 | 271 | **0.62** | 0.586 | 271 | **0.927** |
| End of Line Voltage | | | **19.78** | End of Line Voltage | | **19.47** |
| Percent Drop | | | 3.02% | Percent Drop | | 4.55% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.043 | 86 | 20.11 | 0.294 | 1.44% |
| Device 2 | 0.043 | 21 | 20.04 | 0.361 | 1.77% |
| Device 3 | 0.063 | 34 | 19.94 | 0.460 | 2.26% |
| Device 4 | 0.111 | 12 | 19.91 | 0.491 | 2.41% |
| Device 5 | 0.043 | 32 | 19.85 | 0.552 | 2.70% |
| Device 6 | 0.111 | 7 | 19.84 | 0.563 | 2.76% |
| Device 7 | 0.043 | 24 | 19.81 | 0.587 | 2.88% |
| Device 8 | 0.043 | 23 | 19.80 | 0.605 | 2.96% |
| Device 9 | 0.043 | 16 | 19.79 | 0.613 | 3.00% |
| Device 10 | 0.043 | 16 | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| END | | | 19.78 | 0.617 | 3.02% |
| Totals | | 271 | End of Line Voltage | **19.78** | |

Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |
|---|---|---|
| Model # | Candela | |
| SPCWLA | 15 | 0.041 |
| | 30 | 0.063 |
| | 75 | 0.111 |
| | 115 | 0.158 |

Device Manufacturer: SYSTEM SENSOR

| Strobe Only | WALL | |
|---|---|---|
| Model # | Candela | Current |
| | 15 | 0.043 |
| | 30 | 0.063 |
| | 75 | 0.107 |
| | 110 | 0.148 |

### THIS IS BASED ON 24 VOLT DEVICES ONLY

Project Name: ARROYO
Date: 9/19/2023
Circuit Number: V2-3
Area Covered: 1ST FLOOR - SEGMENT A
Nominal System Voltage: 20.4
Minimum Device Voltage: 16
Total Circuit Current: 0.384
Wire Gauge: 14
Distance from source to 1st device: 48 ft
Wire Gauge for balance of circuit: 14
Enter current in amps. .150 = 150 ma
Distance from previous device
Voltage: At Device; Drop from source; Percent Drop

Calculations and allowable voltage drop are based on revised UL 1971 & 464 standards for current and limits.

| | Point to Point Method CIRCUIT IS WITHIN LIMITS | | | End of Line Method CIRCUIT IS WITHIN LIMITS | | |
|---|---|---|---|---|---|---|
| | Current | Distance | Drop | Current | Distance | Drop |
| Totals | 0.384 | 181 | **0.27** | 0.384 | 181 | **0.406** |
| End of Line Voltage | | | **20.13** | End of Line Voltage | | **19.99** |
| Percent Drop | | | 1.34% | Percent Drop | | 1.99% |

| Wire Gauge | Per 1000 |
|---|---|
| 14 | 2.92 |

End of Line method uses only the wire guage for the first device to source for calculation
Standard Wire Resistance in Ohms per 1000 feet @ 27 C.
18=7.61 16=4.73 14=2.92 12=1.83 10=1.10
18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

This circuit is sourced from:

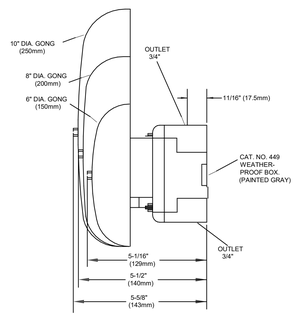
| Device Number | Device Current | Distance from previous device | At Device | Drop from source | Percent Drop |
|---|---|---|---|---|---|
| Device 1 | 0.043 | 48 | 20.29 | 0.108 | 0.53% |
| Device 2 | 0.043 | 12 | 20.27 | 0.132 | 0.64% |
| Device 3 | 0.063 | 36 | 20.21 | 0.194 | 0.95% |
| Device 4 | 0.063 | 9 | 20.19 | 0.207 | 1.01% |
| Device 5 | 0.043 | 58 | 20.14 | 0.265 | 1.30% |
| Device 6 | 0.043 | 6 | 20.13 | 0.269 | 1.32% |
| Device 7 | 0.043 | 6 | 20.13 | 0.272 | 1.33% |
| Device 8 | 0.043 | 6 | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| END | | | 20.13 | 0.274 | 1.34% |
| Totals | | 181 | End of Line Voltage | **20.13** | |

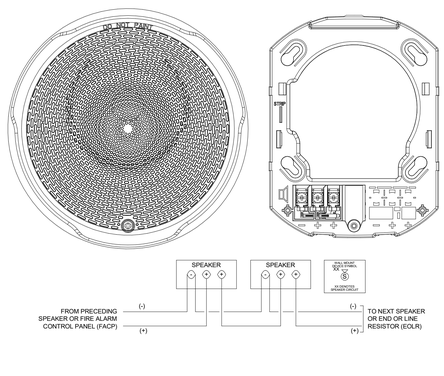
Notes:
Wire resistance is doubled in the calculations for two wires (Positive and Negative)
The voltage calculated to the last device in any method must not be lower then
the manufactures listed minimum operating voltage (IE: rated operating voltage16-33 VDC).

Device Manufacturer: SYSTEM SENSOR

| Speaker / Strobes | WALL | Current |

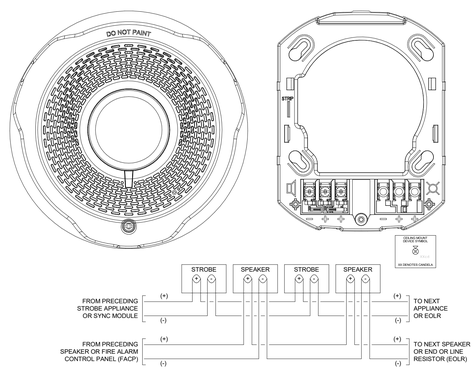
IF THE LINE SHOWN ABOVE IS NOT 1" LONG, THIS SHEET IS ORIGINAL PAPER SIZE




BACKBOX - STANDARD 4S BOX WITH 4S STANDARD EXTENSION BOX

SPCWL - CEILING MOUNT SPEAKER (STYLE Y)

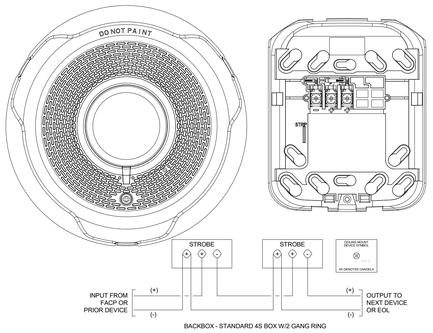



BACKBOX - STANDARD 4S BOX WITH 4S STANDARD EXTENSION BOX

SPSCWL - CEILING MOUNT SPEAKER/STROBE (STYLE Y)

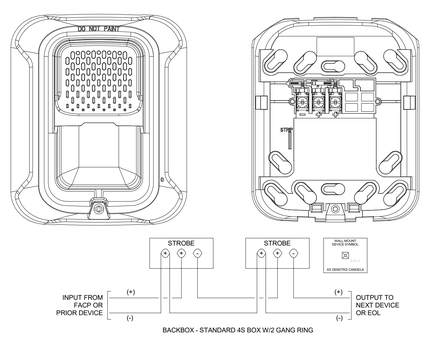
## 24 – SPRINKLER BELL: 439D

SCALE: NONE



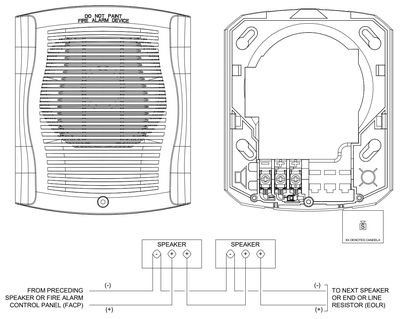

BACKBOX - STANDARD 4S BOX W/2 GANG RING

SCWL - CEILING MOUNT STROBE (STYLE Y)



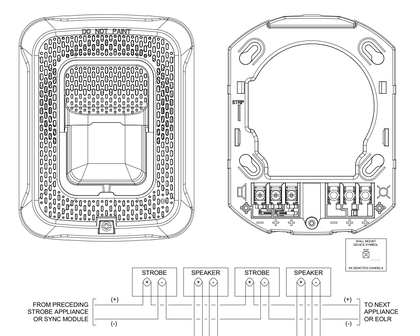

BACKBOX - STANDARD 4S BOX W/2 GANG RING

SWL - WALL MOUNT STROBE (STYLE Y)



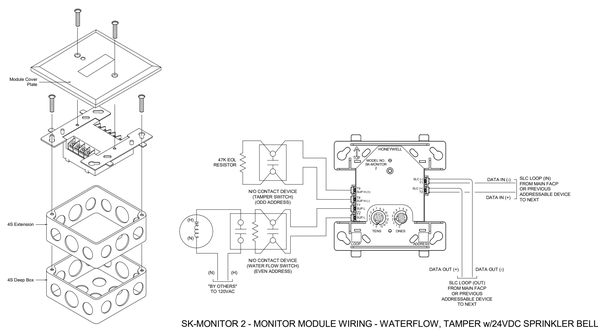

BACKBOX - STANDARD 4S BOX WITH 4S STANDARD EXTENSION BOX

SPWL - WALL MOUNT SPEAKER (STYLE Y)

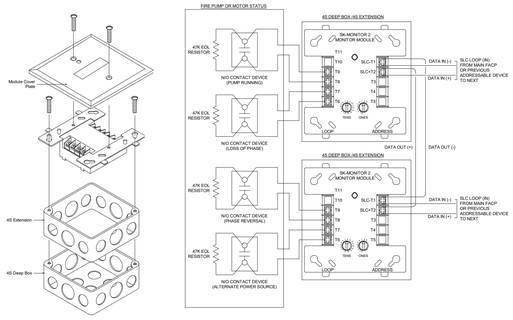



BACKBOX - STANDARD 4S BOX WITH 4S STANDARD EXTENSION BOX

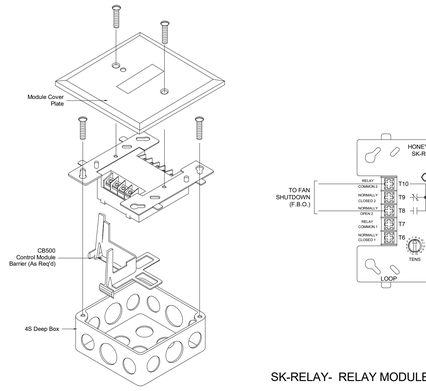
SPSWL - WALL MOUNT SPEAKER/STROBE (STYLE Y)

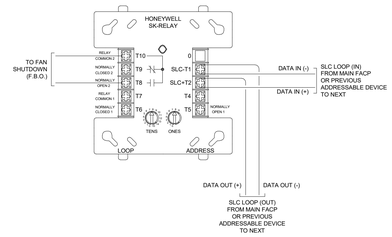



SK-MONITOR 2 - MONITOR MODULE WIRING - WATERFLOW, TAMPER w/24VDC SPRINKLER BELL




FIRE PUMP - DETAIL REQUIRED FOR ALL ELECTRIC FIRE PUMPS

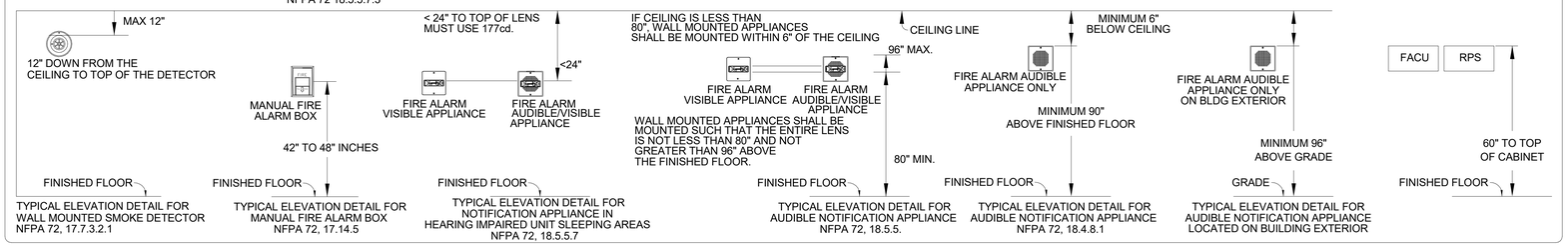



SK-RELAY- RELAY MODULE WIRING - FAN SHUTDOWN

## WALL MOUNTING ELEVATIONS

VISIBLE NOTIFICATION APPLIANCE SHALL BE LOCATED WITHIN 16' OF THE PILLOW. NFPA 72 18.5.5.7.3




IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

NICET BOX

Jorge Velasco, CET
FIRE ALARM SYSTEMS
LEVEL III
NICET #92448
EXPIRES 12-1-2026

03/28/2025
SIGNATURE DATE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Details**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

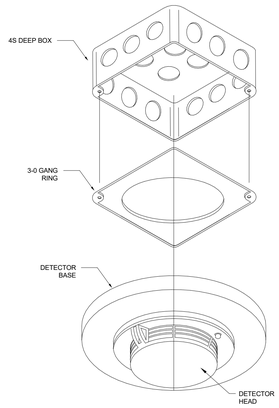
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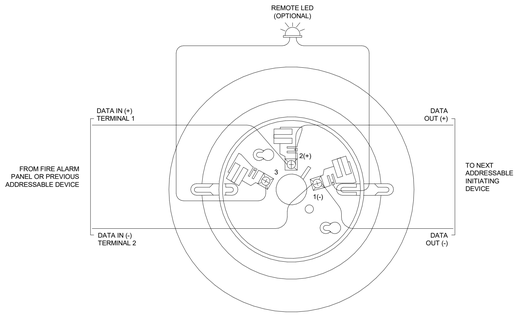
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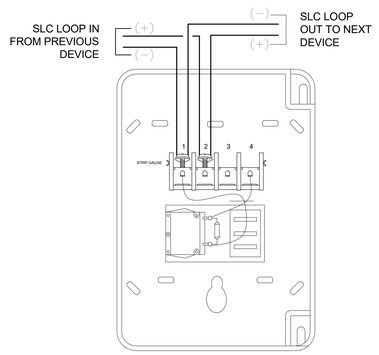
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF THIS SHEET IS ORIGINAL PAGE SIZE



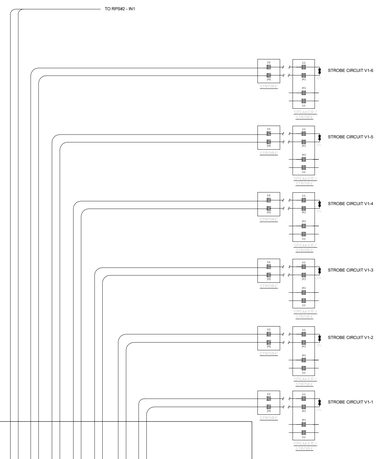




## ADDRESSABLE SMOKE/HEAT DETECTOR WIRING WITH B210LP BASE



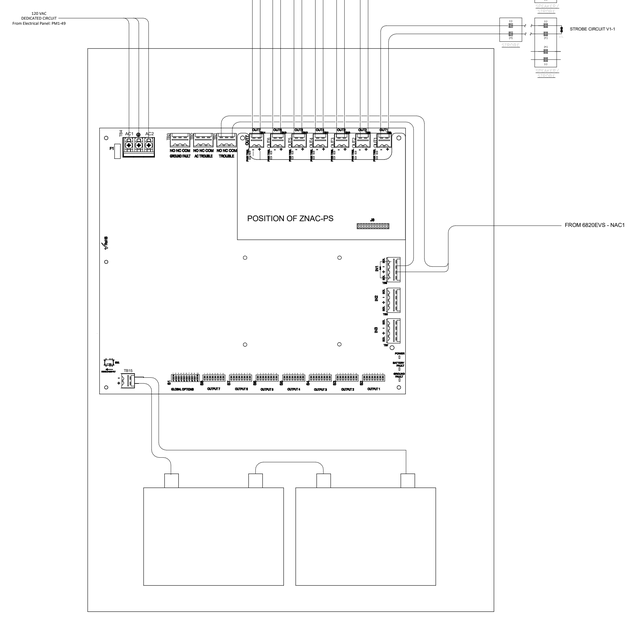

REAR VIEW

## SK-PULL-DA MANUAL PULL STATION



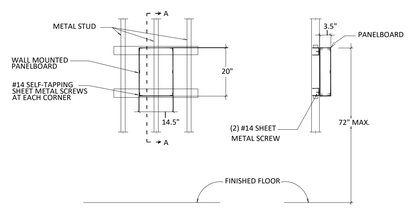

## SK-PS10-RPS#V1

(LOCATED IN MAIN ELECTRICAL ROOM)




(INTERIOR CABINET VIEW)

## SK-PS6/SK-PS10 MOUNTING DETAIL




PANEL ELEVATION - FRONT VIEW
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

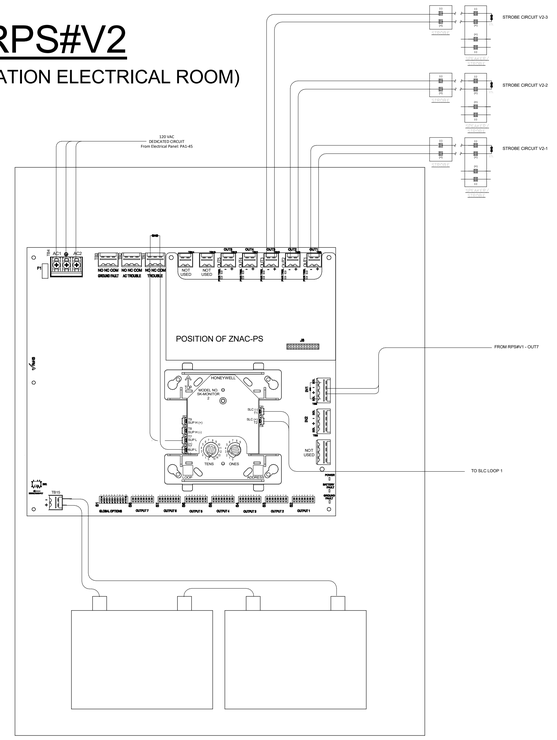
SECTION -A-

TYPICAL MOUNTING OF EQUIPMENT WEIGHING OVER 20 LBS. (39 LBS. MAX.)
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

REFER TO STRUCTURAL SHEET S0.31 DETAIL 1 (BACKING FOR WALL SUPPORTED ITEMS G)

## SK-PS6-RPS#V2

(LOCATED IN ADMINISTRATION ELECTRICAL ROOM)




(INTERIOR CABINET VIEW)

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Details**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# FA0.07

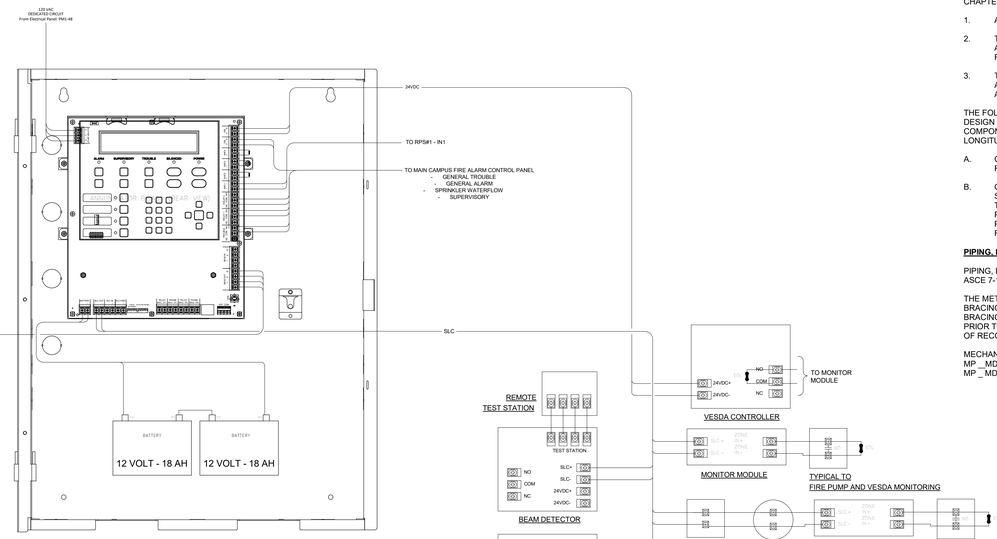
Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-FA-BLDGS.rvt
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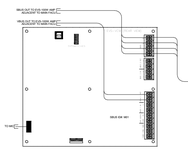
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY

# 6820EVS FACU

(LOCATED IN MAIN ELECTRICAL ROOM)



(LOCATED ON CABINET INTERIOR OF DOOR)




## DSA ANCHORAGE NOTE

APPLICABLE CODE: 2022 CBC

REVISED: 04/21/2023

**MEP COMPONENT ANCHORAGE NOTE**

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA- APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A 1.26 AND ASCE 7- 16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER, *PERMANENTLY ATTACHED SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT

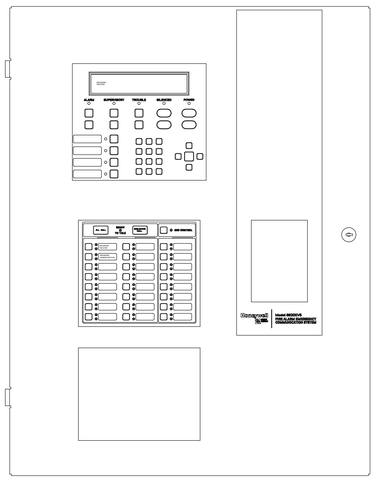
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.
THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

**PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE**

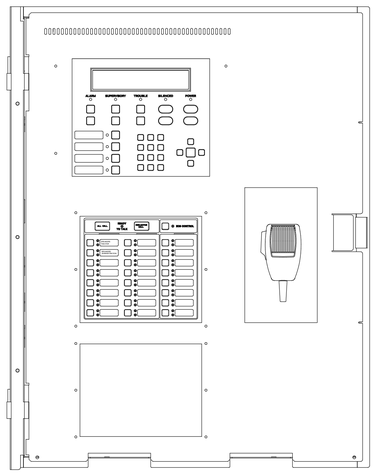
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A 1.24, 1617A.1.25 AND 1617A 1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE
PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):
MP _ MD _ PP _ E X OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
MP _ MD _ PP_ E_ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#)_____.

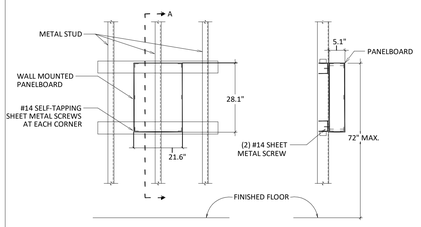


(CABINET DOOR EXTERIOR)



(CABINET DOOR INTERIOR)

## FACU MOUNTING DETAIL




PANEL ELEVATION - FRONT VIEW
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

SECTION -A-

TYPICAL MOUNTING OF EQUIPMENT WEIGHING
OVER 20 LBS. (120 LBS. MAX.)
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

REFER TO STRUCTURAL SHEET S0.31 DETAIL 1 (BACKING FOR WALL SUPPORTED ITEMS G)

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**Details**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

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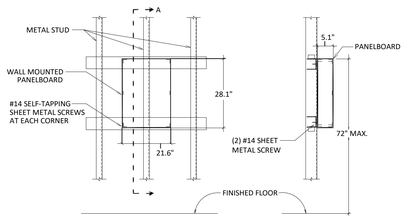

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# EVS-LOC

(LOCATED IN ATTENDANCE OFFICE)

## EVS-LOC MOUNTING DETAIL

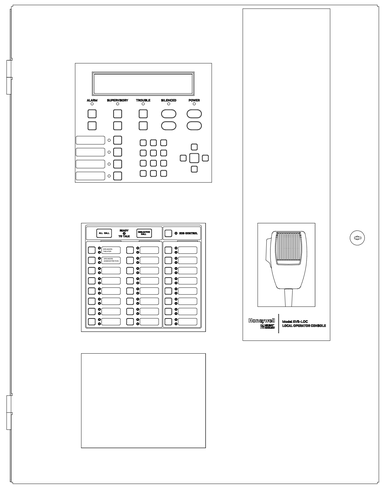



PANEL ELEVATION - FRONT VIEW
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

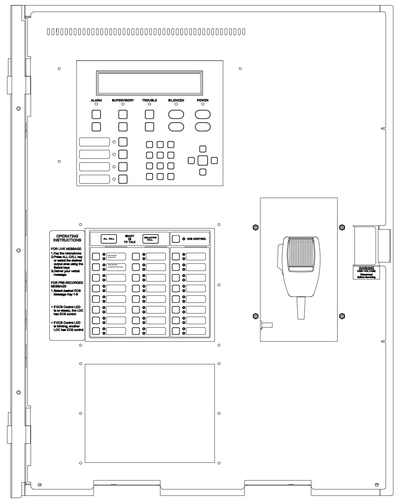
SECTION -A-

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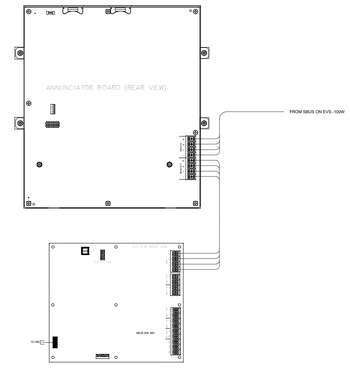
REFER TO STRUCTURAL SHEET S0.31 DETAIL 1 (BACKING FOR WALL SUPPORTED ITEMS G)




LOC DOOR




INNER LOC DOOR

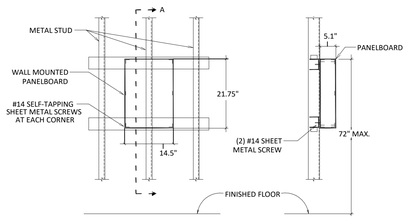



(LOCATED ON CABINET INTERIOR OF DOOR)

# EVS-100W

(LOCATED IN MAIN ELECTRICAL ROOM)

## EVS-100W MOUNTING DETAIL

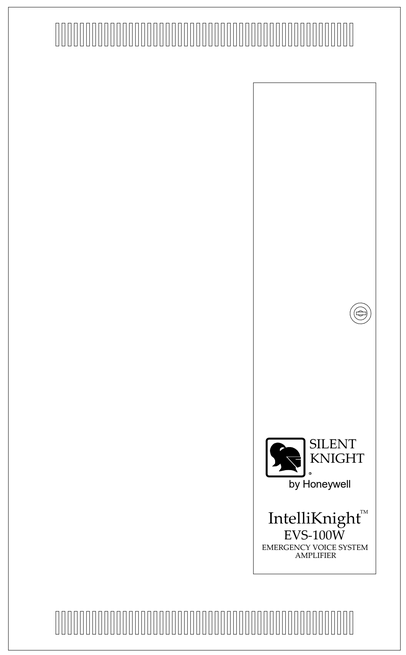


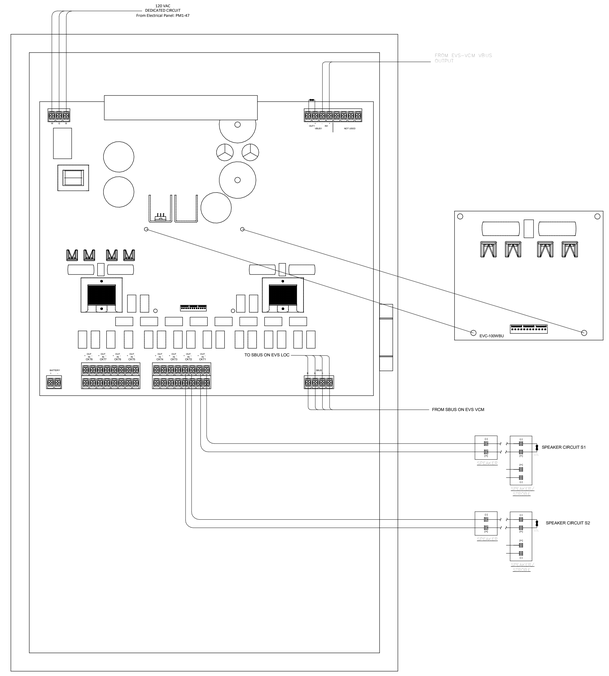

PANEL ELEVATION - FRONT VIEW
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

SECTION -A-

TYPICAL MOUNTING OF EQUIPMENT WEIGHING
OVER 20 LBS. (120 LBS. MAX.)
WITH DOORS AND SHEET ROCK REMOVED FOR CLARITY

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SHEET NAME:

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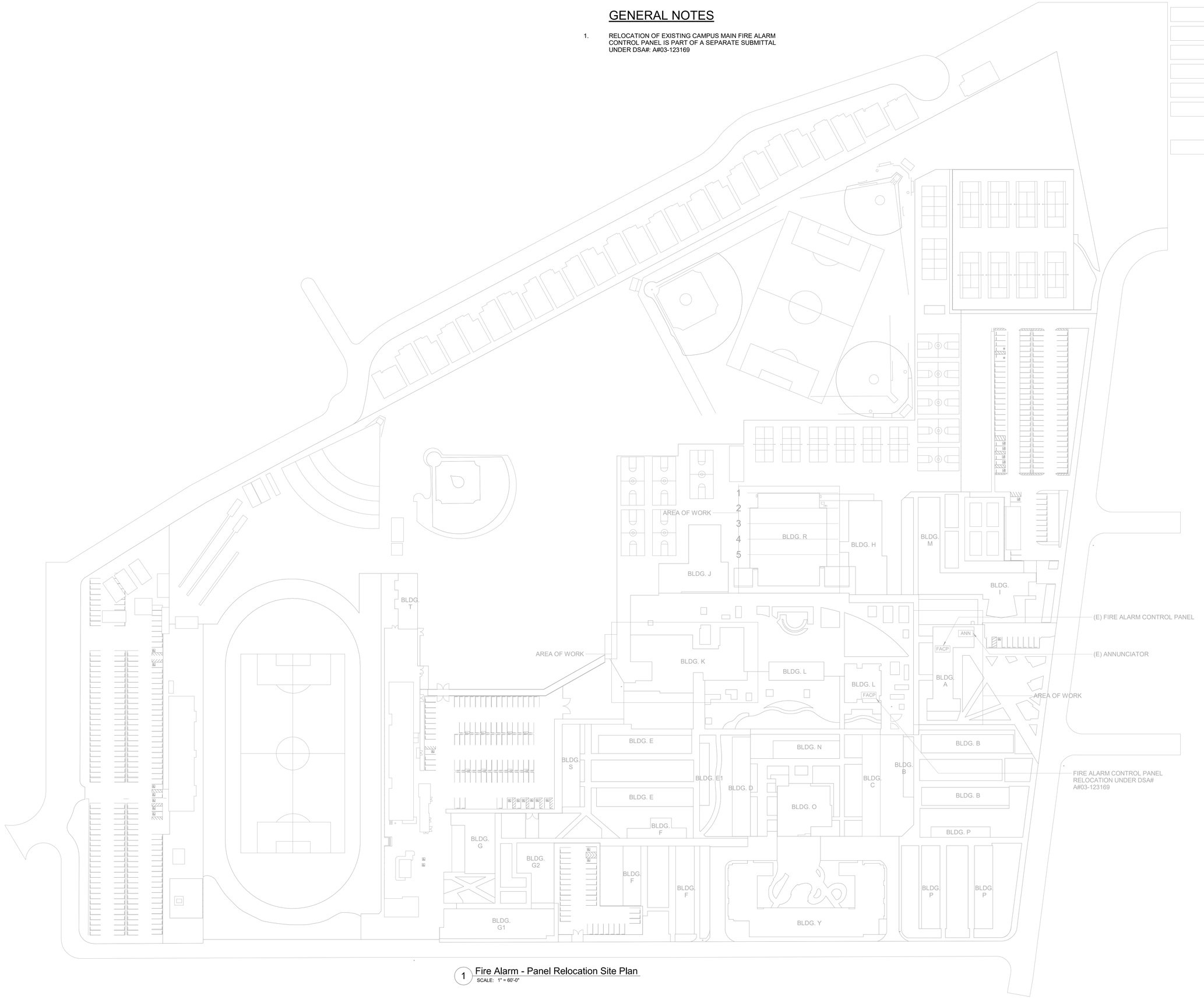
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# GENERAL NOTES

1. RELOCATION OF EXISTING CAMPUS MAIN FIRE ALARM CONTROL PANEL IS PART OF A SEPARATE SUBMITTAL UNDER DSA#: A#03-123169




1 Fire Alarm - Panel Relocation Site Plan
SCALE: 1" = 60'-0"

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Jorge Velasco, CET
FIRE ALARM SYSTEMS
LEVEL III
NICET #92448
EXPIRES 12-1-2026

SIGNATURE 03/28/2025 DATE

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Fire Alarm - Panel Relocation Site Plan**

**DSA SUBMITTAL**

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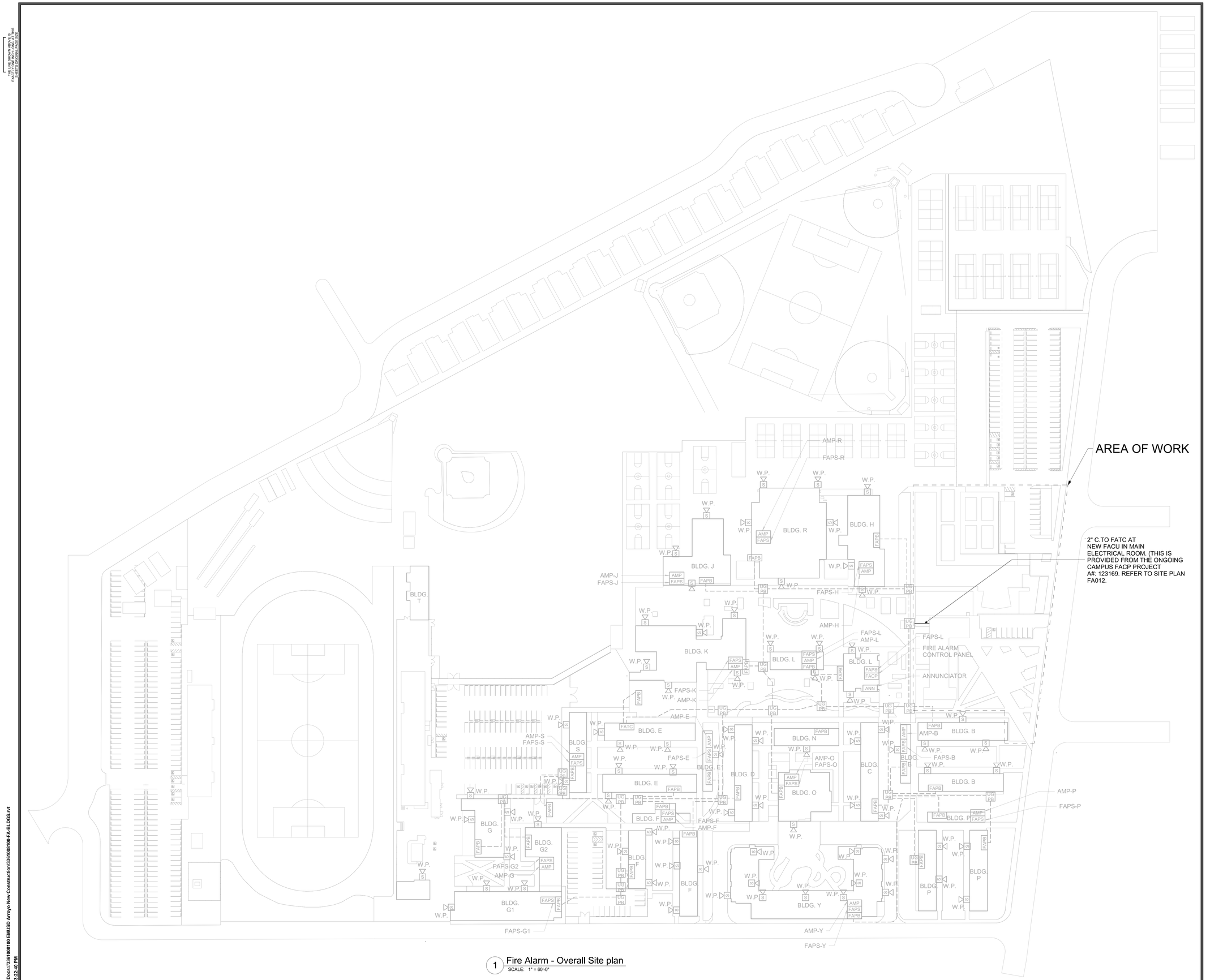
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1 Fire Alarm - Overall Site plan
SCALE: 1" = 60'-0"

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Fire Alarm - Overall Site plan**

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DATE: 06/23/2025 CLIENT PROJ NO: 3361008100

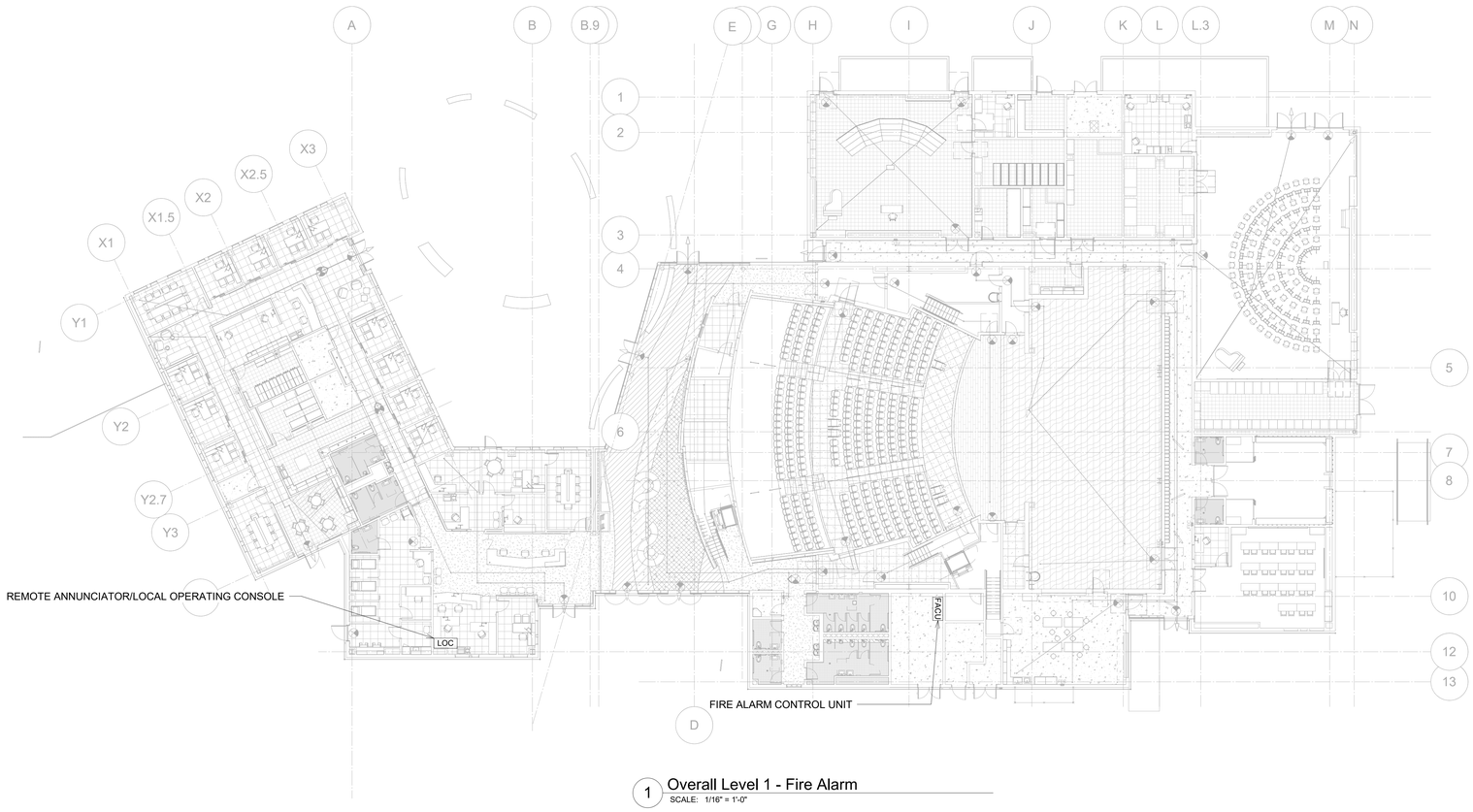
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1 Overall Level 1 - Fire Alarm
SCALE: 1/16" = 1'-0"

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EXPIRES 12-1-2026

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**Fire Alarm - Site plan**

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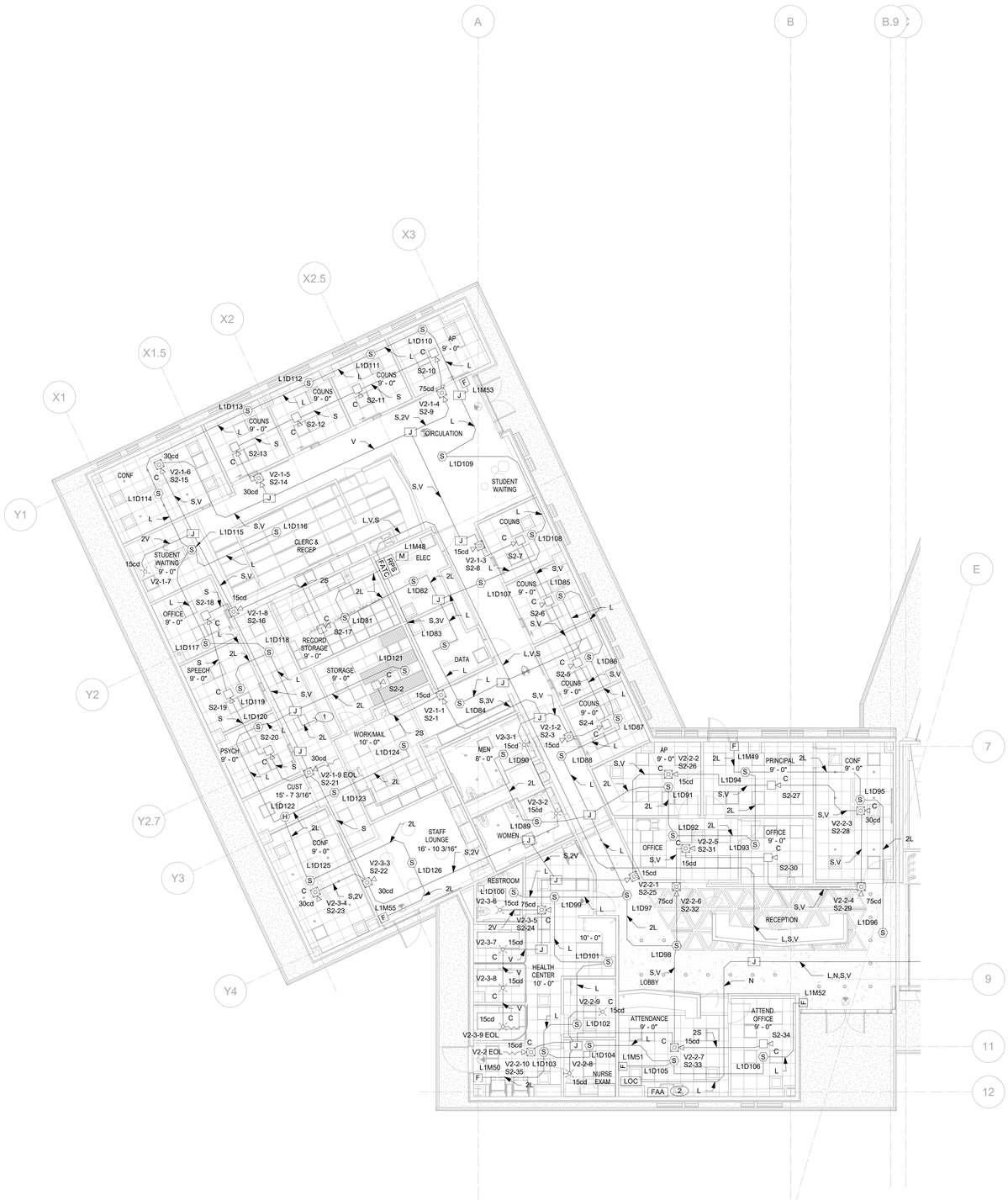
## GENERAL NOTES

1. ALL SPEAKER TO BE TAPPED AT .5 WATT UNLESS OTHE WISE NOTED.
2. SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN A 36" HORIZONTAL PATH FROM THE SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND SHALL BE INSTALLED OUTSIDE OF THE DIRECT AIRFLOW FROM THOSE REGISTERS.

## SHEET NOTES

(1) UP TO ROOF RELAY FOR DOAS #1 SHUTDOWN.

(2) NEW LOCATION FOR EXISTING GAMEWELL MAIN CAMPUS FIRE ALARM REMOTE ANNUNCIATOR FROM BUILDING "L". FIRE ALARM CONTRACTOR TO PROVIDE WIRING AND RELOCATION OF EXISTING REMOTE ANNUNCIATOR.




1 1ST FLOOR - SEGMENT A - FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATER & ADMINISTRATION BUILDING**

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**1ST FLOOR - SEGMENT A - FIRE ALARM PLAN**

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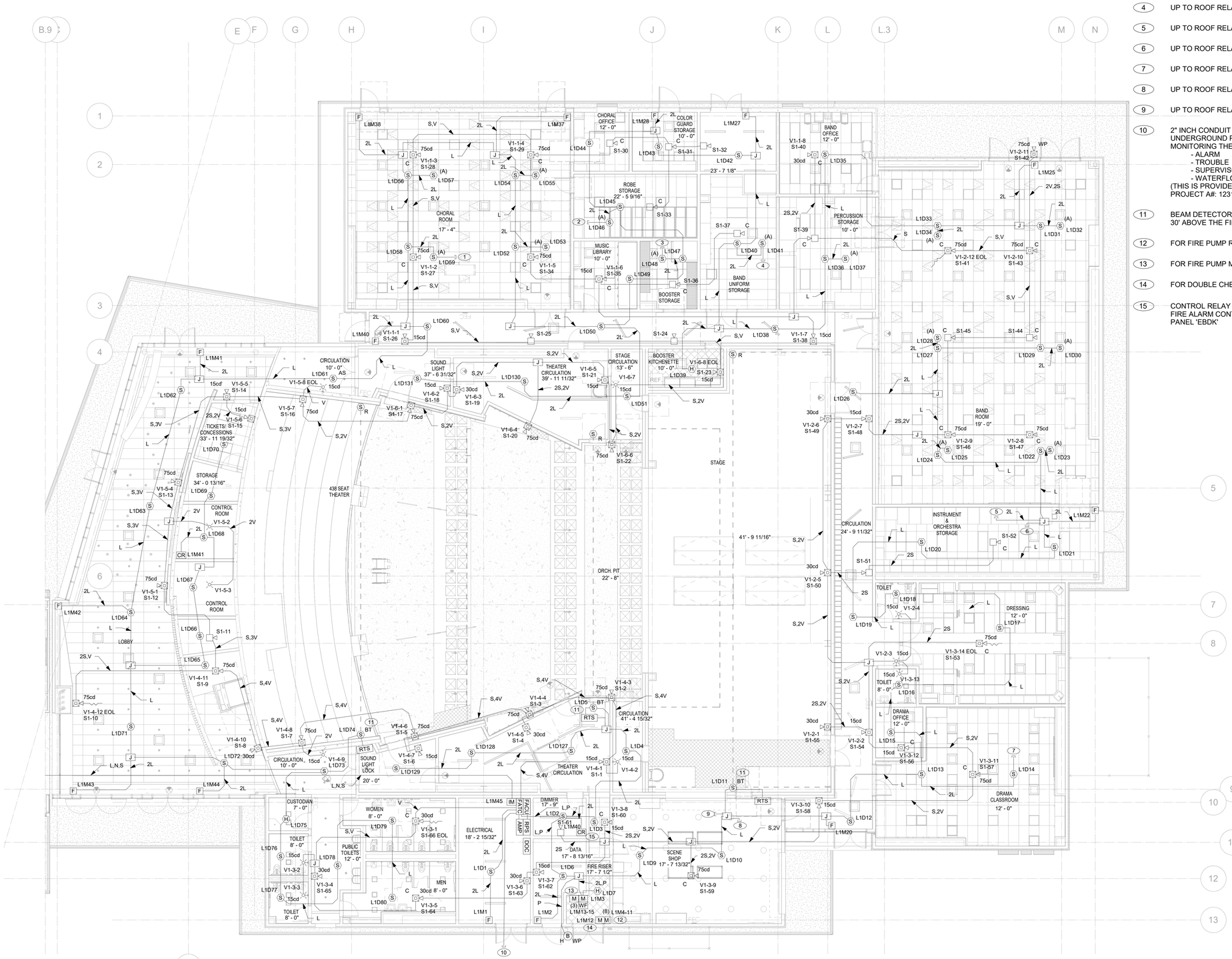
## GENERAL NOTES

1. ALL SPEAKER TO BE TAPPED AT .5 WATT UNLESS OTHER WISE NOTED.
2. SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN A 36" HORIZONTAL PATH FROM THE SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND SHALL BE INSTALLED OUTSIDE OF THE DIRECT AIRFLOR FROM THOSE REGISTERS.

## SHEET NOTES

1. UP TO ROOF RELAY FOR RTU #1 SHUTDOWN
2. UP TO ROOF RELAY FOR RTU #7 SHUTDOWN
3. UP TO ROOF RELAY FOR RTU #9 SHUTDOWN
4. UP TO ROOF RELAY FOR RTU #8 SHUTDOWN
5. UP TO ROOF RELAY FOR RTU #5 SHUTDOWN
6. UP TO ROOF RELAY FOR RTU #6 SHUTDOWN
7. UP TO ROOF RELAY FOR RTU #4 SHUTDOWN
8. UP TO ROOF RELAY FOR RTU #3 SHUTDOWN
9. UP TO ROOF RELAY FOR RTU #10 SHUTDOWN
10. 2" INCH CONDUIT FROM FATC TO EXISTING CAMPUS UNDERGROUND PULL BOX FOR FIRE ALARM SYSTEM. MONITORING THE FOLLOWING:
    - ALARM
    - TROUBLE
    - SUPERVISORY
    - WATERFLOW

    (THIS IS PROVIDED TO THE ONGOING CAMPUS FACP PROJECT A#: 123169. REFER TO SITE PLAN FA012.
11. BEAM DETECTOR TO BE MOUNTED NO HIGHER THAN 30' ABOVE THE FINISHED FLOOR.
12. FOR FIRE PUMP ROOM CONTROL VALVES.
13. FOR FIRE PUMP MONITORING.
14. FOR DOUBLE CHECK VALVE.
15. CONTROL RELAY FOR LIGHTING CONTROL. FIRE ALARM CONTRACTOR TO CONNECT TO PANEL 'EBDK'




1 1ST FLOOR - SEGMENT B - FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

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SHEET NAME:

**1ST FLOOR - SEGMENT B - FIRE ALARM PLAN**

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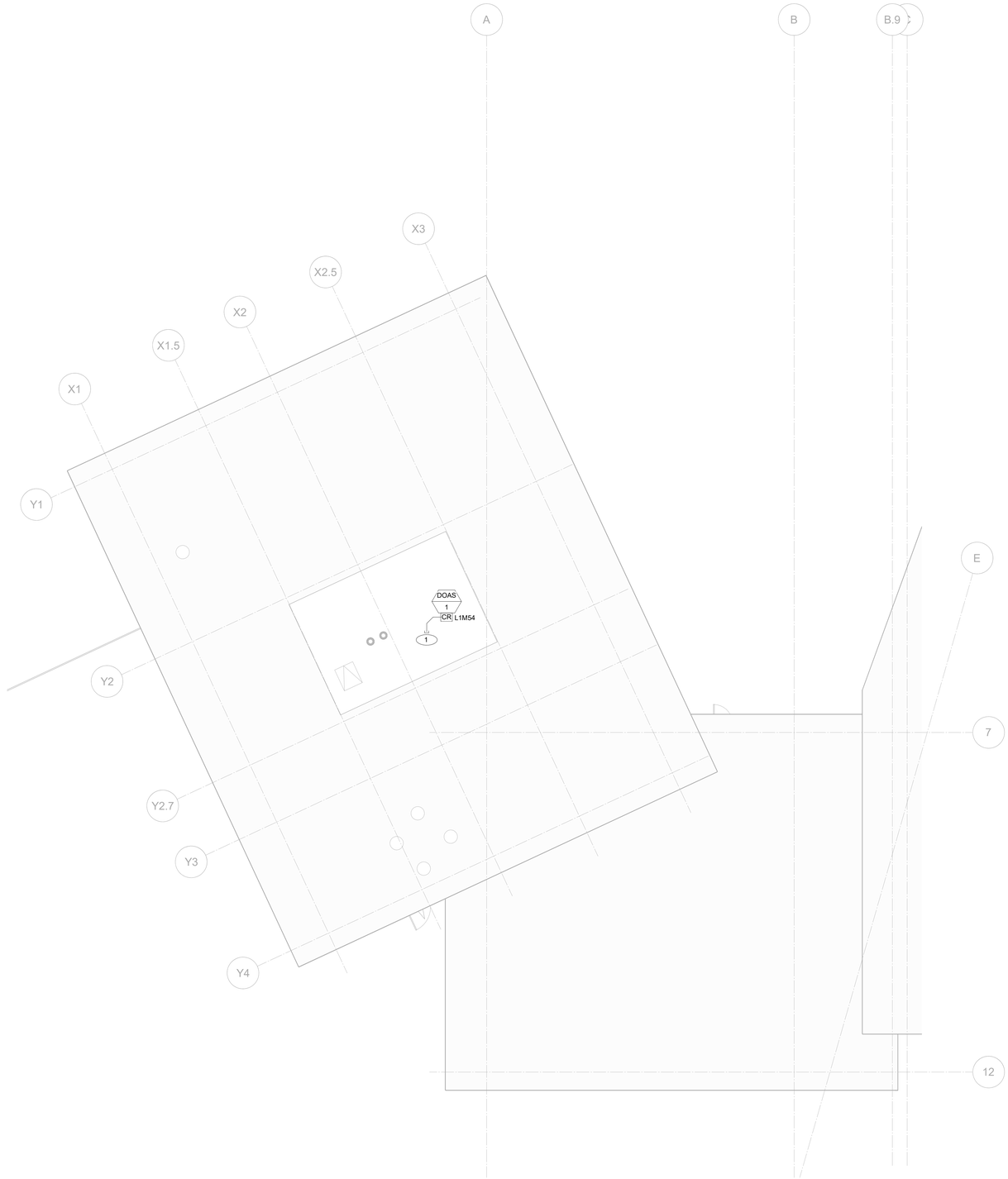
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## SHEET NOTES

1 TO SLC LOOP BELOW.




1 ROOF PLAN - SEGMENT A - FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

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FACILITY:

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PROJECT:

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**ROOF PLAN - SEGMENT A - FIRE ALARM PLAN**

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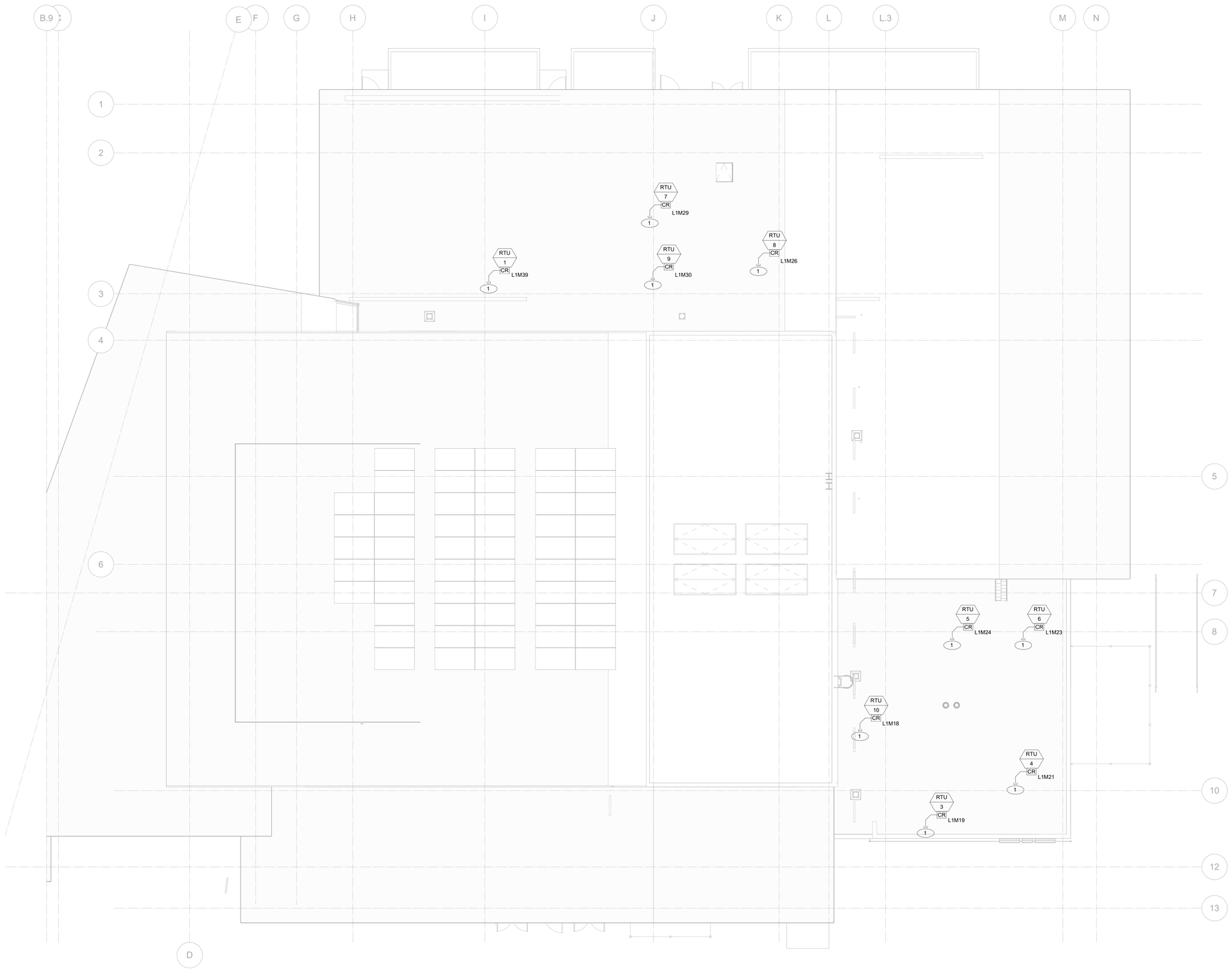
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## SHEET NOTES

(1) TO SLC LOOP BELOW.




1 ROOF PLAN - SEGMENT B - FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

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PROJECT:

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SHEET NAME:

**ROOF PLAN - SEGMENT B - FIRE ALARM PLAN**

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# GENERAL NOTES:

1. ALL SPRINKLER PLANS SHALL BE APPROVED PRIOR TO THE INSTALLATION OF ANY PIPING & A SET OF APPROVED PLANS SHALL BE MAINTAINED AT THE SITE AT ALL TIMES.

2. UNDERGROUND PIPING SIZE IS NOT THE RESPONSIBILITY OF DSA AND THE DESIGNERS OF THE UNDERGROUND PIPING TAKE FULL LIABILITY FOR UNDERSIZED PIPING.

3. THE DESIGNER SHALL INDICATE ON THE PLANS ANY INSERTION OR EXTERIOR PIPING SUBJECT TO FREEZING (WHERE WATER TEMPERATURE CANNOT BE MAINTAINED ABOVE 40 DEGREES FAHRENHEIT) AND PROVIDE PROCTECTION PER 2022 NFPA 13. UNDERGROUND MAINS AND LEAD-IN CONNECTIONS TO SYSTEM RISERS SHALL BE COMPLETELY FLUSHED BEFORE CONNECTION IS MADE TO OVERHEAD SPRINKLER PIPING. WHERE UNDERGROUND PIPING IS FLUSHED AND NOT IMMEDIATELY CONNECTED TO THE OVERHEAD PIPING, IT SHALLED BE CAPPED OR OTHERWISE PROTECTED TO PREVERNT DEBRIS, DIRT, OR ANIMALS FROM ENTERING INTO THE UNDERGROUND PIPING, 2022 NFPA 13.

4. PROVIDE WATER FLOW TEST REPORT AND INDICATE THE LOCATIONS AND HEIGHT ELEVATIONS OF THE TEST AND RESIDUAL FLOW HYDRANTS. DATA MUST BE NO MORE THAN 6 MONTHS OLD. INFORMATION MAY COME FROM THE LOCAL WATER PURVEYOR, UTILITIES COMPANY, OR LOCAL FIRE DEPARTMENT. THIS INFORMATION SHALL BE ACCOMPANIED WITH A WET SIGNATURE AND SIGNED DATE OF TEST. REFER TO SITE PLAN DRAWING G1.51 FOR FLOW TEST LOCATIONS.

5. A COPY OF THE COMPLETED AND SIGNED "CONTRACTORS MATERIALS & TEST CERTIFICATE FOR UNDERGROUND PIPING" & "CONTRACTORS MATERIALS & TEST CERTIFICATE FOR ABOVE GROUND PIPING" (NFPA 13 FIGURE 10.10.1 & FIGURE 25.1) SHALL BE PROVIDED TO THE AOR, IOR, & DSA UPON COMPLETION AND SCANNED ELECTRONICALLY BY DSA TO BE INCLUDED IN THE OVERALL DSA DOCUMENTS.

5. ALL PIPING AND ATTACHED APPURTENANCES SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATICALLY TESTED AT 200 PSI, OR 50 PSI IN EXCESS OF THE SYSTEM WORKING PRESSURE, WHICH EVER IS GREATER, AND SHALL MAINTAIN THAT PRESSURE WITHOUT LOSS FOR 2 HOURS (WITNESSED BY AHJ). 2022 NFPA 13.

7. PROVIDE A SPARE SPRINKER HEAD CABINET, SPRINKLER WRENCH AND NO FEWER THAN 5 SPARE SPRINKLER HEADS MATCHING THE TYPES AND TEMPERATURE RATING IN EACH PROTECTED AREA FOR SYSTEMS LESS THAN 300 SPRINKLERS. (12 SPARE SPRINKLER HEADS FOR SYSTEMS 300 TO 1000 SPRINKLERS). 2022 NFPA 13.

8. THE END SPRINKLER ON EACH LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL AND LATERAL MOVEMENT, 2022 NFPA 13.

9. UNSUPPORTED STEEL ARMOVERS SHALL NOT EXCEED 24 INCHES. WHEN THE PRESSURE EXCEEDS 100 PSI AND THE SPRINKLER IS IN THE PENDANT POSITION, THE UNSUPPORTED ARMOVER SHALL NOT EXCEED 12 INCHES.

10. IF FLEXIBLE DROPS ARE TO BE USED, THE CEILING GRID SHALL BE IDENTIFIED AS IN COMPLIANCE WITH ASTM C 635/636 (INTERMEDIATE OF HEAVY CEILING GRID).

11. IF FLEXIBLE DROPS ARE TO BE USED, WORST CASE SCENARIO IN FRICTION LOSS SHALL BE IDENTIFIED AND REFLECTED IN THE CALCULATIONS.

12. PENETRATIONS OF RATED CORRIDORS, WALLS, AND ASSEMBLIES SHALL BE SEALED IN ACCORDANCE WITH THE CBC.

13. THE INSPECTOR'S TEST VALVE LOCATION SHALL BE INSTALLED AT THE END OF THE HYDRAULICALLY REMOTE PART OF THE SYSTEM WITH A PIPE SIZE OF NO LESS THAN 1" WITH A SMOOTH BORE, CORROSION RESISTANT ORIFICE, EQUIVALENT TO THE SMALLEST ORIFICE ON THE SYSTEM. THE DISCHARGE SHALL BE TO THE EXTERIOR OF THE BUILDING, 2022 CBC 903.4.2 AND THE 2022 NFPA 13, 16.4.2.1 – 16.4.2.3.

14. FINAL LOCATION OF THE ITV (INSPECTOR'S TEST VALVE) AND SYSTEM DRAINS IS SUBJECT TO AHJ APPROVAL.

15. THE SPRINKLER FLOW SWITCH SHALL BE TESTED TO CONFIRM THAT WHEN THE INSPECTOR'S TEST VALVE IN ACTIVATED AN ALARM WILL SOUND NO MORE THAN 90 SECONDS AFTER INITIAL FLOW (WITNESSED BY THE AHJ), 20201 NFPA 25, 13.2.4.2.

16. CONNECTIONS TO PROTECTED PREMISES AND SUPERVISING STATION FIRE ALARM SYSTEM SHALL BE TESTED TO VERIFY PROPER IDENTIFICATIONS AND TRANSMISSIONS OF ALARMS FROM AUTOMATIC FIRE EXTINGUISHING SYSTEMS, 2022 CBC 904.4.3.

17. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS, TEMPERATURES, CRITICAL AIR PRESSURES AND WATER FLOW SWITCHES ON ALL SPRINKLER SYSTEMS SHALL BE SUPERVISED, 2022 CBC 903.4.1.

18. ALL VALVES SHALL HAVE A PERMANENT AFFIXED SIGN INDICATING FUNCTION & BUILDING PROTECTED, 2022 NFPA 13, 16.9.12.

19. A PERMANENT HYDRAULIC DESIGN PLACARD SHALL BE ATTACHED TO EACH SYSTEM RISER, 2022 NFPA 13, 28.5. A PERMANENT GENERAL INFORMATION SIGN SHALL BE ATTACHED TO EACH SYSTEM RISER, 2022 NFPA 13, 28.6.

20. FLOW SWITCH SHALL BE CONNECTED TO A 10 INCH OUTSIDE ALARM BELL AT EACH RISER. APPROVED IDENTIFICATION SIGNS SHALL BE PROVIDED TO OUTSIDE ALARM BELL "SPRINKLER FIRE ALARM - WHEN BELL RINGS CALL 911/FIRE DEPARTMENT." 2022 NFPA 13 SEC. A.16.11.2 AND 2022 CBC 903.4.2.

21. A LABEL OF THE SELF-ADHESIVE TYPE SHALL BE PLACED ON THE FIRE DEPARTMENT CONNECTION OR ON THE RISER FOR FIRE SPRINKLER SYSTEM WITH THE DATE OF SERVICE AND/OR OF INSTALLATION WAS PERFORMED AND LICENSE NUMBER OF PERSON PERFORMING SERVICE WORK, TITLE 19 ARTICLE 906(a).

22. SPRINKLER CONTRACTOR SHALL COMPLETE AND SIGN CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR THE ABOVE GROUND PIPING. THIS FORM SHALL BE GIVEN TO THE PROJECT INSPECTOR WHO WILL FORWARD TO DSA FOR FILING IN PROJECT RECORDS, 2022 NFPA 13, FIGURE 28.1.

23. AUXILIARY DRAIN VALVES SHALL BE PROVIDED TO FACILITATE FUTURE MAINTENANCE AS REQUIRED BY NFPA 13 2022 SECTION 16.9.12.1.

24. CONTRACTOR TO FURNISH SPARE HEAD CABINET WITH REPLACEMENT SPRINKLER HEADS AND WRENCHES AS REQUIRED PER NFPA 13 2022 SECTION 16.2.7 AND 30.2.3.

25. ALL SPRINKLER ZONE CONTROL VALVES ARE TO BE INSTALLED IN A SECURE LOCATION.

26. ALL MONITORED SPRINKLER DEVICES SHALL BE COORDINATED WITH THE INSTALLING ALARM CONTRACTOR AND FIRE ALARM CONTRACTER TO CONNECT TAMPER SWITCHES AND FLOW SWITCHES TO UL CENTRAL STATION MONITORING.

27. PIPING 1-1/4" THROUGH 2" SHALL BE EITHER SCH.40 BLACK STEEL PIPING WITH THREADED FITTINGS OR SCH.10 BLACK STEEL PIPING WITH GROOVED FITTINGS. 1" PIPING SHALL BE SCH.40 BLACK STEEL PIPING WITH THREADED FITTINGS.

28. PIPING 2-1/2" THROUGH 8" SHALL BE SCH.10 BLACK STEEL PIPING WITH GROOVED FITTINGS UNLESS NOTED OTHERWISE.

30. NO VERTICAL OR HORIZONTAL PIPE PENETRATIONS ARE PERMITTED ON ANY CONCRETE/STEEL BEAMS AND COLUMNS UNLESS EACH LOCATION IS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

31. ALL EARTHQUAKE BRACING TO BE IN ACCORDANCE WITH NFPA-13 2022 EDITION AND CONFORM WITH CHAPTER 13 OF ASCE-7 2016 EDITION.

32. LISTED FLEXIBLE COUPLINGS SHALL ONLY BE INSTALLED WHERE REQUIRED BY NFPA 13.

33. FLEXIBLE COUPLINGS SHALL BE LOCATED IN ACCORDANCE WITH NFPA-13 AS FOLLOWS:
A. WITHIN 24" FROM THE TOP AND BOTTOM OF ALL RISERS.
B. WITHIN 12" ABOVE AND 24" BELOW FLOORS IN MULTISTORY BUILDINGS.
C. WITHIN 1' OF ALL CONCRETE AND MASONRY WALL PENETRATIONS UNLESS CLEARANCE IS PROVIDED PER SECTION 18.4.
D. WITHIN 24" OF BUILDING EXPANSION JOINTS.
E. WITHIN 24" OF THE TOP OF DROPS EXCEEDING 15' IN LENGTH TO PORTIONS OF SYSTEMS SUPPLYING MORE THAN 1 SPRINKLER.
F. ABOVE AND BELOW ANY INTERMEDIATE POINTS OF SUPPORT FOR A RISER OR OTHER VERTICAL PIPE.

34. CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING THROUGH WALLS, FLOORS, PLATFORMS, AND FOUNDATIONS, INCLUDING DRAINS, FDCS, AND OTHER AUXILIARY PIPING PER SECTION 18.4.1 OR FLEXIBLE COUPLINGS SHALL BE PROVIDED.

35. LONGITUDINAL SWAY BRACING SPACED PER SEISMIC CALCULATIONS SHALL BE PROVIDED FOR FEED AND CROSS MAINS NOT MORE THAN 6 FEET FROM THE END.

36. TOPS OF RISERS OVER 3 FEET SHALL BE SECURED AGAINST DRIFTING IN ANY DIRECTION USING A 4-WAY BRACE PER SECTION 18.5.8.1. SEE DETAIL 3. SPRIGS 4 FT. OR LONGER TO BE RESTRAINED AGAINST LATERAL MOVEMENT PER NFPA 13 SECTION 18.6.6.

37. LATERAL SWAY BRACING SPACED PER SEISMIC CALCULATIONS SHALL BE PROVIDED FOR FEED AND CROSS MAINS NOT MORE THAN 6 FEET FROM THE END.

38. BRACING SHALL BE ATTACHED DIRECTLY TO FEED AND CROSS MAINS.

39. THE LAST LENGTH OF PIPE AT THE END OF FEED OR CROSS MAINS SHALL BE PROVIDED WITH A LATERAL BRACE. LATERAL BRACES SHALL BE ALLOWED TO ACT AS A LONGITUDINAL BRACE IF THEY ARE WITHIN 24" OF THE CENTERLINE OF THE PIPING BRACED PER NFPA 13 2022 EDITION SECTIONS 18.5.5.8 & 18.5.4.2.

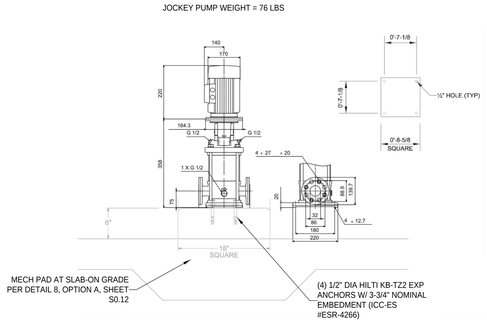
40. SWAY BRACING IS NOT REQUIRED FOR BRANCH LINES 2" AND SMALLER.

41. THE END SPRINKLER ON EACH BRANCH LINE SHALL BE RESTRAINED AGAINST EXCESSIVE MOVEMENT AS DENOTED BY SYMBOL BLR. BLR to be 2'-0" MAX. FROM HANGER PER NFPA 13 SECTION 18.6.2.

42. C-TYPE CLAMPS (INCLUDING BEAM AND LARGE FLANGE CLAMPS), WITH OR WITHOUT RETAINING STRAPS, SHALL NOT BE USED TO ATTACH BRACES TO THE BUILDING STRUCTURE.

43. VALVES WITH LEADING EDGES MORE THAN 27 INCHES (686 MM) AND NOT MORE THAN 80 INCHES (2032 MM) ABOVE THE FINISHED FLOOR OR GROUND SHALL PROTRUDE NO MORE THAN 4 INCHES (102 MM) MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH. "

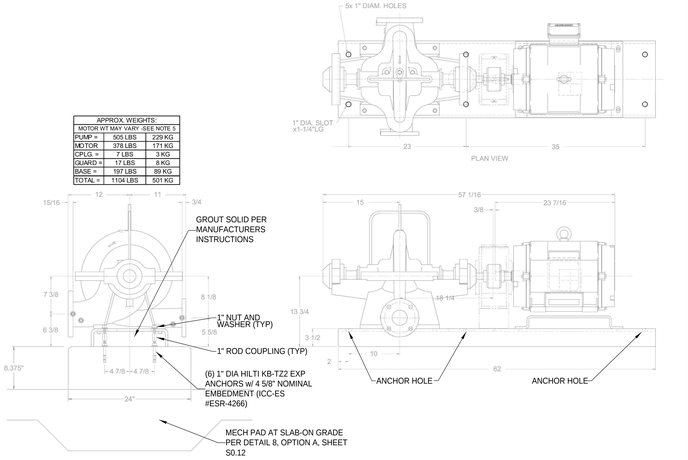
44. A SINGLE AIR VENT WITH A CONNECTION CONFORMING TO NFPA 13 16.7 AND A16.7 SHALL BE PROVIDED ON EACH WET PIPE SYSTEM USING METALLIC PIPE. THE VENT REQUIRED BY 8.1.5 SHALL BE LOCATED NEAR A HIGH POINT SYSTEM TO ALLOW AIR TO BE REMOVED FROM THAT PORTION OF THE SYSTEM BY ONE OF THE FOLLOWING METHODS: (1) MANUAL VALVE, 1/2 INCH SIZE (2) AUTOMATIC AIR VENT (3) OTHER APPROVED MEANS.




