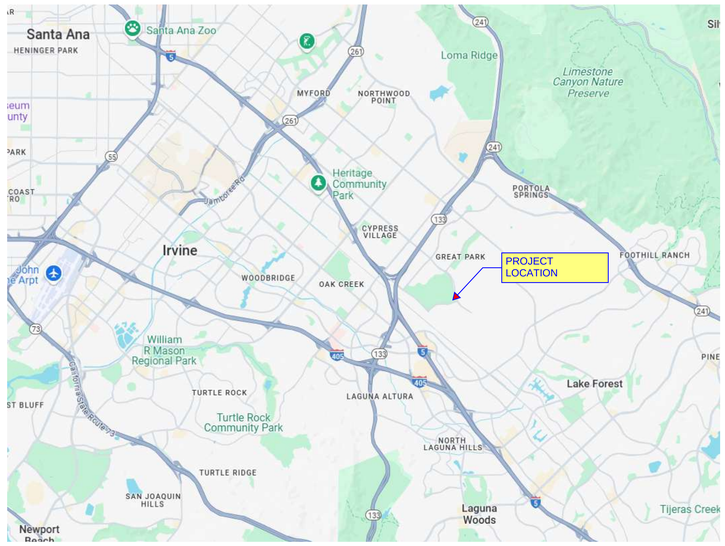
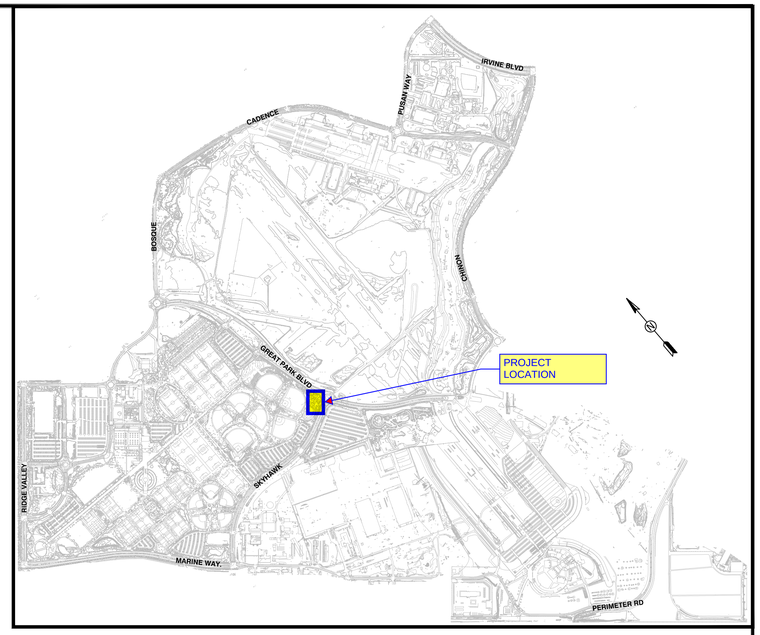


VICINITY MAP

THE CITY OF IRVINE

GREAT PARK
IRVINE, CALIFORNIA

GREAT PARK FRAMEWORK PLAN



LOCATION MAP

MAINTENANCE & OPERATIONS FACILITY

CITY CIP NO. 372414

CITY PC NO. 00954071-PARK

CITY OF IRVINE
COMMUNITY DEVELOPMENT
APPROVED

This set of plans and specification must be kept on the job at all times. It is unlawful to make any changes or alterations on these plans without written permission from the City of Irvine Community Development Department. The stamping of this plan and specification SHALL NOT be held to permit or be an approval of the violation of any provisions of any City Ordinance or State Law, as may be found during field inspection.

APPROVED BY: JOEL BELANGER
DATE : 11/21/2025

CITY OF IRVINE
BUILDING AND SAFETY DIVISION
APPROVAL OF HEATING-VENTILATION
AIR CONDITIONING-REFRIGERATION PLANS

The heating and ventilating, air conditioning refrigeration as submitted upon these plans and proposed for installation have been reviewed and found to meet the minimum requirements of applicable California Mechanical Code. This approval does not constitute authority to violate any provisions of said code not does it prevent further corrections of errors, as my be found during field inspection.

APPROVED BY: VICTOR MURO
DATE : 11/21/2025

CITY OF IRVINE
BUILDING AND SAFETY DIVISION
APPROVAL OF ELECTRICAL PLANS

The proposed installation of power and of lighting as submitted upon your plans have been reviewed and found to meet the minimum requirements of the California Electrical Code. This approval does not constitute authority to violate any provision of said code nor does it prevent further corrections of errors, as may be found during field inspection.

APPROVED BY: SETAREH AFSHAR
DATE : 11/21/2025

CITY OF IRVINE
BUILDING AND SAFETY DIVISION
APPROVAL OF PLUMBING PLANS

The plumbing system has been reviewed, and as submitted upon your plans has been determined to meet the minimum requirements of the California Plumbing Code. This approval does not constitute authority to violate any provision of said code nor does it prevent further corrections of errors, as may be found during field inspections.

APPROVED BY: VICTOR MURO
DATE : 11/21/2025

PLAN CHECK NO.: 00954071-PARK (B5)

CITY OF IRVINE
BUILDING AND SAFETY DIVISION
GRADING APPROVED

This set of plans and specification must be kept on the job at all times. It is unlawful to make any changes or alterations on these plans without written permission from the City of Irvine Building and Safety Division. The stamping of this plan and specification SHALL NOT be held to permit or be an approval of the violation of any provisions of any City Ordinance or State Law, as may be found during field inspection.

APPROVED BY: THOMAS C. POLSON
DATE : 11/21/2025

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE
7					
6					
5					
4					
3					
2					
1					

SVA ARCHITECTS

SVA ARCHITECTS
6 Hutton Centre Dr. Ste. 1150
Santa Ana, CA 92707

LICENSED ARCHITECT
ROBERT M. SIMONDS
No. C-19201
STATE OF CALIFORNIA

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY
APPROVED
These plans and/or specifications are signed by the City of Irvine Public Works & Sustainability Department solely to indicate that they are acceptable to the City Council as required by Provision C.3 of the Municipal Regional Permit for Urban Runoff Management. The City is not responsible for the design, assumptions, or accuracy. All revisions must be approved by the City prior to construction.
11/25/2025, 8:03:56 AM
City Engineer

00954071-PARK
Lincoln Lo

APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES
APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES

CITY OF IRVINE
BUILDING & SAFETY DIVISION

TITLESHEET

SHEET 1 OF 46 SHT(S)

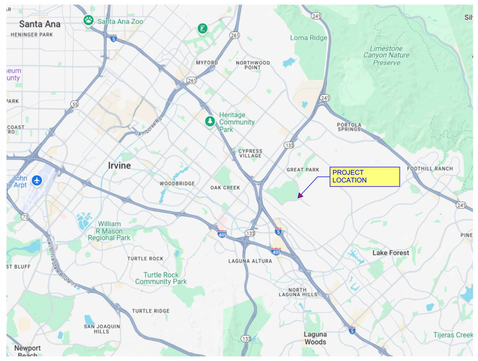
DATE
DATE
DATE

PROJECT NO. 1153: XXXXX XXXXXX XXXXXX

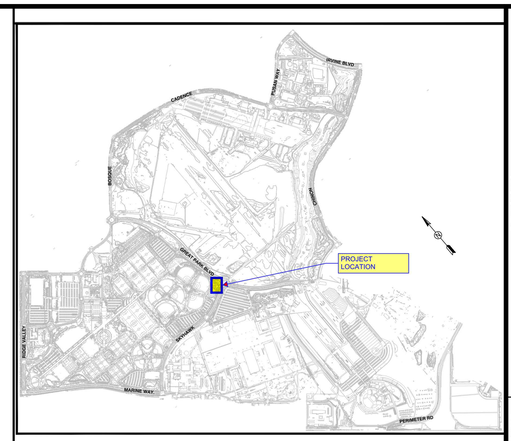
Plotted: May 27, 2025 – 7:22am by: mboyat
Drawing Name: z:\JOBS\11153\Exhibits\OC Park Plan Template\OC Park Building Plan Template.dwg

THE CITY OF IRVINE

BUILDING PLANS



VICINITY MAP



LOCATION MAP

PROJECT INFORMATION REQUIREMENTS

PROJECT LOCATION: 901 SKYHAWK, IRVINE, CA 92618

LEGAL DESCRIPTION FOR NEW TRACTS:
IN THE CITY OF IRVINE, COUNTY OF ORANGE, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 OF PARCEL MAP 2016-152, FILED IN BOOK 390, PAGES 17 THROUGH 44 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL/TRACT # 2016-152 [00522051-PTT (AVTTM 17008)]
LOT # [L OF 2ND AMENDED AVTTM]

PROJECT DESCRIPTION:
NEW TYPE V-B ONE-STORY MAINTENANCE FACILITY FOR THE IRVINE GREAT PARK, OWNED AND OPERATED BY THE CITY OF IRVINE, LOCATED AT THE INTERSECTION OF SKYHAWK AND GREAT PARK BLVD. MAIN BUILDING INCLUDES AN OFFICE, MECHANICAL SHOP AND STORAGE ROOM, AND RELATED SUPPORT ROOMS. PARK MAINTENANCE EQUIPMENT TO BE PARKED UNDER THE CANOPY ATTACHED TO THE MAIN BUILDING. A DETACHED CANOPY STRUCTURE COVERS A FUEL STORAGE (LARGEST TANK: 1,000 GALLONS) AND DISPENSING AREA. A DETACHED COVERED ENCLOSURE FOR VEHICLE WASH AREA. DETACHED OPEN-TO-SKY ENCLOSURES FOR STORAGE OF PALLETS, MULCH, DIRT. DEDICATED AREA IN OPEN YARD FOR LARGE WASTE CONTAINERS. NEW FIRE HYDRANT ON GREAT PARK BLVD. EMPLOYEE PARKING SPACES PROVIDED. FLEET VEHICLE PARKING, INCLUDING ELECTRIC VEHICLE PARKING, PROVIDED WITHIN SITE WALLS.

SPECIAL CONDITIONS OF LAND USE APPROVAL
SPECIAL CONDITIONS RELATING TO THIS PROJECT ARE ESTABLISHED IN

SEE SHEET GEN-0.01 UNDER THE HEADING CONDITIONS OF APPROVAL FOR COMPLETE CONDITIONS OF APPROVAL. (CONDITIONS OF APPROVAL PROVIDED IN FORM OF PLANNING COMMISSION RESOLUTION #14-3332)

USE(S), OCCUPANCY (IES), AND FLOOR AREAS(S):
- SEE TABLES TO RIGHT. SEE SHEET GEN-2 FOR ADDITIONAL INFORMATION.
- FUEL AREA: TWO FUEL STORAGE CABINETS AND ONE DISPENSING TANK, NO UNDERGROUND PIPES. REFER TO STRUCTURAL DETAIL 11/S1.1 FOR FOUNDATION AND ANCHORAGE INFORMATION.

SITE ELEMENTS:
- SITE WALLS: 6FT HIGH 8" THICK CMU, APPROXIMATELY 1,006 FT IN TOTAL LENGTH.
- MECHANICAL ENCLOSURE AREA: 29'-6"
- EXTERIOR SITE LIGHTING: REFER TO ELECTRICAL PLANS
- ELECTRIC VEHICLE CHARGING STATIONS: REFER TO ELECTRICAL PLANS

NUMBER OF STORIES: **1**
MEZZANINES: **0**
TYPE OF CONSTRUCTION: **TYPE V-B (MAIN BLDG, WASH AREA, FUEL AREA)**
FIRE PARTITION WALLS: **NO**
FIRE BARRIER WALLS: **NO**
FIRE WALL: **NO**
SMOKE BARRIER WALLS: **NO**

THERE IS NO RATED ASSEMBLIES ON THIS PROJECT.

HORIZONTAL ASSEMBLIES: **NO**
SPRINKLERS:
MAIN BUILDING & COVERED YARD:
SPRINKLERED PER CBC SECTIONS 903.2.9 AND NFPA 13.

AT WASH AREA & FUEL AREA:
SPRINKLERS NOT REQUIRED PER CBC SECTION 903.2.9 - AREAS DO NOT QUALIFY.

ALLOW HEIGHT AND AREA ANALYSIS PER CBC SECTION 503:
REFER TO GEN-2-CODE ANALYSIS & SIGNAGE PLAN

APPLICABLE STATE CODES (WITH CITY OF IRVINE AMENDMENTS)

CALIFORNIA BUILDING CODE	2022
CALIFORNIA FIRE CODE	2022
CALIFORNIA GREEN BUILDING STANDARDS CODE	2022
CALIFORNIA MECHANICAL CODE	2022
CALIFORNIA ELECTRICAL CODE	2022
CALIFORNIA PLUMBING CODE	2022
CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS	2022

PARKING ANALYSIS

PER CBC TABLE 11B-208.2, SECTION 11B-228.3; CalGREEN SECTIONS 5.106.5.3, 5.106.5.3.4

STALL TYPE	REQUIRED	PROPOSED
STANDARD	7	29
STANDARD - EVCS (EVSE INSTALLED)	2*	8**
STANDARD - EV CAPABLE	6*	7
ACCESSIBLE - STANDARD	1	1
ACCESSIBLE - VAN	1	1
TOTAL	**17**	**46**

** ALL PARKING SPACES ARE FOR STAFF AND FLEET VEHICLES, NOT AVAILABLE TO THE GENERAL PUBLIC – PROJECT IS EXEMPT FROM ACCESSIBLE EV SPACE REQUIREMENTS PER 11B-228.3.2 EXCEPTION 1. EVCS ARE NOT PARKING SPACES FOR THE PURPOSES OF ACCESSIBLE PARKING SPACES REQUIREMENTS PER CBC 11B-208.1.*

* MINIMUM NUMBER OF REQUIRED EVCS IS PART OF THE MINIMUM NUMBER OF EV CAPABLE SPACES PER CalGREEN TABLE 5.106.5.3.1, (6 EV CAPABLE + 2 EVCS = 8 TOTAL EV SPACES REQUIRED; 7 EV CAPABLE + 8 EVCS = 15 TOTAL EV SPACES PROPOSED)

CALIFORNIA GREEN BUILDING STANDARDS CODE

PROVISIONS OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE APPLY TO ALL NEW RESIDENTIAL BUILDINGS (INCLUDING HOTELS AND MOTELS) AND ALL NEW NON-RESIDENTIAL BUILDINGS.

SEE SHEET GEN-0 FOR COMPLETED CITY OF IRVINE GREEN BUILDING STANDARDS NOTES.

CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS

PROVISIONS OF THE CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD APPLY TO THIS PROJECT. SEE SHEETS LISTED BELOW FOR COMPLETE COMPLIANCE DOCUMENTATION.

NRCC-CXR-E: GEN-0.2
NRCC-ENV-E: M00.3
NRCC-MCH-E: M00.3-M00.4
NRCC-LTI-E: E61.2-E61.3
NRCC-LTO-E: E61.3 - E61.4
NRCC-ELC-E: E61.4
NRCC-PLB-E: P00.4

INSTALLTION OF ON-SITE RENEWABLE ENERGY GENERATION IN THE FORM OF PHOTOVOLTAIC (PV) SYSTEMS ARE PROVIDED IN ACCORDANCE WITH SECTION 150.1(b)2. SEE **PV-SERIES SHEETS** FOR SOLAR ROOFING AND PV CONSTRUCTION PLANS.

AREAS: UNCONDITIONED UNLESS NOTED OTHERWISE

OFFICE VOLUME - CONDITIONED

101	HALLWAY	B	321 SF
102	HOTELING AREA	B	169 SF
103	OFFICE	B	136 SF
104	CONFERENCE *	B	153 SF
105	GNRR	B	67 SF
106	STORAGE / CUSTODIAN **	B	73 SF
107	BREAK AREA *	B	84 SF
108	LOCKER ROOM	B	82 SF
109	ELEC RM	B	133 SF
110	IT CLOSET	B	34 SF
TOTAL			1,251 SF

MAINTENANCE VOLUME

111	LANDSCAPE MECH SHOP	S-1	914 SF
112	BREAK RM * - **CONDITIONED**	S-1	419 SF
113	MAINTENANCE	S-1	1,524 SF
114	COMMUNITY SERVICE STORAGE	S-1	2,000 SF
116	GNRR	S-1	89 SF
117	GNRR	S-1	77 SF
118	STORAGE / CUSTODIAN **	S-1	42 SF
TOTAL			5,066 SF

CANOPY - EXTERIOR

120	WASH AREA	U	629 SF
127	FUEL AREA	S-1	538 SF
129	COVERED YARD	S-1	9,553 SF
131	EM.SHOWER	S-1	60 SF
TOTAL			10,780 SF

UNCOVERED - EXTERIOR

115	MECH.	S-2	174 SF
119	PALLET AREA	S-2	600 SF
121	TRASH/RECYCLE	S-2	3,507 SF
122	BUNKER	S-2	236 SF
123	BUNKER	S-2	236 SF
124	BUNKER	S-2	236 SF
125	BUNKER	S-2	236 SF
126	BUNKER	S-2	239 SF
128	YARD 128	U	4,232 SF
130	YARD 130	U	12,295 SF
TOTAL			21,991 SF

* PER CBC 303.1.2, CONFERENCE ROOM AND BREAK ROOMS ARE CLASSIFIED AS THE OCCUPANCIES TO WHICH THEY ARE ACCESSORY.

** PER CBC 311.1.1, A STORAGE ROOM ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS THAT OCCUPANCY.

SPECIAL INSPECTION AND STRUCTURAL OBSERVATION

THIS PROJECT IS SUBJECT TO BOTH SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATION PER CALIFORNIA BUILDING CODE (CBC) CHAPTER 17 AND SHALL FOLLOW THE REQUIREMENTS AS DEFINED IN CITY OF IRVINE INFORMATION BULLETINS NO. 278 AND 251.

SEE SHEET S-03 FOR COMPLETED PROJECT SPECIFIC CITY OF IRVINE SPECIAL INSPECTION PROGRAM FORM.

SEE SHEET S-03 FOR COMPLETED PROJECT SPECIFIC CITY OF IRVINE STRUCTURAL OBSERVATION PROGRAM FORM.

CITY OF IRVINE MUNICIPAL CODE

[NOTE: COMPLETE IMC TEXT IS AVAILABLE ON THE INTERNET AT WWW.MUNICODE.COM]
THE DESIGN AND CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH ALL APPLICABLE IRVINE MUNICIPAL CODE PROVISIONS INCLUDING BUT NOT LIMITED TO:

CONSTRUCTION WORK HOURS [IMC SECT. 6-8-205]
MON-FRI 7 AM TO 7 PM
SAT 9 AM TO 6 PM
NO WORK ON SUNDAYS OR FEDERAL HOLIDAYS

SECURITY DESIGN STANDARDS [IMC SECT. 5-9-501 THROUGH 5-9-520]
SEE SHEETS **GEN-0, GEN-0.03** FOR APPLICABLE COMPLETED SECURITY CODE PROVISIONS.

ROOFING [IMC 5-9-401 H. & 5-9-402 O.]

ROOF COVERING CLASSIFICATION SHALL MEET MINIMUM CLASS A.

ATTIC AND UNDERFLOOR VENT COVERS [IMC 5-9-401 G. & 5-9-402 M. & N.]

ROOF VENT OPENINGS: SEE 14/A62.1; 2,3/A62.2

OFF-SITE FABRICATION

ALL OFF-SITE FABRICATION OF STRUCTURAL STEEL COMPONENTS INCLUDING STEEL STAIRS AND PRE-CAST CONCRETE SHALL BE DONE IN AN APPROVED FABRICATOR SHOP AS REQUIRED BY CITY OF IRVINE INFORMATION BULLETIN NO. 311 ON **SHEET GEN-0**. SEE BULLETIN FOR DETAILS AND REQUIRED DOCUMENTATION REQUIRED AT THE RECEIPT OF ANY SHIPMENT OF OFF-SITE FABRICATED ITEMS.

OUTDOOR COOKING APPLIANCE

REFER TO CALIFORNIA MECHANICAL CODE SECTION 924.0 FOR OUTDOOR COOKING APPLIANCES.
924.1 LISTED UNITS: LISTED OUTDOOR COOKING APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTION (NFPA 54:10.20.1)
924.2 UNLISTED UNITS: UNLISTED OUTDOOR COOKING APPLIANCES SHALL BE INSTALLED OUTDOORS WITH CLEARANCES TO COMBUSTIBLE MATERIALS OF NOT LESS THAN 36 INCHES AT THE SIDES AND BACK AND NOT LESS THAN 48 INCHES AT THE FRONT. IN NO CASE SHALL THE APPLIANCE BE LOCATED UNDER OVERHEAD COMBUSTIBLE CONSTRUCTION (NFPA 54:10.20.2).

OUTDOOR DECORATIVE APPLIANCES

REFER TO CALIFORNIA MECHANICAL CODE SECTION 933.0 FOR OUTDOOR OPEN FLAME DECORATIVE APPLIANCES.
933.1.1 LISTED UNITS: LISTED OUTDOOR OPEN FLAME DECORATIVE APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INTALLATION INSTRUCTION (NFPA 54:10.32.1)
933.1.2 UNLISTED UNITS: UNLISTED OUTDOOR OPEN FLAME DECORATIVE APPLIANCES SHALL BE INSTALLED OUTDOORS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLARANCES TO COMBUSTIBLE MATERIALS OR NOT LESS THAN 36 INCHES FROM THE SIDES. IN NO CASE SHALL THE APPLIANCE BE LOCATED UNDER OVERHEAD COMBUSTIBLE CONSTRUCTION. (NFPA 54:10.32.2)

FIRE RESISTIVE CONSTRUCTION

THE DESIGN, CONSTRUCTION AND INSPECTION OF FIRE RESISTIVE CONSTRUCTION (TYPE VA, TYPE IIIA AND B, TYPE IIA, TYPE IA AND B) SHALL CONFORM TO CITY OF IRVINE INFORMATION BULLETIN NO. 323 SEE BULLETIN FOR DETAILS.

PRE-CONSTRUCTION MEETING REQUIREMENT [IMC 5-9-209A.]

ALL CONSTRUCTION PROJECTS INVOLVING NEW STRUCTURES AND THOSE INVOLVING ADDITIONS TO NON-RESIDENTIAL STRUCTURES OR TENANT IMPROVEMENTS EXCEEDING 5,000 SQUARE FEET OR INVOLVING A NEW RESTAURANT ESTABLISHMENT SHALL NOT COMMENCE UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD. TO SCHEDULE A PRE-CONSTRUCTION MEETING CONTACT EITHER JAY DENNY, NON-RESIDENTIAL INSPECTIONS SUPERVISOR AT (949)724-6139 OR RESIDENTIAL INSPECTION SUPERVISOR GINA MAURO AT (949)724-6546

CONSTRUCTION SITE SECURITY REQUIREMENTS [IMC SECT 5-9-521]

GENERAL REQUIREMENTS MUNICIPAL CODE SECTIONS 5-9-521.B

FOR THE GENERAL REQUIREMENTS CHECKLIST FOR CONSTRUCTION SITE SECURITY PER THE CITY OF IRVINE CONSTRUCTION SITE SECURITY ORDINANCE, SEE

FOR RESIDENTIAL PROJECTS WITH 25 DWELLING UNITS OR MORE OR NON-RESIDENTIAL PROJECTS WITH 50,000 SQUARE FEET OR MORE, A SECURITY PLAN IS ALSO REQUIRED IN ADDITION TO THESE GENERAL REQUIREMENTS (MUNICIPAL CODE SECTION 5-9-521.C) A SEPARATE GUIDELINE IS AVAILABLE OUTLINING SECURITY PLAN REQUIREMENTS.

SEE SHEET GEN-3 FOR SITE SPECIFIC CONSTRUCTION SITE SECURITY PLAN.

ACOUSTICAL REPORT: N/A

REPORT NO.:
PREPARED BY:
DATE:
BUILDING FEATURES RECOMMENDATIONS:

DEFERRED SUBMITTALS
THE FOLLOWING ITEMS ARE DESIGN BUILD SYSTEMS AND WILL BE A DEFERRED SUBMITTAL BY THE CONTRACTOR AT A LATER DATE. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH NOTATION INDICATING THAT DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN FOUND IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. PLANS FOR THE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED IN A TIMELY MANNER THAT ALLOWS A MINIMUM OF 30 WORKING DAYS FOR THE INITIAL PLAN REVIEW. ALL COMMENTS RELATED TO THE DEFERRED SUBMITTAL MUST BE ADDRESSED TO THE SATISFACTION OF THE PLAN CHECK DIVISION PRIOR TO APPROVAL OF THE SUBMITTAL ITEMS.

THIS PROJECT HAS BEEN PERMITTED WITHOUT REVIEW AND/OR APPROVAL OF THE FOLLOWING DEFERRED SUBMITTALS. PLANS APPROVED BY THE CITY SHALL BE OBTAINED FOR EACH DEFERRED ITEM LISTED BELOW PRIOR TO COMMENCING ANY WORK WITHIN THE SCOPE OF SUCH DEFERRAL. DEFERRALS MUST BE REVIEWED AND ACCEPTED BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO SUBMITTING FOR REVIEW WITH THE CITY.

1. FIRE ALARM SYSTEM
2. FIRE PROTECTION (SPRINKLERS, FIRE WATER RISER)
3. ABOVE GROUND FUEL STORAGE AND DISPENSING PLAN
4. ROOF TRUSSES
5. STOREFRONT SYSTEMS
6. STEEL SHELVING

SHEET INDEX:

SEE SHEET GEN-1 FOR SHEET INDEX.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT:

BE ADVISED, SOUTH COAST AIR QUALITY MANAGEMENT (SCAQMD) RULE 1403 GOVERNS WORK PRACTICE REQUIREMENTS FOR ASBESTOS IN ALL RENOVATION AND DEMOLITION ACTIVITIES. PLEASE REFER TO RULE 1403 (http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf) FOR ALL CURRENT REQUIREMENTS.

CALIFORNIA HEALTH AND SAFETY CODE 19827.5 REQUIRES THAT EVIDENCE OF DEMOLITION NOTIFICATION SUBMITTED TO THE SOUTH COAST AQMD BE PROVIDED TO CITY OF IRVINE BUILDING AND SAFETY PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT INCLUDING DEMOLITION WORK.

CITY OF IRVINE BUILDING & SAFETY DEPT

RELATED CASES:

FIRE MASTER PLAN SR#: 25001669

IRWD#: 8313

NO.	DATE	REVISIONS
A	6/25/2025	City PC #2
B	9/12/2025	City PC #3
C	10/15/2025	City PC #4

DESIGN: SVA-Architects
DRAWN: SVA-Architects
CHECKED: SVA-Architects
DATE: OCT 15, 2025
SCALE: 12" = 1'-0"

OWNER: CITY OF IRVINE - GREAT PARK
SOILS ENGINEER: REPORT # DATE

SVA ARCHITECTS
NO: C-18031 JAN 31, 2023

PLANS PREPARED BY: LICENSED ARCHITECT ROBERT W. SIMONS No. C-18031 REGISTERED PROFESSIONAL ARCHITECT STATE OF CALIFORNIA
ARCHITECT: ROBERT W. SIMONS

PROJECT NAME:
MAINTENANCE & OPERATIONS FACILITY
CITY OF IRVINE
COMMUNITY DEVELOPMENT DEPARTMENT

PLAN CHECK :
00954071-PARK
PERMIT :

SHEET 1
OF 2

THE CITY OF IRVINE

BUILDING PLANS

A

SPECIAL VERY HIGH FIRE HAZARD SEVERITY ZONE (CBC CHAPTER 7A AND CRC SECTION R337)

THE PROJECT IS NOT WITHIN A VERY HIGH FIRE HAZARD SEVERITY ZONE

EROSION AND SEDIMENT CONTROL

AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED AT ALL TIMES. **REFER TO PROJECT GRADING PLANS UNDER PERMIT FOR COMPLETE DETAILS**

STORM WATER POLLUTION PREVENTION NOTES

STORMWATER POLLUTION PREVENTION DEVICES AND PRACTICES SHALL BE INSTALLED AND/OR INSTITUTED AS NECESSARY TO ENSURE COMPLIANCE TO THE CITY OF IRVINE WATER QUALITY STANDARDS CONTAINED IN CHAPTER 3, WATER, OF DIVISION 8 OF TITLE 6 OF THE IRVINE MUNICIPAL CODE AND ANY EROSION CONTROL PLAN ASSOCIATED WITH THIS PROJECT. ALL SUCH DEVICES AND PRACTICES SHALL BE MAINTAINED, INSPECTED AND/OR MONITORED TO ENSURE ADEQUACY AND PROPER FUNCTION THROUGHOUT THE DURATION OF THE CONSTRUCTION PROJECT.

COMPLIANCE TO THE WATER QUALITY STANDARDS AND ANY EROSION AND SEDIMENT CONTROL PLAN ASSOCIATED WITH THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING REQUIREMENTS:

1. AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL MEASURES (BMPs) SHALL BE IMPLEMENTED TO PROTECT THE EXPOSED PORTIONS OF THE SITE FROM EROSION AND TO PREVENT SEDIMENT DISCHARGES.
2. SEDIMENTS AND OTHER POLLUTANTS SHALL BE RETAINED ON SITE UNTIL PROPERLY DISPOSED OF, AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION-RELATED MATERIALS SHALL BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND AND WATER FLOW.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS SHALL BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL 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, NOR BE ALLOWED TO SETTLE OR INFILTRATE INTO SOIL.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED 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 WASTES.
6. TRASH AND CONSTRUCTION SOLID WASTES SHALL BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICULAR TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITS SHALL BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. STORMWATER POLLUTION PREVENTION DEVICES AND/OR PRACTICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

FIRE DEPARTMENT NOTES

1. FOR ASSISTANCE WITH FIRE-RELATED PLAN REVIEW ISSUES OR TECHNICAL QUESTIONS, PLEASE CALL (714) 573-6108. FOR FIRE-RELATED INSPECTION QUESTIONS OR ISSUES, PLEASE CONTACT YOUR OCFA INSPECTOR DIRECTLY OR OCFA INSPECTION SCHEDULING AT (714) 573-6150 FOR ASSISTANCE.
2. THE PROJECT SHALL COMPLY WITH THE CURRENTLY ADOPTED CALIFORNIA BUILDING CODE, CALIFORNIA FIRE CODE, AND OTHER CODES, STANDARDS, REGULATIONS AND REQUIREMENTS AS ENFORCED BY THE ORANGE COUNTY FIRE AUTHORITY. APPROVAL OF THESE PLANS SHALL NOT PERMIT THE VIOLATION OF ANY CODE OR LAW.
3. FOR PROJECTS INVOLVING NEW STRUCTURES, ADDITIONS TO EXISTING STRUCTURES, INSTALLATION OF GATES/WALLS/FENCES, OR ALTERATION OF VEHICULAR ACCESS, A FIRE MASTER PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE OCFA PRIOR TO SUBMITTAL OF ARCHITECTURAL PLANS. AN APPROVED FIRE MASTER PLAN SHALL BE SUBMITTED WITH THE ARCHITECTURAL PLANS.
4. ALL WEATHER FIRE ACCESS ROADS SHALL BE APPROVED BY THE OCFA AND BE IN PLACE BEFORE ANY COMBUSTIBLE MATERIALS ARE PLACED ON THE SITE. ACCESS ROADS SHALL BE MAINTAINED CLEAR OF OBSTRUCTIONS DURING AND AFTER CONSTRUCTION.
5. ADDRESS NUMBERS SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS, BE A MINIMUM SIX INCHES HIGH, CONTRAST WITH THEIR BACKGROUND, AND BE PLAINLY VISIBLE FROM THE ROADWAY THE BUILDING IS ADDRESSED ON OR AS OTHERWISE ALLOWED BY OCFA GUIDELINE B-09.
6. BUILDINGS UNDER CONSTRUCTION OR DEMOLITION SHALL CONFORM TO CFC CHAPTER 33. NO SMOKING OR COOKING IS ALLOWED IN STRUCTURES WHERE COMBUSTIBLE MATERIALS ARE EXPOSED OR WITHIN 25' OF COMBUSTIBLE MATERIALS STORAGE AREAS. CUTTING, WELDING, OR OTHER HOT WORK SHALL BE IN CONFORMANCE WITH CFC CHAPTER 35.
7. LOCATIONS AND CLASSIFICATIONS OF EXTINGUISHERS SHALL BE IN ACCORDANCE WITH THE CFC AND CCR TITLE 19. AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED DURING CONSTRUCTION ON EACH FLOOR AT EACH STAIRWAY, IN EACH STORAGE AND CONSTRUCTION SHED, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, OR WHERE SIMILAR HAZARDS ARE PRESENT. BEFORE FINAL OCCUPANCY, AT LEAST ONE 2A:10B:C EXTINGUISHER SHALL BE PROVIDED SO THAT NO POINT IS MORE THAN 75' TRAVEL DISTANCE FROM THE EXTINGUISHER. EXTINGUISHERS SHALL BE LOCATED ALONG THE PATH OF EGRESS TRAVEL AND IN A READILY VISIBLE AND ACCESSIBLE LOCATION, WITH THE BOTTOM OF THE EXTINGUISHER AT LEAST 4" ABOVE THE FLOOR. ADDITIONAL EXTINGUISHERS MAY BE REQUIRED BY THE INSPECTOR AND FINAL PLACEMENT IS SUBJECT TO APPROVAL.
8. WALL, FLOOR AND CEILING FINISHES AND DECORATIVE MATERIALS SHALL NOT EXCEED THE FLAME SPREAD CLASSIFICATIONS IN CBC/CFC CHAPTER 8. DECORATIVE MATERIALS SHALL BE PROPERLY TREATED BY A PRODUCT OR PROCESS APPROVED BY THE STATE FIRE MARSHAL. SUCH ITEMS SHALL BE APPROVED AND INSPECTED PRIOR TO INSTALLATION.
9. KNOX BOXES/KEY CABINETS SHALL BE PROVIDED FOR ALL POOL ENCLOSURES, GATES IN THE PATH OF FIREFIGHTER TRAVEL TO STRUCTURES, SECURED PARKING LEVELS, DOORS GIVING ACCESS TO ALARM PANELS AND/OR ANNUNCIATORS, AND ANY OTHER STRUCTURES OR AREAS WHERE IMMEDIATE ACCESS IS REQUIRED OR IS UNDULY DIFFICULT.
10. DUMPSTERS AND TRASH CONTAINERS EXCEEDING 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM OR LOCATED IN A TYPE I OR IIA STRUCTURE SEPARATED BY 10 FEET FROM OTHER STRUCTURES. CONTAINERS LARGER THAN 1 CUBIC YARD SHALL BE OF NON- OR LIMITED-COMBUSTIBLE MATERIALS OR SIMILARLY PROTECTED OR SEPARATED. CFC 304.3
11. EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS, AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL. THE EGRESS PATH SHALL REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. NO STORAGE IS PERMITTED IN AISLES.
12. EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. DOORS SHALL NOT BE PROVIDED WITH THUMB-TURN LOCKS OR DEADBOLTS THAT DO NOT UNLATCH IN TANDEM WITH THE NORMAL OPERATING LEVER. RATED DOORS SHALL BE SELF-CLOSING AND LATCHING; SUCH DOORS SHALL NOT BE EQUIPPED WITH DOOR STOPS OR OTHERWISE PROPPED OPEN.
13. SPRINKLER AND ALARM SYSTEMS SHALL BE PROVIDED WHEN REQUIRED BY CBC/CFC CHAPTER 9 AND LOCAL ORDINANCE. IN STRUCTURES OF UNDETERMINED USE, THE MINIMUM FIRE SPRINKLER DESIGN DENSITY REQUIRED SHALL BE ORDINARY HAZARD (GROUP 2) WITH A DESIGN AREA OF 3000 SQUARE FEET.
14. EXISTING SPRINKLER AND ALARM SYSTEMS IN SPACES UNDERGOING REMODELING SHALL BE EVALUATED BY A LICENSED CONTRACTOR KNOWLEDGEABLE IN SUCH SYSTEMS TO DETERMINE WHETHER CHANGES WILL BE NECESSARY TO MAINTAIN THESE SYSTEMS IN CONFORMANCE WITH APPLICABLE STANDARDS. IF MODIFICATIONS ARE NECESSARY, PLANS SHALL BE SUBMITTED TO THE OCFA FOR REVIEW AND APPROVAL PRIOR TO MODIFICATION OF THE SYSTEM. SPRINKLER AND ALARM SYSTEMS SHALL BE SUPERVISED BY A UL-LISTED CENTRAL ALARM STATION.
15. WHERE COMMERCIAL-TYPE FOOD HEATING OR COOKING EQUIPMENT THAT PRODUCES GREASE-LADEN VAPORS IS PRESENT, AN AUTOMATIC EXTINGUISHING SYSTEM SHALL BE PROVIDED AND SHALL COMPLY WITH CFC, CMC, AND NFPA 17A. REVIEW AND APPROVAL OF A HOOD AND DUCT EXTINGUISHING SYSTEM PLAN BY THE OCFA IS REQUIRED PRIOR TO INSTALLATION, MODIFICATION, REARRANGEMENT, OR USE OF COOKING EQUIPMENT.
16. HAZARDOUS MATERIALS EQUIPMENT, PROCESSES, STORAGE, DISPENSING, OR USE SHALL COMPLY WITH CBC AND CFC REGULATIONS AND SHALL BE REVIEWED AND APPROVED BY THE OCFA PRIOR TO SUCH MATERIALS OR EQUIPMENT BEING BROUGHT ON SITE.
17. STORAGE AREAS GREATER THAN 500 SQ.FT. WITH HIGH HAZARD MATERIALS STORED HIGHER THAN SIX FEET AND OTHER MATERIALS STORED HIGHER THAN TWELVE FEET ARE NOT PERMITTED WITHOUT FIRST SUBMITTING PLANS TO AND OBTAINING APPROVAL FROM THE OCFA.
18. A NEW HVAC UNIT EXCEEDING A 2,000 CFM CAPACITY SHALL BE PROVIDED WITH A DUCT SMOKE DETECTOR. THIS DETECTOR SHALL SHUT DOWN ONLY THE AFFECTED INDIVIDUAL HVAC UNIT UPON SMOKE DETECTION. THIS DETECTOR MUST ALSO BE INTERFACED TO AN EXISTING FIRE ALARM SYSTEM. THE DETECTOR SHALL ONLY PROVIDE A SUPERVISORY SIGNAL AT THE FIRE ALARM PANEL UPON SMOKE DETECTION.

EMERGENCY RESPONDER RADIO SYSTEM

EXEMPT: THIS BUILDING IS EXEMPT FROM EMERGENCY RESPONDER RADIO SYSTEM COVERAGE REQUIREMENTS PER CFC 510.1. (STRUCTURES IN PROJECT ARE LESS THAN THREE STORIES WITH OUT SUBTERRANEAN AREAS.)

PC RESOLUTION 14-3332 CONDITION 6.23 (MITIGATION MEASURE)

IN CASE OF ACCIDENTAL DISCOVERY OR RECOGNITION OF ANY HUMAN REMAINS DO THE FOLLOWING ITEMS:

- THERE SHALL BE NO FURTHER EXCAVATION OR DISTURBANCE OF THE SITE OR ANY NEARBY AREA RESONABLY SUSPECTED TO OVERLIE ADJACENT HUMAN REMIANS UNTIL:

THE COUNTY CORONER MUST BE CONTACTED TO DETERMINE THAT NO INVESTIGATION OF THE CAUSE OF DEATH IS REQUIRED, AND

IF THE CORONER DETERMINES THE REMIANS TO BE NATIVE AMERICAN:
- THE CORONER SHALL CONTACT THE NATIVE AMERICAN HERITAGE COMMISSION WITHIN 24 HOURS
- THE NATIVE AMERICAN HERITAGE COMMISSION SHALL IDENTIFY THE PERSON OR PERSONS IT BELIEVES TO BE THE MOST LIKELY DESCENDED FROM THE DECEASED NATIVE AMERICAN.
- THE MOST LIKELY DESCENDENT MAY MAKE RECOMMENDATIONS TO THE LANDOWNER OR THE PERSON RESPONSIBLE FOR THE EXCAVATION WORK, FOR MEANS OF TREATING OR DISPOSING OF, WITH APPROPRIATED DIGNITY, THE HUMAN REMAINS AND ANY ASSOCITED GRAVE GOODS AS PROVIDED IN PUBLIC RESOURCES CODE SECTION 5097.98, OR
- WHERE THE FOLLOWING CONDITIONS OCCUR, THE LANDOWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL REBURY THE NATIVE AMERICAN HUMAN REMAINS AND ASSOCIATED GRAVE GOODS WITH APPROPRIATE DIGNITY ON THE PROPERTY IN A LOCATION NOT SUBJECT TO FURTHER SUBSURFACE DISTURBANCE.
  - THE NATIVE AMERICAN HERITAGE COMMISSION IS UNABLE TO IDENTIFY A MOST LIKELY DESCENDENT OR THE MOST LIKELY DESCENDENT FAILED TO MAKE A RECOMMENDATION WITHIN 24 HOURS AFTER BEING NOTIFIED BY THE COMMISSION.
  - THE DESCENDANT IDENTIFIED FAILS TO MAKE A RECOMMENDATION: OR
  - THE LAND OWNER OR HIS AUTHORIZED REPRESENTATIVE REJECTS THE RECOMMENDATION OF THE DESCENDANT, AND THE MEDIATION BY THE NATIVIE AMERICAN HERITAGE COMMISSION FAILS TO PROVIDE MEASURES ACCEPTABLE TO THE LANDOWNER.

PC RESOLUTION 14-3332 CONDITION 3.27 (MITIGATION MEASURE AQ3)

OPERATION-EMISSIONS MITIGATION PLAN:

- PER PLUMBING DRAWINGS TITLE 24 MANDATORY MEASURES SECTION ON SHEET P0-01, ANY APPLIANCE WHICH HAS A CALIFORNIA STANDARD ESTABLISHED FOR APPLIANCE EFFICIENCY MUST COMPLY WITH THOSE STANDARDS. WATER HEATERS SHALL BE AHRI CERTIFIED WHICH COMPLIES WITH ENERGY STAR REQUIREMENTS AND THE DRINKING FOUNTAIN MEETS CSA 815-99 BEING ENERGY EFFICIENT BEATING AVERAGE MARKET PERFORMANCE BY 35%.
- M0.02 SPLIT SYSTEM FAN COIL CHART REMARKS SECTION NOTES FOR PROGRAMMABLE THERMOSTATS TO BE INSTALLED FOR EACH UNIT. LIGHTING FOR ALL INTERIOR ROOMS SHALL HAVE OCCUPANCY SENSORS AND EXTERIOR LIGHTING IS CONTROLLED VIA PHOTOCELL AND TIMECLOCK, SEE SHEET E2.01 FOR LIGHTING PLAN NOTE 3.
- PROVIDE DOUBLE PANE GLAZING AS SPECIFIED IN SECTION 08 80 00 GLAZING AND WINDOW NOTE 8 ON SHEET A52.2
- ROOFING MATERIALS SHALL BE REFLECTIVE GRAY AS SPECIFIED IN SECTION 07 53 10 ELASTOMERIC PVC MEMBRANE ROOFING. THE ROOFING IS ALSO REQUIRED TO COMPLY WITH CALGREEN REQUIREMENTS AND BE CRRC LABELED.
- SHADE TREES SHALL BE PROVIDED ON THE PROPERTY, REFER TO LANDSCAPE DRAWINGS SHEET L-4.1 FOR TREE LEGEND AND PLANTING LOCATIONS.
- COMMERCIAL TRUCK TRAFFIC DIVERSION FROM LOCAL ROADWAYS TO OFF-PEAK HOURS IS NOT FEASIBLE DUE TO PROJECT'S PROGRAM AND USE AS A MAINTENANCE FACILITY AND COMMUNITY STORAGE CENTER. DUE TO THE NATURE OF THE PROJECT'S USE, VEHICLES WILL BE ACCESSING THE SITE DURING OPERATIONAL HOURS OF GREAT PARK. PROJECT IS NOT NEAR RESIDENTIAL AREAS TO CAUSE DISTURBANCE.
- SPACE HEATING AND COOLING SHALL BE CENTRALIZED. REFER TO MECHANICAL DRAWINGS SHEET M1.11 FOR LOCATION OF MECHANICAL UNITS.
- BUILDING SHALL BE ORIENTED IN A NORTH-SOUTH ORIENTATION AS THE SURROUNDING STREETS AND REQUIRED ACCESS WILL ALLOW.
- SOLAR SHADE CANOPIES ARE TO BE INSTALLED UNDER A SEPARATE PERMIT. REFER TO ITEMS 8 & 9 UNDER DEFERRED APPROVALS ON SHEET GEN-1 AS WELL AS THE OUTLINE AND CALLOUT FOR THE FUTURE SOLAR CANOPY ON THE SITE PLAN SHEET A1.0.
- ROOF INSULATION SHALL BE MINIMUM R-38 AND WALLS MINIMUM R-19 PER TITLE 24 ENERGY CALCULATIONS.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

REVISIONS

NO.	DATE	
A	6/25/2025	City PC #2

DESIGN: SVA-Architects
DRAWN: SVA-Architects
CHECKED: SVA-Architects
DATE: OCT 15, 2025
SCALE:

OWNER: CITY OF IRVINE - GREAT PARK
SOILS ENGINEER: REPORT # DATE

SVA ARCHITECTS
JAN 31, 2023
NO. C-18501

PLANS PREPARED BY:
LICENSED ARCHITECT ROBERT M. SIMONS NO. C-18501 STATE OF CALIFORNIA
ARCHITECT: ROBERT M. SIMONS

PROJECT NAME:
MAINTENANCE & OPERATIONS FACILITY
CITY OF IRVINE
COMMUNITY DEVELOPMENT DEPARTMENT

PLAN CHECK :
#000954071-PARK
PERMIT :

SHEET 2
OF 2

INFORMATIONAL BULLETIN

Bulletin No.: 299
Page 1 of 1
Effective: 09/25/02
Revised: 01/28/2021

Chief Building Official

ROOF DRAINAGE SYSTEM SIZING

Purpose: To specify the rainfall rate for sizing roof drainage systems in the City of Irvine

References: California Plumbing Code Section 1101.12
California Building Code Section 1502

The rainfall rate of 4 inches per hour shall be used for sizing roof drainage systems for buildings in the City of Irvine.

INFORMATIONAL BULLETIN

Bulletin No.: 250
Page 1 of 1
Effective: 5/1/95
Revision: 2/20/96
Revision: 6/3/10
Chief Building Official

ROOFS SLOPE AND CERTIFICATION REQUIREMENTS FOR WOOD FRAMED CONSTRUCTION

Reference: California Building Code Sections 1503.4, 1507 and 1611

Minimum Roof Slope:

California Building Code (CBC) Section 1507 requires various minimum slopes for roofs depending on the roofing material. Built-up roofs and thermoplastic roofs may be as little as ¼ inch per foot. This is the minimum allowed for wood framed construction within the City of Irvine unless otherwise approved by the Chief Building Official.

Drainage:

Roof drainage shall conform to CBC Section 1503.4 and the California Plumbing Code using a rainfall rate of 4 inches per hour per **City of Irvine Information Bulletin 299-Roof Drainage System Sizing**.

Accumulated Rainwater Design Load:

CBC Section 1611.1 requires that the roof structure design load include the weight from rainwater accumulation that would occur due to blockage of the primary drainage system including that volume above the inlet of the secondary drainage system at its design flow.

Structural Check for Ponding:

Where the design slope is allowed to be less than ¼ inch per foot, CBC Section 1611.2 requires the design calculations to include verification of adequate stiffness to preclude progressive deflection in accordance with Section 8.4 of ASCE 7.

Certification of Roof Slope:

New roof systems of wood framed construction having a design slope of ¼ inch per foot (2%) or flatter shall be certified upon completion and before building occupancy by a California Registered Engineer or Land Surveyor. Certification shall include a statement that the completed roof system has been verified to be in conformance with the approved plans. Said certification shall be stamped and signed by the registered professional and be retained at the jobsite for collection by the City building inspector.

COMMUNITY DEVELOPMENT
Building and Safety

Print Form

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE REQUIREMENTS (1.1)

[Effective December 1, 2015]
The California Water Commission approved the revised Model Water Efficient Landscape Ordinance (MWELO) on July 15, 2015 to be consistent with Executive Order No. B-29-15.

Instructions: *Designer to complete **PART A**, then **PART B** and provide a landscape plan (if applicable), and incorporate in its entirety into the grading, landscape and/or building plan.*

PART A : PROJECT INFORMATION

PROJECT TYPE
☐ Residential ☒ Commercial ☐ Landscape Retrofit

TOTAL LANDSCAPE AREA
49,535 square feet

PROJECT CATEGORY (Check one)

☐ A. This is a new development or rehabilitated landscape project with an aggregate landscape area equal to or greater than 500 and less than 2,500 square feet per individual property. (§490.1(a)(1)&(c))

☒ B. This project includes a new or rehabilitated landscape with an aggregate landscape area equal to or greater than 2,500 square feet. (§490.1(a)(1)&(a)(2))

☐ C. This project includes new or rehabilitated landscape with an aggregate landscape area of less than 2,500 square feet per individual property and will be irrigated entirely with treated or untreated graywater or rainwater captured on site. (§490.1(d))

☐ D. This project is exempt from the MWELO because:
- ☐ This project is a registered local, state or federal historic site.
- ☐ This project is an ecological restoration project that does not require a permanent irrigation system.
- ☐ This project consists of existing plant collections, as part of botanical gardens and arboretums open to the public.
- ☐ This project does not include any landscaping, or has less than 500 square feet of landscape areas.

COMPLIANCE APPROACH (Select one option that will be used)

☐ Prescriptive Compliance option will be used (Complete Part B)
- May be used only for projects that meet the requirements of Category A

☐ Abbreviated Prescriptive Compliance option will be used (Complete Part B, Sections 1, 5 & 6)
- May be used only for projects that meet the requirements of Category C

☒ Compliance with Landscape Documentation Package option will be used
- May be used for any project
- Shall be used for all projects not meeting the criteria of Project Categories A and C
- **This option requires a landscape plan, plan review and permit per City of Irvine Landscape Manual**

FORM 40-81 REV 12/15
PAGE 1 of 3

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE REQUIREMENTS (1.1)

PART B : PRESCRIPTIVE COMPLIANCE OPTION (APPENDIX D,MWELO)

INSTRUCTIONS: Complete **PART B** only if Categories A and/or C in **Part A** apply to the project.

SECTION 1 - PROJECT INFORMATION

PROJECT APPLICANT			DATE
City of Irvine			03/24/2025
PROJECT ADDRESS			TOTAL LANDSCAPE AREA (SQ FT)
901 Skyhawk			49,535 sf
CITY	STATE	ZIP	PHONE
Irvine	California	92618	714-434-9803
EMAIL			
kevin@clarkgreen.com			

PROJECT TYPE
☐ Residential ☒ Commercial ☐ Landscape Retrofit

WATER SUPPLY TYPE
☐ Potable ☒ Recycled ☐ Well ☐ Graywater/ Rainwater

PROPERTY OWNER			
City of Irvine			
ADDRESS			
1 Civic Center Plaza			
CITY	STATE	ZIP	PHONE
Irvine	California	926065207	949-724-6000
EMAIL			
dmcgregor@dmceng.com			

DESIGNER CERTIFICATION STATEMENT

I agree to comply with the requirements of the prescriptive compliance option to the MWELO.

Kevin D. Lange	Kevin D. Lange	Landscape Architect, #4564
SIGNATURE	NAME	TITLE

FORM 40-81 REV 12/15
PAGE 2 of 3

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE REQUIREMENTS (1.1)

SECTION 2 - SITE PREPARATION

- Compost is incorporated at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into landscape area, or as specified in an agronomic soils test recommendations.

SECTION 3 - PLANT SELECTION (Check applicable notes, complete Plant Selection Table and add to the landscape plan)

☐ For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water.

☒ For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100% of the plant area excluding edibles and areas using recycled water.

☒ Provide a minimum three inch (3") layer of mulch on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

SECTION 4 - TURF SPECIFICATIONS (Complete and check applicable notes)

☐ Residential Site - Turf area is ___________ square feet, or _____ % of overall landscape area (not to exceed 25% of the overall landscape area).

☒ Non-residential Site - Turf area is not proposed (turf area is not allowed unless recycled water is used).

☐ Turf is not to be installed on sloped areas which exceed a slope of 1 foot vertical elevation change for every 4 feet of horizontal length.

☐ Turf is not proposed in parkways less than 10 feet wide.

☐ Turf is proposed in the parkway adjacent to a parking strip and used to enter and exit vehicles. Turf in parkways is irrigated by subsurface irrigation or by other technology that creates no overspray or runoff.

SECTION 5 - IRRIGATION SPECIFICATIONS

- Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data.
- Irrigation controllers shall be of a type which does not lose programming date in the event the primary power source is interrupted.
- Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturers recommended pressure range.
- Manual shut-off valves (such as a gate valve, ball valve or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.
- All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014. "Landscape Irrigation Sprinkler and Emitter Standard," All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

SECTION 6 - CERTIFICATION

- At the time of final inspection, the permit applicant must provide a Certificate of Compliance to the City inspector, and provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

FORM 40-81 REV 12/15
PAGE 3 of 3

INFORMATIONAL BULLETIN

Bulletin No.: 311
Page 1 of 1
Effective: 3/21/2007
Revised: 9/14/2009
Chief Building Official

REQUIREMENTS FOR FABRICATION APPROVAL

Reference: California Building Code (CBC) Appendix Chapter 1 Section 104.1, Section 1704.2 as amended by City of Irvine Municipal Code 5-9-401, item L. and CBC Section 1708.4..

PURPOSE:

To establish a policy for use and acceptance of structural load bearing members and assemblies fabricated offsite and are intended for use in a structure being constructed or modified under a valid building permit. Such members and assemblies include but are not limited to structural steel (including steel stairs) and pre-cast concrete building components.

POLICY:

Fabricator Approval Fabricators for projects within the City of Irvine are required to obtain approval from the Chief Building Official. Approval is generally granted upon verification of a current fabricator listing for the intended work from a recognized agency. Such agencies include the City of Los Angeles and the International Accreditation Services (IAS) for steel fabrication and the Precast Prestressed Concrete Institute (PCI) is acceptable for pre-cast concrete.

Fabricators having a listing with an agency not referenced above may present their credentials to the Chief Building Official for consideration prior to fabrication.

Deliveries to the Jobsite No member or assembly fabricated offsite shall be delivered to the jobsite without required documentation. Required documentation shall be verified to be complete and accurate by the **special inspector** and documented in his daily report. Any exceptions shall be noted and brought to the City inspector's attention.

Documentation requirements are as follows:

- Fabricator's current Certification from a recognized agency.
- Fabricator's Certificate of Compliance. Such certificate shall state "...that the work has been performed in accordance with the approved plans and specifications."
- Any applicable destructive and/or non-destructive testing reports as required by CBC section 1708.4.
- Certified mill test report for all structural steel and reinforcing steel.

COMMUNITY DEVELOPMENT
Building and Safety

STANDARD NOTES NON-RESIDENTIAL CONSTRUCTION 2022 CALIFORNIA GREEN BUILDING STANDARDS (4.1)

[Effective July 1, 2024]
Applies to ***Newly Constructed Non-residential Buildings and associated site development, initial tenant improvements regardless of valuation, and any subsequent addition of 1,000 square feet or more, or tenant improvement having a valuation of $200,000 and associated site development***. The following standard notes shall be completed and incorporated into the approved plans and all effected design features and specifications shall be made to conform.

INSTRUCTIONS: Designer to place an "**X**" preceding each applicable section and complete the notes or indicate "**N/A**" if not applicable. Building plan check shall be responsible for verification except for those items preceded by a **[P]** which will be verified by Planning. All provisions generally apply to new construction and additions of 1,000 square feet or more, or tenant improvements having a valuation of $200,000. An **[N]**, however, indicates a provision applies only to new construction, an **[E]** indicates a provision that applies to new construction and provides additional qualifiers for when the provision applies to an addition or tenant improvement.

STANDARDS

BICYCLE PARKING CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC) Section 5.106.4

[E] Short term bicycle parking applies to new or existing facilities if the project is expected to generate visitor traffic and adds 10 or more vehicular parking spaces.
Check the appropriate box and provide complete input for each selection as applicable:

X **[P]** Short-term bicycle parking (bicycle racks) are provided to accommodate anticipated visitor traffic. The total number provided is: 2 . These racks are located within 200 feet of the visitor's entrance as depicted on plan sheet: L-4.1 .

C

[E] Long term bicycle parking applies to new shell buildings, and to existing facilities if the project adds 10 or more vehicular parking spaces.

X This project will accommodate over 10 tenant-occupants, therefore long term bicycle parking is provided. The total number (minimum one) provided equal to 5% of vehicular parking spaces: 2 . The method(s) selected to satisfy this requirement is (are):

B

- N/A Covered, lockable enclosures with permanently anchored racks for bicycles, the total number provided is:_________ , see plan sheet:_________ .
- N/A Lockable bicycle rooms with permanently anchored racks, the total number provided is:_________ , see plan sheet:_________ .
- X Lockable, permanently anchored bicycle lockers, the total number provided is: 2 , see plan sheet: L-4.1 .

A

ELECTRIC VEHICLE (EV) CHARGING (CGBSC 5.106.5.3)
[E] The following applies to this project:

X New construction where the total number of parking spaces is 10 or more.

N/A Addition or alternation to existing parking facility being modified by one of the following:
- N/A Increase in power supply to an electric service panel as part of a parking facility addition or alteration.
- N/A New Photovoltaic system is installed covering existing parking spaces.
- N/A Scope of work is triggered per CGBC section 301.3 and includes increase in power supply to an electric service panel.

FORM 66-113 REV 07/24
PAGE 1 of 6

EV Charging Space Calculation (CGBSC 5.106.5.3.3)

X Total parking spaces for the project or total parking spaces added/altered is 46 , therefore pursuant to Table 5.106.5.3.1 a total of 8 EV charging space(s) and a total of 7 EV Capable space(s) are provided. See plan sheet: A1.0 . A A

X Project has parkings spaces accessible by automated car parking system. This provision is not applicable.

N/A Project is an existing remote parking facility that do not have access to the building service panel. This provision is not applicable.

N/A Project is for an existing parking area lighting upgrades with no trenching. This provision is not applicable.

1. EV Capable Spaces:
   - A parking stall width of 108 inches and a length as required by the City of Irvine Zoning Code.
   - A listed raceway not less than 1 inch diameter to accommodate a future dedicated 208/240-volt branch circuit originating at the main service or subpanel, and terminating in a listed cabinet, box, or other enclosure in close proximity to the proposed EV capable space. A common raceway may be used to serve multiple EV capable spaces.
   - Service panel or subpanel sized to accommodate original design load plus an added dedicated 40 amp minimum branch circuit for each EV capable space with delivery of 30 amp minimum to an installed EV supply equipment (EVSE).
   - The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV capable space.
   - The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".
2. Electric Vehicle Charging Stations (EVCS):
   - EVCS can be any combination of Level 2 and Direct Current Fast Charging (DCFC), except that at least one Level 2 charger shall be provided.
   - One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required for each EV capable space is accumulatively supplied to the EV charger.
   - The installation of each DCFC EVSE shall be permitted to reduced the minimum number of required EV capable spaces without EVSE by five and reduced proportionally the required electrical load capacity to he service panel or subpanel.
   - When EV chargers are installed, accessible EVCS shall be provided.
   - Accessible EVCS shall be located either on an accessible route or adjacent to an accessible parking space to allow use of the EV charger from the accessible parking.
   - EV space serving an accessible EVCS shall be 18 feet minimum length
   - EV space serving an accessible EVCS shall be 9 feet wide for standard accessible and 12 ft. wide for van accessible. A 5-foot aisle shall be provided on the side of the vehicle space.
   - Surface slope for EV space and the aisle shall not exceed 1:48 in any direction.
   - Refer to California Building Code Chapter 11B for applicable requirements to EV space serving accessible EVCS.

Electric Vehicle (EV) Charging: Medium-Duty and Heavy-Duty (CGBC 5.106.5.4)

[N] The following is applicable to construction of new warehouses, grocery stores, office buildings, manufacturing facilities, and retail stores with planned off-street loading spaces.

N/A EV supply and distribution equipment, spare raceway(s)or busway(s) and adequate capacity for transformer(s), service panel(s) or subpanel(s) for medium and heavy duty is provided. See________ plan sheet.

LIGHT POLLUTION REDUCTION [N](CGBSC Section 5.106.8)

X **[P]** Outdoor lighting designed to comply with the City of Irvine Security Code, Section 3-16-1 of the City of Irvine Zoning Code, which requires all direct rays to be confined to the site and that adjacent properties are protected from glare, and allowable BUG rating limitations of CGBSC Table 5.106.8 are depicted on plan sheet: _________ along with photometrics.

Refer to CGBC Section 5.106.8.1 and 5.106.8.2 for facing requirements and more stringent backlight and glare ratings for luminaries located in proximity to property lines.

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PAGE 2 of 6

WATER EFFICIENCY AND CONSERVATION (CGBSC Section 5.303)

Separate Submeters or metering devices
Applicable to new buildings exceeding 50,000 square feet and **[E]** additions of 50,000 square feet or more made to existing buildings, and to any tenant of a new building or addition, regardless of size, which is projected to consume more than 1,000 gallons/day CGBSC Sections 5.303.1.1and 5.303.1.2.

N/A A separate meter or metering device is provided for the following spaces: _________ . See plan sheet:________ for details and specifications defining metering design.

X This project consists of a single tenant building with a dedicated meter.

N/A Separate meters or metering devices are not required as the new building or addition is less than 50,000 square feet, and no tenant usage is projected to exceed 1,000 gallons/day.

N/A Separate meters or metering devices are not required as no tenant usage is projected to consume more than 100 gallons/day.

NOTES: (1) Tenants of new multi-tenant buildings or additions exceeding 50,000 square feet and that are not provided with a separate metering device must be shown to use less than 100 gallons/day via worksheet WS-1 found in chapter 8 of the CGBSC and any necessary addendum worksheet to reflect process water or other uses not represented on the worksheet. (2) For new buildings or additions having a total floor area less than 50,000 square feet, all its spaces not having a separate metering device must be shown to have a projected consumption of less than 1,000 gallons/day via worksheet WS-1 found in chapter 8 of the CGBSC and any necessary addendum worksheet to reflect process water or other uses not represented on the worksheet.

INDOOR WATER USE (CGBSC 5.303.3)

[E] Applicable to any newly installed plumbing fixture within new construction, the area of remodel or addition.

X All new plumbing fixtures meet the requirements of CGBSC Section 5.303.3, see modified table below for flow rates.

TABLE FIXTURE FLOW RATES

FIXTURE TYPES	MAXIMUM FLOW RATE
SHOWERHEADS	1.8 gpm @ 80 psi
LAVATORY FAUCETS	0.5 gpm @ 60 psi
KITCHEN FAUCETS	1.8 gpm @ 60 psi*
WASH FOUNTAIN	1.8[rim space (in.)/20 gpm @ 60 psi]
METERING FAUCET	0.2 gallons/cycle
METERING FAUCET FOR WASH FOUNTAINS	0.2[rim space (in.)/20 gpm @ 60 psi]
WATER CLOSETS	1.28 gallons/flush*
FLOOR-MOUNTED URINAL	0.5 gallons/flush
WALL-MOUNTED URINAL	0.125 gallons/flush

*Includes single and dual flush water closets with an effective flush rate of 1.28 gallons or less:
Dual flush toilets—The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush.

When a pre-rinse spray valve is installed, it shall meet requirements in the California Code of Regulations, Title 20, Section 1605.1(h)(4) Table H-2, Section 1605.3(h)(4)(A), and Section 1607(d)(7), and shall be equipped with an integral automatic shutoff.

NOTE: The combined flow of multiple showerheads serving a single shower shall not exceed maximum allowable flow rate for a single fixture shower or the control valves shall be arranged to only allow one shower head to operate at a time.

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PAGE 3 of 6

OUTDOOR WATER USE- MWELO (CGBSC Section 5.304)

X This project is subject to MWELO requirements. See plan sheet: GEN-0 for completed City of Irvine Model Water Efficiency Landscape Ordinance work sheet, Form 40-81.

WATER RESISTANCE AND MOISTURE MANAGEMENT (CGBSC Section 5.407)

[E] Applicable to any new entry or opening which is part of an addition of 1,000 or more square feet or any tenant improvement having a valuation of $200,000 or more.

ENTRIES

To prevent water intrusion into exterior entries and/or openings subject to foot traffic or wind-driven rain, the following features have been incorporated into the design for **primary exterior entries:**

X Door is protected by an awning or roof overhang 4 feet or more in depth, or is recessed 4 feet or more, see plan sheet: A12.1 .

X Flashings integrated with a drainage plane, see plan sheet: A61.4 .

X Non-absorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings, see plan sheet: A50.1 .

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY - CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (CGBSC Section 5.408)
Recycling of materials for new construction, additions, and remodels shall conform to the Construction and Demolition Materials Recycling Requirements of the City of Irvine Municipal Code, Sections 6-7-901 through 6-7-912.

LIFE CYCLE ASSESSMENT (CGBC Section 5.409)

[E] Applicable to newly constructed building with floor area of 100,000 square feet or greater or additions/alterations of existing buildings where the combined altered or added floor area is 100,000 square feet or greater. Shall comply with one of the following:

N/A Building reuse analysis for existing buildings (CGBC 5.105.2). See sheet _________ for compliance summary.

N/A Whole Building life cycle assessment (CGB 5409.2). See sheet _________ for summary of the Global Warming Potential (GWP) analysis.

N/A Prescriptive path - Product GWP compliance (CGBC 5.409.3). See sheet _________ for compliance summary.

BUILDING MAINTENANCE AND OPERATION (CGBSC Section 5.410)
RECYCLING BY OCCUPANTS

[E] Applicable to an addition that adds 1,000 square feet or more or has a valuation of $200,000, that **also increases** total floor area by at least 30% of existing floor area.

X **[P]** Designated recycling areas shall be provided as required by City of Irvine Zoning Ordinance (ZO) Sections 3-23-1 through 3-23-4 of the . See plan sheet: A1.0 .

N/A **[N] COMMISSIONING** Building Commissioning is **only** required for new buildings or initial tenant improvements greater than 10,000 square feet. (Exceptions: Unconditioned warehouses of any size, conditioned areas less than 10,000 square feet and accessory to unconditioned warehouses, open parking garages, open parking garage areas associated with a larger structure.)

DESIGN
- Completed and signed Owner's Project Requirements (OPR) including all items as specified in CGBSC section 5.410.2.1, see sheet: _________ .

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PAGE 4 of 6

- Completed and signed Basis of Design (BOD) including all items as specified in CGBSC section 5.410.2.2, see sheet: _________ .
- Completed and signed Commissioning Plan, as specified in CGBSC section 5.410.2.3, see sheet: _________ .

CONSTRUCTION - PRIOR TO FINAL INSPECTION APPROVAL
- A completed Commissioning Report shall be provided to the City Inspector prior to final inspection approval. Contents, pursuant to CGBSC Section 5.410.2.6, shall include a description of the commissioning process activities undertaken through the design, construction, and reporting recommendations for post construction phases. In addition, all required functional performance testing reports shall be included.
- A completed Systems Manual shall be made available for review by the City Inspector prior to final inspection approval. Contents shall include a completed and signed "Systems Manual" as specified in CGBSC section 5.410.2.5.1.

X **TESTING AND ADJUSTING** For buildings not exceeding 10,000 square feet, **[E]** and any new system serving an addition of 1,000 or more square feet or a tenant improvement having a valuation of $200,000, testing and adjusting are required.

A C
DESIGN M00.3; P00.3; E51.4
See sheet L-2.1 for procedures for testing and adjusting systems, which includes:
- HVAC systems and controls
- HVAC balancing per the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; or Associated Air Balance Council National Standards or approved equal.
- Indoor and outdoor lighting and controls
- Water heating systems
- Renewable energy systems
- Landscape irrigation systems
- Water reuse systems

CONSTRUCTION - PRIOR TO FINAL INSPECTION APPROVAL
Completed testing, adjusting, and balancing reports shall be provided to the City Inspector prior to final inspection approval. Contents shall match those specified in the procedures section above and be signed by the responsible parties.

ENVIRONMENTAL QUALITY

N/A **FIREPLACES** Wood burning devices including fireplaces are not permitted under SCAQMD Rule 445. Any installed gas fireplace shall be a direct-vent sealed-combustion type. (CGBSC Section 5.503)

MECHANICAL EQUIPMENT AND DUCT PROTECTION

To reduce the amount of dust, water, and debris collected in mechanical equipment and ducts, all duct openings and other related air distribution equipment component openings shall be covered from the time of delivery at the jobsite through the construction until final start up. (CGBSC Section 5.504.3)

FINISH MATERIAL POLLUTANT CONTROL

- **Adhesives, sealants and caulks** shall meet the applicable standards of CGBSC Section 5.504.4.1 and Tables 5.504.4.1 and 5.504.4.2 for VOC limits and content prohibitions.
- **Paints and coatings** shall meet the applicable standards of CGBSC Section 504.4.3 and Table 5.504.4.3 for VOC limits.

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- **Aerosol paints and coatings** shall meet the applicable standards of CGBSC Section 5.504.4.3.1.
- **Carpet systems** shall meet the applicable standards of CGBSC Section 5.504.4.4 including CGBSC Section 5.504.4.4.1 for **carpet cushions** and CGBSC Section 5.504.4.4.2 for **carpet adhesives**.
- **Resilient flooring** shall meet the applicable standards of CGBSC Section 5.504.4.6.
- **Composite wood products** shall meet the applicable standards of CGBSC Section 5.504.4.5 and Table 5.504.4.5.

ENVIRONMENTAL TOBACCO SMOKE CONTROL (CGBSC Section 5.504.7)

X See plan sheet A11.1 for designated outdoor smoking area which shows a minimum of 25 feet from building entries, outdoor ventilation intakes, and operable windows.

FILTERS (CGBSC Section 5.504.5.3)

X **Ventilation filtration** (CGBSC Section 5.504.5.3) - For new HVAC systems outside and return air shall pass through filtration media having a rating of: A

X MERV 13 or better, see plan sheet M00.2 for specifications.

N/A Equipment is existing and exempt from this requirement.

ENVIRONMENTAL COMFORT (CGBSC Section 5.507)

Exterior Noise Wall and roof assemblies making up the building envelope and exposed to the noise source as follows shall meet a composite STC rating of 50 or a composite OITC rating of 40, and exterior windows within said walls shall meet an STC of 40 or an OITC of 30.

Prescriptive Method (Using Sound Transmission Class (STC) Map - 2012 from the City's online form directory.)

A N/A 1. A portion or the entire building is within the 65 CNEL contour for a freeway or expressway therefore exterior wall assemblies and roof or roof-ceiling assemblies shall meet the specified exterior wall assemblies and roof or roof-ceiling assemblies requirements stated above. For details and specifications see plan sheets_________ .

N/A 2. A portion or the entire building is within the 65 CNEL contour for John Wayne Airport therefore exterior wall assemblies and roof or roof-ceiling assemblies shall meet the specified exterior wall assemblies and roof or roof-ceiling assemblies requirements stated above. For details and specifications see plan sheets_________ .

A N/A 3. The project site fronts a street identified as producing 65 CNEL contours extending beyond the right of way therefore that portion of the building that is the contour shall meet the specified exterior wall assemblies and roof or roof-ceiling assemblies requirements stated above. For details and specifications see plan sheets_________ .

X This building is a factory, storage facility, utility building, enclosed parking structure, or stadium therefore no STC assemblies are required.

Performance Method

N/A Pursuant to CGBSC Section 5.507.4.2, site and building mitigations have been defined based on a noise study prepared by an acoustical engineer. For a summary of features see plan sheets _________ . For construction details see sheets_________ .

Prior to final inspection, an acoustical report shall be provided to the City Inspector which demonstrates complying interior noise sound levels. Said report shall be signed and stamped by an acoustical engineer.

Interior Sound

X Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. Note: Examples of assemblies and their various STC ratings may be found at the California Office of Noise Control at https://www.tsib.org/files/STC_IIC_Rating.pdf. For details and specifications see plan sheets A11.1 .

N/A No interior walls separate tenant spaces or occupant spaces and public areas.

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COMMUNITY DEVELOPMENT
Development Services

STANDARD SECURITY CODE PLAN REQUIREMENTS AND DEFINITIONS

The design professional of record shall complete, as applicable to the project, each of the following:
- Standard Residential Security Code Provisions
- Standard Recreational Spaces Security Code Provisions
- Standard Non-Residential Security Code Provisions
- Standard Parking Facility Security Code Provisions

This document in its entirety, along with each applicable standard shall be incorporated into the plans submitted for approval prior to permit issuance.

DEFINITIONS [Ref. Irvine Municipal Code (IMC) Section 5-9-503]

Alley is any roadway not exceeding 25 feet in width which is primarily used for access to the rear or side entrances of abutting property.

Approved means certified as meeting the requirements of this code by the enforcing authority or its authorized agents, or by other officials designated by law to give approval on a particular matter dealt with by the provisions of this code with regard to a given material, mode of construction, piece of equipment or device.

Astragal is a device, either fixed or movable, which eliminates the vertical opening between a pair of doors when in the closed position.

Bolt is a metal bar which, when actuated, is projected (or thrown) either horizontally or vertically into a retaining member, such as a strike plate, to prevent a door or window from moving or opening.

Bolt projection or bolt thrown is the distance from the edge of the door, at the bolt center line, to the farthest point on the bolt in the projected position.

Burglary resistant glazing means those materials as defined in Underwriters' Laboratories Bulletin 972.

Common area is an area of space, a building or portion of a building, which is legally accessible to the owners or users of a multi-tenant property.

Cylinder means the subassembly of a lock containing the cylinder core, tumbler mechanism and the keyway. A double cylinder lock is one, which has a key-actuated cylinder on both the exterior and interior of the door.

Cylinder guard means a tapered or flush metal ring or plate surrounding the otherwise exposed portion of a cylinder lock to resist cutting, drilling, prying, pulling or wrenching with common tools.

Deadbolt is a lock bolt which does not have a spring action. The bolt must be actuated by a key and a knob or thumb- turn, and when projected becomes locked against return by end pressure.

Dead latch or deadlocking latch bolt means a spring-actuated latch bolt having a beveled end and incorporating a plunger which, when depressed, automatically locks the projected latch bolt against return by end pressure.

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STANDARD SECURITY CODE PLAN REQUIREMENTS AND DEFINITIONS

Double cylinder deadbolt means a deadbolt lock which can be activated only by a key on both the interior and exterior.

Dwelling means a building or portion thereof designed exclusively for residential occupancy, including single-family and multiple-family dwellings.

Enforcing authority is the agency or person having the responsibility for enforcing the provisions of this code.

Flushbolt is a manual, key or turn-operated metal bolt normally used on inactive door(s), and is attached to the top and bottom of the door and engages in the head and threshold of the frame.

Fully tempered glass means those materials meeting or exceeding UCB Standard 24-2 for Safety Glazing.

Glazing is all glass, plastics, and fiberglass utilized as an exterior window, vision panel, light, or pane within any type of door.

Hours of operation shall mean the time period when any activity requires the presence of employees or workers within or about the affected business.

Hours of darkness shall mean any time from one-half hour before sunset and one-half hour after sunrise and any other time when the illumination level is less than the required lighting for uses as designated in this code.

Jamb means the vertical members of a door frame to which the door is secured.

Jamb/wall is that component of a door assembly to which a door is attached and secured; the wall and jamb used together are considered a unit.

Latch or latch bolt is a beveled, spring-actuated bolt, which may or may not have a deadlocking device.

Lock (or lockset) is a keyed device (complete with cylinder, latch or deadbolt mechanism, and trim such as knobs, levers, thumb turns, escutcheons, etc.) for securing a door in a closed position against forced entry. For the purposes of this code, a lock does not include the strike plate.

Locking device is a part of a window assembly, which is intended to prevent movement of the moveable sash, which may be the sash lock or sash operator.

Luminaire is a complete lighting device consisting of a light source together with its direct appurtenances, such as globe, reflector refractor, housing and such support as is integral with the housing. The pole, post or bracket is not considered a part of the luminaire.

Minimum maintained foot-candles of light is the amount of light falling on that point of a surface with the least illumination, calculated through application of a maintenance factor, which is a multiplier applied to account for aging of the lamp and for dirt build-up on the luminaire during the period for which a lamp is in place.

Multiple-family dwelling means a building or portion thereof designed for occupancy by two or more families living independently of each other, including hotels, motels, apartments, duplexes and townhouses.

Nonresidential means any building, parking lot and associated areas used for any purpose other than a dwelling.

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STANDARD SECURITY CODE PLAN REQUIREMENTS AND DEFINITIONS

Panic hardware means a latching device on a door assembly for use when emergency egress is required due to fire or other threat to life safety. Devices designed so that they will facilitate the safe egress of people in case of an emergency when a pressure not to exceed 15 pounds is applied to the releasing device in the direction of exit travel. Such releasing devices are bars or panels extending not less than one-half of the width of the door and placed at heights suitable for the service require, not less than 30 nor more than 44 inches above the floor.

Primary locking device means the single locking system on a door or window unit whose primary function is to prevent unauthorized intrusion.

Private or single-family dwelling means a building designed exclusively for occupancy by one family.

Rail means the horizontal member of a window or door. A meeting rail is one which mates with a rail of another sash or a framing member of the door or window frame when the sash is in the closed position.

Recreational space means any public or private park, community common open space or paseo, bike trail, community swimming pools and associated sidewalks and parking lots.

Sash is an assembly of stiles, rails, and sometimes, mullions assembled into a single frame, which supports the glazing material. A fixed sash is one which is not intended to be opened. A moveable sash is intended to be opened.

Sill is the lowest horizontal member of a window frame.

Single cylinder deadbolt means a deadbolt lock, which is activated from the outside by a key and from the inside by a knob, thumb-turn, lever, or similar mechanism.

Solid core door means a door composed of solid wood or composed of compressed wood equal in strength to solid wood construction.

Stile is a vertical framing member of a window or door.

Strike is a metal plate attached to or mortised into a door or door jamb to receive and to hold a projected latch bolt and deadbolt in order to secure the door to the jamb.

Swinging door means a door hinged at the stile or at the head and threshold.

Underwriters' Laboratories listed means tested and listed by Underwriters' Laboratory, Inc.

Vandal resistant light fixture has a lens constructed of materials meeting or exceeding U.L. Bulletin 972 (Burglary Resistant Glazing) and a housing meeting or exceeding U.L. Bulletin 1572 (Wet Locations).

Window assembly is a unit, which includes a window and the anchorage between the window and the wall.

Window frame is the part of a window, which surrounds and supports the sashes and is attached to the surrounding wall. The members include side jambs (vertical), head jamb (upper, horizontal), sill and mullions.

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CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMONS
No. C-18301
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE:

SHEET NUMBER: **GEN-0**

SHEET TITLE:

IRVINE FORMS

SVA ARCHITECTS

6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK 00954071-PARK

TYP. ON ALL SHEETS

ITEM NUMBER	CONDITION NUMBER	MM DESIGNATION	GENERAL DESCRIPTION (note the descriptions below are in many cases abbreviated. Please refer to the actual Ordinance for a complete description of the Conditions.)	GRADING PERMIT/BUILDING PERMIT/OCCUPANCY	SVA RESPONSES
3	2.6		Prior to issuance of a precise grading permit, a site-specific geotechnical investigation shall be undertaken.	GRADING	Per civil.
11	2.27	GS4	Detailed geotechnical and hydrology reports shall be prepared prior to any development approval or grading activities.	GRADING	Per civil.
12	2.28	H/WQ1	Prior to issuance of a precise grading permit, applicant shall provide evidence that the development of the project area complies with the City Grading and Water Quality Ordinances. Deals with NPDES permits as well.	GRADING	Per civil.
13	2.29	H/WQ2	As part of a construction management plan demonstrate all stormwater runoff and dewater discharges shall be managed to comply with the Santa Ana RWQCBB plan.	GRADING	Per civil.
30	STANDARD CONDITION 3.33		Completed occupancy disclosure form for the project shall be submitted it the Director of Community Development for approval.	BUILDING B	Form completed; submitted to City via plan reviewers during plan check.
32	STANDARD CONDITION 3.5		Structures other than parking structures a final acoustical report submitted to the Director of Community Development. The report shall show the development will be sound attenuated against present and projected noise levels.	BUILDING	No significant noise source from beyond the project site. Noise generated from the maintenance yard heard in Office or Conference Room is mitigated by the CMU wall and hallway.
33	STANDARD CONDITION 3.6		Submit documentation that the Irvine Uniform Security Code requirements for lighting has been met.	BUILDING B	Refer to sheets E11.2P; A11.1; A21,1; A21.2.
34	CONDITION 3.20		Produce a construction site security plan per the Irvine Uniform Security Code. The Chief of Police must approve the plan.	BUILDING	By general contractor; not yet on project.
35	CONDITION 3.27	AQ3	Submit to the Director of Community Development an operations emissions plan.	BUILDING	By ownership.
36	CONDITION 3.28	GS1	The develop must be designed in accordance with the seismic design portions outlined in geotechnical reports and latest Code.	BUILDING	Structural design has been developed and based on the seismic design criteria outlined in the geotechnical report.
37	CONDITION 3.39	GS2	Requirement to produce site specific geotechnical reports.	BUILDING	Final geotechnical report (dated Oct. 21, 2024) included in plan check submittal #2 package.
38	CONDITION 3.30	A1	Submit lighting plans and signage plans to the Director of Community Services to ensure minimal light spillover into adjacent residential areas.	BUILDING	Refer to electrical plans for lighting (E11.1P for photometrics). No electrified signages on project.
61	CONDITION 6.31	SW3	Solid waste that can be recycled, develop and implement a plan that deals with the proper disposal of the materials		By general contractor; not yet on project.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMARD
No. C-11801
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE:

SHEET NUMBER: GEN-0.1

SHEET TITLE:

CONDITIONS OF APPROVAL

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PLAN CHECK 00954071-PARK

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 7 of 7)**
Project Address:	**Date Prepared:**	2025-07-08T20:07:40-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Sun Jung	Documentation Author Signature:
Company: SVA Architects	Signature Date: July 15, 2025
Address: 6 Hutton Centre Dr. Ste. 1150	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Santa Ana, CA 92707	Phone: 949-809-3380

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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Robert Simons	Responsible Designer Signature:
Company: SVA Architects	Date Signed: July 15, 2025
Address: 6 Hutton Centre Dr. Ste. 1150	License: C18301
City/State/Zip: Santa Ana, CA 92707	Phone: 949-809-3380

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 4 of 7)**
	Date Prepared:	2025-07-08T20:07:40-04:00

F. DESIGN REVIEW KICKOFF MEETING

14	Envelope Goals	Compliant to CBC, CEC, CalGreen requirements.
15	HVAC System Goals	The Owner desired a fully controllable HVAC system which can provide HVAC zone segregation. The project also requires no equipment to be installed on the roof. The Owner requires a reliable and low maintenance solution for facility personnel.
16	Indoor Lighting System Goals	The goal for the indoor lighting system is to provide the complete Title 24 code compliant design with the latest 2022 CEC Title 24 Mandatory requirements. This will entail using local stand-alone controls for each enclosed space with dimmable/on/off wall sensors, occupant sensors and photocells where required next to glazing or solar tubes. Lighting will be provided by all LED products to meet the allowable wattage for each enclosed space.
17	Outdoor Lighting System Goals	The goal for the outdoor lighting system is to meet the requirements for the exterior Title 24 by using low wattage fixtures evenly distributed in the Parking lot, canopies, and maintenance yard to meet wattage requirements and route fixtures back the lighting control panel to meet the code requirements for outdoor controls. Some fixtures will require onboard sensors to meet the code requirements for outdoor controls.
18	Water Heating System Goals	The Owner desired to have a low cost, reliable, and low maintenance water heating solution while still meeting efficiency goals of Title 24.
19	Equipment and System Specifications	Standard level for similar project type in similar climate zone.
20	Operations and Maintenance	Low level of training.

G. OWNER'S PROJECT REQUIREMENTS (OPR)

This section does not apply to this project.

H. BASIS OF DESIGN (BOD)

This section does not apply to this project.

I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST

This table is only completed if a design review document is not attached to permit application to demonstrate compliance with 120.8(b) and 120.8(e). For buildings with >= 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the Owner's Project Requirements (Table G.) and the Basis of Design Documents (Table H.). For buildings with < 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the goals documented in Table F. during the Design Review Kickoff.

		YES	NO
01	Attaching Completed Design Review Documentation?	○	●

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 5 of 7)**
	Date Prepared:	2025-07-08T20:07:40-04:00

I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST

Design Review Checklist

02	Envelope Design	Building envelope consists of CMU walls and robust insulation to lower energy cost during operation, and building is expected to outperform 20 year design lifespan. There are no special climate or lighting control mechanisms, which will require low level of training, if any.
03	HVAC System Design	HVAC systems selected include several split system heat pump units with outdoor units installed on grade. This equipment will provide HVAC zoning capabilities while meeting the goal of no equipment on the roof. Heat pumps were also selected to reduce carbon footprint, reliability, and ease of maintenance. Challenges with this equipment included fitting the indoor units above the ceiling of the occupied space while still being able to provide service access.
04	HVAC Controls Design	HVAC controls are standalone type. This provides seamless and straightforward controllability of all air conditioning equipment for the building. Programmable thermostats allow the user to program schedules, lockouts, and other functions to suit their needs.
05	Indoor Lighting System Design	The lighting design for the project will provide a fixture schedule as indicated on E61.1. The schedule will represent the LED fixtures that will be used throughout the interior and the exterior locations on the project. The Symbols identified in the symbol column will correlate with the symbols found on sheets E11.2, E11.2EP and E12.1. The wattages in fixture schedule will also match the wattages used in the T24 forms on Sheet E61.2 and E61.2 to demonstrate compliance with the allowed wattages dictated by Title 24.
06	Indoor Lighting Controls Design	The indoor lighting controls symbols can be found on the sheet E00.1 and will be shown through sheet E12.1. Sheet E12.1 will locate controls in each room and will show a local control, occupant sensor and photocell to comply with Section 130.1(a)(b)(c) as needed. The distributed lighting controls sheets will be found on Sheet E51.2 and E51.3. Sheet E51.4 will provide sequence of operations for the commissioning requirements for the contractor and manufacturer's reps to set light and switch levels to comply with T24 in a space-by-space basis.
07	Outdoor Lighting System and Controls Design	The Outdoor fixtures will be routed through a Title 24 compliant lighting control panel that will provide time clock, photocell control and astronomical time clock features. All outdoor circuits will be routed to the relays so all exterior fixtures will have the ability to be scheduled and turn off at dusk. Pole fixtures will be mounted with a dimmable occupant sensor that will have the ability to reduce lighting by 50% when motion has not been detected for a min 20 duration. Once motion is detected it will smooth dim up to 100%. Refer to Sheet E51.4 which provides sequence of operations for the commissioning requirements for the contractor and manufacturer's reps to set light and switch levels to comply with T24 in a space-by-space basis.
08	Water Heating System Design	The water heater consists of an electric tank type water heater for the entire building. Due to the low hot water demand of the building, a tank type was preferred over several smaller instantaneous heaters at each point of use. The electric design also reduces carbon footprint.
09	Other Systems and Features	Building envelope consists of CMU walls and robust insulation to lower energy cost during operation, and building is expected to outperform 20 year design lifespan. There are no special climate or lighting control mechanisms, which will require low level of training, if any.

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
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J. COMMISSIONING PLAN

This section does not apply to this project.

K. FUNCTIONAL PERFORMANCE TESTING

This section does not apply to this project.

L. DOCUMENTATION AND TRAINING

This section does not apply to this project.

M. COMMISSIONING REPORT

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

There are no forms required for this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 1 of 7)**
Project Address:	**Date Prepared:**	2025-07-08T20:07:40-04:00

This document is used to demonstrate compliance with mandatory commissioning requirements in 120.8 for nonresidential buildings and hotel/motel or mixed-use buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	04	Building Size (ft²)	7000
02	Occupancy Type	Nonresidential	05		< 10,000 ft²
03	Project Type	Newly constructed	06		All other HVAC system types (indicates "complex")
			07	Climate Zone	8

B. PROJECT SCOPE

Based on project information provided in Table A, Table B indicates which commissioning related requirements apply per 120.8. Table B is not editable by the user.

Commissioning Requirements per 120.8

01	Table F: Design Review Kickoff	120.8(d)1 and 120.8(d)2	The design review kickoff meeting establishes who will play the role of the design reviewer, the project schedule and identify owner's requirements. This meeting should be conducted during schematic design.
02	Table G: Owner's Project Requirements (OPR)	120.8(b)	This requirement does not apply.
03	Table H: Basis of Design (BOD)	120.8(c)	This requirement does not apply.
04	Table I: Design Review	120.8(d) and 120.8(e)	The design reviewer(s) reviews the construction documents for clarity, completeness, and adherence to the owner's goals. Commissioning measures must be included in the construction documents to facilitate the design review and commissioning process. For projects with >= 10,000 ft² of nonresidential conditioned floor area, the design review is for adherence with the Owner's Project Requirements (OPR) and Basis of Design (BOD). This should be conducted during design.
05	Table J: Commissioning Plan	120.8(f)	This requirement does not apply.
06	Table K: Functional Performance Testing	120.8(g)	This requirement does not apply.
07	Table L: Documentation and Training	120.8(h)	This requirement does not apply.
08	Table M: Commissioning Report	120.8(i)	This requirement does not apply.

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

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Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 2 of 7)**
	Date Prepared:	2025-07-08T20:07:40-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with commissioning requirements per 120.8. This table is not editable by the user. If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	02	03	04	05	06	07	08	09
Design Kickoff Review	Owner's Project Requirements	Basis of Design	Design Review	Commissioning Plan	Functional Performance Testing	Documentation and Training	Commissioning Report	
Table F	Table G	Table H	Table I	Table J	Table K	Table L	Table M	
Yes			Yes					COMPLIES
10				Doug Brown				COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Nonresidential Building Commissioning
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-CXR-E
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F. DESIGN REVIEW KICKOFF MEETING

This table indicates that the design reviewer meets the qualification requirements per Title 24, Part 1 Section 10-103(a)1 and demonstrates compliance with design review kickoff requirements per 120.8(d)2. This meeting should occur during the Schematic Design phase of the project.

Design Review Kickoff Meeting Details

01	Date of Design Review Kickoff Meeting		2025-01-13	
02	Meeting Attendees: (one person may play multiple roles)			
☒	Owner/Facility Manager:	Ken Graves	☐ Design Reviewer(s)	
☒	Project Manager:	Tim Callahan	☒ Design Architect/ Engineer(s):	Doug Brown
☐	Contractor:		☐ Certified Acceptance Test Tech(s):	
☐	Commissioning Provider:		☐ Energy/ T24 Part 6 Consultant:	

Design Reviewer Qualifications per Title 24 Part 1 Section 10-103(a)1

		Do the Design Reviewer(s) meet these qualifications?	
	The design reviewer(s) must be licensed professional engineers or licensed architects, or licensed contractors representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code.	Yes	No
03	In addition, for buildings with >= 50,000 ft², or complex mechanical systems[1], the design reviewer(s) shall be a third party design engineer, architect, or contractor.	●	○
04	The design reviewer(s) for this project will be:	Doug Brown	

Preliminary Construction Schedule

		Start Date	Completion Date
05	Schematic Design	2025-01-14	2025-02-03
06	Design Development	2025-02-04	2025-03-03
07	Construction Documents	2025-03-04	2025-09-14
08	Construction	2025-09-15	2026-12-15
09	Building Turnover	2026-12-16	2027-01-15

Project Goals Related to Energy Efficiency

10	Operational Costs	Lower energy cost
11	Desired Building Lifespan	20 years
12	Equipment Lifecycle	Durable and easy to maintain building systems equipment.
13	Project Energy Efficiency Goals	No LEED credits. Comply with CalGreen.

CITY OF IRVINE BUILDING & SAFETY DIVISION

B

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMONS Exp. 5-1-2027 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE:
SHEET NUMBER: GEN-0.2
SHEET TITLE:

ENERGY COMPLIANCE FORM

A

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK 00954071-PARK

COMMUNITY DEVELOPMENT
Building and Safety

STANDARD NON-RESIDENTIAL SECURITY CODE PROVISIONS [VERSION 6.0]

[Applies to Applications Made on or After 01/01/2023]
This document shall be completed by the design professional of record. The completed document shall be incorporated, in its entirety, along with the **City of Irvine Standard Security Code Plan Requirements and Definitions** into the plans submitted for approval prior to permit issuance. This document is in 12 point font and may not be reduced in size prior to incorporation.

INSTRUCTIONS:
(1) Those provisions preceded by an asterisk **(*)** shall be completed if applicable and an "**A**" shall be inserted in the space preceding the provision; if not applicable, an "**N/A**" shall be inserted.

(2) Those provisions preceded by a **[P]** shall be depicted in the plans via notes, details, plan, and/or elevation views in a manner that clearly demonstrates compliance to the requirement. Such depictions shall be cross referenced within the brackets { } provided or note shall be completed as otherwise instructed.

STANDARDS

KEYING REQUIREMENTS [Ref. Irvine Municipal Code (IMC) Section 5-9-511]

Upon occupancy by the owner or proprietor, each single unit shall have locks using combinations which are interchange free from locks used in all other proprietorships or similar distinct occupancies.

N/A **(*) STANDARDS FOR LOUVERED WINDOWS [Ref. IMC Section 5-9-514]**

[P] Louvered windows shall not be utilized if any portion of it is within 8 feet vertically or 6 feet horizontally from any exterior accessible surface or any adjoining roof, balcony, landing, stair tread, platform, or similar structure. *{Ref. elevation views, window schedule*

A **(*) STANDARDS FOR GARAGE DOORS: ROLLING OVERHEAD, SOLID OVERHEAD [Ref. IMC Section 5-9-515]**

A. **[P]** Wood doors shall have panels a minimum of 5/16 inch in thickness with the locking hardware being attached to the support framing. *(Ref. plans and/or door schedules or note: Not Applicable-*
NOT APPLICABLE }

B. **[P]** Aluminum doors shall be a minimum thickness of 0.0215 inches and riveted together a minimum of 18 inches on center along the outside seams. There shall be a full width horizontal beam attached to the main door structure which shall meet the pilot, or pedestrian access, door framing within 3 inches of the strike area of the pilot or pedestrian access door framing within 3 inches of the strike area of the pilot or pedestrian access door. *(Ref. plans and/or door schedules or note: Not Applicable-*
PLAN A11.1, SCHEDULE A52.1, DETAILS A52.2 }

C. **[P]** Fiberglass doors shall have panels a minimum density of 6 ounces per square foot from the bottom of the door to a height of 7 feet. Panels above 7 feet shall have a density not less than 5 ounces per square foot. *(Ref. plans and/or door schedules or note: Not Applicable-*
NOT APPLIACABLE }

D. Doors utilizing a cylinder lock shall have a minimum 5 pin tumbler operation with the locking bar or bolt extending into the receiving guide a minimum of 1 inch.

E. Doors that exceed 16 feet in width shall have 2 lock receiving points; or, if the door does not exceed 19 feet, a single bolt may be used if placed in the center of the door with the locking point located either at the floor or door frame header; or, torsion spring counterbalance-type hardware may be used.

F. **[P]** Doors secured by electrical operation shall have a keyed-switch to open the door when in a closed position, or by a signal locking device. *(Ref. plans and applicable notes and/or details or note: Not Applicable-*
SCHEDULE A52.1 AND DOOR HARDWARE SPEC. SECTION 087100 }

G. Doors with slide bolt assemblies shall have frames a minimum of 0.120 inches in thickness, with a minimum bolt diameter of 1/2 inch and protrude at least 1 1/2 inches into the receiving guide. A bolt diameter of 3/8 inch may be used in a residential building. The slide bolt shall be attached to the door with non-removable bolts from the outside. Rivets shall not be used to attach slide bolt assemblies.

STANDARDS FOR EXTERIOR DOORS & OPENINGS [Ref. IMC Section 5-9-517]

A. Swinging exterior glass doors, wood, or metal doors with glass panels, solid wood, or metal doors, and all entrance doors to individual office suites shall be constructed or protected as follows:

1. **[P]** Wood doors shall be of solid core construction with a minimum thickness of 1 3/4 inches. Wood panel doors with panels less than 1 inch thick shall be covered on the inside with a minimum 16 U.S. gauge sheet steel or its equivalent, which is to be attached with screws on minimum 6 inch centers. Hollow steel doors shall be of a minimum 16 U.S. gauge and have sufficient reinforcement to maintain the designated thickness of the door when any locking device is installed; such reinforcement being able to restrict collapsing of the door around any locking device. *(Ref. plans and/or door and window schedules-*
DOOR SCHEDULE ON SHEET A52.1 }
2. **[P]** Except when double cylinder deadbolts are utilized, any glazing utilized within 40 inches of any door locking mechanism shall be constructed or protected as follows:
   a. Fully tempered glass or rated burglary resistant glazing; or
   b. Iron or steel grills of at least 1/8 inch material with a minimum 2 inch mesh secured on the inside of the glazing may be utilized; or
   c. The glazing shall be covered with iron bars of at least 1/2 inch round or 1 inch by 1/4 inch flat steel material, spaced not more than 5 inches apart, secured on the inside of the glazing.
   d. Items b. and c., above, shall not interfere with the operation of opening windows if such windows are required to be openable by the Uniform Building Code.

   {Ref. plans and/or door and window schedules-
   DOOR TYPE FG AND SCHEDULE ON A52.1 }

3. Doors without mechanical locks may be secured with a magnetic locking device which shall have the minimum holding force of 1600 lbs. and a minimum 12 hour back up battery source.

B. All swinging exterior wood and steel doors shall be equipped as follows:

1. A single or double door shall be equipped with a double or single cylinder deadbolt. The bolt shall have a minimum projection of 1 inch and be constructed so as to repel a cutting tool attack. The deadbolt shall have an embedment of at least 3/4 inch into the strike receiving the projected bolt. The cylinder shall have a cylinder guard, a minimum of 5-pin tumblers, and shall be connected to the inner portion of the lock by connecting screws of at least 1/4 inch in diameter. The provisions of the preceding paragraph do not apply where (1) panic hardware is required, or (2) an equivalent device is approved by the enforcing authority.
2. Double doors shall be equipped as follows:
   a. The inactive leaf of double door(s) shall be equipped with metal flush bolts having a minimum embedment of 5/8 inch into the head and threshold of the doorframe.
   b. Double doors shall have an astragal constructed of steel a minimum of 1/8 inch thick, which will cover the opening between the doors. The astragal shall be a minimum of 2 inches wide, and extend a minimum of 1 inch beyond the edge of the door to which it is attached. The astragal shall be attached to the outside of the active door by means of welding or with nonremovable bolts spaced apart on not more than 10 inches centers. (The door to which such an astragal is attached must be determined by the fire safety codes adopted by the enforcing authority.)

C. Aluminum frame swinging doors shall be equipped as follows:

1. The jamb on all aluminum frame swinging doors shall be so constructed or protected to withstand 1,600 pounds of pressure in both a vertical distance of 3 inches and a horizontal distance of 1 inch each side of the strike, so as to prevent violation of the strike.
2. A single or double door shall be equipped with a double cylinder deadbolt with a bolt projection exceeding 1 inch or a hook-shaped or expanding deadbolt that engages the strike sufficiently to prevent spreading. The deadbolt lock shall have a minimum of 5-pin tumblers and a cylinder guard.

D. Panic hardware, whenever required by the Building Code shall be installed as follows:

1. Panic hardware shall contain a minimum of 2 locking points on each door; or
2. On single doors, panic hardware may have 1 locking point, which is not to be located at either the top or bottom rails of the doorframe. The door shall have an astragal constructed of steel 1/8 inch thick, which shall be attached with nonremovable bolts to the outside of the door. The astragal shall extend a minimum of 6 inches vertically above and below the latch of the panic hardware. The astragal shall be a minimum of 2 inches wide and extend a minimum of 1 inch beyond the edge of the door to which it is attached.
3. Double doors containing panic hardware shall have an astragal attached to the doors at their meeting point, which will close the opening between them, but not interfere with the operation of either door.

E. Horizontal sliding doors shall be equipped with a metal guide track at top and bottom, and a cylinder lock and/or padlock with a hardened steel shackle which locks at both heel and toe, and a minimum 5-pin tumbler operation with nonremovable key when in an unlocked position. The bottom track shall be so designed that the door cannot be lifted from the track when the door is in a locked position.

F. In office buildings (multiple occupancy), all entrance doors to individual office suites shall meet the construction and locking requirements for exterior doors.

G. Glazing shall be deemed accessible, if any portion of it is within 40 inches of any door locking mechanism, and shall be constructed of either two part laminated glazing with a 0.60 .0060 inch inner layer or burglary resistant glazing.
Exception:
Glass doors at least 1/2 inch thick and greater than 2880 square inches.

N/A **(*) STANDARDS FOR ROOF OPENINGS [Ref. IMC Section 5-9-517]**

[P] Roof openings shall be protected as follows if the roof is accessible via an exterior ladder or the roof is less than 20 feet from ground level or if any portion of it is within 12 feet vertically or 6 feet horizontally from any exterior accessible surface or any adjoining roof, balcony, landing, stair tread, or similar structure:

A. All skylights on the roof of any building used for business purposes shall be provided with:
   1. Rated burglary-resistant glazing; or
   2. Iron bars of at least 1/2 inch round or 1 by 1/4 inch flat steel material, spaced not more than 5 inches apart, under the skylight and securely fastened; or
   3. A steel grill of at least 1/8 inch material with a maximum 2 inch mesh under the skylight and securely fastened.

B. All hatchway openings on the roof of any building or premises used for business purposes shall be secured as follows:
   1. If the hatchway is of wooden material, it shall be covered on the inside with at least 16 U.S. gauge sheet metal, or its equivalent, attached with screws.
   2. The hatchway shall be secured from the inside with a slide bar or slide bolts.
   3. Outside hinges on all hatchway openings shall be provided with nonremovable pins when using pin-type hinges. *(Ref. plans and details-* }

N/A **(*) STANDARDS FOR EXTERIOR LADDERS [Ref. IMC Section 5-9-517]**

[P] Exterior mounted ladders are prohibited except:

A. Ladders with a minimum 1/8 inch thick steel plate, securely attached to the ladder edge on each side and extending to within 2 inches of the wall for a height of 10 feet above ground level. A door or cover shall be securely attached to the front of the ladder and be constructed of a minimum 1/8 inch steel, extending from ground level to at least 10 feet high. The ladder door shall have nonremovable hinge pins and be locked tight against the side wall by a locking mechanism with a minimum 5-pin tumbler operation, and attached with nonremovable bolts from the exterior; or

B. Ladders beginning a height of 10 feet above ground. *(Ref. plans, elevations, and applicable notes and/or details-* }

EXTERIOR PHONE PANELS ARE PROHIBITED [Ref. IMC Section 5-9-517]

STANDARDS FOR LIGHTING [Ref. IMC Section 5-9-517]

Note: Performance standards are contained herein for reference. Compliance shall be demonstrated in photometric study preceding plan check approval.

Buildings, open parking lots, walkways, and accesses thereto shall conform to the following light standards and be arranged in such a way so as to conform to California Green Building Standards Code Section 5.106.5.2 and Zoning Code Section 3-16-1 which require that direct rays be confined to the site and that adjoining properties are protected from glare such that at 15 feet beyond site boundaries illumination is less than 0.01 horizontal footcandles.

A. **[P]** All types of exterior doors shall be illuminated with an exterior light fixture, during the hours of darkness, with a minimum maintained 1 foot-candle of light, measured within a 5 foot radius on each side of the door at ground level. The light source shall be controlled by a photocell device or a timeclock with an astronomic clock feature and capable of operating during a power outage. *(Ref. plans, elevations, and applicable notes and/or details-*
PLAN A11.1 AND ELEVATIONS A21.1, A21.2, SHEET E11.2P }

B. Recessed areas of buildings or fences, which have a minimum depth of 2 feet, a minimum height of 5 feet, and do not exceed 6 feet in width and are capable of human concealment, shall be illuminated with a minimum maintained 0.25 foot-candles of light at ground level during the hours of darkness. This requirement applies to defined recessed areas which are within 6 feet of the edge of a designated walking surface with an unobstructed pathway to it, not hindered by walls or hedge row landscaping a minimum of 2 feet in height.

C. Stairways shall be illuminated with a minimum maintained 1 foot-candle of light on all landings and stair treads, during the hours of operation, including 1 hour thereafter.

D. All interior or exterior corridors, passageways, and walkways in any hotel, motel, or inn shall be illuminated at all times with a minimum maintained 1 foot-candle of light on the walking surface.

E. All exterior pedestrian walkways, interior common corridors, and open parking lots shall be illuminated with a minimum maintained 1 foot-candle of light on the walking, parking, or driving surface during the hours of operation and 1 hour thereafter.

F. **[P]** For buildings required to have 2 or more exits, lighting for landings shall be on an emergency power system consisting of storage batteries or an onsite generator capable of providing power for 90 minutes, installed as required by California Building Code Section 1008.3 *{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
NOT APPLICABLE }

G. The light source utilized to comply with this section to meet parking and drive surface lighting shall have a rated average bulb life of not less than 12,000 hours.

H. Light fixtures for open parking lots may utilize motion sensing devices to raise and lower the light levels based upon the presence of vehicles or people. The light level shall not be less than minimum maintained .25 foot-candles of light at ground level when not occupied. The motion sensing device shall only be used after business hours and shall be adjusted to sense and activate light when a vehicle or person is within 24 feet of the fixture. Areas within a 50 foot radius of an elevator lobby/doors and stairways shall not fall below the required minimum maintained 1.0 foot-candles of light.

I. **[P]** Accessible luminaires utilized to meet the requirements of this section have fully enclosed vandal resistant light fixtures and be not less than 3 feet in height from ground level when used to illuminate walkways and a minimum of 8 feet in height from ground level when illuminating surfaces associated with vehicles. Light fixtures shall be deemed accessible if mounted within 15 feet vertically or 6 feet horizontally from any accessible surface or any adjoining roof, balcony, landing, stair tread, platform, or similar structure. *(Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
N/A }

J. **[P]** See plan sheet *(Ref. plans or note: This provision is not applicable-*
See Sheet E11.2P. }
showing buildings, parking area, walkways, detailed landscaping with tree legend (if pole lights are used) and shrub legend (if bollards are used), fixture schedule, mounting height, lighting ratio, and a point-by-point photometric calculation of the required light levels. If parking lot is equipped with an occupancy sensor, then a point-by-point photometric calculation is required to show it meets the required minimum level of light. Foot-candles shall be measured at grade on a horizontal plane and conform to a uniformity ratio of 6:1 average/minimum. Landscaping shall not be planted so as to obscure required light levels and with light fixtures exceeding 8 feet in height installed at lease 2 feet from a tree's canopy at 70 percent maturity. Private street, alley, and Fire Department required roadways designed for use in emergency only situations shall be illuminated using the same standards as established for public thoroughfares.

K. Private streets, drive aisles, alleys, and Fire Department required roadways designed for use only in emergency situations shall be illuminated using the same standards as established for public thoroughfares.

STANDARDS FOR ADDRESSING [Ref. IMC Section 5-9-517]

[P] Buildings shall display a street address number conforming to the following specifications:

A. Numerals shall be mounted on the wall or window, not less than 8 feet or higher than 30 feet from ground level and face the street on which the building is addressed. Numerals are to be clearly visible from this same street and not obscured by building landscaping at full maturity. Addressing shall be of a color contrasting to the background to which they are affixed. Method of attachment shall not include the use of two-sided tape or any material not resistant to weather conditions. *{Ref. plans, elevations, and applicable notes and/or details -*
See elevation on 2/A21.1 }

B. Where distance or intervening obstructions impair visibility from the street, addressing shall be mounted on all buildings so as to be visible from the drive aisles and walkways internal to the site, and each such address, or an encompassing range of addresses, shall be displayed on monument signs visible from each site entrance from all approaching directions. In such cases, these signs shall be designed per item E. below. *{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
N/A }

C. Numerals shall be no less than 6 inches in height if located less than 100 feet from the center line of the addressed street, or 12 inches in height if placed further than 100 feet from the center line of the

addressed street. The numerals shall be in a Sans Serif font with a stroke weight of medium to bold, or an approved equivalent font which is clearly legible, and illuminated during the hours of darkness with a minimum of 2 foot-candles of light on the numbers, using a light source provided with an uninterruptible A.C. power source or controlled only by a photoelectric device, which may be the common area site lighting. *{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
See Sheets E11.2, A21.1, A21.2 }

D. The rear swinging doors of all buildings shall have address numbers not less than 6 inches in height, using a Sans Serif font with a stroke weight of medium to bold, or an approved equivalent font which is clearly legible, and be of a color contrasting to the background to which they are affixed. Method of attachment shall not include the use of two-sided tape or any material not resistant to weather conditions.

Exceptions:

1. Buildings with a single street address and rear building frontage of 300 feet or less, at least one rear door, nearest to the center, is required to have an address sign.
2. Buildings with a rear building frontage greater than 300 feet, but less than 600 feet, at least two rear doors are required to have an address sign, located at the first door at each end of the building.
3. Buildings with a rear building frontage greater than 600 feet, at least three rear doors are required to have an address sign, located at the first door at each end of the building and at a middle door.

{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-
N/A - No rear building. }

E. For sites having multiple buildings for which addressing mounted on building is not clearly visible from the street, or for which drive aisles diverge from a site entrance in a manner such that the direct route to each building is not obvious, vehicle directional signs shall be provided. Vehicle direction signage from the point of site entry to each building entrance shall display building addresses or unit number range, and be located at all turning points along the route to a building entrance. Bottom of the address numbers on the sign copy shall be no less than two feet from ground level and not obstructed by landscaping at full maturity or parked cars. Numerals shall be at least 4 inches in height using a Sans Serif font with a stroke weight of medium to bold or an approved equivalent font which is clearly legible. *{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
N/A - No rear building }

F. Buildings, except parking structures, with a total square footage of at least 10,000 square feet shall have rooftop numbers placed parallel to the addressed street, screened from public view and only visible from the air. The numerals are to be white, block lettered, constructed of weather resistant material, and placed against a black background. Address numbers are to be a minimum of 4 feet in height and 18 inches wide. When more than one street address is assigned to a building, the beginning and ending address numbers are to be placed on the rooftop, at opposite ends of the building, reflecting the approximate location of these addresses.

Exceptions:

1. For buildings having white roofing, black lettering shall be used in lieu of white lettering.

2. Buildings providing addressing for a helipad as specified in the California Building Code.

{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-
See Sheet A12.1. No helipad. }

G. For sites having more than three separately addressed buildings with a common area sidewalk connecting each building, and the primary building entrances are not visible from the street or parking lot, pedestrian directional signage shall be provided. Signs shall be posted at all decision-making points, including walkway entrances and intersections. Bottom of the address numbers on the sign copy shall be no less than two feet from ground level and not obstructed by landscaping at full maturity. Numerals shall be at least three inches in height using a Sans Serif font with a stroke weight of medium to bold, or an approved equivalent font which is clearly legible.

H. A Wayfinding Plan shall be developed indicating the following:

   a. Location and wording of directional signage for vehicles and pedestrians;
   b. Location of building address numbers;
   c. Landscaping details for areas near any signage or address numbers, including elevation showing trees near exterior address numbers;
   d. Required lighting level on address numbers.

The plan shall include design drawings or exhibits that clearly illustrate the intent of the Wayfinding Plan. *{Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable-*
N/A }

C N/A **(*) STANDARDS FOR ELEVATOR [Ref. IMC Section 5-9-517]**

Elevators shall be designed as follows:

A. Elevator cabs, the interiors of which are not completely visible when the door is open from a point centered on and 36 inches away from the door, shall have shatter resistant mirrors or other equally reflective material so placed as to make visible the entire elevator cab from this point. The elevator cab shall be illuminated at all times with a minimum maintained 2 foot-candles of light at floor level. *(Ref. plans, elevations, and applicable notes and/or details or note: This provision is not applicable as interior is completely visible per specification above-*
N/A }

B. Elevator emergency stop buttons shall be so installed and connected as to activate the elevator alarm when utilized.

A **(*) EMERGENCY ACCESS [Ref. IMC Section 5-9-519]**

Private roads and parking areas or parking facilities when controlled by unmanned automated parking gates shall provide for police emergency access, at all individual gates, both ingress and egress, utilizing an approved radio controlled entry system and approved key switch device to be installed and designed as follows:

A. **[P]** The key switch control shall be installed at a height of 42 inches from finished driveway grade and a minimum of 15 feet from the entry/exit gate, and be located on the driver's side of the road or driveway.

The key switch is to be accessible in such a manner as to not require a person to exit their vehicle to reach it; nor to require any back-up movements in order to enter/exit the gate. The key switch may be installed within a visitor telephone/intercom call box if meeting the above criteria. The control housing shall consist of heavy gauge metal, and be vandal- and weather-resistant and be mounted on a substantial structure such as a steel post, concrete, or masonry pedestal.

B. Key switches shall be secured to the control housing, telephone/intercom call box, or parking ticket dispenser utilizing tamper resistant screws.

C. Except for any open surface parking lot with less than 100 spaces, a radio controlled entry system shall be installed per City specifications.

D. **[P]** Vehicle gates shall be designed to open in a power failure. *{Ref. plans, elevations, and applicable notes and/or details-*
See sheet A52.1 }

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMPSON No. C-31801 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE:
SHEET NUMBER: GEN-0.3
SHEET TITLE: A

NON-RESIDENTIAL SECURITY CODE FORM

CITY OF IRVINE
BUILDING & SAFETY DIVISION

B
A

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK 00954071-PARK

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

THIS PROJECT SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

FEDERAL:
AMERICANS WITH DISABILITIES ACT (ADA)

ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG)

STATE OF CALIFORNIA PARTIAL LIST OF APPLICABLE CODES AS OF JAN 1, 2020

2022 BUILDING STANDARDS ADMINISTRATIVE CODE
CALIFORNIA CODE OF REGULATIONS (CCR) PART 1, TITLE 24 C.C.R.

2022 CALIFORNIA BUILDING CODE (CBC)
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 2
(2018 INTERNATIONAL BUILDING CODE WITH THE INTERNATIONAL CODE COUNCIL WITH CALIFORNIA AMENDMENTS)

2022 CALIFORNIA ELECTRICAL CODE (CEC)
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 3
(2018 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA)

2022 CALIFORNIA MECHANICAL CODE
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 4
(2018 UNIFORM MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)

2019 CALIFORNIA PLUMBING CODE
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 5
(2018 UNIFORM PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF THE PLUMBING AND MECHANICAL OFFICIALS, IAPMO)

2022 CALIFORNIA ENERGY CODE
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 6

2022 CALIFORNIA FIRE CODE
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 9
(2018 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN CODE)
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 11

2022 CALIFORNIA REFERENCED STANDARDS CODE
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, PART 12

PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 19

PARTIAL LIST OF APPLICABLE STANDARDS:

2022 BUILDING CODE (FOR SFM) REFERENCED STANDARDS CHAPTER 35

NFPA 13	AUTOMATIC SPRINKLER SYSTEM	2022 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2021 EDITION
NFPA 17A	WET CHEMICAL SYSTEMS	2021 EDITION
NFPA 72	NATIONAL FIRE ALARM AND SIGNAL CODE (CALIFORNIA AMENDED. SEE UL STANDARD 1971 FOR "VISUAL DEVICES)	2022 EDITION
NFPA 80	FIRE DOORS AND OTHER OPENING PROTECTIVES	2016 EDITION
NFPA 2001	CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	2018 EDITION
UL 464	AUDIBLE SIGNAL APPLIANCES	2023 EDITION
UL 521	HEAT DETECTORS FOR FIRE PROTECTION SIGNAL SYSTEMS	1999 EDITION

CITY OF IRVINE MUNICIPAL CODES

ORANGE COUNTY FIRE AUTHORITY'S FIRE MASTER PLANS FOR COMMERCIAL & RESIDENTIAL DEVELOPMENT - GUIDELINE B-01

APPLICABLE CODES

CITY OF IRVINE BUILDING & SAFETY
COMMUNITY DEVELOPMENT
1 CIVIC CENTER PLAZA
IRVINE, CA 92606
P: 949.724.6470

ORANGE COUNTY FIRE AUTHORITY
1 FIRE AUTHORITY ROAD
IRVINE, CA 92602
P: 714.573.6000

GOVERNING AGENCIES

PROJECT DIRECTORY

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IRVINE, CA 92606
CONTACT: TIMOTHY CALLAHAN
tcallahan@cityofirvine.org

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SVA ARCHITECTS
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CONTACT: DOUG BROWN
dbrown@sva-architects.com

CIVIL
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157 TECHNOLOGY DRIVE
IRVINE, CA 92618
CONTACT: VOJTA SAFRANEK
vsafranek@hunsaker.com

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IRVINE, CA 92618
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515 SOUTH FIGUEROA STREET
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LOS ANGELES, CA 90071
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IRVINE, CA 92618
CONTACT: JEFF MIXER / RICK BRYSACZ
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IRVINE, CA 92618
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daryl.ballou@wsp.com

PHOTOVOLTAIC
WSP
15231 LAGUNA CANYON ROAD, SUITE 100
IRVINE, CA 92618
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jessica.kendrick@wsp.com

DRY UTILITY
MORROW MANAGEMENT
1130 VIA CALLEJON
SAN CLEMENTE, CA 92673
CONTACT: HEATHER MALONEY
heather@morrowmgmt.com

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(FOR REFERENCE ONLY)

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	DATE	DESCRIPTION		DATE	DESCRIPTION

LOG OF DRAWINGS - CONSTRUCTION PHASE

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
BID SET - 11/21/2025

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-31901
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE

PROJECT NO: 2023-40108
DATE ISSUED: NOV 21, 2025
SCALE:
SHEET NUMBER: GEN-1
SHEET TITLE:

PROJECT INFORMATION & SHEET INDEX

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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PLAN CHECK 00954071-PARK

Memo

To: Joel Belanger, PE, CASp, Senior Plan Check Engineer
From: Ken Graves, Great Park Maintenance Supervisor
Date: September 18, 2025
Re: **Building Occupancy and Use Clarification**

The Great Park Project Management Team is assisting the Great Park Maintenance and Community Services Great Park Teams with design and delivery of a new facility at the northwest corner of Skyhawk and Great Park Boulevard to support ongoing operations throughout the Great Park.

This development will consist of construction of an administrative office building, covered yard and work area for the maintenance and storage of equipment and work vehicles, and gated open yard space for the storage of materials and for fueling and washing equipment and vehicles. The existing site will be reconfigured to allow for the facility construction and to accommodate additional staff parking and emergency vehicle access.

Though a front desk area within the administrative building will be available to the general public and any visiting contractors, the facility will be gated and locked, making it otherwise limited to use by the appropriate City and contract employee staff and their vehicles. At any given time, the true maximum occupancy of the facility is expected to be limited to 50 individuals or less.

Signature:
Email: kgraves@cityofirvine.org

AREAS

OFFICE VOLUME - CONDITIONED

101	HALLWAY	B	321 SF
102	HOTELING AREA	B	169 SF
103	OFFICE	B	136 SF
104	CONFERENCE	B	153 SF
105	GNRR	B	67 SF
106	STORAGE / CUSTODIAN	B	73 SF
107	BREAK AREA	B	84 SF
108	LOCKER ROOM	B	82 SF
109	ELEC RM	B	133 SF
110	IT CLOSET	B	34 SF
TOTAL			1,251 SF

MAINTENANCE VOLUME

111	LANDSCAPE MECH SHOP	S-1	914 SF
112	BREAK RM	S-1	419 SF
113	MAINTENANCE	S-1	1,524 SF
114	COMMUNITY SERVICE STORAGE	S-1	2,000 SF
116	GNRR	S-1	89 SF
117	GNRR	S-1	77 SF
118	STORAGE / CUSTODIAN	S-1	42 SF
TOTAL			5,066 SF

CANOPY - EXTERIOR

120	WASH AREA	U	629 SF
127	FUEL AREA	S-1	538 SF
129	COVERED YARD	S-1	9,553 SF
131	EM.SHOWER	S-1	60 SF
TOTAL			10,780 SF

UNCOVERED - EXTERIOR

115	MECH.	S-2	174 SF
119	PALLET AREA	S-2	600 SF
121	TRASH/RECYCLE	S-2	3,507 SF
122	BUNKER	S-2	236 SF
123	BUNKER	S-2	236 SF
124	BUNKER	S-2	236 SF
125	BUNKER	S-2	236 SF
126	BUNKER	S-2	239 SF
128	YARD 128	U	4,232 SF
130	YARD 130	U	12,295 SF
TOTAL			21,991 SF

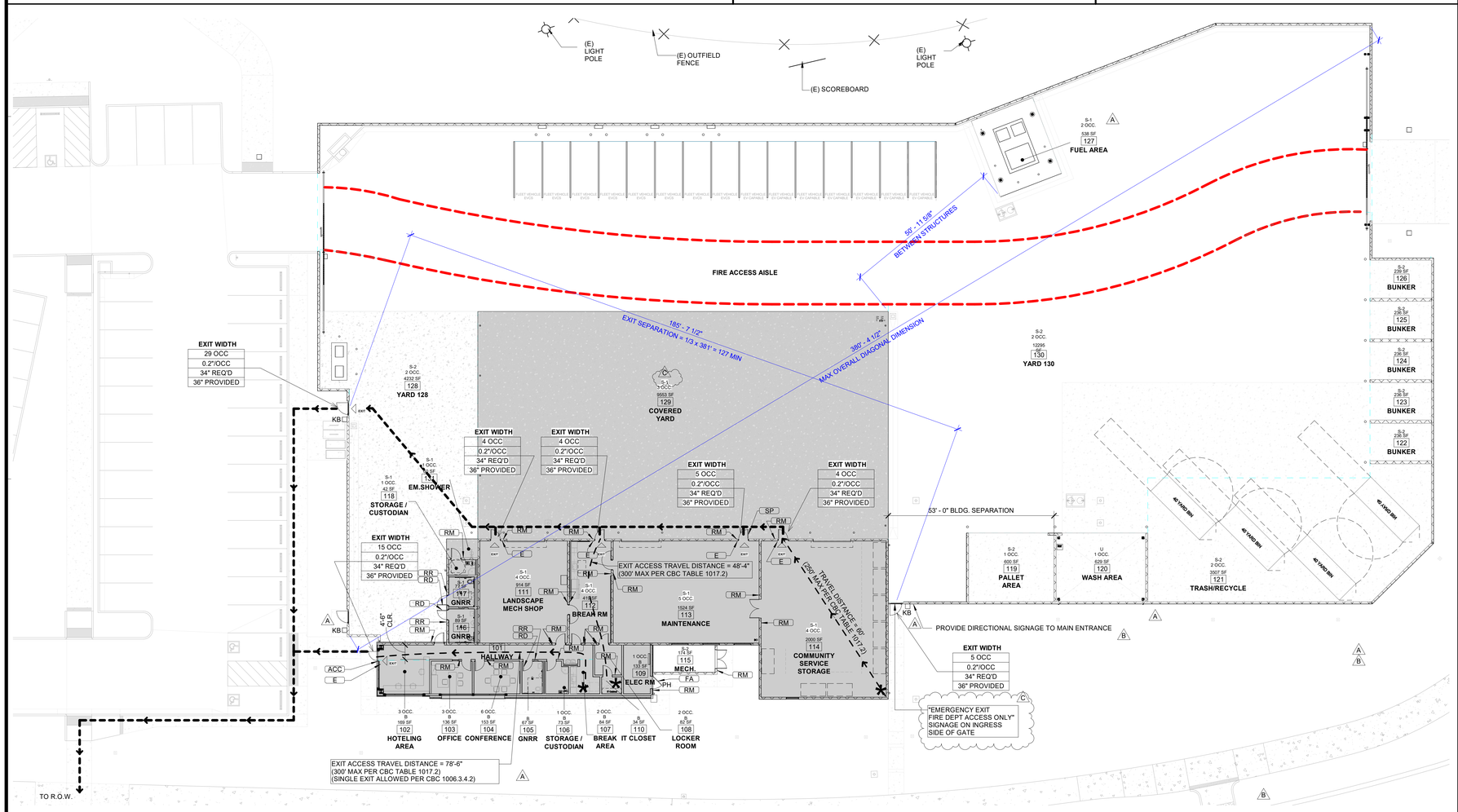
OCCUPANT LOAD

#	NAME	OCCUPANCY	AREA	OCCUPANTS
COVERED				
101	HALLWAY	B	321 SF	0
102	HOTELING AREA	B	169 SF	3
103	OFFICE	B	136 SF	3
104	CONFERENCE *	B	153 SF	6
105	GNRR	B	67 SF	0
106	STORAGE / CUSTODIAN **	B	73 SF	1
107	BREAK AREA *	B	84 SF	2
108	LOCKER ROOM	B	82 SF	2
109	ELEC RM **	B	133 SF	2
110	IT CLOSET **	B	34 SF	-
111	LANDSCAPE MECH SHOP	S-1	914 SF	4
112	BREAK RM *	S-1	419 SF	4
113	MAINTENANCE	S-1	1,524 SF	5
114	COMMUNITY SERVICE STORAGE	S-1	2,000 SF	4
116	GNRR	S-1	89 SF	0
117	GNRR	S-1	77 SF	0
118	STORAGE / CUSTODIAN **	S-1	42 SF	1
120	WASH AREA	U	629 SF	1
127	FUEL AREA	S-1	538 SF	2
129	COVERED YARD	S-1	9,553 SF	3
131	EM.SHOWER	S-1	60 SF	0
UNCOVERED				
115	MECH.	S-2	174 SF	0
119	PALLET AREA	S-2	600 SF	1
121	TRASH/RECYCLE	S-2	3,507 SF	2
122	BUNKER	S-2	236 SF	0
123	BUNKER	S-2	236 SF	0
124	BUNKER	S-2	236 SF	0
125	BUNKER	S-2	236 SF	0
126	BUNKER	S-2	239 SF	0
128	YARD 128	U	4,232 SF	2
130	YARD 130	U	12,295 SF	2
TOTAL			39,089 SF	50 OCC.***

* PER CBC 303.1.2, CONFERENCE ROOM AND BREAK ROOMS ARE CLASSIFIED AS THE OCCUPANCIES TO WHICH THEY ARE ACCESSORY.

** PER CBC 311.1.1, A STORAGE ROOM ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS THAT OCCUPANCY.

*** PER CBC 1004.5, BUILDING OFFICIAL HAS APPROVED USE OF ACTUAL NUMBER OF OCCUPANTS PER OWNER -- SEE MEMO ON LEFT SIDE OF THIS SHEET.



EXITING PLAN

1/16" = 1'-0"

1

AREA & HEIGHT AT MAIN BUILDING AREA

PER CBC TABLES 504.3 & 506.2
CBC 508.3 FOR NON-SEPARATED OCCUPANCIES

OCCUPANCY	HEIGHT	AREA *
OFFICE VOLUME (B)	22'-4 3/4" (22'-5")	1,251 SF
MAINTENANCE VOLUME (S-1)	20'-8 1/2"	5,066 SF
CANOPY (COVERED YARD) (S-1)	16'-2 3/4"	9,553 SF
NONSEPARATED MIXED OCC. **'B' OCC. / TYPE V-B SPRINKLERED (1-STORY)**	**22'-5" PROPOSED** / 60' ALLOWED PER CBC TABLE 504.3	**15,870 SF PROPOSED** / 36,000 SF ALLOWED PER CBC TABLE 506.2

AREA & HEIGHT AT WASH AREA

PER CBC TABLES 504.3 & 506.2
CBC 508.3 FOR NON-SEPARATED OCCUPANCIES

OCCUPANCY	HEIGHT	AREA *
WASH AREA (U) / TYPE V-B NOT SPRINKLERED (1-STORY)	**10'-3" PROPOSED** / 40' ALLOWED PER CBC TABLE 504.3	**629 SF PROPOSED** / 5,500 SF ALLOWED PER CBC TABLE 506.2

* SEE 'AREAS' TABULATION ON LEFT

FUEL AREA (UNENCLOSED / CANOPY ONLY)

PER CBC TABLES 504.3 & 506.2 AND CFC 2306.2.3

TYPE V-B / NOT SPRINKLERED S-1 OCCUPANCY	**15'-0"** TBD / 40' ALLOWED PER CBC TABLE 504.3	**538 SF** / 9,000 SF ALLOWED PER CBC TABLE 506.2

TANK TYPE: PROTECTED ABOVE-GROUND TANK (SINGLE TANK *SPLIT INTERNALLY* FOR GASOLINE AND DIESEL)	**REQUIRED**	**PROVIDED**
TANK CAPACITY	< 6,000 GALLONS	500 GALLONS GASOLINE 500 GALLONS DIESEL
MINIMUM DISTANCE FROM NEAREST IMPORTANT BUILDING ON SAME PROPERTY	5 FEET	49'-1"
MINIMUM DISTANCE FROM NEAREST FUEL DISPENSER	25 FEET	N/A (SINGLE TANK)
MINIMUM DISTANCE FROM LOT LINE / OPPOSITE SIDE OF PUBLIC WAY	15 FEET	33'-11" +/-
MINIMUM DISTANCE FROM NEAREST SIDE OF ANY PUBLIC WAY	5 FEET	175'-6" +/-
MINIMUM DISTANCE BETWEEN TANKS	3 FEET	N/A (SINGLE TANK)

FIRE-RESISTIVE REQUIREMENTS - TYPE V-B

PER CBC TABLE 601

ELEMENT	RATING	NOTES
PRIMARY STRUCTURAL FRAME	0 HR	
BEARING WALLS - EXTERIOR	0 HR	
BEARING WALLS - INTERIOR	0 HR	
NON-BEARING WALLS - EXTERIOR	-	EXT. WALLS ALL BEARING
NON-BEARING WALLS - INTERIOR	0 HR	
FLOOR CONSTRUCTION	-	SLAB ON GRADE
ROOF/CEILING ASSEMBLIES	0 HR	
ROOFING	0 HR	CLASS 'A'

FIRE SPRINKLER REQUIREMENTS

MAIN BUILDING & COVERED YARD:
SPRINKLERED PER CBC SECTIONS 903.2.9 AND NFPA 13.

AT WASH AREA & FUEL AREA:
SPRINKLERS NOT REQUIRED PER CBC SECTION 903.2.9 - AREAS DO NOT QUALIFY.

CODE ANALYSIS

OCCUPANCY TYPE	NUMBER OF OCCUPANTS	WATER CLOSETS	URINALS	LAVATORY	DRINKING FOUNTAIN
B / S-1	25 MALE 25 FEMALE	MALE: 1 REQ'D FEMALE: 2 REQ'D	MALE: 1 REQ'D	MALE: 1 REQ'D FEMALE: 1 REQ'D	1 REQ'D
		3 PROPOSED*	3 PROPOSED*	3 PROPOSED*	1 DRINKING FOUNTAIN + BOTTLE FILLING STATION COMBO UNIT PROPOSED

* IN 3 SINGLE-USER GENDER-NEUTRAL RESTROOMS PER CPC 422.2 EXCEPTION 3. (CALCULATION ASSUMES ALL OCCUPANTS TO BE OCCUPANCY TYPE 'B' (MORE STRINGENT THAN 'S-1')

PLUMBING FIXTURE CALCULATION

PER CBC TABLE 2902.1 & CPC TABLE 422.1

NO.	DESCRIPTION	SHT.
E	TACTILE EXIT SIGN	7 / GEN-5
ACC	ACCESSIBLE ENTRY SIGN	6 / GEN-5
RM	TACTILE ROOM IDENTIFICATION SIGN	5 / GEN-5
RR	RESTROOM SIGN - GENDER-NEUTRAL	2 / GEN-5
RD	RESTROOM DOOR SIGNAGE - GENDER-NEUTRAL	3 / GEN-5
SP	SPRINKLER RISER ROOM SIGN	11 / GEN-5
FA	FIRE ALARM CONTROL PANEL SIGN	8 / GEN-5

SIGNAGE LEGEND

- * — MOST REMOTE POINT
- — — — EXIT PATH
- KB — KNOX BOX. REFER TO SHEETS FMP1, FMP2 FOR FIRE DEPARTMENT REQUIREMENTS.
- PH — PANIC HARDWARE ON DOOR, REFER TO A61.1 DOOR SCHEDULE
- CONCRETE MASONRY UNIT (CMU) WALL PER SHEET A61.1
- METAL STUD WALL PER SHEET A61.1
- SPRINKLERED AREA
- EXIT — EXITING TAG SHOWING EXIT DIRECTION. PROVIDE ILLUMINATED EXIT SIGN ABOVE EXIT

EXITING PLAN LEGEND

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMARD Exp. 5-1-2027 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated
SHEET NUMBER: GEN-2
SHEET TITLE:

CODE ANALYSIS, EXITING & SIGNAGE PLANS

CITY OF IRVINE BUILDING & SAFETY DIVISION

SVA ARCHITECTS

6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK 00954071-PARK

1. SITE DEVELOPMENT

A. GRADE AND DEVELOP SITE SUCH THAT ALL PRIMARY BUILDING ENTRANCES ARE ACCESSIBLE TO THE PHYSICALLY DISABLED FROM THE PUBLIC WAY AND DISABLED PARKING PROVIDED.

B. ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, FACILITIES AND SPACES ON THE SAME SITE. WHERE MORE THAN ONE ROUTE IS PROVIDED, ALL ROUTES SHALL BE ACCESSIBLE

C. IF AN ACCESSIBLE ROUTE HAS A CHANGE IN LEVEL GREATER THAN 1/2", THEN A CURB RAMP, RAMP, ELEVATOR, OR PLATFORM LIFT SHALL BE PROVIDED.

D. ALL WALKS, HALLS, CORRIDORS, AISLES, AND OTHER SPACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL PROVIDE A MINIMUM CLEAR WIDTH OF 48 INCHES AND A CLEAR HEIGHT OF 80 INCHES.

2. WALKS AND SIDEWALKS

A. WALKS AND SIDEWALKS SUBJECT TO THESE REGULATIONS SHALL HAVE A CONTINUOUS COMMON SURFACE, NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2", AND SHALL BE A MINIMUM OF 48 INCHES IN WIDTH.

B. SURFACES WITH A SLOPE OF LESS THAN 6 PERCENT GRADIENT SHALL BE AS SLIP-RESISTANT.

C. SURFACES WITH A SLOPE OF 6 PERCENT GRADIENT OR GREATER SHALL BE SLIP-RESISTANT.

D. SURFACE CROSS SLOPES SHALL NOT EXCEED 1:48 (CBC 11B-403.3).

E. WALKS, SIDEWALKS AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHENEVER POSSIBLE. GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN THE GRATING SHALL BE LIMITED TO 1/2" IN THE DIRECTION OF TRAFFIC FLOW.

F. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE SHALL NOT EXCEED 1/2". WHEN CHANGES DO OCCUR, THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2 EXCEPT THAT LEVELS NOT EXCEEDING 1/4" MAY BE VERTICAL.

G. WHEN CHANGES IN LEVELS GREATER THAN 1/2" ARE NECESSARY THEY SHALL COMPLY WITH THE REQUIREMENTS FOR CURB RAMPS OR RAMPS AS REQUIRED.

H. WALKS SHALL BE PROVIDED WITH A LEVEL AREA NOT LESS THAN 60" SQUARE AT A DOOR OR GATE THAT SWINGS TOWARD THE WALK, AND NOT LESS THAN 48" WIDE BY 44" DEEP AT A DOOR OR GATE THAT SWINGS AWAY FROM THE WALK. SUCH WALKS SHALL EXTEND 24" TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARD THE WALK.

J. WHEN THE SLOPE IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 5%, IT MUST COMPLY WITH THE PROVISIONS FOR PEDESTRIAN RAMPS (PER CBC 11B-405).

K. ALL WALKS WITH CONTINUOUS GRADIENTS SHALL HAVE LEVEL AREAS AT LEAST 5 FEET IN LENGTH AT INTERVALS NOT EXCEEDING 400 FEET.

3. ENTRANCES AND DOORWAYS

A. PRIMARY ENTRANCES TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO THE DISABLED.

B. NOT USED.

C. ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE "ISA" SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS AS REQUIRED VISIBLE FROM APPROACHING PEDESTRIAN WAYS.

D. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND ARE IN THE PATH OF TRAVEL, SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.

E. HAND ACTIVATED DOOR HARDWARE SHALL BE CENTERED BETWEEN 34" AND 44" ABOVE THE FLOOR (CBC 11B-404.2.7).

F. THE FLOOR OR LANDING ON EACH SIDE OF AN ENTRANCE OR PASSAGE DOOR SHALL BE LEVEL AND CLEAR. THE LEVEL AND CLEAR AREA SHALL BE A MINIMUM 60" SQUARE IN THE DIRECTION OF THE DOOR SWING AND A MINIMUM 44" SQUARE OPPOSITE THE DIRECTION OF DOOR SWING (48" IF THE DOOR HAS BOTH LATCH AND CLOSER). THE SQUARES SHALL BE MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN ITS CLOSED POSITION. SEE NOTE I BELOW FOR STRIKE SIDE REQUIREMENTS.

G. NOT USED.

H. THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS AND THE PRIMARY ENTRANCE TO THE DWELLING UNIT.

I. THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED NO GREATER THAN 1:2.

J. THE BOTTOM 10 INCHES OF ALL DOORS EXCEPT SLIDING AND POCKET DOORS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.

K. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS FOR EXTERIOR DOORS AND 5 LBS FOR INTERIOR DOORS, SUCH PULL OR PUSH EFFORT SHALL BE APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. THE AUTHORITY HAVING JURISDICTION MAY INCREASE THE MAXIMUM EFFORT TO OPERATE FIRE DOORS TO ACHIEVE POSITIVE LATCHING, BUT NOT TO EXCEED 15 LBS MAX.

L. EXIT DOORS MUST OPEN FROM THE INSIDE WITHOUT A KEY, OR ANY SPECIAL KNOWLEDGE OR EFFORT. EXIT DOORS FROM BUILDINGS OR ROOMS SERVING 10 OR FEWER OCCUPANTS MAY HAVE A NIGHT LATCH, DEADBOLT OR SECURITY CHAIN, AS LONG AS THE DOORS CAN STILL BE OPENED FROM THE INSIDE WITHOUT A KEY, SPECIAL KNOWLEDGE OR EFFORT. IN ADDITION, THESE DEVICES ARE NOT MOUNTED MORE THAN 48" ABOVE THE FLOOR. MANUALLY OPERATED EDGE BOLTS, SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. WHEN EXIT DOORS ARE USED IN PAIRS AND AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF WITH THE FLUSH BOLT MUST HAVE NO DOORKNOB OR SURFACE MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF MUST NOT REQUIRE MORE THAN ONE OPERATION.

M. EVERY REQUIRED EXIT MUST BE LARGE ENOUGH TO PERMIT A DOOR AT LEAST 3'-0" WIDE BY 6'-8" HIGH. EXIT DOORS SHALL OPEN AT LEAST 90 DEGREES AND PROVIDE A CLEAR WIDTH OF AT LEAST 32".

N. THRESHOLDS AT EXTERIOR DOORS OTHER THAN PRIMARY ENTRANCES SHALL BE NO HIGHER THAN 1/2". SUCH THRESHOLDS SHALL BE BEVELED NO GREATER THAN 1:2.

O. THE FLOOR LANDING IMMEDIATELY OUTSIDE THE ENTRY MAY BE SLOPED UP TO 1/8" PER FOOT IN THE DIRECTION AWAY FROM THE PRIMARY ENTRANCE FOR DRAINAGE.

P. THE SPACE BETWEEN TWO CONSECUTIVE DOOR OPENINGS IN A VESTIBULE, SERVING OTHER THAN A REQUIRED EXIT STAIRWAY, MUST HAVE AT LEAST 48" OF CLEAR SPACE FROM ANY DOOR OPENING INTO THE VESTIBULE WHEN THE DOOR IS OPEN 90 DEGREES FROM ITS CLOSED POSITION. DOORS IN SERIES MUST SWING IN THE SAME DIRECTION OR AWAY FROM THE SPACE BETWEEN THE DOORS.

4. SANITARY FACILITIES

A. WHEELCHAIR ACCESSIBLE WATER CLOSET COMPARTMENTS SHALL BE EQUIPPED WITH A DOOR THAT HAS AN AUTOMATIC CLOSING DEVICE, AND SHALL HAVE A CLEAR UNOBSTRUCTED OPENING WIDTH OF 32-INCHES WHEN LOCATED AT THE END AND 34-INCHES WHEN LOCATED AT THE SIDE WITH THE DOOR POSITION AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.

B. TOILET FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS, NO MORE THAN 44-INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT.

C. WHERE URINALS ARE PROVIDED AT LEAST ONE WITH A RIM PROJECTING A MINIMUM OF 14-INCHES FROM THE WALL AND AT A MAXIMUM OF 17-INCHES ABOVE THE FLOOR SHALL BE PROVIDED.

D. URINAL FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST AND SHALL BE MOUNTED NO MORE THAN 44" ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT.

E. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED.

F. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT. LEVER OPERATED, PUSH TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.

G. MIRRORS SHALL BE MOUNTED WITH THE BOTTOM GLASS EDGE NOT MORE THAN 40-INCHES ABOVE THE FLOOR.

H. LOCATE TOWEL, SANITARY NAPKIN, AND WASTE RECEPTACLES WITH ALL OPERABLE PARTS NOT MORE THAN 40-INCHES FROM THE FLOOR.

I. TOILET TISSUE DISPENSERS SHALL BE LOCATED ON THE WALL OR PARTITION WITHIN 7" TO 9" TO CENTERLINE FROM THE FRONT EDGE OF THE TOILET SEAT, MOUNTED BELOW THE GRAB BAR, AT A MINIMUM HEIGHT OF 19 INCHES, AND 36 INCHES MAXIMUM TO THE FAR EDGE FROM THE REAR WALL. DISPENSERS SHALL PERMIT CONTINUOUS FLOW AND NOT CONTROL DELIVERY (CBC 11B-604.7).

J. GRAB BARS, TUB AND SHOWER SEATS, FASTENERS AND MOUNTING DEVICES SHALL BE DESIGNED FOR 250 LB. PER LINEAR FOOT LOAD.

K. GRAB BARS:
1. THE DIAMETER OR WIDTH OF THE GRIPPING SURFACE OF A GRAB BAR SHALL BE 1-1/4" TO 1-1/2" OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE.
2. IF THE GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BARS SHALL BE 1-1/2".
3. A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS.
4. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
5. EDGES SHALL HAVE A MINIMUM RADIUS OF 1/8".

5. DRINKING FOUNTAINS:

A. ON ANY FLOOR WHERE DRINKING FOUNTAINS ARE PROVIDED, THERE SHALL BE A DRINKING FOUNTAIN THAT IS ACCESSIBLE TO INDIVIDUALS WHO USE WHEELCHAIRS AND ONE ACCESSIBLE TO THOSE WHO HAVE DIFFICULTY BENDING OR STOOPING ("HI-LO" FOUNTAIN) PER CBC 11B-211.2) WHERE MORE THAN ONE IS PROVIDED ON A FLOOR, 50% SHALL COMPLY WITH THESE REQUIREMENTS.(CBC 11B-211.3)

B. THE DRINKING FOUNTAIN SHALL BE A MINIMUM OF 18 INCHES AND A MAXIMUM OF 19 INCHES IN DEPTH AND THERE SHALL BE A CLEAR AND UNOBSTRUCTED KNEE SPACE UNDER THE DRINKING FOUNTAIN NOT LESS THAN 27 INCHES IN HEIGHT, 30 INCHES IN WIDTH, AND 8 INCHES IN DEPTH, THE DEPTH MEASUREMENT BEING TAKEN FROM THE FRONT EDGE OF THE FOUNTAIN. ADDITIONALLY THERE SHALL BE TOE CLEARANCE OF 9 INCHES IN HEIGHT ABOVE THE FLOOR, AND 17 INCHES IN DEPTH FROM THE FRONT EDGE OF THE FOUNTAIN. A SIDE APPROACH DRINKING FOUNTAIN IS NOT ACCEPTABLE.

C. THE BUBBLER SHALL BE ACTIVATED BY A CONTROL WHICH IS EASILY OPERATED BY A DISABLED PERSON SUCH AS A HAND-OPERATED LEVER TYPE LOCATED WITHIN 5 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN. THE BUBBLER OUTLET ORIFICE SHALL BE LOCATED WITHIN 6 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN AND SHALL BE WITHIN 36 INCHES OF THE FLOOR. THE WATER STREAM FROM THE BUBBLER SHALL BE SUBSTANTIALLY PARALLEL TO THE FRONT EDGE OF THE DRINKING FOUNTAIN. THE SPOUT SHALL PROVIDE A FLOW OF WATER THAT IS AT LEAST 4 INCHES HIGH SO AS TO ALLOW THE INSERTION OF A CUP OR GLASS UNDER THE FLOW OF WATER. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NO GREATER THAN 5 LB.

6. SWITCHES CONTROLS AND ELECTRICAL OUTLETS

A. RECEPTACLE OUTLETS SHALL BE 15" MIN ABOVE THE FINISHED FLOOR TO THE BOTTOM OF THE BOX PER CBC 11B-308.1.1.

B. SWITCHES SHALL BE 48" MAX. ABOVE THE FINISHED FLOOR TO THE TOP OF THE BOX (11B-308.1.2).

C. IF REACH IS OVER AN OBSTRUCTION (FOR EXAMPLE, A BASE CABINET) BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH, OR 46" FOR SIDE APPROACH PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. THE OBSTRUCTION MAY NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH THE CONTROL.

D. THE CENTER OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48" ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE OR SIDEWALK.

E. IF EMERGENCY WARNING SYSTEMS ARE REQUIRED THEY SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

ACCESSIBILITY NOTES

City of Irvine
Construction Site Security Requirements

General Requirements

Municipal Code Section 5-9-521.B

This checklist outlines the General Requirements for construction site security per the City of Irvine Construction Site Security Ordinance. The checklist is intended for use with plan check submittals and for field verification of security features. For plan check submittals, this checklist is to be copied on a site plan sheet or in the General Notes section.

For residential projects with 25 dwelling units or more or non-residential projects with 50,000 square feet or more, a Security Plan is also required in addition to these General requirements (Municipal Code Section 5-9-521.C). A separate guideline is available outlining Security Plan requirements. When a Security Plan is required, this checklist is to be placed on the required Security Plan.

Perimeter Fencing, Gates and Locks — Check Box

1. The number of access points onto the site shall be minimized and, where feasible, situated in locations that are highly visible from an adjacent street. ☐
2. Fencing shall be installed around the site perimeter adjacent to streets. ☐
   a. Fencing shall be a minimum 6' high with green 94% minimum blackout heavy-duty plastic screening. ☐
   b. Vehicle and pedestrian gates shall not be covered. ☐
   c. Fencing shall not be covered for 20 feet on each side of gates. ☐
3. Vehicle and pedestrian gates and openings shall have gates secured after hours of operation. ☐
   a. Padlocks used for securing gates shall be designed to prohibit cutting of shackle. ☐
   b. Locking gates shall be secured with minimum 3/8 inch thick, 30 grade coil chain, or minimum 5/16 inch cable. ☐

Note: Perimeter fencing may be removed when there is no longer outside storage of building materials or building fixtures and when there are no remaining exterior construction activities requiring separation of non-construction related personnel and public from exterior construction activity.

Signage

1. Address signs shall be posted at all vehicle entrances listing street name and number using letters and numbers at least 6 inches in height. ☐
2. "No Trespassing" signs, listing California Penal Code Section 602, installed at all perimeter access points. ☐
3. Signs with a 24-hour emergency phone number for a person who can respond to site shall be posted at the main entrance gate and on the exterior of the on-site office trailer or building. ☐
4. All signs to be posted a minimum of 5 feet from ground level. ☐

Construction Site Security Checklist
Page 2

Site Lighting

1. The following locations shall be illuminated during hours of darkness: ☐
   a. Vehicle gate locations. ☐
   b. All open centralized storage areas for building materials or building fixtures. ☐
   c. Trailers, temporary buildings, or containers used as an office or storage for building materials or fixtures. ☐
2. Minimum light level at required locations is one foot-candle at the ground for a 15 foot radius. A Photometric plan is not required. ☐
3. Light fixtures shall be installed a minimum 18 feet high, with tempered or polycarbonate lens approved for wet locations (U.L. Bulletin 1572). ☐
4. Where required lighting would affect occupied residential properties: ☐
   a. Motion sensors can be used to control light fixtures. ☐
   b. Elements may be modified or not required when first approved by the Chief Building Official or Chief of Police. ☐
5. For Projects requiring a Security Plan, submit an informational sheet (cutsheet) for security light fixtures. ☐

Office Trailers and Temporary Buildings

1. Doors shall have a deadbolt lock and an auxiliary locking device using a slide bolt or hasp, with a protective device to prohibit cutting of the padlock. ☐
   a. Bolt or hasp attached with non-removable bolts from the exterior and padlock with a minimum ½ inch thick shackle with heel and toe locking. ☐
2. Windows shall be secured with either:
   a. Steel bars, minimum ½ round or one-inch by ¼ inch flat, spaced not more than 5 inches apart, secured with bolts that are non-removable from the exterior; or, ☐
   b. Steel grate mesh, minimum 1/8 inch thick, securely attached using a means resistant to removal from the exterior. ☐

Storage Containers (with at least 64 square feet of storage area)

1. Doors shall be secured using a hasp or slide bolt with a protective device to prohibit cutting of the padlock, and attached with non-removable bolts from the exterior. ☐
   a. Padlocks shall have a minimum ½ inch thick shackle with heel and toe locking. ☐
2. Exterior hinge pins shall be rendered non-removable by design or welding. ☐

Motorized Equipment

1. Forklifts shall be rendered inoperable when the hours of operation are ceased, making them unable to start, operate or move. Removing forks and securing them satisfies this requirement. ☐
2. An onsite record shall be maintained for all motorized equipment with a minimum 15 inch wheel diameter listing the equipment manufacturer, model, license plate number, vehicle identification number (VIN), and product identification number (PIN). ☐

CONSTRUCTION SITE SECURITY GENERAL REQUIREMENTS

1. THESE DOCUMENTS AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF SVA ARCHITECTS, AND ARE NOT TO BE USED, IN WHOLE OR IN PART FOR ANOTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF SVA ARCHITECTS.

2. THE WORK SHOWN ON THESE DRAWINGS AS EXISTING CONDITIONS WAS PREPARED FROM INFORMATION FURNISHED BY THE OWNER. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, SVA ARCHITECTS IS NOT RESPONSIBLE FOR THE ACCURACY OR ADEQUACY OF ANY WORK SHOWN AS EXISTING NOR IS SVA ARCHITECTS RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

3. EACH BIDDER SHALL POSSESS AT THE TIME OF BID A CLASS B OR THE APPROPRIATE CLASS C CONTRACTOR'S LICENSE PURSUANT TO PUBLIC CONTRACT CODE SECTION 3300 AND BUSINESS AND PROFESSIONS CODE SECTION 7028.15. THE SUCCESSFUL BIDDER MUST MAINTAIN THE LICENSE THROUGHOUT THE DURATION OF THIS CONTRACT.

4. FIRE SAFETY DURING CONSTRUCTION AND THE DURATION OF THIS CONTRACT:

A. GENERAL: FIRE SAFETY DURING CONSTRUCTION SHALL COMPLY WITH 2016 CALIFORNIA FIRE CODE TITLE 24, PART 9, CHAPTER 33.

B. ACCESS ROADS: FIRE DEPARTMENT ACCESS ROADS SHALL BE ESTABLISHED AND MAINTAINED IN ACCORDANCE WITH SECTION 1410.

C. WATER SUPPLY: WATER MAINS AND HYDRANTS SHALL BE OPERATIONAL IN ACCORDANCE WITH SECTION 1412.

D. BUILDING ACCESS: ACCESS TO BUILDINGS FOR THE PURPOSE OF FIREFIGHTING SHALL BE PROVIDED. CONSTRUCTION MATERIAL SHALL NOT BLOCK ACCESS TO BUILDINGS, HYDRANTS OR FIRE APPLIANCES.

E. ALTERATIONS OF BUILDINGS: SHALL COMPLY WITH APPLICABLE PROVISIONS OF SECTIONS 1405, 1411, 1413, AND 1415.

G. FIRE WATCH: MAINTAIN FIRE WATCH WHEN REQUIRED BY THE BUILDING OFFICIAL AND WHEN EXISTING FIRE PROTECTION SYSTEMS ARE SHUT DOWN FOR ALTERATIONS. FIRE WATCH SHALL REMAIN IN EFFECT UNTIL EXISTING FIRE PROTECTION SYSTEMS ARE RETURNED TO SERVICE OR AS ALLOWED BY THE BUILDING OFFICIAL.

5. PENETRATIONS TO FIRE RATED MATERIALS OR ASSEMBLIES SHALL BE RESTORED TO EQUAL RATING. FIRE STOP SYSTEMS AS LISTED BY UNDERWRITERS LABORATORIES SHALL BE INSTALLED PER FIRE RESISTANCE DIRECTORY. FIRE STOP SYSTEMS SHALL BE AS SPECIFIED.

6. STATEMENT (TITLE 24, PART 6): NONRESIDENTIAL ENERGY STANDARDS COMPLIANCE: THE DESIGN INDICATED HEREIN COMPLIES WITH THE REQUIREMENTS OF THE ENERGY CONSERVATION STANDARDS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THE PROPOSED BUILDING(S) WILL BE IN COMPLIANCE WITH THE ENERGY CONSERVATION STANDARDS PROVIDED IT (THEY) IS (ARE) BUILT ACCORDING TO THESE DRAWINGS AND SPECIFICATIONS AND PROVIDED ANY FUTURE IMPROVEMENTS ARE COMPLETED ACCORDING TO THE REQUIREMENTS OF TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS. THESE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED TO INCLUDE ALL SIGNIFICANT ENERGY CONSERVATION FEATURES REQUIRED FOR COMPLIANCE WITH THE STANDARDS. BUILDING AREAS THAT ARE UNCONDITIONED AND/OR NOT SUBJECT TO THE STANDARDS ARE INDICATED ON THE PLANS.

7. ENVELOPE MANDATORY MEASURES:

A. INSTALLED INSULATING MATERIALS SHALL HAVE BEEN CERTIFIED BY THE MANUFACTURER TO COMPLY WITH THE CALIFORNIA QUALITY STANDARDS FOR INSULATING MATERIAL.

B. ALL INSULATING MATERIALS SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF [TITLE 24, PART 2, CALIFORNIA BUILDING CODE, SECTIONS 719 AND 2603.]

C. ALL EXTERIOR JOINTS AND OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL AND OBSERVABLE SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WEATHERSTRIPPED OR OTHERWISE SEALED.

D. SITE CONSTRUCTED DOORS, AND WINDOWS SHALL BE CAULKED BETWEEN THE UNIT AND THE BUILDING, AND SHALL BE WEATHERSTRIPPED (EXCEPT FOR UNFRAMED GLASS DOORS AND FIRE DOORS).

E. MANUFACTURED DOORS AND WINDOWS INSTALLED SHALL HAVE AIR INFILTRATION RATES CERTIFIED BY THE MANUFACTURER IN ACCORDANCE WITH TITLE 24, PART 6, CALIFORNIA CODE OF REGULATIONS, SECTION 116(a)1.

F. MANUFACTURED FENESTRATION PRODUCTS IN THE ENVELOPE OF THE BUILDING, INCLUDING, BUT NOT LIMITED TO, WINDOWS, SLIDING GLASS DOORS, FRENCH DOORS, SKYLIGHTS, CURTAIN WALLS, AND GARDEN WINDOWS MUST BE LABELED FOR U-VALUE IN ACCORDANCE WITH THE (NFRC) NATIONAL FENESTRATION RATING COUNCIL'S INTERIM U-VALUE RATING PROCEDURE.

G. DEMISING WALL INSULATION SHALL BE INSTALLED IN ALL OPAQUE PORTIONS OF FRAMED WALLS (EXCEPT DOORS).

8. INSPECTOR OF RECORD REQUIREMENTS: A. ONE OR MORE INSPECTORS EMPLOYED BY THE OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS WILL BE ASSIGNED TO THE WORK. THE INSPECTORS DUTIES ARE SPECIFICALLY DEFINED IN SECTION 4-342 OF SAID TITLE 24, PART 1 AND IN ADDITION SHALL BE AS STIPULATED IN INTERPRETATION OF REGULATION DOCUMENT IR A-8. B. INSPECTOR SHALL BE CERTIFIED AS A CLASS [2] INSPECTOR THROUGH THE DIVISION OF THE STATE ARCHITECT INSPECTOR EXAMINATION PROGRAM. INSPECTOR SHALL ALSO BE SPECIFICALLY APPROVED BY THE DIVISION OF THE STATE ARCHITECT FOR THIS PROJECT AT LEAST 10 DAYS PRIOR TO THE START OF ANY WORK FOR THIS PROJECT.

9. ALL WORK SHOWN ON THESE DRAWINGS SHALL COMPLY WITH THE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).

10. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CCD APPROVED BY THE CITY OF IRVINE.

11. GRADING PLANS, DRAINAGE IMPRPOVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIROMENTAL HEALTH CONCIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

12. DRINKING WATER SHALL COMPLY WITH ALL LOCAL HEALTH DEPARTMENT REQUIREMENTS.

13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE CODES. ALL ENGINEERING SHALL COMFORM WITH ALL APPLICABLE MUNICIPAL, STATE AND FEDERAL REGULATIONS HAVING JURISDICTION INCLUDING ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.

14. DO NOT SCALE THE DRAWINGS. THE DRAWINGS ARE NOT NECESSARILY TO SCALE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO BIDDING AND START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION BEFORE COMMENCING WORK.

15. ALL DIMENSIONS ARE TO FACE OF CONCRETE, FACE OF MASONRY UNITS, CENTERLINE OF COLUMNS AND BEAMS, OR FACE OF STUDS, UNLESS OTHERWISE NOTED. FINISH FLOOR ELEVATIONS ARE TO TOP OF CONCRETE SLAB OR TOP OF INTERIOR PAVING UNLESS NOTED OTHERWISE. CEILING HEIGHT DIMENSIONS ARE TO FINISHED SURFACES UNLESS NOTED OTHERWISE.

16. THE CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS ARE COMPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE PROCEEDING WITH INSTALLATION OF CIVIL, STRUCTURAL MECHANICAL, PLUMBING, AND ELECTRICAL WORK. SHOULD THERE BE ANY DISCREPANCIES BETWEEN THE ARCHITECT'S AND THE CONSULTING ENGINEER'S DRAWINGS AND SPECIFICATIONS THAT WOULD CAUSE A CONFLICT, IT SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT.

17. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING ABBREVIATIONS OR THEIR EXACT MEANING, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.

18. DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL SIMILAR CASES UNLES SPECIFICALLY INDICATED OTHERWISE.

19. ALL RUBBISH AND DEBRIS RESULTING FROM DEMOLITION AND/OR NEW WORK SHALL BE DISPOSED OF OFF-SITE AND SHALL NOT BE ALLOWED TO ACCUMULATE.

20. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SECTION 013000 OF SPECIFICATIONS AND AS REQUIRED BY INDIVIDUAL SPECIFICATION SECTIONS.

21. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL. REQUEST FOR SUBSTITUTION SHALL BE IN ACCORDANCE WITH SECTION 016000 OF SPECIFICATIONS.

22. ALL METAL FRAMING MEMBERS SHALL BE SO ARRANGED AND SPACED AS TO PERMIT INSTALLATION OF PIPE CONDUITS AND DUCT-WORK WITH A MINIMUM OF CUTTING. SHAFT WALLS SHALL BE PROVIDED WITH NECESSARY FRAMES, BRACING, AND SEALANT AROUND THE OPENING.

23. OFFSET STUDS WHERE REQUIRED SO THAT FINISH WALL SURFACE WILL BE FLUSH.

24. DOORS IN RATED WALLS SHALL CONSIST OF SELF-CLOSING, SELF-LATCHING ASSEMBLIES WITH SMOKE AND DRAFT SEALS AT HEAD AND JAMBS. DOOR ASSEMBLY RATINGS SHALL BE AS INDICATED ON DOOR AND ACTIVATED BY SMOKE DETECTORS.

25. INSTALL METAL CORNER BEADS AT ALL EXPOSED GYPSUM BOARD EDGES INSTALL CASING BEADS WHEREVER GYPSUM BOARD, PLASTER, ETC. ABUTS DISSIMILAR FINISH MATERIAL AND PROVIDE SEALANT AS REQUIRED.

26. GYPSUM BOARD SHALL EXTEND TO UNDERSIDE OF STRUCTURE ABOVE AT ALL COLUMNS AND EXTERIOR PERIMETER WALLS UNLESS OTHERWISE NOTED. WELD FURRING CHANNELS TO STEEL COLUMN PRIOR TO FIRE PROOFING WHEN REQUIRED.

27. CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES, AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK, STAIR RAILINGS, TOILET ROOM ACCESSORIES AND PARTITIONS, AND OF ALL WALL MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL, OR MISCELLANEOUS EQUIPMENT.

28. ALL GLAZING SHALL COMPLY WITH THE CONSUMER PRODUCT SAFETY COMMISSION REQUIREMENTS (C.P.S.C.), CFC, AND CBC.

29. CONTACT BETWEEN DISSIMILAR METAL SHALL BE PROTECTED.

30. ALL DOOR SIZES SHOWN ON DOOR SCHEDULE ARE OPENING SIZES. ALLOWANCE FOR THRESHOLDS, ETC. SHALL BE TAKEN OFF DOOR. ALL DOORS AND FRAME SHALL BE REINFORCED WHERE REQUIRED FOR CLOSERS, STOPS, AND HARDWARE.

31. ROOFING SYSTEM SHALL BEAR U.L. LISTING AS A CLASS "A" SYSTEM. ALL MANUFACTURED MATERIALS USED SHALL BEAR THE APPROPRIATE U.L. LABEL.

32. ALL WOOD TRIM, SPACER, FILLER, ETC., THROUGHOUT JOB SHOULD BE FIRE TREATED.

33. INSPECTION AND TESTING LABORATORY MUST BE IN THE EMPLOY OF THE OWNER, NOT THE CONTRACTOR.

34. MINIMUM HEADROOM CLEARANCE AT STAIRS SHALL BE 6'-8" MEASURED VERTICALLY FROM A PLANE PARALLEL AND TANGENT TO THE TREAD NOSING TO THE SOFFIT ABOVE AT ALL POINTS.

35. ALL EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE. LOCKING DEVICES SHALL BE OF AN APPROVED TYPE.

36. EXIT SIGNS SHALL HAVE 6" MINIMUM HEIGHT LETTERS AND SHALL CONFORM TO SECTION 1012 OF THE CALIFORNIA BUILDING CODE.

37. FURNISH AND INSTALL ACCESS DOORS, FIRE DAMPERS, ETC. IN CEILING AND WALL CONSTRUCTION LOCATED AS REQUIRED BY INSTALLATION OF MECHANICAL PLUMBING, AND ELECTRICAL WORK AND AS APPROVED BY THE ARCHITECT. PROVIDE RATED ASSEMBLIES IN RATED WALLS AND CEILINGS AND SHALL BE APPROVED BY BUILDING INSPECTOR PRIOR TO INSTALLATION.

38. FURNISH AND INSTALL EMERGENCY LIGHTING AS SPECIFIED AND INDICATED BUT IN NO CASE SHALL THE LIGHT VALUE BE LESS THAN ONE FOOT CANDLE AT FLOOR LEVEL IN ALL EXIT CORRIDORS AND STAIR SHAFTS (CBC SECTION 1006).

39. THERE SHALL BE NO TRENCHES OR EXCAVATIONS 5' OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DECEND UNLESS A PERMIT IS OBTAINED FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE ISSUANCE OF A BUILDING OR GRADING PERMIT.

40. THE CONSTRUCTION OR DEMOLITION OF ANY BUILDING, STRUCTURE, SCAFFOLDING OR FALSEWORK MORE THAN 3 STORIES OR 36' IN HEIGHT REQUIRES A PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.

41. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENINGS WITHIN 18" OF THE ADJACENT FLOOR SHALL BE GLASS APPROVED FOR IMPACT HAZARD.

42. ALL LIGHT GAUGE METAL STUDS AND BRACING SHALL COMPLY WITH 2019 CALIFORNIA BUILDING CODE.

43. INSTALLATION OF SHORING, UNDERPINNING, AND/OR SLOT CUTTING EXCAVATIONS SHALL BE PERFORMED UNDER THE CONTINUOUS INSPECTION AND APPROVAL OF THE GEOTECHNICAL ENGINEER.

44. ALL CONSTRUCTION SHALL PERFORMED IN ACCORDANCE WITH THE STATE CONSTRUCTION SAFETY ORDERS ENFORCED BY THE STATE DIVISION OF INDUSTRIAL SAFETY.