## 2B JOCKEY PUMP PAD ANCHORING PLAN

FS0.01 SCALE: 1" = 1'-0"

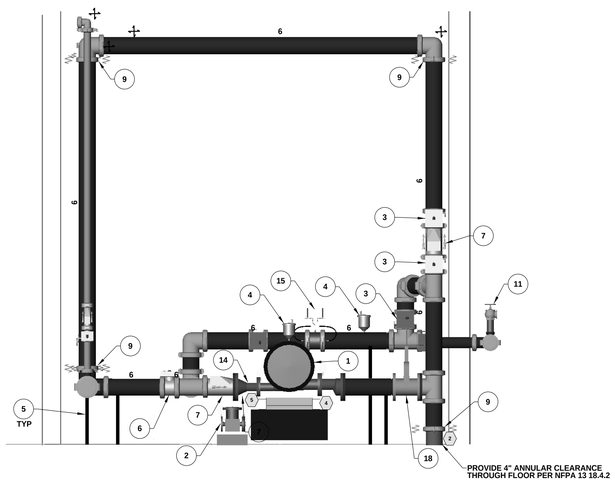
SCALE: 1"= 1'-0"




## 2A FIRE PUMP PAD ANCHORING PLAN

FS0.01 SCALE: 1" = 1'-0"

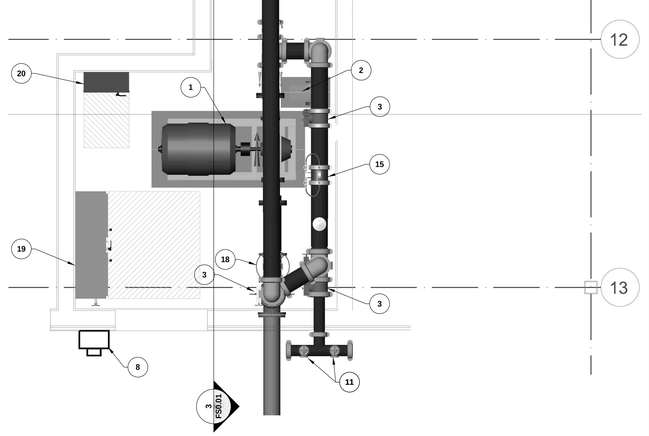
SCALE: 1"= 1'-0"




## 3 FIRE PUMP ROOM SECTION

FS0.01 SCALE: ¼" = 1'-0"

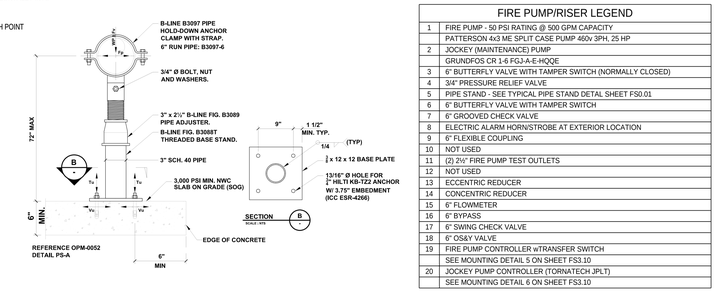
SCALE: ¼"= 1'-0"



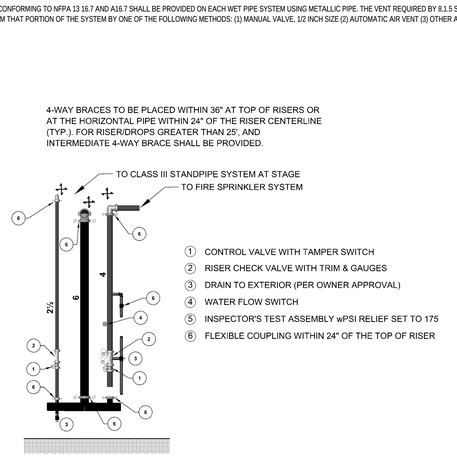

## 1 FIRE PUMP ROOM PLAN VIEW

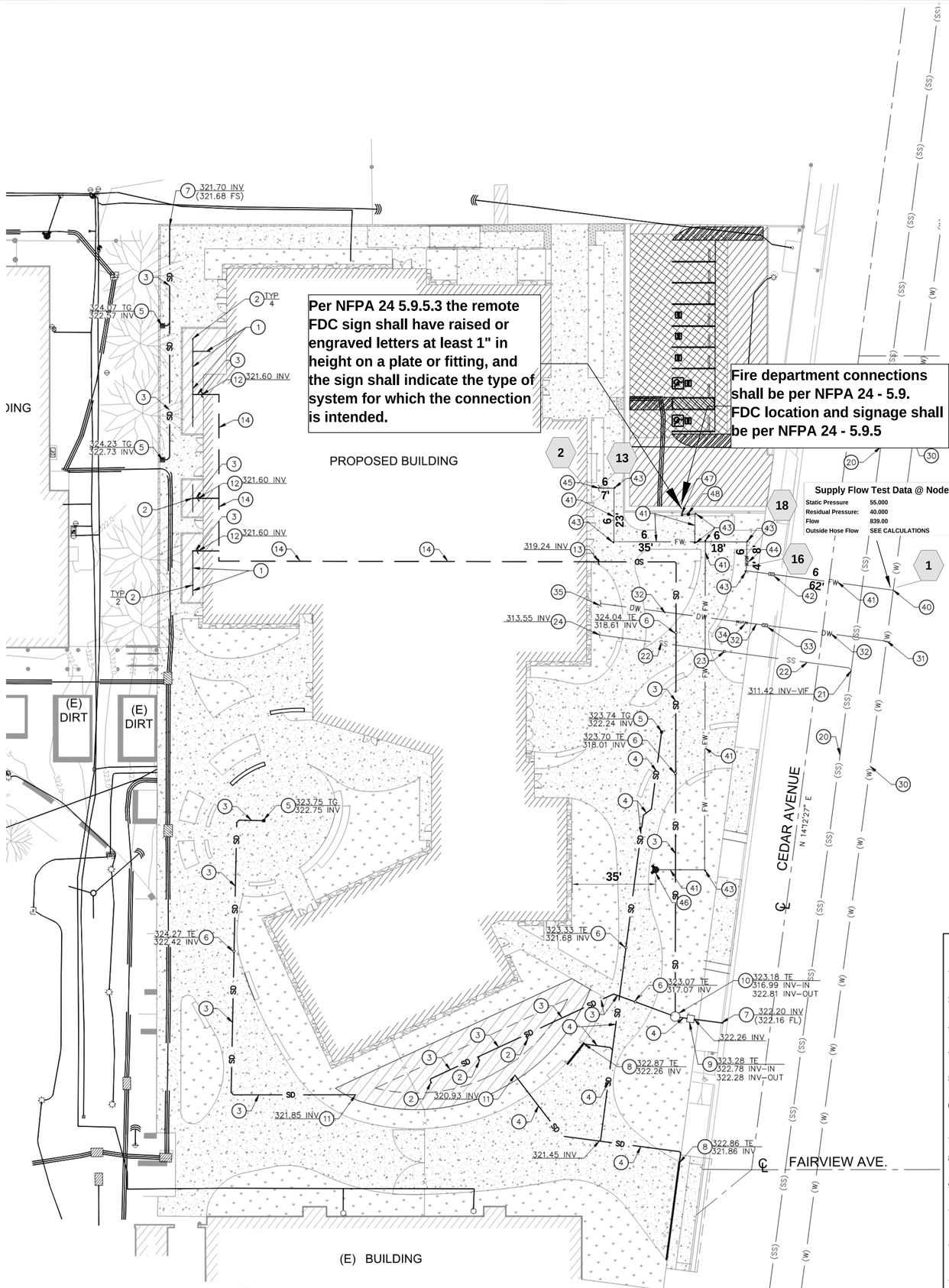
FS0.01 SCALE: ¼" = 1'-0"

SCALE: ¼"= 1'-0"




| FIRE PUMP/RISER LEGEND | | |
|---|---|---|
| 1 | FIRE PUMP - 50 PSI RATING @ 500 GPM CAPACITY | |
| | PATTERSON 4x3 ME SPLIT CASE PUMP 460v 3PH, 25 HP | |
| 2 | JOCKEY (MAINTENANCE) PUMP | |
| | GRUNDFOS CR 1-6 FGJ-A-E-HQQE | |
| 3 | 6" BUTTERFLY VALVE WITH TAMPER SWITCH (NORMALLY CLOSED) | |
| 4 | 3/4" PRESSURE RELIEF VALVE | |
| 5 | PIPE STAND - SEE TYPICAL PIPE STAND DETAL SHEET FS0.01 | |
| 6 | 6" BUTTERFLY VALVE WITH TAMPER SWITCH | |
| 7 | 6" GROOVED CHECK VALVE | |
| 8 | ELECTRIC ALARM HORN/STROBE AT EXTERIOR LOCATION | |
| 9 | 6" FLEXIBLE COUPLING | |
| 10 | NOT USED | |
| 11 | (2) 2½" FIRE PUMP TEST OUTLETS | |
| 12 | NOT USED | |
| 13 | ECCENTRIC REDUCER | |
| 14 | CONCENTRIC REDUCER | |
| 15 | 6" FLOWMETER | |
| 16 | 6" BYPASS | |
| 17 | 6" SWING CHECK VALVE | |
| 18 | 6" OS&Y VALVE | |
| 19 | FIRE PUMP CONTROLLER w/TRANSFER SWITCH | |
| | SEE MOUNTING DETAIL 5 ON SHEET FS3.10 | |
| 20 | JOCKEY PUMP CONTROLLER (TORNATECH JPLT) | |
| | SEE MOUNTING DETAIL 6 ON SHEET FS3.10 | |


4-WAY BRACES TO BE PLACED WITHIN 36" AT TOP OF RISERS OR AT THE HORIZONTAL PIPE WITHIN 24" OF THE RISER CENTERLINE (TYP.). FOR RISER/DROPS GREATER THAN 25', AND INTERMEDIATE 4-WAY BRACE SHALL BE PROVIDED.
TO CLASS III STANDPIPE SYSTEM AT STAGE
TO FIRE SPRINKLER SYSTEM
2½
6
4
6
6
6




1 **CIVIL UTILITY PLAN - C-4.0**
FS3.10 **SCALE: 1" = 20'-0"**

SCALE: 1" = 20'0"

## CONSTRUCTION NOTES:

### STORM DRAIN:

1. INSTALL 4" PERFORATED PIPE PVC STORM DRAIN PIPE WRAPPED IN NON–WOVEN GEOTEXTILE MEMBRANE, MINIMUM SLOPE AT 0.50%. SEE DETAIL 2 ON SHEET C–5.2 FOR REFERENCE.
2. INSTALL 6" PVC PIPE OVER FLOW WITH ATRIUM GRATE INLET AT 12" ABOVE FINISH GRADE. FOR BIOSWALE, SEE DETAIL 4 ON SHEET C–5.1. FOR LID PLANTER BOX, SEE DETAIL 2 ON SHEET C–5.2.
3. INSTALL 6" SCH 40 PVC STORM DRAIN PIPE, MINIMUM SLOPE AT 0.50% FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C–5.0.
4. INSTALL 4" SCH 40 PVC STORM DRAIN PIPE, MINIMUM SLOPE AT 0.50% FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C–5.0.
5. CONSTRUCT 12X12 CATCH BASIN WITH FILTER INSERTS BY KRISTAR OR APPROVED EQUAL PER DETAIL 9 ON SHEET C–5.0.
6. CONSTRUCT STORM DRAIN CLEANOUT PER DETAIL 10 ON SHEET C–5.0.
7. INSTALL 6" CIP SD CURB DRAIN PER APWA STD. PLAN 150–3. SEE DETAIL 3 ON SHEET C–5.1 FOR REFERENCE.
8. CONSTRUCT TRENCH DRAIN WITH FILTER INSERTS BY KRISTAR OR APPROVED EQUAL PER DETAIL 1 ON SHEET C–5.2.
9. INSTALL ENERGY DISSIPATOR PER DETAIL 3 ON SHEET C–5.2.
10. INSTALL SUMP PUMP PER PLUMBING DRAWINGS.
11. POINT OF DISCHARGE INTO BIOSWALE.
12. POINT OF CONNECTION FROM PLANTER BOX OVERFLOW TO BUILDING SD SYSTEM.
13. POINT OF CONNECTION FROM BUILDING SD SYSTEM TO OVERFLOW SUMP PUMP.
14. INSTALL 6" PVC PIPE. COORDINATE WITH PLUMBING FOR INSTALLATION, EXACT LOCATION AND POINT OF CONNECTION. SCHEMATIC DESIGN SHOWN FOR REFERENCE. REFER TO PLUMBING AND STRUCTURAL PLANS FOR PIPE INSTALLATION WITHIN THE BUILDING FOOTPRINT.

### SANITARY SEWER:

20. EXISTING 8" VCP MAIN SANITARY SEWER LINE.
21. CONNECT TO EXISTING MAIN SANITARY SEWER LINE PER CITY STANDARDS. CONTRACTOR TO VERIFY IN FIELD EXISTING SEWER LINE INVERTS.
22. INSTALL 6" ABS SCH 40 SANITARY SEWER LINE. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C–5.0.
23. INSTALL SANITARY SEWER CLEAN OUT PER DETAIL 10 ON SHEET C–5.0
24. CONNECT TO BUILDING SANITARY SEWER LINE. COORDINATE AND MATCH LOCATION WITH PLUMBING DRAWINGS. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.

### DOMESTIC WATER:

30. EXISTING MAIN WATER LINE.
31. CONNECT TO EXISTING WATER MAIN LINE PER CITY STANDARDS. COORDINATE WITH THE UTILITY PURVEYOR FOR CONNECTION REQUIREMENT. CONTRACTOR TO VERIFY IN FIELD. CONTRACTOR TO PAY FOR PERMIT AND FEES.
32. INSTALL 4" AWWA C900 PVC PIPE DOMESTIC WATER LINE. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C–5.0.
33. INSTALL NEW DOMESTIC WATER METER AND/OR VAULT, COORDINATE WITH WATER PURVEYOR FOR REQUIREMENTS.
34. INSTALL 4"ø REDUCED PRESSURE PRINCIPLE ASSEMBLY ZURN MODEL 375A . SEE DETAIL 1 ON SHEET C–5.1 FOR REFERENCE. COORDINATE WITH WATER PURVEYOR FOR AN APPROVED BACKFLOW DEVICE PRIOR TO ORDERING. CONTACT MANUFACTURER FOR INSTALLATION COORDINATION.
35. CONNECT TO BUILDING DOMESTIC WATER LINE. COORDINATE AND MATCH LOCATION WITH PLUMBING DRAWINGS. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.

### FIRE WATER:

40. CONNECT TO EXISTING WATER MAIN LINE PER CITY STANDARDS. COORDINATE WITH THE UTILITY PURVEYOR FOR CONNECTION REQUIREMENT. CONTRACTOR TO VERIFY IN FIELD. CONTRACTOR TO PAY FOR PERMIT AND FEES.
41. INSTALL 6" AWWA C900 PVC PIPE FIRE WATER LINE. COORDINATE WITH FIRE SPRINKLER DESIGNER. FOR BEDDING REQUIREMENTS, SEE DETAIL 8 ON SHEET C–5.0.
42. INSTALL NEW FIRE WATER METER AND/OR VAULT, COORDINATE WITH WATER PURVEYOR FOR REQUIREMENTS.
43. CONSTRUCT THRUST BLOCK PER DETAIL 5 ON SHEET C–5.1.
44. INSTALL 6"ø DOUBLE CHECK DETECTOR ZURN MODEL 350DA. SEE DETAIL 2 ON SHEET C–5.1 FOR REFERENCE. COORDINATE WITH WATER PURVEYOR FOR AN APPROVED BACKFLOW DEVICE PRIOR TO ORDERING. CONTACT MANUFACTURER FOR INSTALLATION COORDINATION.
45. CONNECT TO BUILDING FIRE WATER LINE. COORDINATE AND MATCH LOCATION WITH FIRE SPRINKLER DESIGNER. PROVIDE REDUCER FITTINGS AS REQUIRED TO MATCH/JOIN WITH BUILDING PLUMBING.
46. RELOCATED EXISTING FIRE HYDRANT. SEE DEMOLITION PLAN FOR PREVIOUS LOCATION. CONNECT FIRE HYDRANT TO NEW FIRE WATER LINE, PROVIDE REDUCER AS NEEDED.
47. INSTALL FIRE DEPARTMENT CONNECTION PER DETAIL 3 ON SHEET C–5.2.
48. INSTALL POST INDICATOR VALVE PER DETAIL 4 ON SHEET C–5.2.

## UTILITY SHEET NOTES:

1. REFER TO LANDSCAPE DRAWINGS FOR DEMOLITION OF EXISTING PAVEMENT, DIRT, TREES, SHRUBS, AND PLANTED AREA.
2. REFER TO LANDSCAPE DRAWINGS FOR NEW TREES, SHRUBS, AND PLANTED AREA AND FOR NEW IRRIGATION LINE.
3. SEE LANDSCAPE ARCHITECTURAL DRAWINGS FOR OTHER SITE RELATIVE DIMENSIONS NOT SHOWN ON THESE DRAWINGS.
4. FOR GAS, ELECTRICAL, CABLE, MECHANICAL REQUIREMENTS AND OTHER DRY UTILITIES, REFER TO MEP DRAWINGS.
5. EXISTING UTILITY BOXES SHOULD BE ADJUSTED TO GRADE AS REQUIRED. SEE GENERAL NOTES ON SHEET C–1.0.
6. FOR CATCH BASIN GRATE, RIM, CLEAN OUT, MANHOLE COVER, UTILITY COVER/BOX SPOT ELEVATION SHOWN ON THIS SHEET COORDINATE WITH GRADING PLAN. CONTRACT THE ENGINEER IF THERE ARE DISCREPANCY BETWEEN UTILITY SPOT ELEVATION AND GRADING SPOT ELEVATION PRIOR COMMENCING WORK.
7. FOR PIPE BEDDING SEE DETAIL 8 ON SHEET C–5.0.
8. SEWER INVERT ELEVATIONS ARE BASED ON AS–BUILT AND NAVIGATE LA, CONTRACTOR TO VERIFY IN FIELD THE INVERT ELEVATION AND SADDLE CONNECTION.
9. ALL STORM DRAIN INLETS AND CATCH BASINS SHALL BE STENCILED "NO DUMPING, DRAINS TO THE OCEAN" PER NOTES OF DETAIL 6 ON SHEET C–5.0.
10. INVERT ELEVATIONS OF EXISTING UNDERGROUND UTILITY LINES ARE UNKNOWN AND NOT PROVIDED ON THIS PLAN. CONTRACTOR IS ADVISED TO FIELD VERIFY EXISTING CONDITION, MATERIAL, DEPTH AND LOCATION OF PIPE. INSTALLATION OF STORM DRAINAGE LINE TO BE AT 0.50% SLOPE MIN.
11. CONTRACTOR SHOULD VISUALLY VERIFY IN FIELD ALL EXISTING FEATURES TO BE REMOVED WITHIN LIMIT OF WORK BEFORE BIDDING. ALL SURFACE AND UNDERGROUND FEATURES WITH LIMIT OF WORK ARE A PART OF DEMOLITION PLAN UNLESS OTHERWISE ASKED TO PROTECT.
12. CONTRACTOR TO COORDINATE WITH THE UTILITY PURVEYOR FOR INSPECTION, APPROVAL, AND PERMITTING.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

REGISTERED PROFESSIONAL ENGINEER
TROY SPIGER
No.FP1552
EXP 9/30/2025
FIRE PROTECTION
STATE OF CALIFORNIA
6/20/25

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

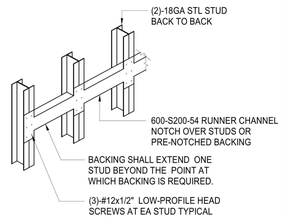
SHEET NAME:
**CIVIL UTILITY PLAN - FOR REFERENCE**

**DSA SUBMITTAL**

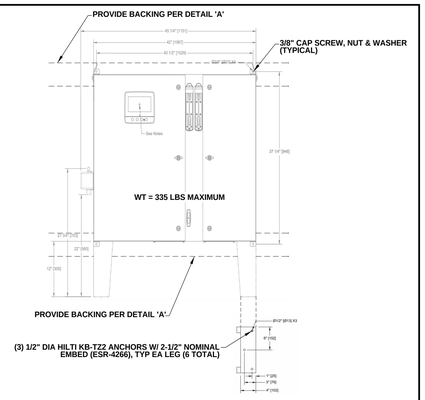
FILE NO.: **19-H10** A NO.: **03-123641**
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:
**FS0.02**

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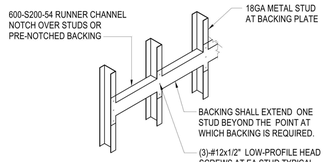

**DETAIL 'A'**
**SIM TO DETAIL 1G ON SHEET S0.31**




**SEE OSP-454 FOR FIRE PUMP CONTROL PANEL SEISMIC CERTIFICATION**

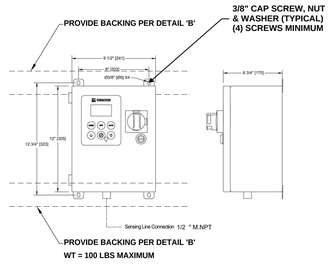
## 5 FS3.10 — FIRE PUMP CONTROL PANEL MOUNTING DETAIL

SCALE: NTS



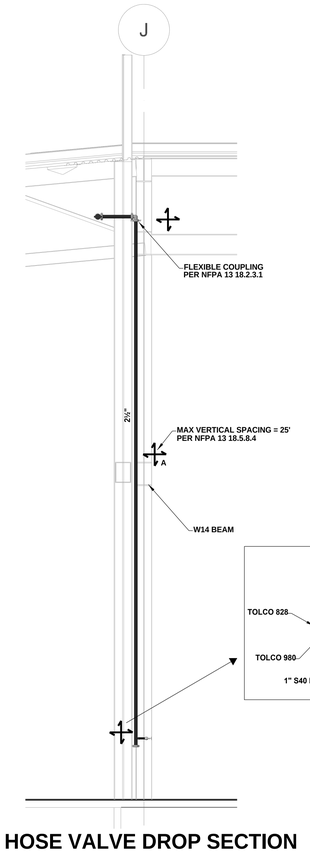

EQUIPMENT WEIGHT UNDER 100 LBS
(AND FIXTURES)

**DETAIL 'B'**
**REFERENCE 1G ON SHEET S0.31**



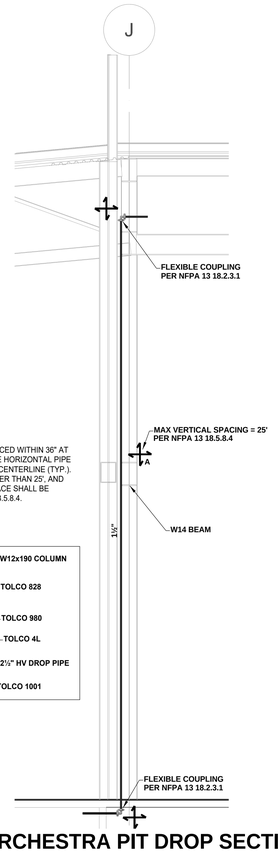

## 6 FS3.10 — JOCKEY PUMP CONTROL PANEL MOUNTING DETAIL

SCALE: NTS

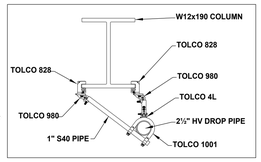



## 2 FS3.10 — HOSE VALVE DROP SECTION

SCALE: ¼" = 1'-0"

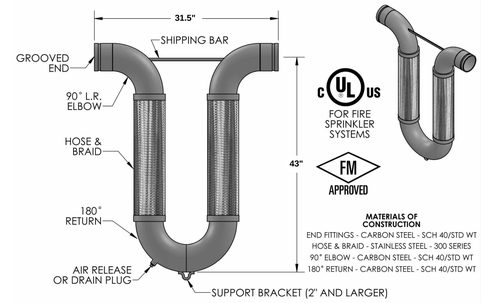



4-WAY BRACES TO BE PLACED WITHIN 36" AT TOP OF RISERS OR AT THE HORIZONTAL PIPE WITHIN 24" OF THE RISER CENTERLINE (TYP.). FOR RISER/DROPS GREATER THAN 25', AND INTERMEDIATE 4-WAY BRACE SHALL BE PROVIDED PER NFPA 13 18.5.8.4.

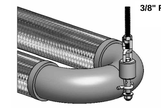



## 3 FS3.10 — ORCHESTRA PIT DROP SECTION

SCALE: ¼" = 1'-0"




NOTE: METRALOOPS 2-1/2" AND LARGER INSTALLED IN ANY ORIENTATION OTHER THAN HANGING DOWN *MUST* HAVE THE 180° RETURN SUPPORTED. (SEE INSTALLATION INSTRUCTIONS.)

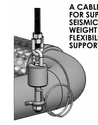


3/8" ROD TO #04T HANGER AT ROOF
(SEE DETAIL SHEET FS3.14)

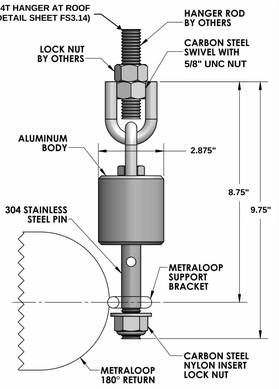
METRALOOP WITH SEISMIC BREAKAWAY HANGER
(FORMERLY BREAKAWAY COUPLING)



IF THE HANGER ROD IS SMALLER THAN THE NUT OF THE SWIVEL HANGER, SIMPLY SLIDE THE UNDERSIZED ROD THROUGH THE NUT AND FASTEN WITH THE APPROPRIATE SIZED NUTS.

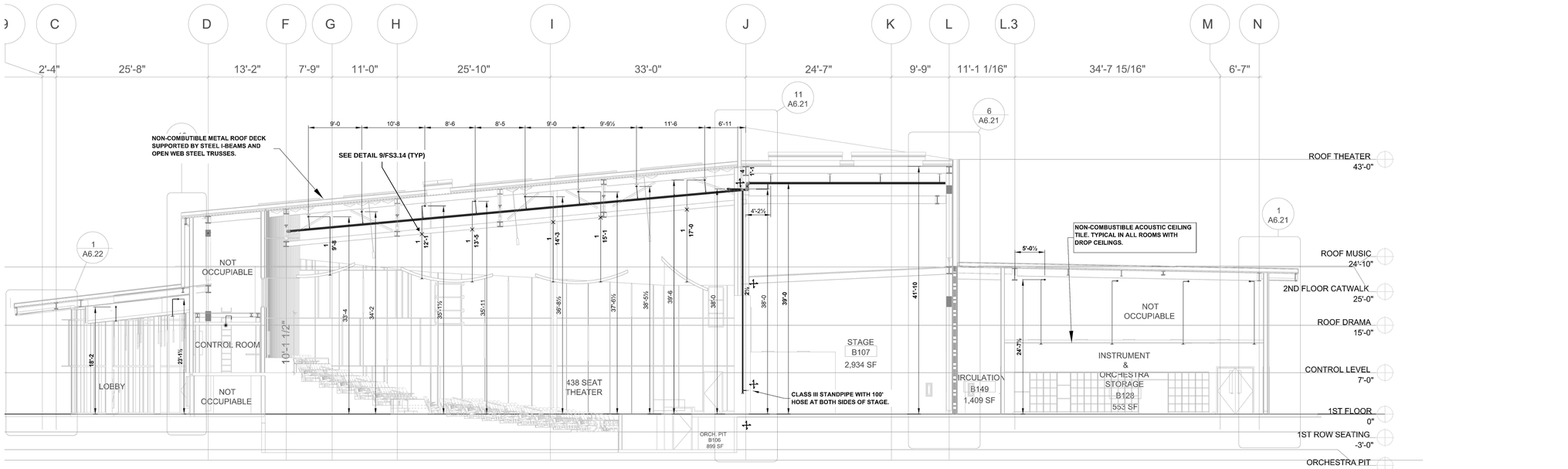


A CABLE TETHER IS SUPPLIED FOR SUPPORTING LARGE SEISMIC LOOPS WHOSE WEIGHT OR EXTREME FLEXIBILITY MAY REQUIRE SUPPORT.




## 4 FS3.10 — FIREFLEX SEISMIC LOOP (+/-8")

SCALE: NTS




## 1 FS3.10 — FULL HEIGHT SECTION 1/A6.11

SCALE: 1/8" = 1'-0"

SCALE: 1/8"= 1'-0"

PLEASE RECYCLE

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APP: 03-123641 INC:
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DATE: 10/15/2025


HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

REGISTERED PROFESSIONAL ENGINEER
TROY SPIGEL
No.FP1552
EXP 9/30/2025
FIRE PROTECTION
STATE OF CALIFORNIA
6/20/25

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

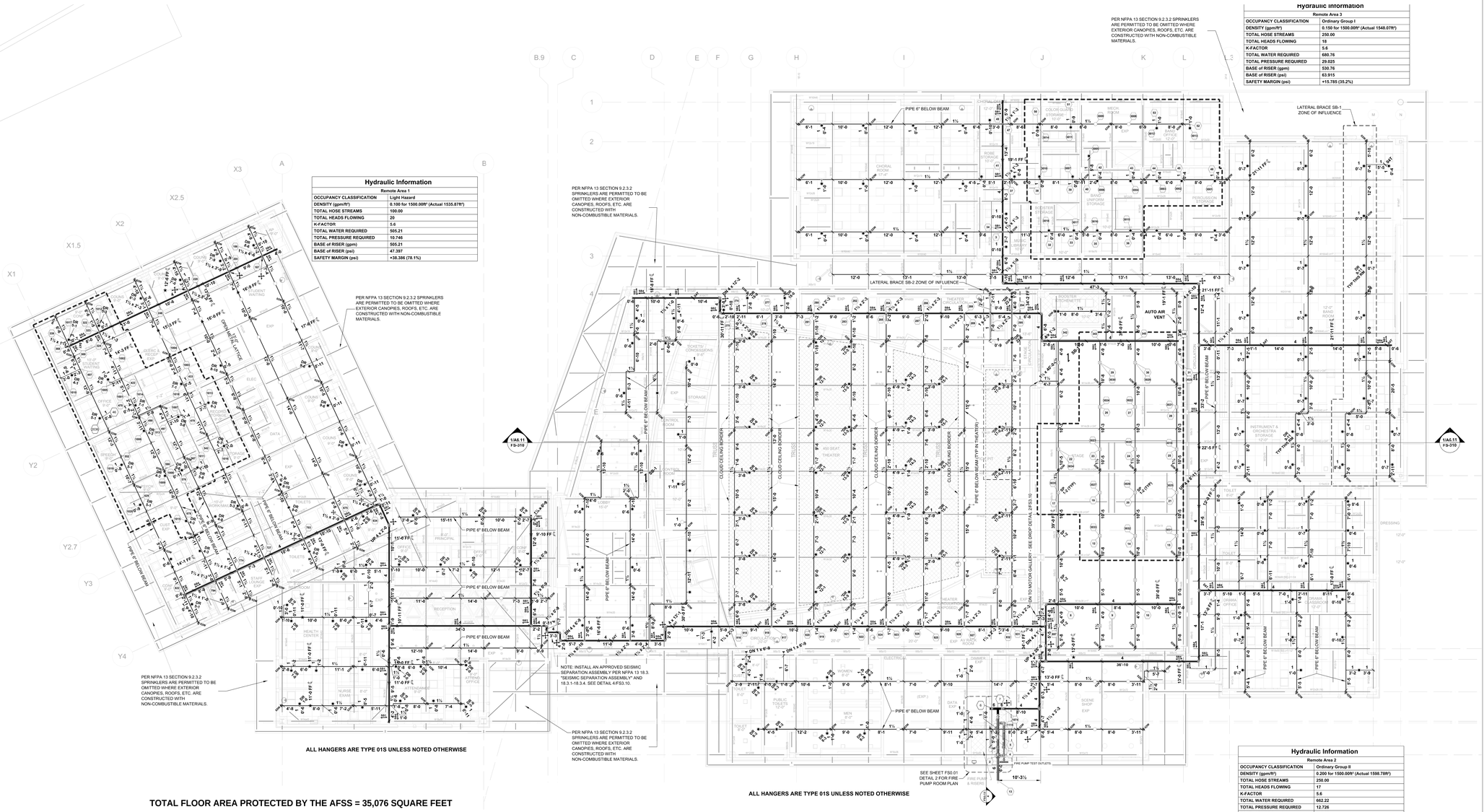
SHEET NAME:
**FULL HEIGHT SECTION & DETAILS**

**DSA SUBMITTAL**

| | |
|---|---|
| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

# FS3.10




TOTAL FLOOR AREA PROTECTED BY THE AFSS = 35,076 SQUARE FEET

# 1 FS3.11 FIRE SPRINKLER SYSTEM OVERALL PIPING LAYOUT

SCALE: 3/32" = 1'-0"

4 3 2 1 0 2 4 8 12

SCALE: 3/32" = 1'-0"

**Sprinkler Legend - PROJECT**

| Symbol | Manufacturer | SIN | Model | Quantity | K-Factor | Type | Size | Response | Finish | Temperature | Note |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ▶ | Generic | | | 2 | 5.6 | Horizontal Sidewall | ½ | Quick | White | 155°F | STD COV CONC. SIDEWALL |
| ◈ | Generic | | | 3 | 5.6 | Upright | ½ | Quick | Brass | 155°F | UPRIGHT UNDER CATWALK |
| · | Generic | | | 138 | 5.6 | Upright | ½ | Quick | Brass | 200°F | BRASS UPRIGHT |
| ⊗ | Generic | | | 31 | 5.6 | Upright | ½ | Quick | Brass | 200°F | BRASS UPRIGHT ON SPRIG |
| ● | Generic | | | 215 | 5.6 | Pendent | ½ | Quick | White | 155°F | STD COV CONCEALED PENDENT |
| | | | | Total = 389 | | | | | | | |

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6/20/25

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**FIRE SPRINKLER SYSTEM OVERALL LAYOUT**

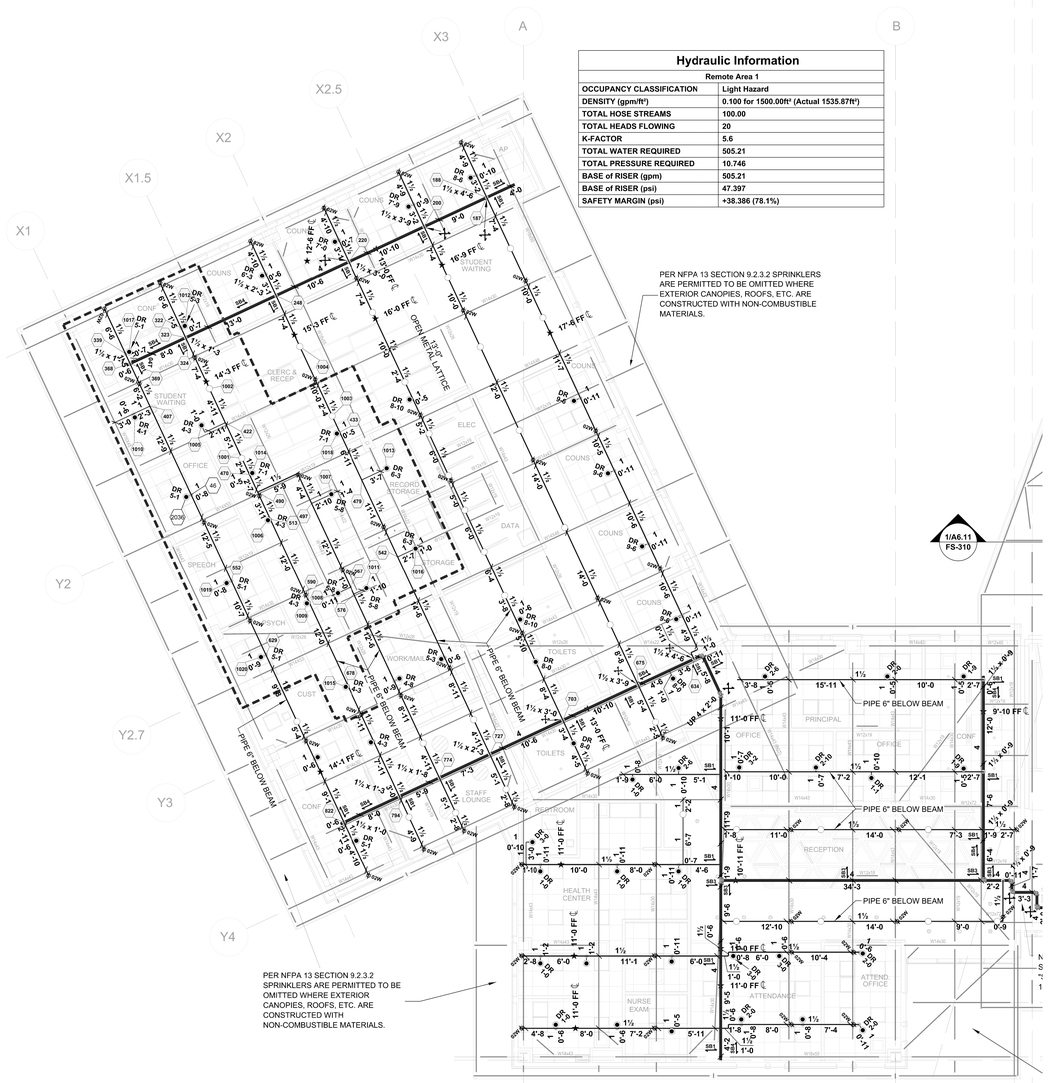
**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**
DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**
SHEET:

# FS3.11

PLEASE RECYCLE

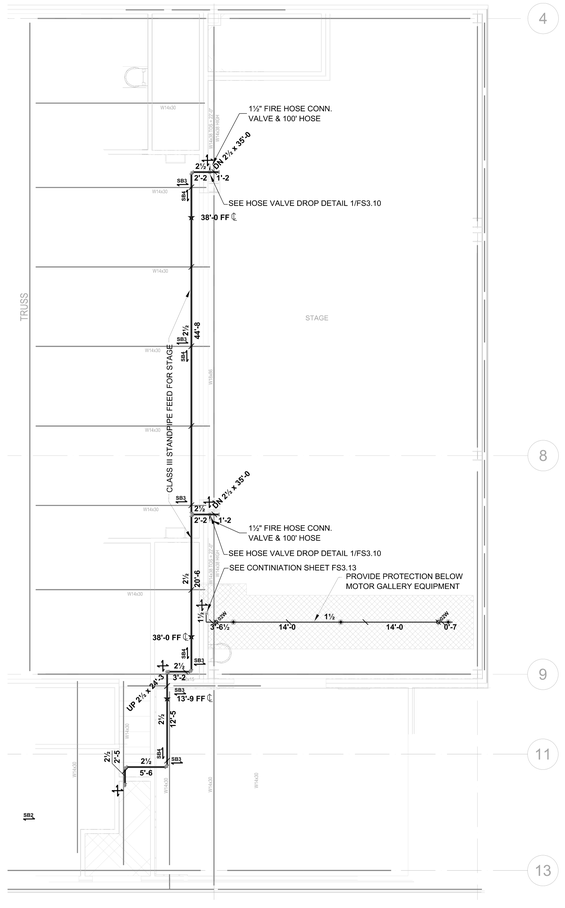
| Hydraulic Information | |
|---|---|
| Remote Area 1 | |
| OCCUPANCY CLASSIFICATION | Light Hazard |
| DENSITY (gpm/ft²) | 0.100 for 1500.00ft² (Actual 1535.87ft²) |
| TOTAL HOSE STREAMS | 100.00 |
| TOTAL HEADS FLOWING | 20 |
| K-FACTOR | 5.6 |
| TOTAL WATER REQUIRED | 505.21 |
| TOTAL PRESSURE REQUIRED | 10.746 |
| BASE of RISER (gpm) | 505.21 |
| BASE of RISER (psi) | 47.397 |
| SAFETY MARGIN (psi) | +38.386 (78.1%) |




## 1 FIRE SPRINKLER SYSTEM SEGMENT A LAYOUT

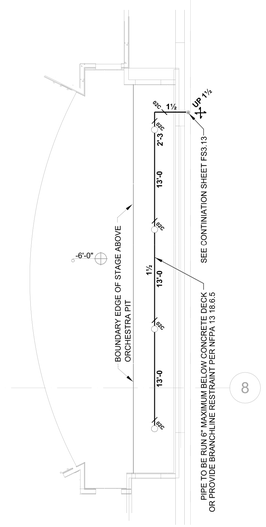
FS3.12 SCALE: 1/8" = 1'-0"

| Sprinkler Legend - FS3.12 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | Manufacturer | SIN | Model | Quantity | K-Factor | Type | Size | Response | Finish | Temperature | Note |
| ◆ | Generic | | | 3 | 5.6 | Upright | ½ | Quick | Brass | 155°F | UPRIGHT UNDER CATWALK |
| ◇ | Generic | | | 38 | 5.6 | Upright | ½ | Quick | Brass | 200°F | BRASS UPRIGHT |
| ● | Generic | | | 60 | 5.6 | Pendent | ½ | Quick | White | 155°F | STD COV CONCEALED PENDENT |
| | | | | Total = 101 | | | | | | | |




## 2 STAGE STANDPIPE AND CATWALK PIPING PLAN

FS3.12 SCALE: 1/8" = 1'-0"




**[F] 410.6 Automatic sprinkler system.**

Stages shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1. Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the stage. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such stages.

**Exceptions:**

1. Sprinklers are not required under stage areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided that the concealed space is separated from the adjacent spaces by Type X gypsum board not less than $^{5}/_{8}$-inch (15.9 mm) in thickness.
2. Sprinklers are not required for stages 1,000 square feet (93 $m^2$) or less in area and 50 feet (15 240 mm) or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.
3. Sprinklers are not required within portable orchestra enclosures on stages.

**[F] 410.7 Standpipes.**

Standpipe systems shall be provided in accordance with Section 905.

## 3 ORHESTRA PIT PIPING PLAN

FS3.12 SCALE: 1/8" = 1'-0"

SCALE: 1/8"= 1'-0"

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STATE OF CALIFORNIA
6/20/25

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:
**FIRE SPRINKLER SYSTEM SEGMENT A & DETAIL PLANS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

FS3.12

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PLEASE RECYCLE

| Hydraulic Information | |
|---|---|
| Remote Area 3 | |
| OCCUPANCY CLASSIFICATION | Ordinary Group I |
| DENSITY (gpm/ft²) | 0.150 for 1500.00ft² (Actual 1548.07ft²) |
| TOTAL HOSE STREAMS | 250.00 |
| TOTAL HEADS FLOWING | 18 |
| K-FACTOR | 5.6 |
| TOTAL WATER REQUIRED | 680.76 |
| TOTAL PRESSURE REQUIRED | 29.025 |
| BASE of RISER (gpm) | 530.76 |
| BASE of RISER (psi) | 63.915 |
| SAFETY MARGIN (psi) | +15.785 (35.2%) |

PER NFPA 13 SECTION 9.2.3.2 SPRINKLERS ARE PERMITTED TO BE OMITTED WHERE EXTERIOR CANOPIES, ROOFS, ETC. ARE CONSTRUCTED WITH NON-COMBUSTIBLE MATERIALS.

PIPE 6" BELOW BEAM

LATERAL BRACE SB-1 ZONE OF INFLUENCE

LATERAL BRACE SB-2 ZONE OF INFLUENCE

PER NFPA 13 SECTION 9.2.3.2 SPRINKLERS ARE PERMITTED TO BE OMITTED WHERE EXTERIOR CANOPIES, ROOFS, ETC. ARE CONSTRUCTED WITH NON-COMBUSTIBLE MATERIALS.

NOTE: INSTALL AN APPROVED SEISMIC SEPARATION ASSEMBLY PER NFPA 13 18.3. "SEISMIC SEPARATION ASSEMBLY" AND 18.3.1-18.3.4. SEE DETAIL 4/FS3.10.

PER NFPA 13 SECTION 9.2.3.2 SPRINKLERS ARE PERMITTED TO BE OMITTED WHERE EXTERIOR CANOPIES, ROOFS, ETC. ARE CONSTRUCTED WITH NON-COMBUSTIBLE MATERIALS.

1/A6.11 FS-310

1/A6.11 FS-310

AUTO AIR VENT

PIPE 6" BELOW BEAM

DN TO MOTOR GALLERY - SEE DROP DETAIL 2/FS3.10

SEE SHEET FS0.01 DETAIL 2 FOR FIRE PUMP ROOM PLAN

FIRE PUMP TEST OUTLETS

FIRE PUMP & RISERS

10'-3½

ALL HANGERS ARE TYPE 01S UNLESS NOTED OTHERWISE

| Hydraulic Information | |
|---|---|
| Remote Area 2 | |
| OCCUPANCY CLASSIFICATION | Ordinary Group II |
| DENSITY (gpm/ft²) | 0.200 for 1500.00ft² (Actual 1598.78ft²) |
| TOTAL HOSE STREAMS | 250.00 |
| TOTAL HEADS FLOWING | 17 |
| K-FACTOR | 5.6 |
| TOTAL WATER REQUIRED | 662.22 |
| TOTAL PRESSURE REQUIRED | 12.726 |
| BASE of RISER (gpm) | 512.22 |
| BASE of RISER (psi) | 48.901 |
| SAFETY MARGIN (psi) | +32.592 (71.9%) |

| Sprinkler Legend - FS3.13 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Symbol | Manufacturer | SIN | Model | Quantity | K-Factor | Type | Size | Response | Finish | Temperature | Note |
| ▶ | Generic | | | 2 | 5.6 | Horizontal Sidewall | ½ | Quick | White | 155°F | STD COV CONC. SIDEWALL |
| · | Generic | | | 96 | 5.6 | Upright | ½ | Quick | Brass | 200°F | BRASS UPRIGHT |
| ⊠ | Generic | | | 31 | 5.6 | Upright | ½ | Quick | Brass | 200°F | BRASS UPRIGHT ON SPRIG |
| ● | Generic | | | 155 | 5.6 | Pendent | ½ | Quick | White | 155°F | STD COV CONCEALED PENDENT |
| | | | | Total = 284 | | | | | | | |

1 FS3.13

# FIRE SPRINKLER SEGMENT B LAYOUT

SCALE: 1/8" = 1'-0"

4 2 0 4 8

SCALE: 1/8" = 1'-0"

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No.FP1552
EXP 8/30/2026
FIRE PROTECTION
STATE OF CALIFORNIA
6/20/25

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FIRE SPRINKLER SYSTEM SEGMENT B LAYOUT**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

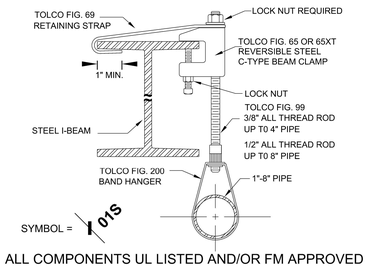
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# FS3.13

PLEASE RECYCLE

## HANGER NO. 01S
## TOP BEAM C-CLAMP WITH RETAINING STRAP (BEAM)

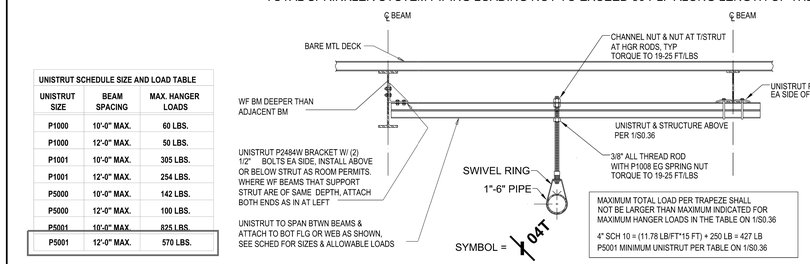



ALL COMPONENTS UL LISTED AND/OR FM APPROVED

## TOTAL SPRINKLER SYSTEM PIPING LOADING NOT TO EXCEED 50 PLF ALONG LENGTH OF THE BEAM.

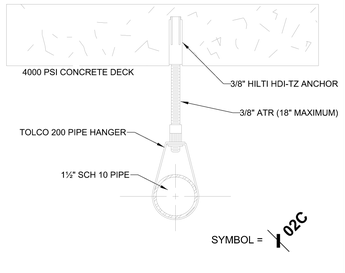
**UNISTRUT SCHEDULE SIZE AND LOAD TABLE**

| UNISTRUT SIZE | BEAM SPACING | MAX. HANGER LOADS |
|---|---|---|
| P1000 | 10'-0" MAX. | 60 LBS. |
| P1000 | 12'-0" MAX. | 50 LBS. |
| P1001 | 10'-0" MAX. | 305 LBS. |
| P1001 | 12'-0" MAX. | 254 LBS. |
| P5000 | 10'-0" MAX. | 142 LBS. |
| P5000 | 12'-0" MAX. | 100 LBS. |
| P5001 | 10'-0" MAX. | 825 LBS. |
| P5001 | 12'-0" MAX. | 570 LBS. |

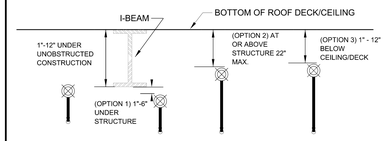



REFERENCE
SUSPENDED UNIT ROD ATTACHMENT
SHEET S0.36

## HANGER NO. 02C
## HILTI HDI-TZ TO CONCRETE DECK




## 1" SPRIG DETAIL




UNDER OBSTRUCTED CONSTRUCTION, THE DISTANCE BETWEEN THE SPRINKLER DEFLECTOR SHALL BE LOCATED IN ACCORDANCE WITH ONE OF THE FOLLOWING ARRANGEMENTS: (1) INSTALLED WITH THE DEFLECTORS WITHIN THE HORIZONTAL PLANES OF 1 INCH TO 6 INCHES BELOW THE STRUCTURAL MEMBERS AND A MAXIMUM DISTANCE OF 22" BELOW THE CEILING/ROOF DECK. (2) INSTALLED WITH THE DEFLECTORS AT OR ABOVE THE BOTTOM OF THE STRUCTURAL MEMBER TO A MAXIMUM OF 22 INCHES BELOW THE CEILING/ROOF DECK WHERE THE SPRINKLER IS INSTALLED PER SECTION 10.2.7.1.2. (3) INSTALLED IN EACH BAY OF CONSTRUCTION, WITH THE THE DEFLECTORS LOCATED A MINIMUM OF 1 INCH AND A MAXIMUM OF 12 INCHES BELOW THE CEILING/ROOF DECK.

**STANDARD ASCE/SEI 7-16 13.4 NONSTRUCTURAL COMPONENT ANCHORAGE**

**13.4.6 Friction Clips.** Friction clips in Seismic Design Categories D, E, or F shall not be used for supporting permanent loads in addition to resisting seismic forces. C-type beam and large flange clamps are permitted for hangers provided that they are equipped with restraining straps equivalent to those specified in NFPA 13, Section 9.3.7. Lock nuts or equivalent shall be provided to prevent loosening of threaded connections.

| WEIGHT OF WATERFILLED PIPE + 250 LBS. ALL PIPE SCH. 10 EXCEPT 1" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NOMINAL PIPE SIZE (INCHES) | 1" SCH 40 | 1¼" | 1½" | 2" | 2½" | 3" | 4" | 6" | |
| WEIGHT/FOOT OF WATER FILLED PIPE | 2.055 | 2.514 | 3.049 | 4.222 | 5.895 | 7.949 | 11.789 | 23.038 | |
| WEIGHT FOR MAXIMUM LENGTH BETWEEN HANGERS + 250 LBS. PER CODE | 275 | 280 | 296 | 313 | 338 | 369 | 427 | 595 | |

| MAXIMUM DISTANCE BETWEEN HANGERS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NOMINAL PIPE SIZE (INCHES) | 1" | 1¼" | 1½" | 2" | 2½" | 3" | 4" | 6" | 8" | |
| SCH10 / SCH 40 | 12'-0 | 12'-0 | 15'-0 | 15'-0 | 15'-0 | 15'-0 | 15'-0 | 15'-0 | 15'-0 | |

# PIPE HANGER DETAILS

SCALE: NOT TO SCALE

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 9' 0" (2.743 m) |
| Diameter of Brace | 1.25" |
| Type of Brace | Sch.40 |
| Angle of Brace | 45° Min. |
| Least Rad. of Gyration | 0.54" (14 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 1774 lbs (805 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

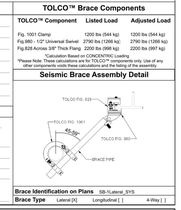
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type B |
| Fastener Type | Fig.828 Across 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 2200 lbs (998 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 1001 Clamp | 1200 lbs (544 kg) | 1200 lbs (544 kg) |
| Fig.980 - 1/2" Universal Swivel | 2790 lbs (1266 kg) | 2790 lbs (1266 kg) |
| Fig.828 Across 3/8" Thick Flang | 2200 lbs (998 kg) | 2200 lbs (997 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-1Lateral_SYS
Brace Type: Lateral [X] Longitudinal [ ] 4-Way [ ]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 15 ft (4.6 m) | 15 ft (4.6 m) | 11.78 lb/ft (17.53 kg/m) | 177 lbs (80 kg) |
| 1.5" (40 mm) | Sch. 10 | 90 ft (27.4 m) | 90 ft (27.4 m) | 3.04 lb/ft (4.52 kg/m) | 274 lbs (124 kg) |
| 1" (25 mm) | Sch. 10 | 110 ft (33.5 m) | 110 ft (33.5 m) | 1.81 lb/ft (2.69 kg/m) | 199 lbs (90 kg) |

SYMBOL AS SHOWN ON LAYOUT PLANS SB1

Subtotal Weight: 650 lbs (295 kg)
Wp (incl. 15%): 747 lbs (339 kg)
Total (Fpw): 600 lbs (359 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 15 | Maximum Fpw per 18.5.5.2 (if applicable): 801 lb (449 kg)

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## 1 4" MAIN LATERAL BRACE SB-1 WITH 1½" BRANCH LINES
FS3.14 SCALE: NTS

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 13' 1" (3.993 m) |
| Diameter of Brace | 4" |
| Type of Brace | Sch.40 |
| Angle of Brace | 60° Min. |
| Least Rad. of Gyration | 0.787" (20 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 3473 lbs (1576 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

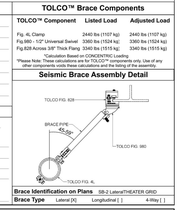
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type C |
| Fastener Type | Fig.828 Across 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 3340 lbs (1515 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 4L Clamp | 2440 lbs (1107 kg) | 2440 lbs (1107 kg) |
| Fig.980 - 1/2" Universal Swivel | 3360 lbs (1524 kg) | 3360 lbs (1524 kg) |
| Fig.828 Across 3/8" Thick Flang | 3340 lbs (1515 kg) | 3340 lbs (1515 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-2 LateralTHEATER GRID
Brace Type: Lateral [X] Longitudinal [ ] 4-Way [ ]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 15 ft (4.6 m) | 15 ft (4.6 m) | 11.78 lb/ft (17.53 kg/m) | 177 lbs (80 kg) |
| 1.5" (40 mm) | Sch. 10 | 80 ft (24.4 m) | 80 ft (24.4 m) | 3.04 lb/ft (4.52 kg/m) | 243 lbs (110 kg) |
| 1" (25 mm) | Sch. 40 | 70 ft (21.3 m) | 70 ft (21.3 m) | 2.05 lb/ft (3.05 kg/m) | 144 lbs (65 kg) |

SYMBOL AS SHOWN ON LAYOUT PLANS SB2

Subtotal Weight: 564 lbs (256 kg)
Wp (incl. 15%): 649 lbs (294 kg)
Total (Fpw): 600 lbs (268 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 15 | Maximum Fpw per 18.5.5.2 (if applicable): 891 lb (449 kg)

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## 2 4" MAIN LATERAL BRACE SB-2 WITH 1½" BRANCH LINES (THEATER)
FS3.14 SCALE: NTS

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 9' 0" (2.743 m) |
| Diameter of Brace | 1.25" |
| Type of Brace | Sch.40 |
| Angle of Brace | 45° Min. |
| Least Rad. of Gyration | 0.54" (14 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 1774 lbs (805 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

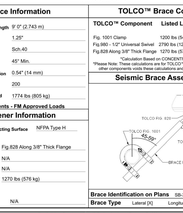
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type H |
| Fastener Type | Fig.828 Along 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 1270 lbs (578 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 1001 Clamp | 1200 lbs (544 kg) | 1200 lbs (544 kg) |
| Fig.980 - 1/2" Universal Swivel | 2790 lbs (1266 kg) | 2790 lbs (1266 kg) |
| Fig.828 Along 3/8" Thick Flange | 1270 lbs (578 kg) | 1270 lbs (578 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-3LAT_BULK
Brace Type: Lateral [X] Longitudinal [ ] 4-Way [ ]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 30 ft (9.1 m) | 30 ft (9.1 m) | 11.78 lb/ft (17.53 kg/m) | 353 lbs (160 kg) |

SYMBOL AS SHOWN ON LAYOUT PLANS SB3

Subtotal Weight: 353 lbs (160 kg)
Wp (incl. 15%): 406 lbs (184 kg)
Total (Fpw): 353 lbs (160 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 30 | Maximum Fpw per 18.5.5.2 (if applicable): 600 lb (264 kg)

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## 3 4" MAIN LATERAL BRACE SB-3 - BULK MAIN
FS3.14 SCALE: NTS

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 9' 0" (2.743 m) |
| Diameter of Brace | 1.25" |
| Type of Brace | Sch.40 |
| Angle of Brace | 30° Min. |
| Least Rad. of Gyration | 0.54" (14 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 1234 lbs (569 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

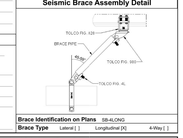
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type G |
| Fastener Type | Fig.828 Along 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 820 lbs (372 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 4L Clamp | 1200 lbs (544 kg) | 1200 lbs (544 kg) |
| Fig.980 - 1/2" Universal Swivel | 2370 lbs (1075 kg) | 2370 lbs (1075 kg) |
| Fig.828 Along 3/8" Thick Flange | 820 lbs (372 kg) | 820 lbs (371 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-4LONG
Brace Type: Lateral [ ] Longitudinal [X] 4-Way [ ]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 40 ft (12.2 m) | 40 ft (12.2 m) | 11.78 lb/ft (17.53 kg/m) | 471 lbs (214 kg) |

SYMBOL AS SHOWN ON LAYOUT PLANS SB4

Subtotal Weight: 471 lbs (214 kg)
Wp (incl. 15%): 542 lbs (246 kg)
Total (Fpw): 493 lbs (224 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 40 | Maximum Fpw per 18.5.5.2 (if applicable): N/A

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## 4 4" MAIN LONGITUDINAL BRACE
FS3.14 SCALE: NTS

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 7' 6" (2.134 m) |
| Diameter of Brace | 1" |
| Type of Brace | Sch.40 |
| Angle of Brace | 45° Min. |
| Least Rad. of Gyration | 0.42" (11 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 1310 lbs (594 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

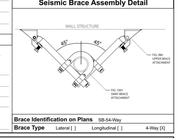
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type B |
| Fastener Type | Fig.828 Across 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 2200 lbs (998 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 1001 Clamp | 1200 lbs (544 kg) | 1200 lbs (544 kg) |
| Fig.980 - 1/2" Universal Swivel | 2790 lbs (1266 kg) | 2790 lbs (1266 kg) |
| Fig.828 Across 3/8" Thick Flang | 2200 lbs (998 kg) | 2200 lbs (997 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-5/4-Way
Brace Type: Lateral [ ] Longitudinal [ ] 4-Way [X]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 25 ft (7.6 m) | 25 ft (7.6 m) | 11.78 lb/ft (17.53 kg/m) | 294 lbs (133 kg) |

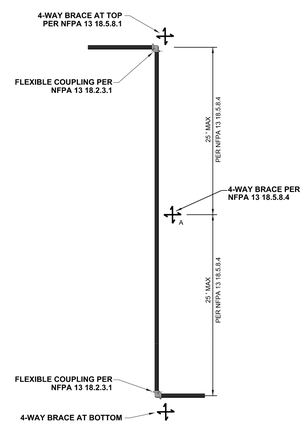
SYMBOL AS SHOWN ON LAYOUT PLANS

SEE 4-WAY BRACE DETAIL 7 FOR CONFIGURATIONS

Subtotal Weight: 294 lbs (133 kg)
Wp (incl. 15%): 338 lbs (153 kg)
Total (Fpw): 338 lbs (140 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 25 | Maximum Fpw per 18.5.5.2 (if applicable): N/A

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## 5 4" MAIN 4-WAY BRACE
FS3.14 SCALE: NTS




## 11 TYPICAL RISER BRACING/COUPLING
FS3.14 SCALE: NTS

**TOLBrace™ Seismic Bracing Calculations** V8.8.144

Project Address: Arroyo High School, 4921 Cedar Avenue, El Monte, CA. Job # 22.3076
Contractor: Torp Consulting. Address: 1604 S. Maryland Parkway Las Vegas, NV 89104. Phone: License:
Calculations based on 26220 NFPA Pamphlet #13

**Brace Information**

| | |
|---|---|
| Maximum Brace Length | 9' 0" (2.743 m) |
| Diameter of Brace | 1.25" |
| Type of Brace | Sch.40 |
| Angle of Brace | 45° Min. |
| Least Rad. of Gyration | 0.54" (14 mm) |
| L/R Value | 200 |
| Max Horizontal Load | 1774 lbs (805 kg) |
| Other Requirements - FM Approved Loads | |

**Fastener Information**

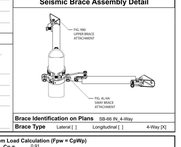
| | |
|---|---|
| Orientation to Connecting Surface | NFPA Type B |
| Fastener Type | Fig.828 Across 3/8" Thick Flange |
| Diameter | N/A |
| Length | N/A |
| Maximum Load | 2200 lbs (998 kg) |
| Prying Factor | N/A |

**TOLCO™ Brace Components**

| TOLCO™ Component | Listed Load | Adjusted Load |
|---|---|---|
| Fig. 4L Clamp | 2210 lbs (1002 kg) | 2210 lbs (1002 kg) |
| Fig.980 - 1/2" Universal Swivel | 2790 lbs (1266 kg) | 2790 lbs (1266 kg) |
| Fig.828 Across 3/8" Thick Flang | 2200 lbs (998 kg) | 2200 lbs (997 kg) |

*Calculation Based on CONCENTRIC Loading
**Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

**Seismic Brace Assembly Detail**




Brace Identification on Plans: SB-6N 4-Way
Brace Type: Lateral [ ] Longitudinal [ ] 4-Way [X]

**Sprinkler System Load Calculation (Fpw = CpWp)** Cp = 0.91

| Diameter | Type | Length | Total Length | Weight Per Unit Length | Total Weight |
|---|---|---|---|---|---|
| 4" (100 mm) | Sch. 10 | 15 ft (4.6 m) | 15 ft (4.6 m) | 23.03 lb/ft (34.27 kg/m) | 345 lbs (156 kg) |

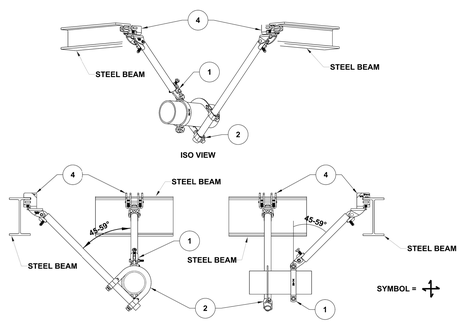
SYMBOL AS SHOWN ON LAYOUT PLANS SB6

SEE 4-WAY BRACE DETAIL 7 FOR CONFIGURATIONS

Subtotal Weight: 345 lbs (156 kg)
Wp (incl. 15%): 397 lbs (180 kg)
Total (Fpw): 351 lbs (158 kg)
Main Size: 4" | Type/Sch.: Sch. 10 | Spacing (ft): 15 | Maximum Fpw per 18.5.5.2 (if applicable): N/A

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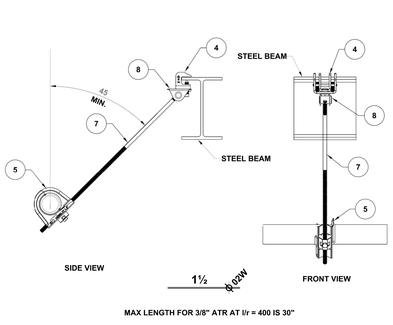
## 6 6" 4-WAY SWAY BRACE SB6
FS3.14 SCALE: NTS




## 7 4-WAY BRACE CONFIGURATIONS
FS3.14

| 4-WAY BRACE SEISMIC MATERIAL | | | | |
|---|---|---|---|---|
| ITEM | QTY. | UOM | PART NUMBER | DESCRIPTION |
| 1 | 1 | EA | FIG. 4L | TOLCO SEISMIC SWAY BRACE ATTACHMENT (FIG.4L) - 6" 4-WAY |
| 2 | 1 | EA | FIG. 1001 | TOLCO SEISMIC SWAY BRACE ATTACHMENT (FIG.1001) |
| 3 | 1 | EA | FIG. 980 | TOLCO UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT (FIG.980) |
| 4 | 1 | EA | FIG.828 | TOLCO I-BEAM SWAY BRACE ATTACHMENT (FIG.828) |

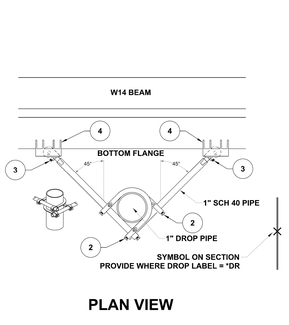
NOTE: USE TOLCO FIG. 4L FOR 6" 4-WAY




## 8 TOLCO FIG. 77 BRANCH LINE RESTRAINT (02W)
FS3.14

| BRANCHLINE RESTRAINT MATERIAL | | | | |
|---|---|---|---|---|
| ITEM | QTY. | UOM | PART NUMBER | DESCRIPTION |
| 5 | 1 | EA | FIG. 77-1 1/2 HDG | SYSTEM PIPING ATTACHMENT FOR PIPE |
| 4 | 1 | EA | FIG. 828 | TOLCO I-BEAM SWAY BRACE ATTACHMENT (FIG.828) |
| 7 | 1 | EA | ATR 3/8 ZN | ALL THREAD ROD |
| 8 | 1 | EA | FIG. 74 WO HDG | STRUCTURAL ATTACHMENT FOR BRANCH |

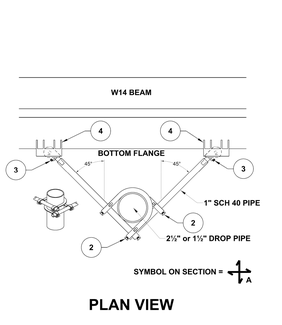
NOTE: BRANCHLINE RESTRAINT MUST BE WITHIN 6" OF A VERTICAL HANGER




PLAN VIEW

## 9 DROP RESTRAINT (THEATER)
FS3.14

| DROP RESTRAINT MATERIAL | | | | |
|---|---|---|---|---|
| ITEM | QTY. | UOM | PART NUMBER | DESCRIPTION |
| 2 | 1 | EA | FIG. 1001 | TOLCO SEISMIC SWAY BRACE ATTACHMENT (FIG.1001) |
| 3 | 1 | EA | FIG. 980 | TOLCO UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT (FIG.980) |
| 4 | 1 | EA | FIG.828 | TOLCO I-BEAM SWAY BRACE ATTACHMENT (FIG.828) |




PLAN VIEW

## 10 PIPE DROP (THEATER/STAGE)
FS3.14

# SEISMIC BRACING DETAILS

SCALE: NTS


IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025



HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES


REGISTERED PROFESSIONAL ENGINEER
TROY SPIGER
No. FP1552
EXP 9/30/2026
FIRE PROTECTION
STATE OF CALIFORNIA
6/20/25


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL**
**NEW THEATER & ADMINISTRATION BUILDING**

SHEET NAME:

**FIRE SPRINKLER HANGER & SEISMIC BRACING DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# FS3.14


Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-A-BLDG.rvt
3/10/2023 10:57:35 AM



PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" IF THIS SHEET IS NOT FULL SIZE

ALL WORK SHALL BE IN CONFORMANCE WITH TITLE 24, 2022 CALIFORNIA CODE OF REGUALTIONS (CCR), 2019 CALIFORNIA BUILDING CODE, PART 2, TITLE 24 CCR, 2022 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24 CCR. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT OR DSA REPRESENTATIVE.

**MEP COMPONENT ANCHORAGE.**

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS.

THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.

2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.

3. TEMPORARY, MOVABLE, OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 LBS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

A. COMPONENTS WEIGHING LESS THAN 400 LBS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 LBS, OR IN CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR THE STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

**PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING**

PIPEING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8, AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED ON SHEET E001. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G. OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

## ABBREVIATION KEY

| | | | | | |
|---|---|---|---|---|---|
| AFF | ABOVE FINISH FLOOR | HCS | HOUSELIGHT CONTROL STATION | RECP. | RECEPTACLE |
| APPROX | APPROXIMATE | HL | HOUSE LEFT | REF. | REFERENCE |
| B.O. | BOTTOM OF | HR | HOUSE RIGHT | REQ'D | REQUIRED |
| B.O.S. | BOTTOM OF STEEL | I.D. | INNER DIAMETER | R&R | REVERSE & REPEAT |
| CAT. | CATWALK | INT. | INTERIOR | RU | RACK UNIT SPACE |
| CC | CONTROL CONSOLE | LTG. | LIGHTING | SCHL | SCHEDULE |
| CER | CONTROL EQUIPMENT RACK | MAX. | MAXIMUM | SF. | SQUARE FOOT (FEET) |
| CIRC. | CIRCUIT | MH | MOUNTING HEIGHT | SL | STAGE LEFT |
| CL | CENTERLINE | MEZZ. | MEZZANINE | SMP | STAGE MANAGERS PANEL |
| CONN. | CONNECTOR | MFR. | MANUFACTURER | SQ. | SQUARE |
| CRS | CONTROL RECEPTACLE STATION | MIN. | MINIMUM | SQ. YD. | SQUARE YARDS |
| CTRL | CONTROL | MS | MIDSTAGE | SR | STAGE RIGHT |
| D | DIMMER | MSL | MIDSTAGE LEFT | STA. | STATION |
| DMX | DMX512 (A LTG. CRTL. PROTOCOL) | MSR | MIDSTAGE RIGHT | T&B | TOP AND BOTTOM |
| DR | DIMMER RACK | MTG | MOUNTING | T.O.S. | TOP OF STEEL |
| DSC | DOWNSTATGE CENTER | N.I.C. | NOT IN CONTRACT | TYP. | TYPICAL |
| DSL | DOWNSTAGE LEFT | N.T.S. | NOT TO SCALE | USC | UPSTAGE CENTER |
| DSR | DOWNSTAGE RIGHT | O.C. | ON CENTER | USL. | UPSTAGE LEFT |
| EA. | EACH | O.D. | OUTER DIAMETER | USR. | UPSTAGE RIGHT |
| E.C. | ELECTRICAL CONTRACTOR | ORCH. | ORCHESTRA | W/ | WITH |
| ELEC. | ELECTRIC / LIGHTING BATTEN | PB | PLUG BOX | W/O | WITHOUT |
| EXT. | EXTERIOR | PCS | PORTABLE CONTROL STATION | W.A.P. | WIRELESS ACCESS POINT |
| FOH | FRONT-OF-HOUSE | PoE | POWER OVER ETHERNET | WCS | WORKLIGHT CONTROL STATION |
| GJB | GRIDIRON JUNCTION BOX | PL | PLASTERLINE | WT | WEIGHT |
| GPC | GROUNDED PIN CONNECTOR (2P&G) | QTY. | QUANTITY | | |
| GTL | GROUNDED TWISTLOCK CONNECTOR | PS | PLUG STRIP | | |

## ELECTRICAL AND STAGE RIGGING COORDINATION ITEMS

| COORDINATION ITEM | ELECTRICAL CONTRACTOR | RIGGING CONTRACTOR |
|---|---|---|
| FURNISH PLUG BOXES (STAGE WALLS, CATWALKS, BOX BOOMS AND OTHER AREAS) | ● | |
| INSTALL PLUG BOXES (STAGE WALLS, CATWALKS, BOX BOOMS AND OTHER AREAS) | ● | |
| PROVIDE STAGE LIGHTING FIXTURES, PLUG BOXES AND CONTROL RECEPTACLES AT BOX BOOM MEZZANINES | ● | |
| PROVIDE STAGE LIGHTING CONNECTOR STRIPS AT MOTORIZED ELECTRICS | | ● |
| FURNISH STAGE LIGHTING CONNECTOR STRIP AT FOH LIGHTING BATTEN | ● | |
| INSTALL STAGE LIGHTING CONNECTOR STRIP AT FOH LIGHTING BATTEN | ● | ● |
| PROVIDE STAGE LIGHTING FIXTURES, PLUG BOXES, AND CONTROL RECEPTACLES AT CATWALKS | ● | |
| PROVIDE ALL WIRING, CONDUIT, JUNCTION BOXES AND ELECTRICAL FITTINGS UNLESS OTHERWISE NOTED | ● | |
| TERMINATE ALL LINE VOLTAGE AND CONTROL CIRCUIT WIRING | ● | |

## SHEET INDEX



| SHEET NUMBER | SHEET TITLE |
|---|---|
| STAGE RIGGING | |
| TR0.00 | SHEET INDEX AND PROJECT NOTES |
| TR2.11 | STAGE RIGGING PLAN |
| TR6.11 | STAGE RIGGING SECTION |
| TR7.11 | STAGE RIGGING ELEVATIONS |
| TR7.12 | STAGE RIGGING ELEVATIONS |
| TR7.13 | STAGE RIGGING ELEVATIONS |
| TR7.14 | STAGE RIGGING ELEVATIONS |
| TR8.11 | STAGE RIGGING DETAILS |
| TR8.12 | STAGE RIGGING DETAILS |
| TR8.21 | STAGE RIGGING DETAILS - CONNECTOR STRIP |
| TR9.21 | STAGE RIGGING SCHEDULES |
| STAGE LIGHTING | |
| TL0.00 | SHEET INDEX AND PROJECT NOTES |
| TL2.11 | STAGE LIGHTING PLAN - STAGE LEVEL |
| TL2.12 | STAGE LIGHTING PLAN - MEZZANINE LEVEL |
| TL2.13 | STAGE LIGHTING PLAN - CATWALK LEVEL |
| TL7.11 | STAGE LIGHTING ELEVATIONS |
| TL7.12 | STAGE LIGHTING MOUNTING DETAILS |
| TL8.11 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.12 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.21 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.22 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.23 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL9.11 | STAGE LIGHTING CONTROL RISER |
| TL9.12 | STAGE LIGHTING RISERS |
| TL9.21 | STAGE LIGHTING SCHEDULES |
| TL9.31 | STAGE LIGHTING PLOT |



## SPECIFICATIONS

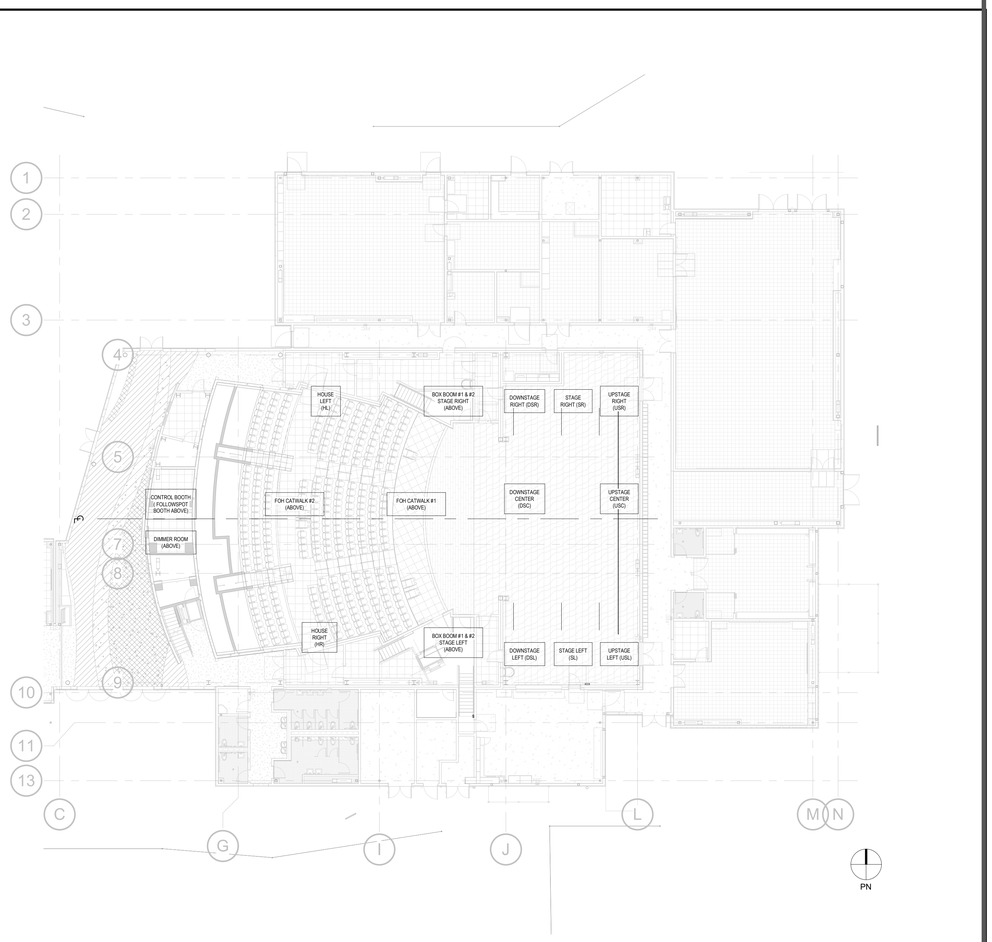
THE WORK SHOWN IN THE 'TR' SERIES OF DRAWINGS IS SPECIFIED IN:
SECTION 11 61 23 STAGE EXTENSION PLATFORMS
SECTION 11 61 33 THEATRICAL RIGGING

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**DRAPERY NOTE**

ALL DRAPES SHALL BE INHERENTLY FLAME RETARDANT (IFR), OR SHALL BE PERMANENTLY FLAMEPROOFED USING THE IMMERSION PROCESS. DRAPERIES SHALL MEET THE STANDARDS OF NFPA 701 AND CFC SECTION 807 AS WELL AS ANY OTHERS WHICH MAY BE REQUIRED BY AUTHORITIES HAVING JURISDICTION. ALL DRAPERIES SHALL MEET THE FLAME PROPAGATION PERFORMANCE CRITERIA AND LABELING REQUIREMENTS OF CA. CODE OF REGULATIONS, TITLE 19, DIVISION 1, & CBC 410.3.6. REFER TO SPECIFICATIONS




STAGE RIGGING ORIENTATION PLAN | 1/16" = 1'-0" | 1

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**SHEET INDEX AND PROJECT NOTES**