45. DIMENSIONS AND CONDITIONS AT THE JOB SITE SHALL BE VERIFIED BY ALL CONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS TO THE OWNER SINCE PROPOSALS MUST TAKE INTO CONSIDERATION ALL SUCH CONDITIONS THAT MAY AFFECT THE WORK. DISCREPANCIES IN THE DRAWINGS OR BETWEEN THE DRAWINGS AND ACTUAL FIELD CONDITION SHALL BE REPORTED TO THE ARCHITECT. REVISED DRAWINGS OR INSTRUCTIONS SHALL BE ISSUED BY THE OWNER PRIOR TO THE INSTALLATION OF ANY WORK.

46. CONTRACTORS SHALL PROVIDE AND INSTALL ALL CONCRETE HOUSEKEEPING PADS FOR MECHANICAL AND ELECTRICAL EQUIPMENT, AS REQUIRED.

47. ALL GYPSUM WALL BOARD TO BE 5/8" THICK TYPE 'X' UNLESS OTHERWISE NOTED OR REQUIRED FOR SPECIFIC WALL CONSTRUCTION.

48. SUSPENDING CEILING FRAMING SYSTEMS ARE TO BE DESIGNED FOR LATERAL FORCES (CP-0.30 AND WP (MIN) =4SPF) (TABLE 25-A).

49. PROVIDE TEMPERED GLASS AT LOCATIONS REQUIRED BY CBC SECTION 2406 AND BY OTHER APPLICABLE CODE.

50. ROOF DRAINS DISCHARGING WATER MUST BE CONDUCTED UNDER THE SIDEWALK

51. DOORS SHALL NOT PROJECT MORE THAN 7 INCHES INTO THE REQUIRED CORRIDOR WIDTH WHEN FULLY OPENED OR MORE THAN ONE HALF INTO THE REQUIRED WIDTH WHEN IN ANY POSITION. (CBC SECTION 1005.7.1)

52. PUBLIC HALLWAYS AND EXIT COURT PASSAGEWAYS TO HAVE 7'-0" CLEAR HEIGHT TO LOWEST PROJECTION. (CBC SECTION 1005.3)

53. OCCUPANCY LOAD SIGNS SHALL BE POSTED IN EACH WORK AREA, OR SIMILAR PURPOSE ROOM, HAVING AN OCCUPANT LOAD OF 50 OR MORE.

54. DUCT PENETRATIONS THROUGH PROTECTIVE ELEMENTS OF FIRE RATED CORRIDOR WALLS SHALL BE PROTECTED WITH A COMBINATION FIRE SMOKE DAMPERS PER CBC SECTION 714.

55. NO CHANGES ARE TO BE MADE ON THESE PLANS WITHOUT THE KNOWLEDGE OR CONSENT OF THE ARCHITECT/ENGINEER WHOSE SIGNATURE APPEARS HEREON.

56. THESE DRAWINGS DO NOT CONTAIN THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

57. THE PROJECT APPLICANT SHALL COMPLY WITH THE REQUIREMENTS OF THE ENGINEERING DIVISION FOR ALL PUBLIC IMPROVEMENTS.

58. LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID INTERCEPTING EXISTING PIPING OR CONDUITS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE ARCHITECT IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT SHOULD ANY UNIDENTIFIED CONDITIONS BE DISCOVERED. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE PROSECUTION OF THIS WORK.

59. CONTRACTOR TO VERIFY PRESENCE OF HAZARDOUS MATERIALS AT SITE PRIOR TO COMMENCEMENT OF WORK, AND INFORM OWNER AND ARCHITECT IF ANY ARE FOUND.

GENERAL NOTES

A.B.	ANCHOR BOLT (S)
A.C.	ASPHALT CONCRETE PAVING
ACOUS	ACOUSTIC
AC. T.	ACOUSTICAL TILE
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
AGG	AGGREGATE
ALT.	ALTERNATE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
APT.	APARTMENT
ASPH.	ASPHALT
A.S.T.M.	AMERICAN SOCIETY OF TESTING MATERIALS
@	AT
B.B	BOTTOM OF BEAM
BD.	BOARD
BLK.	BLOCK
BLK'G.	BLOCKING
BM.	BEAM
B.O.D.	BASIS OF DESIGN
BOT.	BOTTOM
BDRM.	BEDROOM
BR.	BROOM
CAB.	CABINET
CPT.	CARPET
C.B.	CATCH BASIN
CEM.	CEMENT
CEM. PLAS.	CEMENT PLASTER
C.	CENTER LINE
CER.	CERAMIC
C.I.	CAST IRON
CIRC.	CIRCULAR
CLG.	CEILING
CLR.	CLEAR
C.M.T.	CERAMIC MOSAIC TILE
COMPC.	COMPOSITION
CONC.	CONCRETE
CONT.	CONTINUOUS
CTSK.	COUNTERSUNK
CU. FT.	CUBIC FEET
CU. IN.	CUBIC INCH
CU. YD.	CUBIC YARD
D.	DRYER
D.F.	DOUGLAS FIR
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
DR.	DOOR
D.S.	DOWN SPOUT
DSP.	DRY STANDPIPE
DUP.	DUPLICATE
DW.	DISHWASHER
DWGS.	DRAWINGS
E.	EAST
(E)	EXISTING
EA.	EACH
E.J.	EXPANSION JOINT
ELEVA.	ELEVATOR
ELEV.	ELEVATION
ENCL.	ENCLOSURE
EQ.	EQUAL
EQUIP.	EQUIPMENT
EV	ELECTRIC VEHICLE
EVCS	EV CHARCHING STATION
EVSE	EV SUPPLY EQUIPMENT
E.W.W.M.	ELECTRIC WELDED WIRE MESH
EXPN.	EXPANSION
EXP.	EXPOSED
EXT.	EXTERIOR
EXTR.	EXTINGUISHER
FHS	FLAT HEAD SCREW
F.A.U.	FORCED AIR UNIT
F.F.	FINISH FLOOR
F.G.	FIXED GLASS
FHWS	FLAT HEAD WOOD SCREW
FIN.	FINISH
FIXT.	FIXTURE
FLASH.	FLASHING
FLR	FLOOR
FLR'G	FLOORING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
F.P.	FIRE PLACE
F.S.	FINISH SURFACE
FREQ.	FREQUENCY
FT.	FEET, FOOT
FTG.	FOOTING
FXC	FIRE EXTINGUISHER & CABINET
GA.	GAUGE
GALV.	GALVANIZED
G.I.	GALVANIZED IRON (STEEL)
GNRR	GENDER NEUTRAL RESTROOM
GUN.	FUNITE
GYP.	GYPSUM
GYP. BD.	GYPSUM BOARD
H.B.	HOSE BIBB
H.C.	HOLLOW CORE
HD	DEAD
H.M.	HOWLLOW METAL
HORIZ.	HORIZONTAL
HR.	HOUR
I.	IRON
I.D.	INSIDE DIAMETER
INC.	INCORPORATED
INSUL.	INSULATION
INT	INTERIOR
JT.	JOINT
JST.	JOIST
K.	KITCHEN
LAM.	LAMINATED
LAM. PLAS.	LAMINATED PLASTIC
LAV.	LAVATORY
LT.	LIGHT
LVR.	LOUVER

M.C.	MEDICINE CABINET
MECH.	MECHANICAL
MEMB.	MEMBRANE
MET.	METAL
MFG.	MANUFACTURE
M.H.	MAN HOLE
MIN.	MINIMUM
MIR.	MIRROR
MRGB	MOISTURE RESISTANT GYP BD
MTG.	MOUNTING
MTL.	METAL
N.	NORTH
(N)	NEW
NAT.	NATURAL
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O/	OVER
O.C.	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
O.D.	OVERFLOW DRAIN
O.H.	OVERHANG
OPP.	OPPOSITE
OV.	OVEN
OVHD.	OVERHEAD
PB.	PUSHBUTTON
PC	PULL CHAIN
PL	PLATE
P	PROPERTY LINE
PLAS.	PLASTER
PL. GLS.	PLATE GLASS
PLAST.	PLASTER
PLYWD.	PLYWOOD
PNL.	PANEL
PR.	PAIR
PRCST.	PRECAST
PREFAB.	PREFABRICATED
%	[ERCEMT
QRY.	QUARRY
QTY.	QUANTITY
RAD.	RADIUS
R.	RISER
R.A.G.	RETURN AIR GRILLE
RD.	ROAD
R.D.	ROOF DRAIN
RDWD.	REDWOOD
RECP.	RECEPTABLE
REF.	REFERENCE
REF.	REFRIGERATOR
REG.	REGISTER
REINF.	REINFORCEMENT
REQ'D	REQUIRED
RES. FLR.	RESILIENT FLOORING
RET.	RETAINING
RF.	ROOF
RF'G.	ROOFING
RM.	ROOM
RO.	ROUGH
R.O.	ROUGH OPENING
RUB.	RUBBER
R.B.	RUBBER (RESILIENT) BASE
S.	SOUTH
S.C.	SOLID CORE
S.D.	STORM DRAIN
SHT.	SHEET
SHT'G	SHEATHING
SIM.	SIMILAR
S&P	SHELF AND POLE
SPECS.	SPECIFICATIONS
SPRKL.	SPRINKLER
SQ. IN.	SQUARE INCH
SQ. FT.	SQUARE FOOT
ST.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SIM.	SIMILAR
S4S	SMOOTH FOUR SIDES
T	TREAD
T&B	TOP AND BOTTOM
T.B.	TOP OF BEAM
T.C.	TOP OF CURB
T.C.	TOP OF CONCRETE
T.G.	TOP OF GRATE
TEL	TELEPHONE
TEMP.	TEMPERED
T&G	TONGUE AND GROOVE
THK.	THICK
THRESH	THRESHOLD
T.P.	TOP OF PAVING
T.S.	TOP OF SHEATHING
T.W.	TOP OF WALL
TYP.	TYPICAL
UL	UNDERWRITER'S LABEL
ULT.	ULTIMATE
UNFIN.	UNFINISHED
U.R.F.	UNDER ROOF FRAMING
V.A.T.	VINYL ASBESTOS TILE
VENT.	VENTILATOR
VERT.	VERTICAL
VIT.	VITREOUS
VOL.	VOLUME
V.T.	VINYL TILE
W.	WEST
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
W	WIDE FLANGE (STEEL)
W.G.	WIRE GLASS
W.H.	WATER HEATER
W.I.	WROUGHT IRON
W/O	WITH OUT
WP.	WATERPROOFING
WS	WEATHERSTRIPPING
W.S.P.	WET STANDPIPE
WT.	WEIGHT
YD.	YARD

ABBREVIATIONS

DETAIL REFERENCE
DETAIL NUMBER → 1
SHEET ON WHICH DETAIL IS SHOWN → A101

BUILDING SECTION REFERENCE
SECTION NUMBER → 1
SHEET ON WHICH SECTION IS SHOWN → A101

INTERIOR ELEVATION REFERENCE
ELEVATION NUMBER → 1
SHEET ON WHICH ELEVATION IS SHOWN → A101

EXTERIOR ELEVATION REFERENCE
SHEET ON WHICH ELEVATION IS SHOWN → A101

DOOR REFERENCE → 101

WINDOW REFERENCE → 1

STOREFRONT REFERENCE → SF#

REVISION NUMBER → 1

WALL TYPES → A1.6

GRIDLINE REFERENCE → 1

MATERIAL REFERENCE → 101

A

CITY OF IRVINE
BUILDING & SAFETY DIVISION

ARCHITECTURAL SYMBOLS LEGEND

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMONS
No. C-18301
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO:	2023-40108
DATE ISSUED:	OCT 15, 2025
SCALE:	1 1/2" = 1'-0"
SHEET NUMBER:	**GEN-3**
SHEET TITLE:	

GENERAL NOTES

SVA ARCHITECTS

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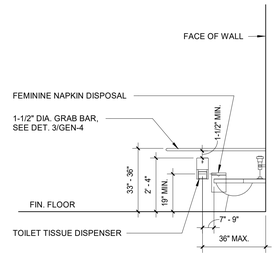
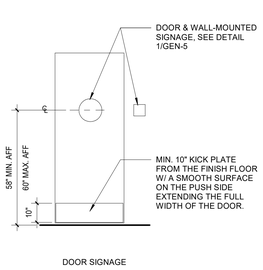
PLAN CHECK 00954071-PARK

NOTE: ALL DIMENSIONS FROM FINISH

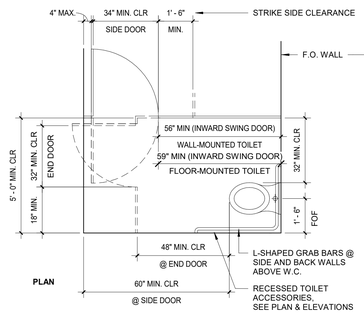
TOILET ROOM ACCESSORY MOUNTING HEIGHTS



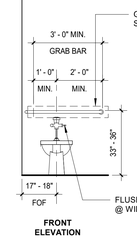
TOILET COMPARTMENT ACCESSORIES INDIVIDUAL ITEMS



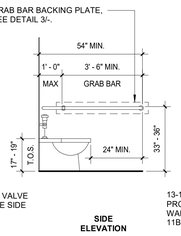
DOOR SIGNAGE



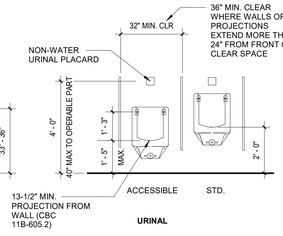
PLAN



FRONT ELEVATION

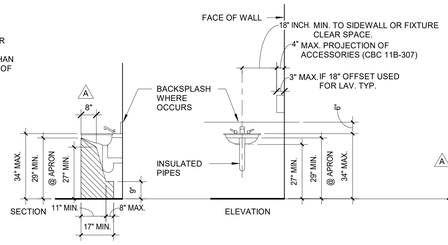


SIDE ELEVATION

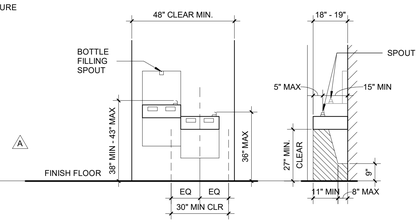


URINAL

TOILET ROOM PLUMBING FIXTURE HEIGHTS/DIMENSIONS

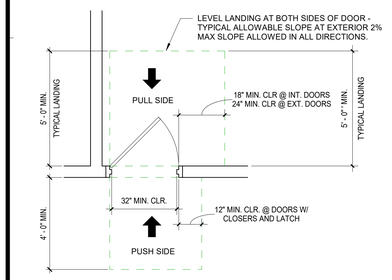


LAVATORY NOTES:
1. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER THE LAVATORY.
2. ALL HOT WATER & DRAIN PIPES ACCESSIBLE UNDER LAVATORIES MUST BE INSULATED OR OTHERWISE COVERED.

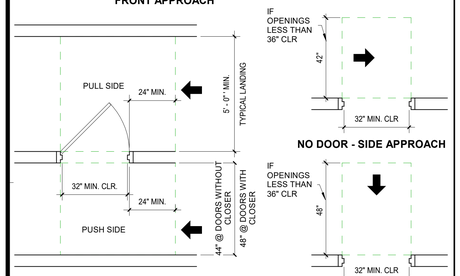


DRINKING FOUNTAIN / BOTTLE FILLER

TOILET ROOM ACCESSORY & PLUMBING FIXTURE HEIGHTS | 3/8" = 1'-0" | 2



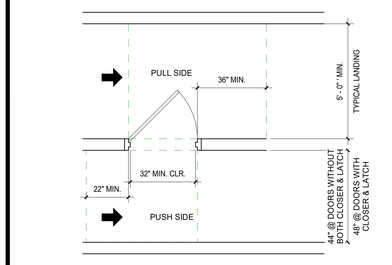
FRONT APPROACH



LATCH APPROACH

NO DOOR - SIDE APPROACH

NO DOOR - FRONT APPROACH



HINGE APPROACH

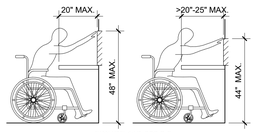
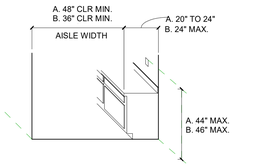
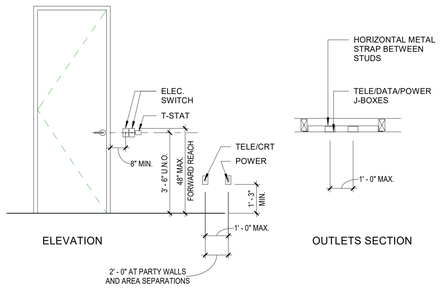


FIGURE 11B-308.2.2
OBSTRUCTED HIGH FORWARD REACH



A. FORWARD APPROACH (KNEE TOE SPACE COMPLY WITH CBC 11B-306.2 AND 11B.306.3 SIDE UNDER COUNTER)

B. SIDE APPROACH OF ACCESSIBLE COUNTER HT. REACH OVER OBSTRUCTION
TYP. WALL MOUNT DIMENSION



7. ACCESSIBLE TOILET COMPARTMENTS:

A. SEE TOILET ROOM FLOOR PLAN FOR ACCESSIBLE TOILET STALL LOCATION.

B. VERIFY TOILET ACCESSORIES & TYPE OF PARTITION IN SPECS.

C. PROVIDE BACKING IN WALL & TOILET PARTITION FOR GRAB BAR ANCHORAGE.

D. COMPARTMENT DOOR TO PROVIDE MINIMUM 18" STRIKE-SIDE CLEARANCE (CBC 11B604.8.1).

E. DOOR PULL AT ACCESSIBLE COMPARTMENT SHALL COMPLY WITH CBC SECTION 11B-404.2.7 AND NOT REQUIRE GRASPING OR TWISTING.

F. OPENING HARDWARE IS CENTERED BETWEEN 34" AND 44" ABOVE FINISH FLOOR (CBC 11B-404.2.7).

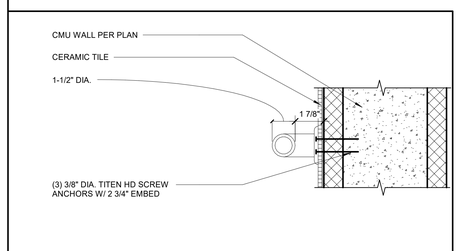
G. TOILET PAPER DISPENSER SHALL PERMIT CONTINUOUS PAPER FLOW AND SHALL NOT CONTROL DELIVERY (CBC 11B-604.9.6).

H. ACCESSIBLE COMPARTMENT DOORS SHALL BE SELF CLOSING. A COMPLIANT DOOR PULL SHALL BE PLACED ON BOTH SIDES OF THE DOOR NEAR LATCH.

I. SEE ACCESSIBILITY NOTES FOR ADDITIONAL REQUIREMENTS.

J. FLUSH CONTROL SHALL BE ON WIDE SIDE OF TOILET COMPARTMENT AT ALL ACCESSIBLE STALLS, TYP.

K. WHERE ONLY ONE TYPE OF TOILET FIXTURE OR ACCESSORY IS USED, IT SHALL BE POSITIONED FOR ACCESSIBILITY.



NOTE:
THE GRAB BAR SHALL BE CAPABLE OF WITHSTANDING A SHEAR FORCE OF 250# WITHOUT BENDING OR PULLING OUT OF THE WALL

H. LOCATE TOWEL, SANITARY NAPKIN, AND WASTE RECEPTACLES WITH ALL OPERABLE PARTS NOT MORE THAN 40 INCHES FROM THE FLOOR.

I. LOCATE TOILET TISSUE DISPENSERS ON THE WALL OR PARTITION WITHIN 7 INCHES MINIMUM AND 9 INCHES MAXIMUM IN FRONT OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE BELOW THE GRAB BAR, 19 INCHES MINIMUM ABOVE THE FINISH FLOOR AND SHALL NOT BE LOCATED BEHIND GRAB BARS (CBC 11B- 604.7)

J. GRAB BARS, TUB AND SHOWER SEATS, FASTENERS AND MOUNTING DEVICES SHALL BE DESIGNED FOR 250 LB. PER LINEAR FOOT LOAD.

K. GRAB BARS (REFER DETAIL 3/GEN-4):

1) THE DIAMETER OR WIDTH OF THE GRIPPING SURFACE OF A GRAB BAR SHALL BE 1-1/4" TO 1-1/2" OR THE SHAPE SHALL PROVIDE EQUIVALENT GRIPPING SURFACE.
2) IF THE GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND GRAB BARS SHALL BE 1-1/2".
3) A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS.
4) GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
5) EDGES SHALL HAVE A MINIMUM RADIUS OF 1/8".

L. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.

4. DRINKING FOUNTAINS: (REFER TO DETAIL 2/GEN-4)

A. ON ANY FLOOR WHERE DRINKING FOUNTAINS ARE PROVIDED, THERE SHALL BE A DRINKING FOUNTAIN THAT IS ACCESSIBLE TO INDIVIDUALS WHO USE WHEELCHAIRS AND ONE ACCESSIBLE TO THOSE WHO HAVE DIFFICULTY BENDING OR STOOPING ("HI-LO" FOUNTAIN) PER CBC 11B-211.2) WHERE MORE THAN ONE IS PROVIDED ON A FLOOR, 50% SHALL COMPLY WITH THESE REQUIREMENTS.(CBC 11B-211.3)

B. THE DRINKING FOUNTAIN SHALL BE A MINIMUM OF 18 INCHES AND A MAXIMUM OF 19 INCHES IN DEPTH AND THERE SHALL BE A CLEAR AND UNOBSTRUCTED KNEE SPACE UNDER THE DRINKING FOUNTAIN NOT LESS THAN 27 INCHES IN HEIGHT, 30 INCHES IN WIDTH, AND 9 INCHES IN DEPTH, THE DEPTH MEASUREMENT BEING TAKEN FROM THE FRONT EDGE OF THE FOUNTAIN. ADDITIONALLY THERE SHALL BE TOE CLEARANCE OF 9 INCHES IN HEIGHT ABOVE THE FLOOR, AND 17 INCHES IN DEPTH FROM THE FRONT EDGE OF THE FOUNTAIN. A SIDE APPROACH DRINKING FOUNTAIN IS NOT ACCEPTABLE.

C. THE BUBBLER SHALL BE ACTIVATED BY A CONTROL WHICH IS EASILY OPERATED BY A DISABLED PERSON SUCH AS A HAND-OPERATED LEVER TYPE LOCATED WITHIN 5 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN. THE BUBBLER OUTLET ORIFICE SHALL BE LOCATED WITHIN 6 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN AND SHALL BE WITHIN 36 INCHES OF THE FLOOR. THE WATER STREAM FROM THE BUBBLER SHALL BE SUBSTANTIALLY PARALLEL TO THE FRONT EDGE OF THE DRINKING FOUNTAIN. THE SPOUT SHALL PROVIDE A FLOW OF WATER THAT IS AT LEAST 4 INCHES HIGH SO AS TO ALLOW THE INSERTION OF A CUP OR GLASS UNDER THE FLOW OF WATER. THE FORCE REQUIRED TO ACTIVATE THE CONTROLS SHALL BE NO GREATER THAN 5 LB.

5. SWITCHES, CONTROLS AND ELECTRICAL OUTLETS: (REFER TO DETAIL 4/GEN-4)

A. ELECTRICAL AND COMMUNICATION SYSTEMS OUTLETS SHALL BE MOUNTED NOT LESS THAN 15 INCHES ABOVE THE FLOOR OR WORKING PLATFORM.

B. THE HIGHEST OPERABLE PART OF ALL CONTROLS, DISPENSERS, RECEPTACLES AND OTHER OPERABLE EQUIPMENT SHALL BE 48" MAXIMUM AND 15" MINIMUM ABOVE THE FINISH FLOOR OR WORKING PLATFORM AT BOTH FORWARD AND PARALLEL APPROACH PER CBC 11B-308.2.1 AND 11B-308.3.1

C. IF REACH IS OVER AN OBSTRUCTION (FOR EXAMPLE: A BASE CABINET) BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH. FOR SIDE APPROACH PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 46". THE OBSTRUCTION MAY NOT EXTEND MORE THAN 24" FROM THE WALL BENEATH THE CONTROL.

D. FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48" ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE, OR SIDEWALK.

E. IF EMERGENCY WARNING SYSTEMS ARE REQUIRED THEY SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

6. ADDITIONAL COMPLIANCE REQUIREMENTS:

A. COUNTERTOPS AND WORK SURFACES SHALL BE ACCESSIBLE (HEIGHT BETWEEN 28" AND 34" AFF) W/ ACCESSIBLE CLEAR SPACE BELOW PER CBC 11B-902.1.

B. WARNING SYSTEMS SHALL COMPLY WITH NFPA 72 AND 72G (AS AMENDED BY CHAPTER 35) AND SHALL PROVIDE VISUAL ALARMS (I.E. STROBES) IN RESTROOMS, CORRIDORS, MULTI-PURPOSES ROOMS, LOBBIES, MEETING ROOMS, AND ANY OTHER COMMON USE ROOMS (CBC 1007.12).

1. RAMPS AND STAIRWAYS
NA

2. ENTRANCES AND DOORWAYS: (REFER TO DETAIL 6/GEN-4)

A. PRIMARY ENTRANCES TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO THE DISABLED.

B. RECESSED DOOR MATS SHALL BE ANCHORED TO PREVENT INTERFERENCE WITH WHEELCHAIRS.

C. ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE SIGN (INTERNATIONAL SYMBOL OF ACCESSIBILITY) AND WITH ADDITIONAL DIRECTIONAL SIGNS AS REQUIRED VISIBLE FROM APPROACHING PEDESTRIAN WAYS.

D. THE FLOOR OR LANDING ON EACH SIDE OF AN ENTRANCE OR PASSAGE DOOR SHALL BE LEVEL AND CLEAR. THE LEVEL AND CLEAR AREA SHALL BE A MINIMUM 60" SQUARE IN THE DIRECTION OF THE DOOR SWING AND A MINIMUM 44" SQUARE OPPOSITE THE DIRECTION OF DOOR SWING. THE SQUARES SHALL BE MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN ITS CLOSED POSITION. SEE NOTE E BELOW FOR STRIKE SIDE CLEARANCES.

E. THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS.

F. THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED NO GREATER THAN 1:2.

G. THE SPACE BETWEEN TWO CONSECUTIVE DOOR OPENINGS IN A VESTIBULE, SERVING OTHER THAN A REQUIRED EXIT STAIRWAY, MUST HAVE AT LEAST 48" OF CLEAR SPACE FROM ANY DOOR OPENING INTO THE VESTIBULE WHEN THE DOOR IS OPEN 90 DEGREES FROM ITS CLOSED POSITION. DOOR IN SERIES MUST SWING IN THE SAME DIRECTION OR AWAY FROM THE SPACE BETWEEN THE DOORS.

H. WHERE A PAIR OF DOORS, MANUALLY OR AUTOMATICALLY OPERATED, IS UTILIZED, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR, UNOBSTRUCTED OPENING 32" WIDE W/ THE LEAF POSITIONED 90 DEGREES FROM ITS CLOSED POSITION.

I. THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO OPEN BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED A 10" HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATED A TRAP OR HAZARDOUS CONDITION.

J. MAXIMUM EFFORT TO OPERATED DOORS SHALL NOT EXCEED 5 LB. SUCH PULL OR PUSH EFFORT SHALL BE APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 POUNDS.

3. SANITARY FACILITIES: (REFER TO DETAIL 2/GEN-4)

A. WATER CLOSET COMPARTMENTS SHALL BE EQUIPPED WITH A DOOR THAT HAS AN AUTOMATIC CLOSING DEVICE, AND SHALL HAVE A CLEAR UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WHEN LOCATED AT THE END AND 34" INCHES WHEN LOCATED AT THE SIDE WITH THE DOOR POSITION AT AN ANGLE OF 90 DEGREES AWAY FROM ITS CLOSED POSITION.

B. TOILET FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS, NO MORE THAN 44" INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT.

C. WHERE URINALS ARE PROVIDED AT LEAST ONE WITH A RIM PROJECTING A MINIMUM OF 14 INCHES FROM THE WALL AND AT A MAXIMUM OF 17 INCHES ABOVE THE FLOOR SHALL BE PROVIDED.

D. URINAL FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND, AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST AND SHALL BE MOUNTED NO MORE THAN 44" ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT.

E. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED.

F. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS PER FOOT. LEVEL OPERATED, PUSH-TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.

G. MIRRORS LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND. MIRRORS NOT LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL BE INSTALLED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND.

DOOR CLEARANCES | 3/8" = 1'-0" | 6

REACH RANGES AND MOUNTING HEIGHTS | 3/8" = 1'-0" | 4

GRAB BARS | 3" = 1'-0" | 3

COMMON AREA ACCESSIBILITY NOTES | 1 : 1 | 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMONDS No. C-13001 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO:	2023-40108
DATE ISSUED:	OCT 15, 2025
SCALE:	As indicated
SHEET NUMBER:	GEN-4
SHEET TITLE:	

ACCESSIBILITY COMPLIANCE DIMENSIONS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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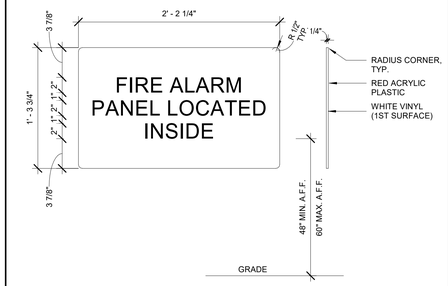
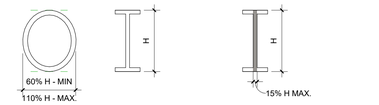
PLAN CHECK 00954071-PARK

CITY HEALTH & SAFETY DIVISION



NOTE: BACKGROUND COLOR TO BE RED
VINYL LETTERING TO BE WHITE

DOOR SIGNAGE - FACP | 1 1/2" = 1'-0" | **8**

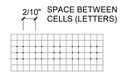


CHARACTER PROPORTIONS

RAISED CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 60 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I".

STROKE PROPORTION

STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15% MAXIMUM OF THE HEIGHT OF THE CHARACTER.

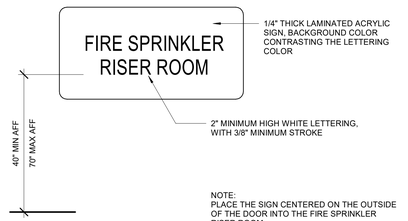


CALIFORNIA CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHEREVER BRAILLE IS REQUIRED. INDIVIDUAL BRAILLE DOTS SHALL EACH BE DISTINCT AND SEPARATE. EACH DOT SHALL BE ROUNDED OR DOMED IN LIEU OF SQUARE SIDED AND FLAT TOPPED. *PER CBC TABLE 11B-703.3.1, DOT BASE DIAMETER SHALL BE 0.059" TO 0.063", DISTANCE BETWEEN TWO DOTS IN THE SAME CELL SHALL BE 0.100", DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS SHALL BE 0.300", DOT HEIGHT SHALL BE 0.025" TO 0.037", AND DISTANCE BETWEEN CORRESPONDING DOTS FROM ONCE CELL DIRECTLY BELOW SHALL BE 0.395" TO 0.400"*

WIDTH TO HEIGHT PROPORTION TEMPLATE

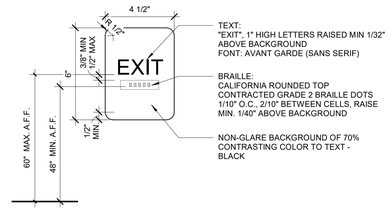
BRAILLE SPACING TEMPLATE PER CALIFORNIA BUILDING CODE (CBC) AND CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 24, PART 2.

TACTILE SIGNAGE TEMPLATES | 1 : 1 | **4**



NOTE:
PLACE THE SIGN CENTERED ON THE OUTSIDE OF THE DOOR INTO THE FIRE SPRINKLER RISER ROOM

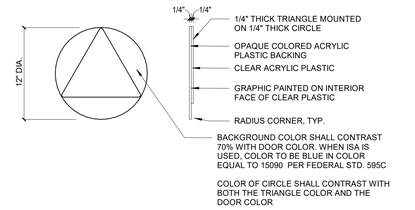
FIRE SPRINKLER ROOM SIGN | 3" = 1'-0" | **11**



NOTE: 1. PROVIDE MECHANICAL MOUNTING W/ VANDAL RESISTANT FASTENERES. PROVIDE ADHESIVE MOUNTING SYSTEM WHEN ATTACHED TO GLAZING.

2. SEE DETAIL 4 GEN-5 FOR TACTILE TEXT REQUIREMENTS

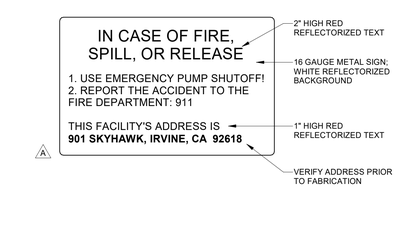
TACTILE EXIT SIGN | 3" = 1'-0" | **7**



NOTE:
ATTACH SIGNS USING THREE FLATHEAD VANDAL RESISTANT COUNTERSUNK SCREWS AND ADHESIVE. SIGNS SHALL BE CENTERED ON THE DOOR AND MOUNTED BEING A 4'-10" MINIMUM AND A 5'-0" MAXIMUM ABOVE FINISH FLOOR LINE TO CENTER OF SIGN.

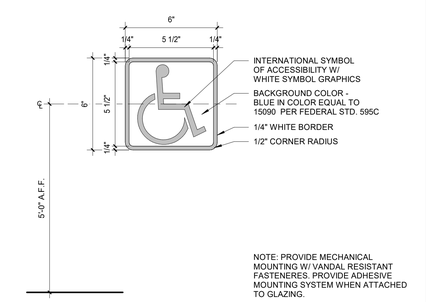
A SEE DETAIL 1/- FOR MOUNTING REQUIREMENTS

DOOR SIGNAGE - GENDER NEUTRAL | 1 1/2" = 1'-0" | **3**



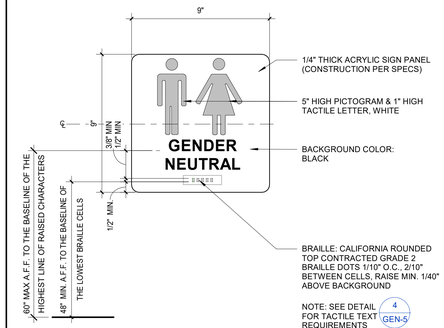
B A

FUEL AREA SIGNAGE | 1 1/2" = 1'-0" | **10**



NOTE: PROVIDE MECHANICAL MOUNTING W/ VANDAL RESISTANT FASTENERES; PROVIDE ADHESIVE MOUNTING SYSTEM WHEN ATTACHED TO GLAZING.

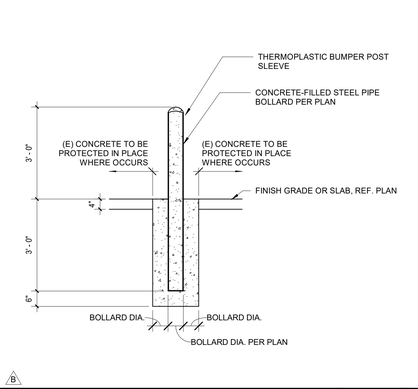
ACCESSIBLE ENTRY SIGN | 3" = 1'-0" | **6**



NOTE: SEE DETAIL 4 GEN-5 FOR TACTILE TEXT REQUIREMENTS

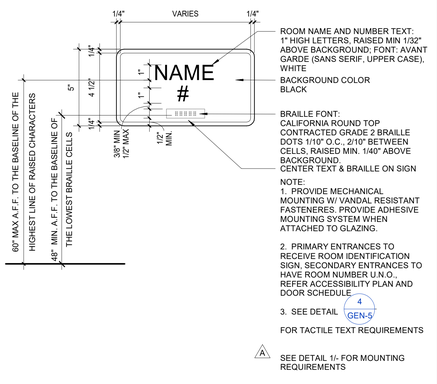
A SEE DETAIL 1/- FOR MOUNTING REQUIREMENTS

RESTROOM SIGN - GENDER NEUTRAL | 3" = 1'-0" | **2**



B A

BOLLARD | 1/2" = 1'-0" | **9**



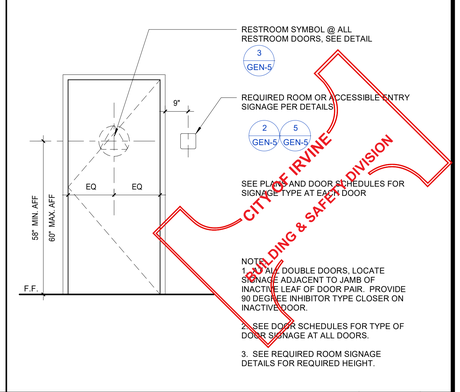
NOTE:
1. PROVIDE MECHANICAL MOUNTING W/ VANDAL RESISTANT FASTENERES. PROVIDE ADHESIVE MOUNTING SYSTEM WHEN ATTACHED TO GLAZING.

2. PRIMARY ENTRANCES TO RECEIVE ROOM IDENTIFICATION SIGN, SECONDARY ENTRANCES TO HAVE ROOM NUMBER U.N.O., REFER ACCESSIBILITY PLAN AND DOOR SCHEDULE.

3. SEE DETAIL 4 GEN-5 FOR TACTILE TEXT REQUIREMENTS

A SEE DETAIL 1/- FOR MOUNTING REQUIREMENTS

ROOM IDENTIFICATION SIGN | 3" = 1'-0" | **5**



NOTE:
1. AT ALL DOUBLE DOORS, LOCATE SIGNAGE ADJACENT TO JAMB OF INACTIVE LEAF OF DOOR PAIR. PROVIDE 90 DEGREE INHIBITOR TYPE CLOSER ON INACTIVE DOOR.

2. SEE DOOR SCHEDULES FOR TYPE OF DOOR SIGNAGE AT ALL DOORS.

3. SEE REQUIRED ROOM SIGNAGE DETAILS FOR REQUIRED HEIGHT.

DOOR ROOM SIGNAGE | 1/2" = 1'-0" | **1**

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMARD Exp. 5-1-2027 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
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SHEET TITLE:

PROJECT COMPLIANCE SIGNAGE

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PLAN CHECK 00954071-PARK

PER CITY OF IRVINE ZONING ORDINANCE 3-37-11:

SITE SIZE	80,918 SF
BUILDING HEIGHT	22' - 5" (AT HIGHEST POINT)
BUILDING SETBACKS:	
PRIMARY HIGHWAY (5 FWY)	3,900 FT
LOCAL STREET	36 FT TO GREAT PARK BLVD. 56 FT TO SKYHAWK
BUILDING TO BUILDING	25' - 0"

PER CITY OF IRVINE ZONING ORDINANCES 3-15-4 AND 3-15-5:

PARKING LOT TREES	(SEE LANDSCAPE DRAWINGS)
BOUNDARY TREES	(SEE LANDSCAPE DRAWINGS)

DEVELOPMENT STANDARDS TABLE

1. REFER TO CIVIL AND LANDSCAPE FOR ADDITIONAL INFORMATION AND SETBACK / HORIZONTAL CONTROL DIMENSIONS.
2. REFER TO FIRE MASTER PLAN SHEETS FMP1 & FMP2 FOR FIRE DEPARTMENT REQUIREMENTS.
3. REFER TO ELECTRICAL FOR EV PROVISIONS.
4. EXTERIOR SITE PARKING INFORMATION IS PROVIDED FOR REFERECE ONLY. REFER TO CIVIL GRADING AND PARKING PLANS FOR THIS INFORMATION.
5. REFER TO CIVIL AND LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

PARKING REQUIREMENTS
PER CITY OF IRVINE ZONING ORDINANCE 4-3

USE / [AREA ON PLAN *]	MINIMUM PARKING REQUIREMENT
OFFICE [ADMIN. BLDG]	1 STALL / 250 SF 1,555 SF / 250 SF = (7) STALLS
VEHICLE REPAIR [LANDSCAPE MECH. SHOP, MAINTENANCE]	1 STALL / 400 SF 2,529 SF / 400 SF = (7) STALLS
WAREHOUSE [STORAGE]	1 STALL / 1,000 SF 2,122 SF / 1,000 SF = (3) STALLS
[SUPPORT AREAS TO MAIN USES OF FACILITY: BREAK RM; RESTROOMS 116, 117; CUSTODIAN/STORAGE 118; WASH AREA; PALLET AREA; BUNKERx4; FUEL AREA; TRASH/RECYCLE AREA]	
TOTAL	(17) STALLS REQUIRED **(46) STALLS PROPOSED**

* REFER TO **2/GEN-2** FOR AREA CALCULATIONS.

PARKING REQUIREMENTS

PARKING ANALYSIS
PER CBC TABLE 11B-208.2, SECTION 11B-228.3; CalGREEN SECTIONS 5.106.5.3, 5.106.5.3.4

STALL TYPE	REQUIRED	PROPOSED
STANDARD	7	29
STANDARD - EVCS (EVSE INSTALLED)	2*	8**
STANDARD - EV CAPABLE	6*	7
ACCESSIBLE - STANDARD	1	1
ACCESSIBLE - VAN	1	1
TOTAL	**17**	**46**

*** ALL PARKING SPACES ARE FOR STAFF AND FLEET VEHICLES, NOT AVAILABLE TO THE GENERAL PUBLIC -- PROJECT IS EXEMPT FROM ACCESSIBLE EV SPACE REQUIREMENTS PER 11B-228.3.2 EXCEPTION 1, EVCS ARE NOT PARKING SPACES FOR THE PURPOSES OF ACCESSIBLE PARKING SPACES REQUIREMENTS PER CBC 11B-208.1.*

** MINIMUM NUMBER OF REQUIRED EVCS IS PART OF THE MINIMUM NUMBER OF EV CAPABLE SPACES PER CalGREEN TABLE 5.106.5.3.1, (6 EV CAPABLE + 2 EVCS = 8 TOTAL EV SPACES REQUIRED; 7 EV CAPABLE + 8 EVCS = 15 TOTAL EV SPACES PROPOSED)*

PARKING ANALYSIS

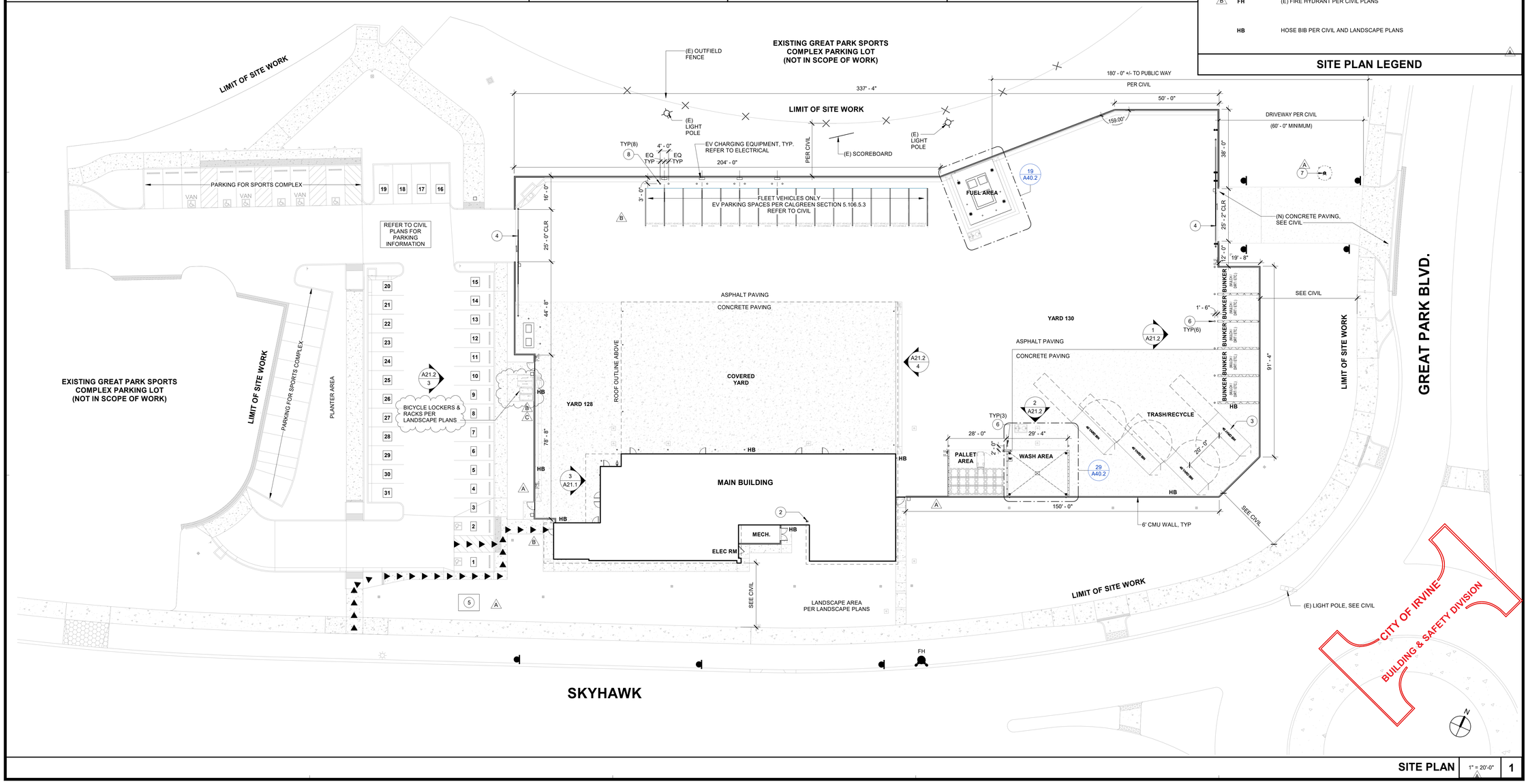
#	KEYNOTE DESCRIPTION
2	FIRE WATER RISER
3	WASTE BINS BY OWNER.
4	MOTORIZED ROLLING METAL GATE PER OCFA GUIDELINE B-01 AND IRVINE UNIFORM SECURITY CODE SECTION 5-9-519 EMERGENCY ACCESS. SEE DETAIL 3/A52.1. REFER TO ELECTRICAL AND TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
5	TRANSFORMER CONCRETE PAD PER POWER COMPANY REQUIREMENTS SEE DRY UTILITY AND ELECTRICAL DRAWINGS
6	8" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH GRADE, EMBED IN FOOTING. SEE DETAIL 9/GEN-5 AND STRUCTURAL PLANS.
7	NEW FIRE HYDRANT AND BOLLARDS PER OCFA GUIDELINE B-01. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.
8	6" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH GRADE. EMBED IN FOOTING. SEE DETAIL 9/GEN-5

KEYNOTES

ACCESSIBLE PATH OF TRAVEL
PATH OF TRAVEL (P.O.T) AS INDICATED SHALL MEET THE FOLLOWING REQUIREMENTS:
1. A BARRIER-FREE ACCESSIBLE ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING 1/2" BEVELED AT A SLOPE NOT STEEPER THAN 1:2 EXCEPT THAT LEVEL CHANGES ARE 1/4" MAX VERTICAL & IS AT LEAST 48" WIDE
2. SURFACE SHALL BE STABLE, FIRM AND SLIP RESISTANT.
3. CLOSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND RUNNING SLOPE SHALL NOT BE STEEPER THAN 1:20 UNLESS OTHERWISE INDICATED (SEC 11B-403.3)
4. P.O.T. SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM (SECTION 11B-307.4) AND PROTURDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL SURFACE BETWEEN 27" AND 80" ABOVE FINISH FLOOR OR GROUND (SECTION 11B-307.2)
5. PROVIDE FLUSH TRANSITIONS AT ANY ADJOINING JOINTS BETWEEN DIFFERENT WALK SURFACES IN P.O.T.

	F.E.	FIRE EXTINGUISHER CABINET
		30"x48" MIN. ACCESSIBLE CLEAR FLOOR SPACE PER CBC 11B-305.
B	FH	(E) FIRE HYDRANT PER CIVIL PLANS
	HB	HOSE BIB PER CIVIL AND LANDSCAPE PLANS

SITE PLAN LEGEND



CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMARD
Exp. 5-1-2027
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
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C	City PC #4	10/15/2025

PROJECT NO:	2023-40108
DATE ISSUED:	OCT 15, 2025
SCALE:	As indicated
SHEET NUMBER:	**A1.0**
SHEET TITLE:	

SITE PLAN

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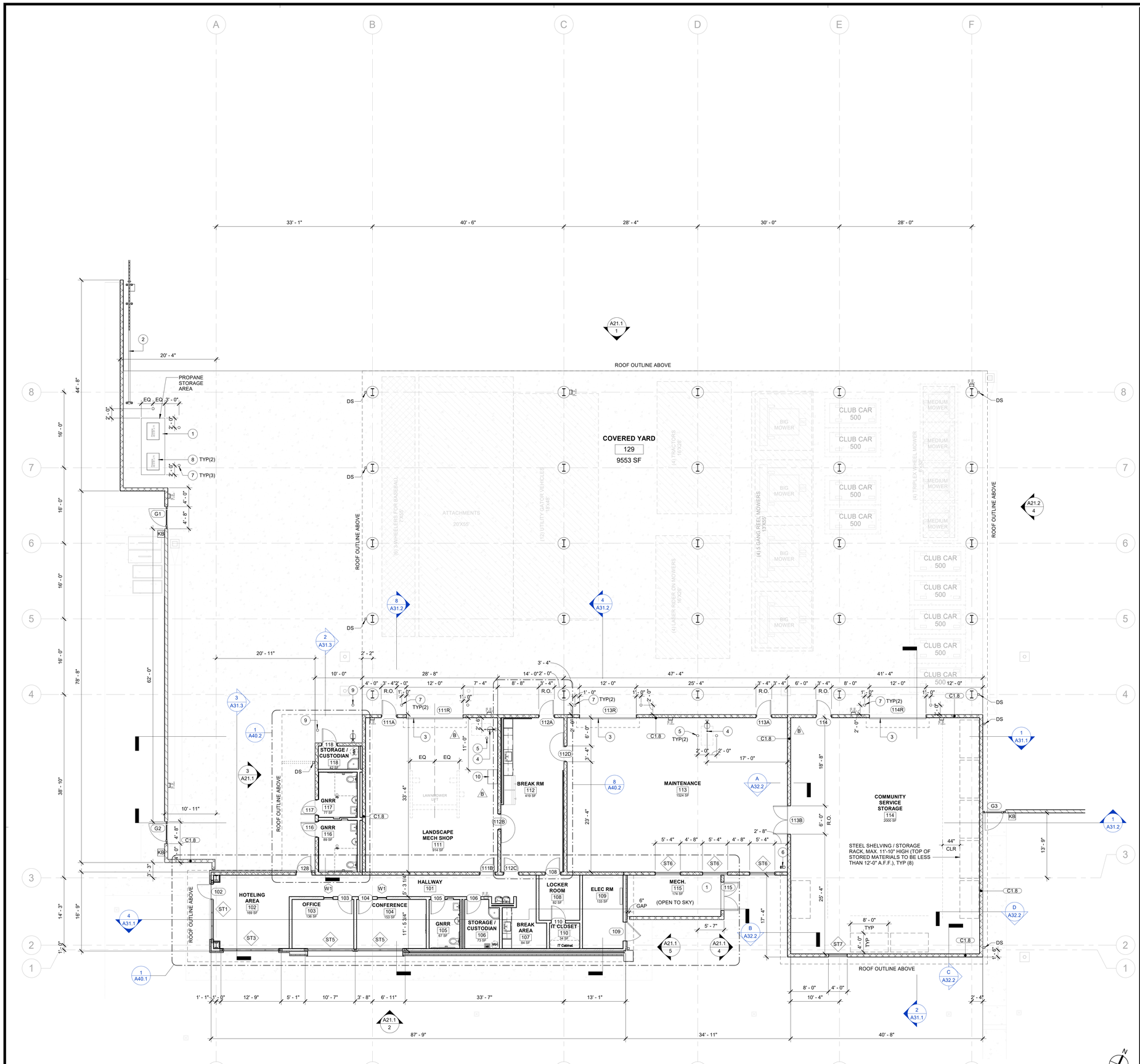
PLAN CHECK 00954071-PARK

SITE PLAN | 1" = 20'-0" | 1



#	KEYNOTE DESCRIPTION
1	6" THICK CONCRETE EQUIPMENT PAD
2	MOTORIZED ROLLING METAL GATE PER OCFA GUIDELINE B-01 AND IRVINE UNIFORM SECURITY CODE SECTION 5-9-519 EMERGENCY ACCESS. SEE DETAIL 3/A52.1. REFER TO ELECTRICAL AND TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
3	MOTORIZED METAL ROLL-UP DOOR PER DETAIL 6/A52.2, SEE STRUCTURAL AND ELECTRICAL PLANS.
4	EMERGENCY EYEWASH AND SHOWER EQUIPMENT PER ANSI Z358.1-1981 SECTIONS 5,7,9. OUTDOORS.
5	4" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH FLOOR. BOLT TO SLAB. SEE DETAIL 9/GEN-5 AND STRUCTURAL PLANS.
6	FIRE WATER RISER
7	8" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH GRADE, EMBED IN FOOTING. SEE DETAIL 9/GEN-5 AND STRUCTURAL PLANS.
8	PROPANE TANK STORAGE CABINET, B.O.D. ULINE MODEL #H-10737S
A 9	6" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH GRADE. EMBED IN FOOTING. SEE DETAIL 9/GEN-5
10	CHARGING CABINET: B.O.D. ULINE H-8961 WITH ADDITIONAL SHELF H-8962.

KEYNOTES

STC RATINGS FOR WALLS SURROUNDING OFFICE AREA

CMU WALL BETWEEN OFFICE AND MAINTENANCE:
C-1.8 = STC 48 PER ASSEMBLY 1.4.2.3.1.7

EXTERIOR WALL OF OFFICE AREA:
M-1.6 = STC 45 PER ASSEMBLY 1.3.3.1.5.9
M-1.14 = STC 45 PER ASSEMBLY 1.3.3.1.5.9
STOREFRONT GLAZING = APPROX. 37, VARIES PER MANUFACTURER

TESTED ASSEMBLIES PER CA OFFICE OF NOISE CONTROL

STC RATINGS

B

DOOR MANEUVERING CLEARANCE PER CBC 11B-404.2. SEE 6/GEN-4

30"x48" MIN. ACCESSIBLE CLEAR FLOOR SPACE PER CBC 11B-305.

60" MIN. ACCESSIBLE CLEAR TURNING SPACE PER CBC 11B-304.

6" METAL STUD WALL PER SHEET A61.1 & A61.2. SEE STRUCTURAL PLANS.

CONCRETE MASONRY UNIT WALL PER SHEET A61.2. PROVIDE 6" CONCRETE CURB AT WET AREAS SEE STRUCTURAL PLANS.

1 — WALL TYPE ANNOTATIONS, SEE SHEET A61.2 FOR DETAILS

101 — NUMBER INDICATES DOOR PER SCHEDULE, REFER TO SHEET A52.1

W-# — NUMBER INDICATED WINDOW/STOREFRONT REFER TO SHEET A52.2

F.E. — FIRE EXTINGUISHER CABINET PER DET. 10/A64.1 AT METAL STUD WALLS. SURFACE MOUNT AT CMU WALLS. BOTTOM OF CABINET AT 27" A.F.F. TYP.

FD — FLOOR DRAIN PER PLUMBING PLANS

DS — DOWNSPOUT. SEE CIVIL & PLUMBING PLANS

STEEL SHELVING (DEFERRED SUBMITTAL) TABULATION: C

(4' x 8')+(44" x 8') = 32 SF PER SHELF + 29.3 SF CLEARANCE PER SHELF = 61.3 SF
61.3 SF x 8 SHELVES = **491 SF** OF SHELF FOOTPRINT **< 500 SF MAX**

500 SF MAX. PER O.C. FIRE AUTHORITY REQUIREMENTS

A

FLOOR PLAN GENERAL NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF THE GRID LINES AND/OR TO THE FACE OF STUDS OR CMU, U.N.O.
2. ALL WALLS ARE FULL HEIGHT, U.N.O.
3. REFER TO SHEET GEN-4 FOR TYPICAL ACCESSIBILITY REQUIREMENTS AND DIMENSIONS.
4. REFER TO ENLARGED PLANS FOR DIMENSIONS AND CALLOUTS NOT SHOWN HERE.
5. REFER TO PLANS BY ALL DISCIPLINES FOR ADDITIONAL INFORMATION.
6. PROVIDE "NO SMOKING" SIGNAGE PER IRVINE CITY ORDINANCE 19-17 AT ALL MAIN ENTRANCES.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

BUILDING PLAN | 1/8" = 1'-0" | 1

LEGEND

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

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A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

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SHEET NUMBER: A11.1
SHEET TITLE:

BUILDING PLAN

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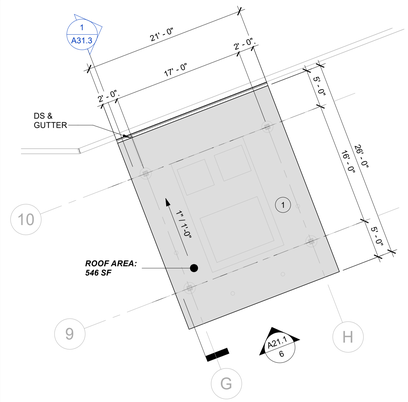
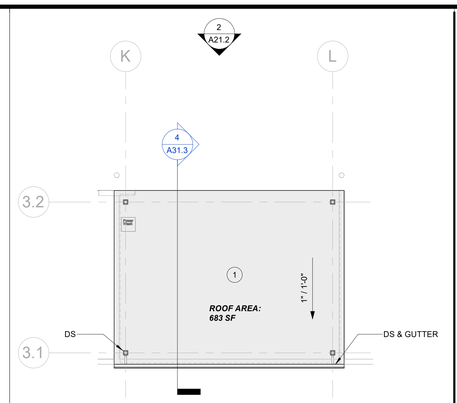
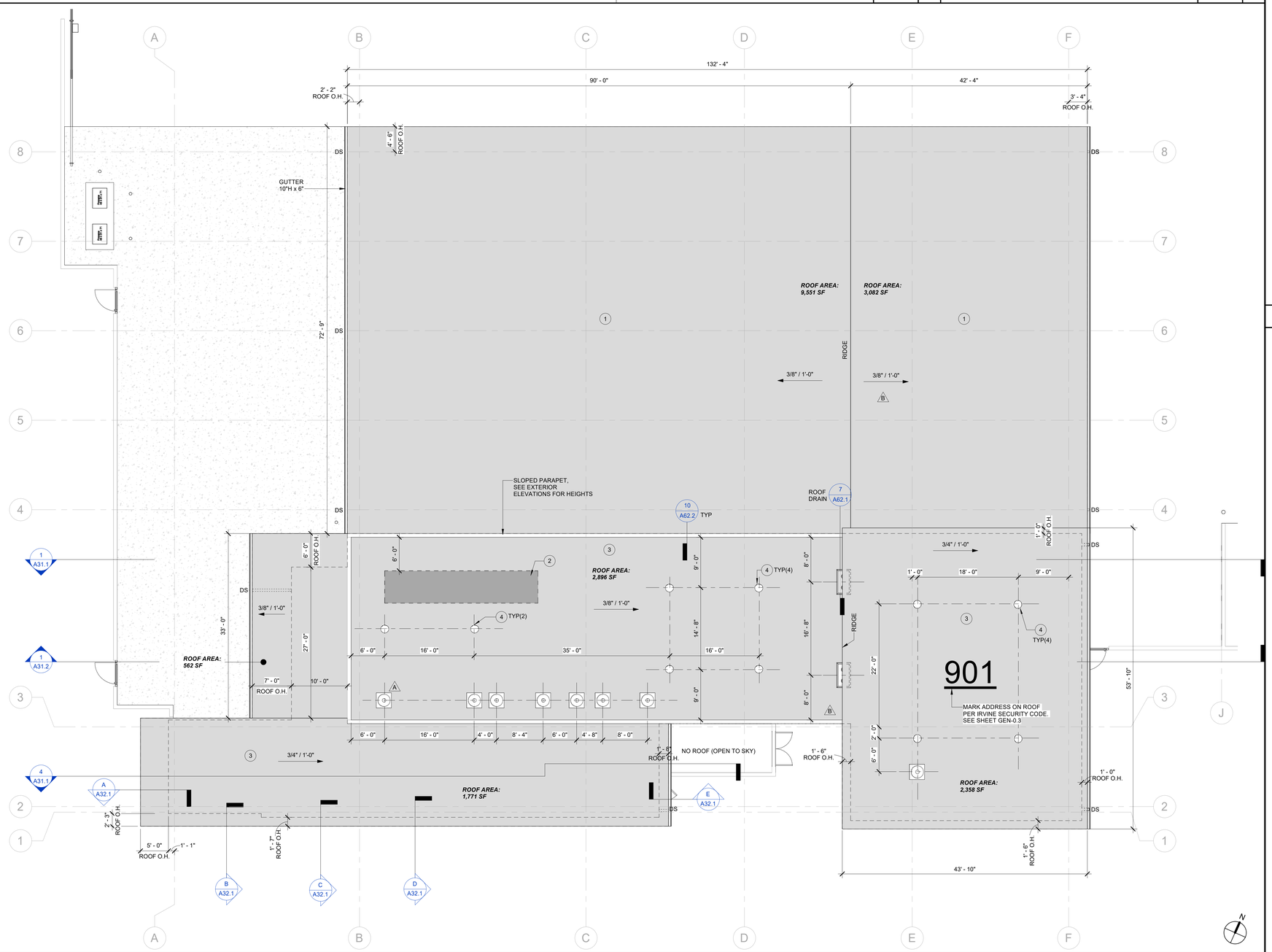


ROOF PLAN - FUEL AREA | 1/8" = 1'-0" | 3



ROOF PLAN - WASH AREA | 1/8" = 1'-0" | 2



ROOF PLAN | 1/8" = 1'-0" | 1

#	KEYNOTE DESCRIPTION
1	METAL ROOFING OVER STRUCTURAL STEEL FRAMING, REFER TO STRUCTURAL.
2	PV PANELS, REFER TO PV PLANS.
3	PVC MEMBRANE ROOFING PER DETAIL 1/A62.1. CLASS 'A' FIRE RATING PER CITY OF IRVINE MUNICIPAL CODE SECTION 5-9-401(D).
4	SOLATUBE PER DETAIL 9/A62.2. (A)

ROOF NOTE:
REFER TO SHEET GEN-0 FOR CITY OF IRVINE INFORMATION BULLETINS 250 & 299 (A)

KEYNOTES

- ROOF DRAIN AND OVERFLOW PER DETAIL 7 / A62.1
- VENT AT LOW-SLOPED ROOFS PER DETAIL 2 / A62.1 .REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- SOLATUBE SKYLIGHT PER DETAIL 9 / A62.2
- DIRECTION OF ROOF SLOPE
- TOP OF WALL / PARAPET ELEVATION; MEASURED FROM GROUND LEVEL

ROOF LEGEND

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

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ROOF PLAN

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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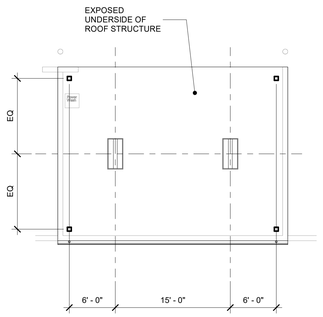
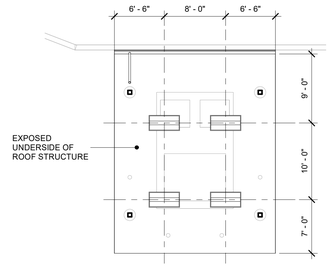


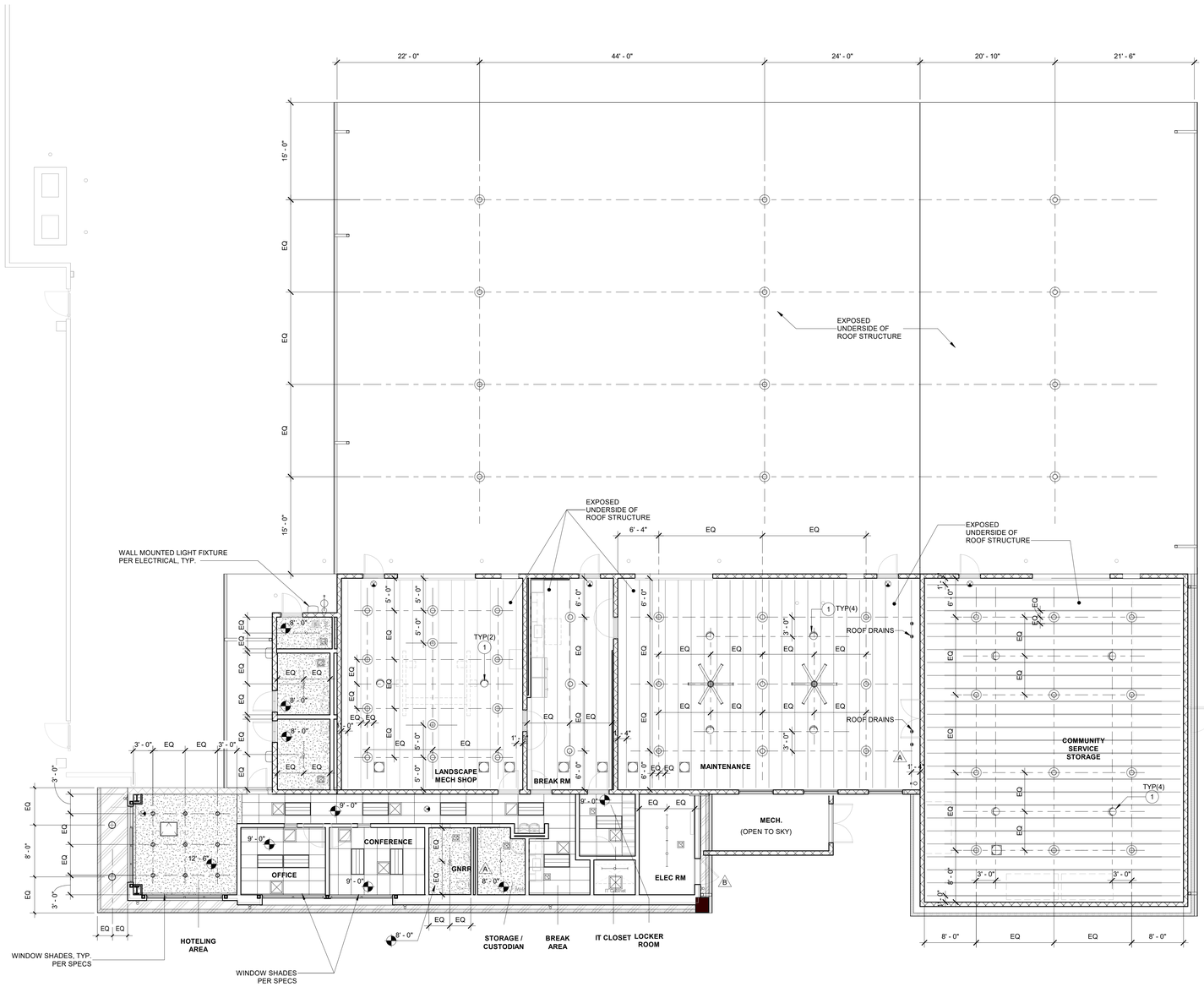
REFLECTED CEILING PLAN - WASH AREA

1/8" = 1'-0" | 3



REFLECTED CEILING PLAN - FUEL AREA

1/8" = 1'-0" | 2



REFLECTED CEILING PLAN

1/8" = 1'-0" | 1

#	KEYNOTE DESCRIPTION
1	SOLATUBE PER DETAIL 9/A62.2.

	RECESSED SUPPLY AIR GRILL, SEE MECH. DRAWINGS
	RECESSED RETURN AIR GRILL, SEE MECH. DRAWINGS
	RECESSED EXHAUST AIR GRILL, SEE MECH. DRAWINGS
	LUMINAIRE, SEE ELEC. DRAWINGS*
	RECESSED DOWNLIGHT, SEE ELEC. DRAWINGS*
	RECESSED DOWNLIGHT, EXTERIOR, SEE ELEC. DRAWINGS*
	LIGHT FIXTURE, SEE ELEC. DRAWINGS*
B	EXHAUST VENTS, SEE MECHANICAL DRAWINGS
	WALL MOUNTED DOWNLIGHT, 80" MIN. CLR. ABOVE FINISH SURFACE. SEE ELEC. DRAWINGS*
	ACCESS PANEL, PER DET. -/---
	GYP. BOARD TO UNDERSIDE OF CEILING/ROOF ASSEMBLY.
	DROPPED GYP. BOARD CEILING, REFER TO NOTE 1
	2' X 4' SUSPENDED CEILING GRID AND TILES. REFER TO NOTE 2.
	METAL PANEL
A	UC-500V SOFFIT PANEL W/ EMBER RESISTANT SCREEN ATTACHED ON THE INSIDE OF THE PANEL W/ EPOXY PER SPEC
	EXIT SIGNAGE, SEE ELECTRICAL DRAWINGS
	CEILING FAN BASIS OF DESIGN: 'BIG ASS FAN' E-SERIES, 7FT DIAMETER. PROVIDE JUNCTION BOX PER ELECTRICAL PLANS.

NOTES:
1. GYPSUM BOARD CEILINGS SHALL BE SUSPENDED. REFER TO STRUCTURAL FOR ADDITIAONAL INFORMATION.
2. FOR SUSPENDED ACOUSTICAL CEILING, REFER TO SHEET **A63.1, A63.2, & S1.9.**
3. AT ALL ROOMS WITHOUT CEILINGS LABELLED AS "EXP." ON PLAN AND/OR ON THE FINISH SCHEDULE), ALL EXPOSED SURFACES AND ELEMENTS SHALL BE PAINTED, INCLUDING STRUCTURE, DECK ABOVE, AND ALL UTILITIES INCLUDING PIPING, CONDUITS, DUCTWORK, ETC.
4. PLUMBING, ELECTRICAL, MECHANICAL AND FIRE PROTECTION COMPONENTS ARE SHOWN FOR REFERNECE AND COORDINATION PURPOSES. REFER TO PLUMBING, ELECTRICAL, MECHANICAL, AND FIRE PROTECTION DRAWINGS FOR COMPONENT AND SYSTEM QUANTITIES, TYPES AND REQUIREMENTS
5. CENTER LIGHTING FIXTURES BETWEEN OPPOSITE WALLS, U.N.O.
6. ALL DIMENSIONS, NOTES, KEYNOTES AND DETAILS CALLOUTS ARE TYPICAL, U.N.O.
7. SEE SHEET A50.1 FOR INTERIOR FINISH LEGEND
8. AT EXPOSED CEILINGS, ALL DUCTS, PIPES AND CONDUITS SHALL RUN PARALLEL OR PERPENDICULAR TO WALL, AND AS CLOSE TO THE DECK ABOVE AS POSSIBLE. PROVIDE ESCUTCHEONS FOR CONDUIT/PIPES AT WALLS WHERE EXPOSED.

* REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF EMERGENCY LIGHTING.

RCP LEGEND A

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
No. C-13801
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
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SHEET TITLE:

REFLECTED CEILING PLAN

CITY OF IRVINE PUBLIC WORKS DIVISION

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PLAN CHECK 00954071-PARK

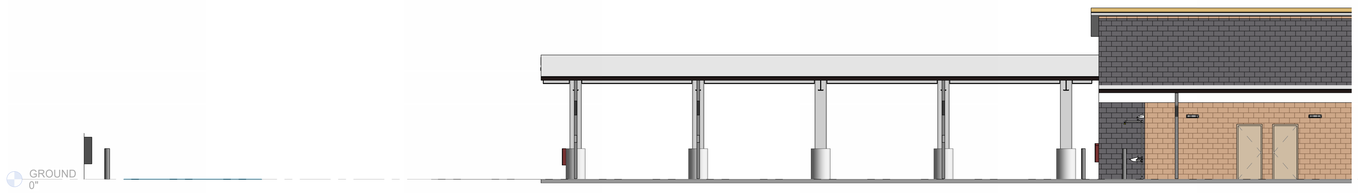
BUILDING ADDRESS NUMBER SHALL BE PROVIDED PER IRVINE UNIFORM SECURITY CODE REQUIREMENTS. A

SECTION 5-9-517 L
L. ADDRESSING FOR NONRESIDENTIAL BUILDINGS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

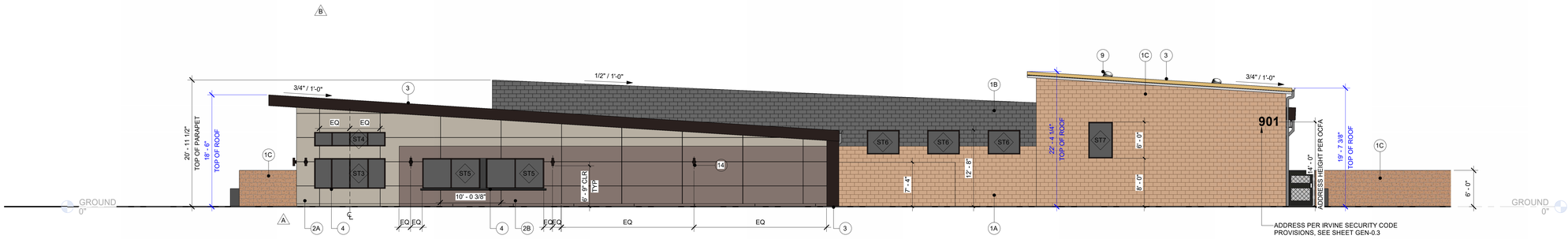
1. NUMERALS SHALL BE MOUNTED ON THE WALL OR WINDOW, NOT LESS THAN 8 FEET OR HIGHER THAN 30 FEET FROM GROUND LEVEL AND FACE THE STREET ON WHICH THE BUILDING IS ADDRESSED. NUMERALS ARE TO BE CLEARLY VISIBLE FROM THIS SAME STREET AND NOT OBSCURED BY BUILDING LANDSCAPING AT FULL MATURITY. ADDRESSING SHALL BE OF A COLOR CONTRASTING TO THE BACKGROUND TO WHICH THEY ARE AFFIXED. METHOD OF ATTACHMENT SHALL NOT INCLUDE THE USE OF TWO-SIDED TAPE OR ANY MATERIAL NOT RESISTANT TO WEATHER CONDITIONS.

2. WHERE DISTANCE OR INTERVENING OBSTRUCTIONS IMPAIR VISIBILITY FROM THE STREET, ADDRESSING SHALL BE MOUNTED ON ALL BUILDINGS SO AS TO BE VISIBLE FROM DRIVE AISLES AND WALKWAYS INTERNAL TO THE SITE, AND EACH SUCH ADDRESS, OR AN ENCOMPASSING RANGE OF ADDRESSES, SHALL BE DISPLAYED ON MONUMENT SIGNS VISIBLE FROM EACH SITE ENTRANCE FROM ALL APPROACHING DIRECTIONS. IN SUCH CASES, THESE SIGNS SHALL BE DESIGNED PER NO. 5 BELOW.

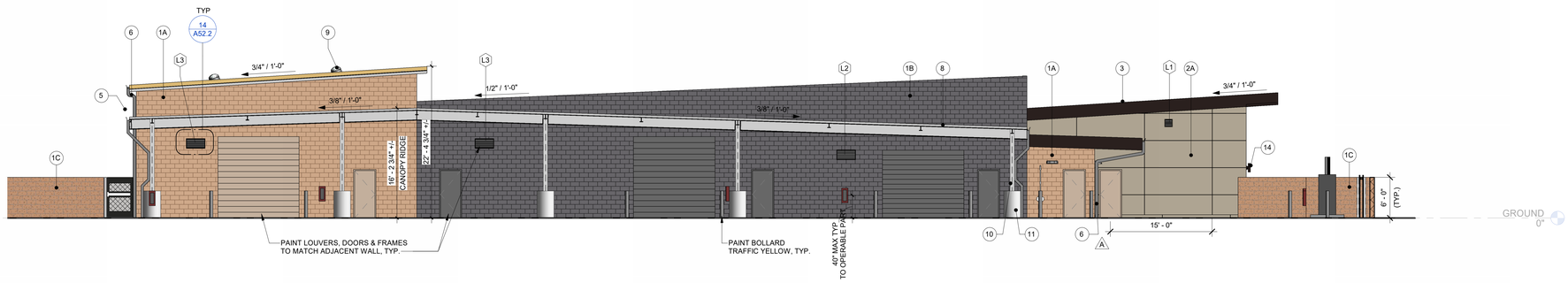
3. NUMERALS SHALL BE NO LESS THAN SIX INCHES IN HEIGHT, IF LOCATED LESS THAN 100 FEET FROM THE CENTER LINE OF THE ADDRESSED STREET OR 12 INCHES IN HEIGHT IF PLACED FURTHER THAN 100 FEET FROM THE CENTER LINE OF THE ADDRESSED STREET. THE NUMERALS SHALL BE IN A SANS SERIF FONT WITH A STROKE WEIGHT OF MEDIUM TO BOLD, OR AN APPROVED EQUIVALENT FONT WHICH IS CLEARLY LEGIBLE, AND ILLUMINATED DURING THE HOURS OF DARKNESS, WITH A MINIMUM OF TWO FOOT-CANDLES OF LIGHT ON THE NUMBERS, USING A LIGHT SOURCE PROVIDED WITH AN UNINTERRUPTIBLE A.C. POWER SOURCE OR CONTROLLED ONLY BY A PHOTOELECTRIC DEVICE, WHICH MAY BE THE COMMON AREA SITE LIGHTING.



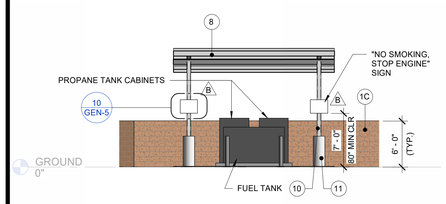
WEST ELEVATION | 1/8" = 1'-0" | 3



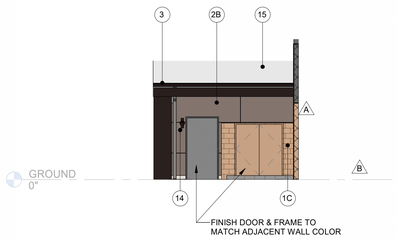
SOUTH ELEVATION | 1/8" = 1'-0" | 2



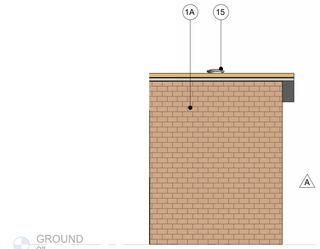
NORTH ELEVATION | 1/8" = 1'-0" | 1



FUEL AREA ELEVATION | 1/8" = 1'-0" | 6



ELEC RM ELEVATION | 1/8" = 1'-0" | 5



STORAGE ELEVATION | 1/8" = 1'-0" | 4

1. REFER TO SHEETS M00.3 - M00.4 FOR TITLE 24 COMPLIANCE FORMS.

ELEVATION GENERAL NOTES

A

101	NUMBER INDICATES DOOR PER SCHEDULE, REFER TO SHEET AS2.1
L1	NUMBER INDICATED LOUVER PER SCHEDULE, REFER TO SHEET AS2.2
W-#	NUMBER INDICATED STOREFRONT REFER TO SHEET AS2.2

ELEVATION LEGEND

1A	CMU: ANGELUS BLOCK - PRECISION TEXTURE (FACTORY FINISH) COLOR "HARVEST" - RUNNING BOND
1B	CMU: ANGELUS BLOCK - PRECISION TEXTURE (FACTORY FINISH) COLOR "ONYX" - RUNNING BOND
1C	CMU: ANGELUS BLOCK - SPLIT FACE (FACTORY FINISH) COLOR "SANDSTONE" - RUNNING BOND
2A	FIBER CEMENT SIDING: EQUITONE, TECTIVA, COLOR "TE 00"
2B	FIBER CEMENT SIDING: EQUITONE, TECTIVA, COLOR "TE 60"
3	SHEET METAL FASCIA: PREFINISH TO MATCH DARK BRONZE STOREFRONT MULLIONS
4	ALUMINUM MULLIONS: DARK BRONZE
5	SHEET METAL GUTTER: COIL - PREFINISHED, MATCH WALL
6	SHEET METAL DOWNSPOUT: RECTANGULAR, PREFINISHED, MATCH WALL
7	PVC ROOFING MEMBRANE: SIKA SARNAFIL
8	METAL DECKING ROOF: GALVANIZED
9	SKYLIGHT: SOLATUBE PER DETAIL 9 / A62.2
10	STEEL COLUMN / BEAM: PAINTED - COLOR GREY TO MATCH CONCRETE BASE
11	CONCRETE BASE AT COLUMN
12	CONTROL JOINT - COLOR TO MATCH WALL
13	GLAZING: SOLAR BAN R100
14	LIGHT FIXTURE PER ELECTRICAL. FINISH COLOR TO MATCH STOREFRONT MULLIONS
15	ROOF VENT

EXTERIOR FINISHES

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A21.1

SHEET TITLE:

EXTERIOR ELEVATIONS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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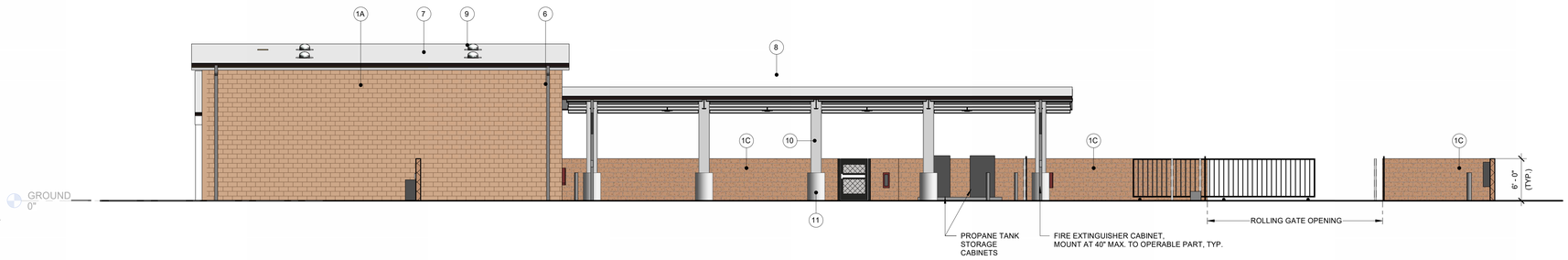
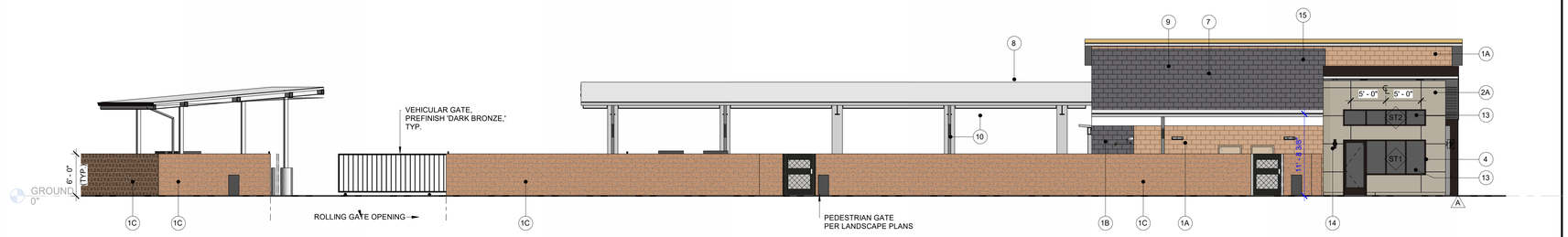
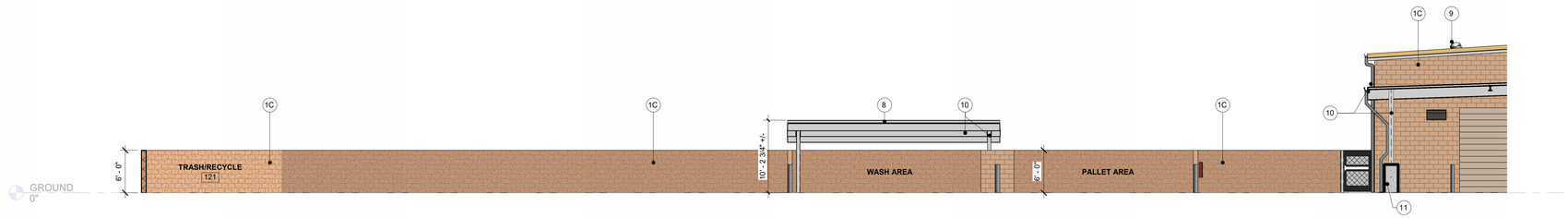
PLAN CHECK 00954071-PARK



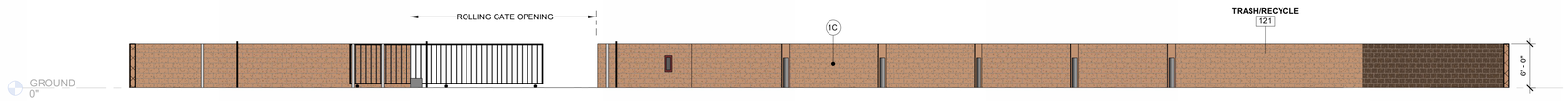
EAST ELEVATION | 1/8" = 1'-0" | **4**



WEST ELEVATION - SITE WALL | 1/8" = 1'-0" | **3**



WASH / TRASH / PALLETE AREA - ELEVATION | 1/8" = 1'-0" | **2**



BUNKER AREA - ELEVATION | 1/8" = 1'-0" | **1**

KEYNOTES

KEYNOTE DESCRIPTION

A

1. REFER TO SHEETS M00.3 - M00.4 FOR TITLE 24 COMPLIANCE FORMS.

ELEVATION GENERAL NOTES

(101) NUMBER INDICATES DOOR PER SCHEDULE, REFER TO SHEET A52.1

(L1) NUMBER INDICATED LOUVER PER SCHEDULE, REFER TO SHEET A52.2

(W-#) NUMBER INDICATED STOREFRONT REFER TO SHEET A52.2

ELEVATION LEGEND

1A CMU: ANGELUS BLOCK - PRECISION TEXTURE (FACTORY FINISH) COLOR "HARVEST" - RUNNING BOND

1B CMU: ANGELUS BLOCK - PRECISION TEXTURE (FACTORY FINISH) COLOR "ONYX" - RUNNING BOND

1C CMU: ANGELUS BLOCK - SPLIT FACE (FACTORY FINISH) COLOR "SANDSTONE" - RUNNING BOND

2A FIBER CEMENT SIDING: EQUITONE, TECTIVA, COLOR "TE 00"

2B FIBER CEMENT SIDING: EQUITONE, TECTIVA, COLOR "TE 60"

3 SHEET METAL FASCIA: PREFINISH TO MATCH DARK BRONZE STOREFRONT MULLIONS

4 ALUMINUM MULLIONS: DARK BRONZE

5 SHEET METAL GUTTER: COIL - PREFINISHED, MATCH WALL

6 SHEET METAL DOWNSPOUT: RECTANGULAR, PREFINISHED, MATCH WALL

7 PVC ROOFING MEMBRANE: SIKA SARNAFIL

8 METAL DECKING ROOF: GALVANIZED

9 SKYLIGHT: SOLATUBE PER DETAIL 9/ A62.2

10 STEEL COLUMN / BEAM: PAINTED - COLOR GREY TO MATCH CONCRETE BASE

11 CONCRETE BASE AT COLUMN

12 CONTROL JOINT - COLOR TO MATCH WALL

13 GLAZING: SOLAR BAN R100

14 LIGHT FIXTURE PER ELECTRICAL. FINISH COLOR TO MATCH STOREFRONT MULLIONS

15 ROOF VENT

EXTERIOR FINISHES

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A21.2

SHEET TITLE:

EXTERIOR ELEVATIONS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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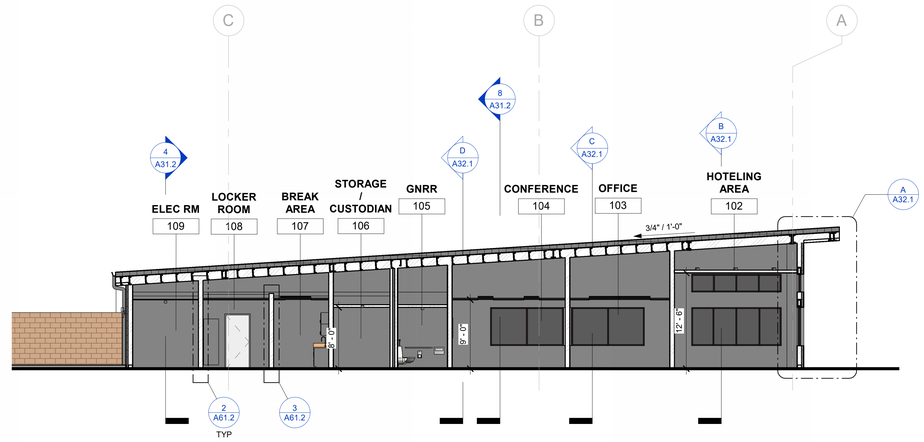

SECTION C | 1/8" = 1'-0" | 4

KEYNOTES

#	KEYNOTE DESCRIPTION
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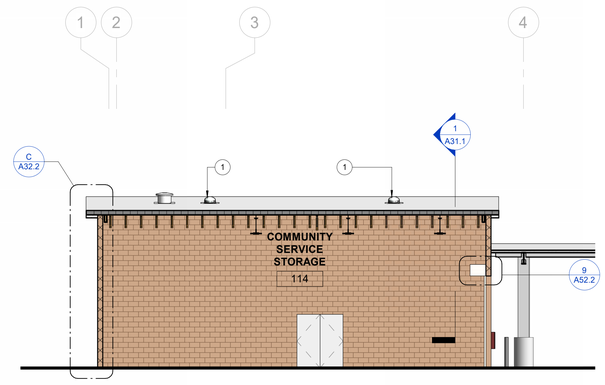
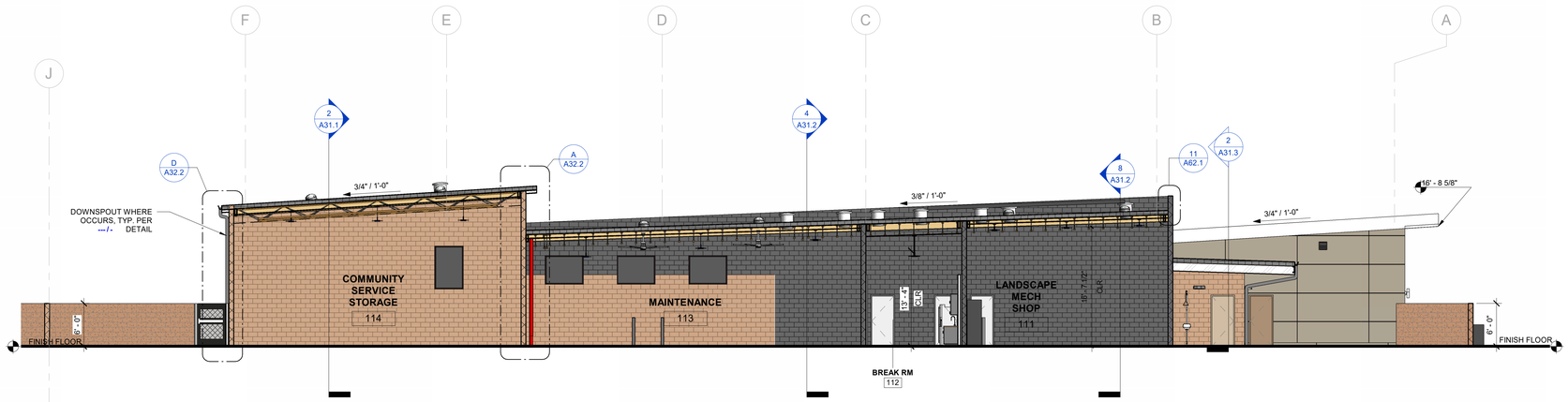


SECTION B | 1/8" = 1'-0" | 2



SECTION - LANDSCAPE MECH SHOP | 1/8" = 1'-0" | 1

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMONS
No. C-13001
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A31.1

SHEET TITLE:

SECTIONS

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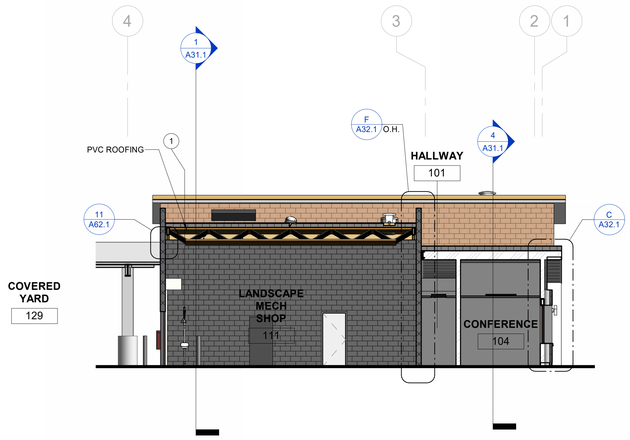
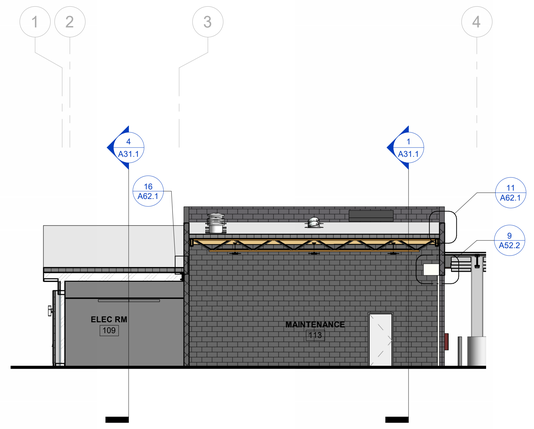


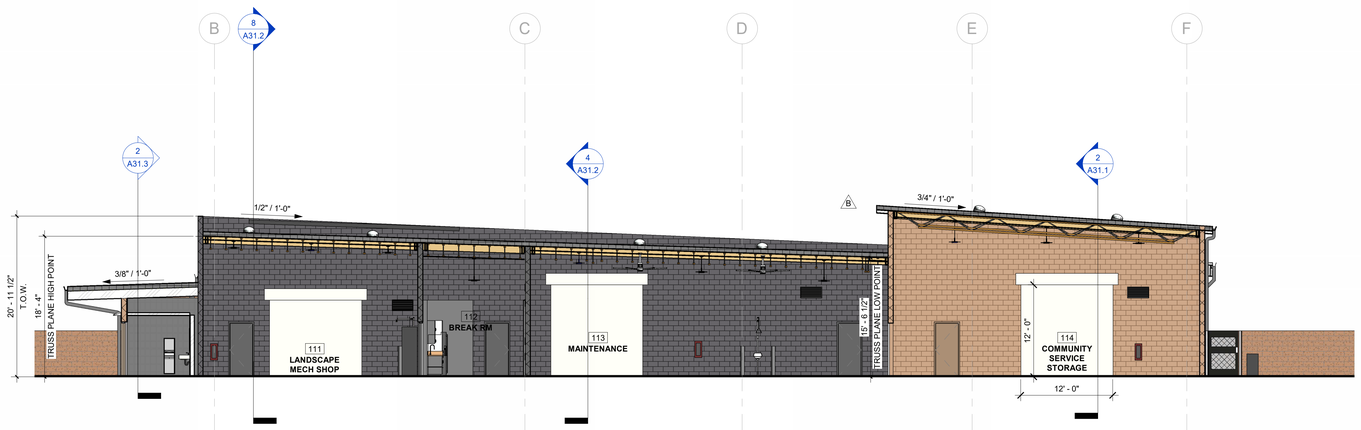
SECTION 8 | 1/8" = 1'-0" | 8



SECTION 7 | 1/8" = 1'-0" | 4

#	KEYNOTE DESCRIPTION
1	

KEYNOTES



SECTION - MECH SHOP, MAINTENANCE, STORAGE | 1/8" = 1'-0" | 1

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SVARA
No. C-19501
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A31.2

SHEET TITLE:

SECTIONS

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6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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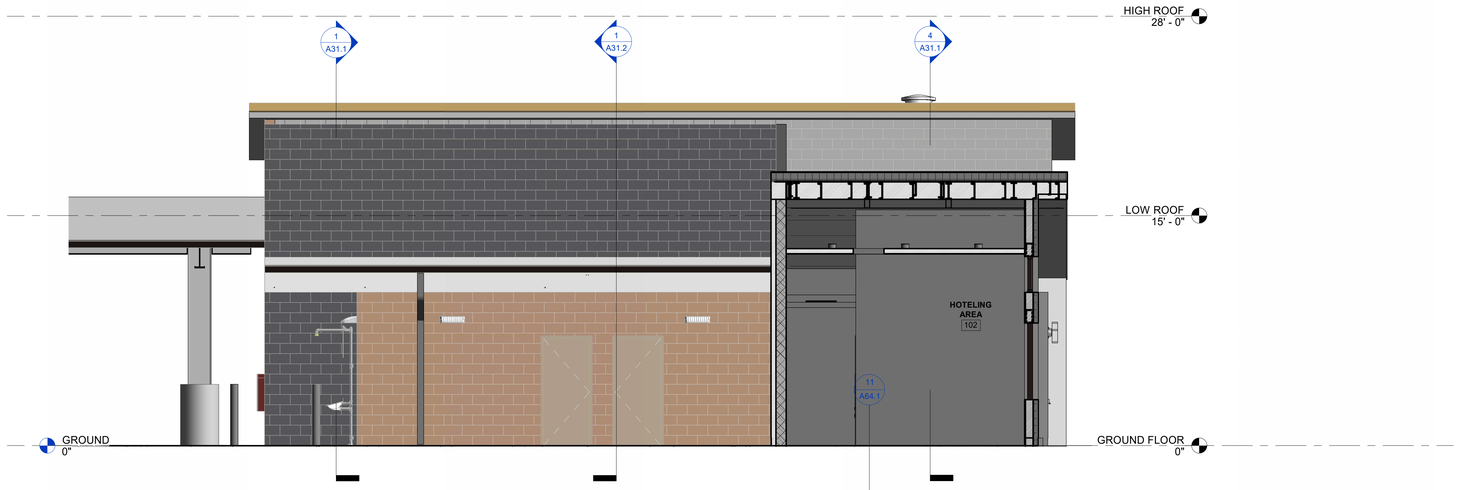
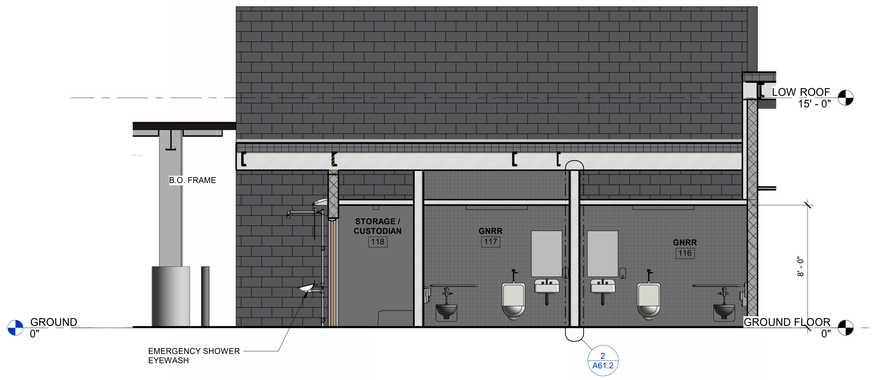
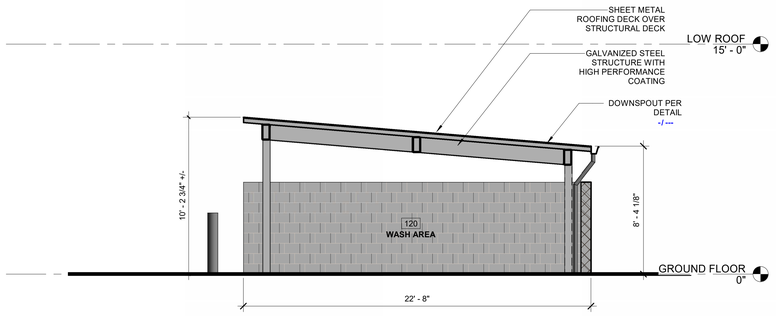


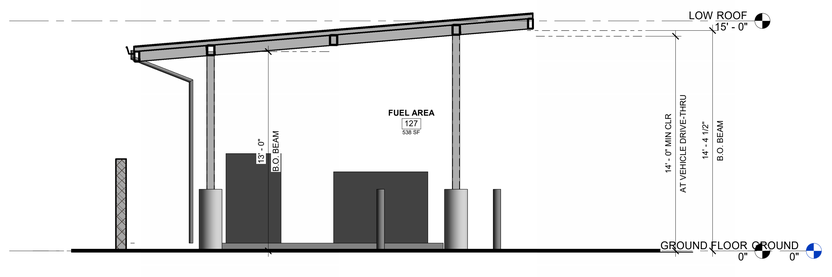
Section 12 | 1/4" = 1'-0" | 3



Section E | 1/4" = 1'-0" | 2



Section G | 1/4" = 1'-0" | 4



Section D1 | 1/4" = 1'-0" | 1

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMARD
No. C-19501
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: 1/4" = 1'-0"

SHEET NUMBER: A31.3
SHEET TITLE:

SECTIONS

SVA ARCHITECTS
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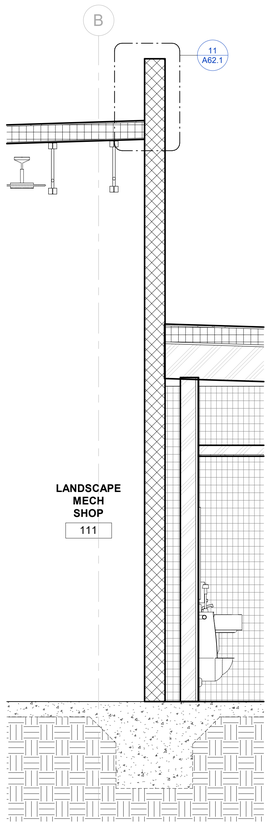
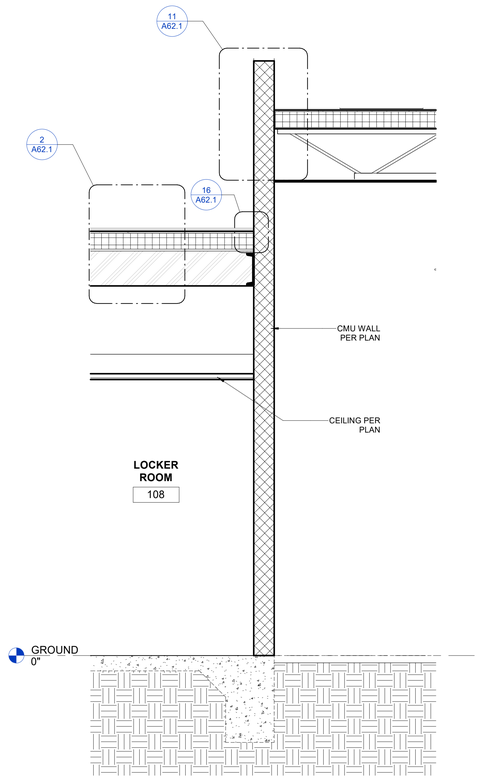
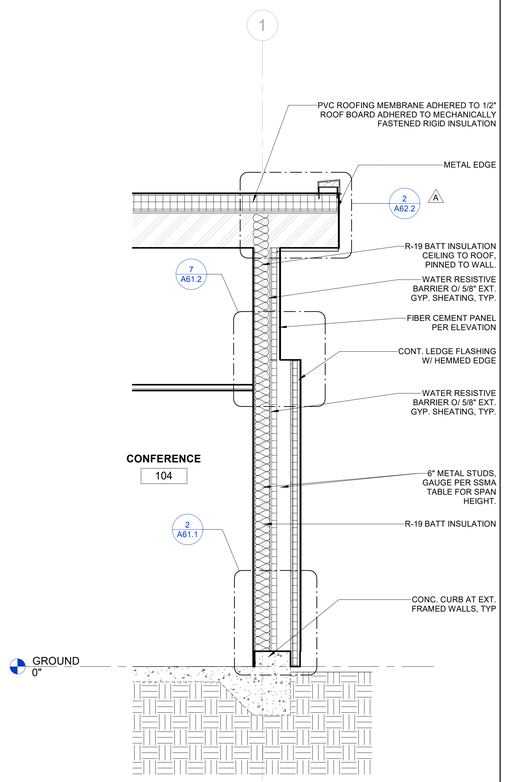
PLAN CHECK 00954071-PARK



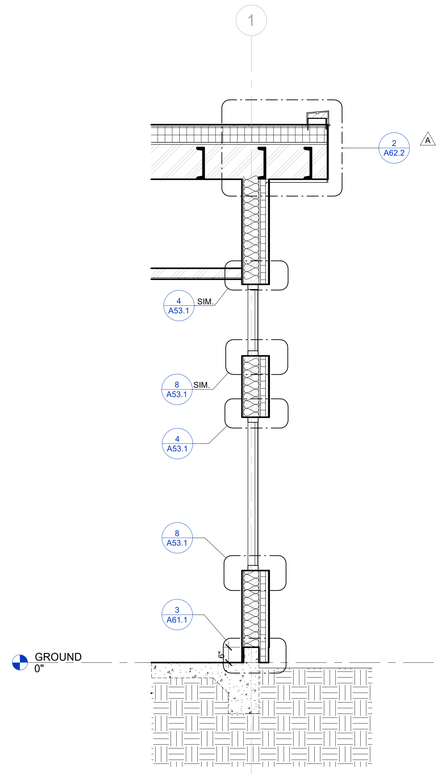
WALL SECTION 8 | 1/2" = 1'-0" | H



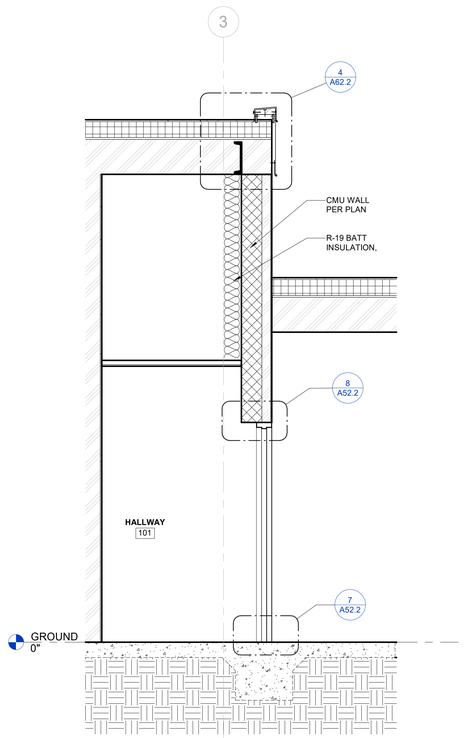
WALL SECTION 6 | 1/2" = 1'-0" | F



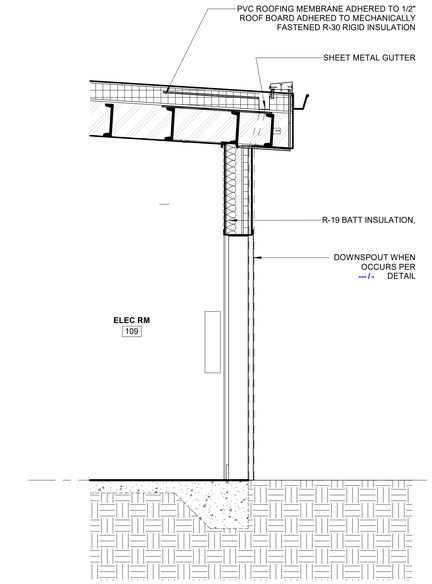
WALL SECTION 4 | 1/2" = 1'-0" | D



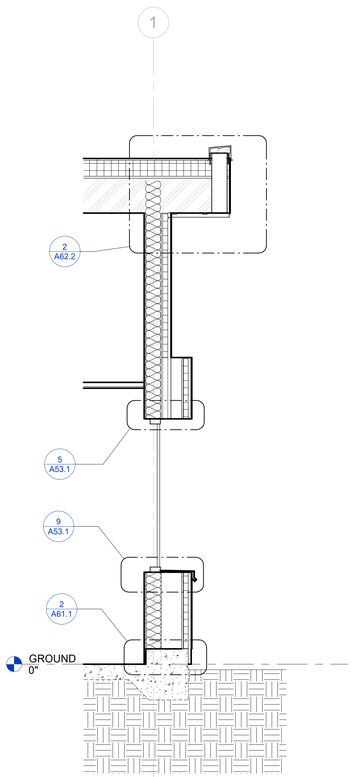
WALL SECTION 2 | 1/2" = 1'-0" | B



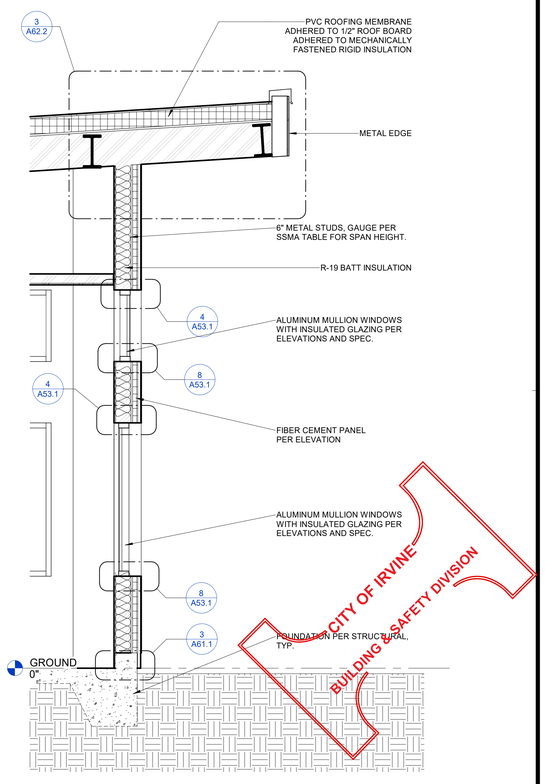
WALL SECTION 7 | 1/2" = 1'-0" | G



WALL SECTION 5 | 1/2" = 1'-0" | E



WALL SECTION 3 | 1/2" = 1'-0" | C



WALL SECTION 1 | 1/2" = 1'-0" | A

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-15201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE: 1/2" = 1'-0"

SHEET NUMBER: A32.1

SHEET TITLE:

WALL SECTIONS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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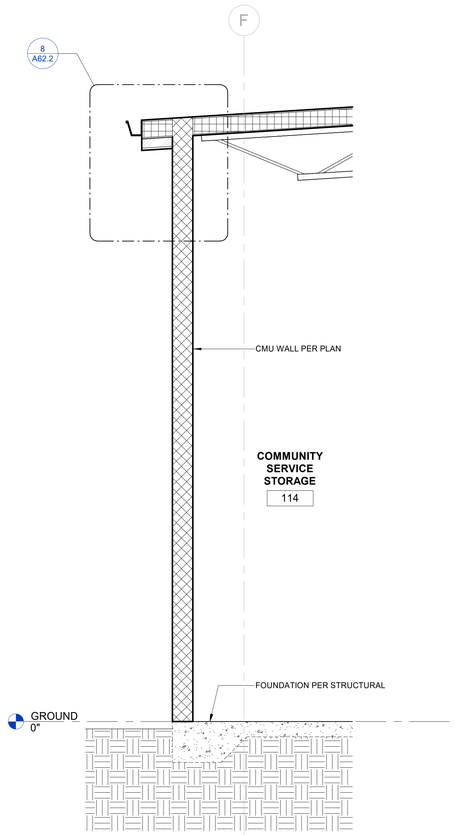
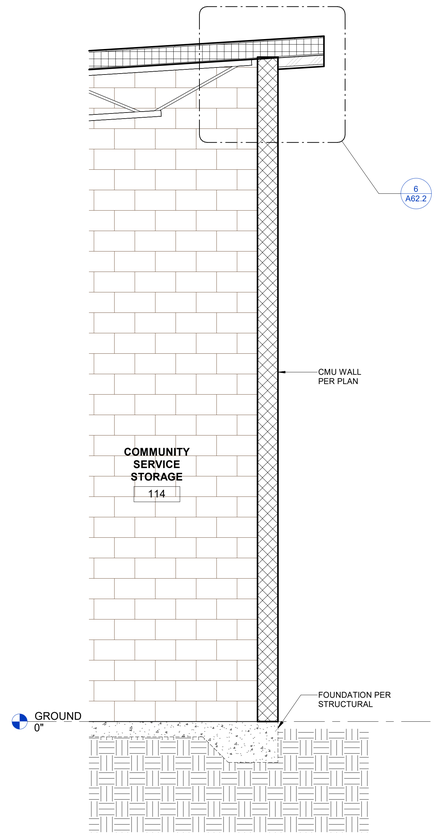
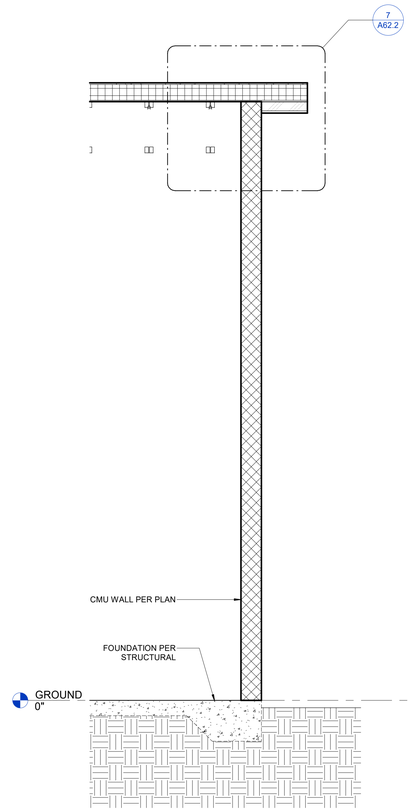
PLAN CHECK 00954071-PARK



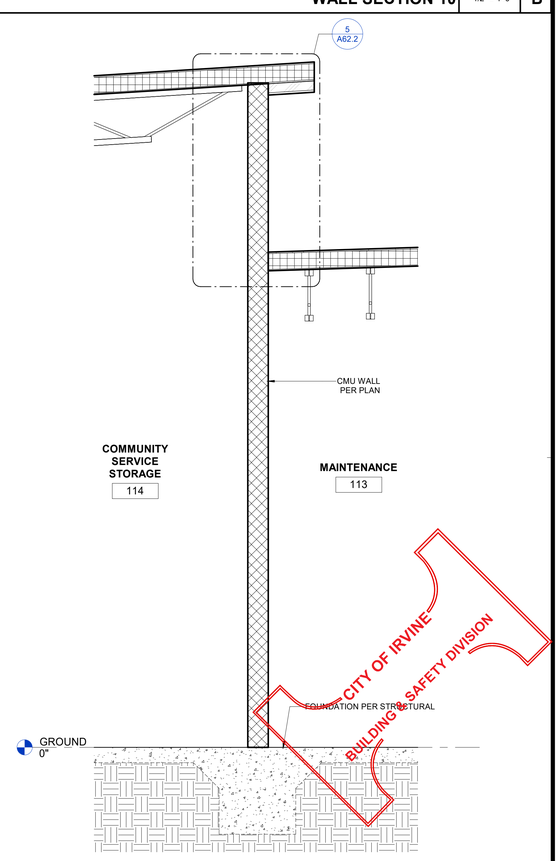
WALL SECTION 12 | 1/2" = 1'-0" | D



WALL SECTION 10 | 1/2" = 1'-0" | B



WALL SECTION 11 | 1/2" = 1'-0" | C



WALL SECTION 9 | 1/2" = 1'-0" | A

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SVA
No. C-17601
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: 1/2" = 1'-0"

SHEET NUMBER: A32.2

SHEET TITLE:

WALL SECTIONS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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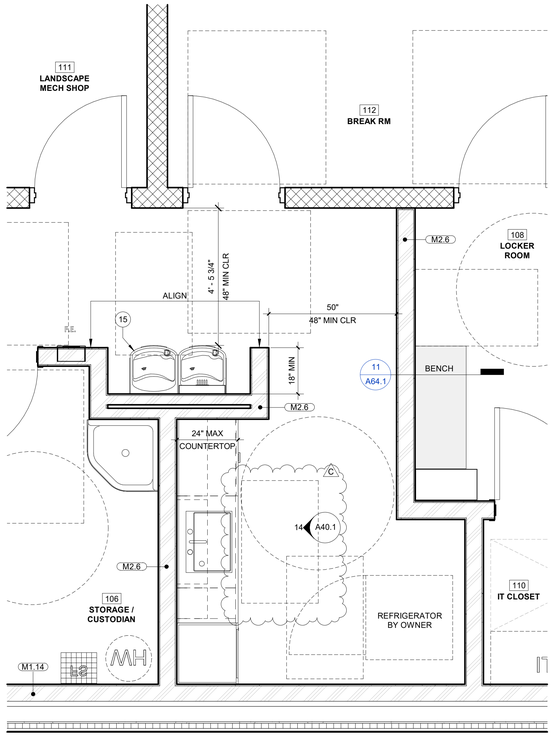
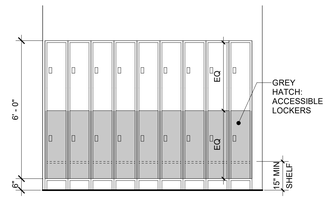
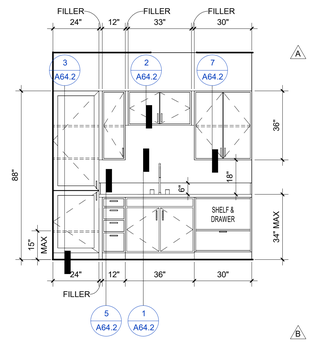
PLAN CHECK 00954071-PARK



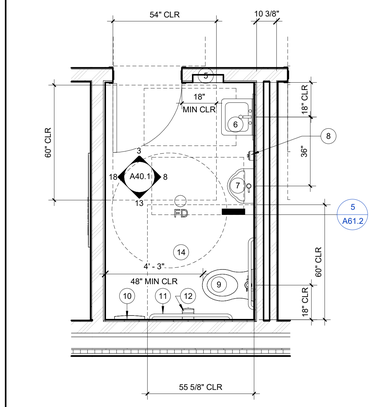
ENLARGED PLAN - BREAK RM 107 | 1/2" = 1'-0" | 23



LOCKER ELEVATION | 3/8" = 1'-0" | 20



BREAK ROOM 107 | 3/8" = 1'-0" | 14



ENLARGED PLAN - GNRR 105 | 3/8" = 1'-0" | 9

KEYNOTES & LEGEND

#	KEYNOTE DESCRIPTION
1	LOCKERS BY OWNER, N.I.C.
2	WATER HEATER PER PLUMBING PLANS
3	MOP SINK, SEE PLUMBING PLANS
4	VIDEO MONITOR WITH WALL BRACKET,OFCI.
5	RECESSED PAPER TOWEL DISPENSER/ WASTE RECEPTACLE, BOBRICK B-3940
6	ACCESSIBLE LAVATORY. SEE PLUMBING PLANS
7	ACCESSIBLE HIGH EFFICIENCY URINAL. SEE PLUMBING PLANS
8	SURFACE-MOUNTED LIQUID SOAP DISPENSER, MODEL# BOBRICK B-4112
9	ACCESSIBLE HIGH EFFICIENCY TOILET (HET), WALL-MOUNTED, SEE PLUMBING PLANS
10	SEAT COVER DISPENSER, MODEL# BOBRICK B-4221
11	1-1/2" DIA. STAINLESS STEEL GRAB BAR W/ANTI-SLIP COATING
12	TOILET PAPER DISPENSER, MODEL# BOBRICK B-4288
13	FRAMED MIRROR, MODEL# BOBRICK B-165
14	DEPRESSED SLAB. SEE STRUCTURAL DRAWINGS
15	ACCESSIBLE HI / LOW DRINKING FOUNTAIN WITH BOTTLE FILLER IN ALCOVE, STAINLESS STEEL FINISH. SEE PLUMBING PLANS

30"x48" MIN. ACCESSIBLE WHEELCHAIR CLEAR FLOOR SPACE

60" MIN. ACCESSIBLE WHEELCHAIR CLEAR TURNING SPACE

1i — WALL TYPE ANNOTATIONS, SEE SHEET A61.2 FOR DETAILS

101 — NUMBER INDICATES DOOR PER SCHEDULE, REFER TO SHEET A52.1

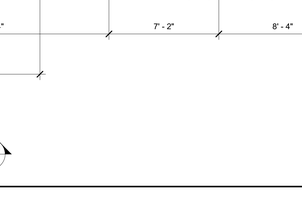
W-# — NUMBER INDICATED WINDOW/STOREFRONT REFER TO SHEET A52.2

FD — FLOOR DRAIN PER PLUMBING PLANS

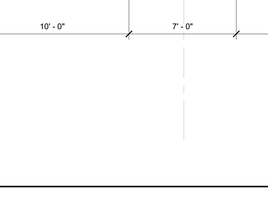
DS — DOWNSPOUT. SEE CIVIL & PLUMBING PLANS

GENERAL NOTES:

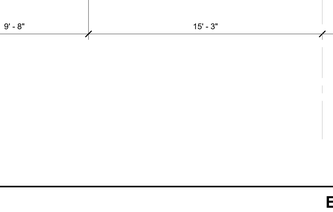
1. ALL DIMENSIONS ARE TO CENTERLINE OF THE GRID LINES AND/OR TO THE FACE OF STUDS OR CMU, U.N.O.
2. ALL WALLS ARE FULL HEIGHT, U.N.O.
3. REFER TO SHEET **GEN-4** FOR TYPICAL ACCESSIBILTY REQUIREMENTS AND DIMENSIONS.
4. REFER TO ENLARGED PLANS FOR DIMENSIONS AND CALLOUTS NOT SHOWN HERE.
5. REFER TO PLANS BY ALL DISCIPLINES FOR ADDITIONAL INFORMATION.



GNRR 105 - D | 3/8" = 1'-0" | 18

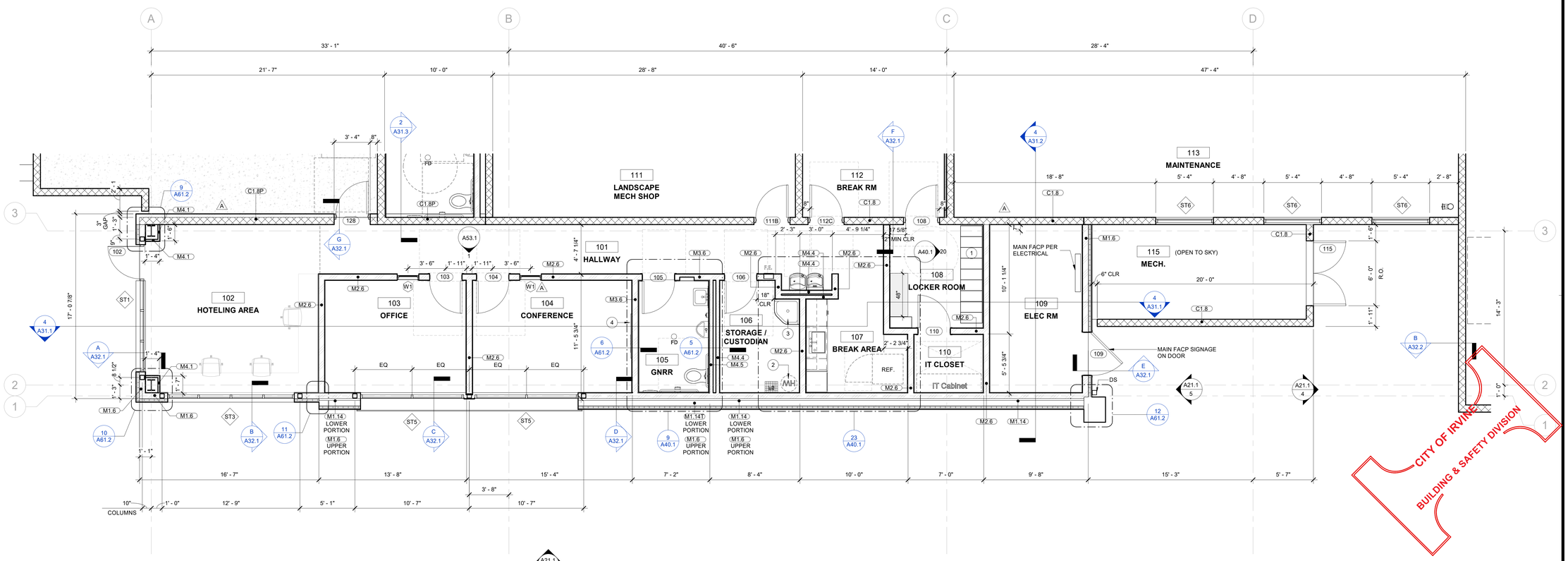


GNRR 105 - C | 3/8" = 1'-0" | 13



GNRR 105 - B | 3/8" = 1'-0" | 8

GNRR 105 - A | 3/8" = 1'-0" | 3



ENLARGED PLAN - ADMINISTRATION AREA | 1/4" = 1'-0" | 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated
SHEET NUMBER: A40.1
SHEET TITLE:

ENLARGED PLANS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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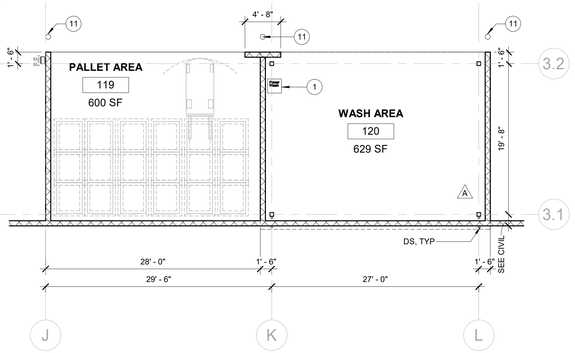
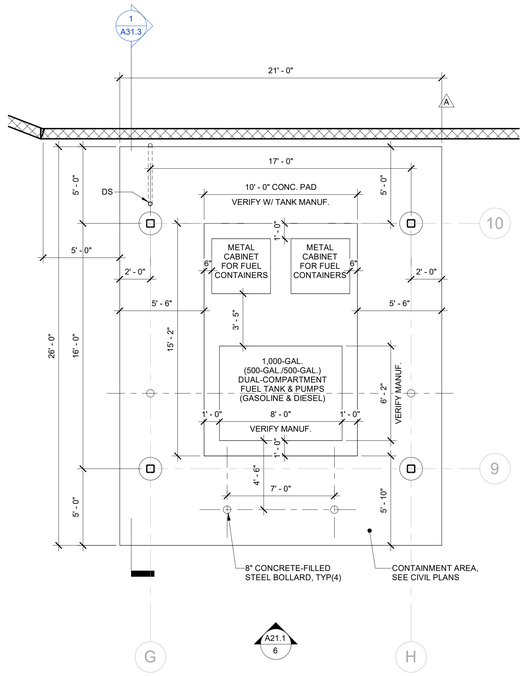
PLAN CHECK 00954071-PARK

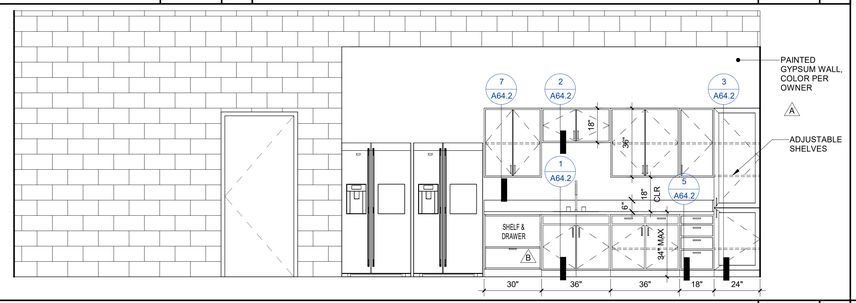


ENLARGED PLAN - PALLET AND WASH AREAS | 1/8" = 1'-0" | 29

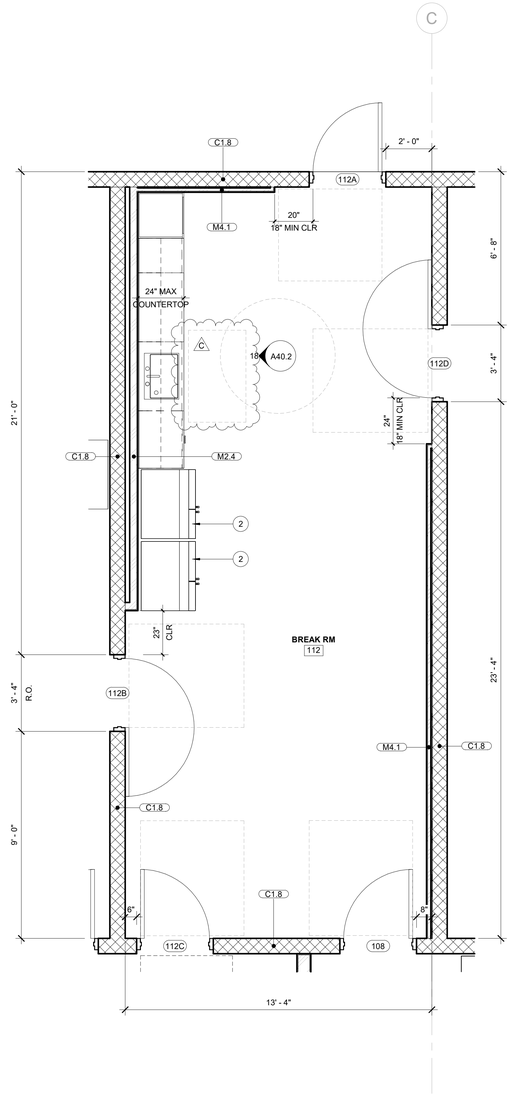


ENLARGED PLAN - FUEL AREA | 1/4" = 1'-0" | 19

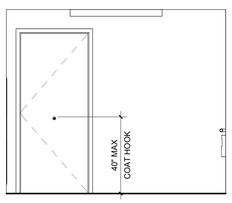
COMPLETE FUEL STORAGE AND DISPENDING PLAN TO BE SUBMITTED AS DEFERRED SUBMITTAL.



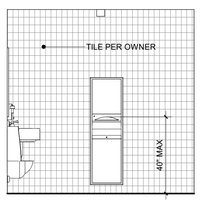
BREAK ROOM 112 | 3/8" = 1'-0" | 18



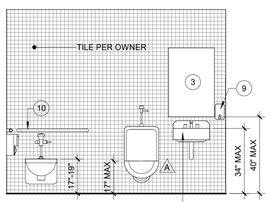
ENLARGED PLAN - BREAK ROOM 112 | 3/8" = 1'-0" | 8



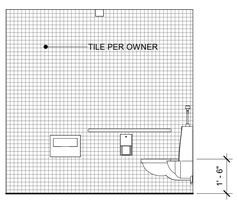
GNRR 122 - D | 3/8" = 1'-0" | 22



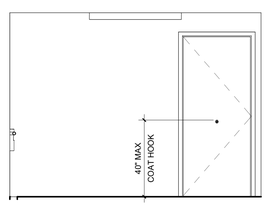
GNRR 122 - C | 3/8" = 1'-0" | 17



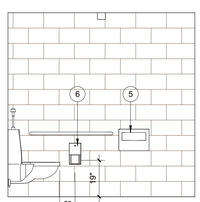
GNRR 122 - B | 3/8" = 1'-0" | 12



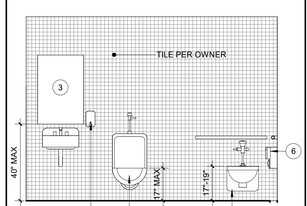
GNRR 122 - A | 3/8" = 1'-0" | 7



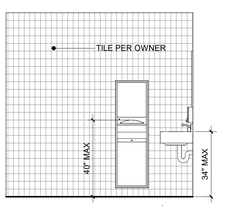
GNRR 123 - D | 3/8" = 1'-0" | 21



GNRR 123 - C | 3/8" = 1'-0" | 16



GNRR 123 - B | 3/8" = 1'-0" | 11



GNRR 123 - A | 3/8" = 1'-0" | 6

#	KEYNOTE DESCRIPTION
1	POWER WASH MACHINE
2	NEW REFRIGERATOR. MODEL #: PFD28KYNFS, 69 7/8" H x 35 3/4" W x 36 1/4" D, STAINLESS STEEL
3	FRAMED MIRROR, MODEL# BOBRICK B-165
4	ACCESSIBLE HIGH EFFICIENCY URINAL. SEE PLUMBING PLANS
5	SEAT COVER DISPENSER, MODEL# BOBRICK B-4221
6	TOILET PAPER DISPENSER, MODEL# BOBRICK B-4288
7	ACCESSIBLE HIGH EFFICIENCY TOILET (HET), WALL-MOUNTED, SEE PLUMBING PLANS
8	ACCESSIBLE LAVATORY. SEE PLUMBING PLANS
9	SURFACE-MOUNTED LIQUID SOAP DISPENSER, MODEL# BOBRICK B-4112
10	1-1/2" DIA. STAINLESS STEEL GRAB BAR W/ANTI-SLIP COATING
11	8" CONCRETE-FILLED STEEL BOLLARDS, 4' ABOVE FINISH GRADE, EMBED IN FOOTING. SEE DETAIL 9/GEN-5 AND STRUCTURAL PLANS.
12	EMERGENCY EYEWASH AND SHOWER EQUIPMENT PER ANSI Z358.1-1981 SECTIONS 5,7,9. OUTDOORS.
13	MOP SINK, SEE PLUMBING PLANS

30"x48" MIN. ACCESSIBLE WHEELCHAIR CLEAR FLOOR SPACE

60" MIN. ACCESSIBLE WHEELCHAIR CLEAR TURNING SPACE

1i — WALL TYPE ANNOTATIONS, SEE SHEET A61.2 FOR DETAILS

101 — NUMBER INDICATES DOOR PER SCHEDULE, REFER TO SHEET A52.1

W-# — NUMBER INDICATED WINDOW/STOREFRONT REFER TO SHEET A52.2

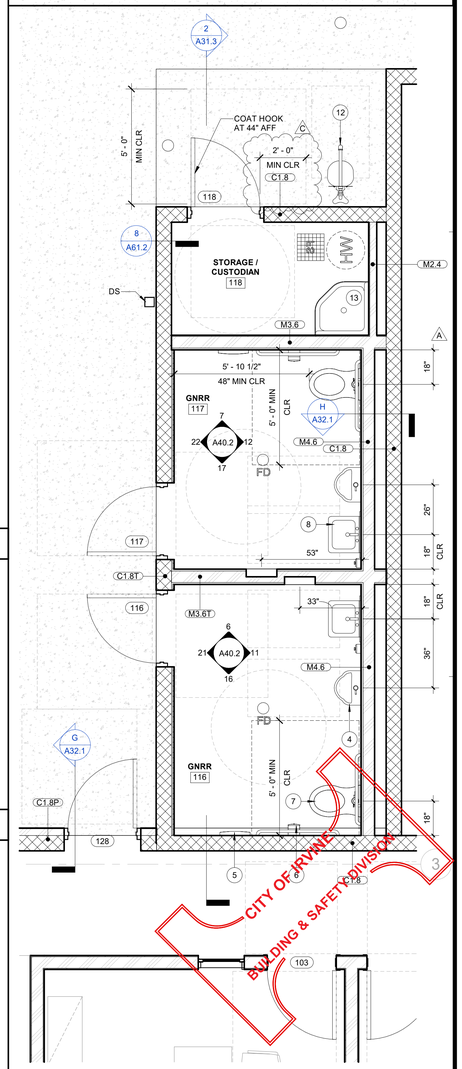
FD — FLOOR DRAIN PER PLUMBING PLANS

DS — DOWNSPOUT. SEE CIVIL & PLUMBING PLANS

GENERAL NOTES:

1. ALL DIMENSIONS ARE TO CENTERLINE OF THE GRID LINES AND/OR TO THE FACE OF STUDS OR CMU, U.N.O.
2. ALL WALLS ARE FULL HEIGHT, U.N.O.
3. REFER TO SHEET **GEN-4** FOR TYPICAL ACCESSIBILTY REQUIREMENTS AND DIMENSIONS.
4. REFER TO ENLARGED PLANS FOR DIMENSIONS AND CALLOUTS NOT SHOWN HERE.
5. REFER TO PLANS BY ALL DISCIPLINES FOR ADDITIONAL INFORMATION.

KEYNOTES & LEGEND



ENLARGED PLAN - YARD RESTROOMS | 3/8" = 1'-0" | 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMMS STATE OF CALIFORNIA Exp. 5-1-2027 JAN 31, 2025

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A40.2

SHEET TITLE:

ENLARGED PLANS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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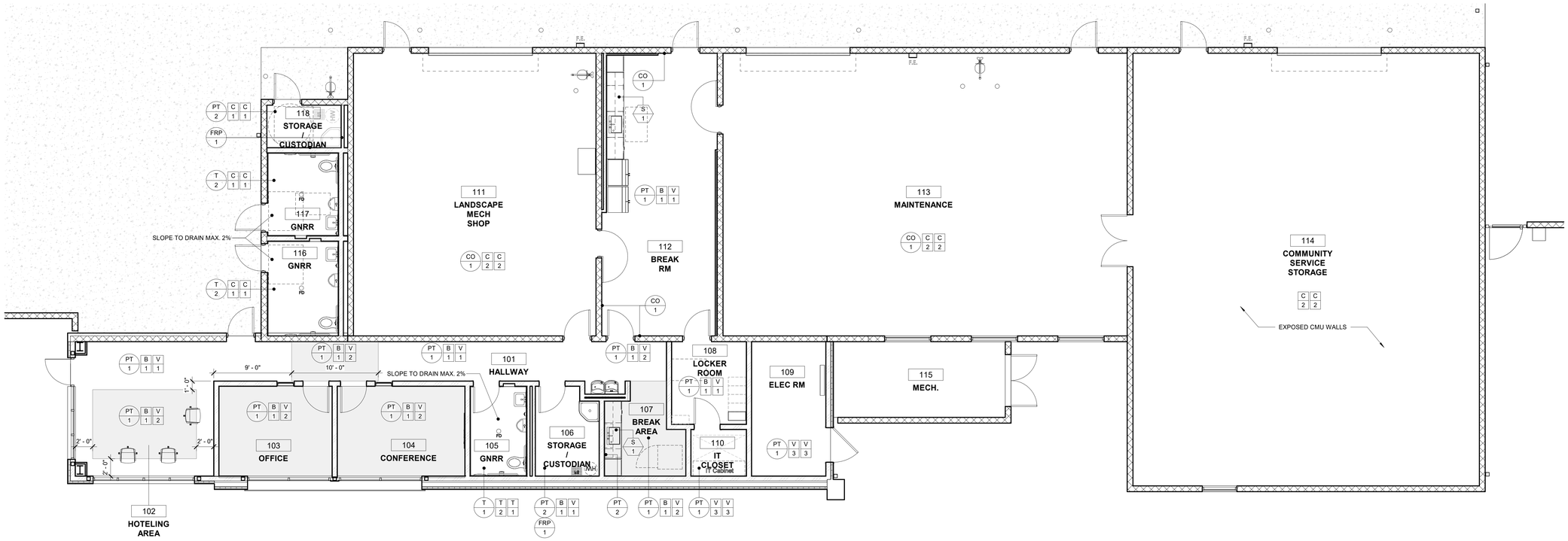
PLAN CHECK 00954071-PARK



INTERIOR FINISH PLAN | 3/16" = 1'-0" | 1

SURFACES

- S 1 — SOLID SURFACE (MANUF.) / (COLOR)

WALL

- PT 1 — PAINT / EGGSHELL (MANUF.) / (COLOR)
- PT 2 — PAINT / SEMI-GLOSS (MANUF.) / (COLOR)
- PT 3 — PAINT (BACK OF HOUSE) / SEMI-GLOSS (MANUF.) / (COLOR)
- T 1 — WALL TILE / (SIZE) (MANUF.) / (COLOR)
- T 2 — WALL TILE / (SIZE) (MANUF.) / (COLOR)
- FRP 1 — FIBERGLASS REINFORCED PLASTIC PANELS WITH TRIM UP TO 48" MIN. A.F.F. / CLASS 'A' / PEBBLED, LIGHT GRAY
- CO 1 — ELASTOMERIC COATING FRAZEE PAINT EMC / 'ZIRCON - SW7667'

FLOOR AND WALL BASE

- C 1 — CONCRETE SLAB WESTCOAT / GROUND AND SEALED WITH EC95 POLYURETHANE TOPCOAT
- C 2 — CONCRETE SLAB WESTCOAT / POLYASPARTIC EPOXY COAT
- B 1 — WALL BASE JOHNSONITE DURACOVE / 4" HIGH / (COLOR)
- B 2 — WALL BASE JOHNSONITE DURACOVE / 6" HIGH / 'SHADED'
- V 1 — VINYL COMPOSITION TILE ARMSTRONG / 'HERBAL GRAY - H2008'
- V 2 — VINYL COMPOSITION TILE ARMSTRONG / 'MOONLIGHT - H2007'
- V 3 — EPOXY CONDUCTIVE ESD TOP COAT KRETUS / NANOTUBE ESD / 'SLATE'
- T 1 — FLOOR TILE / (SIZE) (MANUF.) / (COLOR)
- T 2 — COVE BASE / (SIZE) (MANUF.) / (COLOR)

GENERAL NOTES:

1. ALL FLOOR / SLAB SURFACES IN PROJECT TO MEET DYNAMIC COEFFICIENT OF FRICTION OF 0.6 OR GREATER AT EXTERIOR; 0.42 OR GREATER AT INTERIOR.

FINISH LEGEND

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMONS
No. C-13051
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: 3/16" = 1'-0"

SHEET NUMBER: A50.1

SHEET TITLE:

INTERIOR FINISH PLAN

SVA ARCHITECTS
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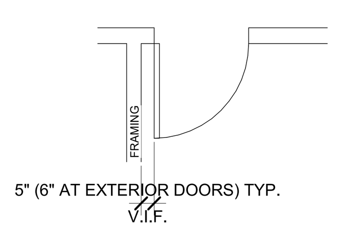
PLAN CHECK 00954071-PARK

DOOR SCHEDULE

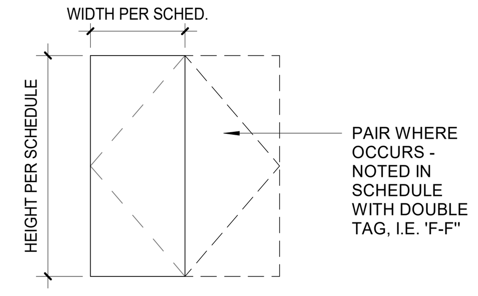
ROOM NAME	NUMBER	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	DETAILS HEAD DETAIL	DETAILS JAMB 1	DETAILS JAMB 2	DETAILS THRESHOLD	HARDWARE GROUP	FIRE RATING	REMARKS
MAIN ENTRY / HOTELING	102	3' - 0"	7' - 10"	FG	AL	BZ	AL	BZ	4/A53.1	2/A53.1	6/A53.1 SIM	17/A52.2	1.0	-	U = 0.45, SHGC = 0.23, VT = 0.17
OFFICE	103	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	1/A52.2	1/A52.2	1/A52.2	17/A52.2	10.0	-	
CONFERENCE	104	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	1/A52.2	1/A52.2	1/A52.2	17/A52.2	10.0	-	
GN RESTROOM 105	105	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	1/A52.2	1/A52.2	1/A52.2	17/A52.2	12.0	-	1" UNDERCUT
CUSTODIAN 106	106	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	1/A52.2	1/A52.2	1/A52.2	17/A52.2	8.0	-	1" UNDERCUT
CHANGE ROOM	108	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	13.0	-	
ELECTRICAL ROOM	109	4' - 0"	8' - 0"	F	HM	FPFP	HM	FPFP	2/A52.2	2/A52.2	2/A52.2	17/A52.2	2.0	-	PANIC HARDWARE; MATCH WALL COLOR; MAX U-FACTOR: 0.7
IT	110	3' - 0"	7' - 0"	F	SCW	FPFP	HM	FPFP	1/A52.2	1/A52.2	1/A52.2	17/A52.2	7.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS
LANDSCAPE MECHANIC SHOP	111A	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	3.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS; MATCH WALL COLOR; 4" HEAD FRAME TO CMU MORTAR LINE
LANDSCAPE MECHANIC SHOP	111B	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	11.0	-	MAX U-FACTOR: 0.7
LANDSCAPE MECHANIC SHOP	111R	12' - 0"	10' - 0"	OHD	AL	FPFP	STL	FPFP	6/A52.2	9/A52.2	9/A52.2	7/A52.2	15.0	-	MATCH WALL COLOR
BREAK RM 112	112A	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	3.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS; MATCH WALL COLOR; 4" HEAD FRAME TO CMU MORTAR LINE; MAX U-FACTOR: 0.7
BREAK RM 112	112B	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	11.0	-	MAX U-FACTOR: 0.7
BREAK RM 112	112C	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	11.0	-	
BREAK RM 112	112D	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	11.0	-	MAX U-FACTOR: 0.7
MAINTENANCE	113A	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	5.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS; MATCH WALL COLOR; 4" HEAD FRAME TO CMU MORTAR LINE
MAINTENANCE	113B	6' - 0"	7' - 0"	F-F	HM	FPFP	HM	FPFP	4/A52.2 SIM	3/A52.2 SIM	3/A52.2 SIM	17/A52.2	9.0	-	
MAINTENANCE	113R	12' - 0"	12' - 0"	OHD	AL	FPFP	STL	FPFP	6/A52.2	9/A52.2	9/A52.2	7/A52.2	15.0	-	MATCH WALL COLOR
COMM. SERV. STORAGE	114	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	3.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS; MATCH WALL COLOR; 4" HEAD FRAME TO CMU MORTAR LINE
COMM. SERV. STORAGE	114R	12' - 0"	12' - 0"	OHD	AL	FPFP	STL	FPFP	6/A52.2	9/A52.2	9/A52.2	7/A52.2	15.0	-	MATCH WALL COLOR
MECH.	115	6' - 0"	6' - 8"	L-L	HM	FPFP	HM	FPFP	-	3/A52.2	3/A52.2	17/A52.2	4.0	-	MATCH WALL COLOR
GN RESTROOM 116	116	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	6.0	-	1" UNDERCUT; 4" HEAD FRAME TO CMU MORTAR LINE
GN RESTROOM 117	117	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	6.0	-	1" UNDERCUT; 4" HEAD FRAME TO CMU MORTAR LINE
CUSTODIAN 118	118	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	4/A52.2	3/A52.2	3/A52.2	17/A52.2	5.0	-	1" UNDERCUT; 4" HEAD FRAME TO CMU MORTAR LINE
HALLWAY-YARD	128	3' - 0"	7' - 0"	F	HM	FPFP	HM	FPFP	8/A52.2	8/A52.2	8/A52.2	17/A52.2	3.0	-	POWERED SECURITY AND ACCESS CONTROL, REFER TO "T" PLANS FOR DETAILS; MATCH WALL COLOR; MAX U-FACTOR: 0.7
YARD - WEST	G1	3' - 0"	6' - 0"	G	HM	FPFP	HM	FPFP	4/A52.1	4/A52.1	3/A52.1	4/A52.1	14.0	-	PEDESTRIAN GATE
YARD - SOUTHWEST	G2	3' - 0"	6' - 0"	G	HM	FPFP	HM	FPFP	4/A52.1	4/A52.1	3/A52.1	4/A52.1	14.0	-	EMERGENCY ACCESS GATE
YARD - SOUTH	G3	3' - 0"	6' - 0"	G	HM	FPFP	HM	FPFP	4/A52.1	4/A52.1	3/A52.1	4/A52.1	14.0	-	EMERGENCY ACCESS GATE

B A

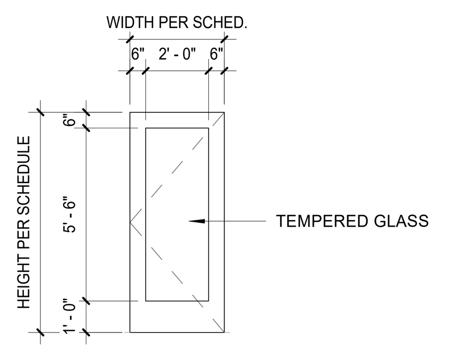
DOOR SCHEDULE (REFER TO IRVINE SECURITY CODE PROVISIONS ON SHEET GEN-0.3)



TYPICAL DOOR PLACEMENT



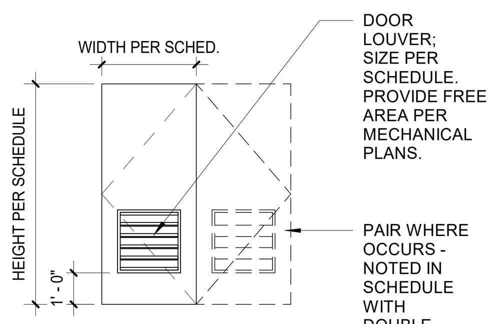
F FLUSH



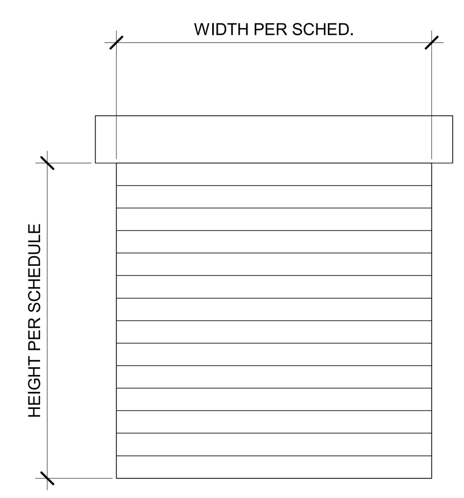
FG FULL GLASS

G PEDESTRIAN GATE
SEE DETAIL 4/A52.1

GV ROLLING VEHICULAR GATE
SEE DETAIL 3/A52.1
(NOT SCHEDULED, SEE A1.0 KEYNOTE 13 FOR LOCATIONS)



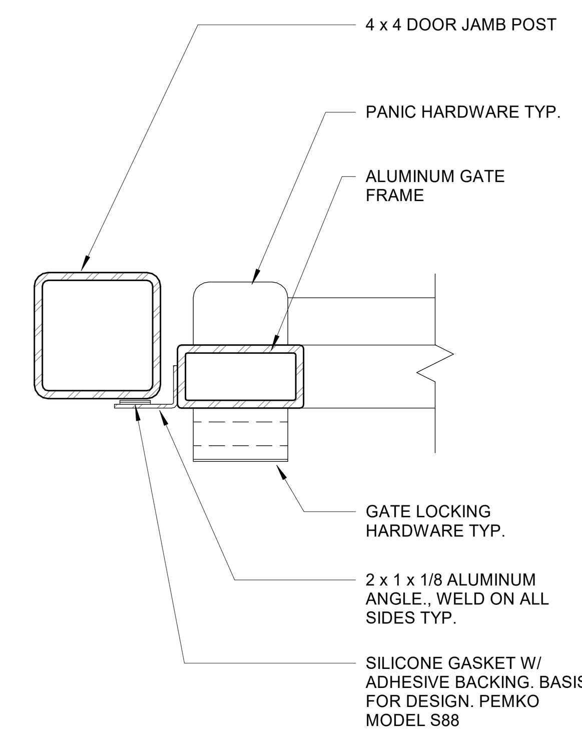
L LOUVER



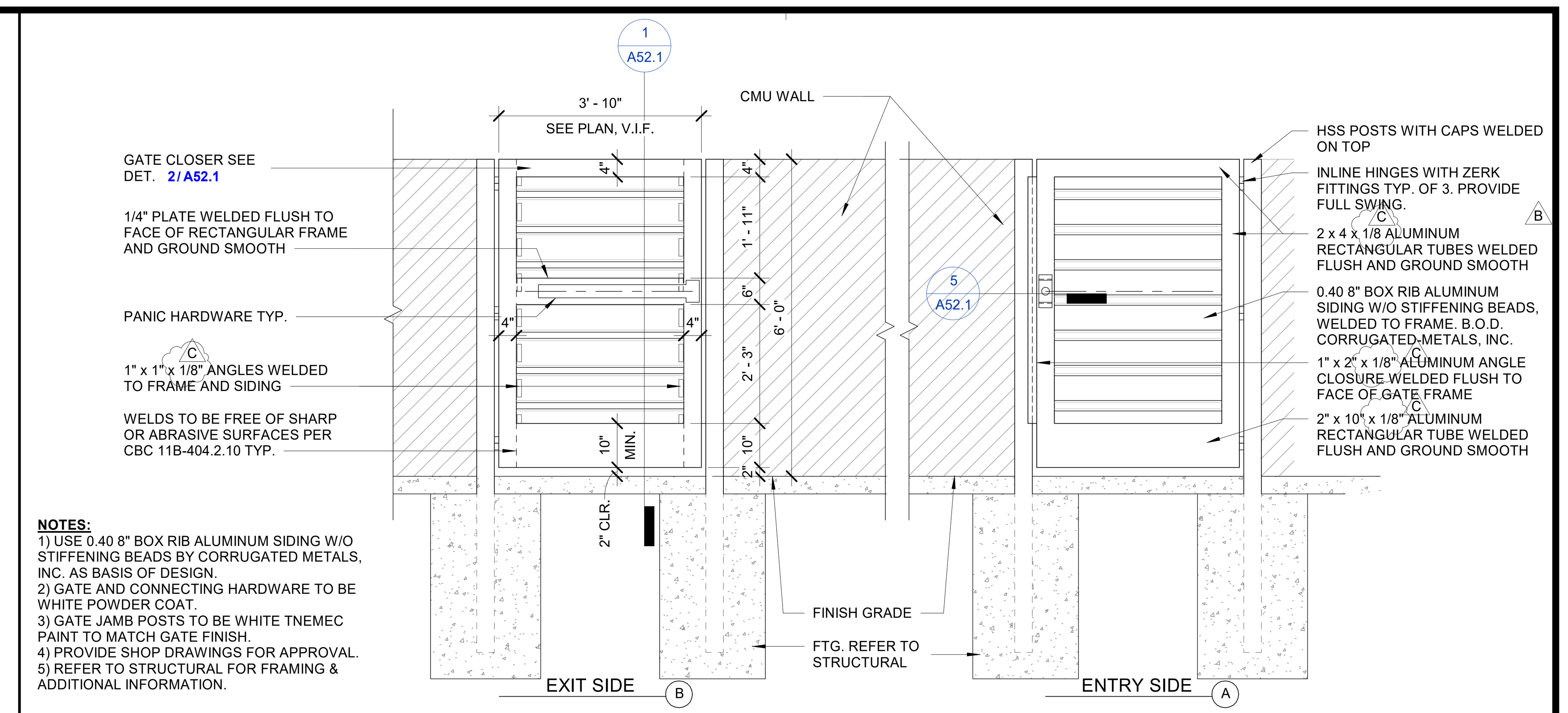
OHD OVERHEAD COILING DOOR

(SEE GENERAL NOTE G1 & G2 FOR ADDITIONAL REQ.)

DOOR TYPES

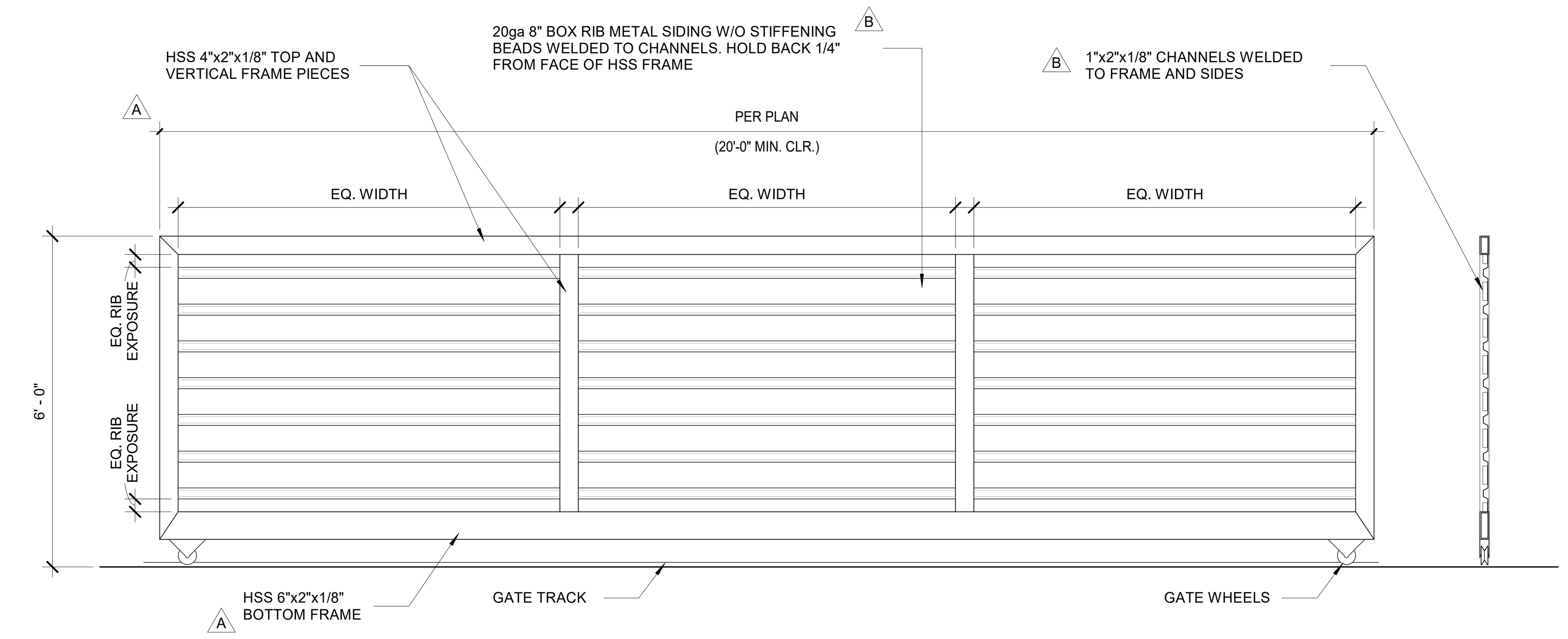


GATE LATCH SECTION 3" = 1'-0" 5



NOTES:
1) USE 0.40 8" BOX RIB ALUMINUM SIDING W/O STIFFENING BEADS BY CORRUGATED METALS, INC. AS BASIS OF DESIGN.
2) GATE AND CONNECTING HARDWARE TO BE WHITE POWDER COAT.
3) GATE JAMB POSTS TO BE WHITE TNEMEC PAINT TO MATCH GATE FINISH.
4) PROVIDE SHOP DRAWINGS FOR APPROVAL.
5) REFER TO STRUCTURAL FOR FRAMING & ADDITIONAL INFORMATION.

PEDESTRIAN GATE 1/2" = 1'-0" 4



NOTES:
1) USE 20ga 8" BOX RIB METAL SIDING W/O STIFFENING BEADS BY CORRUGATED METALS, INC. AS BASIS OF DESIGN.
2) GATE AND HARDWARE TO BE WHITE TNEMEC PAINT.
3) GATE JAMB AND GUIDE POSTS TO BE WHITE TNEMEC PAINT TO MATCH GATE FINISH.
4) PROVIDE SHOP DRAWINGS FOR APPROVAL.
5) WELDS TO BE FREE OF SHARP OR ABRASIVE SURFACES PER CBC 11B-404.2.10 TYP.
6) WIDTH AS REQUIRED TO SECURE OPENING WIDTHS PER SITE PLAN A1.0
7) PROVIDE 3 EQUAL PANEL WIDTHS
8) PROVIDE GATE HARDWARE PER SPEC
9) DESIGN TO BE SIMILAR TO PEDESTRIAN GATE
10) ALL METAL FRAMING JOINTS SHALL BE FULLY WEDED ALL AROUND, U.N.O.
11) GATE OPENER TO COMPLY WITH IRVINE SECURITY CODE PROVISIONS ON SHEET GEN-0.3

VEHICULAR GATE 1/2" = 1'-0" 3

DOOR GENERAL NOTES

1. ALL EGRESS DOORS SHALL BE READILY OPERABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
2. PANIC HARDWARE SHALL COMPLY WITH CBC.1010.1.10. EACH DOOR IN A MEANS OF EGRESS FROM A GROUP A, OR ASSEMBLY AREA NOT CLASSIFIED AS AN ASSEMBLY OCCUPANCY, HAVING AN OCCUPANT LOAD OF 50 OR MORE SHALL NOT BE PROVIDED WITH A LATCH OR LOCK UNLESS IT IS PANIC HARDWARE OR FIRE EXIT HARDWARE. BUILDING CODE 1008.1.10 FIRE CODE 1008.1.10
3. ALL GLAZING SHALL COMPLY WITH CALIFORNIA PUBLIC SAFETY CODE AND CALIFORNIA BUILDING CODE.
4. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENINGS SHALL BE APPROVED FOR IMPACT HAZARD PER CBC SECTION 2406. PROVIDE IDENTIFICATION OF GLAZING PER CBC SECTION 2406.3.
5. DOOR SIZES SHOWN ON DOOR SCHEDULE ARE OPENING SIZES. ALLOWANCES FOR THRESHOLDS, ETC. SHALL BE TAKEN OFF THE DOOR. DOORS AND FRAMES SHALL BE REINFORCED WHERE REQUIRED FOR CLOSERS, STOPS AND HARDWARE. EVERY REQUIRED EXIT MUST BE LARGE ENOUGH TO PERMIT A DOOR AT LEAST 3'-0" WIDE X 6'-8" HIGH. EXIT DOORS SHALL OPEN AT LEAST 90 DEGREES AND PROVIDE A CLEAR WIDTH OF AT LEAST 32".
6. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS PER CALIFORNIA BUILDING CODE, SUCH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THESE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWED BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, BUT NOT TO EXCEED 15 POUNDS.
7. THE SIZE OF A PAIR OF DOORS NOTED IN THE SCHEDULE IS THE TOTAL DOOR OPENING FOR BOTH LEAVES. EACH LEAF IS TO BE OF EQUAL SIZE UNLESS NOTED OTHERWISE. THE INACTIVE LEAF SHALL BE SECURED BY AUTOMATIC FLUSH BOLTS OR BOLTS FROM PANIC HARDWARE.
8. DOORS IN RATED WALLS SHALL CONSIST OF SELF-CLOSING, SELF-LATCHING ASSEMBLIES WITH SMOKE AND DRAFT SEALS WITH THE SAME RATING AT HEAD AND JAMBS. DOOR ASSEMBLY RATINGS SHALL BE INDICATED ON DOOR SCHEDULE. HOLD OPEN DEVICES ON RATED ASSEMBLIES SHALL BE MAGNETICALLY OPERATED AND ACTIVATED BY SMOKE DETECTORS (716.2.6.6).
   NOTE: 1-HR RATED ASSEMBLIES TO HAVE A MAXIMUM TRANSMITTED TEMPERATURE END POINT NOT TO EXCEED 450 DEGREES (F) ABOVE AMBIENT AT THE END OF 30 MIN. OF THE FIRE EXPOSURE SPECIFIED PER CBC SECTION 716.2.2.3.
9. AIR LEAKAGE AT EXTERIOR DOORS SHALL BE LIMITED BY THE FOLLOWING
   A. ALL DOORS SHALL BE PROVIDED WITH A SEAL, ASTRAGAL, OR BAFFLE AT THE HEAD AND SILL. SWINGING DOORS SHALL BE WEATHER-STRIPPED AT THE HEAD, SILL AND JAMBS.
   B. DOORS MOUNTED ON EITHER THE INSIDE OR OUTSIDE OF AN EXTERIOR WALL SHALL HAVE A MINIMUM 1/2" LAP AT EACH JAMB.
   C. DOORS REQUIRING VERTICAL TRACK OR GUIDES SHALL BE USE A CONTINUOUS MOUNTING ANGLE, SEALED, CAULKED, CASKETED OR WEATHER-STRIPPED TO LIMIT AIR LEAKAGE.
   D. MEETING RAILS OR SECTION DOORS AND MEETING STILES OR RAIL OR BI-PARTING DOORS SHALL BE PROVIDED WITH A SEAL, ASTRAGAL OR BAFFLE.