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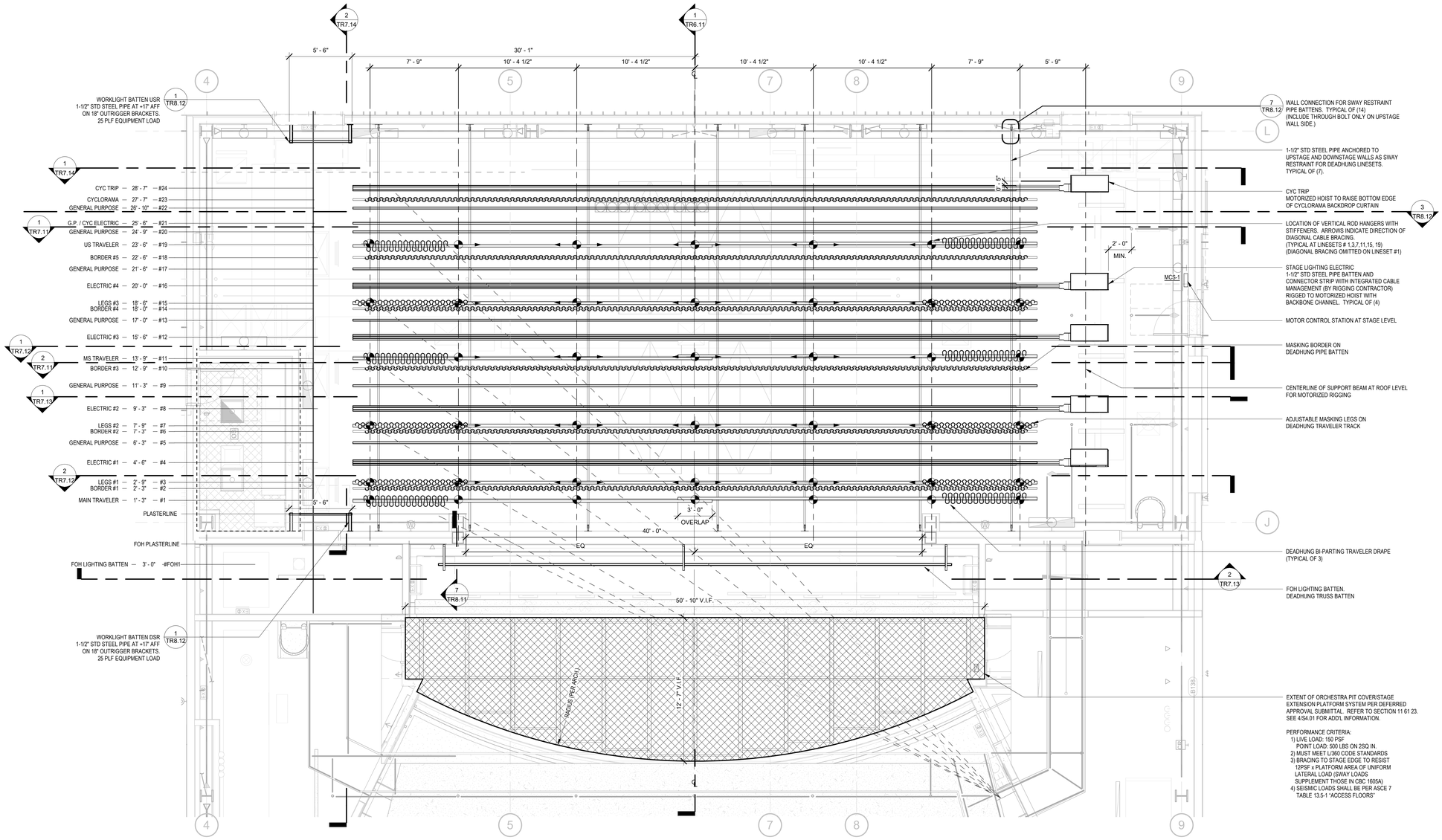
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# STAGE RIGGING PLAN

1/4" = 1'-0"

1

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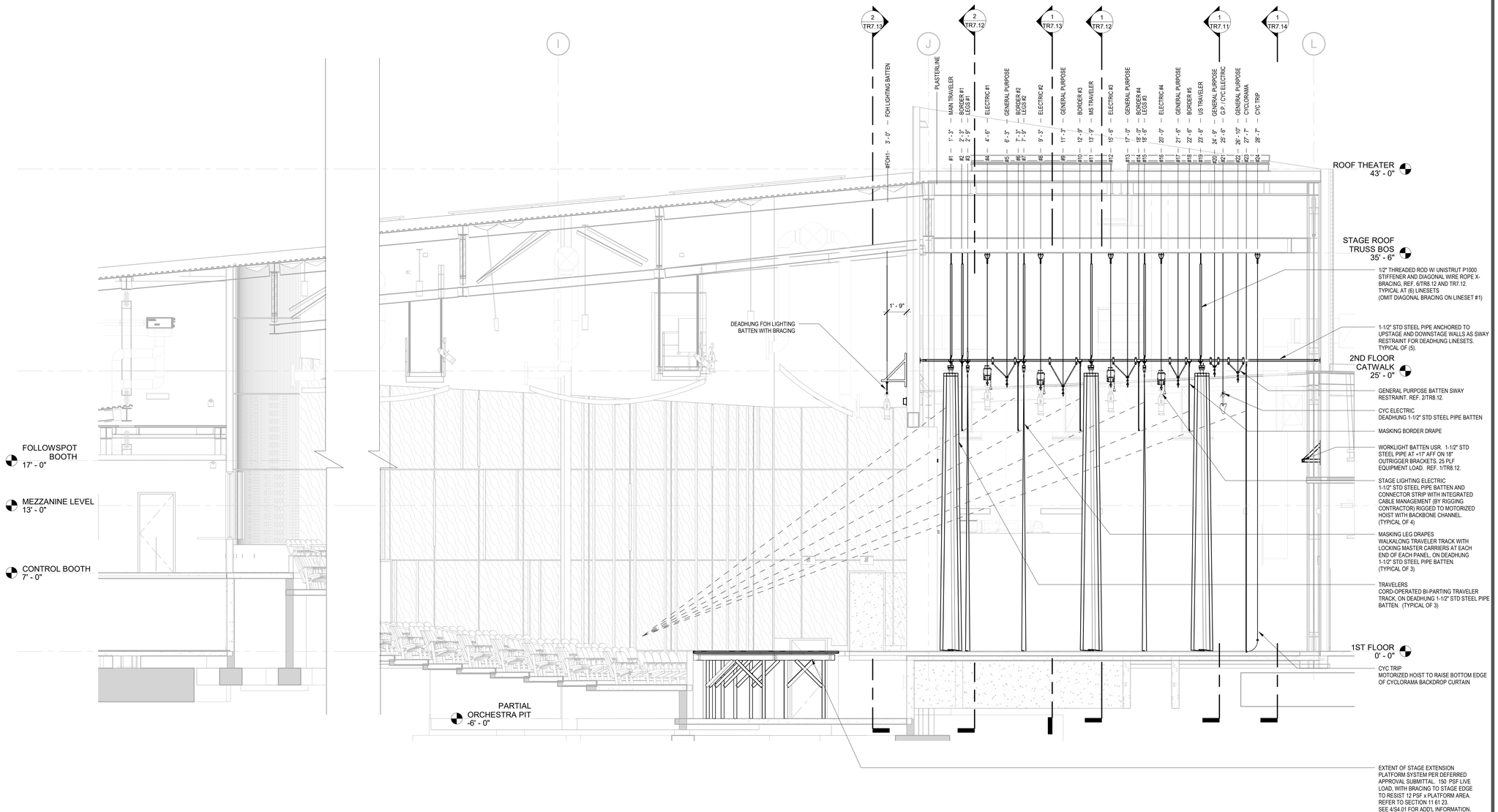
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# STAGE RIGGING - CENTERLINE SECTION | 1/4" = 1'-0" | 1

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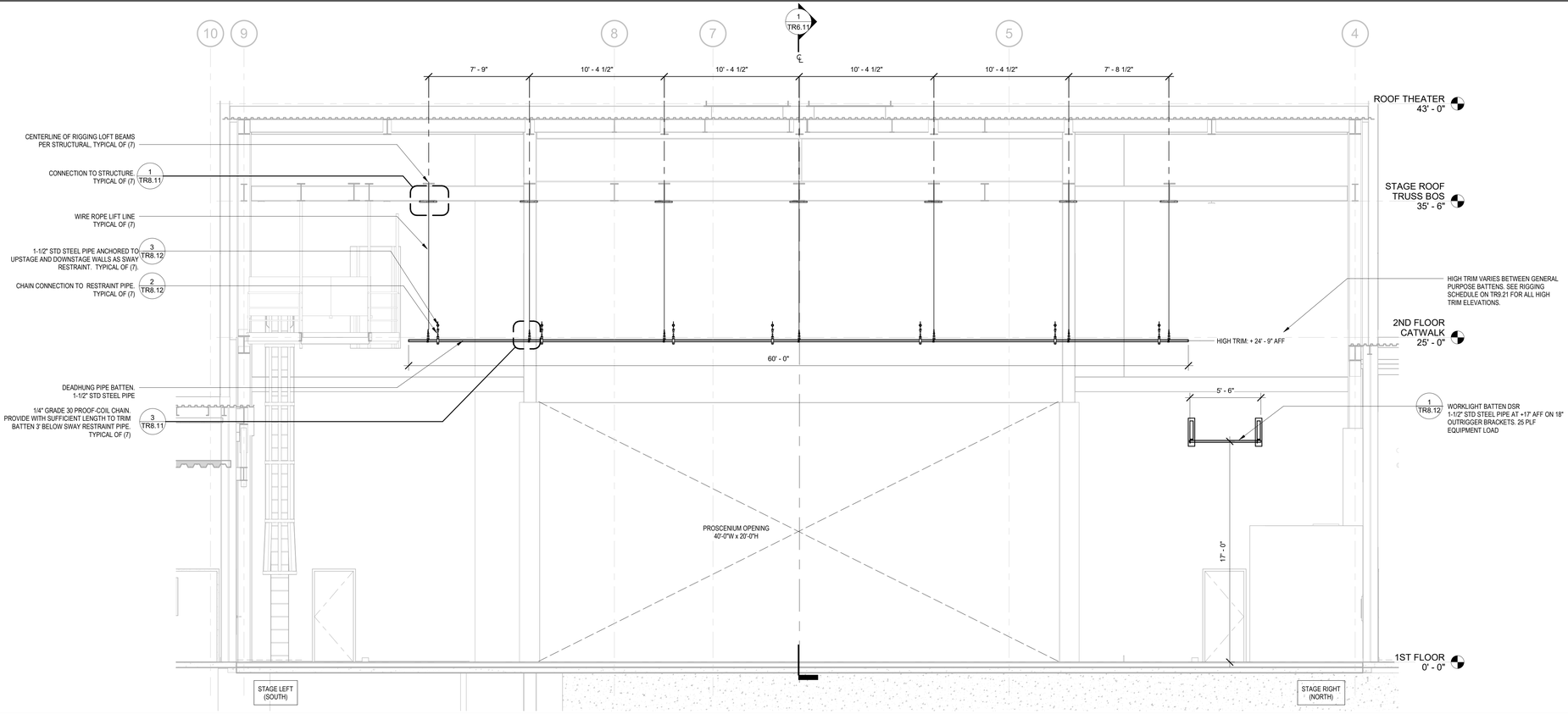
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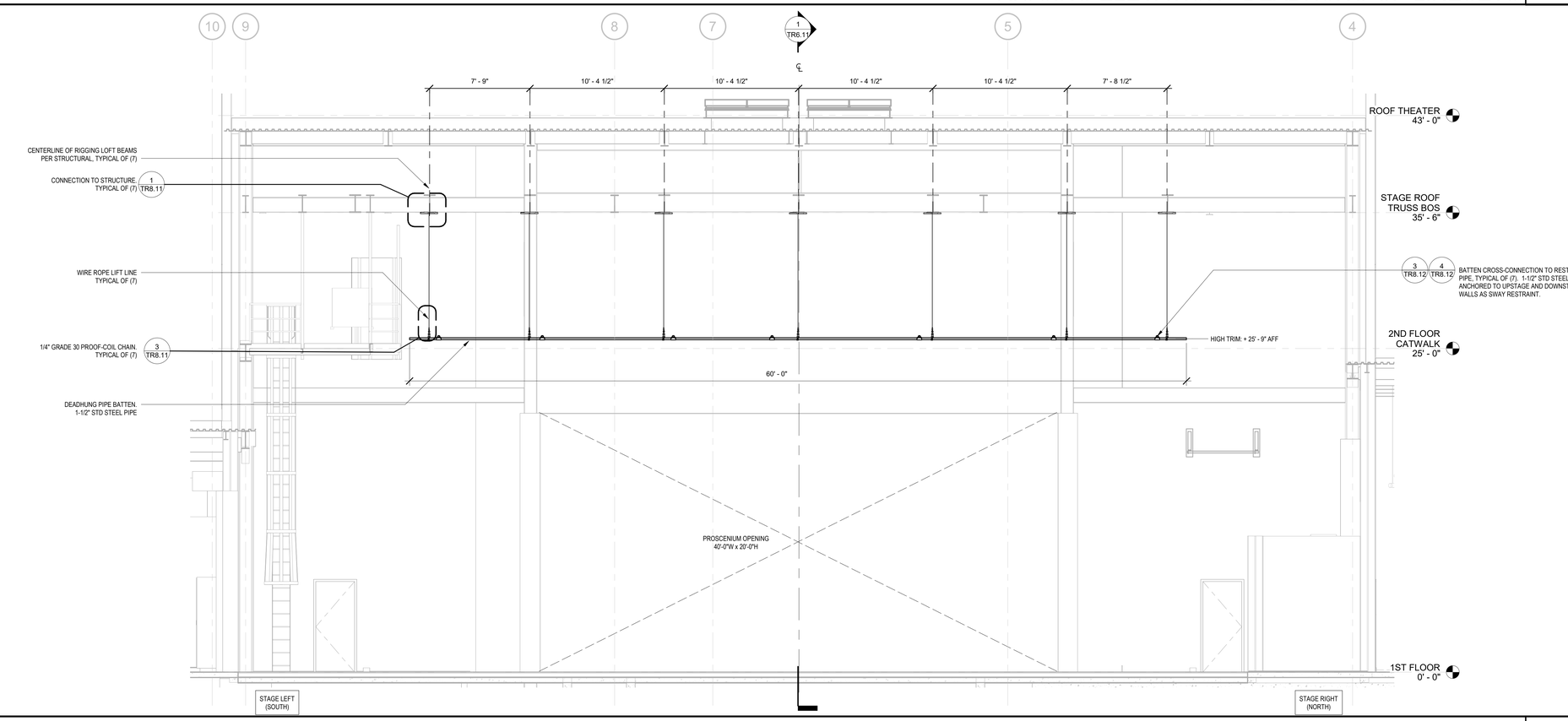
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# RIGGING ELEVATION - DEADHUNG GP LINESETS

1/4" = 1'-0" | 1




# RIGGING ELEVATION - BORDERS AND CYC TOP

1/4" = 1'-0" | 2

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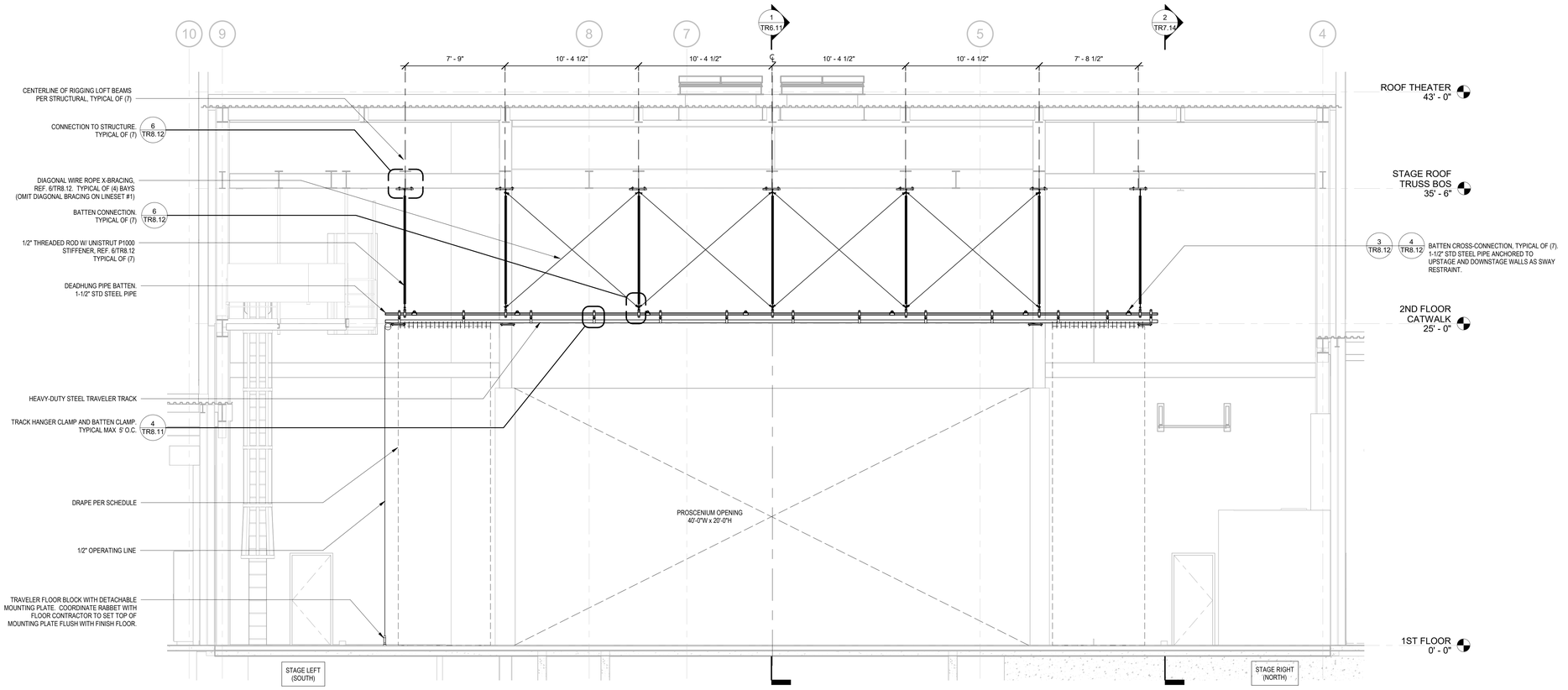
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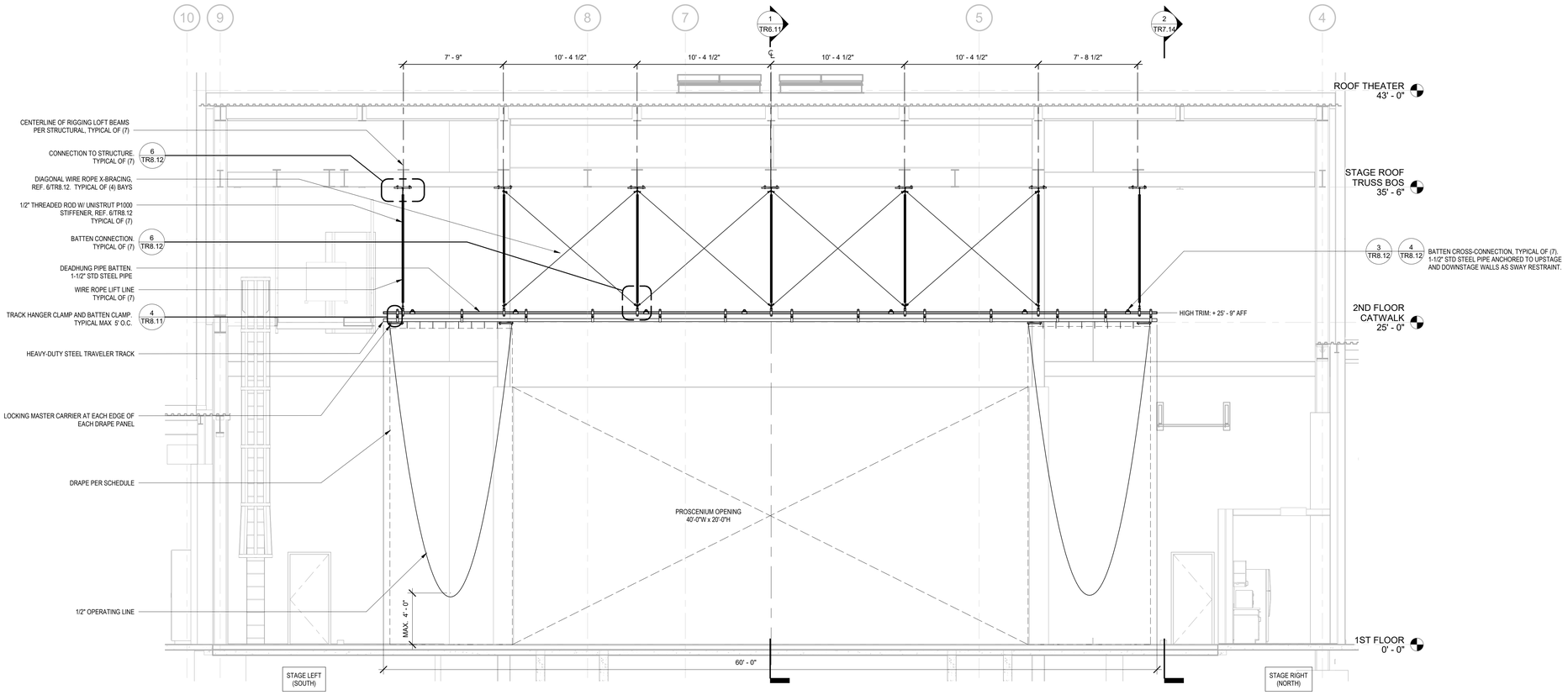
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# RIGGING ELEVATION - TRAVELERS

1/4" = 1'-0"

1




# RIGGING ELEVATION - DEADHUNG LEGS

1/4" = 1'-0"

2

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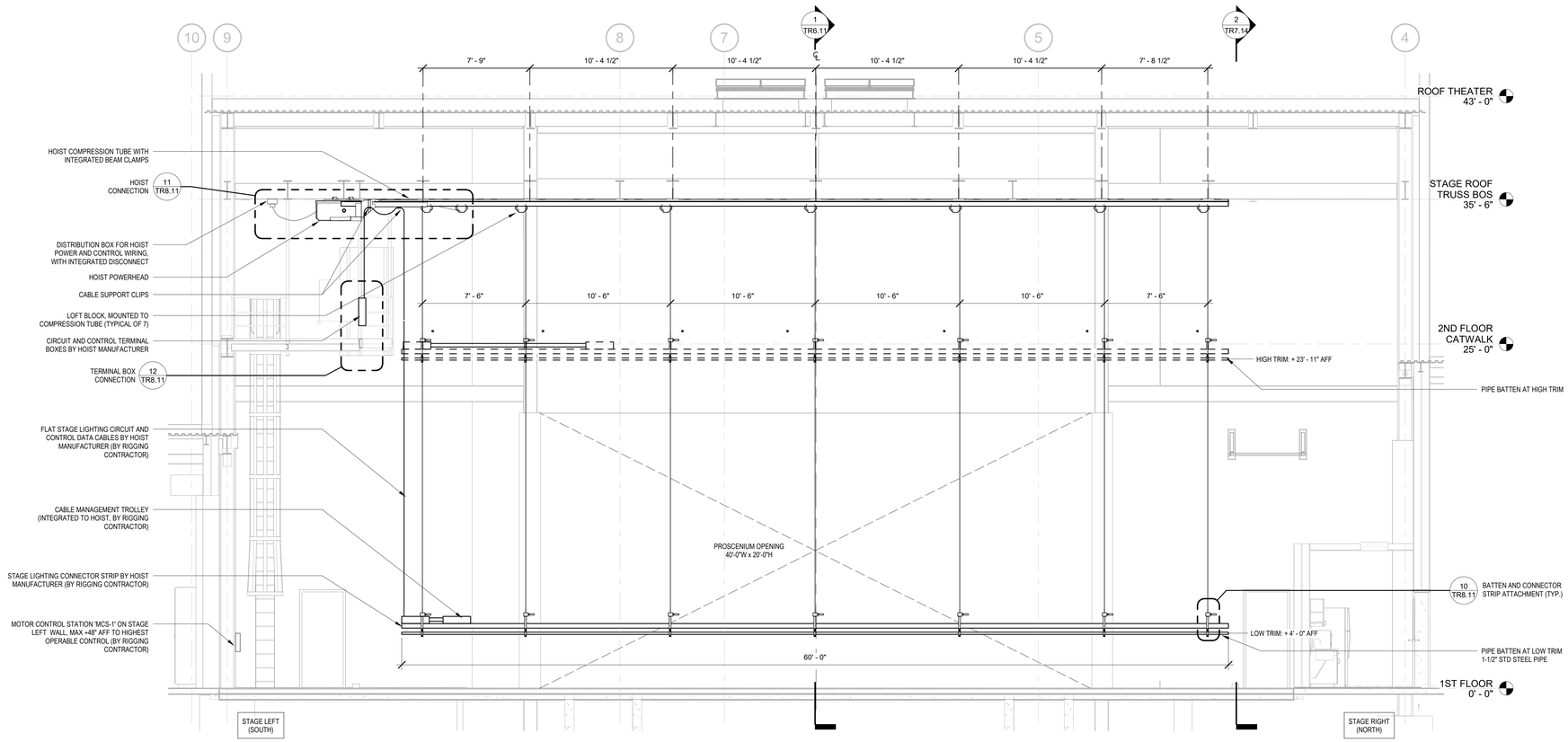
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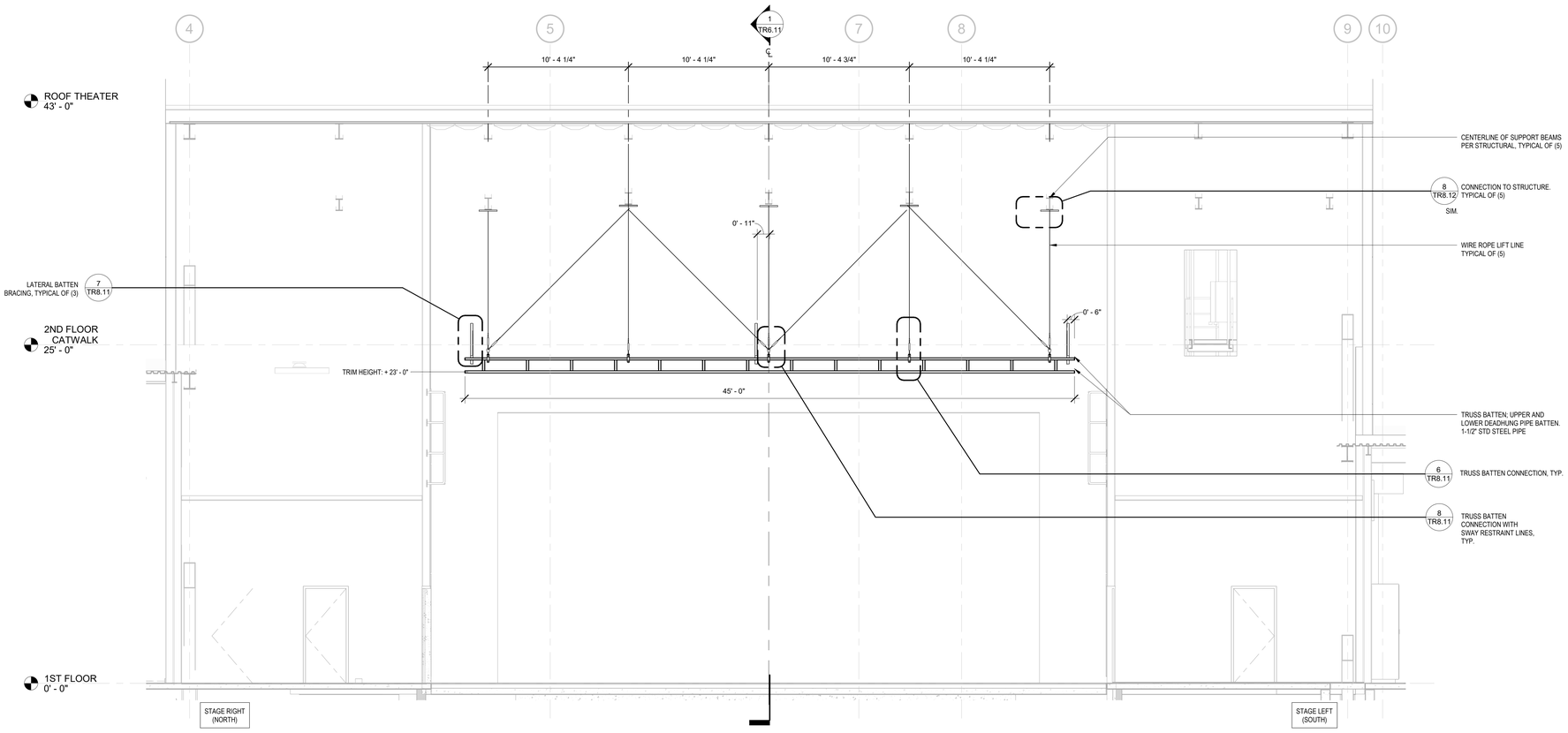
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# RIGGING ELEVATION - MOTORIZED ELECTRICS

1/4" = 1'-0" | 1




# RIGGING ELEVATION - FOH BATTEN

1/4" = 1'-0" | 2

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**STAGE RIGGING ELEVATIONS**

**DSA SUBMITTAL**

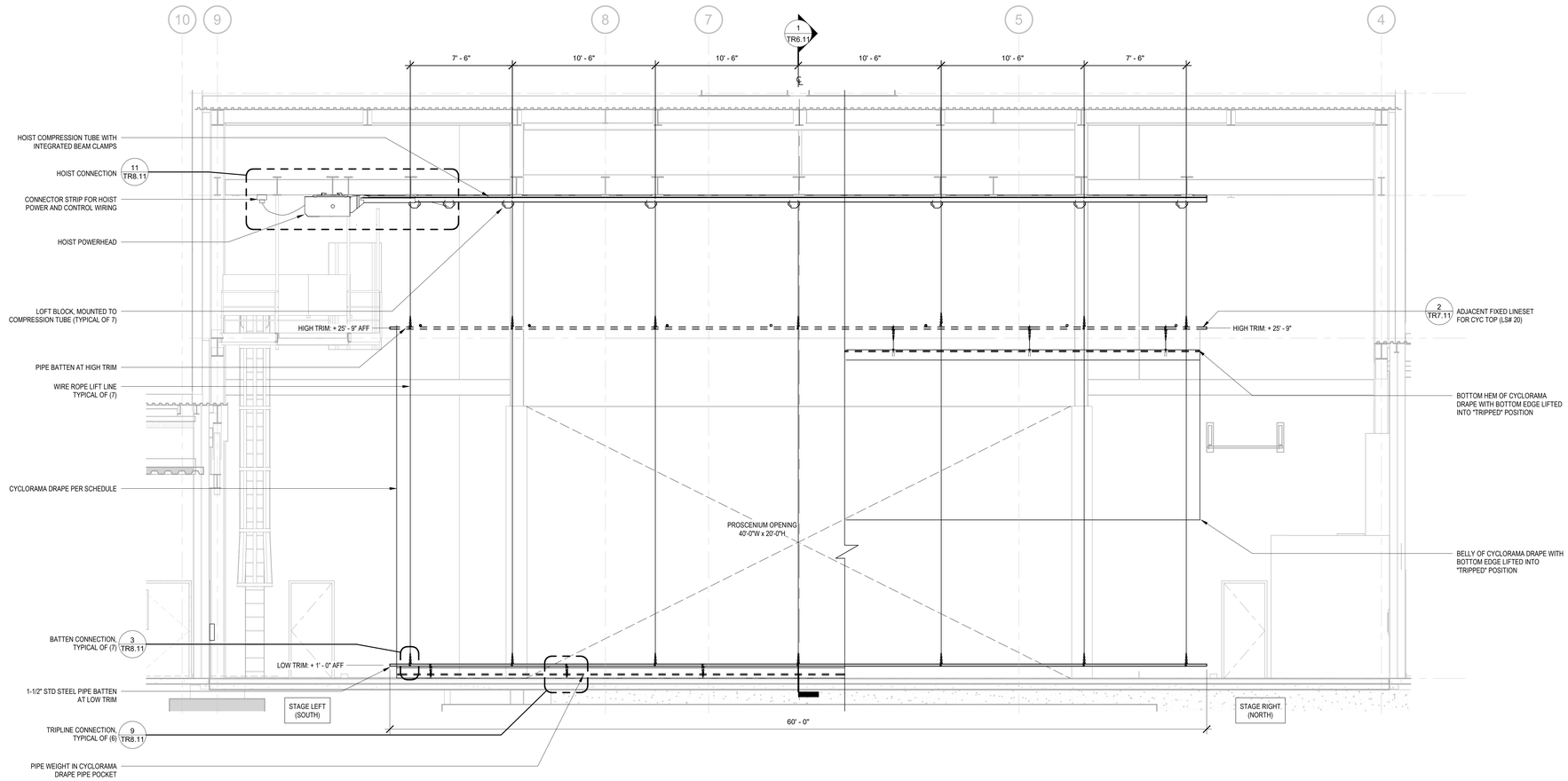
**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

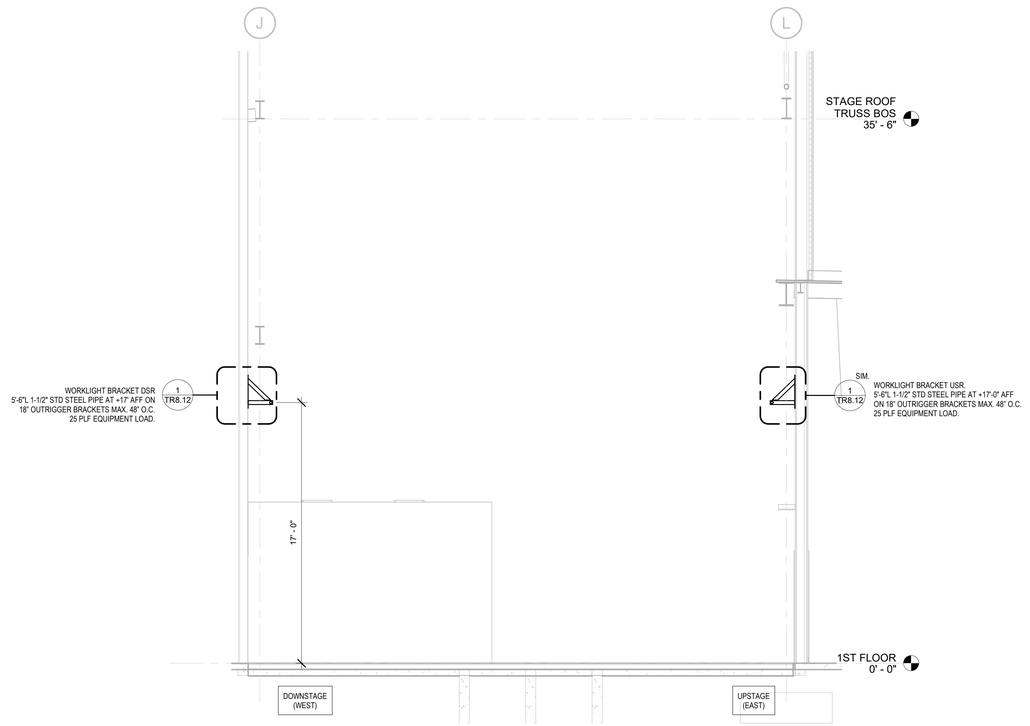
# TR7.13

THE LINE SHOWN ABOVE IS
EXACTLY ONE INCH ON THIS
SHEET'S ORIGINAL PAGE SIZE




# RIGGING ELEVATION - CYCLORAMA AND CYC. TRIP

1/4" = 1'-0" | 1




# RIGGING ELEVATION - WORKLIGHT BRACKETS SR

1/4" = 1'-0" | 2

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213 542 8300 / www.hmcarchitects.com

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VIRGINIA ELAINE MARQUARDT
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06/30/2025
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## KEYNOTES

## NOTES

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FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE RIGGING ELEVATIONS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

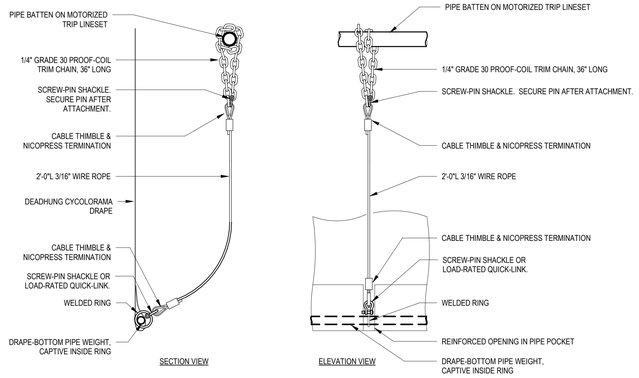
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

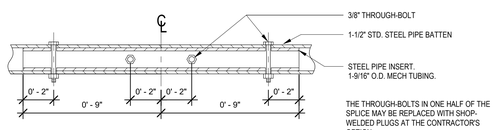
# TR7.14

THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, SHEETS ORIGINAL PAGE SIZE

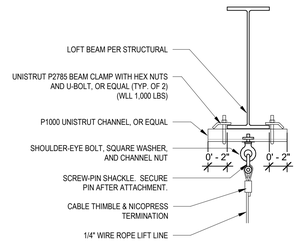
## TRIP LINE CONNECTION | 1 1/2" = 1'-0" | 9



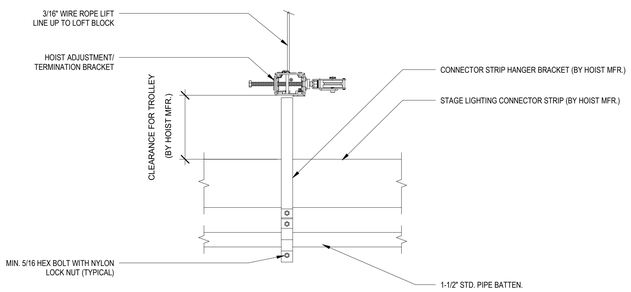

## TYPICAL BATTEN SPLICE | 3" = 1'-0" | 5



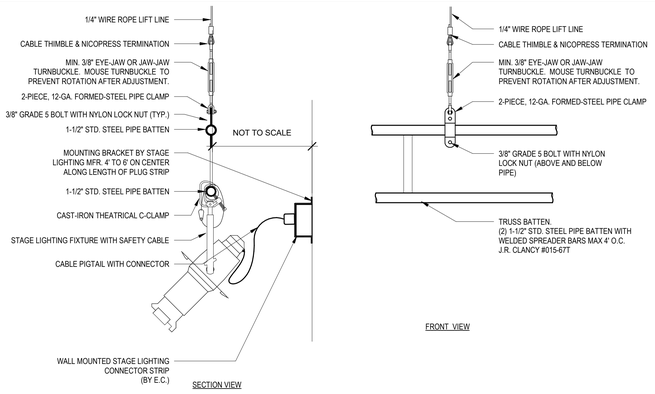

## DEADHANG TIE-OFF BRACKET | 1 1/2" = 1'-0" | 1



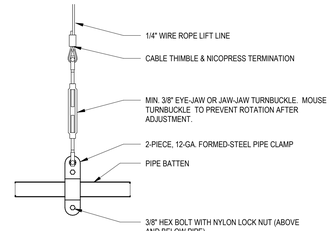

## MOUNTING BRACKET TYPE 'D' | 1 1/2" = 1'-0" | 10



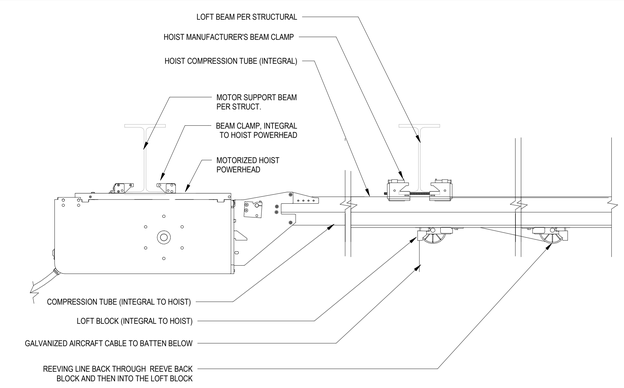

## FOH LTG BATTEN CONNECTION | 1" = 1'-0" | 6



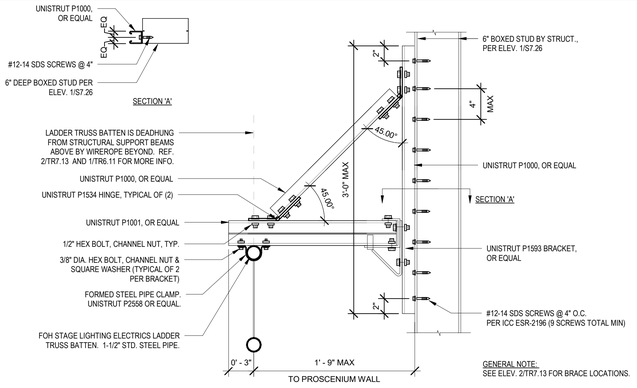

## TURNBUCKLE BATTEN CONNECTION | 1 1/2" = 1'-0" | 2



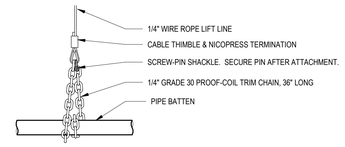

## PRODIGY HOIST CONNECTION | 1" = 1'-0" | 11



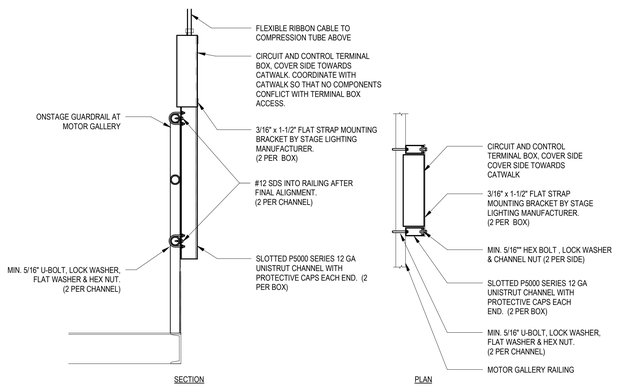

## FOH LTG BATTEN BRACING | 1 1/2" = 1'-0" | 7



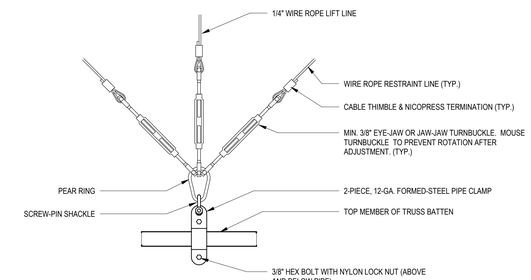

## GENERAL PURPOSE BATTEN CONNECTION | 1 1/2" = 1'-0" | 3



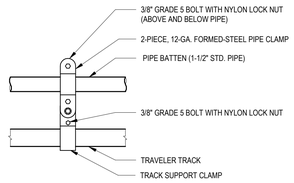

## CABLE SUPPORT AT TERMINAL BOXES | 1" = 1'-0" | 12




## TURNBUCKLE BATTEN CONNECTION | 1 1/2" = 1'-0" | 8




## TYPICAL TRACK CONNECTION | 1 1/2" = 1'-0" | 4




TRACK SUPPORT ASSEMBLY TO BE REPEATED EVENLY SPACED 4'-0" TO 6'-0" ALONG LENGTH OF TRACK.

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SHEET NAME:

**STAGE RIGGING DETAILS**

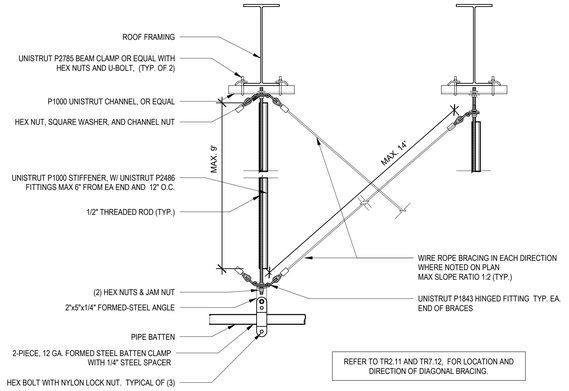
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**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

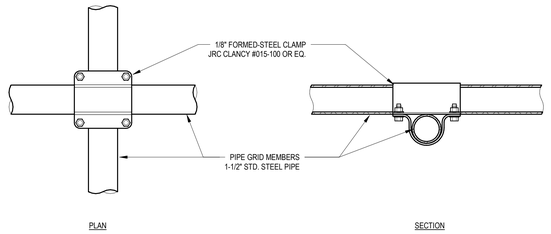
SHEET:

# TR8.11

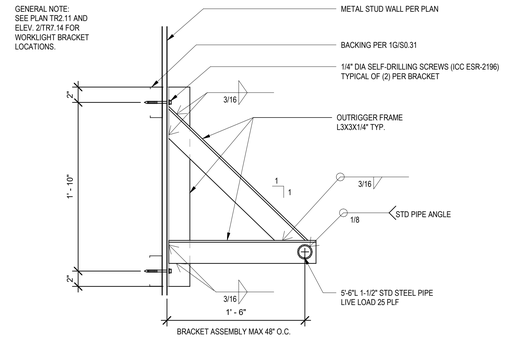



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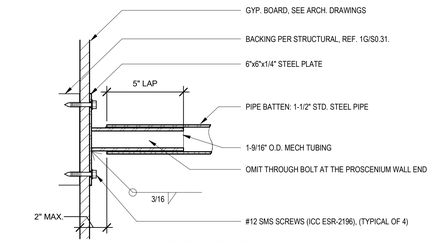
## THREADED ROD HANGER & BRACING DTL | 1" = 1'-0" | 6



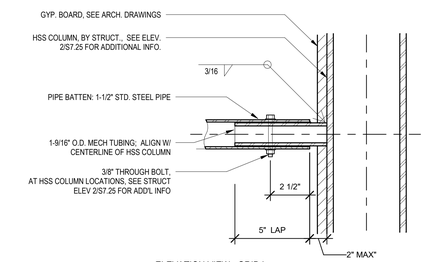

## PIPE BATTEN CROSS-CONNECTION | 3" = 1'-0" | 4




## WORKLIGHT BRACKET | 1 1/2" = 1'-0" | 1

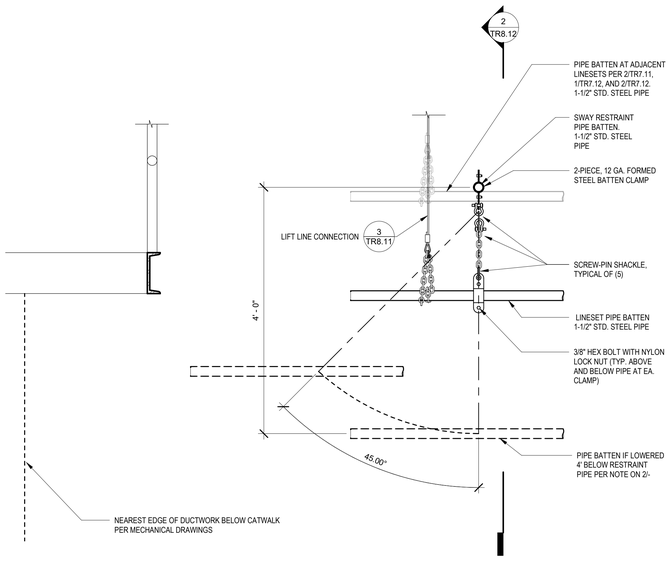



ELEVATION VIEW - GRID J
(PIPE BATTEN CONNECTION AT METAL STUD WALL)

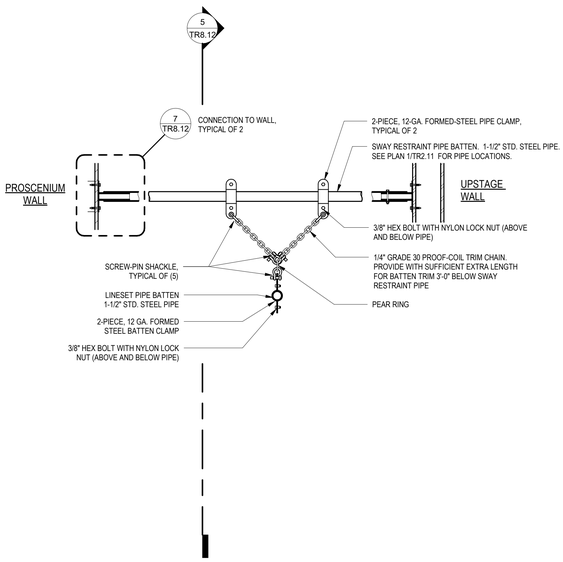



ELEVATION VIEW - GRID L
(PIPE BATTEN CONNECTION AT HSS COLUMN IN METAL STUD WALL)

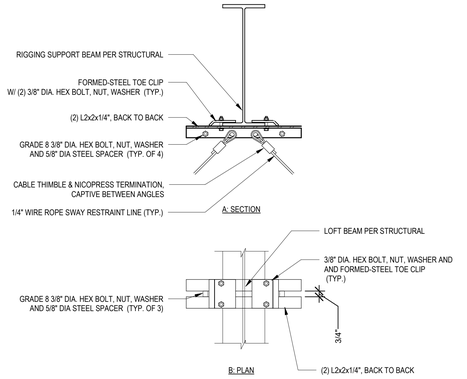
## WALL CONNECTION AT METAL STUD | 3" = 1'-0" | 7



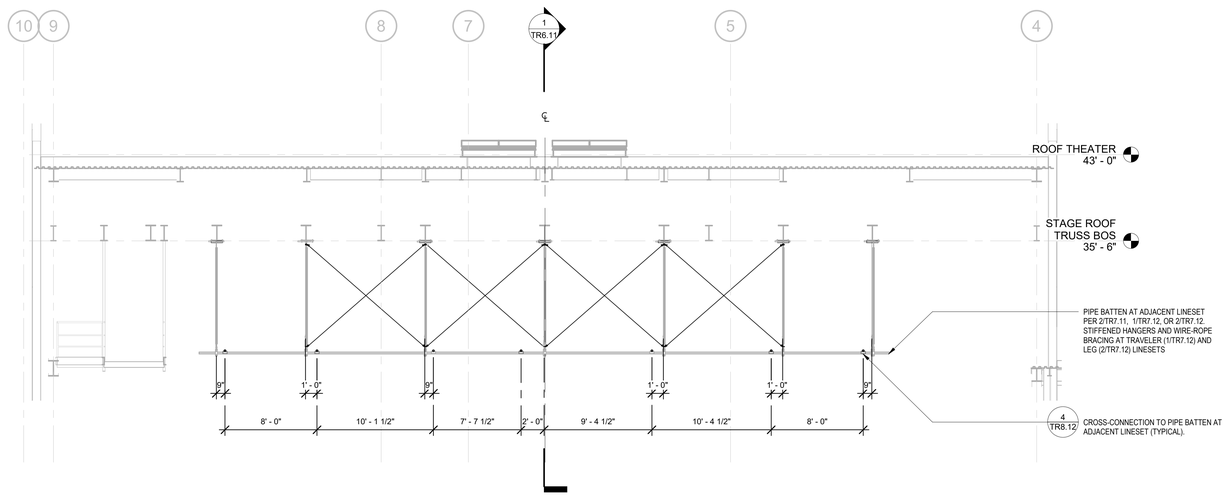

## ELEV AT GP BATTEN SWAY RESTRAINT | 1" = 1'-0" | 5




## GP BATTEN SWAY RESTRAINT | 1" = 1'-0" | 2




## RESTRAINT LINE TIE-OFF BRACKET | 1 1/2" = 1'-0" | 8




## TRANSVERSE SECTION AT SWAY RESTRAINT BATTENS | 3/16" = 1'-0" | 3

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SHEET NAME:

**STAGE RIGGING DETAILS**

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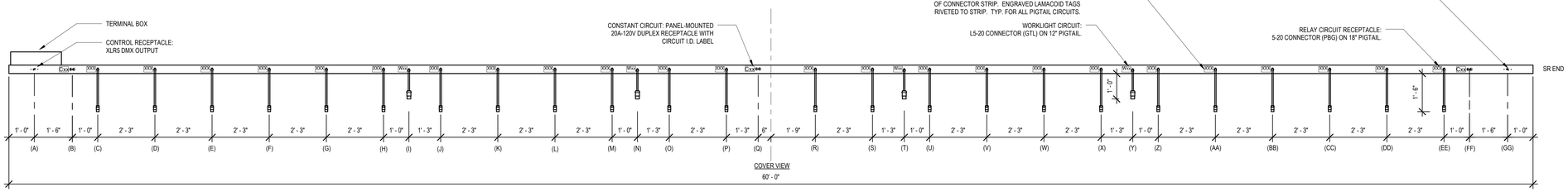
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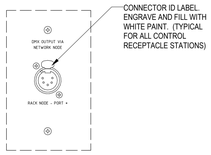
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOT. IF NOT, ADJUST SCALE ACCORDINGLY




| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) | (J) | (K) | (L) | (M) | (N) | (O) | (P) | (Q) | (R) | (S) | (T) | (U) | (V) | (W) | (X) | (Y) | (Z) | (AA) | (BB) | (CC) | (DD) | (EE) | (FF) | (GG) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS | 1 | ELECTRIC #1 | 8 | PIPE | D | ESTIMATED MULTICABLE LENGTH 40'-0" | CRS-24 | PT1-20 | 47 | 48 | 49 | 50 | 51 | 52 | W74 | 47 | 48 | 49 | 50 | W74 | 51 | 52 | PT1-20 | 47 | 48 | W74 | 49 | 50 | 51 | 52 | W74 | 47 | 48 | 49 | 50 | 51 | 52 | PT1-20 | CRS-25 |
| PS | 2 | ELECTRIC #2 | 8 | PIPE | D | ESTIMATED MULTICABLE LENGTH 40'-0" | CRS-27 | PT1-20 | 53 | 54 | 55 | 56 | 57 | 58 | W75 | 53 | 54 | 55 | 56 | W75 | 57 | 58 | PT1-20 | 53 | 54 | W75 | 55 | 56 | 57 | 58 | W75 | 53 | 54 | 55 | 56 | 57 | 58 | PT1-20 | CRS-28 |
| PS | 3 | ELECTRIC #3 | 8 | PIPE | D | ESTIMATED MULTICABLE LENGTH 40'-0" | CRS-30 | PT1-22 | 59 | 60 | 61 | 62 | 63 | 64 | W76 | 59 | 60 | 61 | 62 | W76 | 63 | 64 | PT1-22 | 59 | 60 | W76 | 61 | 62 | 63 | 64 | W76 | 59 | 60 | 61 | 62 | 63 | 64 | PT1-22 | CRS-31 |
| PS | 4 | ELECTRIC #4 | 6 | PIPE | D | ESTIMATED MULTICABLE LENGTH 40'-0" | CRS-33 | PT1-22 | 65 | 66 | 67 | 68 | 65 | 66 | W77 | 67 | 68 | 65 | 66 | W77 | 67 | 68 | PT1-22 | 65 | 66 | W77 | 67 | 68 | 65 | 66 | W77 | 67 | 68 | 65 | 66 | 67 | 68 | PT1-22 | CRS-34 |

## STAGE LIGHTING CONNECTOR STRIP - TYPE 102

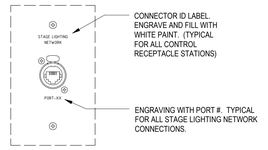
1/2" = 1'-0" | 1




| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 24 | ELECTRIC #1 - SL | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | | RACK NODE 2 - PORT 1 |
| CRS | 27 | ELECTRIC #2 - SL | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | | RACK NODE 2 - PORT 2 |
| CRS | 30 | ELECTRIC #3 - SL | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | | RACK NODE 2 - PORT 3 |
| CRS | 33 | ELECTRIC #4 - SL | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | | RACK NODE 2 - PORT 4 |

## CONTROL RECEPTACLE STATION - TYPE 411

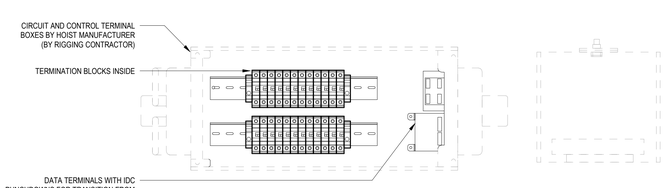
6" = 1'-0" | 4




| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 25 | ELECTRIC #1 -SR | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | 61 | |
| CRS | 28 | ELECTRIC #2 -SR | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | 62 | |
| CRS | 31 | ELECTRIC #3 -SR | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | 63 | |
| CRS | 34 | ELECTRIC #4 -SR | INTEGRAL | SPECIAL BY RIG. MFR. | BLACK | 64 | |

## CONTROL RECEPTACLE STATION - TYPE 410

6" = 1'-0" | 2




| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | NOTES | CIRCUIT RANGE |
|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | |
| GJB | 1 | MOTOR GALLERY AT ELEC #1 | 8 | PIPE | | 47-52, W74, PT1-20 PER EE |
| GJB | 2 | MOTOR GALLERY AT ELEC #2 | 8 | PIPE | | 53-58, W75, PT1-20 PER EE |
| GJB | 3 | MOTOR GALLERY AT ELEC #3 | 8 | PIPE | | 59-64, W76, PT1-22 PER EE |
| GJB | 4 | MOTOR GALLERY AT ELEC #4 | 6 | PIPE | | 65-68, W77, PT1-22 PER EE |

## FLAT CABLE TERMINATION BOX - TYPE 302 GIJB / TYPE 412 CRS

3" = 1'-0" | 3

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 23 | MOTOR GALLERY@ ELEC. #1 GJB | INTEGRAL | N/A | BLACK | 61 | CONTROL DATA TERMINALS AT COMPRESSION TUBE |
| CRS | 26 | MOTOR GALLERY@ ELEC. #2 GJB | INTEGRAL | N/A | BLACK | 62 | CONTROL DATA TERMINALS AT COMPRESSION TUBE |
| CRS | 29 | MOTOR GALLERY@ ELEC. #3 GJB | INTEGRAL | N/A | BLACK | 63 | CONTROL DATA TERMINALS AT COMPRESSION TUBE |
| CRS | 32 | MOTOR GALLERY@ ELEC. #4 GJB | INTEGRAL | N/A | BLACK | 64 | CONTROL DATA TERMINALS AT COMPRESSION TUBE |

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## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE RIGGING DETAILS - CONNECTOR STRIP**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

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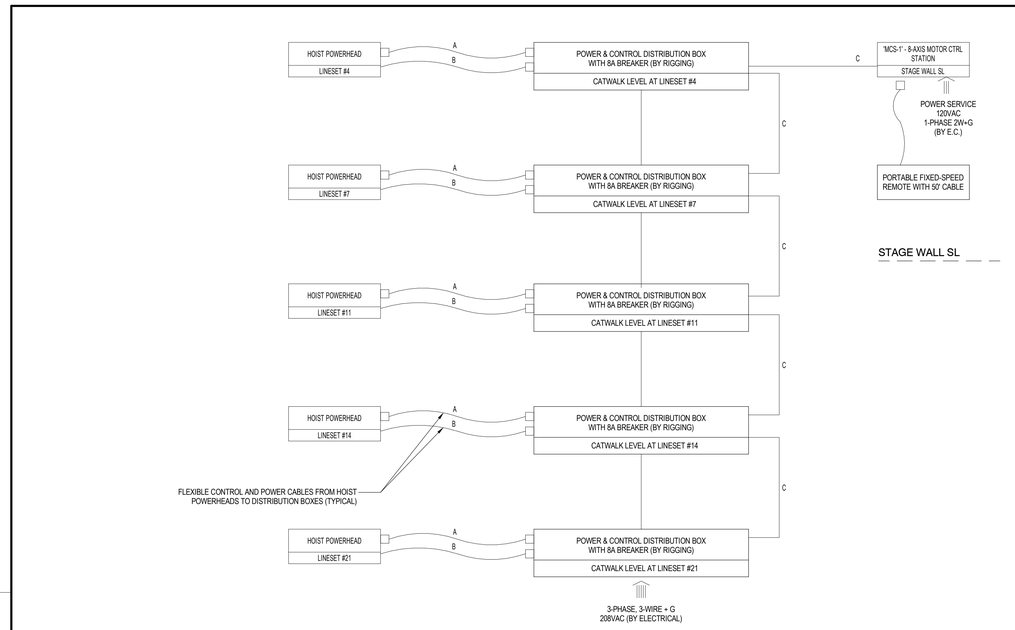
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## RIGGING AND DRAPERY SCHEDULE

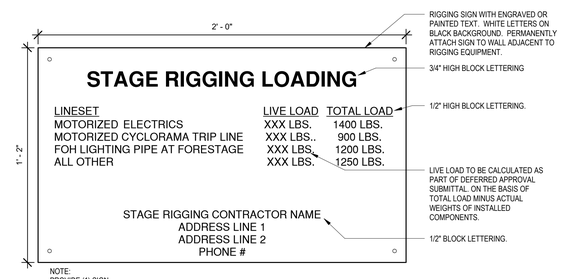
| LINESET # | DESCRIPTION | PIPE BATTEN DISTANCE FROM PL | BATTEN LENGTH | TRACK LENGTH | HIGH TRIM | LINESET CAPACITY (LBS) | DESIGN LOAD (LBS) | DRAWING REFERENCE | RIGGING REMARKS | LINESET # | DESCRIPTION | FABRIC | COLOR | LINED | SIZE W x H | FULLNESS | ATTACHMENT | DRAPERY REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MAIN TRAVELER | 1' - 3" | 60' - 0" | 60'-0" OVERALL | 25' - 9" | 1250 | 800 | 1/TR7.12 | BI-PARTING TRAVELER W/ OPERATING LINE SL | 1 | MAIN TRAVELER | 25 OZ. IFR VELOUR 'PRESTIGE' | TBD BY ARCH | X | 58'-0"W x 26'-0"H OVERALL | 75% | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 2 | BORDER #1 | 2' - 3" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 2 | BORDER #1 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 7'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE |
| 3 | LEGS #1 | 2' - 9" | 60' - 0" | 60'-0" | 25' - 9" | 1250 | 550 | 2/TR7.12 | WALK-ALONG TRAVELER WITH LOCKING MASTER CARRIER AT EACH EDGE OF EACH DRAPE PANEL | 3 | LEGS #1 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | (2) @ 9'-6"W x 26'-0"H | 50% | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 4 | ELECTRIC #1 | 4' - 6" | 60' - 0" | | 23' - 11" | 1400 | 1200 | 1/TR7.13 | MOTORIZED | 4 | ELECTRIC #1 | | | | | | | |
| 5 | GENERAL PURPOSE | 6' - 3" | 60' - 0" | | 23' - 10" | 1250 | 675 | 1/TR7.11 | | 5 | GENERAL PURPOSE | | | | | | | |
| 6 | BORDER #2 | 7' - 3" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 6 | BORDER #2 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 7'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE |
| 7 | LEGS #2 | 7' - 9" | 60' - 0" | 60'-0" | 25' - 9" | 1250 | 550 | 2/TR7.12 | WALK-ALONG TRAVELER WITH LOCKING MASTER CARRIER AT EACH EDGE OF EACH DRAPE PANEL | 7 | LEGS #2 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | (2) @ 9'-6"W x 26'-0"H | 50% | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 8 | ELECTRIC #2 | 9' - 3" | 60' - 0" | | 23' - 11" | 1400 | 1200 | 1/TR7.13 | MOTORIZED | 8 | ELECTRIC #2 | | | | | | | |
| 9 | GENERAL PURPOSE | 11" - 3" | 60' - 0" | | 23' - 0" | 1250 | 675 | 1/TR7.11 | | 9 | GENERAL PURPOSE | | | | | | | |
| 10 | BORDER #3 | 12' - 9" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 10 | BORDER #3 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 7'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE |
| 11 | MS TRAVELER | 13' - 9" | 60' - 0" | 60'-0" OVERALL | 25' - 9" | 1250 | 750 | 1/TR7.12 | BI-PARTING TRAVELER W/ OPERATING LINE SL | 11 | MS TRAVELER | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 26'-0"H OVERALL | 50% | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 12 | ELECTRIC #3 | 15' - 6" | 60' - 0" | | 23' - 11" | 1400 | 1200 | 1/TR7.13 | MOTORIZED | 12 | ELECTRIC #3 | | | | | | | |
| 13 | GENERAL PURPOSE | 17' - 0" | 60' - 0" | | 23' - 10" | 1250 | 675 | 1/TR7.11 | | 13 | GENERAL PURPOSE | | | | | | | |
| 14 | BORDER #4 | 18' - 0" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 14 | BORDER #4 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 7'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE |
| 15 | LEGS #3 | 18' - 6" | 60' - 0" | 60'-0" | 25' - 9" | 1250 | 550 | 2/TR7.12 | WALK-ALONG TRAVELER WITH LOCKING MASTER CARRIER AT EACH EDGE OF EACH DRAPE PANEL | 15 | LEGS #3 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | | | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 16 | ELECTRIC #4 | 20' - 0" | 60' - 0" | | 23' - 11" | 1400 | 1200 | 1/TR7.13 | MOTORIZED | 16 | ELECTRIC #4 | | | | | | | |
| 17 | GENERAL PURPOSE | 21' - 6" | 60' - 0" | | 23' - 10" | 1250 | 675 | 1/TR7.11 | | 17 | GENERAL PURPOSE | | | | | | | |
| 18 | BORDER #5 | 22' - 6" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 18 | BORDER #5 | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 7'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE |
| 19 | US TRAVELER | 23' - 6" | 60' - 0" | 60'-0" OVERALL | 25' - 9" | 1250 | 750 | 1/TR7.12 | BI-PARTING TRAVELER W/ OPERATING LINE SL | 19 | US TRAVELER | 22 OZ. IFR VELOUR 'ENCORE' | BLACK | | 58'-0"W x 26'-0"H OVERALL | 50% | SNAP HOOK | PROVIDE BOTTOM CHAIN |
| 20 | GENERAL PURPOSE | 24' - 9" | 60' - 0" | | 24' - 9" | 1250 | 675 | 1/TR7.11 | | 20 | GENERAL PURPOSE | | | | | | | |
| 21 | G.P. / CYC ELECTRIC | 25' - 6" | 60' - 0" | | 23' - 0" | 1250 | 400 | 1/TR7.11 | | 21 | G.P. / CYC ELECTRIC | | | | | | | |
| 22 | GENERAL PURPOSE | 26' - 10" | 60' - 0" | | 24' - 3" | 1250 | 675 | 1/TR7.11 | | 22 | GENERAL PURPOSE | | | | | | | |
| 23 | CYCLORAMA | 27' - 7" | 60' - 0" | | 25' - 9" | 1250 | 325 | 2/TR7.11 | | 23 | CYCLORAMA | UNBLEACHED MUSLIN | NATURAL | | 58'-0" W x -27'-0"H | 0% | TIE-ON | PROVIDE BOTTOM PIPE WITH REINFORCED GAPS IN CYC. POCKET FOR TRIPLINE ATTACHMENT. REF. 1/TR7.14 |
| 24 | CYC TRIP | 28' - 7" | 60' - 0" | | 24' - 6" | 900 | 175 | 1/TR7.14 | MOTORIZED | 24 | CYC TRIP | | | | | | | |
| FOH1 | FOH LIGHTING BATTEN | 3' - 0" | 45' - 0" | | 24' - 3" | 1200 | 900 | 2/TR7.13 | | FOH1 | FOH LIGHTING BATTEN | | | | | | | |
| | | | | | | | 16225 | | | | | | | | | | | |




| KEY TO WIRE TYPES | | | |
|---|---|---|---|
| TYPE | DESCRIPTION | | NOTES |
| A | FLEXIBLE CONTROL CABLE | BY HOIST MANUFACTURER | CONNECTORIZED CABLE |
| B | 3-PHASE POWER CABLE | BY HOIST MANUFACTURER | PERMANENTLY CONNECTED AT HOIST POWERHEAD |
| C | HOIST CONTROL | BELDEN 1583A (24AWG CAT5E) | DAISY CHAIN BETWEEN DISTRIBUTION DEVICES |
| * (X) = QUANTITY WHEN GREATER THAN ONE* | | | |

KEY TO SYMBOLS

| DEVICE TYPE |
|---|
| LOCATION |




NOTE:
PROVIDE (1) SIGN
MOUNT ON UPSTAGE WALL AT +60" AFF AT STAGE LEVEL, BY MOTOR GALLERY ACCESS LADDER.
ATTACH TO WALL WITH (4) MECHANICAL FASTENERS.