10. DOORS WITH LOUVERS: LOUVER SHALL BE 12" HIGH, UNLESS NOTED OTHERWISE. LOUVERS IN EXTERIOR DOORS TO BE VANDAL RESISTANT.
11. DOOR THICKNESS TO BE 1-3/4" FOR EXTERIOR DOORS AND 1-3/8" FOR INTERIOR DOORS, UNLESS NOTED OTHERWISE. REFER TO SCHEDULE FOR DOOR THICKNESS DESIGNATION.
12. EXIT DOORS MUST OPEN FROM THE INSIDE WITHOUT A KEY, OR ANY SPECIAL KNOWLEDGE OR EFFORT. EXIT DOORS FROM BUILDINGS OR ROOMS SERVING 10 OR FEWER OCCUPANT MAY HAVE A NIGHT LATCH, DEAD BOLT OR SECURITY CHAIN, AS LONG AS THE DOORS CAN STILL BE OPENED FROM THE INSIDE WITHOUT A KEY, SPECIAL KNOWLEDGE OR EFFORT. IN ADDITION, THESE DEVICES SHALL NOT BE MOUNTED MORE THAN 48" ABOVE THE FLOOR. MANUALLY OPERATED BOLTS, SURFACE-MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. WHEN EXIT DOORS ARE USED IN PAIRS AND AUTOMATIC FLUSH BOLTS ARE USED, THE DOOR LEAF WITH THE FLUSH BOLT MUST HAVE NO DOORKNOB OR SURFACE-MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF MUST NOT REQUIRE MORE THAN ONE OPERATION. SPECIAL LOCKING DEVICES SHALL BE APPROVED BY THE LOCAL AUTHORITY.
13. DOOR HARDWARE SHALL COMPLY WITH THE FOLLOWING:
   A. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND ARE IN THE PATH OF TRAVEL, SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.
   B. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS FOR INTERIOR DOORS, SUCH PULL OR PUSH EFFORT SHALL BE APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED AS PERMITTED BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, BUT NOT TO EXCEED 15 POUNDS.
   C. HAND ACTIVATED DOOR HARDWARE SHALL BE CENTERED BETWEEN 34" AND 44" ABOVE THE FLOOR
   D. PROVIDE DEADBOLTS WITH HARDENED INSERTS. DEADLOCKING LATH KEY OPERATED LOCKS SHALL BE OPERABLE FROM THE INSIDE WITHOUT A KEY, SPECIAL KNOWLEDGE OR EFFORT.
   E. ALL DOORS IN ALUMINUM FRAMES SHALL BE PROVIDED WITH AN ARMORED STRIKE.
   F. THRESHOLDS AT EXTERIOR DOORS OTHER THAN PRIMARY ENTRANCES SHALL BE NO HIGHER THAN 1/2" SUCH THRESHOLDS SHALL BE BEVELED NO GREATER THAN 1:2. THE FLOOR LANDING IMMEDIATELY OUTSIDE THE ENTRY MAY BE SLOPED UP TO 1/8" PER FOOT IN THE DIRECTION AWAY FROM THE PRIMARY ENTRANCE FOR DRAINAGE.
   G. DOOR HARDWARE FINISH TYPE/COLOR TO MATCH WITHIN SAME DOOR AND AMONG SIMILAR DOOR TYPES.

14. THE BOTTOM 10 INCHES OF ALL DOORS AND/OR GATES SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR OR GATE TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. (CBC SECTION 11B-404.2.10)
15. ALL EXTERIOR DOORS SHALL BE WEATHERSTRIPPED ON ALL SIDES.
16. COORDINATE FABRICATION OF ALL DOORS AND FRAMES WITH THE PROJECT'S SECURITY REQUIREMENTS. HARDWARE KEYING/MASTERING SHALL BE DIRECTED BY OWNER.
17. INSTALLATION AND CONSTRUCTION OF FRAMES, JAMBS, STRIKES AND HINGES FOR EXTERIOR SWINGING DOORS SHALL BE AS FOLLOWS:
   A. DOOR JAMBS SHALL BE INSTALLED WITH SOLID BACKING IN SUCH A MANNER THAT NO VOIDS EXIST BETWEEN THE STRIKE SIDE OF THE JAMB AND THE FRAME OPENING FOR A VERTICAL DISTANCE OF SIX INCHES EACH SIDE OF THE STRIKE.
   B. IN WOOD FRAMING, HORIZONTAL BLOCKING SHALL BE PLACED BETWEEN STUDS AT DOOR LOCK HEIGHT FOR THREE STUD SPACES EACH SIDE OF THE DOOR OPENINGS. TRIMMERS SHALL BE FULL LENGTH FROM THE HEADER TO THE FLOOR WITH SOLID BACKING AGAINST SOLE PLATES.
   C. DOOR STOPS ON WOODEN JAMBS FOR IN-SWINGING DOORS SHALL BE OF ONE-PIECE CONSTRUCTION WITH THE JAMB. JAMBS FOR ALL DOORS SHALL BE CONSTRUCTED OR PROTECTED SO AS TO PREVENT VIOLATION OF THE STRIKE.
   D. THE STRIKE PLATE FOR DEAD BOLTS ON ALL WOOD FRAMED DOORS SHALL BE CONSTRUCTED OF MIN. SIXTEEN U.S. GA. STEEL, BRONZE, OR BRASS, AND SECURED TO THE JAMB BY A MINIMUM OF TWO SCREWS, WHICH MUST PENETRATE AT LEAST TWO INCHES INTO SOLID BACKING BEYOND THE SURFACE TO WHICH THE STRIKE IS ATTACHED.
   E. HINGES FOR OUT-SWINGING DOORS SHALL BE EQUIPPED WITH NON-RENEWABLE HINGE PINS OR A MECHANICAL INTERLOCK TO PRECLUDE REMOVAL OF THE DOOR FROM THE EXTERIOR BY REMOVING THE HINGE PINS

1. ALL EXTERIOR UTILITY DOORS TO BE PROVIDED WITH HURRICANE CHAIN DOOR STOPS.
2. PROVIDE 180 DEGREE WIDE ANGLE VIEWERS AT ALL ENTRY DOORS.
3. THE PRIMARY ENTRANCE AND REQUIRED EXIT DOORWAY SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 3'-0" IN WIDTH AND NOT LESS THAN 6'-8" IN HEIGHT. WHEN INSTALLED SUCH DOOR SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES AND SHALL BE SO MOUNTED THAT THE CLEAR WIDTH OF THE EXIT WAY IS NOT LESS THAN 32".
4. THE SPACE BETWEEN TWO CONSECUTIVE DOOR OPENINGS IN A VESTIBULE, SERVING OTHER THAN A REQUIRED EXIT STAIRWAY, MUST HAVE AT LEAST 48" OF CLEAR SPACE FROM ANY DOOR OPENING INTO THE VESTIBULE WHEN THE DOOR IS OPEN 90 DEGREES FROM ITS CLOSED POSITION. DOORS IN SERIES MUST SWING IN THE SAME DIRECTION OR AWAY FROM THE SPACE BETWEEN THE DOORS.
5. DOOR AND OPENINGS OTHER THAN PRIMARY ENTRANCE WITHIN UNITS SHALL PROVIDE A MINIMUM OF 32" CLEAR SPACE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP WHEN THE DOOR IS IN THE 90 DEGREES OPEN POSITION.
6. ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS AS REQUIRED VISIBLE FROM APPROACHING PEDESTRIAN WAYS.
7. THE FLOOR OR LANDING ON EACH SIDE OF AN ENTRANCE OR PASSAGE DOOR SHALL BE LEVEL AND CLEAR. THE LEVEL AND CLEAR AREA SHALL BE A MINIMUM 60" SQUARE IN THE DIRECTION OF THE DOOR SWING AND A MINIMUM 44" SQUARE OPPOSITE THE DIRECTION OF DOOR SWING. THE SQUARES SHALL BE MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN ITS CLOSED POSITION. COVERED DWELLING UNITS OF MULTIFAMILY BUILDINGS, THE LEVEL AREA MUST BE 36" LONG MINIMUM IN BOTH THE DIRECTION AND OPPOSITE THE DIRECTION OF THE DOOR SWING.
8. THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS AND THE PRIMARY ENTRANCE TO THE DWELLING UNIT.
9. THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED NO GREATER THAN 1:2
10. EXIT DOORS SERVING 50 OR MORE OCCUPANTS SHALL OPEN IN THE DIRECTION OF EXIT.
11. EXIT DOORS SHALL HAVE A READILY VISIBLE, DURABLE SIGN ON OR ADJACENT TO THE DOOR STATING, "THIS DOOR TO REMAINED UNLOCKED DURING BUSINESS HOURS." THE SIGN SHALL HAVE 1" HIGH LETTERS ON A CONTRASTING BACKGROUND. THE LOCKING DEVICE MUST BE OF A TYPE THAT WILL BE READILY DISTINGUISHABLE AS LOCKED.

A G1. GARAGE DOORS AND ROLLING DOORS SHALL BE TESTED IN ACCORDANCE WITH EITHER ASTM E330 OR ANSI/DASMA 108, AND SHALL MEET THE PASS/FAIL CRITERIA OF ANSI/DASMA 108. GARAGE DOORS AND ROLLING DOORS SHALL BE LABELED WITH A PERMANENET LABEL IDENTIFYING THE DOOR MANUFACTURER, THE DOOR MODEL/SERIES NUMBER, THE POSITIVE AND NEGATIVE DESIGN WIND PRESSURE RATING, THE INSSTALLATION INSTRUCTION DRAWING REFERENCE NUMBER, AND THE APPLICABLE TEST STANDARDS.

G2. GARAGE DOOR OPENERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 3225. (NOTE: THE HEALTH AND SAFETY CODE SECTION 19892 REQUIRES THE GARAGE OPENER TO HAVEA BATTERY BACKUP FUNCTION WHICH ALLOWS THE GARAGE DOOR OPENEER TO BE OPERATIONAL WITHOUT INTERRUPTION DURING AN ELECTRICAL OUTAGE.).

DOOR REMARKS

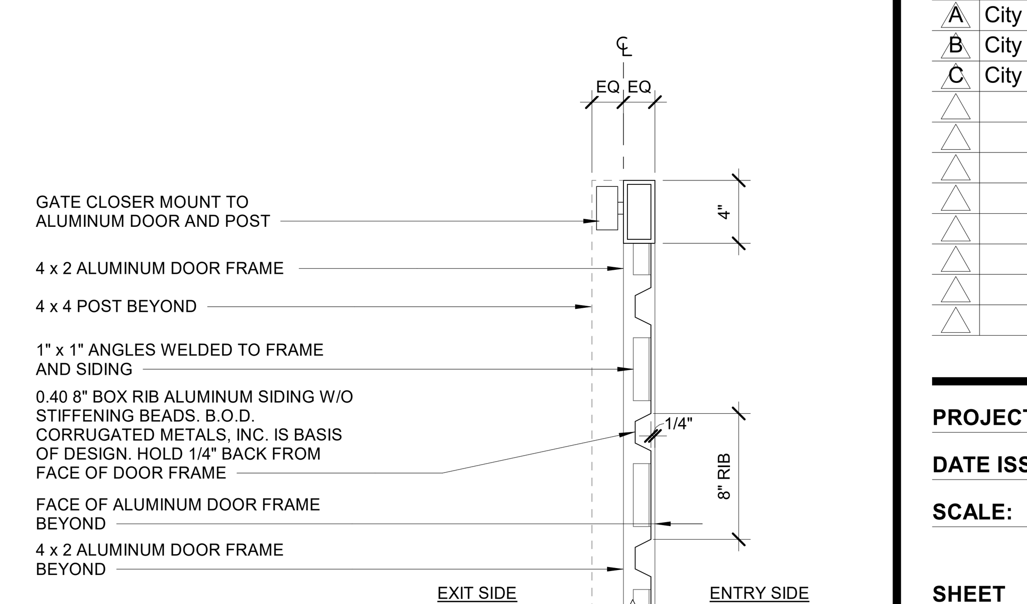
1 / SELF-CLOSING
2 / DOOR VIEWER; 20 MIN. RATED PEEPHOLE
3 / DOOR HOLD-OPEN
4 / MAGNETIC DOOR HOLD-OPEN CONNECTED TO FIRE ALARM SYSTEM
5 / COMPLY WITH: NFPA 2552 OR UL-10C AND, UL-1784
6 / VISION GLAZING; FROSTED ACRYLIC
7 / THINK PROFILE WROUGHT IRON FENCE/GATE BARRIER
8 / TEMPERED GLAZING
9 / BI-PASS DOOR AT PARTITION -- FIELD FABRICATED PER MANUFACTURER

DOOR NOTES

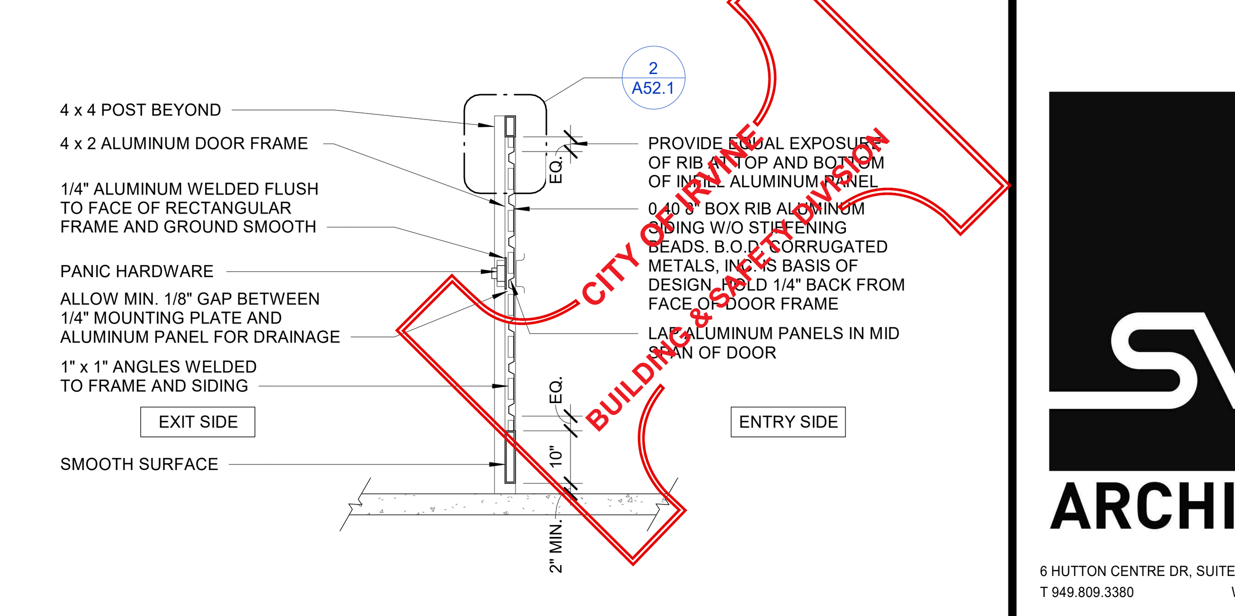
AL	-	ALUMINUM
BZ	-	ANODIZED BRONZE
C	-	COLOR COATED
CC	-	CONCEALED CLOSER
CCA	-	COLOR COATED ALUMINUM
CLR	-	CLEAR
FC	-	FLOOR CLOSER
FF	-	FACTORY FINISH
FLFD	-	FUSIBLE LINK FIRE DAMPER
FP	-	FIELD PAINT
FPFP	-	FACTORY PRIMED, FIELD PAINTED
FRA	-	FIRE RATED ASSEMBLY
FS	-	FIELD STAINED
GA	-	GALVANIZED
GL	-	GLASS OR GLAZING
GS	-	GALVANIZED STEEL
HM	-	HOLLOW METAL
KY	-	FLUOROPOLYMER FINISH (SEE SPECS)
LVR	-	LOUVER
MF	-	MILL FINISH
MR	-	MIRRORED GLASS
MAG	-	MAGNETIC HOLD OPEN
P	-	PAINTED
PG	-	PAINT GRADE
PH	-	PANIC HARDWARE
PR	-	PAIR
SCW	-	SOLID CORE WOOD
SG	-	STAIN GRAIN
SMC	-	SURFACE MOUNTED CLOSER
ST	-	STEEL
SS	-	STAINLESS STEEL
TEMP	-	TEMPERED

1. DOUBLE LETTERS (eg. F-F) FOLLOWING DOOR TYPE LETTER IN SCHEDULE INDICATES A PAIR OF DOORS. SCHEDULED DIMENSION IS TOTAL FRAME OPENING. BOTH DOOR LEAVES ARE THE SAME SIZE UNLESS OTHERWISE NOTED.

2. LETTER "X" FOLLOWING DOOR TYPE LETTER IN SCHEDULE INDICATES A FIXED PANEL ABOVE DOOR LEAF. DOOR LEAF IS TO BE 7'-0" HIGH. SCHEDULED DIMENSION IS HEIGHT OF ACTIVE DOOR LEAF PLUS FIXED PANEL. FIXED PANEL SHALL BE OF SAME MATERIAL, CONSTRUCTION, THICKNESS, AS FINISH AS ACTIVE DOOR AND PROVIDED BY THE SAME MANUFACTURER AS DOOR.



GATE CLOSER DETAIL 1 1/2" = 1'-0" 2



GATE SECTION THRU FENCELINE GATE 1/2" = 1'-0" 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMONS No. C-18301 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated
SHEET NUMBER: A52.1
SHEET TITLE:

DOOR SCHEDULE

SVA ARCHITECTS

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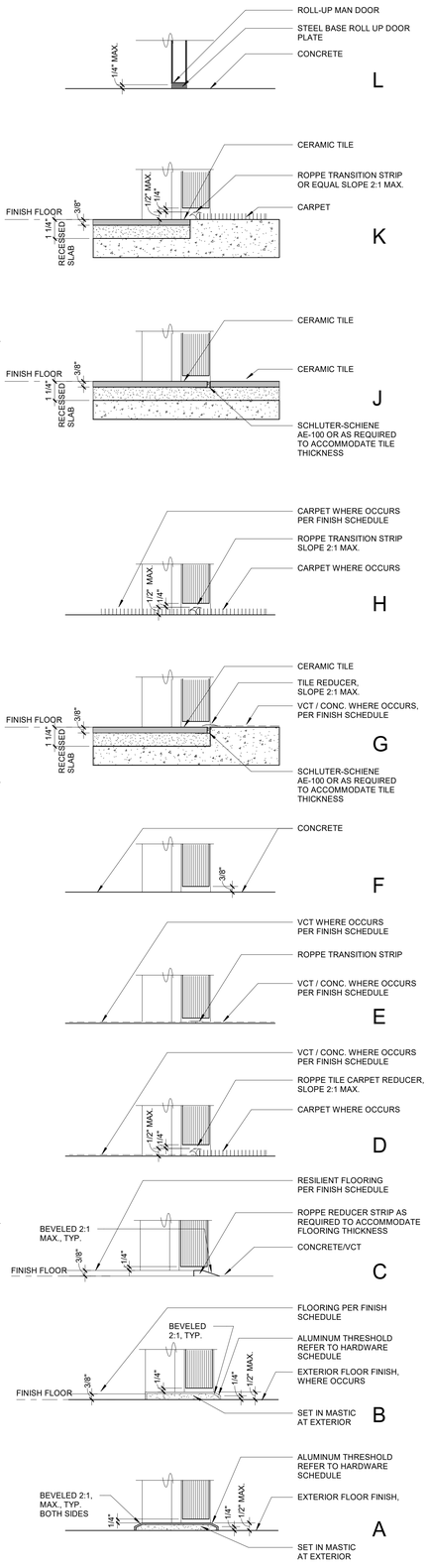
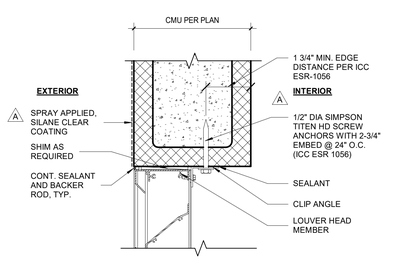
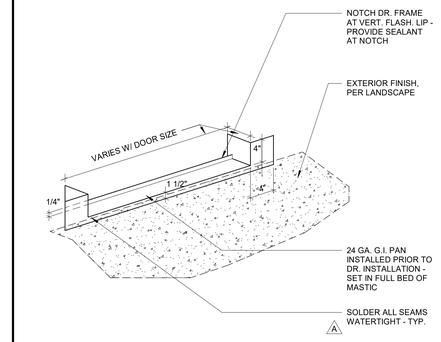
PLAN CHECK 00954071-PARK



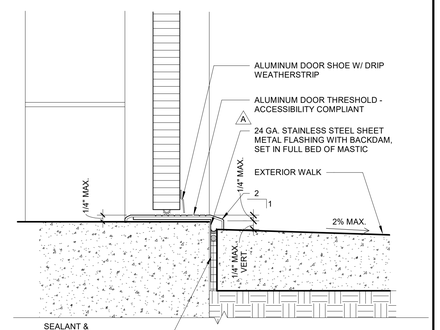
THRESHOLD DETAILS 3" = 1'-0" **17**



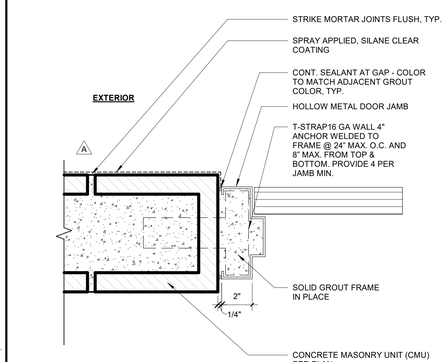
LOUVER HEAD AT CMU 3" = 1'-0" **15**



EXT. DOOR THRESHOLD FLASHING 3" = 1'-0" **11**

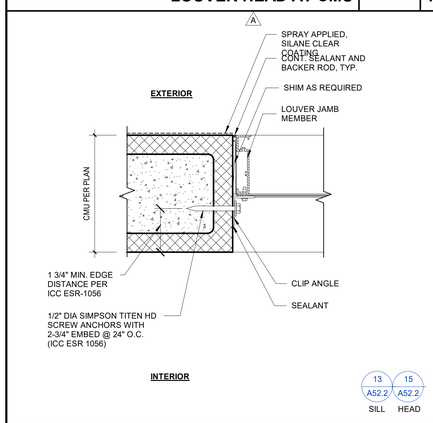


EXTERIOR DOOR THRESHOLD 3" = 1'-0" **7**

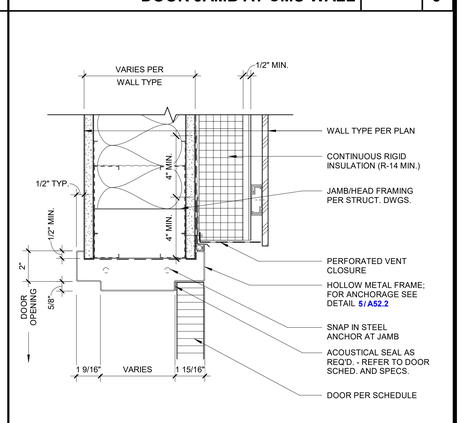


DOOR JAMB AT CMU WALL 3" = 1'-0" **3**

LOUVER JAMB AT CMU 3" = 1'-0" **14**

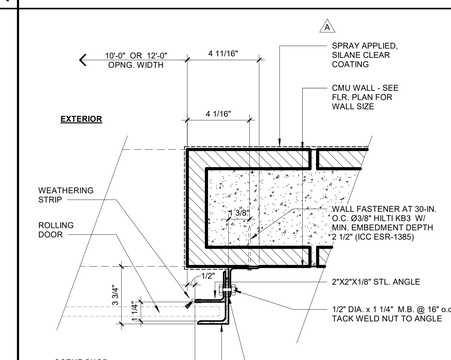


OVERHEAD DOOR HEAD AT CMU WALL 3" = 1'-0" **6**

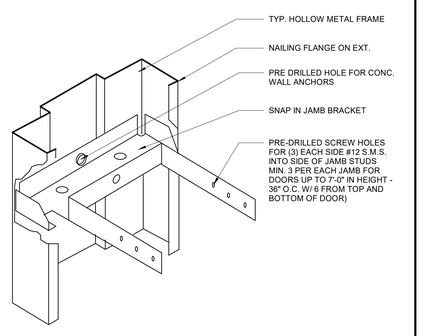


H.M. FRAME HEAD & JAMB AT EXT. 3" = 1'-0" **2**

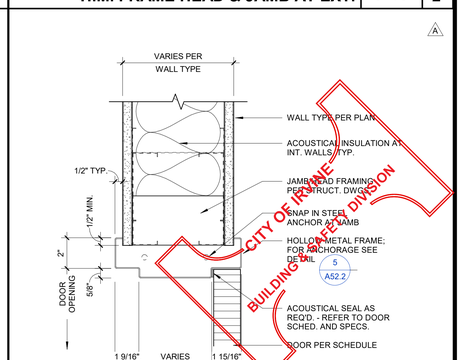
LOUVER SILL AT CMU 3" = 1'-0" **13**



OVERHEAD GUIDE JAMBS AT CMU WALL 3" = 1'-0" **9**



H.M. DOOR FRAME JAMB ANCHORS 1 1/2" = 1'-0" **5**



H.M. FRAME HEAD & JAMB AT INT. 3" = 1'-0" **1**

CITY OF IRVINE - GREAT PARK

MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMMS Exp. 5-1-2027 JAN 31, 2025 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE: As indicated

SHEET NUMBER: A52.2

SHEET TITLE:

DETAILS - DOOR

SVA ARCHITECTS

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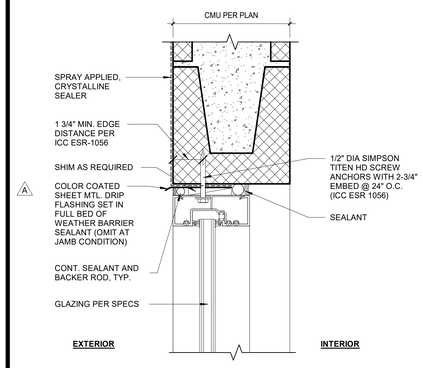
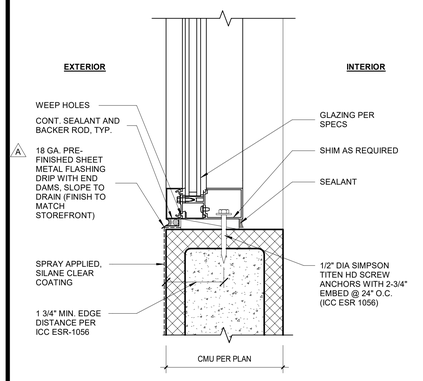
PLAN CHECK 00954071-PARK



HEAD/JAMB AT CMU | 3" = 1'-0" | 11



SILL AT CMU | 3" = 1'-0" | 10

STOREFRONT SCHEDULE

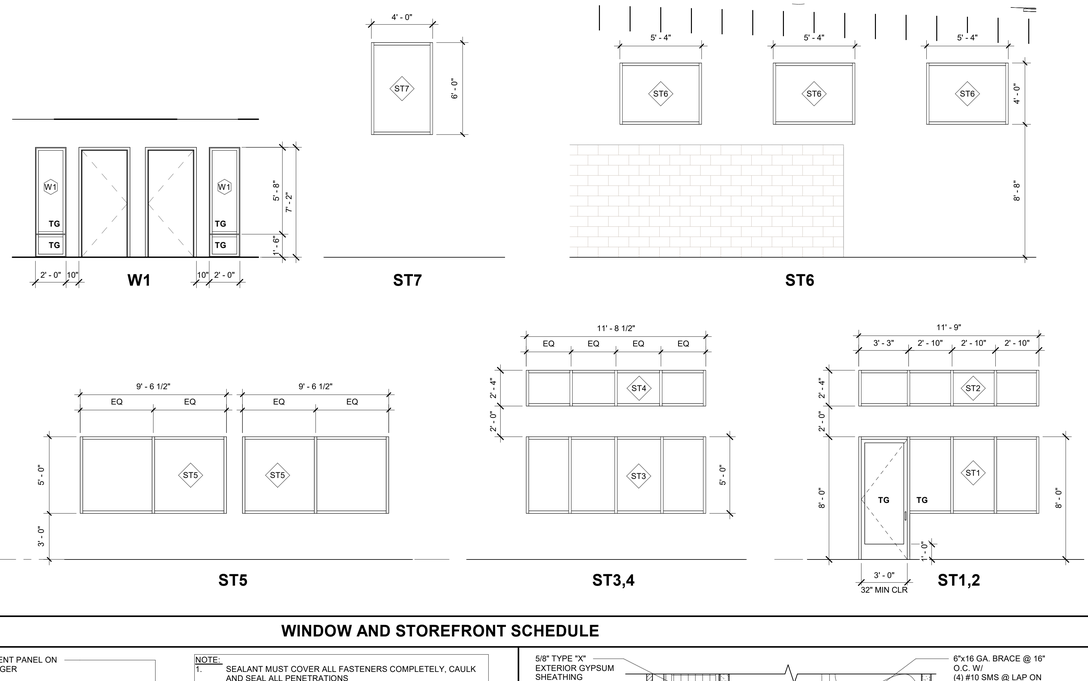
TYPE	WIDTH	HEIGHT	FRAME MATERIAL	FRAME FINISH	GLAZING	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	SILL HEIGHT	REMARKS
ST1	11' - 9"	8' - 0"	AL	CCA		4/A52.2	6/A52.2	8/A52.2	0"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST2	11' - 9"	2' - 4"	AL	CCA		4/A52.2	6/A52.2	8/A52.2	10' - 0"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST3	11' - 8 1/2"	5' - 0"	AL	CCA		4/A52.2	6/A52.2	8/A52.2	3' - 0"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST4	11' - 8 1/2"	2' - 4"	AL	CCA		4/A52.2	6/A52.2	8/A52.2	10' - 0"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST5	9' - 6 1/2"	5' - 0"	AL	CCA		5/A52.2	7/A52.2	9/A52.2	3' - 0"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST6	5' - 4"	4' - 0"	AL	CCA		11/A52.2	11/A52.2	10/A52.2	8' - 8"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42
ST7	4' - 0"	6' - 0"	AL	CCA		11/A52.2	11/A52.2	10/A52.2	8' - 8"	DARK BRONZE; U = 0.36, SHGC = 0.25, VT = 0.42

LOUVER SCHEDULE

TYPE	WIDTH	HEIGHT	MATERIAL	FINISH	HEAD DETAIL	JAMB DETAIL	SILL DETAIL	SILL HEIGHT	REMARKS
L1									
L2									
L3	<varies>	1' - 4"	AL	CCA	15/A63.1	14/A63.1	13/A63.1	10' - 8"	

ABBREVIATIONS

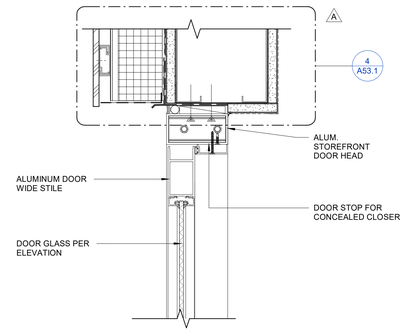
AL	-	ALUMINUM
AN	-	ANODIZED
CCA	-	COLOR COATED ALUMINUM
FPFP	-	FACTORY PRIMED, FIELD PAINTED
FF	-	FACTORY FINISH
IG	-	INSULATED GLASS
GS	-	GALVANIZED STEEL
KYN	-	KYNAR PAINT
LG	-	LAMINATED GLASS
ST	-	STEEL
SS	-	STAINLESS STEEL
TG	-	TEMPERED GLASS
SC	-	MILGARD SUNCOAT LOW E CLASS
NR	-	NON RATED



W1 | ST7 | ST6 | L1 | ST5 | ST3,4 | ST1,2

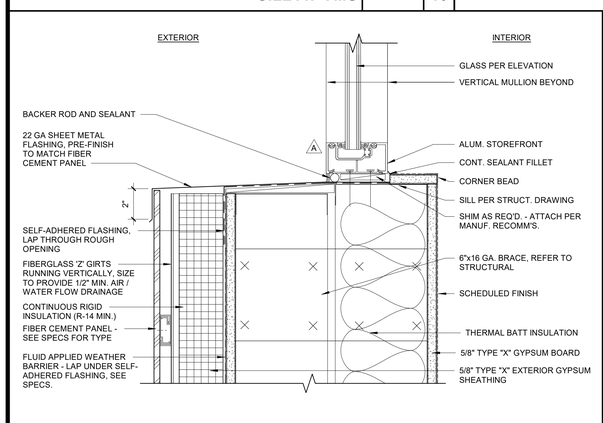
1. WINDOW SHADES TO BE PROVIDED PER RCP. REFER TO SPECS.
2. FOR THE STOREFRONT FRAME FINISHES, REFER TO SPECS & SCHED.
3. ALL GLAZING SHALL COMPLY WITH CBC CHAPTER 24. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENING SHALL BE APPROVED FOR IMPACT HAZARD PER CBC CHAPTER 24. PROVIDE IDENTIFICATION OF GLAZING PER SECTION 2406.3.
4. EACH PANE OF SAFETY GLAZING INSTALLED IN HAZARDOUS LOCATIONS SHALL BE IDENTIFIED BY A MANUFACTURER'S DESIGNATION SPECIFYING WHO APPLIED THE DESIGNATION, THE MANUFACTURER OR INSTALLER AND THE SAFETY GLAZING STANDARD.
5. REFER TO BUILDING PLANS FOR WINDOW TYPE DESIGNATION. REFER TO EXTERIOR ELEVATIONS AND SECTIONS FOR WINDOW PLACEMENT. REFER TO WINDOW TYPE ELEVATIONS ON THIS SHEET FOR OPERABLE WINDOW DESIGNATIONS, IF ANY. ALL WINDOW SIZES ARE NOMINAL -VERIFY EXACT DIMENSIONS WITH MANUFACTURERS.
6. SEE WINDOW TYPES AND EXTERIOR ELEVATIONS FOR MULLION CONFIGURATIONS.
7. REFER TO SPECIFICATIONS FOR ADDITIONAL WINDOW AND GLAZING INFORMATION.
8. WINDOWS TO BE CONSTRUCTED OF MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF THE CBC SECTION 2406 FOR SAFETY GLAZING.
9. GLAZING CLASSIFICATION TO COMPLY WITH THE REQUIREMENTS PER CBC SECTION 2406.2 FOR MINIMUM CATEGORY CLASSIFICATION OF GLAZING.
10. ALL THE REQUIRED SAFETY GLAZING LESS THAN 9 S.F. TO BE CLASS I, AND LARGER THAN 9 S.F. TO BE CLASS II.
11. ALL EXTERIOR GLAZING TO BE TEMPERED GLAZING. REFER TO SPECIFICATIONS.
12. STOREFRONT GLASS TO BE SOLARBAN R70 W/ ARGON

WINDOW NOTES

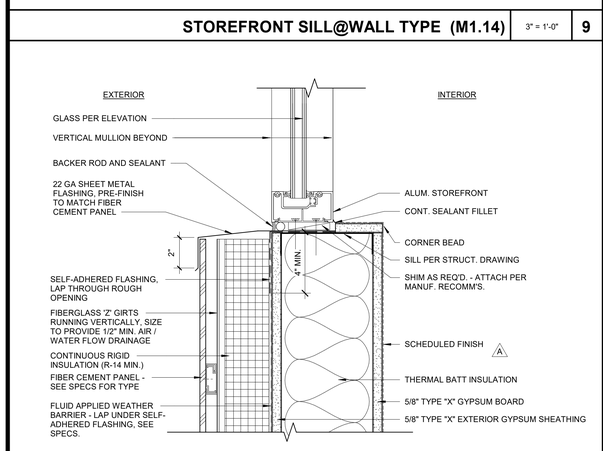


STOREFRONT DOOR HEAD | 3" = 1'-0" | 3

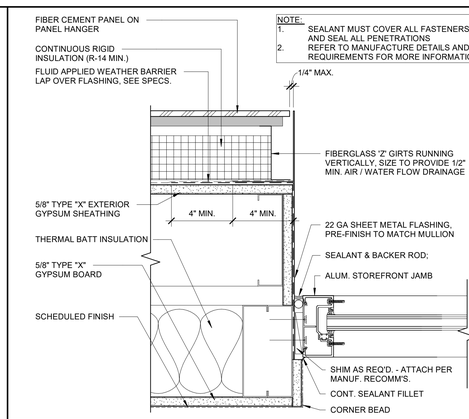
WINDOW AND STOREFRONT SCHEDULE



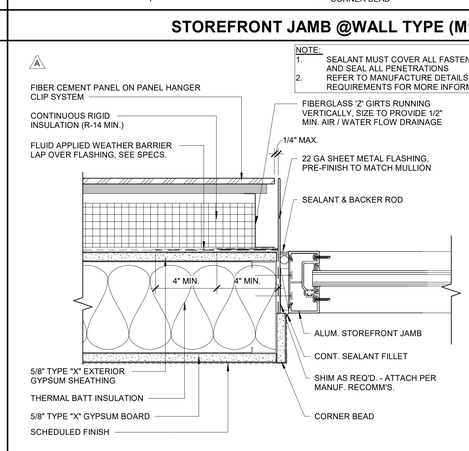
STOREFRONT SILL@WALL TYPE (M1.14) | 3" = 1'-0" | 9



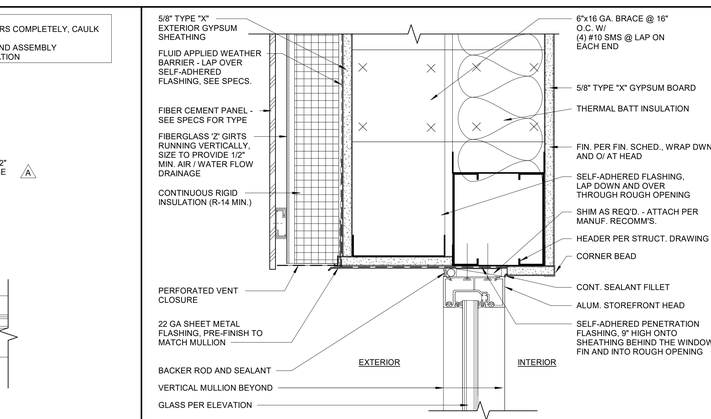
STOREFRONT SILL@WALL TYPE (M1.6) | 3" = 1'-0" | 8



STOREFRONT JAMB @WALL TYPE (M1.14) | 3" = 1'-0" | 7

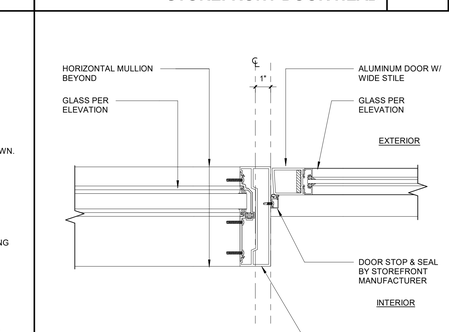


STOREFRONT JAMB @WALL TYPE (M1.6) | 3" = 1'-0" | 6



STOREFRONT HEAD @WALL TYPE (M1.14) | 3" = 1'-0" | 5

STOREFRONT HEAD @WALL TYPE (M1.6) | 3" = 1'-0" | 4



STOREFRONT DOOR JAMB | 3" = 1'-0" | 2

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMARD Exp. 2-1-2027 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A53.1
SHEET TITLE: WINDOW & STOREFRONT SCHEDULE & DETAILS

CITY OF IRVINE BUILDING & SAFETY DIVISION

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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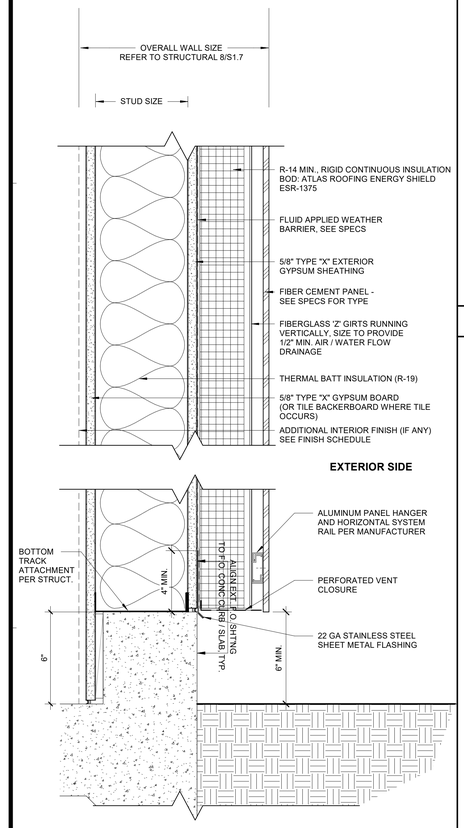
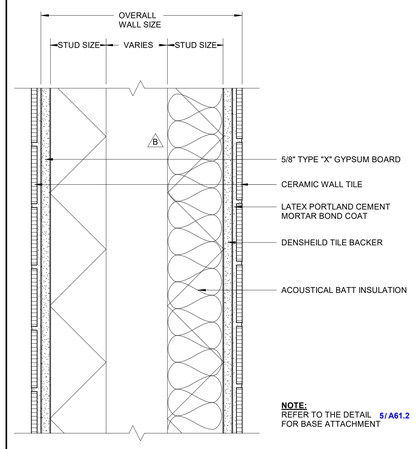
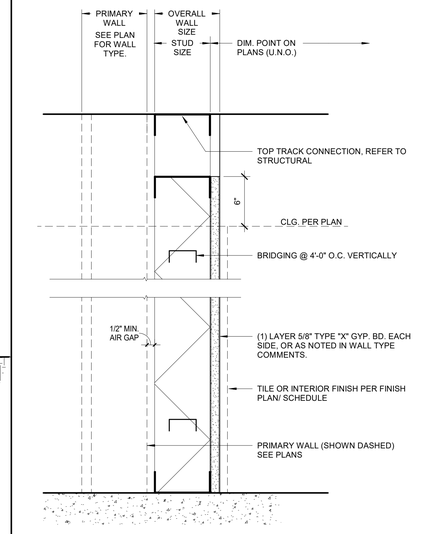
PLAN CHECK 00954071-PARK



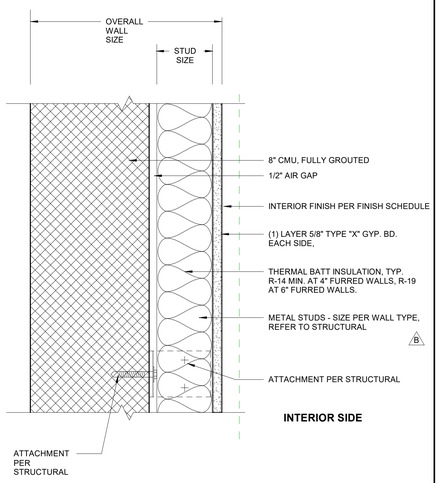
EXT. CEMENT PANEL WALL TYPE(C1.8P) | 3" = 1'-0" | 10



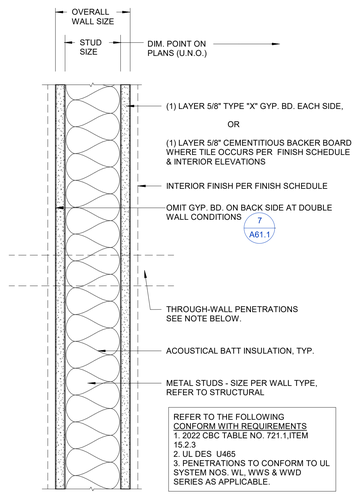
PLUMBING WALL | 3" = 1'-0" | 8



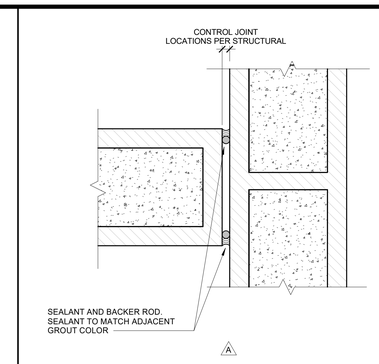
FURRING WALL | 3" = 1'-0" | 7



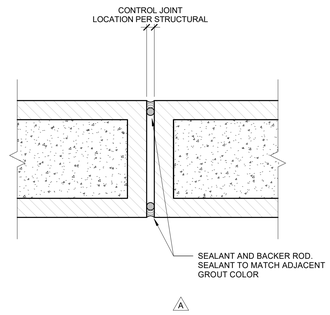
FURRING WALL @ CMU | 3" = 1'-0" | 9



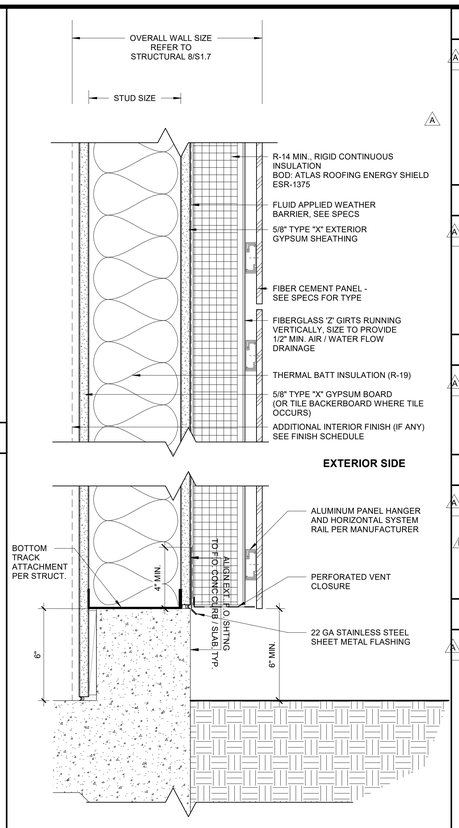
INTERIOR WALL TYPE (M2) | 3" = 1'-0" | 6



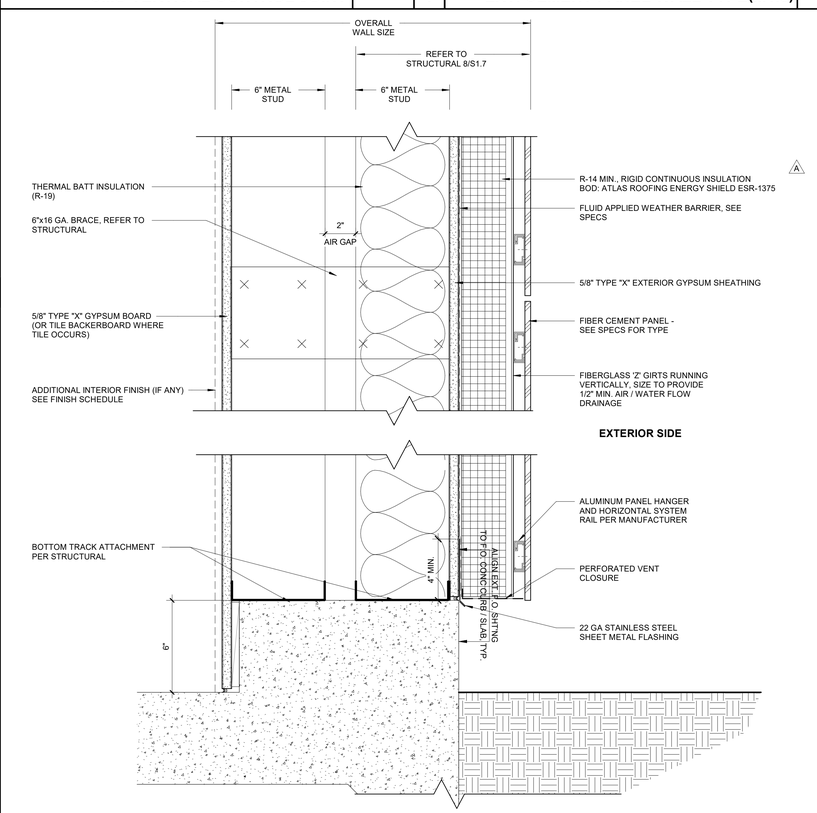
CMU CORNER CONTROL JOINT | 3" = 1'-0" | 5



CMU VERTICAL CONTROL JOINT | 3" = 1'-0" | 4



EXT. CEMENT PANEL WALL TYPE(M1.6) | 3" = 1'-0" | 3



EXT. CEMENT PANEL WALL TYPE (M1.14) | 3" = 1'-0" | 2

C1 EXTERIOR WALL - CMU

A	WALL TYPE	STUD / SIZE	RATING	DETAIL	COMMENTS
	C1.8	7-5/8" CMU	-	*	REFER TO 4&5/- FOR CONTROL JOINT
	C1.8P	7-5/8" CMU	-	10 / - *	REFER TO 4&5/- FOR CONTROL JOINT
	C1.8T	7-5/8" CMU	-	*	REFER TO 4&5/- FOR CONTROL JOINT TILE UP TO 4FT
	C1.12	11-5/8" CMU	-	*	REFER TO 4&5/- FOR CONTROL JOINT

* REFER TO STRUCTURAL DETAILS

M1 EXTERIOR WALL - METAL

A	WALL TYPE	STUD / SIZE	RATING	DETAIL	COMMENTS
	M1.6	6"	-	3 / -	RAINSCREEN SYSTEM / SIDING
	M1.14	6"+ 6"	-	2 / -	RAINSCREEN SYSTEM / SIDING
	M1.14T	6"+ 6"	*	2 / -	RAINSCREEN SYSTEM / SIDING TILE ON INTERIOR SIDE

M2 INTERIOR PARTITION

A	WALL TYPE	STUD / SIZE	RATING	DETAIL	COMMENTS
	M2.4	3 5/8"	-	6 / -	
	M2.6	6"	-	6 / -	

M3 TILE WALL

A	WALL TYPE	STUD / SIZE	RATING	DETAIL	COMMENTS
	M3.6	6"	-	6 / -	
B	M3.6T	6"		6 / -	TILE O/ CEMENT BACKER BOARD, BOTH SIDES

M4 FURRING WALL

A	WALL TYPE	STUD / SIZE	RATING	DETAIL	COMMENTS
	M4.1	1 5/8"	-	7 / -	
	M4.4	3 5/8"	-	7 / -	
	M4.5	3 5/8"	-	7 / -	TILE ONE SIDE
	M4.6	6"	-	9 / -	TILE ONE SIDE

WALL TYPE SCHEDULE

THIRD PARTY APPROVALS OF MATERIALS: C

1. FIBERGLASS 'Z' GIRT: B.O.D. SMARTci EXTERIOR WALL CONTINUOUS INSULATION SYSTEM UTILIZING GREENGIRT, DR J REPORT NO. 1501-06.

2. FIBER CEMENT PANELS: B.O.D. EQUITONE TECTIVA PANELS, ICC EVALUATION REPORT NO. ESL-1186, ESR-3910.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMMS
No. C-19021
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: 3" = 1'-0"
SHEET NUMBER: A61.1
SHEET TITLE:

WALL TYPES

CITY OF IRVINE
BUILDING & SAFETY DIVISION

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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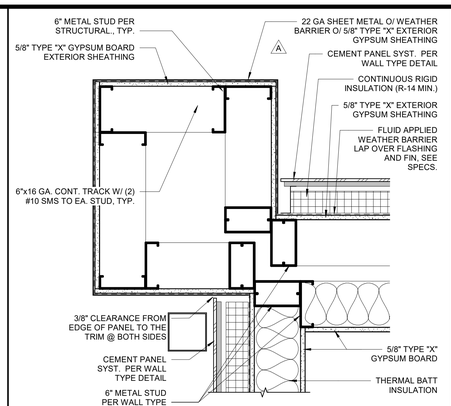
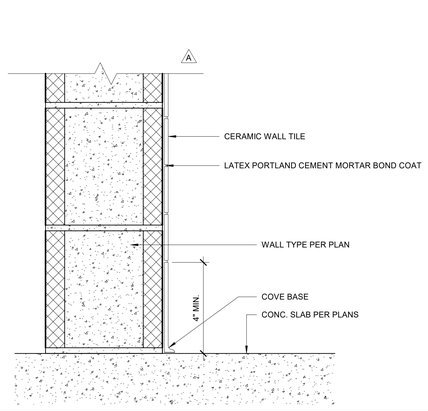
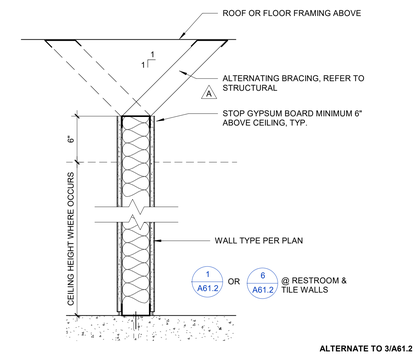
PLAN CHECK 00954071-PARK



SHEET METAL POP OUT WALL PANEL | 1 1/2" = 1'-0" | **12**

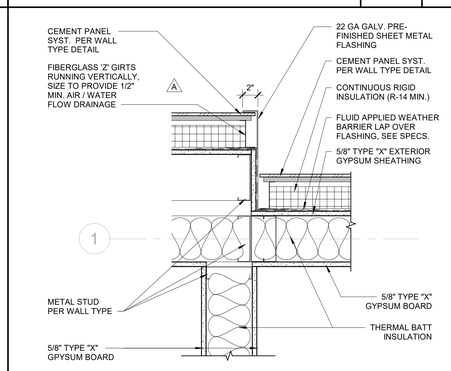


TILE ON CMU BOTTOM TRACK | 3" = 1'-0" | **8**

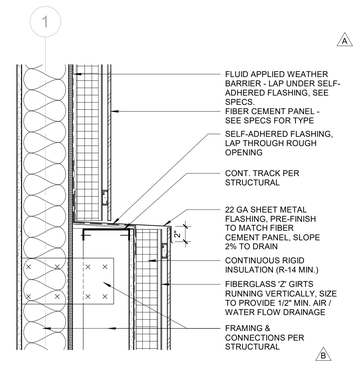


ALTERNATE TO 3/A61.2

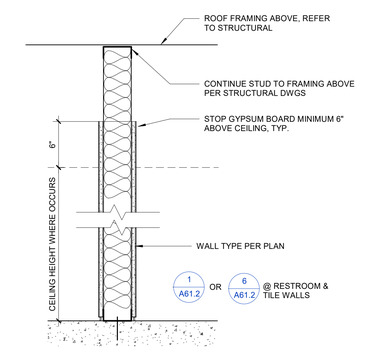
PARTITION FRAMING | 1 1/2" = 1'-0" | **4**



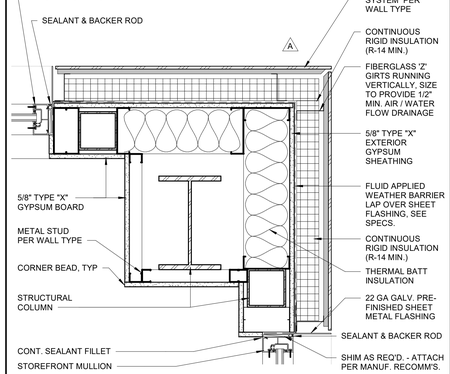
POP OUT WALL TRANSITION PLAN | 1 1/2" = 1'-0" | **11**



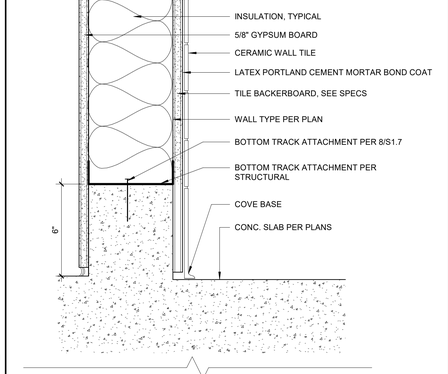
POP OUT WALL FLASHING | 1 1/2" = 1'-0" | **7**



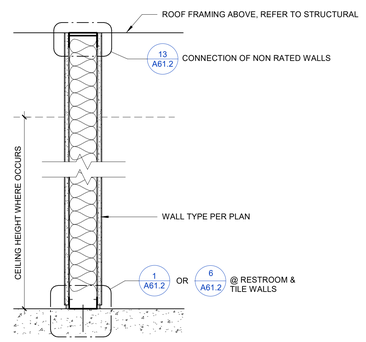
PARTITION FRAMING | 1 1/2" = 1'-0" | **3**



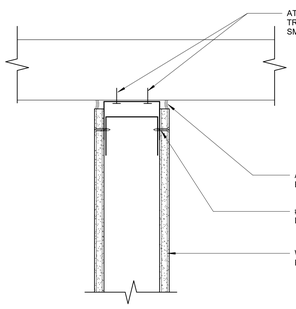
CORNER WALL PANEL TRANSITION PLAN | 1 1/2" = 1'-0" | **10**



TILE WALL BOTTOM TRACK | 3" = 1'-0" | **6**

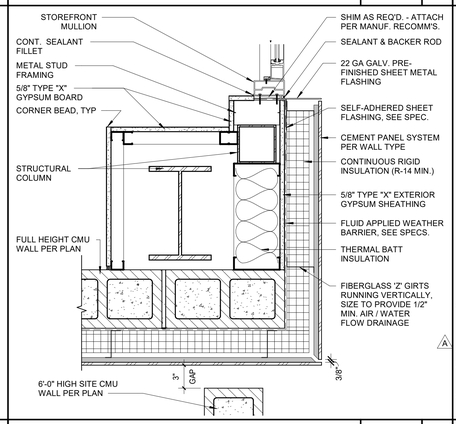


FULL HEIGHT FRAMING | 1 1/2" = 1'-0" | **2**

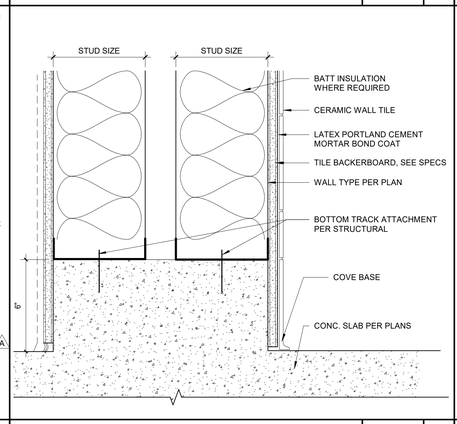


SEE DETAIL 13B / S1.3 FOR STRUCTURAL INFORMATION.

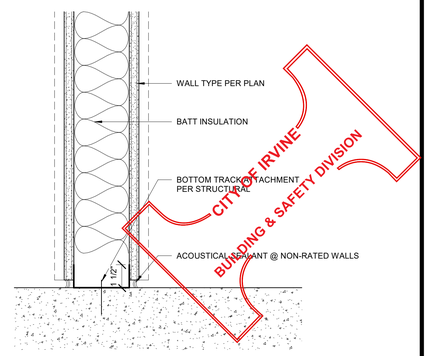
NON-BEARING TOP TRACK (PERP.) | 3" = 1'-0" | **13**



CMU TO CEMENT PANEL WALL | 1 1/2" = 1'-0" | **9**



PLUMBING WALL BOTTOM TRACK | 3" = 1'-0" | **5**



TYPICAL INTERIOR WALL

TYP. BOTTOM TRACK CONNECTION | 3" = 1'-0" | **1**

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A61.2

SHEET TITLE:

DETAILS - WALL ASSEMBLIES

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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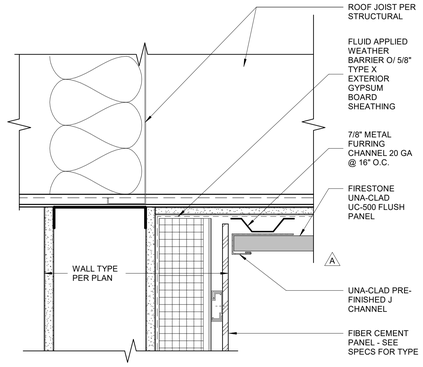
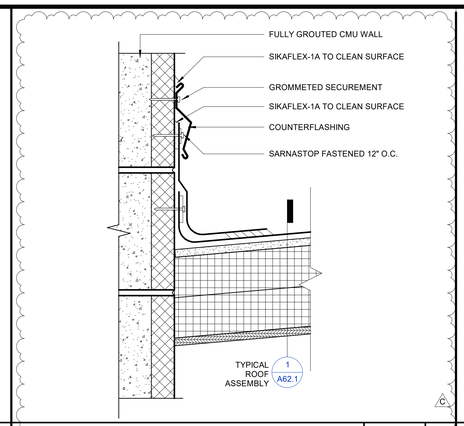
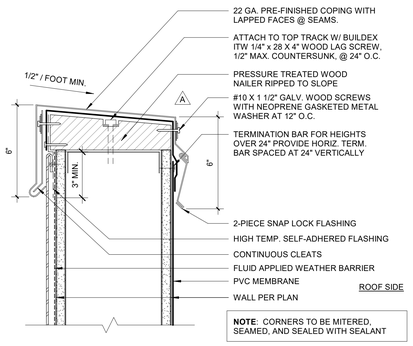
PLAN CHECK 00954071-PARK



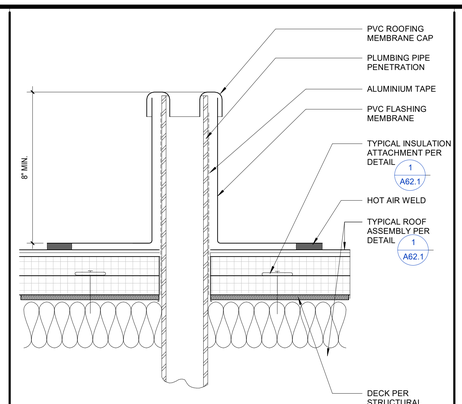
SOFFIT TO WALL TERMINATION | 3" = 1'-0" | 18



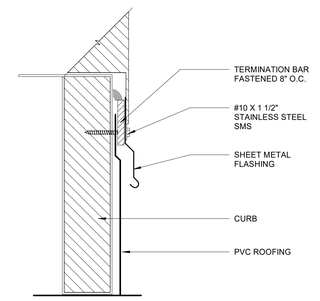
SURFACE MOUNTED COUNTERFLASHING | 3" = 1'-0" | 16



METAL PARAPET COPING | 3" = 1'-0" | 12

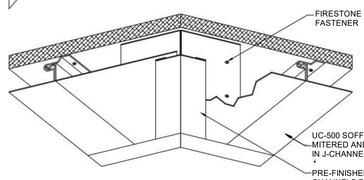


PLUMBING VENT PIPE PENETRATION | 1 1/2" = 1'-0" | 8



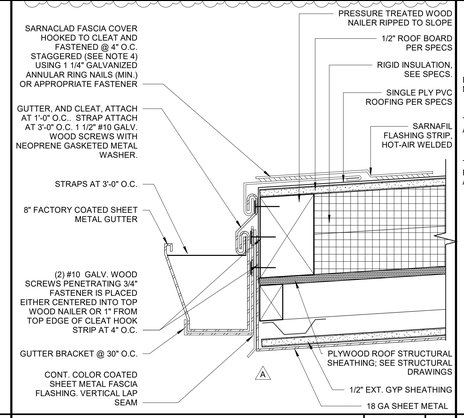
EQUIP. FLASHING | 6" = 1'-0" | 4

SECTION CUT THROUGH

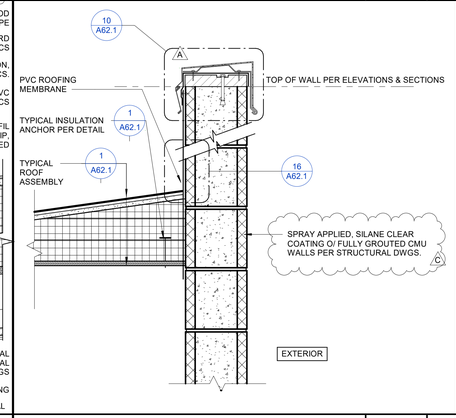


NOTES:
1.REFER TO TECHNICAL INFORMATION SHEETS FOR FASCIA SIZES, ACCEORIES AND FINISHES
2. REFER TO FIRESTONE TECHNICAL DATABASE FOR FASTENER COMPATIBILITY WITH METAL

UC- 5OO SOFFIT PANEL | 6" = 1'-0" | 17

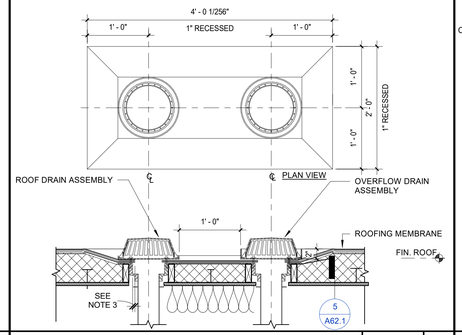


ROOF METAL EDGE @ GUTTER | 3" = 1'-0" | 15

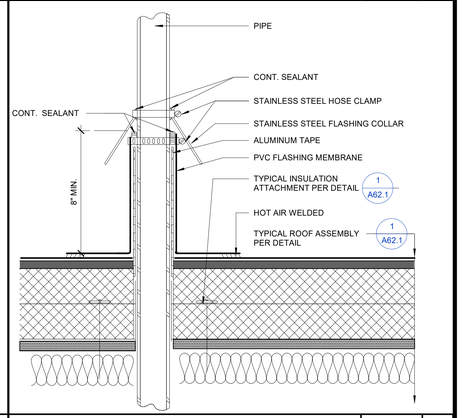


CMU PARAPET FLASHING | 1 1/2" = 1'-0" | 11

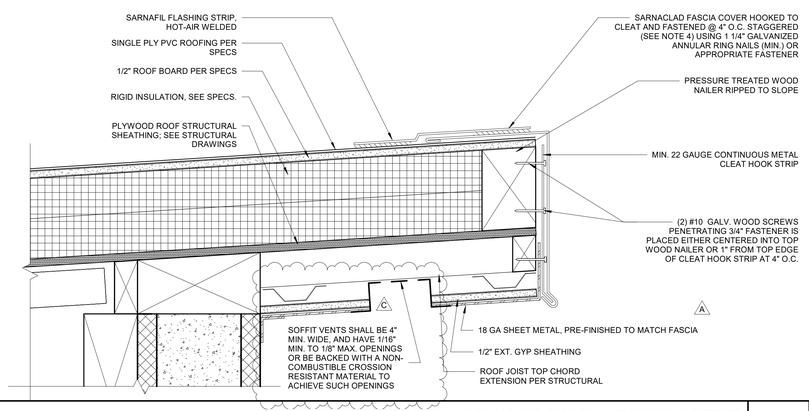
NOTES:
1. STEEL CLAMPING RINGS MUST BE USED ON ALL ROOF AND OVERFLOW DRAINS.
2. AFTER COMPLETE INSTALLATION OF THE ROOFING SYSTEM, CONTRACTOR SHALL INSPECT AND WATER TEST ALL ROOF DRAINS TO ASSURE THAT NO CLOGGING OF THE DRAINAGE SYSTEM IS PRESENT. THE ROOF DRAIN LEADER SHOULD BE IN SUCH CONDITION THAT THE FULL DIAMETER OF THE DRAIN LEADER IS CLEAR.
3. MEMBRANE FLASHING SHALL EXTEND UNDER CLAMPING RING. EXTENT PER MANUF. SPECS.



ROOF DRAIN | 1" = 1'-0" | 7

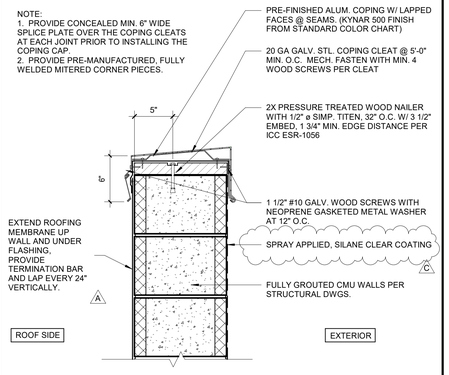


TYP. PIPE PENETRATION FLASHING | 3" = 1'-0" | 3

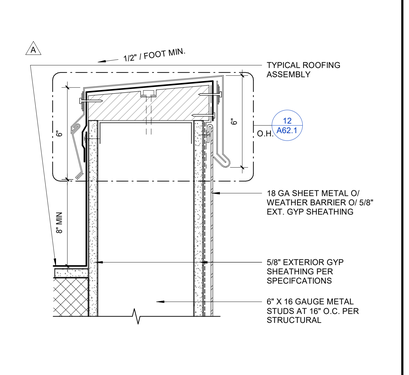


ROOF METAL EDGE @ OVERHANG (WOOD FRAMED SOFFIT) | 3" = 1'-0" | 14

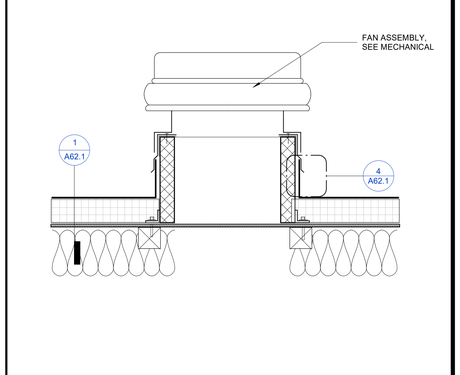
NOTE:
1. PROVIDE CONCEALED MIN. 6" WIDE SPLICE PLATE OVER THE COPING CLEATS AT EACH JOINT PRIOR TO INSTALLING THE COPING CAP.
2. PROVIDE PRE-MANUFACTURED, FULLY WELDED MITERED CORNER PIECES.



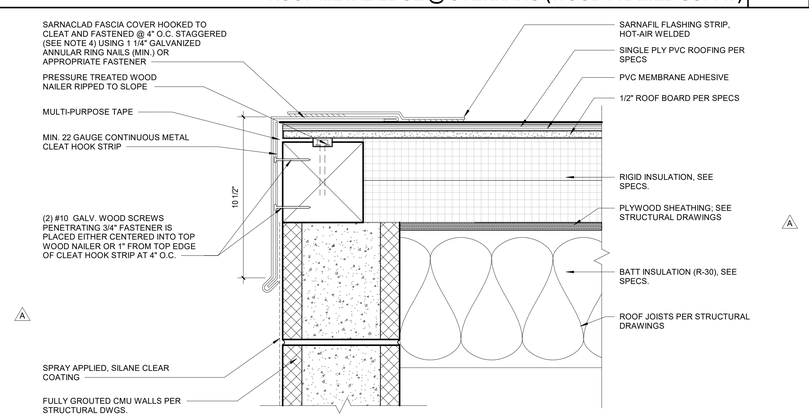
CMU COPING | 1 1/2" = 1'-0" | 10



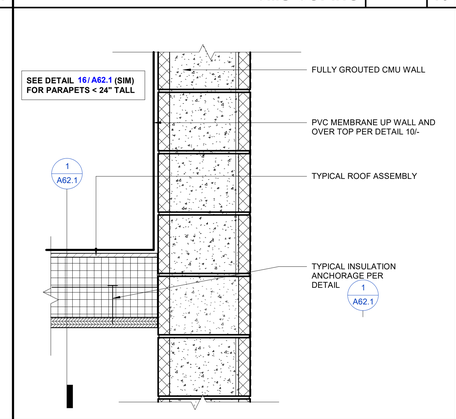
LOBBY ROOF EDGE | 3" = 1'-0" | 6



EXHAUST & RELIEF FAN DETAIL | 3/4" = 1'-0" | 2

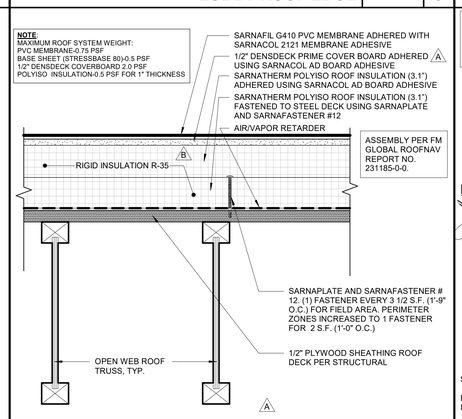


ROOF METAL EDGE | 3" = 1'-0" | 13

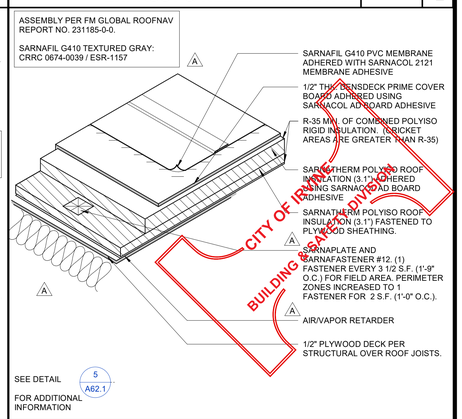


FLAT ROOF TO CMU | 1 1/2" = 1'-0" | 9

NOTE
MAXIMUM ROOF SYSTEM WEIGHT:
PVC MEMBRANE-0.75 PSF
BASE SHEET (STRESSBASE 80)-0.5 PSF
1/2" DENSDECK COVERBOARD 2.0 PSF
POLYISO INSULATION-0.5 PSF FOR 1" THICKNESS



TYPICAL ROOF ASSEMBLY SECTION | 3" = 1'-0" | 5



TYPICAL ROOF ASSEMBLY | 1" = 1'-0" | 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
No. C-15501
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated
SHEET NUMBER: A62.1
SHEET TITLE:

DETAILS - ROOF

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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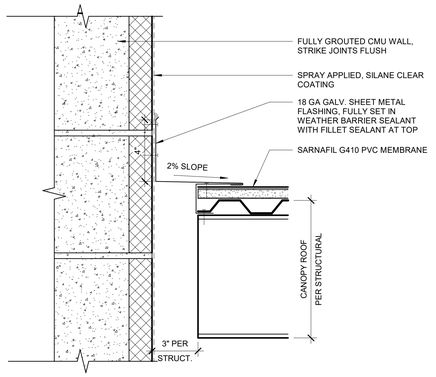
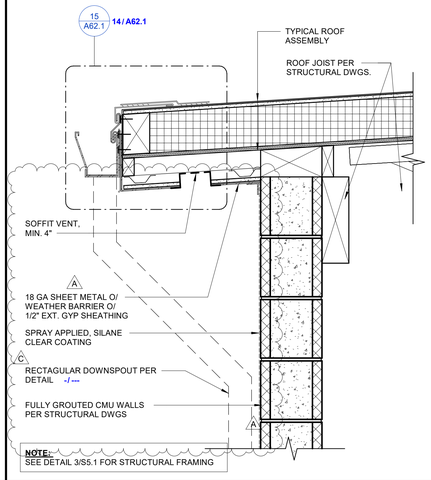
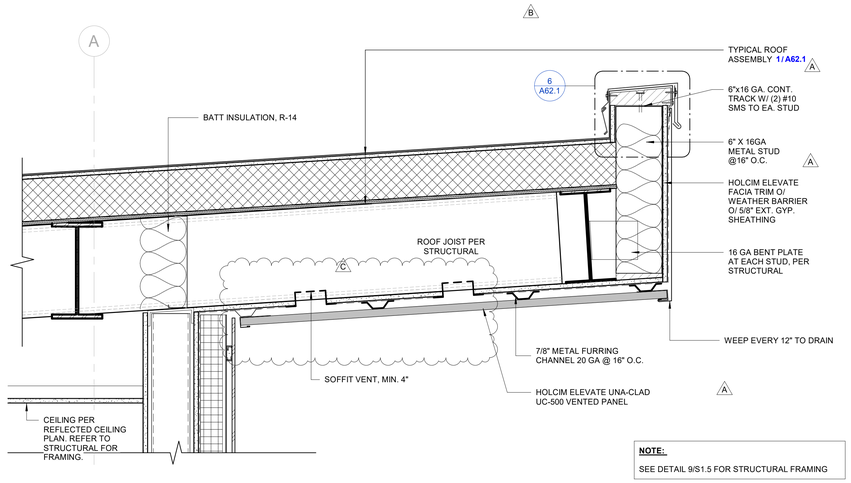
PLAN CHECK 00954071-PARK



BUILDING TO PV GAP CLOSURE | 3" = 1'-0" | **10**

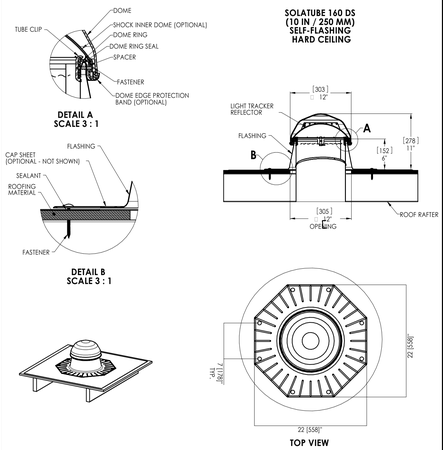


ROOF EDGE @ OVERHANG W/ GUTTER | 1 1/2" = 1'-0" | **8**

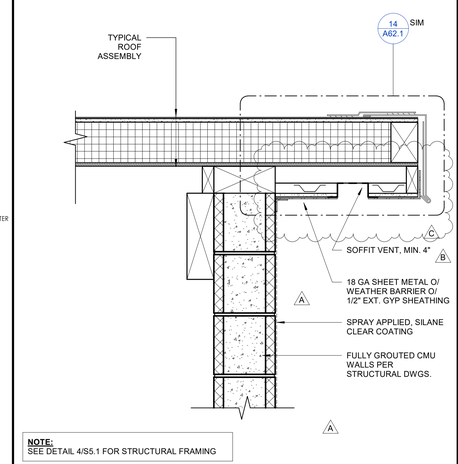


ROOF WEST OVERHANG | 1 1/2" = 1'-0" | **3**

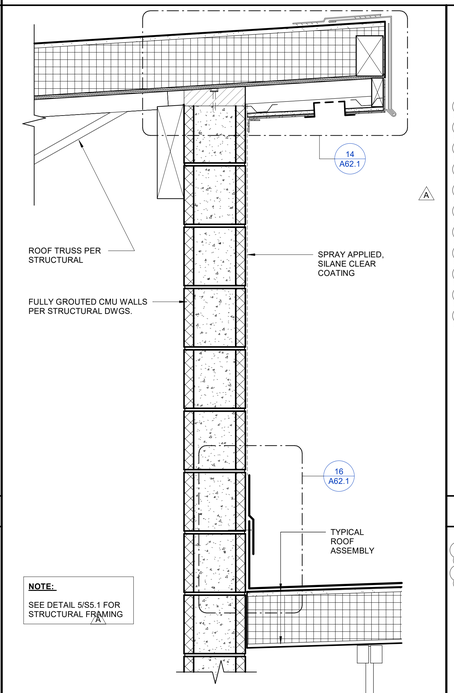
TYP. SURF. MTD. COUNTER FLASHING | 1 1/2" = 1'-0" | **19**



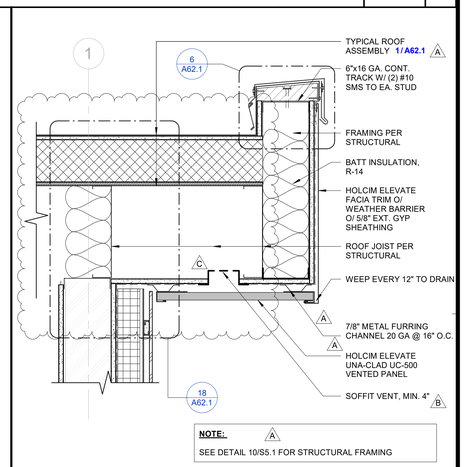
SOLATUBE | 1" = 1'-0" | **9**



TRUSS TO CMU WALL W/ SIDE OVERHANG | 1 1/2" = 1'-0" | **7**

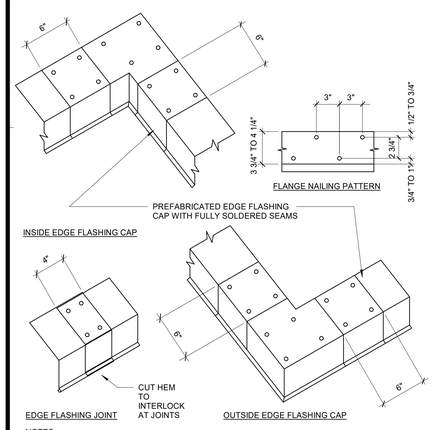


TRUSS TO WALL | 1 1/2" = 1'-0" | **5**

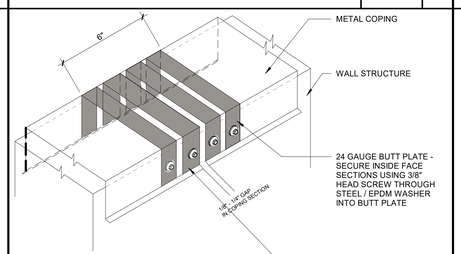


SOUTH ROOF OVERHANG | 1 1/2" = 1'-0" | **2**

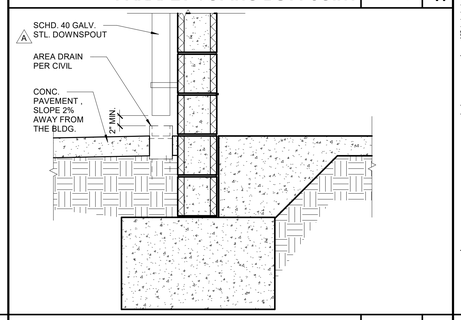
SOFFIT VENTS SHALL BE 4" MIN. WIDE, AND HAVE 1/16" MIN. TO 1/8" MAX. OPENINGS OR BE BACKED WITH A NON-COMBUSTIBLE CROSSION RESISTANT MATERIAL TO ACHIEVE SUCH OPENINGS.



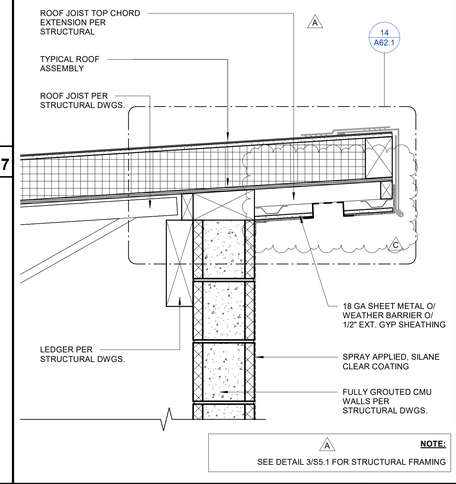
EDGE FLASHING DETAILS | 1 1/2" = 1'-0" | **18**



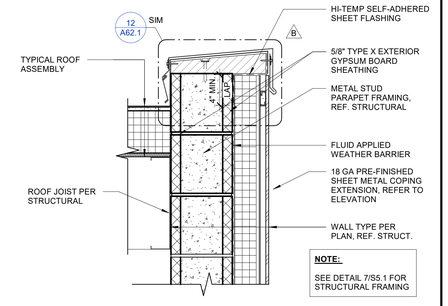
PARAPET COPING BUTT JOINT | 3" = 1'-0" | **17**



DOWNSPOUT CATCH BASIN DETAIL | 1" = 1'-0" | **16**



TRUSS TO CMU WALL W/ OVERHANG | 1 1/2" = 1'-0" | **6**



ADMIN BLDG ROOF SOUTH EDGE | 1 1/2" = 1'-0" | **4**

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
No. C-13001
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025
C	City PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A62.2
SHEET TITLE:

DETAILS - ROOF

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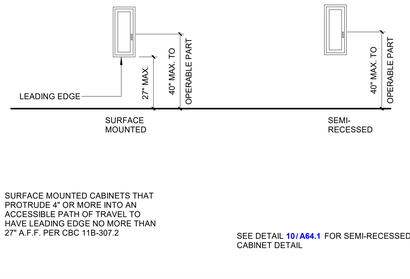
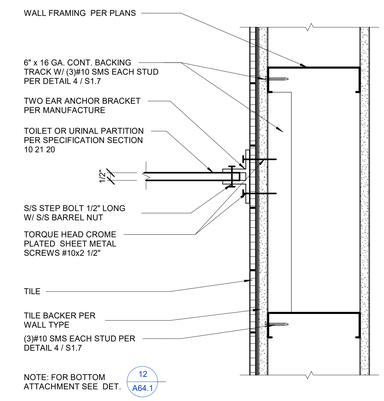


SURFACE MOUNTED CABINETS THAT PROTRUDE 4" OR MORE INTO AN ACCESSIBLE PATH OF TRAVEL TO HAVE LEADING EDGE NO MORE THAN 27" A.F.F. PER CBC 11B-307.2

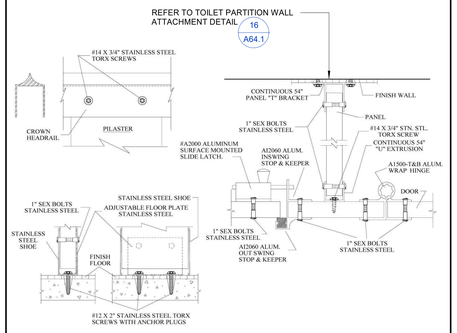
SEE DETAIL **10/A64.1** FOR SEMI-RECESSED CABINET DETAIL

FIRE EXTINGUISHER CABINET | 3/8" = 1'-0" | 20



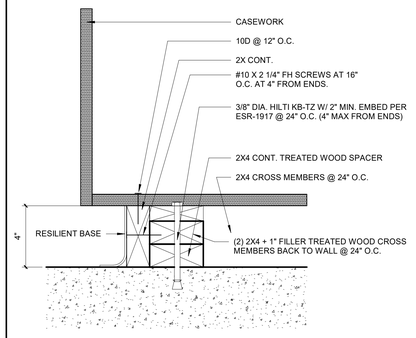
NOTE: FOR BOTTOM ATTACHMENT SEE DET. 12/A64.1

TOILET PARTITION WALL ATTACHMENT | 3" = 1'-0" | 16

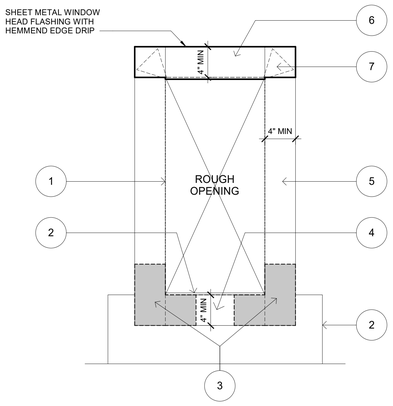


TOILET PARTITION BOTTOM ATTACHMENT | 6" = 1'-0" | 12

B



BASE ANCHORAGE @ FRONT | 3" = 1'-0" | 4



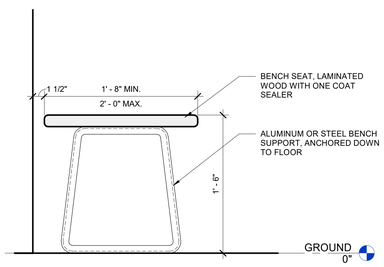
KEYNOTES

1. PRIMED ROUGH OPENING, PREPARE BARE WOOD FOR SHEET MEMBRANE WATERPROOFING.
2. BACK DAM ANGLE AND SELF-ADHERED SHEET MEMBRANE BELOW SILL.
3. FOIL-FACED SELF-ADHERED SHEET FLASHING AT SILL CORNERS.
4. FOIL-FACED SELF-ADHERED SHEET FLASHING, LAPPED OVER SELF-ADHERED SHEET MEMRANE. FLASHING TO TURN UP VERTICALLY 4" MINIMUM IN THE ROUGH OPENING AT THE JAMB AND ONTO THE SHEATHING HORIZONTALLY 4" MINIMUM PAST THE ROUGH OPENING.
5. FOIL-FACED SELF-ADHERED SHEET FLASHING, WRAPPING INTO BOTH SIDES OF THE ROUGH OPENING.
6. FOIL-FACED SELF-ADHERED SHEET FLASHING WRAPPING OVER AND INTO THE HEAD ROUGH OPENING.
7. FOIL-FACED SELF-ADHERED SHEET FLASHING BOW-TIE PIECES OVER THE HEAD FLASHING AT CORNERS.
8. SET WINDOW IN OPENING AND SEAL FASTENER LOCATIONS.
9. SELF-ADHERED SHEET MEMBRANE LAPPED OVER SHEET METAL WINDOW HEAD FLASHING.
10. SELF-ADHERED SHEET MEMRANE OVER FOIL-FACED SELF-ADHERED SHEET FLASHING AT JAMBS AND HEAD.

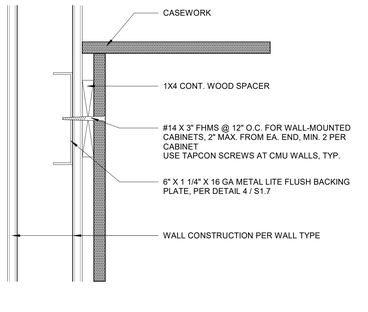
A

WINDOW OPENING FLASHING | 1 1/2" = 1'-0" | 15

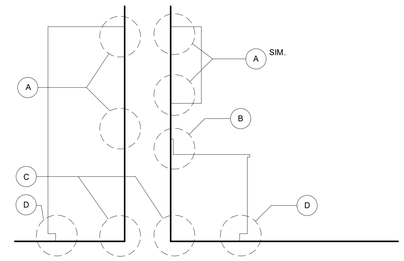
A



LOCKER ROOM BENCH | 1 1/2" = 1'-0" | 11

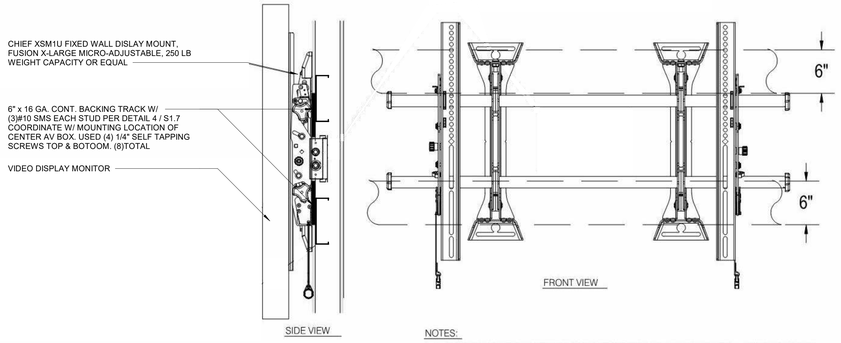


TYP. ANCHORAGE @ WALL | 3" = 1'-0" | 7



A REFER DET. 7/-
B REFER DET. 6/-
C REFER DET. 5/-
D REFER DET. 4/- (NOT APPLICABLE AT ACCESSIBLE BASE CABINET)

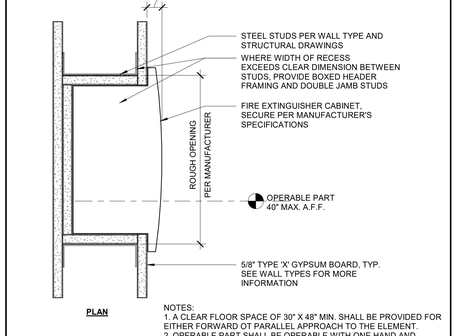
TYPICAL ANCHORAGE | 1/2" = 1'-0" | 3



NOTES:

1. A CLEAR SPACE OF 2" IS REQUIRED BY THE MANUFACTURER AROUND THE PERIMETER OF THE FLAT PANEL MONITOR FOR VENTILATION.

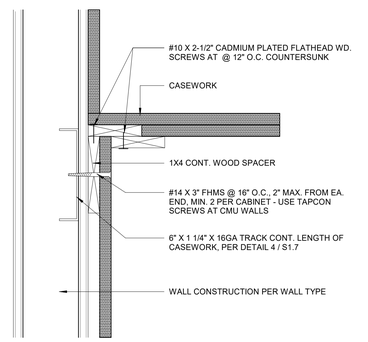
TYPICAL LCD/LED DISPLAY MOUNTING AND BACK BOX | 1 1/2" = 1'-0" | 14



PLAN

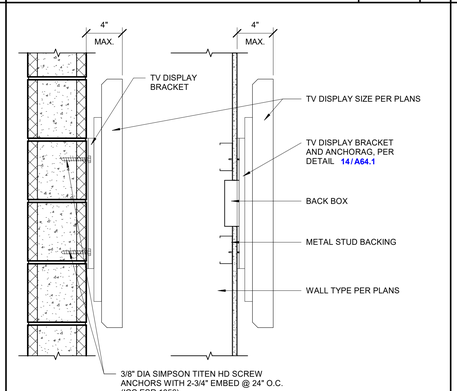
NOTES:
1. A CLEAR FLOOR SPACE OF 30" X 48" MIN. SHALL BE PROVIDED FOR EITHER FORWARD OT PARALLEL APPROACH TO THE ELEMENT.
2. OPERABLE PART SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING , PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUNDS MAX.
3. REFER TO **20/A64.1** FOR ADDITIONAL INFORMATION.

SEMI RECESSED F.E. CABINET | 3" = 1'-0" | 10

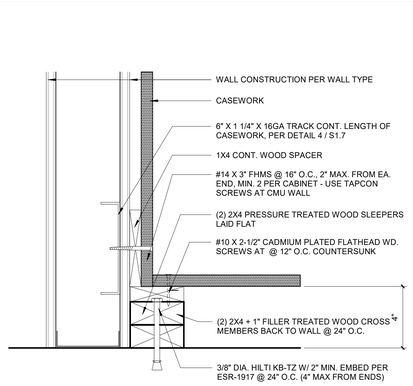


B

MID ANCHORAGE @ WALL | 3" = 1'-0" | 6



WALL MOUNTED TV DISPLAY | 1 1/2" = 1'-0" | 9



BASE ANCHORAGE @ WALL | 3" = 1'-0" | 5

1. CASEWORK SHALL COMPLY W/ THE REQUIREMENTS OF THE WOODWORK INSTITUTE.
2. ALL CABINET DIMENSIONS INDICATED ARE NOMINAL OUTSIDE DIMENSIONS.
3. FILLER STRIPS ARE REQUIRED AT ENDS OF CABINETS WHERE CABINETS ARE ADJACENT TO WALLS.
4. ALL FILLER STRIPS AT TALL AND WALL CABINETS TO HAVE TOP AND BOTTOM RETURNS.
5. ALL PLAN DIMENSIONS OF CASEWORK ARE CABINET DIMENSIONS ONLY AND DO NOT INCLUDE TOPS.
6. PROVIDE FINISHED END PANELS FOR SUPPORT OF COUNTERTOPS AT UNDERCOUNTER EQUIPMENT OR KNEE SPACES WHERE THERE IS NO ADJACENT WALL OR CABINET THAT CAN BE USE FOR SUPPORT.
7. FINISH ALL EXPOSED PORTIONS OF CASEWORK AND COUNTERTOPS.
8. ALL UNITS, INCLUDING OPEN UNITS, SHALL HAVE CASEWORK MANUFACTURER'S STANDARD CABINET LINER UNLESS OTHERWISE NOTED.
9. ALL TOE SPACES SHALL BE 4" IN HEIGHT AND 3" IN DEPTH AND SHALL RETURN TO WALL WHERE ENDS OF CABINETS ARE EXPOSED.
10. ALL SHELVING SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED.
11. ALL COUNTERTOPS SHALL BE OF MAXIMUM PRACTICAL LENGTHS REQUIRED TO CONFORM TO OVERALL BASE CABINET DIMENIONS SHOWN.
12. PROVIDE BACKSPLASH COUNTERTOP RETURN AT ENDS OF COUNTERTOPS WHERE ADJACENT TO WALL OR OTHER FULL HEIGHT CASEWORK.
13. ALL SINKS, SINK TRIM & ELECTRICAL ITEMS SHALL BE FURNISHED BY OTHER THAN THE CASEWORK MANUFACTURER UNLESS OTHERWISE NOTED.
14. ALL OTHER COUNTERTOPS SHALL BE PLASTIC LAMINATE UNLESS OTHERWISE NOTED.
15. ALL W.I. CASEWORK TO BE FACE FRAME MODEL.

CASEWORK NOTES

BUILDING & SAFETY DIVISION
CITY OF IRVINE

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT ROBERT M. SIMON Lic. C-17801 JAN 31, 2027 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE: As indicated

SHEET NUMBER: A64.1

SHEET TITLE:

DETAILS - CASEWORK & MISC.

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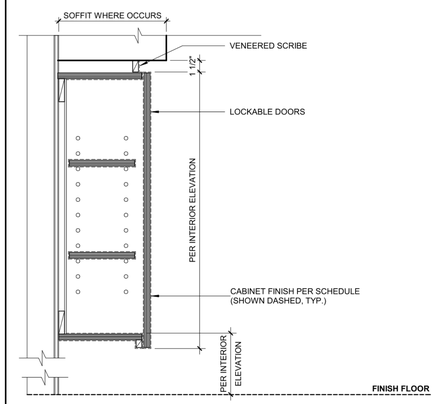
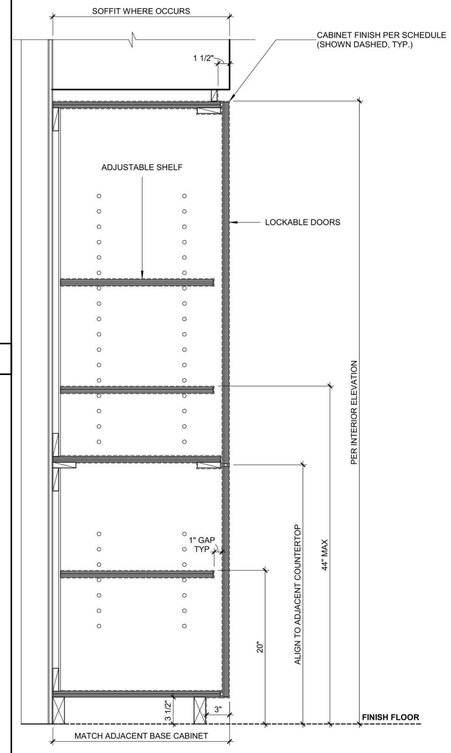
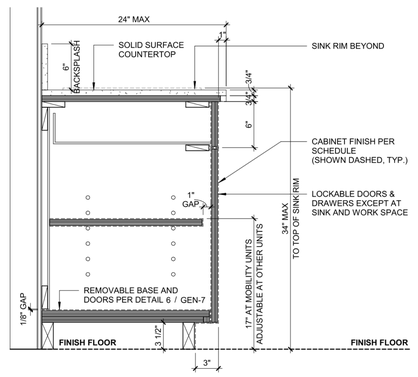


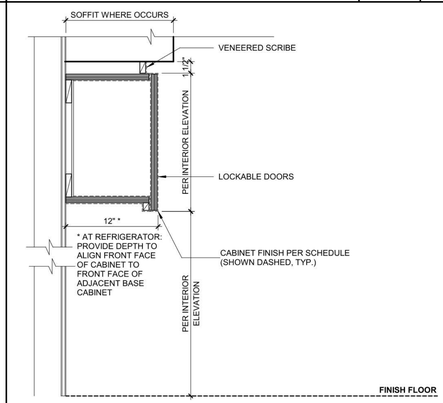
UPPER CABINET | 7



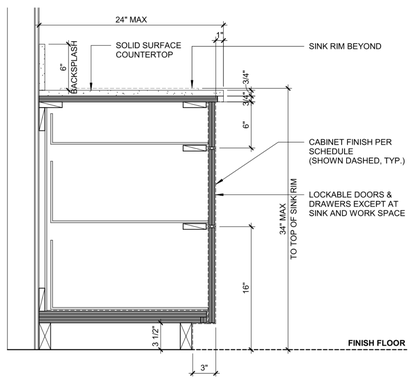
PANTRY | 3



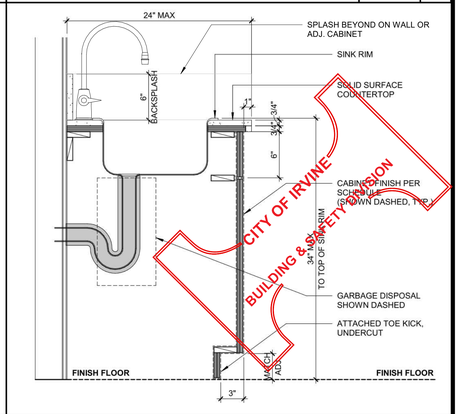
BASE CABINET | 6



UPPER CABINET ABOVE SINK | 2



DRAWERS | 5



BASE CABINET AT SINK | 1

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMONS
No. C-19201
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As indicated

SHEET NUMBER: A64.2

SHEET TITLE:

DETAILS - CASEWORK & MISC.

B

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PLAN CHECK 00954071-PARK

SECTION 07 46 46

FIBRE CEMENT WALL PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Fiber cement siding systems, including:

1. Siding panels and planks.
2. Accessories and trim.

1.2 REFERENCES

A. ASTM C1185 - Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards.

B. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets.

C. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.

F. ASTM G155 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's data sheets on each product to be used, including:

1. Manufacturer's requirements for related materials to be installed by others.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Manufacturer's detailed installation manual, including requirements for all installation methods, including fastening requirements, flashing requirements, and termination details.

C. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.

D. Warranty: Submit copy of manufacturer's warranty, made out in Owner's name, showing that it has been registered with manufacturer.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this Section with minimum three years of experience.

B. Basis of Design: Specifications are based on wall panel systems by specified basis of design manufacturer. Wall panel systems manufactured by other acceptable manufacturers are permitted, subject to compliance with specified requirements, and provided that deviations in design, composition, and profile are minor, and do not detract substantially from the indicated design intent.

1. Comply with requirements specified in Section 01 4000 and Section 01 6000.

1.5 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver and store materials in manufacturer's unopened packaging, with labels intact, until ready for installation.

C. Store products under waterproof cover and elevated above grade, on a flat surface.

1.6 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Provide manufacturer's standard limited, transferable warranties for each system component specified.

1. Fiber Cement Siding System Components and Standard Trim Profile, Factory Primed: 50 years.
2. Fiber Cement Siding Trim, 4/4 and 5/4 Profiles: 25 years.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. EQUITONE, Inc./[tectiva] Fiber Cement Panel

B. Allura, a division of Plycem USA, Inc.

C. GAF

D. Nichiha USA, Inc.

E. Substitutions: See Section 01 25 00.

2.2 WALL PANELS

A. Panel Siding System: Wall panels with machined edges, for concealed clip attachment.

1. Texture: Smooth.
2. Thickness: 7/16 inch, nominal.
3. Finish: Factory applied primer, unless otherwise indicated on Drawings.

B. Factory Finish: Topcoat system applied to specified panel products in factory.

1. Colors and Textures: As selected by Architect from topcoat system manufacturer's full line for each specified finish system.

2.3 ACCESSORIES

A. Fiber Cement Trim: Fiber cement board, provided in nominal sizes as indicated on Drawings, cut edges primed; 5/4 inch nominal thickness.

1. Same material and texture as siding.
2. Finish: Factory applied primer, unless otherwise indicated on Drawings.

B. Metal Reveal System: Extruded aluminum, 6063-T5 alloy-temper; nominal 1 inch face width with 1/2 inch reveal; channels designed to accept siding panels of specified thickness.

1. System Components: Include horizontal reveals, vertical reveals, outside corners, intersection profiles, and other trim profiles as indicated on Drawings.
2. Dimension and Layout: As indicated on Drawings.
3. Finish: Powder coating.
4. Color: As selected by Architect.
5. Acceptable Manufacturer:

a. Easytrim Reveals, Inc.; EZ-Series Trim: www.easytrimreveals.com.
b. Substitutions: See Section 01 25 00.

C. Fasteners: Galvanized or corrosion resistant type; length as required to penetrate minimum 1-1/4 inch into solid backing, except as otherwise specified.

1. Use of siding manufacturer's recommended fasteners is required, to establish and maintain specified warranty, and for proper and complete installation.

D. Sealant: Elastomeric, polyurethane or silyl-terminated polyether/polyurethane, or as otherwise recommended by siding system manufacturer; capable of being painted. Comply with general requirements specified in Section 07 92 00.

E. Insect Screen Mesh: Vinyl-coated fiberglass, 18 x 16 mesh.

F. Sheet Metal Flashing: Specified in Section 07 62 00.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.

B. Verify that weather barrier system has been installed over substrate completely and correctly.

C. Do not begin until unacceptable conditions have been corrected.

D. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Protect surrounding areas and adjacent surfaces during execution of this work.

B. Prime or pre-paint field-cut edges prior to installation.

C. Install sheet metal flashing properly lapped with other components of the weather barrier system, and properly sloped to drain and weep moisture to the exterior.

1. Above door and window trim and casings.
2. Above horizontal trim in field of siding.
3. Components specifically required or recommended by siding manufacturer for installation conditions indicated.
4. Install insect screen mesh at bottom and open edges of installations.

3.3 INSTALLATION

A. Install siding system in accordance with manufacturer's instructions and recommendations, including wood furring strips if required to establish and maintain specified warranty.

1. Read warranty and comply with terms necessary to maintain warranty coverage.
2. Install in accordance with conditions stated in model code evaluation report applicable to location of project.
3. Use trim details indicated on Drawings; if trim details are not indicated, comply with siding manufacturer's standard details in all respects for conditions indicated.
4. Touch up field cut edges before installing.
5. Pre-drill nail holes if necessary to prevent breakage.

B. Over Gypsum Board, Wood, and Wood-Composite Sheathing: Fasten siding through sheathing into studs.

C. Allow space for thermal movement between both ends of siding panels that butt against trim; seal joint between panel and trim with specified sealant.

D. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.

1. Provide sheet flashing behind joints, extending minimum 1 inch above top of siding course, minimum 3 inch each side of joint, and minimum 1 inch overlap with previous siding course, or as otherwise required by siding manufacturer.

E. Minimum Fastener Penetration: Comply with applicable code, but at minimum as follows:

1. Wood Studs: 1 inch.
2. Metal Studs: 3 full threads.

F. Do not install siding less than 6 inches from surface of ground nor closer than 2 inches to roofs, patios, porches, sidewalks, and other surfaces where water may collect, unless otherwise specifically allowed by siding manufacturer or otherwise detailed on Drawings to comply with siding manufacturer's recommendations.

G. Sealants: After siding system installation, seal all joints except lap joints of lap siding and other joints not required to be sealed according to system manufacturer's installation instructions. Seal around all penetrations through panel system.

1. Exceptions: Do not seal joints between siding components and sheet metal flashings, between bottom edge of siding panels and adjacent materials, and similar locations where moisture must be allowed to weep out from behind siding system.

3.4 CLEANING

A. At completion of work, remove debris caused by siding installation from project site.

3.5 PROTECTION

A. Protect installed products until Date of Substantial Completion.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
No. C-13621
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE:

SHEET NUMBER: AS-1
SHEET TITLE:

SPECIFICATIONS

SVA ARCHITECTS
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PLAN CHECK 00954071-PARK

SECTION 07 53 10

ELASTOMERIC PVC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide reinforced polyvinyl chloride (PVC) type elastomeric sheet membrane roofing system with base flashings, insulation, roof deck board, and accessories for complete, weather-tight installation.

B. Related Sections:

1. Section 06 10 50: Wood blocking and plywood in conjunction with roofing.
2. Section 07 60 00: Flashing and sheet metal.

1.2 REFERENCE STANDARDS

A. National Roofing Contractors Association: The NRCA Roofing and Waterproofing Manual.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meeting: Convene not less than one week prior to commencing work of this section. Require attendance of parties directly affecting roofing work.

1. Review procedures and coordination required with related work.

1.4 SUBMITTALS

A. Product Data: Submit membrane manufacturer's literature for membrane and base flashing materials; provide specific recommendations of insulation system manufacturer.

1. Submit membrane manufacturer's recommendations for surface conditioning, flashing, joint cover and crack sealants, and temperature range for application of materials.

B. Shop Drawings: Submit for PVC sheet seams and insulation layout; indicate location and insulation type; provide cross section indicating layers of insulation along with R-value calculations.

C. Samples: Submit samples of each exposed material.

D. Certifications:

1. Installer: Submit certification installer is approved for roof system installation.

2. Materials: Submit certification materials and components conform to Specifications and are compatible with each other, roof substrate, and related work.

3. Fire and Wind: Submit manufacturer's certification system conforms to fire and wind requirements.

4. Manufacturer Representative: Submit certification by manufacturer's representative indicating work has been installed in accordance with manufacturer's recommendations and installation instructions.

1.5 QUALITY ASSURANCE

A. Sustainability Requirements: Comply with *CAL*Green requirements including those relative to energy efficiency.

B. Qualification of Installers: Company with minimum five years successful experienced in PVC membrane roof application on projects of similar scope.

1. Installer: Roofing and insulation manufacturer certified or approved.

C. Supervisor: Installer to maintain full-time supervisor/foreman who is on jobsite during roofing work who is experienced in installation of roofing system specified.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect foam insulation from direct sunlight exposure.

1.7 SITE CONDITIONS

A. Do not apply roofing membrane during inclement weather or when air temperature may fall below 40 degrees F.

1. Do not allow materials to be exposed to moisture during transportation, storage, handling or installation.

2. Mark damp or wet materials, including felts which froth or foam during installation, and remove from site within 24 hours.

B. Do not apply materials to damp, dirty, dusty, or otherwise unsuitable surfaces.

1. Allow concrete surfaces to cure minimum 28 days.

C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.8 WARRANTY

A. Extended Correction Period: Provide for correcting failure of system to resist damage from anticipated sources including damage from wind and water penetration. Repair system and pay for or replace damaged materials and surfaces.

1. Period: Two years.

B. Manufacturer's Warranty: Submit manufacturer's warranty including special manufacturer services as required for manufacturer's warranty.

1. Period: 20 years.

2. Manufacturer's warranty shall not detract from requirements of extended correction period nor from Owner's rights under implied and expressed warranties regardless of wording of manufacturer's warranty.

PART 2 - PRODUCTS

2.1 SYSTEMS MANUFACTURERS

A. Carlisle SynTec Systems.

B. Sarnafil Inc. Basis of Design

C. Substitutions: Refer to Section 01 25 00.

2.2 MATERIALS

A. System Description: Provide reinforced polyvinyl chloride (PVC) type elastomeric sheet membrane roofing system with base flashings, and accessories.

1. System: Fully adhered exposed membrane.

2. Provide roofing system materials by a single manufacturer, except where materials of other manufacturers are specified or approved by Architect.

3. Provide roof insulation, double layer, or more, application where indicated.

4. Provide tapered insulation as required to ensure positive 1/4" per foot slopes to drains.

5. Provide roof deck board to separate insulation from roof membrane.

B. Regulatory Requirements

1. Cool Roof System: Comply with California Building Standards Code requirements for "Cool Roof" system including three-year aged solar reflectance value requirements.

a. Label: System to have Cool Roof Rating Council (CRRC) label.

2. Fire and Wind Resistance: Conform to California Building Standards Code requirements for Underwriters Laboratory (UL) Class A roof system, with UL Class 60 wind resistance classification.

C. Roof Membrane: ASTM D4434, Polyvinyl Chloride (PVC) Elastomeric membrane, reinforced, thickness as recommended by roof membrane manufacturer for application involved, but no less than 48 mils.

1. Scrim Reinforcing: Manufacturer's standard fleece, fiberglass, or polyester scrim.

2. Corners and Elastomeric Membrane Flashing: Provide products using same base material as roof membrane; corners preformed.

3. Seams: Solvent welded and seam sealant finished.

4. UV Resistance: Provide materials with demonstrated resistance to ultraviolet light with no visible surface cracking or discoloration based on industry accepted accelerated test methods.

5. Provide materials compounded specifically for application methods and substrates indicated on Drawings; comply with requirements for fire rated materials.

6. Color: Reflective Gray

D. Insulation: Provide materials approved for use with specified membrane and suitable for application indicated; provide tapered insulation where insulation is indicated to provide roof slopes.

1. Polyisocyanurate Insulation: ASTM C1289, Type II, Class 1, Grade 2 glass fiber faced isocyanurate, with ASTM C1303 Long Term Thermal Resistance (LTTR).

2. Other Types of Insulation: Acceptable subject to manufacturer's recommendations, application involved, and total thickness required for specified thermal resistance.

3. Thermal Resistance: Minimum R-38.

E. Roof Deck Board: ASTM C1278 with moisture and mold resistant core. Provide as indicated, as required for uniform surface for membrane adherence, and as required for fire and wind ratings.

1. Manufacturers:

a. Georgia Pacific/DensDeck Prime.
b. Johns Manville/Securock.
c. Substitutions: Refer to Section 01 25 00.

F. Vapor/Air Barrier

1. Use: to protect insulation and reduce moisture accumulation within an insulated roofing

2. Where insulation is adhered to the vapor retarder, adhesive must be compatible and shall be fully adhered to the substrate.

3. Material: Vapor barrier as recommended by the roofing membrane manufacturer or an acceptable product compatible with the roofing membrane.

G. Accessories: Provide as recommended by membrane manufacturer and system manufacturer as required for complete weather-tight installation, including, but not limited to:

1. Bonding adhesives, splicing cement, and lap sealants and mastics.

2. Seam plates.
3. Molded pipe flashing.
4. Temporary sealing, for end of day closing of membrane.
5. Mechanical fasteners.

H. Integral Coated Metal Flashings: Provide not less than 24-gage galvanized steel flashings, minimum G90 coating, coated with PVC materials for compatibility with direct bonding to roof membrane, as recommended by system manufacturer.

I. Roof Protection Pads: Provide protection materials as recommended by membrane manufacturer where maintenance traffic is anticipated over membrane.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify deck is dry, clean and smooth, free of depressions, waves and projections detrimental to roofing membrane, and properly sloped for drainage.

B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set and that cant strips, nailing strips, and reglets are in place.

C. Beginning installation indicates acceptance of substrate.

D. Metal Surfaces: Remove contaminants which may adversely affect adhesion or performance of roofing system; apply metal primer.

3.2 INSTALLATION

A. Install membrane roofing system in accordance with manufacturer's recommendations and instructions and as required to meet requirements for warranty and applicable codes.

1. Comply with NRCA Specification Guide for Thermoset Roof Membranes as applicable; where conflicts exist comply with manufacturer's recommendations.

B. Insulation: Install insulation in accordance with insulation manufacturer's recommendations and roof membrane manufacturer's recommendations for installation indicated.

1. Place insulation boards butted in close contact; stagger joints between insulation board layers.

2. Bevel insulation to allow snug fit at penetrations; cut neatly around protrusions through roof.

3. Mechanical fasteners as indicated on drawings.

C. Roof Deck Board: Install in accordance with manufacturer recommendations and as required to ensure suitable substrate for membrane roofing over insulation, fire ratings, and wind ratings; secure to roofing deck.

1. Place roof deck boards butted in close contact; stagger joints between roof deck board and insulation board joints.

2. Cut to allow snug fit at penetrations; cut neatly around protrusions through roof.

D. Roof Membrane: Apply membrane in accordance with membrane manufacturer's recommendations and installation instruction. Provide heat welded seams.

1. Apply sheet membrane smooth, free from air pockets, wrinkles, fish-mouths, un-lapped joints, or tears, over first layer insulation.

2. Extend roof membrane up vertical surfaces minimum 8" wherever possible and secure to nailing strips or reglets; reinforce corners with double applications of membrane.

3. Install membrane flashings and seal into membrane.

a. Coordinate installation of roof drains and related flashings.

4. Seal flashings and items projecting through membrane; seal terminations with additional layer of membrane and mastic.

5. Prevent compounds from entering and clogging drains, and from spilling or migrating onto surface of other work.

E. Roof Protection Pads: Secure roof protection pads in place in accordance with membrane manufacturer recommendations and as required to ensure protection of membrane from roof maintenance traffic.

1. Set pads to allow roof drainage; where pads cross drainage path set with not less than 4" and not more than 8" between pads.

3.3 FIELD QUALITY CONTROL

A. Site Tests: Flood test roofing prior to installation of insulation and ballast; if defects are revealed, repair and repeat flood test until no defects are revealed.

1. Do not overload structure with flood test; if necessary, section off areas as necessary.

2. Test for leaks with 2" depth of water maintained for 24 hours.

B. Manufacturer's Field Services: Manufacturer's representative shall inspect work of Project on regular basis and provide certification roofing system has been installed in accordance with manufacturer's recommendations.

1. Provide unobstructed access to roofing work.

2. Correct defects and irregularities as advised by manufacturer's representative.

3.4 CLEANING

A. Remove roofing membrane markings from finished surfaces.

B. In areas where finished surfaces are soiled by roofing work, consult manufacturer of finished surfaces for recommended cleaning methods.

C. Leave completed roof free from debris and uniform in appearance.

3.5 PROTECTION

A. Where work must continue over finished roofing membrane, protect surface in accordance with manufacturer recommendations.

END OF SECTION

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL# 4

LICENSED ARCHITECT
ROBERT M. SIMON
Exp. 5-1-2027
JAN 31, 2027
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
B	City PC #3	9/12/2025

PROJECT NO: 2023-40108

DATE ISSUED: OCT 15, 2025

SCALE:

SHEET NUMBER: AS-2

SHEET TITLE:

SPECIFICATIONS

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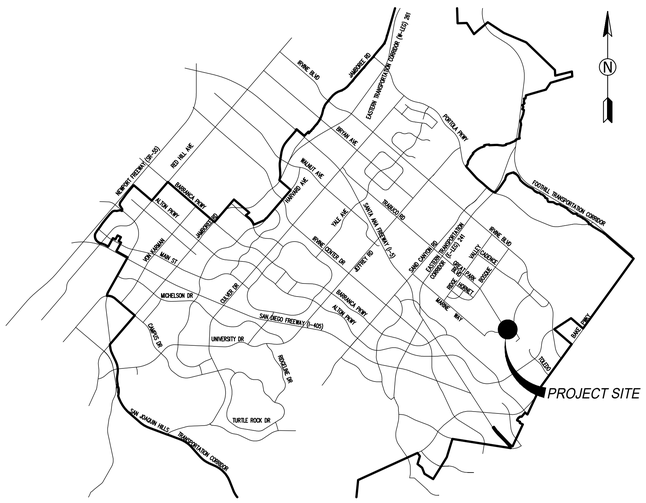
PLAN CHECK 00954071-PARK



VICINITY MAP

THE CITY OF IRVINE

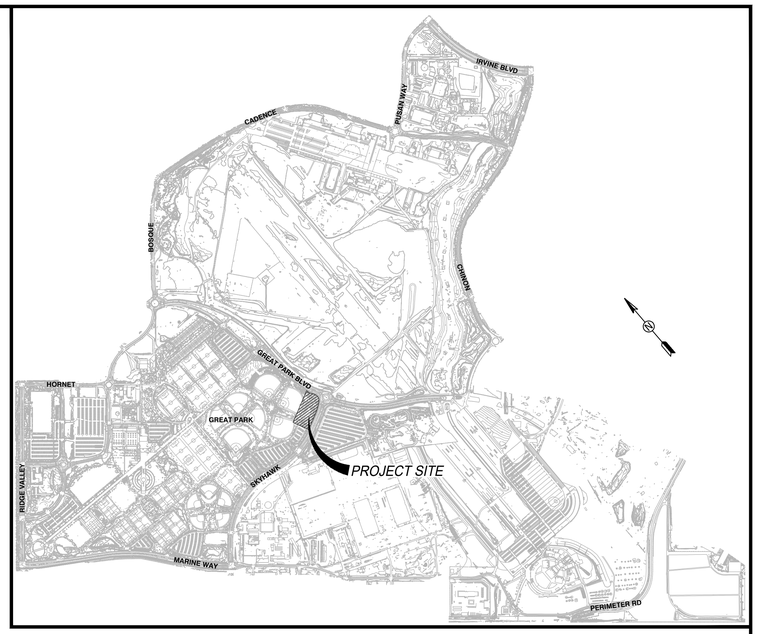
GREAT PARK
IRVINE, CALIFORNIA

GREAT PARK CIVIL PLAN

MAINTENANCE & OPERATIONS FACILITY IMPROVEMENT PLAN

CITY CIP NO. 372414

CITY PC NO. 00954071-PARK



LOCATION MAP

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

REGISTERED PROFESSIONAL ENGINEER
SHAWN YU
C87239
CIVIL
STATE OF CALIFORNIA

PREPARED BY:

HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/12/25
SHAWN YU RCE 87239

CITY OF IRVINE
BUILDING & SAFETY DIVISION

APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE
APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE

APPROVED BY: IRWD SANITARY SEWER FACILITIES	R.C.E. NO.	DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES		DATE

TITLE SHEET
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG G-001

SHEET 1 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 08:59:01 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\G-001.dwg

GRADING NOTES

1. IN ADDITION TO THE PROJECT SPECIFICATIONS ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF
   A. THE IRVINE GRADING AND EXCAVATION REGULATIONS AND GRADING MANUAL
   B. THE CITY OF IRVINE STANDARD PLANS
   C. SPECIAL REQUIREMENTS OF THE GRADING PERMIT
   D. THE CALIFORNIA BUILDING CODE
   E. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK).
   F. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) WHENEVER SPECIAL REQUIREMENTS CONFLICT ON ANY SUBJECT MATTER, THE CHIEF BUILDING OFFICIAL WILL DETERMINE WHICH SPECIAL REQUIREMENT AND/OR CODE WILL GOVERN.
   G. GEOTECHNICAL REPORT FOR LANDSCAPE MAINTENANCE FACILITY, IRVINE GREAT PARK, IRVINE, CALIFORNIA. PREPARED BY NINYO & MOORE, DATED OCTOBER 21, 2024.
2. NO GRADING SHALL BE STARTED WITHOUT FIRST NOTIFYING GRADING INSPECTION. A PRE-GRADING MEETING AT THE SITE IS REQUIRED BEFORE START OF CLEARING AND GRADING WITH THE FOLLOWING PEOPLE PRESENT: OWNER, GRADING CONTRACTOR, DESIGN CIVIL ENGINEER, GEOTECHNICAL ENGINEER, ENGINEERING GEOLOGIST, CITY GRADING INSPECTORS, CITY MAINTENANCE REPRESENTATIVE, ARCHAEOLOGIST, PALEONTOLOGIST OR THEIR REPRESENTATIVES.
3. THE PERMITTEE OR HIS AGENT SHALL NOTIFY GRADING INSPECTION WHEN THE GRADING OPERATION IS READY FOR EACH OF THE FOLLOWING INSPECTIONS: (PHONE (949) 724-6329)
   A. INITIAL INSPECTION. WHEN THE PERMITTEE IS READY TO BEGIN WORK, BUT NOT LESS THAN TWO DAYS BEFORE ANY CLEARING OR GRADING IS STARTED.
   B. TOE INSPECTION. AFTER THE NATURAL GROUND OR BEDROCK IS EXPOSED AND PREPARED TO RECEIVE FILL, BUT BEFORE FILL IS PLACED.
   C. EXCAVATION INSPECTION. AFTER THE EXCAVATION IS STARTED, BUT BEFORE THE VERTICAL DEPTH OF THE EXCAVATION EXCEEDS TEN FEET.
   D. FILL INSPECTION. AFTER THE FILL PLACEMENT IS STARTED, BUT BEFORE THE VERTICAL HEIGHT OF THE FILL EXCEEDS TEN FEET.
   E. DRAINAGE DEVICE INSPECTION. AFTER FORMING OF TERRACE DRAINS, DOWN-DRAINS OR AFTER PLACEMENT OF PIPE IN SUBDRAINS, BUT BEFORE ANY CONCRETE OR FILLER MATERIAL IS PLACED.
   F. ROUGH GRADING INSPECTION. WHEN ALL ROUGH GRADING HAS BEEN COMPLETED. THIS INSPECTION MAY BE CALLED FOR AT THE COMPLETION OF ROUGH GRADING WITHOUT THE INSPECTOR NECESSARILY HAVING PREVIOUSLY REVIEWED AND APPROVED THE REQUIRED REPORTS.
   G. FINAL GRADING AND IMPROVEMENT INSPECTION. WHEN ALL WORK (INCLUDING INSTALLATION OF ALL DRAINAGE STRUCTURES, OTHER PROTECTIVE DEVICES AND ALL OTHER IMPROVEMENTS WHICH INCLUDE LANDSCAPING AND IRRIGATION SYSTEMS) HAS BEEN COMPLETED AND THE AS-GRADED PLAN, PROFESSIONAL CERTIFICATIONS AND THE REQUIRED REPORTS HAVE BEEN SUBMITTED.
4. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL.
5. FILLS SHALL BE COMPACTED THROUGHOUT TO A MINIMUM OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D1557-02E1 MODIFIED. COMPACTED FILLS SHALL BE CERTIFIED BY THE GEOTECHNICAL ENGINEER.
6. AREAS TO RECEIVE FILL SHALL BE PROPERLY PREPARED AND APPROVED BY THE CHIEF BUILDING OFFICIAL AND GEOTECHNICAL ENGINEER PRIOR TO PLACING OF FILL.
7. FILLS SHALL BE BENCHED INTO APPROVED MATERIAL AS DEEMED SUITABLE BY THE GEOTECHNICAL ENGINEER.
8. ALL EXISTING FILLS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND CHIEF BUILDING OFFICIAL BEFORE ANY ADDITIONAL FILLS ARE ADDED.
9. SLOPES EXCEEDING FIVE FEET IN HEIGHT MUST BE PLANTED WITH AN APPROVED IRRIGATION SYSTEM. ALL SLOPES MORE THAN THREE FEET IN HEIGHT SHALL BE PERMANENTLY PROTECTED AGAINST DAMAGE FROM EROSION BY PLANTING WITH GRASS OR GROUNDCOVER PLANTS.
10. THE STOCKPILING OF EXCESS MATERIAL SHALL BY APPROVED BY THE CHIEF BUILDING PRIOR TO EXCAVATION.
11. THE DESIGN CIVIL ENGINEER, PRIOR TO ROUGH GRADE APPROVAL, SHALL PROVIDE A MINIMUM OF ONE BLUE TOP PER FINISHED PAD, SET AT THE HIGHEST POINT IN THE FINISHED DRAINAGE SWALE. FOR PRECISE GRADE APPROVAL, THE ELEVATION OF THE FLOOR SHALL ALSO BE PROVIDED TO INSURE PROPER CLEARANCE AND FALL TO DRAINAGE SWALE. THESE ELEVATIONS SHALL BE NOTED ON THE BUILDING PLANS.
12. ALL TRENCH BACK FILLS SHALL BE TESTED AND APPROVED BY THE SITE GEOTECHNICAL ENGINEER PER THE GRADING AND EXCAVATION REGULATIONS AND PROJECT SPECIFICATIONS.
13. THE ENGINEERING GEOLOGIST AND GEOTECHNICAL ENGINEER SHALL, AFTER CLEARING AND PRIOR TO THE PLACEMENT OF FILL IN CANYONS, INSPECT EACH CANYON FOR AREAS OF ADVERSE STABILITY AND TO DETERMINE THE PRESENCE OR ABSENCE OF SUBSURFACE WATER OR SPRING FLOW. IF NEEDED, CANYON SUBDRAINS WILL BE DESIGNED AND CONSTRUCTED PRIOR TO THE PLACEMENT OF FILL.
14. SUBDRAIN OUTLETS SHALL BE COMPLETED AT THE BEGINNING OF THE SUBDRAIN CONSTRUCTION.
15. SUBDRAIN AND BACKDRAIN LOCATIONS SHALL BE SURVEYED IN THE FIELD FOR LINE AND GRADE, AND THE LOCATIONS SHALL BE SHOWN ON THE AS-GRADED PLANS.
16. ALL CUT SLOPES SHALL BE EVALUATED BOTH DURING AND AFTER GRADING BY AN ENGINEERING GEOLOGIST TO DETERMINE IF ANY SLOPE STABILITY PROBLEM EXISTS. SHOULD EXCAVATION DISCLOSE ANY GEOLOGICAL HAZARDS OR POTENTIAL GEOLOGICAL HAZARDS, THE ENGINEERING GEOLOGIST SHALL RECOMMEND NECESSARY TREATMENT TO THE CITY GRADING ENGINEER FOR APPROVAL.
17. WHERE SUPPORT OR BUTTRESSING OF CUT AND NATURAL SLOPES IS DETERMINED TO BE NECESSARY BY THE ENGINEERING GEOLOGIST AND/OR GEOTECHNICAL ENGINEER, THE GEOTECHNICAL ENGINEER WILL SUBMIT DESIGN CALCULATIONS TO THE CHIEF BUILDING OFFICIAL PRIOR TO CONSTRUCTION. THE ENGINEERING GEOLOGIST AND GEOTECHNICAL ENGINEER WILL INSPECT AND CONTROL THE CONSTRUCTION OF THE BUTTRESSING AND CERTIFY THE STABILITY OF THE SLOPE AND ADJACENT STRUCTURES UPON COMPLETION.
18. WHEN CUT PADS ARE BROUGHT TO NEAR GRADE, THE ENGINEERING GEOLOGIST SHALL DETERMINE IF THE BEDROCK IS EXTENSIVELY FRACTURED OR FAULTED AND WILL READILY TRANSMIT WATER. IF CONSIDERED NECESSARY BY THE ENGINEERING GEOLOGIST AND GEOTECHNICAL ENGINEER, A COMPACTED FILL BLANKET WILL BE PLACED.
19. THE FINAL COMPACTION REPORT AND APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL CONTAIN THE TYPE OF FIELD-TESTING PERFORMED. THE METHOD OF OBTAINING THE IN-PLACE DENSITY, WHETHER SAND CONE, NUCLEAR GAUGE, OR DRIVE RING SHALL BE SO NOTED FOR EACH TEST. SUFFICIENT MAXIMUM DENSITY DETERMINATIONS SHALL BE PERFORMED TO VERIFY THE ACCURACY OF THE MAXIMUM DENSITY CURVES USED BY THE FIELD TECHNICIAN.
20. NOTIFICATION OF NONCOMPLIANCE: IF, IN THE COURSE OF FULFILLING THEIR RESPONSIBILITY, THE CIVIL ENGINEER, THE GEOTECHNICAL ENGINEER, THE ENGINEERING GEOLOGIST OR THE TESTING AGENCY FINDS THAT THE WORK IS NOT BEING DONE IN CONFORMANCE WITH THE APPROVED GRADING PLANS, THE DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE PERSON IN CHARGE OF THE GRADING WORK AND TO THE CM. RECOMMENDATION FOR CORRECTIVE MEASURES, IF NECESSARY. SHALL BE SUBMITTED TO THE CHIEF BUILDING OFFICIAL FOR APPROVAL.
21. THE DESIGN CIVIL ENGINEER SHALL PROVIDE WRITTEN APPROVAL THAT THE GRADING OPERATION IS IN COMPLIANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND APPLICABLE CODES AT COMPLETION OF THE GRADING OPERATION.
22. DUST SHALL BE CONTROLLED BY WATERING USING AN APPROVED METHOD WITHOUT CREATING ANY RUNOFF FROM THE AREA.
23. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE.
24. THE LOCATION AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE PERMITTEE.
25. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE MUST CONTINUE TO FUNCTION, WHILE PROTECTED, ESPECIALLY DURING STORM CONDITIONS. APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING THE GRADING PROJECT. IN ALL CASES, THE CONTRACTOR AND/OR DEVELOPER SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL OR MANMADE DRAINAGE PATTERNS.
26. THE PERMITTEE SHALL COMPLY WITH SECTION 5-10-127 OF THE GRADING CODE WHEN AN EXCESS OF 5,000 CUBIC YARDS OF EARTH IS OVED ON PUBLIC ROADWAYS FROM THE SITE OF AN EARTH GRADING OPERATION.
27. NO DIRT, ROCK OR CONSTRUCTION MATERIAL MAY DE TRACKED OR DROPPED WITHIN THE PUBLIC RIGHTS-OF-WAY DURING THE TRANSPORTATION OF SAID MATERIAL OR EQUIPMENT ASSOCIATED WITH THE PROJECT. ANY DEBRIS IN THE PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY AND/OR AS DEEMED NECESSARY BY THE GRADING INSPECTOR.
28. DIRT ACCESS RAMPS OVER CURB AND GUTTER TO CONSTRUCTION SITES ARE NOT ALLOWED. WHEN NECESSARY FOR ENTRANCE TO SUCH CONSTRUCTION SITES, ASPHALT RAMPS WITH A MINIMUM 3" DIAMETER PIPE WILL BE CONSTRUCTED PER CITY STANDARD 217. ALL BASE, GRAVEL, SOIL OR OTHER MATERIAL CARRIED INTO THE ROADWAY BY CONTRACTOR'S PERSONNEL OR EQUIPMENT WILL BE CLEANED IMMEDIATELY AS NECESSARY TO PREVENT POLLUTANTS FROM GETTING INTO THE STORM DRAIN SYSTEM. TRUCKS HAULING BASE, GRAVEL, FILL OR EXPORT MATERIALS WITHIN CITY LIMITS SHALL BE TARPED AS NECESSARY TO PREVENT MATERIAL FROM SPILLING INTO THE ROADWAY.
29. PRIOR TO ANY CONSTRUCTION THAT INVOLVES HAZARDOUS CONDITIONS, THE CONTRACTOR SHALL FIRST OBTAIN A PERMIT FROM THE STATE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (DOSH).
30. OPEN CUTS OF ARTERIAL HIGHWAYS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL. ROCK WHEELS ARE NOT ALLOWED.
31. ALL NEW ASPHALT CONSTRUCTION SHALL BE SHADED ON GRADING PLAN.
32. RULE: 403, AIR QUALITY CONTROL MANAGEMENT DISTRICT, MUST BE IMPLEMENTED DURING CONSTRUCTION.
   A. A PERSON SHALL NOT CAUSE OR ALLOW THE EMISSIONS OF FUGITIVE DUST FROM ANY TRANSPORT, HANDLING, CONSTRUCTION OR STORAGE: ACTIVITY SO THAT THE PRESENCE OF SUCH DUST REMAINS VISIBLE IN THE ATMOSPHERE BEYOND THE PROPERTY LINE OF THE EMISSION SOURCE: (DOES NOT APPLY TO EMISSION EMANATING FROM UNPAVED ROADWAYS OPEN TO PUBLIC TRAVEL OR FARM ROADS. THIS EXCLUSION SHALL NOT APPLY TO INDUSTRIAL OR COMMERCIAL FACILITIES).
   B. A PERSON SHALL TAKE EVERY REASONABLE PRECAUTION TO MINIMIZE: FUGITIVE: DUST EMISSIONS FROM WRECKING, EXCAVATION, GRADING, CLEARING OF LAND AND SOLID WASTE: DISPOSAL OPERATIONS.
   C. A PERSON SHALL NOT CAUSE OR ALLOW PARTICULATE: MATTER TO EXCEED 100 MICROGRAMS PER CUBIC METER WHEN DETERMINED AS THE DIFFERENCE BETWEEN UPWIND AND DOWNWIND SAMPLES COLLECTED ON HIGH VOLUME: SAMPLERS AT THE PROPERTY LINE FOR A MINIMUM OF FIVE HOURS.
   D. A PERSON SHALL TAKE EVERY REASONABLE PRECAUTION TO PREVENT VISIBLE PARTICULATE MATTER FROM BEING DEPOSITED UPON PUBLIC ROADWAYS, INCLUDING, BUT NOT UNLIMITED TO, THE REMOVAL OF PARTICULATE: MATTER FROM EQUIPMENT PRIOR TO MOVEMENT ON PAVED STREET.
   E. SUBSECTIONS A. AND D. SHALL NOT BE APPLICABLE: WHEN THE WIND SPEED INSTANTANEOUSLY EXCEEDS 40 KILOMETERS (25 MILES) PER HOUR, OR WHEN THE AVERAGE: WIND SPEED IS GREATER THAN 24 KILOMETERS (15 MILES) PER HOUR. THE AVERAGE WIND SPEED DETERMINATIONS SHALL BE ON A 15-MINUTE: AVERAGE AT THE NEAREST OFFICIAL AIR-MONITORING STATION OR BY WIND INSTRUMENT LOCATED AT THE SITE BEING CHECKED.
   F. THE PROVISIONS OF THIS RULE: SHALL NOT APPLY TO AGRICULTURAL OPERATIONS.
33. GRADING OPERATIONS SHALL OCCUR ONLY BETWEEN THE HOURS OF 7: 00 A. M. AND 7: 00 P. M. MONDAY THROUGH FRIDAY, AND BETWEEN THE HOURS OF 9:00 A.M. AND 6:00 P.M. SATURDAYS. NO CONSTRUCTION ACTIVITIES SHALL BE: PERMITTED OUTSIDE: OF THESE PERMITTED HOURS OR ON SUNDAYS AND FEDERAL HOLIDAYS, UNLESS A TEMPORARY WAIVER HAS BEEN GRANTED BY THE CHIEF BUILDING OFFICIAL. ANY WAIVERS SHALL TAKE INTO ACCOUNT THE IMPACT UPON THE COMMUNITY. IRVINE MUNICIPAL CODE SECTION 6-8-205.
34. CURVED STORM DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 306 – 1.2.4B, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST APPROVED EDITION.
35. A SEPARATE: LANDSCAPE PERMIT WILL BE REQUIRED FOR ANY LANDSCAPING ASSOCIATED WITH THIS PROJECT.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE MOST CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CITY OF IRVINE STANDARD DRAWINGS, CITY OF IRVINE STANDARD SPECIFICATIONS, THE UNIFORM BUILDING CODE, THE WORK AREA TRAFFIC CONTROL HANDBOOK (W.A.T.C.H. MANUAL), CALTRANS STANDARD SPECIFICATIONS, ADA, CALIFORNIA MUTCD AND TITLE 24.
2. THE CONTRACTOR SHALL TELEPHONE THE CITY OF IRVINE INSPEC-TIONS (949) 724-6500 AND THE CITY OF IRVINE TRAFFIC OPERA-TIONS (949) 724-7649, AT LEAST TWO WORKING DAYS (48 HOURS) PRIOR TO STARTING CONSTRUCTION.
3. ANY EXISTING PAVEMENT DISTURBED BY THE CONSTRUCTION OF UNDERGROUND INSTALLATIONS SHALL BE COVERED BY A PERMIT ISSUED BY THE CITY OF IRVINE.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR AND COORDINATE THE RELOCATION OF ANY EXISTING UTILITIES DEEMED NECESSARY BY THE PROPOSED IMPROVEMENT.
5. WHENEVER IT BECOMES NECESSARY TO TUNNEL UNDER EXISTING IMPROVEMENTS, THE CONTRACTOR SHALL SUPPORT THOSE IMPROVEMENTS IN A MANNER APPROVED BY THE CITY ENGINEER, OR THE CONTRACTOR SHALL SAWCUT, REMOVE AND REPLACE THOSE IMPROVEMENTS IN ACCORDANCE WITH THE CITY OF IRVINE STANDARD DRAWINGS.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE NEW SEWER LATERALS CONSTRUCTED AND TO STAMP THE CURB WITH AN "S" ABOVE THE NEW LATERAL. INDIVIDUAL SEWER AND WATER SERVICES SHALL NOT BE LOCATED UNDER A DRIVEWAY.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND STAMP THE CURB ON EACH SIDE OF THE STREET WITH THE APPROPRIATE LETTER: "E" FOR EDISON, "T" FOR TELEPHONE, ETC., WHEREVER UNDERGROUND FACILITIES CROSS A STREET.
8. PRIOR TO PLACING OF UNDERGROUND UTILITIES, THE LOCATION OF ALL UNDERGROUND FACILITIES (ELECTRICAL, TELEPHONE, CABLE TV, GAS, ETC.) SHALL BE ADDED TO IMPROVEMENT PLANS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES (BY POTHOLING OR OTHER MEANS). CONTRACTORS SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) 811 AT LEAST TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION TO LOCATE EXISTING UTILITIES.
10. ALL CONCRETE WORK AS SHOWN ON PLANS (CURB & GUTTER, STORM DRAIN, PIPE, MANHOLES, SIDEWALK, ETC.) SHALL BE EXTRA STRENGTH CONCRETE WITH 7 SACK TYPE II CEMENT OR 6 SACK TYPE V CEMENT, UNLESS DEEMED UNNECESSARY BY SULPHATE CONTENT TESTS AS APPROVED BY THE CITY OF IRVINE.
11. CONTRACTOR SHALL OBTAIN ANY REQUIRED O.S.H.A. PERMITS PRIOR TO ANY EXCAVATIONS.
12. ARROW BOARDS SHALL BE USED ON ANY LANE CLOSURES ON ARTERIAL STREETS.
13. SLURRY BACKFILL SHALL BE REQUIRED WHEN TUNNELING UNDER CURB AND GUTTER. SLURRY BACKFILL IS REQUIRED AROUND ALL MANHOLE CONSTRUCTION WITHIN PAVED STREETS.
14. STREET CONSTRUCTION AND IMPROVEMENTS SHALL NOT BE OPENED FOR PUBLIC USE UNTIL ACCEPTED BY THE CITY.
15. ALL IMPROVEMENTS AND TRAFFIC SIGNAL WORK WITHIN THE STATE RIGHT-OF-WAY SHALL CONFORM TO CURRENT CALTRANS STANDARD SPECIFICATIONS.
16. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON PLANS, THE DESIGN ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ALL PIPES WALLS, ETC. ARE ADEQUATELY BRACED DURING CONSTRUCTION.
18. ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE CITY'S INSPECTOR.
19. PURSUANT TO SECTION 8771 OF THE BUSINESS AND PROFESSIONS CODE, EXISTING SURVEY MONUMENTS SHALL BE NOTED AND DOCUMENTED BEFORE CONSTRUCTION. IF MONUMENTS ARE DISTURBED DURING CONSTRUCTION, THE CONTRACTOR SHALL PAY A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER TO RESET SUCH MONUMENTS, UNLESS OTHERWISE SPECIFIED OR DESIGNATED.
20. CONSTRUCTION ACTIVITIES MAY OCCUR BETWEEN 7:00 A.M. AND 7:00 P.M. MONDAYS THROUGH FRIDAYS, AND 9:00 A.M. AND 6:00 P.M. ON SATURDAYS. NO CONSTRUCTION ACTIVITIES SHALL BE PERMITTED OUTSIDE OF THESE HOURS OR ON SUNDAYS AND FEDERAL HOLIDAYS UNLESS A TEMPORARY WAIVER IS GRANTED BY THE CHIEF BUILDING OFFICIAL OR HIS OR HER AUTHORIZED REPRESENTATIVE.
21. NO WORK MAY OCCUR ON ARTERIAL STREETS BEFORE 9:00 A.M. OR CONTINUE AFTER 3:00 P.M. UNLESS A TEMPORARY WAIVER IS GRANTED BY THE CHIEF BUILDING OFFICIAL OR HIS OR HER AUTHORIZED REPRESENTATIVE.

STORM DRAIN NOTES

1. STATION SHOWN AS (0 + 00) ARE STORM DRAIN STATIONS AND ARE INDEPENDENT OF ALL CENTERLINE STATIONS.
2. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CITY OF IRVINE STANDARD DRAWINGS, CITY OF IRVINE STANDARD SPECIFICATIONS, ALL APPLICABLE GENERAL NOTES AND THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA WHERE APPLICABLE, AND THE PROJECT SPECIFICATIONS.
3. ALL TRENCH EXCAVATIONS SHALL CONFORM TO STATE OF CALIFORNIA CONSTRUCTION SAFETY ORDERS. ALL PIPES SHALL BE BEDDED IN ACCORDANCE WITH DETAILS SHOWN ON
4. ALL PIPES SHALL BE BEDDED IN ACCORDANCE WITH DETAILS SHOWN ON STD PLAN 318 UNLESS OTHERWISE NOTED.
5. THE CITY OF IRVINE INSPECTION DEPARTMENT SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS (48 HOURS) PRIOR TO START OF WORK AT (949) 724-6500. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO START OF CONSTRUCTION.
6. R.C.P. SHALL CONFORM TO APPLICABLE A.S.T.M. STANDARDS.
7. ALL FILL MATERIAL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION AS DETERMINED BY CALIFORNIA TEST METHODS 216F.
8. ALL MATERIAL TESTING FOR THE DRAINAGE FACILITIES SHALL BE PROVIDED BY THE CONTRACTOR OR DEVELOPER IN ACCORDANCE WITH THE NUMBER, LOCATION, AND FREQUENCY REQUESTED BY THE CITY INSPECTOR.

EROSION CONTROL NOTES

1. IN CASE OF EMERGENCY, CALL ____________
2. ALL PUBLIC STREETS SHALL BE MAINTAINED FREE OF DUST AND SEDIMENT CAUSED BY GRADING OPERATIONS.
3. A STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE: AT ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE: ON-SITE: AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE: RAPID CONSTRUCTION OF EMERGENCY DEVICES WHEN RAIN IS IMMINENT.
4. EROSION CONTROL DEVICES SHOWN ON THIS PLAN MAY BE REMOVED WHEN APPROVED BY THE BUILDING AND SAFETY/PUBLIC WORKS INSPECTOR IF THE GRADING OPERATION HAS PROGRESSED TO THE POINT WHERE THEY ARE NO LONGER REQUIRED.
5. 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
6. ALL SILT AND DEBRIS SHALL BE REMOVED FROM ALL DEVICES WITHIN 24 HOURS AFTER EACH RAINSTORM.
7. EXCEPT AS OTHERWISE APPROVED BY THE BUILDING AND SAFETY INSPECTOR, ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY OR WEEKENDS WHEN THE 5-DA Y RAIN PROBABILITY FORECAST EXCEEDS 40%.
8. ALL LOOSE SOIL AND DEBRIS WHICH MAY CREATE: A POTENTIAL HAZARD TO OFF-SITE: PROPERTY SHALL BE REMOVED FROM THE SITE: AS DIRECTED BY THE PUBLIC WORKS INSPECTOR.
9. THE PLACEMENT ADDITIONAL DEVICES DAMAGE: THEN THE SITE: SHALL BE AT THE DISCRETION OF THE CITY ENGINEER
10. DESILTING BASINS MAY NOT BE BETWEEN OCTOBER 1 AND MAY 1 WITHOUT THE APPROVAL OF THE CITY INSPECTOR.
11. EROSION CONTROL DEVICES SHALL NOT BE MODIFIED WITHOUT THE APPROVAL OF THE CITY ENGINEER.
12. REVISED PLANS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL.
13. THE CONTRACTOR SHALL SUPERVISE EROSION CONTROL WORK IN WITH THE APPROVED PLANS. THE WORK ALSO INCLUDES, BUT IS NOT LIMITED TO, INSPECTION OF EROSION CONTROL MEASURES BEFORE RAINSTORM AND 5-DAY PROBABILITY RAIN FORECAST.
14. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT' DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL (BEST MANAGEMENT PRACTICES, BMPS) SHALL BE: PROVIDED TO PREVENT PONDING WATER AND DAMAGE: TO ADJACENT PROPERTIES
15. IMPLEMENT FUGITIVE: DUST CONTROL MEASURES DUST BY WATERING OR OTHER APPROVED METHODS IN COMPLIANCE WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAGMD) RULE: 403.
16. FOR SLOPES 3:1 (H:V) OR STEEPER: SLOPES EQUAL TO OR GREATER THAN 3 FEET IN VERTICAL HEIGHT SHALL PLANTED WITH DROUGHT TOLERANT GRASS OR GROUND COVER AT A MAXIMUM SPACING OF 12 INCH ON CENTER. SLOPES EXCEEDING 15 FEET IN VERTICAL HEIGHT SHALL DE PLANTED WITH APPROVED SHRUBS NOT TO EXCEED 10 FEET ON CENTER, OR TREES SPACED NOT TO EXCEED 20 FEET ON CENTER OR SHRUBS NOT TO EXCEEDED FEET, OR A COMBINATION OF SHRUBS AND TREES NOT TO EXCEED 15 FEET ADDITION TO THE GRASS OR GROUND COVER. SLOPES THAT REQUIRE PLANTING SHALL BE: PROVIDED WITH AN IN-GROUND IRRIGATION SYSTEM EQUIPPED WITH AN APPROPRIATE: BACKFLOW DEVICE PER CALIFORNIA PLUMBING CODE, CHAPTER 6. THE SLOPE PLANTING AND IRRIGATION SYSTEM SHALL BE INSTALLED PRIOR TO PRECISE GRADING FINAL INSPECTION.

   NOTE: FOR RISK LEVEL 2 AND 3 SITES, THERE SHALL BE: A "RAIN EVENT ACTION PLAN" AND THE ABILITY TO DEPLOY STANDBY EROSION AND SEDIMENT CONTROL BMPS AS NEEDED TO COMPLETELY PROTECT THE EXPOSED PORTIONS OF THE SITE WITHIN 48 HOURS OF A PREDICTED STORM EVENT (A PREDICTED STORM EVENT IS DEFINED AS A FORECASTED 50% CHANGE OF RAIN).

SIGNING AND STRIPING GENERAL NOTES:

1. SIGNING AND STRIPING SHALL CONFORM TO PART 2 SIGNS & PART 3 MARKINGS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND MUTCD 2003 CALIFORIA SUPPLEMENT DATED MAY 20, 2004, AND ANY ADDENDUMS THERE TO OR LATEST EDITION, THESE PLANS AND SPECIAL PROVISIONS.
2. DETAIL 9 LANE LINE STRIPING PATTERN IN PART 3 MARKINGS SHALL BE USED ON ALL MULTILANE STREETS REGARDLESS OF STREET DESIGN SPEED.
3. PAVEMENT LEGENDS SHALL MATCH THE CITY STENCILS (HAWKINS STENCILS OR EQUIVALENT).
4. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE REFLECTORIZED AND APPLIED IN TWO COATS. A MINIMUM OF SEVEN DAYS SHALL BE PROVIDED BETWEEN FIRST AND SECOND COATS.
5. ALL CONFLICTING STRIPINGS, PAVMENT MARKINGS, AND CURB PAINT SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED.
6. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS OR STRIPING SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY INSPECTOR.
7. THE CONTRACTOR SHALL CONTACT THE CITY OF IRVINE INSPECTION SERVICES FOR INSPECTION 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.
8. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. IF CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON THESE PLANS, THE CITY OF IRVINE INSPECTION SERVICES SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK.
9. ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.
10. ALL TRAFFIC CONTROL WORK FOR CONSTRUCTION SHALL CONFORM TO PART 6 – TEMPORARY TRAFFIC CONTROL OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND MUTCD 2003 CALIFORNIA SUPPLEMENT DATED MAY 20, 2004, -ANY ADDENDUMS THERE TO OR LATEST EDITION AND ALL O.S.H.A. REQUIREMENTS.
11. THE CONTRACTOR SHALL HAVE ALL TRAFFIC CONTROL CONSTRUCTION SIGNS, DELINEATORS, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
12. THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC CONTROL SIGNS, DELINEATORS, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC WHILE WORKING IN THE STREET.
13. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL TRAFFIC CONTROL DEVICES REQUIRED BY THE CITY INSPECTOR/REPRESENTATIVE TO ASSURE PUBLIC SAFETY AT ALL TIMES.
14. THE CONTRACTOR SHALL UTILIZE A FLAGMAN DURING CONSTRUCTION WORK AS DEEMED NECESSARY BY THE CITY INSPECTOR.
15. ARROW BOARDS SHALL BE USED ON ANY LANE CLOSURE ON ARTERIAL STREETS.
16. STRIPING SHALL BE CAT TRACKED AND APPROVED BY THE CITY INSPECTOR PRIOR TO FINAL INSTALLATION.
17. CROSSWALK SHALL CONFORM TO THE CITY OF IRVINE STANDARD PLAN NO. 203.
18. ALL SIGN FACE REFLECTIVE SHEETING SHALL BE HIGH INTENSITY GRADE WITH PROTECTIVE OVERLAY FILM.
19. ALL SIGN POSTS SHALL BE 4"X4" REDWOOD STAINED "IRVINE BROWN" PER THE CITY OF IRVINE REQUIREMENTS. CITY OF IRVINE SPECIAL SIGN R26EB SIGN SHALL BE INSTALLED ON "U" CHANNEL POST OR ON STREET LIGHT POLE.
20. ADVANCED STREET NAME SIGNS AND STREET NAME SIGNS SHALL BE SILVER LETTERS WITH "IRVINE BROWN" BACKGROUND.
21. BLUE RAISED REFLECTIVE PAVEMENT MARKER SHALL BE INSTALLED ADJACENT TO ALL EXISTING FIRE HYDRANTS IN ACCORDANCE WITH MUTCD 2003 CALIFORNIA SUPPLEMENT.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

BE ADVISED, SOUTH COAST AIR QUALITY MANAGEMENT (SCAQMD) RULE: 1403 GOVERNS WORK PRACTICE REQUIREMENTS FOR ASBESTOS IN ALL RENOVATION AND DEMOLITION ACTIVITIES PLEASE REFER TO RULE 1403 (HTTP://IWWW.AQMD.GOV/DOCS.DEFAULT-SOURCE/RULE-BOOK/REG-XIV/RULE-140J.PDF) FOR ALL CURRENT REQUIREMENTS.

CALIFORNIA HEALTH AND SAFETY CODE 19827.5 REQUIREMENTS THAT EVIDENCE OF DEMOLITION NOTIFICATION SUBMITTED TO THE SOUTH COAST AQMD BE PROVIDED TO CITY OF IRVINE BUILDING AND SAFETY PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT INCLUDING DEMOLITION WORK.

PAVING NOTES

1. A PRE-PAVING MEETING IS REQUIRED 48 HOURS PRIOR TO PAVING,
2. A "TACK COAT" (PAINT BINDER) SHALL BE: APPLIED BETWEEN PAVEMENT LAYERS, AND ON EXISTING PAVEMENT TO BE RESURFACED AT A RATE: OF 0.10 GAL./SQ. YD. THE TACK COAT SHALL BE A TYPE SSI ASPHALT EMULSION.

JOB ADDRESS

SITE LOCATION 901 SKYHAWK, IRVINE CA 92618
(NEAREST CROSS STREETS)
SKYHAWK & GREAT PARK BLVD

TRACT/PARCEL MAP NO.:
PARCEL MAP NO. 2016-152, PORTION OF PARCEL 1
ROUGH GRADING PERMIT NO. 00644043-RG
ZONING COMPLIANCE NO. 00598937-PMP

BENCHMARK

BENCHMARK: BEE/ROUND-4
ELEVATION = 576.500
DATUM: NAVD 88, 1995 O.C.S. ADJUSTMENT

ORANGE COUNTY SURVEYOR B.M. NO. "BEE/ROUND-4" DESCRIBED BY OCS 1995 1.6 MILES EASTERLY ALONG PORTOLA PARKWAY FROM THE INTER- SECTION OF SAND CYN AVE TO AN ACCESS RD. LEADING NORTHERLY FROM PORTOLA PARKWAY, 400 FT.,NORTHERLY ALONG ACCESS RD. TO A HEADWALL ON THE EASTERLY SIDE OF THE ACCESS RD., SET AT THE TOP OF THE WESTERLY END OF THE WALL, 50 FT EASTERLY OF THE CENTERLINE OF THE DAM ACCESS ROAD.

BASIS OF BEARING

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING BETWEEN O.C.S. HORIZONTAL CONTROL STATION GPS NO. 6621 AND STATION GPS NO. 6678 BEING SOUTH 29°04'24" EAST PER RECORDS ON FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

LEGAL DESCRIPTION

IN THE CITY OF IRVINE, COUNTY OF ORANGE, STATE OF CALIFORNIA, BEING A PORTION OF PARCEL 1 OF PARCEL MAP 2016-152, FILED IN BOOK 390, PAGES 17 THROUGH 44 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

FLOOD ZONE INFORMATION

PROJECT AREA IS WITHIN ZONE "X" AND BASE FLOOD ELEVATIONS ARE PER FEDERAL EMERGENCY MANAGEMENT AGENCY (FIRM MAP NO. 06059C0315J AND 06059C0305J) EFFECTIVE DATE: DECEMBER 2009.

REFERENCE PLANS:

OCGP SPORTS PARK ROUGH GRADING & STORM DRAIN
PERMIT#00644043-RG
OCGP SPORTS PARK PHASE 3 PRECISE GRADING
PC#00649885-GPRE
SKYHAWK FROM MARINE WAY TO GREAT PARK BLVD STREET & STORM DRAIN IMPROVEMENTS
PERMIT#00639769-MCE
GREAT PARK BLVD (NORTHBOUND) FROM BOSQUE TO SKYHAWK STREET IMPROVEMENT PLANS
PERMIT#00694829-MCE
GP-2 FROM BOSQUE TO GP-1 STREET, STORM DRAIN & SEWER IMPROVEMENTS
PERMIT#00641590-MCE

WDID # 833C403838

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5	DEMOLITION PLAN BELOW GROUND	RA-102
6	ROUGH GRADING DETAILS & SECTIONS	RG-001
7	ROUGH GRADING PLAN	RG-101
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LEGEND OF ABBREVIATIONS AND' SYMBOLS

ARHM	ASPHALT RUBBERIZED HOT MIX
BLDG	BUILDING
BVC	BEGIN VERTICAL CURVE
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CONST	CONSTRUCT
DIA	DIAMETER
DF	DEEPENED FOOTING
DU	DRY UTILITY
DW	DOMESTIC WATER
DWY	DRIVEWAY
EA	EACH
ENCL	ENCLOSURE
EG	EXISTING GROUND
ELEC	ELECTRIC
EP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
EVC	END VERTICAL CURVE
FF	FINISHED FLOOR
FG	FINISH GRADE
FL	FLOWLINE
FS	FINISH SURFACE
GB	GRADE BREAK
GFF	GARAGE FINISHED FLOOR
HMA	HOT MIX ASPHALT
HP	HIGH POINT
IRRIG	IRRIGATION
INV	INVERT OF DRAIN
JS	JUNCTION STRUCTURE
L	LENGTH
MH	MANHOLE
NTS	NOT TO SCALE
OC	ON CENTER
PGP	PRECISE GRADING PAD
PI	POINT OF INTERSECTION
POC	POINT OF CONNECTION
PUE	PUBLIC UTILITY EASEMENT
R	RADIUS
RAD	RADIAL
RG	ROUGH GRADE
RW	RECYCLED WATER
SD	STORM DRAIN
SQ	SQUARE
SS	SANITARY SEWER
TC	TOP OF CURB
TE	THICKENED EDGE
TEMP	TEMPORARY
UG	UNDERGROUND
TX	TOP OF X
BX	BOTTOM OF X

Symbol	Description
(100)	EXIST. CONTOUR
100	PROP. CONTOUR
	RIGHT-OF-WAY (R/W)/℄
	DAYLIGHT LINE
2%	SHEET FLOW RATE
	GRADED SWALE
	CENTERLINE
	FLOWLINE
	PADLINE
	PADLINE
BWV	BACKWATER VALVE
	FIRE HYDRANT
	WATER METER
	SINGLE COBRA HEAD FIXTURE
	DOUBLE COBRA HEAD FIXTURE
	SINGLE ACORN FIXTURE
	LIGHT FIXTURE
LIMIT	LIMITS OF CONSTRUCTION
TG	TOP OF GRATE
TGC	TOP OF GARAGE CURB
TMC	TOP OF MEDIAN CURB
TOC	TOP OF CURB
TRW	TOP OF RETAINING WALL
	STORM DRAIN
	ACCESSIBLE PATH OF TRAVEL
	PERMIT LIMIT

SITE ACREAGE: 3.36 ACRES

EARTHWORK QUANTITIES

AREA OF DISTURBANCE: 3.36 AC

	CUT	FILL
RAW VOLUME	8,736 CYS	1,194 CYS
SHRINKAGE (10%)		874 CYS
2' OX	10,774 CYS	10,774 CYS
OX SHRINKAGE (10%)		1,078 CYS
VEGETATION REMOVALS		539 CYS
HARDSCAPE REMOVALS		580 CYS
TOTALS	19,600 CYS	15,100 CYS
NET VOLUME	4,500 CYS LONG	

THE ABOVE LISTED EARTHWORK QUANTITIES REFLECT THE ENGINEER'S ESTIMATE OF THE VOLUMES OF MATERIAL FOR CUT AND FILL. THESE QUANTITIES ARE PROVIDED TO SATISFY AGENCY REQUIREMENTS WITH RESPECT TO DETERMINATION OF PERMIT AND BONDING FEES ONLY. CONTRACTORS ARE RESPONSIBLE FOR COMPUTING THEIR OWN EARTHWORK QUANTITIES FOR CONTRACT PURPOSES. SHRINKAGE, SUBSIDENCE, AND REMOVALS ARE BASED ON A SAMPLING OF FIELD DATA OBTAINED FROM THE SOILS ENGINEER AND ACTUAL FIELD CONDITIONS DURING CONSTRUCTION MAY VARY. ALSO, ACTUAL QUANTITIES MAY DEVIATE BASED ON A MORE ACCURATE GROUND SURVEY THAT MAY BE PROVIDED WHEN THE SITE HAS BEEN CLEARED OF VEGETATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH FIELD TOPOGRAPHIC INFORMATION AS SOON AS THIS DATA BECOMES AVAILABLE.

PRIVATE ENGINEER'S NOTICE TO CONTRACTOR(S)

1. RELOCATION OR REMOVAL OF ANY EXISTING UTILITIES SHALL BE PERFORMED BY THE RESPECTIVE UTILITY OWNERS, AT THE EXPENSE OF THE DEVELOPER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.

NOTICE TO CONTRACTOR

EXISTING UNDERGROUND STRUCTURES:

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES OR CONDUITS SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE THE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UNDERGROUND UTILITY PIPES, CONDUITS, OR STRUCTURES SHOWN OR NOT SHOWN ON THESE PLANS.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, THE ENGINEER, AND THE COUNTY OF ORANGE HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM SOLE NEGLIGENCE OF OWNER, ENGINEER, OR COUNTY OF ORANGE

THE CONTRACTOR SHALL REMOVE & REPLACE EXISTING PAVING, CURB & GUTTER AND SIDEWALK TO NECESSITATE THE WORK AREA. THE CONTRACTOR SHALL PROTECT IN PLACE EXISTING DRY UTILITY AND ANY FACILITY ABOVE THE GROUND DURING THE CONSTRUCTION.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

Under Ground Service Alert of Southern California
CALL BEFORE YOU DIG
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES
I R V I N E , I N C .
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/12/25
SHAWN YU RCE 87239

	DATE
DRAWN BY: CH	11/25
DESIGNED BY: VJS	11/25
CHECKED BY: VJS	11/25
RECOMMENDED BY:	DATE

APPROVED BY: R.C.E. NO. DATE
CITY ENGINEER

APPROVED BY: ORANGE COUNTY DATE
FIRE MARSHALL

APPROVED BY: IRWD R.C.E. NO. DATE
SANITARY SEWER FACILITIES

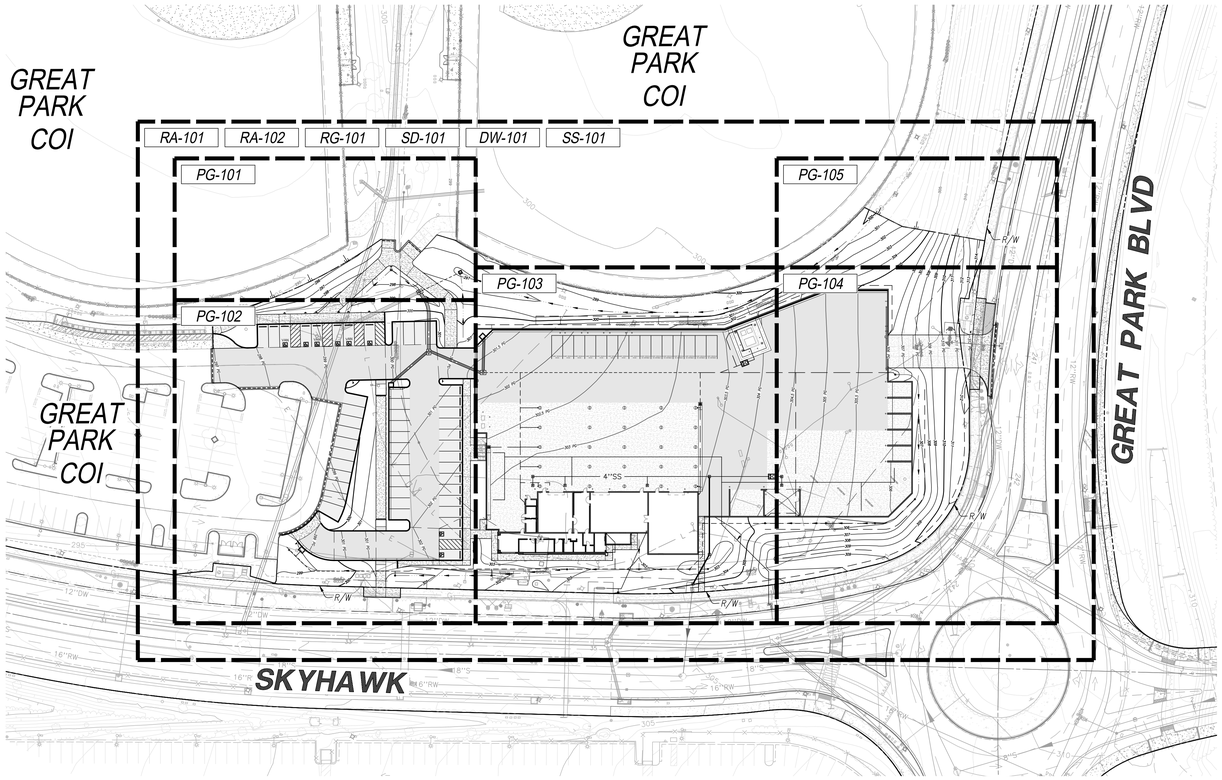
APPROVED BY: IRVINE DATE
RANCH WATER FACILITIES

GENERAL NOTES
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG G-002
SHEET 2 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 08:59:15 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\G-002.dwg



INDEX MAP

SCALE: 1"=50'

PARKING ANALYSIS

STALL TYPE	REQUIRED	PROVIDED
STANDARD	7	29
STANDARD – EVCS (EVSE INSTALLED)	2*	8**
STANDARD – EV CAPABLE	6*	7
ACCESSIBLE – STANDARD	1	1
ACCESSIBLE – VAN	1	1
TOTAL	17	46
BUILDING: 6,948 SF		

** ALL PARKING SPACES ARE FOR STAFF AND FLEET VEHICLES, NOT AVAILABLE TO THE GENERAL PUBLIC -- PROJECT IS EXEMPT FROM ACCESSIBLE EV SPACE REQUIREMENTS PER 11B-228.3.2 EXCEPTION 1. EVCS ARE NOT PARKING SPACES FOR THE PURPOSE OF ACCESSIBLE PARKING SPACES REQUIREMENTS PER CBC 11B-208.1.
* MINIMUM NUMBER OF REQUIRED EVCS IS PART OF THE MINIMUM NUMBER OF EV CAPABLE SPACES PER CalGREEN TABLE 5.106.5.3.1. (6 EV CAPABLE + 2 EVCS =8 TOTAL EV SPACES REQUIRED; 7 EV CAPABLE + 8 EVCS =15 TOTAL EV SPACES PROPOSED)

SEWER RIM & BUILDING FINISH FLOOR ELEVATION SUMMARY

BUILDING	FINISH FLOOR	UPSTREAM RIM
BUILDING	303.50	304.6

THE SEWER RIM & BUILDING FINISH FLOOR ELEVATION SUMMARY IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. PRIOR TO CONSTRUCTION OF A BUILDING (LISTED OR NOT), THE UPSTREAM MANHOLE OR CLEANOUT RIM SHALL BE SURVEYED TO CONFIRM IT'S AS-BUILT ELEVATION. IT IS THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO DETERMINE & INSTALL THE REQUIRED SYSTEMS TO CONFORM WITH THE LATEST CPC/CBC REQUIREMENTS.