STAGE-LEVEL CAPACITY SIGN | 3" = 1'-0" | 2

MOTOR RISER | 12" = 1'-0" | 1

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## KEYNOTES

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE RIGGING SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

**TR9.21**


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## ABBREVIATION KEY

| | | | | | |
|---|---|---|---|---|---|
| AFF | ABOVE FINISH FLOOR | HCS | HOUSELIGHT CONTROL STATION | RECP. | RECEPTACLE |
| APPROX | APPROXIMATE | HL | HOUSE LEFT | REF. | REFERENCE |
| B.O. | BOTTOM OF | HR | HOUSE RIGHT | REQ'D | REQUIRED |
| B.O.S. | BOTTOM OF STEEL | I.D. | INNER DIAMETER | R&R | REVERSE & REPEAT |
| CAT. | CATWALK | INT. | INTERIOR | RU | RACK UNIT SPACE |
| CC | CONTROL CONSOLE | LTG. | LIGHTING | SCHL | SCHEDULE |
| CER | CONTROL EQUIPMENT RACK | MAX. | MAXIMUM | SF. | SQUARE FOOT (FEET) |
| CIRC. | CIRCUIT | MH | MOUNTING HEIGHT | SL | STAGE LEFT |
| CL | CENTERLINE | MEZZ. | MEZZANINE | SMP | STAGE MANAGERS PANEL |
| CONN. | CONNECTOR | MFR. | MANUFACTURER | SQ. | SQUARE |
| CRS | CONTROL RECEPTACLE STATION | MIN. | MINIMUM | SQ. YD. | SQUARE YARDS |
| CTRL | CONTROL | MS | MIDSTAGE | SR | STAGE RIGHT |
| D | DIMMER | MSL | MIDSTAGE LEFT | STA. | STATION |
| DMX | DMX512 (A LTG. CRTL. PROTOCOL) | MSR | MIDSTAGE RIGHT | T&B | TOP AND BOTTOM |
| DR | DIMMER RACK | MTG | MOUNTING | T.O.S. | TOP OF STEEL |
| DSC | DOWNSTATGE CENTER | N.I.C. | NOT IN CONTRACT | TYP. | TYPICAL |
| DSL | DOWNSTAGE LEFT | N.T.S. | NOT TO SCALE | USC | UPSTAGE CENTER |
| DSR | DOWNSTAGE RIGHT | O.C. | ON CENTER | USL. | UPSTAGE LEFT |
| EA. | EACH | O.D. | OUTER DIAMETER | USR. | UPSTAGE RIGHT |
| E.C. | ELECTRICAL CONTRACTOR | ORCH. | ORCHESTRA | W/ | WITH |
| ELEC. | ELECTRIC / LIGHTING BATTEN | PB | PLUG BOX | W/O | WITHOUT |
| EXT. | EXTERIOR | PCS | PORTABLE CONTROL STATION | W.A.P. | WIRELESS ACCESS POINT |
| FOH | FRONT-OF-HOUSE | PoE | POWER OVER ETHERNET | WCS | WORKLIGHT CONTROL STATION |
| GJB | GRIDIRON JUNCTION BOX | PL | PLASTERLINE | WT | WEIGHT |
| GPC | GROUNDED PIN CONNECTOR (2P&G) | QTY. | QUANTITY | | |
| GTL | GROUNDED TWISTLOCK CONNECTOR | PS | PLUG STRIP | | |

## ELECTRICAL AND STAGE RIGGING COORDINATION ITEMS

| COORDINATION ITEM | ELECTRICAL CONTRACTOR | RIGGING CONTRACTOR |
|---|---|---|
| FURNISH PLUG BOXES (STAGE WALLS, CATWALKS, BOX BOOMS AND OTHER AREAS) | ● | |
| INSTALL PLUG BOXES (STAGE WALLS, CATWALKS, BOX BOOMS AND OTHER AREAS) | ● | |
| PROVIDE STAGE LIGHTING FIXTURES, PLUG BOXES AND CONTROL RECEPTACLES AT BOX BOOM MEZZANINES | ● | |
| PROVIDE STAGE LIGHTING CONNECTOR STRIPS AT MOTORIZED ELECTRICS | | ● |
| FURNISH STAGE LIGHTING CONNECTOR STRIP AT FOH LIGHTING BATTEN | ● | |
| INSTALL STAGE LIGHTING CONNECTOR STRIP AT FOH LIGHTING BATTEN | ● | ● |
| PROVIDE STAGE LIGHTING FIXTURES, PLUG BOXES, AND CONTROL RECEPTACLES AT CATWALKS | ● | |
| PROVIDE ALL WIRING, CONDUIT, JUNCTION BOXES AND ELECTRICAL FITTINGS UNLESS OTHERWISE NOTED | ● | |
| TERMINATE ALL LINE VOLTAGE AND CONTROL CIRCUIT WIRING | ● | |

## STAGE LIGHTING SYMBOL LEGEND

### CIRCUIT DEVICES
(REF. TO TL8.1x SHEETS FOR MORE INFO)

- PB-# — PLUG BOX
- PB-# — PLUG BOX (IN FLOOR POCKET)
- PS-# — CONNECTOR STRIP
- GJB-# — GRIDIRON JUNCTION BOX
- # AMPS — COMPANY SWITCH

### CONTROL DEVICES
(REF. TO TL8.2x SHEETS FOR MORE INFO)

- CRS-# — CONTROL RECEPTACLE STATION
- WCS-# — WORKLIGHT CONTROL STATION
- HCS-# — HOUSELIGHT CONTROL STATION
- SMP-# — STAGE MANAGER'S PANEL
- CD-# — MISCELLANEOUS CONTROL DEVICE
- CER-# — CONTROL EQUIPMENT RACK
- RR-# — RELAY PANEL (MAINTAIN 3'-0" CLEAR ZONE IN FRONT)
- DR-# — DIMMER RACK (MAINTAIN 3'-0" CLEAR ZONE IN FRONT)

## SHEET INDEX

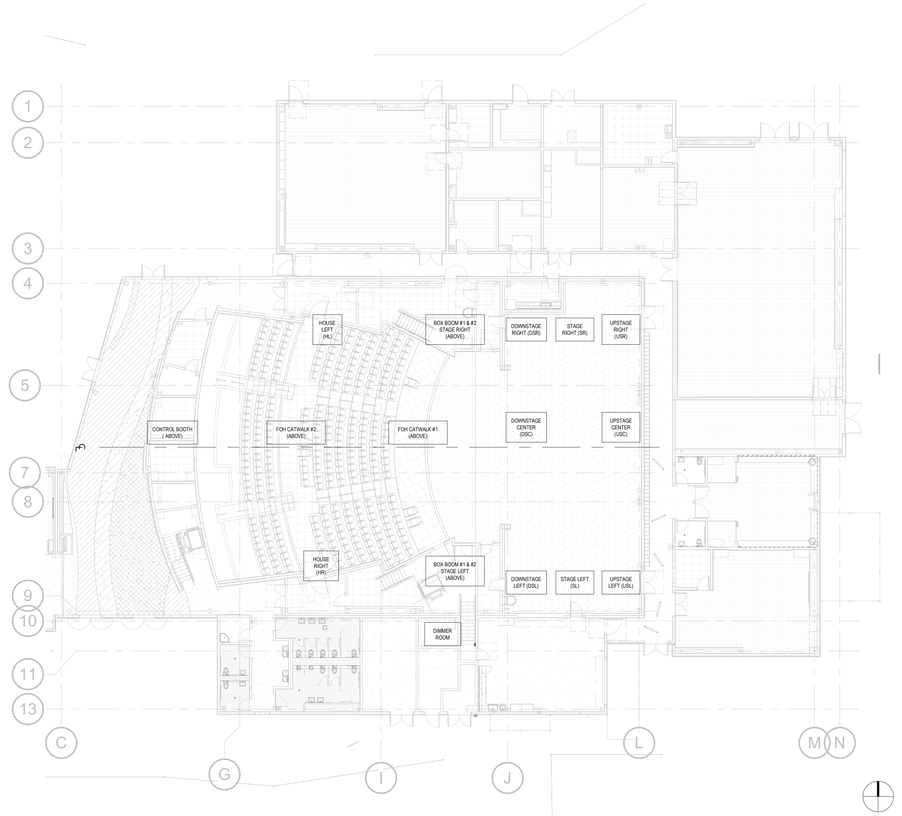


| SHEET NUMBER | SHEET TITLE |
|---|---|
| STAGE RIGGING | |
| TR0.00 | SHEET INDEX AND PROJECT NOTES |
| TR2.11 | STAGE RIGGING PLAN |
| TR6.11 | STAGE RIGGING SECTION |
| TR7.11 | STAGE RIGGING ELEVATIONS |
| TR7.12 | STAGE RIGGING ELEVATIONS |
| TR7.13 | STAGE RIGGING ELEVATIONS |
| TR7.14 | STAGE RIGGING ELEVATIONS |
| TR8.11 | STAGE RIGGING DETAILS |
| TR8.12 | STAGE RIGGING DETAILS |
| TR8.21 | STAGE RIGGING DETAILS - CONNECTOR STRIP |
| TR9.21 | STAGE RIGGING SCHEDULES |
| STAGE LIGHTING | |
| TL0.00 | SHEET INDEX AND PROJECT NOTES |
| TL2.11 | STAGE LIGHTING PLAN - STAGE LEVEL |
| TL2.12 | STAGE LIGHTING PLAN - MEZZANINE LEVEL |
| TL2.13 | STAGE LIGHTING PLAN - CATWALK LEVEL |
| TL7.11 | STAGE LIGHTING ELEVATIONS |
| TL7.12 | STAGE LIGHTING MOUNTING DETAILS |
| TL8.11 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.12 | STAGE LIGHTING DETAILS - CIRCUIT DEVICES |
| TL8.21 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.22 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL8.23 | STAGE LIGHTING DETAILS - CONTROL DEVICES |
| TL9.11 | STAGE LIGHTING CONTROL RISER |
| TL9.12 | STAGE LIGHTING RISERS |
| TL9.21 | STAGE LIGHTING SCHEDULES |
| TL9.31 | STAGE LIGHTING PLOT |



## SPECIFICATIONS

THE WORK SHOWN IN THE 'TL' SERIES OF DRAWINGS IS SPECIFIED IN:
SECTION 26 55 61 THEATRICAL LIGHTING




STAGE LIGHTING ORIENTATION PLAN | 1/16" = 1'-0" | 1

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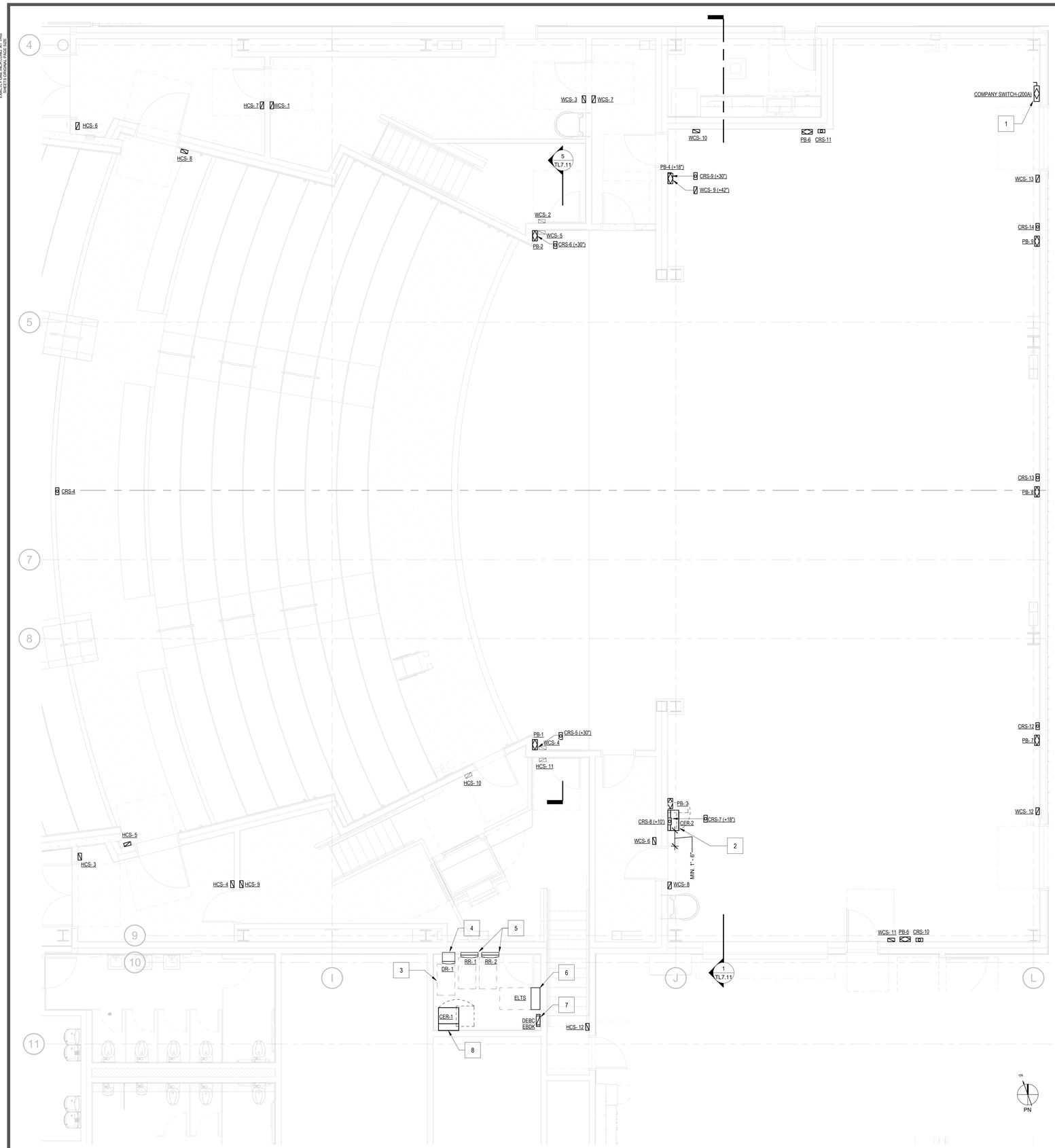
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## CONTROL DEVICE SUMMARY - STAGE

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM PANEL PER EE | NOTES |
|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | |
| CER | 1 | | STAGE ELEC ROOM | | WALL | | 1 | PT1-58 PER EE |
| CER | 2 | | STAGE WALL - DSL | | FLUSH | +27" AFF MAX | 1 | PT1-6 PER EE |
| | | | | | | | | |
| DEBC | | | STAGE ELEC ROOM | | SURFACE | | 1 | |
| | | | | | | | | |
| EBDK | | | STAGE ELEC ROOM | | SURFACE | | | |
| | | | | | | | | |
| CRS | 4 | 407 | AUDITORIUM CENTER | <10 LBS | FLUSH | +18" AFF | 1 | |
| CRS | 5 | 405 | STAGE APRON - SL | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 6 | 405 | STAGE APRON - SR | <5 LBS | FLUSH | +30" AFF | | |
| CRS | 7 | 402 | STAGE - DSL | <10 LBS | FLUSH | +18" AFF | | |
| CRS | 8 | 403 | STAGE - DSL (W.A.P.) | <5 LBS | FLUSH | +10' AFF | | |
| CRS | 9 | 404 | STAGE - DSR | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 10 | 405 | STAGE - MSL | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 11 | 405 | STAGE - MSR | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 12 | 405 | STAGE - USL | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 13 | 405 | STAGE - USC | <5 LBS | FLUSH | +18" AFF | | |
| CRS | 14 | 405 | STAGE - USR | <5 LBS | FLUSH | +18" AFF | | |
| | | | | | | | | |
| HCS | 3 | 602 | HR VESTIBULE - DS | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 4 | 602 | HR VESTIBULE - US | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 5 | 601 | HR AUDITORIUM ENTRY | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 6 | 602 | HL VESTIBULE - DS | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 7 | 602 | HL VESTIBULE - US | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 8 | 601 | HL AUDITORIUM ENTRY | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 9 | 602 | HR FRONT VESTIBULE - DS | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 10 | 602 | HR FRONT VEST AT FRT ROW | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 11 | 602 | HR FRONT VESTIBULE AT PIT | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 12 | 602 | HR FRONT VEST AT SHOP STAIR | <5 LBS | FLUSH | +42" AFF | | |
| | | | | | | | | |
| WCS | 1 | 501 | HL FRONT VESTIBULE - DS | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 2 | 501 | HL FRONT VESTIBULE AT PIT | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 3 | 502 | HL FRONT VESTIBULE - US | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 4 | 501 | ORCH PIT - SL | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 5 | 501 | ORCH PIT - SR | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 6 | 501 | DSL STAGE ALCOVE | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 7 | 501 | DSR STAGE ALCOVE | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 8 | 502 | STAGE - DSL | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 9 | 501 | STAGE - DSR | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 10 | 503 | STAGE - DSR (REHEARSAL) | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 11 | 501 | STAGE - SL | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 12 | 501 | STAGE - USL | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 13 | 501 | STAGE - USR | <5 LBS | FLUSH | +42" AFF | | |

## CIRCUIT DEVICE SUMMARY - STAGE

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM DIMMER/RELAY BANK | 20A CIRCS FROM PANEL PER EE | SYSTEM ADDRESS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | |
| PB | 1 | 205 | STAGE APRON - SL | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D15-D16, PT1-2 PER EE | |
| PB | 2 | 205 | STAGE APRON - SR | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D15-D16, PT1-4 PER EE | |
| PB | 3 | 205 | STAGE - DSL | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D1-D2, PT1-6 PER EE | |
| PB | 4 | 205 | STAGE - DSR | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D3-D4, PT1-8 PER EE | |
| PB | 5 | 205 | STAGE - MSL | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D5-D6, PT1-2 PER EE | |
| PB | 6 | 205 | STAGE - MSR | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D7-D8, PT1-4 PER EE | |
| PB | 7 | 205 | STAGE - USL | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D9-D10, PT1-10 PER EE | |
| PB | 8 | 205 | STAGE - USC | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D11-D12, PT1-8 PER EE | |
| PB | 9 | 205 | STAGE - USR | <10 LBS | FLUSH | +18" AFF | 2 | 1 | D13-D14, PT1-6 PER EE | |

NOTE: SEE RELAY PANEL SCHEDULE FOR RACK CIRCUIT ADDRESSES
ADDRESSES 1-24 ORIGINATE AT RACK DR-1
ADDRESSES 25-72 ORIGINATE AT RACK RR-1
ADDRESSES 73-120 ORIGINATE AT RACK RR-2

## KEYNOTES

SHEET KEYNOTES

| ID | NOTE |
|---|---|
| 1 | COMPANY SWITCH. 200A 120/208V WITH DOUBLE NEUTRAL. 100 LBS. REF. 6/TL7.12. |
| 2 | CONTROL EQUIPMENT RACK "CER-2", WITH STAGE MANAGER'S PANEL. MAX GROSS WEIGHT 200 LBS. REF. 2/TL7.12. |
| 3 | 36" REQUIRED CLEAR ZONE (TYP.) |
| 4 | WALL-MOUNTED 12-MODULE STAGE LIGHTING DIMMER RACK. 150 LBS. REF. 4/TL7.12 |
| 5 | WALL-MOUNTED 48-CIRCUIT STAGE LIGHTING MAINS-FED RELAY PANEL (TYP. OF 2) 150 LBS. REF. 3/TL7.12. |
| 6 | EMERGENCY LIGHTING TRANSFER SWITCH FOR TRANSFER OF LOADS FROM RELAY/DIMMER SYSTEM TO EMERGENCY POWER SOURCE. MAX. GROSS WEIGHT 125 LBS. REF. 5/TL7.12. |
| 7 | WALL-MOUNTED EMERGENCY BYPASS DETECTION KIT (+36" AFF) AND DMX EMERGENCY BYPASS CONTOLLER (+80" AFF). 15 LBS EACH. |
| 8 | WALL-MOUNTED CONTROL EQUIPMENT RACK FOR STAGE LIGHTING CONTROL EQUIPMENT DEVICES. HINGES OPEN FOR REAR WIRING ACCESS. MAX GROSS WEIGHT 435 LBS. REF. 1/TL7.12. |

## NOTES

STAGE LIGHTING PLAN - STAGE LEVEL | 1/4" = 1'-0" | 1

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HMC Architects
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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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| Δ | DESCRIPTION | DATE |
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| | DSA SUBMITTAL | 06/23/2025 |

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LIGHTING DESIGNERS + THEATRE CONSULTANTS

FACILITY:
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**EL MONTE, CALIFORNIA 91732**

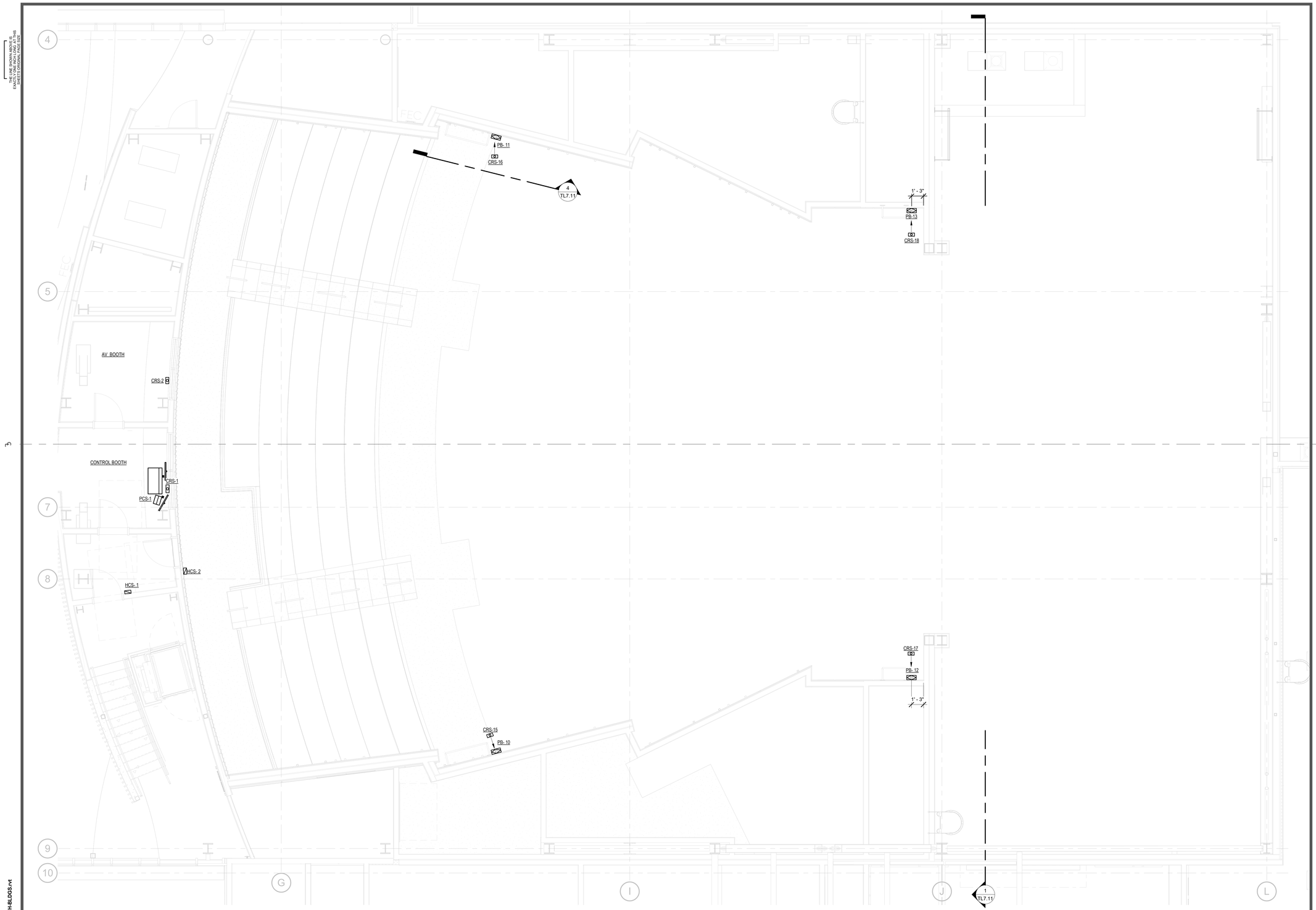
PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**STAGE LIGHTING PLAN - STAGE LEVEL**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

**TL2.11**




### CIRCUIT DEVICE SUMMARY - MEZZANINE

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM DIMMER/RELAY BANK | 20A CIRCS FROM PANEL PER EE | SYSTEM ADDRESS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | |
| PB | 10 | 204 | BOX BOOM #2 SL | <20 LBS | FLUSH | REF. 4/TL7.11 | 2 | 1 | 41-42, PT1-18 PER EE | |
| PB | 11 | 204 | BOX BOOM #2 SR | <20 LBS | FLUSH | REF. 4/TL7.11 | 2 | 1 | 43-44, PT1-18 PER EE | |
| PB | 12 | 204 | BOX BOOM #1 SL | <20 LBS | FLUSH | REF. 4/TL7.11 | 1 | 1 | 45, PT1-18 PER EE | |
| PB | 13 | 204 | BOX BOOM #1 SR | <20 LBS | FLUSH | REF. 4/TL7.11 | 1 | 1 | 46, PT1-18 PER EE | |

NOTE: SEE RELAY PANEL SCHEDULE FOR RACK CIRCUIT ADDRESSES
ADDRESSES 1-24 ORIGINATE AT RACK DR-1
ADDRESSES 25-72 ORIGINATE AT RACK RR-1
ADDRESSES 73-120 ORIGINATE AT RACK RR-2

### CONTROL DEVICE SUMMARY - MEZZANINE

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM PANEL PER EE | NOTES |
|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | |
| CRS | 1 | 401 | CONTROL BOOTH | <10 LBS | FLUSH | +18" AFF | | |
| CRS | 2 | 406 | AV BOOTH | <10 LBS | FLUSH | +18" AFF | | |
| CRS | 15 | 405 | BOX BOOM #2 SL | <5 LBS | FLUSH | REF. 4/TL7.11 | | |
| CRS | 16 | 405 | BOX BOOM #2 SR | <5 LBS | FLUSH | REF. 4/TL7.11 | | |
| CRS | 17 | 405 | BOX BOOM #1 SL | <5 LBS | FLUSH | REF. 4/TL7.11 | | |
| CRS | 18 | 405 | BOX BOOM #1 SR | <5 LBS | FLUSH | REF. 4/TL7.11 | | |
| | | | | | | | | |
| HCS | 1 | 602 | HR REAR VESTIBULE | <5 LBS | FLUSH | +42" AFF | | |
| HCS | 2 | 601 | HR REAR AUDITORIUM ENTRY | <5 LBS | FLUSH | +42" AFF | | |
| | | | | | | | | |
| PCS | 1 | 801 | CONTROL BOOTH | | PORTABLE | | | |

# STAGE LIGHTING PLAN - MEZZANINE LEVEL

1/4" = 1'-0"

1

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|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

| # | SHEET KEYNOTES |
|---|---|
| ID | NOTE |

## NOTES

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING PLAN - MEZZANINE LEVEL**

**DSA SUBMITTAL**

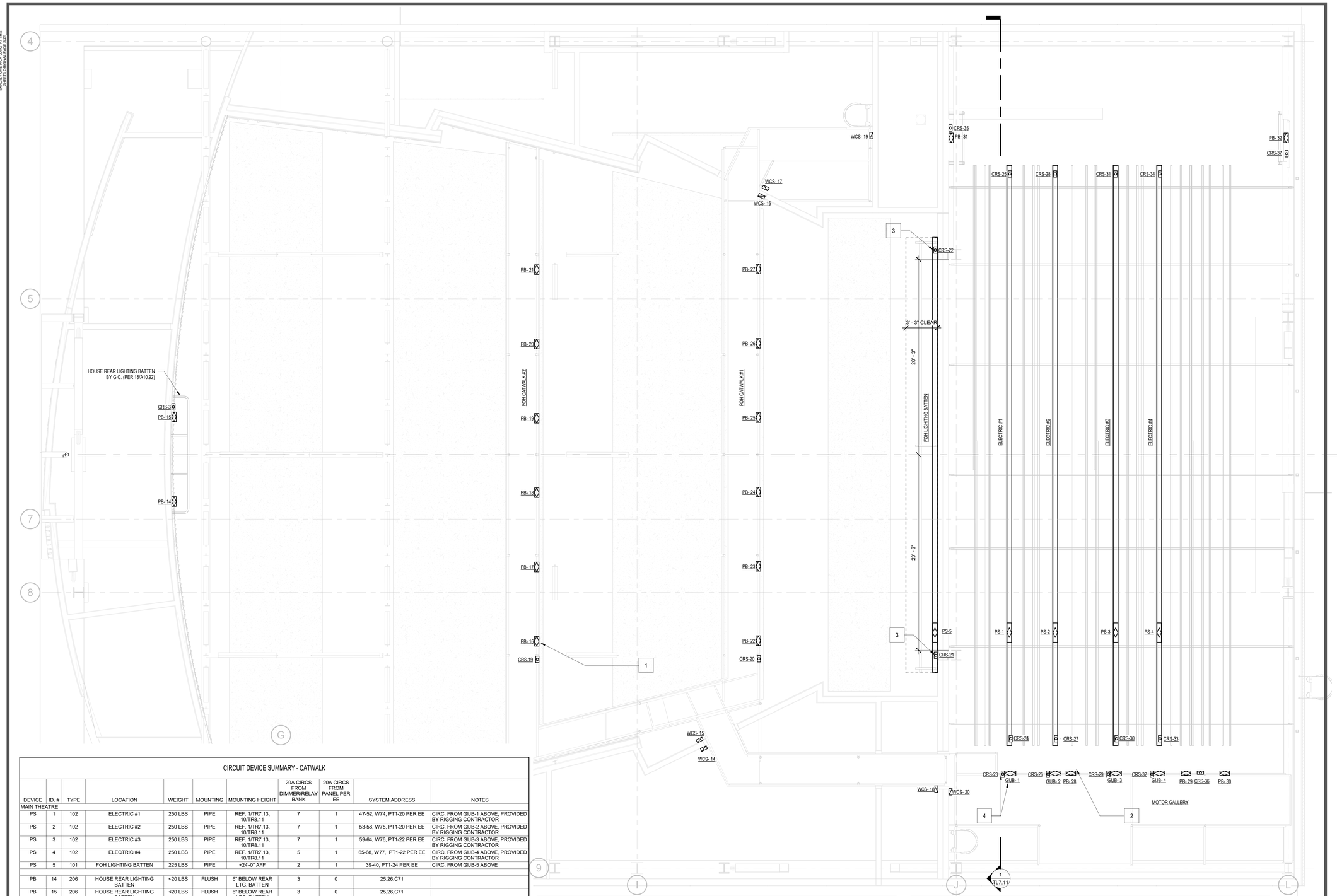
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DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# TL2.12

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## CIRCUIT DEVICE SUMMARY - CATWALK

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM DIMMER/RELAY BANK | 20A CIRCS FROM PANEL PER EE | SYSTEM ADDRESS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | |
| PS | 1 | 102 | ELECTRIC #1 | 250 LBS | PIPE | REF. 1/TR7.13, 10/TR8.11 | 7 | 1 | 47-52, W74, PT1-20 PER EE | CIRC. FROM GUB-1 ABOVE, PROVIDED BY RIGGING CONTRACTOR |
| PS | 2 | 102 | ELECTRIC #2 | 250 LBS | PIPE | REF. 1/TR7.13, 10/TR8.11 | 7 | 1 | 53-58, W75, PT1-20 PER EE | CIRC. FROM GUB-2 ABOVE, PROVIDED BY RIGGING CONTRACTOR |
| PS | 3 | 102 | ELECTRIC #3 | 250 LBS | PIPE | REF. 1/TR7.13, 10/TR8.11 | 7 | 1 | 59-64, W76, PT1-22 PER EE | CIRC. FROM GUB-3 ABOVE, PROVIDED BY RIGGING CONTRACTOR |
| PS | 4 | 102 | ELECTRIC #4 | 250 LBS | PIPE | REF. 1/TR7.13, 10/TR8.11 | 5 | 1 | 65-68, W77, PT1-22 PER EE | CIRC. FROM GUB-4 ABOVE, PROVIDED BY RIGGING CONTRACTOR |
| PS | 5 | 101 | FOH LIGHTING BATTEN | 225 LBS | PIPE | +24'-0" AFF | 2 | 1 | 39-40, PT1-24 PER EE | CIRC. FROM GUB-5 ABOVE |
| PB | 14 | 206 | HOUSE REAR LIGHTING BATTEN | <20 LBS | FLUSH | 6" BELOW REAR LTG. BATTEN | 3 | 0 | 25,26,C71 | |
| PB | 15 | 206 | HOUSE REAR LIGHTING BATTEN | <20 LBS | FLUSH | 6" BELOW REAR LTG. BATTEN | 3 | 0 | 25,26,C71 | |
| PB | 16 | 202 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 3 | 1 | 27,28,W73, PT1-26 PER EE | |
| PB | 17 | 202 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 3 | 1 | 27,28,W73, PT1-26 PER EE | |
| PB | 18 | 201 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 29,30, PT1-26 PER EE | |
| PB | 19 | 201 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 29,30, PT1-26 PER EE | |
| PB | 20 | 202 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 3 | 1 | 31,32,W73, PT1-28 PER EE | |
| PB | 21 | 202 | FOH CATWALK #2 | <20 LBS | PIPE | REF. 2/TL7.11 | 3 | 1 | 31,32,W73, PT1-28 PER EE | |
| PB | 22 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 33,34, PT1-28 PER EE | |
| PB | 23 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 33,34, PT1-28 PER EE | |
| PB | 24 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 35,36, PT1-28 PER EE | |
| PB | 25 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 35,36, PT1-28 PER EE | |
| PB | 26 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 37,38, PT1-28 PER EE | |
| PB | 27 | 201 | FOH CATWALK #1 | <20 LBS | PIPE | REF. 2/TL7.11 | 2 | 1 | 37,38, PT1-28 PER EE | |
| PB | 28 | 203 | MOTOR GALLERY - MSL | <20 LBS | PIPE | REF. 3/TL7.11 | 3 | | W78,W80,RUN-23 | |
| PB | 29 | 203 | MOTOR GALLERY - USL | <20 LBS | PIPE | REF. 3/TL7.11 | 3 | | W78,W80,RUN-23 | |
| PB | 30 | 207 | MOTOR GALLERY- USL (CYC ELEC) | <20 LBS | PIPE | REF. 3/TL7.11 | 2 | 1 | 69,70, PT1-30 PER EE | |
| PB | 31 | 208 | WORKLIGHT BRACKET DSR | <20 LBS | SURFACE | +18'-0" AFF | 3 | | W79,W80,RUN-23 | |
| PB | 32 | 208 | WORKLIGHT BRACKET USR | <20 LBS | SURFACE | +18'-0" AFF | 3 | | W79,W80,RUN-23 | |
| GUB | 1 | 302 | MOTOR GALLERY AT ELEC #1 | 20 LBS | PIPE | REF. 8/TR8.11 | 7 | 1 | 47-52, W74, PT1-20 PER EE | PROVIDED BY RIGGING CONTRACTOR |
| GUB | 2 | 302 | MOTOR GALLERY AT ELEC #2 | 20 LBS | PIPE | REF. 8/TR8.11 | 7 | 1 | 53-58, W75, PT1-20 PER EE | PROVIDED BY RIGGING CONTRACTOR |
| GUB | 3 | 302 | MOTOR GALLERY AT ELEC #3 | 20 LBS | PIPE | REF. 8/TR8.11 | 7 | 1 | 59-64, W76, PT1-22 PER EE | PROVIDED BY RIGGING CONTRACTOR |
| GUB | 4 | 302 | MOTOR GALLERY AT ELEC #4 | 20 LBS | PIPE | REF. 8/TR8.11 | 5 | 1 | 65-68, W77, PT1-22 PER EE | PROVIDED BY RIGGING CONTRACTOR |

*NOTE: SEE RELAY PANEL SCHEDULE FOR RACK CIRCUIT ADDRESSES
ADDRESSES 1-24 ORIGINATE AT RACK DR-1
ADDRESSES 25-72 ORIGINATE AT RACK RR-1
ADDRESSES 73-120 ORIGINATE AT RACK RR-2

## CONTROL DEVICE SUMMARY - CATWALK

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM PANEL PER EE | NOTES |
|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | |
| CRS | 3 | 405 | HOUSE REAR LIGHTING BATTEN | <5 LBS | FLUSH | 6" BELOW REAR LTG. BATTEN | | |
| CRS | 19 | 404 | FOH CATWALK #2 | <5 LBS | ABOVE PIPE | REF. 2/TL7.11 | | |
| CRS | 20 | 405 | FOH CATWALK #1 | <5 LBS | ABOVE PIPE | REF. 2/TL7.11 | | |
| CRS | 21 | 403 | FOH LTG BATTEN - SL | <5 LBS | INTEGRAL | REF. 1/TL8.11 | | INTEGRAL TO PS-5 |
| CRS | 22 | 408 | FOH LTG BATTEN - SR | <5 LBS | INTEGRAL | REF. 1/TL8.11 | | INTEGRAL TO PS-5 |
| CRS | 23 | 412 | MOTOR GALLERY@ ELEC. #1 GUB | <5 LBS | INTEGRAL | REF. 3/TR8.21 | | INTEGRAL TO GUB-1 (BY RIGGING) |
| CRS | 24 | 411 | ELECTRIC #1 - SL | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-1 (BY RIGGING) |
| CRS | 25 | 410 | ELECTRIC #1 -SR | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-1 (BY RIGGING) |
| CRS | 26 | 412 | MOTOR GALLERY@ ELEC. #2 GUB | <5 LBS | INTEGRAL | REF. 3/TR8.21 | | INTEGRAL TO GUB-2 (BY RIGGING) |
| CRS | 27 | 411 | ELECTRIC #2 - SL | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-2 (BY RIGGING) |
| CRS | 28 | 410 | ELECTRIC #2 -SR | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-2 (BY RIGGING) |
| CRS | 29 | 412 | MOTOR GALLERY@ ELEC. #3 GUB | <5 LBS | INTEGRAL | REF. 3/TR8.21 | | INTEGRAL TO GUB-3 (BY RIGGING) |
| CRS | 30 | 411 | ELECTRIC #3 - SL | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-3 (BY RIGGING) |

## CONTROL DEVICE SUMMARY - CATWALK

| DEVICE | ID. # | TYPE | LOCATION | WEIGHT | MOUNTING | MOUNTING HEIGHT | 20A CIRCS FROM PANEL PER EE | NOTES |
|---|---|---|---|---|---|---|---|---|
| CRS | 31 | 410 | ELECTRIC #3 -SR | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-3 (BY RIGGING) |
| CRS | 32 | 412 | MOTOR GALLERY@ ELEC. #4 GUB | <5 LBS | INTEGRAL | REF. 3/TR8.21 | | INTEGRAL TO GUB-4 (BY RIGGING) |
| CRS | 33 | 411 | ELECTRIC #4 - SL | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-4 (BY RIGGING) |
| CRS | 34 | 410 | ELECTRIC #4 -SR | <5 LBS | INTEGRAL | REF. 1/TR8.21 | | INTEGRAL TO PS-4 (BY RIGGING) |
| CRS | 35 | 408 | WORKLIGHT BRACKET DSR | <5 LBS | SURFACE | +18'-0" AFF | | |
| CRS | 36 | 409 | MOTOR GALLERY - USL | <5 LBS | BELOW PIPE | REF. 3/TL7.11 | | |
| CRS | 37 | 408 | WORKLIGHT BRACKET USR | <5 LBS | SURFACE | +18'-0" AFF | | |
| WCS | 14 | 501 | HR FOH CATWALK VEST. - DS | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 15 | 501 | FOH CATWALK - HR | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 16 | 501 | FOH CATWALK - HL | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 17 | 501 | HL FOH CATWALK VEST. - DS | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 18 | 501 | HR FOH CATWALK VEST. - US | <5 LBS | FLUSH | +42" AFF | | |
| WCS | 19 | 502 | HL FOH CATWALK VEST. - US | <5 LBS | SURFACE | +42" AFF | | |
| WCS | 20 | 502 | MOTOR GALLERY - DSL | <5 LBS | FLUSH | +42" AFF | | |

## KEYNOTES

SHEET KEYNOTES

| ID | NOTE |
|---|---|
| 1 | PIPE-MOUNT BOX ABOVE TOP MOUNTING PIPE, ADJACENT TO CATWALK HANGERS. MAKE CONDUIT RUNS ALONG HANGERS, KEEPING PIPES AND GAPS BETWEEN PIPES CLEAR OF OBSTRUCTIONS. REFER TO 2/TL7.11. |
| 2 | PIPE-MOUNT BOX BELOW INTERMEDIATE RAILING, ADJACENT TO POST. MAKE CONDUIT RUNS ALONG FACE OF CATWALK FRAMING, TURNING UP TO BOX AND KEEPING PIPES AND GAPS BETWEEN PIPES CLEAR OF OBSTRUCTIONS. REFER TO 3/TL7.11. |
| 3 | CONTROL RECEPTACLE STATIONS AT FOH ELECTRIC. RECEPTACLES INTEGRATED INTO CONNECTOR STRIP AT FOH PROSCENIUM WALL. |
| 4 | POWER AND CONTROL DATA TERMINAL BOX FOR FLAT CABLE CONNECTION TO CONNECTOR STRIP AT MOTORIZED STAGE LIGHTING ELECTRIC (PROVIDED BY RIGGING CONTRACTOR). MOUNT TO MOTOR GALLERY RAILING. MAKE CONDUIT RUNS ALONG FACE OF CATWALK FRAMING, TURNING UP TO BOX AND KEEPING PIPES AND GAPS BETWEEN PIPES FREE OF OBSTRUCTIONS. |

## NOTES

# STAGE LIGHTING PLAN - CATWALK LEVEL

1/4" = 1'-0"

1

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING PLAN - CATWALK LEVEL**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

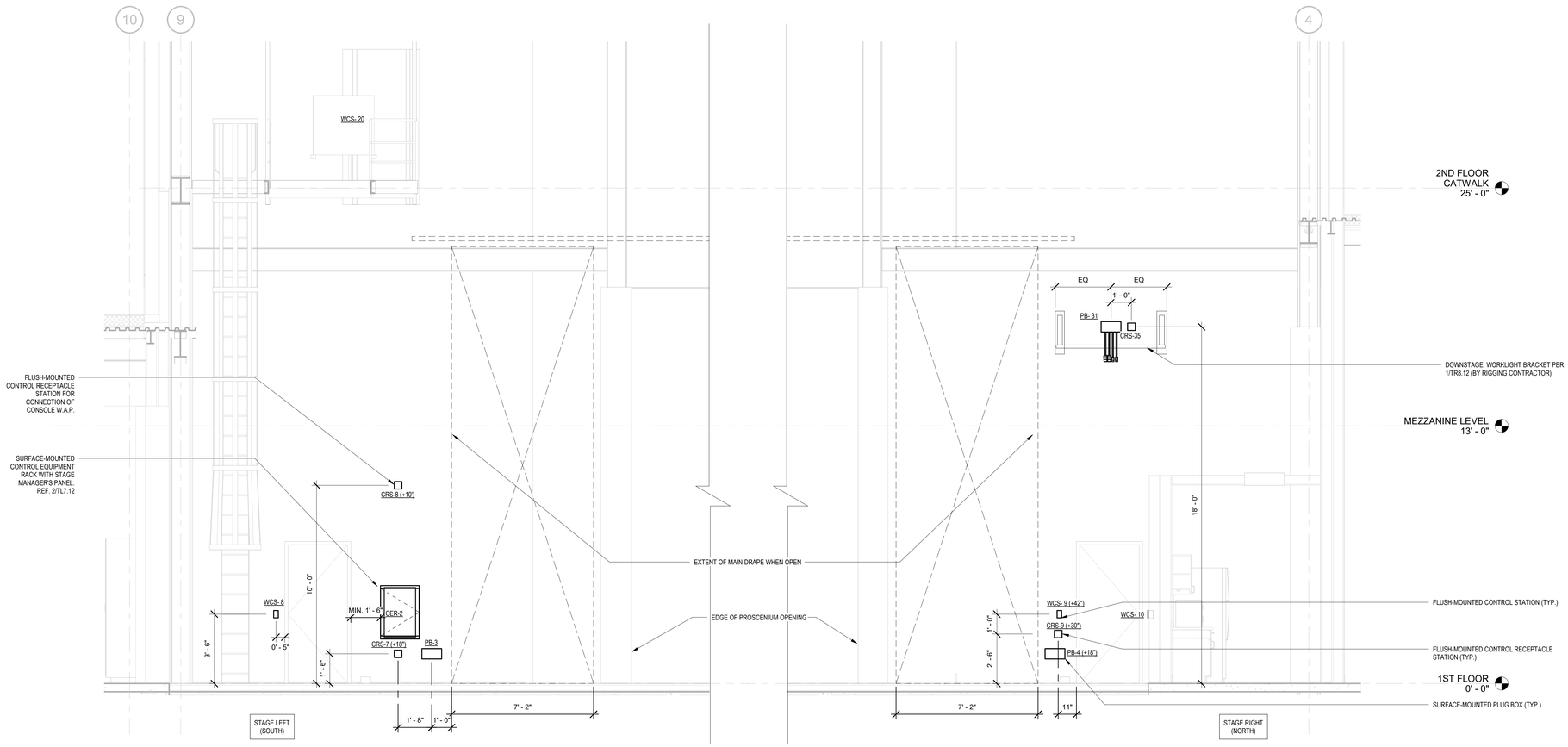
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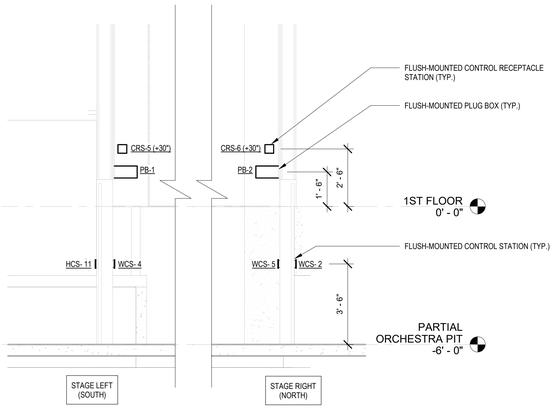
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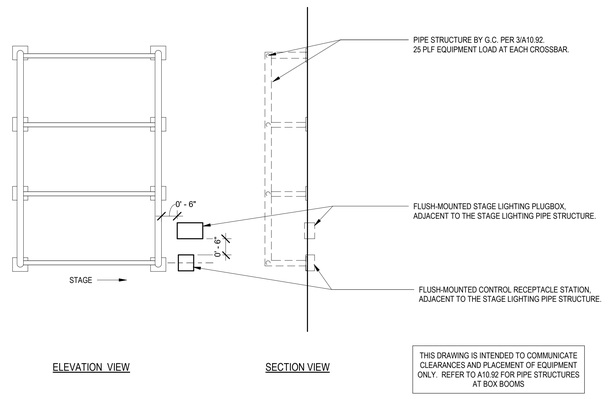
THE LINE SHOWN ABOVE IS 1" LONG ON ORIGINAL PLOTS. IF NOT, ADJUST SCALE ACCORDINGLY




## DOWNSTAGE WALL COORDINATION ELEVATION | 3/8" = 1'-0" | 1

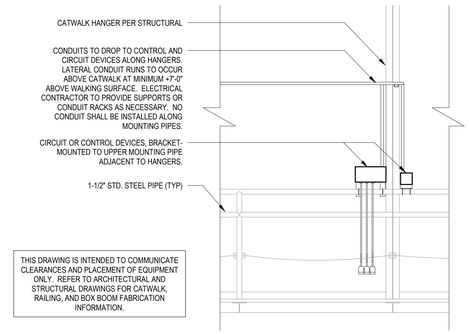



## ORCH. PIT - COORDINATION ELEVATION | 3/8" = 1'-0" | 5



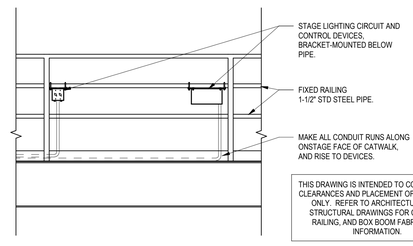

THIS DRAWING IS INTENDED TO COMMUNICATE CLEARANCES AND PLACEMENT OF EQUIPMENT ONLY. REFER TO A10.92 FOR PIPE STRUCTURES AT BOX BOOMS

## EQUIPMENT AT TYPICAL BOX BOOM | 1/2" = 1'-0" | 4




THIS DRAWING IS INTENDED TO COMMUNICATE CLEARANCES AND PLACEMENT OF EQUIPMENT ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CATWALK, RAILING, AND BOX BOOM FABRICATION INFORMATION.

## EQPMT AT STAGE LIGHTING CATWALKS | 1/2" = 1'-0" | 2




THIS DRAWING IS INTENDED TO COMMUNICATE CLEARANCES AND PLACEMENT OF EQUIPMENT ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CATWALK, RAILING, AND BOX BOOM FABRICATION INFORMATION.

## EQPMT AT MOTOR GALLERY CATWALK | 1/2" = 1'-0" | 3

PLEASE RECYCLE

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HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


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**NOTES**

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LIGHTING DESIGNERS + THEATRE CONSULTANTS


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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING ELEVATIONS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

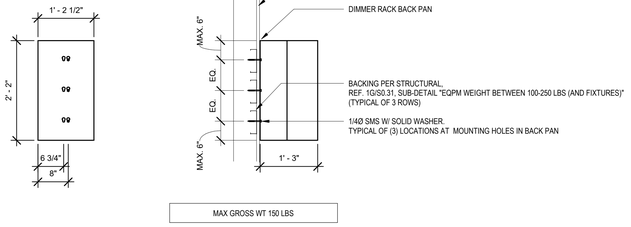
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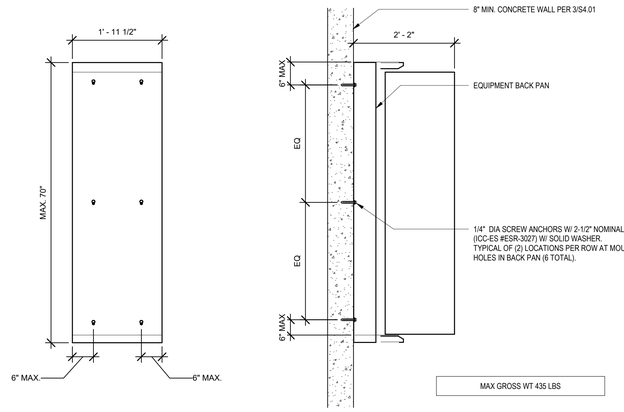
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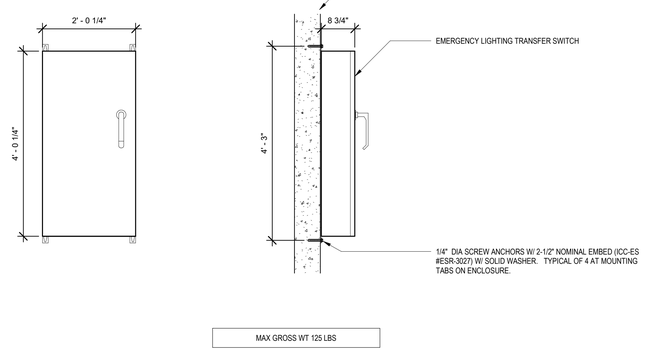
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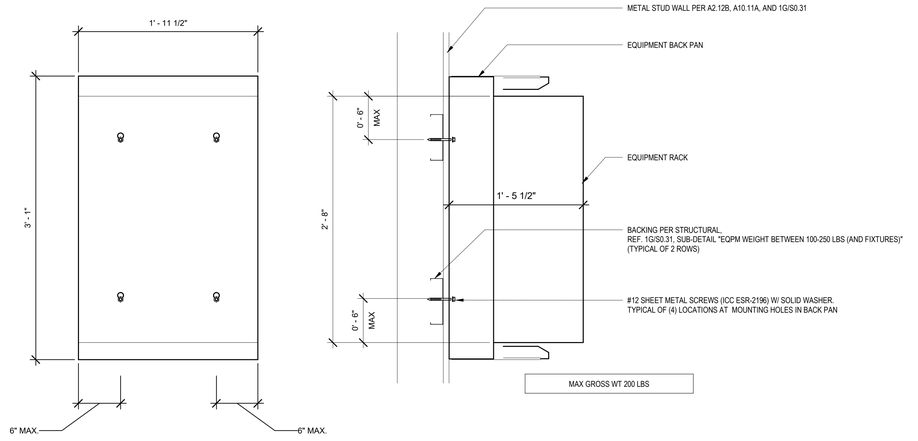

## DIMMER RACK AT METAL STUD WALL | 3/4" = 1'-0" | 4



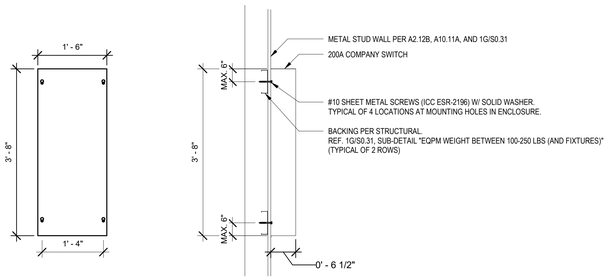

## CER-1 EQPT RACK AT CONCRETE WALL | 3/4" = 1'-0" | 1



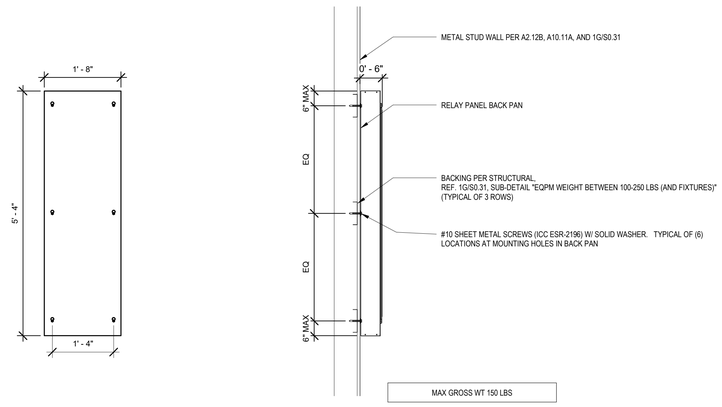

## ELTS AT CONCRETE WALL | 3/4" = 1'-0" | 5




## CER-2 EQPT RACK AT METAL STUD WALL | 1 1/2" = 1'-0" | 2




## COMPANY SWITCH AT METAL STUD WALL | 3/4" = 1'-0" | 6




## RELAY RACK AT METAL STUD WALL | 3/4" = 1'-0" | 3

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING MOUNTING DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** | A NO.: **03-123641**

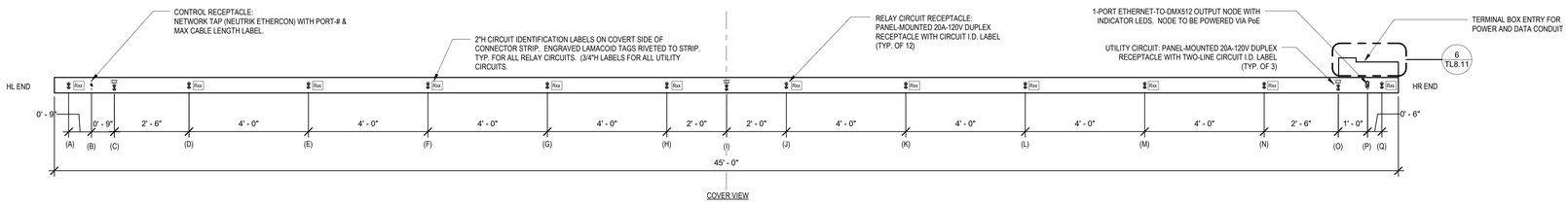
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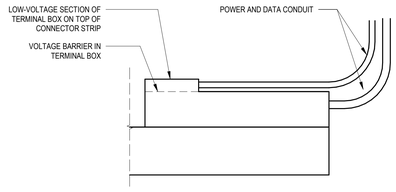
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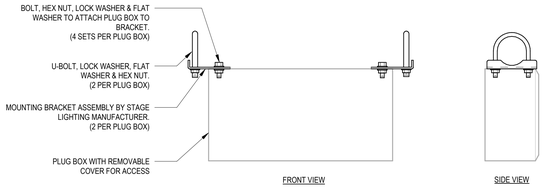

COVER VIEW

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (I) | (J) | (K) | (L) | (M) | (N) | (O) | (P) | (Q) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | | | | | | | | | | | | | |
| PS | 5 | FOH LIGHTING BATTEN | 3 | PIPE | C | | 40 | CRS-21 | PT1-24 | 39 | 40 | 39 | 40 | 39 | PT1-24 | 40 | 39 | 40 | 39 | 40 | PT1-24 | CRS-20 | 39 |

# STAGE LIGHTING CONNECTOR STRIP - TYPE 101 | 1/2" = 1'-0" | 1

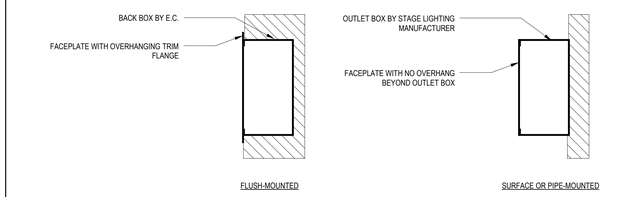



# NETWORK CABLE CONNEC. AT FOH BATTEN | 1 1/2" = 1'-0" | 6



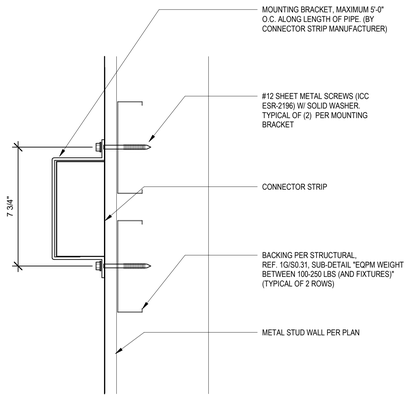

FRONT VIEW SIDE VIEW

# MOUNTING BRACKET TYPE 'B' | 3" = 1'-0" | 4

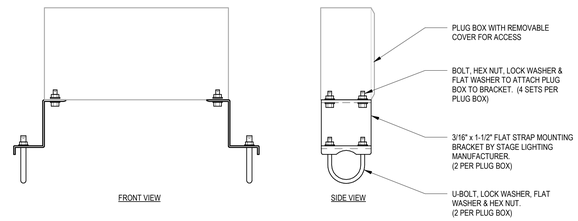



FLUSH-MOUNTED SURFACE OR PIPE-MOUNTED

# TYPICAL FACEPLATE OVERHANG | 3" = 1'-0" | 2




# MOUNTING BRACKET TYPE 'C' | 3" = 1'-0" | 5




FRONT VIEW SIDE VIEW

# MOUNTING BRACKET TYPE 'A' | 3" = 1'-0" | 3

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PROJECT:

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SHEET NAME:

**STAGE LIGHTING DETAILS - CIRCUIT DEVICES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

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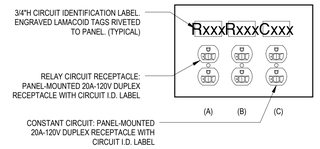
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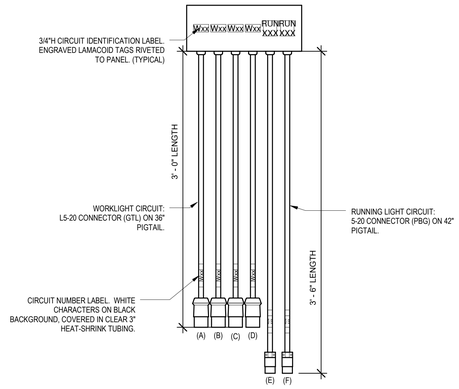
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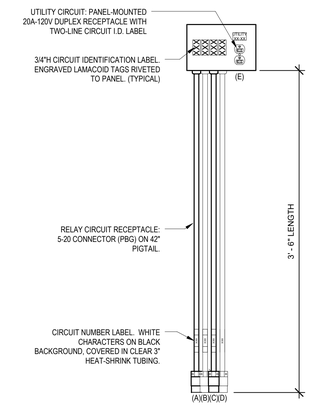

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) |
|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | |
| PB | 14 | HOUSE REAR LIGHTING BATTEN | 3 | FLUSH | | | 25 | 26 | C71 |
| PB | 15 | HOUSE REAR LIGHTING BATTEN | 3 | FLUSH | | | 25 | 26 | C71 |

## STAGE LIGHTING PLUG BOX - TYPE 206 | 3" = 1'-0" | 6




| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) | (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | | |
| PB | 28 | MOTOR GALLERY - MSL | 3 | PIPE | B | | W78 | W78 | W80 | W80 | RUN-23 | RUN-23 |
| PB | 29 | MOTOR GALLERY - USL | 3 | PIPE | B | | W78 | W78 | W80 | W80 | RUN-23 | RUN-23 |

## STAGE LIGHTING PLUG BOX - TYPE 203 | 1 1/2" = 1'-0" | 3



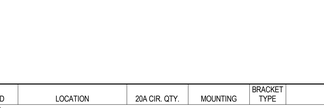

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | |
| PB | 18 | FOH CATWALK #2 | 3 | PIPE | A | | 29 | 29 | 30 | 30 | PT1-26 |
| PB | 19 | FOH CATWALK #2 | 3 | PIPE | A | | 29 | 29 | 30 | 30 | PT1-26 |
| PB | 22 | FOH CATWALK #1 | 3 | PIPE | A | | 33 | 33 | 34 | 34 | PT1-28 |
| PB | 23 | FOH CATWALK #1 | 3 | PIPE | A | | 33 | 33 | 34 | 34 | PT1-28 |
| PB | 24 | FOH CATWALK #1 | 3 | PIPE | A | | 35 | 35 | 36 | 36 | PT1-28 |
| PB | 25 | FOH CATWALK #1 | 3 | PIPE | A | | 35 | 35 | 36 | 36 | PT1-28 |
| PB | 26 | FOH CATWALK #1 | 3 | PIPE | A | | 37 | 37 | 38 | 38 | PT1-28 |
| PB | 27 | FOH CATWALK #1 | 3 | PIPE | A | | 37 | 37 | 38 | 38 | PT1-28 |

## STAGE LIGHTING PLUG BOX - TYPE 201 | 1 1/2" = 1'-0" | 1



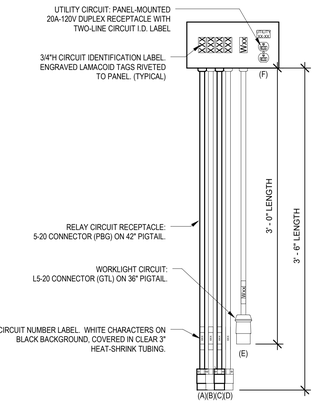

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) |
|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | |
| PB | 30 | MOTOR GALLERY- USL (CYC ELEC) | 3 | PIPE | B | | 69 | 70 | PT1-30 |

## STAGE LIGHTING PLUG BOX - TYPE 207 | 3" = 1'-0" | 7



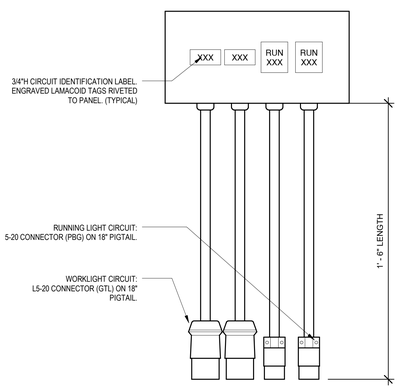

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) |
|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | |
| PB | 10 | BOX BOOM #2 SL | 3 | FLUSH | | | 41 | 42 | PT1-18 |
| PB | 11 | BOX BOOM #2 SR | 3 | FLUSH | | | 43 | 44 | PT1-18 |
| PB | 12 | BOX BOOM #1 SL | 2 | FLUSH | | | 45 | 45 | PT1-18 |
| PB | 13 | BOX BOOM #1 SR | 2 | FLUSH | | | 46 | 46 | PT1-18 |

## STAGE LIGHTING PLUG BOX - TYPE 204 | 3" = 1'-0" | 4



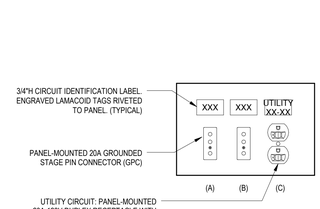

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) | (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | | |
| PB | 16 | FOH CATWALK #2 | 4 | PIPE | A | | 27 | 27 | 28 | 28 | W73 | PT1-26 |
| PB | 17 | FOH CATWALK #2 | 4 | PIPE | A | | 27 | 27 | 28 | 28 | W73 | PT1-26 |
| PB | 20 | FOH CATWALK #2 | 4 | PIPE | A | | 31 | 31 | 32 | 32 | W73 | PT1-28 |
| PB | 21 | FOH CATWALK #2 | 4 | PIPE | A | | 31 | 31 | 32 | 32 | W73 | PT1-28 |

## STAGE LIGHTING PLUG BOX - TYPE 202 | 1 1/2" = 1'-0" | 2



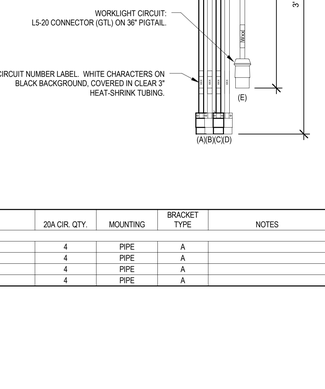

| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) |
|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | |
| PB | 31 | WORKLIGHT BRACKET DSR | 2 | SURFACE | | | W79 | W79 | RUN-23 | RUN-23 |
| PB | 32 | WORKLIGHT BRACKET USR | 2 | SURFACE | | | W79 | W79 | RUN-23 | RUN-23 |

## STAGE LIGHTING PLUG BOX - TYPE 208 | 3" = 1'-0" | 8




| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) |
|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | |
| PB | 1 | STAGE APRON - SL | 3 | FLUSH | | | D15 | D16 | PT1-2 |
| PB | 2 | STAGE APRON - SR | 3 | FLUSH | | | D15 | D16 | PT1-4 |
| PB | 3 | STAGE - DSL | 3 | FLUSH | | | D1 | D2 | PT1-6 |
| PB | 4 | STAGE - DSR | 3 | FLUSH | | | D3 | D4 | PT1-8 |
| PB | 5 | STAGE - MSL | 3 | FLUSH | | | D5 | D6 | PT1-2 |
| PB | 6 | STAGE - MSR | 3 | FLUSH | | | D7 | D8 | PT1-4 |
| PB | 7 | STAGE - USL | 3 | FLUSH | | | D9 | D10 | PT1-10 |
| PB | 8 | STAGE - USC | 3 | FLUSH | | | D11 | D12 | PT1-8 |
| PB | 9 | STAGE - USR | 3 | FLUSH | | | D13 | D14 | PT1-6 |

## STAGE LIGHTING PLUG BOX - TYPE 205 | 3" = 1'-0" | 5




| STA. | ID | LOCATION | 20A CIR. QTY. | MOUNTING | BRACKET TYPE | NOTES | (A) | (B) | (C) | (D) | (E) | (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | | | | | |
| PB | 16 | FOH CATWALK #2 | 4 | PIPE | A | | 27 | 27 | 28 | 28 | W73 | PT1-26 |
| PB | 17 | FOH CATWALK #2 | 4 | PIPE | A | | 27 | 27 | 28 | 28 | W73 | PT1-26 |
| PB | 20 | FOH CATWALK #2 | 4 | PIPE | A | | 31 | 31 | 32 | 32 | W73 | PT1-28 |
| PB | 21 | FOH CATWALK #2 | 4 | PIPE | A | | 31 | 31 | 32 | 32 | W73 | PT1-28 |

## STAGE LIGHTING PLUG BOX - TYPE 202 | 1 1/2" = 1'-0" | 2

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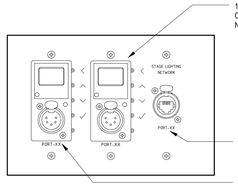
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# TL8.12

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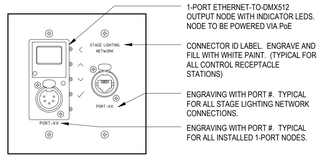
PLEASE RECYCLE

THE LINE SHOWN ABOVE IS 1" WHEN PLOTTED AT FULL SIZE. IF NOT, ADJUST SCALE ACCORDINGLY



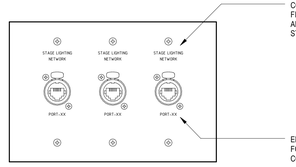

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 36 | MOTOR GALLERY - USL | BELOW PIPE | 3G BY LTG. MFR. | BLACK | 69,70,71 | |

## CTRL RECEPTACLE STATION - TYPE 409 | 6" = 1'-0" | 9



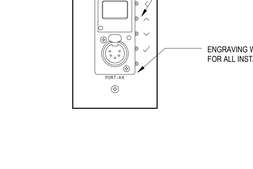

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 3 | HOUSE REAR LIGHTING BATTEN | FLUSH | 2G DEEP BY E.C. | BLACK | 57,58 | |
| CRS | 5 | STAGE APRON - SL | FLUSH | 2G DEEP BY E.C. | BLACK | 21,22 | |
| CRS | 6 | STAGE APRON - SR | FLUSH | 2G DEEP BY E.C. | BLACK | 23,24 | |
| CRS | 10 | STAGE - MSL | FLUSH | 2G DEEP BY E.C. | BLACK | 31,32 | |
| CRS | 11 | STAGE - MSR | FLUSH | 2G DEEP BY E.C. | BLACK | 33,34 | |
| CRS | 12 | STAGE - USL | FLUSH | 2G DEEP BY E.C. | BLACK | 35,36 | |
| CRS | 13 | STAGE - USC | FLUSH | 2G DEEP BY E.C. | BLACK | 37,38 | |
| CRS | 14 | STAGE - USR | FLUSH | 2G DEEP BY E.C. | BLACK | 39,40 | |
| CRS | 15 | BOX BOOM #2 SL | FLUSH | 2G DEEP BY E.C. | BLACK | 41,42 | |
| CRS | 16 | BOX BOOM #2 SR | FLUSH | 2G DEEP BY E.C. | BLACK | 43,44 | |
| CRS | 17 | BOX BOOM #1 SL | FLUSH | 2G DEEP BY E.C. | BLACK | 45,46 | |
| CRS | 18 | BOX BOOM #1 SR | FLUSH | 2G DEEP BY E.C. | BLACK | 47,48 | |
| CRS | 20 | FOH CATWALK #1 | ABOVE PIPE | 2G BY LTG. MFR.. | BLACK | 52,53 | |

## CTRL RECEPTACLE STATION - TYPE 405 | 6" = 1'-0" | 5



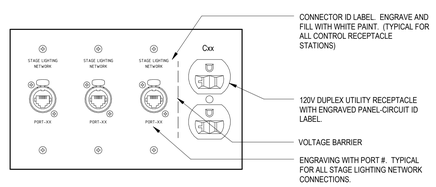

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 1 | CONTROL BOOTH | FLUSH | 3G DEEP BY E.C. | BLACK | 10,11,12 | |

## CTRL RECEPTACLE STATION - TYPE 401 | 6" = 1'-0" | 1



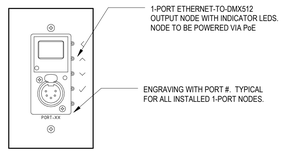

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 2 | AV BOOTH | FLUSH | 2G DEEP BY E.C. | BLACK | 13,14 | |

## CTRL RECEPTACLE STATION - TYPE 406 | 6" = 1'-0" | 6



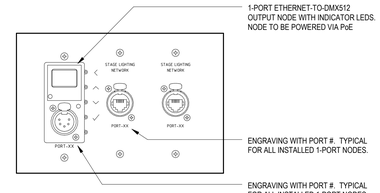

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 4 | AUDITORIUM CENTER | FLUSH | 4G DEEP BY E.C. | BLACK | 15,16,17 | 120V CIRC PER EE |

## CTRL RECEPTACLE STATION - TYPE 407 | 6" = 1'-0" | 7



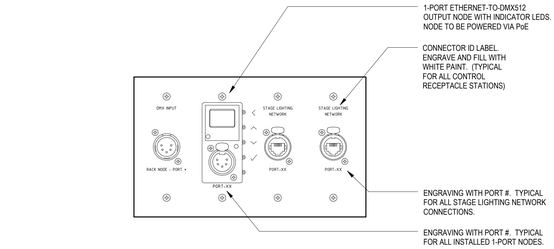

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 22 | FOH LTG BATTEN - SR | INTEGRAL | N/A | BLACK | 66 | |
| CRS | 35 | WORKLIGHT BRACKET DSR | SURFACE | 1G BY LTG. MFR | BLACK | 67 | |
| CRS | 37 | WORKLIGHT BRACKET USR | SURFACE | 1G BY LTG. MFR | BLACK | 68 | |

## CTRL RECEPTACLE STATION - TYPE 408 | 6" = 1'-0" | 8



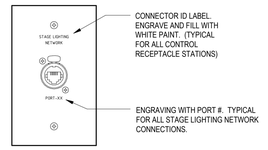

| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 9 | STAGE - DSR | FLUSH | 3G DEEP BY E.C. | BLACK | 28,29,30 | |
| CRS | 19 | FOH CATWALK #2 | ABOVE PIPE | 3G BY LTG. MFR.. | BLACK | 49,50,51 | |

## CTRL RECEPTACLE STATION - TYPE 404 | 6" = 1'-0" | 4




| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 7 | STAGE - DSL | FLUSH | 4G DEEP BY E.C. | BLACK | 25,26,27 | RACK NODE 1 - PORT 1 |

## CTRL RECEPTACLE STATION - TYPE 402 | 6" = 1'-0" | 2




| STA. | ID | LOCATION | MOUNTING | BOX SIZE | FINISH | NETWORK PORT # | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| CRS | 8 | STAGE - DSL (W.A.P.) | FLUSH | 1G DEEP BY E.C. | BLACK | 9 | |
| CRS | 21 | FOH LTG BATTEN - SL | INTEGRAL | N/A | BLACK | 65 | |

## CTRL RECEPTACLE STATION - TYPE 403 | 6" = 1'-0" | 3

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

CONSULTANT:

THE RUZIKA COMPANY
2 Executive Circle, Suite 290
Irvine, California 92614
Ph (949) 253-3479 Fax (949) 250-0181
www.ruzika.com
LIGHTING DESIGNERS + THEATRE CONSULTANTS

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING DETAILS - CONTROL DEVICES**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

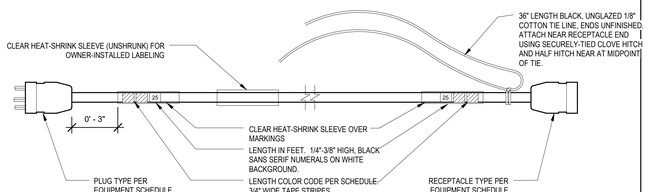
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**TL8.21**

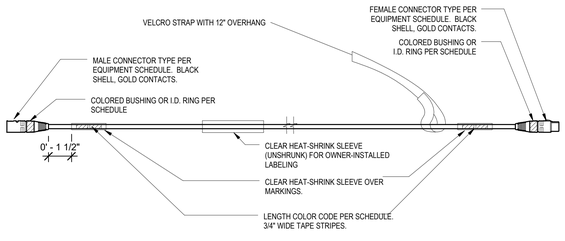
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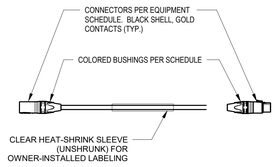
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POWER EXTENSION CABLE




CONTROL EXTENSION CABLE




CONTROL ADAPTER CABLE

## CABLE LENGTH COLOR CODE

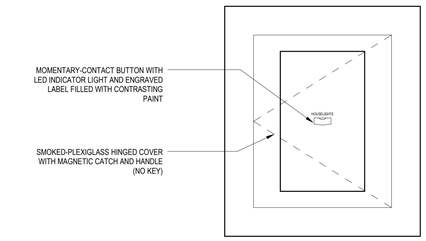
| LENGTH | STRIPES |
|---|---|
| 6' | YELLOW |
| 10' | RED |
| 15' | (1) YELLOW, (1) RED |
| 25' | ORANGE |
| 50' | BROWN |

## CONTROL CABLE BUSHING COLORS

| DESCRIPTION | BUSHING COLOR |
|---|---|
| DMX 512 WITH XLR5 CONNECTORS (XX) | VIOLET |
| NETWORK CABLE - ETHERCON (X ONLY) | BLUE |
| PORTABLE CONTROL STATION | N/A |
| DMX TURNAROUND - XLR5 TO XLR5 (XX) | VIOLET |

NOTES:
1. DO NOT APPLY ADDITIONAL LABELING TO CABLES WITH MANUFACTURER NAME OR PART #'S.
2. UTILIZE NEUTRIK XX-SERIES CONNECTORS FOR ALL XLR 3, 4, 5, & 6 PIN CABLES. UTILIZE NEUTRIK X-SERIES CONNECTORS FOR ALL ETHERCON CABLES. UTILIZE CONNECTORS WITH BLACK SHELLS AND GOLD PLATED CONTACTS FOR ALL DATA CABLES.
3. DMX512 CABLES TO BE CONSTRUCTED WITH TMB PC224P CABLE. NETWORK CABLES TO BE CONSTRUCTED FROM TMB PCCAT5EP CABLE. OTHER CABLES ONLY WITH PRE-APPROVAL.
4. IN ORDER TO MAINTAIN CONSISTENCY BETWEEN VENDORS, ALL TAPE STRIPES SHALL BE VIA 3/4" WIDE SCOTCH #35 COLOR CODING ELECTRICAL TAPE. WHERE 2 STRIPES ARE USED, LEAVE ¼" GAP BETWEEN STRIPS.

## PORTABLE ADAPTER CABLE DETAILS — 3" = 1'-0" — 5




| STA. | ID | LOCATION | MOUNTING | BACKBOX | FINISH | LABEL-1 | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| HCS | 2 | HR REAR AUDITORIUM ENTRY | FLUSH | SPECIAL BY LTG. MFR. | CREAM W/ CREAM COVER | HOUSELIGHTS | |
| HCS | 5 | HR AUDITORIUM ENTRY | FLUSH | SPECIAL BY LTG. MFR. | CREAM W/ CREAM COVER | HOUSELIGHTS | |
| HCS | 8 | HL AUDITORIUM ENTRY | FLUSH | SPECIAL BY LTG. MFR. | CREAM W/ CREAM COVER | HOUSELIGHTS | |

## HOUSELIGHT CONTROL STATION - TYPE 601 — 6" = 1'-0" — 4

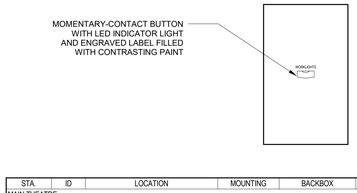



| STA. | ID | LOCATION | MOUNTING | BACKBOX | FINISH | LABEL-1 | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| HCS | 1 | HR REAR VESTIBULE | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 3 | HR VESTIBULE - DS | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 4 | HR VESTIBULE - US | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 6 | HL VESTIBULE - DS | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 7 | HL VESTIBULE - US | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 9 | HR FRONT VESTIBULE - DS | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 10 | HR FRONT VEST AT FRT ROW | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 11 | HR FRONT VESTIBULE AT PIT | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |
| HCS | 12 | HR FRONT VEST AT SHOP STAIR | FLUSH | 1G DEEP BY E.C. | CREAM | HOUSELIGHTS | |

## HOUSELIGHT CONTROL STATION - TYPE 602 — 6" = 1'-0" — 8

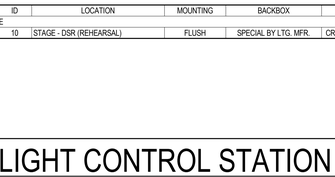



## CTRL STATION PIPE MOUNTING BRACKET — 3" = 1'-0" — 9



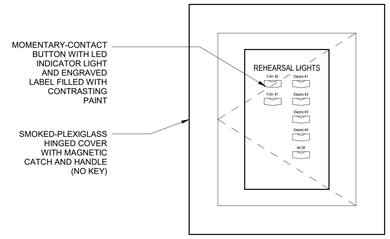

| STA. | ID | LOCATION | MOUNTING | BACKBOX | FINISH | LABEL-1 | NOTES |
|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | |
| WCS | 1 | HL FRONT VESTIBULE - DS | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 2 | HL FRONT VESTIBULE AT PIT | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 4 | ORCH PIT - SL | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 5 | ORCH PIT - SR | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 6 | DSL STAGE ALCOVE | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 7 | DSR STAGE ALCOVE | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 9 | STAGE - DSR | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 11 | STAGE - SL | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 12 | STAGE - USL | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 13 | STAGE - USR | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 14 | HR FOH CATWALK VEST. - DS | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 15 | FOH CATWALK - HR | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 16 | FOH CATWALK - HL | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 17 | HL FOH CATWALK VEST. - DS | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |
| WCS | 18 | HR FOH CATWALK VEST. - US | FLUSH | 1G DEEP BY E.C. | CREAM | WORKLIGHTS | |

## WORKLIGHT CONTROL STATION - TYPE 501 — 6" = 1'-0" — 1




| STA. | ID | LOCATION | MOUNTING | BACKBOX | FINISH | LABEL-1 | LABEL-2 | NOTES |
|---|---|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | | | |
| WCS | 3 | HL FRONT VESTIBULE - US | FLUSH | 1G DEEP BY E.C. | CREAM | VESTIBULE | CATWALK VEST. | |
| WCS | 8 | STAGE - DSL | FLUSH | 1G DEEP BY E.C. | CREAM | STAGE | MOTOR GALLERY | |
| WCS | 19 | HL FOH CATWALK VEST. - US | SURFACE | 1G BY LTG. MFR. | CREAM W/ BLACK BOX | WORKLIGHTS | VESTIBULE | |
| WCS | 20 | MOTOR GALLERY - DSL | FLUSH | 1G DEEP BY E.C. | CREAM | MOTOR GALLERY | STAGE | |

## WORKLIGHT CONTROL STATION - TYPE 502 — 6" = 1'-0" — 2




| STA. | ID | LOCATION | MOUNTING | BACKBOX | FINISH | NOTES |
|---|---|---|---|---|---|---|
| MAIN THEATRE | | | | | | |
| WCS | 10 | STAGE - DSR (REHEARSAL) | FLUSH | SPECIAL BY LTG. MFR. | CREAM W/ BLACK COVER | |

## WORKLIGHT CONTROL STATION - TYPE 503 — 6" = 1'-0" — 3

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**

CONSULTANT:
THE RUZIKA COMPANY
2 Executive Circle, Suite 290
Irvine, California 92614
Ph (949) 253-3479 Fax (949) 250-0181
www.ruzika.com
LIGHTING DESIGNERS + THEATRE CONSULTANTS

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**STAGE LIGHTING DETAILS - CONTROL DEVICES**

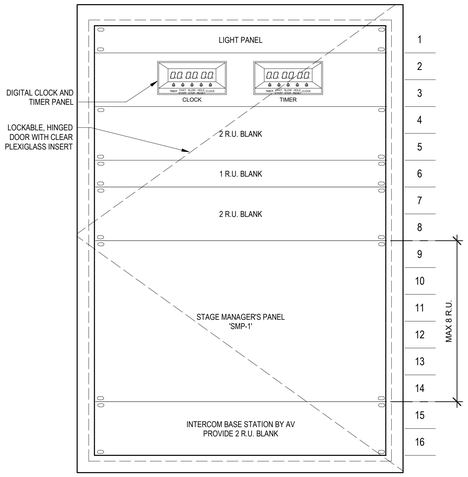
**DSA SUBMITTAL**
FILE NO.: 19-H10 — A NO.: 03-123641
DATE: 06/23/2025 — CLIENT PROJ NO: 3361008100
SHEET:

**TL8.22**

Autodesk Docs://3361008100 EMUSD Arroyo New Construction/3361008100-TH-BLDGS.rvt
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PLEASE RECYCLE

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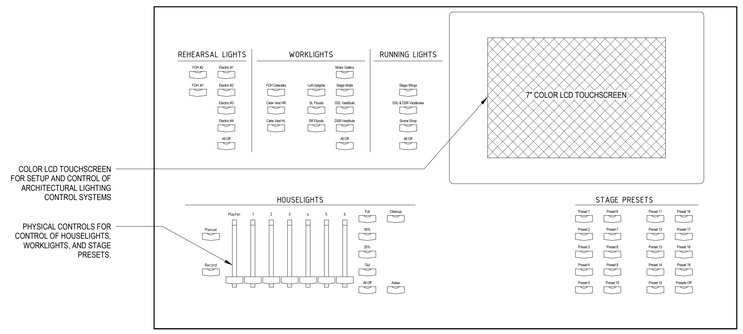



EQUIPMENT RACK TO BE MIDDLE ATLANTIC # DWR-16-17 OR APPROVED EQUAL.
REF 2/TL7.12 FOR MOUNTING

MAX GROSS WEIGHT: 200 LBS

| STA. | ID | LOCATION | MOUNTING |
|---|---|---|---|
| MAIN THEATRE | | | |
| CER | 2 | STAGE WALL - DSL | FLUSH |

## CONTROL EQUIPMENT RACK - CER-2 | 3" = 1'-0" | 5




| STA. | ID | LOCATION | MOUNTING | FINISH |
|---|---|---|---|---|
| MAIN THEATRE | | | | |
| SMP | 1 | PANEL IN RACK 'CER-2' | RACK | BLACK |

## STAGE MANAGER'S PANEL | 6" = 1'-0" | 6

STAGE LIGHTING CONTROL NETWORK
12-PORT LABEL PANELS A (UPPER) & B (LOWER).
24-PORT NETWORK PATCH PANEL A (PORTS 1-24)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIM RACK DR-1 | RELAY RACK RR-1 | RELAY RACK RR-2 | ARCH. CTRL. PROC. | DMX NODE #1 | DMX NODE #2 | 0-10V INTERFACE | SMP (LCD) | STAGE DSL (W.A.P.) | CONTROL BOOTH | CONTROL BOOTH | CONTROL BOOTH |
| **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** |
| AV BOOTH | AV BOOTH | AUD. CENTER | AUD. CENTER | AUD. CENTER | | | | STAGE APRON SL (DMX) | STAGE APRON SL | STAGE APRON SR (DMX) | STAGE APRON SR |

STAGE LIGHTING CONTROL NETWORK
12-PORT LABEL PANELS C (UPPER) & D (LOWER).
24-PORT NETWORK PATCH PANEL B (PORTS 25-48)

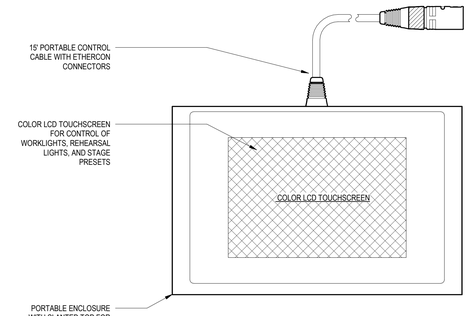
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STAGE DSL (DMX) | STAGE DSL | STAGE DSL | STAGE DSR (DMX) | STAGE DSR | STAGE DSR | STAGE MSL (DMX) | STAGE MSL | STAGE MSR (DMX) | STAGE MSR | STAGE USL (DMX) | STAGE USL |
| **37** | **38** | **39** | **40** | **41** | **42** | **43** | **44** | **45** | **46** | **47** | **48** |
| STAGE USC (DMX) | STAGE USC | STAGE USR (DMX) | STAGE USR | BOX BOOM #2 SL (DMX) | BOX BOOM #2 SL | BOX BOOM #2 SR (DMX) | BOX BOOM #2 SR | BOX BOOM #1 SL (DMX) | BOX BOOM #1 SL | BOX BOOM #1 SR (DMX) | BOX BOOM #1 SR |

STAGE LIGHTING CONTROL NETWORK
12-PORT LABEL PANELS E (UPPER) & F (LOWER)
24-PORT NETWORK PATCH PANEL C (PORTS 49-72)

| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FOH CATW #2 (DMX) | FOH CATW #2 | FOH CATW #2 | FOH CATW #1 (DMX) | FOH CATW #1 | | | | H. REAR LTG. BATT. (DMX) | H. REAR LTG. BATT. | | |
| **61** | **62** | **63** | **64** | **65** | **66** | **67** | **68** | **69** | **70** | **71** | **72** |
| ELEC #1 SR | ELEC #2 SR | ELEC #3 SR | ELEC #4 SR | FOH ELEC SL | FOH ELEC SR (DMX) | WORK LIGHT DSR (DMX) | WORK LIGHT USR (DMX) | MOTOR GLRY - USL (DMX) | MOTOR GLRY - USL | MOTOR GLRY - USL | |

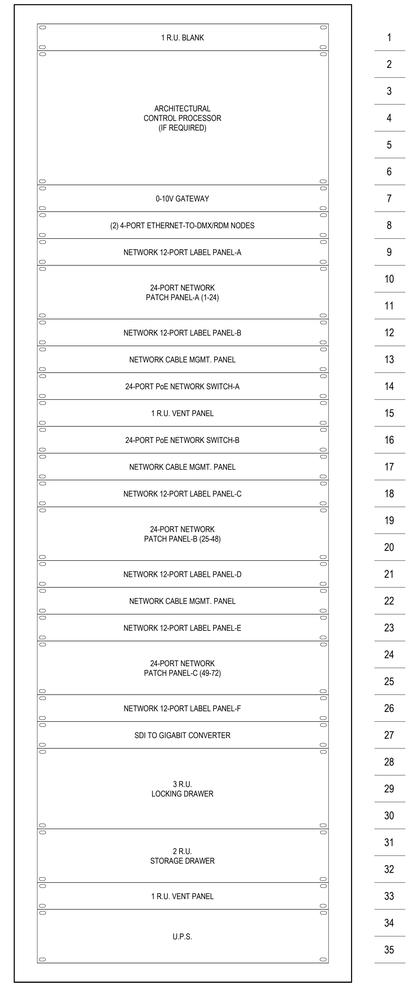
NOTES:
1. REFER TO 1/TL8.23 FOR PLACEMENT OF PATCH AND LABEL PANELS IN CONTROL EQUIPMENT RACK 'CER-1'.
2. SUPPLY RED PATCH CABLES FOR PERMANENTLY-CONNECTED DEVICES (PORTS 1-8). ALL OTHER PATCH CABLES ARE TO BE BLUE, OR ANOTHER CONTRASTING COLOR.