PRECISE GRADING CONSTRUCTION NOTES

		QUANTITIES
1	CONST AC OVER CMB AT DRIVE AISLES PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL	39,790 SF
2	CONST AC OVER CMB AT PARKING STALLS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL	9,161 SF
3	CONSTRUCT FULL DEPTH HMA TO THE BOTTOM OF DISTURBED AC/AB & REPAIR TRENCH PER COI STD 223A	273 SF
4	COLD MILL 0.2" MIN EXISTING PAVEMENT, CONSTRUCT 0.2 MIN ARHM OVER EXISTING AC PAVEMENT AND FEATHER JOIN PER DETAIL 4 ON PG-001	275 SF
5	INSTALL MAINTENANCE SIGN PER DETAIL 5 ON PG-001	3 EA
6	NOT USED	-- --
7	INSTALL FIRE LANE ENTRANCE SIGN PER DETAIL 7 ON GD-001	1 EA
8	INSTALL 12"X12" CONCRETE DRAINAGE BOX INLET WITH TRAFFIC RATED GRATE	2 EA
9	CONSTRUCT INLET GUTTER TRANSITION PER DETAIL 9 ON PG-001	2 EA
10	CONSTRUCT LONGITUDINAL GUTTER PER DETAIL 10 ON PG-001	465 SF
11	CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER COI STD 200	108 LF
12	CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200	573 LF
13	CONSTRUCT 6" CONCRETE CURB ONLY TYPE "B-6" PER COI STD 200	708 LF
14	CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS	6,984 SF
15	CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS	25,460 SF
16	CONSTRUCT DRIVEWAY PER DETAIL 16 ON SHEET PG-001	206 SF
17	CONSTRUCT MODIFIED DRIVEWAY TYPE II-B PER COI STD NO 204 AND DETAIL 17 ON SHEET PG-001	526 SF
18	CONSTRUCT SIDEWALK ACCESS RAMP PER DETAIL 18 ON SHEET PG-001, CASE PER PLAN	355 SF
19	INSTALL PARKING STALL PER COI STD 411 & DETAIL 19 ON SHEET PG-001	57 EA
20	INSTALL ADA PARKING STALL PER DETAIL 20 ON SHEET PG-001	8 EA
21	INSTALL PRECAST CONCRETE WHEEL STOP PER DETAIL 21 ON PG-001	23 EA
22	CONSTRUCT COLOR YELLOW DETECTABLE WARNING SURFACE PER CBC REQUIREMENTS	312 SF
23	CONSTRUCT THICKENED EDGE PER DETAIL 23 ON SHEET PG-002	26 LF
24	CONSTRUCT CURB TRANSITION PER DETAIL 24 ON PG-001, CASE PER PLAN	68 LF
25	CONSTRUCT CURB & GUTTER TRANSITION PER DETAIL 25 ON PG-001, LENGTH & CASE PER PLAN	10 LF
26	CONSTRUCT MODIFIED LOCAL DEPRESSION PER COI STD 303 & DETAIL 26 ON PG-001	1 EA
27	CONSTRUCT LOCAL DEPRESSION PER COI STD 303 & DETAIL 27 ON PG-001	1 EA
28	CONSTRUCT CATCH BASIN TYPE I PER COI STD NO 300 (W=3.5') & MODIFIED LOCAL DEPRESSION PER COI STD 303 & DETAIL 26 ON PG-001	1 EA
29	CONSTRUCT 4" PCC OVER 4" CAB/CMB WITH NO 3 BARS AT 18" EACH WAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS	3,024 SF
30	CONSTRUCT STAIRS PER LANDSCAPE PLAN	2 EA
31	INSTALL ADA COMPLIANT, INTERNATIONAL SYMBOL OF ACCESSIBILITY WITH DIRECTION ARROW SIGN (RIGHT "R" OR LEFT "L" PER PLAN)	1 EA
32	INSTALL TURF BLOCK PER DETAIL 32 ON SHEET PG-002	183 SF
33	INSTALL MOW CURB PER DETAIL 33 ON SHEET PG-002	8 LF

AREA DRAIN CONSTRUCTION NOTES

60	INSTALL 4" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.	665 LF
61	INSTALL 6" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.	212 LF
62	INSTALL 8" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.	469 LF
63	INSTALL 12" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.	305 LF
64	INSTALL 12" LANDSCAPE AREA DRAIN PER DETAIL 64 ON PG-002	13 EA
65	INSTALL 18" LANDSCAPE AREA DRAIN PER DETAIL 65 ON PG-002	1 EA
66	INSTALL 24"x24" CONCRETE CATCH BASIN (BROOKS 2424CB) WITH H-20 LOADING & HEEL PROOF STEEL GRATE PER MANUFACTURE'S RECOMMENDATIONS AND DETAIL ON SHEET PG-002	1 EA
67	CONSTRUCT INLET PIPE OUTFLOW PER DETAIL 67 ON PG-002	2 EA
68	INSTALL PIPE CONNECTION PER DETAIL 68 ON PG-002	12 EA
69	INSTALL TEMPORARY PVC END CAP FOR FUTURE CONNECTION BY OTHERS	1 EA
70	INSTALL TRAFFIC RATED JENSEN PRECAST 500 GALLON SAND-OIL INTERCEPTOR MODEL JP500SO PER MANUFACTURE'S SPECIFICATIONS	1 EA
71	INSTALL ROOF DOWNSPOUT TO AREA DRAIN CONNECTION PER DETAIL 71 ON PG-002	15 EA
72	INSTALL 6" AREA DRAIN PER DETAIL 72 ON PG-002	3 EA
73	INSTALL 8" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.	1 EA
74	CONNECT PVC PIPE TO CB OR JS PER DETAIL 74 ON SHEET PG-001	3 EA

PRECISE GRADING EROSION CONTROL NOTES

91	INSTALL FIBER ROLL PER DETAIL 91 ON PG-201	3,080 LF
92	INSTALL AREA DRAIN GRAVEL PROTECTION PER DETAIL 92 ON PG-201	19 EA
93	INSTALL CATCH BASIN INLET PROTECTION PER DETAIL 93 ON PG-201	3 EA
94	CONST STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 94 ON PG-201	1 EA
95	INSTALL CONCRETE WASHOUT AREA PER CASQA BMP WM-8	1 EA

STORM DRAIN CONSTRUCTION NOTES

110	INST. 18" R.C.P. (SEE PROFILE FOR D-LOAD) W/ BEDDING AND BACKFILL PER CITY OF IRVINE STD. PLAN NO. 318	106 LF
111	INST. 24" R.C.P. (SEE PROFILE FOR D-LOAD) W/ BEDDING AND BACKFILL PER CITY OF IRVINE STD. PLAN NO. 318	47 EA
119	CONST. INLET TYPE I CITY OF IRVINE STD. PLAN NO. 300	2 EA
120	CONST. J.S. NO. I PER CITY OF IRVINE STD. PLAN NO. 306	3 EA
133	REMOVE INLET AND JOIN EXISTING	1 EA
134	ADJUST EXISTING MANHOLE RIMS TO FINISHED GRADE ELEVATIONS. INSTALL MANHOLE LOCKING AND REPLACE MANHOLE COVER TO ADA COMPLIANT AND SLIP RESISTANT.	1 EA

ROUGH GRADING EROSION CONTROL NOTES

141	INSTALL FIBER ROLL PER DETAIL 141 ON RG-201	2,026 LF
142	INSTALL TEMPORARY CSP RISER PER DETAIL 142 ON RG-201	4 EA
143	CONSTRUCT DESILTING BASIN PER COI STD 319	1 EA
144	CONST STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 144 ON RG-201	1 EA
145	INSTALL CONCRETE WASHOUT AREA PER CASQA BMP WM-8	1 EA
146	CONSTRUCT TEMPORARY CONCRETE COLLAR PER CITY OF IRVINE STD. PLAN NO. 310 TO JOIN PVC AND CSP PIPES (USE EPOXY GROUT AT JOIN TO ENSURE WATER TIGHTNESS)	2 EA
147	CONST TEMPORARY 12" CORRUGATED STEEL PIPE	61 LF
148	CONST SPILLWAY & RIPRAP PER COI STD 319	3 EA

PRIVATE SEWER CONSTRUCTION NOTES:

		QUANTITIES
170	REMOVE PLUGS AND JOIN EXISTING 8" SANITARY TEE WITH 6"X8" ADAPTOR AND PVC, SDR-35, CLEANOUT ON EXISTING RISER PER DETAIL ON WS-001	1 EA
171	POINT OF CONNECTION. SEE BUILDING PLUMBING PLAN	4 EA
172	INSTALL 4" PVC, SDR-35 SEWER PIPE W/ TRENCH AND BEDDING PER SEWER PIPE BEDDING DETAIL ON WS-001	232 LF
173	INSTALL 6" PVC, SDR-35 SEWER PIPE W/ TRENCH AND BEDDING PER SEWER PIPE BEDDING DETAIL ON WS-001	92 LF
174	INSTALL TRAFFIC RATED JENSEN PRECAST 500 GALLON SAND-OIL INTERCEPTOR MODEL JP500SO PER MANUFACTURERS SPECIFICATIONS	1 EA
175	INSTALL PIPE CONNECTION PER DETAIL ON WS-001	7 EA
176	INSTALL PVC, SDR-35, IN-LINE CLEANOUT PER DETAIL ON WS-001	2 EA
177	INSTALL PVC, SDR-35, TERMINAL CLEANOUT PER DETAIL ON WS-001	4 EA
178	INSTALL PVC, SDR-35, CLEANOUT WITH RISER PER DETAIL ON WS-001	2 EA
179	INSTALL 12" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.	8 LF

PRIVATE DOMESTIC WATER CONSTRUCTION NOTES:

151	REMOVE PLUG AND JOIN EXISTING DOMESTIC WATER LINE	1 EA
152	INSTALL 3/4" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001	121 LF
153	INSTALL 2" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001	337 LF
154	INSTALL 3/4" PVC, SCH 80, PLUG. BUILDING CONNECTION PER BUILDING PLUMBING PLAN	5 EA
155	INSTALL 2" PVC, SCH 80, PLUG. BUILDING CONNECTION PER BUILDING PLUMBING PLAN	1 EA
156	INSTALL 6" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.	8 LF
157	SAWCUT, REMOVE & REPLACE EXISTING 4" THICK PCC SIDEWALK PER COI STD 201	16 SF
158	REMOVE & REPLACE EXISTING PLANTING AND IRRIGATION	15 SF
159	INSTALL 1" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001	115 LF

* THE ABOVE LISTED QUANTITIES REFLECT THE ENGINEER'S ESTIMATE PROVIDED TO SATISFY AGENCY REQUIREMENTS WITH RESPECT TO DETERMINATION FOR USE OF PERMIT AND BONDING FEES ONLY. CONTRACTORS ARE RESPONSIBLE FOR COMPUTING THEIR OWN QUANTITIES FOR CONTRACT PURPOSES.

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

Under Ground Service Alert of Southern California
Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
H&A HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/12/25
SHAWN YU RCE 87239

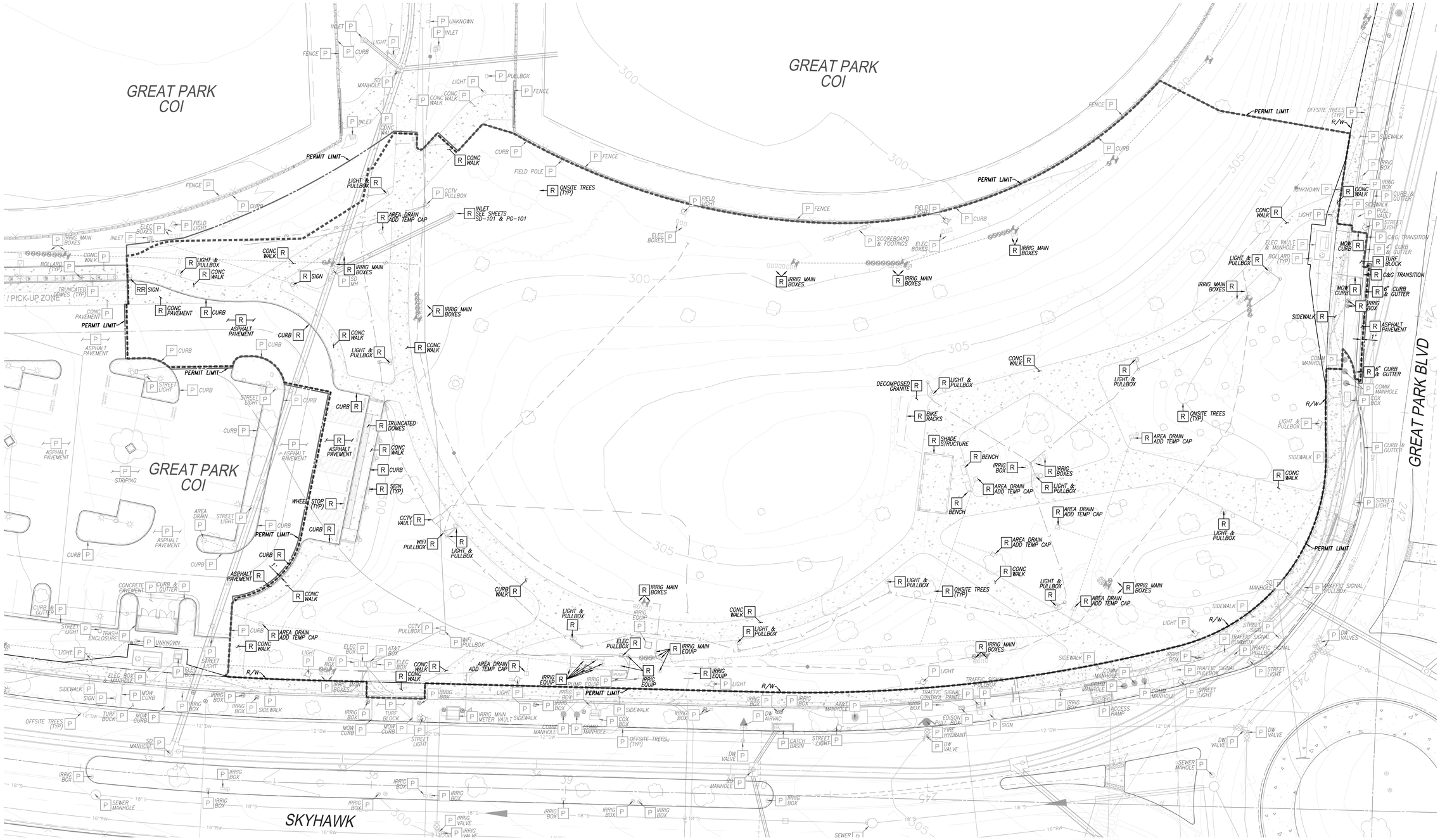
DRAWN BY: CH	DATE 11/25	APPROVED BY: R.C.E. NO. DATE CITY ENGINEER
DESIGNED BY: VJS	DATE 11/25	APPROVED BY: IRWD R.C.E. NO. DATE SANITARY SEWER FACILITIES
CHECKED BY: VJS	DATE 11/25	
RECOMMENDED BY:	DATE	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE
		APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

INDEX MAP, CONST. NOTES & QUANTITIES
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG G-003
SHEET 3 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:00:14 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\G-003.dwg



NOTES:

1. LIGHT STANDARDS, BIKE RACKS AND BENCHES ARE TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE CITY YARD
2. NO ITEMS ARE TO BE REMOVED BY THE CITY OF IRVINE
3. IRRIGATION ITEMS INCLUDING MAIN LINE VALVES, IRRIGATION VALVES, ELECTRICAL DEVICES, IRRIGATION EQUIPMENT AND LARGE IRRIGATION BOXES ARE TO BE RETURNED TO GREAT PARK MAINTENANCE STAFF FOR REUSE
4. SEE ELECTRICAL PLAN FOR ADDITIONAL INFORMATION
5. SEE IRRIGATION PLAN FOR ADDITIONAL INFORMATION

LEGEND

- DEMO LIMIT
- PERMIT LIMIT
- DW — EXISTING DOMESTIC WATER
- RW — EXISTING RECYCLED WATER
- EXISTING STORM DRAIN
- EXISTING AREA DRAIN
- S — EXISTING SEWER
- EXISTING DRY UTILITY
- SAWCUT LINE

ABBREVIATIONS

C&G	CURB & GUTTER
COMM	COMMUNICATION
DU	DRY UTILITY/UTILITIES
DW	DOMESTIC WATER
ELEC	ELECTRIC
IRRIG	IRRIGATION
RW	RECYCLED WATER
SD	STORM DRAIN
SS	SANITARY SEWER
UG	UNDERGROUND

DEMOLITION CONSTRUCTION NOTES

- P — PROTECT IN PLACE
- R — REMOVE

HARDSCAPE REMOVAL QUANTITIES

ASPHALT 4,877 SF
CONCRETE 20,044 SF

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CITY OF IRVINE
BUILDING & SAFETY DIVISION

1"=20'

SCALE: 1" = 20'

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APPROVED BY: CITY ENGINEER — R.C.E. NO. — DATE
APPROVED BY: IRWD SANITARY SEWER FACILITIES — R.C.E. NO. — DATE
APPROVED BY: ORANGE COUNTY FIRE MARSHALL — DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES — DATE

DEMOLITON PLAN ABOVE GROUND

GREAT PARK MAINTENANCE & OPERATIONS FACILITY

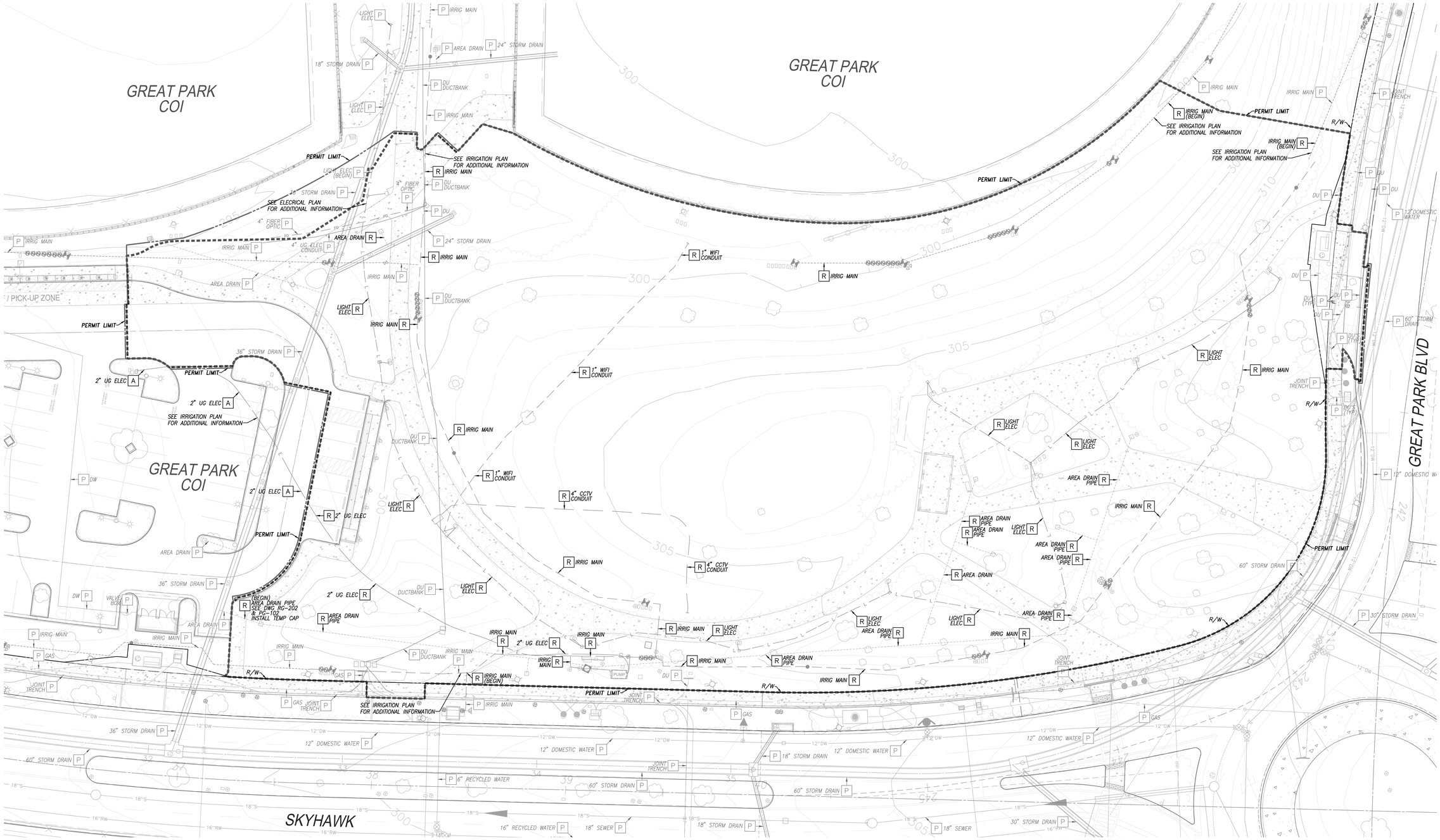
GREAT PARK, IRVINE, CALIFORNIA

DWG RA-101

SHEET 4 OF 23 SHEETS

W.O. 4364-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:01:03 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RA-101.dwg



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LEGEND

- DEMO LIMIT
- PERMIT LIMIT
- EXISTING DOMESTIC WATER
- EXISTING RECYCLED WATER
- EXISTING STORM DRAIN
- EXISTING AREA DRAIN
- EXISTING SEWER
- EXISTING DRY UTILITY
- SAWCUT LINE

ABBREVIATIONS

C&G	CURB & GUTTER
COMM	COMMUNICATION
DU	DRY UTILITY/UTILITIES
DW	DOMESTIC WATER
ELEC	ELECTRIC
IRRIG	IRRIGATION
RW	RECYCLED WATER
SD	STORM DRAIN
SS	SANITARY SEWER
UG	UNDERGROUND

DEMOLITION CONSTRUCTION NOTES

- P PROTECT IN PLACE
- R REMOVE
- A ABANDON

CITY OF IRVINE
BUILDING & SAFETY DIVISION

1" = 20'

SCALE: 1" = 20'

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APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE

APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

DEMOLITION PLAN BELOW GROUND

GREAT PARK MAINTENANCE & OPERATIONS FACILITY

GREAT PARK, IRVINE, CALIFORNIA

DWG RA-102

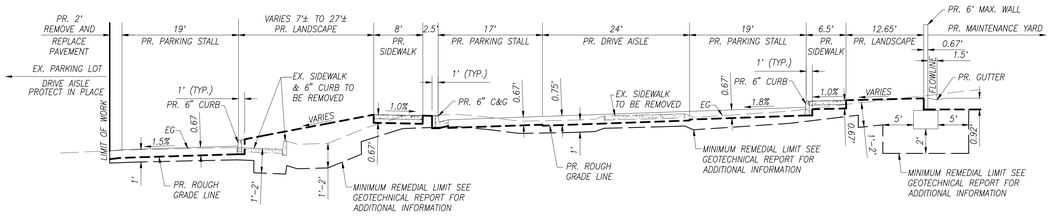
SHEET 5 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

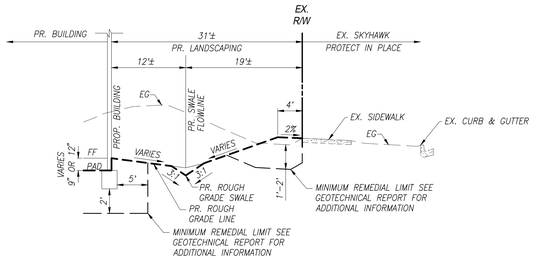
PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:01:52 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RA-102.dwg

ROUGH GRADING LEGEND & ABBREVIATIONS

100 EXIST. CONTOUR	BMP	BEST MANAGEMENT PRACTICE	L= LENGTH
100 PROP. CONTOUR	BS	BOTTOM OF STEP	LF LINEAR FEET
PROPERTY LINE	BW	BACK OF WALK	MAX MAXIMUM
DAYLIGHT LINE	BV	BACKWATER VALVE	MH MANHOLE
2% SHEET FLOW RATE	CASQA	CALIFORNIA STORMWATER QUALITY ASSOCIATION	MIN MINIMUM
FLOWLINE	CF	CURB FACE	NO NUMBER
CENTERLINE	C&G	CURB & GUTTER	NTS NOT TO SCALE
STORM DRAIN	COI	CITY OF IRVINE	PB PULLBOX
TOP OF SLOPE	CONC	CONCRETE	PVC POLYVINYL CHLORIDE
TOE OF SLOPE	CY	CUBIC YARD	R RADIUS
RETAINING WALL	DF	DEEPENED FOOTING	RG ROUGH GRADE
GAS METER	DW	DOMESTIC WATER	RW RECLAIMED WATER
ELECTRICAL SWITCH GEAR	EA	EACH	R/W RIGHT OF WAY
PERMIT LIMITS	EL	ELEVATION	S= SLOPE
F CUT/FILL TRANSITION LINE C	EP	EDGE OF PAVEMENT	SDR STANDARD DIMENSION RATIO
SAND BAGS	ESMT	EASEMENT	SEP SEPARATE
LOT NUMBER — 8 125 P=198.2 — UNIT NUMBER, PAD	EX	EXISTING	SF SQUARE FEET
47 LOT NUMBER	FF	FINISH FLOOR	SHT SHEET
	FG	FINISH GRADE	SS SANITARY SEWER
	FL	FLOWLINE	SD STORM DRAIN
	FS	FINISH SURFACE	TC TOP OF CURB
	GB	GRADE BREAK	TG TOP OF GRATE
	GFF	GARAGE FINISH FLOOR	TS TOP OF STEP
	HH	HANDHOLE	TW TOP OF WALL
	INV	INVERT	TYP TYPICAL
	JS	JUNCTION STRUCTURE	USO UNLESS STATED OTHERWISE
	JT	JOINT TRENCH	



SECTION A
NOT TO SCALE



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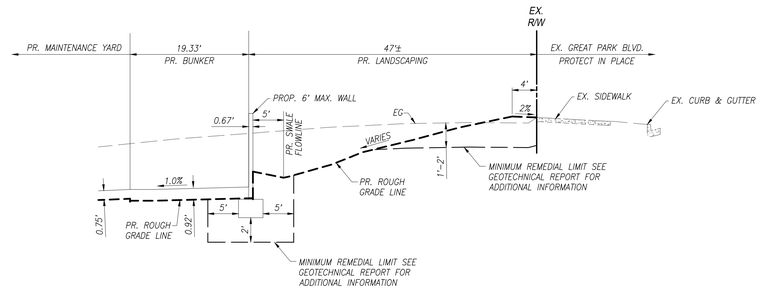

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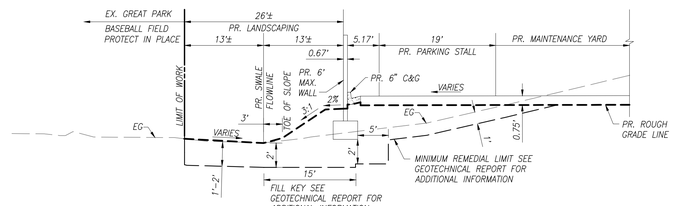

SECTION D
NOT TO SCALE

NOTES:

1. *REFER TO THE LANDSCAPE MAINTENANCE FACILITY GEOTECHNICAL REPORT FOR MORE INFORMATION*
2. *FINAL REMEDIAL LIMITS WILL BE APPROVED DURING GEOTECHNICAL OBSERVATION AT TIME OF GRADING*

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/12/25
SHAWN YU RCE 87239

		DATE
DRAWN BY:	CH	11/25
DESIGNED BY:	VJS	11/25
CHECKED BY:	VJS	11/25
RECOMMENDED BY:		DATE

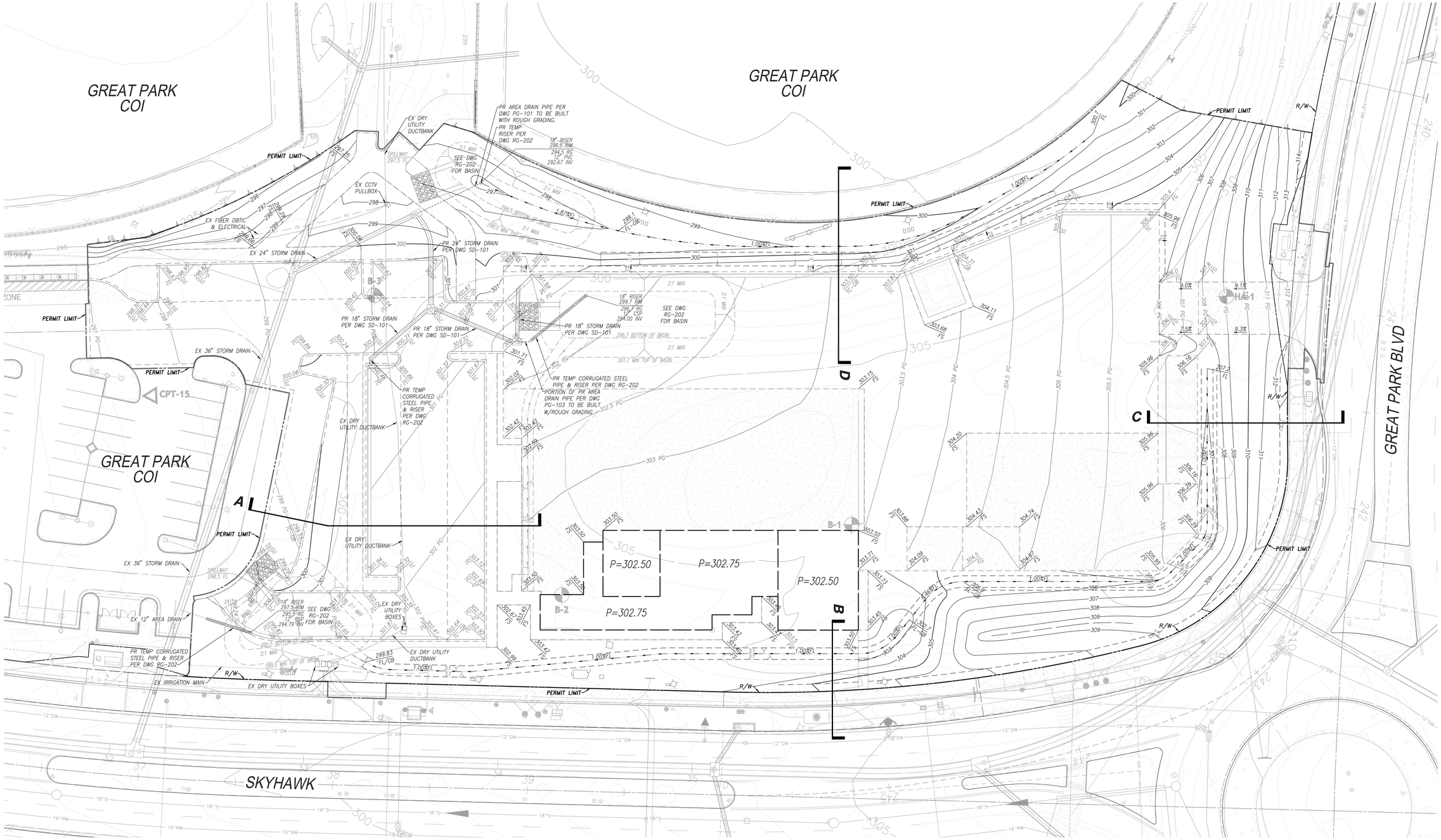
APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE
APPROVED BY: IRWD SANITARY SEWER FACILITIES	R.C.E. NO.	DATE
APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES		DATE

ROUGH GRADING DETAILS & SECTIONS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG RG-001
SHEET 6 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:04:36 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RG-001.dwg



NOTES:

1. SEE DWG RA-101 TO RA-102 FOR FOR DISPOSITION OF EXISTING ITEMS ON-SITE.
2. SEE DWG RG-202 FOR EROSION CONTROL INTERIM DRAINAGE PIPING.
3. SEE DWG RG-001 FOR SECTIONS.

NOTES:

1. STORM DRAIN IMPROVEMENTS PER DWG SD-101 ARE TO BE CONSTRUCTED WITH ROUGH GRADING TO ALLOW FOR EROSION CONTROL INTERIM DRAINAGE PIPING PER DWG RG-101.
2. NOTED AREA DRAIN PIPES ARE TO BE CONSTRUCTED WITH ROUGH GRADING TO ALLOW FOR EROSION CONTROL INTERIM DRAINAGE.

LEGEND

100	EXIST. CONTOUR	TC	TOP OF CURB	H.P.	HIGH POINT
100	PROP. CONTOUR	FL	FLOWLINE ELEV.	L.P.	LOW POINT
	PROPERTY LINE	GB	GRADE BREAK	ESMT	EASEMENT
	DAYLIGHT LINE	FG	FINISH GRADE		
2%	SHEET FLOW RATE	RG	ROUGH GRADE		
	FLOWLINE	FS	FINISH SURFACE		
	CENTERLINE	INV	INVERT OF DRAIN		
	STORM DRAIN	P	PAD ELEVATION		
	TOP OF SLOPE	PR	PROPOSED		
	TOE OF SLOPE	ULT	ULTIMATE		
	RETAINING WALL	TW	TOP OF WALL ELEV.		
B-1, HA-2, CPT-3 OR	APPROXIMATE LOCATION OF EXPLORATORY BORING	L	LENGTH		
		NTS	NOT TO SCALE		
	PERMIT LIMITS	TB	TOP OF BERM		
	LINE OF SIGHT	PA	PLANTER / LANDSCAPE AREA		

CITY OF IRVINE
BUILDING & SAFETY DIVISION

10 0 20 40
SCALE 1"= 20'

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SHAWN YU RCE 87239 11/12/25

DRAWN BY: CH	DATE 11/25		
DESIGNED BY: VJS	DATE 11/25	APPROVED BY: CITY ENGINEER R.C.E. NO. DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE
CHECKED BY: VJS	DATE 11/25		
RECOMMENDED BY:	DATE	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

ROUGH GRADING PLAN

GREAT PARK MAINTENANCE & OPERATIONS FACILITY

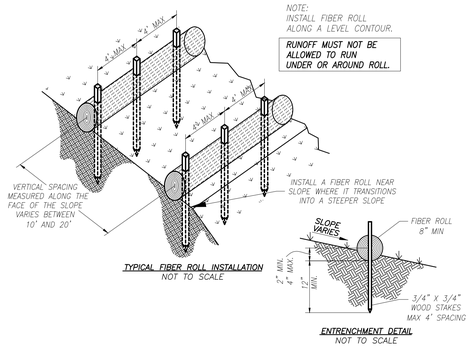
GREAT PARK, IRVINE, CALIFORNIA

DWG RG-101

SHEET 7 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:06:47 AM FILE: F:\037.3\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RG-101.dwg

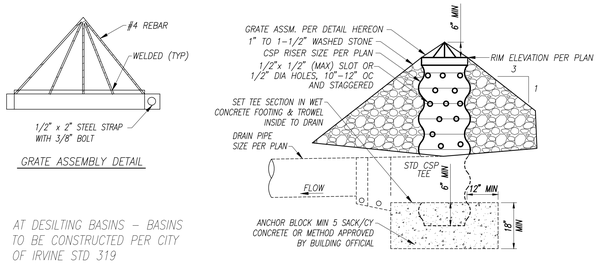


TYPICAL FIBER ROLL INSTALLATION
NOT TO SCALE

ENTRENCHMENT DETAIL
NOT TO SCALE

141 FIBER ROLL DETAIL

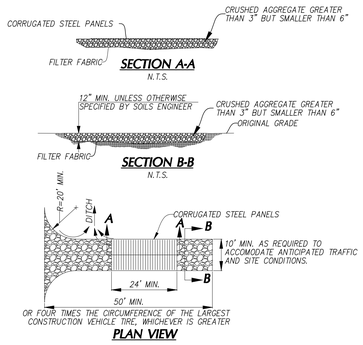
NOT TO SCALE



AT DESILTING BASINS – BASINS
TO BE CONSTRUCTED PER CITY
OF IRVINE STD 319

142 TEMPORARY CSP RISER

NOT TO SCALE



144 STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE
* REFERENCE: CALIFORNIA STORM WATER QUALITY BMP HANDBOOK
TRACKING CONTROL BMP; TC-1

POLLUTION PREVENTION NOTES

IN ORDER TO MEET THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM FOR CONSTRUCTION, CONSTRUCTION CONTRACTORS SHALL INSTALL AND MAINTAIN APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS), AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN, ON ALL CONSTRUCTION PROJECTS. BMPS SHALL BE INSTALLED IN ACCORDANCE WITH INDUSTRY RECOMMENDED STANDARDS, AND/OR IN ACCORDANCE WITH ANY GENERAL CONSTRUCTION PERMIT ISSUED BY THE STATE FOR THE PROJECT TO PREVENT ANY DISCHARGES FROM THE PROJECT SITE OR INTO ANY STORM DRAIN FACILITIES. ALL SEDIMENTS, CONSTRUCTION MATERIALS, DEBRIS AND WASTES, 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, WIND, OR VEHICLE TRACKING. UNDER DIRECTION OF THE ENGINEER OF RECORD, EROSION AND/OR SEDIMENT CONTROL DEVICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

EROSION AND SEDIMENT CONTROL REQUIREMENTS

REQUIREMENTS	SPECIFIED BMPs BMP DETAIL(S)/SHEET NUMBER
A. WIND EROSION BMPS (DUST CONTROL) SHALL BE IMPLEMENTED.	WE-1
B. SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AT THE SITE PERIMETER, AT ALL OPERATIONAL STORM DRAIN INLETS AND AT ALL NON-ACTIVE SLOPES.	SE-04, SE-05, SE-07, SE-08, SE-10
C. BMPS TO CONTROL OFF-SITE SEDIMENT TRACKING SHALL BE IMPLEMENTED AND MAINTAINED.	TC-1, TC-2, TC-3
D. APPROPRIATE WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPS SHALL BE IMPLEMENTED TO PREVENT THE CONTAMINATION OF STORMWATER BY WASTES AND CONSTRUCTION MATERIALS.	WM-01, WM-02, WM-03, WM-04 WM-05, WM-08 & WM-09
E. APPROPRIATE NON-STORMWATER BMPS SHALL BE IMPLEMENTED TO PREVENT THE CONTAMINATION OF STORMWATER FROM CONSTRUCTION ACTIVITIES.	NS-01, NS-04, NS-06, NS-07 NS-08, NS-09, NS-10, NS-12 & NS-13
F. ADEQUATE PHYSICAL OR VEGETATION EROSION CONTROL BMPS (TEMPORARY OR PERMANENT) SHALL BE INSTALLED AND ESTABLISHED FOR ALL COMPLETED SLOPES PRIOR TO THE START OF THE RAINY SEASON. THESE BMPS MUST BE MAINTAINED THROUGHOUT THE RAINY SEASON. IF A SELECTED BMP FAILS, IT MUST BE REPAIRED AND IMPROVED, OR REPLACED WITH AN ACCEPTABLE ALTERNATE AS SOON AS IT IS SAFE TO DO SO. THE FAILURE OF A BMP MAY INDICATE THAT THE BMP, AS INSTALLED, WAS NOT ADEQUATE FOR THE CIRCUMSTANCES IN WHICH IT WAS USED. REPAIRS OR REPLACEMENTS MUST RESULT IN A MORE ROBUST BMP, OR ADDITIONAL BMPS SHOULD BE INSTALLED TO PROVIDE ADEQUATE PROTECTION.	EC-3, EC-5, EC-6 SPRAY HYDROMULCH WITH SOIL BINDER
G. ADEQUATE EROSION AND SEDIMENT CONTROLS MUST BE IMPLEMENTED PRIOR TO THE ONSET OF A STORM EVENT FOR ALL ACTIVELY GRADED AREAS.	EC-1
H. A DISTURBED AREA THAT IS NOT COMPLETED BUT THAT IS NOT BEING ACTIVELY GRADED (NON-ACTIVE AREA) SHALL BE FULLY PROTECTED FROM EROSION WITH THE REFERENCED TEMPORARY AND/OR PERMANENT BMPS (EROSION AND SEDIMENT CONTROL). THE ABILITY TO DEPLOY STANDBY BMP MATERIALS IS NOT SUFFICIENT FOR THESE AREAS. EROSION AND SEDIMENT CONTROL BMPS MUST ACTUALLY BE DEPLOYED. THIS INCLUDES ALL BUILDING PADS, UNFINISHED ROADS AND SLOPES.	SE-08, EC-3, EC-5, EC-6 SPRAY HYDROMULCH WITH SOIL BINDER
I. SUFFICIENT MATERIALS NEEDED TO INSTALL REFERENCED STANDBY EROSION AND SEDIMENT CONTROL BMPS NECESSARY TO COMPLETELY PROTECT THE EXPOSED PORTIONS OF THE SITE FROM EROSION AND TO PREVENT SEDIMENT DISCHARGES SHALL BE STORED ON SITE. AREAS THAT HAVE ALREADY BEEN PROTECTED FROM EROSION USING PERMANENT PHYSICAL STABILIZATION OR ESTABLISHED VEGETATION STABILIZATION BMPS ARE NOT CONSIDERED "EXPOSED" FOR PURPOSES OF THIS REQUIREMENT.	SE-08

NOTE: FOR RISK LEVEL 2 AND 3 SITES, THERE SHALL BE A "RAIN EVENT ACTION PLAN" AND THE ABILITY TO DEPLOY STANDBY SEDIMENT CONTROL BMPS AS NEEDED TO COMPLETELY PROTECT THE EXPOSED PORTIONS OF THE SITE WITHIN 48 HOURS OF A PREDICTED STORM EVENT (A PREDICTED STORM EVENT IS DEFINED AS A FORECASTED 50% CHANCE OF RAIN).

I HEREBY CERTIFY THAT I HAVE READ AND UNDERSTAND THE REQUIREMENTS IN THE CONSTRUCTION RUNOFF GUIDANCE MANUAL AND THAT THE EROSION CONTROL PLANS AND BMPS SHOWN HEREON ARE IN COMPLIANCE WITH THESE REQUIREMENTS.

SIGNED BY: _____ RCE/ PE NUMBER: 87239

IN CASE OF AN EMERGENCY, THE RESPONSIBLE PERSON TO BE CONTACTED SHALL BE:

NAME: TO BE DETERMINED AT PRE-GRADE MEETING TITLE: CONSTRUCTION MANAGER

COMPANY: _____ 24-HR. PHONE NO: _____

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

SHAWN YU RCE 87239 11/12/25

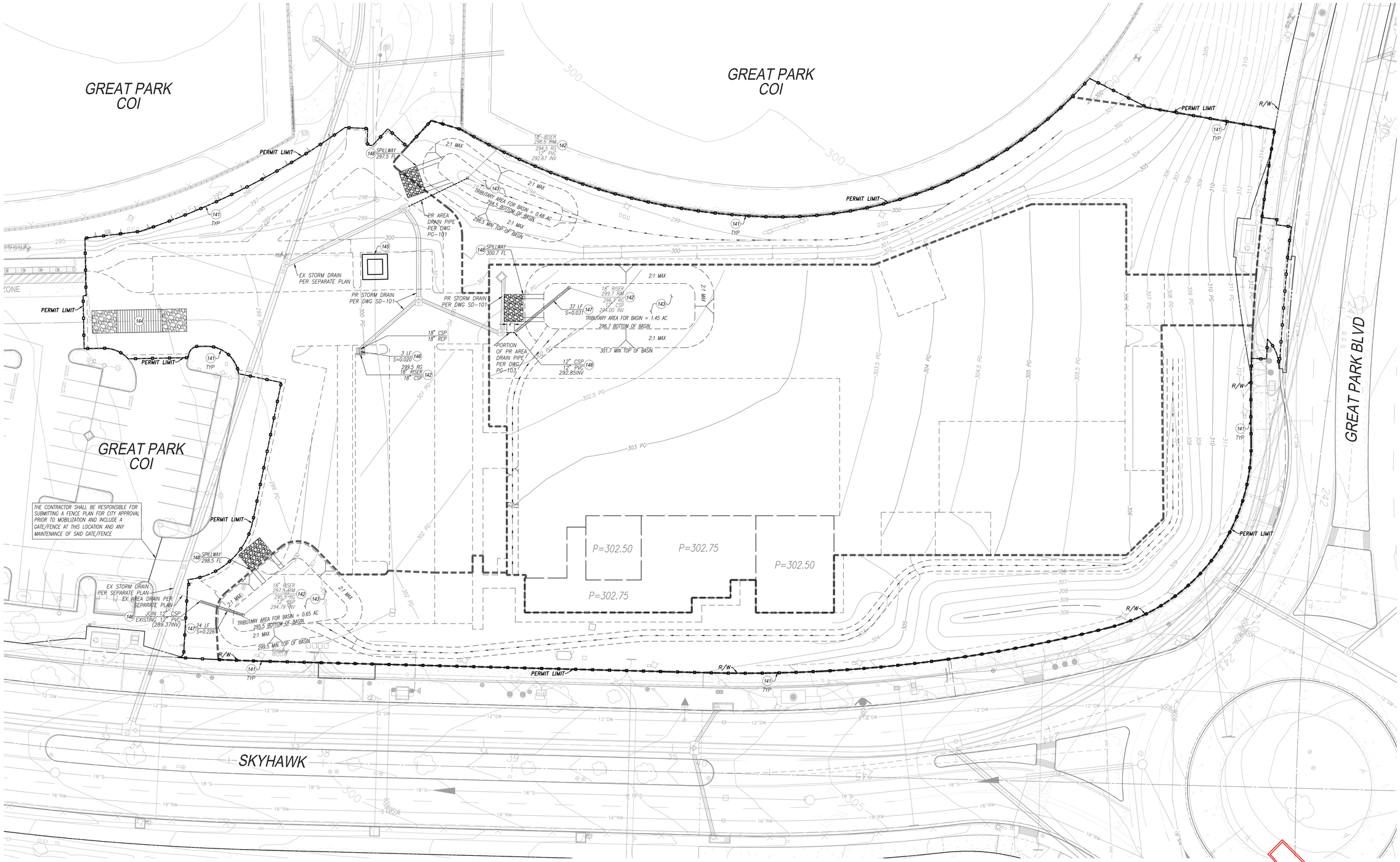
DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER R.C.E. NO. DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE
DESIGNED BY: VJS	DATE 11/25		
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES DATE
RECOMMENDED BY:	DATE		

RG EROSION & SEDIMENT CONTROL DETAILS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG RG-201
SHEET 8 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:06:59 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RG-201.dwg



NOTES:

1. STORM DRAIN IMPROVEMENTS PER DWG SD-101 ARE TO BE CONSTRUCTED WITH ROUGH GRADING TO ALLOW FOR EROSION CONTROL INTERIM DRAINAGE PIPING PER DWG RG-101.
2. NOTED AREA DRAIN PIPES ARE TO BE CONSTRUCTED WITH ROUGH GRADING TO ALLOW FOR EROSION CONTROL INTERIM DRAINAGE.

LEGEND

- - - - - TRIBUTARY AREA FOR BASIN

ROUGH GRADING EROSION CONTROL NOTES

141 INSTALL FIBER ROLL PER DETAIL 141 ON RG-201
142 INSTALL TEMPORARY CSP RISER PER DETAIL 142 ON RG-201
143 CONSTRUCT DESILTING BASIN PER COI STD. 319
144 CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 144 ON RG-201
145 INSTALL CONCRETE WASHOUT AREA PER CASQA BMP WM-8
146 CONSTRUCT TEMPORARY CONCRETE COLLAR PER CITY OF IRVINE STD. PLAN NO. 310 TO JOIN PVC AND CSP PIPES (USE EPOXY GROUT AT JOIN TO ENSURE WATER TIGHTNESS)
147 CONSTRUCT TEMPORARY 12" CORRUGATED STEEL PIPE, 14 GUAGE
148 CONSTRUCT SPILLWAY & RIPRAP PER COI STD 319

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010
SHAWN YU RCE 87239 11/12/25

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RG EROSION & SEDIMENT CONTROL PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG RG-202
SHEET 9 OF 23 SHEETS

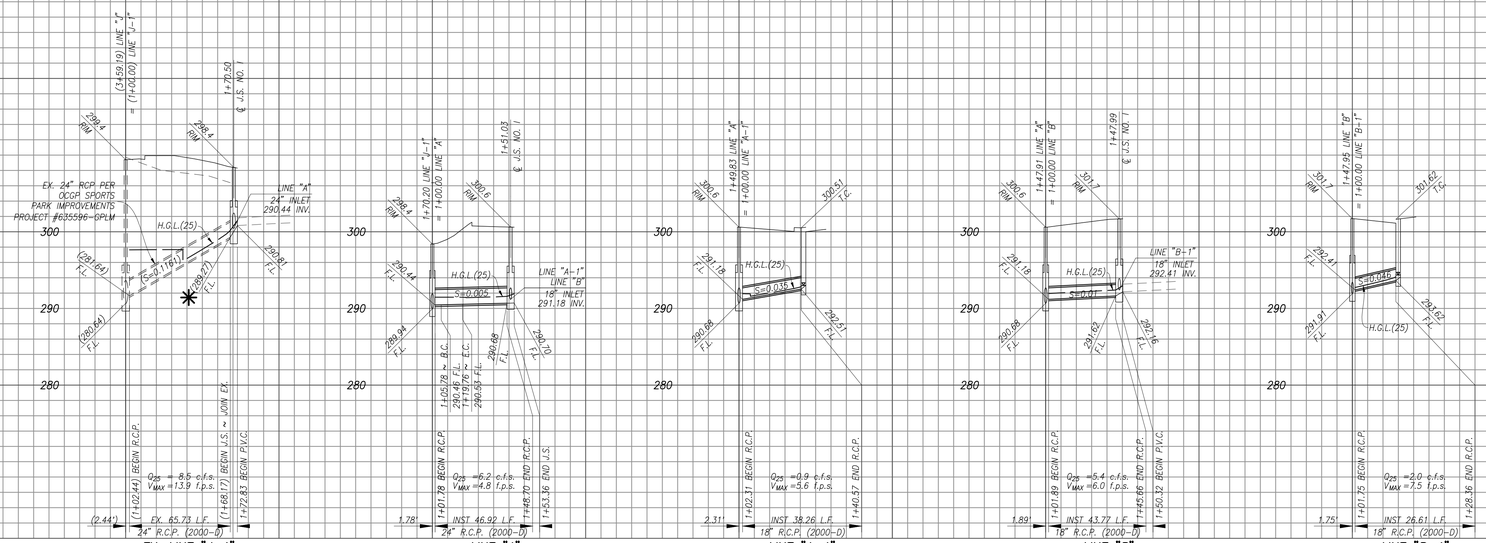
W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 03:49:05 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\RG-202.dwg

PROFILE SCALES

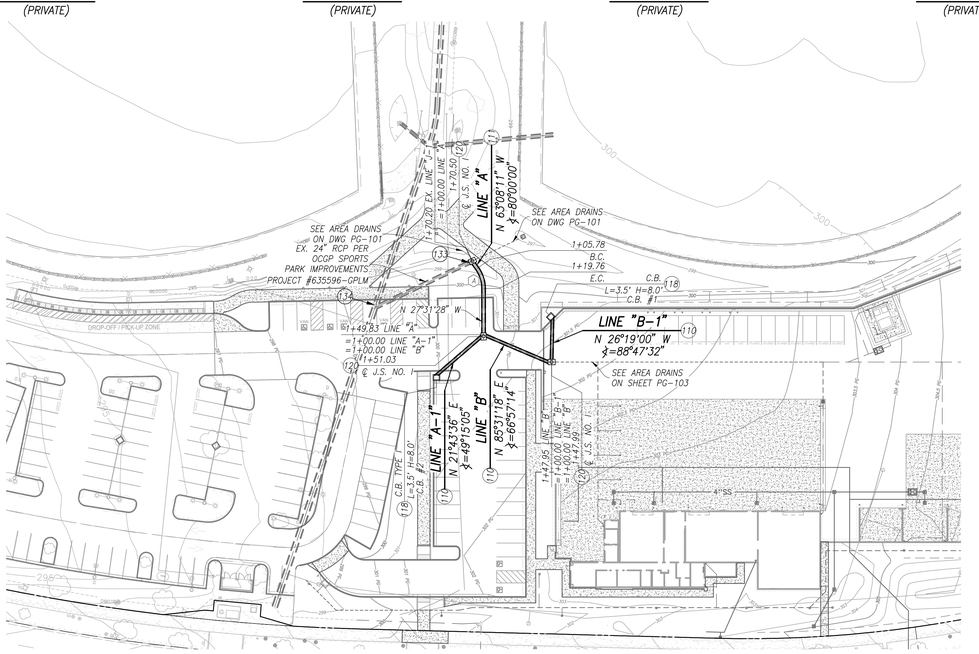
HORIZ.: 1"= 40'
VERT.: 1"= 8'

✳ CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION PRIOR TO START OF ANY CONSTRUCTION.



EX. LINE "J-1" (PUBLIC) | **LINE "A"** (PRIVATE) | **LINE "A-1"** (PRIVATE) | **LINE "B"** (PRIVATE) | **LINE "B-1"** (PRIVATE)

SCALE: 1" = 40'



CONSTRUCTION NOTES

(110) INST. 18" R.C.P. (SEE PROFILE FOR D-LOAD) W/ BEDDING AND BACKFILL PER CITY OF IRVINE STD. PLAN NO. 318
(11) INST. 24" R.C.P. (SEE PROFILE FOR D-LOAD) W/ BEDDING AND BACKFILL PER CITY OF IRVINE STD. PLAN NO. 318
(118) CONST. INLET TYPE I CITY OF IRVINE STD. PLAN NO. 300
(120) CONST. J.S. NO. I PER CITY OF IRVINE STD. PLAN NO. 306
(133) REMOVE INLET AND JOIN EXISTING
(134) ADJUST EXISTING MANHOLE RIMS TO FINISHED GRADE ELEVATIONS. INSTALL MANHOLE LOCKING AND REPLACE MANHOLE COVER TO ADA COMPLIANT AND SLIP RESISTANT.

CURVE DATA

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
(4)	35°36'43"	22.50'	13.98'	7.23'

40 20 0 40 80
GRAPHIC SCALE 1"=40'

CITY OF IRVINE BUILDING & SAFETY DIVISION

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11/12/25
SHAWN YU RCE 87239

		DATE
DRAWN BY:	MM	11/25
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APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

STORM DRAIN PLAN
GREAT PARK MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG SD-101
SHEET 10 OF 23 SHEETS

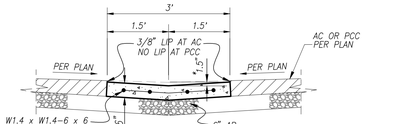
W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 08:48:39 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Rough\SD-101.dwg

PAVEMENT STRUCTURAL SECTION TABLE *

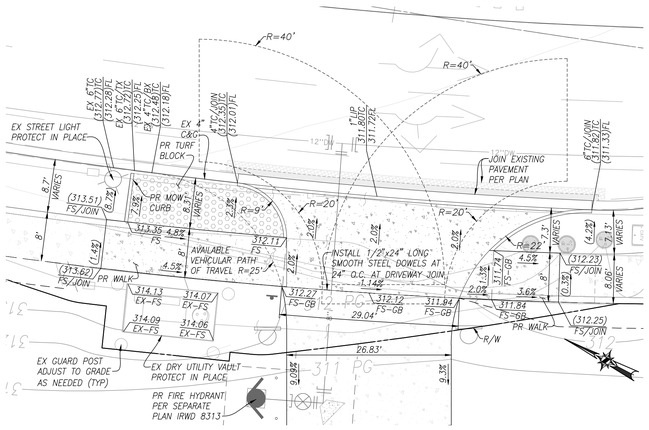
ITEM	LOCATION	T.I. VALUE	AC/CMB (IN FEET)
1	PARKING STALLS	5.0	0.25/0.42
1	DRIVING AISLE	6.0	0.25/0.50

* PAVEMENT SECTIONS TO BE CALCULATED AFTER "R" VALUES ARE AVAILABLE AND "T.I."S VALUES ARE APPROVED BY THE CITY OF IRVINE.

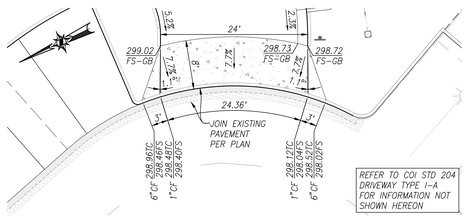


*1.5" MINIMUM AT FUEL AREA, 1.5" TYPICAL AT OTHER LOCATIONS

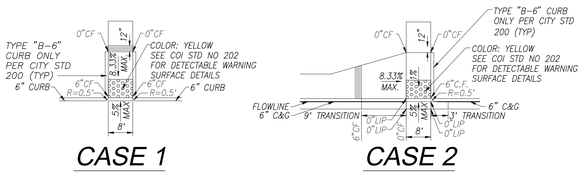
10 LONGITUDINAL GUTTER
NTS



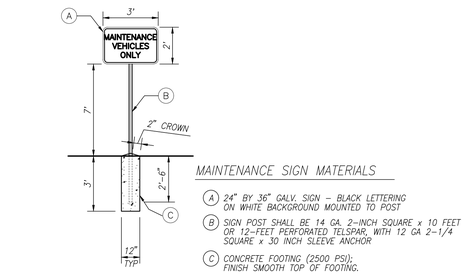
16 MODIFIED DRIVEWAY
1"=10'



17 MODIFIED DRIVEWAY
1"=10'



18 SIDEWALK ACCESS RAMP
NTS



MAINTENANCE SIGN MATERIALS

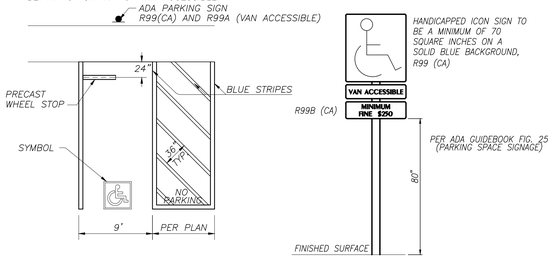
(A) 24" BY 36" GALV. SIGN – BLACK LETTERING ON WHITE BACKGROUND MOUNTED TO POST

(B) SIGN POST SHALL BE 14 GA. 2–INCH SQUARE x 10 FEET OR 12–FEET PERFORATED TELSPAR, WITH 12 GA 2–1/4 SQUARE x 30 INCH SLEEVE ANCHOR

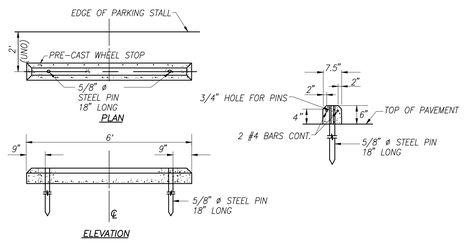
(C) CONCRETE FOOTING (2500 PSI); FINISH SMOOTH TOP OF FOOTING.

5 MAINTENANCE SIGN DETAIL
NTS

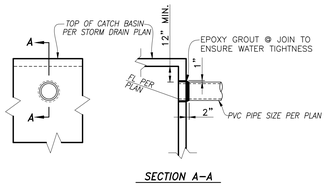
1. ALL PARKING STALL SHALL BE CLEARLY OUTLINED WITH DOUBLE STRIPES. ACCESSIBLE STALLS SHALL BE CLEARLY MARKED WITH INDIVIDUAL SIGNS CONSISTING OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A BLUE BACKGROUND.
2. MINIMUM STALL SHALL BE 9'–0", ACCESSIBLE SPACES SHALL BE 14'–0" OR 17'–0" VAN ACCESSIBLE.



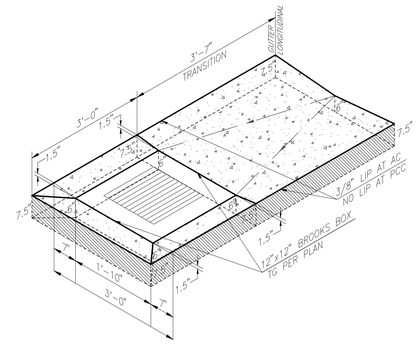
20 ADA PARKING STALL
PER ADA, TITLE 24 AND LATEST CBC
NTS



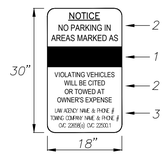
21 PRECAST CONC WHEEL STOP
NTS



74 PVC CONNECTION TO CB OR JS
NTS



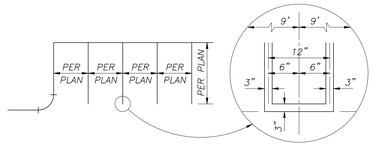
9 INLET GUTTER TRANSITION
NTS



NOTES:

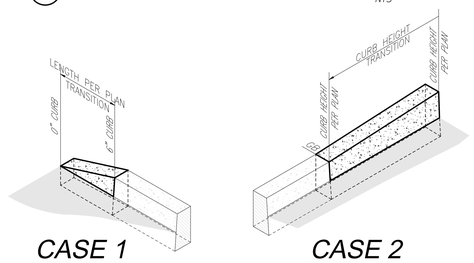
1. THE WORDS FIRE LANE SHALL BE 2–3/4 INCHES BOLD WHITE REFLECTIVE LETTERING ON RED BACKGROUND.
2. LETTERING SHALL BE 1–3/8 INCHES BOLD RED ON WHITE REFLECTIVE BACKGROUND.
3. LETTERING SHALL BE 1 INCH RED ON WHITE REFLECTIVE BACKGROUND.

7 FIRE LANE ENTRANCE SIGN
NTS

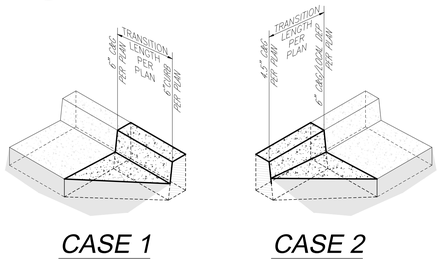


STRIPING SHALL BE 3" WIDE AND SHALL BE PAINTED WITH A NON REFLECTORIZED WHITE PAINT PER COI STANDARD 411.

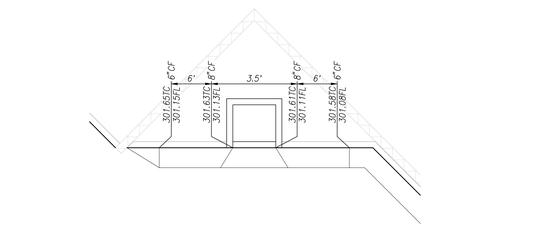
19 PARKING STALL STRIPING
NTS



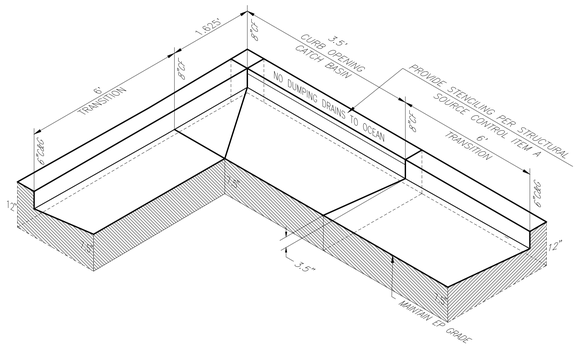
24 CURB TRANSITION
NTS



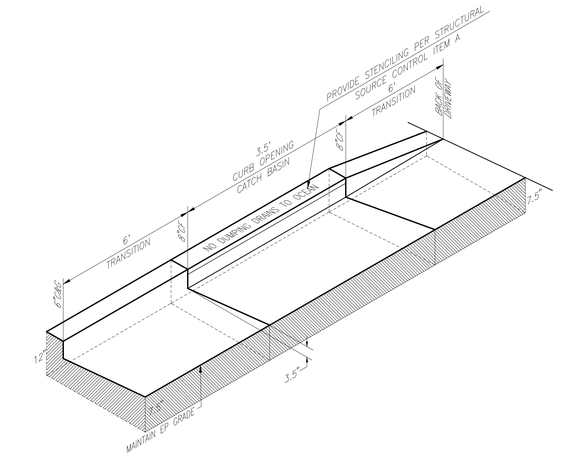
25 CURB & GUTTER TRANSITION
NTS



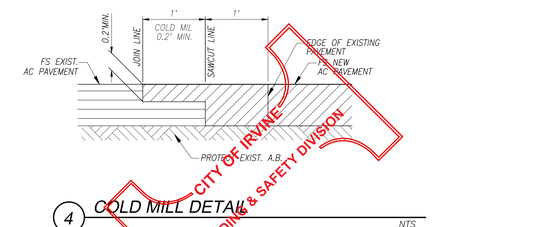
26 MODIFIED LOCAL DEPRESSION
NTS



27 MODIFIED LOCAL DEPRESSION
1"=5'



28 MODIFIED LOCAL DEPRESSION
NTS



4 COLD MILL DETAIL
NTS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

Under Ground Service Alert of Southern California
Call: TOLL FREE 1–800 227–2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
H&A HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010
SHAWN YU RCE 87239 11/12/25

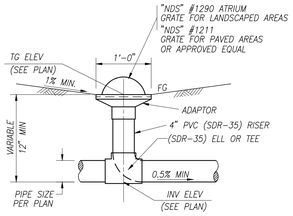
DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER R.C.E. NO. DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE
DESIGNED BY: VJS	DATE 11/25		
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES DATE
RECOMMENDED BY:	DATE		

PRECISE GRADING DETAILS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-001
SHEET 11 OF 23 SHEETS

W.O. 4564–1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 09:10:25 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG–001.dwg

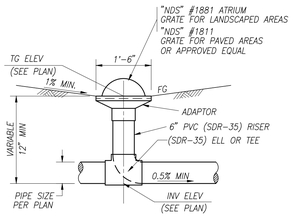


NOTES:

1. ALL FITTINGS BY: NATIONAL DIVERSIFIED SALES INC. (OR EQUAL)
   2550 AZURITE CIRCLE
   NEWBERRY PARK, CA. 91320
2. REFER TO FINISH GRADING FOR ELEVATIONS
3. DO NOT GLUE GRATE OR RISER TO PIPE
4. GLUE: "I.P.S. WELD ON" #773 SOLVENT (MEDIUM BODIED FAST SET FOR ABS PIPE THRU 4" Ø

64 12" DRAIN INLET

NTS



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2. REFER TO FINISH GRADING FOR ELEVATIONS
3. DO NOT GLUE GRATE OR RISER TO PIPE
4. GLUE: "I.P.S. WELD ON" #773 SOLVENT (MEDIUM BODIED FAST SET FOR ABS PIPE THRU 4" Ø

65 18" DRAIN INLET

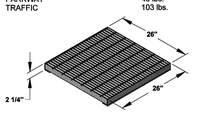
NTS

2424 CAST IRON GRATE

PARKWAY 112 lbs.

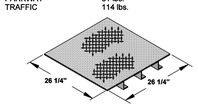
2424 STEEL GRATES

PARKWAY 48 lbs.
TRAFFIC 103 lbs.

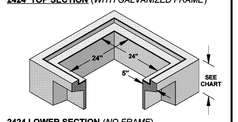


2424 STEEL COVER

PARKWAY 81 lbs.
TRAFFIC 114 lbs.

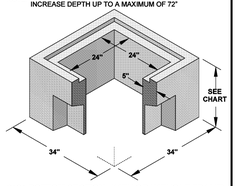


2424 TOP SECTION (*WITH GALVANIZED FRAME*)

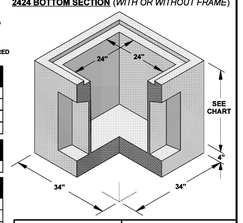


2424 LOWER SECTION (*NO FRAME*)

NOTE: USE 12", 18", 24" LOWERS TO INCREASE DEPTH UP TO A MAXIMUM OF 72"



2424 BOTTOM SECTION (*WITH OR WITHOUT FRAME*)



NOTES:

1. GRATES AND COVERS AVAILABLE PAINTED BLACK OR GALVANIZED
2. "ADA" GRATES AVAILABLE IN PARKWAY & TRAFFIC
3. "HEEL PROOF" GRATES AVAILABLE IN PARKWAY ONLY
4. A TOP SECTION WITH FRAME MUST BE USED IF BOLT DOWN REQUIRED

TOP SECTION	HT.	LBS	KNOCK-OUTS
2424 T6	6"	270	NONE
2424 T12	12"	495	(4) 8" x 11"
2424 T18	18"	745	(4) 9" x 12"
2424 T24	24"	870	(4) 14" x 14"

EXTENSION SECTION	HT.	LBS	KNOCK-OUTS
2424 E6	6"	270	NONE

LOWER SECTION	HT.	LBS	KNOCK-OUTS
2424 L12	12"	495	(4) 8" x 11"
2424 L18	18"	745	(4) 9" x 12"
2424 L24	24"	870	(4) 14" x 14"

BOTTOM SECTION	HT.	LBS	KNOCK-OUTS
2424 B30	30"	1595	(4) 18" x 18"
2424 B36	36"	1905	(4) 18" x 18"

24" x 24" CATCH BASIN

ORIG. ISSUE DATE 11-23-99 | REV. ISSUE DATE 02-14-20

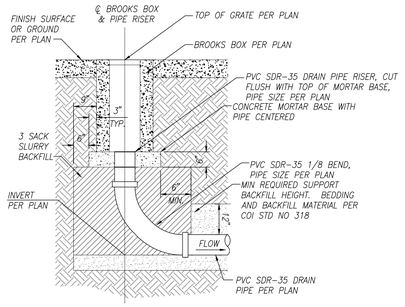
JENSEN PRECAST EST. 1968

BROOKS 2424 CB

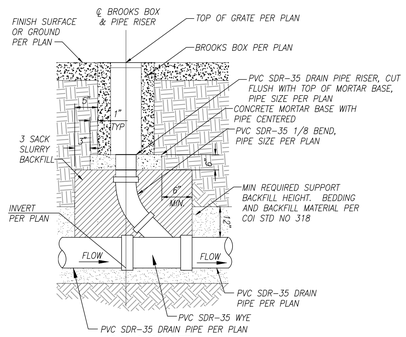
7 - 0 5

66 24"X24" CONCRETE CATCH BASIN

NTS



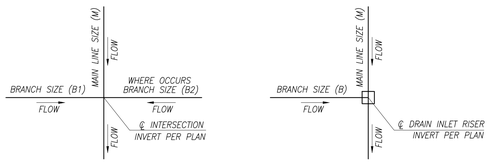
END OF LINE



IN LINE

67 INLET PIPE OUTFLOW

NTS

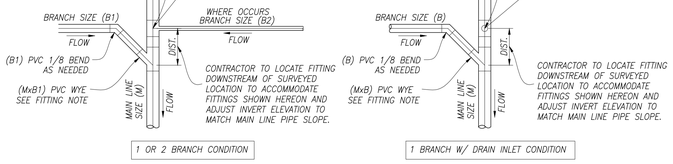


BRANCH SIZE (B1) IS LARGER OR EQUAL TO BRANCH (B2)

1 OR 2 BRANCH CONDITION

1 BRANCH W/ DRAIN INLET CONDITION

LAYOUT OF AREA DRAIN AS SHOWN ON PLAN



1 OR 2 BRANCH CONDITION

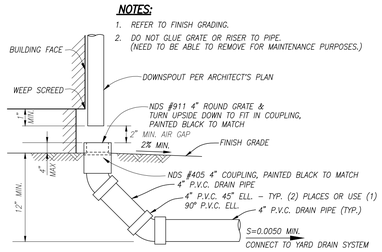
1 BRANCH W/ DRAIN INLET CONDITION

FITTING NOTE
ROTATE FITTING TO MATCH BRANCH SLOPE

FITTING DETAIL

68 PIPE CONNECTION

NTS

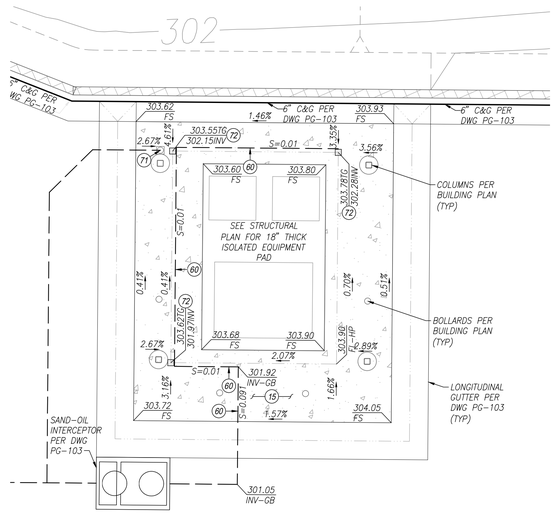


NOTE:

1) ALL DOWNSPOUTS ARE REQUIRED TO BE CONNECTED TO THE AREA DRAIN SYSTEM AS SHOWN.
2) TYPICAL DOWNSPOUT LOCATIONS ARE SHOWN ON TYPICAL FOOTPRINTS.
3) EXACT DOWNSPOUT LOCATIONS ARE TO BE DETERMINED IN FIELD BY BUILDER.

71 ROOF DOWNSPOUT TO AREA DRAIN CONNECTION

NTS



15 CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS.

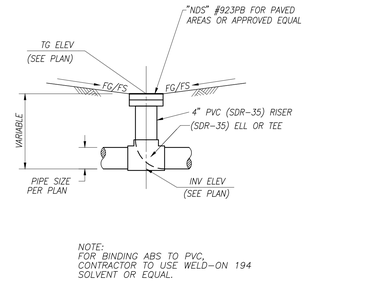
60 INSTALL 4" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

71 INSTALL ROOF DOWNSPOUT TO AREA DRAIN CONNECTION PER DETAIL 71 ON PG-002

72 INSTALL 6" AREA DRAIN PER DETAIL 72 ON PG-002

FUEL AREA DETAIL

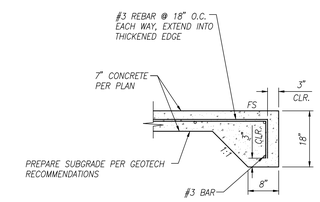
1"=5'



NOTE:
FOR BINDING ABS TO PVC, CONTRACTOR TO USE WELD-ON 194 SOLVENT OR EQUAL.

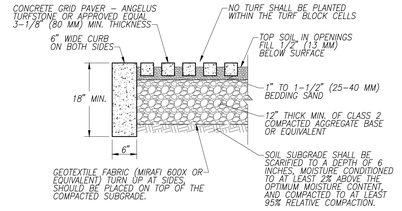
72 6" DRAIN INLET

NTS



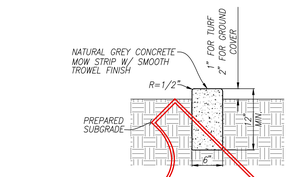
23 THICKENED EDGE DETAIL

NTS



32 MULCH/TURF BLOCK SECTION

NTS



NOTE:
1. JOIN ALL OTHER PAVED SURFACES FLUSH UNLESS NOTED OTHERWISE

33 CONCRETE MOW CURB

NTS

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:

H&A HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

SHAWN YU RCE 87239 11/11/25

DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES	R.C.E. NO.	DATE
DESIGNED BY: VJS	DATE 11/25						
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES		DATE
RECOMMENDED BY:	DATE						

PRECISE GRADING DETAILS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-002

SHEET 12 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:26:45 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-002.dwg

PRECISE GRADING CONSTRUCTION NOTES

(2) CONST AC OVER CMB AT PARKING STALLS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL

(11) CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER COI STD 200

(12) CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200

(13) CONSTRUCT 6" CONCRETE CURB ONLY TYPE "B-6" PER COI STD 200

(14) CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(15) CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(19) INSTALL PARKING STALL PER COI STD 411 & DETAIL 19 ON SHEET PG-001

(20) INSTALL ADA PARKING STALL PER DETAIL 20 ON SHEET PG-001

(21) INSTALL PRECAST CONCRETE WHEEL STOP PER DETAIL 21 ON PG-001

(22) CONSTRUCT COLOR YELLOW DETECTABLE WARNING SURFACE PER CBC REQUIREMENTS

(24) CONSTRUCT CURB TRANSITION PER DETAIL 24 ON PG-001, CASE PER PLAN

(25) CONSTRUCT CURB & GUTTER TRANSITION PER DETAIL 25 ON PG-001, LENGTH & CASE PER PLAN

(27) CONSTRUCT LOCAL DEPRESSION PER COI STD 303 & DETAIL 27 ON PG-001

(29) CONSTRUCT 4" PCC OVER 4" CAB/CMB WITH NO 3 BARS AT 18" EACH WAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(31) INSTALL ADA COMPLIANT INTERNATIONAL SYMBOL OF ACCESSIBILITY WITH DIRECTION ARROW SIGN (RIGHT "R" OR LEFT "L" PER PLAN)

AREA DRAIN CONSTRUCTION NOTES

(61) INSTALL 6" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

(63) INSTALL 12" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

(65) INSTALL 18" LANDSCAPE AREA DRAIN PER DETAIL 65 ON PG-002

(66) INSTALL 24"x24" CONCRETE CATCH BASIN (BROOKS 2424CB) WITH H-20 LOADING & HEEL PROOF STEEL GRATE PER MANUFACTURE'S RECOMMENDATIONS AND DETAIL ON SHEET PG-002

(67) CONSTRUCT INLET PIPE OUTFLOW PER DETAIL 67 ON PG-002

(74) CONNECT PVC PIPE TO CB OR JS PER DETAIL 74 ON SHEET PG-001

GREAT PARK COI

GREAT PARK COI

PERMIT LIMIT

EX 36" RCP PER OCGP SPORTS PARK IMPROVEMENTS PROJECT #635596-GPLM

EX 24" RCP PER OCGP SPORTS PARK IMPROVEMENTS PROJECT #635596-GPLM

STORM DRAIN PER DWG SD-101

EX 0" CURB

SEE SHT-14

SEE SHT-15

CARD READER & KNOX BOX PER SEPARATE TECH PLAN TO BE INSTALLED IN LANDSCAPE AREA

VAN

ACCESSIBLE PATH OF TRAVEL

NOTES:
1. REFERENCE DWGS DW-101 & SS-101 FOR WATER AND SEWER CROSSING INFORMATION
2. REFERENCE DWG RG-001 FOR SECTIONS
3. REFERENCE DWG DEMOLITION SHEETS RA-101 & RA-102 FOR EXISTING ITEMS TO REMAIN PROTECTED IN PLACE

CITY OF IRVINE
BUILDING & SAFETY DIVISION

1"=10'

0 5 10 20 30 40
SCALE: 1" = 10'

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/11/25
SHAWN YU RCE 87239

DRAWN BY: CH	DATE 11/25	APPROVED BY: R.C.E. NO. DATE CITY ENGINEER	APPROVED BY: IRWD R.C.E. NO. DATE SANITARY SEWER FACILITIES
DESIGNED BY: VJS	DATE 11/25		
CHECKED BY: VJS	DATE 11/25		
RECOMMENDED BY:	DATE	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

PRECISE GRADING & AREA DRAIN PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

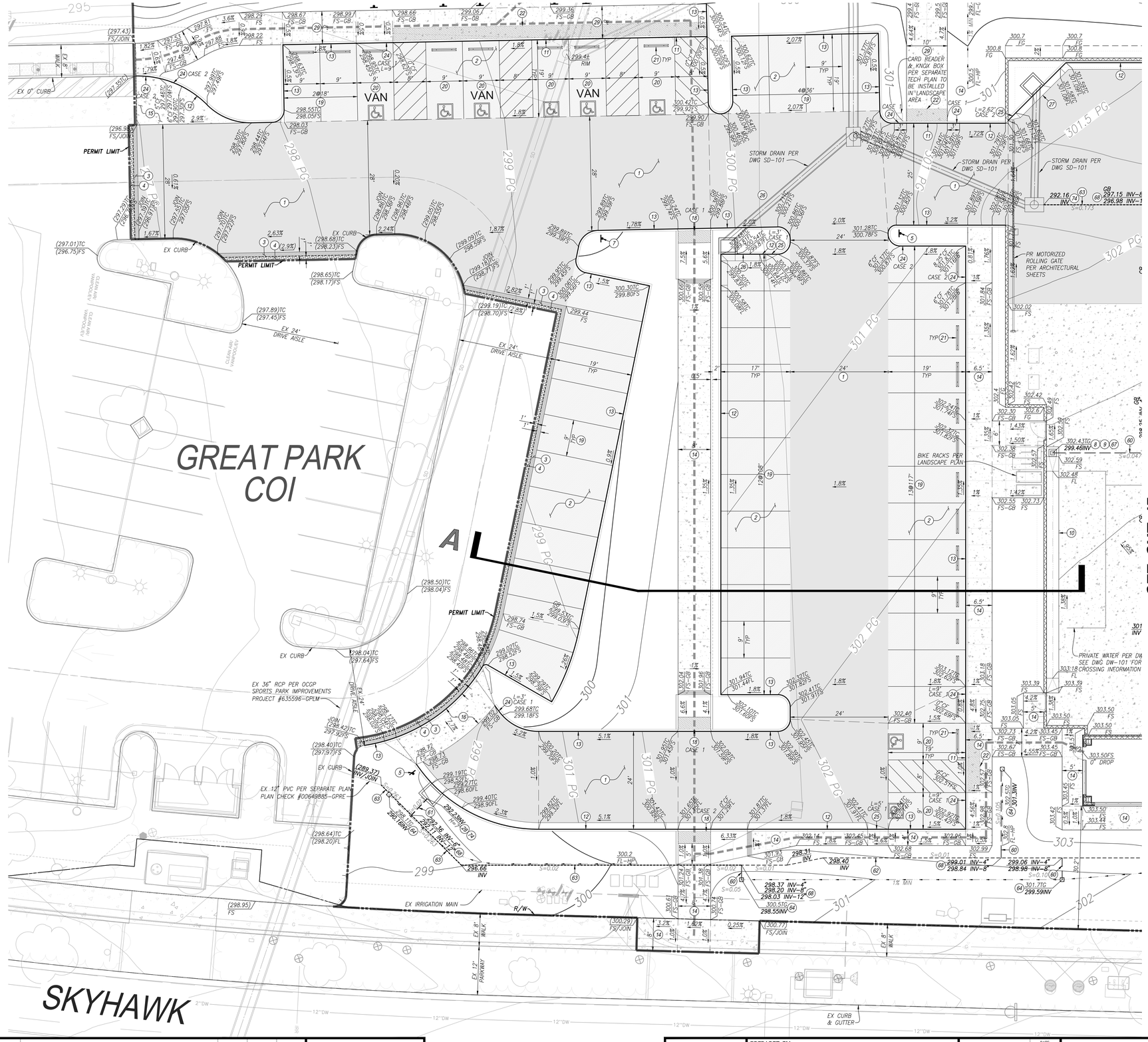
DWG PG-101

SHEET 13 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:29:36 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-101.dwg

SEE SHT-13



SEE SHT-15

PRECISE GRADING CONSTRUCTION NOTES

1. CONST AC OVER CMB AT DRIVE AISLES PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL
2. CONST AC OVER CMB AT PARKING STALLS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL
3. CONSTRUCT FULL DEPTH HMA TO THE BOTTOM OF DISTURBED AC/AB & REPAIR TRENCH PER COI STD 223A
4. COLD MILL 0.2" MIN EXISTING PAVEMENT, CONSTRUCT 0.2 MIN ARHM OVER EXISTING AC PAVEMENT AND FEATHER JOIN PER DETAIL 4 ON PG-001
5. INSTALL MAINTENANCE SIGN PER DETAIL 5 ON PG-001
7. INSTALL FIRE LANE ENTRANCE SIGN PER DETAIL 7 ON GD-001
8. INSTALL 12"X12" CONCRETE DRAINAGE BOX INLET WITH TRAFFIC RATED GRATE
9. CONSTRUCT INLET GUTTER TRANSITION PER DETAIL 9 ON PG-001
10. CONSTRUCT LONGITUDINAL GUTTER PER DETAIL 10 ON PG-001
11. CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER COI STD 200
12. CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200
13. CONSTRUCT 6" CONCRETE CURB ONLY TYPE "B-6" PER COI STD 200
14. CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS
15. CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS
16. CONSTRUCT DRIVEWAY PER DETAIL 16 ON SHEET PG-001
18. CONSTRUCT SIDEWALK ACCESS RAMP PER DETAIL 18 ON SHEET PG-001, CASE PER PLAN
19. INSTALL PARKING STALL PER COI STD 411 & DETAIL 19 ON SHEET PG-001
20. INSTALL ADA PARKING STALL PER DETAIL 20 ON SHEET PG-001
21. INSTALL PRECAST CONCRETE WHEEL STOP PER DETAIL 21 ON PG-001
22. CONSTRUCT COLOR YELLOW DETECTABLE WARNING SURFACE PER CBC REQUIREMENTS
24. CONSTRUCT CURB TRANSITION PER DETAIL 24 ON PG-001, CASE PER PLAN
25. CONSTRUCT CURB & GUTTER TRANSITION PER DETAIL 25 ON PG-001, LENGTH & CASE PER PLAN
26. CONSTRUCT MODIFIED LOCAL DEPRESSION PER COI STD 303 & DETAIL 26 ON PG-001
27. CONSTRUCT LOCAL DEPRESSION PER COI STD 303 & DETAIL 27 ON PG-001
28. CONSTRUCT CATCH BASIN TYPE I PER COI STD NO 300 (W=3.5') & MODIFIED LOCAL DEPRESSION PER COI STD 303 & DETAIL 26 ON PG-001
29. CONSTRUCT 4" PCC OVER 4" CAB/CMB WITH NO 3 BARS AT 18" EACH WAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

AREA DRAIN CONSTRUCTION NOTES

60. INSTALL 4" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
61. INSTALL 6" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
62. INSTALL 8" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
63. INSTALL 12" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
64. INSTALL 12" LANDSCAPE AREA DRAIN PER DETAIL 64 ON PG-002
67. CONSTRUCT INLET PIPE OUTFLOW PER DETAIL 67 ON PG-002
68. INSTALL PIPE CONNECTION PER DETAIL 68 ON PG-002
74. CONNECT PVC PIPE TO CB OR JS PER DETAIL 74 ON SHEET PG-001

ACCESSIBLE PATH OF TRAVEL

NOTES:
1. REFERENCE DWGS DW-101 & SS-101 FOR WATER AND SEWER CROSSING INFORMATION
2. REFERENCE DWG RG-001 FOR SECTIONS
3. REFERENCE DWG DEMOLITION SHEETS RA-101 & RA-102 FOR EXISTING ITEMS TO REMAIN PROTECTED IN PLACE

CITY OF IRVINE
BUILDING & SAFETY DIVISION

1"=10'

0 5 10 20 30 40
SCALE: 1" = 10'

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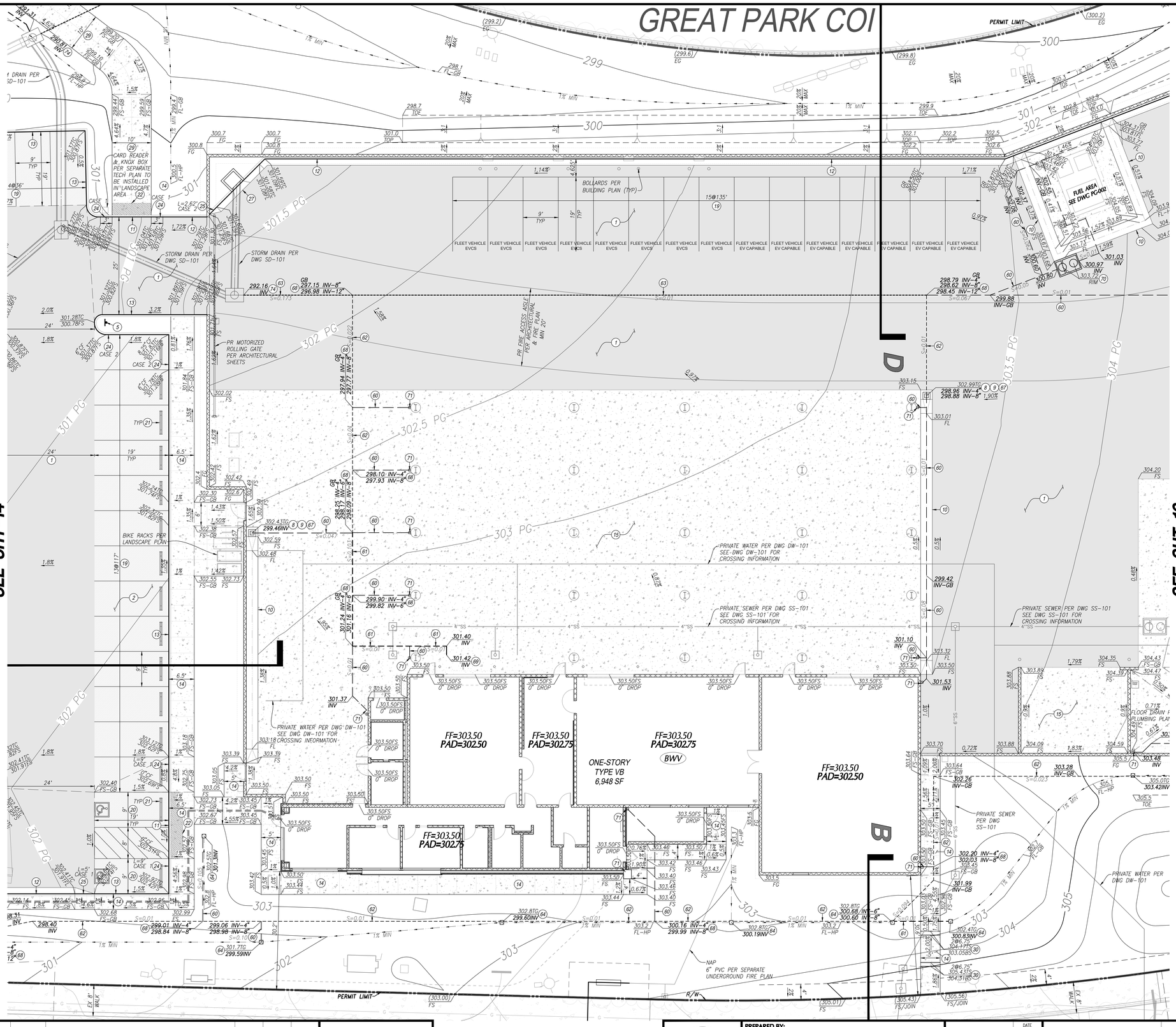
PRECISE GRADING & AREA DRAIN PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-102

SHEET 14 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:32:25 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-102.dwg



PRECISE GRADING CONSTRUCTION NOTES

1. CONST AC OVER CMB AT DRIVE AISLES PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL
2. CONST AC OVER CMB AT PARKING STALLS PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL
5. INSTALL MAINTENANCE SIGN PER DETAIL 5 ON PG-001
8. INSTALL 12"X12" CONCRETE DRAINAGE BOX INLET WITH TRAFFIC RATED GRATE
9. CONSTRUCT INLET GUTTER TRANSITION PER DETAIL 9 ON PG-001
10. CONSTRUCT LONGITUDINAL GUTTER PER DETAIL 10 ON PG-001
11. CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER COI STD 200
12. CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200
13. CONSTRUCT 6" CONCRETE CURB ONLY TYPE "B-6" PER COI STD 200
14. CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS
15. CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS
19. INSTALL PARKING STALL PER COI STD 411 & DETAIL 19 ON SHEET PG-001
20. INSTALL ADA PARKING STALL PER DETAIL 20 ON SHEET PG-001
21. INSTALL PRECAST CONCRETE WHEEL STOP PER DETAIL 21 ON PG-001
22. CONSTRUCT COLOR YELLOW DETECTABLE WARNING SURFACE PER CBC REQUIREMENTS
24. CONSTRUCT CURB TRANSITION PER DETAIL 24 ON PG-001, CASE PER PLAN
25. CONSTRUCT CURB & GUTTER TRANSITION PER DETAIL 25 ON PG-001, LENGTH & CASE PER PLAN
27. CONSTRUCT LOCAL DEPRESSION PER COI STD 303 & DETAIL 27 ON PG-001
29. CONSTRUCT 4" PCC OVER 4" CAB/CMB WITH NO 3 BARS AT 18" EACH WAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS
30. CONSTRUCT STAIRS PER LANDSCAPE PLAN

AREA DRAIN CONSTRUCTION NOTES

60. INSTALL 4" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
61. INSTALL 6" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
62. INSTALL 8" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
63. INSTALL 12" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.
64. INSTALL 12" LANDSCAPE AREA DRAIN PER DETAIL 64 ON PG-002
67. CONSTRUCT INLET PIPE OUTFLOW PER DETAIL 67 ON PG-002
68. INSTALL PIPE CONNECTION PER DETAIL 68 ON PG-002
69. INSTALL TEMPORARY PVC END CAP FOR FUTURE CONNECTION BY OTHERS
70. INSTALL TRAFFIC RATED JENSEN PRECAST 500 GALLON SAND-OIL INTERCEPTOR MODEL JP500SO PER MANUFACTURE'S SPECIFICATIONS
71. INSTALL ROOF DOWNSPOUT TO AREA DRAIN CONNECTION PER DETAIL 71 ON PG-002
74. CONNECT PVC PIPE TO CB OR JS PER DETAIL 74 ON SHEET PG-001

ACCESSIBLE PATH OF TRAVEL

NOTES:
1. REFERENCE DWGS DW-101 & SS-101 FOR WATER AND SEWER CROSSING INFORMATION
2. REFERENCE DWG RG-001 FOR SECTIONS
3. REFERENCE DWG DEMOLITION SHEETS RA-101 & RA-102 FOR EXISTING ITEMS TO REMAIN PROTECTED IN PLACE

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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0 5 10 20 30 40
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SHAWN YU RCE 87239 11/11/25

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APPROVED BY: ORANGE COUNTY FIRE MARSHALL — DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES — DATE

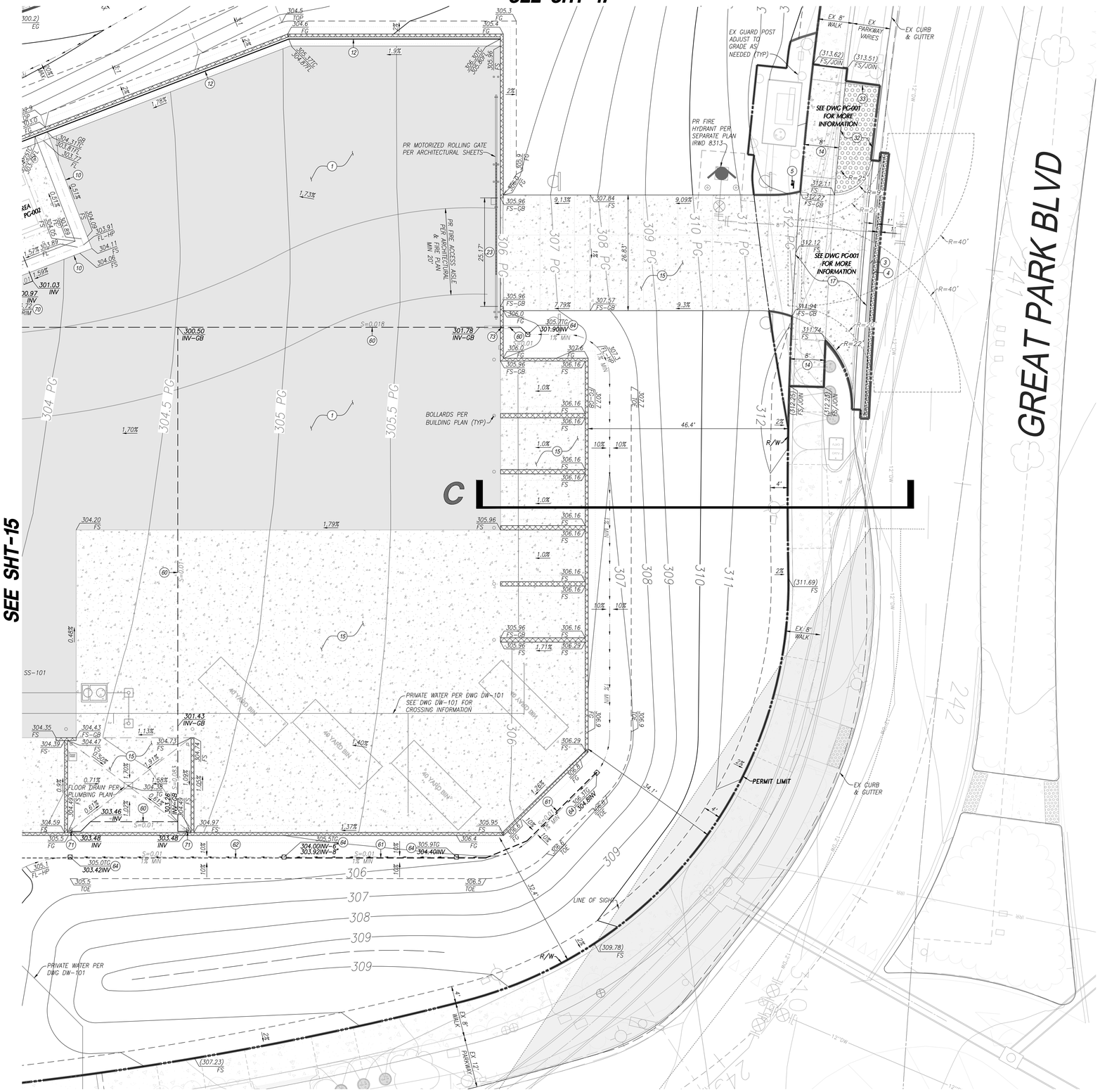
PRECISE GRADING & AREA DRAIN PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-103

SHEET 15 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:35:08 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-103.dwg



PRECISE GRADING CONSTRUCTION NOTES

(1) CONST AC OVER CMB AT DRIVE AISLES PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL

(3) CONSTRUCT FULL DEPTH HMA TO THE BOTTOM OF DISTURBED AC/AB & REPAIR TRENCH PER COI STD 223A

(4) COLD MILL 0.2' MIN EXISTING PAVEMENT, CONSTRUCT 0.2 MIN ARHM OVER EXISTING AC PAVEMENT AND FEATHER JOIN PER DETAIL 4 ON PG-001

(5) INSTALL MAINTENANCE SIGN PER DETAIL 5 ON PG-001

(10) CONSTRUCT LONGITUDINAL GUTTER PER DETAIL 10 ON PG-001

(12) CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200

(14) CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(15) CONSTRUCT 7" PCC OVER 4" CAB/CMB PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(17) CONSTRUCT MODIFIED DRIVEWAY TYPE II-B PER COI STD NO 204 AND DETAIL 17 ON SHEET PG-001

(23) CONSTRUCT THICKENED EDGE PER DETAIL 23 ON SHEET PG-002

(32) INSTALL TURF BLOCK PER DETAIL 32 ON SHEET PG-002

(33) INSTALL MOW CURB PER DETAIL 33 ON SHEET PG-002

AREA DRAIN CONSTRUCTION NOTES

(60) INSTALL 4" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

(61) INSTALL 6" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

(62) INSTALL 8" PVC, SDR 35, DRAIN PIPE, PIPE BEDDING AND BACKFILL PER GEOTECHNICAL RECOMMENDATIONS FOR BACKFILL COMPACTION.

(64) INSTALL 12" LANDSCAPE AREA DRAIN PER DETAIL 64 ON PG-002

(70) INSTALL TRAFFIC RATED JENSEN PRECAST 500 GALLON SAND-OIL INTERCEPTOR MODEL JP500SO PER MANUFACTURE'S SPECIFICATIONS

(71) INSTALL ROOF DOWNSPOUT TO AREA DRAIN CONNECTION PER DETAIL 71 ON PG-002

(73) INSTALL 8" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.

— — — — ACCESSIBLE PATH OF TRAVEL

NOTES:
1. REFERENCE DWGS DW-101 & SS-101 FOR WATER AND SEWER CROSSING INFORMATION
2. REFERENCE DWG RG-001 FOR SECTIONS
3. REFERENCE DWG DEMOLITION SHEETS RA-101 & RA-102 FOR EXISTING ITEMS TO REMAIN PROTECTED IN PLACE

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BUILDING & SAFETY DIVISION

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PRECISE GRADING & AREA DRAIN PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-104
SHEET 16 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:37:48 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-104.dwg

PRECISE GRADING CONSTRUCTION NOTES

(1) CONST AC OVER CMB AT DRIVE AISLES PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AS SHOWN PER TABLE ON PG-001, AND AS APPROVED BY THE CHIEF BUILDING OFFICIAL

(5) INSTALL MAINTENANCE SIGN PER DETAIL 5 ON PG-001

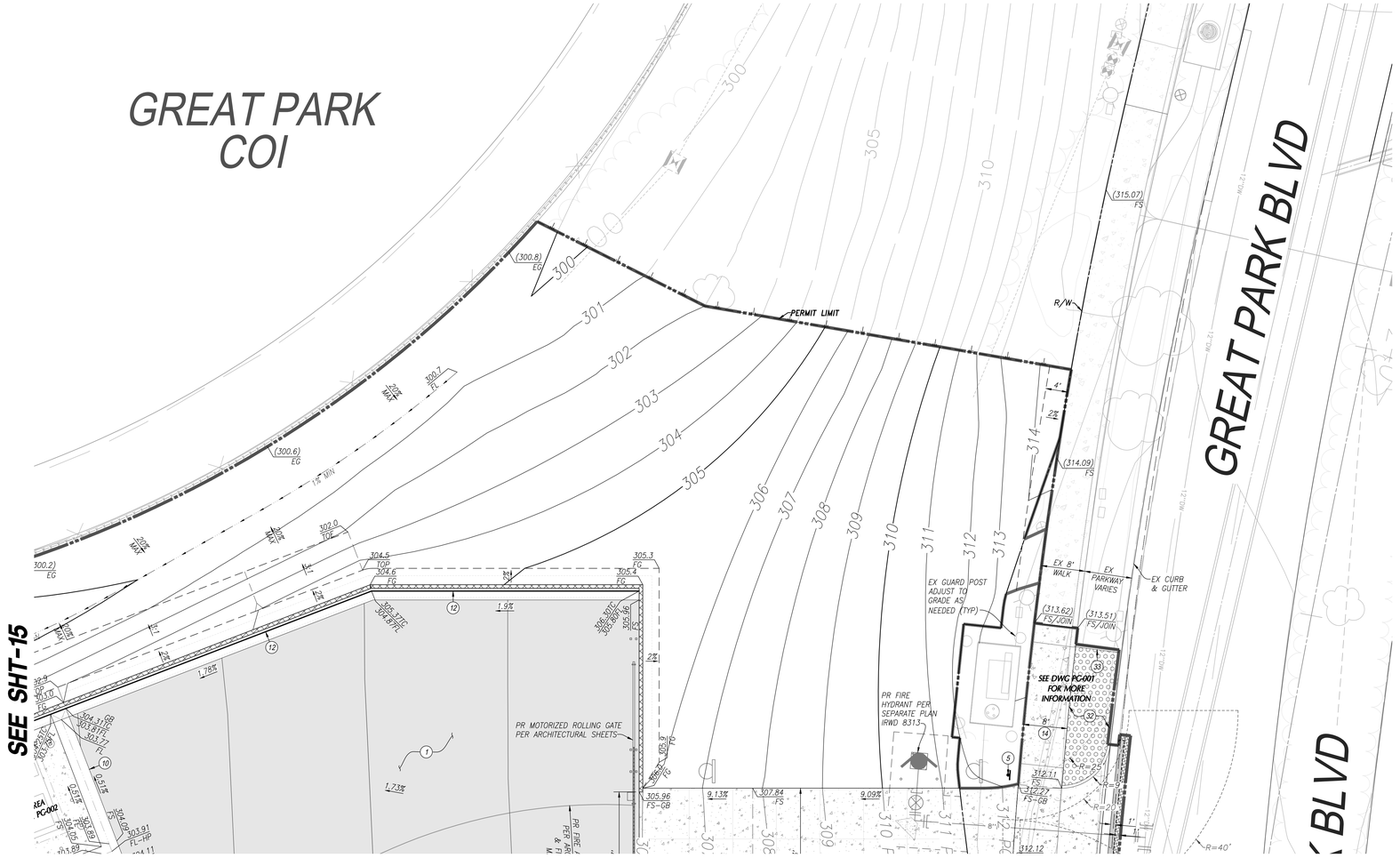
(10) CONSTRUCT LONGITUDINAL GUTTER PER DETAIL 10 ON PG-001

(12) CONSTRUCT 6" CONCRETE CURB AND GUTTER TYPE "D" PER COI STD 200

(14) CONSTRUCT 4" PCC OVER 4" CAB/CMB THICK CONCRETE WALKWAY PER GEOTECHNICAL RECOMMENDATIONS. FINISH, COLOR & SCORING PER LANDSCAPE PLANS

(32) INSTALL TURF BLOCK PER DETAIL 32 ON SHEET PG-002

(33) INSTALL MOW CURB PER DETAIL 33 ON SHEET PG-002



ACCESSIBLE PATH OF TRAVEL

NOTES:
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2. REFERENCE DWG RG-001 FOR SECTIONS
3. REFERENCE DWG DEMOLITION SHEETS RA-101 & RA-102 FOR EXISTING ITEMS TO REMAIN PROTECTED IN PLACE

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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0 5 10 20 30 40
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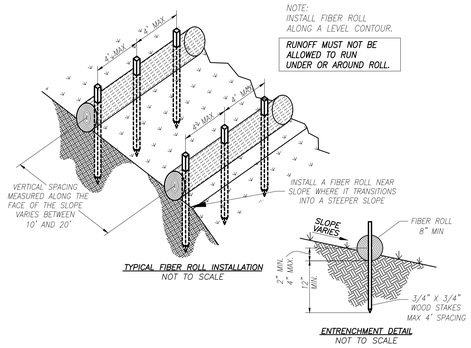
PRECISE GRADING & AREA DRAIN PLAN
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-105

SHEET 17 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES - PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 03:40:30 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-105.dwg

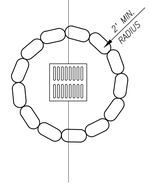


TYPICAL FIBER ROLL INSTALLATION
NOT TO SCALE

ENTRENCHMENT DETAIL
NOT TO SCALE

91 FIBER ROLL DETAIL

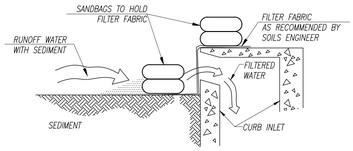
NOT TO SCALE



NOTE:
TYPICAL GRAVEL BAG PLACEMENT FOR ALL AREA DRAINS.
ALL AREA DRAINS SHALL HAVE GRAVELBAGS 1 BAG HIGH
DURING HOUSE CONSTRUCTION SURROUNDING INLET.

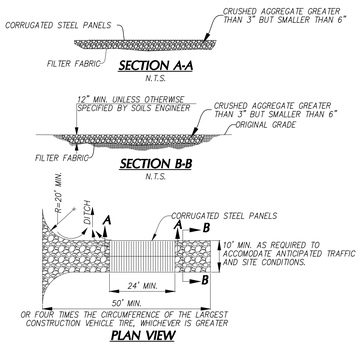
92 AREA DRAIN GRAVEL BAG, SE-10

NOT TO SCALE



93 SCREENED CATCH BASIN INLET, SE-10

NOT TO SCALE



94 STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

* REFERENCE: CALIFORNIA STORM WATER QUALITY BMP HANDBOOK
TRACKING CONTROL BMP; TC-1

STRUCTURAL SOURCE CONTROL REQUIREMENTS

STRUCTURAL SOURCE CONTROL REQUIREMENTS	APPLICABILITY	SPECIFIED BMP (CASQA) BMP DETAIL(S)/ DRAWING NUMBER	INSTALLATION VERIFIED
A. ALL STORM DRAIN INLETS AND CATCH BASINS, CONSTRUCTED OR MODIFIED, WITHIN THE PROJECT AREA SHALL BE STENCILED OR LABELED WITH PROHIBITIVE LANGUAGE ("NO DUMPING DRAINS TO OCEAN") AND/OR GRAPHICAL ICONS TO DISCOURAGE ILLEGAL DUMPING.	A	SD-13, STORM DRAIN SIGNAGE SHEET NUMBER(S): SD-101 PG-101 TO PG-103	
B. ALL TRASH CONTAINER AREAS SHALL BE PAVED WITH AN IMPERVIOUS SURFACE, DESIGNED NOT TO ALLOW RUN-ON FROM ADJOINING AREAS, DESIGNED TO DIVERT DRAINAGE FROM ADJOINING ROOFS AND PAVEMENTS DIVERTED AROUND THE AREA, SCREENED OR WALLED TO PREVENT OFF-SITE TRANSPORT OF TRASH.	NA	SD-32, TRASH STORAGE AREAS SHEET NUMBER(S):	
C. DISCHARGE FROM VEHICLE WASH AREAS SHALL BE EQUIPPED WITH A CLARIFIER OR OTHER PRETREATMENT FACILITY AND DISCHARGED TO SANITARY SEWER.	A	SD-33 VEHICLE WASHING AREAS SHEET NUMBER(S): PG-104	
D. FUEL DISPENSING AREAS SHALL CONTAIN THE FOLLOWING: • AT A MINIMUM, THE FUEL DISPENSING AREA MUST EXTEND 6.5 FEET (2.0 METERS) FROM THE CORNER OF EACH FUEL DISPENSER, OR THE LENGTH AT WHICH THE HOSE AND NOZZLE ASSEMBLY MAY OPERATE PLUS 1 FOOT (0.3 METERS), WHICHEVER IS LESS. • THE FUEL DISPENSING AREAS SHALL BE PAVED WITH PORTLAND CEMENT CONCRETE (OR EQUIVALENT SMOOTH IMPERVIOUS SURFACE). THE USE OF ASPHALT CONCRETE SHALL BE PROHIBITED. • THE FUEL DISPENSING AREA SHALL BE CONSTRUCTED IN SUCH A MANNER AS TO ELIMINATE PONDING, AND MUST BE SEPARATED FROM THE REST OF THE SITE BY A GRADE BREAK THAT PREVENTS RUN-ON OF STORMWATER. • AN OVERHANGING ROOF STRUCTURE OR CANOPY SHALL BE PROVIDED. THE COVER'S MINIMUM DIMENSIONS MUST BE EQUAL TO OR GREATER THAN THE AREA OF THE FUEL DISPENSING AREA. THE COVER MUST NOT DRAIN ONTO THE FUEL DISPENSING AREA AND THE DOWNSPOUTS MUST HAVE A POSITIVE CONNECTION TO THE AREA DRAIN SYSTEM TO PREVENT DRAINAGE ACROSS THE FUELING AREA. THE FUELING AREA SHALL DRAIN TO THE PROJECT'S TREATMENT CONTROL BMP(S) PRIOR TO DISCHARGING TO THE STORM DRAIN.	A	SD-30, FUELING AREAS SHEET NUMBER(S): PG-104	
E. CONTECH STORMFILTER SHALL BE CONSTRUCTED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
F. KRISTAR FLOGARD PERK FILTER SHALL BE CONSTRUCTED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
G. AMERICAST FILTERRA SHALL BE CONSTRUCTED PER DETAILS ON GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
H. HYDRODYNAMIC SEPARATORS SHALL BE CONSTRUCTED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	MP-51, VORTEX SEPARATOR SHEET NUMBER(S):	
I. DRAIN INSERTS SHALL BE CONSTRUCTED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	MP-52, DRAIN INLET SHEET NUMBER(S):	
J. BIOFILTERS(VEGETATED STRIPS OR SWALES) SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	TC-30, VEGETATED SWALE TC-31, VEGETATED BUFFER STRIP SHEET NUMBER(S):	
K. BIORETENTION SHALL BE CONSTRUCTED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	TC-32 BIORETENTION SHEET NUMBER(S):	
L. DRY DETENTION BASINS SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	TC-22, EXTENDED DETENTION BASIN SHEET NUMBER(S):	
M. INFILTRATION TRENCH OR BASINS SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	TC-10, INFILTRATION TRENCH TC-11, INFILTRATION SHEET NUMBER(S):	
N. WET PONDS OR WETLANDS SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	TC-21, CONSTRUCTED WETLANDS MP-20, WETLAND SHEET NUMBER(S):	
O. FILTRATION SYSTEMS SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	MP-40, MEDIA FILTER SHEET NUMBER(S):	
P. GREEN ROOF SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
Q. PERVIOUS PAVEMENT SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
R. CISTERN OR OTHER RETENTION SYSTEM SHALL BE DESIGNED PER DETAILS ON THE GRADING PLANS AND WQMP.	N/A	SHEET NUMBER(S):	
S. NATURAL TREATMENT SYSTEM (NTS) • CERTIFICATION OF CONSTRUCTION AND PLANTING BY THE NTS ENGINEER OF THE RECORDS. • (PRIOR TO OCCUPANCY) DOCUMENTATION FROM IRVINE RANCH WATER DISTRICT (IRWD) THAT THE NTS HAS BEEN ACCEPTED INTO THE ESTABLISHMENT PERIOD. • (POST OCCUPANCY) DOCUMENTATION FROM IRWD FOR NTS FINAL ACCEPTANCE AND RESPONSIBILITY OF MAINTENANCE	N/A	SHEET NUMBER(S):	
T. OTHER:	N/A	SHEET NUMBER(S):	

POLLUTION PREVENTION NOTES

IN ORDER TO MEET THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM FOR CONSTRUCTION, CONSTRUCTION CONTRACTORS SHALL INSTALL AND MAINTAIN APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS), AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN, ON ALL CONSTRUCTION PROJECTS. BMPS SHALL BE INSTALLED IN ACCORDANCE WITH INDUSTRY RECOMMENDED STANDARDS, AND/OR IN ACCORDANCE WITH ANY GENERAL CONSTRUCTION PERMIT ISSUED BY THE STATE FOR THE PROJECT TO PREVENT ANY DISCHARGES FROM THE PROJECT SITE OR INTO ANY STORM DRAIN FACILITIES. ALL SEDIMENTS, CONSTRUCTION MATERIALS, DEBRIS AND WASTES, 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, WIND, OR VEHICLE TRACKING. UNDER DIRECTION OF THE ENGINEER OF RECORD, EROSION AND/OR SEDIMENT CONTROL DEVICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

EROSION AND SEDIMENT CONTROL REQUIREMENTS

REQUIREMENTS	SPECIFIED BMPs BMP DETAIL(S)/SHEET NUMBER
A. WIND EROSION BMPS (DUST CONTROL) SHALL BE IMPLEMENTED.	WE-1
B. SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AT THE SITE PERIMETER, AT ALL OPERATIONAL STORM DRAIN INLETS AND AT ALL NON-ACTIVE SLOPES.	SE-04, SE-05, SE-07, SE-08, SE-10
C. BMPS TO CONTROL OFF-SITE SEDIMENT TRACKING SHALL BE IMPLEMENTED AND MAINTAINED.	TC-1, TC-2, TC-3
D. APPROPRIATE WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPS SHALL BE IMPLEMENTED TO PREVENT THE CONTAMINATION OF STORMWATER BY WASTES AND CONSTRUCTION MATERIALS.	WM-01, WM-02, WM-03, WM-04 WM-05, WM-08 & WM-09
E. APPROPRIATE NON-STORMWATER BMPS SHALL BE IMPLEMENTED TO PREVENT THE CONTAMINATION OF STORMWATER FROM CONSTRUCTION ACTIVITIES.	NS-01, NS-04, NS-06, NS-07 NS-08, NS-09, NS-10, NS-12 & NS-13
F. ADEQUATE PHYSICAL OR VEGETATION EROSION CONTROL BMPS (TEMPORARY OR PERMANENT) SHALL BE INSTALLED AND ESTABLISHED FOR ALL COMPLETED SLOPES PRIOR TO THE START OF THE RAINY SEASON. THESE BMPS MUST BE MAINTAINED THROUGHOUT THE RAINY SEASON. IF A SELECTED BMP FAILS, IT MUST BE REPAIRED AND IMPROVED, OR REPLACED WITH AN ACCEPTABLE ALTERNATE AS SOON AS IT IS SAFE TO DO SO. THE FAILURE OF A BMP MAY INDICATE THAT THE BMP, AS INSTALLED, WAS NOT ADEQUATE FOR THE CIRCUMSTANCES IN WHICH IT WAS USED. REPAIRS OR REPLACEMENTS MUST RESULT IN A MORE ROBUST BMP, OR ADDITIONAL BMPS SHOULD BE INSTALLED TO PROVIDE ADEQUATE PROTECTION.	EC-3, EC-5, EC-6 SPRAY HYDROMULCH WITH SOIL BINDER
G. ADEQUATE EROSION AND SEDIMENT CONTROLS MUST BE IMPLEMENTED PRIOR TO THE ONSET OF A STORM EVENT FOR ALL ACTIVELY GRADED AREAS.	EC-1
H. A DISTURBED AREA THAT IS NOT COMPLETED BUT THAT IS NOT BEING ACTIVELY GRADED (NON-ACTIVE AREA) SHALL BE FULLY PROTECTED FROM EROSION WITH THE REFERENCED TEMPORARY AND/OR PERMANENT BMPS (EROSION AND SEDIMENT CONTROL). THE ABILITY TO DEPLOY STANDBY BMP MATERIALS IS NOT SUFFICIENT FOR THESE AREAS. EROSION AND SEDIMENT CONTROL BMPS MUST ACTUALLY BE DEPLOYED. THIS INCLUDES ALL BUILDING PADS, UNFINISHED ROADS AND SLOPES.	SE-08, EC-3, EC-5, EC-6 SPRAY HYDROMULCH WITH SOIL BINDER
I. SUFFICIENT MATERIALS NEEDED TO INSTALL REFERENCED STANDBY EROSION AND SEDIMENT CONTROL BMPS NECESSARY TO COMPLETELY PROTECT THE EXPOSED PORTIONS OF THE SITE FROM EROSION AND TO PREVENT SEDIMENT DISCHARGES SHALL BE STORED ON SITE. AREAS THAT HAVE ALREADY BEEN PROTECTED FROM EROSION USING PERMANENT PHYSICAL STABILIZATION OR ESTABLISHED VEGETATION STABILIZATION BMPS ARE NOT CONSIDERED "EXPOSED" FOR PURPOSES OF THIS REQUIREMENT.	SE-08

NOTE: FOR RISK LEVEL 2 AND 3 SITES, THERE SHALL BE A "RAIN EVENT ACTION PLAN" AND THE ABILITY TO DEPLOY STANDBY SEDIMENT CONTROL BMPS AS NEEDED TO COMPLETELY PROTECT THE EXPOSED PORTIONS OF THE SITE WITHIN 48 HOURS OF A PREDICTED STORM EVENT (A PREDICTED STORM EVENT IS DEFINED AS A FORECASTED 50% CHANCE OF RAIN).

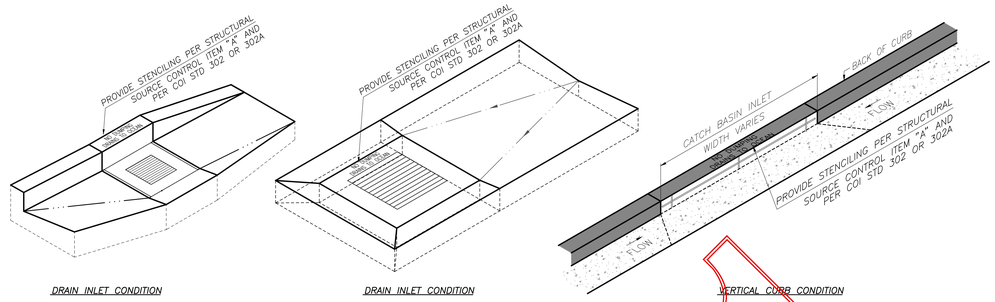
I HEREBY CERTIFY THAT I HAVE READ AND UNDERSTAND THE REQUIREMENTS IN THE CONSTRUCTION RUNOFF GUIDANCE MANUAL AND THAT THE EROSION CONTROL PLANS AND BMPS SHOWN HEREON ARE IN COMPLIANCE WITH THESE REQUIREMENTS.

SIGNED BY: _____ RCE/ PE NUMBER: 87239

IN CASE OF AN EMERGENCY, THE RESPONSIBLE PERSON TO BE CONTACTED SHALL BE:

NAME: TO BE DETERMINED AT PRE-GRADE MEETING TITLE: CONSTRUCTION MANAGER

COMPANY: _____ 24-HR. PHONE NO: _____



DRAIN INLET CONDITION

DRAIN INLET CONDITION

VERTICAL CURB CONDITION

NOTE:
THE WORDS "NO DUMPING, DRAINS TO OCEAN" SHALL BE STENCILED ON TOP OF THE CATCH BASIN INLET WITH 2 INCH LETTERS USING BLACK EPOXY PAINT. ANY VARIATIONS MUST BE APPROVED BY THE CITY BUILDING OFFICIAL.

STORM DRAIN SIGNAGE DETAIL

NTS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

Under Ground Service Alert of Southern California
Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/11/25
SHAWN YU RCE 87239

DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES
DESIGNED BY: VJS	DATE 11/25				
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES
RECOMMENDED BY:	DATE				

PG EROSION & SEDIMENT CONTROL DETAILS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-201

SHEET 18 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES - PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 09:46:16 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-201.dwg

GREAT PARK
COI

GREAT PARK
COI

GREAT PARK
COI

GREAT PARK BLVD

SKYHAWK

PERMIT LIMIT

R/W

ZONE

VAN

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A FENCE PLAN FOR CITY APPROVAL PRIOR TO MOBILIZATION AND INCLUDE A GATE/FENCE AT THIS LOCATION AND ANY MAINTENANCE OF SAID GATE/FENCE

1"=20'

0 10 20 40 60 80

SCALE: 1" = 20'

EROSION CONTROL NOTES

91 INSTALL FIBER ROLL PER DETAIL 91 ON PG-201

92 INSTALL AREA DRAIN GRAVEL PROTECTION PER DETAIL 92 ON PG-201

93 INSTALL CATCH BASIN INLET PROTECTION PER DETAIL 93 ON PG-201

94 CONST STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 94 ON PG-201

95 INSTALL CONCRETE WASHOUT AREA PER CASQA BMP WM-8

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

SHAWN YU RCE 87239 11/12/25

DRAWN BY: CH	DATE 11/25	
DESIGNED BY: VJS	DATE 11/25	APPROVED BY: CITY ENGINEER R.C.E. NO. DATE
CHECKED BY: VJS	DATE 11/25	APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE
RECOMMENDED BY:	DATE	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE
		APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

PG EROSION & SEDIMENT CONTROL PLAN

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG PG-202

SHEET 19 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 12, 2025 03:44:27 PM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-202.dwg

GREAT PARK
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GREAT PARK
COI

PERMIT LIMIT

PERMIT LIMIT

PERMIT LIMIT

PERMIT LIMIT

PERMIT LIMIT

PERMIT LIMIT

/ PICK-UP ZONE

VAN

PR. FIRE ACCESS AISLE PER ARCHITECTURAL SITE PLAN & MIN. 20'

GREAT PARK BLVD

SKYHAWK

ACCESSIBLE PATH OF TRAVEL

CITY OF IRVINE
BUILDING & SAFETY DIVISION

1" = 20'

10 20 40 60 80

SCALE: 1" = 20'

CURVE & LINE DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
A	46°11'13"	24.00'	19.35'	10.23'
B	46°11'13"	15.00'	12.09'	6.40'
C	N 61°22'54" E	–	5.02'	–
D	90°00'00"	3.00'	4.71'	3.00'
E	N 28°37'06" W	–	24.00'	–
F	N 61°22'54" E	–	104.00'	–
G	180°00'00"	3.00'	9.42'	2201713 4886.08'
H	N 61°22'54" E	–	36.00'	–
I	N 28°37'06" W	–	19.11'	–

CURVE & LINE DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
J	88°54'22"	3.00'	4.66'	2.94'
K	N 62°28'32" E	–	27.87'	–
L	50°09'33"	41.00'	35.89'	19.19'
M	88°38'08"	1.00'	1.55'	0.98'
N	N 87°41'26" W	–	18.01'	–
O	18°14'23"	60.00'	19.10'	9.63'
P	N 15°55'48" W	–	85.95'	–
Q	N 74°04'12" E	–	16.00'	–
R	N 15°55'48" W	–	2.90'	–

CURVE & LINE DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
S	7°7'18"42"	5.00'	6.75'	4.00'
T	N 61°22'54" E	–	44.04'	–
U	91°05'38"	3.00'	4.77'	3.06'
V	N 27°31'28" W	–	0.67'	–
W	N 62°28'32" E	–	14.00'	–
X	N 27°31'28" W	–	108.00'	–
Y	N 27°31'28" W	–	3.00'	–
Z	N 62°28'32" E	–	58.70'	–
AA	53°08'14"	12.00'	11.13'	6.00'

CURVE & LINE DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
BB	N 64°23'14" W	–	1.86'	–
CC	53°08'14"	36.00'	33.39'	18.00'
DD	N 62°28'32" E	–	104.70'	–
EE	N 27°31'28" W	–	143.00'	–
FF	N 62°28'32" E	–	16.00'	–
GG	N 27°31'28" W	–	0.10'	–
HH	90°00'00"	2.00'	3.14'	2.00'
II	N 62°28'32" E	–	26.82'	–
JJ	N 17°28'32" E	–	20.04'	–

CURVE & LINE DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
KK	N 62°28'32" E	–	189.38'	–
LL	N 41°28'32" E	–	89.29'	–
MM	N 62°28'32" E	–	49.09'	–

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

SHAWN YU RCE 87239 11/11/25

		DATE
DRAWN BY:	CH	11/25
DESIGNED BY:	VJS	11/25
CHECKED BY:	VJS	11/25
RECOMMENDED BY:		DATE

APPROVED BY: CITY ENGINEER R.C.E. NO. DATE

APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE

APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE

APPROVED BY: IRVINE RANCH WATER FACILITIES DATE

HORIZONTAL CONTROL PLAN

GREAT PARK MAINTENANCE & OPERATIONS FACILITY

GREAT PARK, IRVINE, CALIFORNIA

DWG PG-301

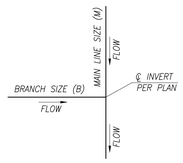
SHEET 20 OF 23 SHEETS

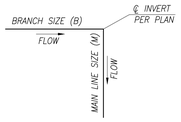
W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

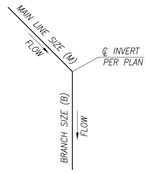
PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 09:51:05 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Grd_Precise\PG-301.dwg

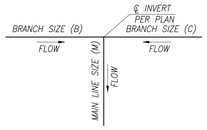
DOMESTIC WATER & SEWER ABBREVIATIONS

AD	AREA DRAIN	ELEV	ELEVATION	JT	JOINT TRENCH	RG	ROUGH GRADE	TYP	TYPICAL
AWWA	AMERICAN WATER WORKS ASSOCIATION	EP	EDGE OF PAVEMENT	L=	LENGTH	RW	RECYCLED WATER	DU	DRY UTILITY
BC	BEGIN CURVE	ESMT	EASEMENT	LT	LIGHT	R/W	RIGHT OF WAY	VERT	VERTICAL
BFV	BUTTERFLY VALVE	EVC	END VERTICAL CURVE	MH	MANHOLE	S=	SLOPE	WT	WATER
BO	BLOW OFF	EX/EXIST	EXISTING	MJ	MECHANICAL JOINT	SD	STORM DRAIN		
BOP	BOTTOM OF PIPE	FE	FLANGED END	NA	NOT APPLICABLE	SDR	STANDARD DIMENSIONAL RATIO		
BVC	BEGIN VERTICAL CURVE	FG	FINISH GRADE	NAP	NOT A PART	SP	STEEL PIPE		
C&G	CURB AND GUTTER	FL	FLOWLINE	NTS	NOT TO SCALE	SS	SANITARY SEWER		
CL	CLASS	FLG'D	FLANGED	PI	POINT OF INTERSECTION	ST	STREET		
COI	CITY OF IRVINE	FS	FINISH SURFACE	PKWY	PARKWAY	STA	STATION		
CONST	CONSTRUCT	FT	FEET	PO	PUSH ON	STD	STANDARD		
CML&C	CEMENT MORTAR LINED AND COATED	GB	GRADE BREAK	PT	POINT	STL	STEEL		
DI	DUCTILE IRON	GV	GATE VALVE	PUE	PUBLIC UTILITY EASEMENT	TC	TOP OF CURB		
DU	DWELLING UNIT	HGL	HYDRAULIC GRADE LINE	PVC	POLYVINYL CHLORIDE	TEMP	TEMPORARY		
DW	DOMESTIC WATER	HORIZ	HORIZONTAL	RAD	RADIAL	TG	TOP OF GRATE		
DWG	DRAWING	IN	INCH	RCP	REINFORCED CONCRETE PIPE	TMC	TOP OF MEDIAN CURB		
DWY	DRIVEWAY	INV	INVERT OF DRAIN	RD	ROAD	TOP	TOP OF PIPE		
EC	END CURVE	IRWD	IRVINE RANCH WATER DISTRICT						

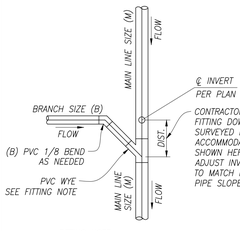








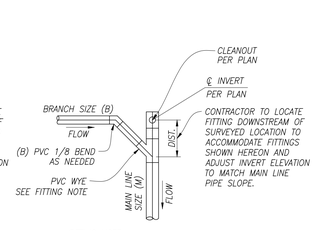
LAYOUT OF SEWER AS SHOWN ON PLAN



FITTING NOTE
ROTATE FITTING TO MATCH BRANCH SLOPE

FITTING DETAIL

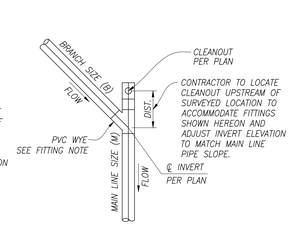
LAYOUT OF SEWER AS SHOWN ON PLAN



FITTING NOTE
ROTATE FITTING TO MATCH BRANCH SLOPE

FITTING DETAIL

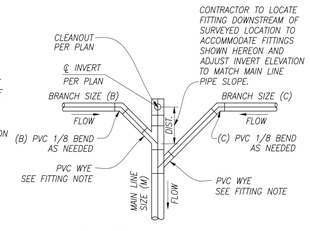
LAYOUT OF SEWER AS SHOWN ON PLAN



FITTING NOTE
ROTATE FITTING TO MATCH BRANCH SLOPE

FITTING DETAIL

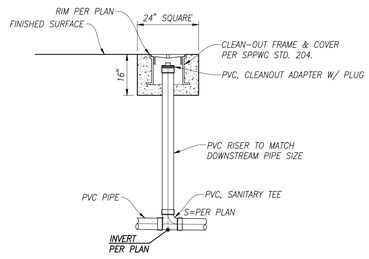
LAYOUT OF SEWER AS SHOWN ON PLAN



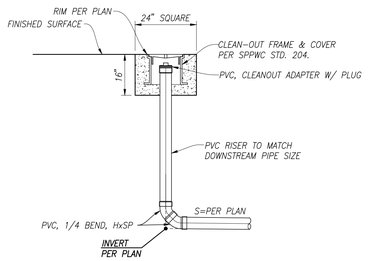
FITTING NOTE
ROTATE FITTING TO MATCH BRANCH SLOPE

FITTING DETAIL

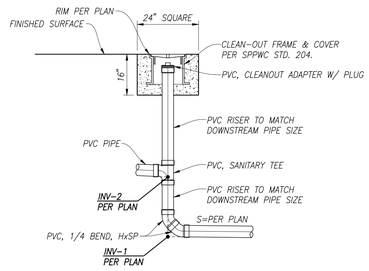
175 PIPE CONNECTION
N.T.S.



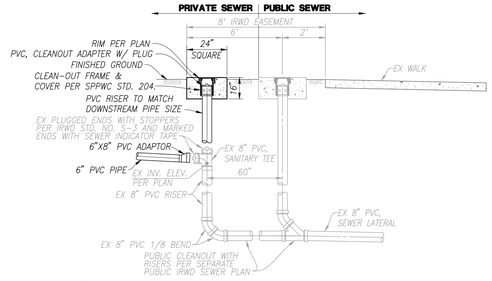
176 IN-LINE CLEANOUT
N.T.S.



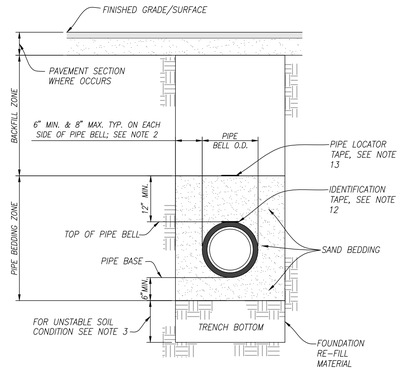
177 TERMINAL CLEANOUT DETAIL
N.T.S.



178 CLEANOUT WITH RISER DETAIL
N.T.S.



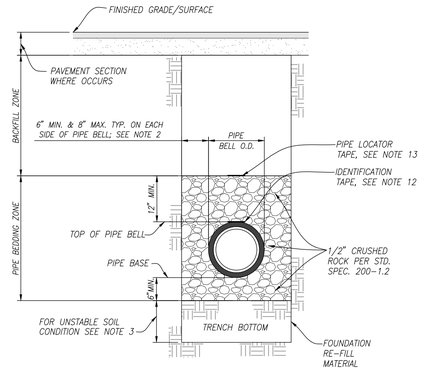
170 CLEANOUT WITH RISER DETAIL
N.T.S.



NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH STD. SPEC. 306-6 AND THE CALIFORNIA PLUMBING CODE SECTIONS 604 AND 609.
2. WHERE CONTRACTOR FAILS TO MAINTAIN PROPER TRENCH WIDTH LIMITS, SPECIAL BACKFILL SUCH AS ONE-SACK SLURRY AND BEDDING SHALL BE DETERMINED IN THE FIELD BY THE SOILS ENGINEER.
3. IF UNSTABLE SOIL IS ENCOUNTERED, THE SOILS ENGINEER SHALL DETERMINE OVEREXCAVATION DEPTH AND FOUNDATION RE-FILL MATERIAL PER STD. SPEC. SECTION 217-2.
4. CONTRACTOR SHALL PROVIDE HAND EXCAVATED "BELL HOLE" FOR EACH PIPE JOINT SO THAT THE WEIGHT OF THE PIPE DOES NOT BEAR ON THE BELL.
5. CONTRACTOR SHALL RE-FILL AND HAND-TAMP EACH "BELL HOLE" PRIOR TO COMPLETING THE PLACEMENT OF THE PIPE BEDDING.
6. TRENCH WIDTH SHALL BE (1.25) O.D. +12" MIN. OR O.D. +16" MAX., INCLUDING THE THICKNESS OF TRENCH SHORING OR SHEETING PER CPC STD 314.4.1
7. WHERE WET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEETING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.
8. TRENCH SHEETING OR SHORING SHALL BE A MINIMUM OF 6 INCHES FROM THE PIPE BARREL AT SPRINGLINE.
9. OPTIONAL COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS
   A) TRENCH DEPTH EXCEEDING 3'6" SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
   B) FOR TRENCHES WITH COMBINED WALLS AND ANY DEPTH EXCEEDING 3'6", THE CONTRACTOR SHALL PROTECT IN ACCORDANCE WITH THE CALIFORNIA DEPT. OF INDUSTRIAL RELATIONS (CALOSHA) CODE OF REGULATIONS TITLE 8, SUBCHAPTER 4 "CONSTRUCTION SAFETY ORDERS".
10. BACKFILL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF NOT LESS THAN 85% STANDARD PROCTOR DENSITY PER CPC 314.4.1 STANDARD PROCTOR DENSITY PER CPC 314.4.1
11. ALL EXCAVATIONS AND TRENCHES SHALL BE PROTECTED IN ACCORDANCE WITH THE CALIFORNIA DEPT. OF INDUSTRIAL RELATIONS (CALOSHA) CODE OF REGULATIONS TITLE 8, SUBCHAPTER 4 "CONSTRUCTION SAFETY ORDERS".
12. PIPE IDENTIFICATION TAPE (SHALL BE BLUE ID TAPE WITH BLACK LETTERING. ID TAPE WORDING SHALL READ: "CAUTION: DOMESTIC WATERLINE BURIED BELOW." TAPE SHALL BE FASTENED TO THE PIPE WITH 2" WIDE 10 MIL PIPE WRAP TAPE AT 5' INTERVALS, PIPE WRAP TAPE SHALL BE WRAPPED AROUND THE ENTIRE CIRCUMFERENCE OF THE PIPE. LOCATOR TAPE SHALL HAVE A MINIMUM THICKNESS OF 6 MILS AND SHALL INCLUDE A METALLIC SUBSTANCE THAT CAN BE REGISTERED BY A MAGNETIC FIELD LOCATION DEVICE.

WATER PIPE BEDDING
N.T.S.



NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH STD. SPEC. 306-6 AND THE CALIFORNIA PLUMBING CODE SECTIONS 312.3, 313.5, 314.4, 701.2 AND 718.3.
2. WHERE CONTRACTOR FAILS TO MAINTAIN PROPER TRENCH WIDTH LIMITS, SPECIAL BACKFILL SUCH AS ONE-SACK SLURRY AND BEDDING SHALL BE DETERMINED IN THE FIELD BY THE SOILS ENGINEER.
3. IF UNSTABLE SOIL IS ENCOUNTERED, THE SOILS ENGINEER SHALL DETERMINE OVEREXCAVATION DEPTH AND FOUNDATION RE-FILL MATERIAL PER STD. SPEC. SECTION 217-2.
4. CONTRACTOR SHALL PROVIDE HAND EXCAVATED "BELL HOLE" FOR EACH PIPE JOINT SO THAT THE WEIGHT OF THE PIPE DOES NOT BEAR ON THE BELL.
5. CONTRACTOR SHALL RE-FILL AND HAND-TAMP EACH "BELL HOLE" PRIOR TO COMPLETING THE PLACEMENT OF THE PIPE BEDDING.
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10. BACKFILL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF NOT LESS THAN 85% STANDARD PROCTOR DENSITY PER CPC 314.4.1 STANDARD PROCTOR DENSITY PER CPC 314.4.1
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12. PIPE IDENTIFICATION TAPE (SHALL BE GREEN ID TAPE WITH BLACK LETTERING. ID TAPE WORDING SHALL READ: "CAUTION: SEWER LINE BURIED BELOW". TAPE SHALL BE FASTENED TO THE PIPE WITH 2" WIDE 10 MIL PIPE WRAP TAPE AT 5' INTERVALS, PIPE WRAP TAPE SHALL BE WRAPPED AROUND THE ENTIRE CIRCUMFERENCE OF THE PIPE.
13. LOCATOR TAPE SHALL HAVE A MINIMUM THICKNESS OF 6 MILS AND SHALL INCLUDE A METALLIC SUBSTANCE THAT CAN BE REGISTERED BY A MAGNETIC FIELD LOCATION DEVICE.

SEWER PIPE BEDDING
N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/11/25
SHAWN YU RCE 87239

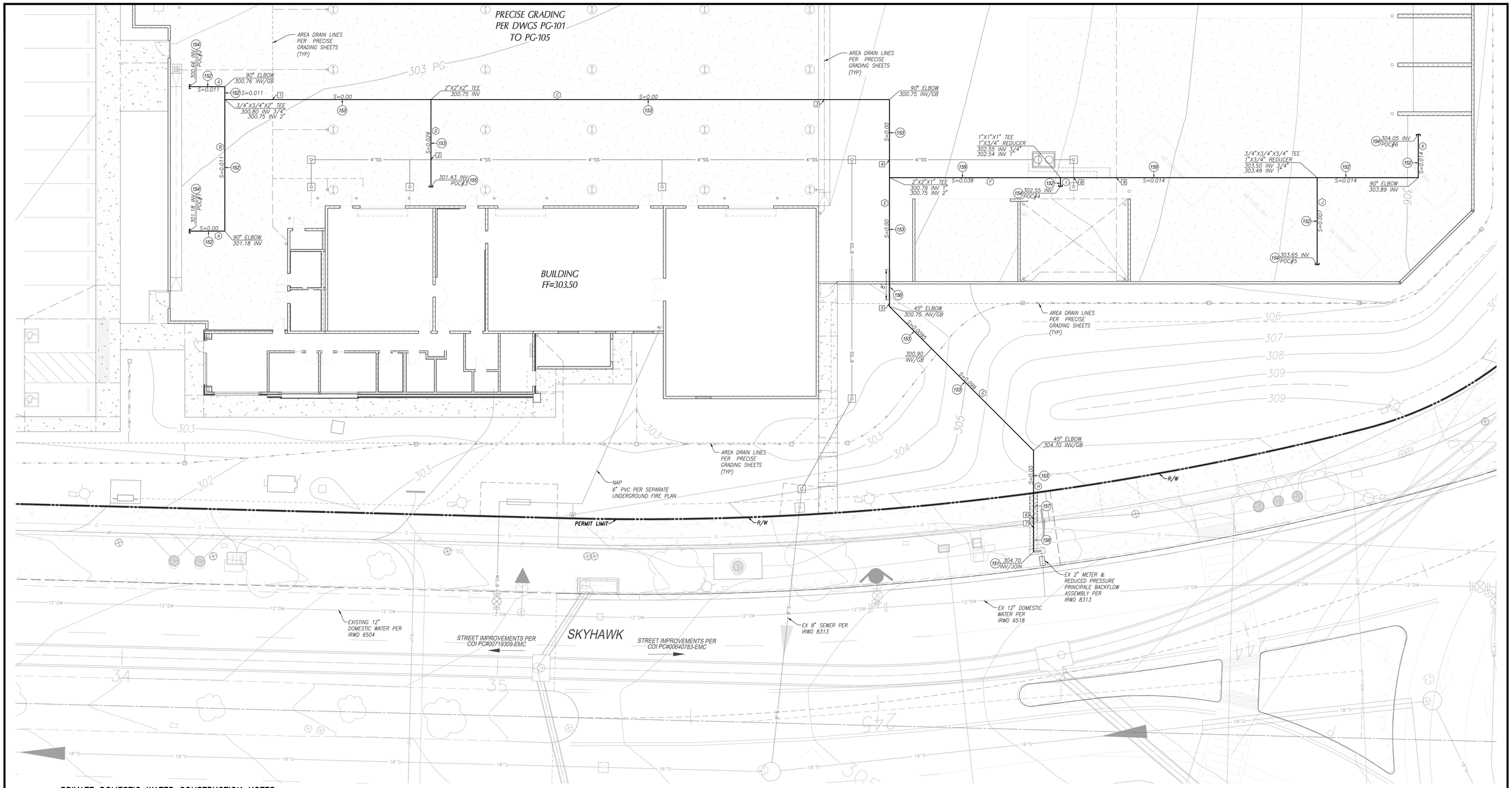
DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES / R.C.E. NO. / DATE
DESIGNED BY: VJS	DATE 11/25				
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES / DATE
RECOMMENDED BY:	DATE				

PRIVATE DOMESTIC WATER & SEWER DETAILS
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG WS-001
SHEET 21 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES - PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 09:52:21 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Imp_Yard Plan\WS-001.dwg



PRIVATE DOMESTIC WATER CONSTRUCTION NOTES:

(151) REMOVE PLUG AND JOIN EXISTING DOMESTIC WATER LINE

(152) INSTALL 3/4" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001

(153) INSTALL 2" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001

(154) INSTALL 3/4" PVC, SCH 80, PLUG. BUILDING CONNECTION PER BUILDING PLUMBING PLAN

(155) INSTALL 2" PVC, SCH 80, PLUG. BUILDING CONNECTION PER BUILDING PLUMBING PLAN

(156) INSTALL 6" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.

** (157) SAWCUT, REMOVE & REPLACE EXISTING 4" THICK PCC SIDEWALK PER COI STD 201

** (158) REMOVE & REPLACE EXISTING PLANTING AND IRRIGATION

(159) INSTALL 1" PVC, SCH 80, W/ TRENCH & BEDDING PER DETAIL ON WS-001

FIXTURES TABLES

POC	WSFU'S	FIXTURES
1	2.5	1 HOSE BIBBS
2	1.0	1 HOSE BIBBS
3	45.0	3 WATER CLOSETS, 3 URINALS, 3 LAVATORIES, 2 SERVICE SINKS, 2 SINKS W/DISPOSAL, 1 DRINKING FOUNTAIN, 1 ICE MAKER, 4 HOSE BIBBS, 3 EYE WASH SHOWERS, 1 REFRIGERATOR
4	1.0	1 HOSE BIBB
5	1.0	1 HOSE BIBB
6	2.5	1 HOSE BIBB

** THE LIMITS OF REMOVAL AND REPAIR SHOWN ARE APPROXIMATE AND ARE SHOWN FOR PLAN APPROVAL ONLY. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE ACTUAL LIMITS BASED ON WORKING AREA REQUIRED PER OSHA REGULATIONS AND AS REQUIRED BY THE CITY OF IRVINE TO MAINTAIN THE FLOW OF TRAFFIC AND DISTURB THE LEAST AMOUNT OF EXISTING PAVEMENT.

DOMESTIC WATER DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
A	N 62°28'32" E	–	9.48'	–
B	N 27°31'28" W	–	38.42'	–
C	N 62°28'32" E	–	176.88'	–
D	N 27°31'28" W	–	23.25'	–
E	N 27°31'28" W	–	55.04'	–
F	N 62°28'32" E	–	140.74'	–
G	N 72°31'28" W	–	54.22'	–
H	N 27°31'28" W	–	26.93'	–
I	N 27°31'28" W	–	2.33'	–
J	N 27°31'28" W	–	23.15'	–
K	N 27°31'28" W	–	11.52'	–

UTILITY CROSSING TABLE

	ELEVATION / UTILITY	ELEVATION / UTILITY	CLEARANCE
1	300.73 BOP 2" DW	299.51 TOP 6" AD	1.22'
2	301.20 BOP 2" DW	299.44 TOP 4" SS	1.76'
3	300.73 BOP 2" DW	299.73 TOP 4" AD	1.00'
4	300.73 BOP 2" DW	298.16 TOP 4" SS	2.57'
5	302.67 BOT 8" AD	300.94 TOP 2" DW	1.66'
6	304.68 BOP 2" DW	303.67 TOP DU JT	1.01'
7	304.68 BOP 2" DW	301.69 TOP 6" GAS	2.99'
8	302.58 BOP 3/4" DW	301.11 TOP 4" SS	1.47'
9	302.74 BOP 1" DW	301.74 TOP 4" AD	1.00'

CONTRACTOR SHALL OBTAIN A YARD PERMIT FOR PRIVATE WATER AND SEWER CONNECTIONS

NOTE: ALL DOMESTIC WATER AND SANITARY SEWER WATER FACILITIES TO BE INSTALLED PRIOR TO DRY UTILITY JOINT TRENCH (JT). AT ALL LOCATIONS WHERE JOINT TRENCH CROSSES PROPOSED WATER AND SEWER MAIN LINES, A MINIMUM VERTICAL CLEARANCE OF 1-FOOT SHALL BE MAINTAINED BETWEEN JOINT TRENCH AND PROPOSED PIPES.

FINAL INSPECTION CAN ONLY OCCUR AFTER A SUCCESSFUL CROSS-CONNECTION TEST BY IRVINE RANCH WATER DISTRICT. CONTACT IRVINE RANCH WATER DISTRICT AT (949) 453-5300.

PVC DOMESTIC WATER PIPING SHALL BE MARKED WITH ASTM D1785, NSF 61pW, SCHEDULE 80. PVC PIPE FITTINGS SHALL BE MARKED WITH ASTM D2464, NSF 61 pW, SCHEDULE 80. ALL MATERIALS FOR DOMESTIC WATER PIPING SHALL BE IN ACCORDANCE WITH 604.1, 2022 CALIFORNIA PLUMBING CODE, AND PVC IN ACCORDANCE WITH AWWA C900 STANDARD.

CITY OF IRVINE BUILDING & SAFETY DIVISION

10 5 0 10 20
SCALE 1"=10'

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

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REGISTERED PROFESSIONAL ENGINEER SHAWN YU C87239 CIVIL STATE OF CALIFORNIA

PREPARED BY:
H&A HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

SHAWN YU RCE 87239 11/11/25

DRAWN BY: CH	DATE 11/25	APPROVED BY: CITY ENGINEER R.C.E. NO. DATE	APPROVED BY: IRWD SANITARY SEWER FACILITIES R.C.E. NO. DATE
DESIGNED BY: VJS	DATE 11/25		
CHECKED BY: VJS	DATE 11/25	APPROVED BY: ORANGE COUNTY FIRE MARSHALL DATE	APPROVED BY: IRVINE RANCH WATER FACILITIES DATE
RECOMMENDED BY:	DATE		

PRIVATE DOMESTIC WATER YARD PLAN

GREAT PARK MAINTENANCE & OPERATIONS FACILITY

GREAT PARK, IRVINE, CALIFORNIA

DWG DW-101

SHEET 22 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 09:54:53 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Imp_Yard Plan\DW-101.dwg

PRECISE GRADING PER DWGS PG-101 TO PG-105

AREA DRAIN LINES PER PRECISE GRADING SHEETS (TYP)

BUILDING FF=303.50

303.27RIM 299.74INV — S=0.021 — 303.39RIM 299.89INV POC#1

303.33FS 299.21INV — 4"SS S=0.02 — 303.43RIM 299.43INV POC#2

303.40FS 297.86INV — 4"SS S=0.02 — 303.46RIM 300.46INV–2 298.01INV–3 POC#3

303.54RIM 296.85INV–4" 296.77INV–6" — 4"SS S=0.02 — 304.43 RIM — S=0.074

304.56RIM 301.85INV — S=0.02 — 2" VENT PIPES SEE MEP PLAN FOR CONTINUATION

304.59RIM 302.09INV–2 302.03INV–1 POC#4

6"SS S=0.02

303.3RIM 295.50INV

S=0.02

305.0RIM (294.95)INV JOIN

NAP 6" PVC PER SEPARATE UNDERGROUND FIRE PLAN

PERMIT LIMIT

R/W

EX SEWER CLEANOUT PER IRWD 8313

STREET IMPROVEMENTS PER COI PC#00719309-EMC

SKYHAWK

STREET IMPROVEMENTS PER COI PC#00640783-EMC

EXISTING 18" SEWER PER IRWD 6504

EX 18" PVC SANITARY SEWER (CAPITAL) PER IRWD 6518

EX 60" SEWER MANHOLE (CAPITAL) PER IRWD 6518 — (304.6±) RIM

PRIVATE SEWER CONSTRUCTION NOTES:

(170) REMOVE PLUGS AND JOIN EXISTING 8" SANITARY TEE WITH 6"X8" ADAPTOR AND PVC, SDR-35, CLEANOUT ON EXISTING RISER PER DETAIL ON WS-001

(171) POINT OF CONNECTION. SEE BUILDING PLUMBING PLAN

(172) INSTALL 4" PVC, SDR-35 SEWER PIPE W/ TRENCH AND BEDDING PER SEWER PIPE BEDDING DETAIL ON WS-001

(173) INSTALL 6" PVC, SDR-35 SEWER PIPE W/ TRENCH AND BEDDING PER SEWER PIPE BEDDING DETAIL ON WS-001

(174) INSTALL TRAFFIC RATED JENSEN PRECAST 500 GALLON SAND-OIL INTERCEPTOR MODEL JP500SO PER MANUFACTURERS SPECIFICATIONS

(175) INSTALL PIPE CONNECTION PER DETAIL ON WS-001

(176) INSTALL PVC, SDR-35, IN-LINE CLEANOUT PER DETAIL ON WS-001

(177) INSTALL PVC, SDR-35, TERMINAL CLEANOUT PER DETAIL ON WS-001

(178) INSTALL PVC, SDR-35, CLEANOUT WITH RISER PER DETAIL ON WS-001

(179) INSTALL 12" STEEL CASING 5/16" MIN. THICKNESS, 8' LONG, CENTERED AT WALL CROSSING WITH 1/8" THICK SYNTHETIC RUBBER RAP AROUND END SEALS, STAINLESS STEEL BAND SPACERS WITH MINIMUM FOUR RUNNERS AND POLYETHYLENE CASING INSULATORS.

FIXTURES TABLE

POC	DFU'S	FIXTURES
1	20.0	2 LAVATORIES, 1 FLOOR SINK, 2 FLOOR DRAINS, 2 WATER CLOSETS, 1 SERVICE SINK, 2 URINAL
2	17.5	1 FLOOR DRAINS, 1 FLOOR SINK, 1 WATER CLOSET, 1 URINAL, 1 LAVATORY, 1 SERVICE SINK, 2 SINKS W/DISPOSAL, 1 DRINKING FOUNTAIN
3	6.0	1 STAND PIPE DRAIN
4	1.0	1 FLOOR DRAIN

SANITARY SEWER DATA TABLE

	BEARING/DELTA	RADIUS	LENGTH	TANGENT
A	N 27°31'28" W	–	7.25'	–
B	N 62°28'32" E	–	191.89'	–
C	N 62°28'32" E	–	4.99'	–
D	N 27°31'28" W	–	7.10'	–
E	N 27°31'28" W	–	63.58'	–
F	N 01°34'00" E	–	27.46'	–

UTILITY CROSSING TABLE

	ELEVATION / UTILITY	ELEVATION / UTILITY	CLEARANCE
1	301.25 BOT 6" AD	300.18 TOP 4" SS	1.07'
2	301.20 BOP 2" DW	299.44 TOP 4" SS	1.76'
3	300.45 BOP 4" AD	297.34 TOP 4" SS	3.11'
4	300.73 BOP 2" DW	298.16 TOP 4" SS	2.57'
5	302.39 BOP 8" AD	296.53 TOP 6" SS	5.86'
6	300.76 BOP 6" AD	295.75 TOP 6" SS	5.01'
7	302.58 BOP 3/4" DW	301.11 TOP 4" SS	1.47'

CONTRACTOR SHALL OBTAIN A YARD PERMIT FOR PRIVATE WATER AND SEWER CONNECTIONS

NOTE: ALL DOMESTIC WATER AND SANITARY SEWER WATER FACILITIES TO BE INSTALLED PRIOR TO DRY UTILITY JOINT TRENCH (JT). AT ALL LOCATIONS WHERE JOINT TRENCH CROSSES PROPOSED WATER AND SEWER MAIN LINES, A MINIMUM VERTICAL CLEARANCE OF 1-FOOT SHALL BE MAINTAINED BETWEEN JOINT TRENCH AND PROPOSED PIPES.

ALL MATERIALS FOR SANITARY SEWER BE IN ACCORDANCE WITH SEC. 701.2, 2022 CALIFORNIA PLUMBING CODE, AND IN ACCORDANCE WITH ASTM D3034 STANDARD.

CITY OF IRVINE BUILDING & SAFETY DIVISION

SCALE 1"=10'

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PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Drive ▪ Irvine, CA 92618 ▪ (949) 583-1010

11/11/25
SHAWN YU RCE 87239

		DATE
DRAWN BY:	CH	11/25
DESIGNED BY:	VJS	11/25
CHECKED BY:	VJS	11/25
RECOMMENDED BY:		DATE

APPROVED BY: CITY ENGINEER — R.C.E. NO. — DATE
APPROVED BY: IRWD SANITARY SEWER FACILITIES — R.C.E. NO. — DATE
APPROVED BY: ORANGE COUNTY FIRE MARSHALL — DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES — DATE

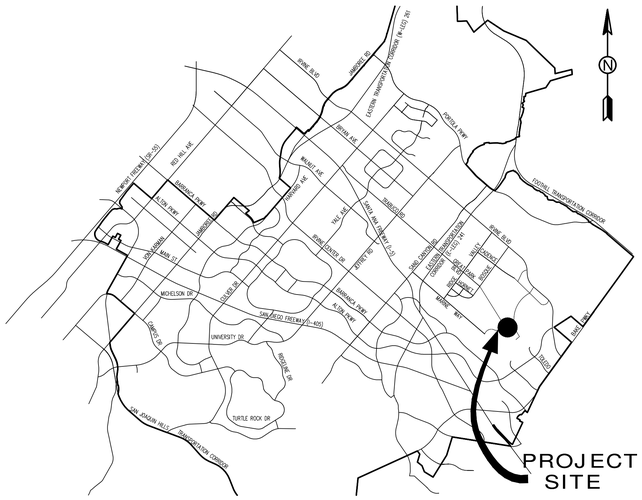
PRIVATE SANITARY SEWER YARD PLAN
GREAT PARK MAINTENANCE & OPERATIONS FACILITY
GREAT PARK, IRVINE, CALIFORNIA

DWG SS-101

SHEET 23 OF 23 SHEETS

W.O. 4564-1X GREAT PARK LANDSCAPE MAINTENANCE FACILITIES – PRECISE GRADING PLAN

PLOTTED BY: Carlos Hernandez DATE: Nov. 11, 2025 09:57:21 AM FILE: F:\0373\Engineering\SA_Great Park\SA_Maintenance Facility\Imp_Yard Plan\SS-101.dwg



VICINITY MAP

THE CITY OF IRVINE

GREAT PARK
IRVINE, CALIFORNIA

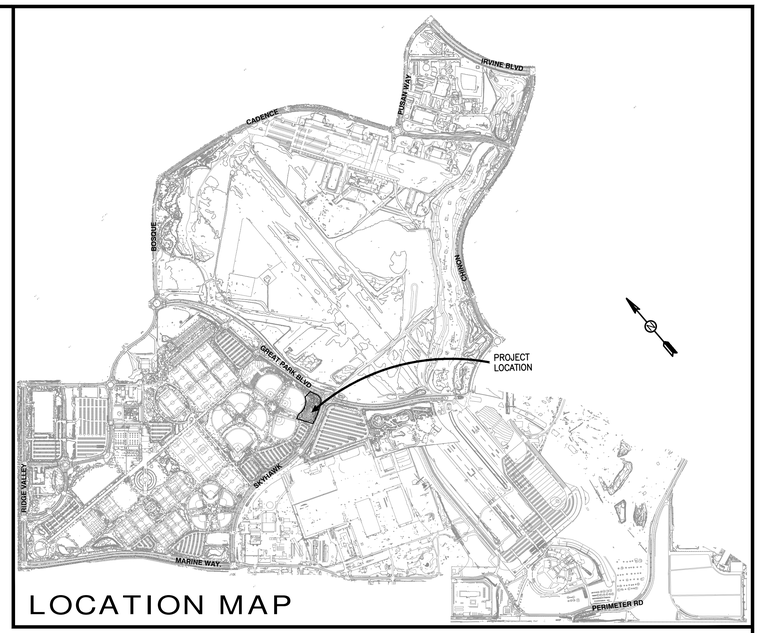
GREAT PARK

MAINTENANCE & OPERATIONS FACILITY

BID SET - 11/21/2025

CITY CIP NO. 372414

CITY PC NO. 00954071-PARK



LOCATION MAP

GENERAL NOTES

1. *ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, THE CITY OF IRVINE LANDSCAPE MANUAL AND STANDARD PLANS, THE CITY OF IRVINE STREET DESIGN MANUAL, STANDARD ENCROACHMENT CONDITIONS, SPECIAL REQUIREMENTS OF THE CONSTRUCTION PERMIT, CALIFORNIA MUTCD AND THE WORK AREA TRAFFIC CONTROL HANDBOOK (W.A.T.C.H MANUAL). WHENEVER SPECIAL REQUIREMENTS CONFLICT ON ANY SUBJECT MATTER, THE CITY ENGINEER OR HIS REPRESENTATIVE SHALL DETERMINE WHICH SPECIAL REQUIREMENT OR CODE WILL GOVERN.*
2. *THE CITY OF IRVINE INSPECTION SERVICES DIVISION MUST BE NOTIFIED BEFORE STARTING ANY WORK. THE CONTRACTOR SHALL REQUEST A PRE-JOB MEETING AND SUBMIT REQUIRED ITEMS AT LEASE 48 HOURS IN ADVANCE OF THE MEETING. THE CITY INSPECTOR, CONTRACTOR, LANDSCAPE ARCHITECT, ENGINEER, AND DEVELOPER'S REPRESENTATIVE SHALL BE PRESENT TO REVIEW GRADING, IRRIGATION, PLANTING AND RELATED ITEMS.*
3. *ALL INSPECTIONS SHALL BE MADE BY THE CITY INSPECTION SERVICES DIVISION. THE CONTRACTOR SHALL REQUEST INSPECTION AND DELIVER REQUIRED SUBMITTALS AT LEAST 48 HOURS IN ADVANCE OF THE TIME INSPECTION IS REQUIRED. NO ITEM SHALL BE COVERED OR ENCLOSED UNTIL IT HAS BEEN INSPECTED AND APPROVED BY THE CITY INSPECTOR. EACH ITEM SHALL BE INSPECTED FOR CONFORMANCE TO THE PLANS AND SPECIFICATIONS. ANY SUBSTITUTIONS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION. INSTALLATION AND WARRANTY OF ANY APPROVED SUBSTITUTION SHALL BE CONTRACTOR'S RESPONSIBILITY. ANY CHANGES REQUIRED FOR INSTALLATION OF ANY APPROVED SUBSTITUTION MUST BE MADE TO THE SATISFACTION OF THE CITY.*
4. *THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS ON THE JOB SITE AT ALL TIMES. HE SHALL RECORD ACCURATELY ON ONE SET OF RECORD DRAWINGS ALL CHANGES IN THE WORK CONSTITUTING DEPARTURES FROM THE ORIGINAL RECORD DRAWINGS. THE CHANGES AND DIMENSIONS SHALL BE RECORDED IN A LEGIBLE AND WORKMANLIKE MANNER TO TO THE SATISFACTION OF THE CITY INSPECTOR. DIMENSIONS SHALL BE FROM TWO PERMANENT POINTS OF REFERENCE (BUILDINGS, MONUMENTS, SIDEWALKS, CURBS, PAVEMENTS, ETC.) DATA TO BE SHOWN ON RECORD DRAWINGS SHALL BE RECORDED DAY TO DAY AS THE PROJECT IS BEING INSTALLED.*
5. *IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND TO PROTECT ALL EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) 800/422-4133 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO LOCATE EXISTING UTILITIES.*
6. *THE CONTRACTOR SHALL OBTAIN ALL NECESSARY O.S.H.A. PERMITS.*
7. *AFTER COMPLETION OF ROUGH GRADING AND PRIOR TO SOIL PREPARATION, THE LANDSCAPE ARCHITECT SHALL PROVIDE THE TESTING OF PLANTING SOILS AND COMPOSTED ORGANIC HUMUS MATERIALS BY AN INDEPENDENT AGRONOMIC SOILS TESTING LABORATORY (MEMBER OF THE CALIFORNIA ASSOCIATION OF AGRICULTURAL LABS). REPRESENTATIVE SOIL SAMPLES SHALL BE TAKEN IN THE FIELD AND A WRITTEN REPORT SHALL BE PREPARED BY THE SOIL SCIENTIST AND SHALL INCLUDE RECOMMENDATIONS FOR SOIL AMENDMENTS, PREPLANT FERTILIZATION, PLANTING BACKFILL MIX, HYDROMULCH SLURRY, AND AUGER HOLE REQUIREMENTS, AND POST-MAINTENANCE FERTILIZATION PROGRAM. TEST RESULTS AND RECOMMENDATIONS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO SOIL PREPARATION.*
8. *THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIALS ON THE STREET.*
9. *THE CONTRACTOR SHALL NOT STORE MATERIALS OR EQUIPMENT, PERMIT BURNING, OPERATE OR PARK EQUIPMENT UNDER THE BRANCHES OF ANY EXISTING TREE. THE CONTRACTOR SHALL PROVIDE FENCES OR OTHER BARRIERS AS NECESSARY AT THE DRIP LINE TO PROTECT EXISTING TREES FROM DAMAGE DURING CONSTRUCTION.*
10. *TREES SHALL BE PLANTED A MINIMUM DISTANCE OF:*
    a. *THREE FEET FROM ANY CITY MAINTENANCE LIMIT LINE.*
    b. *FOUR FEET FROM UTILITY INSTALLATIONS INCLUDING, BUT NOT LIMITED TO SEWERS, GAS, WATER LINES, METER VAULTS, CATCH BASINS, ETC.*
    c. *FOUR FEET FROM FIRE HYDRANTS*
    d. *TWENTY FEET FROM LIGHT STANDARDS*
    e. *TREE LIMBS MUST HAVE A CLEARANCE OF 14.5 FEET OVER STREETS, 8 FEET OVER BICYCLE TRAILS, AND 7 FEET OVER PEDESTRIAN-TRAVELED WAYS.*
11. *REVISIONS MADE ON THE PLANS AFTER APPROVAL BY THE CITY ENGINEER SHALL BE . APPROVED BY THE CITY ENGINEER AND SO NOTED ON THE TITLE SHEET TO IMPLEMENTATION IN THE FIELD.*
12. *NOTIFICATION OF NONCOMPLIANCE: IF, IN THE COURSE OF FULFILLING THEIR RESPONSIBILITY, THE DESIGN LANDSCAPE ARCHITECT FINDS THAT THE WORK IS NOT BEING DONE IN CONFORMANCE WITH THE APPROVED PLANS, THE DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE PERSON IN CHARGE OF THE WORK AND TO THE CITY INSPECTOR. RECOMMENDATIONS FOR CORRECTIVE MEASURES, IF NECESSARY, SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.*
13. *THE DESIGN LANDSCAPE ARCHITECT SHALL PROVIDE A CERTIFICATE OF COMPLIANCE TO THE CITY INSPECTION SERVICES DIVISION PRIOR TO BEGINNING THE MAINTENANCE PERIOD.*
14. *ALL CONCRETE WORK SHOWN ON PLANS SHALL BE CONSTRUCTED WITH TYPE 5, SEVEN (7) SACK CEMENT UNLESS DEEMED UNNECESSARY BY THE SULPHATE CONTENT TESTS CONDUCTED BY THE SOILS ENGINEER AND APPROVED BY THE CITY.*
15. *PERMANENT POWER TO AUTOMATIC CONTROLLERS SHALL BE CONTINUOUS AND ESTABLISHED PRIOR TO THE BEGINNING OF THE MAINTENANCE PERIOD.*

GENERAL NOTES (CONTINUED)

16. *THE CONTRACTOR SHALL PROVIDE FULL MAINTENANCE OF ALL LANDSCAPE AREAS FOR A MINIMUM OF 120 DAYS AFTER INITIAL FIELD APPROVAL. THE MAINTENANCE PERIOD SHALL COMMENCE WHEN ALL ELEMENTS OF THE PROJECT ARE COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND WRITTEN APPROVAL FROM THE CITY INSPECTION DIVISION HAS BEEN OBTAINED. PARTIAL ACCEPTANCE OF IMPROVEMENTS WITHIN THE SCOPE OF WORK OF APPROVED PLANS WILL NOT BE AUTHORIZED WITHOUT APPROVAL BY THE CITY ENGINEER.*

MINIMUM INSPECTIONS REQUIRED BY PROJECT LANDSCAPE ARCHITECT

A) IRRIGATION EQUIPMENT, WORKMANSHIP, AND COVERAGE TEST.
B) FINAL IRRIGATION, APPROVAL TO BEGIN PLANTING.
C) PLANT MATERIALS FOR TYPE, QUALITY PLACEMENT, SOIL PREPARATION.
D) APPROVAL TO BEGIN MAINTENANCE PERIOD.
E) FINAL, PRIOR TO ACCEPTANCE BY OWNER, AFTER 120-DAY MAINTENANCE PERIOD.

THE OWNER SHALL NOTIFY THE CITY INSPECTOR AND THE IRVINE RANCH WATER DISTRICT INSPECTOR NOT LESS THAN 48 HOURS (2 WORKING DAYS) IN ADVANCE OF THESE OBSERVATIONS. FILED REPORTS BY THE LANDSCAPE ARCHITECT SHALL BE FORWARDED TO THE CITY INSPECTOR WITHIN ONE (1) WEEK OF THE DATE OF THE OBSERVATION.

COMPUTERIZED IRRIGATION CONTROL SYSTEM SPECIFICATIONS

1. *ALL MATERIALS FURNISHED AND INSTALLED SHALL BE NEW AND SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION, AS ADOPTED BY THE CITY.*
2. *ALL MATERIALS EXCEPT INTERCONNECT CONDUCTORS SHALL HAVE A FIVE-YEAR WARRANTY. THE CONTRACTOR SHALL SUBMIT PROOF OF WARRANTY TO THE CITY INSPECTOR PRIOR TO THE START OF THE MAINTENANCE PERIOD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY WARRANTY INSPECTIONS FROM THE EQUIPMENT SUPPLIER. NO INSTALLATIONS WILL BE ACCEPTED WITHOUT PROOF OF WARRANTY.*
3. *ALL INCIDENTAL PARTS WHICH ARE NOT SHOWN ON THE PLANS OR SPECIFIED HEREIN AND ARE NECESSARY TO COMPLETE OR MODIFY THE EXISTING SYSTEMS SHALL BE FURNISHED AND INSTALLED AS THOUGH SUCH PARTS WERE SHOWN ON PLANS OR SPECIFIED. ALL SYSTEMS SHALL BE IN SATISFACTORY OPERATION AT THE TIME OF COMPLETION.*
4. *EXISTING INTERCONNECT SYSTEMS SHALL BE MAINTAINED IN EFFECTIVE OPERATION BY THE CONTRACTOR FOR THE DURATION OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR 48 HOURS PRIOR TO PERFORMING ANY WORK ON AN EXISTING SYSTEM.*
5. *THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL PHONE COMPANY FOR CONNECTIONS TO THE TELEPHONE SERVICE AND/OR INSTALLATIONS OF CONDUIT, TELEPHONE CONDUCTORS, JACKS, AND MODEMS AT THE LOCATIONS SHOWN ON THE DRAWINGS. MINOR CHANGES CAUSED BY ACTUAL SITE CONDITIONS SHALL BE MADE AT NO COST TO THE CITY. ALL CHANGES TO THE PLANS SHALL BE APPROVED BY THE CITY ENGINEER.*
6. *A FUNCTIONAL TEST FOR EACH NEW OR MODIFIED ELECTRICAL SYSTEM SHALL CONSIST OF NOT LESS THAN 5 DAYS OF CONTINUOUS, SATISFACTORY OPERATION. IF UNSATISFACTORY PERFORMANCE OF THE SYSTEM DEVELOPS, THE CONDITION SHALL BE CORRECTED AND THE TEST SHALL BE REPEATED UNTIL THE 5 DAYS OF CONTINUOUS SATISFACTORY OPERATION ARE OBTAINED.*

CONSULTANT TEAM

LANDSCAPE ARCHITECT
CLARK AND GREEN ASSOCIATES
15420 LAGUNA CANYON ROAD, SUITE 210
IRVINE, CA. 92618
(714)434-9803
CONTACT: KEVIN LANGE

CIVIL ENGINEER
HUNSAKER AND ASSOCIATES
3 HUGHES
IRVINE, CA. 92618
(949)458-5412
CONTACT: VIVIAN VU

DRY UTILITY CONSULTANT
MORROW MANAGEMENT
1130 VIA CALLEJON
SAN CLEMENTE, CA. 92673
(949)218-9400
CONTACT: SCOTT MORROW

ARCHITECT
SVA ARCHITECTS, INC.
6 HUTTON CENTRE DRIVE, SUITE 1150
SANTA ANA, CA. 92707
(949)809-3380
CONTACT: DOUGLAS BROWN

CITY OF IRVINE PUBLIC WORKS DEPARTMENT

THIS SET OF PLANS AND SPECIFICATIONS MUST BE KEPT ON THE JOB AT ALL TIMES AND IT IS UNLAWFUL TO MAKE ANY CHANGES OR ALTERATIONS ON THE SAME WITHOUT WRITTEN PERMISSION FROM THE CITY OF IRVINE PUBLIC WORKS DEPARTMENT. THE STAMPING OF THIS PLAN AND SPECIFICATIONS SHALL NOT BE HELD TO PERMIT OR BE AN APPROVAL OF THE VIOLATION OF ANY PROVISIONS OF ANY CITY ORDINANCE OR STATE LAW.

SHEET INDEX

TITLE	PAGE
TITLE SHEET	T
IRRIGATION PLAN	L-1.1
IRRIGATION LEGEND & NOTES	L-2.1
IRRIGATION DETAILS	L-3.1 - L-3.2
TREE PLANTING PLAN	L-4.1
SHRUB PLANTING PLAN	L-5.1
PLANTING DETAILS	L-6.1
IRRIGATION SPECIFICATIONS	L-7.1
PLANTING SPECIFICATIONS	L-8.1

SUMMARY OF MAINTENANCE RESPONSIBILITIES

	CITY MAINTAINED	PRIVATELY MAINTAINED	TOTAL
PLANTING AREA	49,535 sf.	0 sf.	49,535 sf.
TOTAL	49,535 sf.	0 sf.	49,535 sf.

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY

WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.

PLAN CHECK NUMBER: 356182
ON-SITE APPROVAL: [signature] DATE: 11/13/2025

BUILDING & SAFETY CONDITIONS

NO.	DATE	REVISIONS	ENGR.	APPROV.	DATE

CLARK & GREEN Associates Landscape Architecture

CLARK AND GREEN ASSOCIATES
15420 LAGUNA CANYON ROAD, SUITE 210
IRVINE, CA. 92618
(714)434-9803
CONTACT: KEVIN LANGE

APPROVED BY: CITY ENGINEER	R.C.E. NO.	DATE
APPROVED BY: ORANGE COUNTY FIRE MARSHALL		DATE

APPROVED BY: IRWD SANITARY SEWER FACILITIES	R.C.E. NO.	DATE
APPROVED BY: IRVINE RANCH WATER FACILITIES		DATE

TITLESHEET

SHEET 1 OF 10 SHT(S)

#4–10/16/25
#3–9/11/25
DATE

PROJECT NO. 1153: XXXX XXXXXX XXXXXX

Plotted: Nov 21, 2025 – 11:16am by: kdlonge
Drawing Name: H:\GPA\24-313 SVA Arch - Sports Park Maint Bldg Restart\40 Construction Document Phase\20 Set\00_Title Sheet_Maint Facility.dwg

PROPOSED IRRIGATION MAINLINE PLACEMENT IS DIAGRAMMATIC, THE TIE-IN FROM THE NEW MAINLINE ROUTING TO THE EXISTING MAINLINE WILL OCCUR AT THIS GENERAL LOCATION +/- 5'-0" OFF THE EXISTING CONCRETE WALK, ACCORDING TO IRRIGATION AS-BUILT INFORMATION. INSTALLING CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE OF ANY CONFLICTS.

PROPOSED IRRIGATION MAINLINE PLACEMENT IS DIAGRAMMATIC, THE TIE-IN FROM THE NEW MAINLINE ROUTING TO THE EXISTING MAINLINE WILL OCCUR AT THIS GENERAL LOCATION +/- 20'-9" FORM THE SIDEWALK INTERSECTION, ACCORDING TO IRRIGATION AS-BUILT INFORMATION. INSTALLING CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE OF ANY CONFLICTS.

EXISTING LIGHT POLE

LIMIT OF WORK

EXISTING SPORTS PARK PARKING LOT

EXISTING SPORTS PARK FIELDS

MAINTENANCE PATH, 6', WIDE TO ALLOW ACCESS TO LANDSCAPE BASEBALL FIELD LIGHTINGS AND SCOREBOARD

EXISTING LIGHT POLE, TYPICAL

EXISTING VALVES TO BE LOCATED ON NEW MAINLINE PATH. NEW MAINLINE SHALL BE PLACED +/- 15' OFF EXISTING BASEBALL FENCE LOCATION. CONTRACTOR SHALL VERIFY LOCATION AND ENSURE NO CONFLICT WITH EXISTING FACILITIES.

CONTRACTOR TO ENSURE IRRIGATION OPERATES THROUGHOUT CONSTRUCTION.

EXISTING LIGHT POLE, TYPICAL

CONNECTION POINT OF NEW IRRIGATION MAINLINE TO EXISTING MAINLINE.

RELOCATED IRRIGATION MAINLINE STARTING POINT CONTRACTOR SHALL VERIFY LOCATION PRIOR TO INSTALLATION

GREAT PARK BLVD

(1-16") AND (1-4") MAINLINE SLEEVE

NEW IRRIGATION MAINLINE LOCATED 2' OFF CONCRETE PATH.

NEW (1-4") SCH 40 GRAY CONDUIT ELECTRICAL SLEEVE

SLIDING VEHICULAR GATE (PER ARCHITECTS PLAN SET)

PERIMETER BLOCK WALL SPLIT-FACE WITH PRECISION CAP (PER SEPARATE PLAN SET)

EXISTING BASEBALL FIELD SCORE BOARD

5' CLEARANCE BETWEEN NEW MAINLINE LOCATION PLACEMENT AND ELECTRICAL LIGHTING SERVICE SHALL BE PROVIDED. CONTACT OWNERS REPRESENTATIVE WITH CONFLICTING INFORMATION PRIOR TO INSTALLATION.

CURRENT IRRIGATION MAINLINE PLACEMENT IS DIAGRAMMATIC, THE TIE-IN FROM THE NEW MAINLINE ROUTING TO THE EXISTING MAINLINE WILL OCCUR AT THIS LOCATION +/- 20' FROM THE BASEBALL FENCE LINE ACCORDING TO IRRIGATION AS-BUILT INFORMATION. INSTALLING CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE OF ANY CONFLICTS.

PERIMETER BLOCK WALL SPLIT-FACE WITH PRECISION CAP (PER SEPARATE PLAN SET)

(1-12") AND (2-4") MAINLINE SLEEVE

SLIDING VEHICULAR GATE (PER ARCHITECTS PLAN SET)

CONTRACTOR SHALL COORDINATE WITH OWNERS REPRESENATIVE THE RELOCATED FERTIGATION SYSTEM PLACEMENT BASED ON THE NEW MAINLINE ROUTING. NEW PLACEMENT SHALL BE LOCATED CLOSE TO THE EXISTING BOOSTER PUMP LOCATION.

MAINTENANCE BUILDING (PER ARCHITECT PLAN SET)

(1-12") AND (1-4") MAINLINE SLEEVE

PERIMETER BLOCK WALL SPLIT-FACE WITH PRECISION CAP (PER SEPARATE PLAN SET)

NEW IRRIGATION MAINLINE. LOCATION TO BE CONFIRMED PRIOR TO INSTALLATION WITH OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT.

NEW IRRIGATION MAINLINE LOCATED 2' OFF CONCRETE PATH.

NEW (1-4") SCH 40 GRAY CONDUIT ELECTRICAL SLEEVE

(1-16") AND (1-4") MAINLINE SLEEVE

NEW IRRIGATION MAINLINE. LOCATION TO BE CONFIRMED PRIOR TO INSTALLATION WITH OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT.

EXISTING IRRIGATION METER, PIPING AND VALVES TO REMAIN

PROTECT IN PLACE EXISTING IRRIGATION PUMP AND ALL POINT OF CONNECTION EQUIPMENT INCLUDING MASTER VALVES, FLOW SENSORS, LINE PRIMARY PROTECTION, Y-STRAINERS, PRESSURE REGULATORS, QUICK COUPLERS AND GATES VALVES, NOT RELOCATED BY NEW REVISED MAINLINE ROUTING.

NEW IRRIGATION MAINLINE. LOCATION TO BE CONFIRMED PRIOR TO INSTALLATION WITH OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT.

PROPOSED IRRIGATION MAINLINE PLACEMENT IS DIAGRAMMATIC, THE TIE-IN FROM THE NEW MAINLINE ROUTING TO THE EXISTING MAINLINE WILL OCCUR AT THIS GENERAL LOCATION +/- 10'-0" FROM THE EXISTING IRRIGATION PUMP, ACCORDING TO IRRIGATION AS-BUILT INFORMATION. REFER TO DETAIL 'P' SHEET L-3.2 FOR JOINT RESTRAINTS THAT SHALL BE USED AT THIS CONNECTION. INSTALLING CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE OF ANY CONFLICTS.

IRRIGATION MAINLINE NOTES

- IRRIGATION MAINLINE IS SHOWN DIAGRAMMATIC FOR CLARITY PURPOSE ONLY. CONTRACTOR SHALL LOCATE AND INSTALL IRRIGATION MAINLINE WITHIN PLANTING AREA AND 18" MIN. FROM EDGE OF ANY HARDSCAPE (BACK OF WALK).
- IF NO PLANTING AREA IS AVAILABLE AT BACK OF WALK, CONTRACTOR SHALL LOCATE AND INSTALL MAINLINE PIPE IN SHRUB PARKWAY, 12" MIN. FROM EDGE OF HARDSCAPE (FRONT OF WALK). VERIFY PRIOR TO INSTALLATION.

IRRIGATION CONSTRUCTION NOTES

REFER TO (SWEENEY & ASSOCIATES SPORTS PARK - PHASE 2 LANDSCAPE IRRIGATION PLANS) (PC# 3581) FOR LOCATION OF EXISTING WATER METER (POC# C12). IRRIGATION CONTROLLER, MAINLINE PIPING AND ADDITIONAL INFORMATION ON EXISTING IRRIGATION SYSTEM.

1. EXISTING IRRIGATION, PROTECT IN PLACE. REPLACE ALL EXISTING IRRIGATION DAMAGED DURING THE INSTALLATION OF THE NEW IRRIGATION SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR TO CONNECT INTO EXISTING 4" MAINLINE PIPE AT LOCATION SHOWN ON PLAN. VERIFY PIPE SIZE PRIOR TO NEW MAINLINE CONNECTION.
3. CONTRACTOR TO CONNECT INTO EXISTING 6" MAINLINE PIPE AT LOCATION SHOWN ON PLAN. VERIFY PIPE SIZE PRIOR TO NEW MAINLINE CONNECTION.
4. CONTRACTOR TO CONNECT INTO EXISTING 8" MAINLINE PIPE AT LOCATION SHOWN ON PLAN. VERIFY PIPE SIZE PRIOR TO NEW MAINLINE CONNECTION.

RECYCLED WATER METER "3" INFORMATION

WATER POC H.G.L.	640 (Zone C)
WATER METER ELEVATION	340.40 Feet
POC STATIC PRESSURE	69 PSI
WATER METER SIZE	4" Disc
REQUIRED DYNAMIC PRESSURE	103 Psi
TOTAL MAX. IRRIGATION DEMAND BY THIS METER	500 Gpm
CIVIL STATION NO.	38+34.25 SKYHAWK
WATER METER ADDRESS	14551 SKYHAWK
TOTAL AREA SERVICED BY METER #3	39.9 ACRES

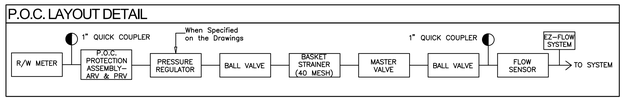
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING ITEMS ON WATER METER #81664532 (U.A.): ALL WATER COST AND ANY PENALTIES THAT MAY OCCUR ON THE WATER METER DURING THE INSTALLATION AND MAINTENANCE PERIOD OF THE PROJECT.

RW / DW SEPARATION NOTES

A. ASSURE THAT NO "RECLAIMED WATER" IS INSTALLED PAST "PRIVATE PROPERTY" LINES. THIS INCLUDES ANY GATED ENTRIES TO HOMES, BACKYARDS, OR ANY AREA UNDER THE CONTROL OF THE INDIVIDUAL HOMEOWNER.

B. SLEEVE RECYCLED MAINLINE, 5' EACH SIDE OF THE DOMESTIC WATER SERVICE, WITH PURPLE CLASS 200 SLEEVES.

P.O.C. LAYOUT DETAIL



THERE ARE NO LOOPED METERS ON THIS SYSTEM.

EDISON LIGHT POLE NOTE

ALL MAINLINE, LATERAL PIPING & SPRINKLERS SHALL NOT BE INSTALLED CLOSER THAN 18" TO ANY EDISON LIGHT POLE FOOTING. MODIFY AS NECESSARY.

IRRIGATION SHEET NOTE

REFER TO SHEET(S) L-2.1 & L-3.1 - L-3.2 FOR IRRIGATION LEGENDS, NOTES & DETAILS.

LATERAL PIPE SIZING LEGEND

"	LATERAL PIPING SIZE BETWEEN TWO IDENTICAL TICK MARKS SHALL BE SIZED THE SAME.
1"	
1 "	
1 "	
2"	
2 "	

UTILITY LEGEND

- A/C UNIT
- STREET SIGN
- SIGNAGE
- WATER METER / BLOW OFF
- FIRE HYDRANT
- DRAIN / DRAIN LINE / SWALE PER CIVIL
- PA PLANTING AREA
- ELECTRIC TRANSFORMERS
- ELECTRIC PULLBOX / HANDHOLE
- ELECTRIC METER PEDESTAL
- UTILITY PULLBOXES / CABINETS
- STREETLIGHT
- HOUSELIGHT
- WALL LIGHT

ADDITIONAL IRRIGATION NOTES

- CONTRACTOR SHALL ALLOW FOR ON-SITE MODIFICATION OF IRRIGATION LAYOUT AND ALLOW IN THE BID PRICE FOR ADJUSTMENTS.
- CONTRACTOR SHALL REVIEW VALVE SEQUENCING WITH THE OWNER'S REPRESENTATIVE AND OBTAIN APPROVAL OF SEQUENCING PLAN PRIOR TO INSTALLATION.
- THE DESIGN IS DIAGRAMMATIC, ALL IRRIGATION EQUIPMENT, PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED PRECISELY WITHIN PLANTING AREAS. LOCATE ALL VALVES IN SHRUB AREAS ONLY. NO ADDITIONAL COMPENSATION ALLOWED.
- REPLACE ALL NEW & EXISTING SHRUBS / TREES DAMAGED DURING THE INSTALLATION OF THE IRRIGATION SYSTEM OR ACCESS, AS NECESSARY.
- PROVIDE SLEEVING WHERE IRRIGATION SYSTEM PASSES THROUGH OR BELOW ANY HARDSCAPE ITEMS SUCH AS MASONRY WALLS, FOOTINGS, ETC.
- MODIFY AND ADJUST EXISTING AND NEW IRRIGATION SYSTEMS FOR PROPER COVERAGE ALONG LIMIT OF WORK.

VALVE LOCATION NOTE

THE CONTRACTOR SHALL STAKE OUT EACH PRESSURE REGULATOR, MASTER VALVE, FLOW SENSOR, REMOTE CONTROL VALVE, GATE VALVE, AIR RELEASE VALVE AND QUICK COUPLER VALVE LOCATION FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH RELOCATING VALVES IF FAILURE TO OBTAIN LANDSCAPE ARCHITECTS APPROVAL.

TREE IRRIGATION NOTES

TREE BUBBLER LOCATION SHOWN ON PLAN IS FOR REFERENCE ONLY. VERIFY FINAL TREE LOCATION PRIOR TO BUBBLER INSTALLATION. REFER TO IRRIGATION DETAILS AND LEGEND.

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY

WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE 'IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION'. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.

PLAN CHECK NUMBER: 385IR2

ON-SITE APPROVAL: DPL DATE: 11/13/2025

EXISTING MAINLINE NOTE

PROTECT IN PLACE EXISTING MAINLINE AND CONTROL WIRE UNLESS NOTED OTHERWISE

CITY OF IRVINE PUBLIC WORKS DEPARTMENT ENGINEERING & SAFETY DIVISION

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

NORTH

0 20' 40'

NO.	DATE	REVISIONS	APP.	DATE
		CITY OF IRVINE		

PLANS PREPARED BY: CLARK & GREEN Associates landscape architecture

LICENSE NO. 4564 EXP. DATE

SEAL: REGISTERED LANDSCAPE ARCHITECT RAYMOND D. LANE Signature 10-31-25 Renewal 31, 2026 Date STATE OF CALIFORNIA

DATE: 11-21-25

DRAWN BY: KDL

DESIGNED BY: KL

CHECKED BY: LS,KL

RECOMMENDED:

IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE

GREAT PARK MAINTENANCE & OPERATIONS FACILITY IRRIGATION PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK

LANDSCAPE PERMIT NO. _____ - LCE

SHEET: L-1.1 OF 10

JOB NO. 24-313

BID SET 11/21/2025

SPECIAL ON-SITE RECYCLED WATER NOTES

THE FOLLOWING SPECIAL ON-SITE RECYCLED WATER NOTES ARE TO BE SHOWN ON ALL ON-SITE RECYCLED WATER SYSTEM CONSTRUCTION PLANS:

A. THE INSTALLATION OF THE IRRIGATION WATER SYSTEM SHALL CONFORM TO THE REGULATIONS FOR THE CONSTRUCTION OF IRRIGATION WATER SYSTEMS WITHIN THE **IRWD** AND THE ACCOMPANYING PLANS AND SPECIFICATIONS.
B. ALL ON-SITE RECYCLED AND POTABLE WATER PIPING INSTALLED ON THIS PROJECT SHALL BE IDENTIFIED IN ACCORDANCE WITH THE **IRWD** RULES AND REGULATIONS AND THE IRRIGATION SPECIFICATIONS.
C. RECYCLED WATER PIPING SHALL BE PURPLE PVC. CONSTANT PRESSURE MAIN LINE PIPING 2" AND LARGER: RUBER-RING JOINT, PVC CLASS 200; SOLVENT WELD JOINT: PVC CLASS 315. CONSTANT PRESSURE MAIN LINE PIPING 1½" AND SMALLER: PVC SCHEDULE 40. INTERMITTENT PRESSURE LATERAL LINE PIPING: SOLVENT WELD JOINT, PVC CLASS 200, SCHEDULE 40.
D. MARKING ON THE PURPLE PVC PIPE SHALL INCLUDE THE FOLLOWING:
   - **"CAUTION: RECYCLED WATER - DO NOT DRINK,"** NOMINAL PIPE SIZE, PVC-1120, PRESSURE RATING IN POUNDS PER SQUARE INCH AT 73 DEGREES, AND ASTM DESIGNATIONS SUCH AS 1785, 2241, 2672, 3139. PRINTING SHALL BE PLACED CONTINUOUSLY ON TWO SIDES OF THE PIPE.
E. ALL RECYCLED WATER SPRINKLER CONTROL VALVES, ISOLATION VALVES, QUICK COUPLERS AND ALL APPURTENANCES SHALL BE TAGGED IN IDENTIFICATION TAGS.
   1. TAGS SHALL BE WEATHERPROOF PLASTIC, 3-inch x 4-inch, PURPLE IN COLOR WITH THE WORDS ***"WARNING RECYCLED WATER - DO NOT DRINK"*** IMPRINTED ON ONE SIDE, AND ***"AVISO - AGUA IMPURA - NO TOMAR"*** ON THE OTHER SIDE. IMPRINTING SHALL BE PERMANENT AND BLACK IN COLOR. USE TAGS AS MANUFACTURED BY T. CHRISTY ENTERPRISES OR APPROVED EQUAL.
   2. ONE TAG SHALL BE ATTACHED TO EACH APPURTENANCE AS FOLLOWS:
      a. ATTACH TO VALVE STEM DIRECTLY OR WITH PLASTIC TIE-WRAP OR
      b. ATTACH TO SOLENOID WIRE DIRECTLY OR WITH PLASTIC TIE-WRAP OR
      c. ATTACH TO VALVE COVER WITH EXISTING VALVE COVER BOLT
      d. ATTACH TO BODY OF THE RELATIVE APPURTENANCE WITH A PLASTIC TIE-WRAP.
F. WARNING TAPE SHALL BE USED ON ALL CONSTANT PRESSURE MAIN LINE PIPING CARRYING POTABLE WATER.
G. WARNING TAPE SHALL BE A MINIMUM OF 3 INCHES WIDE AND SHALL RUN CONTINUOUSLY FOR THE ENTIRE LENGTH OF ALL CONSTANT PRESSURE MAIN LINE PIPING. THE TAPE SHALL BE ATTACHED TO THE TOP OF THE PIPE WITH PLASTIC TAPE BANDED AROUND THE WARNING TAPE AND THE PIPE EVERY FIVE FEET ON CENTER.
H. WARNING TAPE FOR THE CONSTANT PRESSURE POTABLE WATER PIPING SHALL BE BLUE IN COLOR WITH THE WORDS **"CAUTION: BURIED WATERLINE BELOW"** IMPRINTED IN MINIMUM 1-inch HIGH LETTERS, BLACK IN COLOR. IMPRINTING SHALL BE CONTINUOUS AND PERMANENT.
I. IRWD SHALL BE NOTIFIED TWO DAYS PRIOR TO THE START OF IRRIGATION CONSTRUCTION AT (949) 453-5300 AND EACH WORKDAY THEREAFTER UNTIL COMPLETION OF PROJECT.
J. ALL PRESSURE MAIN LINE PIPING FROM THE RECYCLED WATER SYSTEM SHALL BE INSTALLED TO MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION FROM ALL POTABLE WATER PIPING. WHERE RECYCLED AND POTABLE WATER PRESSURE MAIN LINE PIPING CROSS, THE RECYCLED WATER PIPING SHALL BE INSTALLED BELOW THE POTABLE WATER PIPING IN A CLASS 200 PURPLE-COLORED PVC SLEEVE WHICH EXTENDS A MINIMUM OF 5 FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. PROVIDE A MINIMUM VERTICAL CLEARANCE OF 6 INCHES. CONVENTIONAL (WHITE) PVC PIPE MAY BE USED FOR SLEEVING MATERIAL IF IT IS TAPED WITH 3-inch WIDE PURPLE WARNING TAPE WHICH READS **"CAUTION: RECYCLED WATER - DO NOT DRINK"**.
K. THE IRRIGATION SYSTEM MUST BE DESIGNED TO OPERATE BETWEEN THE HOURS OF 9:00 PM AND 6:00 AM UNLESS OTHERWISE DIRECTED BY THE DISTRICT ENGINEER.
L. ALL NEW COMMON AREAS WHERE RECYCLED WATER IS USED AND THAT ARE ACCESSIBLE TO THE GENERAL PUBLIC SHALL BE POSTED WITH PERMANENT CONSPICUOUS SIGNS THAT INCLUDE THE FOLLOWING WORDING IN A SIGN NO LESS THAN 4 INCHES HIGH BY 8 INCHES WIDE: **RECYCLED WATER - DO NOT DRINK** . EACH SIGN SHALL ALSO DISPLAY AN INTERNATIONAL SYMBOL CONVEYING THE SAME WARNING.
M. ADJUST SPRAY HEADS TO ELIMINATE OVERSPRAY ONTO AREAS NOT UNDER THE CONTROL OF THE CUSTOMER, FOR EXAMPLE, POOL DECKS, PRIVATE PATIOS, STREETS AND SIDEWALKS.
N. CONTACT THE IRWD ENGINEERING DEPARTMENT OFFICE TWO DAYS PRIOR TO THE IRRIGATION SYSTEM COVERAGE TEST (949) 453-5300 AND ARRANGE A WALK THROUGH OF THE SYSTEM.
O. FAILURE TO COMPLY WITH ANY OR ALL OF THE ABOVE GUIDELINES PUTS YOUR SYSTEM IN VIOLATION OF IRWD RULES AND REGULATIONS, AND WILL RESULT IN TERMINATION OF SERVICE UNTIL THE APPROPRIATE CORRECTIVE STEPS HAVE BEEN TAKEN.
P. WARNING TAPE ON RECYCLED WATER CONSTANT PRESSURE MAIN LINE PIPING IS ONLY ALLOWED ON PROJECT-BY-PROJECT APPROVAL FROM THE DISTRICT ENGINEER. IF APPROVED, IT MUST FOLLOW THESE INSTALLATION SPECIFICATIONS:
   1. WARNING TAPE SHALL BE USED ON ALL CONSTANT PRESSURE MAINS.
   2. WARNING TAPE SHALL BE A MINIMUM OF 3 INCHES WIDE AND SHALL RUN CONTINUOUSLY FOR THE ENTIRE LENGTH OF ALL CONSTANT PRESSURE MAIN LINE PIPING. THE TAPE SHALL BE ATTACHED TO THE TOP OF THE PIPE WITH PLASTIC TAPE BANDED AROUND THE WARNING TAPE AND THE PIPE EVERY 5 FEET ON CENTER.
   3. WARNING TAPE FOR THE CONSTANT PRESSURE RECYCLED WATER PIPING SHALL BE PURPLE IN COLOR WITH THE WORDS **"RECYCLED WATER - DO NO DRINK"** IMPRINTED IN MINIMUM OF 1-inch HIGH, BLACK LETTERS. IMPRINTING SHALL BE CONTINUOUS AND PERMANENT.

FOR SINGLE-FAMILY RESIDENCES RECEIVING RECYCLED WATER, THE FOLLOWING ADDITIONAL NOTES SHALL APPEAR ON THE PLANS:

Q. ALL POTABLE WATER PIPING OUTSIDE OF THE STRUCTURE SHALL BE COPPER PIPE, WHICH SHALL HAVE WARNING TAPE INSTALLED IN ACCORDANCE WITH ITEMS F, G AND H ABOVE.
R. ALL RECYCLED WATER PIPING SHALL BE PURPLE COLORED PVC PIPE, WHICH SHALL BE MARKED IN ACCORDANCE WITH ITEM D ABOVE.
S. AN APPROVED BACKFLOW PREVENTION ASSEMBLY CONFORMING TO THE IRWD RULES AND REGULATIONS SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF THE POTABLE WATER METER.
T. ALL QUICK COUPLERS MUST BE INSTALLED WITHIN 5 FEET OF THE RECYCLED WATER METER.

GUIDELINES FOR RECYCLED WATER USE

THE FOLLOWING GUIDELINES HAVE BEEN ESTABLISHED BY IRWD IN CONJUNCTION WITH OCHCA AND THE SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD. THEY ARE INTENDED TO PROVIDE THE BASIC PARAMETERS FOR THE USE OF RECYCLED WATER IN LANDSCAPE IRRIGATION. TO OPERATE YOUR SYSTEM IN COMPLIANCE WITH THESE GUIDELINES YOU MUST:

A. IRRIGATION BETWEEN THE HOURS OF 9:00 PM AND 6:00 AM ONLY. WATERING OUTSIDE THIS TIME FRAME MUST BE DONE MANUALLY WITH QUALIFIED SUPERVISORY PERSONNEL ON-SITE. NO SYSTEM SHALL AT ANY TIME BE LEFT UNATTENDED DURING USE OUTSIDE THE NORMAL SCHEDULE.

B. IRRIGATE IN A MANNER THAT WILL MINIMIZE RUNOFF POOLING AND PONDING. THE APPLICATION RATE SHALL NOT EXCEED THE INFILTRATION RATE OF THE SOIL. TIMERS MUST BE ADJUSTED SO AS TO BE COMPATIBLE WITH THE LOWEST SOIL INFILTRATION RATE PRESENT. THIS PROCEDURE MAY BE FACILITATED BY THE EFFICIENT SCHEDULING OF THE AUTOMATIC CONTROL CLOCKS, (I.E., EMPLOYING THE REPEAT FUNCTION TO BREAK UP THE TOTAL IRRIGATION TIME INTO CYCLES THAT WILL PROMOTE MAXIMUM SOIL ABSORPTION).

C. ADJUST SPRAY HEADS TO ELIMINATE OVERSPRAY ONTO AREAS NOT UNDER THE CONTROL OF THE CUSTOMER. FOR EXAMPLE, POOL DECKS , PRIVATE PATIOS, STREETS AND SIDEWALKS.

D. DO NOT USE QUICK COUPLERS FOR WASH DOWN OF HARDSCAPE.

E. MONITOR AND MAINTAIN THE SYSTEM TO MINIMIZE EQUIPMENT AND MATERIAL FAILURE. BROKEN SPRINKLER HEADS, LEAKS, UNRELIABLE VALVES, ETC., SHOULD BE REPAIRED AS SOON AS THEY BECOME APPARENT.

F. EDUCATE ALL MAINTENANCE PERSONNEL, ON A CONTINUOUS BASIS, OF THE PRESENCE OF RECYCLED WATER, AND THE FACT THAT IT IS NOT APPROVED FOR DRINKING PURPOSES. GIVING THE HIGH TURNOVER RATE OF EMPLOYEES IN THE LANDSCAPE INDUSTRY, IT IS IMPORTANT THAT THIS INFORMATION BE DISSEMINATED ON AN ALMOST DAILY BASIS. IT IS YOU, THE LANDSCAPE CONTRACTOR, WHO IS RESPONSIBLE FOR EDUCATING EACH AND EVERY ONE OF YOUR EMPLOYEES.

G. OBTAIN PRIOR APPROVAL FOR ALL PROPOSED CHANGES AND MODIFICATIONS TO ANY ON-SITE FACILITIES. SUCH CHANGES MUST BE SUBMITTED TO, AND APPROVED BY, THE IRWD ENGINEERING OFFICE AND DESIGNED IN ACCORDANCE WITH IRWD STANDARDS.

FAILURE TO COMPLY WITH ANY OR ALL OF THE ABOVE GUIDE-LINES PUTS YOUR SYSTEM IN VIOLATION TO IRWD'S RULES AND REGULATIONS, AND WILL RESULT IN TERMINATION OF SERVICE UNTIL THE APPROPRIATE CORRECTIVE STEPS HAVE BEEN TAKEN.

IRWD FEELS THAT THE BENEFITS TO BE DERIVED FROM THE SUCCESSFUL APPLICATION OF RECYCLED WATER JUSTIFY THE OPERATING REQUIREMENTS THAT HAVE BEEN ESTABLISHED. IF YOU HAVE ANY QUESTIONS, OR IF WE CAN BE OF ANY ASSISTANCE, PLEASE DO NOT HESITATE TO CALL OUR ON-SITE RECYCLED WATER GROUP (949) 453-5300.

REGIONAL WATER QUALITY CONTROL BOARD NOTES

A. THE AVERAGE NUMBER OF PEOPLE AT THIS USE SITE ON A DAILY BASIS:

VARIES

B. BOUNDARIES TO THE PROPOSED USE SITE, FOOTPRINT OF ANY FACILITIES ON THE PREMISES, DRINKING WATER FOUNTAINS, AND ANY RECYCLED WATER OF POTABLE WATER IMPOUNDMENT TO BE USED:

SEE PLAN

C. THE PERSON OR PERSON RESPONSIBLE FOR THE OPERATION OF THE RECYCLED WATER SYSTEM AT EACH USE AREA:

VARIES

D. THE SPECIFIC USE TO BE MADE OF THE RECYCLED WATER AT EACH USE AREA:

LANDSCAPE IRRIGATION

E. THE METHODS TO BE USED TO ASSURE THAT THE INSTALLATION AND OPERATION OF THE RECYCLED WATER SYSTEM WILL NOT RESULT IN CROSS CONNECTION BETWEEN THE RECYCLED WATER AND THE POTABLE WATER PIPING SYSTEM. DESCRIBE THE PRESSURE TEST DONE BEFORE INSTALLATION OF THE METER:

MAINLINE INSTALL, PLACEMENT AND PRESSURE TESTING TO BE WITNESSED BY CITY INSPECTOR. RECYCLED WATER LATERAL & MAINLINE TO BE INSPECTED BY IRWD.

F. PIPE LOCATIONS OF BOTH RECYCLED WATER AND POTABLE SYSTEMS, OF BRIEF EXPLANATION FOR THE EXCLUSION OF SYSTEM NOT SHOWN:

THERE IS NO DOMESTIC SERVICE PLANNED FOR THIS AREA OR DURING THE TIME OF INSTALLATION.

GENERAL IRRIGATION NOTES

1. THE IRRIGATION DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED SURFACES IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED WITHIN PLANTING AREAS. THE CONTRACTOR SHALL LOCATE ALL VALVES IN SHRUB AREAS. NO ADDITIONAL COMPENSATION ALLOWED.
2. ALL MAINLINE PIPING, LATERAL PIPING AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES. MAINLINE AND LATERAL PIPING SLEEVE SIZE SHALL BE A MINIMUM OF TWICE (2X) THE DIAMETER OF THE PIPE TO BE SLEEVED. CONTROLLER WIRE SLEEVES SHALL BE OF SUFFICIENT SIZE FOR THE REQUIRED NUMBER OF WIRES UNDER PAVING SURFACES. SLEEVES SHALL BE INSTALLED PRIOR TO PAVING.
3. PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTIONS OF SMALLER PIPE SIZES SHALL BE PERMITTED, BUT SUBSTITUTIONS OF LARGER SIZES MAY BE APPROVED. ALL DAMAGED AND REJECTED PIPE SHALL BE REMOVED FROM THE SITE AT THE TIME OF SAID REJECTION.
4. INSTALL BASKET STRAINER AND ALL MAINLINE PIPING BETWEEN THE POINT OF CONNECTION AND THE BASKET STRAINER ASSEMBLY PER LOCAL CODES, HEALTH DEPARTMENT AND IRRIGATION LEGEND, NOTES & DETAILS. FINAL LOCATION OF THE BASKET STRAINER SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
5. 120 VAC ELECTRICAL POWER SOURCE AT CONTROLLER LOCATION SHALL BE PROVIDED BY THE CONTRACTOR UNLESS INDICATED OTHERWISE ON THE IRRIGATION PLAN. THE CONTRACTOR SHALL MAKE THE FINAL CONNECTION FROM THE ELECTRICAL SOURCE TO THE IRRIGATION CONTROLLER. FINAL LOCATION OF IRRIGATION CONTROLLER SHALL BE APPROVED BY OWNER'S AUTHORIZED REPRESENTATIVE. ALL SPRINKLER HEADS SHALL BE FIELD ADJUSTED TO PREVENT OVERSPRAY ONTO THE CONTROLLER ASSEMBLY.
6. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE UNLESS OTHERWISE SPECIFIED.
7. THE CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM COVERAGE WITH MINIMAL OVERSPRAY ONTO WALKS, STREETS, WALLS, CURBS, ETC AND AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, STRUCTURES, UTILITIES, ETC. THE CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY THEIR WORK. THEY SHALL COORDINATE THEIR WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERALS THROUGH WALLS, UNDER ROADWAYS AND PAVING ETC.
9. THE SPRINKLER SYSTEM DESIGN IS BASED ON A MINIMUM OPERATING PRESSURE AND A MAXIMUM FLOW DEMAND INDICATED ON THE IRRIGATION PLANS. THE CONTRACTOR SHALL VERIFY EXISTING WATER PRESSURE, FOR EACH POINT OF CONNECTION, PRIOR TO THE INSTALLATION OF THE LANDSCAPE IRRIGATION SYSTEMS. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO START OF WORK.
10. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTION, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL MAKE ALL THE NECESSARY REVISIONS AT CONTRACTOR'S OWN EXPENSE.
11. ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
12. THE CONTRACTOR SHALL INSTALL KBI SERIES ANTI-DRAIN VALVES (OR APPROVED EQUAL) ON ALL HEADS IN AREAS WHERE FINISH GRADE EXCEEDS 4:1, WHERE POST VALVE SHUT-OFF DRAINING OF THE IRRIGATION HEAD OCCURS OR AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
13. THE CONTRACTOR SHALL PROVIDE PRESSURE COMPENSATING SCREENS (PCS) AS NEEDED TO REDUCE OR ELIMINATE OVERSPRAY ONTO WALKS, STREETS, WALLS, ETC. OR OTHER AREAS AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE.
14. ALL BASKET STRAINERS, MASTER VALVES, FLOW SENSORS, REMOTE CONTROL VALVES, PRESSURE RELIEF VALVES, GATE VALVES, QUICK COUPLERS, PULL / SPARE WIRE BOXES SHALL BE INSTALLED COMPLETE IN SUITABLE VALVE BOXES COMPLETE WITH LOCKING COVERS, GRAVEL ROCK, ETC., AND AS SHOWN ON THE IRRIGATION DETAILS. THEY SHALL BE CARSON, NDS OR APPROVED EQUAL AND SHALL BE MARKED INDICATING CONTROLLER AND STATION NUMBER AND / OR AS INDICATED ON THE IRRIGATION DETAILS. LOCATE ALL VALVE BOXES IN SHRUB AREAS ONLY.
15. WHEN NON-POTABLE OR RECLAIMED WATER IS BEING USED FOR IRRIGATION, ALL PVC PIPING MUST MEET OR EXCEED IAPMO AND NSF STANDARDS FOR PVC TYPE I, GRADE 1 PIPE. ALL BELOW GRADE PVC PIPE SHALL BE PURPLE PVC MANUFACTURED FOR RECYCLED (RECLAIMED) WATER SYSTEMS. ALL ON GRADE PVC PIPE SHALL BE PVC UVR BROWN PIPE WITH STENCILED WARNINGS IN WATERPROOF INK STATING "CAUTION RECLAIMED WATER" EVERY FIVE (5) FEET OR PER LOCAL WATER DISTRICT LABELING REQUIREMENTS.
16. ALL TWO-WIRE CABLE SHALL BE A MINIMUM 14 GAUGE, 2-CONDUCTOR PARALLEL CABLE WITH HIGH DENSITY JACKET SUITABLE FOR DIRECT BURIAL. 2-WIRE SLEEVE/JACKET SHALL BE COLOR AS INDICATED PER THE IRRIGATION LEGEND. ALL TWO WIRE CABLE SHALL BE INSTALLED WITHIN A PVC GRAY CONDUIT, SEE LEGEND FOR CONDUIT SIZE.
17. REFER TO IRRIGATION SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION.
18. MAINLINE SHALL BE PRESSURE TESTED FOR 3 HRS @ 150 PSI PRIOR TO BACKFILL.

MAINTENANCE NOTE

MAINTENANCE SCHEDULES. A REGULAR MAINTENANCE SCHEDULE SATISFYING THE FOLLOWING CONDITIONS SHALL BE SUBMITTED AS PART OF THE LANDSCAPE DOCUMENTATION PACKAGE.
LANDSCAPE SHALL BE MAINTAINED TO ENSURE WATER EFFICIENCY. A REGULAR MAINTENANCE SCHEDULE SHALL INCLUDE, BUT NOT BE LIMITED TO, CHECKING, ADJUSTING, AND REPAIRING IRRIGATION EQUIPMENT, RESETTING THE AUTOMATIC CONTROLLER, AERATING AND DETHATCHING TURF AREAS, REPLENISHING MULCH, FERTILIZING, PRUNING, AND WEEDING IN ALL LANDSCAPE AREAS.
WHENEVER POSSIBLE, REPAIR OF IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY SPECIFIED MATERIALS OR THEIR EQUIVALENTS.
A LANDSCAPE IRRIGATION AUDIT SCHEDULE AS REQUIRED IN CHAPTER 20.09 OF TITLE 20 MAY BE RECOMMENDED. THE MAXIMUM PERIOD BETWEEN AUDITS SHALL BE FIVE YEARS.

MAINTENANCE TASK	FREQUENCY
CONTROLLER CABINET - OPEN CABINET, CLEAN OUT DEBRIS, AND REPLACE BATTERY AS NECESSARY. CHECK WIRING AND REPAIR AS NEEDED. CHECK CLOCK AND RESET, IF NECESSARY.	QUARTERLY
IRRIGATION SCHEDULE - ADJUST SCHEDULE FOR SEASONAL VARIATIONS AND OTHER CONDITIONS WHICH MAY AFFECT THE AMOUNT OF WATER NEEDED TO MAINTAIN PLANT HEALTH. ADJUST AS NECESSARY.	MONTHLY
POC - VISUALLY INSPECT COMPONENTS FOR LEAKS, PRESSURE SETTINGS, SETTLEMENT OR OTHER DAMAGE AFFECTING THE OPERATION OF A COMPONENT REPAIR AS NEEDED.	QUARTERLY
REMOTE CONTROL VALVES, ISOLATION VALVES AND QUICK COUPLER VALVES - VISUALLY INSPECT FOR LEAKS, SETTLEMENT, WIRE CONNECTIONS AND PRESSURE SETTINGS. REPAIR OR ADJUST AS NEEDED.	QUARTERLY
MAINLINE AND LATERALS - VISUALLY INSPECT FOR LEAKS OR SETTLEMENT OF TRENCH.	QUARTERLY
SPRINKLERS - VISUALLY CHECK FOR ANY BROKEN, MISSALIGNED OR CLOGGED HEADS, HEADS WITH INCORRECT ARC, INADEQUATE COVERAGE OR OVERSPRAY AND LOW HEAD DRAINAGE. REPAIR AS NEEDED.	WEEKLY
FILTERS AND STRAINERS - VISUALLY CHECK FOR LEAKS AND BROKEN FITTINGS. CLEAN AND FLUSH SCREENS.	MONTHLY

IRRIGATION MOCK-UP NOTES

- AFTER APPROVAL OF ALL IRRIGATION SUBMITTALS BY LANDSCAPE ARCHITECT AND PRIOR TO ANY IRRIGATION INSTALLATION, THE CONTRACTOR SHALL PREPARE AN IRRIGATION MOCK-UP TO BE REVIEWED BY THE OWNERS REPRESENTATIVE.
- THE LOCATION SHALL BE SELECTED BY THE OWNER'S REPRESENTATIVE AND CONSIST OF A 6 FT. x 6 FT. SQUARE AREA LOCATED WITHIN THE PROJECT LANDSCAPE AREA. THE FOLLOWING ITEMS SHALL BE PROVIDED WITHIN THE IRRIGATION MOCK-UP AREA.....
  1. VALVE BOX (SHRUB APPLICATION) INSTALLATION.
- NOTIFY THE OWNERS REPRESENTATIVE (96) HOURS PRIOR TO SCHEDULING IRRIGATION MOCK-UP REVIEW.
- IRRIGATION MOCK-UP SHALL BE REMOVED AT COMPLETION OF IRRIGATION INSTALLATION AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

SPRAY LAYOUT NOTE

WHEN VERTICAL OBSTRUCTIONS (STREET LIGHTS, UTILITY ENCLOSURES, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE ROTOR SPRINKLER LAYOUT AS TO PREVENT PROPER HEAD TO HEAD COVERAGE, CONTRACTOR SHALL FIELD ADJUST THE ROTOR SPRINKLER SYSTEM LAYOUT BY INSTALLING QUARTER / HALF CIRCLE SPRINKLER POP-UP HEADS ON EACH SIDE OF THE OBSTRUCTION.
- ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

COORDINATION NOTE

FULL COORDINATION WITH THE CITY INSPECTION STAFF IS REQUIRED AND THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

PRIVATELY MAINTAINED AREAS – IRRIGATION LEGEND

IRRIGATION HEAD LEGEND

HEAD SYMBOL F	H	Q	T	MANUFACTURER/MODEL NUMBER–DESCRIPTION	NOZZLE	ARC/ADJUST	FLOW RATE IN GPM F	H	Q	T	PSI	RADIUS	DETAIL	SHEET
●				RAIN BIRD RD04–S–P30–N W/PA–80 •PROVIDE (2) TREE BUBBLERS TO EACH TREE INDICATED ON THE IRRIGATION PLAN.	1402	TRICKLE	0.50 (2)–1.00				30	1'–3'	519	L–3.1
				RAINBIRD RD–12–S–P45–F–N SHRUB 12" POP–UP WITH ROTARY NOZZLE	R–VAN14 Series	45°–360°	1.12	0.58	0.29		35	8'–14'	521	L–3.1
				RAINBIRD RD–12–S–P45–F–N SHRUB 12" POP–UP WITH ROTARY NOZZLE	R–VAN18 Series	45°–360°	1.67	0.91	0.47		35	13'–18'	521	L–3.1
				RAINBIRD RD–12–S–P45–F–N SHRUB 12" POP–UP WITH ROTARY NOZZLE	R–VAN–SST Series	SIDE STRIP		0.48			35	5'x30'	521	L–3.1
				RAINBIRD RD–12–S–P30–F–N 12" POP–UP SHRUB SPRAY WITH RAINBIRD MPR NOZZLE	U8' MPR 8' HE–VAN	360°,180°,90°,120°	1.05	0.52	0.26		30	8'	521	L–3.1
				RAINBIRD RD–12–S–P30–F–N 12" POP–UP SHRUB SPRAY WITH RAINBIRD MPR NOZZLE	U10' MPR 10' HE–VAN	360°,180°,90°,120°	1.58	0.79	0.39		30	10'	521	L–3.1
				RAINBIRD RD–12–S–P30–F–N 12" POP–UP SHRUB SPRAY WITH RAINBIRD MPR NOZZLE	U12' MPR 12' HE–VAN	360°,180°,90°,120°	2.60	1.30	0.65		30	12'	521	L–3.1
				RAIN BIRD RD–06–S–P30–F–N 6" POP–UP WITH RAINBIRD MPR NOZZLE	15–SST+ PCS–060	SIDE STRIP		0.60			30	2'x8'	522	L–3.1
				RAIN BIRD RD–06–S–P30–F–N 6" POP–UP WITH RAINBIRD MPR NOZZLE	15–CST+ PCS–060	SIDE STRIP		0.60			30	2'x8'	522	L–3.1
				RAIN BIRD RD–06–S–P30–F–N 6" POP–UP WITH RAINBIRD MPR NOZZLE	15–EST+ PCS–060	SIDE STRIP		0.60			30	2'x8'	522	L–3.1

•CONTRACTOR SHALL INSTALL HUNTER CHECK VALVES MODEL HC–50F–50M, AT ALL SPRINKLERS INSTALLED ON RISERS/SHRUB ADAPTERS TO PREVENT LOW HEAD DRAINAGE, AS NECESSARY TO PREVENT LOW HEAD DRAINAGE. NO LOW HEAD DRAINAGE IS ALLOWED.

IRRIGATION EQUIPMENT LEGEND

SYMBOL LEGEND	MANUF.	MODEL NUMBER / DESCRIPTION	DETAIL	SHEET
	RAINBIRD CALSENSE	PLASTIC REMOTE CONTROL VALVE MODEL PESB–R–PRS–D WITH PRESSURE REGULATING MODULE. SEE PLAN FOR VALVE SIZE. PROVIDE (1) CALSENSE TWO–STATION DECODER MODEL CS–2W–2ST TO EACH REMOTE CONTROL VALVE. REFER TO DETAILS.	510	L–3.1
	RAINBIRD CALSENSE	PLASTIC REMOTE CONTROL VALVE MODEL PESB–R WITH SENNINGER PSR PRESSURE REGULATOR MODEL PSR–40. PROVIDE (1) CALSENSE TWO–STATION DECODER MODEL CS–2W–2ST TO EACH REMOTE CONTROL VALVE. SEE PLAN FOR VALVE SIZE. REFER TO DETAILS.	510	L–3.1
	RAINBIRD	DRIP PLASTIC DRIP REMOTE CONTROL VALVE ZONE KIT WITH PRESSURE REGULATING BASKET FILTERS. USE THE FOLLOWING DRIP RCV FLOWS FOR SELECTING DRIP ZONE KIT MODEL. SEE PLAN FOR VALVE SIZE. •DRIP RCV WITH FLOWS OF 3.0 TO 20.0gpm, PROVIDE ZONE KIT MODEL XCZ–PRB–100–COM. •DRIP RCV WITH FLOWS OF 20.1 TO 40.0gpm, PROVIDE ZONE KIT MODEL XCZ–PRB–150–COM.	F	L–3.2
	(EXISTING)		510	L–3.1
	NETAFIM	DRIP SHRUB TUBING, TECHLINE SERIES, MODEL TL–CV–RW–06–18. DRIPLINE WITH 0.6gph, PRESSURE COMPENSATING EMITTERS. INSTALL DRIPLINE TUBING WITH TL SERIES BARBED FITTINGS AND SOIL STAPLES MODEL TL–S6. INSTALL SOIL STAPLES AT 5' O.C., AT ALL TEES, ELBOWS, CROSS AND CHANGES IN DIRECTION. INSTALL DRIPLINE TUBING AT 18" O.C. ROW SPACING STARTING 12" AWAY FROM HARDSCAPE EDGE (WALKS/CURBS/ETC.). MAINTAIN A TRIANGULAR EMITTER LAYOUT. REFER TO NOTES AND DETAILS.	B,E I,J,K	L–3.2
	SIGNATURE	QUICK COUPLER VALVE MODEL 7645, 1" VALVE WITH ACME THREADS AND PURPLE LOCKING COVER.	508	L–3.1
	NIBCO	ISOLATION VALVE, SEE PLAN FOR MAINLINE SIZE. •MODEL T–FP–600A, BRASS, TWO–PIECE BALL VALVE WITH LEVER HANDLE FOR MAINLINE SIZE 1" TO 2½". •MODEL F–619–RW–SON, DUCTILE IRON, RESILIENT WEDGE, EPOXY COATED GATE VALVE WITH FLANGE CONNECTIONS. INSTALL WITH MEGA–LUG/JOINT RESTRAINTS FOR MAINLINE SIZES 3" AND LARGER.	506 507	L–3.1
	APPROVED	MAINLINE PIPE. SIZE MAINLINES PER PLAN. •PURPLE PVC SCH. 40 IPS FOR MAINLINE SIZES 1" TO 1½". •PURPLE PVC CLASS 315 IPS FOR MAINLINE SIZES 2" TO 3". •PURPLE CLASS 200 IPS RUBBER RING JOINTS FOR MAINLINE SIZES 4" AND LARGER. INSTALL WITH LEEMCO DEEP BELL DUCTILE IRON FITTINGS AND JOINT RESTRAINTS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.	500 501 O/P	L–3.1 L–3.2
	APPROVED	LATERAL PIPE. MINIMUM PIPE SIZE SHALL BE 3/4". SIZE LATERALS PER PLAN. •PURPLE PVC SCH. 40 IPS FOR LATERAL SIZES 3/4" TO 2".	500 501	L–3.1
	APPROVED	LATERAL PIPE. MINIMUM PIPE SIZE SHALL BE 3/4". SIZE LATERALS PER PLAN. •PURPLE PVC SCH. 40 IPS FOR LATERAL SIZES 3/4" TO 2".	500 501	L–3.1
	APPROVED	IRRIGATION SLEEVES TO BE INSTALLED PER DRY UTILITY PLANS, VERIFY PRIOR TO BID. IF IRRIGATION SLEEVES DO NOT EXIST/ARE NOT INSTALLED, CONTRACTOR SHALL PROVIDE AND INSTALL (2)–6" AND (2)–4" PURPLE CLASS 200 MAINLINE SLEEVES PRIOR TO ROADS/HARDSCAPE INSTALLATION. VERIFY LOCATION.	500 501	L–3.1
	APPROVED	IRRIGATION MAINLINE & CONTROL WIRE SLEEVES SHALL BE INSTALLED PER IRRIGATION PLAN, VERIFY LOCATION. CONTRACTOR SHALL PROVIDE AND INSTALL (1)–6" AND (2)–4" PURPLE CLASS 200 MAINLINE SLEEVES PRIOR TO HARDSCAPE/PAVING INSTALLATION.	500 501	L–3.1
	APPROVED	IRRIGATION LATERAL SLEEVES TO BE INSTALLED PER IRRIGATION PLAN. VERIFY LOCATION. SLEEVES SHALL BE PURPLE SCH. 40 PVC, 2X LATERAL LINE SIZE. INSTALL PRIOR TO HARDSCAPE/PAVING INSTALLATION.	500 501	L–3.1
S	APPROVED	RECYCLED WATER SIGN, PER IRWD SPECIFICATIONS. VERIFY LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.	C	L–3.2
PB	APPROVED	SPARE TWO–WIRE PULL BOX. TWO–WIRE SHALL HAVE A 36" LOOP OF EXTRA WIRE, NEATLY BUNDLED, TAPE & TERMINATED WITHIN VALVE BOX. SPARE TWO–WIRE CABLE SLEEVE SHALL BE ORANGE IN COLOR. REFER TO NOTES AND DETAILS FOR ADDITIONAL INFORMATION. INSTALL GROUND PLATES PER MANUFACTURERS RECOMMENDATIONS.	517	L–3.1
SP	CALSENSE I.T.S.	TWO–WIRE GROUND PLATE. PROVIDE 3M–DBY–6/DBR–6 WIRE CONNECTORS FOR ALL TWO–WIRE SPLICES. INSTALL EVERY 500' IN DIA. AND AT EVERY 2–WIRE DEAD END RUNS. LOCATION SHOWN ON PLAN IS DIAGRAMMATIC. PROVIDE (1)–50lb. BAG OF PowerFill OR PowerSet BACKFILL, VERIFY. REFER TO DETAILS FOR ADDITIONAL INFORMATION. INSTALL PER MANUFACTURERS RECOMMENDATIONS.	516 L	L–3.1 L–3.2
IS	CALSENSE I.T.S.	TWO–WIRE PATH ISOLATION SWITCH AT 2–WIRE PATH BRANCHES AND T–INTERSECTIONS. INSTALL I.T.S. TWO–WIRE PATH ISOLATION SWITCH MODEL TWIS WITH 3M–DBY–6/DBR–6 WIRE CONNECTORS FOR ALL SPLICES. VERIFY LOCATION PRIOR TO INSTALLATION. PROVIDE ID TAG MODEL ID–STD–P2 AND PLACE TAG ON INCOMING 2–WIRE PATH FEED WIRE (WIRE FROM CONTROLLER). PROVIDE GROUND PLATE AND SURGE PROTECTION DECODER FOR ISOLATION SWITCH GROUNDING. REFER TO DETAILS.	516 M	L–3.1 L–3.2
LOCATION NOT SHOWN ON PLAN	CHRISTY'S	VALVE ID TAGS. PURPLE ID TAG WITH VALVE STATION # / IDENTIFICATION INDICATED ON TAG MODEL ID–STD.–Y2, AND PURPLE ID TAG WITH WORDING INDICATING "WARNING RECYCLED/RECLAIMED WATER DO NOT DRINK" PRINTED ON TAG MODEL ID–MAX–P2–RC006. PROVIDE ID TAGS TO MV, FS, PRV, ARV, REMOTE CONTROL VALVE, GATE VALVE AND QUICK COUPLER VALVE.	––	––
LOCATION NOT SHOWN ON PLAN	KBI	LATERAL PIPE SWING / SPRING CHECK VALVE, LATERAL LINE SIZE, VERIFY LOCATION. • MODEL KSC / KC2 , PVC SCH. 40. INSTALL PER DETAILS AND MANUFACTURERS RECOMMENDATIONS.	K	L–3.2
LOCATION NOT SHOWN ON PLAN	––––	PVC PIPE TO DRIP TUBING HEADER / EXHAUST CONNECTION WITH SCH. 40 FITTINGS AND DRIP BARB FITTINGS. REFER TO NOTES AND DETAILS.	E,I	L–3.2
LOCATION NOT SHOWN ON PLAN	RAINBIRD	DRIP TUBING AIR RELIEF VALVE MODEL TLAVRV INSTALLED WITH DRIP BARB FITTINGS, VERIFY LOCATION. REFER TO NOTES AND DETAILS.	J	L–3.2
	NIBCO	DRIP MANUAL LINE FLUSH VALVE MODEL 4660–S. REFER TO NOTES AND DETAILS.	N	L–3.2
	RAINBIRD	DRIP SHRUB TUBING OPERATION INDICATOR SPRINKLER MODEL RD–12–S–P30–F–N–(8–HEVAN). 12" POP–UP WITH (1) 8' HE–VAN NOZZLE. ADJUST NOZZLE TO CLOSE POSITION AND LOCATE INDICATOR NEAR DESIGNATED DRIP RCV VALVE BOX. REFER TO DETAILS.	B,E,I	L–3.2

GPM xx M-x CONTROLLER SEQUENCE
RCV HYDROZONE xx 30 1" VALVE SIZE
RCV. DESIGN PSI
REMOTE CONTROL VALVE CALL–OUT

HYDROZONE LEGEND
SB=SHRUB
TR=TREE

CONTRACTOR SHALL REFER TO LATEST EDITION OF THE CITY OF IRVINE LANDSCAPE MANUAL AND STANDARD PLANS. REFER TO IRRIGATION DETAILS FOR ADDITIONAL DETAILED INFORMATION. ALL IRRIGATION INSTALLATION TO MEET OR EXCEED CITY STANDARDS.

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY
WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.
PLAN CHECK NUMBER: 358IR2
ON-SITE APPROVAL: DPL DATE: 11/13/2025

Know what's below. Call before you dig.

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	APP.	DATE
			CITY OF IRVINE	

PLANS PREPARED BY: CLARK & GREEN Associates Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL: REGISTERED LANDSCAPE ARCHITECT KEVIN D. LANGE 4564 Signature 10–31–27 Renewal Date 11–21–25 Date STATE OF CALIFORNIA
DATE: 11–21–25

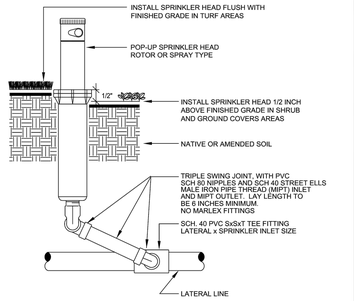
DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
IRRIGATION LEGEND

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK
LANDSCAPE PERMIT NO. ________ - LCE
SHEET: L-2.1 OF 10
JOB NO. 24–313
BID SET 11/21/2025



NOTE:

INSTALL SPRINKLER HEADS 2 INCHES FROM PAVING EDGE.

INSTALL SPRINKLER HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.

USE TEFLON TAPE ON ALL THREADED FITTINGS.

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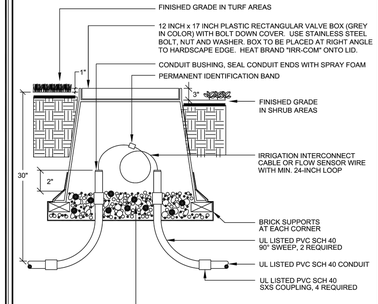
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	POP-UP SPRINKLER (6 INCH)	522
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
THE ENDS OF CONDUIT SHALL BE CAPPED UNTIL PULLING OF CONDUCTORS IS STARTED

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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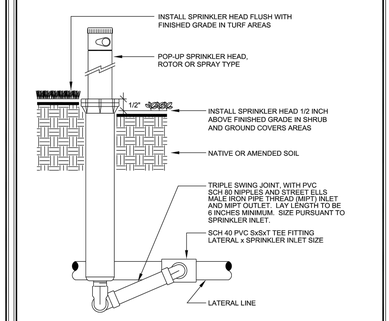
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	FLOW SENSOR & IRRIGATION INTERCONNECT CABLE	518
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



NOTE:
INSTALL SPRINKLER HEADS 6 INCHES FROM PAVING EDGE IN GROUND COVER AREAS. INSTALL SPRINKLER HEADS 4 INCHES FROM PAVING EDGE IN TURF AREAS.

INSTALL SPRINKLER HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS, OR BUILDINGS.

USE TEFLON TAPE ON ALL THREADED FITTINGS.

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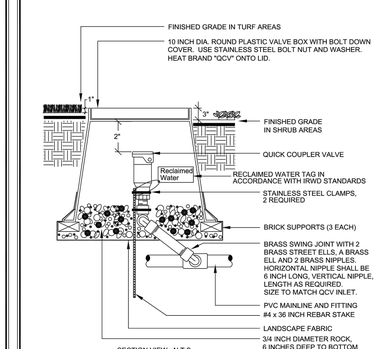
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	POP-UP SPRINKLER (12 INCH)	521
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
USE TEFLON TAPE ON ALL THREADED FITTINGS.

QUICK COUPLER KEY MUST CLEAR VALVE BOX.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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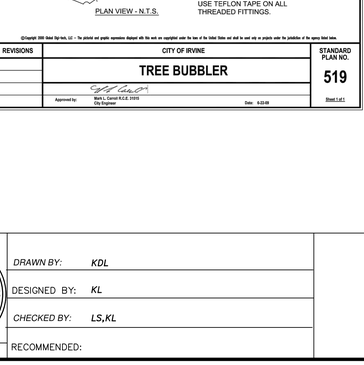
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	QUICK COUPLER VALVE IN BOX	508
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
ALL CONTROL WIRE SPLICES SHALL BE INSTALLED INSIDE PULL BOXES.
ALL SPLICES SHALL BE MADE IN ACCORDANCE WITH STANDARD PLAN NO. 516.
WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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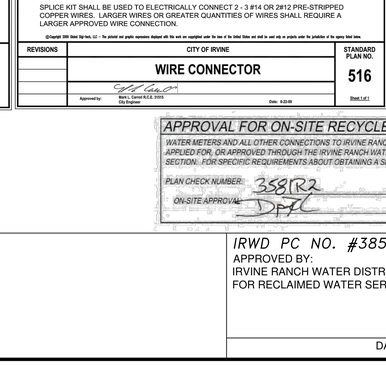
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	CONTROL WIRE PULL BOX	517
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
INSTALL CONTROL VALVES A MINIMUM OF TWO FEET APART IN SHRUB AREAS UNLESS OTHERWISE NOTED.

INSTALL CHRISTY'S MODEL #3800 RECLAIMED WATER IDENTIFICATION NAME PLATES TO THE LID OF EACH RECLAIMED WATER VALVE BOX.

USE TEFLON TAPE ON THREADED FITTINGS.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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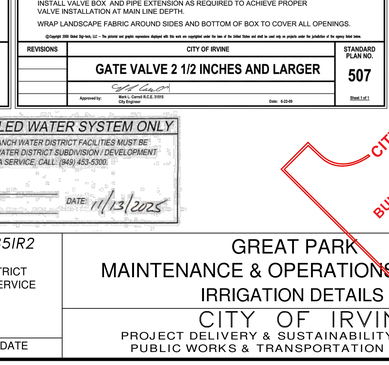
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	ANGLE REMOTE CONTROL VALVE	510
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
INSTALL VALVE BOX AND PIPE EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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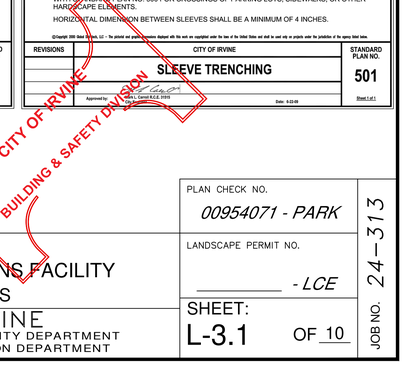
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	GATE VALVE 2 INCHES & SMALLER	506
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



DIMENSION	A	B	C
1/2" TO 2 1/2" IN SIZE	18"	12"	4"
3" TO 6" IN SIZE	24"		4"

SECTION VIEW - N.T.S.

NOTE:
ALL PLASTIC PIPING SHALL BE SNAKED WITHIN TRENCH.

BUNDLE WIRING AND WRAP WITH TAPE AT TEN FOOT INTERVALS.

ALL MAINLINE PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.

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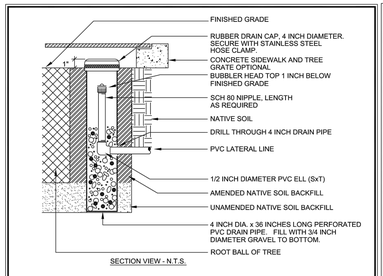
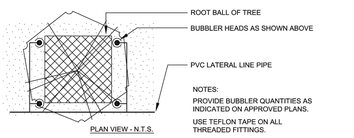
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	PIPE AND WIRE TRENCHING	500
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.



PLAN VIEW - N.T.S.

NOTES:
PROVIDE BUBBLER QUANTITIES AS INDICATED ON APPROVED PLANS.

USE TEFLON TAPE ON ALL THREADED FITTINGS.

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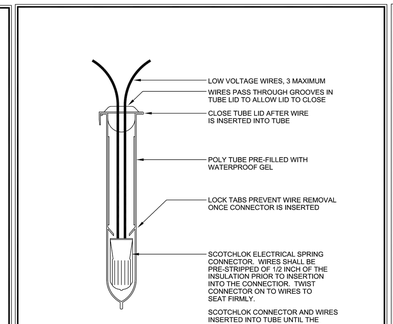
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	TREE BUBBLER	519
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



NOTE:
WIRE CONNECTOR SHALL BE A 3M DBY DIRECT BURY SPLICE KIT.

KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE, AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.

SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR 2#12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

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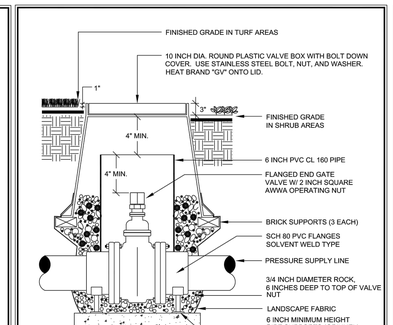
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	WIRE CONNECTOR	516
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



SECTION VIEW - N.T.S.

NOTE:
CONTRACTOR TO PROVIDE ONE 5 FOOT LONG TEE WRENCH WITH SQUARE NUT ADAPTER FOR THE OPERATION OF GATE VALVES.

INSTALL VALVE BOX AND PIPE EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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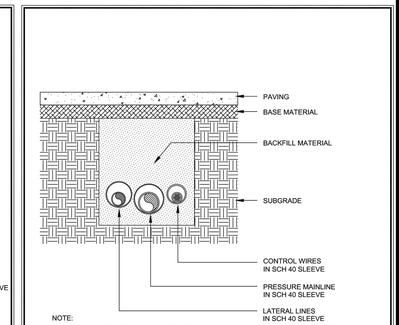
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	GATE VALVE 2 1/2 INCHES AND LARGER	507
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1



NOTE:
ALL PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.

ALL MAINLINE, LATERAL LINES, AND CONTROL WIRES SHALL BE SLEEVED BELOW ALL HARDSCAPE ELEMENTS WITH SCH 40 PVC, 2 TIMES THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.

DEPTH OF SLEEVES, BACKFILL, AND COMPACTION OF TRENCH SHALL BE IN ACCORDANCE WITH STANDARD PLAN NO. 223 FOR CROSSINGS OF STREETS AND SHALL BE IN ACCORDANCE WITH STANDARD PLAN NO. 500 FOR CROSSINGS OF PARKING LOTS, SIDEWALKS, OR OTHER HARDSCAPE ELEMENTS.

HORIZONTAL DIMENSION BETWEEN SLEEVES SHALL BE A MINIMUM OF 4 INCHES.

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REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	SLEEVE TRENCHING	501
	Approved by: Mark L. Carroll R.C.E. 31015, City Engineer — Date: 6-22-09	Sheet 1 of 1

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY

WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.

PLAN CHECK NUMBER: 358IR2

ON-SITE APPROVAL: DPK DATE: 11/13/2025

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	APP.	DATE

CITY OF IRVINE

PLANS PREPARED BY:
CLARK & GREEN Associates Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL
KEVIN D. LANE — LANDSCAPE ARCHITECT — No. 4564 — Signature 10-31-27 Renewal Date 11-21-25 Date — STATE OF CALIFORNIA
DATE: 11-21-25

DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

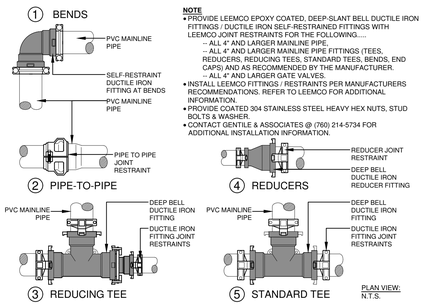
IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

GREAT PARK MAINTENANCE & OPERATIONS FACILITY
IRRIGATION DETAILS
CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET: L-3.1 OF 10
JOB NO. 24-313

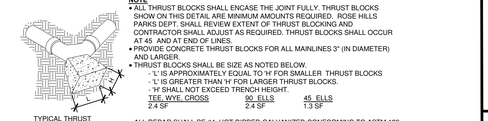
BID SET 11/21/2025

P | JOINT RESTRAINTS



NOTE
- PROVIDE LEEMCO EPOXY COATED, DEEP-SLANT BELL DUCTILE IRON FITTINGS / DUCTILE IRON SELF-RESTRAINED FITTINGS WITH LEEMCO JOINT RESTRAINTS FOR THE FOLLOWING.....
  - ALL 4" AND LARGER MAINLINE PIPE,
  - ALL 4" AND LARGER MAINLINE PIPE FITTINGS (TEES, REDUCERS, REDUCING TEES, STANDARD TEES, BENDS, END CAPS) AND AS RECOMMENDED BY THE MANUFACTURER.
  - ALL 4" AND LARGER GATE VALVES.
- INSTALL LEEMCO FITTINGS / RESTRAINTS PER MANUFACTURERS RECOMMENDATIONS. REFER TO LEEMCO FOR ADDITIONAL INFORMATION.
- PROVIDE COATED 304 STAINLESS STEEL HEAVY HEX NUTS, STUD BOLTS & WASHER.
- CONTACT GENTILE & ASSOCIATES @ (760) 214-5734 FOR ADDITIONAL INSTALLATION INFORMATION.

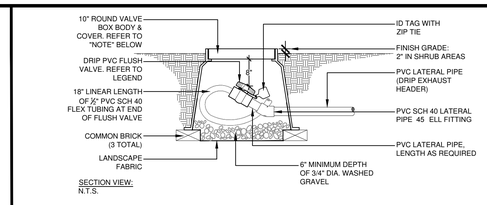
O | CONCRETE THRUST BLOCKS



NOTE
- ALL THRUST BLOCKS SHALL ENCASE THE JOINT FULLY. THRUST BLOCKS SHOW ON THIS DETAIL ARE MINIMUM AMOUNTS REQUIRED. ROSE HILLS PARKS DEPT. SHALL REVIEW EXTENT OF THRUST BLOCKING AND CONTRACTOR SHALL ADJUST AS REQUIRED. THRUST BLOCKS SHALL OCCUR AT 45 AND AT END OF LINES.
- PROVIDE CONCRETE THRUST BLOCKS FOR ALL MAINLINES 3" (IN DIAMETER) AND LARGER.
- THRUST BLOCKS SHALL BE SIZE AS NOTED BELOW.
  - 'L' IS APPROXIMATELY EQUAL TO 'H' FOR SMALLER THRUST BLOCKS
  - 'L' IS GREATER THAN 'H' FOR LARGER THRUST BLOCKS.
  - 'H' SHALL NOT EXCEED TRENCH HEIGHT.

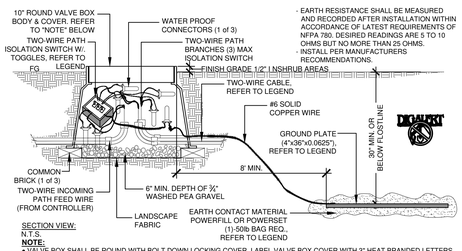
TEE, WYE, CROSS	90 ELLS	45 ELLS
2.4 SF	2.4 SF	1.3 SF

- ALL REBAR SHALL BE #4, HOT DIPPED GALVANIZED CONFORMING TO ASTM 123.
- WRAP PIPE FITTING WITH PROTECTIVE PIPE WRAP AROUND ALL CONCRETE THRUST BLOCKS.



NOTE:
- VALVE BOXES SHALL BE ROUND WITH BOLT DOWN LOCKING COVER. LABEL VALVE COVER WITH 3" HEAT BRANDED LETTERS INDICATING "FV"; CONTROLLER "NUMBER" AND "STATION #".
- PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR VALVE BOX.
- REFER TO "VALVE BOX LAYOUT DETAIL" (THIS SHEET) FOR ADDITIONAL DETAILED INFORMATION.

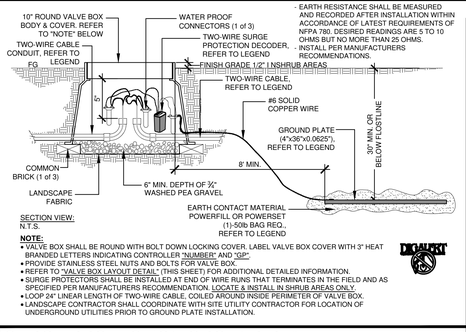
N | DRIP FLUSH VALVE



- EARTH RESISTANCE SHALL BE MEASURED AND RECORDED AFTER INSTALLATION WITHIN ACCORDANCE OF LATEST REQUIREMENTS OF NFPA 780. DESIRED READINGS ARE 5 TO 10 OHMS BUT NO MORE THAN 25 OHMS.
- INSTALL PER MANUFACTURERS RECOMMENDATIONS.

NOTE:
- VALVE BOX SHALL BE ROUND WITH BOLT DOWN LOCKING COVER. LABEL VALVE BOX COVER WITH 3" HEAT BRANDED LETTERS INDICATING CONTROLLER "NUMBER" AND "IS".
- PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR VALVE BOX.
- REFER TO "VALVE BOX LAYOUT DETAIL" (THIS SHEET) FOR ADDITIONAL DETAILED INFORMATION.
- SURGE PROTECTORS SHALL BE INSTALLED AT END OF WIRE RUNS THAT TERMINATES IN THE FIELD AND AS SPECIFIED PER MANUFACTURERS RECOMMENDATION. LOCATE & INSTALL IN SHRUB AREAS ONLY.
- LOOP 24" LINEAR LENGTH OF TWO-WIRE CABLE FOR EACH 2-WIRE PATCH, COILED AROUND INSIDE PERIMETER OF VALVE BOX.
- LANDSCAPE CONTRACTOR SHALL COORDINATE WITH SITE UTILITY CONTRACTOR FOR LOCATION OF UNDERGROUND UTILITIES PRIOR TO GROUND PLATE INSTALLATION.

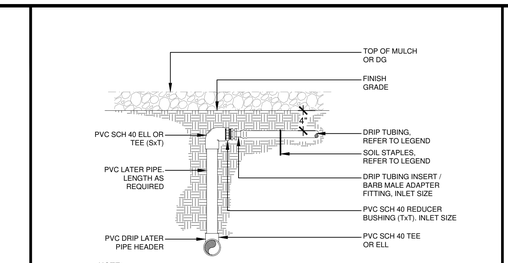
M | TWO WIRE PATH ISOLATION SWITCH



- EARTH RESISTANCE SHALL BE MEASURED AND RECORDED AFTER INSTALLATION WITHIN ACCORDANCE OF LATEST REQUIREMENTS OF NFPA 780. DESIRED READINGS ARE 5 TO 10 OHMS BUT NO MORE THAN 25 OHMS.
- INSTALL PER MANUFACTURERS RECOMMENDATIONS.

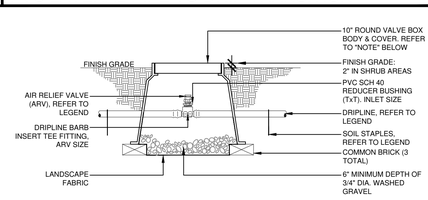
NOTE:
- VALVE BOX SHALL BE ROUND WITH BOLT DOWN LOCKING COVER. LABEL VALVE BOX COVER WITH 3" HEAT BRANDED LETTERS INDICATING "NUMBER" AND "IS".
- PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR VALVE BOX.
- REFER TO "VALVE BOX LAYOUT DETAIL" (THIS SHEET) FOR ADDITIONAL DETAILED INFORMATION.
- SURGE PROTECTORS SHALL BE INSTALLED AT END OF WIRE RUNS THAT TERMINATES IN THE FIELD AND AS SPECIFIED PER MANUFACTURERS RECOMMENDATION. LOCATE & INSTALL IN SHRUB AREAS ONLY.
- LOOP 24" LINEAR LENGTH OF TWO-WIRE CABLE. COILED AROUND INSIDE PERIMETER OF VALVE BOX.
- LANDSCAPE CONTRACTOR SHALL COORDINATE WITH SITE UTILITY CONTRACTOR FOR LOCATION OF UNDERGROUND UTILITIES PRIOR TO GROUND PLATE INSTALLATION.

L | SURGE PROTECTION GROUND PLATE



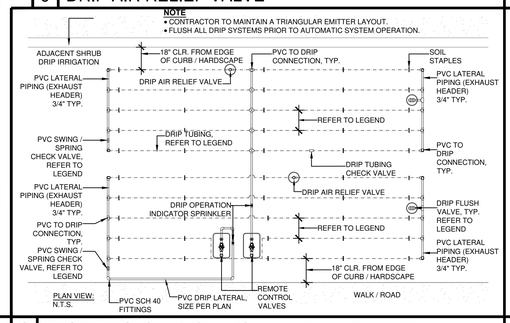
NOTE:
- PROVIDE TEFLON TAPE FOR ALL THREADED CONNECTIONS.

K | PVC LATERAL PIPE TO DRIP TRANSITION



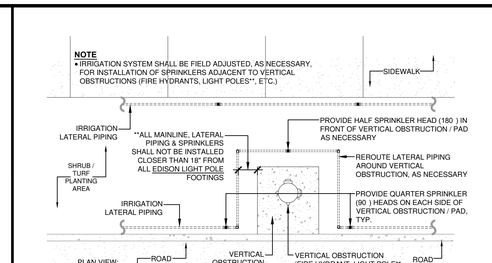
NOTE:
- VALVE BOXES SHALL BE ROUND WITH BOLT DOWN LOCKING COVER. LABEL VALVE COVER WITH 3" HEAT BRANDED LETTERS INDICATING "ARV".
- FLUSH DRIP SYSTEM BEFORE AND AFTER AIR RELIEF VALVE INSTALLATION.
- PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR VALVE BOX.
- PROVIDE TEFLON TAPE FOR ALL THREADED CONNECTIONS.
- LOCATE AIR RELIEF VALVE AT HIGHEST POINT WITHIN IRRIGATION DRIP SYSTEM.
- REFER TO "VALVE BOX LAYOUT DETAIL" (THIS SHEET) FOR ADDITIONAL DETAILED INFORMATION.

J | DRIP AIR RELIEF VALVE



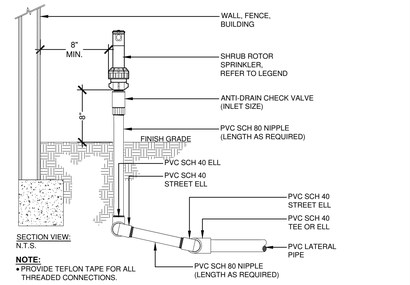
NOTE
- CONTRACTOR TO MAINTAIN A TRIANGULAR EMITTER LAYOUT.
- FLUSH ALL DRIP SYSTEMS PRIOR TO AUTOMATIC SYSTEM OPERATION.

I | DRIP TUBING LAYOUT (CENTER / END FEED)



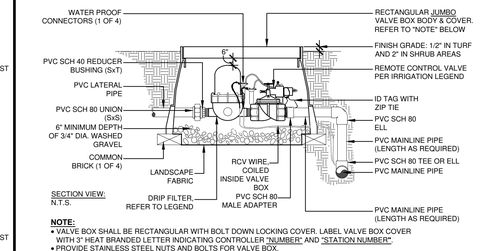
NOTE
- IRRIGATION SYSTEM SHALL BE FIELD ADJUSTED, AS NECESSARY, FOR INSTALLATION OF SPRINKLERS ADJACENT TO VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, LIGHT POLES**, ETC.)

H | SPRINKLERS @ VERTICAL OBSTRUCTION



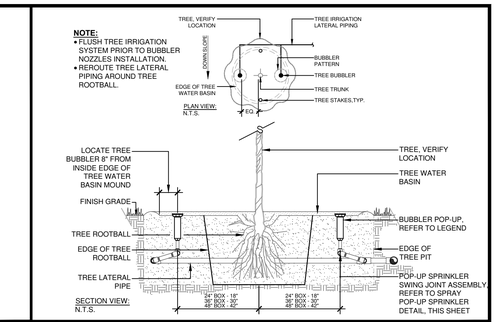
NOTE:
- PROVIDE TEFLON TAPE FOR ALL THREADED CONNECTIONS.

G | ROTOR ON RISER



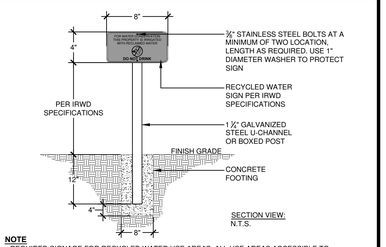
NOTE:
- VALVE BOX SHALL BE RECTANGULAR WITH BOLT DOWN LOCKING COVER. LABEL VALVE BOX COVER WITH 3" HEAT BRANDED LETTER INDICATING CONTROLLER "NUMBER" AND "STATION NUMBER".
- PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR VALVE BOX.
- PROVIDE TEFLON TAPE FOR ALL THREADED CONNECTIONS.
- REFER TO "VALVE BOX LAYOUT DETAIL" (THIS SHEET) FOR ADDITIONAL DETAILED INFORMATION.
- LOOP 30" LINEAR LENGTH OF RCV CABLE. COILED AROUND INSIDE PERIMETER OF VALVE BOX.
- PROVIDE VALVE BOX EXTENSION AS NECESSARY TO ACHIEVE FILTER CLR. TO TOP OF VALVE BOX.

F | DRIP REMOTE CONTROL VALVE



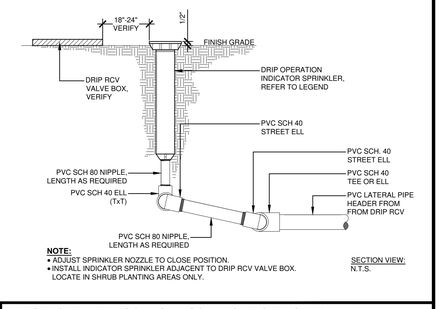
NOTE:
- FLUSH TREE IRRIGATION SYSTEM PRIOR TO BUBBLER NOZZLES INSTALLATION.
- REROUTE TREE LATERAL PIPING AROUND TREE ROOTBALL.

D | TREE IRRIGATION



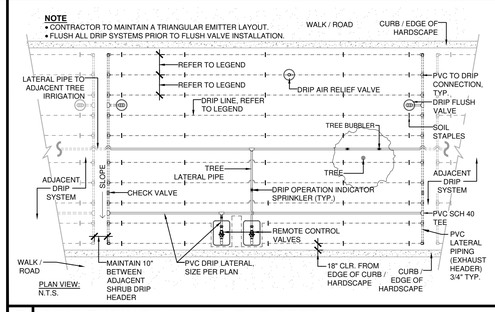
NOTE
- REQUIRED SIGNAGE FOR RECYCLED WATER USE AREAS: ALL USE AREAS ACCESSIBLE TO THE PUBLIC SHALL BE POSTED WITH SIGNS (MINIMUM 2 PER WATER METER) THAT ARE VISIBLE TO THE PUBLIC IN A SIZE NO LESS THAN 4 INCHES HIGH BY 8 INCHES WIDE.
- FOR MINIMUM WORDING REQUIRED ON SIGNAGE, REFERENCE THE ON-SITE NOTES LETTER "L", ON THE IRRIGATION LEGEND SHEET.

C | RECYCLED WATER SIGN



NOTE:
- ADJUST SPRINKLER NOZZLE TO CLOSE POSITION.
- INSTALL INDICATOR SPRINKLER ADJACENT TO DRIP RCV VALVE BOX. LOCATE IN SHRUB PLANTING AREAS ONLY.

B | DRIP OPERATION INDICATOR SPRINKLER



NOTE
- CONTRACTOR TO MAINTAIN A TRIANGULAR EMITTER LAYOUT.
- FLUSH ALL DRIP SYSTEMS PRIOR TO FLUSH VALVE INSTALLATION.

E | DRIP TUBING LAYOUT (END FEED)

A |

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY

WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.

PLAN CHECK NUMBER: 358IR2

ON-SITE APPROVAL: DAL *DATE:* 11/13/2025

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	APP.	DATE

CITY OF IRVINE

PLANS PREPARED BY:
CLARK & GREEN Associates Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL
REGISTERED LANDSCAPE ARCHITECT
Signature
10-31-27
Renewal Date
11-21-25
Date
STATE OF CALIFORNIA
DATE: 11-21-25

DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

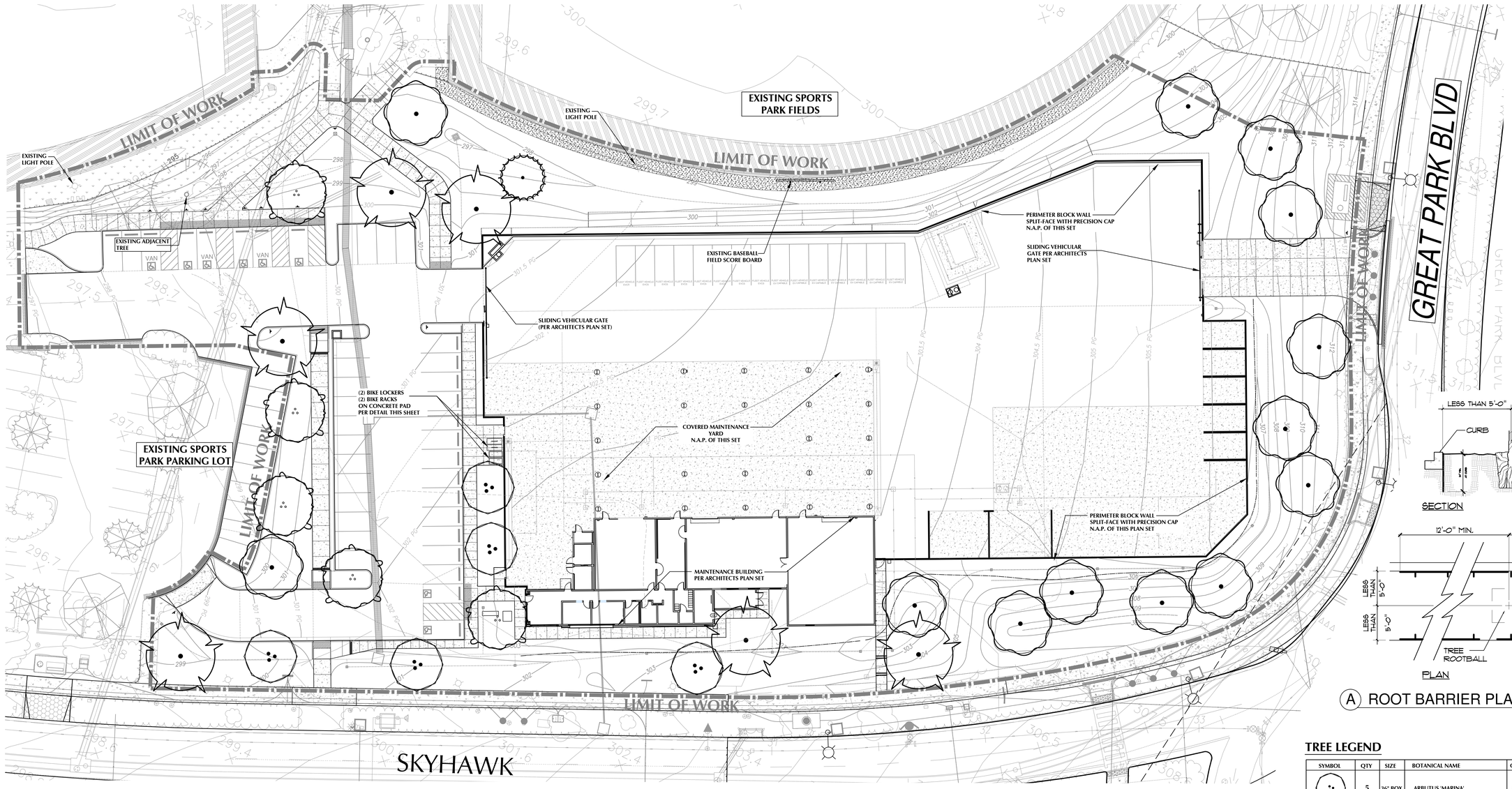
IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

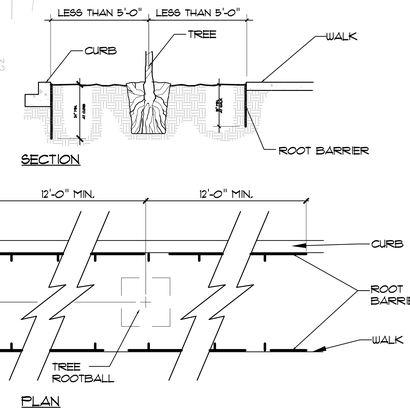
GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
IRRIGATION DETAILS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. *00954071 - PARK*
LANDSCAPE PERMIT NO. _____ - *LCE*
SHEET: L-3.2 OF 10
JOB NO. 24-313

BID SET 11/21/2025



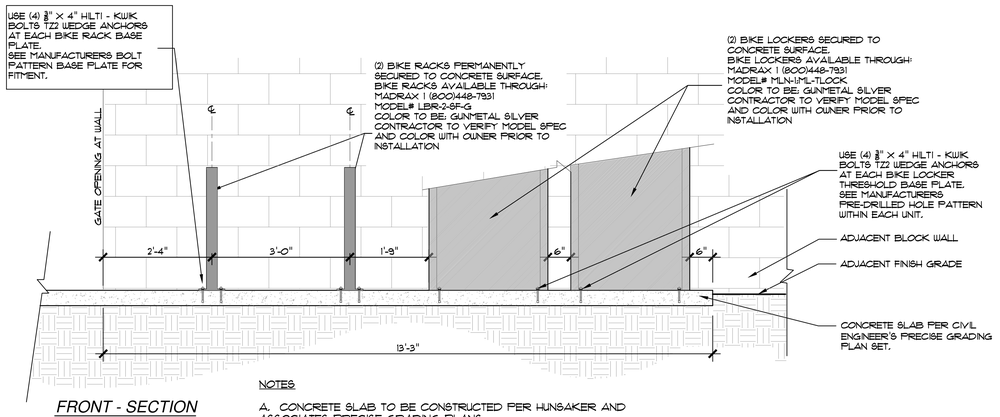


A ROOT BARRIER PLACEMENT

TREE LEGEND

SYMBOL	QTY	SIZE	BOTANICAL NAME	COMMON NAME	15 YR DIAMETER
	5	36" BOX	ARBUTUS 'MARINA'	MARINA STRAWBERRY TREE	20' OF 314 SF
	1	36" BOX	PINUS ELDARICA	AFGHAN PINE	20' OF 314 SF
	6	36" BOX	PISTACIA CHINENSIS	CHINESE PISTACHE	25' OR 491 SF
	6	36" BOX	PLATANUS ACERIFOLIA 'COLUMBIA'	LONDON PLANE TREE	25' OR 491 SF
	13	36" BOX	QUERCUS AGRIFOLIA	COAST LIVE OAK	20' OF 314 SF

1. TREE QUANTITIES PER THIS SHEET ONLY.
2. REFER TO THE PLANTING NOTES AND DETAILS L-6.1' AND THE PLANTING SPECIFICATIONS SHEET L-8.1'.
3. SEE ROOT BARRIER DETAIL THIS SHEET FOR ADDITIONAL INFORMATION.



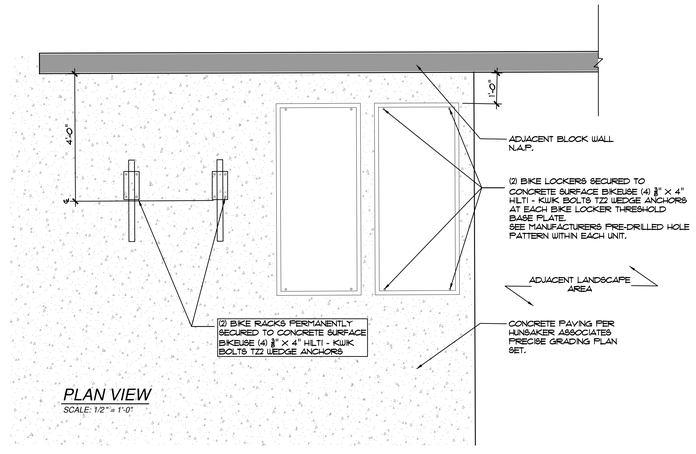
FRONT - SECTION
SCALE: 3/4" = 1'-0"

NOTES

A. CONCRETE SLAB TO BE CONSTRUCTED PER HUNSAKER AND ASSOCIATES PRECISE GRADING PLANS.

B. REFER TO HUNSAKER AND ASSOCIATES PRECISE GRADING PLANS FOR ALL HORIZONTAL AND VERTICAL CONTROL STAKING OF PROPOSED FLATWORK, WALLS, AND FOOTINGS.

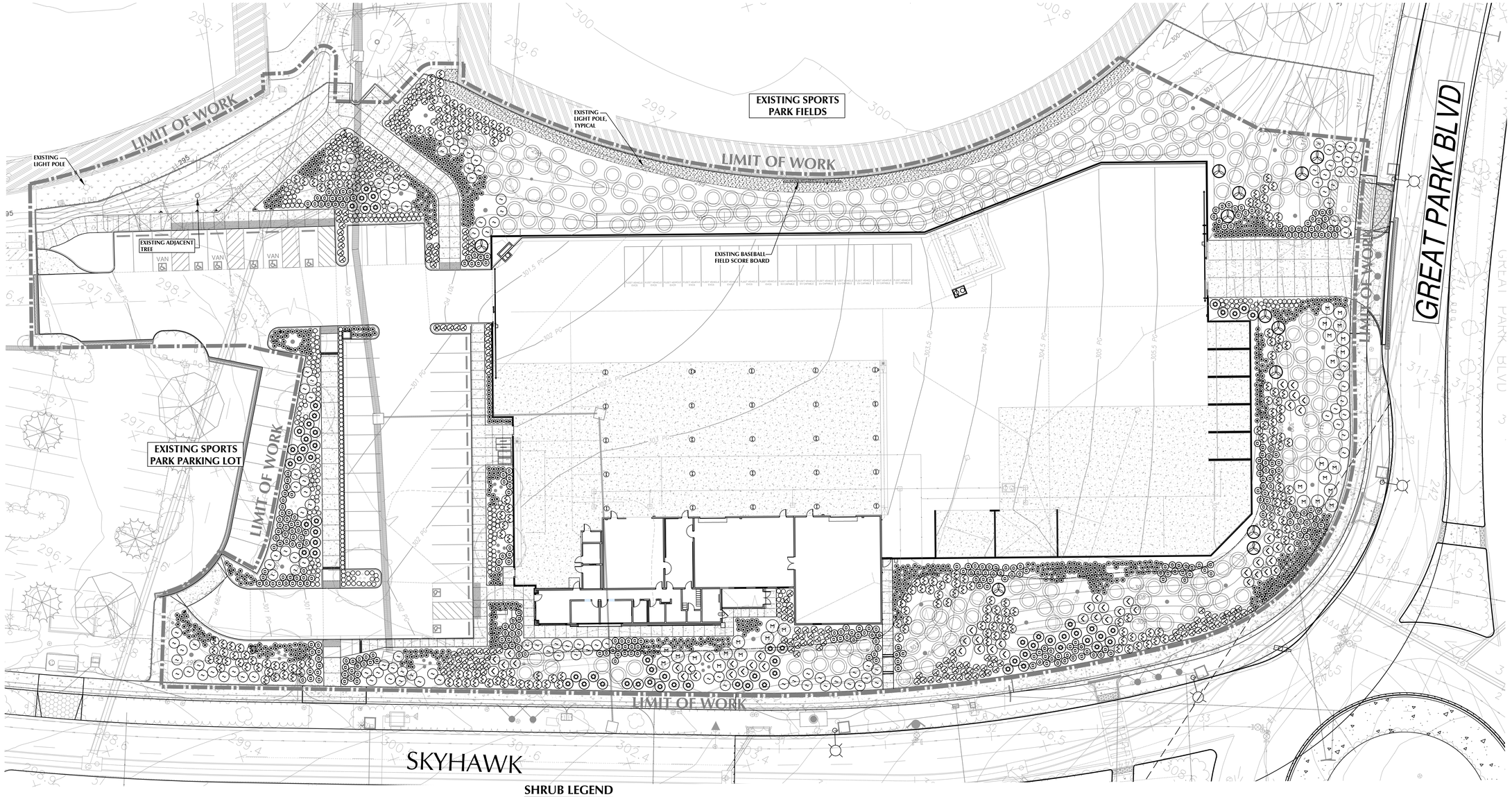
BIKE PARKING DETAIL



PLAN VIEW
SCALE: 1/2" = 1'-0"

BIKE PARKING DETAIL

			CITY OF IRVINE		PLANS PREPARED BY:	SEAL		IRWD PC NO. #385IR2	GREAT PARK MAINTENANCE & OPERATIONS FACILITY TREE PLANTING PLAN	PLAN CHECK NO. 00954071 - PARK
					CLARK & GREEN Associates Landscape Architecture	REGISTERED LANDSCAPE ARCHITECT KEVIN D. LANEY Signature 10-31-27 Renewal Date 11-21-25 Date OF CALIFORNIA	DRAWN BY: KDL	APPROVED BY: IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE	CITY OF IRVINE PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT PUBLIC WORKS & TRANSPORTATION DEPARTMENT	LANDSCAPE PERMIT NO. _____ - LCE
							DESIGNED BY: KL			SHEET: L-4.1 OF 10
							CHECKED BY: LS,KL			JOB NO. 24-313
NO.	DATE	REVISIONS	APP.	DATE	LICENSE NO. 4564 EXP. DATE	DATE: 11-21-25	RECOMMENDED:	DATE		BID SET 11/21/2025



SHRUB LEGEND

SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	COMMENTS
	203	5 GAL.	ACACIA 'DESERT CARPET'	DESERT CARPET ACACIA	8' SPACING
	311	1 GAL.	CAREX DIVULSA	BERKELEY SEDGE	2' SPACING
	69	1 GAL.	EREMOPHILA GLABRA 'MINGENEW GOLD'	GOLD EMU BUSH	5' SPACING
	211	1 GAL.	IVA HAYESIANA	SAN DIEGO MARSH-ELDER	4' SPACING
	12	5 GAL	HETEROMELES ARBUTIFOLIA	TOYON	PER PLAN
	127	5 GAL.	LANTANA CAMARA 'NEW GOLD'	NEW GOLD LANTANA	5' SPACING
	826	1 GAL.	LOMANDRA SPP.	MAT RUSH	2' SPACING
	50	1 GAL.	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	PINK MUHLY FOUNTAIN GRASS	4' SPACING
	27	1 GAL.	MYOPORUM PARVIFOLIUM	MYOPORUM	4' SPACING
	211	5 GAL.	RHAPHIOLEPIS SPP.	INDIAN HAWTHORN	3' SPACING
	315	1 GAL.	WESTRINGIA FRUTICOSA 'MORNING LIGHT'	COAST ROSEMARY	3' SPACING

***ALL PLANTING SHALL BE SETBACK 'SPACING' DISTANCE + 12" FOR ALL HARDSCAPE EDGES.

NOTE:

1. SHRUB QUANTITIES PER THIS SHEET ONLY.
2. REFER TO THE PLANTING NOTES AND DETAILS ON THE PLANTING DETAILS AND NOTES SHEET AND THE PLANTING SPECIFICATIONS SHEET.
3. MULCH ALL LANDSCAPE AREAS WITH A 3" LAYER MINIMUM OF 'FOREST FLOOR' (½"-⅝"), AS MANUFACTURED BY AGUINAGA GREEN OR APPROVED EQUAL.

   AGUINAGA GREEN
   PHONE: 949.786.9558
4. #ALL ACACIA 'DESERT CARPET' MUST BE PURCHASED FROM AN APPROVED LICENSED VENDOR AND MUST HAVE PATENT TAG ON EACH PLANT.

PLANT MATERIAL NOTE:

ALL PLANT MATERIAL INCLUDING TREES, SHRUBS, AND VINES SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT, VIA PHOTO SUBMITTALS, PRIOR TO DELIVERY TO SITE. PHOTO SUBMITTALS SHALL INCLUDE NURSERY, SUPPLIER AND DATE OF PHOTOS. ANY MATERIAL DELIVERED TO SITE WITHOUT APPROVAL IS SUBJECT TO REJECTION. PHOTO SUBMITTALS SHALL BE SENT TO LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO SHIPMENT OF MATERIAL TO THE PROJECT SITE AND SHOULD INCLUDE SOME TYPE OF SCALE REFERENCE IN PHOTO. TREES SHALL BE NOTED WITH HEIGHT FROM FINISH GRADE IN CONTAINER AND CANOPY HEAD SIZE. LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF SCHEDULED NURSERY DELIVERY TIMES A MINIMUM OF 24 HOURS PRIOR TO SHIPMENT OF PLANT MATERIAL. REFER TO PLANTING NOTES AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING QUALITY OF NURSERY STOCK.

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

CITY OF IRVINE
PLANNING & SAFETY DIVISION

NORTH
0 20' 40'

NO.	DATE	REVISIONS	CITY OF IRVINE APP.	DATE

PLANS PREPARED BY:
CLARK & GREEN ASSOCIATES
Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL
DAVID D. LANDRY
REGISTERED LANDSCAPE ARCHITECT
Signature 10-31-25
Renewal Date 11-21-25
STATE OF CALIFORNIA

DATE: 11-21-25

DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
SHRUB PLANTING PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET: L-5.1 OF 10
JOB NO. 24-313

BID SET 11/21/2025

GENERAL PLANTING NOTES

1. THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR ON THE SITE AT ALL TIMES DURING CONSTRUCTION THROUGH COMPLETION OF PICK-UP WORK. ALL EMPTY BAGGED AMENDMENTS, FERTILIZERS, SEEDS, ETC. USED ON PROJECT SHALL STAY ON SITE IN A NEAT, CLEAN AND ORDERLY MANNER UNTIL FINAL APPROVAL BY LANDSCAPE ARCHITECT. ALL MATERIALS OTHER THAN SOIL ORGANIC AMENDMENTS SHALL BE DELIVERED IN UNOPENED BAGS. PACKING LISTS SHALL BE PROVIDED TO VERIFY FURNISHED QUANTITIES. ANY EXCESS MATERIALS REMOVED FROM THE JOB SITE SHALL BE IDENTIFIED PRIOR TO THEIR REMOVAL.

2. THE CONTRACTOR SHALL VERIFY ALL PLANT MATERIAL QUANTITIES PRIOR TO INSTALLATION. PLANT MATERIAL QUANTITIES LISTED FOR CONVENIENCE OF CONTRACTOR. ACTUAL NUMBER OF SYMBOLS SHALL HAVE PRIORITY OVER QUANTITY DESIGNATED. (NO ADDITIONAL COMPENSATION SHALL BE PROVIDED.)

3. THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL CONTAINER GROWN TREES, SHRUBS AND VINES, INCLUDING SEEDED AND SODDED TURF, HYDROMULCHES AND FLATTED GROUNDCOVERS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE AND PAY FOR: PLANTING OF ALL PLANT MATERIALS; THE SPECIFIED GUARANTEE OF ALL PLANT MATERIALS; THE STAKING AND GUYING OF TREES AND THE CONTINUOUS PROTECTION OF ALL PLANT MATERIALS UPON THEIR ARRIVAL AT THE SITE.

4. GROUNDCOVER PLANTING
GROUNDCOVER PLANTING SHALL BE AS SHOWN ON PLAN UNLESS OTHER-WISE NOTED. SEE DETAIL A, B, & D THIS SHEET FOR FLATTED GROUND COVER PLANTING.

5. PLANT MATERIAL
ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER PRIOR TO INSTALLATION.

6. BOXED TREES
ALL BOXED TREES SHALL BE SELECTED AND SPOTTED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.

7. VINES
NOT USED

8. NOT USED

9. SOIL AMENDMENTS, FERTILIZERS & SOIL CONDITIONERS
THE SOIL AMENDMENTS SPECIFIED BELOW ARE FOR BIDDING AND INSTALLATION. THE OWNER HAS PROVIDED AND PAID FOR THE INITIAL SOILS AGRONOMY REPORT FROM AN APPROVED SOILS LABORATORY AND ADDITIONAL SPECIFICATIONS MAYBE PROVIDED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIALS. ANY MODIFICATION TO THE BELOW SPECIFICATION MUST BE IN WRITING FROM THE OWNER OR LANDSCAPE ARCHITECT. AT THE DIRECTION OF THE OWNER OR LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SOILS AGRONOMY TESTING. ADDITIONAL SOILS AGRONOMY TESTING SHALL BE PAID FOR BY THE CONTRACTOR AND SHALL BE COLLECTED IN THE MANNER AS DEFINED IN THE SPECIFICATIONS.

10. FLAT AREAS AND SLOPES LESS THAN 3:1
FOR AREA TO BE LANDSCAPED ON LESS THAN 3:1 SLOPE, THE FOLLOWING AMENDMENTS SHALL BE UNIFORMLY BROADCAST AND THOROUGHLY INCORPORATED BY MEANS OF A ROTOTILLER OR EQUAL TO A DEPTH OF 8". RIP SOILS 24 INCHES DEEP IF THE SITE HAS BEEN COMPACTED FROM SITE CONSTRUCTION ACTIVITIES (i.e. HEAVY EQUIPMENT, HAUL ROADS, VEHICULAR TRAFFIC). ANY AREAS OF CONTAMINATION SHALL BE OVER EXCAVATED AND REMOVED FROM THE SITE (CONCRETE WASHINGS, PAINTS, MASONRY DEBRIS, ETC)

AMOUNT PER 1,000 SQUARE FEET
- AMMONIUM SULFATE (21-0-0) - 5 LBS
- POTASSIUM SULFATE (0-0-50) - 8 LBS
- TRIPLE SUPERPHOSPHATE (0-45-0) - 4 LBS
- AGRICULTURAL GYPSUM - 30 LBS
ORGANIC SOIL AMENDMENT - ABOUT 3 CY, SUFFICIENT FOR 3% TO 5% SOIL ORGANIC MATTER ON A DRY WEIGHT BASIS

COMPOSTED ORGANIC AMENDMENT SHALL ADHERE TO THE DEFINITION FOR COMPOSTED ORGANIC AMENDMENT ON THIS SHEET. ANALYSIS OF PROPOSED COMPOSTED AMENDMENT SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT FOR REVIEW BEFORE INSTALLATION.

11. HAND PLANTED SLOPES GREATER THAN 3:1
FOR HAND PLANTED OR SODDED SLOPES GREATER THAN 3:1 UNIFORMLY BROADCAST:

AMOUNT PER 1,000 SQUARE FEET
- AMMONIUM SULFATE (21-0-0) - 5 LBS
- POTASSIUM SULFATE (0-0-50) - 8 LBS
- TRIPLE SUPERPHOSPHATE (0-45-0) - 4 LBS
- AGRICULTURAL GYPSUM - 30 LBS
ORGANIC SOIL AMENDMENT - ABOUT 3 CY, SUFFICIENT FOR 3% TO 5% SOIL ORGANIC MATTER ON A DRY WEIGHT BASIS

RAKE OR SCRATCH THE ABOVE INTO SOIL TO INCORPORATE AND WATER THOROUGHLY AFTER INSTALLATION OF PLANTS. ALL AREAS ARE TO BE THOROUGHLY WATERED, SUCH THAT SOILS ARE WET TO A MINIMUM DEPTH OF 12" AT LEAST ONCE PRIOR TO PLANTING.

12. PLANTING BACKFILL
A. THE PLANTING PITS FOR TREES AND SHRUBS SHALL BE EXCAVATED PER PLANT DETAILS. THE BACKFILL MIX FOR USE AROUND THE ROOTBALL OF ALL TREES AND SHRUBS SHALL CONSIST OF THE FOLLOWING FORMULA PER CUBIC YARD OF BACKFILL:

AMOUNT PER 1,000 SQUARE FEET
- AMMONIUM SULFATE (21-0-0) - 1/4 LB
- POTASSIUM SULFATE (0-0-50) - 1/3 LB
- TRIPLE SUPERPHOSPHATE (0-45-0) - 1/4 LB
- AGRICULTURAL GYPSUM - 1.5 LBS
ORGANIC SOIL AMENDMENT - ABOUT 15% BY VOLUMN, SUFFICIENT FOR 3% TO 5% SOIL ORGANIC MATTER ON A DRY WEIGHT BASIS

IN ALL CASES, THERE SHALL BE POSITIVE DRAINAGE AWAY FROM THE ROOT CROWN OF THE PLANT MATERIAL

B. PRIOR TO PLANTING, A SAMPLE BACKFILL MIXTURE SHALL BE CREATED UNDER THE OBSERVATION OF THE LANDSCAPE ARCHITECT AND/OR OWNER. THIS MIXTURE SHALL BECOME THE "CONTROL" BACKFILL AND SHALL BE TESTED BY THE APPROVED SOIL LABORATORY FOR ESTABLISHING THE CONTROL BACKFILL COMPOSITION.

C. THROUGHOUT THE PROJECT DURATION, AT ANY TIME, THE LANDSCAPE ARCHITECT MAY SAMPLE THE ACTUAL BACKFILL MIXTURES IMPLEMENTED ON THE PROJECT AND RETEST THESE BY THE APPROVED SOILS LABORATORY FOR COMPARISON WITH THE "CONTROL" SAMPLE. IF THE SUBSEQUENT BACKFILL MIXTURES ARE NOT REASONABLY CONSISTENT AS DETERMINED BY THE LANDSCAPE ARCHITECT WITH THE CONTROL SAMPLE, THE CONTRACTOR SHALL REMOVE ALL PLANT MATERIAL AND RE-AMEND AND RE-PLANT. IF MORE THAN THREE (3) SAMPLES ARE NOT REASONABLY CONSISTENT WITH THE CONTROL SAMPLE ANALYSIS THE CONTRACTOR SHALL PAY FOR ALL FUTURE SAMPLES.

45 DAY & 120 DAY FERTILIZER

13. FORTY FIVE (45) DAYS AFTER INSTALLATION ALL LANDSCAPE SHALL BE FERTILIZED WITH THE FOLLOWING:

APPLY AMMONIUM SULFATE (21-0-0) AT 5 POUNDS PER 1,000 SQUARE FEET.

ALL MATERIALS SHALL BE THOROUGHLY IRRIGATED INTO SOILS IMMEDIATELY AFTER APPLICATION.

14. ONE HUNDRED TWENTY (120) DAYS AFTER INSTALLATION ALL LANDSCAPE SHALL BE BROADCAST FERTILIZED WITH THE FOLLOWING:

APPLY AMMONIUM SULFATE (21-0-0) AT 5 POUNDS PER 1,000 SQUARE FEET.

ALL MATERIALS SHALL BE THOROUGHLY IRRIGATED INTO SOILS IMMEDIATELY AFTER APPLICATION.

FOR CONTINUED SITE MAINTENANCE, APPLY THE FOLLOWING;
- AMMONIUM SULFATE (21-0-0) AT 5 LBS PER 1,000 SF ONCE PER QUARTER
- YARA ORR SIMPLOT CALCIUM AMMONIUM NITRATE (27-0-0) AT 4 LBS PER 1,000 SF IN AREAS WITH LOW SOIL AERATION
- GYPSUM AT 10 LBS PER 1,000 SF ANNUALLY OR AS NEEDED
- NITROGEN, PHOSPHROUS AND POTASSIUM AS NEEDED (12-12-12) AT 8 LBS PER 1,000 SF

15. FOR ALL STAKED TREES, SEE DETAIL C,D & F , THIS SHEET.

16. GUYED TREES - OMIT

17. FOR SHRUB PLANTING, SEE DETAIL A, B, & D , THIS SHEET.

18. PRE-INSTALLATION WEED ABATEMENT
ON IRRIGATED FILL SLOPES AND FLAT AREAS TO BE SEEDED OR SODDED REMOVE ALL EXISTING VEGETATION, EXCEPT AS IDENTIFIED BY LANDSCAPE ARCHITECT FOR PRESERVATION IN PLACE. THE SHRUBS OR TREES TO BE PRESERVED SHALL BE CLEARLY MARKED WITH AN ORANGE RIBBON. FERTILIZE THESE AREAS WITH 300 LBS. PER ACRE OF 14-4-9, OR EQUIVALENT. IRRIGATION FOR 2-4 WEEKS, 2-4 TIMES DAILY TO KEEP THE SOIL SURFACE MOIST IN ORDER TO GERMINATE THE WEED SEEDS EXISTING IN THE SOIL. ONCE THE WEED SEEDS HAVE GERMINATED AND ATTAINED SUFFICIENT GROWTH, APPLY A BROAD SPECTRUM, NON-SELECTIVE HERBICIDE ACCORDING TO THE MANUFACTURER'S LABEL RECOMMENDATIONS AND LICENSED PCA. AFTER SEVEN DAYS, GRUB ALL WEED GROWTH FROM AREAS TO OWNER'S APPROVAL. REPEAT ENTIRE PROCEDURE IF DIRECTED BY LANDSCAPE ARCHITECT OR OWNER.

19. SHRUB PLANTING METHOD
EXCAVATE PLANTING PIT TO TWO (2) TIMES THE DIAMETER OF ROOTBALL AND 1-1/2 TIMES ITS DEPTH. FILL BOTTOM OF PLANTING PIT WITH UNCOMPACTED NATIVE SOIL TO BRING LEVEL TO PROPER PLANTING DEPTH. BACKFILL AROUND ROOTBALL WITH AMENDED SOIL. FORM BASIN ON DOWN-SLOPE SIDE OF PLANTING PIT TO HOLD MOISTURE WITHIN THE ROOT ZONE. REMOVE BASINS 60 DAYS AFTER PLANTING.

20. FIRST WATERING OF NEWLY PLANTED MATERIAL
WET THE ROOT ZONE BY HAND WATERING THE PITS TO THE LOWEST EDGE BASIN. AFTER AMENDED SOIL HAS BEEN WETTED, THE SPRINKLERS SHOULD CONTROL THE MOISTURE FROM THAT POINT ON.

21. ESTABLISHMENT/MAINTENANCE PERIOD (120 DAYS)
THE CONTRACTOR SHALL PROVIDE FOR A 60 DAY ESTABLISHMENT AND A 60 DAY MAINTENANCE PERIOD AFTER THE APPROVAL IN WRITING OF THE INSTALLATION OF THE PROJECT. THE MAINTENANCE SHALL BE PER THE ABOVE NOTES AND THE PROJECT LANDSCAPE SPECIFICATIONS.

22. TREE ROOT BARRIERS
INSTALL "DEEP ROOT" (OR APPROVED EQUAL) TREE ROOT BARRIERS ON ALL TREES WITHIN 5'-0" OF SIDEWALKS OR HARD SURFACES. CHECK MANUFACTURERS CALCULATOR CHART FOR NUMBER OF PANELS REQUIRED FOR EACH SIZE TREE. AVAILABLE FROM: DEEP ROOT PARTNERS, L.P. 81 LANGTON ST #4 SAN FRANCISCO, CA 94103
(800) 458-7668, FAX - (800) 277-7668

23. SHRUB LAYOUT
CONTRACTOR SHALL PROVIDE COLORED FLAGS FOR ALL SHRUB MASSES ALL SLOPE AREAS TO BE SPOTTED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING. AN ADEQUATE QUANTITY OF DIFFERENT COLORS SHALL BE PROVIDED FOR APPROPRIATE LAYOUT CLARITY.

24. MULCH
CONTRACTOR SHALL PROVIDE 2" LAYER OF FOREST FLOOR (1/2" - 1-1/2") OR EQUAL MULCH IN ALL SHRUB PLANTING AREAS INCLUDING SLOPES 2:1 AND LESS.
PROVIDE 2" LAYER OF MULCH AROUND TREE TRUNK IN TURF AREAS. MULCH SHALL EXTEND IN A 36" DIAMETER CIRCLE FROM TRUNK, BUT KEEP 6" CLEAR AROUND SURFACE OF BARK.
DO NOT MULCH SURFACE OF ROOTBALLS.

MULCH AVAILABLE FROM:
AQUINAGA FERTILIZER COMPANY
PHONE (949) 786-9558, FAX (949) 786-9574

25. DEFINITION OF COMPOSTED ORGANIC AMENDMENT
A. HUMUS MATERIAL SHALL HAVE AN ACID-SOLUABLE ASH CONTENT OF NO LESS THAN 6% AND NO MORE THAN 20%.
B. THE pH OF THE MATERIAL SHALL BE BETWEEN 6 AND 7.5.
C. THE SLAT CONTENT SHALL BE LESS THAN 10 MILLIMHO/CM @ 25 DEGREES C ON A SATURATED PASTE EXTRACT.
D. BORON CONTENT OF THE SATURATED EXTRACT SHALL BE LESS THAN 1.0 PARTS PER MILLION.
E. SILICON CONTENT (ACID-SOLUABLE ASH) SHALL BE LESS THAN 50%.
F. CALCIUM CARBONATE SHALL NOT BE PRESENT IF TO BE APPLIED ON ALKALINE SOILS.
G. TYPES OF ACCEPTABLE PRODUCTS ARE COMPOST, MANURES, MUSHROOM COMPOSTS, STRAW, ALFALFA, PEAT MOSSES, ETC. LOW IN SALTS, LOW IN HEAVY METALS, FREE FROM WEED SEEDS, FREE OF PATHOGENS AND OTHER DELETERIOUS MATERIALS.
H. COMPOSTED WOOD PRODUCTS ARE CONDITIONALLY ACCEPTABLE [STABLE HUMUS MUST BE PRESENT]. WOOD BASED PRODUCTS ARE NOT ACCEPTABLE WHICH ARE BASED ON RED WOOD OR CEDAR.
I. SLUDGE-BASED MATERIALS ARE NOT ACCEPTABLE .
J. CARBON:NITROGEN RATION IS LESS THAN 25:1.
K. THE COMPOST SHALL BE AEROBIC WITHOUT MALODOROUS PRESENCE OF DECOMPOSITION PRODUCTS.
L. THE MAXIMUM PARTICLE SIZE SHALL BE 0.5 INCH, 80% OR MORE SHALL PASS A NO. 4 SCREEN FOR SOIL AMENDING. THE MAXIMUM PARTICLE SIZE SHALL BE 0.25 INCH FOR HYDROSEEDING.

MAXIMUM TOTAL PERMISSIBLE POLLUTANT CONCENTRATIONS IN AMENDMENT IN PARTS PER MILLION ON A DRY WEIGHT BASIS:

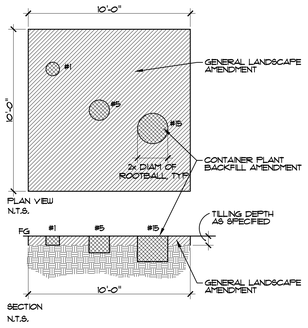
ARSENIC 20	MERCURY 10
CADMIUM 15	MOLYBDENUM 60
CHROMIUM 300	NICKEL 100
COBALT 50	SELENIUM 50
COPPER 150	SILVER 10
LEAD 200	VANANDIUM 200
	ZINC 300

SOIL PREP/AMENDMENT MOCK UP

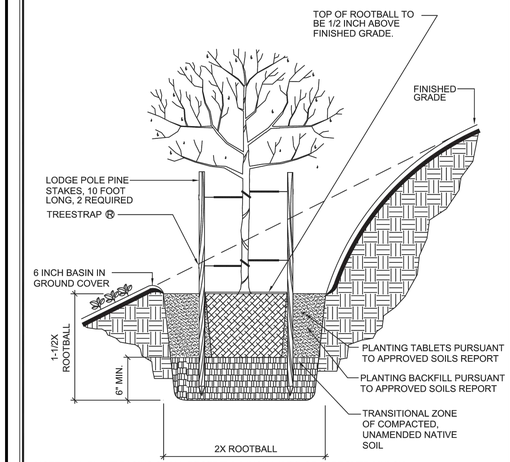
TO ENSURE THAT APPROPRIATE MEANS AND METHODS OF SOIL PREPARATION HAVE BEEN UNDERTAKEN AND THE REQUIRED QUANTITES OF SOIL AMENDMENTS HAVE BEEN APPLIED, THE CONTRACTOR SHALL PREPARE A SOIL PREPARATION AND AMENDMENT MOCK-UP TO BE REVIEWED BY THE OWNER'S REPRESENTATIVE AND ANALYZED FOR SOIL AGRONOMIC ACCEPTABILITY. THE SOIL PREPARATION MOCK-UP LOCATION SHALL BE SELECTED BY THE OWNER'S REPRESENTATIVE AND CONSIST OF A 10 FT. X 10 FT. SQUARE AREA LOCATED WITHIN A PROJECT LANDSCAPE AREA. THE CONTRACTOR SHALL PREPARE THIS AREA, UNDER THE OBSERVATION OF THE OWNERS REPRESENTATIVE, CONSISTENT WITH THE REQUIREMENTS IN THE PLANS AND SPECIFICATIONS AND UTILIZE THE SOIL AMENDMENT COMPONENTS AND QUANTITES AS IDENTIFIED IN THE PLANS, OR AS UPDATED PER THE LATEST AGRONOMIC SOIL REPORT PROVIDED TO THE CONTRACTOR. (CONTRACTOR SHALL VERIFY PRIOR TO DEVELOPING THE MOCK-UP). THE SOIL AMENDMENT QUANTITES SHALL BE PRO RATA AMOUNTS OF THE REQUIRED SPECIFICATIONS AND SHALL BE CONFIRMED BY THE OWNER'S REPRESENTATIVE.

AFTER COMPLETION OF THE 10 FT. X 10 FT. GENERAL LANDSCAPE MOCK-UP AREA THE CONTRACTOR SHALL ALSO EXCAVATE WITHIN THE MOCK UP AREA PLANT PITS FOR A #1, A #5 AND A #15 CONTAINER PLANT SIZE AND AMEND THE EXCAVATED SOIL AS SPECIFIED FOR THE CONTAINER PLANTINGS.

UPON COMPLETION OF THE GENERAL LANDSCAPE AND CONTAINER PLANT MOCK-UP THE CONTRACTOR SHALL IRRIGATE UNTIL WATER HAS PENETRATED INTO THE NATIVE SUB-GRADE. AFTER DRYING, THE SOIL SHALL AGAIN BE SAMPLED BY THE OWNER'S REPRESENTATIVE AND TESTED BY THE OWNER'S AGRONOMIC LABORATORY TO DETERMINE SOIL AGRONOMIC SUITABILITY. IF REQUIRED, ADJUSTMENTS MAY BE MADE TO THE SOIL AMENDMENT SPECIFICATIONS AS RECOMMENDED BY THE AGRONOMIC SOILS LABORATORY.



SOIL PREP/AMENDMENT MOCK UP DIAGRAM



NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM TREE TRUNK.

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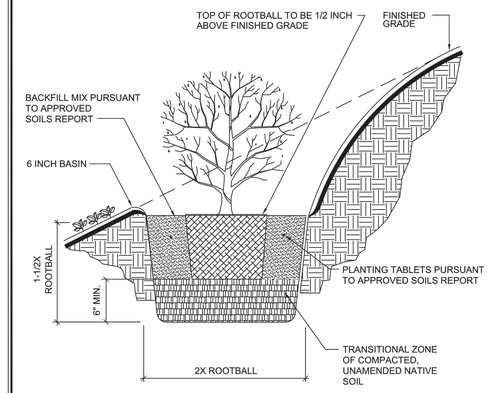
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	DOUBLE STAKE TREE ON SLOPE, 15 GAL. & 24" BOX	607
	Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date: 6-22-09	Sheet 1 of 1



NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE SHRUB STEM.

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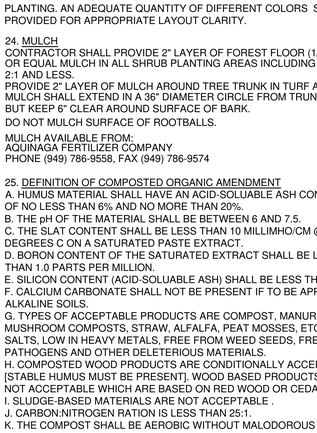
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	SHRUB PLANTING ON SLOPE	602
	Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date: 6-22-09	Sheet 1 of 1



NOTE:
1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE.
2. POSITION ROOT CONTROL BARRIER ADJACENT TO STRUCTURE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. PROVIDE A MIN. OF 12 FEET OF ROOT BARRIER EACH SIDE OF TREE TRUNK.
5. ROOT BARRIER SHALL EXTEND A MIN. OF 18 INCHES BELOW GRADE ON WALK SIDE.
6. ROOT BARRIER SHALL EXTEND A MIN. OF 24 INCHES BELOW GRADE ON CURB SIDE.
7. TREE PLANTING AND STAKING SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD PLAN NOS. 604 THROUGH 607.

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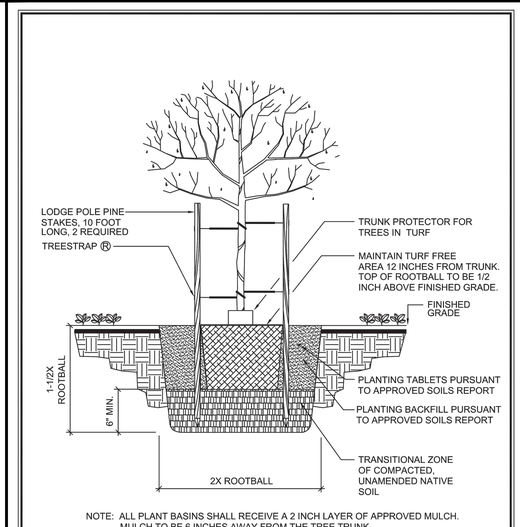
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	ROOT BARRIER	608
	Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date: 6-22-09	Sheet 1 of 1



NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE TREE TRUNK.

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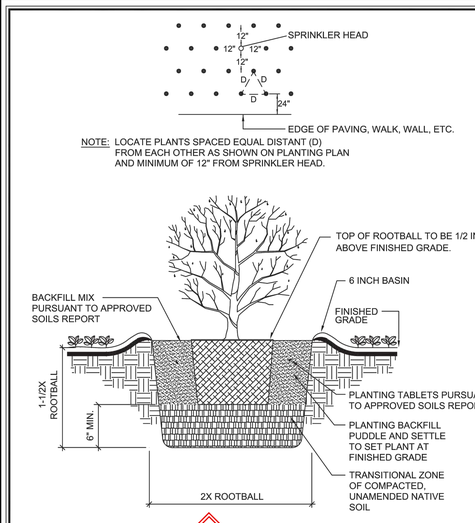
REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	DOUBLE STAKE TREE, 15 GAL. & 24 INCH BOX	606
	Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date: 6-22-09	Sheet 1 of 1



NOTE: LOCATE PLANTS SPACED EQUAL DISTANT (D) FROM EACH OTHER AS SHOWN ON PLANTING PLAN AND MINIMUM OF 12" FROM SPRINKLER HEAD.

NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE SHRUB STEM.

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REVISIONS	CITY OF IRVINE	STANDARD PLAN NO.
	SHRUB PLANTING	601
	Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date: 6-23-09	Sheet 1 of 1

CITY OF IRVINE BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	APP.	DATE
		CITY OF IRVINE		

PLANS PREPARED BY:
CLARK & GREEN Associates Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL: REGISTERED LANDSCAPE ARCHITECT RICHARD D. LANDE Signature 10-31-27 Renewal Date 11-21-25 Date CITY OF IRVINE COUNTY OF ORANGE STATE OF CALIFORNIA

DATE: 11-21-25

DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
PLANTING DETAILS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET: L-6.1 OF 10
JOB NO. 24-313

BID SET 11/21/2025

SECTION 02810

IRRIGATION SYSTEMS

PART I-GENERAL

1.01 SUMMARY

A. Section Includes: Automatic sprinkler irrigation systems and controls.

B. Related Sections:

1. Section 02900-Landscaping.

C. Permits: Apply for and secure required permits.

1.02 REFERENCES:

D. ASTM:

1. B 62-85 - Standard Specification for Composition Bronze or Ounce Metal Castings.

2. D 1784-81 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

3. D 1785-83 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.

4. D 22421-84 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR-Series).

E. National Sanitation Foundation (NSF):

1. Requirements for Seal of Approval.

F. Plastics Pipe Institute (PPI):

1. Recommendations for hydrostatic design stresses for PVC pipe.

G. Standard Specifications for Public Works Construction, as reference in Document 00705-General Provisions.

1.03 SUBMITTALS:

A. Product Data: Submit detailed lists of materials proposed for use. Prepare typewritten material list using the following format. Double space between each item:

ITEM NO. DESCRIPTION MANUFACTURER MODEL NO.

B. Project Record Documents: Record information on a daily basis and submit for review of Landscape Architect.

1. Dimension, from 2 permanent points of reference, such as building corners, sidewalks, or curbs, the location of the following items:
   a. Routing of main pressure lines, at a maximum of 100 feet intervals.
   b. The routing of 24 volt control and common wiring.
   c. Point of connection to electrical power.
   d. Automatic control valves.
   e. Point of connection to water.
   f. Gate valves.
   g. Quick coupling valves.
   h. Other related equipment.

C. Controller Charts:

1. Prepare charts after Project Record Drawings have been approved by Landscape Architect.

2. Provide 2 controller charts as follows:
   a. Chart shall be a reproduction of the Record Drawings, if the scale permits fitting the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
   b. Chart shall be blackline print of the actual "As built" system, showing the area covered by that controller.
   c. Provide 2 charts for each controller.

3. Identify the area of coverage of each remote control valve, using a distinctly different translucent pastel color, drawn over the entire area of coverage.

4. Following approval, hermetically seal charts between 2 layers of 20-mil plastic sheet, and mount using Velcro or similar fasteners.

5. Charts shall be completed and approved prior to final review of irrigation system.

D. Checklist: Provide a signed and dated checklist and submit for review of landscape architect prior to final review of the work.

1. Use the following format:
   a. Plumbing Permits: If not required, so note.
   b. Material Approvals: Approved by and date.
   c. Pressure Line Tests: By whom and date.
   d. Record Drawings: Received by and date.
   e. Controller Charts: Received by and date.
   f. Materials and Equipment Furnished: Received by and date.
   g. Operating and Maintenance Data: Received by and date.
   h. System and Equipment Operation Instructions: Received by and date.
   i. Manufacturer's Warranties (if required): Received by and date.
   j. Written Guaranty: Received by and date.
   k. Lowering of Heads in Lawn Areas: If incomplete, so state.

2. Provide catalog and part sheets on materials and equipment installed under this Section.

3. Include index sheet stating contractor's and equipment manufacturer's name, address, and phone number.

E. Miscellaneous Items: Furnish the following tools as a part of this Contract:
1. Two sets of keys for each automatic controller cabinet, and each controller enclosure cabinet lock.
2. Two wrenches for disassembly and assembly, or adjustment, of each type sprinkler head used in this installation requiring such special tools.
3. One 30-inch sprinkler key for every 12 lock lid valve boxes used in this installation.
4. Two 5-foot long value keys for gate valves.
5. Six quick coupler keys and matching hose swivels for each type of quick coupling valve.
6. Four keys total for loose key hose bibs.
7. Extra materials: Provide four (4) extra heads of each type installed.

F. Test Reports: Submit test reports of pressure testing.

G. Instructions: Provide maintenance manuals, instructions, and demonstrations to Owner's maintenance personnel.
1. Maintenance manuals shall include sufficient detail to permit operating personnel to understand, operate, and maintain equipment.

1.04 QUALITY ASSURANCE:

A. Qualifications: Installer shall be regularly engaged, and specializing, in the installation of equivalent irrigation systems using solvent-gasket joints.

B. Certifications: Electrical wiring, controls, motors, and devices shall be UL listed and labeled.

1.05 DELIVERY, STORAGE, AND HANDLING:

A. Exercise care in handling, loading, unloading, and storing PVC pipe and fittings. Pipe shall be transported in a vehicle which allows the length of pipe to lie flat without undue bending or concentrated external loading at any point. Pipe that has been dented or damaged shall be discarded.

1.06 WARRANTY:

A. The Work will be inspected by the Owners' Representative for acceptance upon receipt of the Contractor's written assertion that the Work has been completed. If, in the Owners' Representative judgment, the Work has been completed and is ready for acceptance, it will so certify to the owner, which may accept the completed Work. The Owners' Representative will, in its certification to the owner, give the date when the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect the Work. Unless otherwise noted in the Contract, all work shall be warranted by the Contractor against defective workmanship and materials for a period of (1) year from the date the Work was completed. The Contractor shall replace any such defective work in a manner satisfactory to the Owners' Representative, after notice to do so from the Owners' Representative, and within the time specified in the notice. If the Contractor fails to make such replacement or repairs within the time specified in the notice, the owner may perform this work and the Contractor's sureties shall be liable for the cost thereof.

1.07 MAINTENANCE:
The entire sprinkler irrigation system shall be under full automatic operation for a period of 7 days prior to any planting, and for the full duration of the maintenance period.
A. Extra Materials: Provide 4 extra heads of each type installed.

PART 2 - PRODUCTS

2.01 PIPING AND FITTINGS:

A. Pressure supply line from point of connection through backflow prevention unit shall be copper or brass.
1. Copper Pipe and Fittings:
   a. Pipe: Type K, hard tempered.
   b. Fittings: Wrought copper, solder joint type.
   c. Joints shall be soldered with silver solder, 45 percent silver, 15 percent copper, 16 percent zinc, and 24 percent cadmium. Solid at 1125 F. and liquid at 1145 F.

2. Brass Pipe and Fittings:
   a. Brass pipe shall be 85 percent red brass, ANSI Schedule 40 screwed pipe.
   b. Fittings shall be medium brass, screwed 125 pound class.

B. Pressure supply lines 1-1/2 inches and smaller downstream of backflow prevention unit shall be ASTM D 1785 Schedule 40 PVC. Pressure lines 2 inches and larger shall be Class 315 PVC. Above grade pressure supply lines shall be in accordance with the typed noted on drawings.

1. Identification Markings: Identify all pipe and fittings with the following indelible markings:
   a. Manufacture's name.
   b. Nominal pipe size.
   c. Schedule or class.
   d. Pressure rating, in PSI.
   e. NSF Seal of Approval.
   f. IAMPO Seal of Approval
   g. Date of extrusion.

2. Pipe (Solvent Weld Type): Manufacture from virgin polyvinyl chloride compound in accordance with ASTM D 2241 or ASTM D 1784, Class 12454-B (formerly Type I, Grade 1). Hydrostatic design stress rating 2,000 psi.

3. Fittings: Standard weight, ASTM D 1785 Schedule 80 unless approved otherwise by Landscape Architect, injection molded solvent-weld PVC. Comply with ASTM D 1784, Class 13454-B.
   a. Threads (Where Required): Injection molded type.
   b. Tees and Ells: Side gated.

4. Threaded Nipples: Standard weight, ASTM D 1785 Schedule 80 with molded threads.

C. Metal:
1. Galvanized Pipe: ASA Schedule 40 mild steel with threaded connections.
2. Fittings: Medium galvanized screwed beaded malleable iron.
3. Protective coating: Two coats of Koppers No. 50 Bitumastic.

D. Non-pressure Lines: ASTM D 1784 Class 14333-D (formerly Type II, Grade 1) PVC with solvent-weld joints. Comply with general requirements for pressure lines.

E. Visible Pipe and Fittings:

1. General: Integral gray color.
2. Threaded Risers and Nipples: ASTM D 1785 Schedule 80 PVC.
3. Other Risers and Fittings: ASTM D 1785 Schedule 40 PVC, solvent weld.

F. Sleeves:

1. 4 inches and smaller: ASTM D 1785 Schedule 40 PVC.
2. Larger than 4 inches: ASTM D 1784 Class 12454-C (formerly Type I, Grade 2, Class 415) PVC.

G. Conduit: ASTM D 1785 Schedule 80 PVC.

H. Identification:

1. Tags: Polyurethane Behr Desopaid, yellow in color with black letters 2-3/4 inches by 2-1/2 inches for 3 character ID and 3"x4" for 4 plus character ID, as manufactured by Christy's or equal. Install purple colored tags in reclaimed water applications.
2. Attach identification tag showing valve number on each solenoid pigtail.

2.02 JOINT CEMENT AND PRIMER:

A. Non-pressure plastic pipe and fittings shall be cemented using a 100 percent active solvent, blue in color.

B. Pressure plastic pipe and fittings shall be coated with a primer and then with a 100 percent active solvent.

C. Both primer and solvent shall be similar in all respects to that manufactured by Christy's or approved equal.

2.03 VALVES: IN ACCORDANCE WITH TYPE NOTED ON DRAWINGS

A. Gate valves:

1. 3 inches and Smaller, (Unless Otherwise Noted on Drawings): ASTM B 62 brass body, 150 pound saturated steam-rated with screwed joints, non-rising stem, screwed bonnet, solid wedge disc. Provide with bronze handwheel. Nibco, or approved equal.

B. Swing Check Valves 2 Inches and Smaller: 200 pound W.O.G. bronze construction with replaceable composition, neoprene, or rubber disc, conforming FS-WW-V-51D, Class A, Type IV.

C. Anti-Drain Valves: Heavy duty virgin PVC construction with F.I.P. thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti-drain valve shall be field adjustable against drawout from 5 to 40 feet of head. Anti-drain valve shall be similar to the Valcon ADV, in accordance with type noted on drawings.

D. Quick Coupling Valves: In accordance with type noted on drawings.

E. Remote Control Valves: In accordance with type noted on drawings.

F. Valve Boxes:

1. Non-Traffic Type: Specification grade plastic box with locking cover. Carson Industries or approved equal, as detailed on Drawings. Install 3/8" x 2 1/2" hex head bolt for locking of box.
   a. Remote Control Valves: 12 inches by 17 inches by 12-1/4 inches Model 1419-12. Color per drawing. Emboss valve station numbers on top of cover.
   b. Gate Valves: 10 inches diameter by 10-1/4 inches Model 910-10. Color per drawing.

2. Traffic Type: 10-1/4-inch diameter precast concrete, as manufactured by Brooks Products, 1850 Parco Ave, Ontario, CA 91761 888-307-7470. Provide bolt-down cast iron cover.

G. Valve Sleeves: For manual control valves, 6" diameter, PVC pipe, length as needed.

2.04 HEADS:

A. Small Lawn Sprinkler Heads: In accordance with type noted on Drawings.

B. Small Shrubbery Sprinkler Heads: In accordance with type noted on Drawings.

C. Rotary Sprinkler Heads: In accordance with type noted on Drawings.

D. Tree Irrigators: Provide assemblies as indicated on Drawings, including vents and filters.

2.05 TRICKLE DRIP EMITTERS AND EMITTER TUBING:

A. Emitter Body: In accordance with type, indicated on drawings provide inlet barb. Flow shall be regulated through a silicone flapped diaphragm with a flow path of 1/4-inch. The emitter shall pressure compensate for rated flow 10 percent plus or minus over a pressure variant of 10 to 50 pounds per square inch.

B. Dripline: Polyethylene UV resistant pressure compensating, inline emitter tubing. Pressure variant 8.5-60 psi (pounds per square inch).

1. Inside diameter of 0.54 inches and outside diameter of 0.63 inches.

2. Emitter spacing per drawings.

C. Tubing: Polyethylene co-extruded from linear, low density, UV-resistant material as manufactured by Rainbird or as indicated on the drawings.

1. 1/2-inch tubing shall have an inside diameter of 0.54-inch and an outside diameter of 0.63-inch.

2. 1/8-inch tubing shall have an inside diameter of 0.16-inch and an outside diameter of 0.22-inch.

D. Fittings: Molded from UV resistant ABS. Use Rainbird compression fittings.

2.06 BACKFLOW PREVENTION UNITS:

A. Backflow Preventer: In accordance with type noted on Drawings.

B. Strainers : In accordance with type noted on Drawings

2.07 AUTOMATIC CONTROLLER:

A. Provide type and size as noted on Drawings.

2.08 ELECTRICAL WIRING AND SERVICE:

A. High Voltage:

1. Electrical service to automatic controller shall be in accordance with Division 16 Sections. Provide final hookup to equipment as a part of the Work of this Section.

B. Low Voltage:

1. Connections between controller and remote control valves shall be made with direct burial AWG-UF, 600 volt wire, 14 gage or larger, insulation thickness 3/64-inch, utilizing low density high molecular weight polyethylene insulation.

2. Splices, where permitted, shall be waterproofed using Rainbird, SnapTite, Scotch-Lok No. 3576 Connectors, or fusible heat shrink tubing.

3. Pilot wires shall be a different color for each controller. Common wires shall be white with a different color stripe for each controller. Minimum size shall be No. 14 gage.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Before work commences, a conference shall be held with Landscape Architect regarding requirements of the Work of this Section.

1. Do not install irrigation system when field obstructions, grade differences, or discrepancies in area dimensions exist that may not have been considered in the original design.

B. Examine surfaces for conditions that shall adversely affect execution, permanence and quality of Work.

1. Verify that grading has been completed and the work of this Section can properly proceed.

2. Exercise care in excavating and working near existing utilities. Be responsible for existing utilities and for damages to utilities which are caused by operations or neglect. Check existing utility drawings for locations.

C. Notify Landscape Architect in writing of existing conditions that are not shown, or that differ from those shown on Drawings.

D. Do not proceed with Work until discrepancies are corrected or existing utilities are located.

3.02 PREPARATION:

A. Lay out each system using staking method as approved by Landscape Architect. Maintain and protect approved staking layout. Piping or equipment shown diagrammatically on Drawings outside of planting areas shall be installed inside planting areas whenever possible.

B. Lay out sprinkler heads and make any minor adjustments required due to differences between actual site conditions and the Drawings. Minor adjustments shall be maintained within the original design intent in order to avoid conflicts between planting and architectural features.

C. Protection: Protect the installed work and materials of other trades from damage during irrigation installation system operations.

3.03 TRENCHING AND BACKFILLING:

A. Excavate trenches in straight lines to required depths. Follow approved layout for each system. Bottom of trench shall be flat to insure piping is supported continuously on an even grade.

B. Provide minimum coverage as follows:

1. Pressure supply lines: 18 inches.

2. Non-pressure lines: 12 inches.

3. Control wire: 18 inches. Place under pressure supply lines.

C. Provide not less than 4 inches clearance between each line and not less than 6 inches clearance between lines of other trades, unless otherwise noted in details on Drawing.

D. Protect materials to prevent intrusion of dirt and moisture.

E. Test all systems prior to backfilling. If the only piping installed is over 20 feet long, pressure testing is required for that section at the time of installation. Upon completion of piping installation, the entire system shall be tested.

F. Backfill Material: Clean, fine granular material, free of rocks and debris.

G. Compact backfill with mechanical devices to a dry density equal to adjacent grade, free of dips, depressions, humps, or other irregularities.

1. Compaction by truck or other vehicle is not permitted.

H. Under Paving:

1. Backfill with sand, one layer 6 inches below pipe and one layer 3 inches above pipe, and compact in layers to 95 percent compaction using mechanical tamping devices. Set in place, cap, and pressure test piping under paving prior to installation of paving work.

2. Install piping under existing walks by jacking, boring, or hydraulic driving. Cutting or breaking of sidewalks or concrete is not allowed without Architect's approval. No hydraulic driving will be permitted under concrete paving.

3. Provide for a minimum cover of 18 inches between top of pipe and bottom of aggregate base for pressure and non-pressure piping installed under asphaltic concrete paving.

3.04 INSTALLATION:

A. Plastic pipe and fittings shall be installed in accordance with manufacturer's instructions.

B. Install backflow assemblies in shrub areas at minimum height permitted by local code.

C. Brass Pipe and Fittings: Assemble using Teflon tape applied to male threads only.

D. Plastic Pipe and Threaded Fittings: Assemble using Teflon tape applied to male threads only.

E. Galvanized Metal Pipe and Fittings: Assemble using Teflon tape applied to male threads only. Coat below grade portions with 2 coats of protective coating.

F. Quick Coupling Valves: Unless otherwise indicated, locate valves within 6 to 12 inches of nearest edge of hardscape.

G. Check Valves and Anti-Drain Valves: Install where required to prevent low-head drainage.

H. Tree Irrigators: Locate at each tree. Install where required to prevent low-head drainage.

I. Backflow Prevention Unit and Automatic Controllers: Verify location with Landscape Architect. Install in accordance with manufacturer's instructions.

J. Sprinkler Heads:

1. Shrub heads shall be installed as noted on Drawings.

2. Elevate full heads in lawn areas to a minimum of 4 inches above grade.

3. Install heads along curbs, walks, and paving level with grade in lawn areas.

4. Lower raised heads within 10 days after notification by the Owner.

5. Set all heads perpendicular to finished grade, unless otherwise directed by Landscape Architect.

K. Remote Control Valves: Install valves in shrub or ground cover areas wherever possible, or where shown on Drawings. When grouped together, allow at least 12 inches between valves. Install each control valve in a separate valve box.

L. Contractor to ensure irrigation operates throughout construction to existing project perimeter landscape and sports fields to limit disruption and maintenance landscape. Contract to provide schedule to owners project team detailing installation of new irrigation facilities, change-over the newly installed mainline, valves and laterials, and flushing of new/old equipment including spray heads, rotors and drip line.

3.05 UTILITY SERVICES:

A. Connect to existing water outlet or gate valve at locations indicated on Drawings and make minor changes in location necessary due to actual site conditions as work of this Section.

B. Connect to existing electrical service. Make minor changes in location as necessary due to actual site conditions as work of this Section.

3.06 WIRING:

A. Place wiring in the same trench and along the same routing as the pressure supply lines, unless otherwise approved.

1. Install wiring prior to main line whenever possible.

2. When more than one wire is placed in a trench, tape wires together at maximum 10 feet on centers.

B. Provide a 12-inch expansion loop at each connection and directional change. Provide a sufficient length at each splice to allow valve bonnet to be brought to the surface without disconnection.

C. Use a continuous wire between controller and remote control valves.

1. Except as otherwise approved, do not splice wire at any point.

2. Approved splices shall be enclosed in a box.

D. If wires under paved areas cannot be continuous, splices shall be enclosed in an approved junction box.

3.07 VALVE BOXES:

A. All Valve boxes shall have installed 3/8" x 2 1/2" hex head bolt for locking of box.

B. Fill area under box with minimum of 1 cubic feet of 3/4-inch crushed gravel before box is installed.

3.08 FIELD QUALITY CONTR0L:

A. Contractor's Responsibility:

1. Notify Landscape Architect for the following reviews, with 48 hours minimum notice.
   a. Pressure supply line installation and testing.
   b. System layout.
   c. Automatic controller installation.
   d. Control wire installation.
   e. Lateral line and sprinkler head installation.
   f. Emitter tubing and emitter installation.
   g. Coverage tests prior to landscape planting.

2. Provide 7 days notice for Final Review.

3. Provide "walkie-talkie" equipment and/or personnel to maintain communication from review area to automatic controllers.

4. Provide up-to-date Project Record Drawings at each review.
   a. In the event Contractor calls for a review without up-to-date Project Record Drawings, or without preparing the system for inspection, Contractor shall be responsible for reimbursing Landscape Architect on an hourly basis for the inconvenience. No further reviews will be scheduled until this charge has been paid.

B. Pressure Tests:

1. Do not install remote control valves, quick couplers, or any other valve assembly until testing of pressure main lines is completed and approved.

2. Do not backfill trenches more than necessary until testing has been reviewed, tested, and approved.

3. Provide equipment necessary to test systems, including force pump.

4. Perform hydrostatic tests in presence of the Architect.

5. Test pressure supply lines under hydrostatic pressure of 150 pounds per square inch for a period of 2 hours, unless otherwise directed by Landscape Architect in writing.

C. System Flushing: After sprinkler pipe lines and risers are in place and connected, and prior to installation of sprinkler heads, thoroughly flush all lines with a full head of water. Install sprinkler heads after lines have been flushed to the satisfaction of the Architect.

D. Coverage Tests:

1. Perform coverage tests after sprinkler system is completed, but prior to any planting, in the presence of the Architect.

2. Test system to ensure that planting areas are watered adequately and uniformly.

3. Make necessary adjustments, including realignment of heads, to provide required coverage as directed by Landscape Architect.

4. If it is determined that coverage can be improved by a nozzle change, make such changes, or arrange with the manufacturer to have such changes made, as part of the work of this Section. Make changes prior to any planting.

3.09 CLEANING:

A. Upon completion of the work, restore ground surfaces to required elevations and remove excess materials, debris and equipment from the site to satisfaction of Landscape Architect.

3.10 DEMONSTRATION:

A. Provide instruction to maintenance personnel in proper operation of equipment.

END OF SECTION

APPROVAL FOR ON-SITE RECYCLED WATER SYSTEM ONLY

WATER METERS AND ALL OTHER CONNECTIONS TO IRVINE RANCH WATER DISTRICT FACILITIES MUST BE APPLIED FOR, OR APPROVED THROUGH THE IRVINE RANCH WATER DISTRICT SUBDIVISION / DEVELOPMENT SECTION. FOR SPECIFIC REQUIREMENTS ABOUT OBTAINING A SERVICE, CALL: (949) 453-5300.

PLAN CHECK NUMBER: 358IR2

ON-SITE APPROVAL: DPC DATE: 11/13/2025

811 Know what's below. Call before you dig. CITY OF IRVINE UNDERGROUND & SAFETY DIVISION

NO.	DATE	REVISIONS	CITY OF IRVINE APP.	DATE

PLANS PREPARED BY: CLARK & GREEN ASSOCIATES Landscape Architecture

LICENSE NO. 4564 EXP. DATE

SEAL: REGISTERED LANDSCAPE ARCHITECT — KENNETH D. LANDE — Signature 10-31-27 — Renewal 2024 (11-21-25) none — STATE OF CALIFORNIA

DATE: 11-21-25

DRAWN BY: KDL

DESIGNED BY: KL

CHECKED BY: LS,KL

RECOMMENDED:

IRWD PC NO. #385IR2

APPROVED BY: IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE

DATE

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
IRRIGATION SPECIFICATIONS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK

LANDSCAPE PERMIT NO. _____ - LCE

SHEET: L-7.1 OF 10

JOB NO. 24-313

BID SET 11/21/2025

SECTION 02900

LANDSCAPING PART 1 - GENERAL 1.01

SUMMARY:

A. Section Includes:
1. Soil preparation and fertilization.
2. Planting operations.
3. Landscape planting materials.
4. Maintenance.

B. Provide landscape plantings in the areas shown on Drawings with plants in a healthy, vigorous growing condition. Items not specifically shown in Drawings or specified, but normally required to conform with such intent, are considered part of the Work.

C. Include labor and equipment required to place, amend, and fine grade the soil. Include the cost of fertilizer as specified. If the final soils analysis results in a change to the specified amendments, a Change Order will be issued.

D. Related Sections:
1. Section 02810 - Irrigation Systems.

1.02 REFERENCES:

A. American Joint Committee on Horticulture Nomenclature (AJCHN):
1. Standardized Plant Names, latest edition.

B. American Association of nurserymen, Inc. (AAN):
1. American Standard for Nursery Stock, latest edition.

C. Standard Specifications for Public Works Construction (Green Book).

D. Agricultural Code of California.

1.03 SUBMITTALS:

A. Product Data: Submit complete lists of materials proposed for use, giving the manufacturer's name, catalog number, and catalog cut for each item where applicable.

B. Substitutions: Substitutions of plant materials will not be permitted unless authorized by the Landscape Architect in writing.
1. Substitutions of plant materials will not be permitted unless authorized by the Landscape Architect.
2. If any plant specified is not obtainable, submit a written substitution request to the Landscape Architect during the bidding period. If no substitutions are requested and approved during bidding, it is the contractor's responsibility to obtain all materials specified. If the project is not completed due to unavailability of plant material within the project contract schedule, the owner may impose such penalties as identified in the contract agreement.

C. Selection, Tagging and Ordering Plant Material:
1. Submit a request for inspection and documentation to Landscape Architect at least one month prior to start of landscape planting work that plant material has been ordered.
2. Plants shall be subject to inspection and rejection by Landscape Architect at place of growth, and after delivery, for conformity to this Specification.

D. Agronomic Soils Test Report: An agronomic soil test and report will be provided by the Owner unless noted otherwise on the Drawings.

E. Certificates:
1. Submit certificates for the following items upon delivery to the job site:
a. Quantity of commercial fertilizer and organic fertilizer.
b. Quantity of seed.
c. Quantity of other soil additives per agronomic soils test report.
2. Submit written certificate of hydroseeding.
3. Submit Certificate of Delivery of container or bulk materials.
4. Submit written certificate of soil balance.
5. Submit written certification of quantity and quality of plant materials.

F. Pre-Installation Conference: Provide a written projected planting schedule noting the estimated completion date, number of working days required, and special coordination requirements.

1.04 QUALITY ASSURANCE:

A. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work and provide for all inspections and permits required by authorities in furnishing, transporting, and installing materials.

B. Materials shall conform to the requirements of this Section and to Section 212 of the Standard Specifications for Public Works, whichever is more stringent.

1.05 DELIVERY, STORAGE, AND HANDLING:

A. Handling Plants: Handle plants in a manner to avoid any damage to the plant. Protect plants from sun or drying winds. Plants that cannot be planted immediately on delivery shall be kept in the shade, well protected, and adequately watered.

B. Furnish a Certificate of Delivery slip with each delivery of material in containers or in bulk. Certificate shall state source, quantity, or weight, type and analysis, and date of delivery.

1.06 PROJECT CONDITIONS:

A. Prior to excavation for planting or placing of stakes, locate utilities, electric cables, conduits, sprinkler lines, heads, valves, and valve control wires so that proper precautions may be taken not to damage such improvements. In the event of a conflict between such lines and plant locations, promptly notify the Landscape Architect to arrange for relocation of one or the other. Failure to follow this procedure places the responsibility on the Contractor for making repairs at his expense for damages resulting from Work hereunder.

B. Notify Landscape Architect in writing of soil or drainage conditions encountered during planting operations which are detrimental to growth of plant material.

1.07 WARRANTY:

A. Plant Material:
1. Plant materials furnished or relocated under this Section shall be warranted in writing, 90 days until final acceptance following minimum establishment period as define within the project bid documentation for final acceptance of all material, against improper installation, and against defective, unsound, or diseased conditions that may appear, unless superseded by contract agreement with the owner.
2. Plant material shall be guaranteed to live and grow in a healthy condition for the above periods, commencing with the acceptance of the work at the conclusion of the maintenance. Dead or obviously unhealthy materials shall be replaced without delay. The opinion of the Landscape Architect/Project Biologist will be final in determining plant material to be replaced due to an unhealthy condition.
3. Upon receipt of written notice from Owner of the death of any warranted plant materials during the warranty period, the subject plant materials shall be promptly replaced with the same species originally planted, and of a size closely approximating the size of the plant if normal growth had occurred since the original planting. Replacements shall be subject to the requirements of this Specification.
4. When plants are replaced, advise the Owner in writing, of the necessary establishment maintenance which must be performed.
5. Replacement shall continue to be made until each plant has successfully established itself for the required guaranty period.

PART 2 - PRODUCTS 2.01 MANUFACTURERS:

A. Design of soil amendments and fertilizers is based on products identified in the drawings.

B. Materials shall be the product of one manufacturer and shall be either the ones upon which the design is based or the products of a manufacturer accepted in advance.

2.02 MATERIALS:

A. Fertilizer/Soil Conditioner:
1. Provide commercial fertilizer, uniform in composition, free-flowing, suitable for application with approved equipment, and delivered to site in unopened containers, each fully labeled according to applicable fertilizer laws, and bearing the name or mark of the manufacturer.
2. Provide fertilizers as indicated on Drawings.

B. Pre-planting Herbicide: Shall meet the City of Irvine guidelines for approved herbicide.

C. Pre-Emergent Weed Control: Shall not be used on this project.

D. Mulch: Double grind recycled fully composted green waste. Size as indicated on drawings.

E. Excess soil shall be removed or redistributed before application of fertilizer. Where soil is to be replaced by plants, allowance shall be made so that when finish grading has begun, there shall be no deficiency in the specified depth of mulched planting beds.

2.03 PLANT MATERIALS:

A. Identification: Plant material shall be true to type and nomenclature in accordance with AJCHN Standardized Plant Names, and each bundle or plant shall be properly identified with durable, legible labels.

B. Quality and Size of Plants: In accordance with rules and grading of AAN American Standard for Nursery Stock, and as shown on the Drawings.
1. Trees, shrubs, vines, and ground covers shall have a normal habit of growth and shall be sound, healthy, vigorous, and free from insect infestations.
2. Plants that meet the measurements specified, but do not possess a normal configuration or balance of height and spread, will be rejected.
3. Trees and shrubs shall have been grown in containers of the size stated on Drawings, and shall have sufficient roots to hold the root ball together after removal from containers without being rootbound.
4. Trees will be straight and of uniform shape without damaged, crooked, or multiple leaders. Trees with abrasions of the bark, sunscald, disfiguring knots, or fresh cuts of limbs over 1/2-inch which have not been pruned and painted or completely callused, will be rejected.
5. Ground cover plants shall be grown in flats or as indicated on the Drawings. Flatgrown plants (rooted cuttings) shall remain in original flats until transplanting. Soil shall contain sufficient moisture so that it will not fall apart when lifting the plants.

2.04 ACCESSORIES:

A. Tree Staking shall be as indicated on Drawings.

B. Ties shall be as indicated on Drawings

2.05 SOURCE QUALITY CONTROL:

A. Agronomic Soils Testing:
1. Unless noted otherwise on the Drawings, soil amendments on plans shall be used for bid purposes. Initial soils analyses or analyses of organic amendments, planter soils, or mulches is supplied by owner. Any subsequent soil testing shall be the responsibility of the contractor and submitted to an approved laboratory.