## NETWORK PATCH PANEL LAYOUTS | 6" = 1'-0" | 3




| STA. | ID | LOCATION | MOUNTING | FINISH |
|---|---|---|---|---|
| MAIN THEATRE | | | | |
| PCS | 1 | CONTROL BOOTH | PORTABLE | |

## PORT. CTRL STATION - PCS-1-TYPE 801 | 6" = 1'-0" | 4




EQUIPMENT RACK TO BE MIDDLE ATLANTIC # DWR-35-26 OR APPROVED EQUAL
REF 1/TL7.12 FOR MOUNTING

MAX GROSS WEIGHT: 435 LBS

| STA. | ID | LOCATION | MOUNTING |
|---|---|---|---|
| MAIN THEATRE | | | |
| CER | 1 | STAGE ELEC ROOM | WALL |

## CONTROL EQUIPMENT RACK - CER-1 | 3" = 1'-0" | 1

PROJECT NAME
STAGE LIGHTING NETWORK PORT LOCATIONS

| LOCATION | PORTS | INSTALLED CABLE LENGTH | MAX PORTABLE CABLE LENGTH |
|---|---|---|---|
| CONTROL BOOTH | 10, 11, 12 | XX' | XX' |
| XXXXXXXXXX | XX, XX | XX' | XX' |
| XXXXXXXXXX | XX, XX | XX' | XX' |
| XXXXXXXXXX | XX, XX | XX' | XX' |
| | | XX' | XX' |

PROVIDE PRINTED SCHEDULE WITH NETWORK RECEPTACLE LOCATIONS AND CABLE LENGTHS ON PLASTIC, FOR INSTALLATION ADJACENT TO EACH CONTROL EQUIPMENT RACK WITH PATCH PANEL.

## NETWORK CABLE LENGTH CHART | 12" = 1'-0" | 2

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HMC Architects

3361008100

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LIGHTING DESIGNERS • THEATRE CONSULTANTS


FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING DETAILS - CONTROL DEVICES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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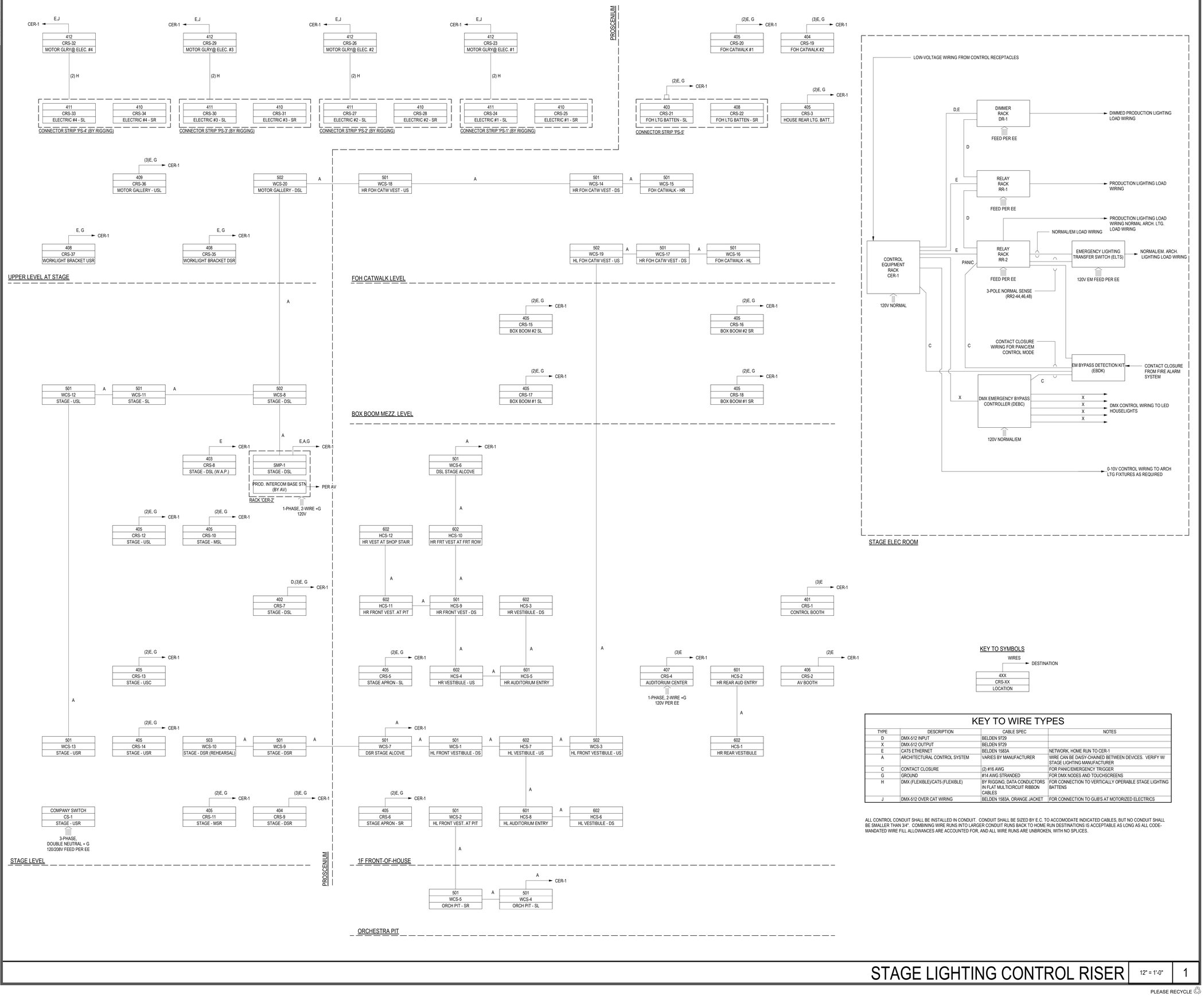
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## KEY TO WIRE TYPES

| TYPE | DESCRIPTION | CABLE SPEC | NOTES |
|---|---|---|---|
| D | DMX-512 INPUT | BELDEN 9729 | |
| X | DMX-512 OUTPUT | BELDEN 9729 | |
| E | CAT5 ETHERNET | BELDEN 1583A | NETWORK, HOME RUN TO CER-1 |
| A | ARCHITECTURAL CONTROL SYSTEM | VARIES BY MANUFACTURER | WIRE CAN BE DAISY-CHAINED BETWEEN DEVICES. VERIFY W/ STAGE LIGHTING MANUFACTURER |
| C | CONTACT CLOSURE | (2) #16 AWG | FOR PANIC/EMERGENCY TRIGGER |
| G | GROUND | #14 AWG STRANDED | FOR DMX NODES AND TOUCHSCREENS |
| H | DMX (FLEXIBLE)/CAT5 (FLEXIBLE) | BY RIGGING; DATA CONDUCTORS IN FLAT MULTICIRCUIT RIBBON CABLES | FOR CONNECTION TO VERTICALLY OPERABLE STAGE LIGHTING BATTENS |
| J | DMX-512 OVER CAT WIRING | BELDEN 1583A, ORANGE JACKET | FOR CONNECTION TO GUB'S AT MOTORIZED ELECTRICS |

ALL CONTROL CONDUIT SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE SIZED BY E.C. TO ACCOMODATE INDICATED CABLES, BUT NO CONDUIT SHALL BE SMALLER THAN 3/4". COMBINING WIRE RUNS INTO LARGER CONDUIT RUNS BACK TO HOME RUN DESTINATIONS IS ACCEPTABLE AS LONG AS ALL CODE-MANDATED WIRE FILL ALLOWANCES ARE ACCOUNTED FOR, AND ALL WIRE RUNS ARE UNBROKEN, WITH NO SPLICES.

# STAGE LIGHTING CONTROL RISER

12" = 1'-0" | 1

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## NOTES


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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING CONTROL RISER**

**DSA SUBMITTAL**

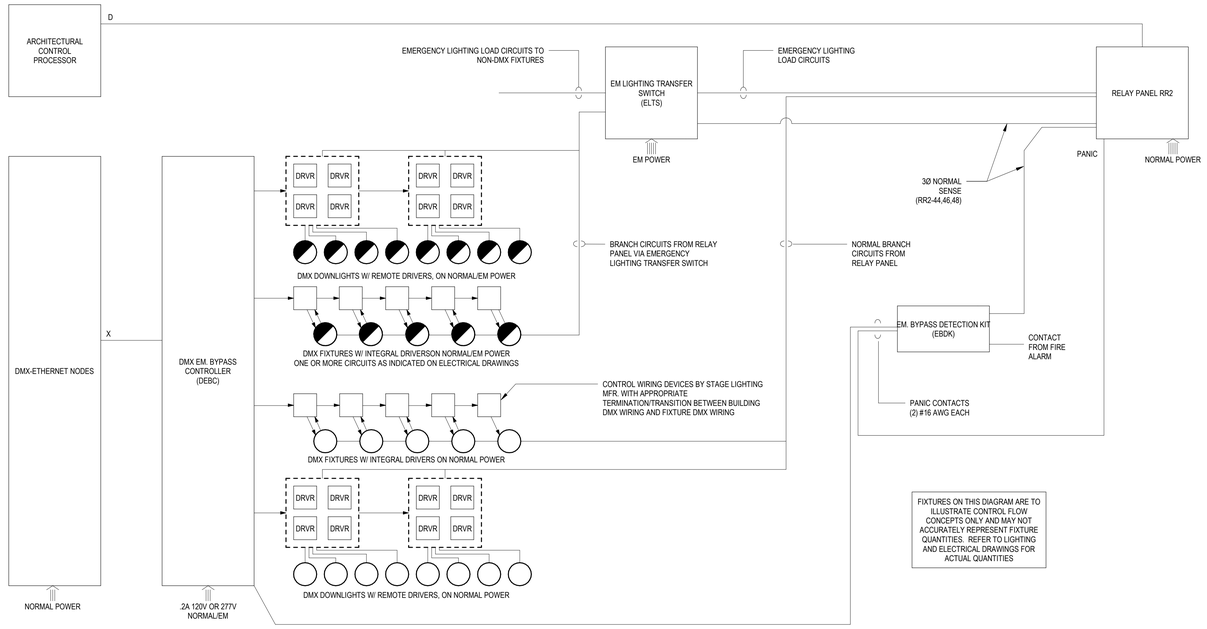
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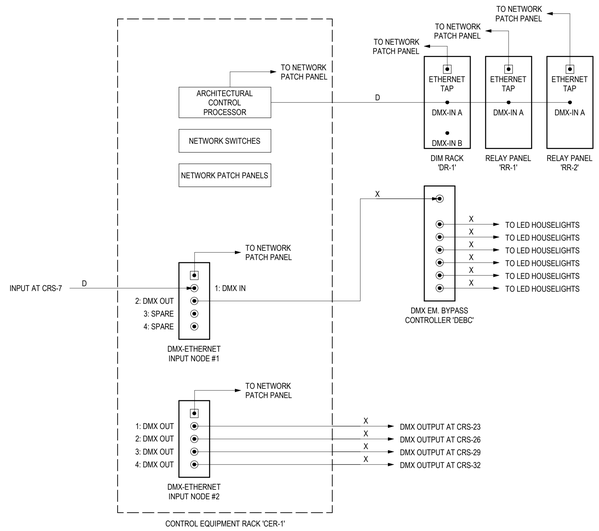
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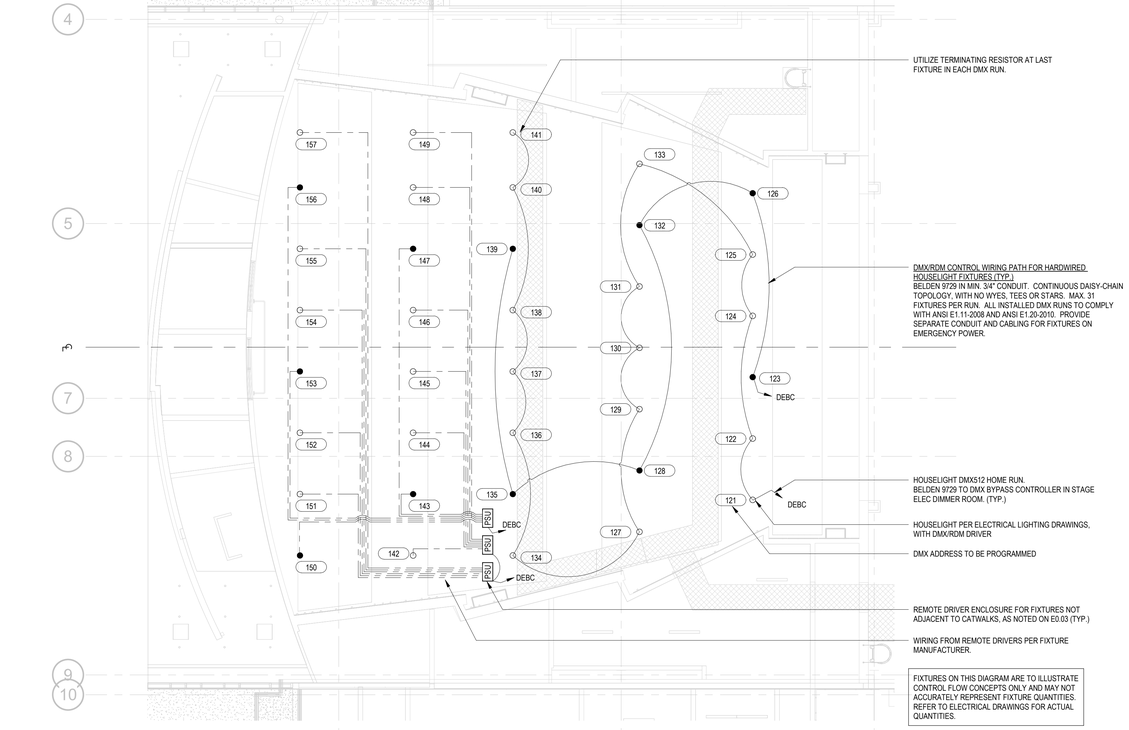
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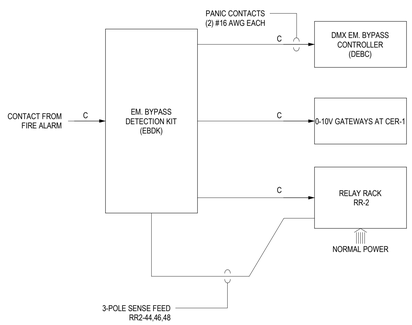

## HOUSELIGHT CONTROL FLOW | 12" = 1'-0" | 2




## DMX SIGNAL FLOW DIAGRAM | 12" = 1'-0" | 1




## HOUSELIGHT DMX COORDINATION PLAN | 1/8" = 1'-0" | 4




## PANIC RISER | 12" = 1'-0" | 3

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING RISERS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

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# SCHEDULE OF EQUIPMENT QUANTITIES

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| QTY. | THEATRE<br>STAGE LIGHTING DIMMING / CONTROL TYPE |
|---|---|
| 1 | STAGE LIGHTING CONTROL CONSOLE (CC-1) WITH U.P.S. + ACCESSORIES |
| 2 | TOUCHSCREEN VIDEO DISPLAYS FOR CC-1 CONTROL CONSOLE |
| 1 | PORTABLE VIDEO NODE (VN-1) |
| 2 | TOUCHSCREEN VIDEO DISPLAY FOR VIDEO NODE |
| 1 | PORTABLE CONTROL STATION (PCS-1) FOR HOUSELIGHTS AND AUXILIARY LIGHTING SYSTEMS |
| 2 | P.O.E. WIRELESS ACCESS POINT FOR STAGE LIGHTING NETWORK |
| 1 | HANDHELD WIRELESS REMOTE FOCUS DEVICE (WRFU-1) |
| | |
| 1 | CONTROL EQUIPMENT RACK 'CER-1' AT DIMMER ROOM; CONTENTS PER ELEVATION |
| 1 | CONTROL EQUIPMENT RACK 'CER-2' AT STAGE; CONTENTS PER ELEVATION |
| | |
| 2 | PORTABLE 2-PORT ETHERNET/DMX512 OUTPUT NODE. (PoE, WITH C-CLAMP, 2x DMX512 OUTPUTS) |
| 1 | PORTABLE 2-PORT ETHERNET/DMX512 INPUT NODE. (PoE, 2x DMX512 INPUTS OR XLR5-M TO XLR5-M TURNAROUND CABLES) |
| | |
| 1 | 200A 3-PHASE COMPANY SWITCH w/ CAM-STYLE SINGLE POLE FEEDER CONNECTORS & CHAMBER FOR BARE LUG CONNECTIONS. |
| | |
| 1 | EMERGENCY LIGHTING TRANSFER SWITCH, MIN. 12 CIRCUIT. VERIFY FEED TYPE AND CIRCUIT COUNT WITH ELECTRICAL |
| 1 | EMERGENCY LIGHTING DETECTION KIT (EBDK) |
| 1 | EMERGENCY DMX BYPASS CONTROLLER (DEBC) |
| | |
| 1 | 12 MODULE DIMMER CABINET |
| 12 | 2.4kw DUAL THRU-POWER MODULES W/ 350 MICRO-SECOND RISE TIME DIMMER, 20A RELAY, CONSTANT POWER (INCLUDES SPARE MODULES) |
| 2 | 1.2kw DUAL REVERSE-PHASE (ELV) DIMMER MODULES (NO SPARE MODULES) |
| | |
| 2 | 48-CIRCUIT MAINS-FED RELAY PANEL |
| | |
| 3 | PORTABLE DIMMER MODULES WITH SINGLE 750W OUTPUT VIA GPC RECEPTACLE, C-CLAMP, 120V INPUT POWER CORD WITH 5-15P CONNECTOR INSTALLED. |
| | |
| LOT | CONTROL RECEPTACLE STATIONS PER CONTROL DEVICE SUMMARY AND PLANS |
| LOT | HOUSELIGHT/WORKLIGHT CONTROL STATIONS PER CONTROL DEVICE SUMMARY AND PLANS |
| LOT | CIRCUIT DISTRIBUTION PLUG BOXES AND CONNECTOR STRIPS PER CIRCUIT DEVICE SUMMARY AND PLANS |
| | |

| QTY. | STAGE LIGHTING FIXTURE TYPE |
|---|---|
| 2 | 19° HALOGEN ELLIPSOIDAL REFLECTOR SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED. ACCESSORIES PER SPECIFICATION. |
| 10 | 14° COLOR-CHANGING LED PROFILE SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 15 | 19° COLOR-CHANGING LED PROFILE SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 40 | 26° COLOR-CHANGING LED PROFILE SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 14 | 36° COLOR-CHANGING LED PROFILE SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 4 | 50° COLOR-CHANGING LED PROFILE SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 5 | 15° - 30° ZOOM COLOR-CHANGING LED PROFILE , C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED. |
| 21 | COLOR-CHANGING LED WASHLIGHT W/ 25°-50° VARIABLE BEAM SPREAD, C-CLAMP, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTOR INSTALLED |
| 8 | LED CYCLORAMA WASH LIGHT W/ ASYMMETRICAL OPTICS, HANGER BRACKETS AND C-CLAMPS, SAFETY CABLE, POWER CORD WITH GROUNDED 5-15P CONNECTORS INSTALLED. ALTMAN SPECTRA-CYC OR APPROVED EQUAL. 200W |
| 8 | 8" LED FRESNEL SPOTLIGHT W/ C-CLAMP, SAFETY CABLE, L5-20 TWISTLOCK CONNECTOR INSTALLED (FOH REHEARSAL LIGHT) |
| 26 | WIDE FLOOD LED WORKLIGHT W/ C-CLAMP, SAFETY CABLE, L5-20 TWISTLOCK CONNECTOR INSTALLED (STAGE OVERHEAD REHEARSAL LIGHT FLOODS) |
| 6 | LED RUNNING LIGHT W/ BARN DOORS, DIFFUSION LENSES, C-CLAMP, SAFETY CABLE, POWER LEAD WITH 5-15P CONNECTOR INSTALLED. |
| 1 | GHOSTLIGHT WITH LAMP, 5-15P CONNECTOR INSTALLED |

| QTY. | STAGE LIGHTING ACCESSORY TYPE |
|---|---|
| | NOTE: MIXTURE OF POWERCON AND TRUE1 CONNECTORS WILL BE COORDINATED WITH FIXTURE SUBMITTALS |
| LOT | CAT-5e ETHERNET DATA EXTENSION CABLES (PROPLEX CABLE, ETHERCON CONNECTORS), WITH LABELING, TIE LINE.<br>4 @ 15' / 2 @ 25' |
| LOT | PORTABLE DMX512 CONTROL EXTENSION CABLES WITH 5-PIN XLR CONNECTORS, LABELING, TIE LINE.<br>(TMB PRO-PLEX CABLE OR EQUAL)<br>55 @ 6' / 60 @ 10' / 30 @ 15' / 8 @ 25' / 2 @ 50' |
| LOT | 12/3 TYPE SO PORTABLE STAGE EXTENSION CABLES WITH MALE AND FEMALE GROUNDED STAGE PIN CONNECTORS LABELING, TIE LINE.<br>4 @ 15' / 4 @ 25' |
| LOT | 12/3 TYPE SO PORTABLE STAGE EXTENSION CABLES WITH MALE AND FEMALE 5-20 CONNECTORS, LABELING, TIE LINE.<br>12 @ 6' / 4 @ 10' / 8 @ 15' / 8 @ 25' / 2 @ 50' |
| LOT | 12/3 TYPE SO PORTABLE STAGE EXTENSION CABLES WITH MALE AND FEMALE L5-20 CONNECTORS, LABELING, TIE LINE.<br>4 @ 6' / 4 @ 10' |
| LOT | PORTABLE POWERCON OR TRUE1 JUMPER CABLE<br>15 @ 6' / 15 @ 10' |
| 4 | POWERCON COUPLER |
| 4 | MOLDED-RUBBER-CABLE TWOFERS WITH EDISON CONNECTORS |
| 4 | 12/3 SO PORTABLE MALE GROUNDED STAGE PIN TO FEMALE GROUNDED EDISON ADAPTORS - 1'-0" LONG |
| 18 | PORTABLE DMX512 TERMINATING PLUG (XLR5-M w/ 120 OHM RESISTOR) |
| | |
| 2 | ROLLING ROAD CASE FOR STORAGE OF ACCESSORIES |
| 10 | 4-PANE STAGE LIGHTING BARNDOORS FOR LED WASHLIGHTS, W/ PERMANENTLY ATTACHED SAFETY CABLE |
| 6 | 4-PANE STAGE LIGHTING BARNDOORS FOR LED RUNNING LIGHTS, W/ PERMANENTLY ATTACHED SAFETY CABLE |
| 20 | STAGE LIGHTING TOPHATS FOR 19°/26°/36° LED PROFILE SPOTLIGHTS, W/ PERMANENTLY ATTACHED SAFETY CABLE |
| 5 | STAGE LIGHTING TOPHATS FOR 50° LED PROFILE SPOTLIGHTS, W/ PERMANENTLY ATTACHED SAFETY CABLE |
| 32 | STAGE LIGHTING TEMPLATE HOLDER (A SIZE) FOR LED PROFILE SPOTLIGHTS |
| 1 | BLACK 1/8" UNGLAZED TIELINE, 3000' ROLL |

# CIRCUIT DEVICE SUMMARY

| DEVICE | ID. # | TYPE | LOCATION |
|---|---|---|---|
| MAIN THEATRE | | | |
| PS | 1 | 102 | ELECTRIC #1 |
| PS | 2 | 102 | ELECTRIC #2 |
| PS | 3 | 102 | ELECTRIC #3 |
| PS | 4 | 102 | ELECTRIC #4 |
| PS | 5 | 101 | FOH LIGHTING BATTEN |
| | | | |
| PB | 1 | 205 | STAGE APRON - SL |
| PB | 2 | 205 | STAGE APRON - SR |
| PB | 3 | 205 | STAGE - DSL |
| PB | 4 | 205 | STAGE - DSR |
| PB | 5 | 205 | STAGE - MSL |
| PB | 6 | 205 | STAGE - MSR |
| PB | 7 | 205 | STAGE - USL |
| PB | 8 | 205 | STAGE - USC |
| PB | 9 | 205 | STAGE - USR |
| PB | 10 | 204 | BOX BOOM #2 SL |
| PB | 11 | 204 | BOX BOOM #2 SR |
| PB | 12 | 204 | BOX BOOM #1 SL |
| PB | 13 | 204 | BOX BOOM #1 SR |
| PB | 14 | 206 | HOUSE REAR LIGHTING BATTEN |
| PB | 15 | 206 | HOUSE REAR LIGHTING BATTEN |
| PB | 16 | 202 | FOH CATWALK #2 |
| PB | 17 | 202 | FOH CATWALK #2 |
| PB | 18 | 201 | FOH CATWALK #2 |
| PB | 19 | 201 | FOH CATWALK #2 |
| PB | 20 | 202 | FOH CATWALK #2 |
| PB | 21 | 202 | FOH CATWALK #2 |
| PB | 22 | 201 | FOH CATWALK #1 |
| PB | 23 | 201 | FOH CATWALK #1 |
| PB | 24 | 201 | FOH CATWALK #1 |
| PB | 25 | 201 | FOH CATWALK #1 |
| PB | 26 | 201 | FOH CATWALK #1 |
| PB | 27 | 201 | FOH CATWALK #1 |
| PB | 28 | 203 | MOTOR GALLERY - MSL |
| PB | 29 | 203 | MOTOR GALLERY - USL |
| PB | 30 | 207 | MOTOR GALLERY- USL (CYC ELEC) |
| PB | 31 | 208 | WORKLIGHT BRACKET DSR |
| PB | 32 | 208 | WORKLIGHT BRACKET USR |
| | | | |
| GUB | 1 | 302 | MOTOR GALLERY AT ELEC #1 |
| GUB | 2 | 302 | MOTOR GALLERY AT ELEC #2 |
| GUB | 3 | 302 | MOTOR GALLERY AT ELEC #3 |
| GUB | 4 | 302 | MOTOR GALLERY AT ELEC #4 |

# CONTROL DEVICE SUMMARY

| DEVICE | ID. # | TYPE | LOCATION |
|---|---|---|---|
| MAIN THEATRE | | | |
| ELTS | | | STAGE ELEC ROOM |
| EBDK | | | STAGE ELEC ROOM |
| DEBC | | | STAGE ELEC ROOM |
| CER | 1 | | STAGE ELEC ROOM |
| RR | 1 | | STAGE ELEC ROOM |
| DR | 1 | | STAGE ELEC ROOM |
| CER | 2 | | STAGE WALL - DSL |
| RR | 2 | | STAGE ELEC ROOM |
| | | | |
| CRS | 1 | 401 | CONTROL BOOTH |
| CRS | 2 | 406 | AV BOOTH |
| CRS | 3 | 405 | HOUSE REAR LIGHTING BATTEN |
| CRS | 4 | 407 | AUDITORIUM CENTER |
| CRS | 5 | 405 | STAGE APRON - SL |
| CRS | 6 | 405 | STAGE APRON - SR |
| CRS | 7 | 402 | STAGE - DSL |
| CRS | 8 | 403 | STAGE - DSL (W.A.P.) |
| CRS | 9 | 404 | STAGE - DSR |
| CRS | 10 | 405 | STAGE - MSL |
| CRS | 11 | 405 | STAGE - MSR |
| CRS | 12 | 405 | STAGE - USL |
| CRS | 13 | 405 | STAGE - USC |
| CRS | 14 | 405 | STAGE - USR |
| CRS | 15 | 405 | BOX BOOM #2 SL |
| CRS | 16 | 405 | BOX BOOM #2 SR |
| CRS | 17 | 405 | BOX BOOM #1 SL |
| CRS | 18 | 405 | BOX BOOM #1 SR |
| CRS | 19 | 404 | FOH CATWALK #2 |
| CRS | 20 | 405 | FOH CATWALK #1 |
| CRS | 21 | 403 | FOH LTG BATTEN - SL |
| CRS | 22 | 408 | FOH LTG BATTEN - SR |
| CRS | 23 | 412 | MOTOR GALLERY@ ELEC. #1 GUB |
| CRS | 24 | 411 | ELECTRIC #1 - SL |
| CRS | 25 | 410 | ELECTRIC #1 -SR |
| CRS | 26 | 412 | MOTOR GALLERY@ ELEC. #2 GUB |
| CRS | 27 | 411 | ELECTRIC #2 - SL |
| CRS | 28 | 410 | ELECTRIC #2 -SR |
| CRS | 29 | 412 | MOTOR GALLERY@ ELEC. #3 GUB |
| CRS | 30 | 411 | ELECTRIC #3 - SL |
| CRS | 31 | 410 | ELECTRIC #3 -SR |
| CRS | 32 | 412 | MOTOR GALLERY@ ELEC. #4 GUB |
| CRS | 33 | 411 | ELECTRIC #4 - SL |
| CRS | 34 | 410 | ELECTRIC #4 -SR |
| CRS | 35 | 408 | WORKLIGHT BRACKET DSR |
| CRS | 36 | 409 | MOTOR GALLERY - USL |
| CRS | 37 | 408 | WORKLIGHT BRACKET USR |
| | | | |
| HCS | 1 | 602 | HR REAR VESTIBULE |
| HCS | 2 | 601 | HR REAR AUDITORIUM ENTRY |
| HCS | 3 | 602 | HR VESTIBULE - DS |
| HCS | 4 | 602 | HR VESTIBULE - US |
| HCS | 5 | 601 | HR AUDITORIUM ENTRY |
| HCS | 6 | 602 | HL VESTIBULE - DS |
| HCS | 7 | 602 | HL VESTIBULE - US |
| HCS | 8 | 601 | HL AUDITORIUM ENTRY |
| HCS | 9 | 602 | HR FRONT VESTIBULE - DS |
| HCS | 10 | 602 | HR FRONT VEST AT FRT ROW |
| HCS | 11 | 602 | HR FRONT VESTIBULE AT PIT |
| HCS | 12 | 602 | HR FRONT VEST AT SHOP STAIR |
| | | | |
| WCS | 1 | 501 | HL FRONT VESTIBULE - DS |
| WCS | 2 | 501 | HL FRONT VESTIBULE AT PIT |
| WCS | 3 | 502 | HL FRONT VESTIBULE - US |
| WCS | 4 | 501 | ORCH PIT - SL |
| WCS | 5 | 501 | ORCH PIT - SR |
| WCS | 6 | 501 | DSL STAGE ALCOVE |
| WCS | 7 | 501 | DSR STAGE ALCOVE |
| WCS | 8 | 502 | STAGE - DSL |
| WCS | 9 | 501 | STAGE - DSR |
| WCS | 10 | 503 | STAGE - DSR (REHEARSAL) |
| WCS | 11 | 501 | STAGE - SL |
| WCS | 12 | 501 | STAGE - USL |
| WCS | 13 | 501 | STAGE - USR |
| WCS | 14 | 501 | HR FOH CATWALK VEST. - DS |
| WCS | 15 | 501 | FOH CATWALK - HR |
| WCS | 16 | 501 | FOH CATWALK - HL |
| WCS | 17 | 501 | HL FOH CATWALK VEST. - DS |
| WCS | 18 | 501 | HR FOH CATWALK VEST. - US |
| WCS | 19 | 502 | HL FOH CATWALK VEST. - US |
| WCS | 20 | 502 | MOTOR GALLERY - DSL |
| | | | |
| SMP | 1 | - | PANEL IN RACK 'CER-2' |
| | | | |
| PCS | 1 | 801 | CONTROL BOOTH |

# DIMMER AND RELAY PANEL SCHEDULES

DIMMER PANEL DR-1

| MODULE TYPE | SYSTEM ADDRESS | RACK CIRCUIT | LOCATION | FUNCTION | ARCH LTG. CONTROL WIRING |
|---|---|---|---|---|---|
| DIM+ RELAY+ CONST | 1 | 1 | STAGE - DSL | | |
| | 2 | 2 | STAGE - DSL | | |
| DIM+ RELAY+ CONST | 3 | 3 | STAGE - DSR | | |
| | 4 | 4 | STAGE - DSR | | |
| DIM+ RELAY+ CONST | 5 | 5 | STAGE - MSL | | |
| | 6 | 6 | STAGE - MSL | | |
| DIM+ RELAY+ CONST | 7 | 7 | STAGE - MSR | | |
| | 8 | 8 | STAGE - MSR | | |
| DIM+ RELAY+ CONST | 9 | 9 | STAGE - USL | | |
| | 10 | 10 | STAGE - USL | | |
| DIM+ RELAY+ CONST | 11 | 11 | STAGE - USC | | |
| | 12 | 12 | STAGE - USC | | |
| DIM+ RELAY+ CONST | 13 | 13 | STAGE - USR | | |
| | 14 | 14 | STAGE - USR | | |
| DIM+ RELAY+ CONST | 15 | 15 | ORCH PIT | | |
| | 16 | 16 | ORCH PIT | | |
| DIM+ RELAY+ CONST | 17 | 17 | | | |
| | 18 | 18 | | | |
| ELV | 19 | 19 | AUDITORIUM LOW-LEVEL | HOUSE LT FIXTS | |
| | 20 | 20 | AUD. REAR STAIR LOW-LEVEL | HOUSE LT FIXTS | |
| ELV | 21 | 21 | S/L LOCK LOW-LEVEL | HOUSE LT FIXTS | |
| | 22 | 22 | AUDITORIUM FRONT VEST LOW-LEVEL | HOUSE LT FIXTS | |
| DIM+ RELAY+ CONST | 23 | 23 | | | |
| | 24 | 24 | STAGE CATWALKS | RUN LTS | |

RELAY PANEL RR1

| LOCATION | FUNCTION | ARCH LTG. CONTROL WIRING | TYPE | RACK CIRCUIT | SYSTEM ADDRESS | SYSTEM ADDRESS | RACK CIRCUIT | TYPE | LOCATION | FUNCTION | ARCH LTG. CONTROL WIRING |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FOLLOWSPOT BOOTH | | | 1P 20A RELAY | 1 | 25 | 26 | 2 | 1P 20A RELAY | FOLLOWSPOT BOOTH | | |
| FOH CATWALK #2 | | | 1P 20A RELAY | 3 | 27 | 28 | 4 | 1P 20A RELAY | FOH CATWALK #2 | | |
| FOH CATWALK #2 | | | 1P 20A RELAY | 5 | 29 | 30 | 6 | 1P 20A RELAY | FOH CATWALK #2 | | |
| FOH CATWALK #2 | | | 1P 20A RELAY | 7 | 31 | 32 | 8 | 1P 20A RELAY | FOH CATWALK #2 | | |
| FOH CATWALK #1 | | | 1P 20A RELAY | 9 | 33 | 34 | 10 | 1P 20A RELAY | FOH CATWALK #1 | | |
| FOH CATWALK #1 | | | 1P 20A RELAY | 11 | 35 | 36 | 12 | 1P 20A RELAY | FOH CATWALK #1 | | |
| FOH CATWALK #1 | | | 1P 20A RELAY | 13 | 37 | 38 | 14 | 1P 20A RELAY | FOH CATWALK #1 | | |
| FOH ELECTRIC | | | 1P 20A RELAY | 15 | 39 | 40 | 16 | 1P 20A RELAY | FOH ELECTRIC | | |
| BOX BOOM #2 SL | | | 1P 20A RELAY | 17 | 41 | 42 | 18 | 1P 20A RELAY | BOX BOOM #2 SL | | |
| BOX BOOM #2 SR | | | 1P 20A RELAY | 19 | 43 | 44 | 20 | 1P 20A RELAY | BOX BOOM #2 SR | | |
| BOX BOOM #1 SL | | | 1P 20A RELAY | 21 | 45 | 46 | 22 | 1P 20A RELAY | BOX BOOM #1 SR | | |
| ELECTRIC #1 | | | 1P 20A RELAY | 23 | 47 | 48 | 24 | 1P 20A RELAY | ELECTRIC #1 | | |
| ELECTRIC #1 | | | 1P 20A RELAY | 25 | 49 | 50 | 26 | 1P 20A RELAY | ELECTRIC #1 | | |
| ELECTRIC #1 | | | 1P 20A RELAY | 27 | 51 | 52 | 28 | 1P 20A RELAY | ELECTRIC #1 | | |
| ELECTRIC #2 | | | 1P 20A RELAY | 29 | 53 | 54 | 30 | 1P 20A RELAY | ELECTRIC #2 | | |
| ELECTRIC #2 | | | 1P 20A RELAY | 31 | 55 | 56 | 32 | 1P 20A RELAY | ELECTRIC #2 | | |
| ELECTRIC #2 | | | 1P 20A RELAY | 33 | 57 | 58 | 34 | 1P 20A RELAY | ELECTRIC #2 | | |
| ELECTRIC #3 | | | 1P 20A RELAY | 35 | 59 | 60 | 36 | 1P 20A RELAY | ELECTRIC #3 | | |
| ELECTRIC #3 | | | 1P 20A RELAY | 37 | 61 | 62 | 38 | 1P 20A RELAY | ELECTRIC #3 | | |
| ELECTRIC #3 | | | 1P 20A RELAY | 39 | 63 | 64 | 40 | 1P 20A RELAY | ELECTRIC #3 | | |
| ELECTRIC #4 | | | 1P 20A RELAY | 41 | 65 | 66 | 42 | 1P 20A RELAY | ELECTRIC #4 | | |
| ELECTRIC #4 | | | 1P 20A RELAY | 43 | 67 | 68 | 44 | 1P 20A RELAY | ELECTRIC #4 | | |
| STAGE CATWALK - USL (CYC ELEC) | | | 1P 20A RELAY | 45 | 69 | 70 | 46 | 1P 20A RELAY | STAGE CATWALK - USL (CYC ELEC) | | |
| HOUSE REAR LIGHTING BATTEN | UTILITY | | 1P 20A BREAKER | 47 | 71 | 72 | 48 | 1P 20A BREAKER | SPARE | | |

RELAY PANEL RR2

| LOCATION | FUNCTION | ARCH LTG. CONTROL WIRING | TYPE | RACK CIRCUIT | SYSTEM ADDRESS | SYSTEM ADDRESS | RACK CIRCUIT | TYPE | LOCATION | FUNCTION | ARCH LTG. CONTROL WIRING |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FOH CATWALK #2 | REHEARSAL | | 1P 20A RELAY | 1 | 73 | 74 | 2 | 1P 20A RELAY | ELECTRIC #1 | REHEARSAL | |
| ELECTRIC #2 | REHEARSAL | | 1P 20A RELAY | 3 | 75 | 76 | 4 | 1P 20A RELAY | ELECTRIC #3 | REHEARSAL | |
| ELECTRIC #4 | REHEARSAL | | 1P 20A RELAY | 5 | 77 | 78 | 6 | 1P 20A RELAY | MOTOR GALLERY (SL FLOODS) | WORK LTS | |
| WORKLIGHT BRACKETS DSR & USR (SR FLOODS) | WORK LTS | | 1P 20A RELAY | 7 | 79 | 80 | 8 | 1P 20A RELAY | MOTOR GALLERY (LOFT UPLIGHTS) | WORK LTS | |
| HOUSELIGHTS | HOUSE LT FIXTS | DMX | 1P 20A RELAY | 9 | 81 | 82 | 10 | 1P 20A RELAY | HOUSELIGHTS | HOUSE LT FIXTS | DMX |
| HOUSELIGHTS | HOUSE LT FIXTS | DMX | 1P 20A RELAY | 11 | 83 | 84 | 12 | 1P 20A RELAY | HOUSELIGHTS | HOUSE LT FIXTS | DMX |
| HOUSELIGHTS | HOUSE LT FIXTS | DMX | 1P 20A RELAY | 13 | 85 | 86 | 14 | 1P 20A RELAY | HOUSELIGHTS | HOUSE LT FIXTS | DMX |
| AUDITORIUM FRONT VEST HR | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 15 | 87 | 88 | 16 | 1P 20A RELAY | AUDITORIUM FRONT VEST HL | HOUSE LT FIXTS | 0-10V |
| PIT WC LIFT LANDING | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 17 | 89 | 90 | 18 | 1P 20A RELAY | PIT STAIRS HL | HOUSE LT FIXTS | 0-10V |
| AUD. REAR VESTIBULE | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 19 | 91 | 92 | 20 | 1P 20A RELAY | AUD REAR WC LIFT | HOUSE LT FIXTS | |
| PIT WC LIFT | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 21 | 93 | 94 | 22 | 1P 20A RELAY | | | |
| AISLE LIGHTS | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 23 | 95 | 96 | 24 | 1P 20A RELAY | AUDITORIUM CROSS-AISLE LOW-LEVEL | HOUSE LT FIXTS | 0-10V |
| SOUND/LIGHT LOCK VEST HR | HOUSE LT FIXTS | 0-10V | 1P 20A RELAY | 25 | 97 | 98 | 26 | 1P 20A RELAY | SOUND/LIGHT LOCK VEST HR | HOUSE LT FIXTS | 0-10V |
| | | | 1P 20A RELAY | 27 | 99 | 100 | 28 | 1P 20A RELAY | | | |
| | | | 1P 20A RELAY | 29 | 101 | 102 | 30 | 1P 20A RELAY | | | |
| STAGE CATWALKS | WORK LT FIXTS | | 1P 20A RELAY | 31 | 103 | 104 | 32 | 1P 20A RELAY | STAGE WALLS | WORK LT FIXTS | |
| FOH CATWALKS | WORK LT FIXTS | | 1P 20A RELAY | 33 | 105 | 106 | 34 | 1P 20A RELAY | | | |
| FOH CATWALK VEST HR | WORK LT FIXTS | | 1P 20A RELAY | 35 | 107 | 108 | 36 | 1P 20A RELAY | FOH CATWALK VEST HL | WORK LT FIXTS | |
| STAGE VESTIBULE DL | WORK LT FIXTS | | 1P 20A RELAY | 37 | 109 | 110 | 38 | 1P 20A RELAY | STAGE VESTIBULE DL & DR | RUN LT FIXTS | 0-10V |
| STAGE VESTIBULE DR | WORK LT FIXTS | | 1P 20A RELAY | 39 | 111 | 112 | 40 | 1P 20A RELAY | SCENE SHOP | RUN LT FIXTS | |
| | | | 1P 20A RELAY | 41 | 113 | 114 | 42 | 1P 20A RELAY | | | |
| | | | 1P 20A RELAY | 43 | 115 | | 44 | | | | |
| | | | 1P 20A RELAY | 45 | 117 | | 46 | 3P 15A BRKR | SENSE FEED | | |
| | | | 1P 20A RELAY | 47 | 119 | | 48 | | | | |

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## KEYNOTES

## NOTES

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING SCHEDULES**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

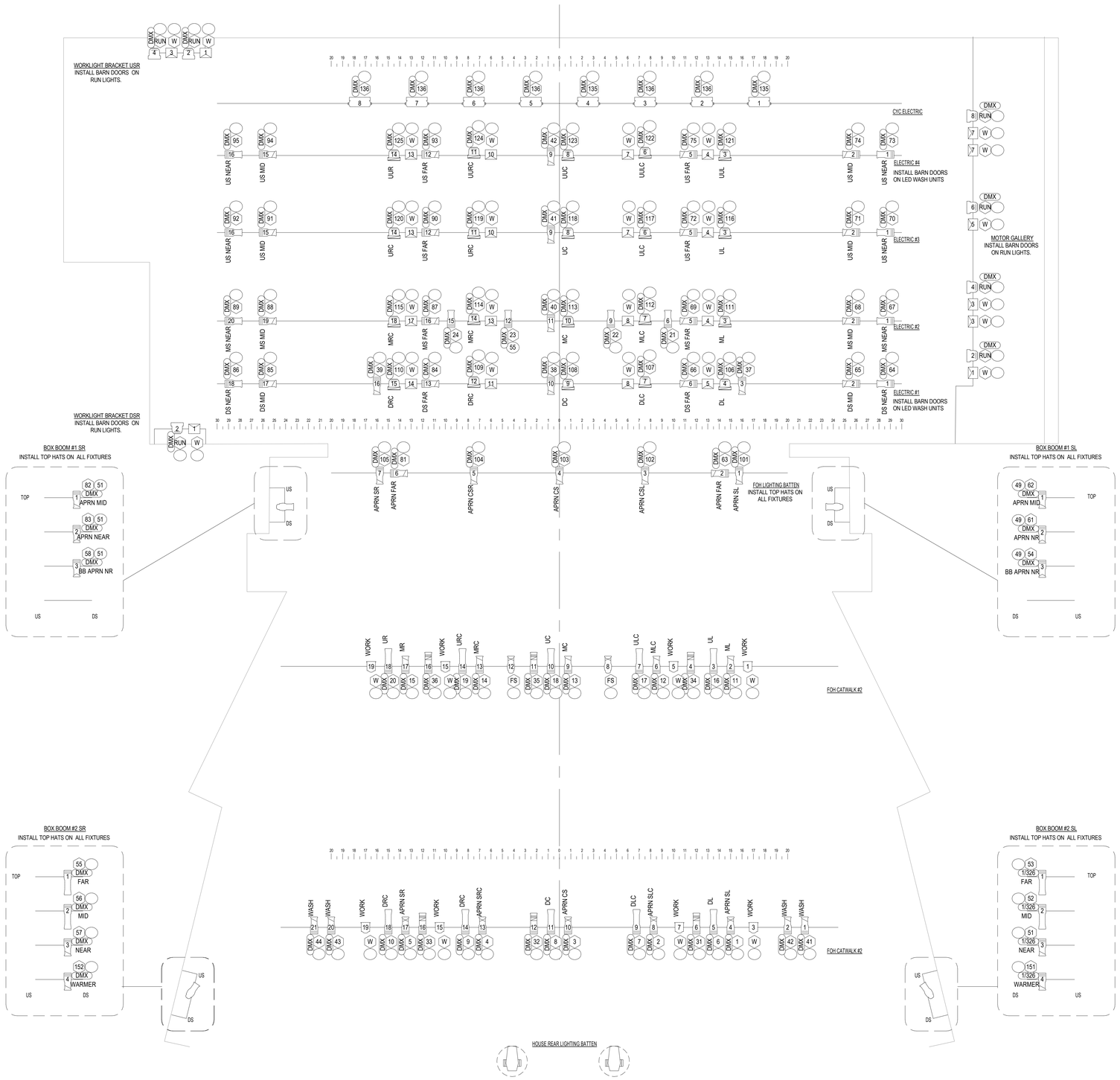
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## GENERAL NOTES

1. PER SPECIFICATION, STAGE LIGHTING SYSTEMS INTEGRATOR IS TO PROVIDE TRAINED AND QUALIFIED THEATRICAL STAGE TECHNICIANS TO HANG AND AIM THEATRICAL LIGHTING FIXTURES AS INDICATED ON THIS DRAWING.
2. INSTALLATION WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   A.) UNPACK FIXTURE, ASSEMBLE ALL COMPONENTS PACKED SEPARATELY INCLUDING CLAMPS, LAMPS, LENSES, OR OTHER ITEMS. DISPOSE OF PACKING MATERIALS.
   B.) HANG FIXTURES AT MOUNTING POSITIONS AS INDICATED ON HANG PLOT AND CONNECT TO POWER CIRCUITS AS NOTED. INSTALL DATA CABLING AS REQUIRED FOR INTELLIGENT FIXTURES.
   C.) INSTALL SAFETY CABLE FOR EACH FIXTURE BETWEEN MOUNTING PIPE AND YOKE OR OTHER ATTACHMENT POINT DESIGNED FOR SAFETY CABLES.
   D.) VERIFY THAT FRAMING SHUTTERS ARE PULLED OUT, BARNDOORS ARE OPENED, AND TOPHATS ARE INSTALLED IF NOTED.
   E.) TIE ANY LOOSE CABLING TO MOUNTING PIPE OR ADJACENT STRUCTURES TO KEEP CABLES FROM INTERFERING WITH FIXTURE FUNCTION AND TO MAINTAIN A CLEAN INSTALLATION. CUT 36" LENGTHS OF BLACK TRICK LINE FROM 3,000 SPOOL AS REQUIRED FOR TIE-LINES.
   F.) UNPACK AND FULLY ASSEMBLE FOLLOWSPOTS AT BOOTHS
   G.) IF PORTABLE EXTENSION CABLES OR TWO-FERS ARE REQUIRED THEY SHOULD BE PULLED FROM THE STOCK OF CABLE & ACCESSORIES TO BE PROVIDED AND AN INVENTORY SHOULD BE MAINTAINED OF LOOSE EQUIPMENT USED. VERIFY THAT LOOSE EQUIPMENT TO BE SUPPLIED BY ELECTRICAL CONTRACTOR IS ON-SITE AND AVAILABLE FOR USE AT TIME OF LIGHT HANG.
   H.) NOTE ANY CIRCUITING OR INSTALLATION DEVIATIONS FROM THIS DRAWING AND PROVIDE TO THE THEATRE CONSULTANT PRIOR TO SYSTEM CHECKOUT.
3. ONCE ENTIRE LIGHT PLOT HAS BEEN HUNG, TEST ENTIRE SYSTEM IN CONJUNCTION WITH ELECTRICAL CONTRACTOR RESPONSIBLE FOR DIMMING AND CONTROL SYSTEM TO VERIFY THAT ALL FIXTURES PERFORM AS DESIGNED AND THAT ALL INTELLIGENT FIXTURE PARAMETERS RESPOND CORRECTLY VIA THE MAIN CONTROL CONSOLE. SETUP MAIN CONTROL CONSOLE PATCH FOR INTELLIGENT FIXTURES IN ORDER TO DEMONSTRATE ALL PARAMETERS AT TIME OF EQUIPMENT CHECKOUT.
4. IF THEATRICAL LIGHTING FIXTURES ARE TO BE INSTALLED BEFORE FACILITY IS DUST-FREE, LIGHTING FIXTURES SHALL BE COVERED WITH PLASTIC BAGS TO PREVENT ACCUMULATION OF DUST ON LENSES AND OPTICAL COMPONENTS. TURN OFF DIMMER CIRCUIT BREAKERS OR UNPLUG COVERED FIXTURES TO PREVENT INADVERTENT ACTIVATION WHILE COVERED.
5. SEE ADDITIONAL SETUP INSTRUCTIONS FOR INTELLIGENT FIXTURES.

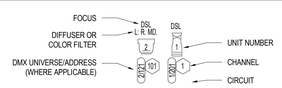
## INTELLIGENT FIXTURE SETUP NOTES

1. CONFIGURE E.T.C COLORSOURCE FIXTURES AS FOLLOWS:
   SET FOR 5-CHANNEL MODE
   SET DMX ADDRESS PER DRAWING
2. CONFIGURE ALTMAN SPECTRA CYC LED FIXTURES AS FOLLOWS:
   SET FOR 8-CHANNEL PERSONALITY #606 (16 BIT, MASTER=OFF, SMOOTHING=ON). LOCKOUT BUTTONS AFTER PERSONALITY AND ADDRESS ARE SET.
   SET DMX ADDRESS PER DRAWING.
3. UTILIZE BUILT-IN 1-PORT ETHERNET-TO-DMX NODES FOR DMX OUTPUTS. ALL FRONT-OF-HOUSE NODES TO BE SET TO UNIVERSE #1; ALL NODES AT STAGE AND ELECTRICS TO BE SET TO UNIVERSE #2.

## LEGEND

| | |
|---|---|
| | 19° HALOGEN ELLIPSOIDAL REFLECTOR SPOTLIGHT WITH ACCESSORIES PER SPECIFICATION |
| | 14° COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | 19° COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | 26° COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | 36° COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | 50° COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | 15°-30° ZOOM COLOR-CHANGING LED PROFILE SPOTLIGHT |
| | COLOR-CHANGING LED WASHLIGHT W/ 25°-50° VARIABLE BEAM SPREAD |
| | LED CYCLORAMA WASH LIGHT (2 CELL) |
| | WIDE FLOOD LED WASH LIGHT (STAGE REHEARSAL LIGHT) |
| | LED SPOTLIGHT (FOH REHEARSAL LIGHT) |
| | LED WASH LIGHT W/ MED-OBLONG LENS (RUN LTS) |

## KEY




## STAGE LIGHTING INSTRUMENT USAGE SUMMARY

| | 19° HALOGEN ELLIPSOIDAL REFLECTOR SPOTLIGHT | 14° LED PROFILE SPOTLIGHT | 19° LED PROFILE SPOTLIGHT | 26° LED PROFILE SPOTLIGHT | 36° LED PROFILE SPOTLIGHT | 50° LED PROFILE SPOTLIGHT | 15°-30° ZOOM LED PROFILE SPOTLIGHT | LED WASHLIGHT W/ 25°-50° VARIABLE BEAM SPREAD | LED CYC LIGHT | LED WASH LIGHT W/ MED-OBLONG LENS (RUN LTS) | LED SPOTLIGHT (REHEARSAL LIGHT) | WIDE FLOOD WORKLIGHT | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FOH CATWALK #2 | | 5 | 5 | 4 | | | 3 | | | | 4 | | 21 |
| FOH CATWALK #1 | 2 | 5 | 5 | | | | 3 | | | | 4 | | 19 |
| FOH LIGHTING BATTEN | | | | 7 | | | | | | | | | 7 |
| BOX BOOM #2 SL | | | | 2 | 2 | | | | | | | | 4 |
| BOX BOOM #2 SR | | | | 2 | 2 | | | | | | | | 4 |
| BOX BOOM #1 SL | | | | 1 | | 2 | | | | | | | 3 |
| BOX BOOM #1 SR | | | | 1 | | 2 | | | | | | | 3 |
| ELECTRIC #1 | | | | 7 | 2 | | | 5 | | | | 4 | 18 |
| ELECTRIC #2 | | | | 5 | 6 | | | 5 | | | | 4 | 20 |
| ELECTRIC #3 | | | | 5 | 2 | | | 5 | | | | 4 | 16 |
| ELECTRIC #4 | | | | 5 | 2 | | | 5 | | | | 4 | 16 |
| CYC ELECTRIC | | | | | | | | | 8 | | | | 8 |
| MOTOR GALLERY SL | | | | | | | | | | 3 | | 7 | 10 |
| WORKLIGHT BATTENS DSR & USR | | | | | | | | | | 3 | | 3 | 6 |
| SPARE | | | 1 | 1 | 2 | | | 1 | | | | | 5 |
| TOTAL | 2 | 10 | 15 | 40 | 14 | 4 | 6 | 21 | 8 | 6 | 8 | 26 | 160 |

# STAGE LIGHTING PLOT

1/4" = 1'-0" | 1

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**STAGE LIGHTING PLOT**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

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# ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING

EL MONTE, CA

## GENERAL NOTES

REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.

1. ELECTRICAL
   - A. ALL CONDUITS, JUNCTION BOXES, BACK BOXES, PULL STRING AND POWER OUTLETS BY DIVISION 26 CONTRACTOR AS REQUIRED.
   - B. ELECTRICAL CONTRACTOR TO PROVIDE PULLSTRING ON ALL AV CONDUIT.
   - C. ALL POWER TO AV EQUIPMENT TO ORIGINATE FROM DEDICATED AUDIO VIDEO LOAD CENTER IN ACCORDANCE WITH THE LATEST LOCAL AND NATIONAL CODES REFERENCING "TECHNICAL POWER SYSTEMS", NEC ARTICLE 640.
   - D. BRANCH CIRCUITS FEEDING AUDIO-VISUAL EQUIPMENT MUST NOT ORIGINATE FROM LOAD CENTERS CONNECTED TO INDUCTIVE LOADS.
   - E. PROVIDE ALL AV CIRCUITS WITH ISOLATED GROUND, DEDICATED NEUTRAL
2. COORDINATE
   - A. COORDINATE WITH THE WORK OF ALL SECTIONS. COORDINATE THE LOCATION OF BLOCKING AND BACKING REQUIRED BY THIS SECTION. MAKE REASONABLE MINOR ADJUSTMENTS TO PRESERVE ARCHITECTURAL SYMMETRY AND ALIGNMENT WITH ADJACENT FEATURES AT NO CLAIM FOR ADDITIONAL COST OR TIME. PRESENT CONFLICTS IN TIMELY MANNER FOR RESOLUTION.
   - B. RELOCATION, REVISION OR CORRECTION CAUSED BY FAILURE OF THE CONTRACTOR TO COORDINATE THE WORK SHALL NOT BE SUBJECT TO CLAIM FOR ADDITIONAL COST OR TIME.
   - C. POWER RECEPTACLES SHOWN ON THE AV DRAWINGS OUTSIDE OF EQUIPMENT RACKS ARE SHOWN FOR COORDINATION INFORMATION ONLY. REFER TO DIVISION 26 DOCUMENTS FOR CONSTRUCTION.
   - D. THESE DRAWINGS SHOW SCOPE. THE EXACT LOCATION & ELEVATIONS OF LOUDSPEAKERS, RECEPTACLES AND DEVICES MUST BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
   - E. CONDUIT, BACK BOXES AND PULL BOXES SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR UNDER SUPERVISION OF AV CONTRACTOR.
   - F. GENERAL CONTRACTOR SHALL COORDINATE THE CONDUIT, DEVICES, PATHWAYS AND JUNCTION BOXES FOR THE AV WITH OTHER TRADE TO AVOID ANY CONFLICTS.
3. LOCATIONS AND DIMENSIONS
   - A. LOCATIONS AND DIMENSIONS SHOWN ON ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER THESE AV DRAWINGS. IN CASE OF APPARENT CONFLICT OR AMBIGUITY, SUBMIT TO THE ARCHITECT IN TIMELY MANNER FOR RESOLUTION.
   - B. DIMENSIONS TAKE PRECEDENCE OVER SCALE. LARGE SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL. REPORT ALL CONFLICTS BEFORE INSTALLATION.
   - C. UNLESS OTHERWISE NOTED, DIMENSIONS ARE SHOWN HEIGHT x WIDTH x DEPTH.
   - D. VERIFY ALL DIMENSIONS, LOCATIONS AND CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. NOTIFY ARCHITECT OF ANY APPARENT DISCREPANCIES.
4. SUPPORT

   PROVIDE ALL BLOCKING, BRIDGING, TIES, FASTENERS AND RELATED SUPPORT PROVISIONS FOR ALL WORK OF THIS SECTION. COMPLY WITH APPLICABLE CODE REQUIREMENTS FOR MEANS OF SUPPORT OF ELECTRICAL EQUIPMENT OF THE SAME WEIGHT UNDER THE SAME MOUNTING CONDITIONS. DO NOT APPLY ANY LOAD TO BUILDING STRUCTURE WITHOUT FIRST OBTAINING WRITTEN APPROVAL OF THE PROJECT STRUCTURAL ENGINEER. OBTAIN PER PROJECT PROCEDURES. SUPPORTS FOR RACEWAY SYSTEM BY DIVISION 26 CONTRACTOR.
5. BOX, PANEL AND ENCLOSURE INSTALLATION
   - A. COORDINATE THE LOCATION OF ALL BOXES, PANELS, ENCLOSURES AND RELATED RACEWAY WITH THE WORK OF OTHER SECTIONS.
   - B. VERIFY ACCESS TO BOXES, PANELS AND ENCLOSURES COMPLY WITH APPLICABLE CODE.
   - C. COORDINATE AND CORRECT ALL CONDITIONS OF OCCLUSION OF ALL LOUDSPEAKER ASSEMBLIES. WHERE MORE THAN ONE (1) FLUSH MOUNTED CEILING LOUDSPEAKER HAS BEEN SCHEDULED, NONE SHALL BE LOCATED CLOSER TO ANY FIXED WALL THAN ONE-HALF (1/2) OF THE ADJACENT CLEAR HEIGHT, EXCEPT AT CEILING DISCONTINUITIES, OR WHERE SPECIFICALLY SHOWN ON THE DRAWINGS.
   - D. INSTALL BOXES, PANELS AND ENCLOSURES SQUARE AND PLUMB. SET FLUSH MOUNTED UNITS SO THAT THE FACE OF THE COVER, BEZEL OR ESCUTCHEON, IS IN THE SAME PLANE AS THE SURROUNDING FINISHED SURFACE. MOUNT BOXES, PANELS AND TRIM SO THAT THERE ARE NO GAPS, CRACKS OR OBVIOUS LINES BETWEEN THE TRIM AND THE ADJACENT FINISHED SURFACE.
   - E. UNLESS OTHERWISE NEED, PROVIDE STEEL BOXES, PANELS AND ENCLOSURES. COMPLY WITH DIVISION 26 REQUIREMENTS AND APPLICABLE CODE.
   - F. UNLESS OTHERWISE NOTED, BOXES AND ENCLOSURES SHALL BE NOT LESS THAN 2-1/8 INCHES DEEP. PROVIDE THE LARGER OF THE SIZE REQUIRED BY APPLICABLE CODE OR AS SHOWN ON DRAWINGS. COORDINATE WIRE AND CABLE BEND RADIUS WITH BOX AND ENCLOSURE SIZE.
   - G. PULL BOXES: PROVIDE AS REQUIRED BY THE MOST RESTRICTIVE OF APPLICABLE CODE OR THE PROVISIONS OF DIVISION 26. COORDINATE WITH WIRE AND CABLE BEND RADIUS.
   - H. PROVIDE REQUIRED FIRE RATED JUNCTION BOXES OR FIRE STOP GUARDS AT ALL RATED WALLS.
   - I. CONDUIT AND ACCESSORIES MUST BE INSTALLED PLUMB AND TRUE WITH UNIFORM FASTENING, FULLY DRESSED AND FINISHED.
6. RACEWAY
   - A. FOR ALL WORK OF THIS SECTION, RACEWAY ABOVE GROUND SHALL BE EMT, RACEWAY BELOW GROUND SHALL BE PVC.
   - B. RACEWAY SHALL BE ¾ INCH DIAMETER TRADE SIZE UNLESS OTHERWISE NOTED.
   - C. ALL CONDUIT RUNS OVER 100 FT. MUST HAVE LARGE RADIUS BENDS.
   - D. A MAXIMUM OF TWO 90 DEGREE ELBOWS IN EACH CONDUIT RUN.
   - E. CONDUIT WITH FIBER OPTIC CABLE INSTALLED, MUST CONFORM TO THE MINIMUM BEND RADIUS AS SPECIFIED BY THE MANUFACTURER OF THE CABLE. DIVISION 26 CONTRACTOR IS TO APPLY RADIUS BENDS WHERE NEEDED. FIBER BEND RADIUS SHALL BE A MINIMUM LONG-TERM LOW-STRESS RADIUS NOT LESS THAN 20 TIMES THE CABLE DIAMETER.
   - F. KEEP A MINIMUM OF 12" CLEAR BETWEEN ELECTRICAL CONDUIT AND LOW VOLTAGE CONDUIT.
   - G. PROVIDE FIRE RATED CONDUIT PENETRATION SEALS AT ALL FIRE RATED WALLS.
   - H. CONDUIT AND ACCESSORIES MUST BE INSTALLED PLUMB AND TRUE WITH UNIFORM FASTENING, FULLY DRESSED AND FINISHED.
7. GROUNDING AND BONDING
   - A. COMPLY WITH NATIONAL ELECTRICAL CODE SECTION 250.
   - B. BOND RACEWAY AND RELATED BOXES, PANELS, ENCLOSURES AND CABINETS AS REQUIRED BY APPLICABLE CODE AND DIVISION 26.
   - C. MAKE RACEWAY CONNECTIONS TO EQUIPMENT RACKS AND SIMILAR EQUIPMENT ENCLOSURES CONTAINING POWERED EQUIPMENT WITH ISOLATED FITTINGS.
   - D. GROUND AND BOND EQUIPMENT RACKS AND SIMILAR EQUIPMENT ENCLOSURES CONTAINING POWERED EQUIPMENT EXCLUSIVELY VIA THE ISOLATED EQUIPMENT GROUNDING CONDUCTORS PROVIDED UNDER DIVISION 26. SIZE SUCH CONDUCTORS ACCORDING TO APPLICABLE CODE. FOR EACH TECHNICAL BRANCH CIRCUIT, THE ISOLATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE COPPER OF THE SAME GAUGE AS SUPPLY AND NEUTRAL CONDUCTORS. MAIN ISOLATED EQUIPMENT GROUNDING CONDUCTOR TO EACH ENSEMBLE OF EQUIPMENT RACKS SHALL BE COPPER, SIZED AS REQUIRED BY APPLICABLE CODE.
   - E. D.C. RESISTANCE BETWEEN THE ISOLATED EQUIPMENT GROUNDING BUS AT EQUIPMENT ROOM TECHNICAL POWER PANELS AND THE MAIN PROJECT GROUND FIELD SHALL NOT EXCEED 0.15 OHMS.
   - F. FOR COMMUNITY ANTENNA TELEVISION AND MASTER ANTENNA TELEVISION SYSTEMS AND RELATED PROVISIONS, COMPLY WITH ARTICLE 800, NATIONAL ELECTRICAL CODE.
8. CABLE AND WIRE
   - A. ALL LOW VOLTAGE CABLE AND WIRE BY AUDIO-VISUAL CONTRACTOR.
   - B. USE PLENUM RATED WIRE WHERE REQUIRED BY CODE.
   - C. CABLE SPLICING NOT ALLOWED IN ANY PULLBOXES.
9. GENERAL
   - A. IN THE EVENT THAT THESE PLANS, NOTES OR DETAILS OR ANY PART OR PORTION THEREOF ARE USED BY ANY THIRD-PARTY WITHOUT THE EXPRESS AUTHORIZED PERMISSION OF VENEKLASEN ASSOCIATES, THE UNAUTHORIZED USER AND ANYONE BENEFITING THEREFROM, SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS VENEKLASEN ASSOCIATES AND ITS AGENTS, PRINCIPALS, EMPLOYEES AND CONSULTANTS FROM AND AGAINST ANY AND ALL CLAIMS, INCLUDING ATTORNEYS' FEES ARISING OUT OF SAID UNAUTHORIZED USE.
   - B. FURTHERMORE, THE UNAUTHORIZED USE OF THESE PLANS, NOTES, DETAILS OR ANY PART OR PORTION THEREFORE IS EXPRESSLY PROHIBITED AND VENEKLASEN ASSOCIATES RETAINS A COPYRIGHT OVER ANY AND ALL DOCUMENTS PREPARED BY VENEKLASEN ASSOCIATES.
   - C. IN THE EVENT THAT THE INSTALLER DEVIATES FROM THE PLANS AND SPECIFICATIONS PREPARED BY VENEKLASEN ASSOCIATES WHICH RESULTS IN DAMAGE TO PERSONS OR PROPERTY OF ANY KIND, INSTALLER HEREBY AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS VENEKLASEN ASSOCIATES, ITS AGENTS, PRINCIPALS, EMPLOYEES AND CONSULTANTS FROM AND AGAINST ANY AND ALL CLAIMS, INCLUDING ATTORNEYS' FEES CAUSED BY SUCH FAILURE TO FOLLOW THE PLANS AND SPECIFICATIONS PREPARED BY VENEKLASEN ASSOCIATES, EXCEPTING ONLY THE DAMAGES TO PERSONS OR PROPERTY WHICH ARE CAUSED BY THE SOLE NEGLIGENCE OR WILLFUL MISCONDUCT OF VENEKLASEN ASSOCIATES.
   - D. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE OF WORK AND TO INDICATE GENERAL ARRANGEMENT. THERE ARE NOT INTENDED TO SHOW EVERY DETAIL INCLUDING OFFSET OR FITTING OR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING THE WORK. EXCEPT AS OTHERWISE INDICATED, LOCATIONS OF ITEMS ARE APPROXIMATE ONLY. EXACT LOCATIONS NECESSARY TO SECURE PROPER CONDITIONS AND RESULTS MUST BE DETERMINED AT PROJECT SITE AND MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
   - E. EXCEPT AS OTHERWISE INDICATED, MAKE REASONABLE MODIFICATIONS IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH OTHER WORK OR PROPER EXECUTION OF WORK.
   - F. INCLUDE WORK NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER INSTALLATION AND OPERATION OF A SYSTEM OR PIECE OF EQUIPMENT IN WORK.
   - G. COMPLY WITH APPLICABLE BUILDING CODES FOR ACCESS AND STANDARD MOUNTING REQUIREMENTS INCLUDING BUT NOT LIMITED TO CALIFONICA BUILDING CODES.

## SHEET INDEX

| SHEET NUMBER | SHEET NAME | 100% DESIGN DEVELOPMENT - 04/28/2023 | REVIEW SET - 06/21/2023 | 50% CONSTRUCTION DOCUMENTS - 07/14/2023 | DSA SUBMITTAL - 09/29/2023 | DSA SUBMITTAL - 08/30/2024 | DSA SUBMITTAL - 03/31/2025 | DSA SUBMITTAL - 06/20/2025 |
|---|---|---|---|---|---|---|---|---|
| AV0.01 | AV GENERAL NOTES AND SHEET INDEX | X | X | X | X | X | X | X |
| AV0.02 | AV ABBREVIATIONS, NOTES AND SYMBOLS | X | X | X | X | X | X | X |
| AV0.03 | AV JUNCTION BOX SCHEDULE | X | X | X | X | X | X | X |
| AV2.11 | 1ST FLOOR - AV FLOOR PLAN | X | X | X | X | X | X | X |
| AV2.11B | 1ST FLOOR - SEGMENT B - AV FLOOR PLAN | X | X | X | X | X | X | X |
| AV2.21 | 2ND FLOOR - AV FLOOR PLAN | X | X | X | X | X | X | X |
| AV2.21B | 2ND FLOOR - SEGMENT B - AV FLOOR PLAN | X | X | X | X | X | X | X |
| AV2.41 | 1ST FLOOR - REFLECTED CEILING PLAN | | X | X | X | X | X | X |
| AV2.41B | 1ST FLOOR - SEGMENT B - REFLECTED CEILING PLAN | | X | X | X | X | X | X |
| AV2.71 | AV THEATER SECTIONS | | X | X | X | X | X | X |
| AV2.91 | AV RISER DIAGRAM | | X | X | X | X | X | X |
| AV3.00 | WIRING SCHEME AND SYMBOL KEY | | X | X | X | X | X | X |
| AV3.01 | THEATER - AV ONLINE DIAGRAM | | X | X | X | X | X | X |
| AV3.02 | THEATER - AV ONLINE DIAGRAM | | X | X | X | X | X | X |
| AV3.03 | THEATER - AV ONLINE DIAGRAM | | X | X | X | X | X | X |
| AV3.04 | INTERCOM ONELINE DIAGRAM | | X | X | X | X | X | X |
| AV3.05 | AUDIO NETWORK ONLINE DIAGRAM | | X | X | X | X | X | X |
| AV4.50 | AV CONTROL ROOM LAYOUT | | | | X | X | X | X |
| AV4.51 | AV EQUIPMENT LAYOUTS | | X | X | X | X | X | X |
| AV5.01 | AV RACK DETAILS | X | X | X | X | X | X | X |
| AV5.02 | AV RACK ELEVATIONS | | | | | X | X | X |
| AV6.01 | AV DETAILS | X | X | X | X | X | X | X |
| AV6.02 | AV DETAILS | | | X | X | X | X | X |
| AV6.51 | FACILITY PANEL DETAILS | | X | X | X | X | X | X |
| AV6.52 | FACILITY PANEL DETAILS | | X | X | X | X | X | X |

: 25

## PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING & MEP COMPONENT ANCHORAGE NOTES

APPLICABLE CODE: 2022 CBC

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2022 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., HCAI OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☐ E ☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ OPTION 2: SHALL COMPLY WITH HCAI (OSHPD) PREAPPROVAL (OPM #) #_____, AS INCLUDED IN THESE DRAWINGS WITH PROJECT-SPECIFIC NOTES AND DETAILS.

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DESIGN PROFESSIONAL USER NOTE (DO NOT COPY THIS 'USER NOTE' TO THE PLANS):
MECHANICAL/PLUMBING/ELECTRICAL DESIGN PROFESSIONALS: IDENTIFY WHICH OPTION(S) APPLY FOR YOUR PROJECT. IF THE FIRST OPTION IS CHOSEN, PROVIDE PROJECT SPECIFIC DETAILS, CONSISTENT WITH THE SUPPORTING STRUCTURAL SUPPORT FRAMING MATERIALS, SHOWING SUPPORT AND BRACING; CLEARLY INDICATE THE SUPPORTS AND BRACING FOR ALL APPLICABLE SYSTEMS. FOR THE SECOND OPTION, SPECIFY THE OPM # (FOR 2013 CBC OR LATER) APPLICABLE TO THE CONDITIONS OF THE PROJECT AND PROVIDE PROJECT-SPECIFIC DETAILS ON THE PLANS WITH PROJECT-SPECIFIC DIRECTION AS REQUIRED. A SIMPLE REFERENCE TO THE OPM NUMBER WILL NOT BE PERMITTED. INCLUDE THE "GENERAL NOTES" OR "NOTES TO THE SEOR" SPECIFIC TO THE OPM ON THE DRAWINGS AND VERIFY COMPLIANCE.
COORDINATE WITH THE SEOR TO VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT ALL HANGER AND BRACE LOADS.

APPLICABLE CODE: 2022 CBC

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
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633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

ISSUE

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

REGISTERED PROFESSIONAL ENGINEER
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No. E13208
ELECTRICAL
STATE OF CALIFORNIA
9/30/25
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www.veneklasen.com

FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**AV GENERAL NOTES AND SHEET INDEX**

DSA SUBMITTAL

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

AV0.01

THE LINE SHOWN ABOVE IS 3" LONG ON ORIGINAL. IF IT IS NOT, THIS SHEET IS ORIGINAL PAPER SIZE

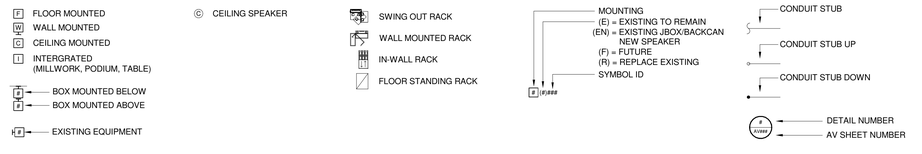
## DEVICE / BOX ID

| Device ID | Description | DAS | Digital Audio Source | | | PSC | Projection Screen Control | TAM | Telephone Access Module |
|---|---|---|---|---|---|---|---|---|---|
| 1GMR | 1 Gang Mud Ring | DAT | Digital Audio Tape Unit | KB | Keyboard | PSD | Paging Station Desk Mount | TB | Terminal Box |
| 2GMR | 2 Gang Mud Ring | DB | Direct Box | KM | Keyboard & Mouse | PSLR | Program Select & Level Remote | TBC | Time Base Corrector |
| 3DTV | 3D Television | DC | Document Camera | KMI | Keyboard & Mouse Interface | PSP | Powered Speaker | TBU | Tape Backup |
| 3GMR | 3 Gang Mud Ring | DCA | Digital Controlled Amplifier | KMK | Keyboard & Mouse Kit | PSQ | Power Sequencer | TC | Programmable Time Clock |
| 4GMR | 4 Gang Mud Ring | DCC | Data Control Card | KVM | Keyboard, Video & Mouse | PSR | Paging Station Rack Mount | TCB | Terminal Cabinet |
| | | DCM | Digital Cart Machine | KVME | Keyboard, Video & Mouse Extender | PSW | Paging Station Wall Mount | TCR | Transcoder |
| A | Audio | DCN | Divider Combiner Network | | | PTC | Pan & Tilt Camera | TCS | Teleconferencing System |
| ABA | Audio Buffer Amplifier | DCPU | Digital Central Processing Unit | LAN | Local Area Network | PVM | Preview Video Monitor | TEL | Telephone Output |
| AC | Audio Combiner | DCR | Digital Capture Recorder | LC | Lighting Console | PWS | Power Strip | TI | Telephone Interface |
| ACM | Audio Card Module | DD | Dimmer Doubler | LD | Line Doubler | PXS | Proximity Switch | TJB | Transformer Junction Box |
| ACN | Audio Control Network | DDL | Digital Delay | LDP | Laser Disc Player | PZM | Pressure Zone Microphone | TM | Table Microphone |
| ACR | Audio Control Relay | DEB | De-Embedder | LDR | Line Driver | | | TMB | Table Microphone Box |
| ACS | Audio Conferencing System | DEC | Decoder | LEC | Lectern | RAS | RGB Auto Switcher | TP | Twisted Pair |
| ADA | Audio Distribution Amplifier | DEQ | Dynamic Equalizer | LED | Light Emitting Panel | RC | Remote Control | TPC | Touch Panel Control |
| ADB | Audio Distribution Box | DFR | Digital File Recorder | LFS | Low Frequency Speaker | RDA | RGB Distribution Amp | TPM | Teleprompter |
| ADI | Analog to Digital Input | DIM | Dimmer Module | LI | Lighting Interface | REC | Record | TPR | Twisted Pair Receiver |
| ADK | Audio Ducker | DIU | Digital Interface Unit | LL | Line Level | REV | Reverb | TPT | Twisted Pair Transmitter |
| ADP | Adaptor | DJCC | Digital Joystick Camera Control | LM | Line Module | RF | Radio Frequency | TR | Talent Receiver |
| AE | Audio Extractor | DM | Digital Mixer | LP | Lectern Panel | RFA | RF Amplifier | TRC | Transceiver |
| AFT | AM/FM Tuner | DMR | Dimmer Rack | LPM | Lapel Microphone | RFAS | RF Antenna Splitter | TS | Touch Screen |
| AIM | Audio Input Module | DMX | DMX | LPT | Laptop | RFDA | RF Distribution Amplifier | TT | Turn Table |
| AIP | Audio Input Panel | DMXC | DMX Control Cable | LTF | Line Transformer | RFS | RF Splitter | TTP | Table Top Panel |
| AIU | Analog Interface Unit | DMXN | DMX Node | LTP | LCD Touch Panel | RFT | RF Transmitter | TV | Television |
| AL | Audio Left | DPB | Disc Publisher | LVR | Line Voltage Regulator | RFTA | RF Transmitting Antenna | TVP | TV Panel |
| ALA | Assistive Listening Antenna | DRC | Door Control | | | RGB | RGBHV | TVT | TV/RF Tuner |
| ALR | Assistive Listening Receiver | DREC | Digital Recorder | MA | Mixer Amplifier | RIP | Rack Input Panel | TX | Transmitter |
| ALS | Assistive Listening System | DSD | Data Stroage Device | MAL | Media Archive Library | RK | Rack Lights | | |
| ALT | Assistive Listening Transmitter | DSMP | Digital Signage Media Player | MATV | Master Antenna Television | RKM | Rack Mount | UBC | Unbalance to Balance Converter |
| AM | Audio Monitor | DSP | Digital Signal Processor | MCS | Media Collaboration System | RM | Relay Module | UC | Up Converter |
| AMS | Audio Monitor Speaker | DSS | Digital Satellite System | MCT | Main Cabler Tray | RMS | RGB Matrix Switcher | UCD | Unified Communication Device |
| AMX | Auto Mixer | DTP | Digital Twisted Pair | MCV | Media Converter | RPM | Retractable Projector Mount | UP | Usher Panel |
| ANT | Antenna | DVC | DVD/VCR Combo | MD | Mini Disc | RPN | Rack Panel | UPS | Uninterruptible Power Supply |
| AOB | Analog Output Bridge | DVD | Digital Versatile Device | MDCF | Matrix Digital Card Frame | RPT | Repeater | USB | Universal Serial Bus |
| AOP | Audio Output Panel | DVHS | Digital Cassette Recorder | MDR | Motion Detector | RSC | RGB System Controller | USBX | Universal Serial Bus Extender |
| AP | Access Point | DVP | Digital Video Processor | MFP | Microphone Facility Panel | RSI | RGB Switching Interface | | |
| APB | Audio Patch Bay | DVR | Digital Video Recorder | MFS | Mid Frequency Speaker | RSRS | Rotating Sliding Rail System | V | Video |
| APD | Antenna Power Distribution | DVS | Digital Video Scaler | MI | Mdi Interface | RSW | RGB Switcher | VC/SS | Volume Control / Selector Switch |
| APM | Audio Program Monitor | DWR | Drawer | MIC | Microphone | RTP | Remote Truck Panel | VCA | Voltage Controlled Amplifier |
| AR | Audio Right | | | MIDI | MIDI | RX | Receiver | VCC | Video Conference Camera |
| ASP | Antenna Splitter | EBD | Embedder | MIX | Mixer | | | VCM | Video Card Module |
| ASV | Audio Server | EBF | Expanded Beam Fiber Connector | MKB | Monitor Keyboard Sliding Shelf | S | Speaker Level | VCR | Video Cassette Recorder |
| ASW | Audio Switcher | EC | Expansion Card | MM | Microphone Module | SA | Aquatic Speaker | VCS | Video Conferencing System |
| AT | Audio Tie Line | EDB | Electrical Distribution Box | MMC | Media Matrix Computer | SAN | Storage Area Network | VCU | Video Conferencing Unit |
| ATI | Audio Teleconference Interface | EFX | Effects Processor | MMP | Monitor Mix Panel | SAT | Satellite Receiver | VD | Video Display |
| ATN | Attenuator | ELTC | Emergency Lighting Transfer Cabinet | MMPA | Measurement Mix Pre Amplifier | SB | Bass Speaker | VDA | Video Distribution Amplifier |
| AV | Audio Video | EN | Ethernet | MNR | Masking Noise Processor | SC | Ceiling Speaker | VDR | Video Disk Recorder |
| AVC | Auto Volume Controller | ENC | Encoder | MOB | Monitor Out Box | SCB | Cinema Speaker Bass | VE | Video Encoder |
| AVD | Audio Video Distribution | ENG | Electronic News Gathering | MOD | Modulator | SCD | Speaker Control Distribution | VEH | Video Encoder Hub |
| AVI | Audio Video Interface | EQ | Equalizer | MON | Monitor | SCF | SC Fiber Connector | VF | View Finder |
| AVIM | Audio Video Input Module | ERK | Equipment Rack | MOU | Mouse | SCN | Cinema Speaker | VFX | Video Effects Processor |
| AVN | Audio Video Network | ERT | Ethernet Router | MP | Media Panel | SCP | System Control Pad | VIC | Visual Concert |
| AVP | Audio Video Panel | EXG | Expander/Gate | MPA | Microphone Pre-Amplifier | SDA | SDI Distribution Amplifier | VIP | Video Input Panel |
| AVR | Audio Video Router | EXT | Extender | MPL | Music Player | SDB | Speaker Distribution Box | VL | Voice Lift |
| AXF | Auto Transformer | | | MPN | Monitor Panel | SDD | Solid State Disk Dock | VLCF | Voice Lift Card Cage Frame |
| | | F | Fiber | MPS | Motorized Projection Screen | SE | Effects Speaker | VM | Video Monitor |
| BAT | Battery | FB | Floor Box | MPY | Media Player | SER | Serial | VMS | Video Matrix Switcher |
| BC | Battery Charge | FBS | Feed Back Suppresser | MR | Message Repeater | SES | Sound Enhancement Speaker | VOL | Volume Control |
| BDP | Blu-Ray Disc Player | FLM | Floor Monitor | MRP | MD Recorder Player | SFF | Front Fill Speaker | VOP | Voice Over Paging Module |
| BOB | Break Out Box | FMA | FM Antenna | MSC | Main System Controller | SG | Ground Speaker | VPB | Video Patch Bay |
| BP | Belt Pack | FMR | FM Receiver | MSF | Master Fader | SGEN | Sync Generator | VPJ | Video Projector |
| | | FMT | FM Tuner | MSP | Microphone Splitter | SGMR | Single Gang Mud Ring | VPJRM | Video Projector Rotating Mount |
| C | Conduit | FMTA | FM Transmitting Antenna | MSR | Microphone Splitter Rack | SGP | Signal Processor | VPM | Video Program Monitor |
| CAM | Video Camera | FMTR | FM Transmitter | MSV | Media Server | SGS | Signage Server | VPS | Video Production Switcher |
| CAS | Cassette Deck | FOH | Front Of House | MSW | Matrix Switcher | SH | Horn Speaker | VSC | Video Scan Converter |
| CASR | Cassette Deck Recorder | FP | Facility Panel | MXP | Mixer Pre-Amplifier | SHF | Shelf | VSL | Video Scaler |
| CATV | Community Antenna Television | FPL | Floor Panel | | | SI | Sensor Interface | VSP | Video Signal Processor |
| CBD | Curve Bender | FPP | Fiber Patch Panel | NADU | Network Audio Distribution Amp | SIS | Set Integrated Speaker | VSPC | Video Screen Panel Control |
| CBT | Cable Tray | FREC | Fiber Receiver | NET | Network Outlet | SIW | In-Wall Speaker | VSS | Video System Switcher |
| CC | Contact Closure | FSC | File System Controller | NHB | Network Hub | SJB | Speaker Junction Box | VSV | Video Server |
| CCC | Contact Closure Card | FT | Fiber Tie Line | NI | Network Interface | SLA | Speaker Line Array | VSW | Video Switcher |
| CCF | Card Cage Frame | FTP | Fiber Tie Panel | NMCPU | Network Manager CPU | SMP | Stage Manager Panel | VT | Video Tie Line |
| CCP | Camera Connectivity Panel | FW | Firewire | NSG | Noise Gate | SMR | Stage Manager Rack | VW | Video Wall |
| CCU | Camera Control Unit | | | NSS | Network Source Switch | SMS | Scaling Matrix Switcher | VWP | Video Wall Processor |
| CDB | Crestron Distribution Block | GEQ | Graphic Equalizer | NT | Network Terminator | SMSW | Satellite Multiswitch | | |
| CDC | Compact Disc Changer | GNM | Gooseneck Microphone | NWS | Network Switch | SMX | Splitter Mixer | WAA | Wireless Antenna Amplifier |
| CDP | Compact Disc Player | | | | | SO | Speaker Overhead | WAD | Wireless Antenna Distribution |
| CG | Character Generator | HP | Headphone | OPJ | Optical Projector | SP | Speaker | WAS | Wireless Antenna Splitter |
| CIM | Control Interface Module | HDTV | High Definition Television | | | SPCL | Speaker Cluster | WB | White Board |
| CIU | Computer Interface Unit | HDW | Hardware | P | Power | SPG | Program Speaker | WBC | Window Blind Control |
| CL | Camera Lens | HFS | High Frequency Speaker | PA | Power Amplifier | SPJ | Slide Projector | WBP | Wireless Belt Pack |
| CM | Card Module | HHM | Hand Held Microphone | PAD | Pad | SPL | Splitter | WC | Word Clock |
| CME | Control Module Extended | HPR | Headphone Remote Station | PB | Push Button | SPN | Stage Panel | WER | Wireless Ethernet Router |
| CMIC | Ceiling Microphone | HRB | Headset Remote Box | PBR | Play Back Rack | SPP | Speaker Patch Panel | WFM | Waveform Monitor |
| CMP | CD/Media Player | HS | Headset | PC | Personal Computer | SPR | Speaker Processor | WGA | Wireless Gateway Antenna |
| CN | CobraNet | HTS | Home Theater System | PCB | Patch Cable | SPT | Speaker Portable | WGW | Wireless Gateway |
| CNT | Control Network | | | PCC | Personal Computer Control | SR# | Surround Rear | WIA | Wireless Intercom Antenna |
| COD | Codec Unit | IAA | Integrated Audio Amplifier | PCD | Power Conditioner | SRA | Stereo Receiver Amp | WLM | Wireless Microphone |
| COM | Compressor | IBP | Intercom Belt Pack | PCLD | Projector Controller With Line Doubler | SS | Surround Sound Speaker | WLU | Wireless Unit |
| CON | Converter | IBS | Intercom Base Station | PCT | Portable Cart | SS# | Surround Sound Side | WM | Wireless Mouse |
| CP | Conduit Pocket | IC | Intercom | PD | Plasma Display | SSA | Solid State Audio Source | WMA | Wireless Mic Antenna |
| CPIS | Control Plug In Station | ICS | Intercom Station | PDL | Plasma Display Lift | SSF | Sliding Shelf | WMAP | Wireless Mic Antenna Panel |
| CPL | Compressor/Limiter | ID | Interactive Display | PEC | Portable Equipment Case | SSV | Streaming Server | WMG | Wire Manager |
| CPP | Central Paging Processor | IFC | Interface Card | PEQ | Parametric Equalizer | SSW | Serve Switch | WMKA | Wireless Mic Keyboard Antenna |
| CPU | Central Processing Unit | IH | Intercom Handset | PGM | Program Monitor | ST# | Surround Top | WMKS | Wireless Mouse Keyboard Antenna |
| CRC | Camera Remote Control | IHS | Intercom Head Set | PGS | Paging System | STB | Stage Box | WMR | Wireless Mic Receiver |
| CRK | Control Rack | IMS | Intercom Main Station | PI | Power Injector | SUM | Summing Amplifier | WP | Wall Plate |
| CS | Conference Station | IOP | Input/Output Panel | PJL | Projector Lift | SV | S-Video | WPG | Wireless Presentation Gateway |
| CSF | Call Signal Flasher | IPC | IP Camera | PJS | Projection Screen | SVC | Slide to Video Converter | WPN | Wall Panel |
| CT | Control | IR | Infrared | PM | Paging Microphone | SVD | Signage Video Display | WSI | Work Station Interface |
| CTM | Control Module | IRB | IR Broadcast | PMIC | Presentation Microphone | SVDA | S-Video Distribution Amp | WTA | Wireless Touch Panel Adapter |
| CTN | Cable Tuner | IRE | IR Emitter | PMP | Podium Microphone Panel | SVHS | S-Video Cassette Recorder | WTP | Wireless Touch Panel |
| CTR | Controller | IRM | IR Modulator | PNWS | Power Network Switch | SVMS | S-Video Matrix Switcher | WTPR | Wireless Touch Panel Receiver |
| CTS | Computer Training System | IRR | IR Receiver | POD | Podium | SVS | S-Video Switcher | | |
| CVM | Computer Video Monitor | IRS | Intercom Remote Station | PP | Podium Panel | SVSS | S-Video Separator Switcher | XFR | Transformer |
| | | IRT | IR Transmitter | PPS | Phantom Power Supply | SW | Wall Mounted Speaker | XKVM | Extended KVM |
| DA | Distribution Amp | ISDN | Integrated Service Digital Network | PRE | Pre Amplifier | SWG | Switch Glass | XLRP | XLR Panel |
| DAB | Digital Audio Bus | ITR | Isolation Transformer | PRK | Portable Rack | SWH | Sound Web Hub | XOV | Crossover |
| DAO | Digital to Analog Output | | | PS | Power Supply | SYSW | System Switcher | | |
| DAR | Digital Audio Recorder | JB | Junction Box | PSB | Powered Subwoofer | | | | |

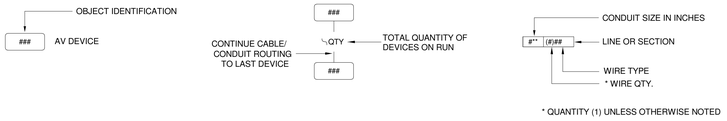
## ABBREVIATIONS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (E)### | Existing | CLG | Ceiling | | | NTS | Not To Scale | | |
| (F) | Future | CM | Construction Manager | GC | General Contractor | | | SECT | Section |
| | | CO | Conduit Only | | | OC | On Center | SHP | Shielded Pair |
| A 0 | Above Zero Floor Level | | | HR | Home Run | OD | Outer Diameter | SIM | Similar |
| ACT | Above Counter Top | DIA | Diameter | | | OFCI | Owner Furnished Contractor Installed | SM | Stage Manager |
| AFB | Above Floor Below | DR | Door | IW | In Wall | OFE | Owner Furnished Equipment | STD | Standard |
| AFC | Above Finished Ceiling | | | | | OFOI | Owner Furnished Owner Installed | | |
| AFF | Above Finished Floor | E.C. | Empty Conduit | LP | Lightning Protector | | | TPD | Tripod |
| AH | Above Header | EC | Electrical Contractor | LRR | Lightning Room Rack | P/O | Part Of | TST | Test Set |
| AS | Above Slab | EL | Elevation | LTG | Lighting | PF | Press Feed | TYP | Typical |
| | | ELEC | Electrical | | | POC | Point of Connection | | |
| BFC | Below Finished Ceiling | EOL | End Of Line | MISC | Miscellaneous | PRG | Program | UBC | Uniform Building Code |
| BGM | Background Music | EQUIP | Equipment | MOM | Momentary | PROJ | Project | UON | Unless Otherwise Noted |
| BOH | Back Of House | | | MTD | Mounted | PSCH | Project Standard Control Height | | |
| BTU | British Thermal Units | FAN | Fan Panel | MTF | Mounting Termination Fabrication | PSRH | Project Standard Receptacle Height | VIF | Verify In Field |
| | | FBO | Furnished By Owner | MTL | Metal | PSSH | Project Standard Switch Height | | |
| CAB | Cabinet | FCA | Finished Ceiling Above | | | PST | Pull String | WP | Weather Proof |
| CATV | Cable TV | FIN | Finished | NC | Normally Closed | PWR | Power | | |
| CBC | California Building Code | FOH | Front Of House | NIC | Not In Contract | | | | |
| CL | Center Line | FSF | Folding Shelf | NO | Normally Open | RCP | Reflected Ceiling Plan | | |

## FACILITY INPUT SYMBOL SCHEDULE AND DESCRIPTIONS FOR FLOOR AND CEILING PLANS



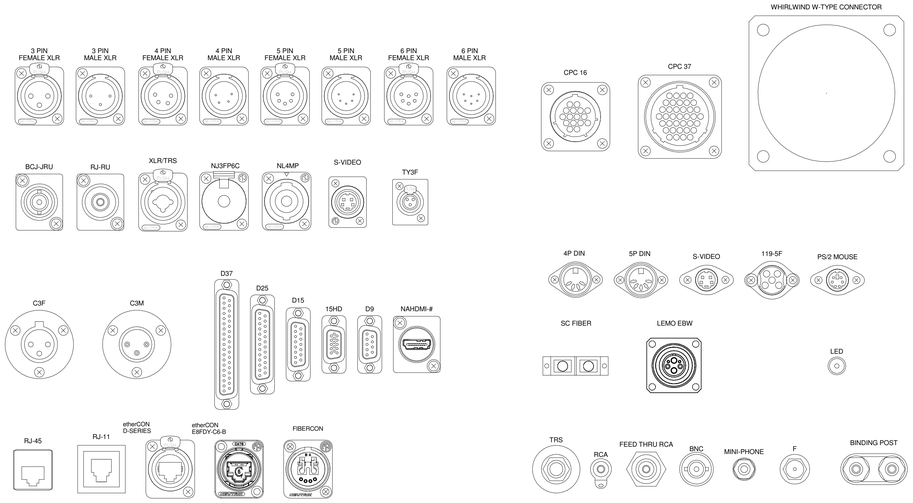

## RISER SYMBOL SCHEDULE AND DESCRIPTIONS




* QUANTITY (1) UNLESS OTHERWISE NOTED

** ONE CONDUIT PER LINE OR SECTION UNLESS OTHERWISE NOTED

## FACILITY PANEL CONNECTOR LEGEND




## WIRE SCHEDULE

NOTES:
1. CONTRACTOR TO USE PLENUM RATED CABLE WHERE REQUIRED BY CODE.
2. WIRING TO BE INSTALLED BY AV CONTRACTOR

| TYPE | APPLICATION | DESCRIPTION (FIXED INSTALL CABLE) | O.D. | MANUF. | PART NO. |
|---|---|---|---|---|---|
| A1 | AUDIO ANALOG/DIGITAL CABLE | ANALOG/DIGITAL AUDIO CABLE, MICROPHONE AND LINE LEVEL WIRING, LESS THAN -24 dBu, FROM 20Hz TO 20kHz, 24 AWG, IMPEDANCE 110/Ω-2126 ±20%, CAPACITANCE 26pF/FT, 100% SHIELDED, STRANDED TWISTED PAIR | 0.177 | BELDEN | 1800B |
| C2 | CONTROL/PWR SUPPLY | CONTROL CABLE AC/DC, 22 AWG, 2 PAIR, TWISTED, TINNED COPPER | 0.233 | BELDEN | 9744 |
| D1 | DATA SERIAL CABLE RS232-485 | SERIAL DATA CABLE, 28 AWG, TINNED COPPER, 100% FOIL, 65% TC BRAID SHIELD, TWISTED 2 PAIR | 0.220 | BELDEN | 8132 |
| D2 | CAT 6A DATA NETWORK CABLE (HD BASE-T COMPATIBLE) | FOUR TWISTED PAIR, F/UTP O/A FOIL SHIELD, 23 AWG INSULATED SOLID BARE COPPER, HELICAL TC DRAIN, RIPCORD AND OVERALL PVC JACKET, CAPACITANCE 15 pF/ft, DELAY SKEW 45nS/100m (4K HDBaseT). | 0.290 | BELDEN | 2183R |
| D3 | CAT 6 DATA NETWORK CABLE | CATEGORY 6 DATA CABLE, 23 AWG, UNBONDED PAIR CABLES, SOLID BARE COPPER, MAX. ATTENUATION 28.3dB/100m @ 200MHz, MAX DELAY SKEW 45ns/100 m , NOM MUTUAL CAPACITANCE @ 1KHz 15pF/FT, MAX DC RESISTANCE 8.2/Ω-2126/100m | 0.220 | BELDEN | 2412 |
| F2.4 | MULTI MODE FIBER OPTICS | MULTI MODE FIBER 62.5/125/900 MICRON, 4 CONDUCTORS, PVC JACKET, MAX. ATTENUATION 1.25dB/km @ 1300nm | 0.200 | BELDEN | FI1D004R9 |
| I3 | INTERCOM UNDER 500 FT | 20 AWG, PVC JACKET, SHIELDED STRANDED (7x28) TC CONDUCTORS, (4) TWISTED PAIRED | 0.345 | BELDEN | 8725 |
| R1 | LOW LOSS 50/Ω-2126 WIRELESS | RG58C/U, 20 AWG, 50/Ω-2126, 95% BRAIDED SHIELD, NOM ATTN -21.5dB/100ft @ 1GHz | 0.195 | BELDEN | 8262 |
| R3 | LOW LOSS 50/Ω-2126 WIRELESS | RG213/U, 13 AWG, 50/Ω-2126, 96% BRAIDED SHIELD, NOM ATTN -8dB/100ft @ 1GHz | 0.405 | BELDEN | 8267 |
| S1 | SPEAKER | LOUDSPEAKER LEVEL OR CIRCUIT WIRING GREATER THAN +24dBu, FROM 20Hz TO 20kHz, 16 AWG, STRANDED, TWISTED PAIR WITH PVC JACKET. | 0.208 | BELDEN | 5200UP |
| S2 | SPEAKER | LOUDSPEAKER LEVEL OR CIRCUIT WIRING GREATER THAN +24dBu, FROM 20Hz TO 20kHz, 14 AWG, STRANDED, TWISTED PAIR WITH PVC JACKET. | 0.260 | BELDEN | 5100UP |
| S3 | SPEAKER | LOUDSPEAKER LEVEL OR CIRCUIT WIRING GREATER THAN +24dBu, FROM 20Hz TO 20kHz, 12 AWG, STRANDED, TWISTED PAIR WITH PVC JACKET. | 0.302 | BELDEN | 5000UP |
| V1 | VIDEO (ANALOG & DIGITAL) | RG-59, PRECISION VIDEO CABLE, 75/Ω-2126, 20AWG, NOM ATTN -13.4dB/100ft @ 3GHz | 0.233 | BELDEN | 1505A |

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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**AV ABBREVIATIONS, NOTES AND SYMBOLS**

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## AV JUNCTION BOX SCHEDULE

| DEVICE ID | DESCRIPTION | BOX TYPE | BOX SIZE | INSTALL METHOD | ELEVATION (TO CENTER OF BOX U.O.N) |
|---|---|---|---|---|---|
| CAM1 | CAMERA JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | 96" AFF. |
| CAM2 | CAMERA POSITION JUNCTION BOX | FSR INC WB-4G-G W/WB-4G-C | 8.9 x 8.9 x 5.75 | WALL | 96" AFF. |
| ERK1.# | AV EQUIPMENT RACK | N/A | N/A | N/A | N/A |
| ERK2 | EQUIPMENT RACK | N/A | N/A | N/A | N/A |
| FB1.# | FLOOR BOX | FL-540P-6-B W/ FL-540P-BLK-C COVER | FL-540P (10 x 12.16 x 6.20 | FLOOR | N/A |
| FOH1 | FRONT OF HOUSE JUNCTION BOX | HOFFMAN A-SG10X10X6 W/FLUSH MOUNT COVER | 10 x 10 x 6 | WALL | PSRH |
| FOH2 | FRONT OF HOUSE FLOOR BOX | RAISED FLOOR BOX (FSR-INC FL-540P) / POUR IN PLACE CONCRETE (FSR-INC FL-500P) W/APPROPRIATE COVER AND ACCESSORIES | FL-540P (10 x 12.16 x 6.20) / FL-500P (10 x 12.16 x 6.08) | FLOOR | N/A |
| FOH3 | FRONT OF HOUSE FLOOR BOX | RAISED FLOOR BOX (FSR-INC FL-540P) / POUR IN PLACE CONCRETE (FSR-INC FL-500P) W/APPROPRIATE COVER AND ACCESSORIES | FL-540P (10 x 12.16 x 6.20) / FL-500P (10 x 12.16 x 6.08) | FLOOR | N/A |
| FP1 | FACILITY PANEL JUNCTION BOX | FSR SMWB-4G | 8.5 x 4.81 x 2.5 | SURFACE MOUNT | 18" AFF. |
| IC1 | INTERCOM JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR OR FSR SMWB-1G | (4-11/16 x 4-11/16 x 2-1/8) / (3.06 x 4.81 x 2.5) | WALL / SURFACE MOUNT | PSCH |
| IC2 | INTERCOM JUNCTION BOX | 4.7 SQ. BOX DEEP W/2GMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | PSCH |
| IC3 | INTERCOM JUNCTION BOX | 4 GANG BOX DEEP W/4GMR | 7-13/32 x 3-3/4 x 2-1/2 | WALL | PSCH |
| IC4 | INTERCOM JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | PSCH |
| IC5 | INTERCOM JUNCTION BOX | 4 GANG BOX DEEP W/4GMR | 7-13/32 x 3-3/4 x 2-1/2 | WALL | PSCH |
| IRT-A | IR TRANSMITTER JUNCTION BOX | 4.7 SQ. BOX DEEP W/2GMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | 144"AFF. |
| IRT-B | IR TRANSMITTER JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | 144"AFF. |
| PSC1 | PROJECTION SCREEN CONTROL JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | 252" AFF. |
| SC1 | CEILING SPEAKER | QSC AD-MR6 TRIM RING OR TILE BRIDGE | N/A | CEILING | N/A |
| SC2 | CEILING SPEAKER | QSC AD-MR4 TRIM RING OR TILE BRIDGE | N/A | CEILING | N/A |
| SPCL.# | SPEAKER CLUSTER JUNCTION BOX | FSR INC WB-X3-GNG W/COVER | 12.38 x 16.75 x 3.97 | WALL | 288" AFF. |
| SPN1.# | STAGE PANEL JUNCTION BOX | HOFFMAN A-SG16X12X6 W/ COVER | 12 x 12 x 6 | WALL | PSRH |
| SPN2.# | STAGE PANEL JUNCTION BOX | HOFFMAN A-SG12X12X6 W/ COVER | 12 x 12 x 6 | WALL | PSRH |
| TPC1 | TOUCH PANEL CONTROL JUNCTION BOX | 4.7 SQ. BOX DEEP W/2GMR | 4-11/16 x 4-11/16 x 2-1/8 | WALL | PSCH |
| VD43 | VIDEO DISPLAY JUNCTION BOX | FSR-INC PWB-253 AS REQUIRED ACCESSORIES AND COVER | 7.10 x 14.25 x 2.88 | WALL | 59" AFF. |
| VD50 | VIDEO DISPLAY JUNCTION BOX | FSR-INC PWB-253 AS REQUIRED ACCESSORIES AND COVER | 7.10 x 14.25 x 2.88 | WALL | 61" AFF. |
| VPJ1 | VIDEO PROJECTOR JUNCTION BOX | 4.7 SQ. BOX DEEP W/SGMR | 4-11/16 x 4-11/16 x 2-1/8 | CEILING | N/A |
| WIA | WIRELESS INTERCOM ANTENNA JUNCTION BOX | 4 GANG BOX DEEP W/4GMR | 7-13/32 x 3-3/4 x 2-1/2 | WALL | 216" AFF. |
| WMA | WIRELESS MICROPHONE ANTENNA JUNCTION BOX | 4 GANG BOX DEEP W/4GMR | 7-13/32 x 3-3/4 x 2-1/2 | WALL | 216" AFF. |

*NOTE: CONTRACTOR IS TO PROVIDE BLANK PANELS FOR ALL BOXES THAT ARE DESIGNATED FOR FUTURE USE. BOXES THAT ARE ABLE TO ACCEPT STANDARD SIZE BLANK PANELS SHALL BE PROVIDED WITH SAME (SGMR, 2GMR, SWITCH BOXES, ETC). NON STANDARD SIZE BOXES (I.E. TOUCH PANELS) WILL BE PROVIDED WITH ANODIZED ALUMINUM BLANK PANELS. SEE SPECIFICATION FOR REQUIREMENTS (I.E. COLOR COORDINATION). CONTRACTOR TO LABEL ALL CONDUIT STUBS AND FUTURE BACK BOXES WITH PERMANENT MARKER. SEE SPECIFICATION FOR DETAILS.

## AV EQUIPMENT WEIGHT AND DETAIL SCHEDULE

| DEVICE ID | DESCRIPTION | WEIGHT | ATTACHMENT DETAIL |
|---|---|---|---|
| CAM | PAN-TILT CAMERA | 7 LBS. | 3/AV6.01 |
| ERK1.# | EQUIPMENT RACK | 500 LBS. MAX | 1/AV5.01 |
| ERK2 | EQUIPMENT RACK | 300 LBS. MAX | 3/AV5.01 |
| PJS | PROJECTION SCREEN | 500 LBS. | A/AV6.02 |
| SC1 | CEILING SPEAKER | 9.5 LBS. | 2/AV6.01 |
| SC2 | CEILING SPEAKER | 6.4 LBS. | 2/AV6.01 |
| SPCL.# | SPEAKER CLUSTER | 500 LBS | 4/AV6.01 |
| VD43 | VIDEO DISPLAY | 20 LBS. | 1/AV6.01 |
| VD50 | VIDEO DISPLAY | 30 LBS. | 1/AV6.01 |
| VPJ1 | VIDEO PROJECTOR | 150 LBS. | 1/AV6.02 |

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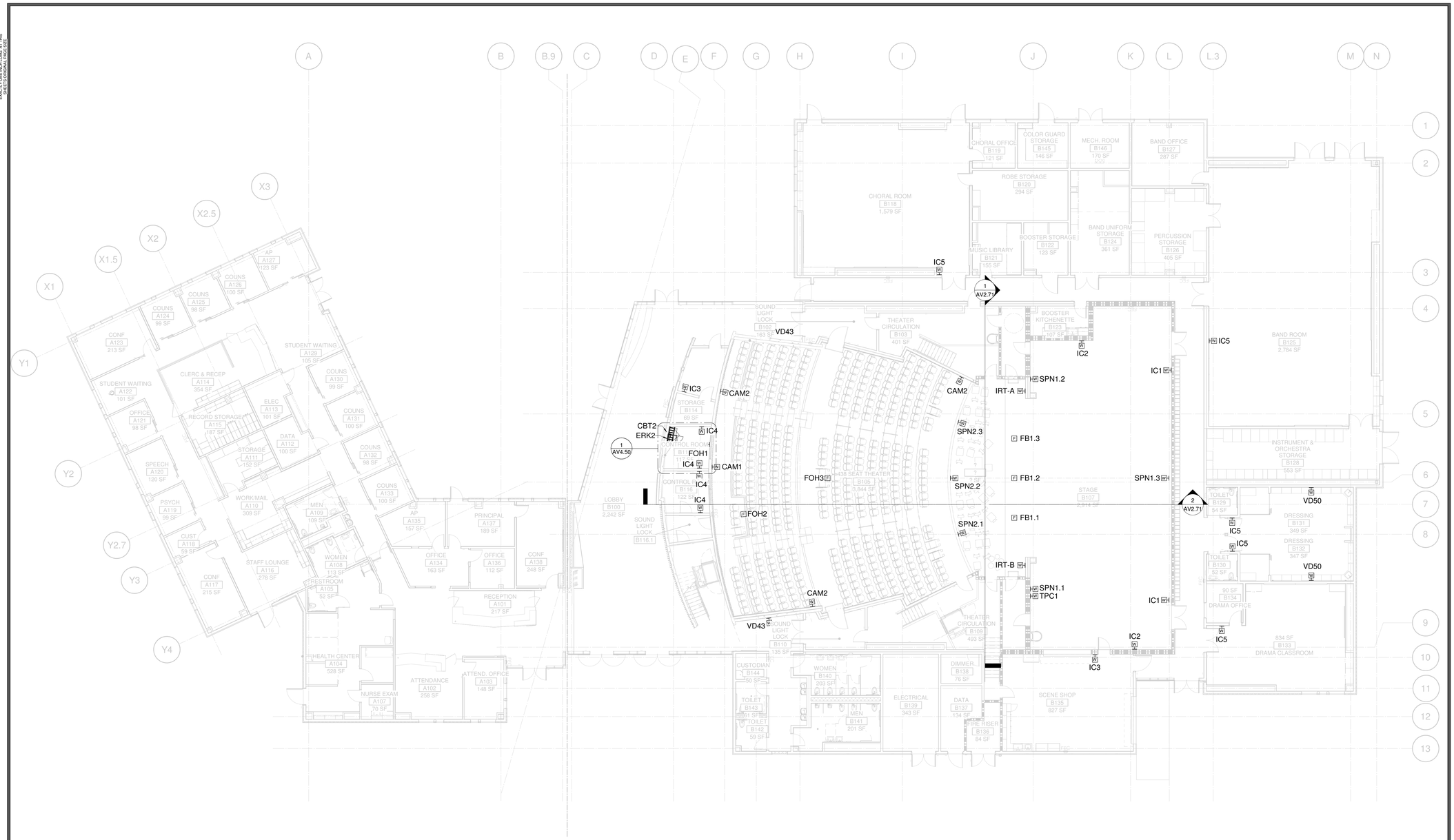
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FLOOR PLAN - OVERALL - 1ST FLOOR **1**
3/32" = 1'-0"

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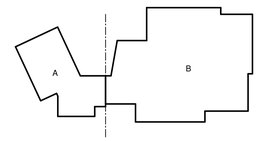
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**1ST FLOOR - AV FLOOR PLAN**

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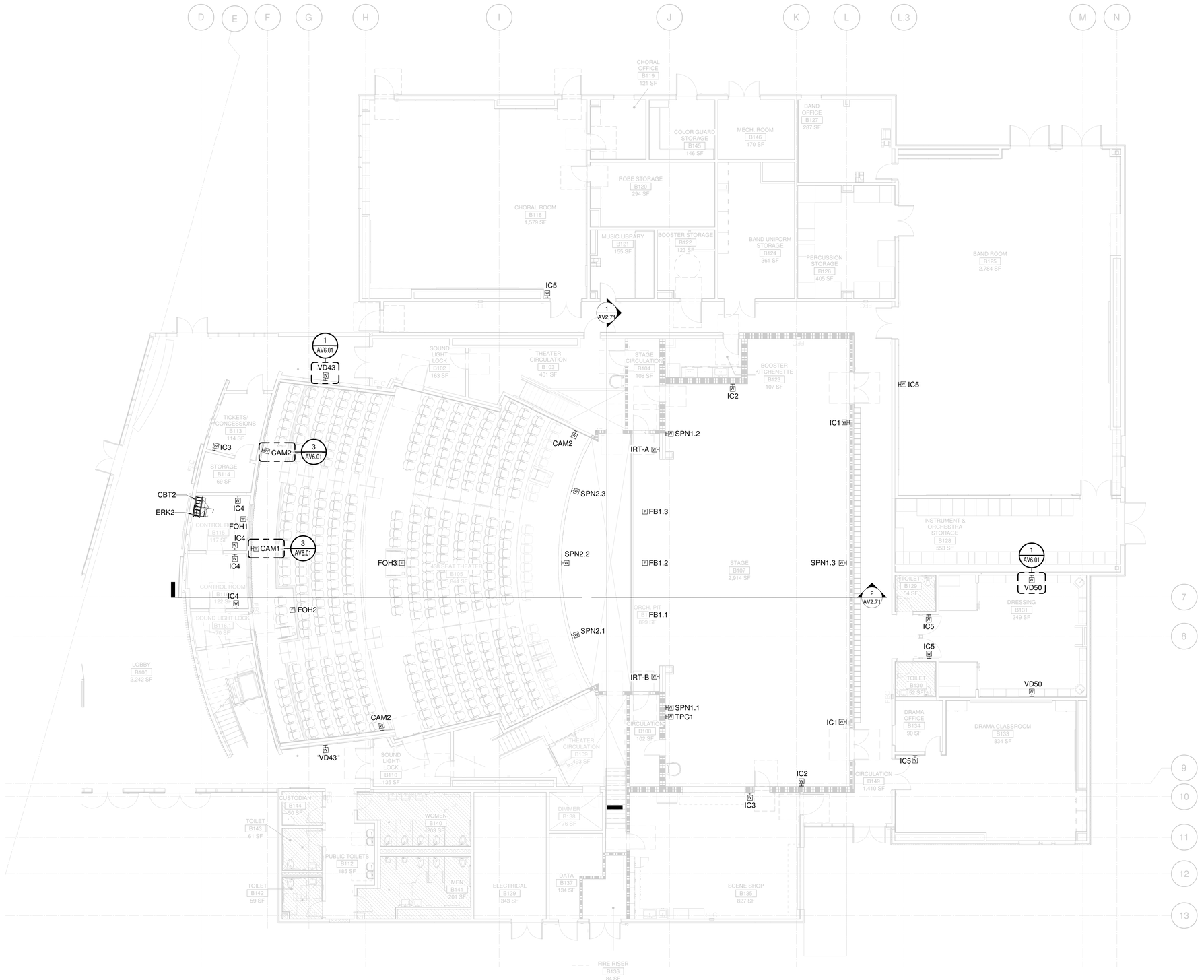
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**FLOOR PLAN - PARTIAL - 1ST FLOOR - SEGMENT B** | **1** 1/8" = 1'-0"

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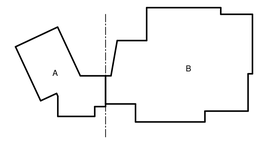
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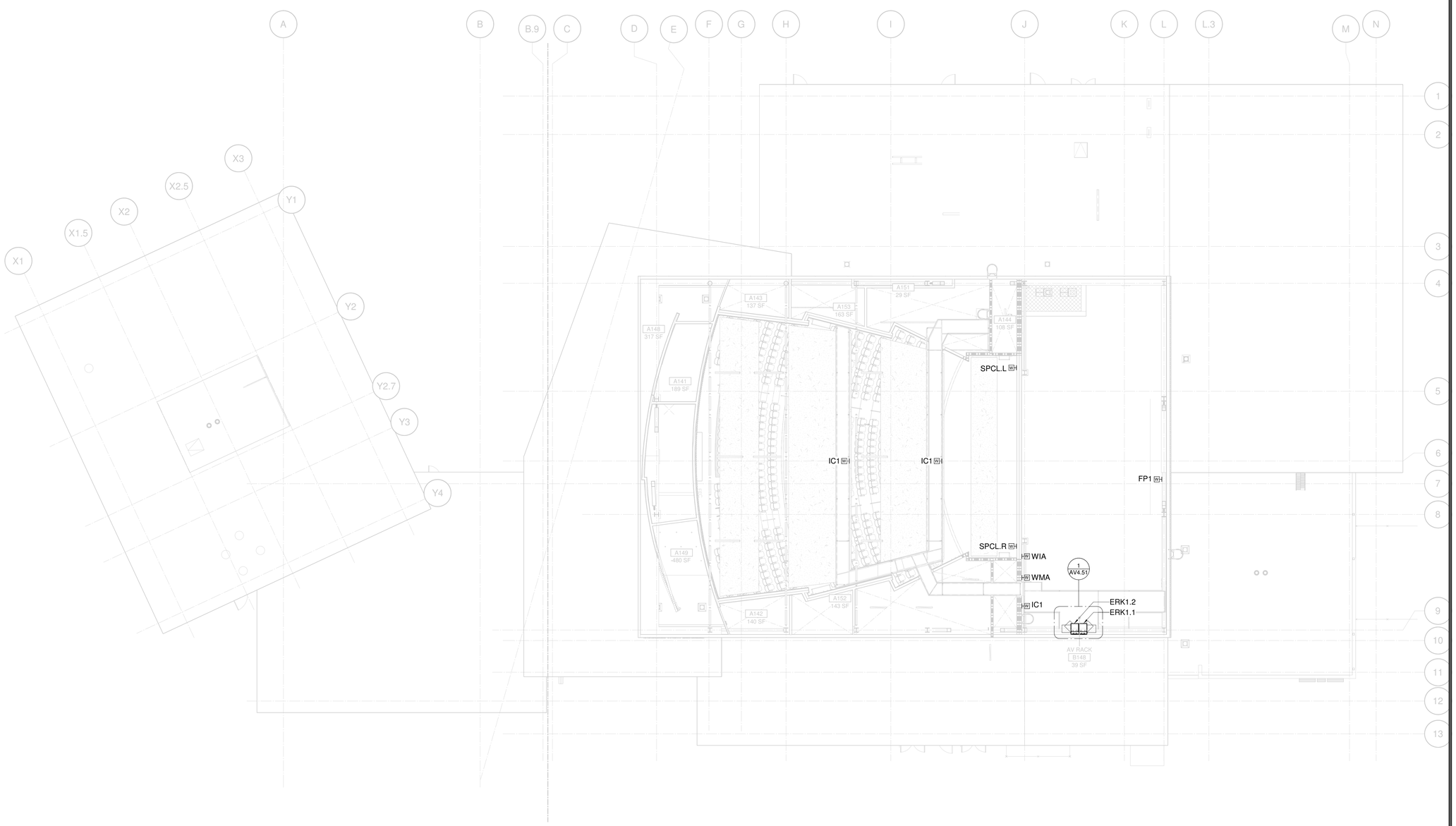
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FLOOR PLAN - OVERALL - 2ND FLOOR **1**
3/32" = 1'-0"

PLEASE RECYCLE

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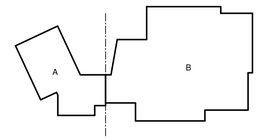
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www.veneklasen.com

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**2ND FLOOR - AV FLOOR PLAN**

**DSA SUBMITTAL**

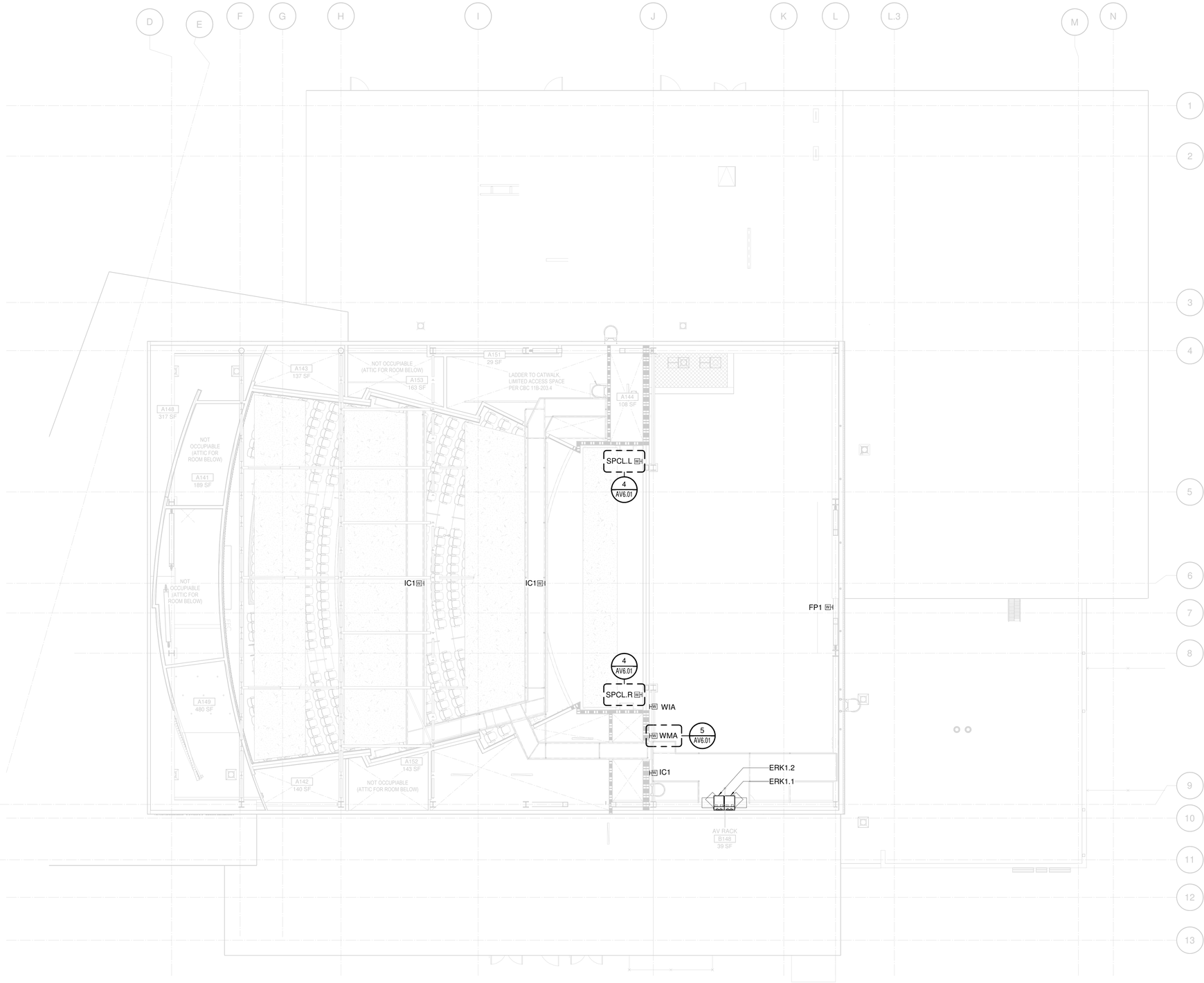
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**FLOOR PLAN - PARTIAL - 2ND FLOOR - SEGMENT B** | **1** 1/8" = 1'-0"

PLEASE RECYCLE

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EL MONTE UNION HIGH SCHOOL DISTRICT
COMMITTED TO COLLEGE AND CAREER
ESTABLISHED 1991

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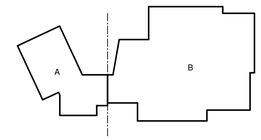
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KEY PLAN:




FACILITY:

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**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**2ND FLOOR - SEGMENT B - AV FLOOR PLAN**

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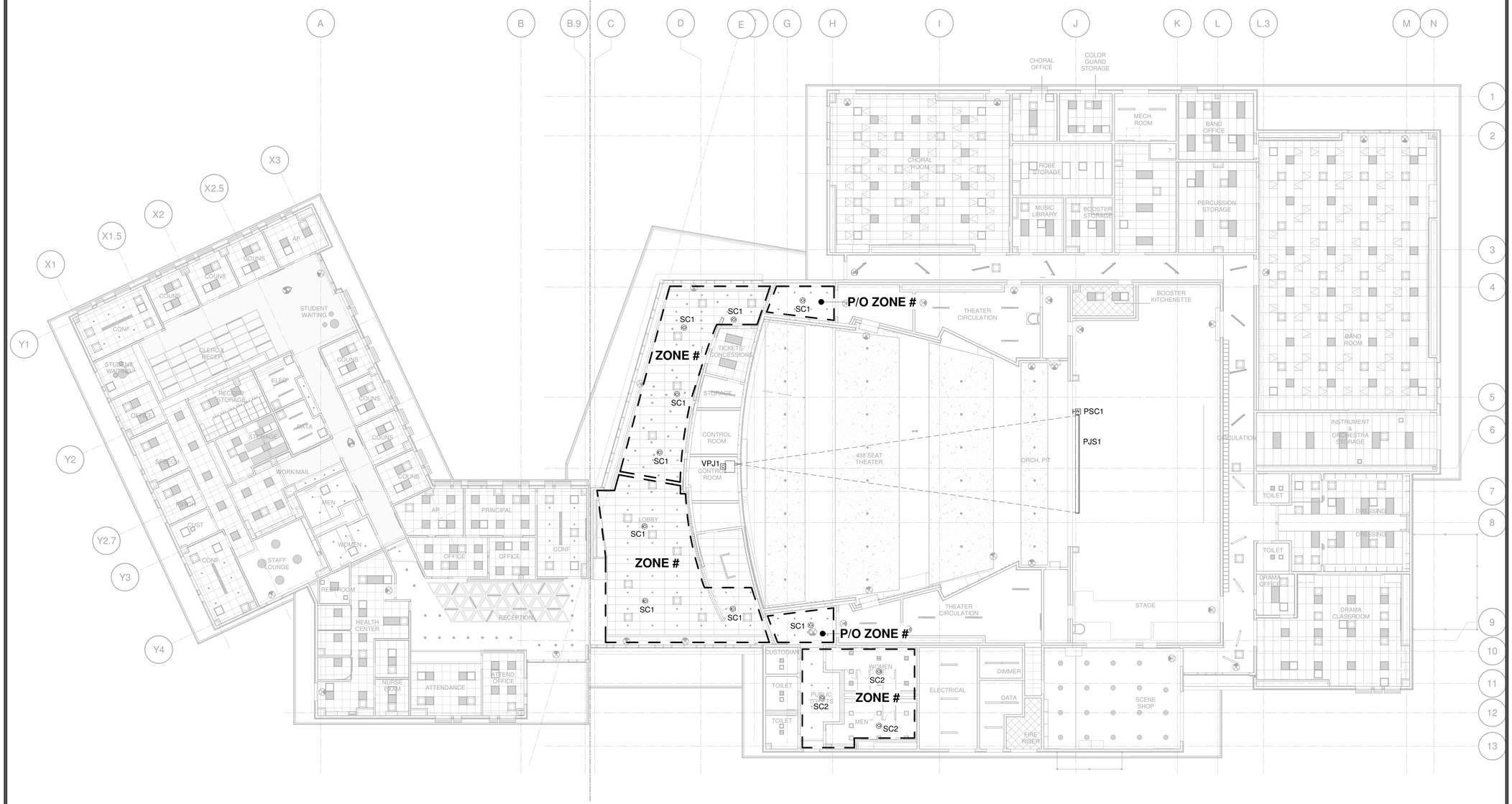
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**RCP - OVERALL - 1ST FLOOR** | **1** 3/32" = 1'-0"

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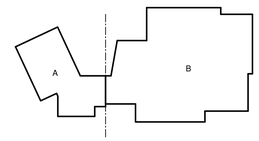
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - REFLECTED CEILING PLAN**

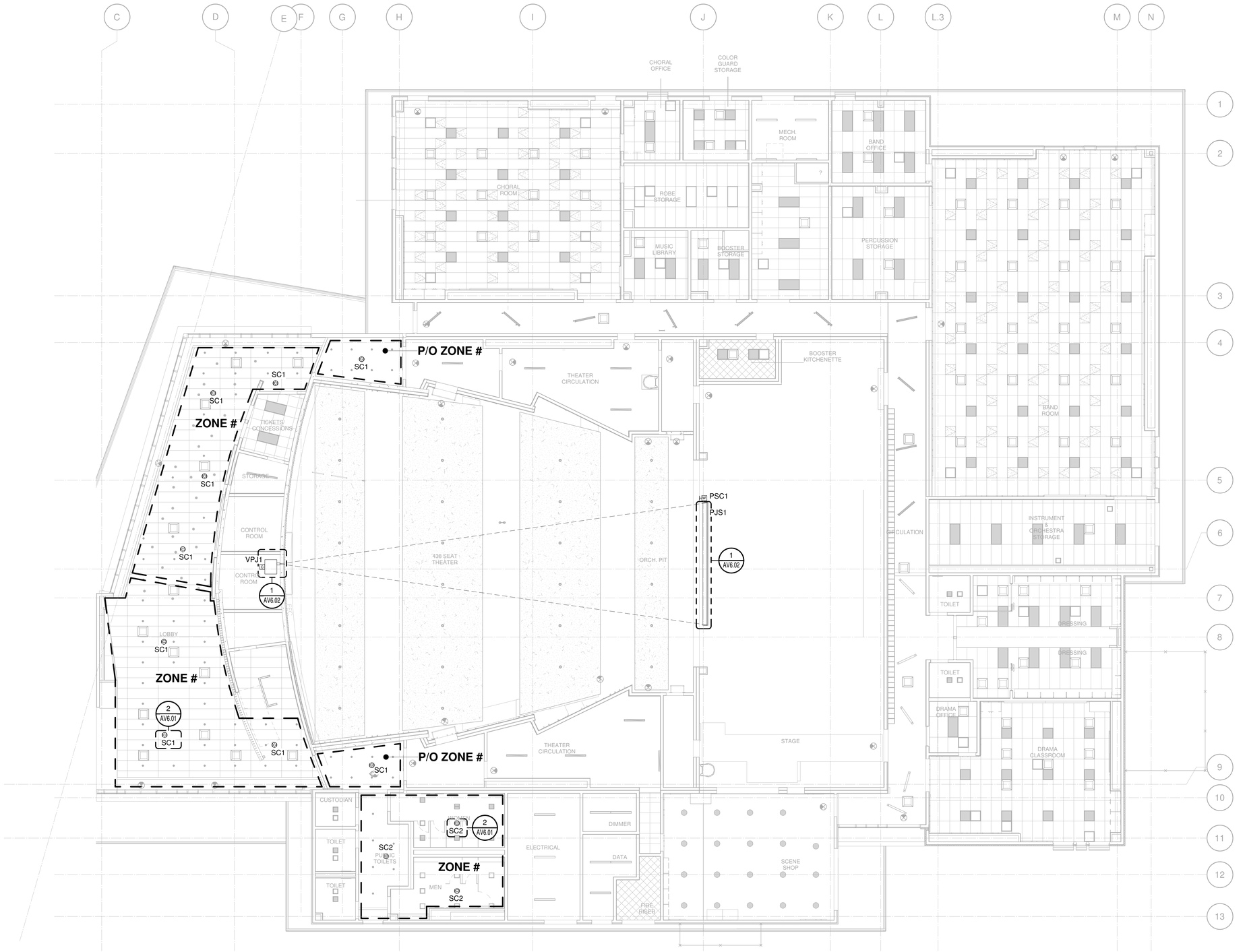
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RCP - PARTIAL - 1ST FLOOR - SEGMENT B | 1 | 1/8" = 1'-0"

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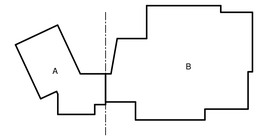
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**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**1ST FLOOR - SEGMENT B - REFLECTED CEILING PLAN**

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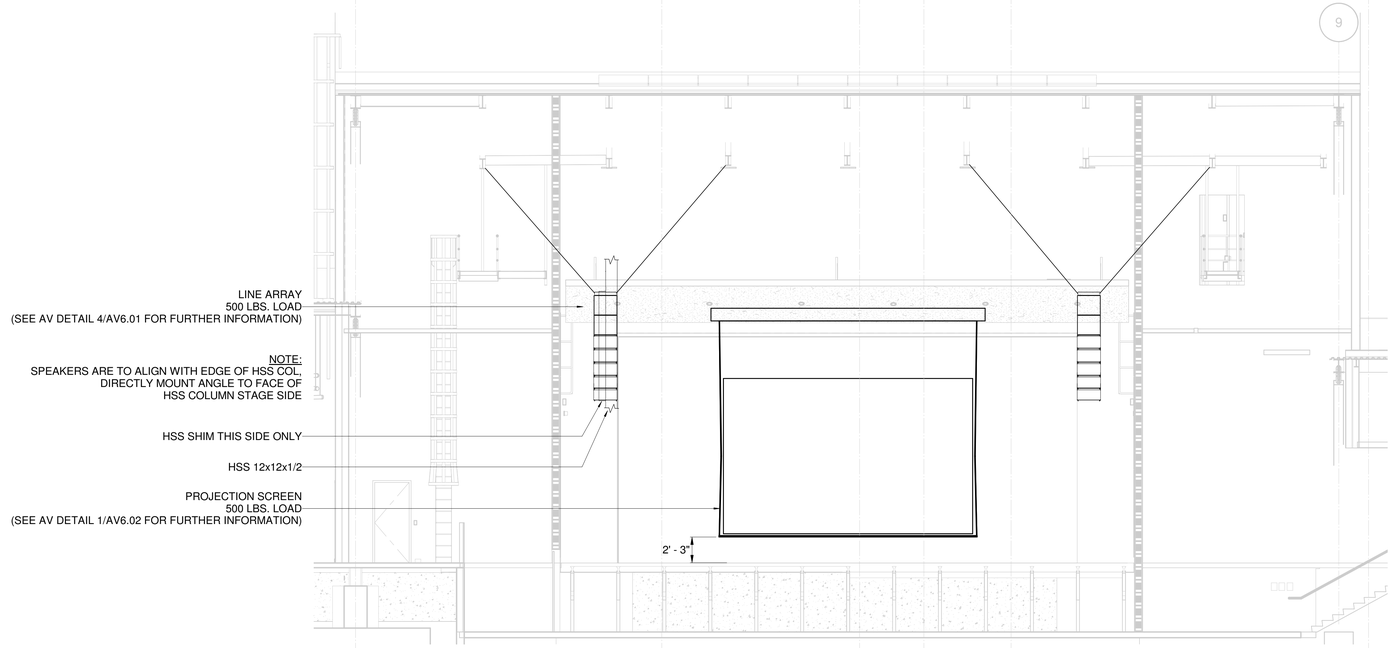
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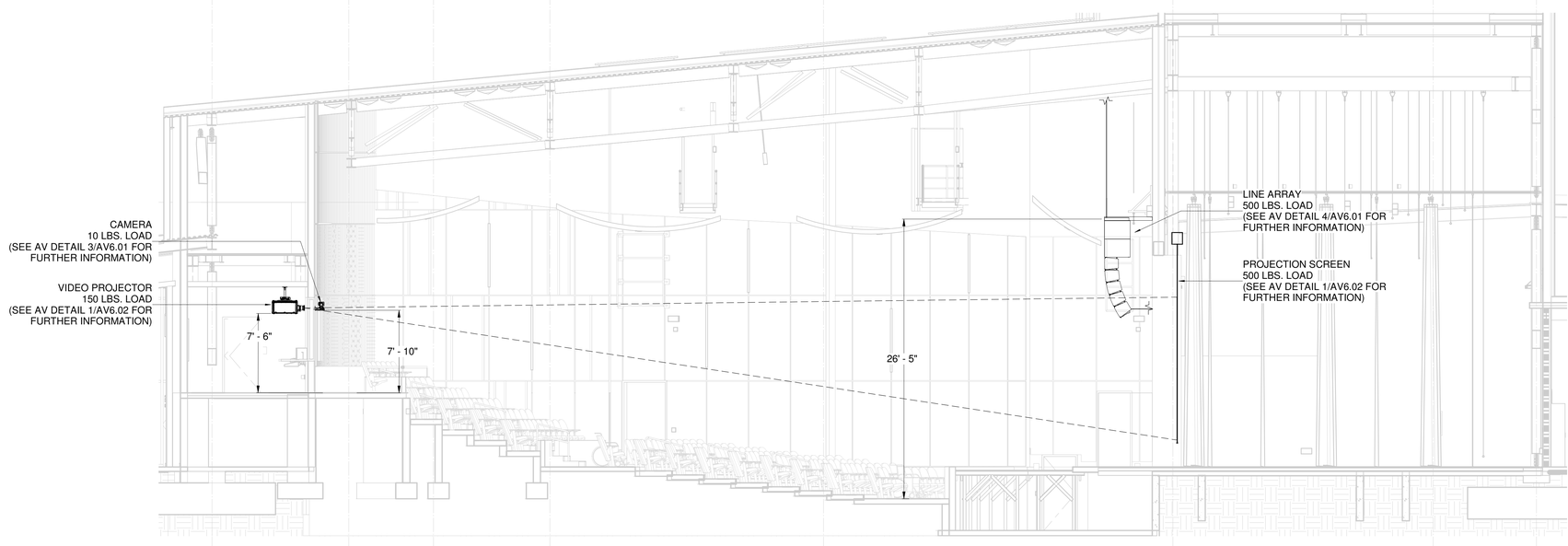
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**TRANSVERSAL SECTION** 1
3/16" = 1'-0"




**LONGITUDINAL SECTION** 2
3/16" = 1'-0"

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PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**AV THEATER SECTIONS**

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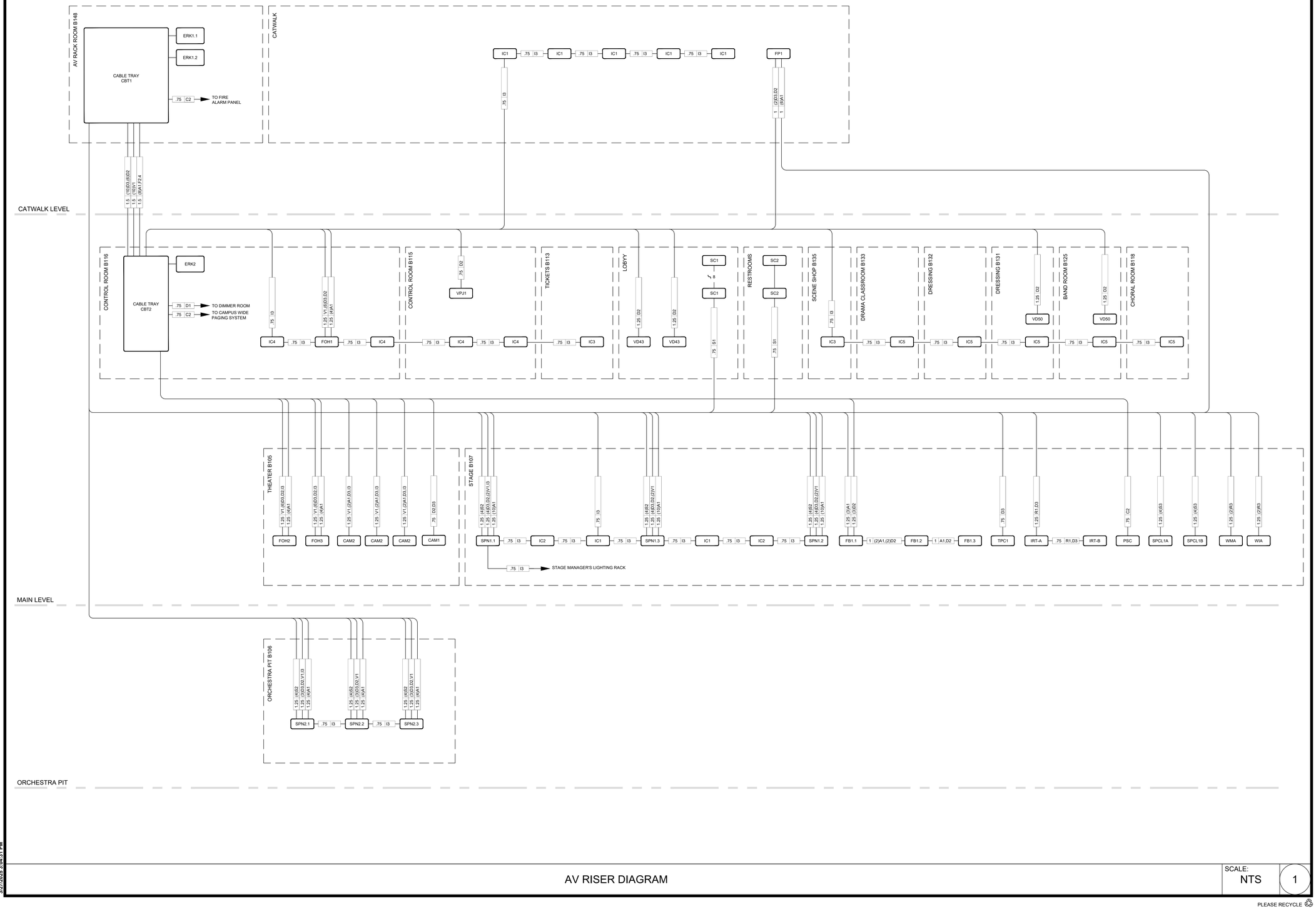
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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**AV RISER DIAGRAM**

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**AV2.91**

AV RISER DIAGRAM

SCALE: NTS

1

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## SPEAKERS

CEILING SPEAKER



CEILING SPEAKER W/TRANSFORMER



MONITOR SPEAKER



HORN



OVERHEAD SPEAKER



OVERHEAD SPEAKER W/TRANSFORMER



MID & LOW SPEAKER



2 WAY SPEAKER



3 WAY SPEAKER



HORN W/TRANSFORMER



SINGLE SUB WOOFER



DUAL SUB WOOFER



QUAD SUBWOOFER



SELF POWERED SPEAKER



3-WAY POWERED SPEAKER



3-WAY SPEAKER



IN-WALL SPEAKER



PLASMA SPEAKER



POWERED LINE ARRAY SPEAKER



LINE ARRAY SPEAKER



PLANTER SPEAKER



## AMPLIFIERS

SINGLE CHANNEL



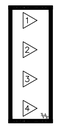
DUAL CHANNEL



3 CHANNEL



4 CHANNEL



BRIDGE



TOP HALF



MIDDLE HALF



BOTTOM HALF



## VIDEO

VIDEO PROJECTOR



PAN & TILT CAMERA



VIDEO CAMERA



DOCUMENT CAMERA



VIDEO / TV DISPLAY



PROJECTION SCREEN



SATELLITE



## DEVICES

DEVICE



TOP HALF



BOTTOM HALF



MIDDLE HALF



## JUNCTION BOXES

J-BOX



## MISCELLANEOUS SYMBOLS

FULL COMPUTER



COMPUTER MONITOR



CPU



KEYBOARD



MOUSE



LAPTOP PC



KEYBOARD VIDEO MOUSE



WIRELESS MOUSE



TOUCH PANEL



WIRELESS TOUCH PANEL



DOCK ABLE TOUCH PANEL



TABLE TOP MICROPHONE



HAND HELD MICROPHONE



WIRELESS HAND HELD MICROPHONE



LAVALIERE MICROPHONE



CEILING MICROPHONE



GOOSENECK MICROPHONE



PAGING MICRHOPHONE



BELT PACK



HEADSET BELTPACK



HEADSET PLUGIN



NECK LOOP



ANTENNA



INFRA RED EMITTER



MICROPHONE ARRAY



ATTENUATOR



TRANSFORMER



10K POT



LIGHTING PROTECTION



## LINE CONVENTIONS

AREA



AUDIO LINE



CONTROL LINE



DATA



INTERCOM



MULTI



SPEAKER



RACK



RF



VIDEO LINE



WIRE BUSS



"Y" CONNECTION



## DRAWING AND SIGNAL NAVIGATION

PAGE TO




PAGE FROM




FROM EXTERNAL SYSTEM



TO EXTERNAL SYSTEM



## AUDIO PATCH POINTS

HALF NORMAL BRIDGING



HALF NORMAL



FULL NORMAL



IN (LEFT ON PATCH BAY)



OUT (LEFT ON PATCH BAY)



## I/O CONNECTIONS

SCREW TERMINAL



DEVICE INPUT




DEVICE OUTPUT




CONNECTOR/CONNECTION POINT



## WIRING KEY

SCALE: NTS — 2

### JACK SINGLE, MICROPHONE TRUNK

GRAPHIC SYMBOL



SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK SINGLE

GRAPHIC SYMBOL



SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK PAIR

GRAPHIC SYMBOL



HALF NORMAL (MONITOR ON SOURCE, BREAK ON LOAD)

SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK PAIR, CONSOLE INSERT

GRAPHIC SYMBOL



HALF NORMAL (MONITOR ON SOURCE, BREAK ON LOAD)

SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK PAIR, MICROPHONE TRUNK

GRAPHIC SYMBOL



THROUGH NORMAL BOTH WAYS (BREAK ON SOURCE AND LOAD)

SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK DOUBLE

GRAPHIC SYMBOL



THROUGH NORMAL BOTH WAYS (BREAK ON SOURCE AND LOAD)

SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK MULTIPLE, (MULT)

GRAPHIC SYMBOL



SCHEMATIC DIAGRAM




JACK BAY ELEVATION




### JACK PAIR, CONSOLE INSERT

GRAPHIC SYMBOL



HALF NORMAL (MONITOR ON SOURCE, BREAK ON LOAD)

SCHEMATIC DIAGRAM




JACK BAY ELEVATION




## GROUNDING DIAGRAM SCHEMES

SCALE: 3




NOTES:

1. REFER TO GENERAL NOTES AND SPECIFICATIONS FOR COMPLETE REQUIREMENTS.
2. DO NOT BUS GROUND LINES EXCEPT AS SHOWN.
3. USE GROUND CONDUCTORS OF INSULATED COPPER OF GAUGE SHOWN OR LARGER.
4. DO NOT CONNECT SHIELDS TO DEVICE CHASSIS IF SHIELDS ARE GROUNDED ELSEWHERE AS SHOWN.
5. DEVICES WITH 3-WIRE MAINS CORDS GROUND TO THE ISOLATED GROUND BUS VIA THE ISOLATED GROUND TECHNICAL POWER SYSTEM.