B. Testing laboratory shall be: Soil & Plant Laboratory, 1594 North Main Street, Orange, CA 92867-3433 (714) 282-8777 or Wallace Labs, 365 Coral Circle, El Segundo, CA 90245 (310) 615-0116
1. Submit testing laboratory's interpretation, recommendations, and comments to Landscape Architect within 14 days.

C. Samples of materials, including fertilizers, plants, and other specified materials, shall be submitted for inspection and testing at the discretion of Landscape Architect. Delivery may begin upon approval of samples.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Verification of Conditions: Inspect and accept the condition of the site relative to this Section before commencing Work. If not acceptable, notify the Owner in writing. By proceeding with the Work of this Section, the Contractor indicates his acceptance of previous related work.

B. Landscape work shall not begin until construction adjacent to planting areas has been completed and irrigation systems have been installed and approved by Landscape Architect.

3.02 PREPARATION:

A. Protection:
1. Provide necessary safeguards and exercise caution against injury or defacement of existing site improvements.
2. Be responsible for any damage resulting from landscape planting operations. Repair damage and return the area to the previous condition at no cost to the Owner.

3.03 WEED CONTROL:

A. Apply pre-planting herbicide to visible weeds, before planting. Herbicide must be approved by the Project Biologist and the City of Irvine.

B. Pre-emergent weed control shall not be used.

C. Protect existing plants from damage.

D. After application of weed killer, before and during preliminary and finish grading, remaining weed and grasses shall be dug out by the roots and disposed of off-site. Weeds and grasses not of the perennial type, less than 2-1/2 inches high and not bearing seed, may be turned under. Perennial weeds and grasses to be removed include, but are not limited to the following:
1. Nut Grass.
2. Alfalfa.
3. St. Augustine.
4. Puncture Vine.
5. Kikuya Grass.
6. Mustard Plant.
7. Johnson Grass.
8. Wirewood.
9. Morning Glory.
10. Spurge.
11. Bermuda Grass
12. Cheese Weed
13. Common Rye Grass
14. Stinknet
15. castorbean
16. fountain grass
17. Pampas grass

INTEGRATED PEST MANAGEMENT PROGRAM PURPOSE:
To establish criteria for an Integrated Pest Management (IPM) Program.

POLICY: The City of Irvine will focus on long-term prevention or suppression of pest problems with minimum impact on human health, the environment, and nontarget organisms with the limited use of pesticides in accordance with direction provided by the City Council for Parks, Fields and Playgrounds; and City-wide Pest Management Guiding Principles:

City-wide Pest Management Guiding Principles:

a. Use of organic pesticides in all City properties.
b. Limit exposure to any pesticides where children and the general public congregate.
c. Incorporate additional guidance on use of pesticides for city rights of way, facilities, and other properties as reflected in the staff report.
d. Use EPA Level pesticides in a targeted manner, and only if deemed necessary to protect public health and economic loss by a licensed pest control adviser and City staff, when pests cannot be managed by other methods that we would have.

PROCEDURES:

Prevention:
1. Public Works Staff shall review all new development and rehabilitation projects plans to verify compatibility with the site's environment.

Monitoring:
1. The Maintenance Divisions shall hire a consultant or contractor to provide regular monitoring services for all of the City's properties.
2. The consultant or contractor shall determine if pest populations are increasing, decreasing, or staying the same and to determine when to use a control tactic.
3. The consultant or contractor shall provide monthly monitoring records which include information such as date of examination, pests found, size and extent of the infestation, location of the infestation, control options utilized, effectiveness of the control options, labor and material costs.

Non Chemical Control Measures:
1. The Landscape Division shall utilize cultural controls which are modifications of normal plant care activities that reduce or prevent pests. In addition to those methods used in the pest preventions, other cultural control methods include adjusting the frequency and amount of irrigation, fertilization, and mowing height.
2. The Maintenance Divisions shall utilize mechanical control tactics involve the use of manual labor and machinery to reduce or eliminate pest problems using methods such as handpicking, physical barriers, or machinery to reduce pest abundance indirectly.
3. The Maintenance Divisions shall utilize the use of environmental manipulations that indirectly control or prevent pests by altering temperature, light, and humidity can be effective in controlling pests. Although in outdoor situations these tactics are difficult to use for most pests, they can be effective in controlling birds and mammals if their habitat can be modified such that they do not choose to live or roost in the area.
4. The Maintenance Divisions shall utilize a biological control practice which uses living organisms to reduce pest populations. These organisms are often also referred to as beneficials, natural enemies or biocontrols. They act to keep pest populations low enough to prevent significant economic damage. Biocontrols include pathogens, parasites, predators, competitive species, and antagonistic organisms. Beneficial organisms can occur naturally or can be purchased and released. The most common organisms used for biological control in landscapes are predators, parasites, pathogens and herbivores.

Pesticide Controls:
Pesticides are to be utilized in a prioritized approach on City properties as follows:

Parks, Fields and Playgrounds:
When pesticides are needed, use the following prioritized approach: (1) organic pesticides; (2) Water Quality Act Allowed Pesticides, and (3) EPA Level III "caution" labeled pesticides only when deemed necessary to protect public health and economic impact by a licensed pest control adviser.

Rights of Way (Street medians/parkways) - Prioritized Use of Pesticides:
a. Use organic pesticides first, when pesticides are needed.
b. Use Clean Water Act allowed pesticides.
c. EPA Level III "caution" label pesticides only if deemed necessary to protect public health and economic impact by a licensed pest control adviser and City staff.
d. EPA Level II "warning" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control adviser and City staff, when other methods do not adequately control the pest.
e. EPA Level I "danger" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control adviser and City staff, when other methods do not adequately control the pest.

Facilities/Buildings - Prioritized Use of Pesticides:
a. Use organic pesticides first, when pesticides are needed.
b. Use Clean Water Act allowed pesticides.
c. Bait formulations of insecticides will be used where appropriate.
d. EPA Level III "caution" label pesticides only if deemed necessary to protect public health and economic impact by a licensed pest control adviser and City staff.
e. EPA Level II "warning" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control advisor and City staff, when other methods do not adequately control the pest.
f. EPA Level I "danger" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control adviser and City staff, when other methods do not adequately control the pest.

Other City Properties - Prioritized Use of Pesticides:
a. Use organic pesticides first, when pesticides are needed.
b. Use Clean Water Act allowed pesticides
c. EPA Level III "caution" label pesticides only if deemed necessary to protect public health and economic impact by a licensed pest control adviser and City staff.
d. EPA Level II "warning" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control advisor and City staff, when other methods do not adequately control the pest.
e. EPA Level I "danger" label pesticides, only if deemed necessary to protect public health and economic loss by a licensed pest control advisor and City staff, when other methods do not adequately control the pest Pesticides should only be used when other methods fail to provide adequate control of pests and just before pest populations cause an unacceptable damage, since the overuse of pesticides can cause beneficial organisms to be killed and pest resistance to develop.

Approvals and Application of Chemical Pesticides:
1. Pesticides shall be approved by the Maintenance Division Superintendents for their area of oversight prior to use. A written recommendation of proposed pesticide, including commercial name, concentrations, allocation rates, usage and reentry time shall be prepared by a licensed California Pest Control Adviser and site specific schedule submitted for approval. No work shall begin until written approval of use is obtained and a notice of intent has been filed with the County Agricultural Commissioner's office, as required. Copies of Safety Data Sheets and specimen labels shall be given to the City prior to pesticide use on City property.
2. For Facilities and Building Maintenance, the referenced responsibilities of a licensed pest control adviser presented throughout this policy are to be performed by a California State Licensed Structural Pest Control Operator.
3. Chemicals shall only be applied by those persons possessing a valid California Qualified Applicator license/certificate; or a Structural Pest Control License. Application shall be in strict accordance with all governing regulations. Records of all operations shall be kept per California Department of Pesticide Regulations, or the California Structural Pest Control Board.
4. Pesticides shall be applied in a manner to avoid contamination of non-target areas. Precautionary measure shall be employed to keep the public from entering the spray zone until it is safe.
5. Posting of signs shall be required at all park facilities when any application of pesticides is performed. Specific requirements for posting are as follows: - Post signs at all park entrances at least 48 hours prior to spraying applications. The vendor's contact information, chemical name and application date must be listed. - Place spray notices inside plastic page protectors. Attach them to a four-foot (4') high wooden stake. Signs must be readable 25' away from posted area. - Leave the same signs up for 72 hours after the spraying applications are completed, then remove promptly. - A temporary mesh fence such as orange plastic construction fencing can be erected on the perimeter of any area that is to be treated with a broadcast type application with the intent to keep people and pets off the treated area for a period of 24 hours.

Records and Reporting:
Records of all pesticides used by the Contractor on City property shall be retained in accordance with Department of Pesticide Regulations. Maintenance Superintendents will keep records of all pesticide usage and the Public Works Department will provide an annual report to the City Council.3.05 PLANTING OPERATIONS:

A. Finish Grading: Prior to commencement of planting operations, complete finish grading.
1. When preliminary grading, including weeding and has been completed and the soil has dried sufficiently to be readily worked, planting areas shall be graded to uniform levels or slopes at a minimum of 2 percent. Minor adjustments to finish grades shall be made in the direction of the water. Low spots and pockets shall be graded to drain properly. Finish grade of planting areas shall be one inch below grade of adjacent pavement. Grading shall be done when soil is at optimum moisture content for working. Planting areas shall be scarified to a depth of 6 inches below grade prior to planting. Rock and debris more than 1 inches in diameter shall be removed from the site.
2. Watering Basins: Construct a firmly compacted mound of soil around each container plant to form a watering basin at the edge of, and following, the shape of the planting pit area. Mounds for trees, and for vines from 5 gallons or larger containers, shall be as indicated on the Drawings. Excavated earth, if capable of retaining water, may be used. Refill any settlement. Watering basins shall be removed per times given on the Drawings.

B. Plant Pits: Trees and shrubs shall be installed as indicated on the drawings

C. Setting Container and Larger Plants:
1. Plants shall be centered and set on the appropriate native soil that has been puddled and settled.
2. Plants shall be installed as outlined in drawings.
3. Water plants immediately after planting.

D. Hydroseeding:
1. Seed: Shall be fresh, clean, new crop seed, premixed by mechanical mixer to proportions specified on planting plan.
2. Seed shall be mixed by dealer and furnished with dealer's guaranteed statement of composition and purity.
3. Transmit copy composition and purity to Owners Representative for inspection with:
a. 2 oz. sample of each species with certificate lab report showing p/g of each species. Seed shall not be over 15 month's old.
b. Packing/delivery receipt and seed tags per the California Food and Agricultural Code.
4. Installation Preparation:
a. Following 1st grow and kill weed abatement, scarify soil to depth of one-half inches (1/2"). Perform 2nd grow/kill treatment.
b. 24 hours prior to the application of seed, irrigate planting area to a minimum depth of four inches (4").
c. At the time of hydroseeding, all hydroseed mixing shall be performed in a tank with a built-in continuous agitation and recirculation system of sufficient capacity to produce homogenous slurry and a discharge system that will apply the slurry to designated areas at a continuous and uniform rate. Water shall be provided by the Contractor and shall be free of impurities, excess chlorine and salts. The tanks, trucks (including tires), all hoses and workers' boots shall be triple-rinsed prior to entering the Project site.
d. The hydroseed shall be applied in a two step method, as follows:
e. The First Application:
1a. Specified seed mix per drawing.
1b. The hydroseed slurry shall have the following specifications per acre:
aa. Hydropost Premium Compost at 1000 lbs/acre
bb. Biosol Forte 7-2-1 Organic Fertilizer at 800 lbs/acre
cc. AM 120 Mycorrhizal inoculum at 60 lbs/acre
dd. Tri-C Soluble Humate at 1 lb/acre
ee. Fiber mulch
1aa. 500 lbs. per acre, slope applications 3:1 and steeper (Hydro Blanket or equal).
1bb. 2,000 lb. per acre, 100% wood fiber, flat applications less than 4:1 (Conwed Hydro Mulch or equal) with 80 lbs ecological controls M- Binder.
ff. The first application slurry preparation shall take place at the Project site. All seed bags shall be inspected by the Owners Representative prior to mixing. All seed bag labels shall be provided to the Owners Representative following the mixing. The agitator system shall be activated, and the water shall be added until the water level has reached the height of the agitator shaft; at this point the specified seed mix shall be added to the tank. When the tank is at least 30 percent full, the mycorrhizal inoculum shall be added to the slurry
gg. The second slurry application preparation shall take place at the Project site immediately following the first slurry application and applied to all slopes 3:1 and steeper. The agitator system shall be activated, and when the tank is at least 30 percent full, the wood fiber mulch shall be added. Following application, all activity on the mulch layer must be kept to a minimum.
1a. 2500 lbs. per acre, slope applications 3:1 and steeper (Hydro Blanket or equal).

E. Mulching: Spread mulch as indicated on the Drawings, in all areas unless specified otherwise on the Drawings

F. Plants damaged during installation shall be replaced at the direction of the Landscape Architect at his/her sole discretion.

3.07 FIELD QUALITY CONTROL:

A. General: Notify Architect at least 24 hours in advance when requesting on-site reviews.

B. Schedule for On-Site Reviews:
1. Pre-job conference.
2. At completion of weed abatement/grow-kill
3. At delivery of plant materials.
4. At plant layout prior to excavating pits. Use 36" minimum lath or colored flags to locate trees for review. Paint top of lath in different colors for different species. Mark size and type of tree.
5. After planting pits have been excavated, but prior to backfilling.

C. Pre-maintenance Review:
1. At the completion of landscape planting operations and prior to the beginning of the formal maintenance period, the Pre-maintenance review shall be held.
2. Request on-site review of Landscape Architect/Biologist five working days prior to the completion of work in order that a mutually agreeable time for review may be arranged.
3. At the time of review, the areas under the Contract shall be free of weeds, dead leaves and trash, neatly cultivated and raked and plant basins shall be in good order.
4. If, after the Pre-maintenance review, Landscape Architect/Biologists is of the opinion that the work has been performed in accordance with the Drawings and Specifications, written notice of preliminary acceptance will be given. This report will note any items which must be corrected, and state the date of commencement and completion of the formal maintenance period.

D. Final Review: Perform Final Review- At completion of Establishment and Maintenance periods.

3.08 CLEANING:

A. Keep all areas of the Work clean, neat and orderly at all times during the period of Contract. Clean construction areas at the end of each day.

3.09 PROTECTION:

A. Protect areas susceptible to traffic by erecting barricades immediately after planting. Maintain protection as required.

END OF SECTION

CITY OF IRVINE
BUILDING & SAFETY DIVISION

NO.	DATE	REVISIONS	APP.	DATE
		CITY OF IRVINE		

PLANS PREPARED BY: CLARK & GREEN Associates Landscape Architecture
LICENSE NO. 4564 EXP. DATE

SEAL: REGISTERED LANDSCAPE ARCHITECT — CHRISTOPHER J. CLARK — Signature 10-31-27 Renewal Date — License — STATE OF CALIFORNIA
DATE: 11-21-25

DRAWN BY: KDL
DESIGNED BY: KL
CHECKED BY: LS,KL
RECOMMENDED:

IRWD PC NO. #385IR2
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
PLANTING SPECIFICATIONS
CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00954071 - PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET: L-8.1 OF 10
JOB NO. 24-313

BID SET 11/21/2025

GENERAL NOTES:

1. DETAILS OF CONSTRUCTION NOT SHOWN SHALL BE OF SAME NATURE AS THOSE SHOWN FOR SIMILAR CONDITIONS. REFER TO THE TYPICAL DETAIL SHEETS FOR TYPICAL DETAILS OF CONSTRUCTION. TYPICAL DETAILS APPLY TO ALL CONSTRUCTION UNLESS SPECIFICALLY NOTED OR SHOWN OTHERWISE. WHERE CONDITIONS REQUIRE MODIFICATIONS OF A TYPICAL DETAIL, THE CONTRACTOR SHALL SUBMIT MODIFIED DETAIL FOR APPROVAL BY THE ENGINEER OF RECORD PRIOR TO FABRICATION AND INSTALLATION.

2. CONTRACTOR SHALL CONSIDER THE PROJECT SPECIFICATIONS A PART OF THE CONTRACT DOCUMENTS. WHERE INFORMATION IS CONFLICTING, SPECIFIC DETAILS SHALL GOVERN OVER TYPICAL DETAILS WHICH SHALL GOVERN OVER THESE NOTES WHICH SHALL GOVERN OVER SPECIFICATIONS.

3. ALL DIMENSIONS ON STRUCTURAL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL DIMENSIONS. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE OMITTED OR NOT CLEAR, CONTACT THE ARCHITECT (ARCH) OR STRUCTURAL ENGINEER OF RECORD (SEOR). ALL DIMENSIONS RELATED TO EXISTING CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. DIMENSIONS ARE TO THE FACE OF STUDS, AND TO CENTERLINE OF COLUMNS UNO.

4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY NOTIFY THE SEOR OF ANY CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND OTHER DRAWINGS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON DRAWINGS PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE BUILDING THAT IS IN CONFLICT UNTIL THE CONFLICT IS RESOLVED WITH THE AFFECTED PARTIES.

5. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN THEY DO NOT INDICATE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE CONSTRUCTION AND ALL ADJACENT PROPERTIES DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR SEOR SHALL NOT INCLUDE OBSERVATION OF THE ABOVE ITEMS.

6. SUBSTITUTION REQUESTS FOR MATERIALS SPECIFIED ON THE STRUCTURAL DRAWINGS MAY BE CONSIDERED WITH MATERIALS HAVING EQUIVALENT OR GREATER CAPACITY AND PERFORMANCE. CURRENT EVALUATION REPORTS AND PRODUCT INFORMATION SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER DEMONSTRATING THE REQUIRED CAPACITY AND PERFORMANCE OF THE MATERIAL TO BE SUBSTITUTED. WRITTEN APPROVAL FROM THE SEOR SHALL BE OBTAINED PRIOR TO THE SUBSTITUTION OF ANY MATERIAL SPECIFIED ON THE STRUCTURAL DOCUMENTS.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. THE ARCHITECT, SEOR, AND THE OWNER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.

8. ALL WORK IS NEW (N) UNLESS INDICATED AS EXISTING (E).

9. CONSTRUCTION MATERIALS SHALL BE DISTRIBUTED WHEN PLACED ON THE STRUCTURE SUCH THAT LOADS DO NOT EXCEED DESIGN LIVE LOADS OR RESULT IN AN UNBALANCED CONDITION.

10. REFER TO THE PROJECT SPECIFICATIONS FOR SHOP DRAWING REQUIREMENTS AND SUBMITTALS.

STRUCTURAL DESIGN CRITERIA:

1. CODES:
   ALL WORK SHALL BE IN CONFORMANCE WITH THE CALIFORNIA BUILDING CODE (CBC) 2022 EDITION, INCLUDING ALL AMENDMENTS. ALL STANDARDS USED SHALL BE THE LATEST VERSION APPROVED BY THE CODE ENFORCEMENT AGENCY ON THE DATE OF THE PERMIT ISSUANCE UNLESS SPECIFICALLY NOTED OTHERWISE.

2. DESIGN LIVE LOAD

	LOAD
ROOF	20 PSF

3. WIND DESIGN INFORMATION

RISK CATEGORY = II	Kz = 0.94	Kd =0.85	Kzt = 1.0
BASIC WIND SPEED Vfm = 95 MPH (3 SEC GUST)			EXPOSURE = C
INTERNAL PRESSURE COEFF. = +/- 0.18			

4. SEISMIC DESIGN INFORMATION

I = 1.0	RISK CATEGORY = II			SITE CLASS = D
S_S = 1.244g	S1 = 0.445g	SDS = 0.831g		SD1=0.550g
SEISMIC DESIGN CATEGORY = D				
ANALYSIS PROCEDURE = EQUIV. LATERAL FORCE PROCEDURE OR LINEAR DYNAMIC PROCEDURE (RESPONSE SPECTRUM)				
HORIZONTAL IRREGULARITIES = N/A				
VERTICAL IRREGULARITIES = 2. REENTRANCE CORNER IRRG				
SLRS : SPECIAL REINF. MASONRY SHEAR WALLS				
Rho = 1.0	R = 5	Cd = 3.5	Ω = 2.5	Cs = 0.166
SLRS : STEEL MOMENT FRAME				
Rho = 1.3	R = 3.5	Cd = 3	Ω = 3	Cs = 0.237
SLRS : STEEL ORDINARY CANTILEVER COLUMN				
Rho = 1.0	R = 1.25	Cd = 1.25	Ω = 1.25	Cs = 0.665

EXISTING UNDERGROUND UTILITY NOTES:

1. THE ARCHITECT AND ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS. THE LOCATION OF ANY EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD ANY SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.

CONTRACTOR RESPONSIBILITY NOTE:

1. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN LATERAL-FORCE-RESISTING SYSTEM, DESIGNATED ON PLANS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING:

   A. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS.

   B. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.

   C. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF THE REPORTS.

   D. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

STRUCTURAL SUBMITTALS:

1. REVIEW OF SHOP DRAWINGS AND SUBMITTALS BY THE SEOR IS FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS.

2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE SEOR FOR REVIEW PRIOR TO FABRICATION. THE CONTRACTOR WILL REMAIN RESPONSIBLE FOR ALL ERRORS OF DETAILING, FABRICATION, AND FOR CORRECT FITTING OF ALL STRUCTURAL MEMBERS INCLUDING COORDINATION WITH OTHER TRADES.

   A. SHOP DRAWINGS SHALL BE SUBMITTED A MINIMUM OF 2 WEEKS PRIOR TO SCHEDULED FABRICATION AND SHALL CONSIST OF ONLY ONE SET FOR OUR RECORDS AND ONE REPRODUCIBLE SET.

   B. SEOR WILL RETURN THE REPRODUCIBLE SET CLEARLY MARKED WITH COMMENTS. ANY REQUIRED RECORD SET COPIES SHALL BE MADE FROM THIS RETURNED SET.

   C. REPRODUCTION OF STRUCTURAL PLANS & DETAILS FOR SHOP DRAWINGS IS PROHIBITED. SUBCONTRACTOR/FABRICATOR IS TO PROVIDE INDEPENDENTLY CREATED DRAWINGS BASED ON THE STRUCTURAL PLANS AND DETAILS. 2. SHOP DRAWINGS AND SUBMITTALS DO NOT CONSTITUTE CHANGE ORDERS. ANY PROPOSED CHANGES TO THE STRUCTURAL DOCUMENTS MUST BE SUBMITTED IN WRITING AS A REQUEST FOR SUBSTITUTION TO THE ARCHITECT AND SEOR FOR APPROVAL.

3. THE FOLLOWING LIST SUMMARIZES IMPORTANT STRUCTURAL SUBMITTALS FOR THIS PROJECT. REFER TO THE SPECIFICATIONS FOR A COMPLETE LIST AND ADDITIONAL REQUIREMENTS.

   GENERAL
   REQD: QUALIFICATION DATA FOR APPROVED INSTALLERS AND FABRICATORS.
   REQD: CERTIFICATES OF CONFORMANCE FOR PREFABRICATED MEMBERS.
   REQD: PROVIDE PRODUCT DATA FOR ALL MANUFACTURED STRUCTURAL PRODUCTS AND ACCESSORIES USED.

   CONCRETE FORMWORK
   REQD: MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR PROPRIETARY MATERIALS INCLUDING FORM COATINGS, MANUFACTURED FORM.
   REQD: SYSTEMS, TIES AND ACCESSORIES SHOP DRAWINGS FOR FABRICATION AND ERECTION OF FORMWORK AND SHORING.

   CONCRETE REINFORCEMENT
   REQD: MANUFACTURER'S PRODUCT DATA, SPECIFICATIONS AND INSTALLATION PROCEDURES FOR PROPRIETARY MATERIALS AND REINFORCEMENT.
   REQD: STEEL PRODUCER'S CERTIFICATES OF MILL ANALYSIS, TENSILE AND BEND TESTS .
   REQD: SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT.

   CAST-IN-PLACE CONCRETE
   REQD: DESIGN MIX FOR EACH CONCRETE MIX.
   REQD: MATERIAL TEST REPORTS.
   REQD: MATERIAL CERTIFICATES FOR CEMENT, AGGREGATES AND ADMIXTURES.
   REQD: MANUFACTURER'S PRODUCT DATA FOR WATERSTOPS, BONDING AGENTS, VAPOR RETARDERS, JOINT FILLER, CURING MATERIALS AND FLOOR.
   REQD: TREATMENTS SHOP DRAWINGS FOR PROPOSED LOCATIONS OF ADDITIONAL CONSTRUCTION OR CONTROL JOINTS NOT SHOWN ON THE STRUCTURAL PLANS.
   REQD: MINUTES FROM PREINSTALLATION CONFERENCE.

   UNIT MASONRY
   REQD: DESIGN MIX FOR GROUT.
   REQD: MATERIAL TEST REPORTS.

   STRUCTURAL STEEL
   REQD: MANUFACTURER'S MILL CERTIFICATES.
   REQD: MILL TEST REPORTS.
   REQD: SHOP DRAWINGS FOR FABRICATION AND ASSEMBLY OF MEMBERS.
   REQD: ERECTION PLAN SEQUENCE AND PROCEDURES.
   REQD: WELDING PROCEDURE SPECIFICATIONS (WPS).
   REQD: CERTIFICATES FOR ALL WELDERS VERIFYING CURRENT AWS QUALIFICATIONS.
   REQD: TEST REPORTS FOR SHOP AND FIELD WELDED AND BOLTED CONNECTIONS.

   STEEL DECK
   REQD: SHOP DRAWINGS INDICATING LAYOUT AND DETAILS.

   COLD-FORMED METAL FRAMING
   NOT REQD: SHOP DRAWINGS INDICATING LAYOUT AND DETAILS.
   NOT REQD: ENGINEERING CALCULATIONS.

   PREFABRICATED WOOD PRODUCTS
   REQD: SHOP DRAWINGS INDICATING LAYOUT.
   REQD: ENGINEERING CALCULATIONS.

DEFERRED APPROVAL ITEMS

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE REVIEWED BY THE ARCHITECT OR ENGINEER OF RECORD AND THEN SUBSEQUENTLY REVIEWED AND APPROVED BY THE BUILDING OFFICIAL PRIOR TO INSTALLATION.

FIRE SPRINKLER ANCHORAGE NOTES:
1. FIRE SPRINKLER CONTRACTOR SHALL PROVIDE CALCULATIONS, DETAILS AND PLANS OF ALL FIRE SPRINKLER ANCHORAGE. VERTICAL LOADS PER CODE LATERAL LOADS PER NFPA 13.
2. FIRE SPRINKLER CONTRACTOR SHALL COORDINATE HANGER AND BRACING ANCHORAGE LOCATION WITH THE STRUCTURAL DRAWINGS AND ROOF AND FLOOR FRAMING SYSTEMS BY OTHERS.
3. SUBMIT PLANS DETAILS AND CALCULATIONS STAMPED AND SIGNED BY A LICENSED CIVIL OR STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

DESIGN BUILD METAL STUD & WINDOW WALL NOTES:
1. METAL STUD CONTRACTOR & WINDOW WALL FABRICATOR TO PROVIDE CALCULATIONS, DETAILS AND PLANS OF ALL METAL STUDS AND THEIR CONNECTIONS TO THE STRUCTURE. (WIND PRESSURE PER PER CODE)
2. SUBMIT PLANS & CALCULATIONS STAMPED & SIGNED BY A CALIFORNIA LICENSED STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.
3. METAL STUDS AND WINDOW WALLS TO ACCOMMODATE 1" OF VERTICAL MOVEMENT.
4. METAL STUDS ARE TO BE SUPPORTED VERTICALLY & LATERALLY @ EACH FLOOR, UNO.

MECHANICAL NOTES:
1. MECHANICAL CONTRACTOR TO VERIFY ALL MECHANICAL UNIT LOCATIONS, SIZES AND OPENINGS.
2. STEEL FABRICATOR TO LOCATE ALL BEAMS BASED ON INFORMATION FROM MECHANICAL CONTRACTOR AND SUBMIT STEEL BEAM LOCATION TO THE STRUCTURAL ENGINEER FOR REVIEW.
3. MECHANICAL CONTRACTOR TO SUBMIT HVAC ANCHORAGE DETAILS STAMPED AND SIGNED BY CALIFORNIA LICENSED CIVIL ENGINEER.

FOUNDATION AND SLAB ON GRADE NOTES:

1. SEE SOIL REPORT BY: NINYO & MOORE GEOTECHNICAL & ENVIRONMENTAL SCIENCES COMSULTANTS
   REPORT NO.: 212085029 DATED: OCTOBER 21, 2024

   SOILS REPORT SHALL BE CONSIDER A PART OF THESE CONSTRUCTION DOCUMENTS.

2. BUILDING FOOTING

   ALLOWABLE FTG VERTICAL BEARING PRESSURE
   DEAD LOAD + LIVE LOAD = ...2,500 PSF (3,000 PSF MAX.)
   DEAD LOAD + LIVE LOAD + LATERAL LOAD = ...3,320 PSF

   ALLOWABLE FTG LATERAL BEARING PRESSURE IS 350 PSF PER FT OF DEPTH (3,500 PSF/FT MAX.)
   ALLOWABLE FTG COEFFICIENT OF FRICTION FOR SLIDING: 0.35

3. POLE FOOTING (EMBEDMENT DEPTH OF 8FEET OR MORE) (A)

   ALLOWABLE POLE FTG LATERAL BEARING PRESSURE IS 150 PSF PER FOOT OF DEPTH.
   ALLOWABLE POLE FTG LATERAL BERAING PRESSURE FOR WIND OR SEISMICE IS 200PSF PER FOOT OF DEPTH.

4. THE CONTRACTOR SHALL CONFORM TO ALL RECOMMENDATIONS AND CONDITIONS INDICATED IN THE SOIL REPORT. THE GEOTECHNICAL ENGINEER SHALL OBSERVE ALL FOOTING EXCAVATIONS PRIOR TO PLACING CONCRETE.

5. SUBSURFACE SOIL PREPARATION:
   A. ALL EXISTING UNDOCUMENTED FILL SHALL BE REMOVED AND RECOMPACTED. ALL TOPSOILS SHALL BE REMOVED AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
   B. GEOTECHNICAL ENGINEER SHALL BE RETAINED DURING THE OVEREXCAVATION PROCESS. THE ACTUAL DEPTH OF REMOVAL WILL BE DETERMINED DURING GRADING OPERATIONS.
   C. OFFSITE FILL MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.

6. SPREAD FOOTINGS ARE CENTERED UNDER WALLS AND COLUMNS, UNO.

7. FOOTING ELEVATIONS ARE NOTED ON THE PLANS AND DETAILS . IN ANY CASE, FOOTINGS SHALL BEAR ON FIRM UNDISTURBED SOIL OR ENGINEERED FILL OR BEDROCK , IN ACCORDANCE WITH THE SOIL REPORT AND DETAILS SHOWN.

8. CONTRACTOR SHALL PROTECT ALL UTILITY LINES, ETC. ENCOUNTERED DURING EXCAVATION AND BACKFILLING.

9. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS WITH THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING IS NOT PERMITTED.

10. ALL TRENCHES SHALL COMPLY WITH APPLICABLE OSHA REQUIREMENTS.

11. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED WITH NON-EXPANSIVE SOIL BUT NOT BEHIND RETAINING WALLS BEFORE CONCRETE OR MASONRY ATTAINS ITS FULL DESIGN STRENGTH.

12. THE DESIGN OF ALL RETAINING WALLS AND SUBTERRANEAN BUILDING WALLS INDICATED ON THESE DRAWINGS IS BASED ON DRAINED SOILS.

13. CONSTRUCTION JOINTS (CJ) AND SAWCUT (SC) JOINTS IN SLABS SHALL OCCUR WHERE LOCATED ON PLANS AND DETAILS. CJ'S SHALL HAVE FORMED POUR STOPS. CONSTRUCTION JOINTS IN WALLS AND FOOTINGS NEED NOT OCCUR AT THE SAME LOCATION, UNO.

14. SEE ARCHITECT'S PLANS FOR LOCATIONS OF SLAB SLOPES, DEPRESSIONS, CURBS, DRAINS, NON-STRUCTURAL PARTITIONS AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL PLANS.

15. ALL GRADING, FOUNDATION FOOTINGS, AND DRAINAGE PLANS SHALL BE REVIEWED BY THE GEOTECHNICAL ENGINEER UPON SUBMITTAL. A CERTIFIED LETTER BY THE GEOTECHNICAL ENGINEER IS REQUESTED STATING THAT THE RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT HAVE BEEN INCORPORATED INTO THE PROJECT PLANS AND SPECIFICATIONS PRIOR TO CONSTRUCTION.

16. PRIOR TO THE CONTRACTOR REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL IN WRITING THAT:
    A. THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT.
    B. THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED.
    C. THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT.

REINFORCING STEEL NOTES:

1. REINFORCING GRADES FOR CONCRETE OR MASONRY:

ALL BARS EXCEPT THOSE TO BE WELDED	ASTM A615, GRADE 60
TIES AND STIRRUPS	ASTM A615, GRADE 60
WELDED WIRE FABRIC	ASTM A185
ALL BARS TO BE WELDED	ASTM A706, GRADE 60
ALL BARS IN THE CONCRETE SHEARWALL INDICATED ON WALL ELEVATION INCLUDING SUPPORTING WALL FOOTING LONGITUDINAL BARS (WF), AND ALL GRADE BEAMS (GB)	A706, GRADE 60

2. MAINTAIN MINIMUM CONCRETE COVER FROM FACE OF CONCRETE TO EDGE OF ALL REINFORCEMENT AS FOLLOWS (UNO):
   (SEE PLAN/ SECTION FOR CONCRETE W/ FIRE RATING.)

CONDITION	COVER
CONCRETE POURED AGAINST EARTH	3"
CONCRETE POURED IN FORMS AND EXPOSED TO WEATHER OR EARTH	
-#6 BARS AND LARGER	2"
-#5 BARS AND SMALLER	1 1/2"
INTERIOR COLUMNS AND BEAMS	1 1/2"
INTERIOR WALL FACES AND RAISED SLABS	1"
STRUCTURAL SLABS ON GRADE	
-FROM BOTTOM OF SLAB	2"
-FROM TOP OF SLAB	1 1/2"
OTHER CONCRETE NOT EXPOSED TO WEATHER OR EARTH FOR #11 BARS AND SMALLER	1"

   PROVIDE THE LARGEST COVER REQUIRED FOR ALL APPLICABLE CONDITIONS. WHERE #3 STIRRUPS OR TIES ARE USED, ENSURE THAT THE COVER FOR LONGITUDINAL BARS IS ADEQUATE.

3. REINFORCEMENT SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE". EACH REINFORCING BAR SHALL BE WIRED TO A CROSS BAR AT A MAXIMUM SPACING OF 24" OC. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING IN POSITIONS SHOWN ON THE PLANS.

4. SPLICES IN CONTINUOUS REINFORCEMENT AS USED IN WALLS, FOOTINGS, SLABS, ETC., SHALL HAVE A CLASS "B" LAP (1'-6" MIN) AND THE SPLICES IN ADJACENT BARS SHALL BE NOT LESS THAN 5'-0" APART. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. BARS MAY BE WIRED TOGETHER AT SPLICES OR LAPS EXCEPT FOR TOP REINFORCING OF BEAMS AND SLABS OR WHERE SPECIFICALLY DETAILED TO BE SEPARATED. WELDED WIRE FABRIC SHALL BE LAPPED 12" MINIMUM.

5. ALL DOWELS, ANCHOR BOLTS AND OTHER HARDWARE TO BE SET IN CONCRETE SHALL BE TIED IN PLACE PRIOR TO PLACEMENT OF CONCRETE. NO WET SETTING, STABBING, RODDING OR OTHER MOVEMENT OF EMBEDDED ITEMS SHALL BE PERFORMED DURING PLACEMENT OF CONCRETE.

6. BEND REINFORCING BARS COLD.

7. STEEL SHALL BE KEPT CLEAN AND FREE OF RUST.

8. DOWELS BETWEEN FOOTING AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE MAIN REINFORCING UNO.

9. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN PLACE INSPECTION IS MADE.

10. CHAIRS OR SPACERS FOR REINFORCING SHALL BE NON-FERROUS OR PLASTIC COATED WHEN RESTING ON EXPOSED SURFACES.

STRUCTURAL CONCRETE NOTES:

1. CONCRETE SHALL BE MIXED, PLACED AND CURED IN ACCORDANCE WITH ACI 318, 2019 EDITION, AND PROJECT SPECIFICATIONS.

2. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. IN SUCH CASES, HOPPERS AND VERTICAL CHUTES OR TRUNKS SHALL BE USED. CHUTES OR TRUNKS SHALL BE OF VARIABLE LENGTHS SO THAT FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED SIX FEET. A SUFFICIENT NUMBER OF CHUTES OR TRUNKS SHALL BE USED TO ENSURE THE CONCRETE IS KEPT LEVEL AT ALL TIMES.

3. CONSTRUCTION JOINTS SHALL BE CLEANED AND ROUGHENED BY REMOVING THE ENTIRE SURFACE TO EXPOSE CLEAN AGGREGATE SOLIDLY EMBEDDED IN THE MORTAR MATRIX. SLUSH WITH A COAT OF NEAT CEMENT BEFORE PLACING CONCRETE. SEE PLANS AND DETAILS FOR LOCATION AND TYPE OF CONSTRUCTION JOINT. LOCATIONS OF ADDITIONAL CONSTRUCTION JOINTS NOT SHOWN ON THESE PLANS SHALL BE SUBMITTED FOR APPROVAL BY THE EOR PRIOR TO PLACING ANY CONCRETE.

4. STRUCTURAL CONCRETE SHALL MEET THE FOLLOWING DESIGN CRITERIA:

LOCATION	MIN 28-DAY COMP STRENGTH	CONC TYPE[a]	MAX AGGR. SIZE	MAX W/C RATIO	MAX SLUMP[b]	CEMENT TYPE
FOUNDATIONS STEM WALLS, PILASTER	4000 PSI	NWC	1 1/2"	0.45	4"	II / V
SLAB ON GRADE	4000 PSI	NWC	1"	0.45	4"	II / V
ALL OTHER STRUCTURAL CONCRETE NO NOTED..	4000 PSI	NWC	1"	0.50	6"	II / V

   a. MAXIMUM DRY WEIGHT OF LIGHTWEIGHT CONCRETE SHALL BE 110 PCF .
   b. SLUMP MEASURED PRIOR TO SUPERPLASTICIZER, WHERE OCCURS.

5. CONCRETE MIX DESIGN AND TESTING SHALL MEET THE REQUIREMENTS OF THE BUILDING CODE, AND SPECIFICATIONS. ALL CONCRETE MIXES SHALL BE DESIGNED BY A RECOGNIZED TESTING LAB STAMPED AND SEALED BY A LICENSED CALIFORNIA CIVIL ENGINEER AND SUBMITTED TO THE SEOR FOR REVIEW PRIOR TO CONCRETE PLACEMENT. STRUCTURAL CONCRETE MIXES SHALL CONSIST OF 5 SACK MINIMUM UNO.

6. AGGREGATES IN NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C-33 (HARDROCK). AGGREGATES IN LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C-330.

7. COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND THE SEOR.

8. PORTLAND CEMENT SHALL BE AS NOTED ABOVE FOR ALL CONCRETE CONFORMING TO ASTM C150, LOW ALKALI. MILL TESTS WITH CERTIFICATES OF COMPLIANCE SHALL BE SUBMITTED.

9. FLY ASH OR OTHER POZZOLANS CONFORMING TO ASTM C618 CLASS N OR F MAY BE USED AS A PARTIAL SUBSTITUTION FOR PORTLAND CEMENT UP TO A MAXIMUM OF 15% TOTAL CEMENTITIOUS MATERIALS BY WEIGHT IF THE MIX DESIGN IS PROPORTIONED PER ACI 318, SECTION 26.4.3.

10. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C94.

11. LEAN CONCRETE, WHERE SPECIFICALLY INDICATED, SHALL CONTAIN 2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.

12. DRYPACK OR NONSHRINK GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2 TIMES THE SUPPORTING CONCRETE STRENGTH, AND SHALL BE OF FIVE STAR GROUT, SIKA GROUT 212, OR APPROVED EQUAL WITH VALID CODE REPORT (LARR,ICC,ESR,IAPMO ER). FOR THICK GROUT LAYERS FOLLOW MANUFACTURER'S GUIDELINES TO ATTAIN THE REQUIRED STRENGTH, WHICH MAY INCLUDE THE ADDITION OF PEA GRAVEL.

13. DO NOT USE ANY CONCRETE OR GROUT CONTAINING CHLORIDES. WATER USED IN MIX SHALL BE CLEAN AND POTABLE.

14. NOT USED

15. FOR INTERIOR SLABS-ON-GRADE AND ALL OTHER SLABS RECEIVING ADHERED FLOORING FINISHES (I.E., GLUED, ETC.), THE MAXIMUM W/C RATIO SHALL NOT EXCEED 0.45. CURING COMPOUNDS USED ON CONCRETE THAT IS TO RECIEVE FINISHES SHALL BE COMPATIBLE WITH TILE AND ADHESIVES OR GROUTS IN ACCORDANCE WITH MANUFACTURER'S DATA AND BE APPROVED BEFORE USE.

16. MAINTAIN CONCRETE ABOVE 50 DEGREES FAHRENHEIT AND IN A MOIST CONDITION FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT UNLESS OTHERWISE ACCEPTED BY SEOR.

17. SEE ARCHITECTURAL DRAWINGS FOR WALL OPENINGS, WALL OFFSETS, CHAMFERS, KERFS, DRIPS AND FOR EXTENT OF DEPRESSIONS, RAMPS, ETC. PROVIDE SLEEVES FOR ALL PIPES THROUGH CONCRETE WALLS AND FOOTINGS WHERE SHOWN ON THESE DRAWINGS. CORING IS NOT PERMITTED WITHOUT PRIOR APPROVAL BY THE SEOR.

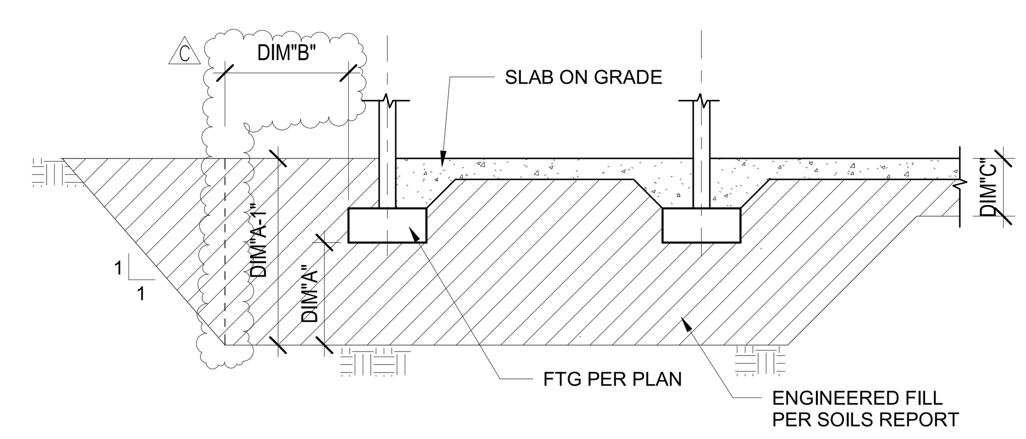
18. SEE ARCHITECT'S PLANS FOR LOCATIONS OF SLAB SLOPES, DEPRESSIONS, CURBS, DRAINS, NON-STRUCTURAL PARTITIONS AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL PLANS.

19. EXPOSED CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH 3/4" CHAMFER, UNO.

20. CONSTRUCTION JOINTS (CJ) AND SAWCUT (SC) JOINTS IN SLABS SHALL OCCUR WHERE LOCATED ON PLANS AND DETAILS. CJ'S SHALL HAVE FORMED POUR STOPS. CONSTRUCTION JOINTS IN WALLS AND FOOTINGS NEED NOT OCCUR AT THE SAME LOCATION, UNO.

SUB-GRADE PREPARATION NOTES:

1. SEE SOILS REPORT FOR INFORMATION OF SUB-GRADE PREPARATION.



TYPICAL EXCAVATION SECTION

DIM "A" OR "A-1":
5 FEET BELOW EXISTING SITE GRADES (A-1) OR A MINIMUM OF 2 FEET BELOW BOTTOM OF FOOTINGS (A), WHICHEVER IS DEEPER.

DIM "B":
5 FEET MINIMUM BEYOND EDGE OF FOOTING.

DIM "C":
3 FEET BELOW EXISTING SITE GRADES OR A MINIMUM OF 2 FEET BELOW BOTTOM OF SLABS, WHICHEVER IS DEEPER.

NOTE:
BALANCE OF INFO SEE SOILS REPORT.

1 / S0.1 — OVER EXCAVATION DIAGRAM
SCALE: N.T.S.

TYPICAL ABBREVIATIONS

AB	ANCHOR BOLT	INT	INTERIOR
ABV	ABOVE	JST	JOIST
ADDT'L	ADDITIONAL	KLF	KIPS PER LINEAR FOOT
ADJ	ADJACENT	KSL	KIPS PER SQUARE FOOT
AFF	ABOVE FINISH FLOOR	KSI	KIPS PER SQUARE INCH
ALT	ALTERNATE	L	ANGLE
ARCH	ARCHITECT(URAL)	LFRS	LATERAL FORCE RESISTING SYSTEM
ATR	ALL THREADED ROD		
BLDG	BUILDING	LLH	LONG LEG HORIZONTAL
BLKG	BLOCKING	LLV	LONG LEG VERTICAL
BLW	BELOW	LP	LOW POINT
BM	BEAM	LWC	LIGHTWEIGHT CONCRETE
BN	BOUNDARY NAILING	MAX	MAXIMUM
B.O.	BOTTOM OF	MB	MACHINE BOLT
BOTT	BOTTOM	MECH	MECHANICAL
BRG	BEARING	MFR	MANUFACTURER
BS	BOTH SIDES	MIN	MINIMUM
BTWN	BETWEEN	MTL	METAL
C	CAMBER	(N)	NEW
CIP	CAST IN PLACE	NS	NEAR SIDE OR NON-SHRINK
CJ	CONTROL/ CONSTRUCTION JOINT	NTS	NOT TO SCALE
		NWC	NORMAL WEIGHT CONCRETE
CL	CENTERLINE	OC	ON CENTER
CLR	CLEAR	O.F.	OUTSIDE FACE
CMU	CONCRETE MASONRY UNIT	OH	OPPOSITE HAND
COL	COLUMN	OPM	OSHPD PRE APPROVAL OF MANUFACTURER'S CERTIFICATION
CONC	CONCRETE		
CONN	CONNECTION		
CONT	CONTINUOUS	OPN'G	OPENING
CP	COMPLETE PENETRATION	PDF	POWDER DRIVEN FASTENER
CSK	COUNTERSINK	PENE.	PENETRATION
CTR(D)	CENTER(ED)	PJ	PANEL JOIST
DB	BAR OR BOLT DIAMETER	PL	PLATE
DBL	DOUBLE	PLC(S)	PLACE(S)
DC	DEMAND CRITICAL	PLF	POUND PER LINEAR FOOT
DEMO	DEMOLITION	PLYWD	PLYWOOD
DET	DETAIL	PREFAB	PREFABRICATED
DIA	DIAMETER	PSF	POUND PER SQUARE FOOT
DIAG	DIAGONAL	PSI	POUND PER SQUARE INCH
DIM	DIMENSION	PT	PRESSURE TREATED OR POST TENSION
DO	DITTO		
DWG	DRAWING	QTY	QUNATITY
(E)	EXISITNG	RAD, R	RADIUS
EA	EACH	REF	REFERENCE
EF	EACH FACE	REINF	REINFORCING
EJ	EXPANSION JOIST	REQ'D	REQUIRED
EMBED	EMBEDMENT	SB	SILL BOLT
ELEC	ELECTRICAL	SC	SAW CUT OR SLIP CRITICAL
ELEV	ELEVATION	SCHED	SCHEDULE
EN	EDGE NAILING	SEOR	STRUCTURAL ENGINEER ON RECORD
E.O.	EDGE OF		
EOR	ENGINEER OF RECORD	SHT'G	SHEATHING
EQ	EQUAL	SIM	SIMILAR
EQUIP	EQUIPMENT	SLRS	SEISMIC LOAD RESISTING SYSTEM
ES	EACH SIDE/ EDGE SCREW		
EW	EACH WAY	SMS	SHEET METAL SCREW
EXP	EXPANSION	SN	SILL NAIL
EXT	EXTERIOR	SOG	SLAB ON GRADE
FIN	FINISH	SQ	SQUARE
FLR	FLOOR	SS	STAINLESS STEEL
FN	FEILD NAILING	STD	STANDARD
FND	FOUNDATION	STGRD	STAGGERED
F.O.	FACE OF	SITFF	STIFFENER
FS	FAR SIDE OR FIELD SCREW	STL	STEEL
FRMG	FRAMING	STRUCT	STRUCTURAL
FT	FOOT OR FEET	T&B	TOP AND BOTTOM
FTG	FOOTING	THK	THICK
G	GIRDER	T.O.	TOP OF
GA	GAGE	TOM	TOP OF MASONRY
GALV	GALVANIZED	TOS	TOP OF STEEL
HAB	HEADED ANCHOR BOLT	TYP	TYPICAL
HD	HOLDOWN	UNO	UNLESS NOTED OTHERWISE
HDR	HEADER	VERT	VERTICAL
HGR	HANGER	W/	WITH
HK	HOOK	W/O	WITHOUT
HORIZ	HORIZONTAL	WF	WIDE FLANGE
HP	HIGH POINT	WLD	WELDED
HS	HIGH STRENGTH	WO	WHERE OCCURS
HSS	HOLLOW STRUCTURAL STEEL	WP	WORK POINT
		WT	WEIGHT
HT	HEIGHT	WWF	WELDED WIRE FABRIC
IN	INCH	⌀	DIAMETER
⌖	REFERENCE ELEVATION OR WORK POINT		

SHEET LIST

S0.1	GENERAL NOTES
S0.2	GENERAL NOTES
S0.3	GENERAL NOTES
S0.4	GENERAL NOTES
S1.1	TYPICAL REBAR & S.O.G DETAILS
S1.2	TYPICAL EXCAVATION & FOOTING DETAILS
S1.3	TYPICAL INTERIOR METAL STUD DETAILS
S1.4	TYPICAL METAL DECK DETAILS
S1.5	TYPICAL MASONRY DETAILS
S1.6	TYPICAL DETAILS
S1.7	TYPICAL DETAILS
S1.8	TYPICAL DETAILS
S1.9	TYPICAL EXTERIOR METAL STUD & CEILING DETAILS
S2.0	OVERALL PLAN
S2.1	RETAINING WALL & BLDG FOUNDATION PLAN
S2.2	RETAINING WALL & CANOPY FOUNDATION AND ROOF FRAMING PLAN
S3.1	ROOF FRAMING PLAN
S4.1	FOUNDATION DETAILS
S4.2	FOUNDATION DETAILS
S4.3	FOUNDATION DETAILS
S5.1	FRAMING DETAILS
S5.2	FRAMING DETAILS
S6.1	WALL ELEVATIONS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: **S0.1**
SHEET TITLE:

GENERAL NOTES

VCA ENGINEERS INC
CIVIL • STRUCTURAL
MBE • DBE • SBE
Quality Service Commitment
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

REGISTERED PROFESSIONAL ENGINEER
YOUNG KEUN NA
No. S4029
Exp. 9/30/26
STRUCTURAL
STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

MASONRY NOTES:

1. MASONRY UNITS SHALL DEVELOP THE FOLLOWING MINIMUM 28 DAY PRISM COMPRESSIVE STRENGTHS IN ACCORDANCE WITH THE BUILDING CODE:

MINIMUM 28 DAY COMPRESSIVE STRENGTH			
LOCATION	fm	TYPE S MORTAR PER ASTM C270	GROUT PER CBC 2103.3
ALL MASONRY U.N.O	2000 PSI	1800 PSI	2000 PSI

2. CONCRETE BLOCK SHALL CONFORM TO ASTM C90 MEDIUM WEIGHT. CLAY BRICK LOCK SHALL CONFORM TO ASTM C652
3. PRISM TEST SHALL BE PERFORMED FOR MASONRY WITH f'm OVER 2000 PSI FOR CBC 2105.5
4. VERTICAL REINFORCING SHALL BE FULL HEIGHT OF WALL AND SHALL BE BRACED AT 6' - 8" MAXIMUM TO PREVENT MOVEMENT WHILE GROUTING.
5. HORIZONTAL REINFORCING SHALL BE IN BOND BEAM UNITS AND TIED SECURELY TO VERTICAL REINFORCING.
6. DOWELS, ANCHORS, AND OTHER EMBEDDED ITEMS SHALL BE TIED SECURELY IN PLACE TO PREVENT MOVEMENT WHILE GROUTING. WET SETTING OR STABBING IS NOT ALLOWED.
7. MAXIMUM GROUT LIFTS SHALL NOT EXCEED 8' - 0" AND CLEANOUTS AT THE BOTTOM OF ALL CELLS SHALL BE USED UNLESS THE LIFT IS 4' - 0" OR LESS. THE CLEANOUTS SHALL BE SEALED BEFORE GROUTING. GROUT FOR EACH POUR SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A BLOCK COURSE EXCEPT AT THE FINAL COURSE. ALL GROUT SHALL BE THOROUGHLY CONSOLIDATED BY VIBRATING IMMEDIATELY AFTER PLACING. SHAKING OR RODDING REBAR IS NOT ALLOWED. FILL ALL CELLS WITH GROUT.
8. BLOCK SHALL BE PLACED IN RUNNING BOND AND SHALL BE 8"x8"x16" NOMINAL UNITS, UNO. WHERE BLOCK IS REQUIRED TO BE PLACED IN STACK BOND (SEE ARCH), OPEN-ENDED UNITS (I.E., "SPEED BLOCK") SHALL BE USED.
9. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE SAFETY OF LIFT HEIGHT FOR OPEN ENDED OR FIELD MODIFIED BLOCKS.
10. LAYOUT OF MASONRY BLOCK UNITS SHALL BE RUNNING BOND, U.N.O. BLOCK MODULES/MORTAR JOINTS SHOWN ON THESE DRAWINGS ARE FOR PRESENTATION PURPOSES ONLY, AND NOT INTENDED TO SUPERSEDE ARCHITECTURAL DESIGN REQUIREMENTS.
11. WALL REINFORCEMENT SEE PLANS & ELEVATIONS
12. PROVIDE VERTICAL CONTROL JOINTS IN CMU WALLS AS SHOWN ON PLAN. UNLESS NOTED OTHERWISE VERTICAL CONTROL JOINTS SHALL OCCUR AT 25' - 0" O.C. MAXIMUM ALONG WALL LENGTH, AT FOUNDATION STEPS, FLOOR OR ROOF JOINTS, WALL HEIGHT CHANGES, AND 24" MINIMUM PAST ONE SIDE OF OPENINGS > 6' - 0" WIDE, UNO ON PLANS
13. WHEN THE AMBIENT TEMPERATURE FALLS BELOW 40°F, OR EXCEEDS 100°F, PROVSIONS OF TMS602 / ACI 530 / ASCE6. ARTICLE 1.8C OR ARTICLE 1.8D SHALL BE IMPLEMENTED.

STRUCTURAL STEEL NOTES:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATIONS AND STANDARD OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), AS CONTAINED IN THE 15TH EDITION OF "AISC MANUAL OF STEEL CONSTRUCTION".
2. ALL STRUCTURAL STEEL SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND SHALL BE LEFT IN PLACE UNTIL OTHER MEANS IS PROVIDED TO ADEQUATELY BRACE THE STRUCTURE.
3. PROVIDE THE FOLLOWING MATERIALS FOR STRUCTURAL STEEL UNO:

STRUCTURAL STEEL GRADES:		
A.	ALL WIDE FLANGE SECTIONS	ASTM A992
B.	SQUARE OR RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS)	ASTM A500, GRADE C (F_Y= 50 KSI)
C.	ROUND HOLLOW STRUCTURAL SECTION (HSS)	ASTM A500,GRADE C (F_Y= 46KSI)
C.	PIPES	ASTM A53 TYPE E OR S, GRADE B (F_Y=35 KSI)
E.	PLATES, ANGLES, CHANNELS & TEES	ASTM A36
F.	ALL PLATES PART OF SLRS	ASTM 572, GRADE 50
G.	MACHINE BOLTS (MB)	ASTM A307
H.	HIGH STRENGTH BOLTS (HSB)	ASTM A325 TYPE N, A490
I.	WELDED HEADED STUDS	ASTM A108
J.	THREADED RODS FOR ANCHOR BOLTS	ASTM F1554, GRADE 36

4. 1/8" THICK PLATES AND THICKER SHALL BE GAS CUT OR SAW CUT EXCEPT AS OTHERWISE NOTED, ALL BOLTS SHALL BE HIGH STRENGTH BOLTS. EXCEPT OTHERWISE NOTED, ALL BOLT HOLES SHALL BE STANDARD HOLES.
5. ALL CONNECTIONS NOT SHOWN SHALL CONFORM TO THE "AISC MANUAL OF STEEL CONSTRUCTION" AND SHALL BE SUBMITTED ON SHOP DRAWINGS FOR REVIEW BY SEOR PRIOR TO FABRICATION.
6. ALL WELDED HEADED STUDS, THREADED STUDS, AND DEFORMED BARS SHALL BE NELSON, OR EQUIVALENT, AND WELDED (IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS BY CERTIFIED WELDERS) SO AS TO FULLY DEVELOP THE TENSILE CAPACITY OF THE CONNECTOR.
7. BOLTS WITH UPSET THREADS ARE NOT ALLOWED. USE THE APPROPRIATE NUT AND WASHER TYPE FOR THE SPECIFIED BOLT.
8. ALL STEEL FABRICATION SHALL BE PERFORMED BY A LICENSED FABRICATOR.
9. ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL PERMANENTLY EXPOSED TO THE ELEMENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION UNLESS A WEATHER PROOF COATING IS SPECIFIED BY THE ARCHITECT UNO. STAINLESS AND WEATHERING STEELS ARE EXCEPTED WHERE SPECIFIED.
10. SEE ARCHITECTURAL DRAWINGS FOR NAILER HOLES, WELDED STUDS OR OTHER ITEMS NOT SHOWN IN THESE DRAWINGS. WHERE STEEL IS EMBEDDED IN CONCRETE OR MASONRY, PROVIDE HOLES AS REQUIRED FOR PASSAGE OF CONTINUOUS REINFORCING BARS WHERE INDICATED ON DRAWINGS. DO NOT CUT HOLES IN STRUCTURAL STEEL WITHOUT PRIOR APPROVAL OF SEOR.
11. ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL COMPLY WITH AISC CODE OF STANDARD PRACTICE, SECTION 10.
12. PLACE NON-SHRINK OR DRYPACK GROUT UNDER ALL BASE PLATES AND ALLOW TO CURE BEFORE APPLYING LOADS.
13. ALL OPEN HSS ENDS SHALL BE CAPPED. MIN. 1/4" STL CAP. PROVIDE SQUARE WELD ALL AROUND, CAP PLATE TO HSS.
14. FOR STRUCTURAL STEEL, IN ADDITION TO THE REQUIREMENTS OF SPECIFICATION SECTION A3.1c, HOT ROLLED SHAPES WITH FLANGES 1 1/2" THICK AND THICKER SHALL HAVE MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20FT-LB AT 70°F. PLATES 2" THICK AND THICKER SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20FT-LB AT 70°F.

WELDING NOTES:

1. WELDING PROCEDURES, ELECTRODES AND WELDER QUALIFICATIONS SHALL CONFORM TO THE "CODE FOR WELDING IN BUILDING CONSTRUCTION", AMERICAN WELDING SOCIETY (AWS), D1.1, D1.8 AND THE AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. ALL WELDERS SHALL HAVE EVIDENCE OF PASSING THE AWS STANDARD QUALIFICATION TESTS, AND SHALL BE CERTIFIED FOR THE WORK THEY ARE PERFORMING.
3. PROJECT WELDING SHALL BE PERFORMED ONLY IN ACCORDANCE WITH WELDING PROCEDURE SPECIFICATIONS (WPS) SUBMITTED BY THE CONTRACTOR AND REVIEWED BY THE SEOR AND PROJECT WELDING INSPECTOR. THE WPS SHALL BE IN ACCORDANCE WITH AWS D1.1-D1.4 & D1.8 CURRENT EDITION.
4. ALL WELDS WITHIN MEMBERS DESIGNATED AS PART OF THE SEISMIC LOAD RESISTING SYSTEM (SLRS) SHALL CONFORM TO THE DETAILING, MATERIALS, WORKMANSHIP, TESTING, AND INSPECTION REQUIREMENTS PER AWS D1.8 AND MUST HAVE A MIN. CVN TOUGHNESS OF 20 FT-LB @ 0°F PER AISC 341 A3.4B
.
5. WHERE WELDS ARE DESIGNATED AS DEMAND CRITICAL, THEY SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CHARPY V-NOTCH (CVN) TOUGHNESS OF 20 FT-LB AT 0°F AND 40 FT-LB AT 70°F. SEE AISC 341-16 SECTION A3.4B FOR ADDITIONAL REQUIREMENTS.
6. WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED PER AWS D1.1 & D1.8 USING <u>E70XX ELECTRODES</u> UNLESS OTHERWISED NOTED.
7. WELDING OF REINFORCING BARS SHALL BE PERFORMED PER AWS D1.4 USING <u>E80XX ELECTRODES</u>.
8. WELDING OF METAL DECK AND LIGHT GAGE STEEL SHALL BE IN ACCORDANCE WITH AWS D1.3.
9. ALL GROOVE OR BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS. ALL EXPOSED BUTT WELDS SHALL BE GROUND SMOOTH.
10. ALL EXPOSED WELDS ON ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL COMPLY WITH AISC CODE OF STANDARD PRACTICE, SECTION 10.
11. FIELD WELDS HAVE BEEN INDICATED WHERE THEY ARE EXPECTED TO OCCUR. THE CONTRACTOR SHALL DETERMINE THE ACTUAL FIELD WELDING NECESSARY TO COMPLETE THE PROJECT AND INCLUDE ALL ASSOCIATED COSTS WITHIN THE BASE BID.
12. ALL WELDS (SHOP AND FIELD) REQUIRE SPECIAL INSPECTION.
13. ALL FULL PENETRATION WELDS SHALL BE ULTRA-SONIC TESTED PER AWS D1.1 & AISC 341 J6.2.

HIGH-STRENGTH BOLT NOTES:

1. SEE STRUCTURAL STEEL NOTES THIS SHEET FOR ADDITIONAL INFORMATION.
2. ALL HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A-325 OR ASTM A-490, NUTS SHALL CONFORM TO ASTM A-563 AND WASHERS SHALL CONFORM TO ASTM F-436.
3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE "AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". SLIP CRITICAL BOLTS (SC) SHALL BE USED FOR ALL "SEISMIC LOAD RESISTING SYSTEM" (SLRS) MEMBER STEEL-TO-STEEL CONNECTIONS.
4. PAINT SHALL NOT BE PERMITTED ON CONTACT SURFACES UNLESS NOTED OTHERWISE. CONTACT SURFACES OF BOLTED PARTS SHALL BE DESCALED AND FREE OF DIRT, OIL, BURRS, PITS, AND OTHER DEFECTS WHICH PREVENT SOLID SEATING OF PARTS.
5. FAYING SURFACE SHALL BE "CLASS A" FOR SLIP CRITICAL BOLTS (SC).
6. SLIP-CRITICAL JOINT ASSEMBLIES SHALL BE FULLY PRE-TENSIONED BY TURN-OF-NUT TIGHTENING, CALIBRATED WRENCH TIGHTENING, INSTALLATION OF ALTERNATE DESIGN BOLTS OR BY DIRECT TENSION INDICATOR TIGHTENING.

MOMENT FRAME AND COMPLETE JOINT PENETRATION CONNECTION NOTES:

<u>WELDING ELECTRODES</u>
A. SMAW E8018*
B. FCAW E80 SERIES*

* WELD METAL SHALL BE CAPABLE OF DELIVERING A MINIMUM OF 20 FT-LBS AT -0°F AND 40FT-LBS @ 70°F AS MEASURED BY A CHARPY V-NOTCH IMPACT TEST PER AWS D1.1AND D1.8, APPENDIX III.

* BASE METAL FOR STRUCTURAL SHAPES IN SIZE GROUP 4 & 5 W/ t/f > 11/2" SHALL BE CAPABLE OF DELIVERING A MINIMUM OF 20 FT-LBS AT 70°. F AS MEASURED BY A CHARPY V-NOTCH IMPACT TEST PER A.I.S.C. MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.

<u>STRUCTURAL STEEL</u>
1. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE FOR STEEL AWS D1.1-10 AND D1.8.
2. WELDING PROCEDURE SPECIFICATIONS (WPS) SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL, PRIOR THE ENGINEER FOR APPROVAL, PRIOR TO THE BEGINNING OF WELDING OPERATIONS. THE WPS SHALL INCLUDE THE WELDING PARAMETERS RECOMMENDED BY THE ELECTRODE MANUFACTURER. SEE AWS D1.1 APPENDIX E, FORM E-1. JOINT DETAILS TO SUIT EXISTING CONDITIONS. THE WELDING ELECTRODE MANUFACTURER'S SPECIFICATIONS SHALL BE ATTACHED TO THE WPS. ALL WELDERS AND INSPECTORS SHALL BE INFORMED OF THE WPS AND SHALL RETAIN A COPY.
3. SEE AWS FOR PREQUALIFIED SMAW WPS'S.
4. SEE AWS FOR PREQUALIFIED FCAW WPS'S.
5. WELDING TO BE DONE BY WELDERS CERTIFIED BY AWS.
6. ONLY SHIELDED METAL ARC WELDING (SMAW) WITH LOW HYDROGEN ELECTRODES OR FLUX CORE ARC WELDING (FCAW), EITHER GAS SHIELDED OF SELF SHIELDED, SHALL BE USED. FOR SMAW, THE TYPICAL REQUIREMENTS SHALL BE ACCORDING TO NOTE #3 ABOVE. WELDING PROCEDURES SHALL MEET THE REQUIREMENTS OF AWS D1.1 4.6.2, OR SHALL BE QUALIFIED BY TEST. FOR FCAW, THE TYPICAL REQUIREMENTS SHALL BE ACCORDING TO NOTE #4 ABOVE. THE WELDING PROCEDURE SHALL MEET THE REQUIREMENTS OF AWS D1.1 4.14.1.6.
7. INDIVIDUAL WELDS SHALL BE CARRIED CONTINUOUSLY TO COMPLETION BEFORE THE JOINT IS ALLOWED TO COOL BELOW THE MINIMUM SPECIFIED PREHEAT AND INTERPASS TEMPERATURE.
8. AT ALL COMPLETE PENETRATION WELDS, WELD BEADS SHALL BE PEENED AFTER EACH PASS, WITH THE EXCEPTION OF THE ROOT PASS AND THE SURFACES PASSES, AS FOLLOWS: TURN SLAG GUN 90 DEG. AND MAKE A MINIMUM OF 4 PASSES WITH DULL CHISEL.
9. PREHEATING IS REQUIRED ON ALL TACK WELDS NOT INCORPORATED INTO FINAL WELDS. SEE AWS D1.1, SECTION 3.3.7.
10. FOR BEAM FLANGE REINFORCEMENT PLATES, THE ROLLING DIRECTION OF GRAIN SHALL BE INDICATED ON THE PLATE AND INSTALLED SO THAT THE GRAIN DIRECTION IS PARALLEL TO THE LONGITUDINAL AXIS OF THE MEMBER.
11. FULL TIME VISUAL INSPECTION BY AN AWS QC-1 QUALIFIED INSPECTOR IS REQUIRED FOR ALL WELDING.
12. 100% ULTRASONIC WELD TESTING BY THE INSPECTOR IS REQUIRED FOR ALL COMPLETE PENETRATION WELDS.
13. AMPEREAGE, VOLTAGE, POLARITY AND ELECTRODE STICK OUT SHALL BE VERIFIED TO BE IN COMPLIANCE WITH THE ELECTRODE MANUFACTURER'S RECOMMENDATIONS.
14. REMOVE B.U. BARS AND WELD TABS AT ALL FLANGE COMPLETE JOINT PENETRATION (CJP) WELDS AT DUCTILE MOMENT FRAME CONNECTIONS. TYPICAL UNLESS NOTED OTHERWISE.

METAL DECK NOTES (FILLED & UNFILLED):

1. MATERIAL FOR METAL DECK SHALL HAVE A MIN YIELD STRENGTH OF 50 KSI AND CONFORM TO ASTM A653-SS GRADE 33 WITH GALVANIZED G60 COATING COMPLYING WITH ASTM A525.
2. SEE TYPICAL DETAILS FOR REINFORCING OF DECK AROUND OPENINGS. CONTRACTOR SHALL COORDINATE SIZE AND LOCATIONS OF OPENINGS WITH THE VARIOUS TRADES. NO LOADS SHALL BE HUNG FROM DECK WITHOUT APPROVAL OF SEOR.
3. FLOOR AND ROOF DECK IS DESIGNED FOR UNSHORED CONSTRUCTION, UNO. MAINTAIN 3 SPAN CONDITION WHEREVER POSSIBLE (2 SPAN MIN) EXCEPT AT STAIR LANDING AND WHERE NOTED OTHERWISE ON PLANS.
4. PROVIDE 2" MINIMUM BEARING AT ALL SUPPORTS. END LAPS OF METAL DECK SHALL BE A MINIMUM OF 2" AND SHALL OCCUR ONLY OVER SUPPORTS. DECK SHALL BE LAID OUT SO THAT A LOW FLUTE FALLS ON EACH PARALLEL SUPPORT.
5. INSTALL DECK BY WELDING. USE 3/4" DIAMETER PUDDLE WELDS OR WELDED STUDS TO SUPPORTS SPACED AS SHOWN ON CONSTRUCTION DRAWINGS. SPACING FOR TOP SEAM, SIDE SEAM, BUTTON PUNCH, OR PUNCHLOK CONNECTION SHALL BE IN ACCORDANCE WITH DRAWINGS. SEE TYPICAL METAL DECK DETAILS.
6. SUBMIT SHOP DRAWINGS FOR METAL DECK TO THE SEOR FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL SHOW TYPE OF DECK, LAYOUT OF DECK, THE SIZE AND LOCATION OF ANY OPENINGS OF WIDTH GREATER THAN 1'-0", AND ATTACHMENT METHOD.
7. ALTERNATES TO TYPE OF DECK AND FASTENING MAY BE USED WITH THE APPROVAL OF THE SEOR. DECK PROPERTIES SHALL BE EQUAL TO OR GREATER THAN THOSE SHOWN ON THE PLANS. ANY DECK OR METHOD OF FASTENING SHALL HAVE LATEST EVALUATION REPORT PER CURRENT CODE APPROVING THE DECK FOR THE APPLICATION.
8. METAL DECK WITH CONCRETE FILL SHALL HAVE POSITIVE VENTING. DO NOT EMBED PIPES, SLEEVES, CONDUIT, ETC IN CONCRETE TOPPING UNO.
9. CONCRETE FILL OVER METAL DECK SHALL NOT BE OVER-POURED TO ACHIEVE LEVEL FLOOR.

COLD-FORMED STEEL FRAMING NOTES:

1. DESIGN, FABRICATION AND ERECTION OF COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE SPECIFICATIONS AND STANDARD OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI), AS CONTAINED IN THE "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION, INCLUDING ALL APPLICABLE AMENDMENTS.
2. ALL COLD-FORMED STEEL FRAMING SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND LEFT IN PLACE UNTIL OTHER MEANS IS PROVIDED TO ADEQUATELY BRACE THE STRUCTURE.
3. COLD-FORMED STEEL GRADES:
   A. 18 GA (43 MILS) OR THINNER ....ASTM A1003 GRADE 33 (FY = 33 KSI)
   B. 16 GA (54 MILS) AND THICKER ....ASTM A1003 GRADE 50 (FY = 50 KSI)
4. ALL COLD-FORMED STEEL FRAMING SHALL BE BRACED AS REQUIRED BY SECTION D3 OF THE AISI SPECIFICATION.
5. SUBMIT COLD-FORMED STEEL FRAMING SHOP DRAWINGS AND SPECIFICATIONS TO THE SEOR FOR REVIEW PRIOR TO FABRICATION.
6. COLD-FORMED STEEL STUDS AND TRACKS ARE TO BE ATTACHED WITH SHEET METAL SCREWS (SMS) WITH SIZES CALLED OUT ON THE DETAILS. PENETRATION OF SCREWS THROUGH JOINED MATERIAL SHOULD NOT BE LESS THAN 3 EXPOSED THREADS. SCREWS ARE TO BE INSTALLED AND TIGHTENED IN ACCORDANCE WITH SCREW MANUFACTURER'S RECOMMENDATIONS.
7. ALL HOLES FOR BOLTS SHOULD BE SHALL BE STANDARD HOLES.
8. GALVANIZED COATING SHALL COMPLY WITH ASTM A924.
9. COLD-FORMED STEEL FRAMING SHALL BE PER STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA), ICC ER-3064P.

CROSS REFERENCE OF SECTIONS & DETAILS:

DETAIL REFERENCE SHOWN THUS*: 2 / S5.01 ** — DETAIL NOTED IS SHOWN ON SHEET S501, DETAIL 2

BUILDING SECTION INDICATION SHOWN THUS: 2 / S3.01 ** — CUT IS SHOWN ON SHEET S301, DETAIL 2

ELEVATION INDICATION SHOWN THUS: 2 / S5.01 ** — ELEVATION IS SHOWN ON SHEET S501, DETAIL 2

* (ADDITIONAL INDICATIORS MAY BE USED TO SHOW LOCATION OF DETAIL CUTS)
** (SHEET NUMBER WILL BE REPLACED BY A HYPHEN (-) WHEN THE REFERENCED DETAIL APPEARS ON THE SAME SHEET AS THE CALL-OUT)

DETAIL TITLE SHOWN THUS:

X DETAIL TITLE
SCALE: X"=X'-X"

INDICATES THE TITLE, SCALE, DETAIL NUMBER AND SHEET ON WHICH DETAIL APPEARS

SLRS — INDICATES A DETAIL OR PORTION OF FRAMING IS A PART OF THE SEISMIC LOAD RESISTING SYSTEM AND IS SUBJECT TO ADDITIONAL REQUIREMENTS OUTLINED IN THE GENERAL NOTES & SPECIFICATIONS.

POST INSTALLED ANCHORS NOTES:

1. INSTALL POST-INSTALLED ANCHORS IN ACCORDANCE WITH THE APPLICABLE ICC-ES REPORT AND THE MANUFACTURER'S RECOMMENDATIONS.
2. ALL POST-INSTALLED ANCHORS SHALL BE TESTED PER CBC 1901.3.4.
3. APPLY PROOF TEST LOADS TO EXPANSION & ADHESIVE ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT & INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS OF THE ORIGINAL NUT USING A TORQUE WRENCH & APPLY LOAD.
4. 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).
5. THE TESTING OF THE POST-INSTALLED ANCHORS SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY.
6. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS.
7. TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
8. TESTING FREQUENCY:
   A. WHEN POST-INSTALLED ANCHORS ARE USED FOR SILL PLATE BOLTING APPLICATIONS, 10 PERCENT OF THE ANCHORS SHALL BE TESTED.
   B. WHEN POST-INSTALLED ANCHORS ARE USED FOR OTHER STRUCTURAL APPLICATIONS, ALL SUCH ANCHORS SHALL BE TESTED.
   C. WHEN POST-INSTALLED ANCHORS ARE USED FOR NONSTRUCTURAL COMPONENTS, SUCH AS EQUIPMENT ANCHORAGE, 50 PERCENT OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP, SHALL BE TESTED.
   D. EXEMPTIONS:
      a. TESTING OF SHEAR DOWELS ACROSS COLD JOINTS IN SLABS ON GRADE, WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM TESTING IS NOT REQUIRED.
      b. FOR POWER ACTUATED FASTENERS USED TO ATTACH TRACKS OF INTERIOR NON-SHEAR WALL PARTITIONS FOR SHEAR ONLY, WHERE THERE ARE AT LEAST THREE FASTENERS PER SEGMENT OF TRACK, TESTING IS NOT REQUIRED .
9. TEST ACCEPTANCE CRITERIA: ACCEPTANCE CRITERIA FOR POST-INSTALLED ANCHORS SHALL BE BASED ON AN APPROVED EVALUATION REPORT USING CRITERIA ADOPTED IN THE LATEST BUILDING CODE. FIELD TESTS SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:
   A. HYDRAULIC RAM METHOD:
      a. ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED APPARATUS SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNIBLE MOVEMENT DURING THE TENSION TEST, E.G., AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT.
      b. FOR ADHESIVE ANCHORS, WHERE OTHER THAN BOND IS BEING TESTED, THE TESTING APPARATUS SUPPORT SHALL NOT BE LOCATED WITHIN 1.5 TIMES THE ANCHOR'S EMBEDMENT DEPTH TO AVOID RESTRICTING THE CONCRETE SHEAR CONE TYPE FAILURE MECHANISM FROM OCCURRING.
   B. TORQUE WRENCH METHOD:
      a. TORQUE-CONTROLLED POST-INSTALLED ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH SHALL ATTAIN THE SPECIFIED TORQUE WITHIN 1/2 TURN OF THE NUT; OR ONE-QUARTER (1/4) TURN OF THE NUT FOR A 3/8 INCH SLEEVE ANCHOR ONLY.
      b. SCREW-TYPE ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH SHALL ATTAIN THE SPECIFIED TORQUE WITHIN ONE-QUARTER (1/4) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD.
10. IF ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME TYPE SHALL BE TESTED, WHICH ARE INSTALLED BY THE SAME TRADE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
11. WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST- TENSIONED) LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
12. TEST LOADS SHALL BE AS NOTED BELOW UNLESS NOTED OTHERWISE IN SPECIFIC DETAILS:

<u>EPOXY/ADHESIVE ANCHOR PULL/TENSION TEST LOAD:</u>

THREADED RODS (GRADE 36)

ROD DIAM.	TENSION TEST LOAD UNO	
3/8"	3,180	LBS
1/2"	5,652	LBS
5/8"	8,831	LBS
3/4"	12,717	LBS
7/8"	17,309	LBS
1"	22,608	LBS

REBAR (GRADE 60)

REBAR SIZE	TENSION TEST LOAD UNO	
#3	5,299	LBS
#4	9,420	LBS
#5	14,719	LBS
#6	21,195	LBS
#7	28,849	LBS
#8	37,680	LBS

<u>SCREW/EXPANSION ANCHOR TORQUE TEST LOAD:</u>
TORQUE TEST LOAD SHALL BE BASED ON AN APPROVED EVALUATION REPORT USING CRITERIA ADOPTED IN THE LATEST BUILDING CODE

<u>POWDER-ACTUATED FASTENER (PAF):</u>
POWDER-ACTUATED FASTENERS SHALL BE ONE OF THE FOLLOWING, UNO:
HILTI X-U (ICC-ESR 2269) AT METAL.
HILTI X-CP72(ICC-ESR 2379) AT PTDF.

PROVIDE 0.08" THK X 1.1" SQUARE OR 1.425" ROUND WASHERS FOR ALL POWDER-ACTUATED FASTENERS.

FASTENER DIAMETER AND EMBEDMENT SHALL BE AS SPECIFICALLY DETAILED ELSEWHERE IN THE DRAWINGS.

ROUGH CARPENTRY/ WOOD NOTES:

1. ALL GRADES SPECIFIED ARE MINIMUM GRADES REQUIRED.
2. DOUGLAS FIR (DF) SHALL BE GRADED BY THE WESTERN WOOD PRODUCTS ASSOCIATION GRADING RULES, AND ASTM D245.
3. REDWOOD SHALL BE GRADED BY THE CALIFORNIA REDWOOD ASSOCIATION, REDWOOD INSPECTION SERVICE.
4. SILL PLATES SHALL BE PRESSURE-TREATED (PT) DOUGLAS FIR #1. REDWOOD IS PERMITTED WITH SEOR APPROVAL.
5. TOP PLATES, SILL PLATES, STUDS SHALL BE....................................DF #1
   JOISTS, RAFTERS, PURLINS, BEAMS & POSTS SHALL BE ....DF #1 (UNO)
   LOAD BEARING STUDS SHALL BE...DF #1
6. MOISTURE CONTENT OF SAWN LUMBER SHALL NOT EXCEED 18% WHEN FRAMING STARTS OR SHEATHING IS APPLIED. ANY NONCOMPLIANT WORK SHALL BE REJECTED AND REFRAMED WITH ACCEPTABLE LUMBER.
7. TIMBERS 4" NOMINAL IN THE LEAST DIMENSION SHALL NOT CONTAIN BOXED HEART.
8. SILL PLATES SHALL BE PRESSURE-TREATED AND SHALL BE BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS AT 48" O/C MAX, UNO WITH A BOLT BETWEEN 4" TO 12" FROM THE END OF EACH PIECE OF SILL (2 BOLTS MIN EACH PIECE). PIECE OF SILL SHALL BE CONSIDERED ENDED WHERE PLATE IS CUT OUT OVER ONE-THIRD OF CROSS-SECTION.
9. ANCHOR BOLTS FOR STRUCTURAL WALLS SHALL HAVE 12" EMBEDMENT (UNO) MEASURED FROM TOP OF SLAB.
10. STUD BEARING WALLS AND PARTITIONS SHALL HAVE DOUBLE TOP PLATES LAPPED AT WALL AND PARTITION INTERSECTIONS. JOINTS IN UPPER AND LOWER MEMBERS OF DOUBLE TOP PLATES SHALL BE STAGGERED AT LEAST 4'-0".
11. HOLES IN WOOD AND STEEL MEMBERS FOR BOLTS SHALL BE THE NOMINAL BOLT DIAMETER PLUS 1/16".
12. ALL BOLTS IN WOOD SHALL BE ASTM A307 STANDARD BOLTS, UNO. BOLTS AND SCREWS SHALL BE TIGHTENED AT TIME OF ERECTION AND RETIGHTENED BEFORE CLOSING IN OR AT THE COMPLETION OF THE JOB.
13. HOLES IN WOOD FOR LAG SCREW SHANK SHALL BE BORED TO THE SAME DIAMETER AND DEPTH AS THE SHANK, AND FOR THE THREADED PORTION BORED WITH A BIT NOT LARGER THAN 40% TO 70% OF THE SHANK DIAMETER.
14. LAG SCREWS AND SCREWS SHALL BE SCREWED AND NOT DRIVEN INTO PLACE. BOLT HOLES SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM 1/16" LARGER THAN THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED IN MAIN MEMBERS AND SIDE PLATES. BOLTS SHALL NOT BE FORCIBLY DRIVEN.
15. METAL FRAMING CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG TIE COMPANY (CURRENT CATALOG), OR "USP" WITH EQUIVALENT ICC PUBLISHED VALUES AND SHALL BE INSTALLED PER SPECIFICATIONS, NO EXCEPTIONS.
16. INSTALL WINDOWS AND DOORS IN STUD WALLS AFTER DEAD LOADS ARE APPLIED, AND PROVIDE A 1/2" SHIM SPACE AT THE HEAD CONDITION.
17. STEEL WASHERS SHALL BE PROVIDED UNDER HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS WHICH BEAR ON WOOD. STANDARD CUT WASHERS MAY BE USED IN ALL CASES EXCEPT SILL PLATES AND WOOD LEDGERS AGAINST CONCRETE OR MASONRY. NOTE, WASHERS UNDER CARRIAGE BOLT HEADS SHALL BE LARGE ENOUGH TO ALLOW FOR SQUARE SHOULDERS.
18. ONLY LOAD BEARING AND/OR SHEAR WALLS ARE SHOWN. SEE ARCHITECTURAL DRAWINGS FOR ALL OTHER PARTITIONS.
19. ELEVATIONS SHOWN ON PLANS ARE FROM FINISHED FIRST FLOOR, DATUM ELEVATION = 0'-0".
20. ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS ARE 2x6 STUDS @ 16"OC TYPICAL, UNO.
21. ALL EXTERIOR STUD WALLS SHALL BE COMPLETELY SHEATHED WITH 15/32" APA RATED SHEATHING, EXPOSURE-1 (32/16).
22. INTERIOR STRUCTURAL SHEATHED WALLS ARE SHOWN ON PLANS AND SHALL HAVE 15/32" APA RATED SHEATHING EXPOSURE-1, (32/16),TYPICAL UNO.
23. ALL STRUCTURAL WALL SHEATHING IS SPLICED ON 2" NOMINAL BLOCKING AT HORIZONTAL JOINTS, UNO.
24. STRUCTURAL FLOOR AND ROOF SHEATHING SHALL BE AS ON PLAN AND SHALL BE APA RATED SHEATHING (32/16).
    NOTE: 1/8" GAP SHALL BE PROVIDED BETWEEN ADJACENT PANELS. PANELS WITH GRADE STAMP INDICATION "SIZED FOR SPACING" MAY BE USED TO FACILITATE THIS REQUIREMENT. SEE PLANS FOR REQUIRED BOUNDARY AND EDGE NAILING NOT LISTED BELOW. FLOOR SHEATHING SHALL BE GLUED AND NAILED PER PLAN.

    (* - SHEATHING @ EXTERIOR DECKS SHALL BE EXTERIOR RATED PLYWOOD.)

    BN=BOUNDARY NAILING
    EN=EDGE NAILING
    FN=FIELD NAILING
25. SEE PLANS FOR LOCATION OF NOMINAL 2X FLAT BLOCKING AT ROOF SHEATHING PANEL JOINTS. SEE THIS SHEET FOR PLY CLIP REQUIREMENTS AT UNBLOCKED ROOF PANEL JOINTS. T&G SHEATHING IS NOT REQUIRED WHERE JOINTS ARE BLOCKED.
26. (S) INDICATES METAL FRAMING CONNECTORS MANUFACTURED BY SIMPSON STRONG TIE COMPANY (CURRENT CATALOG) OR "USP" WITH EQUIVALENT ICC PUBLISHED VALUES AND SHALL BE INSTALLED PER SPECIFICATIONS, NO EXCEPTIONS.
27. FASTENERS, INCLUDING NAILS, NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE - TREATED WOOD SHALL BE OF HOT-DIPPED ZINC COATED GALVANIZED STEEL OR STAINLESS STEEL.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S0.2
SHEET TITLE:

GENERAL NOTES

VCA ENGINEERS INC
CIVIL • STRUCTURAL
MBE • DBE • SBE
Quality Service Commitment
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

REGISTERED PROFESSIONAL ENGINEER
YOUNG-KEUN NA
No. S4029
Exp. 9/30/26
STRUCTURAL
STATE OF CALIFORNIA

PRODUCT APPROVALS:

1. FOR ALL ITEMS ON THE CONSTRUCTION DOCUMENTS NOT NOTED WITH A SPECIFIC PRODUCT TYPE OR MANUFACTURER, THE CONTRACTOR SHALL PROVIDE THE PRODUCT SPECIFIED IN THE TABLE BELOW.
2. THE FOLLOWING PRODUCTS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE REFERENCED PRODUCT APPROVALS BELOW, UNO.
3. AT CONTRACTOR'S OPTION, PRODUCTS MAY BE SUBSTITUTED FOR LIKE PRODUCTS PER THE SCHEDULE BELOW IF APPROVED BY SEOR.

ITEM	APPROVED PRODUCTS	ICC#	IAPMO ER
EXPANSION ANCHOR TO CONCRETE	HILTI KWIK BOLT TZ	ESR-1917	-
	SIMPSON STRONG-BOLT-2	ESR-3037	-
	DEWALT POWER STUD+ SD2	ESR-2502	-
EXPANSION ANCHOR TO MASONRY	HILTI KWIK BOLT 3	ESR-1385	-
	SIMPSON STRONG-BOLT 2	-	ER-0240
	DEWALT POWER STUD+ SD1	ESR-2966	-
SCREW ANCHOR TO CONCRETE	SIMPSON TITEN HD SCREW ANCHOR	ESR-2713	-
	HILTI KH-EZ	ESR-3027	-
	DEWALT SCREW-BOLT+	ESR-3889	-
SCREW ANCHOR TO MASONRY	SIMPSON TITEN HD SCREW ANCHOR	ESR-1056	-
	HILTI KH-EZ	ESR-3056	-
	DEWALT SCREW-BOLT+	ESR-4042	-
EPOXY ANCHOR TO CONCRETE	HILTI HIT-HY 200	ESR-3187	-
	SIMPSON SET-XP	ESR-2508	-
	DEWALT PURE 110+	ESR-3298	-
EPOXY ANCHOR TO MASONRY	HILTI HIT-HY 200	ESR-3963	-
	SIMPSON SET-XP	-	ER-0265
	DEWALT AC100+ GOLD	ESR-3200	-
SHOTPIN	HILTI LOW-VELOCTIY X-U UNIVERSAL POWER-DRIVEN	ESR-2269	-
	SIMPSON POWER-DRIVEN	ESR-2138	-
	RAMSET POWER-DRIVEN	ESR-1799	-
SHEET METAL SCREW	HILTI KWIK-PRO SDS	ESR-2196	-
	DRIL-FLEX SDS	ESR-3332	-
WELD STUD /ANCHORS	NELSON BAR ANCHORS/STUD	ESR-2907	-

STRUCTURAL OBSERVATIONS:

1. VISUAL OBSERVATIONS WILL BE PERFORMED AT THE DISCRETION OF THE OWNER, ARCHITECT, SEOR, AND AS REQUIRED BY THE BUILDING OFFICIAL IN ACCORDANCE WITH THE BUILDING CODE.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY THE STRUCTURAL ENGINEER AS TO WHEN EACH MAJOR PHASE OF CONSTRUCTION IS READY FOR OBSERVATION A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.
3. THE FOLLOWING MAJOR PHASES OF CONSTRUCTION IN THE TABLE REQUIRE A SITE VISIT AND STRUCTURAL OBSERVATION REPORT FROM THE SEOR:
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NAILING, REINFORCEMENT, WELDS, CONNECTIONS, ETC. ARE VISIBLE FOR OBSERVATION WHEN THE SEOR IS ON SITE AND FOR ANY SCHEDULING DELAYS DUE TO NONCOMPLIANT ITEMS FOUND DURING THE OBSERVATION.

COMMUNITY DEVELOPMENT
Building and Safety

STRUCTURAL OBSERVATION PROGRAM

PROJECT ADDRESS		PERMIT APPLICATION NUMBER
901 Skyhawk, Irvine CA 92618		00954071-PARK
DESCRIPTION OF WORK		
New one-story maintenance facility by the use of the City of Irvine.		
OWNER	ARCHITECT	ENGINEER
City of Irvine	Douglas Brown, SVA Architects	Young K. Nam

STRUCTURAL OBSERVATION (ONLY CHECKED ITEMS ARE REQUIRED)

FIRM OR INDIVIDUAL TO BE RESPONSIBLE FOR THE STRUCTURAL OBSERVATION		
VCA Engineers, Inc.		
NAME	PHONE	CALIFORNIA REGISTRATION
Young K. Nam	(949)679-0870	S4029

FOUNDATION	WALL	FRAME	DIAPHRAGM
☒ FOOTING, STEM WALLS, PIERS	☐ CONCRETE	☒ STEEL MOMENT FRAME	☐ CONCRETE
☐ MAT FOUNDATION	☒ MASONRY	☐ STEEL BRACED FRAME	☒ STEEL DECK
☒ CAISSON, PILES, GRADE BEAM	☐ WOOD	☐ CONCRETE MOMENT FRAME	☒ WOOD
☐ STEPPING/RETAINING FOUNDATION	☒ OTHER: Metal stud	☐ MASONRY WALL FRAME	☐ OTHER:
☐ OTHER:		☐ OTHER:	

THIS PROJECT IS STRUCTURALLY REPETITIVE IN THE FOLLOWING MANNER: _____

DUE TO THE REPETITIVE NATURE DESCRIBED ABOVE AND SUBJECT TO THE CONDITIONS OF THE CITY OF IRVINE INFORMATIONAL BULLETIN NO. 251, STRUCTURAL OBSERVATION WILL BE PERFORMED AS FOLLOWS:

DECLARATION BY OWNER: I, THE OWNER OF THE PROJECT, DECLARE THAT THE ABOVE LISTED FIRM OR INDIVIDUAL IS HIRED BY ME TO BE THE STRUCTURAL OBSERVER.

Timothy Callahan — SIGNATURE
June 17, 2025 — DATE

ONLY COMPLETE IF DEFERRING SELECTION: IN CONSIDERATION OF DEFERRING THE SELECTION OF THE STRUCTURAL OBSERVER, THE OWNER ACKNOWLEDGES THAT THE PROJECT CAN NOT COMMENCE UNTIL SUCH SELECTION IS MADE AND DOCUMENTED ON A SUPPLEMENTAL CITY OF IRVINE STRUCTURAL OBSERVATION PROGRAM FORM PROVIDED TO THE CITY INSPECTOR AT OR BEFORE THE PRE-CONSTRUCTION MEETING, WHICH SHALL BE ATTENDED BY THE SELECTED STRUCTURAL OBSERVER.

SIGNATURE _____ DATE _____

FORM 40-83 REV 1/16

COMMUNITY DEVELOPMENT
Building and Safety

STATEMENT OF SPECIAL INSPECTION

Special Inspections shall be performed in accordance with Chapter 17 of the California Building Code (CBC) and the City of Irvine Special Inspection Manual.

INSTRUCTIONS: Place an **X** preceding each applicable section or indicate **N/A** if not applicable. Provide a complete and detailed description, detail, or plan sheet reference where required to complete an applicable section. Incorporate this completed form in its entirety into the project construction plans for plan check review.

SECTION 1705: SPECIAL INSPECTIONS

1. X — **Special Cases, Section 1705.1.1** The following describes additional systems or elements subject to special inspection as required by the Chief Building Official, Engineer of Record, manufacturer's instructions, or Evaluation Report:
   POST-INSTALLED ANCHOR (PERIODIC)
2. X — **Structural Steel, Section 1705.2** Special inspections and nondestructive testing of structural steel elements shall be in accordance with AISC 360. Offsite fabrication may only be performed by an approved fabricator. See City of Irvine Informational Bulletin 311.
   Cold-Formed Steel Deck, Section 1705.2.2 Special inspections for cold formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC.
   Open-Web Steel Joists and Joist Girders, Section 1705.2.3 Special inspections of open-web steel joists and joist girders shall be in accordance with Table 1705.2.3.
3. X — **Concrete Construction, Section 1705.3** All structural concrete is subject to special inspection per CBC Table 1705.3 and City of Irvine Information Bulletin 181.
4. X — **Masonry Construction, Section 1705.4** Special inspections and tests of masonry construction shall be performed in accordance with the quality assurance program requirements of TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6 except masonry fireplaces, masonry heaters, or masonry chimneys installed or constructed in accordance with Section 2111, 2112, or 2113, respectively.
5. X — **Wood Construction, Section 1705.5** Special inspections of prefabricated wood structural elements and assemblies shall be in accordance with Section 1704.2.5. Offsite fabrication may only be performed by an approved fabricator. See City of Irvine Informational Bulletin 311.
6. N/A — **Mass Timber Construction, Section 1705.5.7** Special inspections of Mass Timber elements shall be in accordance with Table 1705.5.7. Periodic special inspection will also be required for Mass Timber sealants and adhesives in accordance with Section 1705.20, when required by 703.9.
7. N/A — **High Load Diaphragms, Section 1705.5.1** The following describes high load diaphragms (diaphragms designed in accordance to CBC Table 2306.2) subject to special inspection requirements as described in Section 1704.2 (plan sheet or detail reference is acceptable):

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STATEMENT OF SPECIAL INSPECTION

8. N/A — **Metal-Plate-Connected Wood Trusses, Section 1705.5.2** Special inspection of wood trusses with an overall height greater than or equal to 60 inches, or with a clear span greater than or equal to 60 feet is required in accordance with CBC 1705.5.2.
9. X — **Soils, Section 1705.6** Footing excavations are subject to verification that proper depth and bearing material have been reached prior to placement of concrete per CBC Table 1705.6 (**NOTE:** Work performed under a grading permit is subject to separate special inspection requirements.)
10. N/A — **Driven Deep Foundations, Section 1705.7** Driven deep foundations are subject to special inspection per CBC Table 1705.7.
11. X — **Cast-in-Place Deep Foundations, Section 1705.8** Cast-in-place deep foundations are subject to special inspection per CBC Table 1705.8.
12. N/A — **Helical Pile Foundation, Section 1705.9** Helical pile foundations are subject to special inspection per CBC Section 1705.9.
13. N/A — **Sprayed Fire-Resistant Materials, Section 1705.14** Special inspections and tests of sprayed fire-resistant materials applied to floor, roof, and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.
14. N/A — **Mastic and Intumescent Fire-Resistant Coatings, Section 1705.15** Mastic and intumescent fire-resistant coatings applied to structural elements and decks shall be performed in accordance with Association of the Wall and Ceiling Industry (AWCI) Technical Manual 12-B.
15. N/A — **Exterior Insulation and Finish Systems (EIFS), Section 1705.16** Exterior insulation and finish systems (EIFS) are subject to special inspection per CBC Section 1705.16.
16. N/A — **Fire-Resistant Penetrations and Joints, Section 1705.17** In high-rise buildings or in buildings assigned to Risk Category III or IV, special inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systems, and perimeter fire barrier systems that are tested and listed in accordance with Sections 714.3.1.2, 714.4.2, 715.3, and 715.4 shall be in accordance with Section 1705.17.1 or 1705.17.2.
17. N/A — **Smoke Control, Section 1705.18** Via Orange County Fire Authority (OCFA) procedures.

SECTION 1705.12: SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

The following are applicable to specified seismic force-resisting systems, designated seismic systems, and architectural, mechanical, and electrical components. See CBC Sections 1705.12.1 through 1705.12.9 to determine applicability.

Seismic-Force Resisting Systems. The following describes the seismic-force resisting systems(s) subject to special inspection per applicable CBC Sections 1705.12.1 through 1705.12.9 as indicated below:

18. X — **Structural Steel, Section 1705.12.1** Special inspections of structural steel in the seismic force resisting systems of buildings shall be performed in accordance with the quality assurance requirements of American Institute of Steel Construction (AISC) 341.

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PAGE 2 of 5

STATEMENT OF SPECIAL INSPECTION

19. X — **Structural Wood, Section 1705.12.2** For the seismic force-resisting systems:
    1. Continuous special inspection shall be required during field gluing operations of elements of the seismic force-resisting system.
    2. Periodic special inspection shall be required for nailing, bolting, anchoring, and other fastening of elements of the seismic force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels, and hold-downs.

    Exception: Special inspections are not required for wood shear walls, shear panels, and diaphragms, including nailing, bolting, anchoring, and other fastening to other elements of the seismic force-resisting system, where the fastener spacing of the sheathing is more than 4 inches on center.

    Provide plan sheet or detail reference where the special inspection is required.
20. X — **Cold-Formed Steel Light-Frame Construction, Section 1705.12.3** For the seismic force-resisting systems of structures, periodic special inspection shall be required:
    1. For welding operations of elements of the seismic force-resisting system; and
    2. For screw attachment, bolting, anchoring, and other fastening of elements of the seismic force-resisting system, including shear walls, braces, diaphragms, collectors (drag struts), and hold-downs.

    Provide plan sheet or detail reference where the special inspection is required.
21. N/A — **Designated Seismic Systems, Section 1705.12.4** The special inspector shall examine designated seismic systems requiring seismic qualification in accordance with Section 13.2.2 of ASCE 7 and verify that the label, anchorage and mounting conform to the certificate of compliance.
22. N/A — **Architectural Components, Section 1705.12.5** Periodic special inspection is required during the erection and fastening of:
    - ☐ Exterior cladding, and exterior or interior veneer, more than 30 feet in height above grade or walking surface, or weighing more than 5 psf as indicated on plan sheet(s): _____
    - ☐ Non-bearing walls more than 30 feet in height or weighing more than 15 psf as indicated on plan sheet(s): _____
23. N/A — **Access Floors, Section 1705.12.5.1** Periodic special inspection is required for the anchorage of access floors.
24. N/A — **Mechanical and Electrical Components, Section 1705.12.6** Periodic special inspection is required during installation and anchorage of:
    - ☐ Electrical equipment for emergency or standby power systems.
    - ☐ The piping system(s) and associated mechanical units intended to hazardous materials as indicated on plan sheet(s): _____

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PAGE 3 of 5

STATEMENT OF SPECIAL INSPECTION

- ☐ The HVAC ducts intended to carry hazardous materials as indicated on plan sheet(s): _____
- ☐ The vibration isolation system as indicated on plan sheet(s) : _____

25. N/A — **Storage Racks and Access Floors, Section 1705.12.7** Periodic special inspection is required during the anchorage of storage racks 8 feet or greater.
26. N/A — **Seismic Isolation System, Section 1705.12.8** Periodic special inspection is required during the fabrication and installation of ☐ isolator units and ☐ energy dissipation devices.
27. N/A — **Cold-Formed Steel Special Bolted Moment Frames, Section 1705.12.9** Periodic special inspection shall be provided for the installation of cold-formed steel special bolted moment frames.

SECTION 1705.13: TESTING FOR SEISMIC RESISTANCE

28. X — **Structural Steel, Section 1705.13.1** The following describes required testing of welds, base metal, weld tab removal sites, and thermally cut surfaces of beam copes or access holes per CBC Section 1708 and AISC 341. MT= Magnetic Particle Testing per Appendix W of Section W4.2 AISC 341, UT= Ultrasonic Testing per Appendix W, Section 4.1. Testing procedures and acceptance criteria shall conform to AISC 341 and AWS D1.1.
    - ☐ K-area welding; web area shall be MT'd for cracks in the k-area base metal within 3 inches minimum of the weld.
    - ☒ Complete joint penetration groove welds. All shall be UT'd for materials 5/16 inches or thicker.
    - ☒ Complete joint penetration groove welds. 25% of all beam to column connections shall be MT'd.
    - ☒ Base metal for lamellar tearing; UT testing for discontinuities behind and adjacent to weld fusion line for all complete joint penetration groove welded connections for tension loading in the through thickness direction of base metal greater than 1 1/2 inch thickness to connected piece greater than 3/4 inch.
    - ☒ Flange and web thickness exceeding 1 1/2 inches-__ welded splices and connections, __ thermally cut surfaces of beam copes and access holes shall be MT or penetrant tested.
    - ☒ End of welds from which a weld tab has been removed shall be MT'd. (**NOTE:** N/A for continuity plate weld tabs)
    - ☒ UT percentage reduction protocol is as follows (**NOTE:** May not exceed that allowed by AISC 341): _____
    - ☐ MT percentage reduction protocol is as follows (**NOTE:** May not exceed that allowed by AISC 341): _____
29. N/A — **Nonstructural Components, Section 1705.13.2** The registered design professional shall specify on the approved construction documents the requirements for seismic qualification. Certificate of compliance for the seismic qualification shall be provided to the building official as specified in Section 1704.5.
30. N/A — **Designated Seismic Systems, Section 1705.13.3** The registered design professional shall specify on the approved construction documents the requirements for seismic qualification. Certificate of compliance for the seismic qualification shall be provided to the building official as specified in Section 1704.5.

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STATEMENT OF SPECIAL INSPECTION

SECTION 1705.11: SPECIAL INSPECTIONS FOR WIND RESISTANCE

Special inspections for wind resistance, Section 1705.11 Special inspections for wind resistance specified in Sections 1705.11.1 through 1705.11.3

31. N/A — **Structural Wood, Section 1705.11.1** Continuous special inspection is required during field gluing operations of elements of the main windforce-resisting system. Periodic special inspection is required for nailing, bolting, anchoring, and other fastening of elements of the main windforce-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, and hold-downs.
    Exception: Special inspections are not required for wood shear walls, shear panels, and diaphragms where the fastener spacing of the sheathing is more than 4 inches on center.
32. N/A — **Cold-Formed Steel Light-Frame Construction, Section 1705.11.2** Periodic special inspection is required for welding operations of elements of the main windforce-resisting system. Periodic special inspection is required for screw attachment, bolting, anchoring, and other fastening of elements of the main windforce-resisting system, including shear walls, braces, diaphragms, collectors (drag struts), and hold-downs. See Section 1705.11.2 for exceptions.
33. N/A — **Wind-Resisting Components, Section 1705.11.3** Periodic special inspection is required for fastening of the following systems and components:
    1. Roof covering, roof deck, and roof framing connections.
    2. Exterior wall covering and wall connections to roof and floor diaphragms and framing.

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CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S0.3
SHEET TITLE:

GENERAL NOTES

VCA ENGINEERS INC
CIVIL ▪ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

REGISTERED PROFESSIONAL ENGINEER — YOUNG K. NAM — No. S4029 — Exp. 9/30/26 — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

NAILING SCHEDULE

(UNLESS OTHERWISE NOTED ON PLANS)

NAIL SPACING TO BE NOT LESS THAN REQUIRED PENETRATION. EDGE AND END DISTANCES SHALL BE NOT LESS THAN HALF THIS SPACING. ALL SPACING AND EDGE AND END DISTANCES SHALL BE SUCH AS TO AVOID SPLITTING OF THE WOOD. HOLES FOR NAILS, WHERE NECESSARY TO PREVENT SPLITTING, SHALL BE BORED OF A DIAMETER SMALLER THAN THAT OF THE NAILS. COMMON OR BOX NAILS MAY BE USED FOR NAILING AT TYPICAL CONNECTIONS NOTED BELOW (U.N.O.). FOR ALL CONNECTIONS OTHERWISE NOTED OR DETAILED ON PLANS, COMMON NAILS SHALL BE USED (SEE SCHEDULE BELOW).

NAIL TYPES		
SIZE	DIAMETER (IN)	LENGTH (IN)
8d	0.131	2 1/2
10d	0.148	3
12d	0.148	3 1/4
16d	0.162	3 1/2
20d	0.192	4

SHORTENED 10d COMMON NAILS MAY BE USED TO FASTEN WOOD STRUCTURAL PANELS UNO. USE THE FOLLOWING MINIMUM LENGTHS:
10d x 2 1/4" FOR 15/32" OR THINNER PANELS,
10d x 2 3/8" FOR 19/32" PANELS, AND FULL LENGTH FOR 5/8" OR THICKER PANELS.

TABLE 2304.10.1

FASTENING SCHEDULE

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
	ROOF		
1	BLOCKING BETWEEN CEILING JOISTS, RAFTER OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	(3) 8d	EACH END, TOENAIL
1	BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	(2) 8d	EACH END, TOENAIL
1	BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	(2) 16d	END NAIL
1	FLAT BLOCKING TO TRUSS AND WEB FILLER	16d	FACE NAIL
2	CEILING JOISTS TO TOP PLATE	(3) 8d	EACH JOIST, TOENAIL
3	CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (NOT THRUST) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	(3) 16d	FACE NAIL
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	PER TABLE 2308.7.3.1	FACE NAIL
5	COLLAR TIE TO RAFTER	(3) 10d	FACE NAIL
6	RAFTER OR ROOF TRUSS TO TOP PLATE (SEE SECTION 2308.7.5, TABLE 2308.7.5)	(3) 10d	TOENAIL
7	ROOF RAFTER TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2-INCH RIDGE BEAM	(2) 16d	END NAIL
7	ROOF RAFTER TO RIDGE VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2-INCH RIDGE BEAM	(3) 10d	TOENAIL
	WALL		
8	STUD TO STUD (NOT A BRACED WALL PANELS)	16d	24" O/C FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d	16" O/C FACE NAIL
10	BUILT-UP HEADER (2" TO 2" HEADER)	16d	16" O/C EACH EDGE, FACE NAIL
11	CONTINUOUS HEADER TO STUD	(4) 8d	TOENAIL
12	TOP PLATE TO TOP PLATE	16d	16" O/C FACE NAIL
13	TOP PLATE TO TOP PLATE, AT END JOINT	(8) 16d	EACH SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d	16" O/C FACE NAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING AT BRACED WALL PANELS	(2) 16d	16" O/C FACE NAIL
16	STUD TO TOP OR BOTTOM PLATE	(4) 8d	TOENAIL
16	STUD TO TOP OR BOTTOM PLATE	(2) 16d	END NAIL
17	TOP OR BOTTOM PLATE TO STUD	(2) 16d	END NAIL
18	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	(2) 16d	FACE NAIL
19	1" BRACE TO EACH STUD AND PLATE	(2) 8d	FACE NAIL
20	1"x6" SHEATHING TO EACH BEARING	(2) 8d	FACE NAIL
21	1"x8" AND WIDER SHEATHING TO EACH BEARING	(3) 8d	FACE NAIL

a. NAILS SPACED AT 6 INCHES AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING

b. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).

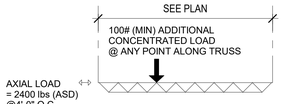
c. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE AND THE CEILING JOIST IS FASTENED TO THE TOP PLATE IN ACCORDANCE WITH THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY ONE NAIL.

TYPICAL PREMANUFACTURED WOOD TRUSS NOTES:

1. THE WOOD TRUSS SYSTEM SHALL BE DESIGNED BY THE TRUSS MANUFACTURER FOR THE LOADS GIVEN BELOW AND CONFIGURATIONS SHOWN ON PLANS.
2. TOP & BOTTOM TRUSS CHORDS SHALL HAVE A MINIMUM SPECIFIC GRAVITY, G=0.50 (E.G. DOUGLAS FIR-LARCH).
3. SST OR TJL INDICATES TRUSS MEMBERS BY STANDARD STRUCTURES, INC. OR TRUSS JOIST RESPECTIVELY, W/ EQUIVELENT ICC PUBLISHED VALUES.
4. TRUSS SHOP DRAWINGS, ERECTION DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER AND THE BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATION OF TRUSSES. ALL REQUIRED BRACING, CROSS-BRIDGING AND BEARING IMPROVEMENTS SHALL BE SPECIFIED AND SHOWN ON THE TRUSS DRAWINGS. CALCULATIONS AND DRAWINGS SHALL BE SIGNED BY A CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.
5. TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:

   ROOF JOISTS: B

   DL = 17 PSF (DOES NOT INCLUDE SELF-WEIGHT)
   LL = 20 PSF
   Δ/DL+LL ≤ L/180 Δ /LL ≤ L/240
   WIND UPLIFT(LRFD) : 25 PSF (ZONE 1) 33.3 PSF (ZONE 2)

   SEE ARCHITECTURAL, MECHANICAL AND FIRE PROTECTION/SPRINKLER DRAWINGS FOR LOCATIONS AND WEIGHTS OF ADDITIONAL LOADS. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: MECHANICAL UNITS, MECHANICAL CURBS, WALLS, DRAFT STOPS, SPRINKLER MAINS, CONSTRUCTION LOADS, ETC. DEAD LOAD DEFLECTION MAY BE CAMBERED OUT.
6. THE DESIGN AND FABRICATION OF WOOD TRUSSES SHALL CONFORM TO THE REQUIREMENTS OF THE BUILDING CODE. ALL CONNECTORS USED SHALL HAVE ICC APPROVAL AND CONNECTOR ICC REPORTS SHALL BE SUBMITTED WITH TRUSS CALCULATIONS. SUFFICIENT BEARING AREA SHALL BE PROVIDED SO THAT THE BEARING STRESSES ON THE TRUSS AND SUPPORTING MEMBERS DO NOT EXCEED THE MAXIMUM BEARING STRESS ALLOWED BY THE BUILDING CODE.
7. THE TRUSS SYSTEM PROVIDED SHALL BE A COMPLETE FRAMING SYSTEM INCLUDING TRUSSES, BRACING, CROSS-BRIDGING, AND CONNECTIONS. CONNECTIONS SHALL INCLUDE ALL TRUSS HANGERS & UPLIFT CONNECTORS FOR WIND & SEISMIC FORCES. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZES AND LOCATIONS OF OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE OPENINGS WITH ACTUAL MECHANICAL UNITS SELECTED FOR INSTALLATION. FRAMING SHALL BE SIMILAR TO OPENINGS SHOWN ON PLANS OR TRUSS MANUFACTURER MAY SUBMIT ALTERNATE FRAMING TO BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION OF TRUSSES. A
8. THE CONTRACTOR SHALL INSTALL ALL REQUIRED BRACING INCLUDING BRACING SPECIFIED BY THE TRUSS MANUFACTURER, BRACING SHOWN ON THESE PLANS AND BRACING REQUIRED FOR STABILITY DURING ERECTION.
9. PREFABRICATED WOOD STRUCTURAL ELEMENTS SHALL BE FABRICATED BY AN APPROVED FABRICATOR, WHO SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL AT THE COMPLETION OF FABRICATION STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. B

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated

SHEET NUMBER: S0.4

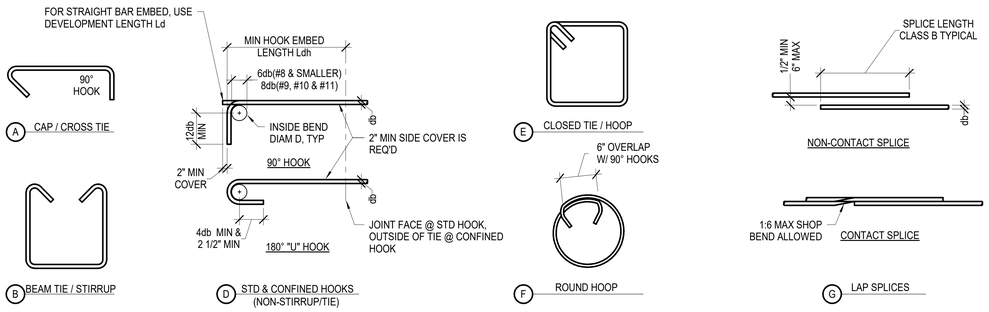
SHEET TITLE:

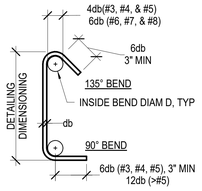
GENERAL NOTES

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — Exp. 9/30/26

PLAN CHECK 00954071-PARK





BAR SIZE	FINISHED BEND DIAMETER "D" IN INCHES
#3	2 1/4"
#4	3"
#5	3 3/4"
#6	4 1/2"
#7	5 1/4"
#8	8"
#9	9 1/2"
#10	10 3/4"
#11	12"
#14	18 1/4"
#18	24"

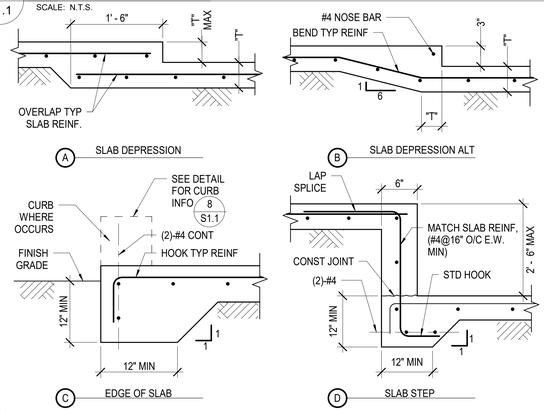
STANDARD HOOKS

	BAR SIZE	L_{dh}(in) STD HOOK	LAP SPLICE (in) CLASS B		L_d(in) DEVELOPMENT LENGTH	
			TOP	OTHER	TOP	OTHER
3000 PSI NWC	#3	6	29	23	22	17
	#4	8	38	29	29	22
	#5	10	47	37	36	28
	#6	12	56	43	43	33
	#7	14	82	63	63	48
	#8	16	94	72	72	55
	#9	18	106	81	81	62
	#10	20	119	91	91	70
	#11	22	132	102	101	78
4000 PSI NWC	#3	6	25	20	19	15
	#4	7	33	25	25	19
	#5	9	41	32	31	24
	#6	10	49	38	37	29
	#7	12	71	55	54	42
	#8	14	81	63	62	48
	#9	15	91	71	70	54
	#10	17	103	80	79	61
	#11	19	114	88	87	67
5000 PSI NWC	#3	6	23	17	17	13
	#4	6	30	23	23	17
	#5	8	37	29	28	22
	#6	9	45	34	34	26
	#7	11	64	50	49	38
	#8	12	73	56	56	43
	#9	14	82	63	63	48
	#10	16	93	71	71	54
	#11	17	102	78	78	60

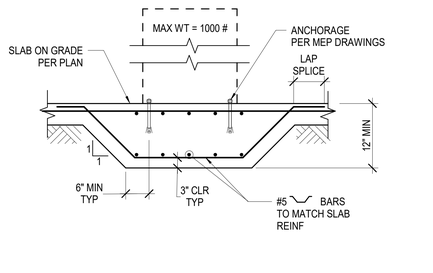
NOTES:
1. Ldh - HOOK DEVELOPMENT LENGTH.
2. Ld - DEVELOPMENT LENGTH.
3. SEE BUILDING CODE AND ACI 318-19 VERSION FOR ALL REQUIREMENTS NOT NOTED.
4. FOR LIGHTWEIGHT CONCRETE MULTIPLY Ldh AND Ld VALUES SHOWN BY 1.3.
5. "TOP" BARS ARE HORIZONTAL WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW BARS. ALL OTHER BARS ARE "OTHER" BARS.
6. STD HOOK Ldh DOES NOT ACCOUNT FOR THE EFFECT OF TIES. CONFINED HOOK Ldh MAY BE USED WHERE ACI 318-19 25.4.3 APPLIES.
7. VALUES SHOWN ABOVE ARE FOR GRADE 60 (FY=60 KSI) REINFORCEMENT.
8. SPLICE LENGTHS SHOWN ARE FOR CLEAR SPACING NOT LESS THAN 2db, CONCRETE COVER NOT LESS THAN db .
9. FOR EPOXY-COATED REINFORCEMENT, SEE BUILDING CODE.

5 S1.1 TYPICAL REINFORCEMENT DETAILS AND DEVELOPMENT LENGTHS

SCALE: N.T.S.

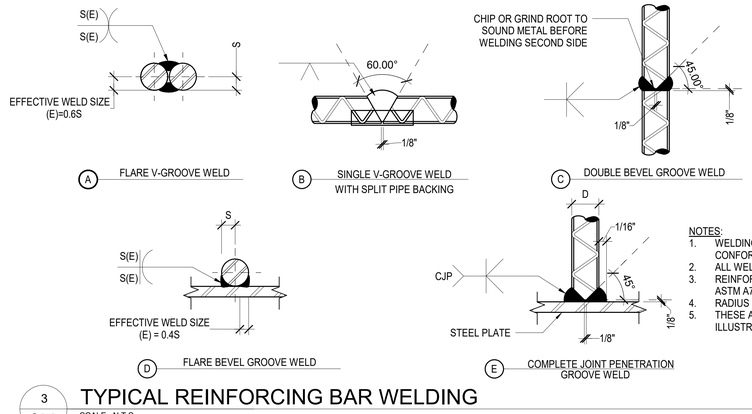


WHERE HOUSE KEEPING PAD IS NEEDED SEE 8 S1.1 DET 'A'



7 S1.1 REINF BAR SPLICES AT CONT WALL FTGS INTERSECTIONS

SCALE: N.T.S.

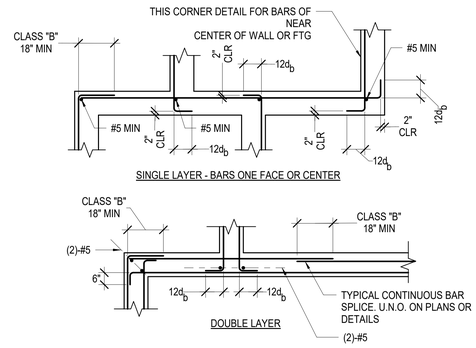


WELD SCHEDULE	
BAR SIZE	MIN WELD LENGTH
#3	3"
#4	3"
#5	3"
#6	4"
#7	5"
#8	5"
#9	6"
#10	6"

NOTES:
1. WELDING SHALL BE WITH LOW HYDROGEN ELECTRODES E90XX AND SHALL CONFORM TO AWS-D1.4.
2. ALL WELDING SHALL BE SUBJECT TO CONTINUOUS INSPECTION.
3. REINFORCING BARS TO BE WELDED SHALL MEET THE REQUIREMENT OF ASTM A706.
4. RADIUS OF REINFORCING BAR = S.
5. THESE ARE SECTIONAL VIEWS. BAR DEFORMATIONS ARE SHOWN ONLY FOR ILLUSTRATIVE PURPOSES.

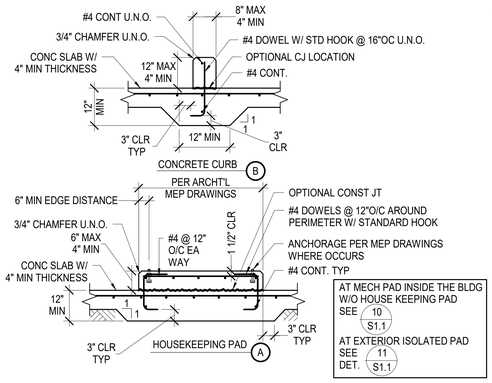
3 S1.1 TYPICAL REINFORCING BAR WELDING

SCALE: N.T.S.



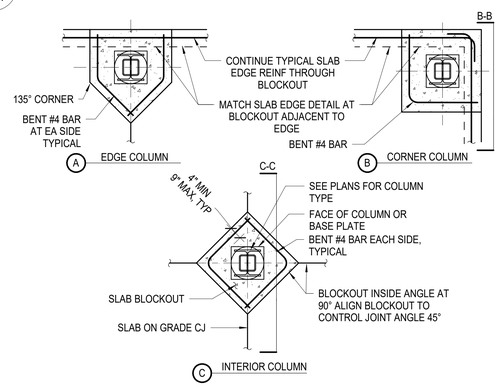
8 S1.1 TYPICAL CONCRETE PAD AND CURB ON GRADE

SCALE: N.T.S.



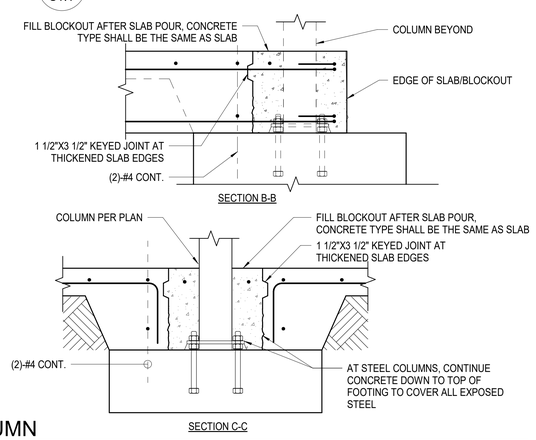
9 S1.1 TYPICAL SLAB ON GRADE DETAILS

SCALE: N.T.S.



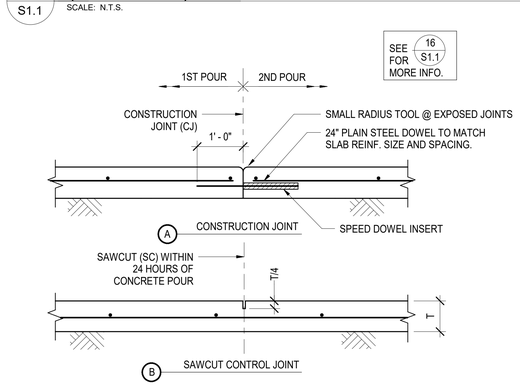
10 S1.1 EQUIPMENT PAD ON GRADE (INTERIOR)

SCALE: N.T.S.



11 S1.1 TYPICAL ISOLATED EQUIPMENT PAD (EXTERIOR)

SCALE: N.T.S.

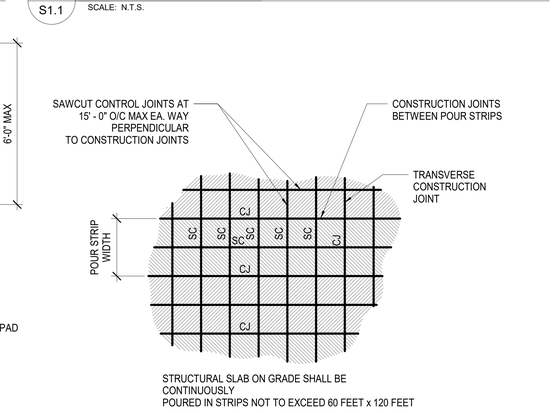


13 S1.1 TYPICAL SLAB ON GRADE BLOCKOUT AT COLUMN

SCALE: N.T.S.

15 S1.1 TYPICAL SLAB ON GRADE CONTROL JOINT (FOR SLAB THICKNESS 4" TO 6")

SCALE: N.T.S.



16 S1.1 TYPICAL SLAB ON GRADE CONTROL JOINT

SCALE: N.T.S.

NOTES:
1. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF VISUALLY EXPOSED CONTROL JOINTS.
2. FOR POURING SEQUENCE OTHER THAN THAT SHOWN ON THESE PLANS, SUBMIT SHOP DRAWINGS TO SEOR FOR REVIEW 7 DAYS PRIOR TO POUR.
3. FOR SAW CUT (SC) AND CONSTRUCTION JOINT (CJ) SEE DETAIL 15 / S1.1
4. FOR TYPICAL SLAB EDGE AND STEPS IN SLAB SEE DETAIL 9 / S1.1

CITY OF IRVINE BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated

SHEET NUMBER: S1.1

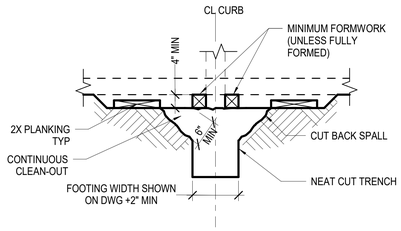
SHEET TITLE:

TYPICAL REBAR & S.O.G DETAILS

VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

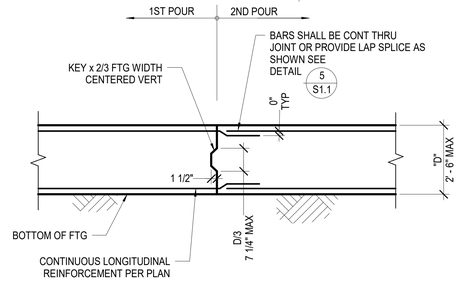
PROFESSIONAL ENGINEER KEVIN A. VAN LEUVEN No. 34029 Exp. 9/30/26 STRUCTURAL STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



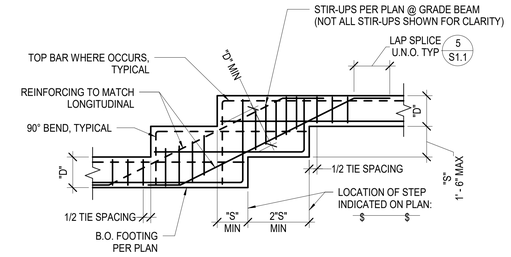
NOTES:
1. FOOTINGS POURED AGAINST EARTH ARE SUBJECT TO APPROVAL OF GEOTECH. ENGR.
2. FOOTING WIDTHS SHALL NOT BE MORE THAN 4" WIDER THAN SHOWN ON PLAN.
3. FORMWORK NOT PERMITTED BELOW GRADE UNLESS FULLY FORMED.
4. FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER. THE MINIMUM FORMWORK SHOWN ON THE DRAWINGS IS MANDATORY TO ENSURE CLEAN EXCAVATIONS IMMEDIATELY PRIOR TO AND DURING THE PLACING OF CONCRETE.
5. CONT CLEAN-OUT STAKES NOT PERMITTED IN THE FTG AREA.
6. AFTER CONCRETE HAS SET, REMOVE LAITANCE AND SCUM.

1 S1.2 FOOTING POURED AGAINST EARTH
SCALE: N.T.S.



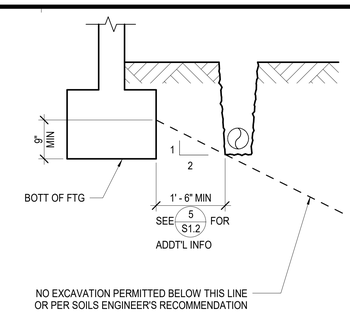
NOTES:
1. PROVIDE ADEQUATE SUPPORT FOR LONGITUDINAL REINFORCEMENT WITHIN 6" OF JOINT USING FOOTING TIES, VERTICAL DOWELS OR OTHER MEANS.
2. SECTIONS SHOWN ARE AT CENTER OF FOOTING IN LONGITUDINAL DIRECTION.

2 S1.2 CONSTRUCTION JOINT AT FOOTING/ GRADE BEAM
SCALE: N.T.S.



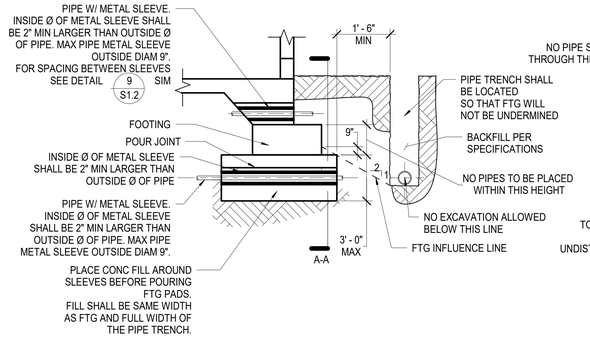
NOTES:
1. FOR FTG REINFORCING SEE PLANS AND DETAILS.
2. VERTICAL WALL DOWELS SHALL EXTEND TO BOTTOM OF FOOTING.
3. TRANSVERSE STEEL NOT SHOWN FOR CLARITY.
4. TWO STEPS ARE SHOWN, DETAIL FOR SINGLE STEP OR ADDITIONAL STEPS IS SIMILAR.

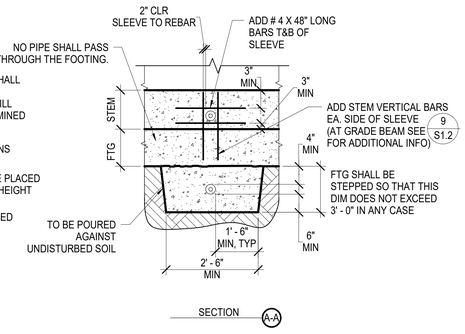
3 S1.2 TYPICAL STEPPED FOOTING GRADE BEAM
SCALE: N.T.S.



NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING OR OTHERWISE MAINTAINING THE SIDES OF THE EXCAVATION FROM CAVE-INS UNTIL ALL BACKFILL IS COMPLETED PER SPECIFICATIONS AND GEOTECHNICAL REPORT.

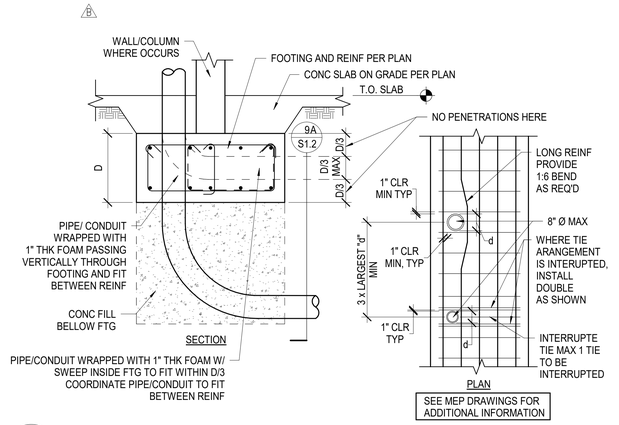
4 S1.2 TYPICAL EXCAVATION PARALLEL TO FOOTING
SCALE: N.T.S.



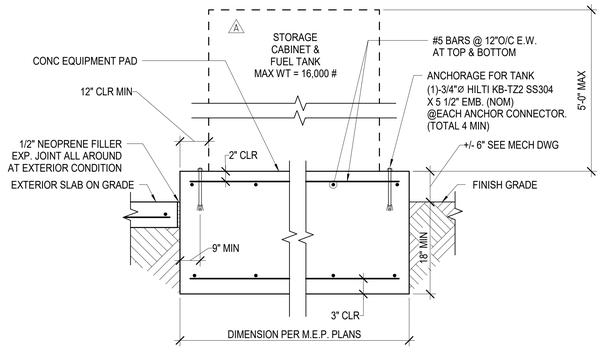


NOTES:
1. CONTRACTOR SHALL COORDINATE ALL PIPE LOCATIONS WITH BUILDING FOUNDATION REQUIREMENTS.
2. IF REQUIREMENTS AS SHOWN CANNOT BE MET, STEP FOOTING PER TYPICAL 'STEPPED FOOTING' DETAIL.
3. REFERENCE CBC SECTION 1809.14.

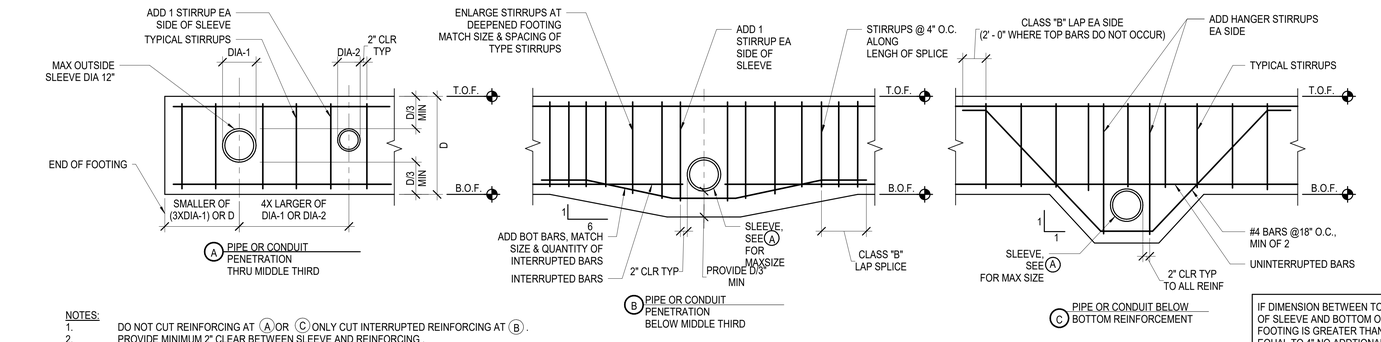
5 S1.2 PIPE TRENCH FOOTING DETAIL
SCALE: N.T.S.



7 S1.2 PIPE/ CONDUIT SWEEP THRU FOOTING
SCALE: N.T.S.



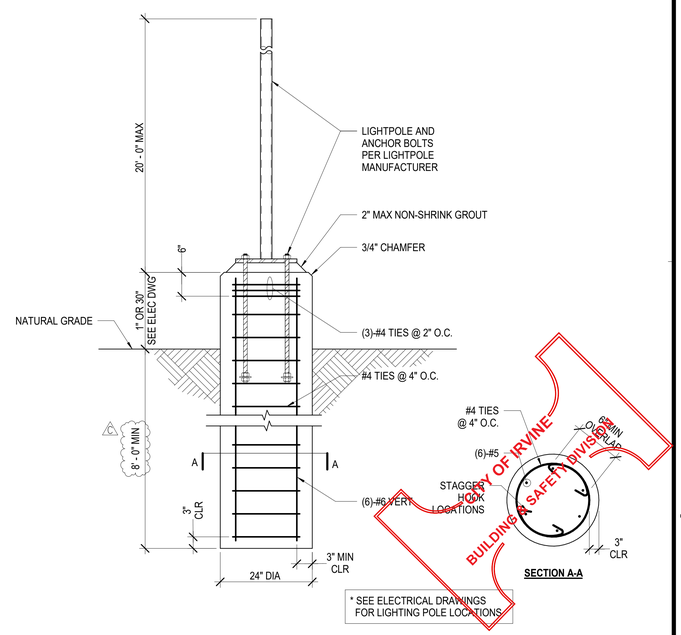
8 S1.2 ISOLATED EQUIPMENT PAD FOR FUEL TANK (1000 GAL)
SCALE: N.T.S.



IF DIMENSION BETWEEN TOP OF SLEEVE AND BOTTOM OF FOOTING IS GREATER THAN OR EQUAL TO 4" NO ADDTIONAL REINFORECEMENT IS REQUIRED. SEE DET. 5 S1.2

NOTES:
1. DO NOT CUT REINFORCING AT (A) OR (C) ONLY CUT INTERRUPTED REINFORCING AT (B).
2. PROVIDE MINIMUM 2" CLEAR BETWEEN SLEEVE AND REINFORCING .
3. INSIDE Ø OF METAL SLEEVE SHALL BE 2" MIN LARGER THAN OUTSIDE Ø OF PIPE.
4. CAULK SEAL GAP AT SLEEVE-TO-PIPE/CONDUIT INTERFACE ON EXTERIOR SIDE OF FOOTING .
5. IF PIPE OR CONDUIT PENETRATION OCCURS AT EITHER TOP OR BOTTOM REBAR SPLICE LOCATION PROVIDE 2 ADDITIONAL SHEAR STIRRUPS FOR A TOTAL OF 4 SHEAR STIRRUPS ON EACH SIDE OF PENETRATION .

9 S1.2 TYPICAL PIPE OR CONDUIT PENETRATIONS THRU CONTINUOUS FOOTINGS
SCALE: N.T.S.



* SEE ELECTRICAL DRAWINGS FOR LIGHTING POLE LOCATIONS

16 S1.2 LIGHTPOLE FOUNDATION
SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

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DATE ISSUED: OCT 15, 2025
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SHEET TITLE:

TYPICAL EXCAVATION & FOOTING DETAILS

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
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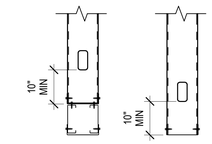
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

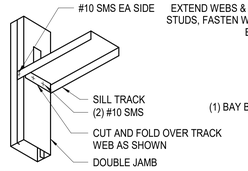
PROFESSIONAL ENGINEER — No. 34029 — Exp. 9/30/26 — STRUCTURAL — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

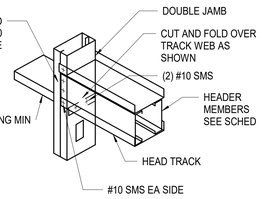


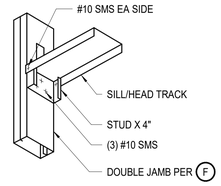
1 CONDITION 2 CONDITION

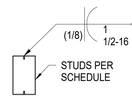
NON-BEARING - HEADER DIRECTLY OVER OPENING



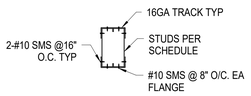
NOTE:
SEE DETAILS D & E FOR ALTERNATE CONNECTION AS CONTRACTORS OPTION.





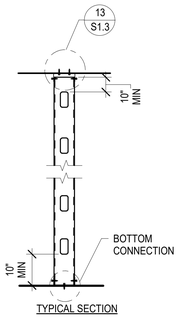


WELD OPTION



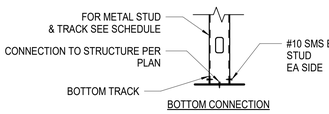
SCREW OPTION

A HEADER DETAIL



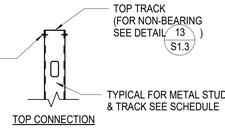
TYPICAL SECTION

B DETAIL



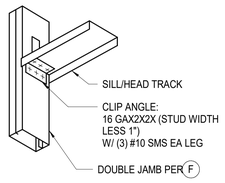
BOTTOM CONNECTION

C DETAIL

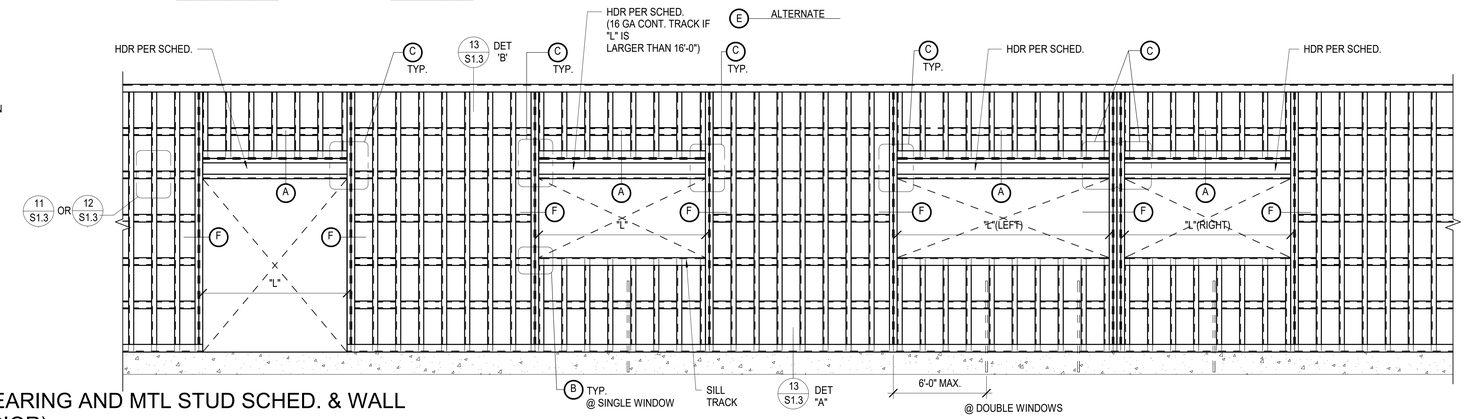


TOP CONNECTION

D ALTERNATE



E ALTERNATE



F TYP. JAMB SHCEDULE

JAMB STUD SCHEDULE		
MAX OPENING "L" OR COMBINED OPENING L= L(RIGHT) + L (LEFT) AT ADJACENT OPENING	HT < 16'-0" (INTERIOR)	
	STUDS	CONN AT TOP TRACK
L ≤ 6'-0"	(2) 400S162-33	SL400*
	(2) 600S162-33	SL600*
6'-0" ≤ L ≤ 10'-0"	(2) 400S162-33	SL400*
	(2) 600S162-43	SL600*
10'-0" ≤ L ≤ 16'-0"	(2) 400S162-43	SL400*
	(2) 600S162-43	SL600*

NOTES:
1. JAMB STUDS DEPTHS SHALL MATCH TYPICAL WALL STUD DEPTHS.
2. * DENOTES TSN (THE STEEL NETWORK) CLIPS. (ICC-ESR-2049)

NOTES:
1. PROVIDE STUDS, TRACKS AND BRACING PER SCHEDULE BELOW:

METAL STUD SCHEDULE UNO ON PLAN REF: STEEL STUD MANUFACTURER'S ASSOCIATION (ESR-3064P)						
TRACK	NOMINAL STUD SIZE	SSMA PRODUCT IDENTIFICATION	STUD SPACING	MINIMUM PROPERTIES		
				Ix (in⁴)	Sx (in³)	Ma (in-k)
BOTTOM TRACK	6"x1 1/2"x16GA	600T150-54	-	2.400	0.609	18.24
TOP TRACK	6"x1 1/2"x16GA	600T150-54	-	2.400	0.609	18.24
CAPPING TRACK	6"x2"x16GA	600T200-54	-	2.641	0.717	21.48

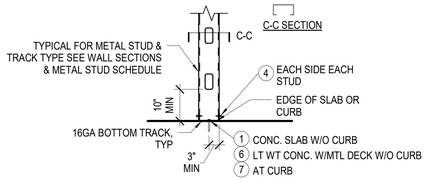
MAX HT FOR INTERIOR METAL STUD SIZE (1 5/8" FLANGE WIDTH) @ 16" O/C MAX LOAD= 7.5 PSF (L/240)					
GAUGE	MEMBER WEB DEPTH				
	2 1/2"	3.5/8"	4"	6"	8"
14	-	17'-5"	18'-10"	26'-2"	33'-4"
16	-	16'-4"	17'-8"	24'-6"	31'-1"
18	11'-5"	15'-3"	16'-6"	22'-10"	29'-0"

HEADER BEAM SCHEDULE (INTERIOR NON-BEARING PARTITIONS) MAX WIND = 5PSF		
SPAN "L"	CONDITION	LINTEL SIZE
≤ 4' 0"	DET. A - 2	16 GA TRACK, WIDTH TO MATCH
> 4' 0" ≤ 8' 0"	DET. A - 1	(2) 6"X20 GA METAL STUDS (600S162-33)
> 8' 0" ≤ 12' 0"	DET. A - 1	(2) 6"X18 GA METAL STUDS (600S162-43)
> 12' 0" ≤ 16' 0"	DET. A - 1	(2) 8"X16 GA METAL STUDS (800S162-54)

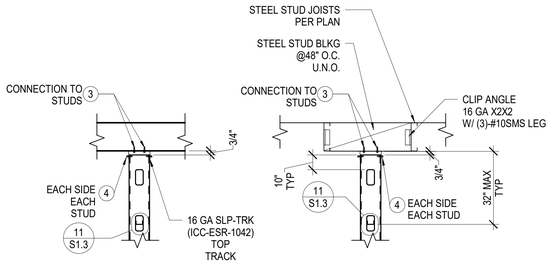
2. ALL STUDS AND TRACKS SHALL CONFORM TO ASTM A1003.
   a. 18GA AND LIGHTER: MINIMUM YIELD POINT OF 33 KSI
   b. 16GA AND HAVIER: MINIMUM YIELD POINT OF 50 KSI.
   c. ALL STUDS AND TRACKS SHALL BE MANUFACTURED BY CURRENT MEMBERS OF THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) LISTED IN ICC REPORT NO. ESR-3064P. ALL STUDS AND TRACKS SHALL COMPLY WITH ICC REPORT NO. ESR-3064P.
3. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY OR ON ANGLE (SUCH AS BRACING) TO SQUARELY FIT. AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY POSITION UNTIL PROPERLY FASTENED.
4. STUD AND TRACKS SHALL BE ATTACHED BY WELDING AND SHEET METAL SCREWS AS NOTED ON THE DRAWINGS.
5. MANUFACTURER PROVIDED PUNCH-OUTS MAY BE LOCATED ALONG THE CENTERLINE OF THE WEBS OF THE FRAMING MEMBERS. PUNCH-OUTS SHALL HAVE A MINIMUM CENTER-TO-CENTER SPACING OF 24". PUNCH-OUT SHALL HAVE A MAXIMUM WIDTH OF HALF THE MEMBER DEPTH OR 2 1/2", WHICHEVER IS LESS, AND MAXIMUM LENGTH OF 4 1/2".
6. SPLICES IN STUDS AND BRACES SHALL NOT PERMITTED.
7. ALL FRAMING SHALL BE COORDINATED WITH GLAZING MANUFACTURERS, MECHANICAL, ELECTRICAL, PLUMBING AND OTHER TRADES.
8. PROVIDE 0.08" THICK x 1.1" SQUARE OR 1.425" ROUND WASHERS FOR ALL POWDER ACTUATED FASTENERS.
9. LOCATE PUNCHOUTS 10" CLEAR OF CONNECTIONS. IF PUNCH IS CLOSER THAN 10" TO CONNECTION, SEE DETAIL 'C' ON 13 / S1.3

5 / S1.3 TYPICAL NON-BEARING AND MTL STUD SCHED. & WALL FRAMING (INTERIOR)

SCALE: N.T.S.



STUD TO BOTTOM TRACK A



STUD PERPENDICULAR TO STEEL STUD

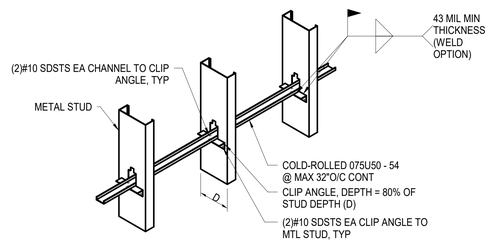
STUD PARALLEL TO STEEL STUD

STUD WALL TO ROOF FRAMING B

NOTES:
1. FOR STEEL STUD AND TRACK TYPE SEE PLANS, SECTIONS AND METAL STUD SIZE SCHEDULE ON DETAIL 5 S1.3
2. FOR METAL STUD FASTENERS, SEE METAL STUD FASTENER SCHEDULE.
3. ALL POWER DRIVEN FASTENERS TO HAVE A MINIMUM PENETRATION OF 1 1/4".

11 / S1.3 BRIDGING CHANNEL W/ CLIP ANGLE (WITHOUT PLYWOOD/GYP BOARD)

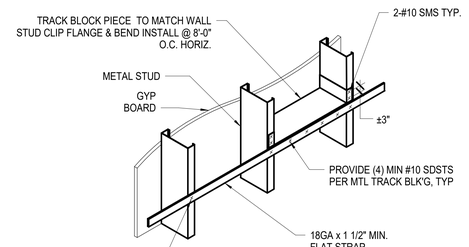
SCALE: N.T.S.



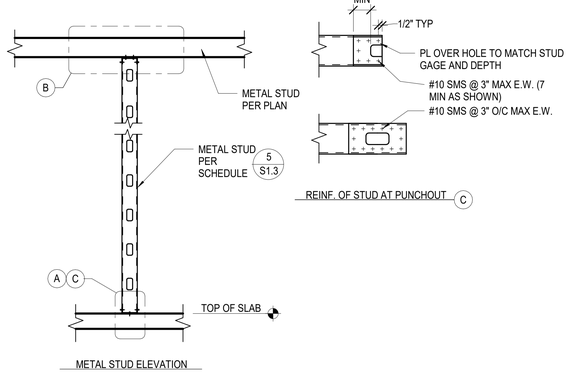
SEE SCHEDULE ON THIS SHEET FOR METAL STUD & TRACK SIZES

12 / S1.3 SINGLE FLAT STRAP BRIDGING W/ BLOCKING (WITH PLYWOOD/GYP BOARD ON ONE SIDE)

SCALE: N.T.S.



SEE SCHEDULE ON THIS SHEET FOR METAL STUD & TRACK SIZES



METAL STUD ELEVATION

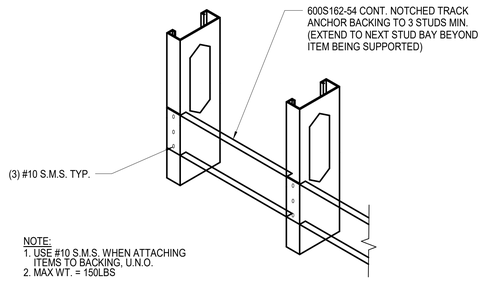
METAL STUD FASTENER SCHEDULE		
MARK	FASTENERS SIZE & SPACING	REMARKS
1	HILTI 0.157" DIA. X-U SHOT PIN @ 32" O/C W. 1 1/2 " MIN EMBED	ESR-2269
2	HILTI 0.157" DIA. X-U SHOT PIN @COMPOSITE DECK W/ 1 1/2" MIN EMBED	ESR-2269
3	#10 SMS AT ROOF METAL DECK	ESR-1408
4	#10 SHEET METAL SCREW	ESR-1408
5	#12 SHEET METAL SCREW	ESR-1408
6	HILTI KH-EZ 1/4" X 1.18" EMBED. SCREW ANCHOR @ 24" O/C	ESR-3027
7	5/8" X 12" HEADED BOLT @ 32"O/C W/ STD WASHER TYP. (MIN.4"EMBED)	-

PAF: POWER ACTUATED FASTENER (LOW VELOCITY) OR POWER DRIVEN FASTENER HOLES FOR A.B. SHALL BE 1/16" LARGER THAN BOLT SIZE.

NOTES:
1. MAXIMUM STUD HEIGHT "H" FOR STUDS @ 16" O/C PER SCHEDULE 5 S1.3
2. SEE ARCHITECTURAL FOR OTHER CONDITIONS.
3. LIMIT PER (2022 CBC TABLE 1604.3)
   L/360 - W/ PLASTER AND STUCCO FINISHES.
   L/240 - W/ OTHER BRITTLE FINISHES.
   L/120 - W/ FLEXIBLE FINISHES.
4. STUDS CARRYING EQUIPMENT OR CASEWORK WEIGHING 40 LBS OR MORE SHALL BE 16GA MIN.

13 / S1.3 STEEL STUD BRACING DETAIL (INTERIOR ONLY)

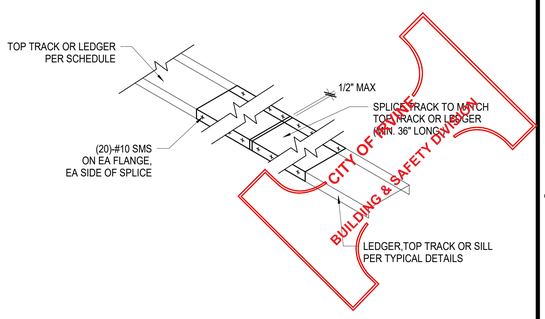
SCALE: N.T.S.



NOTE:
1. USE #10 S.M.S. WHEN ATTACHING ITEMS TO BACKING, U.N.O.
2. MAX WT. = 150LBS

15 / S1.3 BACKING DETAIL

SCALE: N.T.S.



16 / S1.3 TOP TRACK, LEDGER & SILL SPLICE DETAIL

SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

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A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S1.3
SHEET TITLE:

TYPICAL INTERIOR METAL STUD DETAILS

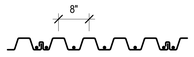
VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

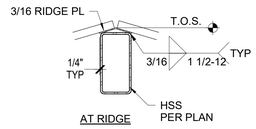
PROFESSIONAL ENGINEER — No. 54029 — Exp. 9/30/26 — CIVIL — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

7 - WELD PATTERN (PLB-36)

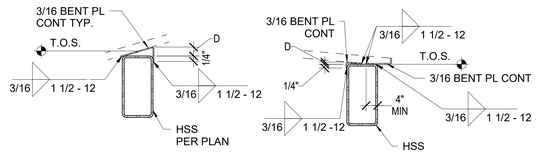
5 - WELD PATTERN (PLN-3)



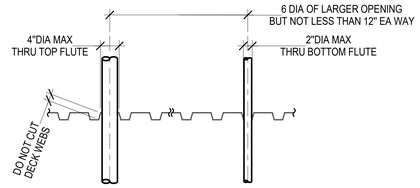


AT RIDGE

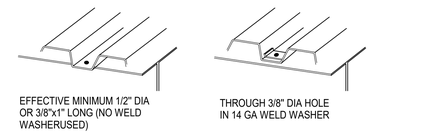
NOTE:
IF "D" IS LESS THAN 3/16" THEN BENT PLATE IS NOT REQ'D



AT SLOPED PLATE AT EAVE

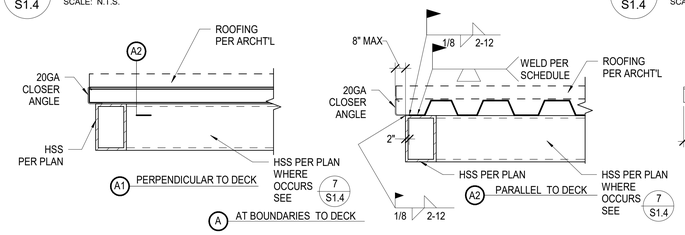


IF OPENINGS ARE CLOSER OR LARGER THAN SHOWN, REINFORCE DECK PER TYP OPENINGS IN METAL DECK DETAIL



1 S1.4 TYP METAL DECK WELDING / SCREW PATTERNS

SCALE: N.T.S.



NOTE:
DO NOT SPLICE DECK AT STRUT MEMBER

SYMBOL	METAL DECK DESIGNATION	GAGE	CONC. FILL & REINF. (TOTAL SLAB DEPTH)	METAL DECK ATTACHMENT TO SUPPORT		DECK TO DECK SIDE LAP ATTACHMENT	SHEAR TRANZ II	DECK PROPERTY		
				AT BOUNDARY DECK PERPENDICULAR TO SUPPORT	AT BOUNDARY DECK PARALLEL TO SUPPORT			I (IN4)	+S(IN3)	-S(IN3)
D1	VERCO PLB-36 (IAMPO ER-2018)	16	-	7 PUDDLE WELDS PER PANEL	PUDDLE WELDS @ 12" O/C	TSW @ 6" O/C	NO	0.223	0.233	0.244
D2	VERCO PLN-3 (IAMPO ER-2018)	18	-	5 PUDDLE WELDS PER PANEL	PUDDLE WELDS @ 12" O/C	TSW @ 6" O/C	NO	1.229	0.671	0.722

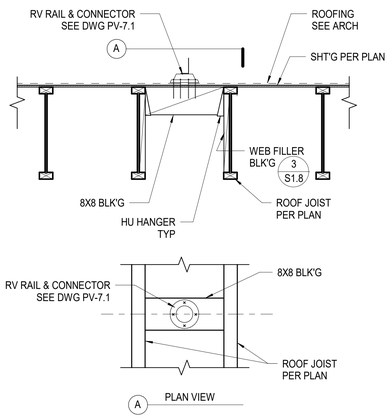
* NOTE: ALL WELDS CAN BE SUBSTITUTED BY #12 SELF DRILLING TEK SCREWS

NOTES:
1. SEE METAL DECK NOTES ON SHEET S-1.2.
2. ALL DECK SHALL HAVE 2 1/2" MIN BEARING ON END SUPPORT, 1 1/2" MIN BEARING ON SIDE SUPPORT TYP., U.N.O.
3. TSW REFERS TO TOP SEAM WELD. SEE DETAIL 3 / S1.4
4. VSC REFERS TO VERCO SIDELAP CONNECTION
5. SEE DETAIL 4 / S1.4 FOR WELDING PATTERN.
6. ALL STEEL DECK SHALL BE GALVANIZED, U.N.O.
7. NO LOADS OF ANY KIND SHALL BE HUNG FROM ROOF DECK UNLESS SPECIFICALLY DETAIL ON STRUCTURAL DRAWINGS.
8. ALL PUDDLE WELDS SHALL HAVE AN EFFECTIVE FUSION AREA AT LEAST EQUIVALENT TO 3/8" X 1" LONG OR 3/4" IN DIAMETER. PUDDLE WELD MAY BE OMITTED WHERE LOCATION COINCIDES WITH SHEAR STUDS WELDED THROUGH METAL DECK.
9. SEE DETAIL 2 / S1.4 WHERE THE SLOPE OF THE METAL DECK REQUIRES BENT PLATE

A

9 S1.4 TYP METAL DECK DETAILS AND SCHEDULE

SCALE: N.T.S.

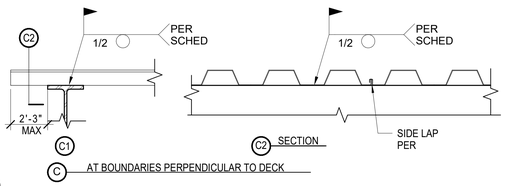


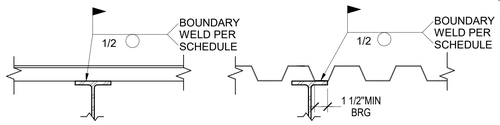
13 S1.4 PV RAIL SUPPORT

SCALE: N.T.S.

2 S1.4 TYP SLOPED DECK TO BEAM DETAIL

SCALE: N.T.S.



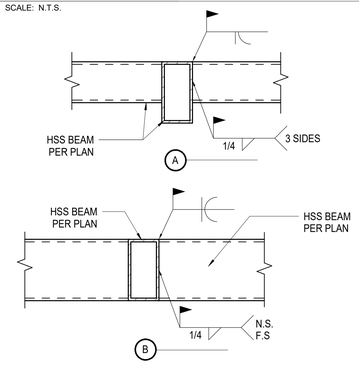


NOTE:
DO NOT SPLICE DECK AT STRUT MEMBER

E AT INTERIOR STRUT

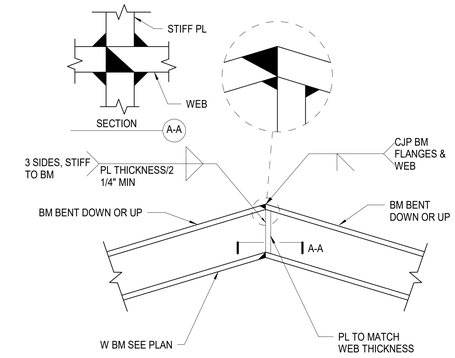
3 S1.4 PIPE PENETRATIONS AT DECK WITHOUT FILL

SCALE: N.T.S.



7 S1.4 HSS BEAM TO HSS BEAM CONNECTION

SCALE: N.T.S.



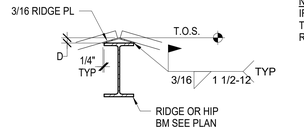
11 S1.4 TYPICAL BENT BEAM

SCALE: N.T.S.

A

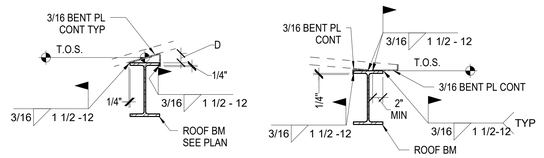
4 S1.4 TYP METAL DECK WELDING

SCALE: N.T.S.



AT RIDGE

NOTE:
IF "D" IS LESS THAN 3/16" THEN BENT PLATE IS NOT REQ'D



AT SLOPED PLATE AT EAVE

8 S1.4 TYP SLOPED DECK TO BEAM DETAIL

SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

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C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
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SHEET NUMBER: S1.4
SHEET TITLE:

TYPICAL METAL DECK DETAILS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
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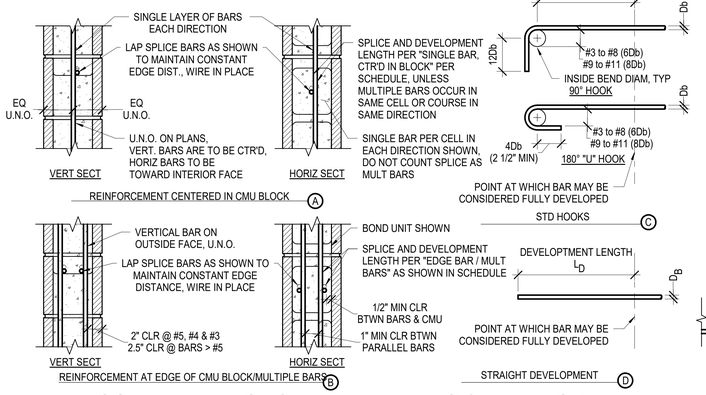
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER — REGISTERED — No. 34029 — Exp. 9/30/26 — STRUCTURAL — STATE OF CALIFORNIA

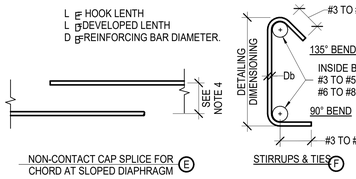
PLAN CHECK 00954071-PARK



BAR SIZE	STD HOOK L_e (IN)	$48D_B$ (IN)	L_D (IN)	LAP SPLICE (IN) U.N.O.
CMU WITH f'm=2,000 PSI (MIN) #3	5	18	18	18
#4	7	24	30	30
#5	9	30	46	46
#6	10	36	64	54
#7	12	42	87	63
#8	13	48	114	72
#9	15	55	145	81

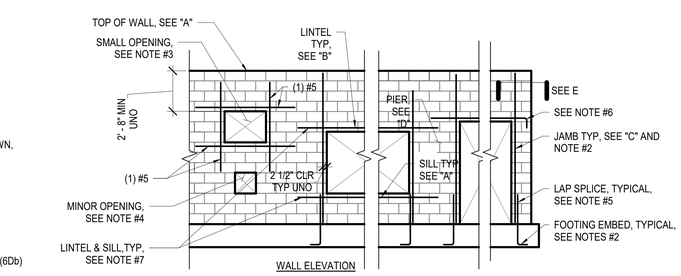
NOTES:
1. VALUES SHOWN ARE FOR GRADE 60 REINF DEVELOPED IN CMU.
2. REFER TO TYPICAL REINFORCEMENT DETAILS FOR INFO NOT SHOWN, AND FOR DEVELOPMENT IN CONCRETE.
3. USE OF HYTEN COUPLER (OR EQ. W/ ESR REPORT) IN LIEU OF LAP SPLICE @ CMU VERTICAL REINF. ARE ACCEPTED. (ICC-ESR-4275)
4. WHERE NON-CONTACT SPLICES ARE USED, REINFORCEMENT SHALL NOT BE SPACED FARTHER APPART THAN ONE-FIFTH THE REQUIRED LAP SPLICE NOR MORE THAN 8 INCHES APPART.

L = HOOK LENTH
L_D = DEVELOPED LENTH
D = REINFORCING BAR DIAMETER.

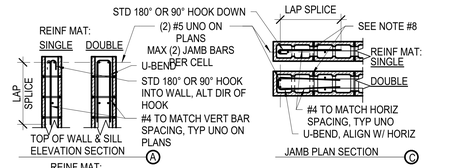


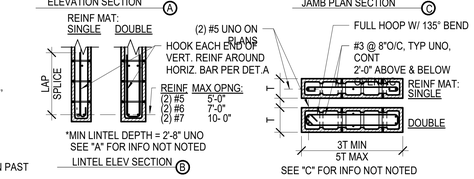
MASONRY REINFORCEMENT DETAILS & DEVELOPMENT LENGTHS

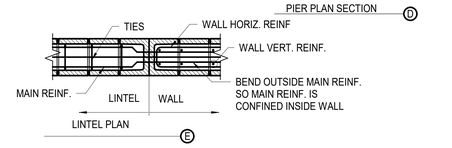
1 / S1.5 — SCALE: N.T.S.



NOTES:
1. SEE PLANS FOR TYPICAL AND ADDITIONAL REINFORCEMENT.
2. FOR OPENINGS 36" OR LARGER IN WIDTH USE FULL HEIGHT JAMB BARS. EXTEND TO TOP OF WALL AT UPPER/SINGLE STORY, 48D MIN PAST FLOOR AND INTO FOOTING.
3. AT OPENINGS LESS THAN 36" IN WIDTH, EXTEND JAMB BARS 48D PAST EDGE OF OPENING.
4. FOR MINOR OPENINGS THAT DO NOT INTERRUPT TYPICAL REINF, ARE NO LARGER THAN 16" SQ, AND ARE AT LEAST 24" FROM ADJACENT OPENINGS OR WALL EDGE, NO ADDITIONAL REINF IS REQ'D UNO ON PLANS.
5. USE A TYPICAL LAP SPLICE UNO ON PLANS.
6. WHERE FULL EXTENSION IS NOT POSSIBLE, EXTEND BARS AS FAR AS POSSIBLE AND USE A STD HOOK.
7. EXTEND LINTEL AND SILL BARS 48D MINIMUM PAST EDGE OF OPENING.
8. AT FULL HEIGHT JAMB BARS, THE WEB AND SHELL MAY BE REMOVED TO FACILITATE INSTALLATION. THE CONTRACTOR SHALL ENSURE THAT GROUTING WILL NOT BE COMPROMISED IF THIS OPTION IS USED.

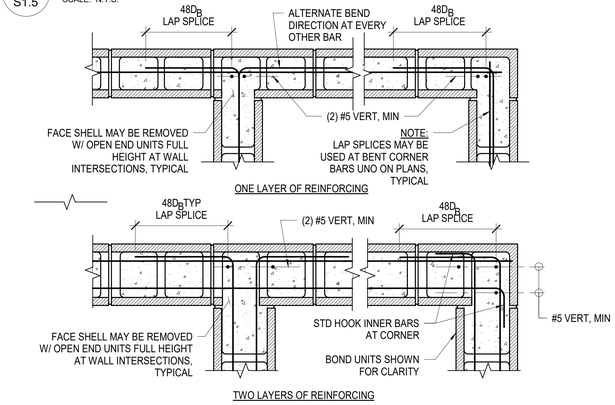






TYPICAL MINIMUM REINFORCEMENT FOR MASONRY OPENINGS

3 / S1.5 — SCALE: N.T.S.



NOTE:
UNLESS DETAILED ON THESE PLANS, DO NOT PLACE BOLTS IN FACE OF WALL < 12 DIAM FROM OPENINGS OR EDGES WITHOUT APPROVAL FROM SEOR

MINIMUM EMBEDMENT TABLE					
DIAMETER OF BOLTS IN INCHES	1/2	5/8	3/4	7/8	1
EMBEDMENT IN INCHES (EMBED)	4	5	6	7	8
MIN. CMU WALL THICKNESS (INCHES)	6"	8"	8"	10"	12"

NOTES:
1. BOLTS CAST-IN MASONRY SHALL BE GROUTED IN PLACE WITH 1" OF GROUT BETWEEN BOLT AND MASONRY.
2. BOLTS SHALL BE A307 HEADED MACHINE BOLTS OR A36 ROD W/TACK WELDED HEX NUT.

HEADED BOLT GROUTED IN CMU WALL

5 / S1.5 — SCALE: N.T.S.

NOTE:
DO NOT SUBSTITUTE EXPANSION JOINTS FOR CONTROL JOINTS. EXPANSION JOINTS PROVIDE COMPLETE STRUCTURAL DISCONTINUITY, USE ONLY WHERE SPECIFICALLY NOTED ON THE PLANS.

TYP CMU WALL EXPANSION JOINT (E.J.)

6 / S1.5 — SCALE: N.T.S.

CONCRETE MASONRY WALL INTERSECTION

7 / S1.5 — SCALE: N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

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SHEET TITLE:

TYPICAL MASONRY DETAILS

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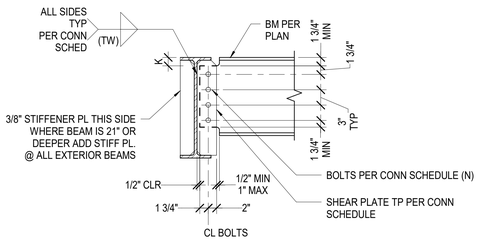
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER KEVIN M. PAN No. 54029 Exp. 9/30/26 STRUCTURAL STATE OF CALIFORNIA

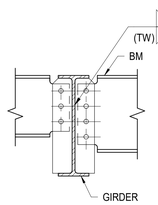
PLAN CHECK 00954071-PARK



ONE-SIDED CONNECTION OCCURS WHERE OPPOSITE BEAMS ARE OFFSET BY 12" OR MORE

NOTE:
1. USE STANDARD BOLT HOLES

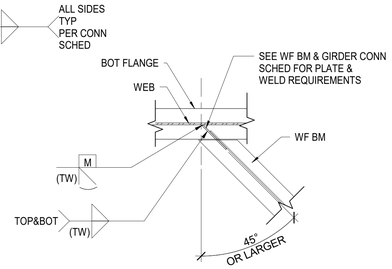
BEAM ONE SIDE



BEAM EACH SIDE

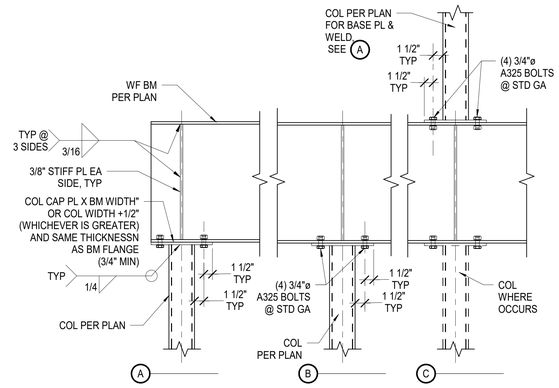
FOR ITEMS NOT SHOWN OR NOTED SEE "BEAM ONE SIDE"

TYP WF BEAM TO WF BEAM



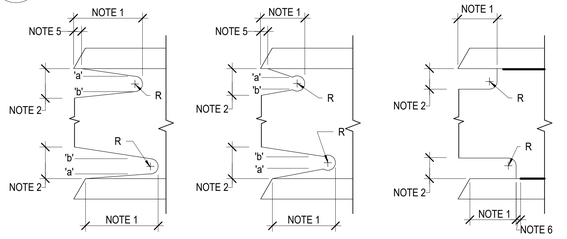
PLAN VIEW

SKEWED BEAM CONNECTION



3 S1.6 WF BEAM TO COL

SCALE: N.T.S.



ROLLED SHAPES AND BUILT-UP SHAPES ASSEMBLED PRIOR TO CUTTING THE WELD ACCESS HOLE.

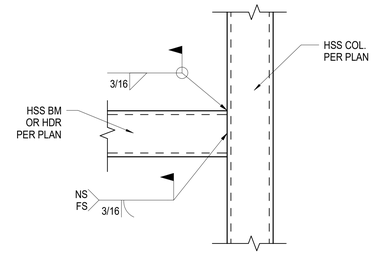
BUILT-UP SHAPES ASSEMBLED AFTER CUTTING THE WELD ACCESS HOLE.

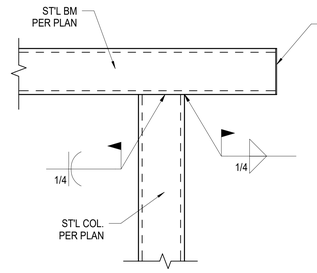
NOTES:
THESE ARE TYPICAL DETAILS FOR JOINTS WELDED FROM ONE SIDE AGAINST STEEL BACKING.

1. LENGTH: GREATER OF 1.5 tw OR 1 1/2 IN.
2. HEIGHT: GREATER OF 1.0 tw OR 3/4 IN. BUT NEED NOT EXCEED 2 IN.
3. R: 3/8 IN. MIN. GRIND THE THERMALLY CUT SURFACES OF WLED ACCESS HOLES IN HEAVY SHAPES AS DEFINED IN SECTIONS A3.1(c) AND (d).
4. SLOPE 'a' FORMS A TRANSITION FROM THE WEB TO THE FLANGE. SLOPE 'b' MAY BE HORIZONTAL.
5. THE BOTTOM OF THE TOP FLANGE IS TO BE CONTOURED TO PERMIT THE TIGHT FIT OF BACKING BARS WHERE THEY ARE TO BE USED.
6. THE WEB-TO-FLANGE WELD OF BUILT-UP MEMBERS IS TO BE HELD BACK A DISTANCE OF AT LEAST THE WELD SIZE FROM THE EDGE OF ACCESS HOLE.

4 S1.6 HSS BM OR HDR TO HSS COL. CONNECTION DETAIL

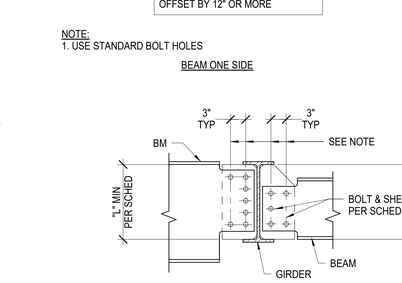
SCALE: N.T.S.





5 S1.6 TYPICAL BEAM TO BEAM CONNECTION

SCALE: N.T.S.



DROP BEAM OR DEEPER BEAM THAN GIRDER CONNECTION

NOTE:
WHERE NUMBER OF REQUIRED BOLTS PER PLAN OR SCHEDULE ARE MORE THAN NUMBER OF BOLTS THAT FIT AT ONE ROW, USE MAXIMUM BOLTS AT FIRST ROW & BALANCE IN SECOND ROW (2 BOLTS MIN AT SECOND ROW).

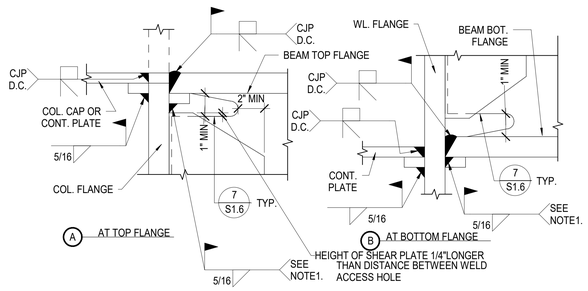
WF BM & GIRDER CONNECTION SCHEDULE

WF BM	(N) A325N BOLTS U.N.O.	(L) MIN PLATE / WELD LENGTH	(TP) MIN PLATE THICKNESS	(TW)[1] MIN WELD THICKNESS
W8	(2) 3/4"ø	5 1/2"	3/8"	1/4"
W10	(2) 3/4"ø	6"	3/8"	1/4"
W12	(3) 1"ø	9"	3/8"	1/4"
W14	(3) 1"ø	9"	3/8"	1/4"
W16	(4) 1"ø	12"	3/8"	1/4"
W18	(5) 1"ø	15"	1/2"[2]	3/8"
W21,24	(6) 1"ø	18"	1/2"[2]	3/8"
W27	(7) 1"ø	21"	1/2"[2]	3/8"
W30	(8) 1"ø	24"	1/2"[2]	3/8"
W33	(9) 1"ø	27"	1/2"[2]	3/8"
W36	(10) 1"ø	31"	1/2"[2]	3/8"

NOTES:
1. 5/16" MIN FOR COLUMN FLANGES GREATER THAN 3/4" THICK
2. PL 1/2" & THICKER SHALL BE GAS OR SAW CUT
3. ALL BOLT HOLES SHALL BE STD HOLES UNO.

7 S1.6 WELD ACCESS HOLE

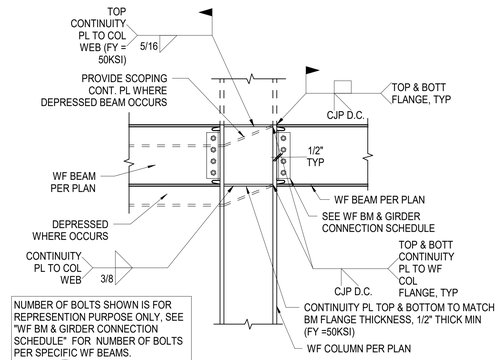
SCALE: N.T.S.



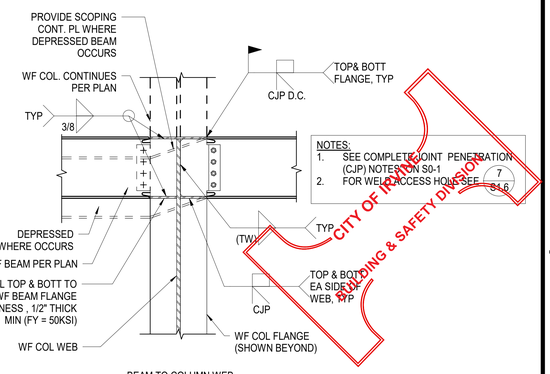
NOTES:
1. REMOVE BACKING
   THE ROOT PASS SHALL BE BACKGOUGED TO SOUND WELD METAL AND BACKWELDED WITH A REINFORCING FILLET.(MIN.5/16")
2. WHERE STEEL BACK IS USED AT THE CONTINUITY PLATE, THE BACKING NEED NOT TO BE REMOVED, BUT FOR BACKING LEFT IN PLACE SHALL BE ATTACHED TO COLUMN. FLANGE WITH A 5/16" FILLET WELD BELOW THE CJP WELD (CONT PLATE TO COLUMN FLANGE, NON DC WELD PER AISC 341 E4.6F) EDGE. (AISC 358-16 3.3.1)
3. CJP WELDS OF BEAM FLANGES AND BEAM WEBS TO COLUMNS SHALL BE DEMAND CRITICAL WELDS PER AISC 3410-16 E3.6
4. AT WELDING IN THE K AREA, TEST WEB FOR CRACKS USING MAGNETIC PARTICLE TESTING (MT). THE MT INSPECTION AREA SHALL INCLUDE THE K-AREA BASE METAL WITHIN 3" OF THE WELD. REF, AISC 341-16 J6.2A.
5. NON-DESTRUCTIVE TESTING (NDT) FOR SMF CONNECTIONS: SHALL BE PROVIDED FOR ALL CJP WELDED CONNECTION, K-AREA WELDS, ETC PER AISC 341-16 J6.2 IN ADDITION TO AISC 360-16 N5.5, AND PER DSA IR 17-2 QA REQUIREMENTS.

8 S1.6 HSS COL TO HSS BM DETAIL

SCALE: N.T.S.



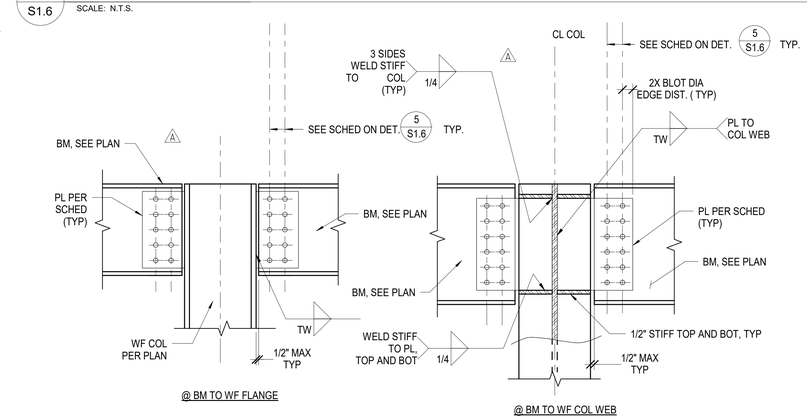
BEAM TO COLUMN FLANGE



BEAM TO COLUMN WEB

9 S1.6 TYPICAL CANTILEVER BEAM CONNECTION

SCALE: N.T.S.



@ BM TO WF FLANGE

@ BM TO WF COL WEB

13 S1.6 TYPICAL BEAM TO COLUMN CONNECTION

SCALE: N.T.S.

15 S1.6 OMF BEAM TO COL FLANGE WELDS

SCALE: N.T.S.

16 S1.6 TYP MOMENT BEAM CONNECTION

SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S1.6
SHEET TITLE:

TYPICAL DETAILS

BUILDING & SAFETY DIVISION
CITY OF IRVINE

VCA ENGINEERS INC
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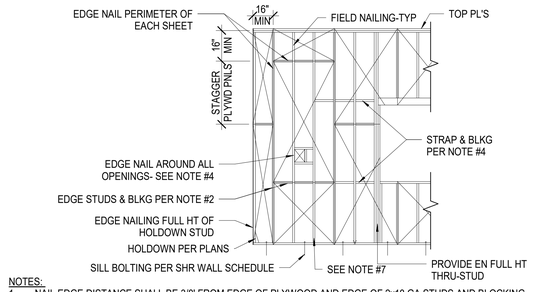
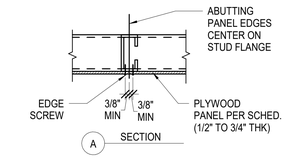
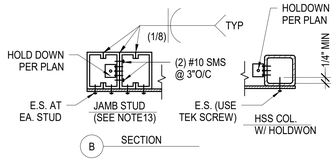
Fax. 949.679.9370
Project No.: H601

PLAN CHECK 00954071-PARK



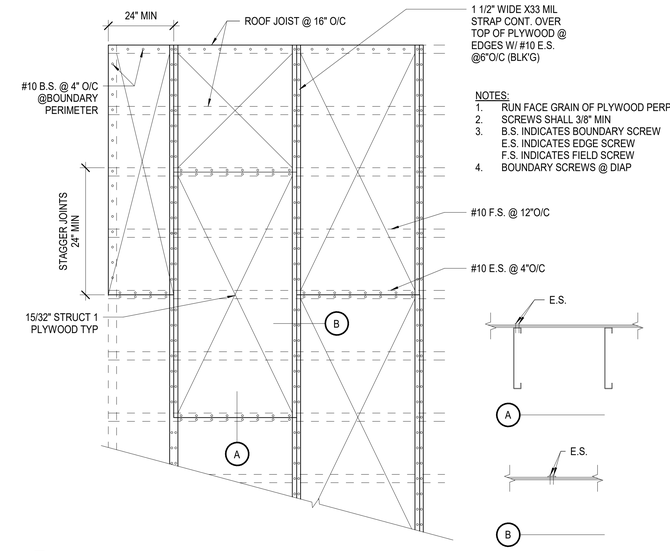
NOTES:
1. NAIL EDGE DISTANCE SHALL BE 3/8' FROM EDGE OF PLYWOOD AND EDGE OF 2x18 GA STUDS AND BLOCKING.
2. PROVIDE EDGE STUDS AND BLOCKING PER SHEAR WALL SCHEDULE.
3. NAIL EDGE DISTANCE SHALL BE 5/8" FROM EDGE OF PLYWOOD AND EDGE OF 3x STUDS AND BLOCKING.
4. PROVIDE EDGE NAILING AROUND ALL OPENINGS. WHERE OPENING WIDTH EXCEEDS ONE STUD SPACE, PROVIDE CS150 COILED STRAP EACH SIDE OF OPENING WITH #10 SMS @ 4" O.C. STRAP LENGTH SHALL EQUAL OPENING WIDTH/3 WITH STRAP CENTER AT JAMB STUD. STRAP LENGTH NEED NOT EXCEED 8' - 0" AND MAY BE OMITTED AT CORNER (END OF WALL) COND'N. WHERE NON-CONT HEADERS OCCUR AT ADJACENT OPENINGS PROVIDE CS150 ACROSS HEADERS WITH LENGTH BASED ON LARGER OPENING (STRAP NOT REQ'D AT CONTINUOUS HEADERS).
5. ALL DEFECTIVE NAILING SHALL BE REMOVED AND REPLACED BY SOUND NAILING.
6. PROVIDE FULL HEIGHT EDGE NAILING WHERE POST OR STEEL COLUMN WITH NAILERS OCCURS WITHIN WALL.





1 S1.7 PLYWOOD SHEARWALL DETAILS

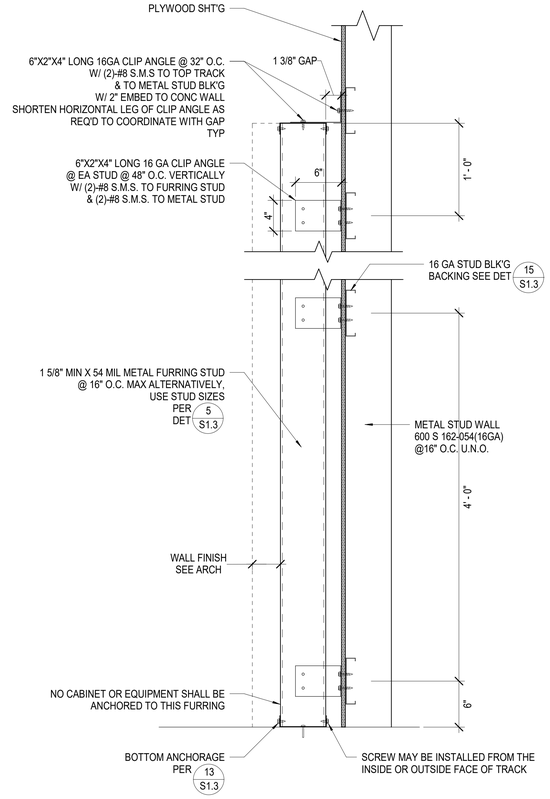
SCALE: N.T.S.



NOTES:
1. RUN FACE GRAIN OF PLYWOOD PERPEN.
2. SCREWS SHALL 3/8" MIN
3. B.S. INDICATES BOUNDARY SCREW
   E.S. INDICATES EDGE SCREW
   F.S. INDICATES FIELD SCREW
4. BOUNDARY SCREWS @ DIAP

3 S1.7 PLYWOOD ROOF @ METAL JOIST

SCALE: N.T.S.

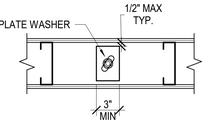


SHEARWALL SCHEDULE									
MARK	PLYWOOD OR OSB SHEATHING	EDGE NAILING (EN)	SILL NAILING (SN)	SILL BOLTING (SB)	SILL PL	TOP PL	REMARKS	CAPACITY (ASD)	T.O.W. A35 SPACING
A	15/32" STRUCT 1	#8 @ 6"O.C.	#12 @ 12"O.C.	5/8"Ø @ 48"O.C.	2X18GA	(2) 2X18GA		356 PLF	16"O.C. MAX
B	15/32" STRUCT 1	#8 @ 4"O.C.	#12 @ 9"O.C.	5/8"Ø @ 32"O.C.	2X18GA	(2) 2X18GA	3X18GA STUD @ ADJOINING PANEL EDGES	532 PLF	12"O.C. MAX
C	15/32" STRUCT 1	#8 @ 3"O.C.	#12 @ 6"O.C.	5/8"Ø @ 24"O.C.	2X18GA	(2) 2X18GA	3X18GA STUD @ ADJOINING PANEL EDGES	710 PLF	10"O.C. MAX
D	15/32" STRUCT 1	#8 @ 2"O.C.	#12 @ 4"O.C.	5/8"Ø @ 16"O.C.	2X18GA	(2) 2X18GA	3X18GA STUD @ ADJOINING PANEL EDGES	876 PLF	8"O.C. MAX

NOTES:
1. STRUCTURAL WALL SHEATHING SHALL BE AS SPECIFIED IN THE TYPICAL FRAMING NOTES. INTERMEDIATE NAILING SHALL BE #8 SCREW @ 12"O.C. (U.N.O.).
2. THE FOUNDATION SILL PLATE AND FRAMING AT ADJOINING PANEL EDGES SHALL BE 3X18GA MIN AND NAILS SHALL BE STAGGERED WHERE SHEARWALL CAPACITY INDICATED ABOVE EXCEEDS 350 PLF.
3. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 INCHES (152MM) ON CENTER ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3-INCH (76MM) NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.
4. ALL PANEL EDGES SHALL BE BLOCKED (2x OR 3x, SEE NOTE 2 ABOVE)
5. USE OF MACHINE NAILING IS SUBJECT TO APPROVAL BY THE PROJECT STRUCTURAL ENGINEER. WITH APPROVAL, MACHINE NAILING IS SUBJECT TO THE DEMONSTRATION OF CONTINUOUS SATISFACTORY JOBSITE PERFORMANCE. IF NAIL HEADS PENETRATE THE OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND HAMMER, OR IF MINIMUM EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY.
6. NO PANEL LESS THAN 12 INCHES WIDE SHALL BE USED IN VERTICAL PLYWOOD SHEAR WALLS.
7. ALL SILL BOLTS SHALL HAVE A PLATE WASHER UNDER NUT, SEE DETAIL BELOW.
8. A.B. SHALL BE LOCATED AT MIN. 1.5d FROM S.W. END CONC FACE & NOT MORE THAN 12" & NOT LESS THAN 4" FROM END OF WOOD SILL.
9. SILL BOLTS SHALL HAVE 9" MIN EMBED INTO CONCRETE (U.N.O.)
10. NAILING SHALL BE #8 TAPPING SCREW W/ MIN HEAD DIAMETER 0.285 INCH.
11. PLYWOOD EN & SN SHALL BE STAGGERED.
12. FOUNDATION SILL PLATES ARE THOSE PLACED AGAINST CONCRETE & RECEIVING SILL BOLTING.
13. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL. FASTENERS OTHER THAN NAILS, TIMBER RIVERS, WOOD SCREWS AND LAG SCREWS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLAS 55 MIN.

PLATE WASHER:
FOR PLATE WASHERS AT SILL PLATES SEE DETAIL HEREIN.
HOLES IN PLATE WASHERS SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1' - 3/4" GIVEN THAT A
STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.

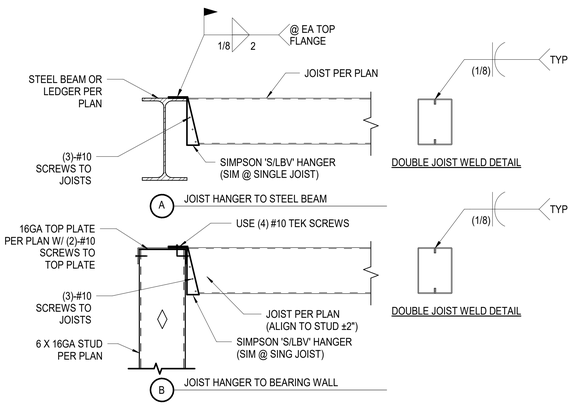
BOLT DIAMETER	@ 2X4 WALL	@ 2x6 WALL	@ 2x8 WALL
1/2"	3" x 3" x 1/4"	4 1/2" x 3" x 1/4"	6 1/4" x 3" x 1/4"
5/8"	3" x 3" x 1/4"	4 1/2" x 3" x 1/4"	6 1/4" x 3" x 1/4"
3/4"	3" x 3" x 5/16"	4 1/2" x 3" x 5/16"	6 1/4" x 3" x 5/16"
7/8"	3" x 3" x 3/8"	4 1/2" x 3" x 3/8"	6 1/4" x 3" x 3/8"
1"	3" x 3" x 3/8"	4 1/2" x 3" x 3/8"	6 1/4" x 3" x 3/8"

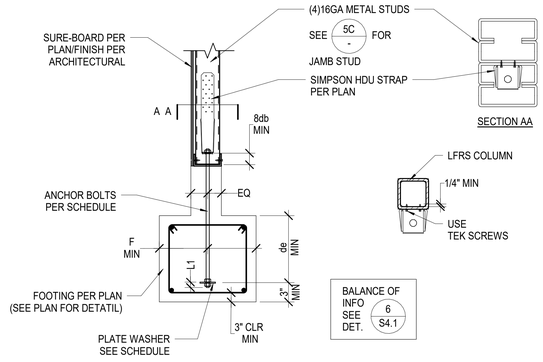


PLAN VIEW

5 S1.7 TYPICAL METAL STUD SHEAR WALL SCHEDULE

SCALE: N.T.S.





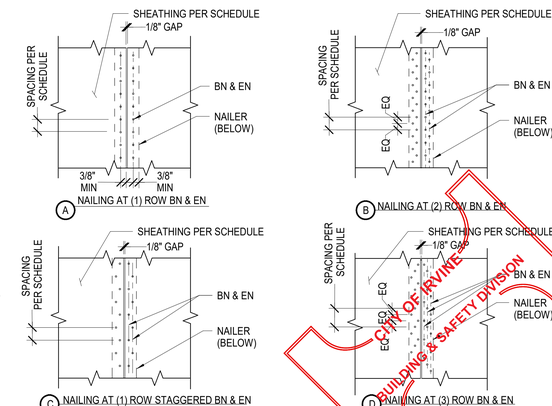
HOLDOWN SCHEDULE		
SIMPSON HOLDOWN SIZE	SIMPSON ANCHOR	STUD GAUGE
S/HDU4	PAB 5	16GA STUDS

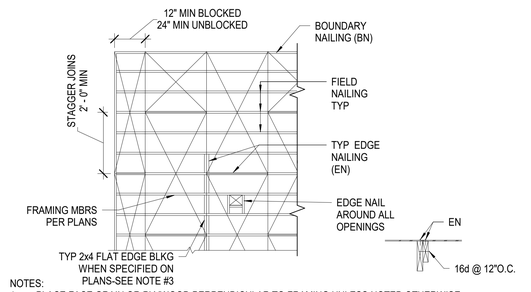
NOTE:
HOLD DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.

PAB ANCHOR BOLT SCHEDULE					
SIMPSON PAB	"d" DIAMETER	de	F	PLATE WASHER SIZE l_1	L1
PAB5	5/8"	6"	9"	1/2"X 1 3/4"X 1 3/4"	1 3/8"

8 S1.7 STUD FURRED ATTACHMENT TO METAL STUD

SCALE: N.T.S.





NOTES:
1. PLACE FACE GRAIN OR PLYWOOD PERPENDICULAR TO FRAMING UNLESS NOTED OTHERWISE.
2. NAIL EDGE DISTANCE SHALL BE 3/8" FROM EDGE OF PLYWOOD & 2x FRAMING MBR (3/4" @ 3x OR 4x FRAMING MBR).
3. WHERE BLKG IS SPECIFIED ON PLANS THE FOLLOWING MAY BE USED IN LIEU: 3/4"x3" WIDE PLYWOOD CLEATS W/ #10x1-1/4" FLAT HD WD SCREWS @ SAME SPACING SPECIFIED FOR EN CLEATS TO BE INSTALLED W/1/8" CLEAR EA END OF JOIST. ADD 3-8d @ 2" O.C. TO JOIST @ EA END OF CLEAT.
4. PROVIDE BOUNDARY NAILING (BN) AT DIAPHRAGM BOUNDARIES, CHORDS, STRUT TIES AND WHERE SPECIFIED.
5. WHERE JOIST LAP-SPLICE OCCURS AND PLYWOOD JOINT IS OFFSET ADD 2x4 OR 3x4 NAILER AS SHOWN:

13 S1.7 DOUBLE JOIST HANGER DETAILS (SIM @ SINGLE JOIST)

SCALE: N.T.S.

14 S1.7 HOLDOWN @ FOUNDATION

SCALE: N.T.S.

15 S1.7 PLYWOOD ROOF @ WOOD

SCALE: N.T.S.

16 S1.7 ROOF NAILING

SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

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PROJECT NO: 2023-40108
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SCALE: As Indicated
SHEET NUMBER: S1.7
SHEET TITLE:

TYPICAL DETAILS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
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Tel. 949.679.0870
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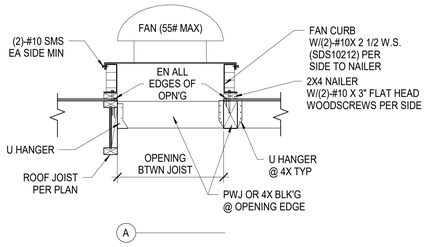
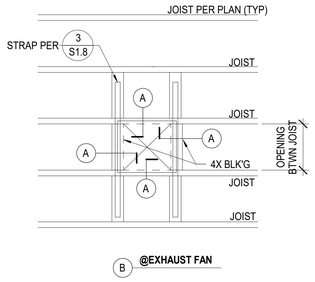
Project No.: H601

PROFESSIONAL ENGINEER — KEVIN A. [illegible] — No. 54029 — Exp. 9/30/26 — REGISTERED — STATE OF CALIFORNIA

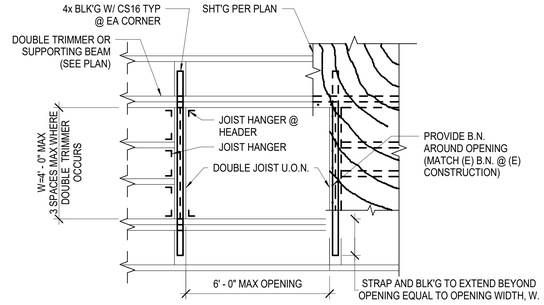
PLAN CHECK 00954071-PARK





1 S1.8 TYP EXHAUST FAN & GRAVITY VENT

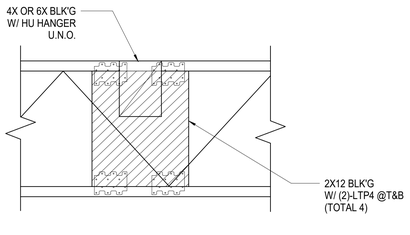
SCALE: N.T.S.



NOTE:
JOIST HGRS TO BE SIMPSON STD U JOIST HGRS. (OR EQUAL)
FOR SAWN LUMBER MIT JOIST HANGER FOR I-JOIST

3 S1.8 TYPICAL ROOF OPENING DETAIL

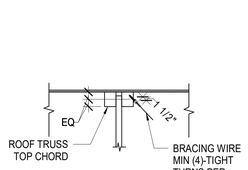
SCALE: N.T.S.



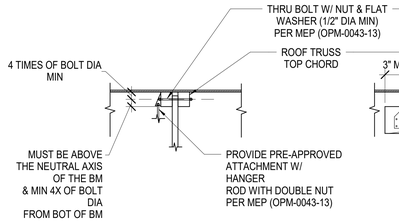
TYP. WEB FILLER BLK'G FOR OPEN WEB JOIST

4 S1.8 TYP. WEB FILLER BLK'G

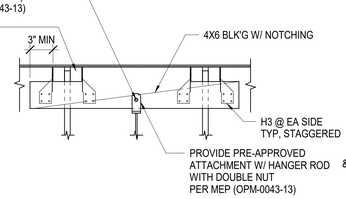
SCALE: N.T.S.



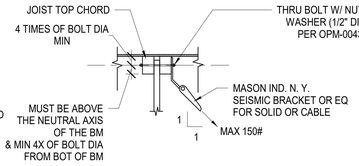
A BRACING WIRE ATTACHMENT TO (E) TOP CHORD



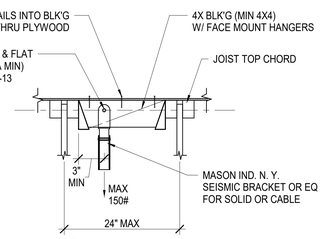
B HANGER ROD PARALLEL @ JOIST



C HANGER ROD BETWEEN JOIST



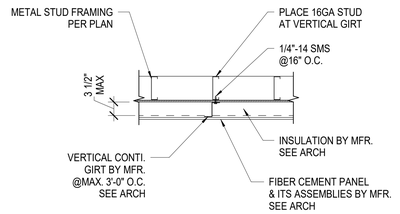
D SEISMIC BRACE BRACKET PERPENDICULAR TO JOIST



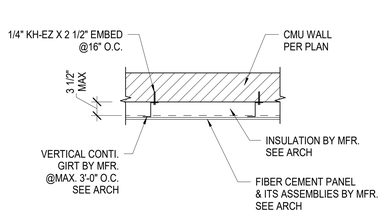
D1 SEISMIC BRACE BRACKET PARALLEL TO JOIST

5 S1.8 HANGER ROD SUPPORT AT JOIST

SCALE: N.T.S.



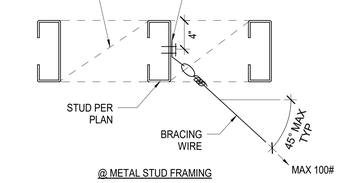
PLAN VIEW AT METAL STUD WALL



PLAN VIEW AT CMU WALL

9 S1.8 INSULATION AND FIBER CEMENT PANEL SUPPORT DETAIL

SCALE: N.T.S.

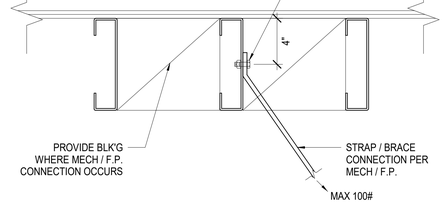


@ METAL STUD FRAMING

NOTES:
1. HANGER WIRE AND BRACING WIRE SHALL BE 12 GA MIN W/ 4 TIGHT TURNS IN 1 1/2" @ EA END.

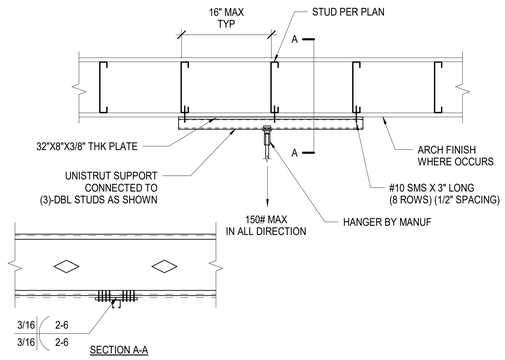
11 S1.8 TYP WIRE CONNECTION TO STUD JOIST

SCALE: N.T.S.



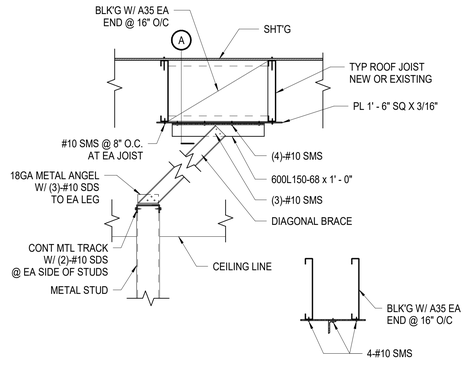
12 S1.8 TYP STRAP/BRACE CONNECTION TO STUD JOIST

SCALE: N.T.S.



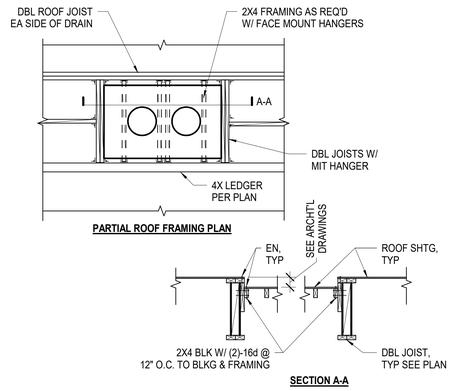
13 S1.8 UNISTURT TO METAL STUD CONNECTION

SCALE: N.T.S.



14 S1.8 DETAIL (FOR INT. PARTITION & CEILING BRACE) @ MTL JOIST

SCALE: N.T.S.



SECTION A-A

15 S1.8 TYPICAL ROOF DRAIN FRAMING

SCALE: N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

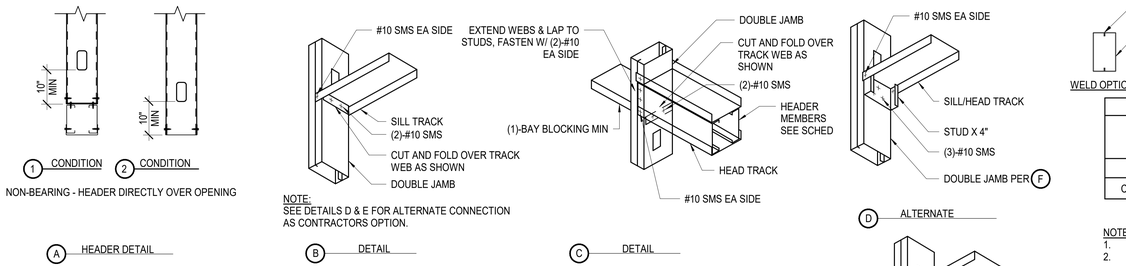
	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S1.8
SHEET TITLE:

TYPICAL DETAILS

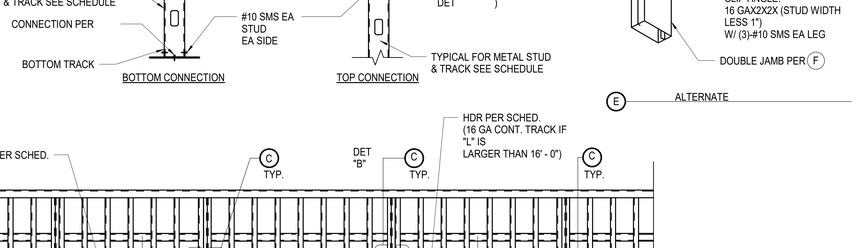
VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

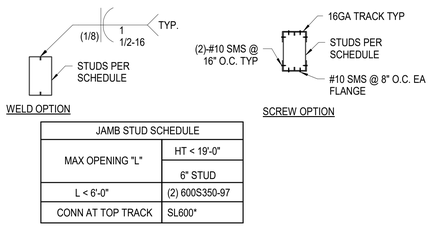
PLAN CHECK 00954071-PARK



TYPICAL NON-BEARING AND MTL STUD SCHED. & WALL FRAMING (EXTERIOR)

5 / S1.9 SCALE: N.T.S.





JAMB STUD SCHEDULE	
MAX OPENING "L"	HT < 19'-0"
	6" STUD
L < 6'-0"	(2) 600S350-97
CONN AT TOP TRACK	SL600*

NOTES:
1. JAMB STUDS DEPTHS SHALL MATCH TYPICAL WALL STUD DEPTHS.
2. * DENOTES TSN (THE STEEL NETWORK) CLIPS. (ICC-ESR-2049)

F TYP JAMB SHCEDULE

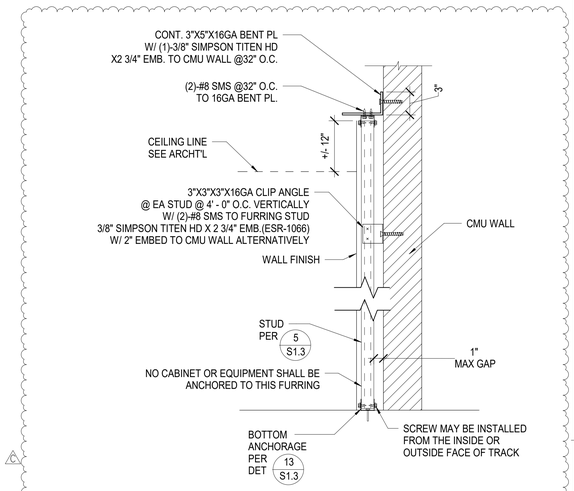
NOTE:
1. PROVIDE STUDS, TRACKS AND BRACING PER SCHEDULE BELOW:

METAL STUD SCHEDULE UNO ON PLAN REF: STEEL STUD MANUFACTURER'S ASSOCIATION (ESR-3064P)						
TRACK	NOMINAL STUD SIZE	SSMA PRODUCT IDENTIFICATION	STUD SPACING	MINIMUM PROPERTIES		
				Ix (in⁴)	Sx(in⁴)	Ma (in-k)
BOTTOM TRACK	6"x 2"x16GA	600T200-54	-	2.400	0.609	18.24
TOP TRACK	6"x1 1/2"x16GA	600T150-54	-	2.400	0.609	18.24

METAL STUD SIZE
SEE PLAN

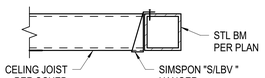
HEADER BEAM SCHEDULE USE UNPUNCHED STUDS		
SPAN "L"	CONDITION	LINTEL SIZE
≤ 12' 0"	1	(2) 12"X12 GA METAL STUDS (1200S300-97)

2. ALL STUDS AND TRACKS SHALL CONFORM TO ASTM A1003.
   a. 18GA AND LIGHTER: MINIMUM YIELD POINT OF 33 KSI
   b. 16GA AND HAVIER: MINIMUM YIELD POINT OF 50 KSI.
   c. ALL STUDS AND TRACKS SHALL BE MANUFACTURED BY CURRENT MEMBERS OF THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) LISTED IN ICC REPORT NO. ESR-3064P. ALL STUDS AND TRACKS SHALL COMPLY WITH ICC REPORT NO. ESR-3064P.
3. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY OR ON ANGLE (SUCH AS BRACING) TO SQUARELY FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD FIRMLY POSITION UNTIL PROPERLY FASTENED.
4. STUD AND TRACKS SHALL BE ATTACHED BY WELDING AND SHEET METAL SCREWS AS NOTED ON THE DRAWINGS.
5. MANUFACTURER PROVIDED PUNCH-OUTS MAY BE LOCATED ALONG THE CENTERLINE OF THE WEBS OF THE FRAMING MEMBERS. PUNCH-OUTS SHALL HAVE A MINIMUM CENTER-TO-CENTER SPACING OF 24". PUNCH-OUT SHALL HAVE A MAXIMUM WIDTH OF HALF THE MEMBER DEPTH OR 2 1/2", WHICHEVER IS LESS, AND MAXIMUM LENGTH OF 4 1/2".
6. SPLICES IN STUDS AND BRACES SHALL NOT PERMITTED.
7. ALL FRAMING SHALL BE COORDINATED WITH GLAZING MANUFACTURERS, MECHANICAL, ELECTRICAL, PLUMBING AND OTHER TRADES.
8. PROVIDE 0.08" THICK x 1.1" SQUARE OR 1.425" ROUND WASHERS FOR ALL POWDER ACTUATED FASTENERS.
9. LOCATE PUNCHOUTS 10" CLEAR OF CONNECTIONS. IF PUNCH IS CLOSER THAN 10" TO CONNECTION, SEE DETAIL 13 / S1.3 DET "C"

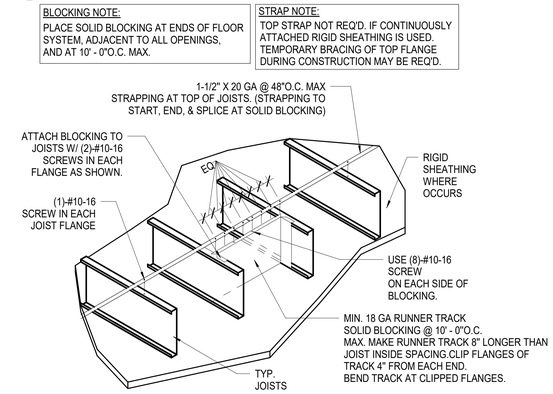


4 / S1.9 SCALE: N.T.S.

STUD FURRED ATTACHMENT TO CMU WALL



D JOIST TO STEEL BEAM

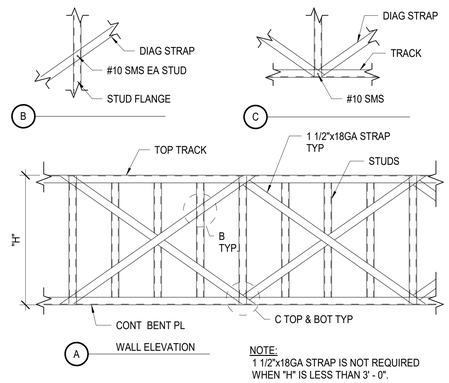


BLOCKING NOTE:
PLACE SOLID BLOCKING AT ENDS OF FLOOR SYSTEM, ADJACENT TO ALL OPENINGS, AND AT 10' - 0"O.C. MAX.

STRAP NOTE:
TOP STRAP NOT REQ'D. IF CONTINUOUSLY ATTACHED RIGID SHEATHING IS USED. TEMPORARY BRACING OF TOP FLANGE DURING CONSTRUCTION MAY BE REQ'D.

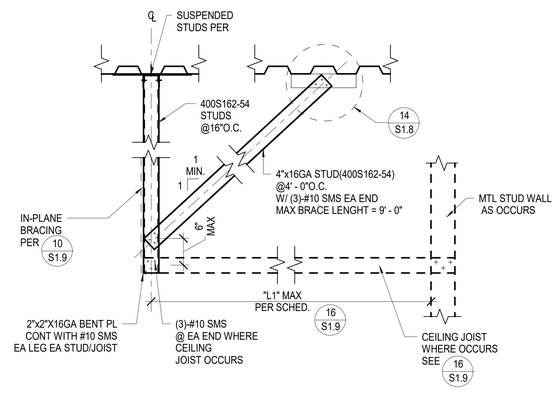
9 / S1.9 SCALE: N.T.S.

CEILING JOISTS FLANGE BRACING



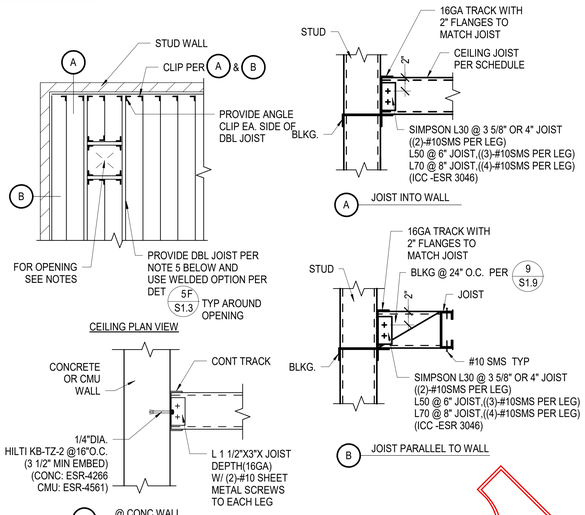
10 / S1.9 SCALE: N.T.S.

IN-PLANE BRACING



11 / S1.9 SCALE: N.T.S.

STUD BRACING (INTERIOR ONLY)

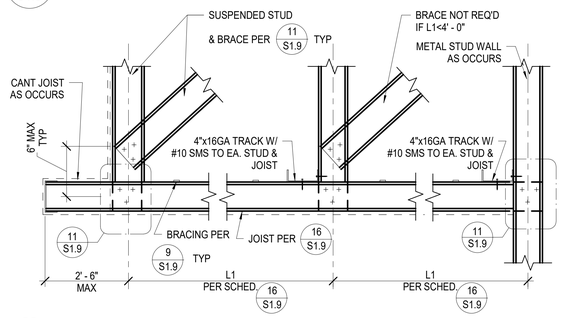


INTERIOR METAL CEILING JOIST SCHEDULE					
NOMINAL SIZE	SSMA PRODUCT IDENTIFICATION	Ixx(IN⁴)	Sxx(IN³)	SPACING (IN)	MAXIMUM SPAN("L")
3 5/8"x20GA	362S162-33	0.551	0.304	16	8' - 6"
4"x18GA	400S162-43	0.892	0.446	16	9' - 6"
6"x18GA	600S162-43	2.316	0.772	16	11' - 0"
8"x18GA	800S162-43	4.633	1.158	16	12' - 0"

NOTES:
1. JOIST AND TRACK DESIGNATIONS ARE BASED ON STEEL STUD MANUFACTURER'S ASSOCIATION (ICC ER-3064P).
2. DESIGN LOADS: DEAD LOAD = 20 PSF
3. SEE TYP. CEILING JOIST FRAMING DETAIL 13 / S1.9
5. WHERE JOIST IS CUT, PROVIDE DOUBLE JOIST TO ADJ. CEILING JOIST NEXT TO CUT JOIST (DO NOT CUT MORE THAN ONE JOIST).
6. SEE DETAIL 9 / S1.9 FOR BRACING REQUIREMENTS.

16 / S1.9 SCALE: N.T.S.

MTL CEILING JOIST SCHED (INTERIOR ONLY)



13 / S1.9 SCALE: N.T.S.

INTERIOR CEILING FRAMING

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REVISIONS:

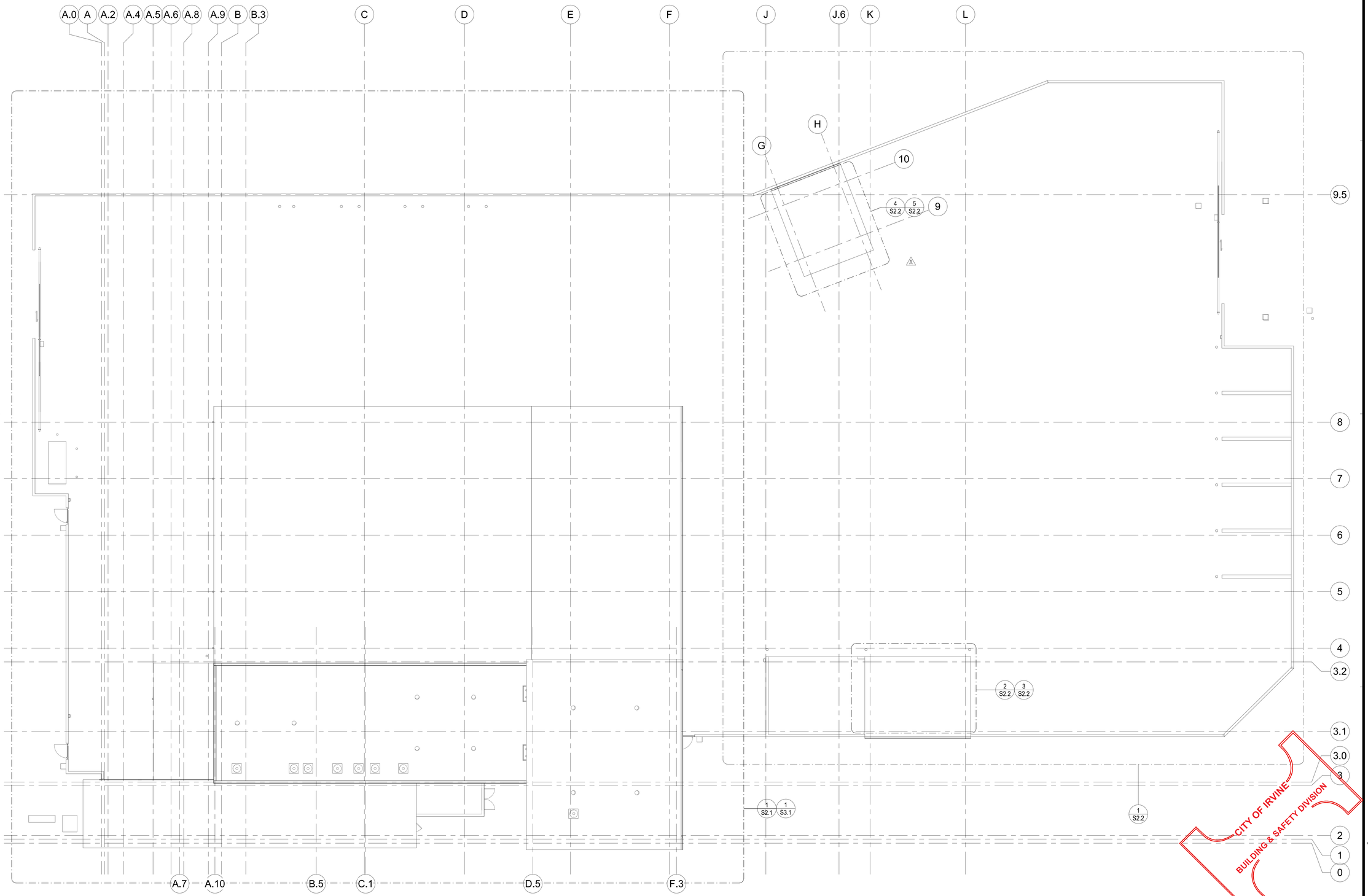
	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S1.9
SHEET TITLE:

TYPICAL EXTERIOR METAL STUD & CEILING DETAILS

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PLAN CHECK 00954071-PARK



1 S2.0 OVERALL PLAN
SCALE: 3/32" = 1'-0"

CITY OF IRVINE - GREAT PARK

MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

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A	CITY PC #2	06/25/2025
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C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated

SHEET NUMBER: **S2.0**

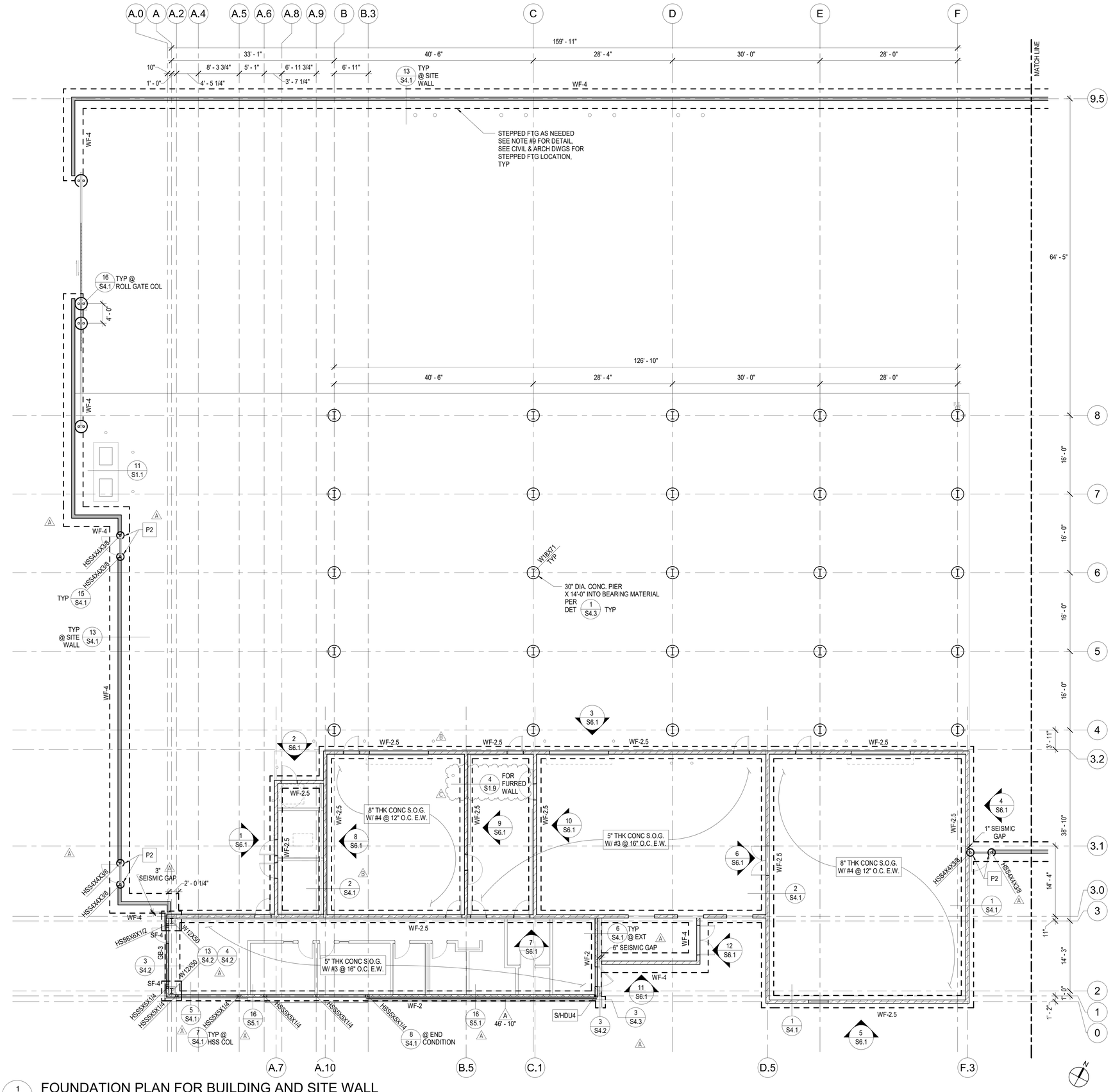
SHEET TITLE:

OVERALL PLAN

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER — STRUCTURAL — STATE OF CALIFORNIA
No. S4029
Exp. 9/30/26

PLAN CHECK 00954071-PARK



1 S2.1 FOUNDATION PLAN FOR BUILDING AND SITE WALL

SCALE: 1/8" = 1'-0"

FOUNDATION NOTES:

1. FOR GENERAL NOTES, SEE S0.0 SERIES.
2. FOR TYPICAL DETAILS, SEE S1.0 SERIES.
3. DRAWING DATUM = 0'-0"; REF. ELEV. @ GROUND FLOOR FINISH FLOOR (SEE CIVIL & ARCH FOR ACTUAL ELEVATION)
4. FOR SLAB SAWCUT AND CONTROL JOINT, SEE DETAIL 16 / S1.1
5. UNDERGROUND UTILITY NOTE:
   CONTRACTOR SHALL COORDINATE ALL NEW AND EXISTING UTILITIES PRIOR TO ANY FOUNDATION WORK. STEP FOOTING AS REQUIRED PER DETAIL 3 / S1.2
6. SF-# INDICATES SPREAD FOOTING.
   SEE SPREAD FOOTING SCHEDULE FOR ADDITIONAL INFO.

SPREAD FOOTING SCHEDULE					
MARK	DIMENSIONS			REINFORCEMENT	
	LENGTH	WIDTH	DEPTH	LONG	SHORT
SF-4	4' - 0"	4' - 0"	18"	(4)-#6 T&B	(4)-#6 T&B

7. GB-# INDICATES WALL GRADE BEAM.

GRADE BEAM SCHEDULE					
MARK	DIMENSIONS		REINFORCEMENT		#4 TIES @ 12" O.C., U.N.O.
	WIDTH	DEPTH	TOP&BOTTOM BARS		
			1ST ROW	2ND ROW	
GB-3	3' - 0"	1' - 6"	(4)-#7	-	

ALT CAP
3 INTERMED U.N.O.
EQ EQ EQ
TYP TIE LAYOUT U.N.O.

8. WF-# INDICATES WALL FOOTING.

WALL FOOTING SCHEDULE				
MARK	DIMENSIONS		REINFORCEMENT	#4 TIES @ 12" O.C., U.N.O.
	WIDTH	DEPTH	TOP & BOTTOM BARS	
			1ST ROW	2ND ROW	
WF-2	2' - 0"	1' - 6"	(2)-#5 T&B	-	
WF-2.5	2' - 6"	1' - 6"	(3)-#5 T&B	-	
WF-4	4' - 0"	1' - 6"	(4)-#5 T&B	-	

ALT CAP

9. INDICATES STEP IN FOOTING, SEE DET 3 / S1.2
10. INDICATES 8" THK CMU WALL.
    SEE WALL ELEVATION SHEETS FOR ADDITIONAL INFORMATION
    INDICATES 6" THK METAL STUD (600S162-54) @ 16" O.C., U.N.O.
    SEE DET 5 / S1.9
    INDICATES 8" THK CMU FENCE WALL SEE CIVIL PLAN, TYP.
    SEE DET 13 / S4.1
    INDICATES 12" THK CMU FENCE WALL SEE CIVIL PLAN, TYP.
    SEE DET 14 / S4.1
    INDICATES NEW NON-BEARING WALL, SEE DET 5 / S1.3
11. P1 INDICATES POLE FOOTING, SEE DET 15 / S4.1

POLE FOOTING SCHEDULE				
MARK	DIMENSIONS		VERT. REINF.	TIES
	DIAMETER	DEPTH		
P1	1' - 6"	9' - 0"	(8)-#5	#4 @ 12" O.C. U.N.O.
P2	1' - 6"	8' - 0"	(8)-#5	#4 @ 12" O.C. U.N.O.

12. SLAB SHALL BE UNDERLYED BY MIN. 15 MIL VAPOR BARRIER OVER 4" THK. LAYER OF CLEAN SAND OR GRAVEL (PARTICALE SIZE OF 0.4" OR SMALLER). SEE SOILS REPORT FOR MORE INFORMATION.
    (CONTRACTOR TO PROTECT VAPOR BARRIER FROM PUNCHURE.)
14. # DENOTES SHEAR WALL , SEE DET 5 / S1.7 .
15. # DENOTES HOLDOWN, SEE DET 14 / S1.7 .
    HOLDOWN TYPE PER PLAN.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
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B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S2.1
SHEET TITLE:

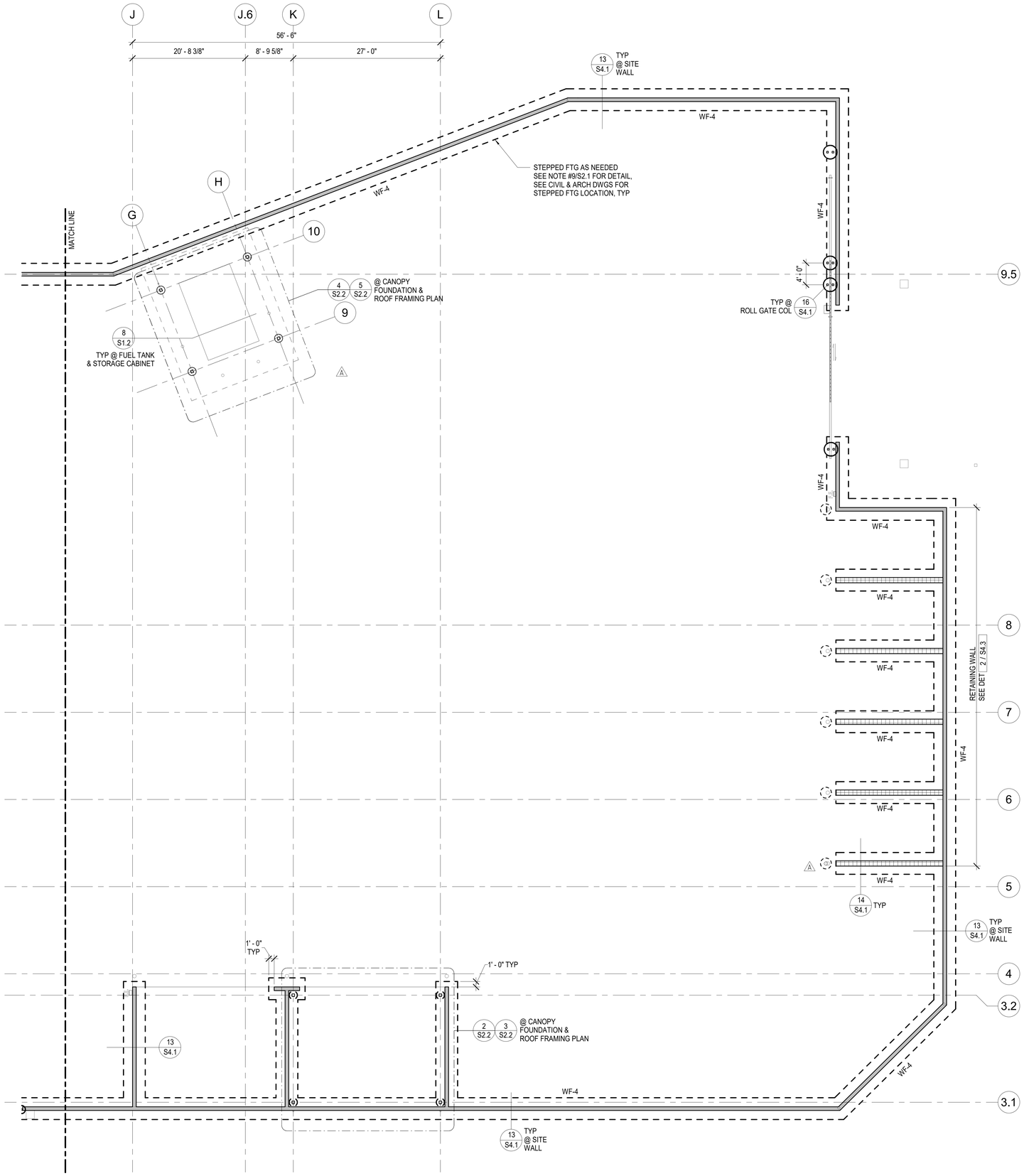
RETAINING WALL & BLDG FOUNDATION PLAN

CITY OF IRVINE
BUILDING & SAFETY DIVISION

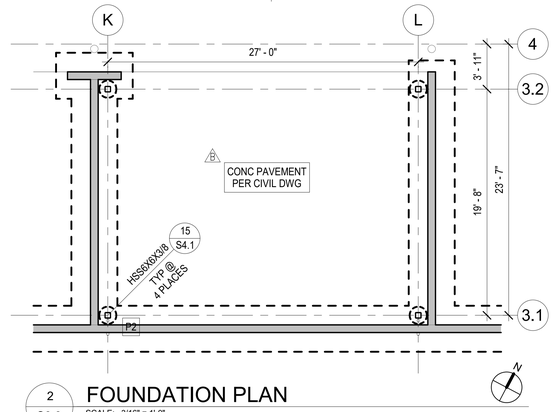
VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER KEUN K. PARK No. S4029 Exp. 9/30/26 STRUCTURAL STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

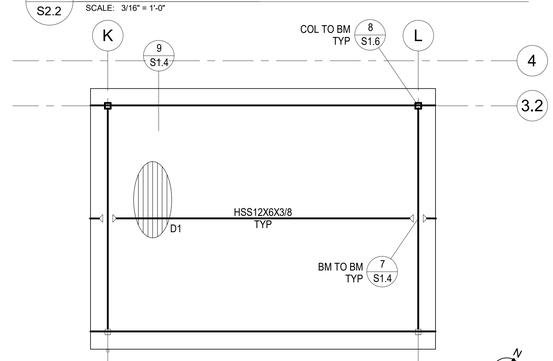


1 S2.2 SITE WALL PLAN
SCALE: 1/8" = 1'-0"



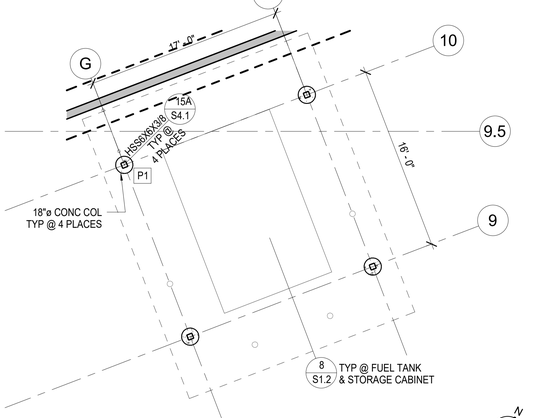
FOR TYP. FOUNDATION NOTES, SEE S-2.1

2 S2.2 FOUNDATION PLAN
SCALE: 3/16" = 1'-0"



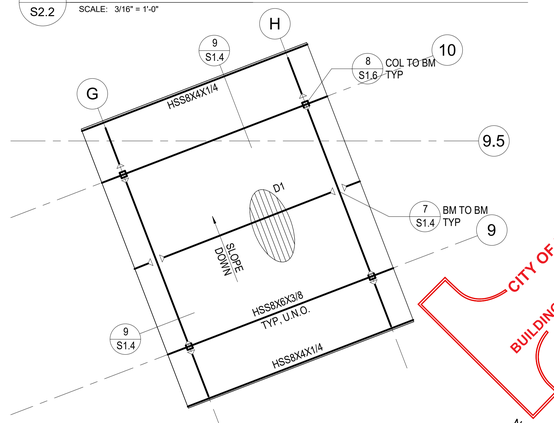
FOR TYP. ROOF FRAMING NOTES, SEE S-3.1

3 S2.2 ROOF FRAMING PLAN
SCALE: 3/16" = 1'-0"



FOR TYP. FOUNDATION NOTES, SEE S-2.1

4 S2.2 FOUNDATION PLAN
SCALE: 3/16" = 1'-0"



FOR TYP. ROOF FRAMING NOTES, SEE S-3.1

5 S2.2 ROOF FRAMING PLAN
SCALE: 3/16" = 1'-0"

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

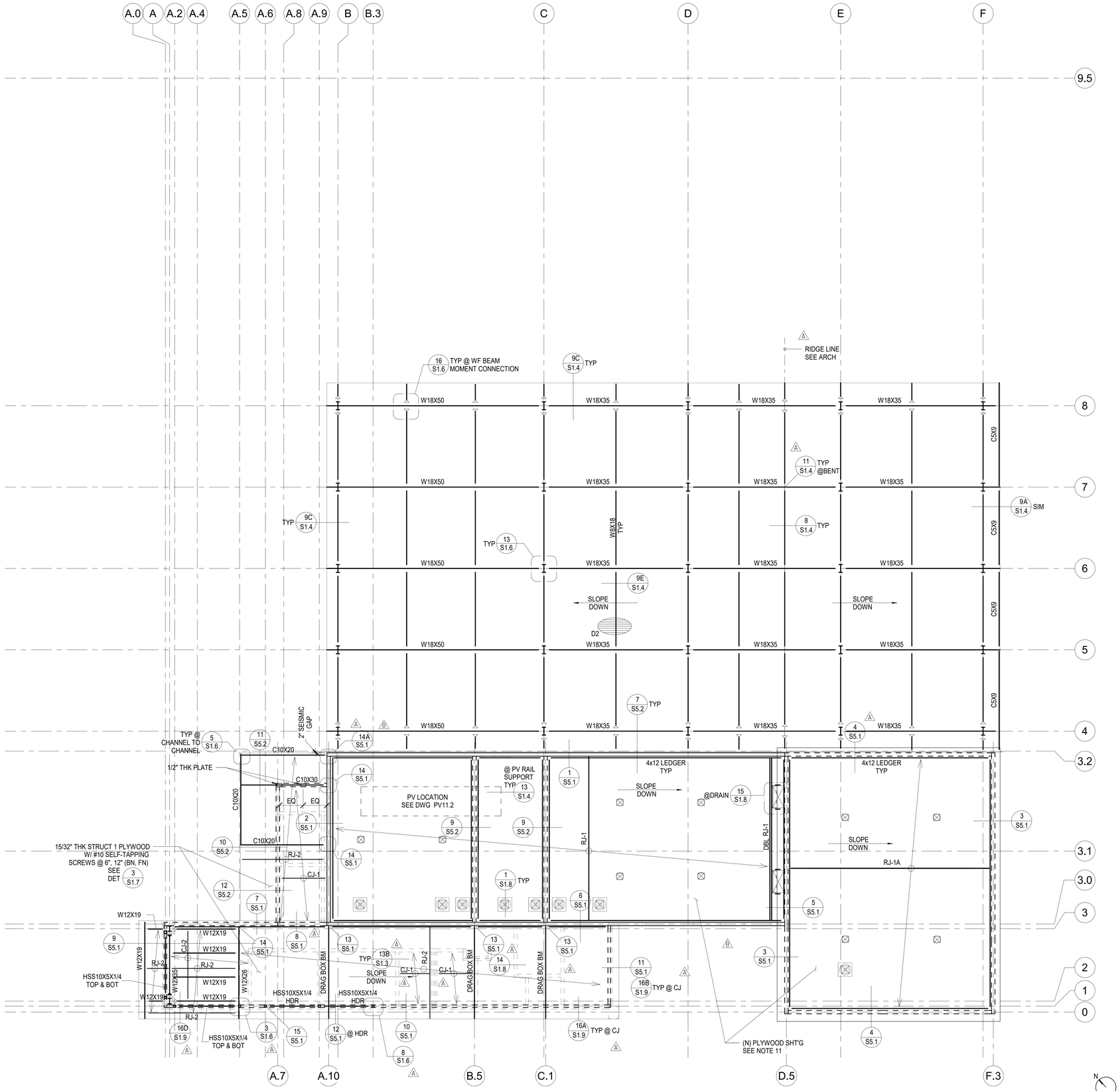
PROJECT NO:	2023-40108
DATE ISSUED:	OCT 15, 2025
SCALE:	As Indicated
SHEET NUMBER:	**S2.2**
SHEET TITLE:	

RETAINING WALL & CANOPY FOUNDATION AND ROOF FRAMING PLAN

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER KEUN K. KIM No. 54029 Exp. 9/30/26 CIVIL STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



1 S3.1 ROOF FRAMING PLAN

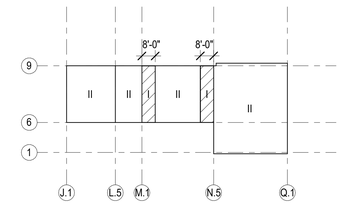
SCALE: 1/8" = 1'-0"

ROOF FRAMING NOTES:

1. FOR GENERAL NOTES, SEE S0.0 SERIES.
2. FOR TYPICAL DETAILS, SEE S1.0 SERIES.
3. INDICATES WALL BELOW
4. METAL DECK, SEE 9 / S1.4 FOR ADDITIONAL INFORMATION.
5. TOS = VARIES. SEE PLAN & VERIFY WITH ARCHT'L DRAWINGS REFER TO ARCHT'L FOR ROOF SLOPES
6. FOR TYPICAL BEAM TO BEAM CONNECTIONS, SEE DETAIL 5 / S1.6
7. INDICATES CANTILEVERD BEAM MOMENT CONNECTION SEE DETAIL 9 / S1.6 .
8. INDICATE OMF CONNECTION SEE DETAIL 15 / S1.6 & 16 / S1.6 .
9. HSS COLUMNS: SEE S2.1 FOR SIZES.
10. DENOTES FLOOR/ROOF PENETRATION. SEE DETAIL - / --- SEE ARCHT'L / MEP DRAWINGS FOR ACTUAL LOCATION AND ADDITIONAL INFOMATION AND ADDITIONAL PENETRATION.
11. PROVIDE WELD/SCREW PER DECK SCHEDULE TO LFRS MEMBERS. ALL WELDS TO LFRS MEMBERS SHALL CONFORM TO AWS D1.8
12. ROOF SHEATHING SHALL BE 15/32" THK STRUCT 1 PLYWOOD W/ 10d NAILS. BLOCK ALL PLYWOOD EDGES. UNLESS NOTED OTHERWISE, SEE DET 15 / S1.7 & 16 / S1.7 . SEE SCHEDULE BELOW:

DIAPHRAGM SCHEDULE:

ZONE	BN	OTHER EDGE	FIELD	BOUNDARY CONT PANEL EDGE
I	2 1/2"	4"	12"	2X
II	4"	6"	12"	2X



JOIST SCHEDULE:

RJ-1: RED-S X 20" DEEP @ 24" O.C. (ESR-1774)
RJ-1A: RED-S X 20" DEEP @ 16" O.C. (ESR-1774)
RJ-2: 1000S 162-043 (18GA) @ 16" O.C.
CJ-1: 362S162-33 @ 16" O.C.
CJ-2: 600S162-43 @ 16" O.C.

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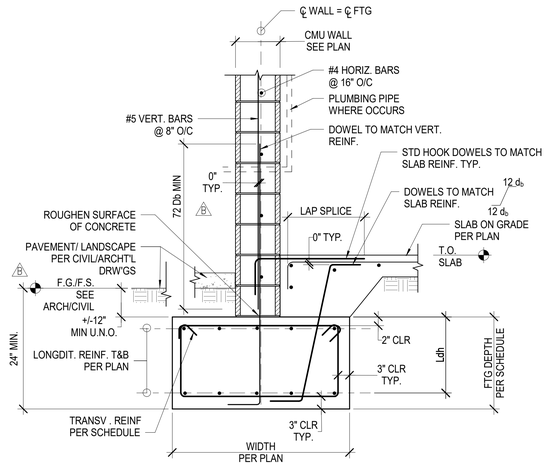
ROOF FRAMING PLAN

CITY OF IRVINE
BUILDING & SAFETY DIVISION

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER
No. 34029
Exp. 9/30/26
STRUCTURAL
STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



1 S4.1 WALL FOOTING @CONC. WALL (BLDG EXTERIOR)

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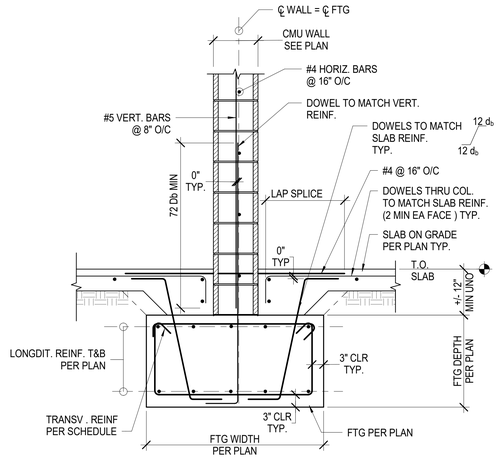
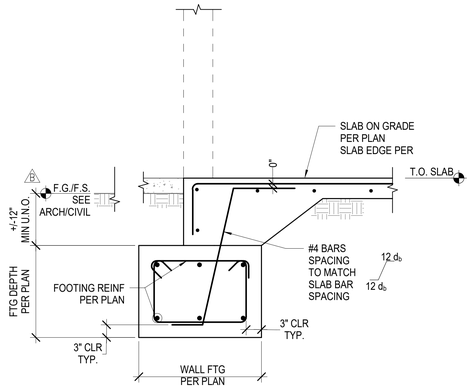


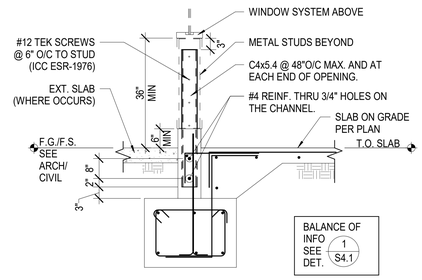
2 S4.1 INT. CMIU WALL FOOTING DETAIL

SCALE: N.T.S.



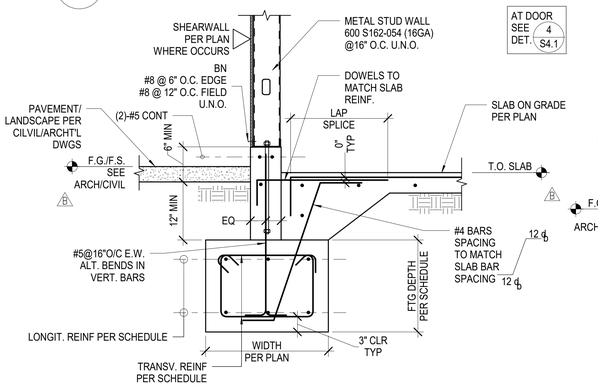
4 S4.1 TYP @ DOOR

SCALE: N.T.S.



5 S4.1 PONY WALL DETAIL

SCALE: N.T.S.



6 S4.1 EXT MTL STUD WALL FTG DETAIL

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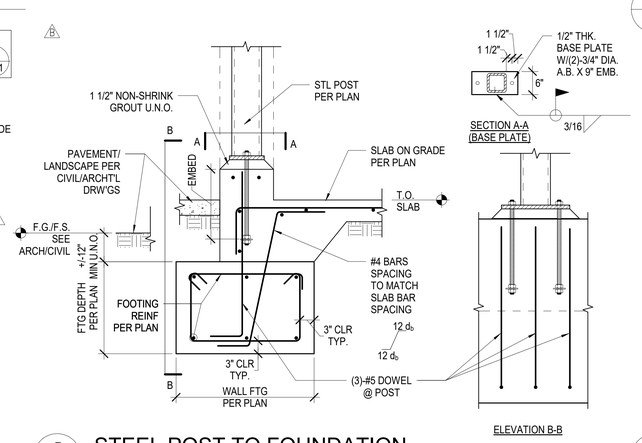

7 S4.1 STEEL POST TO FOUNDATION

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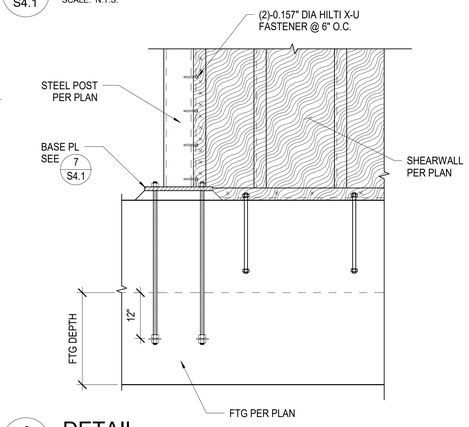
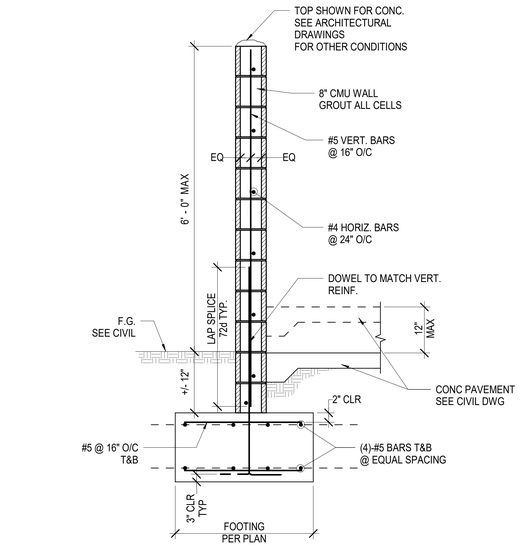


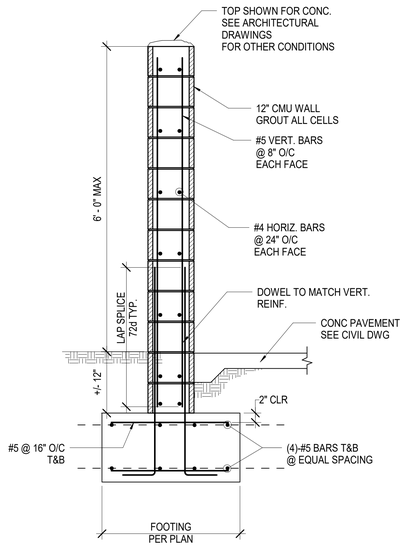
8 S4.1 DETAIL

SCALE: N.T.S.



13 S4.1 FREE STANDING WALL DETAIL 1 (8" THK)

SCALE: N.T.S.



14 S4.1 FREE STANDING WALL DETAIL 2 (12" THK)

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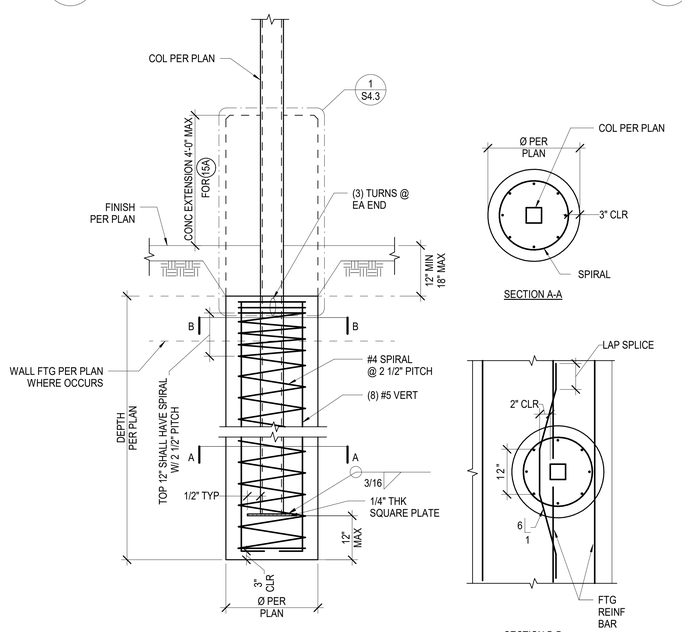
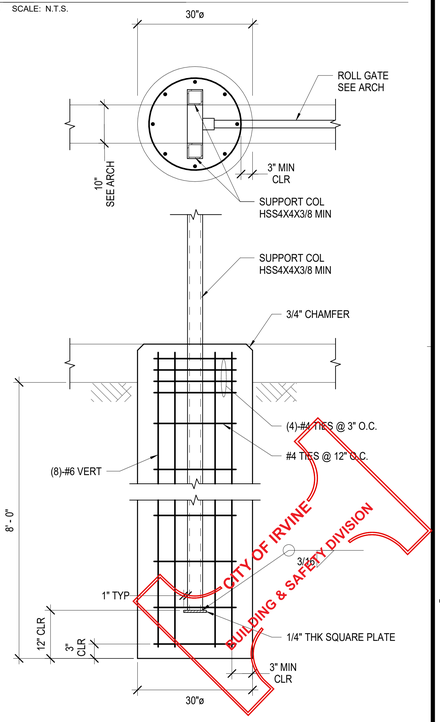


15A S4.1

15 S4.1 POLE FOOTING

SCALE: N.T.S.



16 S4.1 ROLL GATE SUPPORT COL & FOOTING

SCALE: N.T.S.

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

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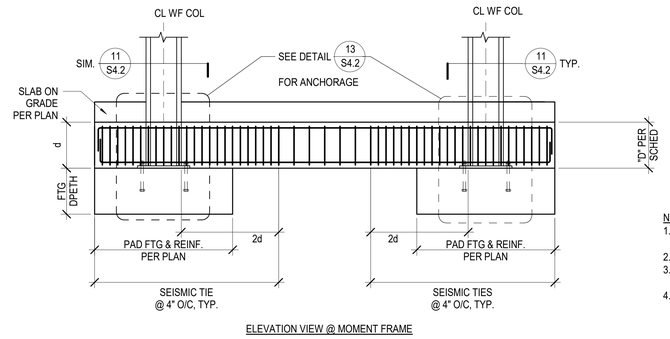
SHEET TITLE:	

FOUNDATION DETAILS

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER KEVIN A. [illegible] No. S4029 Exp. 9/30/26 STRUCTURAL STATE OF CALIFORNIA

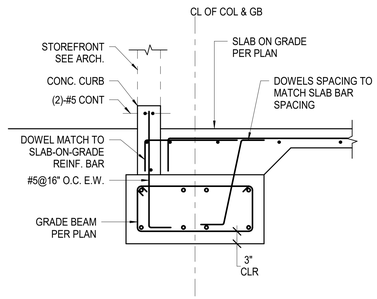
PLAN CHECK 00954071-PARK



ELEVATION VIEW @ MOMENT FRAME

NOTES:
1. #4 SEISMIC TIES PER SCHEDULE. SEE ELEV. ABOVE WHERE 4" SPACING IS REQD.
2. ALL REINFORCEMENT SHALL BE ASTM A706.
3. TYP SEISMIC TIE: ALTERNATE CAP TIE
4. TYPE 2 MECHANICAL COUPLERS MAY BE USED IN LIEU OF LAP SPLICES @ GRADE BEAM REINF. (ICC ESR 1764)

1 S4.2 **GRADE BEAM DETAIL**
SCALE: N.T.S.



3 S4.2 **GRADE BEAM SECTION**
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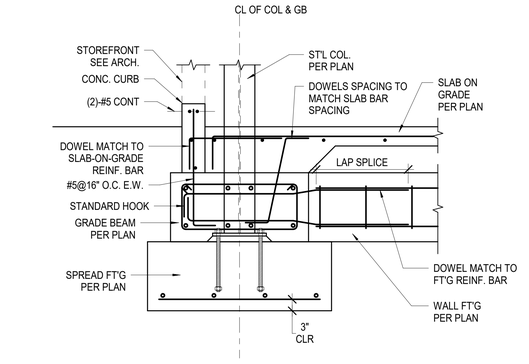

4 S4.2 **CONT FTG TO GRADE BEAM**
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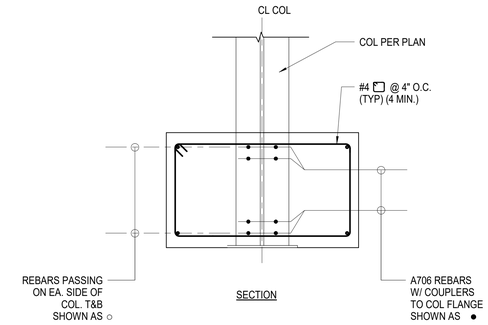
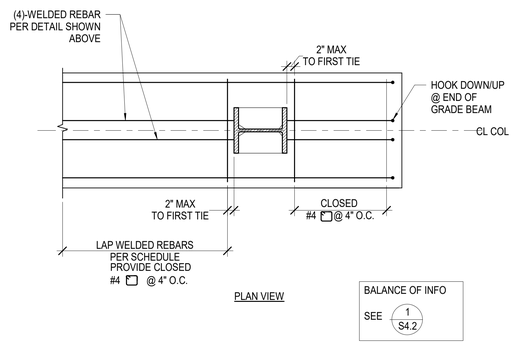
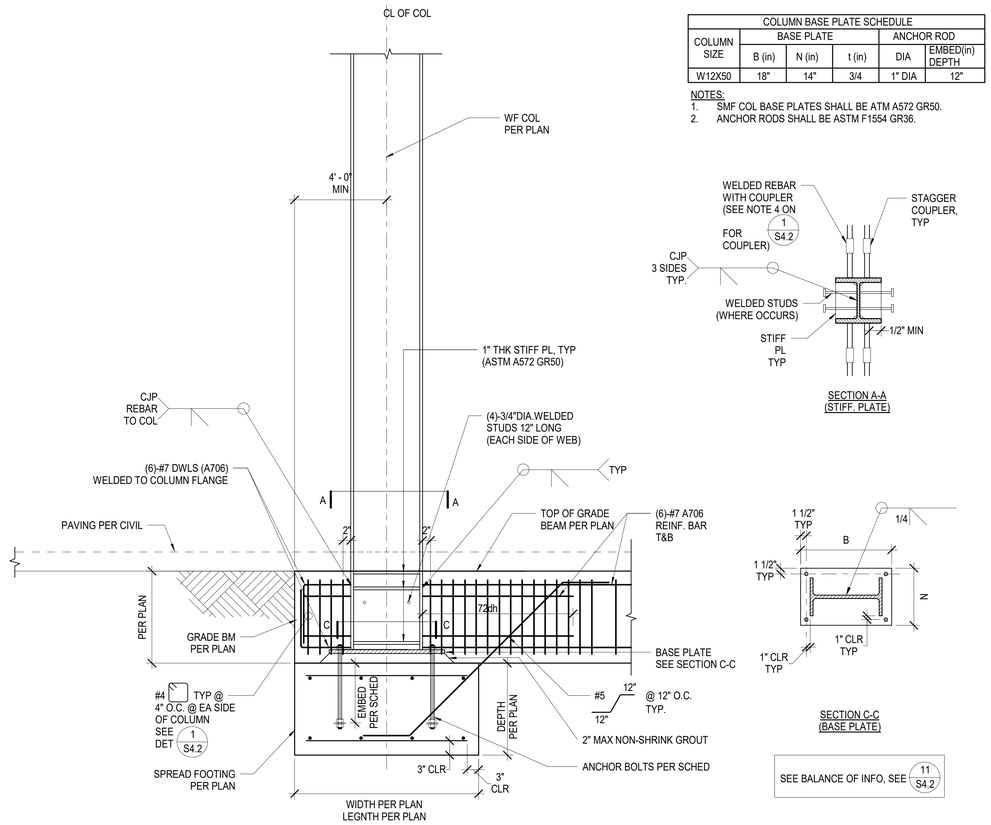




11 S4.2 **WELDED @ OMRF**
SCALE: N.T.S.

COLUMN BASE PLATE SCHEDULE					
COLUMN SIZE	BASE PLATE			ANCHOR ROD	
	B (in)	N (in)	t (in)	DIA	EMBED(in) DEPTH
W12X50	18"	14"	3/4	1" DIA	12"

NOTES:
1. SMF COL BASE PLATES SHALL BE ATM A572 GR50.
2. ANCHOR RODS SHALL BE ASTM F1554 GR36.



SECTION A-A (STIFF. PLATE)

SECTION C-C (BASE PLATE)

SEE BALANCE OF INFO, SEE 11 S4.2

13 S4.2 **COLUMN TO GRADE BEAM**
SCALE: N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618
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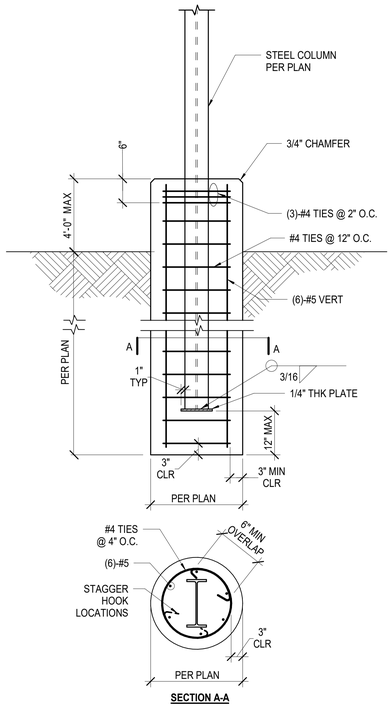
SHEET TITLE:

FOUNDATION DETAILS

VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
Tel. 949.679.0870
Fax. 949.679.9370
Project No.: H601

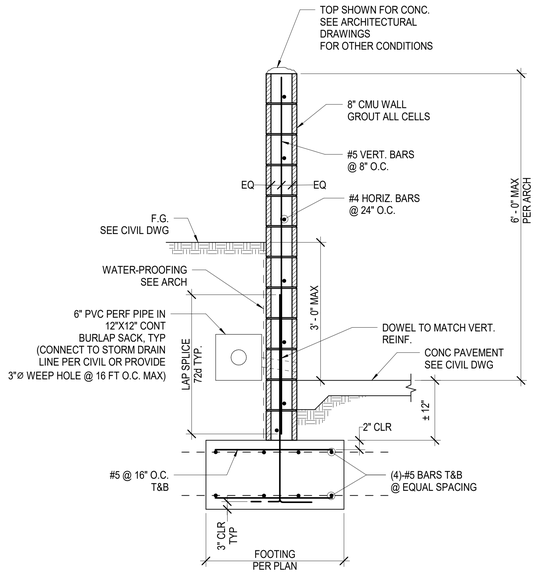
PROFESSIONAL ENGINEER — No. S4029 — Exp. 9/30/26 — STRUCTURAL — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



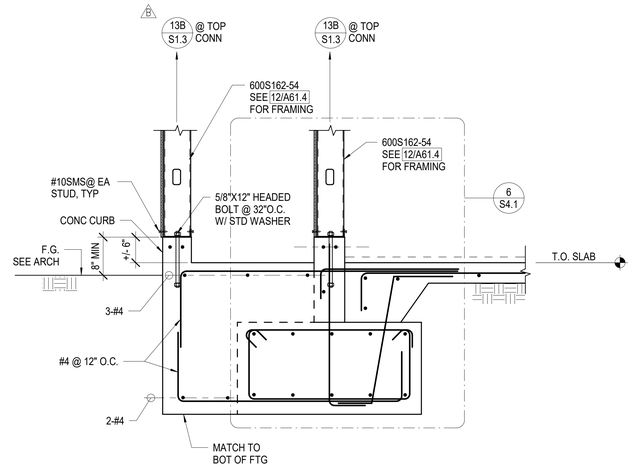
1 S4.3 CAST-IN-PACED DEEP FOUNDATION

SCALE: N.T.S.



2 S4.3 SITE WALL WITH RETAINING CONDITION

SCALE: N.T.S.



3 S4.3 FOOTING @ STEEL METAL POP OUT WALL

SCALE: N.T.S.

A

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK

MAINTENANCE & OPERATIONS FACILITY

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IRVINE, CA 92618

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SHEET TITLE:

FOUNDATION DETAILS

VCA ENGINEERS INC
CIVIL ★ STRUCTURAL
2401 E KATELLA Ave. #430
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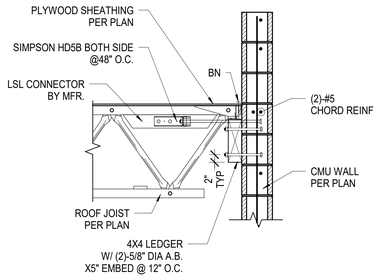
Fax. 949.679.9370
Project No.: H601

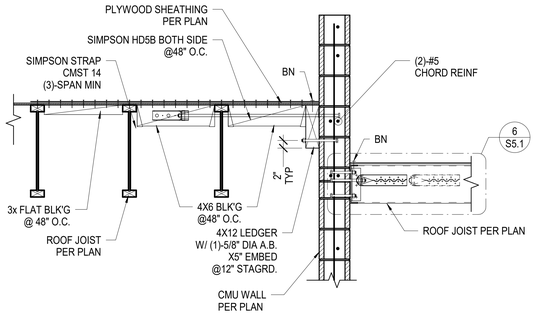
PROFESSIONAL ENGINEER — KEVIN R. VU — No. S4029 — Exp. 9/30/26 — STRUCTURAL — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



1 S5.1 TRUSS TO CMU WALL (PERPENDICULAR) @ EXTERIOR

SCALE: N.T.S.



2 S5.1 TRUSS TO CMU WALL (PARALLEL) @ EXTERIOR

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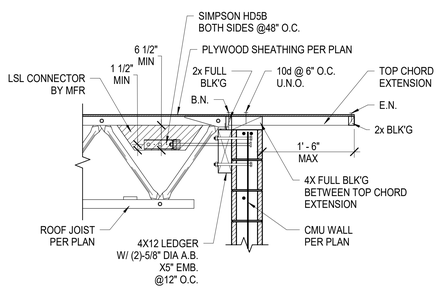
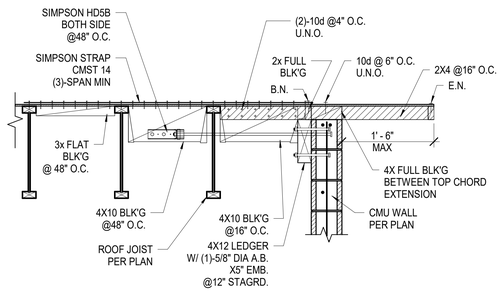


3 S5.1 TRUSS TO CMU WALL W/ OVERHANG

SCALE: N.T.S.



4 S5.1 TRUSS TO CMU WALL (PARALLEL) @ EXTERIOR W/ OVERHANG

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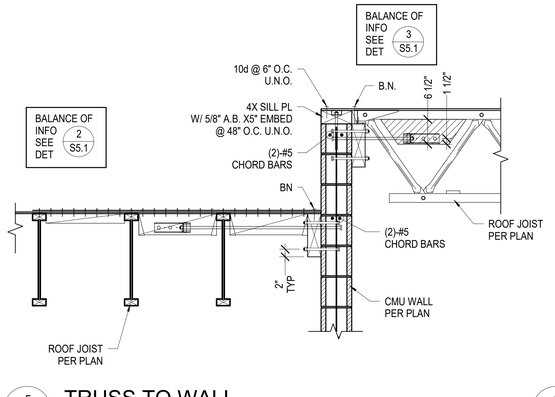
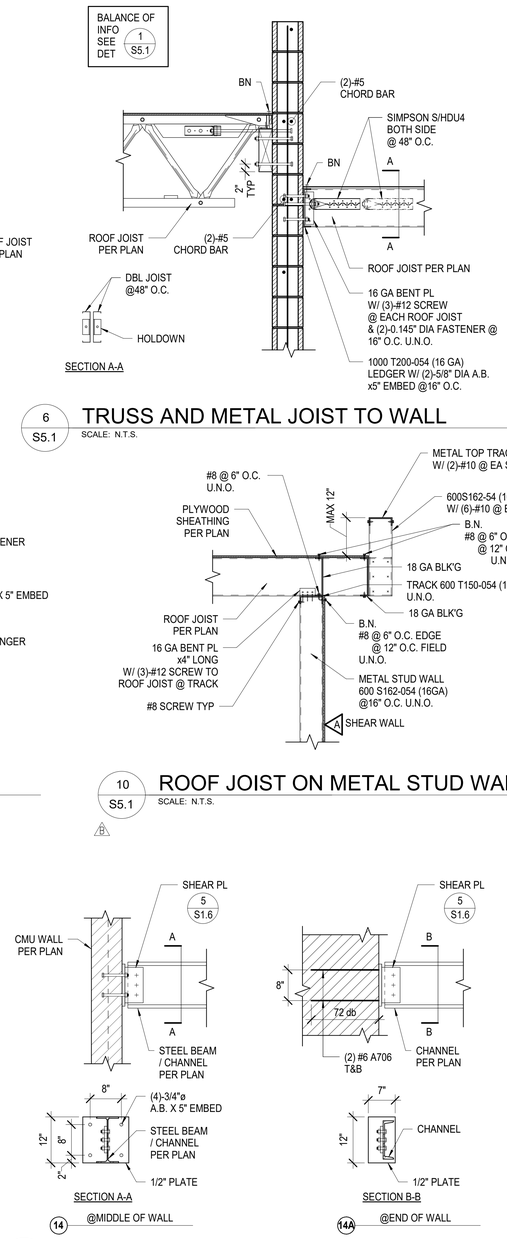


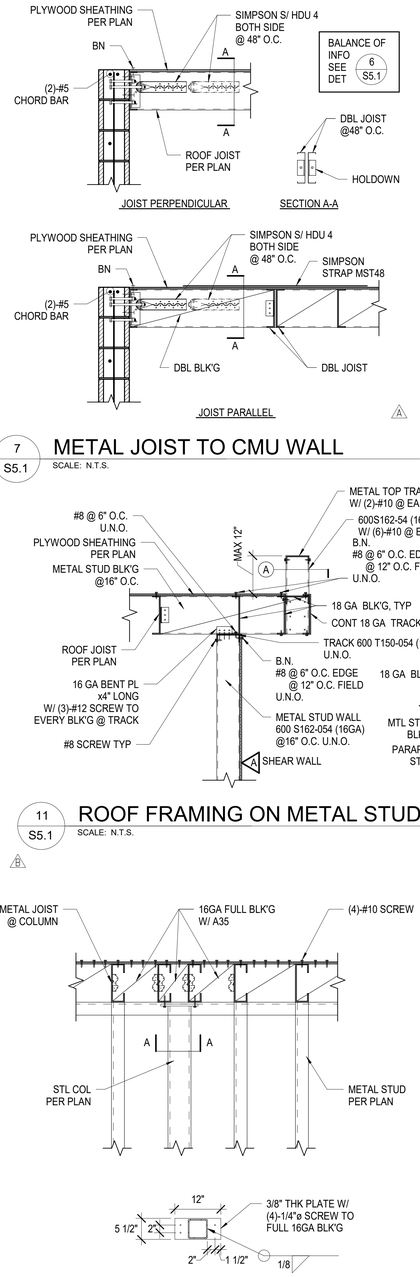
5 S5.1 TRUSS TO WALL

SCALE: N.T.S.



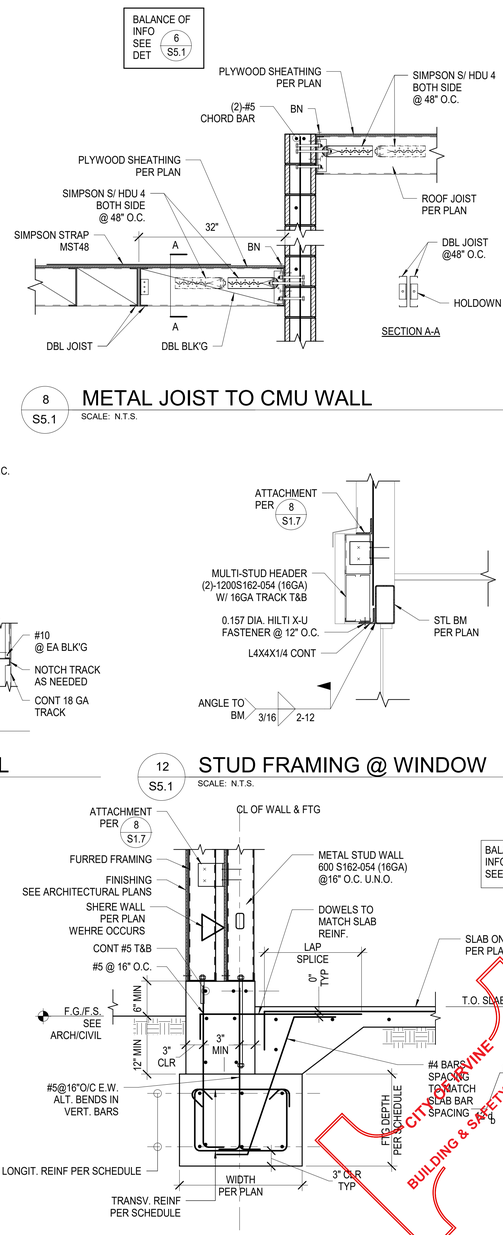
6 S5.1 TRUSS AND METAL JOIST TO WALL

SCALE: N.T.S.



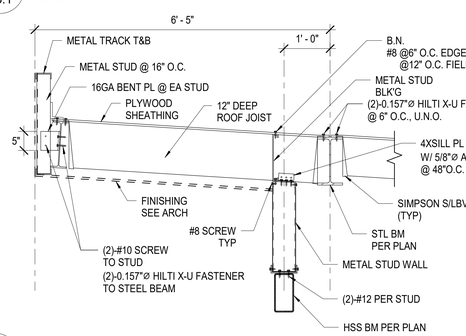
7 S5.1 METAL JOIST TO CMU WALL

SCALE: N.T.S.



8 S5.1 METAL JOIST TO CMU WALL

SCALE: N.T.S.



9 S5.1 DETAIL

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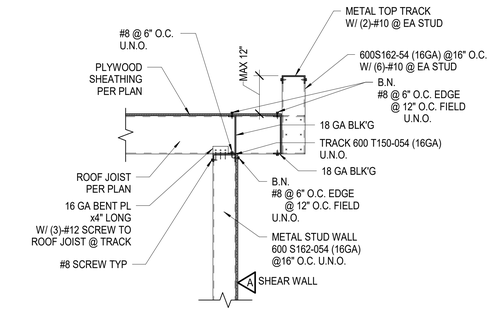

10 S5.1 ROOF JOIST ON METAL STUD WALL

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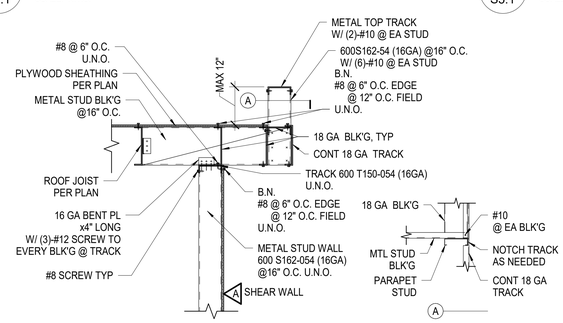

11 S5.1 ROOF FRAMING ON METAL STUD WALL

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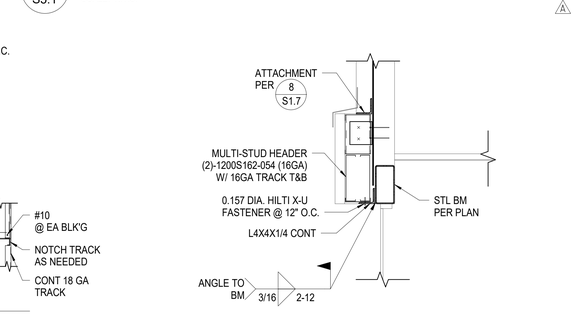

12 S5.1 STUD FRAMING @ WINDOW

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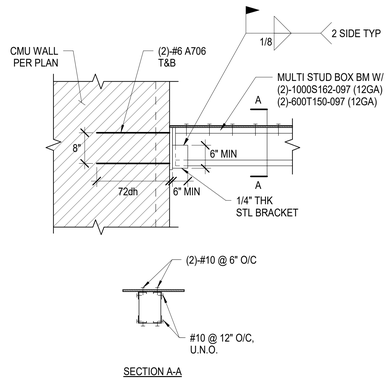


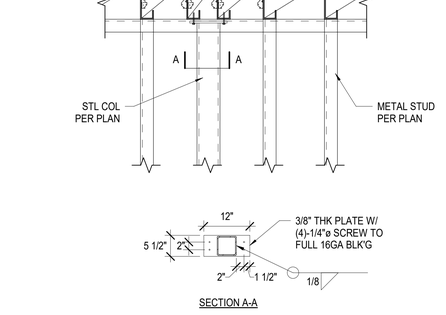
13 S5.1 METAL BOXED BEAM TO CMU WALL

SCALE: N.T.S.

14A S5.1

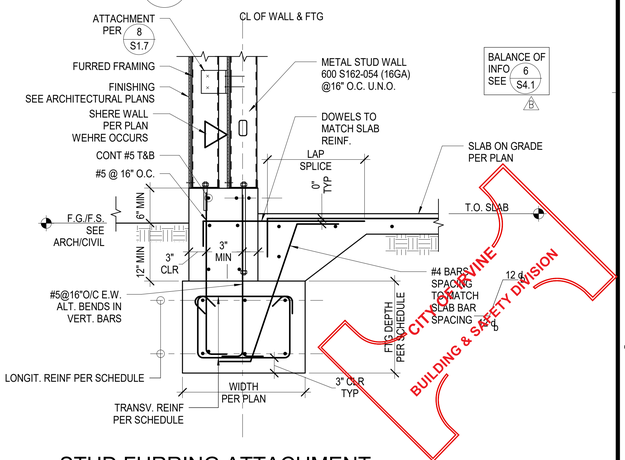
14 S5.1 STEEL BEAM / CHANNEL TO CMU WALL

SCALE: N.T.S.



15 S5.1 TOP CONNECTION OF STEEL COLUMN

SCALE: N.T.S.



16 S5.1 STUD FURRING ATTACHMENT TO METAL STUD WALL

SCALE: N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REVISIONS:

	DESCRIPTION	DATE
A	CITY PC #2	06/25/2025
B	CITY PC #3	09/12/2025
C	CITY PC #4	10/15/2025

PROJECT NO: 2023-40108
DATE ISSUED: OCT 15, 2025
SCALE: As Indicated
SHEET NUMBER: S5.1
SHEET TITLE:

FRAMING DETAILS

VCA ENGINEERS, INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
Anaheim, CA 92806
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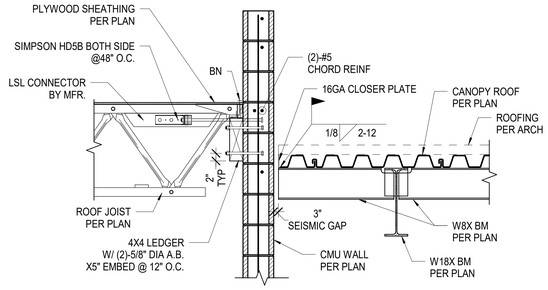
Fax. 949.679.9370
Project No.: H601

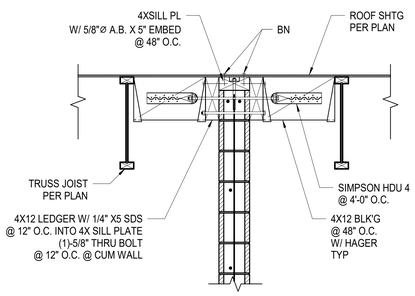
PROFESSIONAL ENGINEER KEVIN A. VAN No. 34029 Exp. 9/30/26 STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



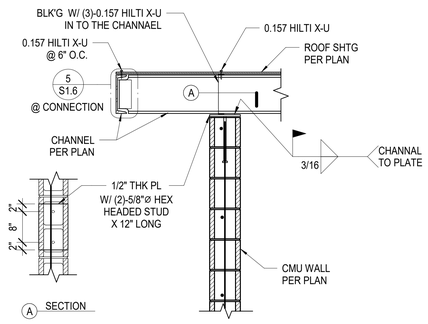
7 S5.2 DETAIL BETWEEN BULDING AND CANOPY

SCALE: N.T.S.



9 S5.2 TRUSS TO CMU WALL W/O PARAPET (PARALLEL)

SCALE: N.T.S.



10 S5.2 CHANNEL TO CUM WALL (PERPENDICULAR)

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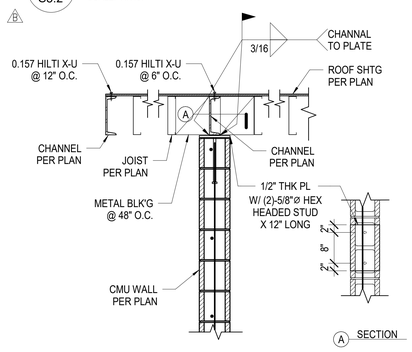

11 S5.2 CHANNEL TO CUM WALL (PERPENDICULAR)

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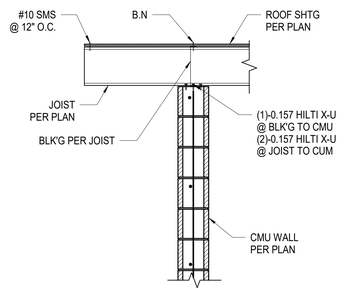

12 S5.2 METAL JOIST TO CUM WALL (PERPENDICULAR)

SCALE: N.T.S.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK

MAINTENANCE & OPERATIONS FACILITY

901 SKYHAWK
IRVINE, CA 92618

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SHEET NUMBER: **S5.2**

SHEET TITLE:

FRAMING DETAILS

VCA ENGINEERS INC
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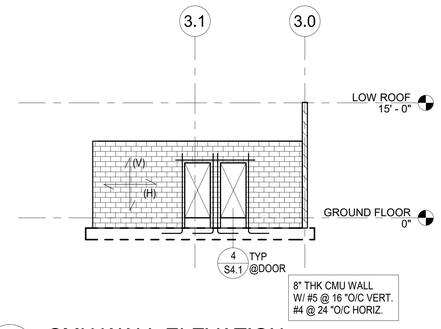
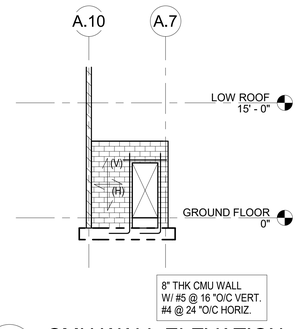
Project No.: H601

PROFESSIONAL ENGINEER
REGISTERED
No. 34029
Exp. 9/30/26
STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK



1 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"



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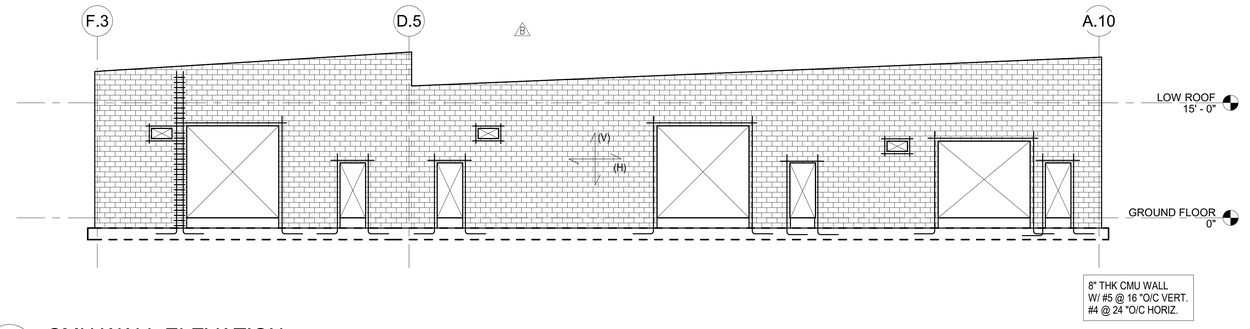
SCALE: 1/8" = 1'-0"



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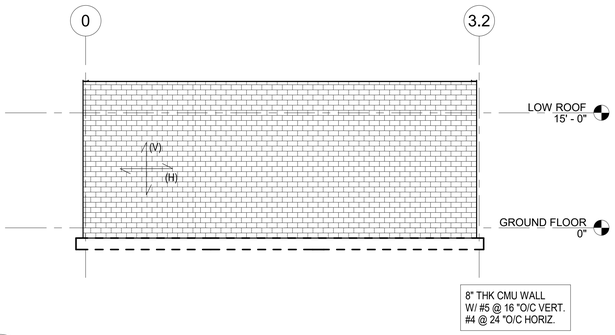
SCALE: 1/8" = 1'-0"



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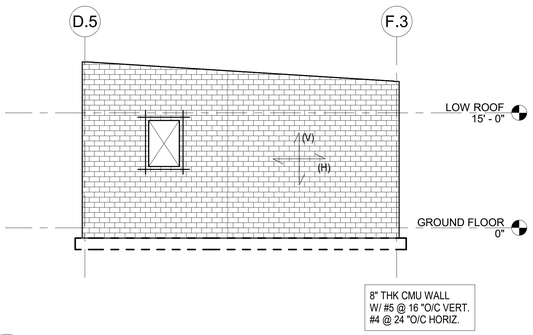
SCALE: 1/8" = 1'-0"



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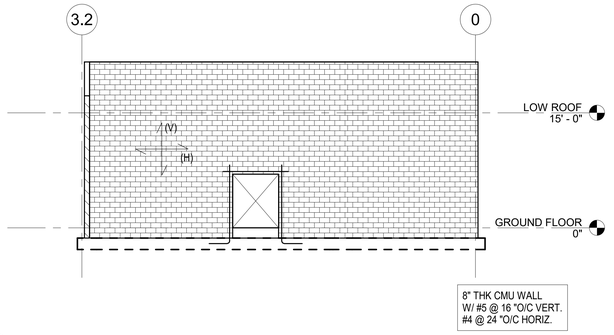
SCALE: 1/8" = 1'-0"



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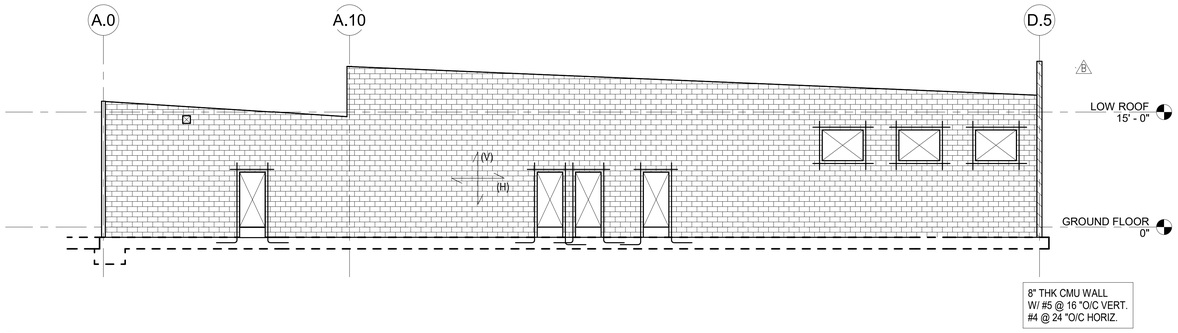
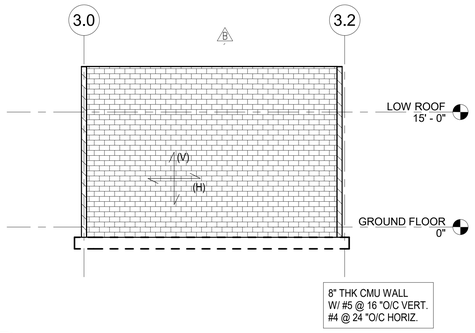
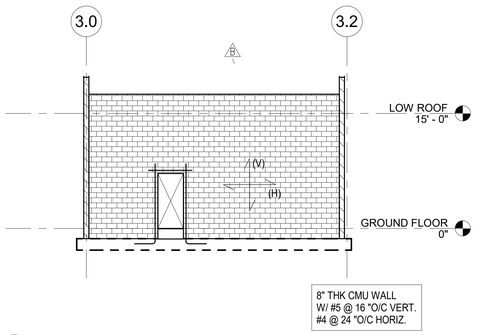
SCALE: 1/8" = 1'-0"



7 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"



8 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"



9 S6.1 CMU WALL ELEVATION
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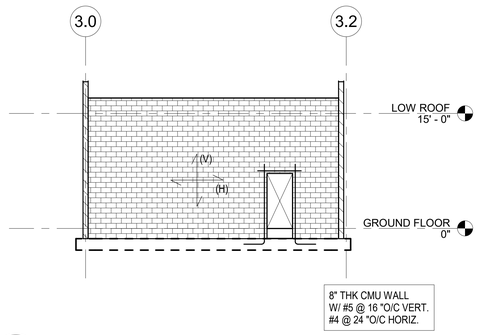
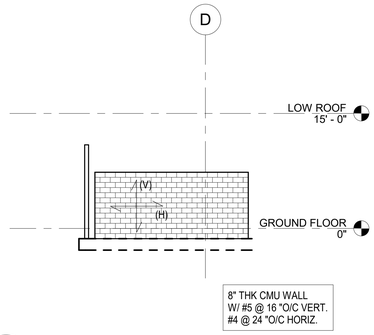
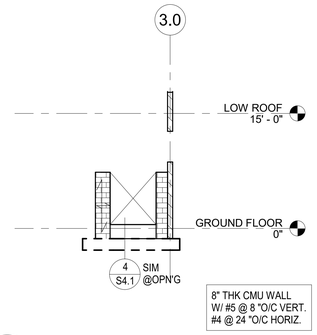


10 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"



11 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"



12 S6.1 CMU WALL ELEVATION
SCALE: 1/8" = 1'-0"

CITY OF IRVINE
BUILDING & SAFETY DIVISION

FOR TYPICAL MASONRY DETAILS, SEE SHEET S1.5

VERIFY OPENING DIMENSIONS WITH ARCHITECTURAL DRAWINGS

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATIONS FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

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WALL ELEVATIONS

VCA ENGINEERS INC
CIVIL • STRUCTURAL
2401 E KATELLA Ave. #430
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Fax. 949.679.9370
Project No.: H601

PROFESSIONAL ENGINEER — KEVIN A. VU — No. 54029 — Exp. 9/30/26 — STRUCTURAL — STATE OF CALIFORNIA

PLAN CHECK 00954071-PARK

ABBREVIATIONS

A/C	AIR CONDITIONING	HWP	HEATING WATER PUMP
ABV	ABOVE	HWR	HEATING WATER RETURN
ACCEPT	ACCEPTANCE	HWS	HEATING WATER SUPPLY
ACU	AIR CONDITIONING UNIT	HX	HEAT EXCHANGER
AD	ACCESS DOOR	ID	INSIDE DIAMETER
ADA	AMERICANS WITH DISABILITIES ACT	IE	INVERT ELEVATION
ADD	ADDITION	IN	INCH
AFF	ABOVE FINISH FLOOR	IW	INDUSTRIAL WASTE
AHJ	AUTHORITY HAVING JURISDICTION	L	LENGTH
AHU	AIR HANDLING UNIT	LBS	POUNDS
AP	ACCESS PANEL	LP	LOW PRESSURE
APPROX	APPROXIMATE	LPC	LOW PRESSURE CONDENSATE
ARCH	ARCHITECTURAL	LPS	LOW PRESSURE STEAM
ARI	AMERICAN REFRIGERATION INSTITUTE	M	MOTOR
AS	AIR SEPARATOR	MA	MIXED AIR
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MAU	MAKEUP AIR
AUTO	AUTOMATIC	MAX	MAXIMUM
AUX	AUXILLIARY	MC	MECHANICAL CONTRACTOR
AV	AIR VENT	MCC	MOTOR CONTROL CENTER
B	BOILER	MECH	MECHANICAL
BAS	BUILDING AUTOMATION SYSTEM	MIN	MINIMUM
BDD	BACKDRAFT DAMPER	MPC	MEDIUM PRESSURE CONDENSATE
BFF	BELOW FINISH FLOOR	MPS	MEDIUM PRESSURE STEAM
BLDG	BUILDING	MV	MANUAL AIR VENT
BOD	BOTTOM OF DUCT	(N)	NEW
BOP	BOTTOM OF PIPE	N/A	NOT APPLICABLE
BSMT	BASEMENT	NC	NORMALLY CLOSED
BV	BALL VALVE	NO	NORMALLY OPENED
BYV	BUTTERFLY VALVE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
C	COMMON, CONDENSATE OR CONDUIT	NIC	NOT IN CONTRACT
CA	CONTROL AIR, or COMBUSTION AIR	NTS	NOT TO SCALE
CAC	CALIFORNIA ADMINISTRATIVE CODE	OA	OUTSIDE AIR
CAP	CAPACITY	OBD	OPPOSED BLADE DAMPER
CAV	CONSTANT AIR VOLUME	OC	ON CENTER
CB	CHILLED BEAM	OD	OUTSIDE DIAMETER
CBC	CALIFORNIA BUILDING CODE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CC	COOLING COIL OR CONTROLS CONTRACTOR	OFOI	OWNER FURNISHED OWNER INSTALLED
CD	CONSTRUCTION DOCUMENTS	P	PUMP OR PRESSURE OR POLE
CEC	CALIFORNIA ELECTRICAL CODE	PC	PUMPED CONDENSATE
CFC	CALIFORNIA FIRE CODE	PCR	PRESSURIZED CONDENSATE RETURN
CFM	CUBIC FEET PER MINUTE	PD	PRESSURE DROP
CH	CHILLER	PE	PNEUMATIC ELECTRIC
CHV	CHECK VALVE	PF	PRE FILTER
CHWP	CHILLED WATER PUMP	PG	PIPE GUIDE OR PRESSURE GAUGE
CHWR	CHILLED WATER RETURN	PH	PHASE
CHWS	CHILLED WATER SUPPLY	PLBG	PLUMBING
CL	CENTERLINE	POC	POINT OF CONNECTION
CLG	CEILING	POD	POINT OF DISCONNECTION
CMC	CALIFORNIA MECHANICAL CODE	PS	PRESSURE SENSOR
CONN	CONNECTION	PSI	POUNDS PER SQUARE INCH
CP	CONTROL PANEL	PSIG	POUNDS PER SQUARE INCH - GAUGE
CPC	CALIFORNIA PLUMBING CODE	QTY	QUANTITY
CV	CONSTANT VOLUME OR CONTROL VALVE	(R)	REMOVE
CWP	CONDENSER WATER PUMP	R	RISERS, RELOCATE OR RISE
CWR	CONDENSER WATER RETURN	RA	RETURN AIR
CWS	CONDENSER WATER SUPPLY	REB	REBALANCE
D	DROP OR DRAIN	REF	RELIEF FAN
DDC	DIRECT DIGITAL CONTROL	REFRIG	REFRIGERANT
DEMO	DEMOLISH / DEMOLITION	REL	RELOCATE
DEPT	DEPARTMENT	REQ'D	REQUIRED
DET	DETAIL	REV	REVISE, REVISION OR REVOLUTIONS
DIA	DIAMETER	RF	RETURN FAN
DIFF	DIFFERENCE	RHC	REHEAT COIL
DISCH	DISCHARGE	RL	REFRIGERANT LIQUID
DN	DOWN	RM	ROOM
DTR	DOWN THRU ROOF	RS	REFRIGERANT SUCTION
DV	DIAPHRAGM VALVE	RTU	ROOFTOP UNIT
DWG	DRAWING	SA	SUPPLY AIR
DX	DIRECT EXPANSION	SAN	SANITARY
(E)	EXISTING TO REMAIN	SD	SMOKE DAMPER
EA	EXHAUST AIR OR EACH	SEN	SENSIBLE
EC	ELECTRICAL CONTRACTOR	SF	SUPPLY FAN OR SQUARE FEET
ECON	ECONOMIZER	SP	STATIC PRESSURE
EF	EXHAUST FAN	SPEC	SPECIFICATION
EL	ELEVATION	SQ FT	SQUARE FEET
ELEC	ELECTRICAL	SQ IN	SQUARE INCH
EQUIP	EQUIPMENT	ST	STRAINER OR SOUND TRAP OR STEAM TRAP
ESP	EXTERNAL STATIC PRESSURE	STD	STANDARD
ET	EXPANSION TANK	STRUC	STRUCTURAL
EXH	EXHAUST	T	THERMOSTAT OR THERMOMETER OR THROAT
FC	FLEXIBLE CONNECTION OR FAIL CLOSED	TCP	TEMPERATURE CONTROL PANEL
FCU	FAN COIL UNIT	TDH	TOTAL DYNAMIC HEAD
FD	FIRE DAMPER	TEMP	TEMPERATURE
FF	FINISH FLOOR OR FINAL FILTER	THRU	THROUGH
FFE	FINISH FLOOR ELEVATION	TI	TENANT IMPROVEMENT
FLR	FLOOR	TOP	TOP OF DUCT
FPB	FAN POWERED BOX	TS	TEMPERATURE SENSOR
FR	FIRE WRAP	TSP	TOTAL STATIC PRESSURE
FSD	FIRE/SMOKE DAMPER	TYP	TYPICAL
FT	FOOT / FEET	UC	UNDERCUT DOOR
G	GAS	UG	UNDERGROUND
GA	GAUGE, GAGE	UH	UNIT HEATER
GALV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GLV	GLOBE VALVE	UTR	UP THRU ROOF
GN	GENERAL NOTE	V	VENT
GND	GROUND	VAV	VARIABLE AIR VOLUME
GPM	GALLON PER MINUTE	VD	VOLUME DAMPER
GV	GATE VALVE	VEL	VELOCITY
HC	HEATING COIL	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER	W/	WITH
HP	HIGH PRESSURE	W/O	WITHOUT
HP	HEAT PUMP	WG	WATER GAUGE
HPC	HIGH PRESSURE CONDENSATE	WMS	WIRE MESH SCREEN
HPS	HIGH PRESSURE STEAM	WPD	WATER PRESSURE DROP
HRU	HEAT RECOVERY UNIT	WSHP	WATER SOURCE HEAT PUMP
HVAC	HEATING, VENTILATION & AIR CONDITIONING	WT	WEIGHT
HW	HEATING WATER	XFMR	TRANSFORMER

HVAC LEGEND

SYMBOL	DESCRIPTION
	GENERAL
	LIMIT OF DEMOLITION
	POINT OF CONNECTION
XY ZZZ	KEYNOTE
M	FURNISHED & INSTALLED BY MECHANICAL
ME	FURNISHED BY MECHANICAL INSTALLED BY ELECTRICAL
EM	FURNISHED BY ELECTRICAL INSTALLED BY MECHANICAL
E	FURNISHED & INSTALLED BY ELECTRICAL
	EQUIPMENT TAG TYPE MARK EQUIPMENT NUMBER
(RAR/EAR)	SUPPLY, RETURN, & EXHAUST REGISTER NECK SIZE AIR QUANTITY (C.F.M.)
(REAG)	RELIEF AIR GRILLE NECK SIZE AIR QUANTITY (CFM)
	LINEAR SUPPLY & RETURN # OF SLOTS - SLOT WIDTH CFM/FT TOTAL LENGTH (FT)
	DUCTWORK
	REMOVE EXIST. EQUIP., PIPES, OR DUCT SHOWN HATCHED
	EXIST. DIFFUSER, RETURN AIR GRILLE OR EXHAUST GRILLE TO BE REMOVED
	RELOCATED EXIST. DIFFUSER, RETURN AIR GRILLE OR EXHAUST GRILLE TO
	EXIST. DIFFUSER, RETURN AIR GRILLE OR EXHAUST GRILLE TO REMAIN OR BE RELOCATED
	EXIST. MECHANICAL EQUIPMENT & DUCT
	EXIST. DUCTWORK TO BE REMOVED & CAPPED
	LINEAR DIFFUSER
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
14x12 14x12	RECTANGULAR DUCT SIZE (WIDTH x DEPTH IN INCHES)
14"Ø 14"Ø	ROUND DUCT SIZE (WIDTH x DEPTH IN INCHES)
R	DUCT RISE / DUCT DROP
	DUCT WITH SOUND INSULATION
	STAINLESS STEEL DUCTWORK
	FLEXIBLE DUCT
	RECTANGULAR DUCT UP
	RECTANGULAR DUCT DOWN
	DUCT TRANSITION (RECTANGULAR TO ROUND)
D.L./U.C.	DOOR LOUVER OR UNDERCUT
	AUTOMATIC DAMPER (WITH ACTUATOR)
	BACKDRAFT DAMPER
	MANUAL VOLUME DAMPER
FSD	COMBINATION FIRE & SMOKE DAMPER
FD	FIRE DAMPER
	CONTROLS (PLAN)
CO2	CO2 SENSOR
NOX	NITROGEN DIOXIDE SENSOR
H	HUMIDITY SENSOR
O	OXYGEN SENSOR
T x	ROOM THERMOSTAT & ZONE NUMBER
S	SWITCH (MANUAL WALL MOUNT OR DOOR INTERLOCK)
SD	SMOKE DETECTOR
CO	CARBON MONOXIDE SENSOR
SP	PRESSURE SENSOR (DUCT MOUNTED)
P	PRESSURE SENSOR (ROOM PRESSURE)
V	PURGE EXHAUST CONTROL SWITCH
HS	VISUAL STROBE AND AUDIBLE HORN
RS	REFRIGERANT LEAK DETECTION SENSOR
	PIPING
#"-####	PIPE TAG (E.G. 2"-CHWS)
	PIPE RISE
	PIPE DROP
	PIPE BRANCH
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CIRCUIT SETTER
	REDUCER
	STRAINER
	UNION
	AIR VENT VALVE
	PRESSURE GAUGE
	THERMOMETER
	CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE & TEMPERATURE RELIEF VALVE
	PIPE ANCHOR
	P.I. FLOW LIMITING DEVICE

DELEGATED DESIGN NOTES

1. HANGERS & SUPPORTS DELEGATED-DESIGN SUBMITTALS: FOR HANGERS, TRAPEZE HANGERS, ROOF/FLOOR SUPPORTS, WALL SUPPORTS, AND EQUIPMENT SUPPORTS FOR HVAC PIPING, DUCTWORK, AND EQUIPMENT SHALL COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
   - 1.1. DETAIL FABRICATION AND ASSEMBLY OF HANGERS, TRAPEZE HANGERS, ROOF/FLOOR SUPPORTS, WALL SUPPORTS, AND EQUIPMENT SUPPORTS FOR HVAC PIPING, DUCTWORK, AND EQUIPMENT.
   - 1.2. INCLUDE DESIGN CALCULATIONS FOR DESIGNING HANGERS, TRAPEZE HANGERS, ROOF/FLOOR SUPPORTS, WALL SUPPORTS, AND EQUIPMENT SUPPORTS FOR HVAC PIPING, DUCTWORK, AND EQUIPMENT.
2. VIBRATION & SEISMIC DELEGATED-DESIGN SUBMITTALS: FOR EACH VIBRATION ISOLATION AND SEISMIC-RESTRAINT DEVICE.
   - 2.1. INCLUDE DESIGN CALCULATIONS AND DETAILS FOR SELECTING VIBRATION ISOLATORS, SEISMIC RESTRAINTS, AND VIBRATION ISOLATION BASES COMPLYING WITH PERFORMANCE REQUIREMENTS, DESIGN CRITERIA, AND ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE PREPARATION.
   - 2.2. DESIGN CALCULATIONS: CALCULATE STATIC AND DYNAMIC LOADING DUE TO EQUIPMENT WEIGHT, OPERATION, AND SEISMIC FORCES REQUIRED TO SELECT VIBRATION ISOLATORS AND SEISMIC RESTRAINTS AND FOR DESIGNING VIBRATION ISOLATION BASES.
     - 2.2.1. COORDINATE DESIGN CALCULATIONS WITH WIND LOAD CALCULATIONS REQUIRED FOR EQUIPMENT MOUNTED OUTDOORS. COMPLY WITH REQUIREMENTS IN OTHER SECTIONS FOR EQUIPMENT MOUNTED OUTDOORS.
   - 2.3. RISER SUPPORTS: INCLUDE RISER DIAGRAMS AND CALCULATIONS SHOWING ANTICIPATED EXPANSION AND CONTRACTION AT EACH SUPPORT POINT, INITIAL AND FINAL LOADS ON BUILDING STRUCTURE, SPRING DEFLECTION CHANGES, AND SEISMIC LOADS. INCLUDE CERTIFICATION THAT RISER SYSTEM WAS EXAMINED FOR EXCESSIVE STRESS AND THAT NONE EXISTS.
   - 2.4. SEISMIC-RESTRAINT DETAILS:
     - 2.4.1. DESIGN ANALYSIS: TO SUPPORT SELECTION AND ARRANGEMENT OF SEISMIC RESTRAINTS. INCLUDE CALCULATIONS OF COMBINED TENSILE AND SHEAR LOADS.
     - 2.4.2. DETAILS: INDICATED FABRICATION AND ARRANGEMENT. DETAIL ATTACHMENTS OF RESTRAINTS TO THE RESTRAINED ITEMS AND TO THE STRUCTURE. SHOW ATTACHMENT LOCATIONS, METHODS, AND SPACINGS. IDENTIFY COMPONENTS, LIST THEIR STRENGTHS, AND INDICATE DIRECTIONS AND VALUES OF FORCES TRANSMITTED TO THE STRUCTURE DURING SEISMIC EVENTS. INDICATE ASSOCIATION WITH VIBRATION ISOLATION DEVICES.
     - 2.4.3. COORDINATE SEISMIC-RESTRAINT AND VIBRATION ISOLATION DETAILS WITH WIND-RESTRAINT DETAILS REQUIRED FOR EQUIPMENT MOUNTED OUTDOORS, COMPLY WITH REQUIREMENTS IN OTHER SECTIONS FOR EQUIPMENT MOUNTED OUTDOORS.
     - 2.4.4. PREAPPROVAL AND EVALUATION DOCUMENTATION: BY AN AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, SHOWING MAXIMUM RATINGS OF RESTRAINT ITEMS AND THE BASIS OF APPROVAL (TESTS OR CALCULATIONS).

DESIGN CONDITIONS

SITE LOCATION: IRVINE, CALIFORNIA
384 FEET ELEVATION
CA CLIMATE ZONE 8

OUTDOOR DESIGN CONDITIONS
SUMMER: 86.9 DRY BULB AND 67.5 WET BULB (ASHRAE 1%)
WINTER: 45.3 DRY BULB (ASHRAE 99%)

INDOOR DESIGN CONDITIONS
OFFICE: 75° COOLING, 70°HEATING
CONFERENCE: 75° COOLING, 70°HEATING
BREAK ROOM: 75° COOLING, 70°HEATING
MISCELLANEOUS : 75° COOLING, 70°HEATING

ENVELOPE
WALL CONSTRUCTION: 8" CMU, U-FACTOR = 0.69
ROOF CONSTRUCTION: METAL DECK OVER STEEL JOIST, U-FACTOR = 0.038
WINDOW CONSTRUCTION: U-FACTOR = 0.36, SHGC = 0.25, VT = 0.42

VENTILATION
OFFICE: 15 CFM/PERSON OR 0.15 CFM/SQ.FT, WHICHEVER IS GREATER
CONFERENCE: 15 CFM/PERSON OR 0.5 CFM/SQ.FT, WHICHEVER IS GREATER
BREAK ROOM: 15 CFM/PERSON OR 0.5 CFM/SQ.FT, WHICHEVER IS GREATER
STORAGE, CORRIDOR: 15 CFM/PERSON OR 0.15 CFM/SQ.FT, WHICHEVER IS GREATER

INTERNAL LOADS
A. OFFICE
OCCUPANCY DENSITY: 150 SQ.FT./PERSON OR ACTUAL COUNT, WHICHEVER IS GREATER
LIGHTING: 0.8 W/SQ.FT.
MISCELLANEOUS LOAD: 1.5 W/SQ.FT.
B. CONFERENCE
OCCUPANCY DENSITY: 50 SQ.FT./PERSON OR ACTUAL COUNT, WHICHEVER IS GREATER
LIGHTING: 0.8 W/SQ.FT.
MISCELLANEOUS LOAD: 1.5 W/SQ.FT.
C. BREAK ROOM
OCCUPANCY DENSITY: 40 SQ.FT./PERSON OR ACTUAL COUNT, WHICHEVER IS GREATER
LIGHTING: 0.8 W/SQ.FT.
MISCELLANEOUS LOAD: 0.1 W/SQ.FT.
D. CORRIDOR/STORAGE
OCCUPANCY DENSITY: 250 SQ.FT./PERSON OR ACTUAL COUNT, WHICHEVER IS GREATER
LIGHTING: 0.8 W/SQ.FT.
MISCELLANEOUS LOAD: 0.1 W/SQ.FT.

MECHANICAL SCOPE OF WORK

PROVIDE (4) NEW CONDENSING UNIT AND FAN COIL, AND NEW AIR DISTRIBUTION AND DUCTWORK TO CONFORM THE ARCHITECTURE SPACE PLANS. PROVIDE (11) FANS FOR ENVIRONMENTAL EXHAUST. SCOPE OF WORK IS ON THE 1ST FLOOR OF A 1 STORY BUILDING.

MECHANICAL GENERAL NOTES

1. ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING STRUCTURAL, PLUMBING, AIR CONDITIONING AND ELECTRICAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND AT NO EXPENSE TO THE OWNER.
2. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
3. DO NOT SCALE DRAWINGS. ALL DIMENSIONS AND JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
4. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK AND PROVIDE A FULLY OPERATIONAL SYSTEM. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE CITY AND STATE FIRE MARSHALL.
5. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF DEMOLITION AND/OR NEW WORK.
6. VERIFY FINAL LOCATION OF THERMOSTATS WITH ARCHITECT AND/OR TENANT CONSTRUCTION COORDINATOR PRIOR TO ANY INSTALLATION WORK.
7. CONTRACTOR SHALL PROVIDE RECORD/AS BUILT DOCUMENTS TO CONSTRUCTION COORDINATOR, ARCHITECT AND ENGINEER AT COMPLETION OF CONSTRUCTION.
8. MAINTAIN NET FREE AREA EQUAL TO DUCT SIZE WHERE FIRE DAMPERS OCCUR.
9. ROOM THERMOSTATS SHALL BE CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE SET POINTS FOR 55° F TO 85° F AND SHALL BE CAPABLE OF OPERATING THE HEATING AND COOLING IN SEQUENCE. THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 5° F BETWEEN FULL HEATING AND FULL COOLING BEING SUPPLIED. TEMPERATURE CONTROL SYSTEM SHALL OPERATE IN ACCORDANCE WITH THE BASE BUILDING SEQUENCE OF OPERATION
10. PROVIDE MINIMUM DUCT RADIUS ON ELBOWS AT 1-1/2 TIMES DUCT SIZE.
11. ALL CEILING DIFFUSERS ARE 4-WAY THROW UNLESS NOTED OTHERWISE.
    - 11.1. DIFFUSERS SHALL BE ADJUSTED BY MECHANICAL CONTRACTOR AND/OR TEST & BALANCE CONTRACTOR FROM 4-WAY TO 3-WAY OR 2-WAY WHEN WITHIN 3'-0" OF ADJACENT WALL OR CORNER. SUBMIT PROPOSED ADJUSTMENTS IN WRITING PRIOR TO ADJUSTING.
12. CONTRACTOR SHALL STRICTLY COORDINATE ALL CEILING DIFFUSERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN. IF ANY DISCREPANCIES ARE ENCOUNTERED THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION. VERIFY WITH OWNERS REPRESENTATIVE IN FIELD PRIOR TO INSTALLATION.
13. MATERIALS EXPOSED WITHIN DUCT OR PLENUM SHALL COMPLY WITH SECTION 602.2 OF THE 2022 CMC. ALL MATERIALS EXPOSED WITHIN THE CEILING PLENUM SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50.
14. PROVIDE SMOKE DETECTORS IN MAIN SUPPLY AIR DUCTS OF AIR MOVING SYSTEMS EXCEEDING 2,000 CFM AND ANY COMBINATION OF SYSTEMS SERVING AREAS PERMANENTLY OPEN TO EACH OTHER WHOSE COMBINED SUPPLY AIR EXCEEDS 2,000 CFM PER SECTION 609.1 OF THE 2022 CMC.
15. MECHANICAL REFRIGERATION SYSTEMS SHALL COMPLY WITH REQUIREMENTS OF SECTION 608 OF THE 2022 CFC.
16. ENVIRONMENTAL AIR DUCTS SHALL NOT TERMINATE LESS THAN 3-FT. FROM A PROPERTY LINE, 10-FT FROM A FORCED AIR INLET, 10-FT ABOVE A PUBLIC WALKWAY AND 3-FT FROM OPENINGS INTO THE BUILDING, PER 2022 CMC 502.2.1.
17. THE CONTRACTOR SHALL COORDINATE ALL CEILING ACCESS PANELS FOR SERVICING MECHANICAL EQUIPMENT/DEVICES WITH THE ARCHITECT AND INTERIOR DESIGNER AS APPLICABLE.
18. PRIOR TO ROUGH-IN OF ELECTRICAL, PROVIDE COORDINATION SHOP DRAWINGS OF T-STAT LOCATIONS TO ARCH./ENG. FOR REVIEW.
19. DUCT SEALING:
    - 19.1. DUCTWORK SHALL BE SEALED PRIOR TO DELIVERY TO JOB SITE.
    - 19.2. DUCTWORK SHALL BE SEALED DURING DELIVERY.
    - 19.3. DUCTWORK SHALL BE SEALED UPON INSTALLATION.
    - 19.4. OPENINGS INTO EQUIPMENT AND DUCTWORK SHALL BE SEALED DURING CONSTRUCTION.
20. ALL CONTROL WIRING ROUTED IN CEILING PLENUM SHALL BE CLEARLY IDENTIFIED & SECURED TO DUCTWORK OR TIGHT TO STRUCTURE TO PREVENT DAMAGE DURING FUTURE TENTANT IMPROVEMENT PROJECTS.
21. THE CONTRACTOR SHALL VERIFY ALL DIFFUSER/GRILLE/REGISTER/BORDER AND FRAME TYPES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ORDERING. COORDINATE ALL FINISHES WITH ARCHITECT.
22. ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH AN APPROVED METHOD PER THE 2022 CMC SECTION 314.1, CALGREEN AND THE ENERGY EFFICIENCY STANDARDS.
23. THROUGH-PENETRATIONS AND MEMBRANE PENETRATIONS SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM OR MEMBRANE PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, WITH MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER OR AS OTHERWISE PERMITTED BY 2022 CBC, SECTION 714. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS AND MEMBRANE PENETRATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTALLATION FOR DETAILS LISTED SYSTEMS. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS, MEMBRANE PENETRATION PROTECTION AND OTHER PERMITTED MEANS AND METHODS OF PENETRATION PROTECTION SHALL BE SUBMITTED TO THE AGENCY HAVING JURISDICTIONAL AUTHORITY FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
24. PROVIDE BALANCING VOLUME DAMPERS IN EACH BRANCH DUCT TO PROVIDE FOR COMPLETE AIR BALANCING. PROVIDE ADEQUATE ACCESS. OPPOSED BLADE DAMPERS (OBD'S) ARE NOT CONSIDERED BALANCING DAMPERS UNLESS OTHERWISE NOTED. COORDINATE ALL LOCATIONS WITH ARCHITECT'S REFLECTED CEILING PLAN WHERE REMOTE BALANCING DAMPERS ARE REQUIRED.
25. PROVIDE INTERNALLY LINED DUCTWORK FOR SUPPLY AND RETURN AIR PLENUMS ON ALL FAN COILS WITH MINIMUM ONE-INCH THICK ACOUSTICAL DUCT LINER.
26. INSTALL DIELECTRIC INSULATION WHERE COPPER PIPES CONNECT TO FERROUS PIPES, COMPONENTS AND EQUIPMENT.
27. OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN.

EQUIPMENT ANCHORAGE AND SYSTEM BRACING

1. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CALIFORNIA BUILDING CODE REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10, SECTION 13.6 AND TABLE 13.6-1.
   - a. ALL PERMANENT EQUIPMENT AND COMPONENTS.
   - b. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICE SUCH AS ELECTRICITY, GAS OR WATER.
   - c. MOVABLE EQUIPMENT WHICH IS STATION IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.
2. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT TO BE DETAILED ON PLAN. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
   - a. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE 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 HUNG FROM WALL.
3. FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE INSTALLED PER SMACNA GUIDELINES AND/OR MANUFACTURER'S RECOMMENDATIONS.
4. SEISMIC ANCHORAGE OF EQUIPMENT AND BRACING OF PIPING/DUCTWORK SYSTEMS SHALL BE PROVIDED IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10, SECTION 13.6 AND TABLE 13.6-1.

APPLICABLE CODES

2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA ELECTRICAL CODE
2022 CALIFORNIA FIRE CODE
2022 CALIFORNIA ENERGY STANDARDS
2022 CAL GREEN CODE
ALL OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #3

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Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

REGISTERED PROFESSIONAL ENGINEER
JIWAN TANG
No. M29973
EXP. 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: M00.1
SHEET TITLE:

LEGEND, ABBREVIATIONS & NOTES

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PLAN CHECK #00856737-CNEW

SPLIT SYSTEM HEAT PUMP

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	AMBIENT TEMPERATURE DB (°F)	EER2	SEER2	HSPF2	REFRIGERANT	COOLING	HEATING	ELECTRICAL CONNECTION						FC TAG	VIBRATION ISOLATION TAG	DETAIL REFERENCE	CONTROL DIAGRAM	OPERATING WEIGHT (LBS)	REMARKS
									TYPE	TOTAL CAPACITY (BTU/HR)	OUTPUT CAPACITY (BTU/HR)	MCA (A)	MOCP (A)	VOLTAGE (V)	PHASE	HERTZ (HZ)	SCCR (KA)	EMERGENCY POWER (YES/NO)						
HP	1	CARRIER	27SPA618A003	HOTELING AREA 102	105	12	14.5	7.5	R-454B	16170	17400	10.9	15	208	1	60	5	NO	FC-1	VI-2	5/M50.1	1/M60.1	220	PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5).
HP	2	CARRIER	27SPA636A003	OFFICE, CONFERENCE, COMMON AREA	105	12	14.5	7.5	R-454B	32650	34470	19.2	30	208	1	60	5	NO	FC-2	VI-2	5/M50.1	1/M60.1	250	PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5).
HP	3	CARRIER	RAV-BP241AT2P	IT - 110	105	11.8	22.7	-	R-454B	24000	-	17	25	208	1	60	5	NO	FC-3	VI-2	4/M50.1	2/M60.1	150	PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5). DISABLE HEATING FUNCTION.
HP	4	CARRIER	27SPA618A003	BREAK RM 112	105	12	14.5	7.5	R-454B	16170	17400	10.9	15	208	1	60	5	NO	FC-4	VI-2	5/M50.1	1/M60.1	220	PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5).

SPLIT SYSTEM FAN COIL

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	MIN OA (CFM)	SUPPLY FAN		COOLING COIL					ELECTRICAL POWER CONNECTIONS (#)	ELECTRICAL CONNECTION 1							CONDENSATE CONNECTION		CU TAG	VIBRATION ISOLATION TAG	DETAIL REFERENCE	CONTROL DIAGRAM	OPERATING WEIGHT (LBS)	REMARKS
						AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (IN WG)	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)		MOTOR (HP)	MCA	MOCP	VOLTAGE (V)	PHASE	HERTZ (HZ)	EMERGENCY POWER (YES/NO)	QTY	SIZE (IN)						
FC	1	CARRIER	FJSANXA18L00	HOTELING AREA 102	100	600	0.5	16170	12900	80	67	60.1	58.35	1	1/3	3.6	15	208	1	60	NO	1	3/4	HP-1	VI-1	3/M50.1	1/M60.1	140	PROVIDE WITH PROGRAMMABLE THERMOSTAT. CONDENSATE PUMP REQUIRES 120V/1PH POWER SUPPLY, AND FACTORY FILTER RACK WITH 2" MERV-13 FILTERS. PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5). ROUTING.
FC	2	CARRIER	FJSANXA36L00	OFFICE, CONFERENCE, COMMON AREA	290	1200	0.5	32650	25530	80	67	59.68	57.96	1	1/2	5.3	15	208	1	60	NO	1	3/4	HP-2	VI-1	3/M50.1	1/M60.1	170	PROVIDE WITH PROGRAMMABLE THERMOSTAT. CONDENSATE PUMP REQUIRES 120V/1PH POWER SUPPLY, AND FACTORY FILTER RACK WITH 2" MERV-13 FILTERS. PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5). ROUTING.
FC	3	CARRIER	RAV-HB241KRTP	IT - 110	-	530	-	24000	24000	-	-	-	-	1	POWERED FROM OUTDOOR CONDENSING UNIT							1	3/4	HP-3	-	4/M50.1	2/M60.1	40	PROVIDE WITH PROGRAMMABLE THERMOSTAT. CONDENSATE PUMP REQUIRES 120V/1PH POWER SUPPLY. PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5). ROUTING.
FC	4	CARRIER	FJSANXA18L00	BREAK RM 112	200	600	0.5	16170	12900	80	67	60.1	58.35	1	1/3	3.6	15	208	1	60	NO	1	3/4	HP-4	VI-1	3/M50.1	1/M60.1	140	PROVIDE WITH PROGRAMMABLE THERMOSTAT. CONDENSATE PUMP REQUIRES 120V/1PH POWER SUPPLY, AND FACTORY FILTER RACK WITH 2" MERV-13 FILTERS. PROVIDE A2L NAMEPLATE WITH REFRIGERANT INDICATION (ASHRAE 15.7.6.2.1). INTEGRAL REFRIGERANT LEAK DETECTION AND DISSIPATION SYSTEM ON THE FAN COIL (ASHRAE 15.9.12.5). REFRIGERANT STOP VAVLVES AT SUCTION INLET AND DISCHARGE OUTLET OF COMPRESSORS (ASHRAE 15.9.12.5). ROUTING.

EXHAUST FANS

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	TYPE	CLASS	DRIVE TYPE	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (IN WG)	EXTERNAL STATIC PRESSURE + ACCESSORIES (IN WG)	EFFICIENCY (%)	FAN SPEED (RPM)	MOTOR ENCLOSURE	MOTOR (BHP)	ELECTRICAL CONNECTION					VIBRATION ISOLATION TAG	DETAIL REFERENCE	CONTROL DIAGRAM	OPERATING WEIGHT (LBS)	REMARKS
															MOTOR (HP)	VOLTAGE (V)	PHASE	HERTZ (HZ)	EMERGENCY POWER (YES/NO)				
EF	1	GREENHECK	SQ-130-VG	LANDSCAPE MECH SHOP-111	INLINE	1	DIRECT	1400	0.5	0.64	46	1367	ODP	0.31	3/4	120	1	60	NO	VI-1	2/M50.1	5/M60.1	90	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	2	GREENHECK	SQ-100-VG	FACILITY MAINTENANCE-114	INLINE	1	DIRECT	800	0.5	0.648	57	1460	TENV	0.14	1/4	120	1	60	NO	VI-1	2/M50.1	5/M60.1	70	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	3	GREENHECK	SQ-100-VG	COMMUNITY SERVICE-115	INLINE	1	DIRECT	700	0.5	0.613	58	1381	TENV	0.12	1/4	120	1	60	NO	VI-1	2/M50.1	5/M60.1	70	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	4	GREENHECK	SP-LP0511	CUST./STOR.-121	CEILING	1	DIRECT	80	0.25	0.25	-	773	TEAO	11 WATTS	11 WATTS	120	1	60	NO	-	1/M50.1	5/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	5	PANASONIC	FV-1115VK2	RESTROOM-121	CEILING	1	DIRECT	120	0.25	0.25	8.6 CFM/WATT	895	ENCLOSED	14 WATTS	0.33 A	120	1	60	NO	-	1/M50.1	4/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET. PROVIDE "PLUG N PLAY" MODULES: MULTI SPEED WITH TIME DELAY.
EF	6	PANASONIC	FV-1115VK2	RESTROOM-120	CEILING	1	DIRECT	120	0.25	0.25	8.6 CFM/WATT	895	ENCLOSED	14 WATTS	0.33 A	120	1	60	NO	-	1/M50.1	4/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET. PROVIDE "PLUG N PLAY" MODULES: MULTI SPEED WITH TIME DELAY.
EF	7	PANASONIC	FV-1115VK2	GNRR-105	CEILING	1	DIRECT	120	0.25	0.25	8.6 CFM/WATT	895	ENCLOSED	14 WATTS	0.33 A	120	1	60	NO	-	1/M50.1	4/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET. PROVIDE "PLUG N PLAY" MODULES: MULTI SPEED WITH TIME DELAY.
EF	8	GREENHECK	SP-A90	CUST./STOR.-106	CEILING	1	DIRECT	80	0.25	0.25	-	773	TEAO	11 WATTS	11 WATTS	120	1	60	NO	-	1/M50.1	5/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	9	PANASONIC	FV-0511VK2	BREAK RM-107	CEILING	1	DIRECT	70	0.25	0.25	8.5 CFM/WATT	1112	ENCLOSED	8.5 WATTS	0.2 A	120	1	60	NO	-	1/M50.1	5/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET. PROVIDE "PLUG N PLAY" MODULES: MULTI SPEED WITH TIME DELAY.
EF	10	GREENHECK	SP-A90	CHANGE ROOM - 108	CEILING	1	DIRECT	80	0.25	0.25	-	773	TEAO	11 WATTS	11 WATTS	120	1	60	NO	-	1/M50.1	5/M60.1	15	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.
EF	11	GREENHECK	SQ-70-VG	ELECTRICAL RM - 109	INLINE	1	DIRECT	160	0.25	0.285	25	1540	TENV	0.03	1/15	120	1	60	NO	VI-1	2/M50.1	3/M60.1	50	PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN AT DISCHARGE OUTLET.

VIBRATION ISOLATION

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	DEFLECTION (IN.)	TYPE	REMARKS
VI	1	M.W. SAUSSE	RMXA	FC-1,2,4, EF-1,2,3,11	1	HANGER	
VI	2	M.W. SAUSSE	EVAPG-EQ	CU-1,2,3,4	-	R-PAD	

*MINIMUM HANGER SIZES FOR ROUND DUCT				
DIA. [IN.]	MAXIMUM SPACING [FT.]	WIRE DIA. [GA.]	ROD [IN.]	STRAP [GA]
10	12	(1) 12 GA	1/4	1"x22
11–18	12	(2) 12 GA –OR– (1) 8 GA	1/4	1"x22
19–24	12	(2) 10 GA	1/4	1"x22
25–36	12	(2) 8 GA	3/8	1"x20
37–50	12	——	3/8	(2)1"x20
51–60	12	——	3/8	(2)1"x18
61–84	12	——	3/8	(2)1"16
85–96	12	——	1/2	(2)1–1/2"x16

NOTES:

1. *SMACNA – HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE THIRD EDITION.
2. STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED STEEL. ALL ARE ALTERNATIVES.
3. TABLE ALLOWS FOR CONVENTIONAL WALL THICKENESS, AND JOINT SYSTEMS PLUS ONE LB./S.F. INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS; SEE ALLOWABLE LOADS WITH TABLE 5–1. HANGER SPACING MAY BE ADJUSTED BY SPECIAL ANALYSIS.

*APPROXIMATE WEIGHT – ROUND DUCT IN PER LINEAL FOOT				
DIA. \ GA.	18S	18L	16S	16L
6	3.7	3.66	5.0	4.51
8	4.8	4.79	6.7	5.9
9	5.3	5.36	7.5	6.6
10	6.0	5.92	8.3	7.29
12	7.2	7.05	10.0	8.68
14	8.3	8.19	11.7	10.08
16	9.4	9.32	13.4	11.47
18	10.5	10.45	15.0	12.86

NOTES:

1. *SMACNA – HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE THIRD EDITION.
2. LINER AND/OR EXTERIOR INSULATION WEIGHT EXCLUDED.
3. BASED ON GALVANIZED STEEL. INVESTIGATE TOLERANCES FOR CLOSER ESTIMATES.
4. S = SPIRAL DUCT – FROM MANUFACTURERS PUBLISHED TABLES. L = LONGITUDINAL SEAMS WITH 1–1/2" SEAM ALLOWANCE.