## SYMBOL KEY

SCALE: NTS — 1

## GROUNDING DETAIL

SCALE: NTS — 4

## WIRING SCHEME AND SYMBOL KEY

SCALE: NTS — 1

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SHEET NAME:

**WIRING SCHEME AND SYMBOL KEY**

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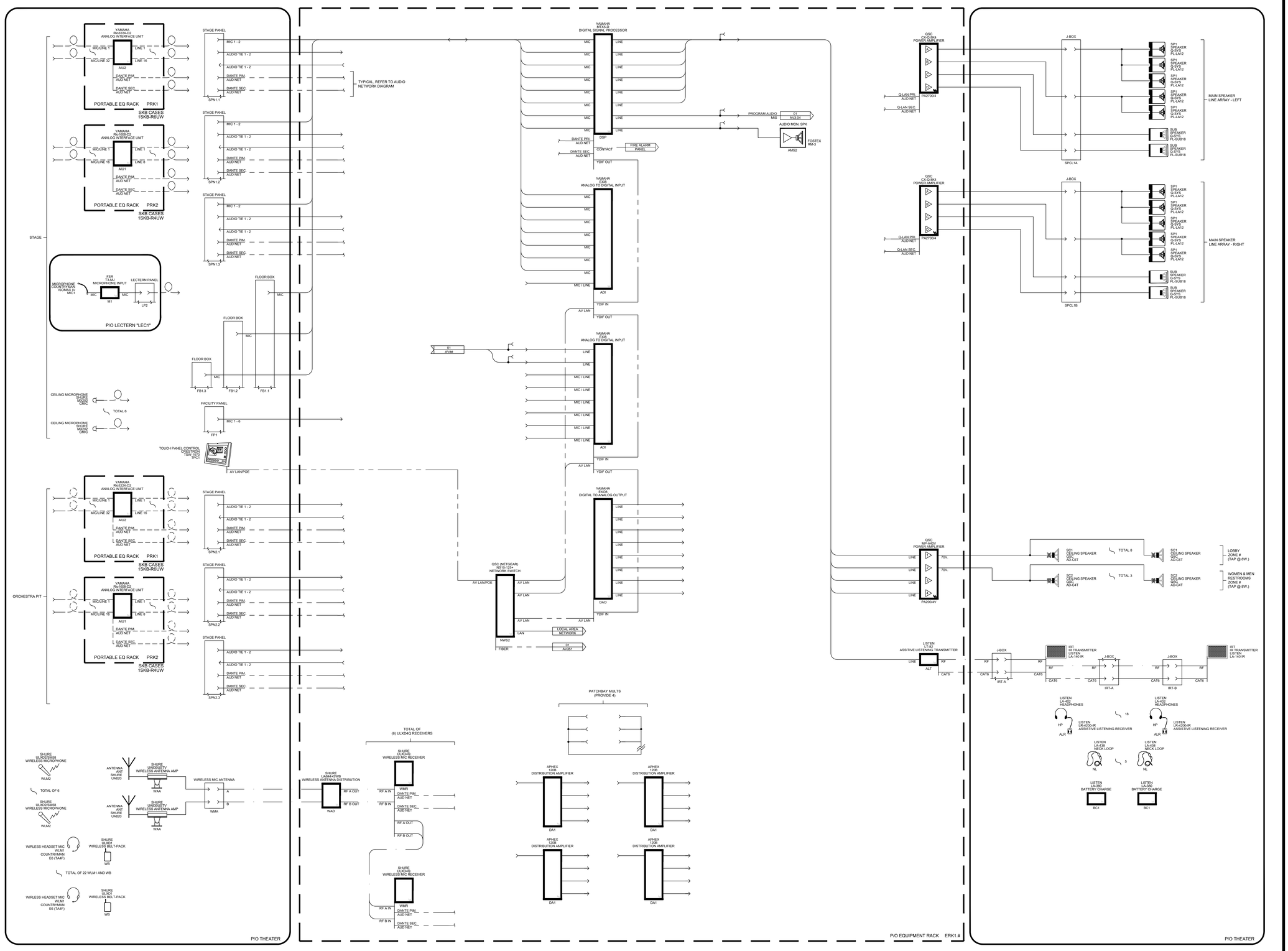
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SHEET NAME:

**THEATER - AV ONLINE DIAGRAM**

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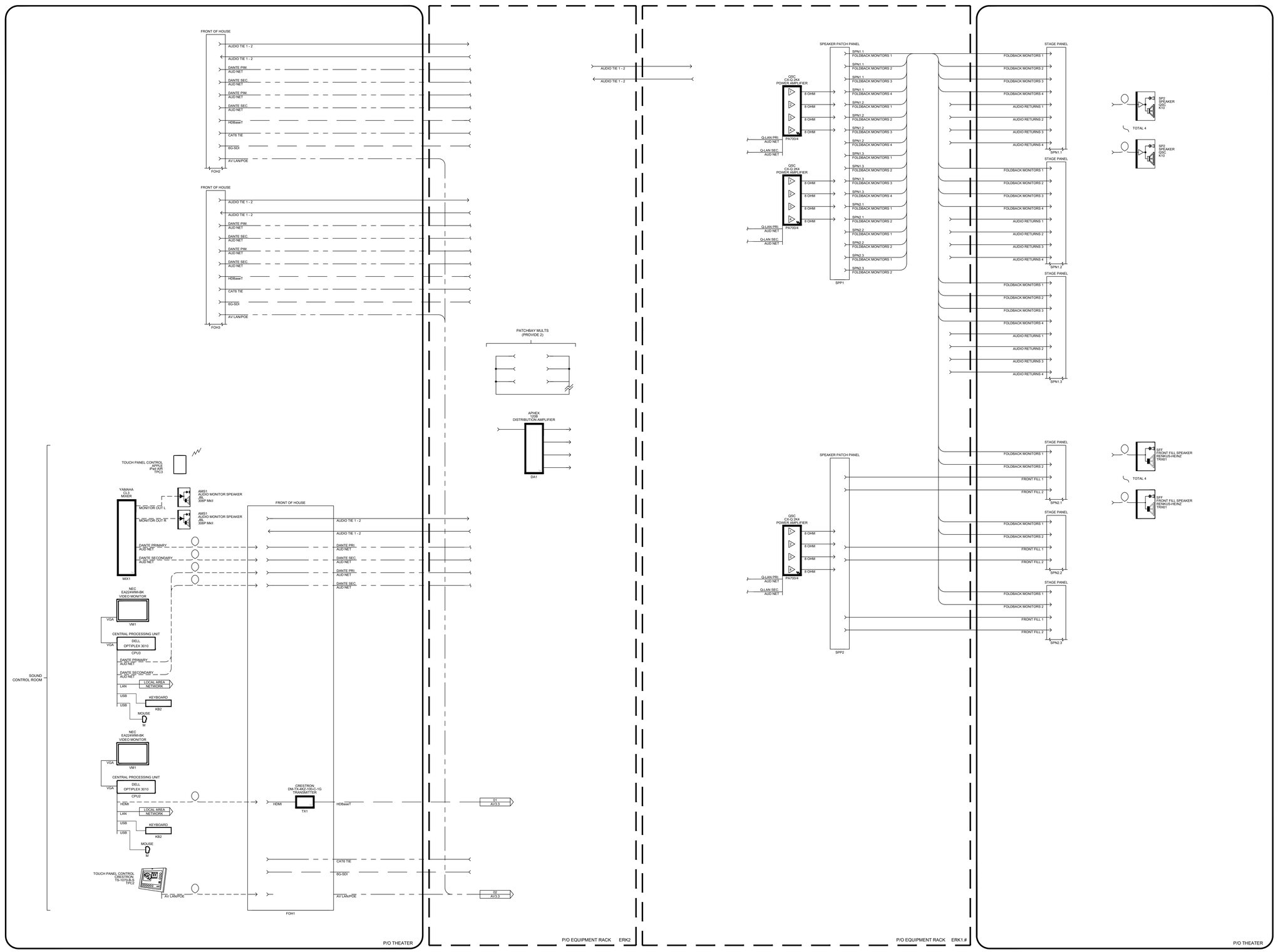


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EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**THEATER - AV ONLINE DIAGRAM**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# AV3.02

THEATER - AV ONLINE DIAGRAM

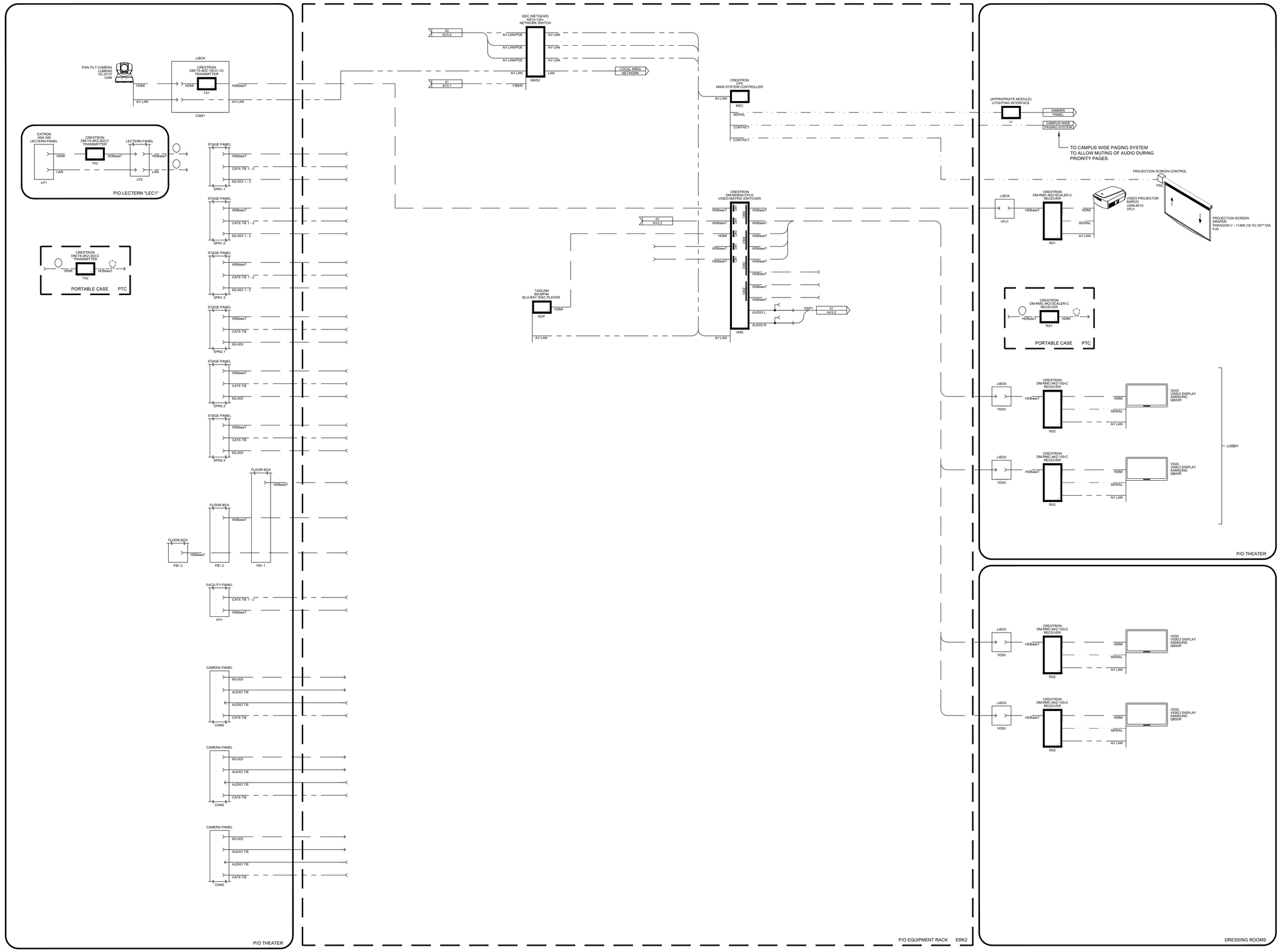
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1

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PLEASE RECYCLE

THE LINE BROWN ABOVE IS EXACTLY 1" LONG ON ORIGINAL 24X36 SHEETS ORIGINAL IMAGE SIZE




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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**THEATER - AV ONLINE DIAGRAM**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

**AV3.03**

THEATER - AV ONLINE DIAGRAM

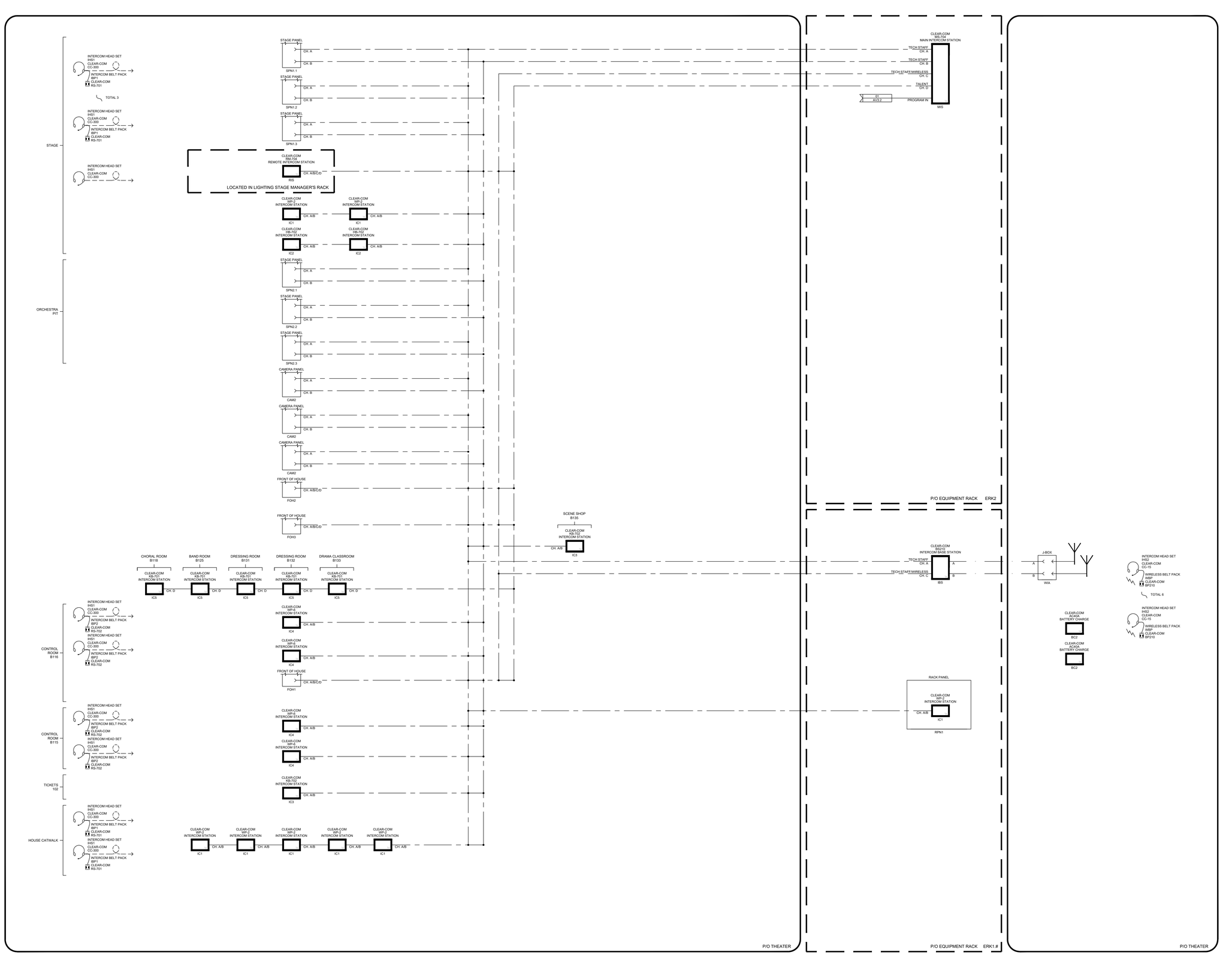
SCALE: NTS

1

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IF THIS LINE SHOWN ABOVE IS NOT CONTINUOUS, THEN THIS SHEET IS ORIGINAL MADE SIZE




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THEATER - AV ONLINE DIAGRAM

SCALE: NTS

1

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**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**INTERCOM ONELINE DIAGRAM**

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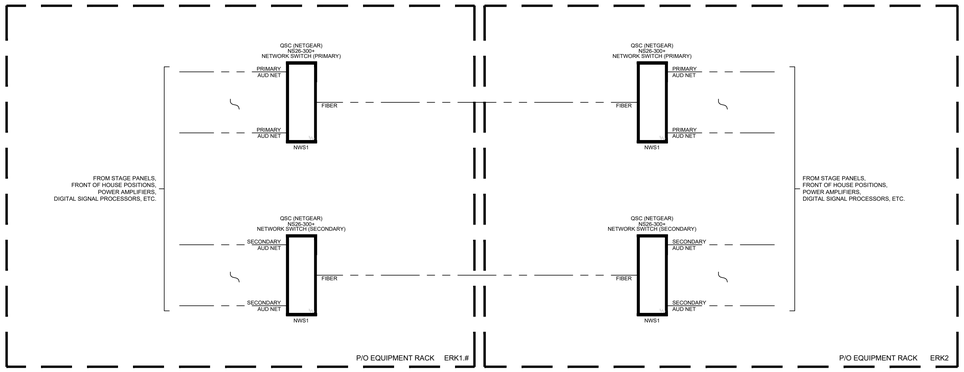
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

AV3.04

THE LINE BROWN ABOVE IS EXACTLY ONE INCH LONG ON FULL SIZE (24X36) ORIGINAL IMAGE SIZE




AUDIO NETWORK ONLINE DIAGRAM

SCALE: NTS

1

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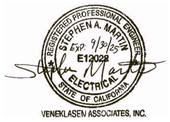
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**AUDIO NETWORK ONLINE DIAGRAM**

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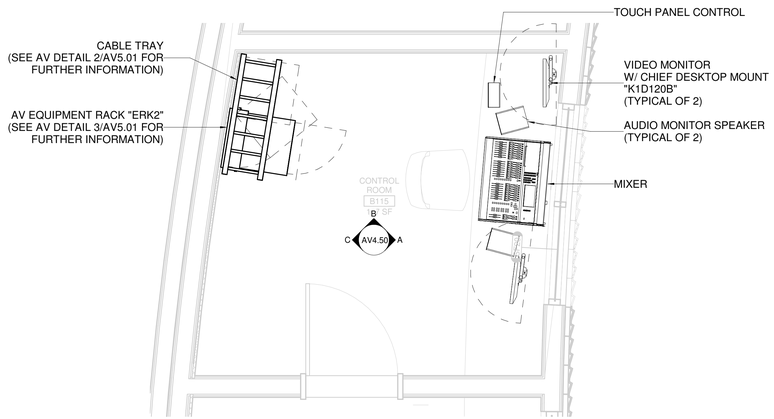
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# AV3.05

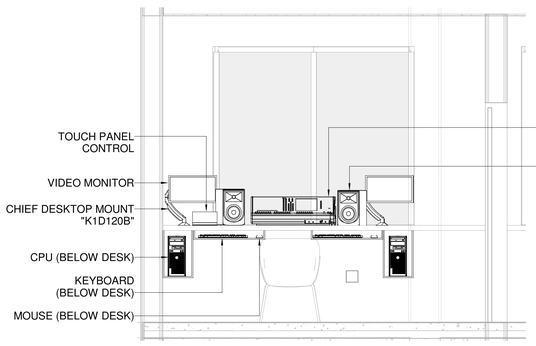
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PLEASE RECYCLE

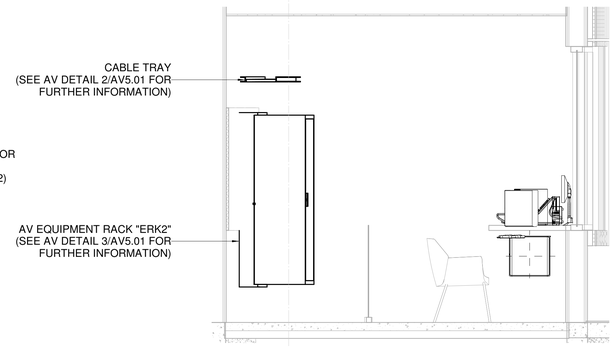
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EXACT ORIGINAL PAGE SIZE



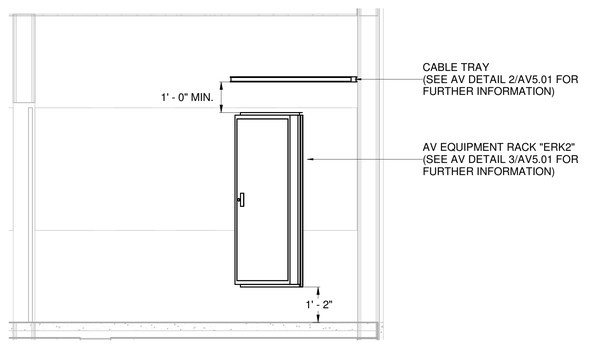

1 CONTROL ROOM B115 - PLAN LAYOUT
1/2" = 1'-0"




A CONTROL ROOM B115 - ELEVATION A
1/2" = 1'-0"




B CONTROL ROOM B115 - ELEVATION B
1/2" = 1'-0"




C CONTROL ROOM B115 - ELEVATION C
1/2" = 1'-0"

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## KEYNOTES

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PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**AV CONTROL ROOM LAYOUT**

**DSA SUBMITTAL**

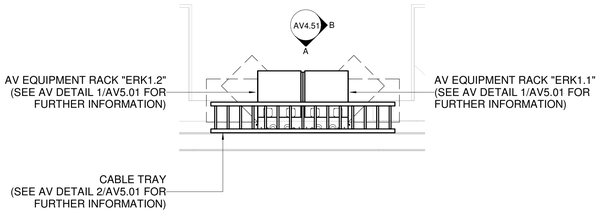
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100
SHEET:

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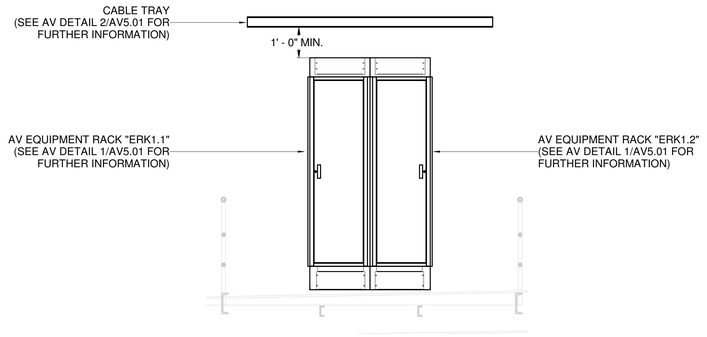
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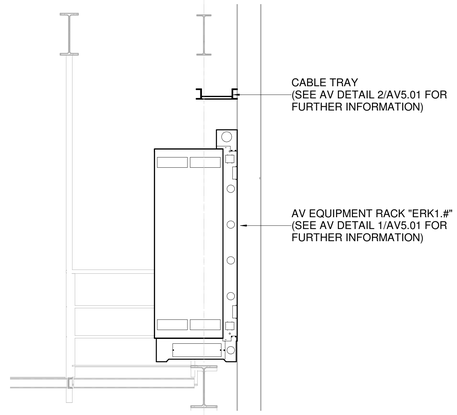
THE LINE SHOWN ABOVE IS
EXACTLY ONE INCH LONG ON
SHEETS ORIGINAL PAGE SIZE




1 AV RACK ROOM B148 - AV EQUIPMENT LAYOUT
3/8" = 1'-0"




A AV RACK ROOM B148 - FRONT ELEVATION
1/2" = 1'-0"




B AV RACK ROOM B148 - ELEVATION
1/2" = 1'-0"

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PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**AV EQUIPMENT LAYOUTS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

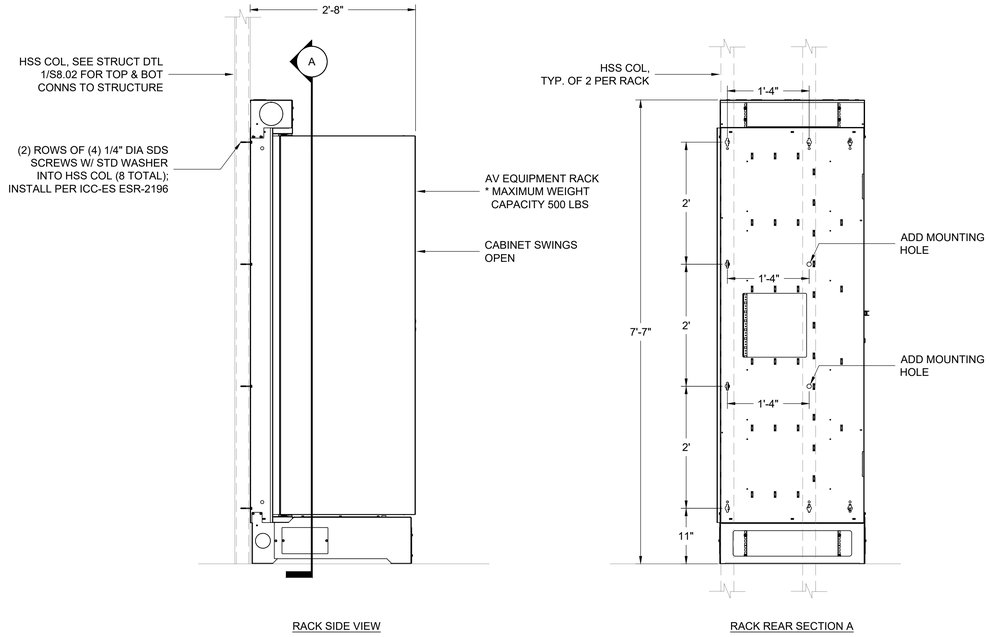
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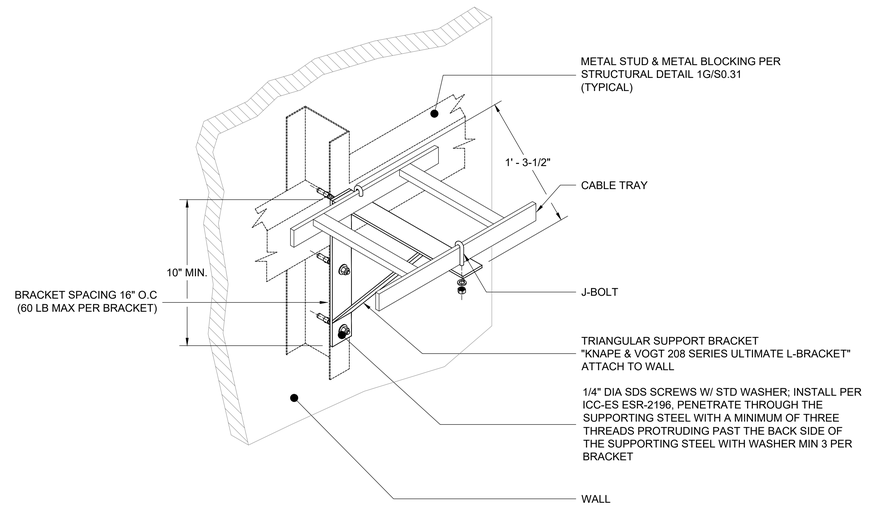

RACK SIDE VIEW

RACK REAR SECTION A

## TYPICAL SWING OUT AV EQUIPMENT RACK DETAIL

SCALE: NTS

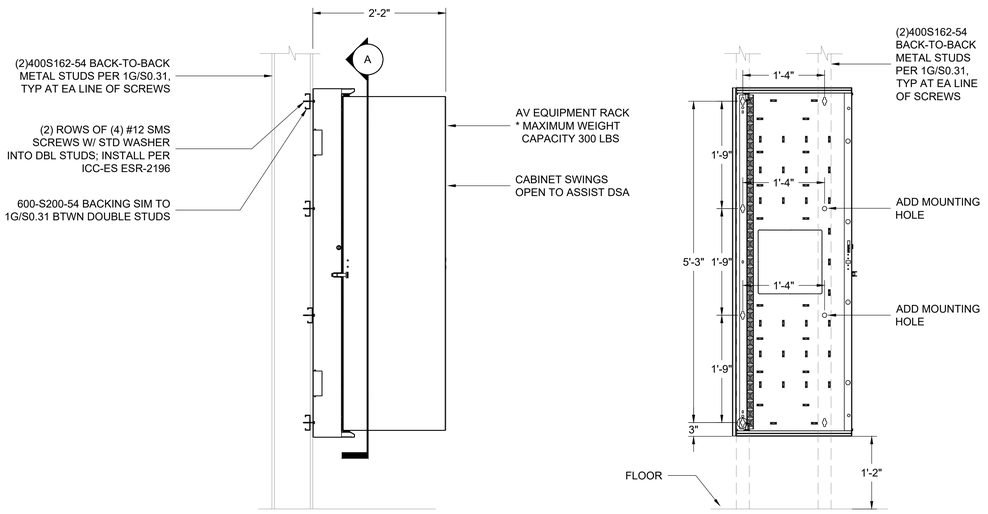
1




## TYPICAL CABLE TRAY TRIANGULAR WALL SUPPORT DETAIL

SCALE: NTS

2




RACK SIDE VIEW

RACK REAR SECTION A

## TYPICAL WALL MOUNTED AV EQUIPMENT RACK DETAIL

SCALE: NTS

3

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**AV RACK DETAILS**

**DSA SUBMITTAL**

FILE NO.: 19-H10 | A NO.: 03-123641

DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

# AV5.01

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AV RACK ROOM B148

ERK1.1

| | |
|---|---|
| BLANK PANEL | |
| NETWORK SWITCH | NWS1 |
| NETWORK SWITCH | NWS1 |
| BRUSH PANEL | |
| NETWORK SWITCH | NWS2 |
| BLANK PANEL | |
| AUDIO MONITOR SPK | AMS2 |
| BLANK PANEL | |
| AUDIO PATCH BAY | APB |
| AUDIO PATCH BAY | APB |
| AUDIO PATCH BAY | APB |
| AUDIO PATCH BAY | APB |
| BLANK PANEL | |
| DA1 / DA1 | |
| DA1 / DA1 | |
| DIGITAL SIGNAL PROCESSOR | DSP |
| ANALOG TO DIG. INPUT | ADI |
| ANALOG TO DIG. INPUT | ADI |
| DIGI. TO ANALOG OUT | DAO |
| BLANK PANEL | |
| BLANK PANEL | |
| POWER AMPLIFIER | PA2700/4 |
| POWER AMPLIFIER | PA2700/4 |
| POWER AMPLIFIER | PA200/4V |
| BLANK PANEL | |

AV RACK ROOM B148

ERK1.2

| | |
|---|---|
| BLANK PANEL | |
| WIRELESS MIC REC. | WMR |
| WIRELESS MIC REC. | WMR |
| WIRELESS MIC REC. | WMR |
| WIRELESS MIC REC. | WMR |
| WIRELESS MIC REC. | WMR |
| WIRELESS MIC REC. | WMR |
| BLANK PANEL | |
| ALT / BLANK | |
| BLANK PANEL | |
| IC BASE STATION | IBS |
| RACK PANEL | RPN1 |
| SPEAKER PATCH PANEL | SPP1 |
| BLANK PANEL | |
| SPEAKER PATCH PANEL | SPP2 |
| BLANK PANEL | |
| BLANK PANEL | |
| BLANK PANEL | |
| POWER AMPLIFIER | PA700/4 |
| POWER AMPLIFIER | PA700/4 |
| POWER AMPLIFIER | PA700/4 |

AV EQUIPMENT RACK "ERK1.#" ELEVATION

SCALE: NTS

1

CONTROL ROOM B116

ERK2

| | |
|---|---|
| BLANK PANEL | |
| NETWORK SWITCH | NWS1 |
| NETWORK SWITCH | NWS1 |
| BRUSH PANEL | |
| NETWORK SWITCH | NWS2 |
| BLANK PANEL | |
| MAIN SYS. CONTROLLER | MSC |
| BLANK PANEL | |
| AUDIO PATCH BAY | APB |
| DA1 / BLANK | |
| BLANK PANEL | |
| BLU-RAY DISC PLAYER | BDP |
| BLANK PANEL | |
| MAIN I-COM STATION | MIS |
| SDI TIE PATCH | SDITPB |
| BLANK PANEL | |
| HDBASET PATCH BAY | HPB |
| BLANK PANEL | |
| CAT6 TIE PATCH | CAT6PB |
| BLANK PANEL | |
| BLANK PANEL | |
| BLANK PANEL | |
| VIDEO MATRIX SWITCHER | VMS |

AV EQUIPMENT RACK "ERK2" ELEVATION

SCALE: NTS

2

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SHEET NAME:
**AV RACK ELEVATIONS**

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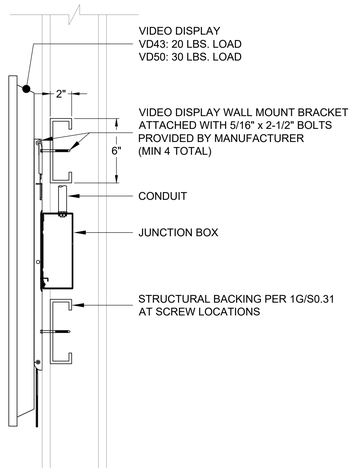
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**AV5.02**

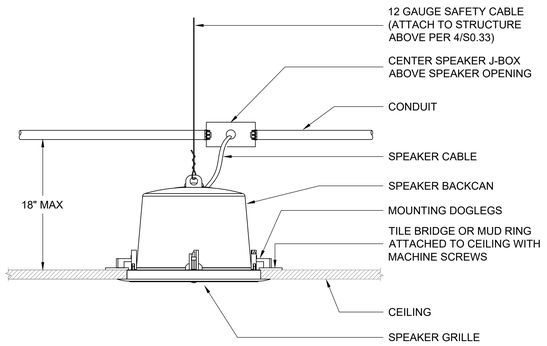
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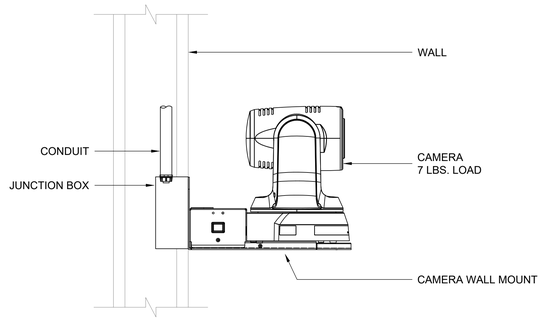

TYPICAL VIDEO DISPLAY "VD45" WALL MOUNTING DETAIL | SCALE: NTS | 1



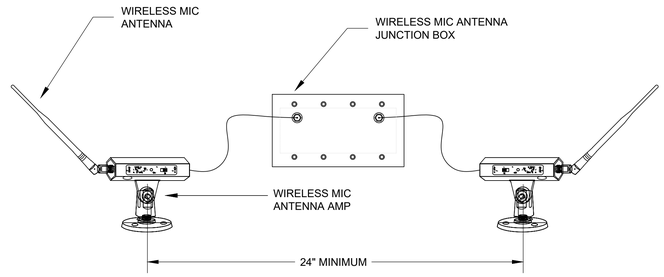

CEILING SPEAKER:

NOTES:
- SPEAKER & SPEAKER GRILLE BY AV CONTRACTOR
- CONDUIT BY E.C.

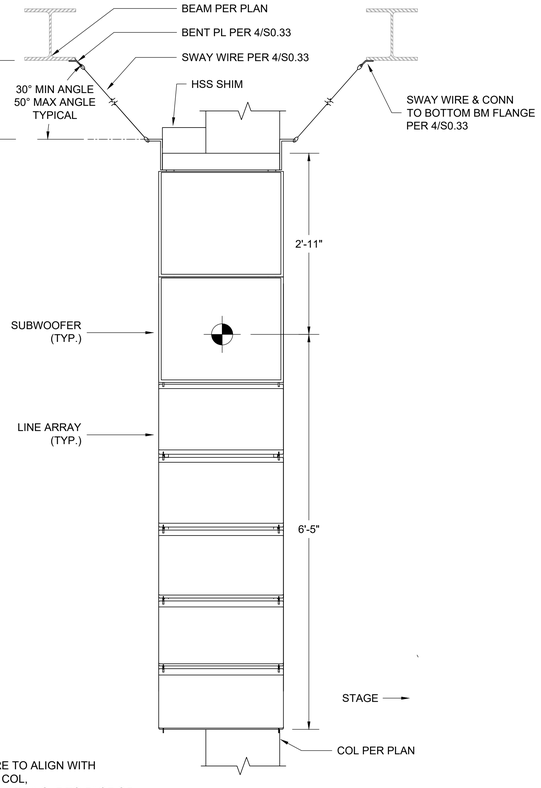
TYPICAL CEILING SPEAKER "SC#" DETAIL | SCALE: NTS | 2




TYPICAL WALL MOUNTED VIDEO CAMERA "CAM#" DETAIL | SCALE: NTS | 3

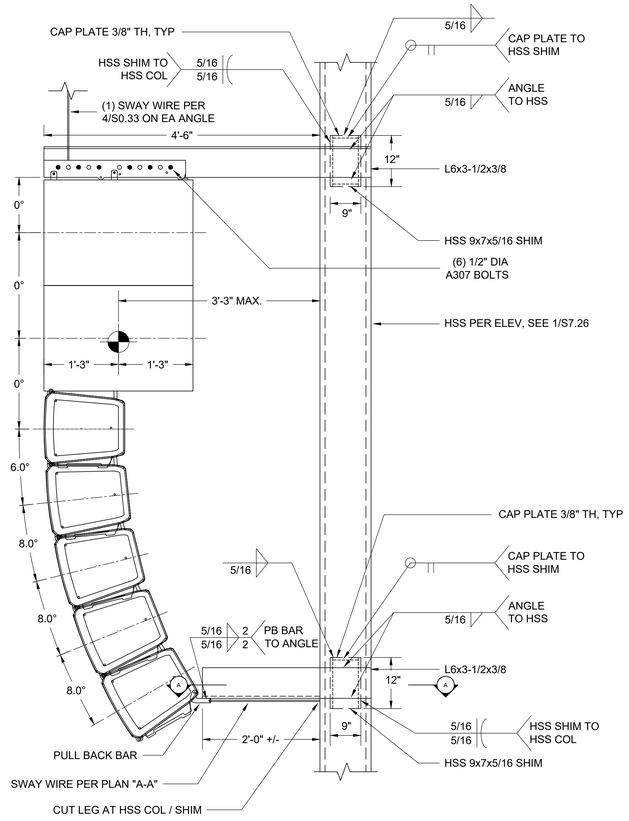



TYPICAL WIRELESS MIC ANTENNA "WMA" DETAIL | SCALE: NTS | 5




NOTE:
SPEAKERS ARE TO ALIGN WITH EDGE OF HSS COL, DIRECTLY MOUNT ANGLE TO FACE OF HSS COLUMN STAGE SIDE

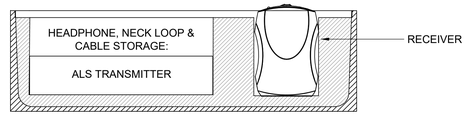
LEFT/RIGHT ARRAY- FRONT VIEW



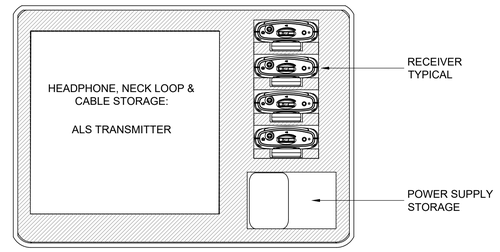

LEFT/RIGHT ARRAY- SIDE VIEW

MAX WEIGHT:
500 LBS

LOUDSPEAKERS DETAIL "SPCL.#"- STAGE LEFT/RIGHT ARRAY | SCALE: NTS | 4

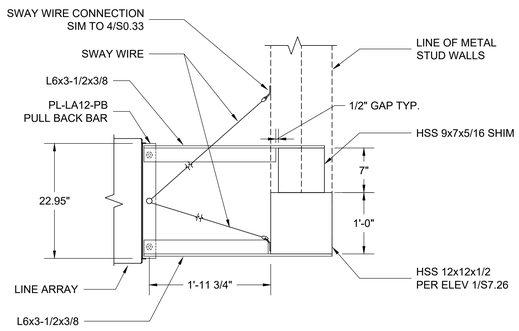



SECTION VIEW




TOP VIEW

PORTABLE CASE DETAIL | SCALE: NTS | 6




PLAN VIEW "A-A" | SCALE: NTS | A

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3361008100
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REGISTERED PROFESSIONAL ENGINEER
STEPHEN A. MARTIN
Exp. 9/30/25
E12028
ELECTRICAL
STATE OF CALIFORNIA
VENEKLASEN ASSOCIATES, INC.

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Consultants In Acoustics | AV | IT | Security | Environmental Noise
1711 Sixteenth Street
Santa Monica, CA 90404
(310) 450-1733
www.veneklasen.com

FACILITY:
**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:
**AV DETAILS**

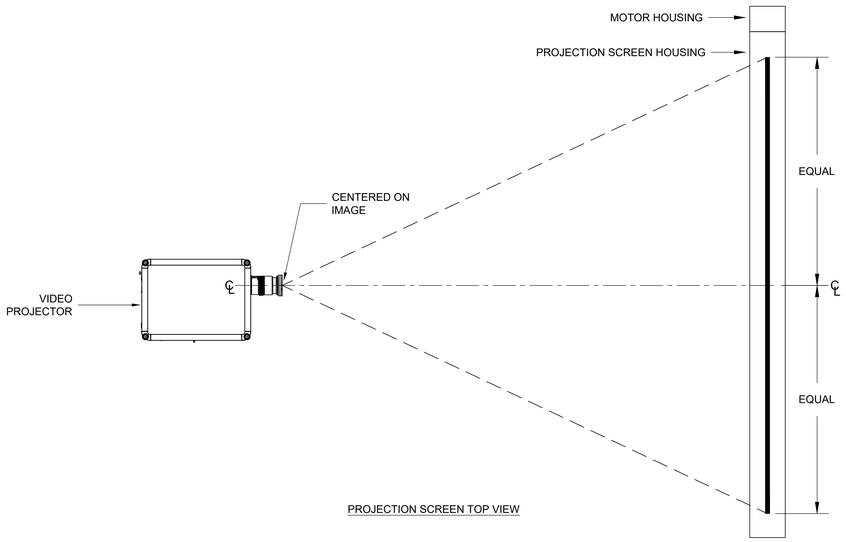
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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

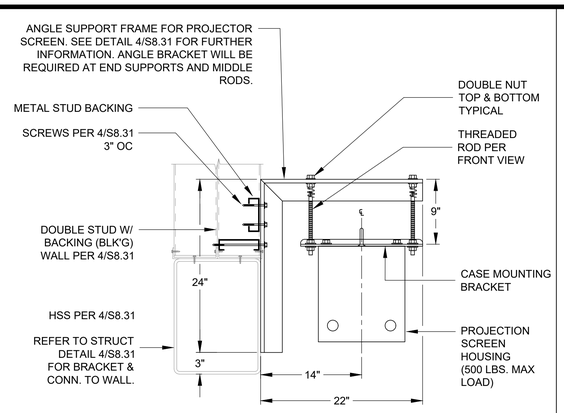
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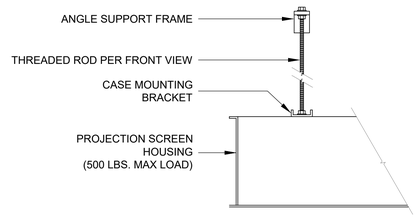
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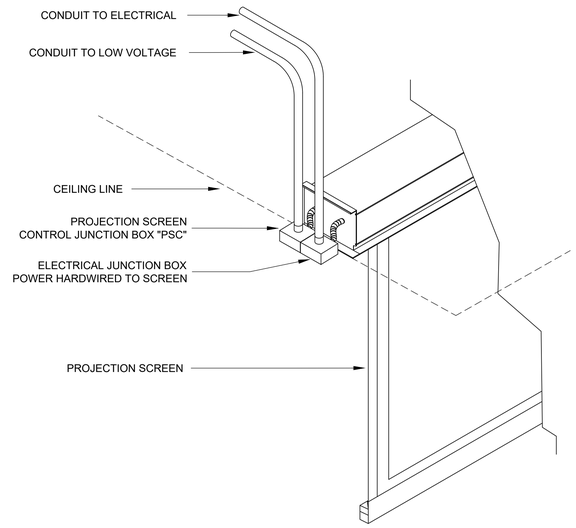

PROJECTION SCREEN TOP VIEW




SIDE VIEW

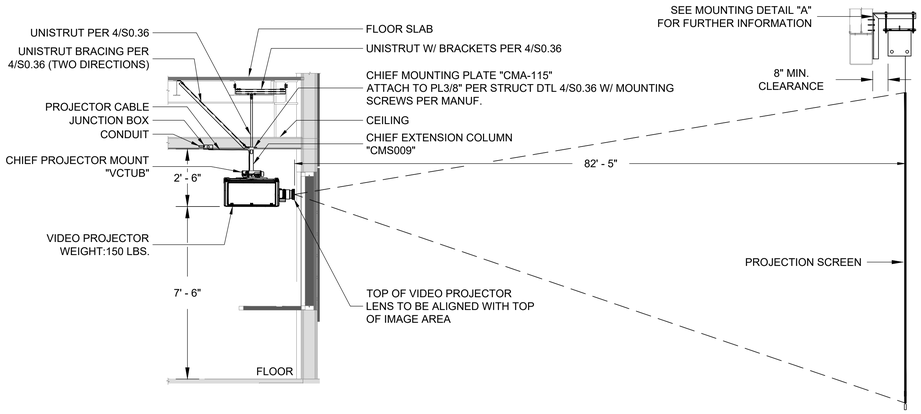



FRONT VIEW

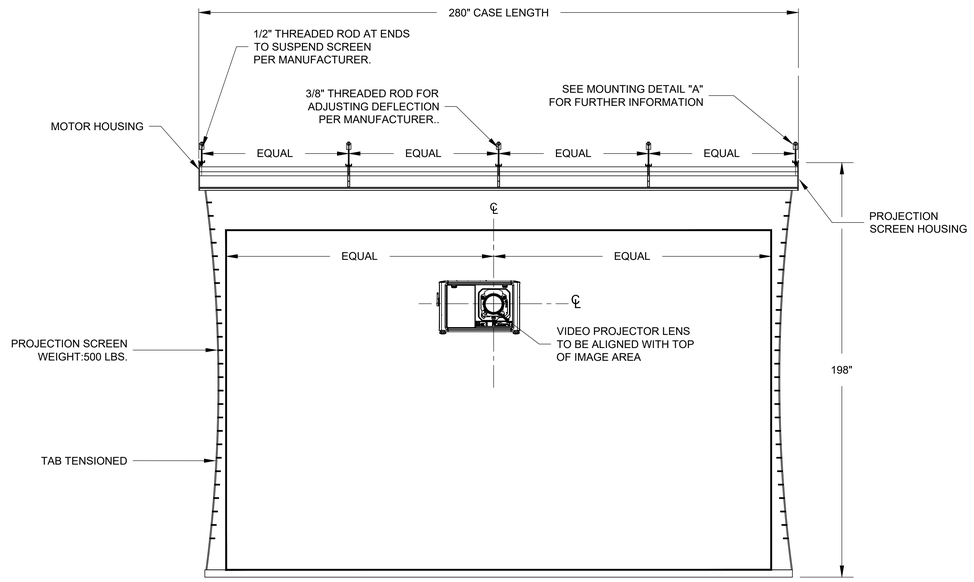



| TYPICAL WALL MOUNTED PROJECTION SCREEN DETAIL | SCALE: NTS | A |
|---|---|---|

| TYPICAL PROJECTION SCREEN LOW VOLTAGE AND ELECTRICAL DETAIL | SCALE: NTS | B |
|---|---|---|




SIDE VIEW




FRONT VIEW

| TYPICAL PROJECTION SCREEN MOUNTING DETAILS | SCALE: NTS | 1 |
|---|---|---|

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HMC Architects

3361008100

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FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**AV DETAILS**

**DSA SUBMITTAL**

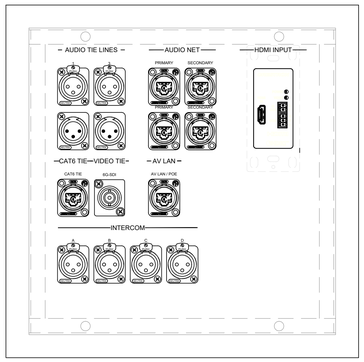
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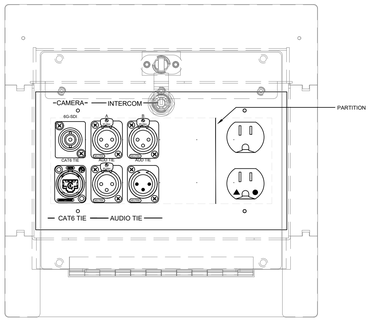

CONTROL BOOTH B116 - FRONT OF HOUSE PANEL "FOH1" LAYOUT | SCALE: NTS | 1



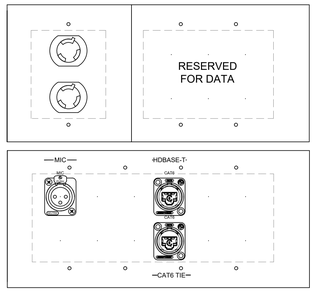

FOLLOW SPOT BOOTH B147 - VIDEO PROJECTOR PANEL "VPJ1" LAYOUT | SCALE: NTS | 2



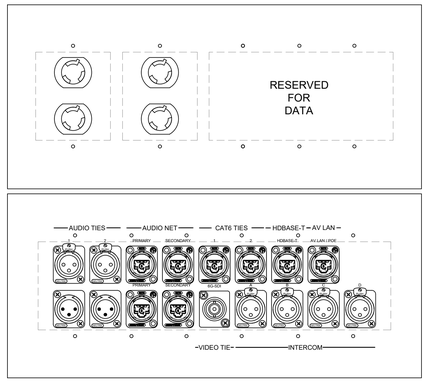

THEATER - CAMERA "CAM1" PANEL LAYOUT | SCALE: NTS | 3



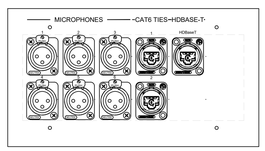

THEATER - CAMERA "CAM2" PANEL LAYOUT | SCALE: NTS | 4




THEATER - FLOOR BOX "FB1.#" PANEL LAYOUT | SCALE: NTS | 5




THEATER - FRONT OF HOUSE "FOH2 & FOH3" PANEL LAYOUTS | SCALE: NTS | 6




THEATER - FACILITY PANEL "FP1" LAYOUT | SCALE: NTS | 7




THEATER - IR TRANSMITTER "IRT-A" PANEL LAYOUT | SCALE: NTS | 8




THEATER - IR TRANSMITTER "IRT-B" PANEL LAYOUT | SCALE: NTS | 9

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SHEET NAME:

**FACILITY PANEL DETAILS**

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DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

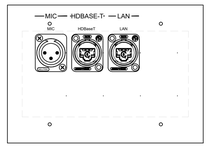
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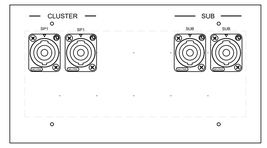
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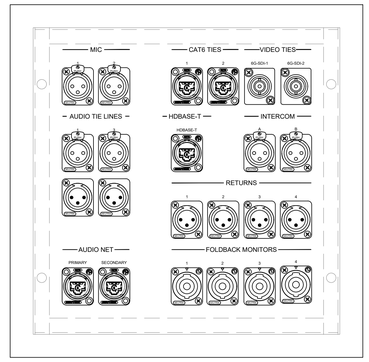
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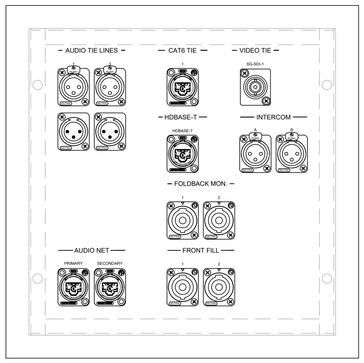

THEATER - LECTERN PANEL "LP2" LAYOUT | SCALE: NTS | 1



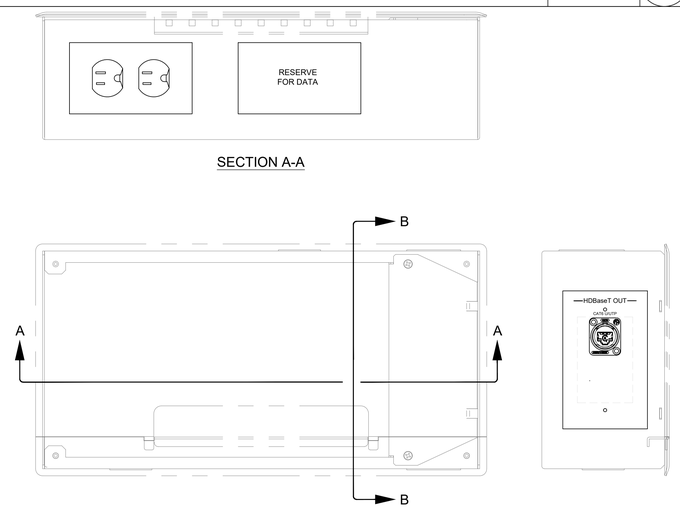

THEATER - SPEAKER CLUSTER "SPCL.#" PANEL LAYOUT | SCALE: NTS | 2




THEATER - STAGE PANEL "SPN1.#" LAYOUT | SCALE: NTS | 3




THEATER - STAGE PANEL "SPN2.#" LAYOUT | SCALE: NTS | 4




THEATER - VIDEO DISPLAY "VD43" PANEL LAYOUT | SCALE: NTS | 5



THEATER - WIRELESS MICROPHONE ANTENNA "WMA" PANEL LAYOUT | SCALE: NTS | 6

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CHINO VALLEY UNIFIED SCHOOL DISTRICT — ARROYO HIGH SCHOOL — ESTABLISHED 1991 — COMMITTED TO COLLEGE AND CAREER

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REGISTERED PROFESSIONAL ENGINEER — STEPHEN A. MARTIN — Exp. 9/30/25 — E12028 — ELECTRICAL — STATE OF CALIFORNIA

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FACILITY:

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PROJECT:

**ARROYO HIGH SCHOOL - NEW THEATRE & ADMINISTRATION BUILDING**

SHEET NAME:

**FACILITY PANEL DETAILS**

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# ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT

## VICINITY MAP

PROJECT LOCATION
4921 CEDAR AVENUE
EL MONTE, CA 91732




## PROJECT DATA

*PROJECT ADDRESS*
ARROYO HIGH SCHOOL
4921 CEDAR AVENUE
EL MONTE, CA 91732

*PROJECT SCOPE OF WORK*
INSTALL FULLY MECHANICALLY ATTACHED PHOTOVOLTAIC PANELS AT PROJECT ROOF.
PHOTOVOLTAIC PANEL ROOF AREA - 1,784 SF
PROJECT ROOF AREA - 30,048 SF

| SYSTEM SUMMARY | |
|---|---|
| MODULE MODEL | CS7N-720TB-AG |
| MODULE STC DC RATING (W) | 864 |
| TOTAL MODULE COUNT | 45 |
| TOTAL STC DC SYSTEM SIZE (W) | 38,880 |
| TOTAL AC SYSTEM SIZE (W) | 33,000 |
| DC: AC RATIO | 1.18 |
| INVERTER MODEL | SOLIS S6-GC33K-US |
| RACKING SYSTEM | PROSOLAR ROOFTRACK |

## APPLICABLE CODES

2022 CALIFORNIA BUILDING CODE

IR 16-8 SOLAR PHOTOVOLTAIC AND THERMAL SYSTEM REVIEW AND APPROVAL REQUIREMENTS: 2022 CBC

## SHEET INDEX


| | |
|---|---|
| PV-001 | COVER SHEET |
| PV-002 | GENERAL NOTES AND PRODUCT CERTIFICATES |
| PV-101 | ROOF PLAN /PROPOSED SOLAR PANEL LAYOUT |
| PV-500 | DETAILS |
| PV-501 | PV SYSTEM COMPONENT TECHNICAL DATA |
| PVE-000 | ABBREVIATIONS, SYMBOLS AND GENERAL NOTES |
| PVE-100 | SINGLE LINE DIAGRAM |
| PVE-200 | PV ELECTRICAL ROOF PLAN |
| PVE-400 | PV ELECTRICAL DETAILS |
| PVE-401 | PV ELECTRICAL DETAILS |


## ABBREVIATIONS

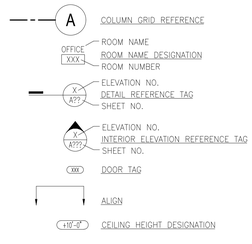
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ACT. | ACOUSTICAL TILE | EA. | EACH | MACH. | MACHINE | TEL. | TELEPHONE |
| ADJ. | ADJACENT | EL. | ELEVATION | MAX. | MAXIMUM | THK. | THICK(NESS) |
| A.F.F. | ABOVE FINISH FLOOR | E. | ELECTRICAL | MECH. | MECHANICAL | TYP. | TYPICAL |
| AL or ALUM | ALUMINUM | ELEV. | ELEVATOR | MTL. | METAL | | |
| ANOD. | ANODIZED | E.C. | ELECTRIC PANEL | MFR. | MANUFACTURER | | |
| ALUM.G. | APPROXIMATELY | E.PH. | EMERGENCY PHONE | MIN. | MINIMUM | | |
| BD. | BOARD | EQ. | EQUAL | N.I.C. | NOT IN CONTRACT | | |
| BLDG. | BUILDING | EQUIP. | EQUIPMENT | NO. | NUMBER | | |
| BLK. | BLOCK | EXT. | EXTERIOR | NOM. | NOMINAL | | |
| CAB. | CABINET | F.E.C. | FIRE EXTINGUISHER CAB. | N.T.S. | NOT TO SCALE | | |
| CEM. | CEMENT | F.F. | FINISH FACE | O.C | ON CENTER | | |
| CER. T. | CERAMIC TILE | F.H.C. | FIRE HOSE CABINET | OFCI | OWNER FURNISHED CONTRACTOR INSTALLED | | |
| CT | CERAMIC TILE | FIN. | FINISH | | | | |
| C.G. | CORNER GUARD | FLR. | FLOOR | O.H. | OPPOSITE HAND | | |
| CHK'D | CHECKERED | F.O. | FACE OF... | OPNG. | OPENING | | |
| C.J. | CONTROL JOINT | F.R. | FIRE RATED | OPP. | OPPOSITE | | |
| CLG. | CEILING | FT. | FOOT *or* FEET | PL. | PLATE | | |
| CLR. | CLEAR | GA. | GAUGE | PLAST. | PLASTER | | |
| CLST. | CLOSET | GALV. | GALVANIZED | PNL. | PANEL | | |
| COL. | COLUMN | GB | GYPSUM BOARD | RAD. | RADIUS | | |
| CONC. | CONCRETE | G.I. | GALVANIZED IRON | REF. | REFERENCE | | |
| COND. | CONDITION | GL. | GLASS | REINF. | REINFORCED | | |
| CONN. | CONNECTION | GALV.STL. | GALVANIZED STEEL | REQ'D. | REQUIRED | | |
| CONT. | CONTINUOUS | GWB | GYPSUM WALL BOARD | SCWD.A. | SOLID CORE WOOD DR. | | |
| CONTR. | CONTRACTOR | GYP.BD. | GYPSUM BOARD | SEC. | SECTION | | |
| DEPT. | DEPARTMENT | HDWR | HARDWARE | SHT. | SHEET | | |
| DET. | DETAIL | H.M. *or* HM | HOLLOW METAL | REQD. | SIMILAR | | |
| D.F. | DRINKING FOUNTAIN | HR. | HOUR | SPECS. | SPECIFICATIONS | | |
| DIA. | DIAMETER | HT. | HEIGHT | SQ. | SQUARE | | |
| DIM. | DIMENSION | INSUL. | INSULATION | S.S. | STAINLESS STEEL | | |
| DN | DOWN | JST. | JOIST | STD. | STANDARD | | |
| DR. | DOOR | JT. | JOINT | STL. | STEEL | | |
| DW. | DRYWALL | LT. | LIGHT | STRUCT. | STRUCTURAL | | |
| DWG. | DRAWING | | | SUSP. | SUSPENDED | | |

## CONSULTANTS

*ARCHITECT: (PV SCOPE OF WORK)*
SAA ASSOCIATES
680 E. COLORADO BLVD, SUITE 180
PASADENA, CA 91101
TEL: 818-437-8452

*ELECTRICAL ENGINEER: (PV SCOPE OF WORK)*
RBE CONSULTING ENGINEER
3016 E. COLORADO BLVD. #5249
PASADENA, CA 91107
626-831-2449

## SYMBOLS




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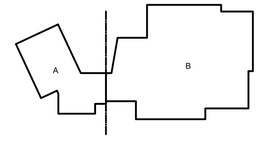
**KEYNOTES**

**NOTES**


CONSULTANT:
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Architecture Development Management
SAA ASSOCIATES
680 E. COLORADO BLVD, SUITE 180
PASADENA, CA 91101
T: 818-437-8452


REGISTERED ARCHITECT
Christopher Mehren
C-15567
Renewal 08/31/2025
STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:

**COVER SHEET**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# PV-001

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2. REFERENCE TO ANY DETAIL OR DRAWING IS FOR CONVENIENCE ONLY AND DOES NOT LIMIT THE APPLICATION OF SUCH DETAIL OR DRAWINGS.

3. DISCREPANCIES IN THE DRAWINGS ARE BETWEEN THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE ARCHITECT. CORRECTED DRAWINGS OR INSTRUCTIONS SHALL BE ISSUED BY THE ARCHITECT OR PRIOR TO THE INSTALLATION OF ANY WORK.

4. CONTRACTOR TO CHECK AND VERIFY SIZE AND LOCATION OF FIRE/LIFE SAFETY EQUIPMENT/DEVICE DUCTS, PLUMBING RUNS, AND MECHANICAL EQUIPMENT WITH MECHANICAL AND PLUMBING CONTRACTORS BEFORE COMMENCEMENT OF FINAL DESIGN WORK AND CONSTRUCTION.

5. GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK SHOWN ON THE DRAWINGS AND SPECIFICATIONS UNLESS SPECIFICALLY NOTED OTHERWISE.

6. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO BIDDING AND START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION. THERE SHALL BE NO EXPENSE TO OWNER, TENANT OR DESIGNER TO CORRECT WORK RESULTING OF SUCH DISCREPANCIES OR CONDITIONS.

7. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED BASIS OF DESIGN WORK/STRUCTURE UNLESS OTHERWISE SHOWN. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATIONS VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE ARCHITECT AND HIS ENGINEERS SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES REQUIRED FOR SAME, WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY SUPPORT SERVICES PERFORMED BY THE ARCHITECT AND HIS ENGINEERS DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ARCHITECT AND HIS ENGINEERS, WHETHER OF MATERIAL OR WORK AND WHETHER PERFORMED TO, DURING AFTER COMPLETION OF CONSTRUCTION ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. BUT THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

8. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A TEMPORARY CERTIFICATE OF OCCUPANCY AND SHALL OBTAIN ALL REQUIRED SIGNATURES AND PAY FEES FOR SAME.

9. CONTRACTORS SHALL PROVIDE PROTECTION DURING CONSTRUCTION.

10. THE GENERAL CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO ORDERING OR FABRICATION FOR ALL WORK THAT THIS TO BE INSTALLED ON THE JOB.

11. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR QUESTIONS REGARDING SAME, OR THEIR EXACT MEANING, ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.

12. THE GENERAL CONTRACTOR SHALL CUT, PATCH, AND REPAIR ALL BUILDING SHELL AND CORE FLOOR. WALL AND CEILING SURFACES TO REMAIN AS REQUIRED TO RECEIVE NEW WORK. FINISH, FLUSH, AND MATCH ADJACENT MATERIALS AND SURFACES, U.O.N.

13. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ALL EXISTING "BASE BUILDING" OR NEW WORK: ELECTRICAL, MECHANICAL, PLUMBING FIXTURES, LIFE SAFETY SYSTEM, OR EQUIPMENT THAT IS IN CONFLICT WITH ARCHITECT'S DRAWINGS, U.O.N.

14. CONTRACTORS SHALL NOTIFY THE OWNER IMMEDIATELY OF ALL UTILITIES DETERMINED IN COURSE OF CONSTRUCTION AS BEING NECESSARY TO BE TEMPORARILY SHUT OFF, MODIFIED, AND/OR REMOVED WHICH OTHERWISE HAVE NOT BEEN NOTED FOR IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL REMOVE SUCH UTILITIES ONLY AFTER CONSULTATION WITH THE ARCHITECT, CLIENT, AND OWNER MANAGEMENT REP. WHETHER PRE-DETERMINED IN THE CONSTRUCTION DOCUMENTS OR DETERMINED LATER IN FIELD, DISCONNECT, CUT BACK TO SOURCE AND CAP ALL UTILITY SERVICES REMOVED, SEAL ALL PENETRATIONS CREATED BY REMOVAL OF UTILITY TO MATCH ADJACENT CONSTRUCTION AND FINISHES.

15. "ALIGN" SHALL MEAN TO ACCURATELY LOCATE FINISH FACES IN THE SAME PLANE.

16. "TYPICAL" OR "TYP." SHALL MEAN THAT THE CONDITION IS REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT, UNLESS OTHERWISE NOTED. DETAILS ARE USUALLY KEYED AND NOTED "TYP." ONLY ONCE, WHEN THEY FIRST OCCUR.

17. "SIMILAR" MEANS COMPARABLE CHARACTERISTICS FOR THE CONDITIONS NOTED. VERIFY DIMENSIONS & ORIENTATION ON PLANS AND ELEVATORS.

18. G.C. TO FURNISH AND INSTALL ALL SPECIFIED MATERIALS IN SUCH A MANNER AS TO PROVIDE A COMPLETE AND FINISHED SYSTEM W/OUT REQUIREMENT OF ADDITIONAL PARTS, MATERIALS, AND LABOR TO COMPLETE.

19. PRIOR TO SUBMITTAL OF BIDS, THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL IDENTIFY IN WRITING ANY AND ALL DISCREPANCIES AND/OR OMISSIONS OF MATERIAL REQUIRED FOR A COMPLETE JOB. NO CHANGE ORDERS WILL BE ALLOWED FOR OBVIOUS DISCREPANCIES NOT IDENTIFIED IN WRITING.

20. THE CONTRACTOR SHALL MAINTAIN FOR THE DURATION OF THE WORK ALL EXITS, EXIT LIGHTING, FIRE PROTECTIVE DEVICES AND ALARMS IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

21. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED PER MANUFACTURERS INSTRUCTIONS. IN CASE OF DIFFERENCES BETWEEN THE MANUFACTURERS INSTRUCTIONS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER AND ARCHITECT BEFORE PROCEEDING.ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED PER MANUFACTURERS INSTRUCTIONS. IN CASE OF DIFFERENCES BETWEEN THE MANUFACTURERS INSTRUCTIONS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER AND ARCHITECT BEFORE PROCEEDING.

22. ANY DIMENSION IDENTIFIED AND NOTED AS "VERIFY" MUST BE CONFIRMED BY THE CONTRACTOR AND REVIEWED BY THE ARCHITECT, BEFORE PROCEEDING W/WORK.

23. THE ARCHITECT HAS NO KNOWLEDGE OF AND SHALL NOT BE HELD LIABLE FOR ANY ASBESTOS OR OTHER HAZARDOUS MATERIALS ON THE JOBSITE. IF ASBESTOS OR OTHER HAZARDOUS MATERIALS ARE DISCOVERED DURING CONSTRUCTION, THE CONTRACTOR SHALL ISOLATE THE AFFECTED AREA AND CONTACT THE CONSTRUCTION MANAGER AND OWNER FOR FURTHER INSTRUCTIONS BEFORE PROCEEDING.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK AND/OR EQUIPMENT SUPPLIED BY THE OWNER.

25. PROVIDE FACILITIES FOR THE PHYSICALLY HANDICAPPED IN ACCORDANCE WITH C.A.C. TITLE 24 AND AS REQUIRED BY THE 2022 CALIFORNIA BUILDING CODE.

26. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE OR REPAIR OR REPLACEMENT IN CONJUNCTION WITH THE EXECUTION OF THIS WORK.

27. MAINTAIN SANITARY TOILET FACILITIES DURING CONSTRUCTION AS REQUIRED BY APPLICABLE REGULATIONS.

28. WHENEVER A REFERENCE TO A SPECIFIC BRAND NAME IS MADE IN THESE CONTRACT DOCUMENTS, IT IS ILLUSTRATIVE AND TO BE CONSTRUED AS A SPECIFICATION WHICH DESCRIBES A COMPONENT THAT HAS BEEN TESTED OR EVALUATED AS BEST MEETING THE OPERATIONAL DESIGN, PERFORMANCE MAINTENANCE QUALITY AND RELIABILITY STANDARDS AND REQUIREMENTS OF THE DIVISION OF THE STATE ARCHITECT, THEREBY INCORPORATING THESE REQUIREMENTS BY REFERENCE WITHIN THE CONTRACT DOCUMENTS. AN EQUIVALENT (OR EQUAL) MAY BE OFFERED BY THE BIDDER SUBJECT TO TESTING AND EVALUATION BY THE CITY AND APPROVED BY THE OWNER PRIOR TO AWARD OR BID.

29. ALL DRAWINGS AND DETAILS SHOWN IN THESE DRAWINGS, WHETHER REFERENCED OR NOT REFERENCED, SHALL BE PART OF PROJECT SCOPE.

30. CONTRACTOR SHALL IMMEDIATELY NOTIFY ARCHITECT AND REQUEST CLARIFICATION FOR DISCREPANCIES OR OMISSIONS BETWEEN ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.

# CANADIAN SOLAR PV PRODUCT CERTIFICATE

**Certificate:** 80016357
**Project:** 80160211

**Master Contract:** 249143
**Date Issued:** 2023-03-13

CS7N-xxxTB-AG (xxx = 650 to 720 W),
CS7U-xxxTB-AG (xxx = 590 to 850 W),
CS6W-xxxTB-AG (xxx = 540 to 600 W).

| Model Type | Maximum DC System Voltage (V) | Open Circuit Voltage (V) | Maximum power voltage (V) | Short Circuit Current (A) | Maximum power current (A) | Maximum Power (Watts) | Maximum overcurrent protection rating (A) |
|---|---|---|---|---|---|---|---|
| CS3U-350PB-AG | 1500 | 46.60 | 39.2 | 9.51 | 8.94 | 350 | 25 |
| CS3U-355PB-AG | 1500 | 46.80 | 39.4 | 9.59 | 9.02 | 355 | 25 |
| CS3U-360PB-AG | 1500 | 47.00 | 39.6 | 9.67 | 9.10 | 360 | 25 |
| CS3U-365PB-AG | 1500 | 47.20 | 39.8 | 9.75 | 9.18 | 365 | 25 |
| CS3U-370PB-AG | 1500 | 47.40 | 40.0 | 9.83 | 9.26 | 370 | 25 |
| CS3U-375PB-AG | 1500 | 47.60 | 40.2 | 9.91 | 9.34 | 375 | 25 |
| CS3U-380PB-AG | 1500 | 47.80 | 40.4 | 9.99 | 9.42 | 380 | 25 |
| CS3U-385PB-AG | 1500 | 48.00 | 40.6 | 10.07 | 9.50 | 385 | 25 |
| CS3U-390PB-AG | 1500 | 48.60 | 40.8 | 10.17 | 9.56 | 390 | 25 |
| CS3U-395PB-AG | 1500 | 48.80 | 41.0 | 10.24 | 9.64 | 395 | 25 |
| CS3W-415MB-AG | 1500 | 47.7 | 39.7 | 11.22 | 10.46 | 415 | 25 |
| CS3W-420MB-AG | 1500 | 47.9 | 39.9 | 11.27 | 10.53 | 420 | 25 |
| CS3W-425MB-AG | 1500 | 48.1 | 40.1 | 11.32 | 10.6 | 425 | 25 |
| CS3W-430MB-AG | 1500 | 48.3 | 40.3 | 11.37 | 10.68 | 430 | 25 |
| CS3W-435MB-AG | 1500 | 48.5 | 40.5 | 11.42 | 10.75 | 435 | 25 |
| CS3W-440MB-AG | 1500 | 48.7 | 40.7 | 11.48 | 10.82 | 440 | 25 |
| CS3W-445MB-AG | 1500 | 48.9 | 40.9 | 11.54 | 10.89 | 445 | 25 |
| CS3W-450MB-AG | 1500 | 49.1 | 41.1 | 11.6 | 10.96 | 450 | 25 |
| CS3W-455MB-AG | 1500 | 49.3 | 41.3 | 11.66 | 11.02 | 455 | 25 |
| CS3W-460MB-AG | 1500 | 49.5 | 41.5 | 11.72 | 11.09 | 460 | 25 |
| CS3W-465MB-AG | 1500 | 49.7 | 41.7 | 11.78 | 11.16 | 465 | 25 |
| CS3U-350MB-AG | 1500 | 46.6 | 38.8 | 9.53 | 9.03 | 350 | 25 |
| CS3U-355MB-AG | 1500 | 46.8 | 39.0 | 9.61 | 9.11 | 355 | 25 |
| CS3U-360MB-AG | 1500 | 47 | 39.2 | 9.69 | 9.19 | 360 | 25 |
| CS3U-365MB-AG | 1500 | 47.2 | 39.4 | 9.77 | 9.27 | 365 | 25 |
| CS3U-370MB-AG | 1500 | 47.4 | 39.6 | 9.85 | 9.35 | 370 | 25 |
| CS3U-375MB-AG | 1500 | 47.6 | 39.8 | 9.93 | 9.43 | 375 | 25 |
| CS3U-380MB-AG | 1500 | 47.8 | 40.0 | 10.01 | 9.50 | 380 | 25 |
| CS3U-385MB-AG | 1500 | 48 | 40.2 | 10.09 | 9.58 | 385 | 25 |
| CS3U-390MB-AG | 1500 | 48.2 | 40.4 | 10.17 | 9.66 | 390 | 25 |
| CS3U-395MB-AG | 1500 | 48.4 | 40.6 | 10.25 | 9.73 | 395 | 25 |
| CS3U-400MB-AG | 1500 | 48.6 | 40.8 | 10.33 | 9.81 | 400 | 25 |
| CS3U-405MB-AG | 1500 | 49.3 | 41.0 | 10.44 | 9.88 | 405 | 25 |
| CS3U-410MB-AG | 1500 | 49.5 | 41.2 | 10.52 | 9.96 | 410 | 25 |
| CS3K-280MB-AG | 1500 | 38.5 | 31.7 | 8.84 | 9.49 | 280 | 25 |


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**Certificate:** 80016357
**Project:** 80160211

**Master Contract:** 249143
**Date Issued:** 2023-03-13

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CAN/CSA-C22.2 No. 61730-1:19 | Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction, 2019-12 |
| CAN/CSA-C22.2 No. 61730-2:19 | Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing, 2019-12 |
| UL 61730-1 First Edition | Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction, 2017-12-04, revision date 2020-04-30 |
| UL 61730-2 First Edition | Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing, 2017-12-04, revision date 2020-04-30 |

Notes:

Products certified under Class C531110 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca


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# SOLIS INVERTER PRODUCT CERTIFICATE

## Certificate of Compliance

**Certificate:** 80062600
**Master Contract:** 273488
**Project:** 80173205
**Date Issued:** 2023-09-15

**Issued to:** Ginlong Technologies Co., Ltd.
No.57, Jintong Road, Xiangshan
Ningbo, Zhejiang, 315712
CHINA
**Attention:** Ruyi Pan

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only***

Issued by: *Magic Zhang*
Magic Zhang

**PRODUCTS**

CLASS - C531109 - POWER SUPPLIES - Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Transformerless Utility Interactive PV Inverter, Models Solis-15K-LV-5G, Solis-20K-LV-5G, Solis-23K-LV-5G, Solis-40K-HV-5G, Solis-50K-HV-5G and S5-GC15K-LV, S5-GC20K-LV, S5-GC23-LV, S5-GC40K-HV, S5-GC50K-HV, permanently connected.

Transformerless Grid Support Utility Interactive PV Inverter, Models S6-GC25K-US, S6-GC30K-US, S6-GC33K-US, S6-GC36K-US, S6-GC40K-US, S6-GC50K-US, S6-GC60K-US and S6-GC30K-LV-US, permanently connected.

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance, Annex A, or the Descriptive Report.

**APPLICABLE REQUIREMENTS**

CSA-C22.2 No.107.1-16 - Power Conversion Equipment


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**Certificate:** 80062600
**Master Contract:** 273488
**Project:** 80173205
**Date Issued:** 2023-09-15

| | |
|---|---|
| *UL Std No. 1741 | - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Third Edition, Dated May 18, 2021) |
| **UL 1699B | - Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Revision Dated August 22, 2021) |
| **UL1741 CRD | - Non-Isolated EPS Interactive PV Inverters Rated Less Than 30Kva (Dated April 26, 2010) |

For Transformerless Utility Interactive PV Inverter:
*Note: Conformity to UL 1741 (Third Edition, Dated September 28, 2021) includes compliance with applicable requirements of IEEE 1547-2003(R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015.

For Transformerless Grid Support Utility Interactive PV Inverter:
*Note: Conformity to UL 1741(Third Edition, Dated September 28, 2021) and Grid support function is verified according to UL 1741 Supplement SA8/SA18 with the SRDs of California Electric Rule 21 and also verified according to UL 1741 Supplement SB and IEEE 1547.1-2020 with the SRDs of IEEE 1547-2018, IEEE 1547a-2020 and Hawaiian Electric Co. SRD-V2.0. While the grid support function evaluated according to IEEE 1547.1-2020, the interoperability is verified with IEEE 2030.5-2018 communication protocol.

**Note: The functional safety has been evaluated according to applicable requirement of UL 1998-Edition 3 as required by the product standard.

Notes:

Products certified under Class C531109 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca


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*Supplement to Certificate of Compliance*

**Certificate:** 80062600
**Master Contract:** 273488

***The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.***

**Product Certification History**

| Project | Date | Description |
|---|---|---|
| 80173205 | 2023-09-15 | Updated report 80062600 to add model S6-GC30K-LV-US and evaluate the Grid support function to comply with UL 1741 Supplement SA8-SA18 with the SRDs of California Electric Rule 21 and UL 1741 Supplement SB according to IEEE 1547.1-2020 with SRDS IEEE 1547-2018 and IEEE 1547a-2020. |
| 80155184 | 2023-09-13 | Updated report 80062600 to evaluate the Grid support function to comply with HECO SRD V2.0 requirements for Transformerless Grid Support Utility Interactive PV Inverter, firmware number is A2. |
| 80103314 | 2023-08-31 | Updated report 80062600 to meet requirements of UL 1699B Photovoltaic (PV) DC Arc-Fault Circuit Protection (First Edition, Revision Dated May 18, 2021) for all models. |
| 80155183 | 2023-06-02 | Updated report 80062600 to add Models S6-GC25K-US, S6-GC30K-US, S6-GC33K-US, S6-GC36K-US, S6-GC40K-US, S6-GC50K-US, S6-GC60K-US and evaluate the Grid support function to comply with UL 1741 Supplement SB according to IEEE 1547.1-2020 with SRDS IEEE 1547-2018 and IEEE 1547a-2020. |
| 80062600 | 2022-03-26 | Transformerless Utility Interactive PV Inverter, Models Solis-15K-LV-5G, Solis-20K-LV-5G, Solis-23K-LV-5G, Solis-40K-HV-5G, Solis-50K-HV-5G and S5-GC15K-LV, S5-GC20K-LV, S5-GC23K-LV, S5-GC40K-HV, S5-GC50K-HV. (CUS) |


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# STATIC LOAD TEST FOR PROSOLAR ROOFTRACK

VINCI & ASSOCIATES *Structural Engineers*

CLIENT:
Professional Solar Products, Inc.
1551 S. Rose Ave., Oxnard, CA 93033
Tel: 805-486-4700

**Subject: Static load test results for the ProSolar® sloped roof mount:**

| Mounting System | Min Rail Height | Max rail span | Test Load | Wind exposure (ASCE 7-16) | Roof zone** | ASCE 7-16 Wind Speed rating** |
|---|---|---|---|---|---|---|
| RoofTrac® | 2" | 72" | 30 lb/ft² | A, B, C | All roof zones | 120 mph |

**TEST SETUP (as shown in attached drawing detail):** Modules* were bolted to 2" tall Professional Solar Products (PSP) UL2703 RoofTrac® support rails using an assembly of 5/16" Stainless Steel (SS) bolts, SS lock washers and proprietary PSP aluminum clamps and RoofTrac® channel nuts. The RoofTrac® support rail was attached to the PSP RoofTrac® structural attachment device with 3/8" SS hardware at four attachment points. The setup was attached to 2"x6" wooden rafters using 5/16" x 3-1/2" lag bolts. The attachment spans consisted of 48" front to rear with structural attachments spaced 72" on center.

**TEST PROCEDURE (as shown in attached drawing detail):** The test set up was top loaded to above specified load per UL2703 loading guidelines (Intertek report reference: 1046015495LAX). The setup remained under load for an approximate period of 30 minutes per UL2703. Any signs of permanent deformation were recorded. The test setup was then inverted and loaded to simulate the wind uplift condition. The test set up was re-loaded to above specified load. The setup remained under load for an approximate period of 30 minutes. Any signs of permanent deformation were noted.

**TEST RESULTS:**
The maximum top load resulted in no permanent deformation.
The maximum uplift load resulted in no permanent deformation.

This document certifies the RoofTrac® mounting system withstands the stated static pressure load, equivalent to the stated wind speeds**. The mounting system performed as expected. System compliance evaluation complete for: ASCE/SEI 7-16, 2022 CBC, 2022(CRC), 2021(IBC), AC428 (2012), Aluminum Design Manual (2015), ANSI/AWC NDS-2018, CPP Report 9790 (2017), SEAOC PV-2 (2017)

Sincerely,
James R. Vinci, S.E.

This engineering report verifies that Vinci & Associates accepts and verifies the findings outlined in the Testing Report 100779407LAX-003, dated May 19, 2021. The results of this load test reflect actual deflection values and are generally accepted as the industry standard for testing module mounting systems. Vinci & Associates does not field check installations or verify that the mounting system is installed as described in this engineering report.

Structural attachment: Lag bolt attachment should be installed using the proper pilot hole for optimum strength. A 5/16" lag bolt requires a 3/16" pilot hole. It is the responsibility of the installer to ensure a proper attachment is made to the structural member of the roof. Failure to securely attach to the roof structure may result in damage to equipment, personal injury or property damage. The purposed racking system may be installed on any roof up to a maximum of 24 foot above grade without further analysis. Racking shall be installed into a roof member or blocking with a 5/16" diameter screw at each Fast jack location. Screws shall have minimum of 2 ½ penetration into framing member for zone 1&2(n/e/r), and a minimum of 3" penetration into framing member for zone 3(e/r). (Zone 3 is defined as the approximately 4'-0" square at each corner of the roof)

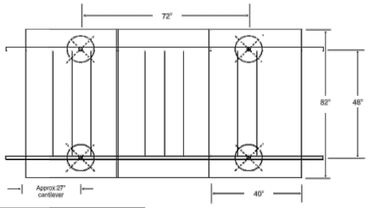
This office/report does not express an opinion as to the load bearing characteristics of the structure the mounting system/modules are being installed on.

ICC accredited laboratory tested structural attachments manufactured by Professional Solar Products (including, but not limited to Fastjack®, TileTrac®, and FoamJack®) can be interchanged with this system. Any rail splice used shall be manufactured by PSP. As tested, 2.0 splice located anywhere along rail except cantilever. Limit spliced rail run to approx. 45 ft. for expansion/contraction

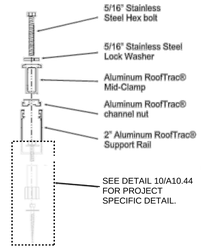
Check with local building department or AHJ for site specific requirements.
*Modules tested to UL1703, or equivalent, up to 23 lb/ft² are included in this engineering.
**Wind loading values relative to defined load values using wind load exposure and gust factor coefficient "exposure C" as defined in the 2021(IBC) /2022(CBC) / ASCE 7-16.
Est. snow load rating of 15 lb/ft² based on 2.0 safety factor.

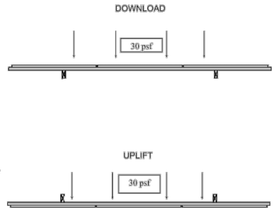


9320
179 E. WILBUR ROAD, SUITE 103 • THOUSAND OAKS, CA 91360
805.498.2100 • VinciSE.com




| | | |
|---|---|---|
| Total module (45 lbs ea.) and rail (12 lbs ea.) weight: | 159 | lbs |
| Number of attachments: | 4 | ea |
| Weight / attachment point: | 40 | lbs |
| Area: (3 modules) | 69 | ft² |
| Distributed weight: | 2.3 | lb/ ft² |




*Professional Solar Products RoofTrac®*
*Photovoltaic mounting system*

0423

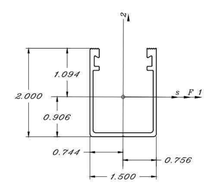
**RoofTrac®**
**Solar Modules**
**Static load test illustration**



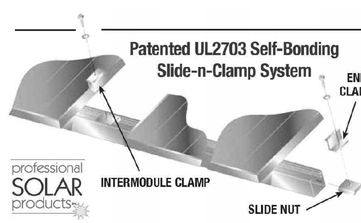
professional SOLAR products
1551 S. Rose Ave., Oxnard, CA 93033
(805) 486-4700 | (805) 486-4799
www.prosolar.com

| Aluminum | |
|---|---|
| Part Number | 24032-C |
| **Calculate** | |
| Factor | 20 |
| Area | 0.490 |
| Weight | 0.597 |
| Perimeter | 11.61 |
| Ixx | 0.252 |
| Iyy | 0.194 |
| Sxx | 0.230 |
| Syy | 0.258 |

Clear




**Optional sub-flashing shown*




*Fully integrated, and patented, clamping system actually changes the structural properties of the aluminum channel making it significantly stronger. This design allows solar modules to be installed at a lower profile to the roof providing a more aesthetically pleasing installation.*

*Module end clamps are specifically designed for each specific module frame.*

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

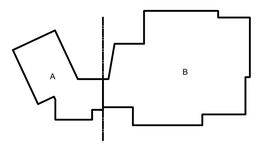
| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

CONSULTANT:
SAA ASSOCIATES
Architecture Development Management
SAA ASSOCIATES
680 E. COLORADO BLVD, SUITE 180
PASADENA, CA 91101
T: 818-437-8452
Licensed Architect Christopher Mehren C-35567 Renewal 08/31/2027 State of California

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:
**GENERAL NOTES AND PRODUCT CERTIFICATES**

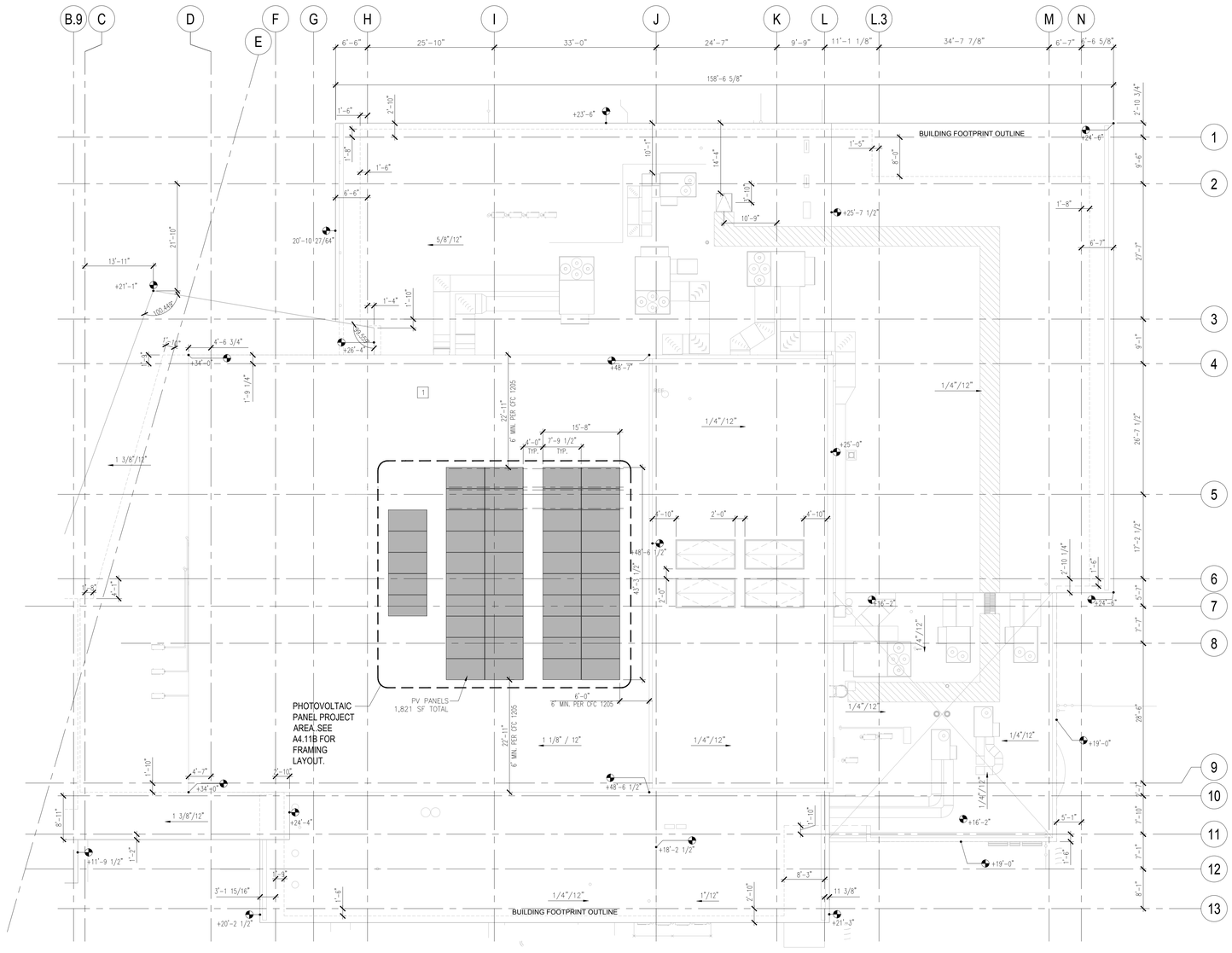
**DSA SUBMITTAL**

**FILE NO.: 19-H10** **A NO.: 03-123641**
DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:
# PV-002

PLEASE RECYCLE

THE LINE BROWN ABOVE IS EXACTLY 1" WHEN PLOTTED ON SHEETS ORIGINAL PAGE SIZE




NOTE:
A. FOR INVERTER LOCATION, PLEASE SEE PARTIAL ELECTRICAL ROOM PLAN FOR THE FIRST FLOOR ON SHEET PVE-200.
B. THE WEIGHT OF THE PV PANELS IS 4LBS PER SF PER STRUCTURAL .

1 ROOF PLAN/PROPOSED SOLAR PANEL LAYOUT
SCALE: 3/32" = 1'-0"

## SOLAR PANEL KEYNOTES

1. EXISTING ROOF AREA. PROTECT FROM DAMAGE DURING CONSTRUCTION.
2. CONTRACTOR SHALL FIELD VERIFY ROOF CONDITION AND ALL DIMENSIONS PER DRAWINGS AND NOTIFY THE ARCHITECT OF ANY CONFLICT.
3. ALL ROOF PENETRATION/PATCH/REPAIR AND FLASHING WORK RELATED TO PHOTOVOLTAIC INSTALLATION SHALL COMPLY WITH DRAWINGS AND ROOF SPECIFICATION REQUIREMENTS.
4. PHOTOVOLTAIC MODULE TYPICAL.
5. THE DRAWINGS HAVE SHOWN AREAS FOR PV PANEL LAYOUT. THE CONTRACT SHALL PROVIDE FINAL ARRAY DIAGRAM FOR REVIEW AND APPROVAL BY ARCHITECT AND ENGINEER.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWING COMPLYING WITH REQUIREMENTS FOR APPROVAL BY ARCHITECT AND ENGINEER IN ADDITION TO OBTAINING APPLICABLE PERMITS PRIOR TO THE COMMENCEMENT OF WORK.
7. ALL WATERPROOFING, FIRE SAFING AND ATTACHMENT AND ATTACHMENT TO STRUCTURE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS SHALL INCLUDE ANY ROOF REPAIR WORK ASSOCIATED WITH PV PANELS INSTALLATION.
8. CONTRACTOR SHALL PROVIDE A COMPLETE, FULLY MECHANICALLY ATTACHED, AND FULLY OPERATIONAL PHOTOVOLTAIC SYSTEM AS APPROVED BY ARCHITECT AND ENGINEER, BASED ON THE INFORMATION CONTAINED ON DRAWINGS AND ANY SUBSEQUENT STATUTORY AND LOCAL STANDARD OF CARE CLARIFICATIONS INCLUDING, BUT NOT LIMITED TO DRAWINGS, SPECIFICATION, BID INSTRUCTIONS AND ADDENDA. THE CONTRACTOR SHALL INCLUDE ALL RELATED WORK IN THEIR BID SUBMITTAL FOR A COMPLETE AND FUNCTIONING SYSTEM.
9. THE OWNER MAY NOT ACCEPT ANY SUBSTITUTION OTHER THAN SPECIFIED ITEM.
10. CHANGES TO THE APPROVED PLANS SHALL BE MADE BY MEANS OF CONSTRUCTION CHANGE DOCUMENTS AND SUBMITTED TO DSA FOR APPROVAL. ANY PROPOSED SUBSTITUTION BY CONTRACTOR FOR PHOTOVOLTAIC PANEL SYSTEM SHALL BE MECHANICALLY ATTACHED SHALL BE COORDINATED/COMPLY WITH ABOVE NOTES IN ADDITION TO THE FOLLOWING CRITERIA AT A MINIMUM.
   - A. SYSTEM SHALL BE SIZED TO MAXIMIZE OUTPUT AND TILT DEGREES SHALL NOT BE LESS THAN THAT SHOWN ON DRAWINGS.
   - B. INCLUDE COST FOR ALL REQUIRED UPGRADES TO ACCOMMODATE INCREASED SYSTEM CAPACITY OR MODIFICATIONS, INCLUDING BUT NOT LIMITED, ADDITIONAL SUBMITTAL REVIEWS, DESIGN CHANGES FOR LOAD REQUIREMENTS AND EQUIPMENT AND ALL RELATED WORK INCLUDING ANCHORAGE SYSTEM.
   - C. ANCHORAGE SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF UL 2703

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

3361008100

633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

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**KEYNOTES**

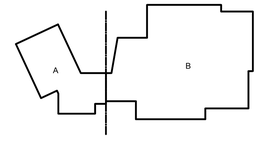
**NOTES**

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T: 818-437-8452

LICENSED ARCHITECT Christopher Mohren C-35567 Renewal 08/31/2026 STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:
**ROOF PLAN/PROPOSED SOLAR PANEL LAYOUT**

**DSA SUBMITTAL**

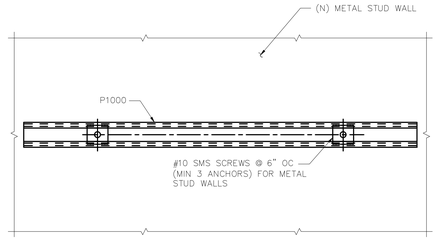
FILE NO.: 19-H10 | A NO.: 03-123641
DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100

SHEET:

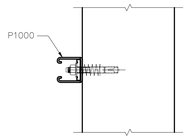
# PV-101

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ELEVATION

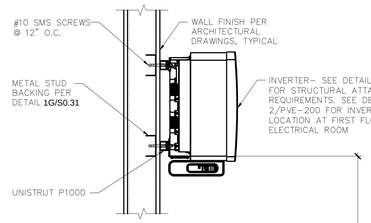



NOTE:
1. FOR UNISTRUT LEDGERS ATTACHED TO METAL STUD WALL USE # 10 SMS SCREWS @ 6" OC TO STUD BACKING

SECTION

HMC_DTL-UNISTRUT LEDGER TO WALL ATTACHMENT

**3 UNISTRUT LEDGER TO WALL ATTACHMENT** NTS




NOTE:
INVERTER SIZE31"(W) x 22" (D) x12 1/2" (H)
MAXIMUM WEIGHT – 96.5 LBS

ARO_DTL-INVERTER ATTACHMENT DETAIL @ METAL STUD WALL

**4 INVERTER ATTACHMENT DETAIL @ METAL STUD WALL** NTS

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SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects

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**KEYNOTES**

**NOTES**

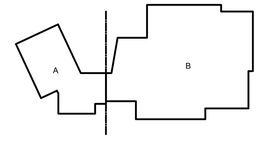
CONSULTANT:

SAA ASSOCIATES
Architecture
Development
Management

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LICENSED ARCHITECT
Christopher Mehren
C-15567
Renewal 12/31/25
STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:
**DETAILS**

**DSA SUBMITTAL**

| FILE NO.: 19-H10 | A NO.: 03-123641 |
|---|---|
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

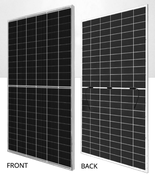
SHEET:

# PV-500

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CanadianSolar




# TOPBiHiKu7

**N-type Bifacial TOPCon Technology**

**690 W ~ 720 W**

**CS7N-690|695|700|705|710|715|720TB-AG**

**MORE POWER**

- 720 W — Module power up to 720 W, Module efficiency up to 23.2 %
- EXTRA POWER — Up to 85% Power Bifaciality, more power from the back side
- Excellent anti-LeTID & anti-PID performance, Low power degradation, high energy yield
- Lower temperature coefficient (Pmax): -0.29%/°C, increases energy yield in hot climate
- Lower LCOE & system cost

**MORE RELIABLE**

- Tested up to ice ball of 35 mm diameter according to IEC 61215 standard
- Minimizes micro-crack impacts
- Heavy snow load up to 5400 Pa, wind load up to 2400 Pa*

- 12 Years — **Enhanced Product Warranty on Materials and Workmanship***
- 30 Years — **Linear Power Performance Warranty***

**1st year power degradation no more than 1%**
**Subsequent annual power degradation no more than 0.4%**

*According to the applicable Canadian Solar Limited Warranty Statement.

**MANAGEMENT SYSTEM CERTIFICATES***

ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety
IEC 62941: 2019 / Photovoltaic module manufacturing quality system

**PRODUCT CERTIFICATES***

IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA / CGC
CEC listed (US California) / FSEC (US Florida)
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
UNI 9177 Reaction to Fire: Class 1 / Take-e-way

* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

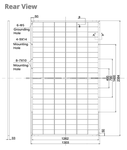
CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 23 years, it has successfully delivered over 125 GW of premium-quality solar modules across the world.

* For detailed information, please refer to the Installation Manual.

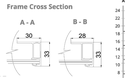

CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com


**ENGINEERING DRAWING (mm)**

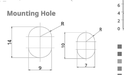
Rear View



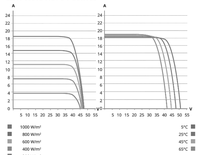
Frame Cross Section




Mounting Hole



**CS7N-695TB-AG / I-V CURVES**




**ELECTRICAL DATA | STC***

| | | Nominal Max. Power (Pmax) | Opt. Operating Voltage (Vmp) | Opt. Operating Current (Imp) | Open Circuit Voltage (Voc) | Short Circuit Current (Isc) | Module Efficiency |
|---|---|---|---|---|---|---|---|
| CS7N-690TB-AG | | 690 W | 39.6 V | 17.43 A | 47.5 V | 18.39 A | 22.2% |
| Bifacial Gain** | 5% | 725 W | 39.6 V | 18.30 A | 47.5 V | 19.31 A | 23.3% |
| | 10% | 759 W | 39.6 V | 19.17 A | 47.5 V | 20.23 A | 24.4% |
| | 20% | 828 W | 39.6 V | 20.92 A | 47.5 V | 22.07 A | 26.7% |
| CS7N-695TB-AG | | 695 W | 39.8 V | 17.47 A | 47.7 V | 18.44 A | 22.4% |
| Bifacial Gain** | 5% | 730 W | 39.8 V | 18.34 A | 47.7 V | 19.36 A | 23.5% |
| | 10% | 765 W | 39.8 V | 19.22 A | 47.7 V | 20.28 A | 24.6% |
| | 20% | 834 W | 39.8 V | 20.96 A | 47.7 V | 22.13 A | 26.8% |
| CS7N-700TB-AG | | 700 W | 40.0 V | 17.51 A | 47.9 V | 18.49 A | 22.5% |
| Bifacial Gain** | 5% | 735 W | 40.0 V | 18.39 A | 47.9 V | 19.41 A | 23.7% |
| | 10% | 770 W | 40.0 V | 19.26 A | 47.9 V | 20.34 A | 24.8% |
| | 20% | 840 W | 40.0 V | 21.01 A | 47.9 V | 22.19 A | 27.0% |
| CS7N-705TB-AG | | 705 W | 40.2 V | 17.55 A | 48.1 V | 18.54 A | 22.7% |
| Bifacial Gain** | 5% | 740 W | 40.2 V | 18.43 A | 48.1 V | 19.47 A | 23.8% |
| | 10% | 776 W | 40.2 V | 19.31 A | 48.1 V | 20.39 A | 25.0% |
| | 20% | 846 W | 40.2 V | 21.06 A | 48.1 V | 22.25 A | 27.2% |
| CS7N-710TB-AG | | 710 W | 40.4 V | 17.59 A | 48.3 V | 18.59 A | 22.9% |
| Bifacial Gain** | 5% | 746 W | 40.4 V | 18.47 A | 48.3 V | 19.52 A | 24.0% |
| | 10% | 781 W | 40.4 V | 19.35 A | 48.3 V | 20.45 A | 25.1% |
| | 20% | 852 W | 40.4 V | 21.11 A | 48.3 V | 22.31 A | 27.4% |
| CS7N-715TB-AG | | 715 W | 40.6 V | 17.63 A | 48.5 V | 18.64 A | 23.0% |
| Bifacial Gain** | 5% | 751 W | 40.6 V | 18.51 A | 48.5 V | 19.57 A | 24.2% |
| | 10% | 787 W | 40.6 V | 19.39 A | 48.5 V | 20.50 A | 25.3% |
| | 20% | 858 W | 40.6 V | 21.16 A | 48.5 V | 22.37 A | 27.6% |
| CS7N-720TB-AG | | 720 W | 40.8 V | 17.67 A | 48.7 V | 18.69 A | 23.2% |
| Bifacial Gain** | 5% | 756 W | 40.8 V | 18.55 A | 48.7 V | 19.62 A | 24.3% |
| | 10% | 792 W | 40.8 V | 19.44 A | 48.7 V | 20.56 A | 25.5% |
| | 20% | 864 W | 40.8 V | 21.20 A | 48.7 V | 22.43 A | 27.8% |

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

**ELECTRICAL DATA**

| | |
|---|---|
| Operating Temperature | -40°C ~ +85°C |
| Max. System Voltage | 1500 V (IEC/UL) |
| Module Fire Performance | TYPE 29 (UL 61730) or CLASS C (IEC61730) |
| Max. Series Fuse Rating | 35 A |
| Protection Class | Class II |
| Power Tolerance | 0 ~ + 10 W |
| Power Bifaciality* | 80 % |

* Power Bifaciality = $P_{max_{rear}}$ / $P_{max_{STC}}$, both $P_{max_{rear}}$ and $P_{max_{STC}}$ are tested under STC. Bifaciality Tolerance: ± 5 %

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.


CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com



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**ELECTRICAL DATA | NMOT***

| | Nominal Max. Power (Pmax) | Opt. Operating Voltage (Vmp) | Opt. Operating Current (Imp) | Open Circuit Voltage (Voc) | Short Circuit Current (Isc) |
|---|---|---|---|---|---|
| CS7N-690TB-AG | 522 W | 37.4 V | 13.94 A | 45.0 V | 14.83 A |
| CS7N-695TB-AG | 526 W | 37.6 V | 13.97 A | 45.2 V | 14.87 A |
| CS7N-700TB-AG | 529 W | 37.8 V | 14.00 A | 45.4 V | 14.91 A |
| CS7N-705TB-AG | 533 W | 38.0 V | 14.03 A | 45.5 V | 14.95 A |
| CS7N-710TB-AG | 537 W | 38.2 V | 14.06 A | 45.7 V | 14.99 A |
| CS7N-715TB-AG | 541 W | 38.4 V | 14.09 A | 45.9 V | 15.03 A |
| CS7N-720TB-AG | 544 W | 38.6 V | 14.12 A | 46.1 V | 15.07 A |

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

**MECHANICAL DATA**

| Specification | Data |
|---|---|
| Cell Type | TOPCon cells |
| Cell Arrangement | 132 [2 x (1 x 6)] |
| Dimensions | 2384 × 1303 × 33 mm (93.9 × 51.3 × 1.30 in) |
| Weight | 37.8 kg (83.3 lbs) |
| Front Glass | 2.0 mm heat strengthened glass with anti-reflective coating |
| Back Glass | 2.0 mm heat strengthened glass |
| Frame | Anodized aluminium alloy |
| J-Box | IP68, 3 bypass diodes |
| Cable | 4.0 mm² (IEC), 12 AWG (UL) |
| Cable Length (Including Connector) | 360 mm (14.2 in) (+) / 200 mm (7.9 in) (-) or customized length* |
| Connector | T6 or MC4-EVO2 or MC4-EVO2A |
| Per Pallet | 33 pieces |
| Per Container (40' HQ) | 594 pieces or 495 pieces (only for US & Canada) |

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

**TEMPERATURE CHARACTERISTICS**

| Specification | Data |
|---|---|
| Temperature Coefficient (Pmax) | -0.29 % / °C |
| Temperature Coefficient (Voc) | -0.25 % / °C |
| Temperature Coefficient (Isc) | 0.05 % / °C |
| Nominal Module Operating Temperature | 41 ± 3°C |

**PARTNER SECTION**

solis
ussales@solisinverters.com

## S6-GC(25-60)K-US

## Solis Three Phase Grid-Tied Inverters

**Efficient**
- Max. efficiency 98.8% (CEC efficiency 98.3%)
- String current up to 20A
- 3/4 MPPT design, supports multiple orientation system design
- Night time PID recovery function, increases overall system yield (optional)
- Wide voltage range and low startup voltage

**Safe**
- Type 4X, C5 Anti-Corrosion Level
- AFCI protection, proactively reduces fire risk
- Intelligent redundant fan-cooling
- Integrated module level rapid shutdown transmitter
- High quality components from globally recognized suppliers
- Integrated DC and AC disconnects

**Smart**
- Equipped with external power control interface, supporting zero output power control
- Intelligent string monitoring, smart I-V curve scan
- Supports RS485, Ethernet, WiFi, Cellular
- Scan to register on SolisCloud, supports remote upgrade and control

**Economic**
- > 1.5 DC/AC ratio
- Supports high power modules for lower installation costs
- Separable AC wiring box

**Models:**

S6-GC25K-US, S6-GC33K-US
S6-GC36K-US / S6-GC40K-US
S6-GC50K-US / S6-GC60K-US

**Ordering: S6-GC(25-60)K-US**

- APST (APS MLRSD Transmitter)
- RSS (Tigo MLRSD Transmitter)
- NEPT (NEP MLRSD Transmitter)




solis
www.solisinverters.com

**DATASHEET** — **S6-GC(25-60)K-US**

| Models | 25K | 33K | 36K | 40K | 50K | 60K |
|---|---|---|---|---|---|---|
| **Input DC** | | | | | | |
| Max. input voltage | | | 1000 V | | | |
| Rated voltage | | | 720 V | | | |
| Start-up voltage | | | 180 V | | | |
| MPPT voltage range | | | 180-1000 V | | | |
| Max. input current | | 3*40 A | | | 4*40 A | |
| Max. short circuit current | | 3*63 A | | | 4*63 A | |
| MPPT number/Max. input strings number | | 3/6 | | | 4/8 | |
| **Output AC** | | | | | | |
| Rated output power | 25 kW | 33 kW | 36 kW | 40 kW | 50 kW | 60 kW |
| Max. apparent output power | 25 kVA | 33 kVA | 36 kVA | 40 kVA | 50 kVA | 60 kVA |
| Max. output power | 25 kW | 33 kW | 36 kW | 40 kW | 50 kW | 60 kW |
| Rated grid voltage | | | 3Ø/PE, 480 V | | | |
| Rated grid frequency | | | 60 Hz | | | |
| Max. output current | 30.1 A | 39.7 A | 43.3 A | 48.1 A | 60.1 A | 72.2 A |
| Power factor | | | +/-99 (0.8 leading - 0.8 lagging) | | | |
| THDi | | | <3% | | | |
| **Efficiency** | | | | | | |
| Max. efficiency | | | 98.8% | | | |
| CEC efficiency | | | 98.3% | | | |
| **Protection** | | | | | | |
| DC reverse-polarity protection | | | Yes | | | |
| Short circuit protection | | | Yes | | | |
| Output over current protection | | | Yes | | | |
| Surge protection | | | DC Type II / AC Type II | | | |
| Grid monitoring | | | Yes | | | |
| Anti-islanding protection | | | Yes | | | |
| Temperature protection | | | Yes | | | |
| Strings monitoring | | | Yes | | | |
| I/V Curve scanning | | | Yes | | | |
| Integrated AFCI | | | Yes | | | |
| Integrated PID recovery | | | Optional | | | |
| Integrated DC switch | | | Yes | | | |
| Integrated AC switch | | | Yes | | | |
| **General Data** | | | | | | |
| Dimensions (W*H*D) | | | 30.9*21.6*12.6 in (784*549*320 mm) | | | |
| Weight | | 96.3 lbs (43.7 kgs) | 105.4 lbs (47.8 kgs) | | 108.7 lbs (49.3 kgs) | 110.5 lbs (50.1 kgs) |
| Topology | | | Transformerless | | | |
| Self-consumption (night) | | | <1 W | | | |
| Relative humidity | | | 0-100% | | | |
| Operating ambient temperature range | | | -13°F to 140°F (-25°C to 60°C) | | | |
| Ingress protection | | | TYPE 4X | | | |
| Noise emission (typical) | | | ≤55 dB(A) | | | |
| Cooling concept | | | Natural convection | | | |
| Max. operation altitude | | | ≤3,220 ft (4000 m) | | | |
| Compliance | | | UL1741SB, IEEE 1547-2018, UL1699B, UL1998, FCC Part15 ClassB, California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2:107.1-1 | | | |
| **Features** | | | | | | |
| DC connection | | | MC4 connector | | | |
| AC connection | | | OT terminal (4 AWG to 3/0 AWG) | | | |
| Display | | | LCD | | | |
| Communication | | | Modbus RTU (Sunspec compliant), RS485, Optional: Cellular, WI-FI | | | |

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CONSTRUCTION TRADES EDUCATION NETWORK — UNION HIGH SCHOOL DISTRICT — COMMITTED TO COLLEGE AND CAREER — ESTABLISHED 1991


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**KEYNOTES**

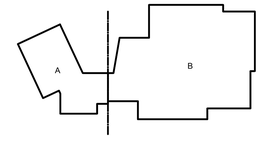
**NOTES**

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LICENSED ARCHITECT — Christopher Mehren — C-19567 — Renewal 12/31/26 — STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:

**DETAILS**

**DSA SUBMITTAL**

**FILE NO.: 19-H10** | **A NO.: 03-123641**

DATE: **06/23/2025** | CLIENT PROJ NO: **3361008100**

SHEET:

# PV-501

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## ELECTRICAL SYMBOLS

- SEE NOTE A OR 1 ON THE SAME SHEET
- 113 — EQUIPMENT NAME OR NUMBER
- +4'-6" — MOUNTING HEIGHT FROM FINISHED FLOOR TO CENTERLINE OF OUTLET OR EQUIPMENT
- EXIST ITEMS TO REMAIN
- EXIST ITEMS TO BE REMOVED
- NEW ITEMS
- HOMERUN TO PANELBOARD, CABINET OR TERMINAL BOARD AS INDICATED.
- HOMERUN TO SWITCHBOARD OR MCC AS INDICATED. REFER TO SINGLE LINE FOR CONDUIT AND WIRE SIZES.
- CONDUIT END CAP.
- CONDUIT DOWN
- CONDUIT UP
- CONDUIT RUN UNDERGROUND OR BELOW FLOOR.
- CONDUIT CONCEALED IN WALL OR CEILING.
- W — SURFACE WIREMOLD RACEWAY
- (X) — MULTIOUTLET RACEWAY. NUMBER IN (X) INDICATES OUTLET SPACING. WHERE MULTIPLE CIRCUITS ARE INDICATED, ALTERNATE CIRCUITS FOR OUTLETS ALONG RACEWAY.
- T1 — VOICE/DATA CONDUIT ONLY. SIZE AND QTY AS NOTED. T=1¼" / T1=1½" / T2=2" / T3=3" / T4=4" / (X)T4=(X)4"
- AV1 — AUDIO VISUAL CONDUIT ONLY. SIZE AND QTY AS NOTED. AV=1¼" / AV1=1½" / AV2=2" / AV3=3" / (X)AV3=(X)3"
- S1 — SECURITY SYSTEM CONDUIT ONLY. SIZE AND QTY AS NOTED. S=¾" / S1=1" / S2=1¼" / S3=1½" / (X)S1=(X)1"
- G — GROUND CONDUCTOR AS NOTED
- $S_M$ — MANUAL MOTOR STARTER WITH HOA AND THERMAL OVERLOAD.
- DISCONNECT SWITCH, 30 AMP MINIMUM
- COMBINATION DISCONNECT SWITCH AND MOTOR STARTER WITH HOA, 30 AMP, SIZE 1 MINIMUM
- AH-1 — MOTOR, MECHANICAL EQUIPMENT DESIGNATED 'AH-1'
- SURFACE MOUNTED MISCELLANEOUS CABINET AS INDICATED ON PLANS
- FLUSH MOUNTED MISCELLANEOUS CABINET AS INDICATED ON PLANS
- L1A — SURFACE MOUNTED PANELBOARD, DESIGNATED 'L1A'
- FLUSH MOUNTED PANELBOARD
- SWITCHBOARD
- COPPER GROUND BUS
- COPPER TECHNICAL GROUND BUS ON ISOLATORS
- COPPER GROUND ROD, MINIMUM ¾"ø X 10' LONG

## OUTLET SYMBOLS

SUBSCRIPT 'C' INDICATES ASSOCIATED OUTLET IS MOUNTED AT COUNTER HEIGHT. REFER TO ARCHITECTURAL DRAWINGS. RECEPTACLES ARE NEMA 5-20R UON.

- WALL MOUNTED DUPLEX RECEPTACLE
- WALL MOUNTED QUADRUPLEX RECEPTACLE.
- J — WALL MOUNTED JUNCTION BOX 4" SQUARE MINIMUM.
- WALL MOUNTED JUNCTION BOX SIZE AS REQUIRED FOR NUMBER OF WIRES.
- J — CEILING MOUNTED JUNCTION BOX SIZE AS REQUIRED FOR NUMBER OF WIRES.

## ONE LINE DIAGRAM SYMBOLS

- EXIST ITEMS TO REMAIN
- EXIST ITEMS TO BE REMOVED
- NEW ITEMS
- TRANSFORMER, AS NOTED ON SINGLE LINE
- ISOLATION TYPE TRANSFORMER WITH ELECTROSTATIC SHIELD, AS NOTED ON SINGLE LINE
- LOW VOLTAGE CIRCUIT BREAKER
- G — OCPD WITH GROUND FAULT PROTECTION
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- M — DEMAND TYPE KWH METER
- AUTOMATIC TRANSFER SWITCH
- CURRENT TRANSFER, RATIO AS NOTED.
- AS — AMMETER SWITCH
- AM — AMMETER
- IQ — ELECTRONIC METER, UON CUTLER HAMMER IQ ANALYZER CAT. NO. IQA6430 OR EQUAL BY SQUARE D SCHNEIDER
- GROUND

## GENERAL NOTES

A. CODES AND STANDARDS:
- A.A. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION. PROVIDE ALL LABOR AND TOOLS NECESSARY. PROVIDE AND INSTALL ALL REQUIRED EQUIPMENT, MATERIALS AND ASSOCIATED APPURTENANCES.
- A.B. ALL ELECTRICAL WORK SHALL COMPLY WITH 2023 EDITION OF THE ELECTRICAL CODE, BASED ON 2022 CALIFORNIA ELECTRICAL CODE (BASED ON 2020 NATIONAL ELECTRICAL CODE) WITH CITY AMENDMENTS.
- A.C. PROCURE ALL PERMITS, ARRANGE FOR ALL INSPECTIONS AND PAY ALL ASSOCIATED COSTS AND FEES.
- A.D. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.

D. MATERIALS:
- D.A. SERIES RATING OF ELECTRICAL SYSTEM IS NOT ALLOWED.
- D.B. ALL INDOOR CONDUCTORS SHALL BE COPPER, TYPE 'THWN/THHN' 90 DEGREE INSULATION. ALL EXTERIOR, WET OR DAMP LOCATION CONDUCTORS SHALL BE COPPER, TYPE 'THWN-2 OR XHHW-2' 90 DEGREE INSULATION.
- D.C. ALL LUGS SHALL BE 75 DEGREE C RATED, MINIMUM.
- D.D. USE OF NONMETALLIC SHEATHED CABLE (NM OR NMC), ARMORED CABLE (AC) OR METAL CLAD CABLE (MC) IS NOT ALLOWED.
- D.E. USE OF STEEL FLEX IS NOT ALLOWED EXCEPT FOR LENGTHS UP TO 6 FEET FOR FINAL CONNECTION TO LIGHTING FIXTURES OR VIBRATING EQUIPMENT. ALUMINUM FLEX IS NOT ALLOWED.
- D.F. PROVIDE ENERGY EFFICIENT TRANSFORMERS AS REQUIRED BY THE DEPARTMENT OF ENERGY.
- D.G. ALL EQUIPMENT BUSSING TO BE COPPER.
- D.H. ALL DISTRIBUTION TRANSFORMERS TO HAVE VACUUM PRESSURE IMPREGNATED COILS WITH COPPER WINDINGS, 220-DEGREE INSULATION SYSTEM, 115 DEGREE C TEMPERATURE RISE AND (2)+2.5% & (2)-2.5% VOLTAGE TAPS.

E. INSTALLATION:
- E.A. DO NOT PENETRATE STRUCTURAL ITEMS WITHOUT PRIOR APPROVAL.
- E.B. INSTALL EXPOSED CONDUITS PARALLEL AND AT RIGHT ANGLES TO NEARBY SURFACES AND STRUCTURAL MEMBERS.
- E.C. UNLESS OTHERWISE NOTED, MOUNT ALL ELECTRICAL, TELEPHONE AND DATA OUTLETS 18" ABOVE FINISHED FLOOR TO BOTTOM OF THE DEVICE. RECEPTACLES TO BE MOUNTED WITH THE GROUND PRONG UP.
- E.D. UNLESS OTHERWISE NOTED, INSTALL LIGHTING CONTROL STATIONS 42" ABOVE FINISHED FLOOR TO THE CENTER OF THE STATION.
- E.E. INSTALL GREEN INSULATED COPPER GROUNDING CONDUCTOR IN ALL RACEWAY AND BOXES. THE RACEWAYS SHALL NOT BE RELIED UPON FOR 'EQUIPMENT GROUNDING'.
- E.F. INSTALL DEDICATED COPPER NEUTRAL CONDUCTOR BACK TO PANEL FOR EACH BRANCH CIRCUIT.
- E.G. NORMAL AND EMERGENCY POWER SHALL NOT OCCUPY THE SAME ENCLOSURE.
- E.H. LABEL ALL EQUIPMENT, DEVICES AND RACEWAY SYSTEMS WITH THEIR SERVING CIRCUIT NUMBERS. REFER TO IDENTIFICATION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- E.I. PROVIDE FIRE STOPPING AT CONDUIT PENETRATIONS OF RATED SURFACES. PROVIDE FIRE PADS FOR ELECTRICAL SYSTEMS INSTALLED IN RATED SURFACES.
- E.J. PROVIDE SOUND INSULATION MATERIAL FOR PENETRATIONS THRU SOUND RATED WALLS. PROVIDE SOUNDS PADS FOR ELECTRICAL SYSTEMS INSTALLED IN RATED SURFACES.
- E.K. STAGGER OUTLETS ON OPPOSITE SIDES OF THE SAME WALL. DO NOT INSTALL OUTLETS "BACK TO BACK".
- E.L. SUPPORT LIGHTING FIXTURES AND CEILING MOUNTED DEVICES TO THE STRUCTURAL MEMBERS INDEPENDENT OF THE CEILING.
- E.M. DO NOT COMBINE HOMERUNS.
- E.N. INSTALL PULL STRING IN ALL CONDUIT ONLY INSTALLATIONS.

K. COORDINATION:
- K.A. COORDINATE ELECTRICAL WORK WITH ALL OTHER TRADES.
- K.B. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS OF ALL LIGHT FIXTURES AND DEVICES.
- K.C. REFER TO LOW VOLTAGE SYSTEM DRAWINGS FOR COMPLETE REQUIREMENTS, INCLUDING FIRE ALARM, TELECOMMUNICATION, AUDIO / VISUAL, SECURITY AND MECHANICAL CONTROLS.
- K.D. LENGTHS SHOWN ON SINGLE LINE OR FEEDER SCHEDULE ARE ESTIMATES FOR PLAN CHECK PURPOSES. CONTRACTOR TO PERFORM THEIR OWN TAKE OFF.
- K.E. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- K.F. COORDINATE FINAL EQUIPMENT INSTALLATION WITH MANUFACTURER'S SHOP DRAWINGS.

## PROJECT DESCRIPTION

ADDITIONAL OF PV SYSTEM AND ASSOCIATED APPURTENANCES.

## SHEET INDEX


| | |
|---|---|
| PVE-000 | ABBREVIATIONS, SYMBOLS AND GENERAL NOTES |
| PVE-100 | SINGLE LINE DIAGRAM |
| PVE-200 | PV ELECTRICAL ROOF PLAN |
| PVE-400 | PV ELECTRICAL DETAILS |
| PVE-401 | PV ELECTRICAL DETAILS |


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## KEYNOTES

## NOTES

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KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:

**ABBREVIATIONS, SYMBOLS AND GENERAL NOTES**

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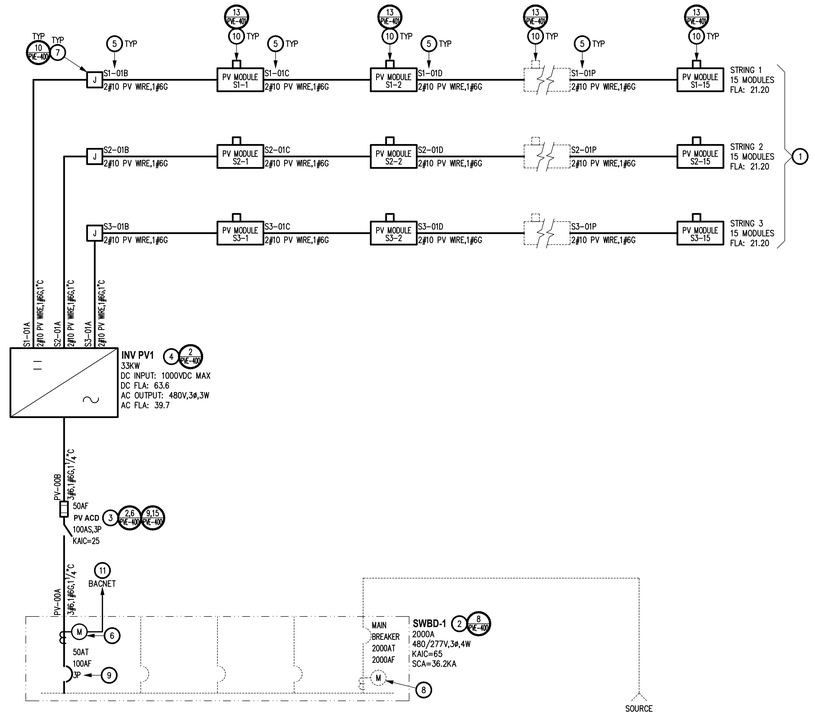
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# PVE-000

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REFERENCED NOTES:

1. (3) STRINGS OF PV MODULES. (15) PV MODULES IN SERIES EACH.
2. FACILITY'S MAIN SWITCHBOARD. REFER TO BUILDING DOCUMENTS.
3. PV SYSTEM AC DISCONNECT SWITCH.
4. PV SYSTEM INVERTER WITH MODULE LEVEL RAPID SHUTDOWN TRASMITTER AND INTEGRAL DC AND AC DISCONNECT SWITCHES.
5. TYPICAL STRING WIRING SHOWN.
6. PV SYSTEM METER WITH BACNET CAPABILITY. METER TO MATCH BUILDING'S METER MANUFACTURER.
7. PV SYSTEM JUNCTION BOX.
8. BUILDING'S MAIN METER.
9. PV BREAKER SHALL BE LOCATED AT OPPOSITE END OF MAIN BREAKER.
10. MODULE LEVEL RAPID SHUT DOWN DEVICE.
11. BACNET COMM WIRING IN 1"C.

NOTE:
SCOPE OF WORK INCLUDES PV SYSTEM AND ASSOCIATED APPURTENANCES. REFER TO BUILDING DOCUMENTS FOR ADDITIONAL INFORMATION.

| System Summary | |
|---|---|
| Module Model | CS7N-720TB-AG |
| Module STC DC Rating (W) | 864 |
| Total Module Count | 45 |
| Total STC DC System Size (W) | 38,880 |
| Total AC System Size (W) | 33,000 |
| DC: AC Ratio | 1.18 |
| Inverter Model | Solis S6-GC33K-US |
| Racking System | PROSOLAR ROOFTRACK |

| Module Specifications (STC) | |
|---|---|
| Make | CSI Solar Co., Ltd |
| Model | CS7N-720TB-AG |
| Power (W) | 864 |
| Operating Voltage VMP (V) | 40.8 |
| Operating Current IMP (A) | 21.2 |
| Open Circuit Voltage VOC (V) | 48.7 |
| Short Circuit Current ISC (A) | 22.43 |

| Inverter Specifications | |
|---|---|
| Make | Solis |
| Model | S6-GC33K-US |
| Nominal Power Rating (W) | 33,000 |
| Efficiency (%) | 98.3 |
| Output Voltage (V) | 480 |
| Max Current (A) | 39.7 |
| Quantity | 1 |

### Fault Current

Project Name: Arroyo HS PV
Project Number: 17706
Designed By: Michael Sanchez
Item Name: Short Circuit
Notes: -NONE-

Calculation of Fault Current
Fault SCA Source = Main Bus
SCA Available = 36200
Length Units = Feet
Motor Load = None
Motor SCA = None
Motor SCA Treatment = Motor SCA Not Included
System Voltage = 480
System Phase = 3 Phase
Transformers

| Name | PH | Size | Pri.V | Sec.V | %Z | SCA,3PH |
|---|---|---|---|---|---|---|
| TA | 3-PH | | | 480 | | |

Main-Feeders

| Name | Cond | Cable | Size | Qty | Feet | SCA,3PH |
|---|---|---|---|---|---|---|
| F1 PV-00A | EMT | 1/c,CU | 6 | 1 | 15 | 20,023 |

### Volt Drop 600

Project Name: Arroyo HS PV
Project Number: 17706
Designed By: Michael Sanchez
Item Name: Voltage Drop
Notes:

PV-00A

AC Calculation for Voltage Percent
Voltage: 480
Load: 39.7 Amperes
Load Circuit: 3-PH, 3-W, Delta
Power Factor: 1
Insulation Temp: 75°C/167°F
Conductor: Copper
Conductors per Phase: 1
Conduit: EMT
Cable Length: 15 Feet
Conductor Gauge: 6

Results:
0.11%
0.51 Volts Line-to-Line

### Volt Drop 600

Project Name: Arroyo HS PV
Project Number: 17706
Designed By: Michael Sanchez
Item Name: Voltage Drop
Notes:

PV-00B

AC Calculation for Voltage Percent
Voltage: 480
Load: 39.7 Amperes
Load Circuit: 3-PH, 3-W, Delta
Power Factor: 1
Insulation Temp: 75°C/167°F
Conductor: Copper
Conductors per Phase: 1
Conduit: EMT
Cable Length: 15 Feet
Conductor Gauge: 6

Results:
0.11%
0.51 Volts Line-to-Line

VOLTAGE DROP – S1-01A

| | |
|---|---|
| User Mode | Commercial 90° C |
| Current Type | DC |
| Units for Length | Feet |
| Phase | single |
| Conductor | copper |
| Installation | Cable, Conduit (non-Steel), & Direct Burial |
| Length of Cable Run | 55 Feet |
| Conductor Size | 10 AWG |
| Voltage | 600 Volts |
| Max Voltage Drop | 3 % |
| Current at end of Cable Run | 21.2 Amps |
| Power Factor | 0.9 |

**Results for Voltage Drop**
Voltage drop will be limited to 0.45% or less with 1 parallel(set) of 10 AWG Copper conductor delivering a total of 21.2 amps on a 600 volt single phase system for a distance of 55 feet.

VOLTAGE DROP – S2-01A

| | |
|---|---|
| User Mode | Commercial 90° C |
| Current Type | DC |
| Units for Length | Feet |
| Phase | single |
| Conductor | copper |
| Installation | Cable, Conduit (non-Steel), & Direct Burial |
| Length of Cable Run | 90 Feet |
| Conductor Size | 10 AWG |
| Voltage | 600 Volts |
| Max Voltage Drop | 3 % |
| Current at end of Cable Run | 21.2 Amps |
| Power Factor | 0.9 |

**Results for Voltage Drop**
Voltage drop will be limited to 0.74% or less with 1 parallel(set) of 10 AWG Copper conductor delivering a total of 21.2 amps on a 600 volt single phase system for a distance of 90 feet.

VOLTAGE DROP – S3-01A

| | |
|---|---|
| User Mode | Commercial 90° C |
| Current Type | DC |
| Units for Length | Feet |
| Phase | single |
| Conductor | copper |
| Installation | Cable, Conduit (non-Steel), & Direct Burial |
| Length of Cable Run | 65 Feet |
| Conductor Size | 10 AWG |
| Voltage | 600 Volts |
| Max Voltage Drop | 3 % |
| Current at end of Cable Run | 21.2 Amps |
| Power Factor | 0.9 |

**Results for Voltage Drop**
Voltage drop will be limited to 0.54% or less with 1 parallel(set) of 10 AWG Copper conductor delivering a total of 21.2 amps on a 600 volt single phase system for a distance of 65 feet.

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KEY PLAN:

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:

**SINGLE LINE DIAGRAM**

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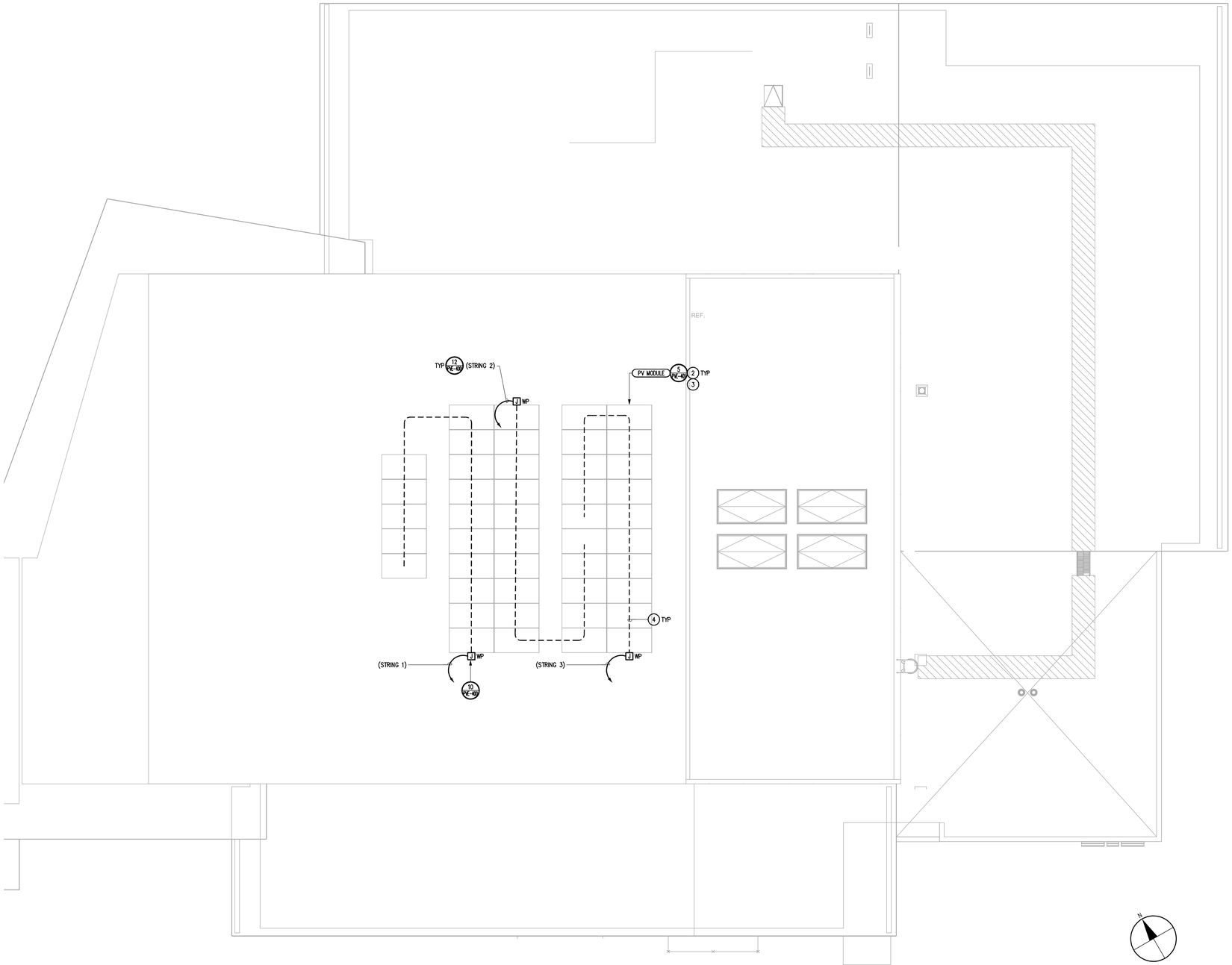
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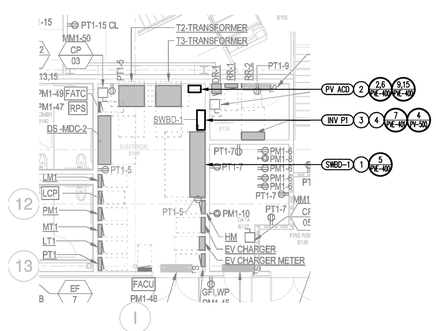



REFERENCED NOTES:

1. FACILITY'S MAIN SWITCHBOARD. REFER TO BUILDING DOCUMENTS.
2. PV MODULES LOCATED ON ROOF. REFER TO SINGLE LINE DIAGRAM FOR WIRING INFORMATION.
3. REFER TO STRUCTURAL DRAWINGS FOR ANCHORING INFORMATION.
4. DC WIRING. REFER TO SINGLE LINE DIAGRAM.

## 1 ROOF PLAN

1/8" = 1'-0"




REFERENCED NOTES:

1. FACILITY'S MAIN SWITCHBOARD. REFER TO BUILDING DOCUMENTS.
2. PV SYSTEM MAIN AC DISCONNECT SWITCH.
3. PV SYSTEM INVERTER.
4. REFER TO PV SYSTEM INVERTER ATTACHMENT DETAIL.

## 2 FIRST FLOOR ELECTRICAL ROOM

1/8" = 1'-0"

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SHEET NAME:

**ELECTRICAL ROOF PLAN**

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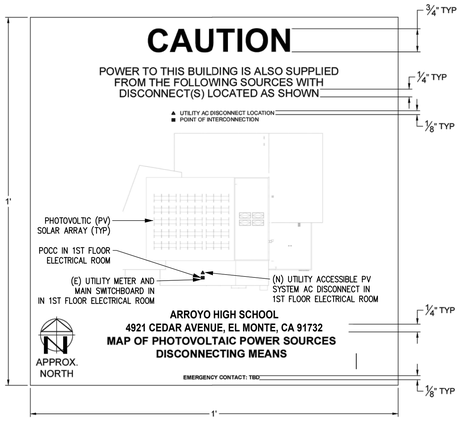
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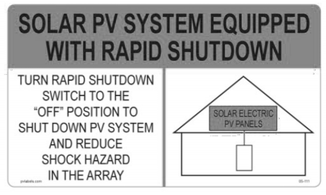
FACILITIES WITH UTILITY SERVICES AND PV SYSTEMS PLACARD

AT MINIMUM ONE MAP AT UTILITY MAIN SERVICE DISCONNECT, AT PV UTILITY AC DISCONNECTS



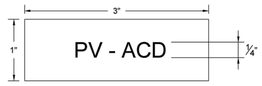

## 5 PLACARD TO BE PLACED ON EXISTING SWITCHBOARD NEAR MAIN SERVICE SICONNECT

NONE




## 9 RAPID SHUTDOWN PLACECARD

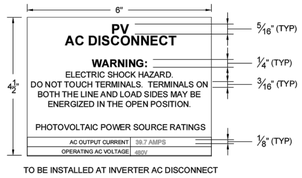
NONE




I.D. PLACARD FOR PV AC DISCONNECT

## 2 EQUIPMENT IDENTIFICATION

NONE




TO BE INSTALLED AT INVERTER AC DISCONNECT

## 6 PV SERVICE AC DISCONNECT MEANS

NONE




MARKING OR LABELING REQUIRED. THE FOLLOWING WIRING METHODS AND ENCLOSURES THAT CONTAIN PV POWER SOURCE CONDUCTORS SHALL BE MARKED WITH THE WORDING "PHOTOVOLTAIC POWER SOURCE" BYMEANS OF PERMANENTLY AFFIXED LABELS OR OTHER APPROVED PERMANENT MARKING:

1. EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS
2. COVERS OR ENCLOSURES OF PULL BOXES AND JUNCTION BOXES
3. CONDUIT BODIES IN WHICH ANY OF THE AVAILABLE CONDUIT OPENINGS ARE UNUSED

## 7 WARNING: PV POWER SOURCE

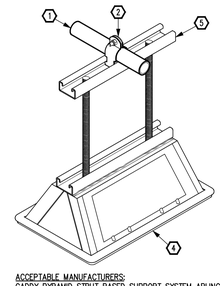
NONE

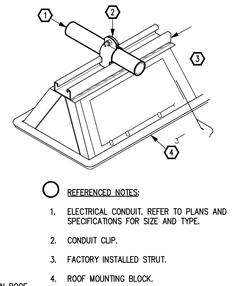



TO BE INSTALLED AT EXISTING MAIN SWITCHBOARD

## 8 IDENTIFICATION OF MULTIPLE SOURCES

NONE



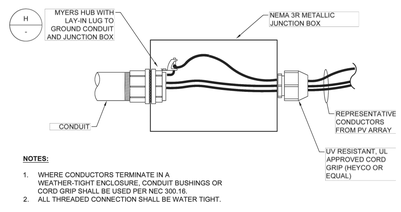

REFERENCED NOTES:

1. ELECTRICAL CONDUIT. REFER TO PLANS AND SPECIFICATIONS FOR SIZE AND TYPE.
2. CONDUIT CLIP.
3. FACTORY INSTALLED STRUT.
4. ROOF MOUNTING BLOCK.
5. FACTORY INSTALLED STRUT WITH ADJUSTABLE HEIGHT.

ACCEPTABLE MANUFACTURERS:
CADDY PYRAMID STRUT BASED SUPPORT SYSTEM ARLINGTON ROOF TOPPER SUPPORT SYSTEM B-LINE DURA-BLOK SUPPORT SYSTEM

## 12 ROOF MOUNTED CONDUIT

NONE

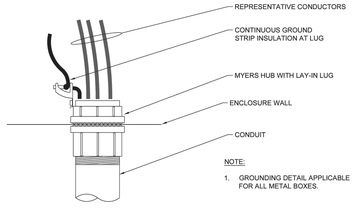



NOTES:

1. WHERE CONDUCTORS TERMINATE IN A WEATHER-TIGHT ENCLOSURE, CONDUIT BUSHINGS OR CORD GRIP SHALL BE USED PER NEC 300.16.
2. ALL THREADED CONNECTION SHALL BE WATER TIGHT.

## 10 WURING JUNCTION BOX DETAIL

NONE




NOTE:

1. GROUNDING DETAIL APPLICABLE FOR ALL METAL BOXES.

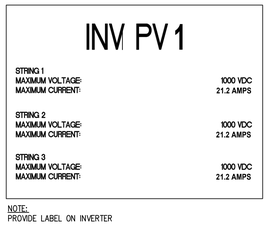
## 11 METAL CONDUIT GROUNDING

NONE




## 13 PV SYSTEM BREAKER LABEL

NONE




NOTE:
PROVIDE LABEL ON INVERTER

## 14 INVERTER DISCONNECT LABEL

NONE




NOTE:
LOCATE LABEL ON OR NO MORE THAN 3 FEET FROM THE SWITCH. LABEL SHALL BE REFLECTIVE WITH WHITE LETTERS ON RED BACKGROUND.

## 15 RAPID SHUTDOWN LABEL

NONE

PLEASE RECYCLE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025


HMC Architects
3361008100
633 W. 5TH STREET, THIRD FLOOR,
LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com


**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

**KEYNOTES**

**NOTES**


CONSULTANT:
SAA ASSOCIATES Architecture Development Management
SAA ASSOCIATES
680 E. COLORADO BLVD, SUITE 180
PASADENA, CA 91101
T: 818-437-8452

RBE Inc.
Consulting Electrical Engineers
3016 E Colorado Blvd #5249
Pasadena , Ca . 91107
626.831.2449


REGISTERED PROFESSIONAL ENGINEER
JEANETTE MALEKASKHARIAN
E 21589
ELECTRICAL
STATE OF CALIFORNIA

KEY PLAN:




FACILITY:

**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:
**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:
**PV ELECTRICAL DETAILS**

**DSA SUBMITTAL**

| | |
|---|---|
| FILE NO.: 19-H10 | A NO.: 03-123641 |
| DATE: 06/23/2025 | CLIENT PROJ NO: 3361008100 |

SHEET:

# PVE-400



# TOPBiHiKu7

**N-type Bifacial TOPCon Technology**

**690 W ~ 720 W**

**CS7N-690|695|700|705|710|715|720TB-AG**

FRONT BACK

**MORE POWER**

- 720 W — Module power up to 720 W; Module efficiency up to 23.2 %
- EXTRA POWER — Up to 85% Power Bifacility, more power from the back side
- Excellent anti-LeTID & anti-PID performance, Low power degradation, high energy yield
- Lower temperature coefficient (Pmax): -0.29%/°C, increases energy yield in hot climate
- Lower LCOE & system cost

**MORE RELIABLE**

- Tested up to ice ball of 35 mm diameter according to IEC 61215 standard
- Minimizes micro-crack impacts
- Heavy snow load up to 5400 Pa, wind load up to 2400 Pa*

- 12 Years — **Enhanced Product Warranty on Materials and Workmanship***
- 30 Years — **Linear Power Performance Warranty***

1st year power degradation no more than 1%
Subsequent annual power degradation no more than 0.4%

*According to the applicable Canadian Solar Limited Warranty Statement.

**MANAGEMENT SYSTEM CERTIFICATES***

ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety
IEC 62941: 2019 / Photovoltaic module manufacturing quality system

**PRODUCT CERTIFICATES***

IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA / CGC
CEC listed (US California) / FSEC (US Florida)
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
UNI 9177 Reaction to Fire: Class 1 / Take-e-way

* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

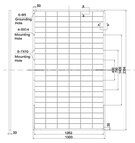
CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 23 years, it has successfully delivered over 125 GW of premium-quality solar modules across the world.

* For detailed information, please refer to the Installation Manual.

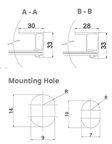
CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com

**ENGINEERING DRAWING (mm)**

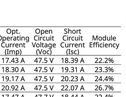
Rear View



Frame Cross Section




Mounting Hole



**ELECTRICAL DATA | STC***

| | Nominal Max. Power (Pmax) | Opt. Operating Voltage (Vmp) | Opt. Operating Current (Imp) | Open Circuit Voltage (Voc) | Short Circuit Current (Isc) | Module Efficiency |
|---|---|---|---|---|---|---|
| CS7N-690TB-AG | 690 W | 39.6 V | 17.43 A | 47.5 V | 18.39 A | 22.2% |
| Bifacial Gain** 5% | 725 W | 39.6 V | 18.30 A | 47.5 V | 19.31 A | 23.3% |
| Bifacial Gain** 10% | 759 W | 39.6 V | 19.17 A | 47.5 V | 20.23 A | 24.4% |
| Bifacial Gain** 20% | 828 W | 39.6 V | 20.92 A | 47.5 V | 22.07 A | 26.7% |
| CS7N-695TB-AG | 695 W | 39.8 V | 17.47 A | 47.7 V | 18.44 A | 22.4% |
| Bifacial Gain** 5% | 730 W | 39.8 V | 18.34 A | 47.7 V | 19.36 A | 23.5% |
| Bifacial Gain** 10% | 765 W | 39.8 V | 19.22 A | 47.7 V | 20.28 A | 24.6% |
| Bifacial Gain** 20% | 834 W | 39.8 V | 20.96 A | 47.7 V | 22.13 A | 26.8% |
| CS7N-700TB-AG | 700 W | 40.0 V | 17.51 A | 47.9 V | 18.49 A | 22.5% |
| Bifacial Gain** 5% | 735 W | 40.0 V | 18.39 A | 47.9 V | 19.41 A | 23.7% |
| Bifacial Gain** 10% | 770 W | 40.0 V | 19.26 A | 47.9 V | 20.34 A | 24.8% |
| Bifacial Gain** 20% | 840 W | 40.0 V | 21.01 A | 47.9 V | 22.19 A | 27.0% |
| CS7N-705TB-AG | 705 W | 40.2 V | 17.55 A | 48.1 V | 18.54 A | 22.7% |
| Bifacial Gain** 5% | 740 W | 40.2 V | 18.43 A | 48.1 V | 19.47 A | 23.8% |
| Bifacial Gain** 10% | 776 W | 40.2 V | 19.31 A | 48.1 V | 20.39 A | 25.0% |
| Bifacial Gain** 20% | 846 W | 40.2 V | 21.06 A | 48.1 V | 22.25 A | 27.2% |
| CS7N-710TB-AG | 710 W | 40.4 V | 17.59 A | 48.3 V | 18.59 A | 22.9% |
| Bifacial Gain** 5% | 746 W | 40.4 V | 18.47 A | 48.3 V | 19.52 A | 24.0% |
| Bifacial Gain** 10% | 781 W | 40.4 V | 19.35 A | 48.3 V | 20.45 A | 25.1% |
| Bifacial Gain** 20% | 852 W | 40.4 V | 21.11 A | 48.3 V | 22.31 A | 27.4% |
| CS7N-715TB-AG | 715 W | 40.6 V | 17.63 A | 48.5 V | 18.64 A | 23.0% |
| Bifacial Gain** 5% | 751 W | 40.6 V | 18.51 A | 48.5 V | 19.57 A | 24.2% |
| Bifacial Gain** 10% | 787 W | 40.6 V | 19.39 A | 48.5 V | 20.50 A | 25.3% |
| Bifacial Gain** 20% | 858 W | 40.6 V | 21.16 A | 48.5 V | 22.37 A | 27.6% |
| CS7N-720TB-AG | 720 W | 40.8 V | 17.67 A | 48.7 V | 18.69 A | 23.2% |
| Bifacial Gain** 5% | 756 W | 40.8 V | 18.55 A | 48.7 V | 19.62 A | 24.3% |
| Bifacial Gain** 10% | 792 W | 40.8 V | 19.44 A | 48.7 V | 20.56 A | 25.5% |
| Bifacial Gain** 20% | 864 W | 40.8 V | 21.20 A | 48.7 V | 22.43 A | 27.8% |

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature at 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

**ELECTRICAL DATA**

| | |
|---|---|
| Operating Temperature | -40°C ~ +85°C |
| Max. System Voltage | 1500 V (IEC/UL) |
| Module Fire Performance | TYPE 29 (UL 61730) or CLASS C (IEC61730) |
| Max. Series Fuse Rating | 35 A |
| Protection Class | Class II |
| Power Tolerance | 0 ~ + 10 W |
| Power Bifaciality* | 80 % |

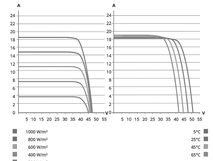
* Power Bifaciality = $P_{max_{rear}}$ / $P_{max_{front}}$, both $P_{max_{rear}}$ and $P_{max_{front}}$ are tested under STC. Bifaciality Tolerance: ± 5 %

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com

July 2024. All rights reserved, PV Module Product Datasheet V1.8_EN

**CS7N-695TB-AG / I-V CURVES**




**ELECTRICAL DATA | NMOT***

| | Nominal Max. Power (Pmax) | Opt. Operating Voltage (Vmp) | Opt. Operating Current (Imp) | Open Circuit Voltage (Voc) | Short Circuit Current (Isc) |
|---|---|---|---|---|---|
| CS7N-690TB-AG | 522 W | 37.4 V | 13.94 A | 45.0 V | 14.83 A |
| CS7N-695TB-AG | 526 W | 37.6 V | 13.97 A | 45.2 V | 14.87 A |
| CS7N-700TB-AG | 529 W | 37.8 V | 14.00 A | 45.4 V | 14.91 A |
| CS7N-705TB-AG | 533 W | 38.0 V | 14.03 A | 45.5 V | 14.95 A |
| CS7N-710TB-AG | 537 W | 38.2 V | 14.06 A | 45.7 V | 14.99 A |
| CS7N-715TB-AG | 541 W | 38.4 V | 14.09 A | 45.9 V | 15.03 A |
| CS7N-720TB-AG | 544 W | 38.6 V | 14.12 A | 46.1 V | 15.07 A |

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

**MECHANICAL DATA**

| Specification | Data |
|---|---|
| Cell Type | TOPCon cells |
| Cell Arrangement | 132 [2 x (11 x 6)] |
| Dimensions | 2384 × 1303 × 33 mm (93.9 × 51.3 × 1.30 in) |
| Weight | 37.8 kg (83.3 lbs) |
| Front Glass | 2.0 mm heat strengthened glass with anti-reflective coating |
| Back Glass | 2.0 mm heat strengthened glass |
| Frame | Anodized aluminium alloy |
| J-Box | IP68, 3 bypass diodes |
| Cable | 4.0 mm² (IEC), 12 AWG (UL) |
| Cable Length (Including Connector) | 360 mm (14.2 in) (+) / 200 mm (7.9 in) (-) or customized length* |
| Connector | T6 or MC4-EVO2 or MC4-EVO2A |
| Per Pallet | 33 pieces |
| Per Container (40' HQ) | 594 pieces or 495 pieces (only for US & Canada) |

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

**TEMPERATURE CHARACTERISTICS**

| Specification | Data |
|---|---|
| Temperature Coefficient (Pmax) | -0.29 % / °C |
| Temperature Coefficient (Voc) | -0.25 % / °C |
| Temperature Coefficient (Isc) | 0.05 % / °C |
| Nominal Module Operating Temperature | 41 ± 3°C |

**PARTNER SECTION**

## 5 PV MODULE

NONE

solis
ussales@solisinverters.com

## S6-GC(25-60)K-US

### Solis Three Phase Grid-Tied Inverters

**Efficient**

- Max. efficiency 98.8% (CEC efficiency 98.3%)
- String current up to 20A
- 3/4 MPPT design, supports multiple orientation system design
- Night time PID recovery function, increases overall system yield (optional)
- Wide voltage range and low startup voltage

**Safe**

- Type 4X, C5 Anti-Corrosion Level
- AFCI protection, proactively reduces fire risk
- Intelligent redundant fan-cooling
- Integrated module level rapid shutdown transmitter
- High quality components from globally recognized suppliers
- Integrated DC and AC disconnects

**Smart**

- Equipped with external power control interface, supporting zero output power control
- Intelligent string monitoring, smart I-V curve scan
- Supports RS485, Ethernet, WiFi, Cellular
- Scan to register on SolisCloud, supports remote upgrade and control

**Economic**

- > 1.5 DC/AC ratio
- Supports high power modules for lower installation costs
- Separable AC wiring box

**Models:**

S6-GC25K-US | S6-GC33K-US
S6-GC36K-US / S6-GC40K-US
S6-GC50K-US / S6-GC60K-US

**Ordering: S6-GC(25-60)K-US**

- APST (APS MLRSD Transmitter)
- RSS (Tigo MLRSD Transmitter)
- NEPT (NEP MLRSD Transmitter)




## 7 INVERTER SPEFICIATIONS

NONE

solis
www.solisinverters.com

**DATASHEET** S6-GC(25-60)K-US

| Models | 25K | 33K | 36K | 40K | 50K | 60K |
|---|---|---|---|---|---|---|
| **Input DC** | | | | | | |
| Max. input voltage | 1000 V | | | | | |
| Rated voltage | 720 V | | | | | |
| Start-up voltage | 180 V | | | | | |
| MPPT voltage range | 180-1000 V | | | | | |
| Max. input current | 3*40 A | | | 4*40 A | | |
| Max. short circuit current | 3*63 A | | | 4*63 A | | |
| MPPT number/Max. input strings number | 3/6 | | | 4/8 | | |
| **Output AC** | | | | | | |
| Rated output power | 25 kW | 33 kW | 36 kW | 40 kW | 50 kW | 60 kW |
| Max. apparent output power | 25 kVA | 33 kVA | 36 kVA | 40 kVA | 50 kVA | 60 kVA |
| Max. output power | 25 kW | 33 kW | 36 kW | 40 kW | 50 kW | 60 kW |
| Rated grid voltage | 3Φ/PE, 480 V | | | | | |
| Rated grid frequency | 60 Hz | | | | | |
| Max. output current | 30.1 A | 39.7 A | 43.3 A | 48.1 A | 60.1 A | 72.2 A |
| Power factor | >0.99 (0.8 leading - 0.8 lagging) | | | | | |
| THDi | <3% | | | | | |
| **Efficiency** | | | | | | |
| Max. efficiency | 98.8% | | | | | |
| CEC efficiency | 98.3% | | | | | |
| **Protection** | | | | | | |
| DC reverse-polarity protection | Yes | | | | | |
| Short circuit protection | Yes | | | | | |
| Output over current protection | Yes | | | | | |
| Surge protection | DC Type II / AC Type II | | | | | |
| Grid monitoring | Yes | | | | | |
| Anti-islanding protection | Yes | | | | | |
| Temperature protection | Yes | | | | | |
| Strings monitoring | Yes | | | | | |
| I/V Curve scanning | Yes | | | | | |
| Integrated AFCI | Yes | | | | | |
| Integrated PID recovery | Optional | | | | | |
| Integrated DC switch | Yes | | | | | |
| Integrated AC switch | Yes | | | | | |
| **General Data** | | | | | | |
| Dimensions (W*H*D) | 30.9*21.6*12.6 in (784*549*320 mm) | | | | | |
| Weight | 96.3 lbs (43.7 kgs) | | 105.4 lbs (47.8 kgs) | | 108.7 lbs (49.3 kgs) | 110.5 lbs (50.1 kgs) |
| Topology | Transformerless | | | | | |
| Self-consumption (night) | <1 W | | | | | |
| Relative humidity | 0-100% | | | | | |
| Operating ambient temperature range | -13°F to 140°F (-25°C to 60°C) | | | | | |
| Ingress protection | TYPE 4X | | | | | |
| Noise emission (typical) | ≤55 dB(A) | | | | | |
| Cooling concept | Natural convection | | | | | |
| Max. operation altitude | 13,220 ft (4000 m) | | | | | |
| Compliance | UL1741SB, IEEE 1547:2018, UL1699B, UL3998, FCC Part15 Class(B), California Rule 21, Heco Rule 14H, NEC 690.12-2020, CAN/CSA C22.2:107.1-1 | | | | | |
| **Features** | | | | | | |
| DC connection | MC4 connector | | | | | |
| AC connection | OT terminal (4 AWG to 3/0 AWG) | | | | | |
| Display | LCD | | | | | |
| Communication | Modbus RTU (Sunspec compliant), RS485, Optional: Cellular, Wi-Fi | | | | | |

## 11 -

NONE

## 12 -

NONE

APsmart

Raising the bar in innovative DC **MLPE** solar power systems



# RSD-D

- Meets NEC 2017、2020&2023 (690.12) requirements
- Executes rapid shutdown of system when Transmitter signal is absent
- Meets SunSpec requirements
- Dual-input channel

RSD-D meets SunSpec requirements, maintaining normal function by continually receiving a heartbeat signal from the APsmart Transmitter. The RSD-D executes rapid system shutdown when the Transmitter signal is absent. Users can manually execute rapid shutdown using Transmitter breaker switch.[1][2]

**> RSD-D TECHNICAL DATA**

| MODEL | RSD-D-15 | RSD-D-20 |
|---|---|---|
| **INPUT DATA (DC)** | | |
| Range of Input Operating Voltage | 8-65V Per Channel | |
| Maximum Cont. Input Current (Imax) | 15A Per Channel | 20A Per Channel |
| Maximum Short Circuit Current (Isc) | 25A | |
| **OUTPUT DATA (DC)** | | |
| Range of Output Operating Voltage | 16-130V | |
| Maximum Cont. Output Current | 15A | 20A |
| Maximum System Voltage | 1000V/1500V | |
| Maximum Series Fuse Rating | 30A | |
| **MECHANICAL DATA** | | |
| Operating Ambient Temperature Range | -40 oF to +167 oF (-40 °C to + 75 °C) | |
| Dimensions (without cable & connectors) | 5.5" x 2" x 0.8"(140 mm x 50.6 mm x 20 mm) | |
| Cable Length | Input 500mm/Output 2400mm | |
| Cable Cross Section Size | TUV:4mm²/UL:12AWG | |
| Connector | Input: Stäubli MC4 PV-KBT4&KST4 or Customize<br>Output: APsystems specified or Customized | |
| Enclosure Rating | NEMA Type 6P/IP68 | |
| Protection Temperature | 100°C | |
| **FEATURES & COMPLIANCE** | | |
| Communication Compliance | PLC | |
| Safety Compliance | NEC 2017、2020&2023 (690.12); UL1741; CSA C22.2 No. 330-17; IEC/EN62109-1 | |
| EMC Compliance | FCC Part15; ICES-003 | |

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*(1) RSD-D does not have automatic shutdown function for arc detection. When the system is abnormal, the transmitter signal is cut off by pulling the gate, which triggers shutdown.
*(2) RSD-D is designed to reduce the risk of fire suppression but does not solve the risk of a arc fire.

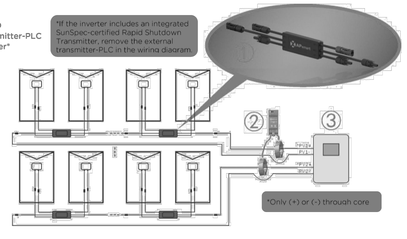
REV2.3 2023-10-07

APsmart

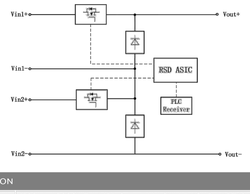
**> RSD-D WIRING DIAGRAM**

① RSD-D
② Transmitter-PLC
③ Inverter*

*If the inverter includes an integrated SunSpec-certified Rapid Shutdown Transmitter, remove the external transmitter-PLC in the wiring diagram.




**> WORKING SCHEMATIC DIAGRAM**




| ORDERING INFORMATION | |
|---|---|
| 426101 | 1500V UL/1000V TUV, 15A, 2.4m cable, Stäubli MC4 PV-KBT4&KST4 |
| 446101 | 1500V UL/1000V TUV, 20A, 2.4m cable, Stäubli MC4 PV-KBT4&KST4 |
| 4261xx* | 15A, 2.4m cable, Customize connector |
| 4461xx* | 20A, 2.4m cable, Customize connector |

*please see the RSD Series Ordering Information

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## 13 RAPID SHUT DOWN

NONE

## 15 -

NONE

## 16 -

NONE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123641 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 10/15/2025

HMC Architects
3361008100
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LOS ANGELES, CA, 90071
213 542 8300 / www.hmcarchitects.com

**ISSUE**

| Δ | DESCRIPTION | DATE |
|---|---|---|
| | DSA SUBMITTAL | 06/23/2025 |

## KEYNOTES

## NOTES

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**4921 CEDAR AVENUE**
**EL MONTE, CALIFORNIA 91732**

PROJECT:

**ARROYO HIGH SCHOOL PHOTOVOLTAIC PROJECT**

SHEET NAME:

**PV ELECTRICAL DETAILS**

**DSA SUBMITTAL**

FILE NO.: **19-H10** A NO.: **03-123641**

DATE: **06/23/2025** CLIENT PROJ NO: **3361008100**

SHEET:

# PVE-401

PLEASE RECYCLE