2 in. wg Static Pos. or Neg. Duct Dimension	No Reinforcement Required	Reinforcement Code for Duct Gage Number – Reinforcement Spacing Options							
		10 ft	8 ft	6 ft	5 ft	4 ft	3 ft	2½ ft	2 ft
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
10 in. and under	26 ga.	Not Required							
11 – 12 in.	26 ga.								
13 – 14 in.	24 ga.			B-26	B-26	B-26	B-26	B-26	B-26
15 – 16 in.	24 ga.			C-26	C-26	C-26	C-26	B-26	B-26
17 – 18 in.	22 ga.			C-26	C-26	C-26	C-26	C-26	B-26
19 – 20 in.	20 ga.		C-22	C-24	C-26	C-26	C-26	C-26	C-26
21 – 22 in.	18 ga.		D-22	D-24	D-26	D-26	C-26	C-26	C-26
23 – 24 in.	18 ga.		E-22	E-24	D-26	D-26	D-26	C-26	C-26
25 – 26 in.	18 ga.		E-22	E-22	E-24	D-26	D-26	C-26	C-26
27 – 28 in.	18 ga.		F-20	E-20	E-22	E-24	D-26	D-26	C-26
29 – 30 in.	18 ga.		F-20	F-20	E-22	E-24	D-26	D-26	D-26
31 – 36 in.	16 ga.		G-18	G-20	F-22	F-24	E-24	E-26	D-26
37 – 42 in.			H-16	H-18	G-20	G-22	F-24	E-24	E-26
43 – 48 in.				I-18	H-20	H-22	G-22	F-24	F-24
49 – 54 in.				I-16G	I-18G	H-20G	H-20G	G-24	F-24
55 – 60 in.					I-18G	I-20G	H-20G	G-22	G-24
61 – 72 in.		Not Designed			J-16H	J-18H	I-20G	H-22G	H-24
73 – 84 in.						J-16H	I-20G	I-20G	I-22G
85 – 96 in.							J-18H	I-18H	I-20H
97 – 108 in.							K-16I	K-18H	J-18H
109 – 120 in.								K-16I	K-18I

Table 2–3 Rectangular Duct Reinforcement

NOTES:

1. FROM SMACNA 006-2006 HVAC DUCT CONSTRUCTION STANDARDS, 3RD EDITION.
2. FOR GALVANIZED STEEL.

4 in. wg Static Pos. or Neg. Duct Dimension	No Reinforcement Required	Reinforcement Code for Duct Gage Number – Reinforcement Spacing Options							
		10 ft	8 ft	6 ft	5 ft	4 ft	3 ft	2½ ft	2 ft
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
8 in. and under	24 ga.	Not Required		B-26	B-26	B-26	B-26	B-26	B-26
9 – 10 in.	22 ga.			B-24	B-26	B-26	B-26	B-26	B-26
11 – 12 in.	22 ga.		B-24	C-24	C-26	C-26	C-26	B-26	B-26
13 – 14 in.	20 ga.		C-22	C-22	C-24	C-26	C-26	C-26	C-26
15 – 16 in.	20 ga.		D-22	D-22	C-24	C-26	C-26	C-26	C-26
17 – 18 in.	18 ga.		D-22	D-22	D-24	D-26	C-26	C-26	C-26
19 – 20 in.	18 ga.		E-20	E-22	E-24	D-24	D-26	C-26	C-26
21 – 22 in.	18 ga.		E-20	E-20	E-24	E-24	D-26	D-26	C-26
23 – 24 in.	18 ga.		F-20	F-20	E-22	E-24	E-26	D-26	D-26
25 – 26 in.	16 ga.	G-18	G-18	F-20	F-22	E-24	E-26	E-26	D-26
27 – 28 in.	16 ga.	H-18G	G-18	G-20	F-22	F-24	E-26	E-26	D-26
29 – 30 in.	16 ga.	H-18G	H-18G	G-18	G-22	F-24	E-26	E-26	E-26
31 – 36 in.		J-16H	I-16G	H-18G	H-20	G-22	F-24	F-26	E-26
37 – 42 in.			J-16H	I-16G	I-18G	H-20G	G-22	G-24	F-26
43 – 48 in.				J-16H	I-18G	I-18G	H-22G	H-24G	G-24
49 – 54 in.				J-16H	I-18H	I-18G	I-20G	H-22G	H-24G
55 – 60 in.					J-16I	I-18H	I-20G	I-22G	H-24G
61 – 72 in.		Not Designed				K-16H	J-18H	I-20H	I-22G
73 – 84 in.							K-16I	J-18I	I-20H
85 – 96 in.							L-16I	K-18I	J-20I
97 – 108 in.							L-16I	L-18I	L-18I
109 – 120 in.							L-16I	L-18I	L-18J

Table 2–5 Rectangular Duct Reinforcement

NOTES:

1. FROM SMACNA 006-2006 HVAC DUCT CONSTRUCTION STANDARDS, 3RD EDITION.
2. FOR GALVANIZED STEEL.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
TIWAN TANG
No. M29973
EXP. 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: M00.2

SHEET TITLE: EQUIPMENT SCHEDULES

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
This document is used to demonstrate compliance with mandatory requirements in 110.8(g) and 120.7(b)/ 160.1 for newly constructed nonresidential, hotel/ motel, multifamily and mixed-use buildings, and 141.0(b)1/ 180.2 for alterations, related to roof, wall and floor assemblies. It is also used to demonstrate compliance with prescriptive requirements in 140.3/ 170.2 for newly constructed buildings, and 141.0/ 180.1/ 180.2 for additions and alterations, related to roof, wall, floor, door, fenestration and daylighting requirements.		
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 1 of 9)**
Project Address:	**Date Prepared:**	2025-09-09T21:24:42-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	05	# of Stories (Habitable Above Grade)	1
02	Zipcode	92618	06	Total Conditioned Floor Area (ft²)	1537
03	Climate Zone	8	07	Total Unconditioned Floor Area (ft²)	4780
04	Occupancy Types Within Project: (select all that apply): If one occupancy constitutes >= 80% of the conditioned floor area, the entire building envelope may be designed to comply with the provisions of that occupancy per 100.0(f).		08	☐ Project includes unconditioned enclosed space(s) > 5,000 ft² under a roof with a ceiling height of at least 15 ft. [1]	

• Office

[1] FOOTNOTE: Enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15 ft in climate zones 2 through 15 are required to meet the minimum daylighting requirements defined in 140.3(c)/ 170.2(b). Compliance with 140.3(c)/ 170.2(b) is documented in Table L. This is the only prescriptive requirement which applies to unconditioned spaces.

B. PROJECT SCOPE

This table specifies project envelope components within the permit application demonstrating compliance using the prescriptive paths outlined in 140.3/ 170.2 and 141.0(a)1/ 180.1 and 141.0(b)1 and 2/ 180.2 for additions and alterations.

My project consists of (check all that apply) 01	Component Types 02			
☒ New Construction or Newly Conditioned Space	☒ Roof	☒ Walls	☒ Exterior Opaque Doors	
☐ One or more enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15ft		☐ Floors	☒ Fenestration/ Glazed Doors[1]	
☐ Addition of conditioned space	☐ Roof	☐ Walls	☐ Exterior Opaque Doors	
☐ One or more enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15ft				
☐ Addition is <=700 ft²		☐ Floors	☐ Fenestration/ Glazed Doors[1]	
☐ Addition is >700 ft²				
☐ Alteration of conditioned space	☐ Roof Assembly	☐ Walls		
☐ One or more enclosed spaces > 5,000 ft² directly under roof with ceiling height > 15ft and lighting system installed for the first time	☐ Roofing Material [2]	☐ Floors	☐ Fenestration	

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STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 2 of 9)**
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B. PROJECT SCOPE

[1]FOOTNOTE: Doors that are more than 25% glass in area are considered Glazed Doors and should be documented on table K with fenestration.
[2]Roof recovers and replacements must also check "Roof Assembly" box and document compliance with insulation requirements in Table F. Roof recoats may document compliance with roof material only in Table G.

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through L. 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.

Opaque Envelope Components: Roof Assembly	Roofing Materials	Walls	Floors	Doors	Fenestration	Daylighting Spaces > 5,000ft²	Compliance Results
01	02	03	04	05	06	07	08
(See Table F)	(See Table G)	(See Table H)	(See Table I)	(See Table J)	(See Table K)	(See Table L)	COMPLIES with Exceptional Conditions
Yes	Yes	Yes		Yes	Yes		

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Additional documentation for any assembly complying using "Approved Software" or "Other per JA4.1.2.1" to calculate design thermal performance may be requested by the plans examiner.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. ROOF ASSEMBLY SCHEDULE

This table demonstrates compliance for prescriptive roof assembly requirements in 140.3(a)1B/ 170.2(a)1B for new construction, 141.0(a)/ 180.1 for additions, or 141.0(b)2Biii/ 180.2 for alterations,

01	Indicate roof types included in the project:	☒ Framed	☐ Framed-Multifamily	☐ SIPS	☐ Span Deck & Concrete	☐ Metal Panels	☐ Metal Building

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F. ROOF ASSEMBLY SCHEDULE

Framed Roof Assemblies

01	☐	Include Framed Roof Assemblies in Area-Weighted Average U-factor Calculation [1]			
02	03	04	05		06
Tag/Plan Detail ID	Name/Description	Status	Exception to Roof Insulation Requirements in §141.0(b)2Biii (Alts. Only)		Occupancy Type
Roof	Roof	New			Nonresidential/ Relocatable 1 CZ

07	08	09	10	11	12	13	14	15		16
Tag/Plan Detail ID	How Design U-factor was determined	Roof Type & Frame Material	Frame Spacing Depth	Cavity Insulation per Design [2]	Continuous Insulation per Design [2]	Thermal Performance Unit	Required Thermal Performance [3]	U-factor per Design		Net Area [4] ft²
Roof	Other per JA4.1.2.1	Metal Rafter		0	35	U-factor	0.049	per JA4		
								per Software/ Other	0.026	

[1]FOOTNOTES: If any individual assembly is non-compliant, assemblies may show compliance using an area-weighted calculation. Metal building roofs may not be combined with other roof types. The area-weighted compliance option is not available for alterations demonstrating compliance with R-values in Table 141.0-C.
[2] For alterations using U-factor as the Thermal Performance Unit, at least R-10 insulation must be above deck.
[3] If "R-value" is shown in cell 13 as the Thermal Performance Unit, the R-value shown here is for continuous insulation per Table 141.0-C.
[4] Roof area minus any fenestration/ skylight area

G. RATED ROOFING MATERIAL (COOL ROOF)

This table demonstrates compliance with prescriptive roof material requirements in 140.3(a)1A/ 170.2(a)1A for new construction, 141.0(a)/ 180.1 for additions, and 141.0(b)2B/ 180.2 for alterations. Roof recovers and replacements must also document compliance with insulation requirements in Table F. Roof recoats may document compliance with roof material only in Table G.

01	02	03	04	05	06	07	08	09	10
Tag/Plan Detail ID	Name/ Description/ Location	Status	Occupancy Type	Roof Slope	Roof Material	Compliance Method	Required Minimum Material Performance	Designed Material Performance	U-factor / R-value of Assembly

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G. RATED ROOFING MATERIAL (COOL ROOF)

Roof	Roof	New	Nonresidential	Low slope	Polymer composite steep slope	Aged solar reflectance and thermal emittance	Reflectance	0.63	Reflectance[1]	0.63	
							Emittance	0.75	Emittance	0.75	
							SRI		SRI		

H. WALL ASSEMBLY SCHEDULE

This table demonstrates compliance with prescriptive wall assembly requirements in 140.3(a)/ 170.2(a) for new constructions, 141.0(a)/ 180.1 for additions and 141.0(b)1B/ 180.2 for alterations.

01	Indicate wall types included in the project: [1]	☒ Framed	☒ Mass (new only)	☐ Concrete Sandwich Panel (new only)	☐ SIPS	☐ ICF (new only)
		☐ Metal Panels	☐ Metal Building	☐ Spandrel/ Curtain Wall	☐ Straw Bale	☐ Log Home (new only)

[1] FOOTNOTES: Wall types indicated above as "(new only)" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and should be clicked above and compliance demonstrated within this table.

Framed Walls

01	☐	Calculate Area-Weighted Average U-factor for Metal Framed Walls [1]
02	☐	Include Wood Framed Walls in Area-Weighted Average U-factor Calculation [1]

03	04	05	06	07	08	09	10	11	12		13
Tag/Plan Detail ID	Occupancy & Status	How Design U-factor was determined	Location/ Fire Rating	Frame Material, Spacing & Depth	Cavity Insulation per Design	Continuous Insulation per Design	Thermal Performance Unit	Required Thermal Performance	U-factor per Design		Net Area [3] ft²
Wall	Nonresidential/ Relocatable 1 CZ: New	JA4 Tables	Exterior wall	Metal 16" OC 2x6	R-19	R-14	U-factor	0.055	per JA4	0.051	
									per Software/ Other		

[1]FOOTNOTES: If any individual assembly is non-compliant, assemblies may show compliance using an area-weighted calculation. Metal framed walls may not be combined with other wall types. Wood framed walls are combined with SIPS, spandrel & curtain, metal panel and straw bale wall types. The area-weighted compliance option is not available for alterations demonstrating compliance with R-values in Table 141.0-C.
[2] If "R-value" is shown in cell 10 as the Thermal Performance Unit, the R-value shown here is for cavity insulation per 141.0(b)1B.
[3] Wall area minus any fenestration area

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H. WALL ASSEMBLY SCHEDULE

Mass Walls (new walls only)

01	☐	Calculate Area-Weighted Average U-factor for Mass Walls [1]

02	03	04	05	06	07	08	09	10	11		12
Tag/Plan Detail ID	Occupancy Type	How Design U-factor was determined	Mass Information: Mass Material	Fill Options	Thickness (in)	Additional Insulation Information: Frame Material & Thickness	Cavity Insulation per Design	Maximum U-factor Allowed[2]	U-factor per Design		Net Area [3] ft²
Wall	Nonresidential/ Relocatable 1 CZ	JA4 Tables	CMU normal weight	Solid Grout	8 in			0.69	per JA4	0.69	
									per Software/ Other		

[1]FOOTNOTES: If any individual assembly is non-compliant, assemblies may show compliance using an area-weighted calculation. Mass walls are combined with concrete sandwich panel, log and ICF wall types. Mass walls must meet mandatory requirements in 120.7(b), but may area-weight to comply with prescriptive requirements in Table 140.3 for new construction.
[2] Mass walls are defined as "light" or "heavy" depending on their Heat Capacity. Heat Capacity is determined in Tables 4.3.5 and 4.3.6 in Joint Appendix 4. Walls with Heat Capacity of 15 or greater are "heavy" while walls with Heat Capacity from 7 to less than 15 are "light". Walls with heat capacity less than 7 would be categorized as "Wood framed and Other" for compliance purposes.
[3] Wall area minus any fenestration area

I. FLOOR ASSEMBLY SCHEDULE

This section does not apply to this project.

J. EXTERIOR DOOR SCHEDULE

This table demonstrates compliance with prescriptive exterior door requirements in 140.3(a)7/ 170.2(a)4 for new construction or additions. Doors which are being replaced (alterations) do not need to be documented in this table because there are no Title 24, Part 6 requirements that apply. Exterior doors separate conditioned space from unconditioned space or from ambient air. Doors that are more than 25% glass in area are considered Glazed Doors and should be documented on Table K with fenestration per Table B.

01	02	03	04	05	06	07

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STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 6 of 9)**
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J. EXTERIOR DOOR SCHEDULE

Tag/Plan Detail ID	Name/Description	Occupancy Type	Door Type	Door Insulation	Maximum Allowed U-factor	U-factor per Design	
109	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5
111B	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5
112A	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5
112B	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5
A112D	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5
128	A11.1	Nonresidential	Swinging	Insulated metal swing doors	0.7	per JA4	0.5

K. FENESTRATION AND GLAZED DOOR SCHEDULE

This table demonstrates compliance with prescriptive fenestration requirements in 140.3(a)5/ 170.2(a)3 for new constructions, 141.0(a)/ 180.1 for additions, or 141.0(b)2A/ 180.2 for alterations. Exterior doors that are more than 25% glass in area are considered Glazed Doors and should be documented on this table with fenestration.

01	Indicate fenestration types included in the project: [1]	☐ Vertical (alterations)	☒ Vertical (new)	☐ Skylights	☐ Glazed Doors (new only)

[1] FOOTNOTES: Fenestration types indicated above as "(new only)" do not have Title 24, Part 6 requirements for alterations. New construction and additions do have requirements and should be clicked above and compliance demonstrated within this table.

Vertical Fenestration and Glazed Doors- Total Building & West Facing Area (New Construction & Additions Only)

01	02	03	04	05
Elevation Item Tag/ Description	Orientation (Azimuth)[1]	Gross Exterior Wall Area[2] (ft²)	Display Perimeter Length[2] (ft)	Vertical Fenestration Area per Design[3] (ft²)
S Window	South Facing	1080	0	172.5
W Window	West Facing	247.5	0	96

06	Maximum Allowed Vertical Fenestration (ft²)- All Orientations	531	07	Total Vertical Fenestration (ft²) per design- All Orientations	268.5
08	Maximum Allowed Vertical Fenestration (ft²)- West Facing	99	09	Total Vertical Fenestration (ft²) per design- West Facing	96

[1]FOOTNOTES: Orientation between 226 deg and 315 deg are considered "West Facing". A diagram has been provided in the Nonresidential Compliance Manual for visual reference.
[2]Do not include demising walls per 140.3(a)5 .
[3] Includes glazed door fenestration area .

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STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
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K. FENESTRATION AND GLAZED DOOR SCHEDULE

Vertical Fenestration And Glazed Doors- U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)

01	☐	Calculate Area-Weighted Average U-factor for Vertical Fenestration and Glazed Doors[1]
02	☐	Calculate Area-Weighted Average (R)SHGC for Vertical Fenestration and Glazed Doors[1]
03	☐	Calculate Area-Weighted Average VT for Vertical Fenestration and Glazed Doors[1]

Vertical Fenestration And Glazed Doors- U-factor, Solar Heat Gain Coefficient (RSHGC/ SHGC), Visible Transmittance (VT)

04	05	06	07	08	09	10	11	12	13
Tag/Plan Detail ID	Fenestration Type	Occupancy & Status	U-factor/ (R)SHGC Compliance Method	VT Compliance Method	Calculation Method for Performance Values per Design[2]	Product Performance Unit	Required Product Performance	Product Performance per Design	Area ft²
Window	Fixed window	Nonresidential/ Relocatable 1 CZ: : New	Table 140.3-B/C/D	Table 140.3-B/C/D	NFRC Certified	U-factor (max)	0.36	0.36	268.5
					☐ Overhang/ Slats used for RSHGC	(R)SHGC (max)	0.25	0.25	
						VT (min)	0.42	0.42	
Door 102	Glazed door	Nonresidential/ Relocatable 1 CZ: : New	Table 140.3-B/C/D	Table 140.3-B/C/D	NFRC Certified	U-factor (max)	0.45	0.45	
					☐ Overhang/ Slats used for RSHGC	(R)SHGC (max)	0.23	0.23	
						VT (min)	0.17	0.17	

[1]FOOTNOTES: If any individual fenestration product is non-compliant, products may show compliance using an area-weighted calculation. Chromogenic glazing is not included in area-weighted calculations. Area-weighted calculation shown in separate area-weighted table below.
[2]The NA6 Default Calculation can only be used for alterations or dwelling units in buildings with <= 3 habitable stories. Alterations are limited to 200ft² of site built glazing and dwelling units are limited to 250ft² or 5% of conditioned floor area. If the fenestration does not meet these conditions, the only options for determining fenestration values are NFRC Certification or the Default Tables in 110.6.
[3] Overhangs must extend past the left and right window the same distance as the depth of the overhang or greater to show an affect on the RSHGC. If an overhang does not meet this requirement, the affect of the overhang will be ignored.
[4]Projecting includes casement and awning windows.

L. DAYLIGHT IN LARGE ENCLOSED SPACES

This section does not apply to this project.

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STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 8 of 9)**
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M. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection 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

Form/Title
NRCI-ENV-01-E - Must be submitted for all buildings

N. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, form user must provide an explanation in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4. Individuals who perform the field testing and verification work, and provide the information required for completion of the fenestration Certificate of Acceptance documentation are not required to be licensed professionals. However, the person who signs the Certificate of Acceptance document to certify compliance with the acceptance requirements shall be licensed as specified in Standards Section 10-103(a)4 and NA7.3.1

Form/Title	Systems/Spaces To Be Field Verified
NRCA-ENV-02-F must be submitted for all new, added or altered site built fenestration.	Window; Door 102

O. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no forms required for this project.

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STATE OF CALIFORNIA
Envelope Component Approach
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ENV-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 9 of 9)**
Project Address:	**Date Prepared:**	2025-09-09T21:24:42-04:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: WSP	Documentation Author Signature:
Company: wsp	Signature Date: 09/09/2025
Address: 15231 LAGUNA CANYON ROAD, SUITE 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: IRVINE, CA 92618	Phone: 949-751-5800

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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: TJWAN TANG	Responsible Designer Signature:
Company: WSP	Date Signed: 09/09/2025
Address: 15231 LAGUNA CANYON ROAD, SUITE 100	License: M29973
City/State/Zip: IRVINE, CA 92618	Phone: 949-751-5800

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STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
This document is used to demonstrate compliance for mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, or 141.0(b)2 for alterations.		
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 1 of 13)**
Project Address:	**Date Prepared:**	2025-09-10T03:00:52-04:00

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	04	Total Conditioned Floor Area	1537
02	Climate Zone	8	05	Total Unconditioned Floor Area	4780
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

• Office

B. PROJECT SCOPE

This table Includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterations.

01 Air System(s)	02 Wet System Components	03 Dry System Components
☒ Heating Air System	☐ Water Economizer	☐ Air Economizer
☒ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ System Piping	☐ Fan Systems
☒ Mechanical Controls (existing to remain, altered or new)	☐ Cooling Towers	☒ Ductwork (existing to remain, altered or new)
	☐ Chillers	☒ Ventilation
	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

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STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 2 of 13)**
	Date Prepared:	2025-09-10T03:00:52-04:00

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance.

01		02		03		04		05		06		07		08	09
System Summary 110.1, 110.2, 140.4, 170.2(c)	AND	Pumps 140.4(k), 170.2(c)4I	AND	Fans/ Economizers 140.4(c), 140.4(e), 170.2(c)	AND	System Controls 110.2, 120.2, 140.4(f), 170.2(c)	AND	Ventilation 120.1, 160.2	AND	Terminal Box Controls 140.4(d), 170.2(c)4B	AND	Distribution 120.3, 140.4(l), 160.2, 160.3	AND	Cooling Towers 110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes	AND		AND		AND	Yes	AND	Yes	AND		AND	Yes	AND		COMPLIES
Mandatory Measures Compliance (See Table Q for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Space Conditioning System Information

01	02	03	04	05	06
System Name	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
HP-1 / FC-1	1	Single zone	New/ Addition	Office	☐
HP-2 / FC-2	1	Single zone	New/ Addition	Office	☐
HP-3 / FC-3	1	Single zone	New/ Addition	All Other Occupancies	☐
HP-4 / FC-4	1	Single zone	New/ Addition	Office	☐

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STATE OF CALIFORNIA
Mechanical Systems
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Irvine Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 3 of 13)**
	Date Prepared:	2025-09-10T03:00:52-04:00

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces and unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
				Equipment Sizing per Mechanical Schedule (kBtu/h) 140.4(a&b), 170.2(c)1 & 170.2(c)2						
				Heating Output [2,3]			Cooling Output [2,3]		Load Calculations [3,4]	
Name or Item Tag	Equipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aii	Equipment Type per Tables 110.2 and Title 20	Smallest Size Available [1] 140.4(a) and 170.2(c)1	Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)
HP-1 / FC-1	Unitary Heat Pumps	Air-cooled, split (1phase)	Yes	17,400	17,400	0	12,690	16,170	17400	12,690
HP-2 / FC-2	Unitary Heat Pumps	Air-cooled, split (1phase)	Yes	34,470	34,470	0	25,530	32,650	34470	25,530
HP-3 / FC-3	Unitary AC/ Condensers	AC, air cooled, split (1 phase)	Yes				24,000	24,000		24,000
HP-4 / FC-4	Unitary Heat Pumps	Air-cooled, split (1phase)	Yes	17,400	17,400	0	12,690	16,170	17400	12,690

[1]FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per 140.4(a) and 170.2(c)1. Healthcare facilities are excepted.
[2]It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.
[3] If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.
[4] Authority Having Jurisdiction may ask for load calculations used for compliance per 140.4(b) and 170.2(c).

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
HP-1 / FC-1	<65,000		HSPF2	7.5	7.5	SEER2	14.3	14.5
HP-2 / FC-2	<65,000		HSPF2	7.5	7.5	SEER2	14.3	14.5

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TITLE-24 MANDATORY MEASURES

1. ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE COMMISSION, AS SPECIFIED IN THOSE REGULATIONS, THAT THE APPLIANCE COMPLIES WITH THE APPLICABLE STANDARD FOR THAT APPLIANCE.
2. DUCTING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH THE SECTIONS 120.3, 120.4, 120.7 OF TITLE 24 ENERGY EFFICIENCY STANDARDS, CHAPTER 6 OF THE 2022 CMC, AND ALL CODES HAVING JURISDICTION.
3. ALL HVAC SYSTEMS SHALL MEET THE EFFICIENCY AND CONTROL REQUIREMENTS PER SECTION 110.2 AND 120.2 E.E.S.
4. ALL HVAC EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS PER SECTION 110.1-110.3, 110.5, 120.1-120.4 TITLE-24 ENERGY STANDARDS.
5. EACH SPACE CONDITIONING SYSTEM SHALL BE INSTALLED WITH AN AUTOMATIC TIME SWITCH WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOW OPERATION OF THE SYSTEM DURING OFF-HOURS FOR UP TO 4 HOURS. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS AND WEEKENDS, INCORPORATE AN AUTOMATIC HOLIDAY "SHUT-OFF" FEATURE THAT TURNS OFF ALL LOADS FOR AT LEAST 24 HOURS, THEN RESUMES THE NORMALLY SCHEDULED OPERATION, AND HAS PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICE'S PROGRAM AND TIME SETTING FOR AT LEAST 10 HOURS IF POWER IS INTERRUPTED.
6. EACH SPACE CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT TEMPORARILY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN A SETBACK HEATING AND COOLING THERMOSTAT SETPOINT.
7. EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE. WHERE USED TO CONTROL HEATING, THE CONTROL SHALL BE ADJUSTABLE DOWN TO 55°F OR LOWER. FOR COOLING, THE CONTROL SHALL BE ADJUSTABLE UP TO 85°F OR HIGHER. WHERE USED TO CONTROL BOTH HEATING AND COOLING, THE CONTROL SHALL BE CAPABLE OF PROVIDING A DEAD BAND OR AT LEAST 5°F WITHIN WHICH THE SUPPLY OR HEATING AND COOLING IS SHUT OFF OF REDUCED TO A MINIMUM.
8. THERMOSTATS SHALL HAVE NUMERIC SETPOINTS IN °F.
9. THERMOSTATS SHALL HAVE ADJUSTABLE SETPOINT STOPS ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.
10. GRAVITY OR AUTOMATIC DAMPERS INTERLOCKED AND CLOSED ON FAN SHUTDOWN SHALL BE PROVIDED ON THE OUTSIDE AIR INTAKES AND DISCHARGES OF ALL SPACE CONDITIONING AND EXHAUST SYSTEMS.
11. ALL GRAVITY VENTILATING SYSTEMS SHALL BE PROVIDED WITH AUTOMATIC OR READILY ACCESSIBLE MANUALLY OPERATED DAMPERS IN ALL OPENINGS TO THE OUTSIDE, EXCEPT FOR COMBUSTION AIR OPENINGS.
12. ALL BALANCING: ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE WITH AND PERFORMED BY A COMPANY CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) PROCEDURAL STANDARDS (1983), OR ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS (1986).
13. OUTSIDE AIR CERTIFICATION: THE SYSTEM SHALL PROVIDE THE MINIMUM OUTSIDE AIR AS SHOWN ON THE MECHANICAL DRAWINGS, AND SHALL BE MEASURED AND CERTIFIED BY THE INSTALLING LICENSED C-20 MECHANICAL CONTRACTOR.
14. THE AIR CONDITIONING SYSTEM SHALL BE ENERGIZED 1 HOUR IMMEDIATELY PRIOR TO OCCUPANCY TO PROVIDE THE MINIMUM REQUIRED VENTILATION RATE.

CALGREEN MANDATORY MEASURE NOTES

1. PROVIDE TESTING AND ADJUSTING OF SYSTEMS IN ACCORDANCE WITH CALGREEN SECTION 5.410.4.
2. THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING OR AREAS OF ADDITION OR ALTERATION WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY, OR, IF THE BUILDING IS OCCUPIED DURING ALTERATION, AT THE CONCLUSION OF CONSTRUCTION. (CALGREEN SECTION 5.504.1)
3. AT THE TIME OF ROUGH INSTALLATION, DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF WATER, DUST AND DEBRIS, WHICH MAY ENTER THE SYSTEM. (CALGREEN SECTION 4.501 OR 5.504.3)
4. ALL PAINTS, ADHESIVES, SEALANTS AND CAULKS SHALL MEET THE REQUIREMENTS OF CALGREEN SECTION 4.504.2 OR 5.504.4.
5. IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13. MERV 13 SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATIONS AND MAINTENANCE MANUAL. (CALGREEN SECTION 5.504.5.3)
6. FOR BUILDINGS OR ADDITIONS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS AND VENTILATION CONTROLS SHALL BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY CODE. (CALGREEN SECTION 5.506.2)
7. HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN ANY CHLOROFLUOROCARBONS (CFCs). (CALGREEN SECTION 5.508.1.1)
8. HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN ANY HALONS. (CALGREEN SECTION 5.508.1.2)

CITY OF IRVINE
BUILDING & SAFETY DIVISION

wsp

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com

Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
TJWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: M00.3

SHEET TITLE:

TITLE 24 COMPLIANCE FORMS

SVA ARCHITECTS

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PLAN CHECK #00856737-CNEW

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP), DX-DOAS and Dual Fuel Heat Pumps)

01	02	03	04	05	06	07	08	09
		Heating Mode				Cooling Mode		
Name or Item Tag	Size Category (Btu/h)	Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2 / Title 20	Design Efficiency
HP-3 / FC-3	<45,000					EER2 SEER2	9.8 14.3	11.8 22.7
HP-4 / FC-4	<65,000		HSPF2	7.5	7.5	SEER2	14.3	14.5

G. PUMPS

This section does not apply to this project.

H. FAN SYSTEMS & AIR ECONOMIZERS

This section does not apply to this project.

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in 110.2 and 120.2 and prescriptive controls in 140.4(f) and (n), 170.2(c)4D 170.2(c)4L or requirements in 141.0(b)2E 180.2(b)2 for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats 110.2(b) & (c)[1], 120.2(a) 160.3(a)2A or 141.0(b)2E & 180.2(b)2	Shut-Off Controls 120.2(e) & 160.3(a)2D	Isolation Zone Controls 120.2(g) & 160.3(a)2F	Demand Response 110.12 120.2(b) & 160.3(a)2B	Supply Air Temp. Reset 140.4(f) & 170.2(c)4D	Window Interlocks per 140.4(n) & 170.2(c)4D	Direct Digital Control (DDC) per 120.2
CU-1 / FC-1	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	NA: Single Zone	DR Tstat per 110.12	NA: Single Zone	NA: No operable windows	NA: Single Zone
CU-2 / FC-2	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	NA: Single Zone	DR Tstat per 110.12	NA: Single Zone	NA: No operable windows	NA: Single Zone
CU-3 / FC-3	Single zone	<= 25,000 ft²	Setback	NA: 7 day per 120.2(e)1	NA: Single Zone	DR Tstat per 110.12	NA: Single Zone	NA: No operable windows	NA: Single Zone
CU-4 / FC-4	Single zone	<= 25,000 ft²	Setback	Auto Timer Switch	NA: Single Zone	DR Tstat per 110.12	NA: Single Zone	NA: No operable windows	NA: Single Zone

[1]FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

J. VENTILATION AND INDOOR AIR QUALITY

This table is used to demonstrate compliance with mandatory ventilation requirements in 120.1 120.2(e)3B 140.4(a) and 140.4(a) for all nonresidential and hotel/motel and d124refnolink/160.2, 160.3(a)3D, 170.2(c)4N, 170.2(c)4O for high-rise residential occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☒	Check this box if the project included Nonresidential, Hotel/Motel Spaces or Multifamily Common Use Spaces
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per 120.1(c)2.

Nonresidential and Hotel/ Motel Multifamily Common Use Ventilation Systems

J. VENTILATION AND INDOOR AIR QUALITY

04	05				06			07
System Name	CU-1 / FC-1	System Design OA CFM Airflow[1]		100	System Design Transfer Air CFM		0	Air Filtration per 120.1(c) 141.0(b)2 and 160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per 120.1(c)[3] & 160.2(c)3					Exh. Vent per 120.1(c)4 & 160.2(c)4		DCV or Sensor Controls per 120.1(d)3, 120.1(d)5, and 120.1(e)3[4] 160.2(c)5D 160.2(c)5E 160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
Hoteling Area 102	Main Entry Lobby	170			85			DCV: NA: Area < 150ft² or design occupancy < 10 people Occ Sensor: NA: Not required space type
17	Total System Required Min OA CFM				85	18	Ventilation for this System Complies?	Yes
04	05				06			07
System Name	CU-2 / FC-2	System Design OA CFM Airflow[1]		290	System Design Transfer Air CFM		0	Air Filtration per 120.1(c) 141.0(b)2 and 160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per 120.1(c)[3] & 160.2(c)3					Exh. Vent per 120.1(c)4 & 160.2(c)4		DCV or Sensor Controls per 120.1(d)3, 120.1(d)5, and 120.1(e)3[4] 160.2(c)5D 160.2(c)5E 160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
Office 103	Office space	136			20.4			DCV: NA: Area < 150ft² or design occupancy < 10 people Occ Sensor: Provided per §120.1(d)5
Conference 104	Conference/ meeting	153			76.5			DCV: NA: Area < 150ft² or design occupancy < 10 people Occ Sensor: Provided per §120.1(d)5
Break Rm 107	Break room	86			43			DCV: NA: Area < 150ft² or design occupancy < 10 people Occ Sensor: NA: Not required space type
Hallway 101	Corridor	324			48.6			DCV: NA: Not required per §120.1(d)3 Occ Sensor: NA: Not required space type
GNRR 105	Toilet, private	67	2		10.05	100	120	DCV: NA: Not required per §120.1(d)3 Occ Sensor: NA: Not required space type
Cust/Stor	Janitor closet	72			10.8	72	80	DCV: NA: Not required per §120.1(d)3 Occ Sensor: NA: Not required space type
17	Total System Required Min OA CFM				209.35	18	Ventilation for this System Complies?	Yes

J. VENTILATION AND INDOOR AIR QUALITY

04	05				06			07
System Name	CU-4 / FC-4	System Design OA CFM Airflow[1]		200	System Design Transfer Air CFM		0	Air Filtration per 120.1(c) 141.0(b)2 and 160.2(c)21 [2] Provided
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per 120.1(c)[3] & 160.2(c)3					Exh. Vent per 120.1(c)4 & 160.2(c)4		DCV or Sensor Controls per 120.1(d)3, 120.1(d)5, and 120.1(e)3[4] 160.2(c)5D 160.2(c)5E 160.2(c)5D
	Occupancy Type[4]	Conditioned Floor Area (ft²)	# of Shower heads/ toilets	# of people [5]	Required Min OA CFM	Required Min CFM	Provided per Design CFM	
Break Rm 112	Break room	400			200			DCV: NA: Not required per §120.1(d)3 Occ Sensor: NA: Not required space type
17	Total System Required Min OA CFM				200	18	Ventilation for this System Complies?	Yes

J. VENTILATION AND INDOOR AIR QUALITY

[1] FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system

[2] Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

[3] Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

[4] See Standards Tables 120.1-A and 120.1-B.

[5] For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

[6]120.2(e)3 requires systems serving rooms that are required by 130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000 ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by 130.1(c).

K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 120.4(g) for duct sealing.

01	☐	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

Duct Leakage Testing

The answers to the questions below apply to the following duct systems:	New ductwork	**NR/ Common Use:** Duct leakage testing shall not exceed 6% per NA7.5.3 required for these systems?	No

J. VENTILATION AND INDOOR AIR QUALITY

[1] FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system

[2] Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

[3] Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

[4] See Standards Tables 120.1-A and 120.1-B.

[5] For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

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K. TERMINAL BOX CONTROLS

This section does not apply to this project.

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 120.4(g) for duct sealing.

01	☐	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.

Duct Leakage Testing

The answers to the questions below apply to the following duct systems:	New ductwork	**NR/ Common Use:** Duct leakage testing shall not exceed 6% per NA7.5.3 required for these systems?	No

L. DISTRIBUTION (DUCTWORK and PIPING)

		Dwelling Units: Total duct leakage of duct system shall not exceed 12% or duct system to outside shall not exceed 6% per RA3.1.4 required for systems?	---
		Duct leakage testing per CMC Section 603.9.2 required for these systems?	Yes
11	No	The scope of the project includes only duct systems serving healthcare facilities	
12	Yes	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.	
13	Yes	The space conditioning system serves less than 5,000 ft² of conditioned floor area.	
14	No	The combined surface area of the ducts is more than 25% of the total surface area of the entire duct system.	
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.	
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.	
17	Exposed Ductwork located in occupied space	All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A	
18	No	All ductwork is an extension of an existing duct system	
19	No	Ductwork serving individual dwelling unit	
20		< 25 ft of new or replacement space conditioning ducts installed	
21	R-8	Duct Insulation R-value	
22	No	Ductwork Existing To Remain	
23	No	Duct System Connected To Altered Space Conditioning System	

M. COOLING TOWERS

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title
NRCI-MCH-01-E - Must be submitted for all buildings

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4

Form/Title	Systems/Spaces To Be Field Verified
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.	CU-1 / FC-1; CU-2 / FC-2; CU-3 / FC-3; CU-4 / FC-4
NRCA-MCH-03-A - Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".	CU-1 / FC-1; CU-2 / FC-2; CU-3 / FC-3; CU-4 / FC-4

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no NRCV forms required for this project.

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block	No	Plan sheet or construction document location
03		04
Mandatory Measure		**Plan sheet or construction document location**
Heating Equipment Efficiency per 110.1		M00.2
Cooling Equipment Efficiency per 110.1		M00.2
Furnace Standby Loss Control per 110.2(d)		N/A
Duct Insulation per 120.4		M00.3
Heat Pump with Supplemental electric Resistance Heater Controls per 110.2(b)		N/A
The air duct and plenum system is designed per 120.4(a) (f)		M00.2
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		N/A

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	WSP	Documentation Author Signature:	
Kris Suvitcharnpun			
Company:		Signature Date:	
wsp			09/09/2025
Address:	15231 LAGUNA CANYON ROAD, SUITE 100	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	IRVINE, CA 92618	Phone:	949-751-5800

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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	T JWAN TANG	Responsible Designer Signature:	
Company:	WSP	Date Signed:	09/09/2025
Address:	15231 LAGUNA CANYON ROAD, SUITE 100	License:	M29973
City/State/Zip:	IRVINE, CA 92618	Phone:	949-751-5800

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US00022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
T JWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: **M00.4**
SHEET TITLE:

TITLE 24 COMPLIANCE FORMS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

MECHANICAL ZONING PLAN | 1/8" = 1'-0" | **1**

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
JIWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: M11.1Z
SHEET TITLE:

MECHANICAL ZONING PLAN

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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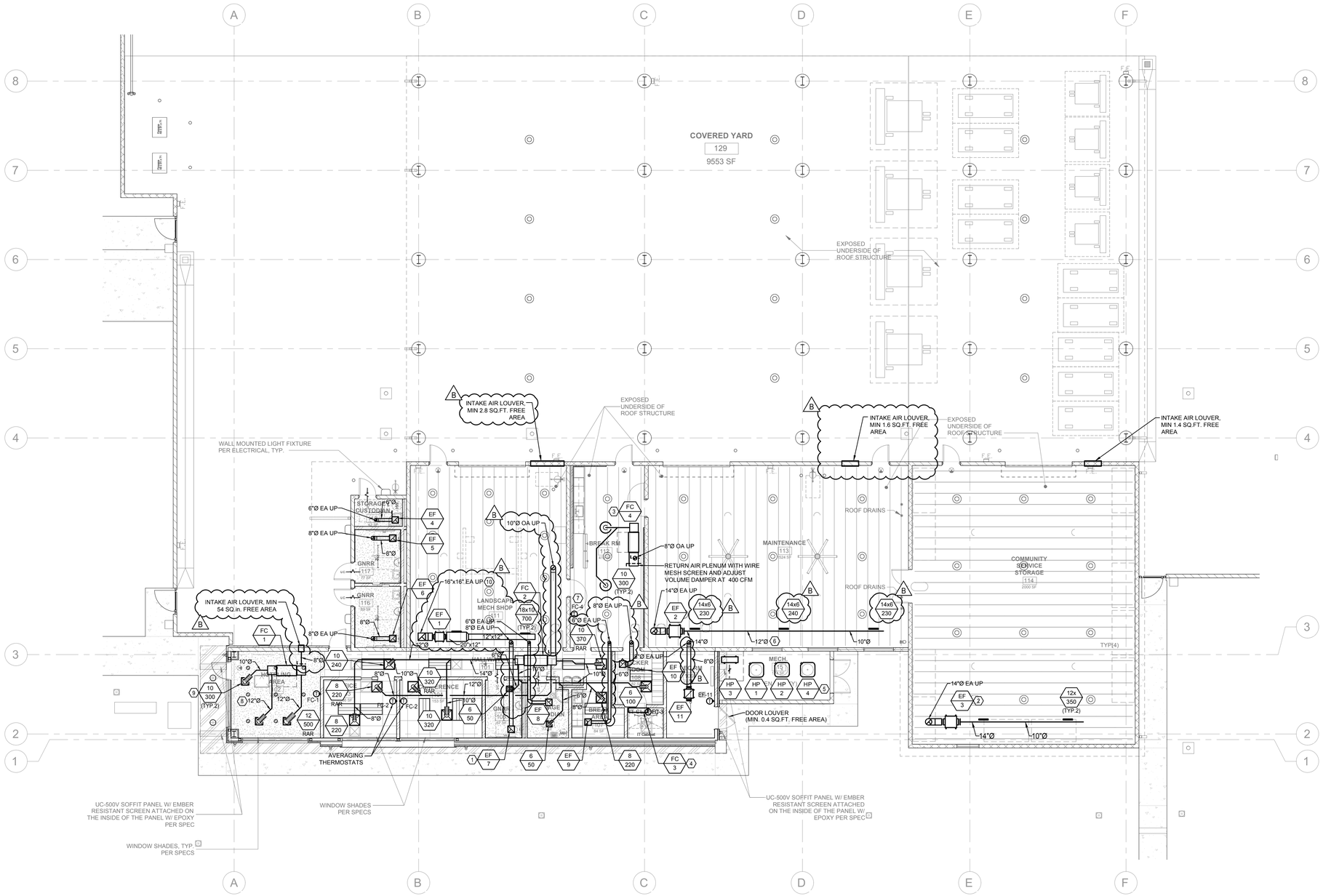
PLAN CHECK #00856737-CNEW



MECHANICAL FLOOR PLAN | 1/8" = 1'-0" | 1

KEY NOTES:

1. CEILING EXHAUST FAN SEE DETAIL (TYP.) — 1 M50.1
2. INLINE FAN SEE DETAIL (TYP.) — 2 M50.1
3. SPLIT SYSTEM FAN COIL UNIT SEE DETAIL (TYP.) — 3 M50.1
4. WALL MOUNTED DUCTLESS SPLIT SYSTEM SEE DETAIL (TYP.) — 4 M50.1
5. OUTDOOR CONDENSING UNIT DETAIL (ON GRADE) SEE DETAIL (TYP.) — 5 M50.1
6. EXPOSED ROUND DUCT MOUNTED EXHAUST GRILLE SEE DETAIL (TYP.) — 6 M50.1
7. THERMOSTAT MOUNTING SEE DETAIL (TYP.) — 7 M50.1
8. DUCTWORK HANGER SUPPORTS SEE DETAIL (TYP.) — 8 M50.1
9. CEILING DIFFUSER SEE DETAIL (TYP.) — 9 M50.1

CITY OF IRVINE BUILDING & SAFETY DIVISION

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949.751.5800 wsp.com
Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER — TJWAN TANG — No. M29973 EXP 06-30-26 — MECHANICAL — STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: M11.1
SHEET TITLE:

MECHANICAL FLOOR PLAN

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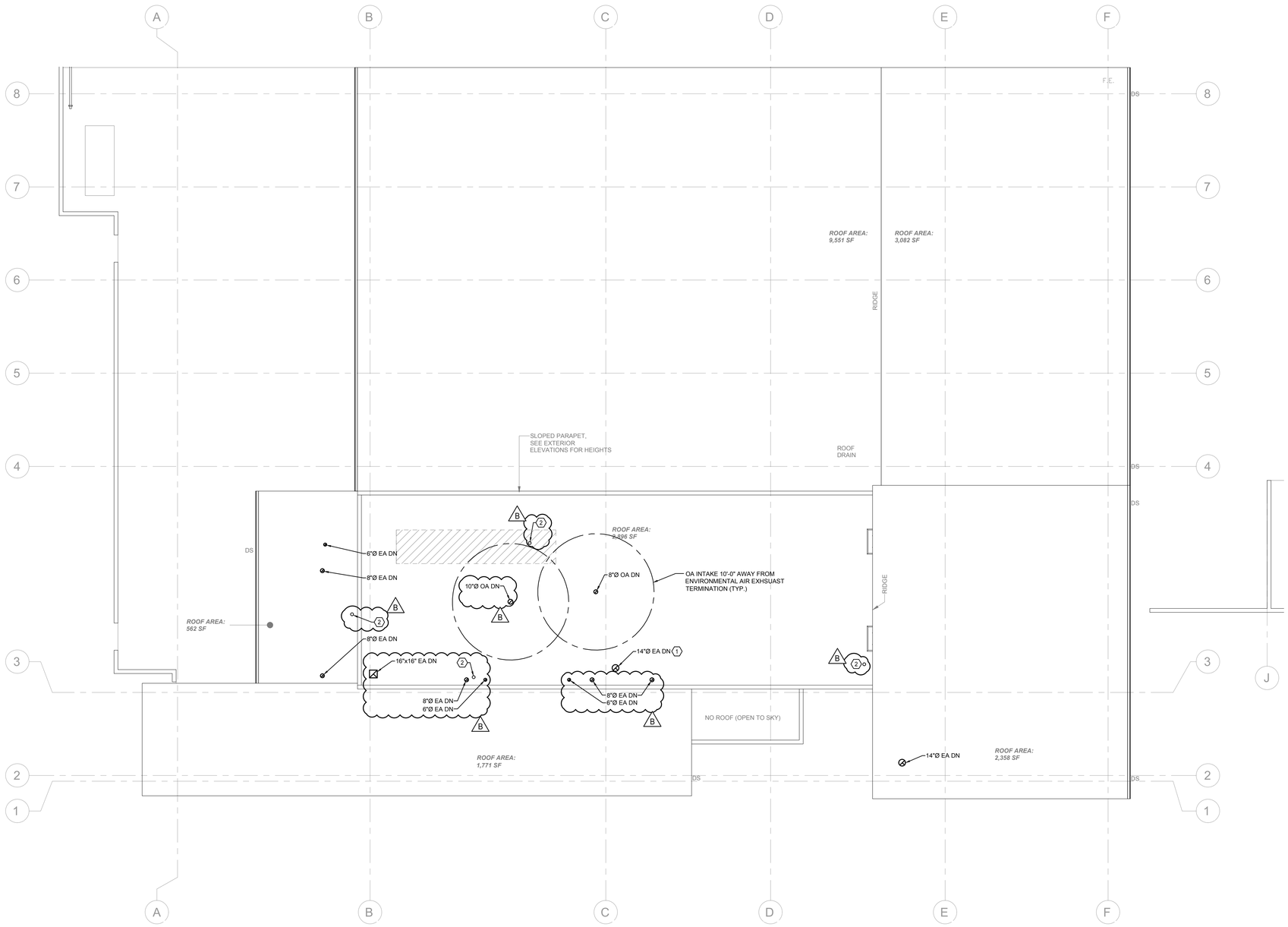
PLAN CHECK #00856737-CNEW



MECHANICAL ROOF PLAN

1/8" = 1'-0"

1

KEY NOTES:

1. DUCT THRU ROOF WITH GOOSENECK SEE DETAIL 1/M50.1 (TYP.)
2. PLUMBING VENT (SEE PLUMBING DRAWING FOR EXACT LOCATION.)

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com

Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

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IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
JIWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108

DATE ISSUED: 11/19/2024

SCALE: As indicated

SHEET NUMBER: M11.2

SHEET TITLE:

MECHANICAL ROOF PLAN

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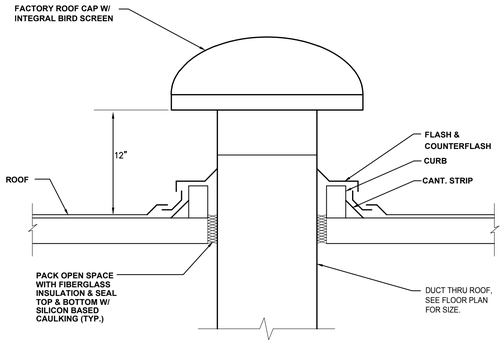
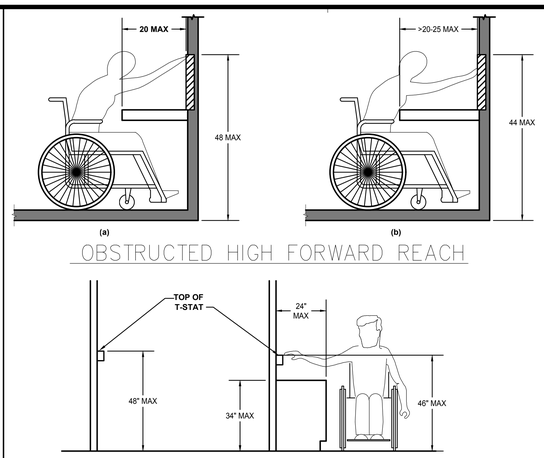
PLAN CHECK #00856737-CNEW



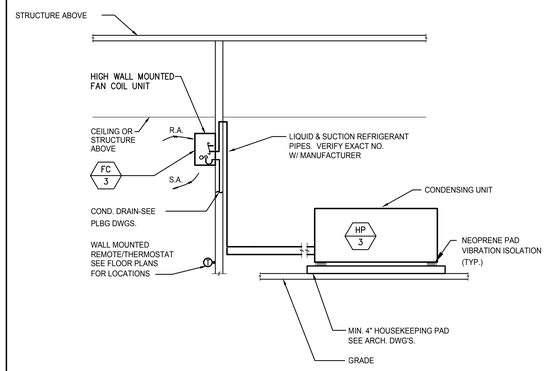
DUCT THRU ROOF WITH GOOSENECK | SCALE - | 10



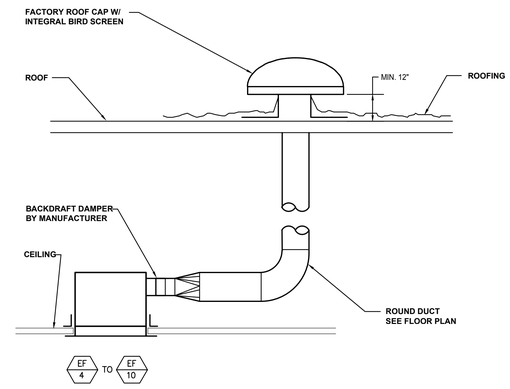
NOTES:

1. PRIOR TO ROUGH-IN OF THERMOSTATS, CONTRACTOR SHALL PROVIDE DIMENSIONED SHOP DRAWINGS SHOWING ALL WALL DEVICES TO ARCHITECT FOR COORDINATION WITH FURNITURE LAYOUT.
2. ALL CONTROL DEVICES SHALL MATCH IN COLOR.
3. THERMOSTATS ON EXTERIOR WALLS/ COLUMN COVERS SHALL BE PROVIDED WITH INSULATED BACKING TO PREVENT FALSE READINGS.
4. UPON PROJECT COMPLETION, CALIBRATE THERMOSTATS AND ENSURE ACCURACY AND REPEATABILITY.

THERMOSTAT MOUNTING | SCALE - | 7



WALL MOUNTED DUCTLESS SPLIT SYSTEM | SCALE - | 4



CEILING EXHAUST FAN | SCALE - | 1

-

SCALE - | 11

DUCTWORK HANGER SUPPORTS | SCALE - | 8

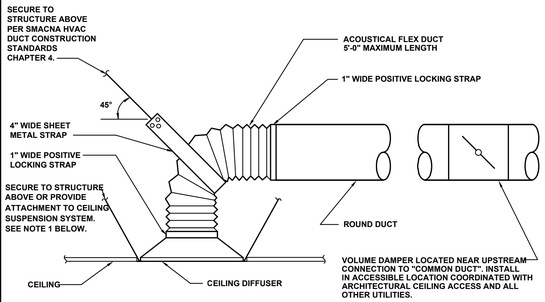
NOTES: 1. COORDINATE CLEARANCES WITH EQUIPMENT MANUFACTURER'S INSTALLATION GUIDELINES.

OUTDOOR CONDENSING UNIT DETAIL (ON GRADE) | SCALE - | 5

INLINE FAN | SCALE - | 2

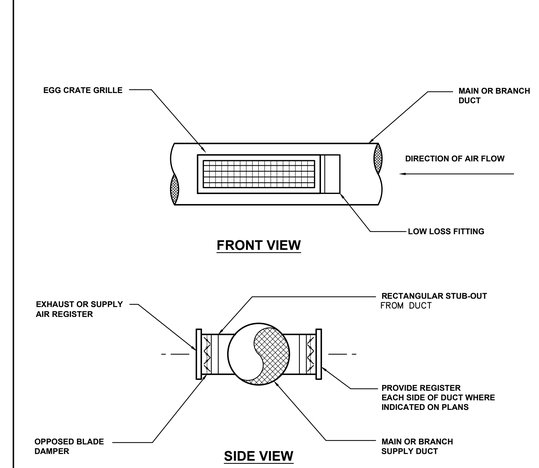
-

SCALE - | 12

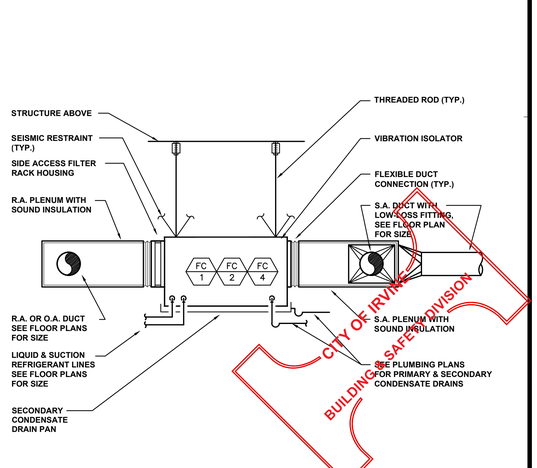


1. ALL TERMINAL SHALL BE MOUNTED IN A MANNER THAT WILL NOT COMPROMISE CEILING PERFORMANCE
2. MECHANICAL TERMINALS SHALL BE SUPPORTED DIRECTLY ON RUNNERS CLASSIFIED AS ASTM HEAVY DUTY, BUT THEY MUST ALSO HAVE A MINIMUM OF TWO (2) #12 GAGE SLACK SAFETY WIRES ATTACHED TO THE FIXTURE AT DIAGONAL CORNERS AND ANCHORED TO THE STRUCTURE ABOVE.
3. MECHANICAL TERMINALS WEIGHING 56 LBS. OR MORE MUST BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN FOUR (4) TAUT #12 GAGE WIRES ATTACHED TO THE HOUSING AND TO THE STRUCTURE ABOVE. THE FOUR (4) TAUT #12 GAGE WIRES, INCLUDING THEIR ATTACHMENT TO THE STRUCTURE ABOVE, MUST BE CAPABLE OF SUPPORTING FOUR (4) TIME THE WEIGHT OF THE UNIT.
4. FLEXIBLE DUCT TO BE INSTALLED AND SUPPORTED PER SMACNA SECTION 3.5 AND 3.7.
5. FLEXIBLE DUCT CONNECTIONS SHALL BE CASCO SILENT FLEX II OR EQUAL.
6. RETURN AIR REGISTERS AND RELIEF AIR REGISTERS ARE SIMILAR.
7. EXHAUST AIR REGISTERS SIMILAR WITH RIGID DUCT IN LIEU OF FLEX.
8. DIFFUSERS AND REGISTERS TO BE INSTALLED PER SMACNA.
9. PROVIDE REMOTE ACTUATED VOLUME DAMPERS AT HARD-LID CEILING INSTALLATION.

CEILING DIFFUSER | SCALE - | 9



EXPOSED ROUND DUCT MOUNTED EXHAUST GRILLE | SCALE - | 6



CITY OF IRVINE
BUILDING SAFETY DIVISION

SPLIT SYSTEM FAN COIL UNIT | SCALE - | 3

CITY OF IRVINE - GREAT PARK
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Project Leader - Jeff Mixer
Mechanical Lead - Jeff Halliwell
WSP Job #: US0022861.0069

REGISTERED PROFESSIONAL ENGINEER
LIJWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: M50.1

SHEET TITLE: DETAILS

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PLAN CHECK #00856737-CNEW

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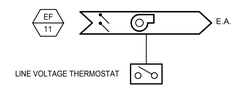
SCALE -

9



EXHAUST FAN - TEMPERATURE CONTROLLED
UNLESS OTHERWISE NOTED, ALL SETPOINTS AND TIME DELAYS SHALL BE ADJUSTABLE.

RUN CONDITIONS:
THE UNIT SHALL BE ENABLED TO MAINTAIN A ZONE TEMPERATURE COOLING SETPOINT OF 78°F.
- THE FAN SHALL BE ENABLED WHEN THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT.
- THE FAN SHALL BE DISABLED WHEN THE ZONE TEMPERATURE IS BELOW THE COOLING SETPOINT.

-

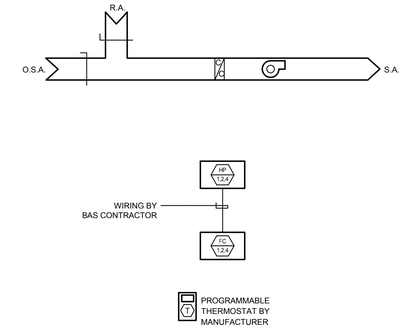
SCALE -

6

EXHAUST FAN TEMPERATURE CONTROL

SCALE -

3



SPLIT SYSTEM (HEAT PUMP):
UNLESS OTHERWISE NOTED, ALL SETPOINTS ARE ADJUSTABLE.

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 75°F COOLING SETPOINT.
- A 70°F HEATING SETPOINT.
- A DEADBAND OF 5°F BETWEEN COOLING AND HEATING.

OCCUPIED MODE SHALL BE BETWEEN 6:00AM AND 6:00PM.

PRE-OCCUPANCY PURGE MODE: THE UNIT SHALL MAINTAIN
- A 75°F COOLING SETPOINT.
- A 70°F HEATING SETPOINT.
- A DEADBAND OF 5°F BETWEEN COOLING AND HEATING.

PRE-OCCUPANCY PURGE MODE SHALL BEGIN 1-HOUR PRIOR TO OCCUPANCY.

UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- AN 85°F COOLING SETPOINT.
- A 55°F HEATING SETPOINT.

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR. THE RANGE OF ADJUSTMENT SHALL BE +/- 2°F.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR 30 MINUTE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE NORMAL SCHEDULE.

SUPPLY FAN:
THE SUPPLY F AN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL BE SUBJECT TO THE FACTORY MINIMUM RUNTIME SAFETIES.

COOLING STAGE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COMPRESSOR TO MAINTAIN ITS ZONE COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE COMPRESSOR(S) SHALL BE SUBJECT TO THE FACTORY PRESET MINIMUM RUNTIMES.

THE COOLING SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE HEATING IS NOT ACTIVE.

HEATING STAGE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COMPRESSOR TO MAINTAIN ITS ZONE HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE HEATING SHALL BE SUBJECT TO THE FACTORY MINIMUM RUNTIME SAFETIES.

THE HEATING SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS BELOW THE HEATING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE COOLING IS NOT ACTIVE.

-

SCALE -

10

-

SCALE -

7

EXHAUST FANS - LIGHT SWITCH/OCCUPANCY SENSOR CONTROL

RUN CONDITIONS - SCHEDULED:
THE EXHAUST FAN UNIT SHALL BE INTERLOCKED TO RUN WHENEVER THE LIGHT SWITCH OR OCCUPANCY SENSOR IS ON. THE FAN SHALL TURN OFF WHEN THE LIGHT SWITCH IS SWITCHED OFF OR WHEN THE OCCUPANCY SENSOR NO LONGER SENSES AN OCCUPANT.

EXHAUST FAN LIGHT SWITCH/OCCUPANCY

SCALE -

4

SPLIT SYSTEM - HEAT PUMP (DUCTED)

SCALE -

1

-

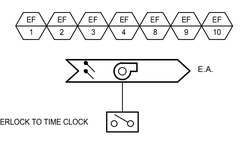
SCALE -

11

-

SCALE -

8



EXHAUST FANS - BUILDING EXHAUST
UNLESS OTHERWISE NOTED, ALL SETPOINTS AND TIME DELAYS SHALL BE ADJUSTABLE.

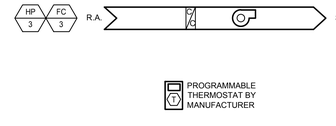
RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

OCCUPIED MODE:
- THE UNIT SHALL BE ENABLED TO RUN CONTINUOUSLY DURING OCCUPIED MODE VIA TIME CLOCK

EXHAUST FAN TIME OF DAY

SCALE -

5



SPLIT SYSTEMS (DUCTLESS):

THE DUCTLESS SPLIT SYSTEMS SHALL BE CONTROLLED BY FACTORY-FURNISHED HARD WIRED THERMOSTATS. THE BAS SHALL MONITOR THE ROOM TEMPERATURE FOR ZONE HIGH AND LOW TEMPERATURE ALARM ONLY.

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- 24/7: THE UNIT SHALL MAINTAIN A 74°F (ADJ.) COOLING SETPOINT.

COOLING STAGES:
THE THERMOSTAT SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS ZONE COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE COMPRESSOR SHALL BE SUBJECT TO THE FACTORY PRESET MINIMUM RUNTIMES.

THE COOLING SHALL BE ENABLED WHENEVER:

- THE ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE HEATING IS NOT ACTIVE.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

SPLIT SYSTEM - HEAT PUMP (DUCTLESS)

SCALE -

2

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MAINTENANCE & OPERATION FACILITY

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PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
YI-HWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

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WIRING & CONTROLS

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PLAN CHECK #00856737-CNEW

APPLICABLE	TITLE 24 MANDATORY MEASURES
	EQUIPMENT AND SYSTEMS EFFICIENCY
☒	ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE COMMISSION, AS SPECIFIED IN THOSE REGULATIONS , THAT THE APPLIANCE COMPLIES WITH THE APPLICABLE STANDARD FOR THAT APPLIANCE.
☒	PIPING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH REQUIREMENTS OF THE TITLE 24 STANDARDS AND ALL CODES HAVING THE JURISDICTION.
	SERVICE WATER HEATING SYSTEMS.
☐	THE FOLLOWING SERVICE WATER HEATING SYSTEMS AND EQUIPMENT MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED THAT THE EQUIPMENT MEETS OR EXCEEDS ALL APPLICABLE EFFICIENCY REQUIREMENTS LISTED IN 113 OF THE ENERGY EFFICIENCY STANDARDS : GAS–FIRED NON–STORAGE TYPES > 200,000 BTU/HR.
☐	UNFIRED SERVICE WATER HEATER STORAGE TANKS AND BACKUP TANKS FOR SOLAR WATER HEATING SYSTEMS SHALL HAVE EITHER : EXTERNAL INSULATION WITH AN INSTALLED R–VALUE OF AT LEAST R–12 , INTERNAL AND EXTERNAL INSULATION WITH A COMBINED R–VALUE OF AT LEAST R–16 , OR SUFFICIENT INSULATION SO THAT THE HEAT LOSS OF THE TANK SURFACE BASED ON AN 80° F WATER–AIR TEMPERATURE DIFFERENCE SHALL SHALL BE LESS THAN 6.5 BTU / HR / SF.
☒	IF A CIRCULATING HOT WATER SYSTEM IS INSTALLED , IT SHALL HAVE A CONTROL CAPABLE OF AUTOMATICALLY TURNING OFF THE CIRCULATING PUMP(S) WHEN HOT WATER IS NOT REQUIRED.
☒	LAVATORIES IN RESTROOMS OF PUBLIC FACILITIES SHALL BE EQUIPPED WITH:
☒	OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.5 GALLONS PER MINUTE.
☐	FOOT ACTUATED CONTROL VALVES , AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.75 GALLONS PER MINUTE .
☒	LAVATORIES IN RESTROOM OF PUBLIC FACILITIES SHALL BE EQUIPPED WITH CONTROLS TO LIMIT THE OUTLET TEMPERATURE TO 110° F .

PIPING MATERIALS

1.	SANITARY SEWER, VENT AND STORM DRAIN PIPING BELOW GROUND:	POLYVINYL CHLORIDE (PVC) SCHEDULE 40 SOLID CORE DWV PIPE AND FITTINGS WITH SOLVENT CEMENTED JOINTS. INSTALL PER MANUFACTURERS DIRECTIONS. PIPE AND FITTINGS TO CONFORM AND BE INSTALLED TO THE REQUIREMENTS OF ASTM D1785, ASTM D2665, AND ASTM F 1866.
2.	SOIL, WASTE, VENT, STORM DRAIN PIPING ABOVE GROUND:	NO-HUB CAST IRON PIPE & FITTINGS WITH STAINLESS STEEL NO-HUB COUPLINGS. PIPE AND FITTINGS CONFORM AND BE INSTALLED TO THE REQUIREMENTS OF CISPI STANDARD 301, ASTM A888 OR ASTM A74 FOR ALL PIPE AND FITTINGS.
3.	WATER PIPING BELOW GROUND:	TYPE 'K' COPPER WITH BRAZED JOINTS.
4.	DOMESTIC WATER PIPING ABOVE GROUND :	DOMESTIC HOT AND COLD WATER PIPING ABOVE GROUND: TYPE L HARD-DRAWN COPPER TUBE, ASTM B88, AND WROUGHT COPPER FITTINGS, ANSI B16.22. SOLDER AND FLUX SHALL BE J.W. HARRIS BRIDGET, LEAD-FREE SOLDER ALLOY. 95-5 SOLDERS ARE NOT APPROVED.
5.	CONDENSATE DRAIN PIPING:	TYPE M COPPER TUBE, ASTM B88 AND WROUGHT COPPER FITTINGS, ANSI B16.22, SOLDER JOINT TYPE. COORDINATE CONDENSATE TRAP INSTALLATION WITH AIR CONDITIONING UNIT MANUFACTURER. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED.
6.	INSULATION OF HOT WATER SUPPLY & RETURN PIPING :	GLASS FIBER PIPE INSULATION WITH FACTORY APPLIED WHITE JACKET, "J-M" MICRO-LOK 750AP. HOT WATER PIPE INSULATION SHALL HAVE A MINIMUM WALL THICKNESS OF NOT LESS THAN 1" FOR ⅜ IN. PIPE, 1½ IN. FOR 1 IN. THRU 1½ IN. PIPE AND NOT LESS THAN 2 IN. FOR PIPE 2" DIA. AND LARGER.
7.	INSULATION OF INTERIOR CONDENSATE DRAIN PIPING:	AP ARMFLEX CLOSED-CELL ELASTOMERIC FOAM INSULATION. FLAME-SPREAD INDEX OF 25 OR LESS AND SMOKE-DEVELOPED INDEX OF 50 OR LESS. 1/2 INCH THICK FOR 4 INCH DIAMETER PIPE AND LESS.
8.	ALL OF THE ABOVE SHALL COMPLY WITH THE SPECIFICATIONS.	

PLUMBING GENERAL NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES AND DRAINS.
2. COORDINATE ALL LOCATIONS, SIZES AND ELEVATIONS OF ALL SLEEVES THROUGH BEAMS, SLABS AND FOOTINGS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
3. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE AND ELEVATION OF ALL EXISTING PIPING AT P.O.C.'S PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT IF SAID CONNECTIONS ARE NOT IN THE LOCATION SHOWN OR ARE NOT OF SUFFICIENT SIZE OR DEPTH TO MAKE THE CONNECTION.
4. THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.
5. ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
6. ALL MATERIALS AND FIXTURES SHALL BE NEW, UNLESS OTHERWISE NOTED AND OF THE BEST GRADE OF THE RESPECTIVE KIND, FREE FROM ALL DEFECTS.
7. MATERIALS FOR SIMILAR USE SHALL BE OF THE SAME TYPE AND MANUFACTURER, UNLESS OTHERWISE SPECIFIED.
8. ALL VALVES AND COCKS SHALL BE LOCATED TO BE ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN, OR BEHIND WALLS PARTITIONS OR CEILINGS, AN ACCESS PANEL SHALL BE INSTALLED.
9. WHERE EXISTING FIXTURES ARE REMOVED, ALL PLUMBING CONNECTIONS SHALL TERMINATE IN AN APPROVED MANNER AND SO AS NOT TO CONFLICT WITH NEWLY FINISHED AREAS.
10. INSTALL ALL NEW PLUMBING AND PIPING WORK TO AVOID INTERFERENCE WITH NEW AND EXISTING MECHANICAL, ELECTRICAL & OTHER EQUIPMENT. WHERE REQUIRED, OFFSET NEW PIPING TO CLEAR EXISTING OBSTRUCTIONS.
11. THE LINE ROUTING AND VALVING SHOWN ON PLANS IS DIAGRAMMATIC. ROUTING AS SHOWN AVOIDS ALL KNOWN MAJOR OBSTRUCTIONS. CONTRACTOR SHALL REROUTE PIPING AS NECESSARY TO AVOID CONFLICTS WITH EXISTING CONDITIONS.
12. ALL PENETRATIONS THRU RATED WALLS SHALL BE SEALED WITH APPROVED FIREPROOFING .
13. ALL WORK SHALL COMPLY WITH BUILDING STANDARDS, SPECIFICATIONS, STATE AND COUNTY HEALTH DEPARTMENT REQUIREMENTS, 2022 CALIFORNIA BUILDING CODE AND 2022 CALIFORNIA PLUMBING CODE.
14. FOR FIRE PROTECTION PIPING SEE FIRE SPRINKLER SHOP DRAWINGS. FIRE SPRINKLER DESIGN/BUILD CONTRACTOR SHALL COORDINATE HIS WORK DURING SHOP DRAWING PHASE.
15. ALL PIPE, FITTINGS, FIXTURES, ETC. THAT CONTACT POTABLE WATER FOR HUMAN CONSUMPTION SHALL SHOW APPROVAL TO NSF 61, ANNEX "G". EFFECTIVE JANUARY 1, 2010, THE LEAD CONTENT OF THE WETTED SURFACE AREA OF THE PIPES, FITTINGS AND FIXTURES CONVEYING POTABLE WATER FOR HUMAN CONSUMPTION, OF NOT HUMAN CONSUMPTION, OF NOT MORE THAN 0.25%, SHALL BE DETERMINED PURSUANT TO A PRESCRIBED FORMULA AS DETERMINED BY THIRD PARTY CERTIFIERS TO NSF STANDARD 61, ANNEX "G". REFERENCE SECTION 604.2, CALIFORNIA PLUMBING CODE, 2022 EDITION, AND HEALTH & SAFETY CODE SECTION 116875.

STORMWATER POLLUTION PREVENTION NOTES:

STOMWATER POLLUTION PREVENTION DEVICES AND PRACTICES SHALL BE INSTALLED AND/OR INSTITUTED AS NECESSARY TO ENSURE COMPLIANCE TO THE CITY OF IRVINE WATER QUALITY STANDARDS CONTAINED IN CHAPTER 3. WATER, OF DIVISION 8 OF TITLE 6 OF THE IRVINE MUNICIPAL CODE AND ANY EROSION CONTROL PLAN ASSOCIATED WITH THIS PROJECT. ALL SUCH DEVICES AND PRACTICES SHALL BE BE MAINTAINED, INSPECTED AND/OR MONITORED TO ENSURE ADEQUACY AND PROPER FUNCTION THROUGHOUT THE DURATION OF THE CONSTRUCTION PROJECT. COMPLIANCE TO THE WATER QUALITY STANDARDS ON ANY EROSION CONTROL PLAN ASSOCIATED WITH THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING REQUIREMENTS:

1. EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED. TO PROTECT THE EXPOSED PORTIONS OF THE SITE FROM EROSION AND PREVENT SEDIMENT DISCHARGES.
2. SEDIMENT AND OTHER POLLUTANTS SHALL BE RETAINED ON SITE UNTIL PROPERLY DISPOSED OF, AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION-RELATED MATERIALS SHALL BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND AND WATER FLOW.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS SHALL BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL 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, NOR BE ALLOWED TO SETTLE OR INFILTRATE INTO SOIL.
5. EXCESS OR WASTE CONCRETE MAY NOT WASHED INTO 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 WASTES.
6. TRASH AND CONSTRUCTION SOIL WASTES SHALL BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OR RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENT AND OTHER MATERIALS MAY BE TRACKED FROM THE SITE BY VEHICULAR TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITS SHALL BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. STORMWATER POLLUTION PREVENTION DEVICES AND/OR PRACTICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

LEGEND

SYMBOL	ABBR.	DESCRIPTION
	S OR W	SOIL OR WASTE ABOVE FLOOR OR GRADE
	S OR W	SOIL OR WASTE BELOW FLOOR OR GRADE
SD	SD	STORM DRAIN ABOVE FLOOR OR GRADE
SD	SD	STORM DRAIN BELOW FLOOR OR GRADE
OD	OD	OVERFLOW DRAIN ABOVE FLOOR OR GRADE
OD	OD	OVERFLOW DRAIN BELOW FLOOR OR GRADE
	V	SANITARY VENT
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN
F	F	FIRE MAIN
D	D	INDIRECT DRAIN LINE
CD	CD	CONDENSATE DRAIN
SCD	SCD	SECONDARY CONDENSATE DRAIN
PCD	PCD	PUMPED CONDENSATE DRAIN
TP	TP	TRAP PRIMER
		DIRECTION OF FLOW
	P.G.	PRESSURE GAUGE W/PETE COCK
	G.C.	GAS COCK
	P.R.V.	PRESSURE REDUCING VALVE
	G.V.	GATE VALVE
	L.B.V.	LOCKING BALL VALVE
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
		DOWN
		RISE
		UNION
		SLOPE IN DIRECTION OF FLOW
	W.H.A.	WATER HAMMER ARRESTOR
	P.O.C.	POINT OF CONNECTION
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
(E)	EXIST. (E)	EXISTING
	ABV.	ABOVE
	A.F.F.	ABOVE FINISHED FLOOR
	A.P.	ACCESS PANEL
	ASS'Y	ASSEMBLY
	BEH.	BEHIND
	BEL.	BELOW
	BLDG.	BUILDING
	BMCS	BUILDING MANAGEMENT AND CONTROL SYSTEM
	C.I.	CAST IRON
	CLG.	CEILING
	COTG	CLEANOUT TO GRADE
	CO.	CLEAN OUT
	CONT.	CONTINUATION
	FFE	FINISHED FLOOR ELEVATION
	DET.	DETAIL
	DN	DOWN
	DWG'S	DRAWINGS
	EA	EACH
	ELEC.	ELECTRIC
	EQUIP	EQUIPMENT
	FH	FIRE HYDRANT
	FIN	FINISHED
	FU	FIXTURE UNIT
	FLR	FLOOR
	FR.	FROM
	GPF	GALLONS PER FLUSH
	GPM	GALLONS PER MINUTE
	GR	GRADE
	HDR	HEADER
	I.E.	INVERT ELEVATION
	TYP	TYPICAL
	U/G	UNDERGROUND
	VTR	VENT THROUGH ROOF

PROJECT DESCRIPTION

THE PROJECT SCOPE INCLUDES THE FOLLOWING:

1) INSTALLATION OF NEW WATER CLOSETS, LAVATORY, MOP SINK, BREAKROOM SINKS, EMERGENCY EYEWASH/SHOWER, FLOOR SINK, FLOOR DRAIN, FUNNEL DRAIN, APPLIANCES, AND ASSOCIATED PIPING.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
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Project Leader - Jeff Mixer
Plumbing Lead - Jeff Hall
WSP Job #: US00228861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
I. IWAN TANTO
No. M29973
EXP 06-30-26
CHAN
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
3		
4		
5		
6		
7		
8		

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: P00.1
SHEET TITLE:

LEGEND, SCHEDULES & NOTES

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PLAN CHECK #00856737-CNEW

ELECTRIC WATER HEATER

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	STORAGE CAPACITY	TEMP RISE @ 60°F	INLET TEMP °F	FACTORY SET OUTLET TEMP. °F	ELECTRICAL				OPER. WT. LBS.	REMARKS
								KW	V	Ø	HZ		
WH 1	A.O. SMITH, DEL-30	JANITOR ROOM	DOMESTIC HOT WATER	30 GAL	20 GPH @ 60° T	60°	120°	6.0	208	3	60	140	SEE DETAIL 3/P-5.1. PROVIDE AMSTROL ST-5 EXPANSION TANK.

HOT WATER RECIRCULATING PUMP

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	TYPE	GPM	TDH FT	MOTOR					OPER. WT. LBS.	REMARKS
							HP	RPM	V	PH	HZ		
CP 1	GRUNDFOS UP 15-29 SF	JANITOR CLOSET	DOMESTIC	IN-LINE	4	8	1/12	1750	115	1	60	6	OPEN SYSTEM. ALL BRONZE WH 7-DAY TIMECLOCK

PLUMBING FIXTURE SCHEDULE

UNIT NO.	DESCRIPTION	CONNECTION SIZES					FIXTURE UNITS			FLOW RATE	SPECIFICATIONS AND REMARKS
		TRAP	W	V	CW	HW	W/V	CW	HW		
WC-1	WATER CLOSET (ADA)	INT.	4"	2"	1"	-	4	5	-	1.28 GPF	AMERICAN STANDARD "MILLENNIUM FLOWISE" #2257101020, WALL HUNG SLOAN ROYAL 111-1.28 SFSM FLUSH VALVE. JR SMITH 0542FY SERIES CARRIER, BEMIS 1955SCT OPEN FRONT SEAT. B
U-1	URINAL (ACCESSIBLE)	INT.	2"	½"	¾"	-	2	4	-	0.125 GPF	AMERICAN STANDARD MODEL 6002.001.020 "PINTBROOK" VITREOUS CHINA. SLOAN ROYAL 186-0.125 SFSM BATTERY POWER FLUSH VALVE.
L-1	LAVATORY (ACCESSIBLE)	1½"	2"	½"	½"	½"	1	1	0.75	0.5 GPM	AMERICAN STANDARD MODEL 0355.041 "LUCERNE" VITREOUS CHINA. AMERICAN STANDARD "SELECTRONIC" 6055.105 ELECTRONIC PROXIMITY FAUCET, BATTERY-POWERED. PROVIDE ASSE 1070 MIXING VALVE 50XTMV1070. B
S-1	SINK W/GARBAGE DISPOSAL	1½"	2	½"	½"	½"	2	1.5	1.125	1.75 GPM	JUST MANF., SL-ADA-1815-A-GR, SINGLE COMPARTMENT, COUNTER MOUNTED, STAINLESS STEEL, 18 GAUGE, 18" X 15" X 61/2"D., SOUND DEADENED. FAUCET: KOHLER, "PURIST" K7507, STAINLESS STEEL FINISH, SWIVEL SPOUT. MCGUIRE LFH ANGLE STOPS, SUPPLIES, 17GA. ADA COMPLIANT. GARBAGE DISPOSAL."IN-SINK-ERATOR" PRO 750, 3/4 HORSEPOWER, 120V-1PH-60HZ.
S-2	SINK	1½"	2	½"	½"	½"	2	1.5	1.125	1.75 GPM	JUST MANF., SL-ADA-1815-A-GR, SINGLE COMPARTMENT, COUNTER MOUNTED, STAINLESS STEEL, 18 GAUGE, 18" X 15" X 61/2"D., SOUND DEADENED. FAUCET: KOHLER, "PURIST" K7507, STAINLESS STEEL FINISH, SWIVEL SPOUT. MCGUIRE LFH ANGLE STOPS, SUPPLIES, 17GA. ADA COMPLIANT.
SS-1	SERVICE SINK	1½"	2	½"	½"	½"	3	3	2.25	2.0 GPM	AMERICAN STANDARD MODEL 7741.000, "FLORWELL" ENAMELED CAST-IRON ACID-RESISTING, FLOOR MOUNTED. CHICAGO 897-RCF POLISHED CHROME-PLATED, 1.8 GPM ATMOSPHERIC VACUUM BREAKER WALL-MOUNTED FITTING WITH HOSE END, WALL BRACE, BUCKET HOOK, INTEGRAL STOPS. CHROME STRAINER COAT WIRE RIM GUARD, #7745.811, HOSE AND GRID DRAIN #7721.038.
DF-1	DRINKING FOUNTAIN (ACCESSIBLE)	1½"	2"	½"	½"	-	1	1	-	1.5 GPM	ELKAY #LMABFT8WSSK: WATER COOLER(LMABFTLBWSSC), BOTTLE FILLER(LZWSR). WATER FILTERED MECHANICALLY ACTIVATED, 8GPH @ 50° F, 18 GAUGE, BOTTLE FILLER. PROVIDE MOUNTING FRAME AND BRACKET(MLP200), 115V, 60HZ, SINGLE PHASE.
FS-1	FLOOR SINK	3"	2"	2"	-	-					JR SMITH 3140 W/ TRAP PRIMER CONNECTION W/ ½ GRATE FOR DISCHARGE INDIRECT WASTE.
FD-1	FLOOR DRAIN	2"	2"	2"	-	-	1	-	-	-	MIFAB F1000, CAST-IRON DRAIN W/CLAMPING FLANGE, BOTTOM OUTLET, 6" SQ. STAINLESS STRAINER & TRAP PRIMER CONNECTION. SEE PLAN FOR SIZE.
FD-2	FLOOR DRAIN (MEDIUM DUTY)	2"	4"	2"	½"	-	1	-	-	-	JR SMITH 2110 W/ TRAP PRIMER.
R-1	REFRIGERATOR/ ICE MAKER	-	-	-	½"	-	-	0.5	-	-	FURNISHED UNDER ANOTHER SECTION, PROVIDE MCGUIRE LFH SERIES ANGLE STOP IN RECESSED WALL BOX AND CONNECT COLD WATER TO REFRIGERATOR ICE MAKER.
IM-1	ICE MAKER	-	-	-	½"	-	-	0.5	-	-	FURNISHED UNDER ANOTHER SECTION, PROVIDE MCGUIRE LFH SERIES ANGLE STOP IN RECESSED WALL BOX AND CONNECT COLD WATER TO ICE MAKER.
EEWS-1	EMERGENCY EYE WASH SHOWER	-	-	-	1 ¼"	-	-	-	-	-	ACORN SAFETY #S1340-BF SAFETY STATION WITH ET71-2-BVS-OTG, 7-3/8" DIA. YELLOW ABS SHOWER HEAD, 1" IPS CHROME PLATED BRASS STAY-OPEN BALL VALVE, UNIT IS PROVIDED WITH STAINLESS STEEL ACTUATOR ARM AND STAINLESS STILL PULL ROD. SPILL DRAIN TO FLOOR.
TP-1	TRAP PRIMER	-	-	-	½"	-	-	-	-	-	SIOUX CHIEF MODEL 695-01 AUTOMATIC TRAP PRIMER VALVE. INSTALL BEHIND ACCESS PANEL
TP-2	ELECTRONIC TRAP PRIMER	-	-	-	½"	-	-	-	-	-	SIOUX CHIEF MODEL 695-E (WITH MANIFOLD) 695-ES01 (SINGLE) 115V AGAINST THE WALL IN MECHANICAL OR STORAGE ROOM. RECESSED IN WALL BEHIND ACCESS PANEL FOR INTERIOR APPLICATIONS OR WHERE APPLICABLE.
WHA-1	WATER HAMMER ARRESTER	-	-	-	-	-	-	-	-	-	SEE SPECIFICATIONS SECTION 2.15/P00.3.
HB-1	HOSE BIBB (RECESSED)	-	-	-	¾"	-	-	1	-	-	WOODFORD MB24 RECESSED WALL HYDRANT
HB-2	HOSE BIBB	-	-	-	¾"	-	-	1	-	-	WOODFORD MODEL 21.
RD-1	ROOF DRAIN	-	-	-	-	-	-	-	-	-	J.R. SMITH # 1010Y-CL-U-CID, DUCO CAST IRON BODY WITH COMBINED FLASHING CLAMP AND GRAVEL STOP WITH CAST IRON DOME. SEE ROOF PLANS FOR SIZES.
OD-1	OVERFLOW ROOF DRAIN	-	-	-	-	-	-	-	-	-	J.R. SMITH # 1080Y-CL-U-CID, DUCO CAST IRON BODY WITH COMBINED FLASHING CLAMP AND GRAVEL STOP WITH CAST IRON DOME. SEE ROOF PLANS FOR SIZES.

CITY OF IRVINE
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PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
TIMAN TANG
No. M29973
EXP. 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
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SHEET TITLE:

EQUIPMENT & FIXTURE SCHEDULES

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PLAN CHECK #00856737-CNEW

SECTION 15400 - PLUMBING

PART 1 - GENERAL

1.01 DESCRIPTION

A. GENERAL CONDITIONS AND NOTES INDICATED ON ARCHITECTURAL DRAWINGS APPLY TO THIS SECTION. PROVIDE PLUMBING AS INDICATED, SPECIFIED AND REQUIRED.

1.02 PRODUCT HANDLING

A. PROTECTION: TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS OF THIS SECTION BEFORE, DURING, AND AFTER INSTALLATION.
B. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

1.03 LOCATION AND ACCESSIBILITY

A. VALVES, MOTORS AND OTHER DEVICES REQUIRING SERVICE, MAINTENANCE AND ADJUSTMENT SHALL BE PLACED IN FULLY ACCESSIBLE POSITIONS AND LOCATIONS.
B. DRAWINGS: COORDINATE ALL SPACE REQUIREMENTS WITH OTHER TRADES. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING, EQUIPMENT AND OTHER ITEMS AND ARE TO BE FOLLOWED AS CLOSE AS POSSIBLE. ALL OFFSETS AND INTERFERENCES MAY NOT BE INDICATED DUE TO THE SCALE OF THE DRAWINGS.

1.04 LOCATION AND ACCESSIBILITY

A. CODES AND STANDARDS
   1. ALL GOVERNING CODES, ORDINANCES AND AGENCIES, IN ACCORDANCE WITH THE PROVISIONS OF GENERAL CONDITIONS AND NOTES OF THESE SPECIFICATIONS.
B. WARRANTY: THE CONTRACTOR SHALL FURNISH A WRITTEN WARRANTY FOR LABOR, MATERIALS AND EQUIPMENT PROVIDED UNDER THIS CONTRACT IN ACCORDANCE WITH THE PROVISIONS OF GENERAL CONDITIONS AND NOTES OF THESE SPECIFICATIONS.

1.05 SUBMITTALS

A. MANUFACTURER'S LITERATURE: SUBMIT BROCHURES ON ALL MATERIALS AND EQUIPMENT TO THE ARCHITECT IN ACCORDANCE WITH THE PROVISIONS OF GENERAL CONDITIONS AND NOTES OF THESE SPECIFICATIONS.
B. OTHER SUBMITTALS:
   1. SHOP DRAWINGS.
   2. STERILIZATION TEST REPORT.
   3. TEST DATA.
   4. OPERATIONS AND MAINTENANCE MANUALS.
   5. RECORD DRAWINGS.

PART 2 - PRODUCTS

2.01 GENERAL

A. PIPE ESCUTCHEONS: PROVIDE POLISHED CHROMIUM PLATE AND BRASS SET SCREW ESCUTCHEONS WHERE PLUMBING PIPES PASS THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS IN FINISHED PORTIONS OF BUILDING, INCLUDING PIPES AT FIXTURES.
B. PIPE IDENTIFICATION:
   1. PIPING IDENTIFICATION PER CALIFORNIA PLUMBING CODE REQUIREMENTS AND PIPES NOT COVERED BY THE PLUMBING CODE SHALL BE PER ANSI STANDARDS: EACH INDIVIDUAL PIPELINE SHALL BE MARKED FOR QUICK AND EASY IDENTIFICATION AS TO CONTENT, DIRECTION OF FLOW, AND CHARACTER OF MATERIAL CARRIED IN THE PIPES BY SETON SNA OR STR MARKERS.
   2. MARKERS SHALL BE INSTALLED AND SPACED AT NOT MORE THAN 20 FT. INTERVALS, BUT NOT LESS THAN ONCE PER ROOM AND SO LOCATED THAT MARKERS SHALL BE VISIBLE FROM FLOOR LEVEL.
      a. ONE MARKER SHALL BE INSTALLED AT EACH SIDE OF VALVES, SPECIAL FITTINGS AND AT BRANCH TAKE-OFF. IN FURRED SPACES INSTALL ONE BAND 2 FT. ABOVE FLOOR AND 19 IN. BELOW CEILING LINE.
      b. FURNISH TWO IDENTIFICATION CHARTS COMPLETE WITH GLASS AND ALUMINUM FRAME SHOWING LIST OF MATERIALS CARRIED IN THE PIPING SYSTEM, CLASSIFIED BY NATURE OF ITS CONTENTS AND RESPECTIVE IDENTIFYING COLORS.
   3. COLOR SCHEME SHALL BE APPROVED. BASE COLOR FOR MARKERS SHALL BE AS FOLLOWS:

      DOMESTIC HOT WATER - YELLOW W/ BLACK LETTERS
      DOMESTIC COLD WATER - GREEN W/ WHITE LETTERS
      INDUSTRIAL COLD WATER - YELLOW W/ BLACK LETTERS
      SANITARY SEWER - GREEN W/ WHITE LETTERS
      SANITARY VENT - GREEN W/ WHITE LETTERS
      STORM DRAINS - GREEN W/ WHITE LETTERS
      CONDENSATE - YELLOW W/ BLACK LETTERS
      PUMPED CONDENSATE - YELLOW W/ BLACK LETTERS
      FUEL GAS - YELLOW W/ BLACK LETTERS

C. VALVE IDENTIFICATION:
   1. VALVE CHARTS: TWO COMPUTER GENERATED CHARTS NOT LESS THAN 8 IN. X 10 IN. SHALL BE MADE SHOWING ASSIGNED NUMBER CONTROLLED IN EACH SYSTEM BY EACH VALVE IN MECHANICAL ROOMS ONLY. CHARTS SHALL BE MOUNTED BEHIND ALUMINUM FRAME WITH GLASS.
   2. VALVE TAGS: PROVIDE A TAG CONSISTING OF A 2 IN. DIA. 20 GA. STAINLESS STEEL OR BRASS DISK FOR EACH MAIN AND BRANCH LINE SHUT-OFF VALVE OR COCK. FASTEN TAGS IN PLACE WITH CONTINUOUS STEEL RING OR CHAIN AROUND STEM OF VALVES AND ROUND PIPE FOR COCKS. TWO INCH LETTERS AND FIGURES STENCILED IN CONTRASTING COLORS ON PIPE OR PIPE COVERING MAY BE SUBSTITUTED FOR TAGS ON OS&Y VALVES. DISKS SHALL BE STAMPED WITH A NUMBER CORRESPONDING TO IDENTIFICATION (OR LOCATION) NUMBER SHOWN ON VALVE CHART AND WITH SERVICE DESIGNATION, WITH 1/4 IN. HIGH LETTERS.
D. MATERIALS: MATERIALS WHEN NOT OTHERWISE DEFINITELY SPECIFIED SHALL CONFORM TO THE APPLICABLE STANDARDS.
E. EQUAL MATERIALS AND SUBSTITUTIONS: IN ADDITION TO MANUFACTURERS SPECIFIED, THE FOLLOWING SHALL ALSO BE CONSIDERED EQUAL, PROVIDED CORRESPONDING MODELS MEET SPECIFIED REQUIREMENTS. EQUIVALENT SUBSTITUTED EQUIPMENT NAMED HEREIN SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. SUBMIT ALTERNATE SELECTIONS AT TIME OF BID, LISTING MAJOR EQUIPMENT.

ITEM	MANUFACTURER
1. ACCESS PANELS:	MILCOR, MIFAB
2. ANGLE STOPS & SUPPLIES:	BRASSCRAFT, SPEEDWAY
3. BACKFLOW PREVENTERS:	WATTS
4. CLEANOUTS:	ZURN
5. DRAINS & FLOOR SINKS	ZURN, JAY R SMITH
6. FAUCETS:	CHICAGO, DELTA, SLOAN, KOHLER, GROHE
7. HOSE BIB:	MIFAB, ACORN
8. INSULATION:	3M, MANVILLE, FIBERGLASS
9. NO-HUB COUPLINGS:	CLAMP-ALL, MISSION, HUSKEY
10. PIPE HANGERS & SUPPORTS:	TOLCO, B-LINE, HILTI
11. PLUMBING FIXTURES:	TOTO, SLOAN, ZURN, KOHLER
12. PRESSURE GAUGES:	MARSH, MARSHALLTOWN, TRERICE
13. SOLDERS:	HANDY-HARMAN, LUCAS, MILHAUPT
14. STRAINERS:	WALWORTH, BAILEY, MUELLER
15. TRAP PRIMER:	MIFAB, SIOUZ CHIEF, JAY R SMITH
16. VALVES:	CRANE, RED-WHITE
17. WATER HEATERS:	RHEEM, BRADFORD WHITE
18. PRESSURE REDUCING VALVES:	WATTS, CLAVAL

2.02 PIPE AND FITTINGS

A. SOIL, WASTE, VENT, AND STORM DRAIN PIPING BELOW GRADE: POLYVINYL CHLORIDE (PVC) SCHEDULE 40 SOLID CORE DWV PIPE AND FITTINGS WITH SOLVENT CEMENTED JOINTS. PIPE AND FITTINGS TO CONFORM AND BE INSTALLED TO THE REQUIREMENTS OF ASTM D1785, ASTM D 2665, AND ASTM F 1866.
B. SOIL, WASTE, VENT, AND STORM DRAIN PIPING ABOVE GRADE: CAST-IRON SOIL PIPE AND FITTINGS CONFORM AND BE INSTALLED TO THE REQUIREMENTS OF CISPI STANDARD 301, ASTM A888 OR ASTM A74 FOR ALL PIPE AND FITTINGS. PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND BE LISTED BY NSF INTERNATIONAL OR RECEIVE PRIOR APPROVAL OF THE ENGINEER. TYLER, A. B. & I., CHARLOTTE. WRAP ALL UNDERGROUND PIPING PER PARAGRAPH 3.09 HERE IN. TYLER, A. B. & I., CHARLOTTE.
C. DOMESTIC HOT AND COLD WATER PIPING: TYPE L HARD DRAWN COPPER TUBE, ASTM B88 AND WROUGHT COPPER FITTINGS, ANSI B16.22. SOLDER AND FLUX SHALL BE J.W. HARRIS BRIDGET, LEAD-FREE SOLDER ALLOY. 95-5 SOLDERS ARE NOT APPROVED. BELOW GROUND PIPING SHALL BE TYPE K WITH SILVER SOLDERED BRAZED JOINTS.
D. INDIRECT AND CONDENSATE DRAIN PIPING: TYPE M COPPER TUBE, ASTM B88 AND SOLDER AND FLUX SHALL BE J.W. HARRIS LEAD-FREE SOLDER WITH NON-CORROSIVE PASTE FLUX. COORDINATE CONDENSATE DRAIN TRAP INSTALLATION WITH MECHANICAL CONTRACTOR.

2.03 UNIONS AND GASKETS

A. 2 INCHES AND SMALLER FOR STEEL PIPE: SCREWED MALLEABLE IRON GROUND JOINT, 300 LB CLASS 150 WITH BRASS TO IRON SEAT, GALVANIZED OR BLACK TO SUIT SERVICE.
B. 2-1/2 INCHES AND LARGER FOR STEEL PIPE: CAST-IRON FLANGED GASKET TYPE, CONFORMING TO ANSI B16.1, GALVANIZED OR BLACK TO SUIT SERVICE, OR 150 POUND FORGED STEEL SLIP-ON FLANGES.
C. UNIONS FOR COPPER TUBING: CAST BRONZE, GROUND JOINT PATTERN, SOLDERED JOINT CONNECTION, ASTM B62, ANSI B16.18
D. DIELECTRIC UNIONS: COMPLETE WITH ISOLATORS AND GASKETS OR SAME SIZE AS PIPE, GALVANIZED OR BLACK TO SUIT SERVICE. WATTS SERIES 3004/LF3004 GALVANIZED OR WATTS SERIES 3006 BLACK STEEL.

2.04 VALVES

A. VALVES SHALL BE OF SAME MANUFACTURER, OR FOLLOWING NUMBERS OR EQUIVALENT BY COMPARATOR CHART OF APPROVED MANUFACTURER. PROVIDE ADAPTERS FOR VALVES IN COPPER TUBING WHERE NECESSARY. ALL DOMESTIC WATER VALVES, 2-1/2 IN. AND SMALLER, SHALL BE FULL PORT BALL VALVES.
   1. ECCENTRIC VALVES, 2 IN. AND SMALLER, GAS: APOLLO 489-140 SERIES VALVE OR EQUAL WITH 316 STAINLESS STEEL PLUG, CARBON STEEL BODY, THREADED, REINFORCED PTFE SEATS, U.L. LISTED.
   2. BALL VALVES, DOMESTIC WATER 2-1/2 IN. AND SMALLER: LEAD-FREE BRONZE, BODY AND BRASS MATERIALS FULLPORT, SOLID BALL CLASS 150, MPTFE SEATS AND STEM PACKING MSSSP-110, ANSSI/NSF 61-8. APOLLO 77CLF-100 SERIES, NIBCO S/T685-80-LF, WATTS B6080 SERIES (THREADED) AND B6801 SERIES (SOLDERED) OR RED AND WHITE 5044 AB.
   3. CHECK VALVES, IN-LINE CHECK VALVE, 2 IN. AND SMALLER, LEAD-FREE BRONZE BODY, THREADED, STAINLESS STEEL SPRING. APOLLO MODEL CVB-61LF SERIES, NIBCO T-480-Y-LF.
   4. BALANCING VALVES: BELL & GOSSETT CIRCUIT SETTER PLUS, BRONZE, SCREWED, WATTS CSM-61 SERIES.
   5. SEISMIC GAS SHUTOFF VALVE: THE SENSING MEANS OF THE VALVE OR SYSTEM SHALL ACTUATE THE SHUTOFF MEANS OF THE VALVE OR SYSTEM WITHIN 5 SECONDS WHEN SUBJECTED TO A HORIZONTAL, SINUSOIDAL OSCILLATION HAVING A PEAK ACCELERATION OF 0.3G AND A PERIOD OF 0.4 SECONDS. THE VALVE SHALL BE CAPABLE OF BEING RESET EXTERNALLY WITHOUT VALVE REMOVAL. THE EARTHQUAKE VALVE SHALL MEET OR EXCEED CALIFORNIA STANDARD NO. 12-23-1, ANSI Z21.71 1981 AND SHALL CARRY A LIFETIME WARRANTY. EQUIVALENT TO KOSO.
   6. CHECK VALVE: DOMESTIC WATER SYSTEMS
      a. IN-LINE CHECK VALVE, 3 IN. AND SMALLER, LEAD-FREE BRONZE BODY THREADED, STAINLESS STEEL SPRING. APOLLO MODEL CVB-61LF SERIES, NIBCO T-480-Y-LF.
      b. DUAL CHECK VALVE, 1 IN. AND SMALLER, LEAD-FREE COMPOSITE BODY WITH CORROSION RESISTANT INTERNAL PARTS, TWO INDEPENDENTLY OPERATED IN-LINE SPRING LOADED MODULAR CHECKS. WILKINS MODEL 705-XL, APOLLO MODEL DUC-4NLF.
   7. PRESSURE REDUCING VALVES: DOMESTIC WATER SYSTEMS
      a. 2 IN. AND SMALLER: WILKINS MOEL 500XL-YSBR-XL, LEAD FREE BRONZE, STAINLESS STEEL SEAT, WITH STRAINER.
      b. 2½" AND 3":WILKINS MODEL 500XL3-Y, LEAD FREE BRONZE, STAINLESS STEEL SEAT, WITH STRAINER.
   8. GAS PRESSURE REDUCING VALVE: SERVICE REGULATOR, INTERNAL RELIEF VALVE TYPE DIAPHRAGM ASSEMBLY AND VENT VALVE. PROVIDE A STRAINER AHEAD OF ALL REGULATORS. CHARACTERISTIC AS INDICATED ON DRAWINGS.

2.05 BACKFLOW PREVENTERS

A. REDUCED PRESSURE TYPE: CAST-BRONZE WITH STAINLESS STEEL FASTENERS, INTEGRAL FULL PORT BALL VALVE AND BRONZE Y-STRAINER, ASTM B584. EQUIVALENT TO WILKINS 975XLS. PROVIDE WITH MODEL AG AIR GAP AND PIPE RELIEF DRAIN TO FLOOR SINK OR AS INDICATED ON DRAWINGS.

2.06 PIPE HANGERS

A. HANGERS SHALL BE SUPPLIED WITH FACTORY INSTALLED ISOLATION AND DICHROMATE FINISH.
   1. 2 IN. AND SMALLER: GRINNELL F69.
   2. 2-1/2 IN. AND LARGER: GRINNELL F65.
   3. CONCRETE INSERTS: GRINNELL 281 & 282.
   4. RISER CLAMPS FOR COPPER PIPING: GRINNELL 261P, PLASTIC COATED.
   5. RISER CLAMPS FOR OTHER PIPING: GRINNEL 261.

2.07 ROOF FLASHING

A. SANITARY VENT FLASHING: SEMCO 1100-3 OR 1100-5, WITH ONE-PIECE LEAD FLASHING AND COUNTER FLASHING SLEEVE.
B. OTHER PIPE THROUGH ROOF FLASHING: SEMCO 1100-2 OR 1100-4, ONE-PIECE 4 LB. LEAD FLASHING AND COUNTERFLASHING SLEEVE.

2.08 PIPE SLEEVES

A. PROVIDE AT CONCRETE OR MASONRY EXTERIOR BEARING WALLS, ADJUST-TO-CRETE, PARAMOUNT, OR SPERZEL CRETESLEEVE. WALL SLEEVES SHALL BE FLUSH WITH FINISHED SURFACE. SLEEVES SHALL BE SIZED TO ALLOW ½ IN. CLEARANCE AROUND PIPE OR INSULATION. INSULATION AND COVERING SHALL BE CONTINUOUS THROUGH SLEEVES.
B. PROVIDE AT EXTERIOR WALLS BELOW GRADE PROVIDED A MODULAR MECHANICAL SEAL CONSISTING OR INTER-LOCKING EPDM RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL OPENING WITH A MOLDED HIGH DENSITY POLYETHYLENE SLEEVE WATER-STOP RING, END CAPS AND REINFORCING RIBS. ASTM B117, ISO 9002. MECHANICAL SEALS SHALL BE "THUNDERLINE" LINK SEAL, OR APPROVED EQUAL.

2.09 ACCESS PANELS

A. ACCESS PANELS IN PLASTER WALLS AND CEILINGS: KARP NO. DSC214PL, ELMDOR PW, 24X24 IN. WITH METAL ACCESS DOOR AND FRAME, PRIME COATED STEEL AND PAINTED TO MATCH ADJACENT SURFACES. FOR FIRE RATED AREAS USE KARP #KRP-150 FR 1-1/2 HOUR B LABEL ACCESS PANELS, U.L. LISTED.
B. ACCESS PANELS IN ACOUSTIC TILE CEILINGS: KARP NO. DSC-210, ELMDOR AT, 24 X 24 IN. WITH METAL ACCESS DOOR AND FRAME, 24 X 24 IN. MINIMUM SIZE, PRIME COATED STEEL, RECESSED TO ACCEPT STANDARD TILE IN FULL OPENING DOOR.
C. ACCESS PANELS IN CERAMIC TILE WALLS: KARP NO. DSC214M, SMITH 4730, CHROME-PLATED COVER AND FRAME OF SUITABLE SIZE FOR PURPOSE INTENDED, BUT NOT LESS THAN 8 X 8 IN. SIZE. FOR FIRE RATED AREAS USE KARP NO. FRP-150 FR 1-1/2 HOUR B LABEL ACCESS PANELS, U.L. LISTED.

2.10 CLEANOUTS

A. FOR CAST-IRON SOIL PIPE, IRON BODY WITH EXTRA HEAVY BRONZE PLUGS SCREWED INTO CAULKING FERRULES, FOR STEEL PIPE, EXTRA HEAVY BRONZE PLUGS. WHERE CLEANOUTS OCCUR IN FINISHED INTERIOR WALLS, PROVIDE ACCESS PANELS, PLATES, AND FRAMES FOR FLUSH MOUNTING. WHERE FLOOR CLEANOUTS OCCUR IN CARPETED AREAS, PROVIDE CLEANOUTS WITH CARPET MARKER. EXPOSED PARTS OF FLOOR CLEANOUTS IN FINISHED ROOM SHALL BE NON-SLIP POLISHED NICKEL BRONZE, CAST-IRON IN UNFINISHED ROOMS. FLOOR CLEANOUTS SHALL HAVE ADJUSTABLE TOP. ALL CLEANOUTS AND CLEANOUT PLUGS SHALL BE ACCESSIBLE. CLEANOUT SHALL BE THE FOLLOWING:
   1. PLASTERED AND/OR DRYWALL TYPE FOR CAST-IRON PIPE: SMITH 4532-S-PC, PRIME COATED.
   2. TILE WALL TYPE FOR CAST-IRON PIPE: SMITH 45585-NB STAINLESS STEEL.
   3. FLOOR LEVEL TYPE IN FINISHED ROOMS: SMITH 4023-Y.

2.11 PRESSURE TEMPERATURE RELIEF VALVE

A. PROVIDE DOMESTIC WATER HEATER WITH ASME RATED PRESSURE/TEMPERATURE RELIEF VALVE SET TO RELIEF AT 125 PSI PRESSURE AND AT 188 DEGREES TO 208 DEGREES F TEMPERATURE.

2.12 THERMOMETERS

A. H.O. TRERICE BX91403-1/21/2 (SCALE 30 DEGREES TO 240 DEGREES F) ADJUSTABLE ANGLE RED MERCURY TYPE WITH 9 IN. CHROME-PLATED BRONZE CASE, 3-1/2 IN. STEM AND SWIVEL NUT ¾ IN. NPT BRASS SEPARABLE SOCKET, AND ETCHED SCALE WITH GRADUATIONS AS SHOWN OR REQUIRED.

2.13 TRAP PRIMER ASSEMBLIES

A. PROVIDE FOR DRAINS AND FLOOR SINKS WHERE TRAP PRIMER IS NOT PROVIDED FROM A WATER CLOSET AND AS INDICATED AND SPECIFIED, EACH INCLUDING TRAP PRIMER VALVE, STANDPIPE, AND DISTRIBUTION UNIT(S) REQUIRED FOR THE SPECIFIED DISTRIBUTION. PROVIDE EACH CONCEALED ASSEMBLY WITH ACCESS PANEL, 8 IN. BY 8 IN. SIZE WHEN DISTRIBUTION UNITS ARE NOT REQUIRED AND 12 IN. BY 12 IN. SIZE WHEN ONE OR TWO DISTRIBUTION UNITS ARE REQUIRED. PROVIDE TRAP PRIMER PIPING SAME AS SPECIFIED FOR DOMESTIC WATER, INCLUDING PIPE WRAPPING. PORTABLE WATER SUPPLY TRAP SEAL PRIMER VALVES SHALL COMPLY WITH ASSE 1018. DRAINAGE AND ELECTRONIC DESIGN TYPE TRAP SEAL PRIMER DEVICE SHALL COMPLY WITH ASSE 1044.
   1. TP-1: PRECISION PLUMBING PRODUCTS MODEL P-1 OR P-2, OR EQUAL.
   2. TP-2: PRECISION PLUMBING PRODUCTS MODEL MINI-PRIME MPB-500-115V OR EQUAL.
   3. TP-3: FLUSH VALVE TRAP PRIMER, SLOAN MODEL VBF-72-A1 OR EQUAL.

2.14 PRESSURE GAUGES

A. POTTER-ROEMER 6240-U.L. - F.M. 0-300 PSI RANGE, COMPLETE WITH 3-1/2 IN. DIAMETER DIAL AND GAUGE COCK. INSTALL PRESSURE GAUGES WHERE INDICATED AND AS REQUIRED.

2.15 WATER HAMMER ARRESTORS

A. PRECISION PLUMBING PRODUCTS (PPP) MAINTENANCE FREE WATER HAMMER ARRESTORS, INSTALLED AS INDICATED OR AS RECOMMENDED BY ASSE 1010 PDI PAMPHLET WH-201. PROVIDE ACCESS PANEL FOR A SINGLE MULTIPLE FIXTURE INSTALLATION. IN NO CASE SHALL A FLUSH VALVE FIXTURE OR A QUICK CLOSING FAUCET OR VALVE BE INSTALLED WITHOUT SHOCK PROTECTION.

2.16 INSULATION

A. ALL PIPE INSULATION SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS. INSULATION THICKNESSES INDICATED ARE BASED ON INSULATION HAVING THERMAL RESISTANCES IN THE RANGE OF R=4. 0 TO R=4.6 PER INCH OF THICKNESS ON A FLAT SURFACE AT A MEAN TEMPERATURE OF 75 DEGREES F. THICKNESSES INDICATED ARE MINIMUM AND SHALL BE INCREASED PROPORTIONATELY FOR MATERIALS HAVING R VALUES LESS THAT 4.0 PER INCH OF THICKNESS OR MAY BE REDUCED FOR MATERIALS HAVING A R VALUES GREATER THAN 4.6 PER INCH THICKNESS. INSTALL PIPE INSULATION AFTER PIPING IS INSTALLED, TESTED, AND APPROVED, AND IS IN CLEAN DRY CONDITION. FIRMLY BUTT INSULATION JOINTS.
B. INSULATE ALL HOT WATER PIPING WITH GLASS FIBER PIPE INSULATION WITH FACTORY APPLIED WHITE JACKET J-M MICRO-LOK HP, 1 INCH THICK FOR PIPE SIZES ½ INCH AND ¾ INCH. 1½ INCHES THICK FOR PIPE SIZES 1 INCH, 1¼ INCHES, AND 1½ INCHES. 2 INCHES THICK FOR 2 INCHES AND LARGER. INSULATE FITTING AND VALVES WITH PREFORMED INSULATION WITH PVC PREMOLDED ONE PIECE FITTING COVERS, J.M. ZESTON COVER. ADHERE LONGITUDINAL LAPS AND BUTTS STRIPS OF JACKET WITH FACTORY APPLIED PRESSURE SENSITIVE TAPE SYSTEM, JM-AP-T. FLANGES AND UNIONS SHALL NOT BE COVERED.
C. INSULATE ALL PIPING UNDER LAVATORIES AND SINKS ACCESSIBLE TO THE PHYSICALLY DISABLED WITH TRUEBRO LAVGUARD, PLUMBEREX PRO-2000, OR EQUAL, P-TRAP AND SUPPLIES FORM FITTED INSULATION.

2.17 PLUMBING FIXTURES

A. GENERAL: PLUMBING FIXTURES TRIM AND EXPOSED SUPPLIES AND WASTES SHALL BE BRASS WITH POLISHED CHROME-PLATED FINISH. PROVIDE INDIVIDUAL LOOSE KEY STOPS OR, IF SO SPECIFIED, SCREW DRIVER STOPS FOR SUPPLIES AND, UNLESS INTEGRAL WITH VALVES OR FAUCETS, MOUNT UNDER FIXTURE. SEPARATELY TRAP ALL WASTES. PROVIDE EXPOSED SUPPLIES AND WASTES TO WALL WITH POLISHED CHROME-PLATED CAST BRASS WALL ESCUTCHEONS. ALL LAVATORIES SHALL HAVE 1-1/2 IN. 17 GAUGE CHROME-PLATED CAST BRASS P-TRAPS. ALL PLUMBING FIXTURES SHALL BE WHITE, UNLESS OTHERWISE NOTED.
B. DRAINS: WHERE INSTALLED IN CONSTRUCTION WITH WATERPROOF MEMBRANE, PROVIDE DRAINS WITH FLASHING CLAMP DEVICE WITH CORROSION-RESISTANT CLAMPING BOLTS.
C. FIXTURE SEALER: INSTALL WALL-HUNG FIXTURES WITH WHITE SILICONE SEALER BETWEEN FIXTURE AND WALL, APPLIED SMOOTH AND EVEN.
D. FIXTURE, TRIM AND ACCESSORIES SHALL BE EQUAL TO THE FOLLOWING: REFER TO FIXTURE SCHEDULES FOR SPECIFICATIONS.
   1. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE SPECIFICATIONS.

2.18 SPECIALTY ITEMS

A. FIRE SAFING: SAFE ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS WITH U.L. LISTED PROSET, HILTI, HYDROFLAME OR EQUAL FIRE SAFING. INSTALL PER MANUFACTURER'S DIRECTIONS.
B. ELECTRIC INSTANTANEOUS WATER HEATERS: POINT-OF-USE ELECTRIC INSTANTANEOUS MICRO-PROCESSOR CONTROLLED WATER HEATER, 98% ENERGY EFFICIENT, U.L. LISTED, FACTORY PRE-SET OUTLET TEMPERATURE OF 110° F, FIELD SERVICEABLE HEATING ELEMENT, HIGH TEMPERATURE LIMIT SWITCH, TURN-ON FLOW RATE=0.2GPM. PROVIDE WITH "PPP" #MM-5001FCT WATER HAMMER ARRESTOR ON COLD WATER ANGLE STOP AND "WATTS" LFFS-CFC-S FLOODSAFE LEAD-FREE BRAIDED STAINLESS STEEL COLD WATER SUPPLY CONNECTOR WITH COMPRESSION FITTINGS.
   1. WATER HEATER (WH-1): REFER TO WATER HEATER SCHEDULE FOR SPECIFICATION.
   2. WATER HEATER (WH-2): REFER TO WATER HEATER SCHEDULE FOR SPECIFICATION.

PART 3 - EXECUTION

3.01 LOCATIONS AND SPACE REQUIREMENTS

A. CONTRACTOR SHALL FULLY INFORM HIMSELF REGARDING PECULIARITIES AND LIMITATIONS OF SPACES AVAILABLE FOR INSTALLATION OF WORK UNDER THIS DIVISION. DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF PIPING, EQUIPMENT, AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. WORK SPECIFIED AND NOT CLEARLY DEFINED BY DRAWINGS SHALL BE INSTALLED AND ARRANGED IN A MANNER SATISFACTORY TO ARCHITECT. IN THE EVENT CHANGES IN INDICATED LOCATION OR ARRANGEMENT ARE DEEMED NECESSARY BY ARCHITECT, THEY SHALL BE MADE BY CONTRACTOR WITHOUT ADDITIONAL CHARGES PROVIDED THE CHANGE IS ORDERED BEFORE WORK IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.
B. VERIFY ALL SPACES, DIMENSIONS FOR ALL FIXTURES, EQUIPMENT, TENANT OR OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER SECTIONS.
C. OBTAIN ALL NECESSARY ROUGH-IN DATA AND DIMENSIONS FOR ALL FIXTURES, EQUIPMENT, TENANT OR OWNER-FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER SECTIONS.
D. MAINTAIN AMPLE HEADROOM, CLEARANCE AND ACCESSIBILITY. MAINTAIN CEILING HEIGHTS.
E. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION.

3.02 DISCREPANCIES

A. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE ARCHITECT. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED. INTERFERENCES BETWEEN INSTALLED WORK OF VARIOUS TRADES DUE TO LACK OF COORDINATION SHALL BE REVIEWED BY THE ARCHITECT/ENGINEER WHOSE DECISION IS FINAL AND RESOLVED BY CONTRACTOR. RELOCATE OR OFFSET ANY WORK AS REQUIRED TO ACCOMMODATE WORK OF OTHER TRADES AT NO EXTRA COST TO THE OWNER WHEN SO DIRECTED BY THE ARCHITECT/ENGINEER.

3.03 PIPE INSTALLATION

A. MAKE PIPE RUNS STRAIGHT AND TRUE. SPRINGING OR FORCING PIPING INTO PLACE IS NOT PERMITTED. INSTALL IN MANNER TO PREVENT ANY UNDUE STRAIN ON EQUIPMENT. MAKE JOINTS SMOOTH AND UNOBSTRUCTED INSIDE AND OUT, AND REAM PIPE ENDS THOROUGHLY TO REMOVE BURRS. CONCEAL PIPING IN FINISHED PORTIONS OF THE BUILDINGS EXCEPT AS OTHERWISE DIRECTED OR INDICATED. CAP OR PLUG ENDS AND OPENINGS IN PIPE AND FITTINGS IMMEDIATELY TO EXCLUDE DIRT UNTIL EQUIPMENT IS INSTALLED OR FINAL CONNECTIONS ARE MADE. MAKE PIPE SIZE REDUCTIONS WITH REDUCING FITTINGS. USE NO BUSHINGS UNLESS SPECIFICALLY AUTHORIZED. USE NO CLOSE NIPPLES. PROCEED TO ROUGH IN AS RAPIDLY AS GENERAL CONSTRUCTION OF BUILDING WILL PERMIT AND COMPLETE AND TEST BEFORE ANY LATHING, PLASTERING, OR DRYWALL, OR OTHER FINISH WORK IS STARTED. FIT WORK TO AVAILABLE SPACE AND ACCURATELY ROUGH IN. GRADE AND VALVE WATER PIPING SO AS TO PROVIDE FOR COMPLETE DRAINAGE AND CONTROL OF THE SYSTEM. PROVIDE CLAMPS AND/OR CONCRETE THRUST BLOCKS AT DEAD ENDS, ANGLES, OR OTHER POINTS WHERE SEPARATION OF JOINTS MAY OCCUR. GRADE VENT PIPING TO ALLOW PIPING TO FREE ITSELF OF CONDENSATION OR WATER.
B. INSTALL PIPING TO CLEAR BEAMS UNLESS SLEEVING IS INDICATED. CONSTANTLY CHECK WORK OF OTHER TRADES TO PREVENT INTERFERENCE WITH THIS INSTALLATION. OBTAIN APPROVAL FROM ARCHITECT IF CORING OR CUTTING OF CONCRETE WORK IS NECESSARY DUE TO FAILURE TO INSTALL REQUIRED SLEEVES PRIOR TO THE TIME OF CONCRETE POUR. COST OF CORING AND CUTTING WORK SHALL BE BORNE BY THE SUBCONTRACTOR.
C. EXPOSED PLATED OR ENAMELED PIPE: MAKE CONNECTIONS TO EQUIPMENT WITH SPECIAL CARE. SHOW NO TOOL MARKS OR THREADS.
D. DIELECTRIC UNIONS: MAKE CONNECTIONS BETWEEN TWO DISSIMILAR METAL PIPES WITH DIELECTRIC UNIONS.
E. UNIONS: PROVIDE A UNION AT BOTH SIDES OF AUTOMATIC VALVES, AT EQUIPMENT CONNECTIONS AND ELSEWHERE INDICATED OR REQUIRED, UNLESS FLANGES ARE INDICATED.
F. FLOOR, WALL AND CEILING PLATES: PROVIDE WHERE PIPES PIERCE FINISHED SURFACES.
G. NOISE: INSTALL SOIL, WASTE, AND WATER PIPING IN MANNER THAT PREVENTS ANY UNUSUAL NOISE FROM FLOW OF WATER UNDER NORMAL CONDITIONS.
H. SHUTOFF VALVES: PROVIDE WHERE INDICATED AND REQUIRED FOR ADEQUATE CONTROL OF SYSTEMS AND FOR ISOLATION OF FIXTURE GROUPS AND EQUIPMENT.
I. BURIED PIPING: INSTALL WITH MINIMUM 36 IN. COVERAGE UNLESS OTHERWISE INDICATED. LAY PIPING ACCURATELY TO GRADE WHERE INVERT ELEVATIONS ARE INDICATED. WHEN REQUIRED, PROVIDE THRUST BLOCKS PER MANUFACTURER'S RECOMMENDATIONS.
J. EQUIPMENT AND MATERIALS: INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
K. ACCESSIBILITY: INSTALL WORK READILY ACCESSIBLE FOR NORMAL OPERATION, READING OF INSTRUMENTS, ADJUSTMENT, SERVICE, INSPECTION AND REPAIR. PROVIDE ACCESS PANELS WHERE INDICATED AND REQUIRED.
L. PIPE JOINTS: MAKE SCREWED JOINTS WITH A MINIMUM AMOUNT OF COMPOUND APPLIED TO THE MALE THREAD ONLY. ALL JOINTS SHALL BE MADE PER CODE REQUIREMENTS.
M. PIPE SUPPORTS: SUPPORT OR SECURE TO BUILDING CONSTRUCTION OR FIRMLY ANCHOR WASTE, VENT, AND WATER PIPES IN SUCH A MANNER THAT THEY CANNOT BE DISPLACED. USE OF MAKESHIFT DEVICES SUCH AS WIRE, ROPE, WOOD, AND TAPE, ETC., IS PROHIBITED.

3.04 HANGERS AND SUPPORTS

A. HOLD HORIZONTAL PIPE RUNS FIRMLY IN PLACE USING APPROVED STEEL AND IRON HANGERS, SUPPORTS, AND/OR PIPE RESTS UNLESS OTHERWISE INDICATED. SUSPEND HANGER RODS FROM CONCRETE INSERTS OR FROM APPROVED BRACKETS, CLAMPS OR CLIPS. HANG PIPES INDIVIDUALLY OR IN GROUPS IF SUPPORTING STRUCTURE IS ADEQUATE TO SUPPORT WEIGHT OF PIPING AND FLUID. EXCEPT FOR BURIED PIPING, HANG OR SUPPORT PIPE RUNS SO THAT THEY MAY EXPAND OR CONTRACT FREELY WITHOUT STRAIN TO PIPE OR EQUIPMENT.
   1. HORIZONTAL STEEL PIPING: PROVIDE HANGERS OR SUPPORTS EVERY 10 FEET FOR PIPING 1-1/2 INCHES AND LARGER, EVERY 8 FEET FOR PIPING 1¼ INCHES AND SMALLER.
   2. HORIZONTAL COPPER TUBING: FOR 2 INCHES DIAMETER AND LARGER, PROVIDE HANGERS EVERY 10 FEET, FOR 1½ INCHES DIAMETER AND SMALLER PROVIDE EVERY 6 FEET.
   3. HORIZONTAL CAST-IRON NO HUB PIPING: PROVIDE HANGERS OR SUPPORTS AT EACH SIDE OF A NO HUB FITTING. PROVIDE ANTI-SEPARATION BRACING AT EACH 90 DEGREE CHANGE OF DIRECTION.
   4. SOUND AND ELECTROLYSIS ISOLATORS: PROVIDE AT ALL HANGERS AND SUPPORTS FOR HOT AND COLD DOMESTIC WATER LINES. SECURELY ATTACH PIPE TO WALLS, STUDS, ETC. ALL SUCH PIPING SHALL BE ISOLATED FROM STRUCTURE WITH 1-2 INCH FELT OR TRISOLATORS.
   5. SWAY BRACE IN ACCORDANCE WITH NFPA 13.

3.05 EXPANSION AND CONTRACTION

A. INSTALL PIPING SUBJECT TO EXPANSION AND CONTRACTION WITH EXPANSION LOOPS MADE UP OF BENDS, FITTINGS, OR VICTAULIC COUPLINGS, EXPANSION JOINTS, SWING JOINTS, OR OTHER APPROVED METHODS OR DEVICES. BRANCH LINES FROM MAINS SUBJECT TO EXPANSION AND CONTRACTION SHALL HAVE A SWING JOINT AT A POINT OF CONNECTION WITH THE MAIN. RISERS WHICH PASS THROUGH ONE OR MORE FLOORS SHALL HAVE SWING JOINTS AT THEIR BASE. ANCHOR LINES SUBJECT TO EXPANSION AND CONTRACTION BY APPROVED METHODS TO RESTRICT MOVEMENT.

3.06 CORROSION PREVENTION

A. MAKE JOINTS BETWEEN CUPROUS AND FERROUS MATERIALS WITH APPROVED NYLON INSULATING COUPLINGS. SEPARATE CONTACT SURFACES OF DISSIMILAR METALS WITH NON-CONDUCTING COATING.

3.07 CLEANOUTS

A. PROVIDE CLEANOUTS WHERE INDICATED AND REQUIRED. UNLESS OTHERWISE INDICATED, CLEANOUTS SHALL BE ACCESSIBLE WITH EXTENSIONS TO GRADE, TO OUTSIDE OF BUILDINGS, OR TO FLOORS ABOVE AS INDICATED OR REQUIRED. DO NOT LOCATE CLEANOUTS IN PUBLIC LOBBIES AND PUBLIC CORRIDORS UNLESS APPROVED BY ARCHITECT.
B. MEMBRANES: WHERE WATERPROOFING MEMBRANE OCCURS UNDER FLOOR, BRING MEMBRANE TO CLEANOUT WITHOUT PUNCTURING, AND PERMANENTLY ANCHOR TO INTEGRAL ANCHORING FLANGE WITH A HEAVY CAST-IRON CLAMPING COLLAR AND RUST-PROOFED BOLTS.
C. COVERS: SET CLEANOUT COVERS WITH ALL FINISHED WALL, FLOOR OR GRADE. IN ALL CASES SECURELY ANCHOR BY MEANS OF INTEGRAL LUGS AND BOLTS. WHERE SURFACING MATERIAL SUCH AS RESILIENT COVERING IS SPECIFIED, ASCERTAIN THICKNESS BEING USED AND SET CLEANOUT TOP SO FINISHED FLOOR IS SMOOTH.
D. USE ACORN 3500 THREAD COMPOUND.

3.08 ACCESS BOXES AND PANELS

A. PROVIDE VALVE BOXES FOR VALVES LOCATED BELOW GRADE. PROVIDE METAL ACCESS PANELS OF SIZE AND TYPE HEREINBEFORE SPECIFIED FOR VALVES OR SHOCK ABSORBERS LOCATED IN CONCEALED AREAS.
B. ACCESS BOXES AND PANELS: SET FLUSH WITH FINISHED WALL, FLOOR OR CEILING. THOSE IN FINISHED WALLS SHALL HAVE DOOR OR PLATE REMOVED DURING CONSTRUCTION OR BE OTHERWISE SUITABLY COVERED TO PROTECT FINISH.
C. OUTSIDE GENERAL SERVICE ACCESS BOXES: PROVIDE WITH METAL OR CLAY PIPE SLEEVE EXTENSIONS WHERE ADDED DEPTH IS NECESSARY. DO NOT LOCATE BOXES IN PUBLIC WALKS, DRIVEWAYS OR COVERED PASSAGES UNLESS INDICATED.

3.09 PROTECTION FOR UNDERGROUND CAST-IRON PIPE AND FITTINGS

A. WRAP ALL PIPE AND FITTINGS WITH 8 MIL. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH ANSI/AWWA STANDARD C105/A21.5-93. BED AND BACKFILL WITH CLEAN SAND AT LEAST 6 INCHES THICK SURROUNDING THE PIPE. UNDERGROUND IRON PIPE SHALL BE ELECTRICALLY INSULATED FROM DISSIMILAR METALS AND ABOVE GROUND IRON PIPE.

3.10 STERILIZATION

A. ALL NEW OR REPAIRED POTABLE WATER PIPING SYSTEMS SHALL BE DISINFECTED PRIOR TO USE WHENEVER REQUIRED BY THE AUTHORITY HAVING JURISDICTION. THE METHOD TO BE FOLLOWED SHALL BE THAT PRESCRIBED BY THE HEALTH AUTHORITY OR, IN CASE NO METHOD IS PRESCRIBED BY IT, THE FOLLOWING :
   1. MATERIALS:
      a. LIQUID CHLORINE: U.S. ARMY SPECIFICATION 4-1.
      b. HYPOCHLORIDE: LIQUID SHALL CONFORM TO FED. SPEC O-C-11RA (INT. 4).
   2. METHOD:
      a. THE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL ONLY POTABLE WATER APPEARS AT THE POINTS OF THE OUTLETS.
      b. THE SYSTEM OR PARTS THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN FIFTY PARTS PER MILLION (60 PPM) OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVED OFF AND ALLOWED TO STAND FOR TWENTY-FOUR (24) HOURS; OR, THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER-CHLORINE SOLUTION CONTAINING NOT LESS THAN TWO-HUNDRED (200 PPM) PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR THREE (3) HOURS.
      c. FOLLOWING THE ALLOWED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE CHLORINE RESIDUAL IN THE WATER COMING FROM THE SYSTEM DOES NOT EXCEED THE CHLORINE RESIDUAL IN THE FLUSHING WATER.
      d. THE SYSTEM SHALL BE REPEATED IF IT IS SHOWN BY THE BACTERIOLOGICAL EXAMINATION MADE BY AN APPROVED AGENCY THAT CONTAMINATION PERSISTS IN THE SYSTEM.
   3. TEST REPORTS: FURNISH ONE COPY OF THE TEST REPORT OF COMPLETE AND ADEQUATE STERILIZATION TO ARCHITECT BEFORE FINAL ACCEPTANCE OF WORK. CERTIFICATES SHALL BEAR SIGNATURE OF AN OFFICIAL LABORATORY RESPONSIBLE FOR TEST. COST OF TESTING LABORATORY SERVICES SHALL BE INCLUDED IN THIS SUBCONTRACT.

3.11 TESTS

A. FURNISH NECESSARY LABOR AND EQUIPMENT AND BEAR COSTS FOR TESTING. COST OF REPLACING AND/OR REPAIRING DAMAGE RESULTING THEREFROM SHALL BE BORNE BY THIS CONTRACTOR. SHOULD THIS CONTRACTOR REFUSE OR NEGLECT TO MAKE TESTS NECESSARY TO SATISFY THE ARCHITECT THAT REQUIREMENTS OR SPECIFICATIONS AND DRAWINGS ARE MET, SUCH TEST MAY BE MADE BY AND INDEPENDENT TESTING COMPANY AND THIS CONTRACTOR CHARGED FOR ALL EXPENSES.
B. HYDROSTATIC TESTS: UPON COMPLETION OF A SECTION, OR OF THE ENTIRE HOT AND COLD WATER SUPPLY SYSTEM IT SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE UNDER WHICH IT IS TO BE USED. THE WATER USED FOR TESTS SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY. EXCEPT FOR PLASTIC PIPING, A FIFTY (50) PSI AIR PRESSURE SHALL BE PERMITTED TO BE SUBSTITUTED FOR THE WATER TEST. IN EITHER METHOD, THE PIPING SHALL WITHSTAND THE TEST WITHOUT LEAKING FOR A PERIOD OF NOT LESS THAN FIFTEEN (15) MINUTES.
C. SANITARY SOIL, WASTE AND VENT SYSTEM TESTS: THE PIPING OF THE PLUMBING, DRAINAGE AND VENT SYSTEMS SHALL BE TESTED WITH WATER OR AIR, EXCEPT THAT PLASTIC PIPE SHALL NOT BE TESTED WITH AIR. THE AUTHORITY HAVING JURISDICTION SHALL BE PERMITTED TO REQUIRE THE REMOVAL OF ANY CLEANOUTS, ETC., TO ASCERTAIN WHETHER THE PRESSURE HAS REACHED ALL PARTS OF THE SYSTEM. AFTER THE PLUMBING FIXTURES HAVE BEEN SET AND THEIR TRAPS FILLED WITH WATER, THEY SHALL BE SUBMITTED TO A FINAL TEST. TEST PROCEDURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS LISTED IN THE 2022 CALIFORNIA PLUMBING CODE.
D. WATER HEATERS
   1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST AND ADJUST FIELD-ASSEMBLED COMPONENTS AND EQUIPMENT INSTALLATION, INCLUDING CONNECTIONS, AND TO ASSIST IN FIELD TESTING. REPORT RESULTS IN WRITING.
   2. PERFORM THE FOLLOWING FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS:
      a. LEAK TEST: AFTER INSTALLATION, TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
      b. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.
      c. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
   3. REMOVE AND REPLACE WATER HEATERS THAT DO NOT PASS TEST AND INSPECTIONS AND RETEST AS SPECIFIED ABOVE.
   4. ENGAGE A FACTORY-AUTHORIZED RESPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN COMMERCIAL AND INSTANTANEOUS ELECTRIC WATER HEATERS."

3.12 ADJUSTING

A. UPON COMPLETION OF WORK AND AFTER CLEANING OF SYSTEM, FIXTURES AND EQUIPMENT, AUTOMATIC PARTS OF PLUMBING SYSTEM SHALL BE CAREFULLY ADJUSTED FOR NORMAL OPERATION. ALL FIXTURES STOPS CHECKED FOR PROPER OPERATION AND FINAL ADJUSTMENTS MADE WHERE REQUIRED. SYSTEM SHALL OPERATE QUIETLY, WITHOUT VIBRATIONS OR NOISE.

END OF SECTION

CITY OF IRVINE
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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
TJWAN TANG
No. M29973
EXP 06-30-26
MECHANICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
△	100% DD	01-13-25
△	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
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PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: **P00.3**

SHEET TITLE:
SPECIFICATIONS

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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 1 of 8)
Project Address:	Great Park Blvd. Irvine, CA 92618	**Date Prepared:** 2024-12-16T19:28:47-05:00

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	02	Climate Zone	8
03	Occupancy Types Within Project (select all that apply):				
• All Other Occupancies					

B. PROJECT SCOPE

This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive paths outlined in 140./ 170.2(d) and 141.0(a)/ 180.1, or 141.0(b)2N / 180.2 for additions or alterations. Solar water heating systems are documented on the NRCC-SAB compliance document. Combined hydronic water heating systems are documented on the NRCC-MCH compliance document.

01	02	03		
My project consists of (check all that apply):	System Type[1,2]	System Components		
☒ New system (DHW system being installed for the first time)	Central System (serving nonresidential spaces)	☒ Equipment	☒ Distribution	☒ Controls
☐ System Alteration (equipment, distribution or controls)		☐ Equipment	☐ Distribution	☐ Controls

[1] *FOOTNOTES: Point of use water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.*
[2] *Dwelling units refers to hotel/motel guest rooms and units in a multifamily residential occupancy.*
[3] *DHW systems serving 2 or more dwelling units are considered "Central Systems" for multifamily occupancies*

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with water heating requirements. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. or the table indicated as not compliant for guidance.

01	02	03	04
Domestic Hot Water Equipment	Distribution Systems	Controls	**Compliance Results**
Table F	Table G	Table H	
Yes	Yes	Yes	COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 2 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 3 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

F. DOMESTIC HOT WATER EQUIPMENT

This table is used to demonstrate compliance with mandatory equipment requirements in 110.1 and 110.3. Compliance with prescriptive requirements in 140.5(c) / 170.2(d) must also be demonstrated and with 141.0 / 180.1/ 180.2 for addition and alteration scopes.

Equipment Schedule: Water Heating Efficiency and Standby Loss

03	04			05	06			
System Name	WH-1	Exception to 140.5(c)/ 170.2(d)3	Exceptions Do Not Apply	☐	Gas Service Water Heating System >= 1MMBtu/h[1]	Capacity-weighted Average Efficiency %		
07	08	09	10	11	12	13	14	15
Name or Item Tag	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Max GPM/ First Hour Rating (FHR)	Rated Efficiency	Minimum Efficiency Required	Efficiency Unit	Designed Standby Loss	Maximum Standby Loss
WH-1	Commercial Electric Storage Water Heater	30						1.2	1.2

[1] *FOOTNOTE: In systems >= 1MMBtu/h with multiple units, gas water heaters with input capacity > 100,000 Btu/h may meet 90% Et requirements via an input capacity-weighted average.*
[2] *FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website: https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx*

Water Heating Equipment All Occupancies

	Yes	No	Not Applicable	Requirement
18	☒	☐	☐	Unfired storage tank insulation shall have Internal + External >=R-16 OR External >=R-3.5. Label required per 110.3(c)3
19	☐	☐	☒	New state buildings 60% of energy for service water heating from site solar energy or recovered energy per 110.3(c)5
20	☒	☐	☐	Isolation valves for instantaneous water heater with input rating >6.8 kBTUH or 2 kW has been specified per 110.3(c)6
21	☐	☐	☒	School buildings < 25,000 ft² and < 4 stories must install a heat pump water heating system per 140.5(a)1. Water heating systems serving an individual bathroom space may be an instantaneous electric water heater.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101 | Documentation Software: Energy Code Ace Compliance ID: 247274-1224-0003 Report Generated: 2024-12-16 16:28:48

STATE OF CALIFORNIA
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CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 4 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in 120.3 and 140.5. For multifamily and hotel/motel occupancies, compliance is demonstrated with requirements 110.3(c), 160.4, 170.2(d).

Recirculation Loops in Central Systems Serving Dwelling Units or Nonresidential Spaces

	Yes	No	Not Applicable	Requirement
01	●	○	○	Air release valve or vertical pump installation per 110.3(c)4A
02	●	○	○	Check valve or similar located between recirculation pump and water heating equipment to prevent backflow per 110.3(c)4B
03	●	○	○	Hose bibb installed between pump and equipment and isolation valve between hose bibb and equipment per 110.3(c)4C
04	●	○	○	Isolation valves on both sides of the pump per 110.3(c)4D
05	●	○	○	Cold water and recirculation loop piping shall not be connected to the hot water storage tank drain port per 110.3(c)4E
06	●	○	○	Check valve installed on cold water supply between hot water system and next closest tee on cold water supply per 110.3(c)4F
07	○	○	●	DWELLING UNITS ONLY: For central systems serving multiple dwelling units, design includes a recirculation system serving separate dwelling units per 170.2(d) unless building has <=8 dwelling units.
08	○	○	●	DWELLING UNITS ONLY: For heat pump water heating systems, the hot water return from the recirculation loop shall connect to a recirculation loop tank and shall not directly connect to the primary heat pump water heater inlet or the primary thermal storage tanks per 170.2(d)2A.
09	○	○	●	DWELLING UNITS ONLY: For heat pump water heating systems, the fuel source for the recirculation loop tank shall be electricity if auxiliary heating is needed. The recirculation loop heater shall be capable of multi-pass water heating operation per 170.2(d)2B.

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STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 5 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM

Mandatory Pipe Insulation All Occupancies

13	☐	For systems serving dwelling units, pipe insulation must meet the minimum insulation requirements in Table 160.4-A (see blow) except: • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members • Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5. • Piping surrounded with a minimum of 1 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation.
14	☒	For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A (see below) per 120.3: • Recirculating system piping, including supply and return piping of the water heater • The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system • Pipes that are externally heated
15	☒	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service per 120.3(b) / 160.4(f). Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve.

TABLE 120.3-A / 160.4-A PIPE INSULATION THICKNESS

Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hour per ft² per °F)	Insulation Mean Rating Temp (°F)	Nominal Pipe Diameter (in)			
			< 1	1 to < 1.5	1.5 to < 4	1.5 to < 4 Multifamily & Hotel/Motel
			Minimum Insulation Required			
105-140	0.22 - 0.28	100	1.0 in or R-7.7	1.5 in or R-12.5	1.5 in or R-11	2.0 in or R-16

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101 | Documentation Software: Energy Code Ace Compliance ID: 247274-1224-0003 Report Generated: 2024-12-16 16:28:48

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 6 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

H. DOMESTIC HOT WATER CONTROLS

This table is used to demonstrate compliance with control requirements in 110.3 for all occupancies. For multifamily residential and hotel/motel occupancies, compliance is also demonstrated with requirements in 160.4(e) / 170.2(d).

	Yes	No	Not Applicable	Requirement
01	☒	☐	☐	Construction documents require manufacturer certification that service water-heating systems are equipped with automatic temperature controls capable of adjusting temperature settings per 110.3(a).
02	☒	☐	☐	Systems with capacity > 167,000 BTUH equipped with outlet temperature controls per 110.3(c)1 unless covered by California Plumbing Code 613.0.
03	☒	☐	☐	Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system per §110.3(c)2 unless systems serves healthcare facility.
04	☐	☐	☒	For recirculation systems serving multiple dwelling units, design includes automatic pump controls per 170.2(d) or 180.1(b)3 for additions.
05	☐	☐	☒	For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix RA4.4.9 per 170.2(d).
06	☐	☐	☒	Combustion air positive shut-off shall be provided per 160.4(3).on all newly installed commercial boilers as follows: • Boilers with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure • Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
07	☐	☐	☒	Boiler combustion air fans with motor >= 10 hp shall meet one of the following • The fan motor shall be driven by a variable speed drive OR • The fan motor shall include controls that limit the fan motor demand to <=30% of the total design wattage at 50% of the design air volume.
08	☐	☐	☒	Newly installed boilers with an input capacity [d:gte/] 5MMBtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

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STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 7 of 8)
		Date Prepared: 2024-12-16T19:28:47-05:00

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by 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

Form/Title
NRCI-PLB-E - Must be submitted for all buildings

J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

There are no forms required for this project.

CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | Generated Date/Time: Report Version: 2022.0.000 Schema Version: rev 20220101 | Documentation Software: Energy Code Ace Compliance ID: 247274-1224-0003 Report Generated: 2024-12-16 16:28:48

STATE OF CALIFORNIA
Domestic Water Heating System
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-PLB-E
Project Name:	City Of Irvine - Great Park Landscape Maintenance Facility	**Report Page:** (Page 8 of 8)
Project Address:	Great Park Blvd. Irvine, CA 92618	**Date Prepared:** 2024-12-16T19:28:47-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: John Tran	Documentation Author Signature: John Tran
Company: WSP	Signature Date: 2024-12-16
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine, CA 92618	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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Tjwan Tang	Responsible Designer Signature:
Company: WSP	Date Signed: 2024-12-16
Address: 15231 Laguna Canyon Road, Suite 100	License: M29973
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

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11/10/2020 MAEDBS

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Large Electric Water Htrs.

Cancel

*Model Number: DSE 30A	
Manufacturer: A.O. Smith Corporation (American Water H	Add Date: 06/11/2018
Brand: A. O. SMITH	*Regulatory Status: I - Federally-Regulated Commercial & I
Energy Source: E - Electricity	Heatraps: False
Hot Water Supply Boiler? (T/F): None	InsulationType: Please Select
Mobile Home?: False	Rated Volume: 30
Measured Volume: 29.6	Residential Duty Commercial (T/F): False
Input KW: 6	Thermal Efficiency:
Thermal Efficiency Std:	Standby Loss Percent/Hour: 1.21
Standby Loss Percent/Hour Std: 1.21	Standby Loss Watts: 61.4
Insulation R-Value:	Uniform Energy Factor:
Calculated Field: 1377	Reference Number:

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https://cacertappliances.energy.ca.gov/Pages/Appliance/ApplianceDetail.aspx

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Plumbing Lead - Jeff Hall
WSP Job #: US00022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
TJWAN TANG
No. M29973
EXP. 06-30-26
CIVIL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: P00.4
SHEET TITLE:

TITLE 24 COMPLIANCE FORMS

SVA ARCHITECTS

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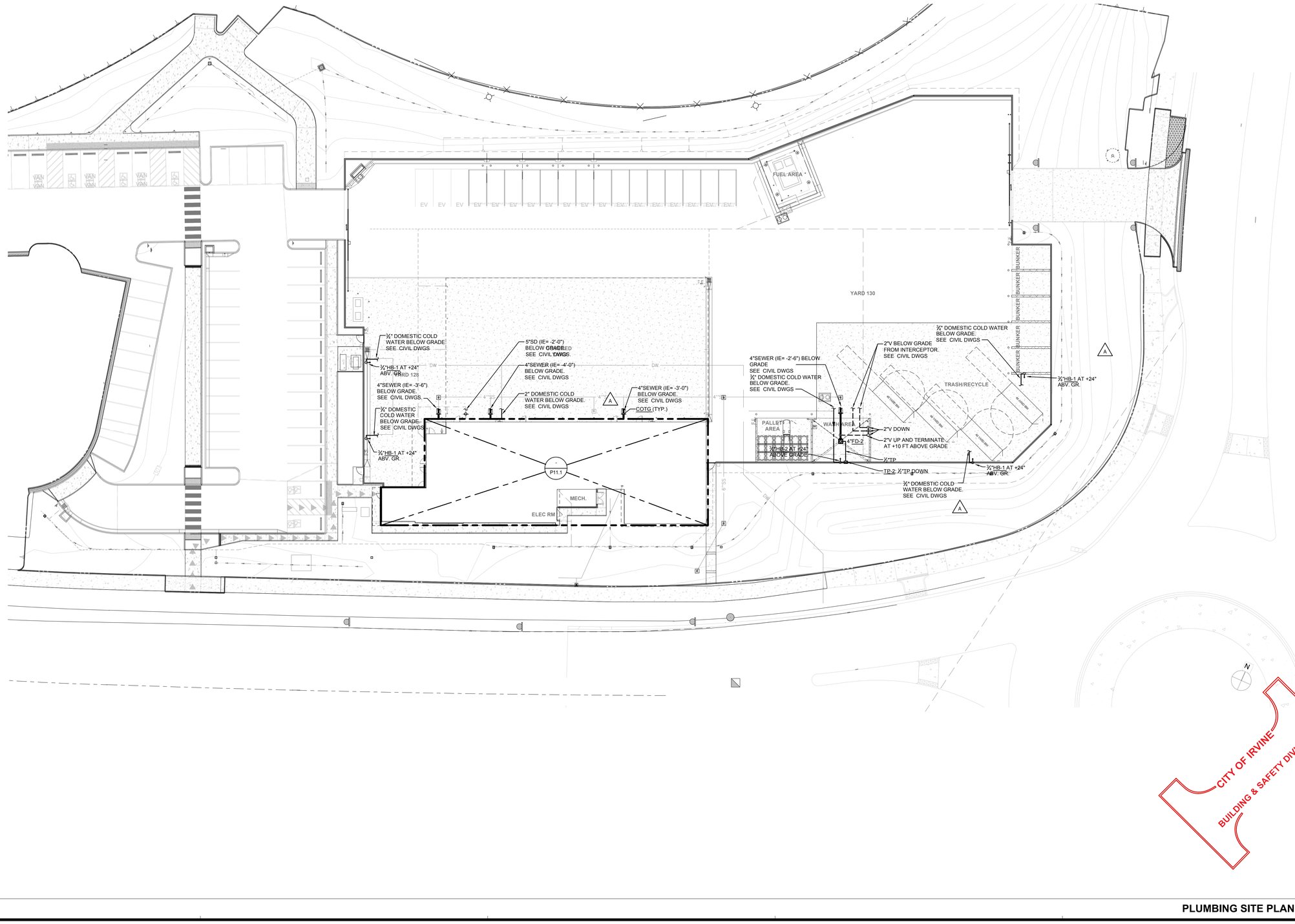
PLAN CHECK #00856737-CNEW



PLUMBING SITE PLAN | 1" = 20'-0" | **1**

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Plumbing Lead - Jeff Hall
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER I-WAN TANG No. M29973 EXP. 06-30-26 CHANGED STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: **P10.0**

SHEET TITLE:

PLUMBING SITE PLAN

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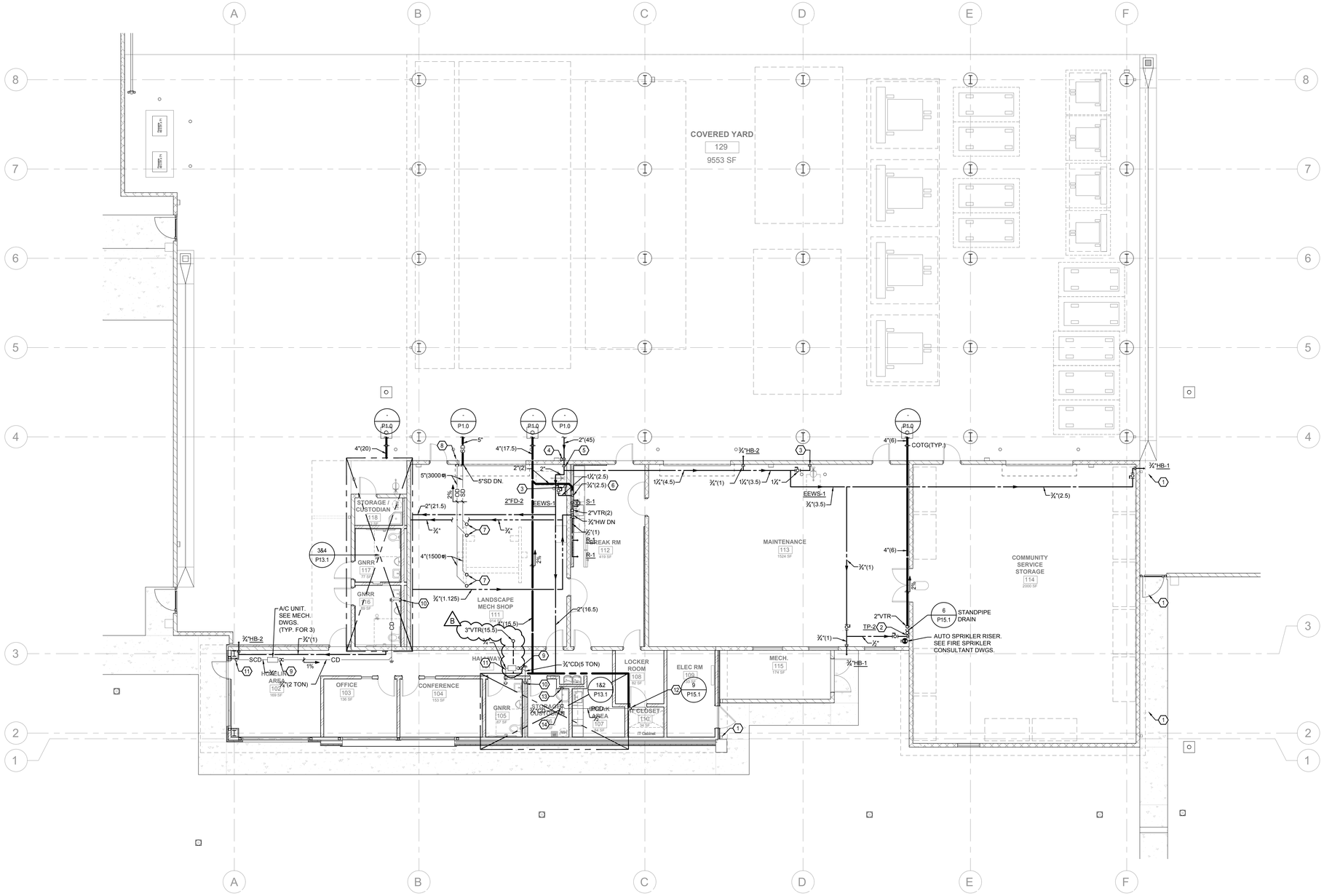
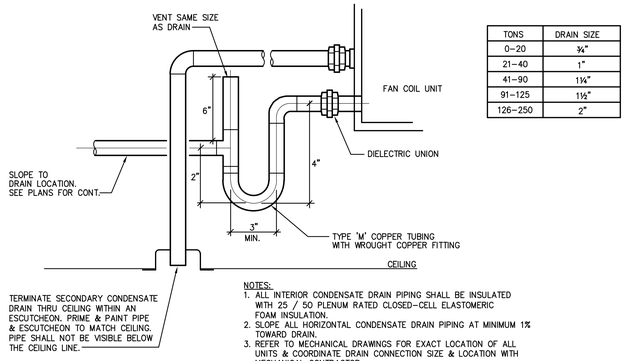
PLAN CHECK #00856737-CNEW



PLUMBING FLOOR PLAN | 1/8" = 1'-0" | 1



TONS	DRAIN SIZE
0–20	¾"
21–40	1"
41–90	1¼"
91–125	1½"
126–250	2"

NOTES:
1. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 25 / 50 PLENUM RATED CLOSED-CELL ELASTOMERIC FOAM INSULATION.
2. SLOPE ALL HORIZONTAL CONDENSATE DRAIN PIPING AT MINIMUM 1% TOWARD DRAIN.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL UNITS & COORDINATE DRAIN CONNECTION SIZE & LOCATION WITH MECHANICAL CONTRACTOR.

CONDENSATE DRAIN TRAP & OVERFLOW | SCALE: NONE | 1

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE AND ELEVATION OF ALL EXISTING PIPING AT P.O.C.'S PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT IF SAID CONNECTIONS ARE NOT IN THE LOCATION SHOWN OR ARE NOT OF SUFFICIENT SIZE OR DEPTH TO MAKE THE CONNECTION.
2. THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.
3. CONTRACTOR TO SLOPE ALL WASTE PIPING AT 2% SLOPE AND ALL INDIRECT/CONDENSATE PIPING AT 1% SLOPE.

KEY NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR DOWNSPOUT.
2. ½" COLD WATER DOWN TO TP-2. ½" TRAP PRIMER DOWN BELOW SLAB TO FLOOR SINK.
3. 1¼" COLD WATER DOWN TO EMERGENCY EYEWASH/ SHOWER.
4. 2" COLD WATER DOWN TO BELOW SLAB WITH SHUT-OFF VALVE ON RISER.
5. 2" COLD WATER DOWN ON WALL.
6. ¾" COLD WATER DOWN.
7. 4" STORM DRAIN AND OVERFLOW DRAIN UP TO ROOF.
8. SPILL 5" OVERFLOW DRAIN THRU WALL TO GRADE AT 6" ABOVE GRADE.
9. ¾" CONDENSATE DRAIN TRAP. SEE DETAIL1.
10. ¾" CONDENSATE DRAIN DOWN IN WALL AND CONNECT TO LAVATORY TAILPIECE.
11. SPILL ¾" SECONDARY CONDENSATE DRAIN THRU CEILING WITHIN AN ESCUTCHEON. PRIME AND PAINT PIPE AND ESCUTCHEON TO MATCH CEILING. PIPE SHALL NOT BE VISIBLE BELOW CEILING LINE. SEE DETAIL 1.
12. ½" PUMPED CONDENSATE DRAIN DOWN W/ CHECK VALVE TO CONDENSATE PUMP PROVIDED WITH UNIT BY MECHANICAL.
13. ¾" CONDENSATE DRAIN DOWN IN WALL AND SPILL TO MOP SINK.
14. RISE AND CONNECT ½" PUMPED CONDENSATE DRAIN TO UPPER ½ OF ¾" GRAVITY CONDENSATE DRAIN ABOVE CEILING. SLOPE GRAVITY DRAIN AT 1%.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Plumbing Lead - Jeff Hall
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER I. IWAN TAN No. M29973 EXP. 06-30-26 CHANICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: P11.1
SHEET TITLE:

PLUMBING FLOOR PLAN

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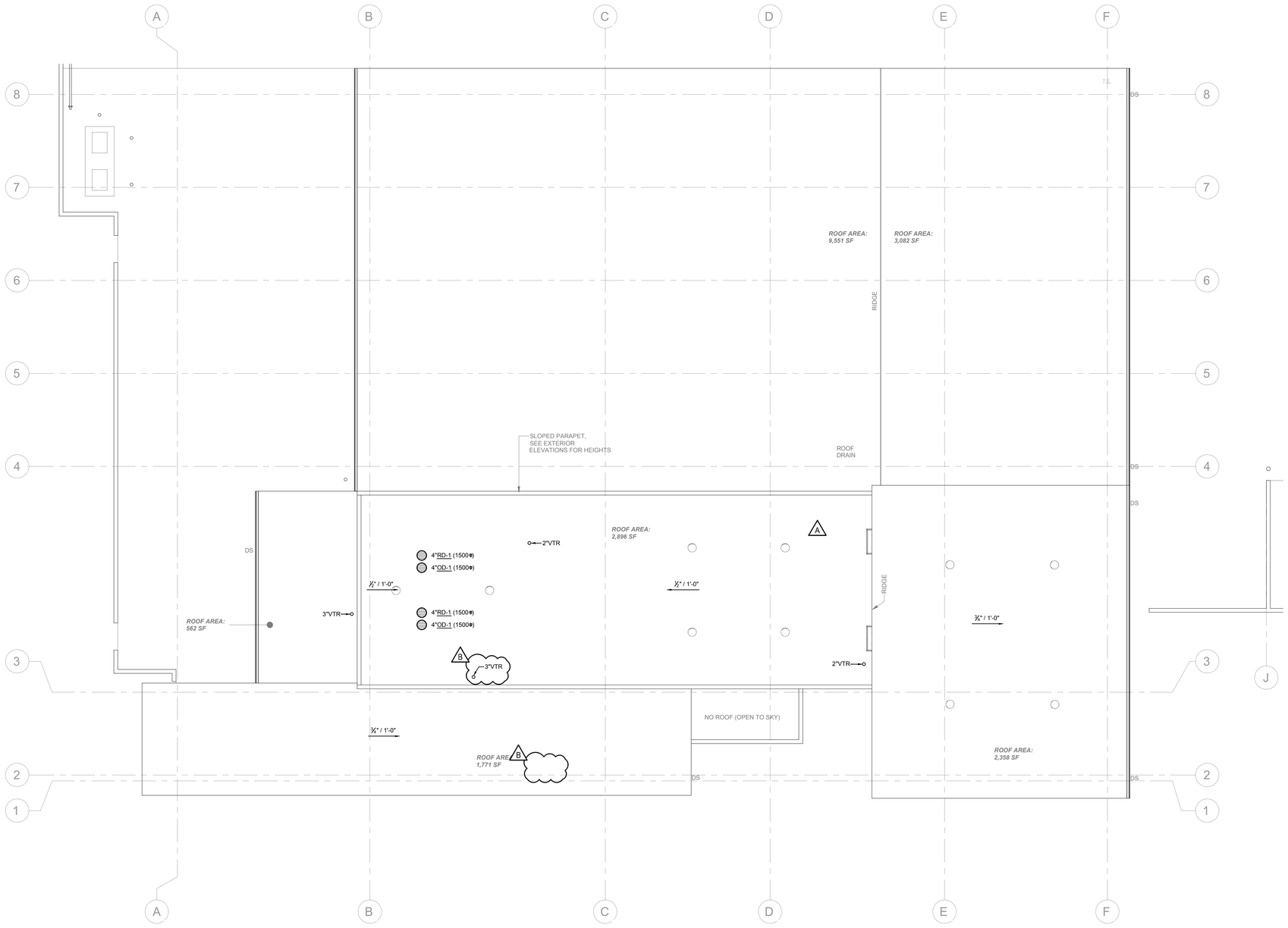
PLAN CHECK #00856737-CNEW



PLUMBING ROOF PLAN | 1/8" = 1'-0" | **1**

NOTE:
1. STORM AND OVERFLOW PIPING SIZE PER PER 2022 CPC TABLE 1103.1 AND 1103.2 UNDER 4 INCH PER HOUR RAINFALL RATE.

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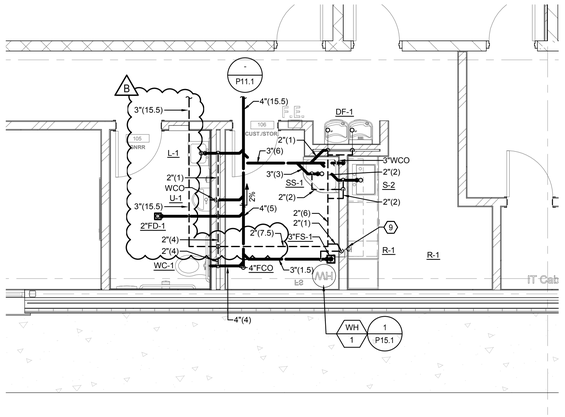
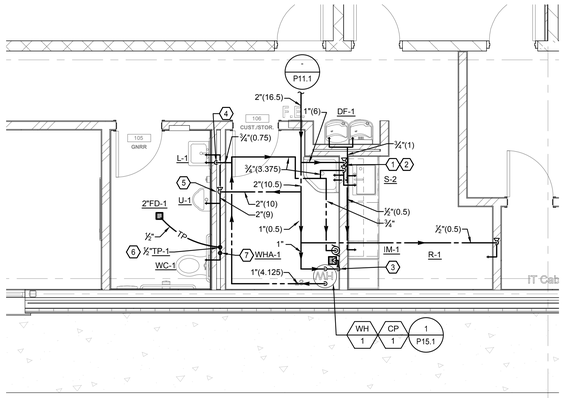


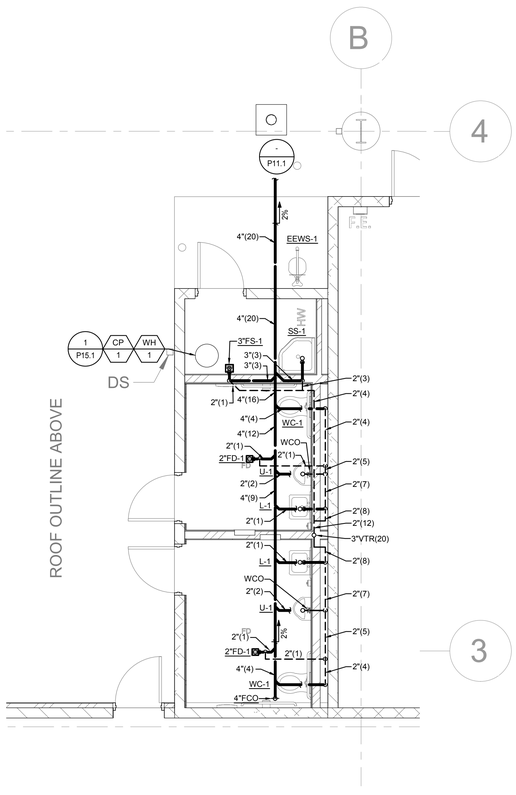
ENLARGED WASTE AND VENT PLAN - ADMINISTRATION RESTROOM

1/4" = 1'-0" | 2



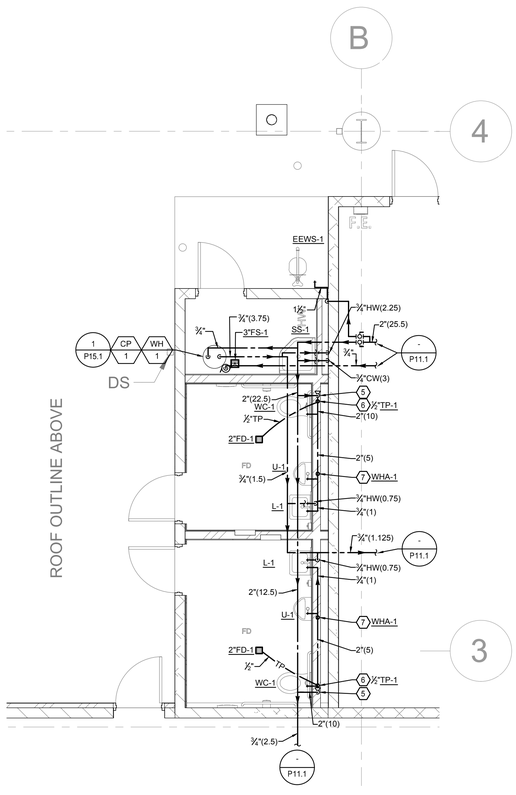
ENLARGED WATER PLAN - ADMINISTRATION RESTROOM

1/4" = 1'-0" | 1



ENLARGED WASTE AND VENT PLAN - YARD RESTROOMS

1/4" = 1'-0" | 4



ENLARGED WATER PLAN - YARD RESTROOMS

1/4" = 1'-0" | 3

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE AND ELEVATION OF ALL EXISTING PIPING AT P.O.C.'S PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT IF SAID CONNECTIONS ARE NOT IN THE LOCATION SHOWN OR ARE NOT OF SUFFICIENT SIZE OR DEPTH TO MAKE THE CONNECTION.

2. THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.

3. CONTRACTOR TO SLOPE ALL WASTE PIPING AT 2% SLOPE AND ALL INDIRECT/CONDENSATE PIPING AT 1% SLOPE.

KEYNOTES:

1. 1" COLD WATER PIPING DOWN IN WALL TO SHUT-OFF VALVE BEHIND ACCESS PANEL.
2. ¾" COLD WATER PIPING DOWN IN WALL TO SHUT-OFF VALVE BEHIND ACCESS PANEL.
3. ½" COLD WATER DOWN TO TP-1, SPILL ½" TRAP PRIMER PIPING INDIRECTLY TO FLOOR SINK.
4. ¾" HOT WATER PIPING DOWN IN WALL TO SHUT-OFF VALVE BEHIND ACCESS PANEL.
5. 2" COLD WATER PIPING DOWN IN WALL TO SHUT-OFF VALVE BEHIND ACCESS PANEL.
6. TRAP PRIMER, ½"TP-1, BEHIND ACCESS PANEL. ROUTE TRAP PRIMER PIPING BELOW FLOOR TO FLOOR DRAIN, FD-1.
7. WATER HAMMER, WHA-1, IN WALL BEHIND ACCESS PANEL.
8. 1½" COLD WATER PIPING DOWN IN WALL TO SHUT-OFF VALVE BEHIND ACCESS PANEL.
9. ROUTE AND SPILL ICE MAKER DRAINAGE INDIRECTLY TO FLOOR SINK IN CUST./STOR 106.

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PLUMBING ENLARGED PLANS

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PLAN CHECK #00856737-CNEW

WATER SYSTEM CALCULATION

STREET PRESSURE	HIGH = 68 P.S.I. LOW = 62 P.S.I.	
TOTAL FIXTURE UNITS = 47 FU, GPM = 50		
LOSSES:		
2" METER @ 50 GPM	=	1.0 P.S.I.
2" RPBP @ 50 GPM	=	12 P.S.I.
STATIC LOSS (.433 X 15 FT.)	=	6.5 P.S.I.
RESIDUAL FIXTURE	=	25 P.S.I.
TOTAL	=	44.5 P.S.I.
PRESSURE AVAILABLE FOR FRICTION LOSS: 62 PSI– 44.5 PSI	=	17.5 P.S.I.
SYSTEM EQUIVALENT LENGTH: (METER TO RESIDUAL FIXTURE)	=	350+25%=437 FT.
ALLOWABLE AVERAGE LOSS DUE TO FRICTION PER 100 FT. OF PIPE: 17.5 PSI ÷ 437 FT. X 100 FT.	=	4.0 PSI/100 FT.

COLD WATER SYSTEM SIZING IS BASED ON 3 PSI /100' OR 8 FT. PER SECOND MAXIMUM VELOCITY, WHICHEVER RESTRICTION IS GREATER.

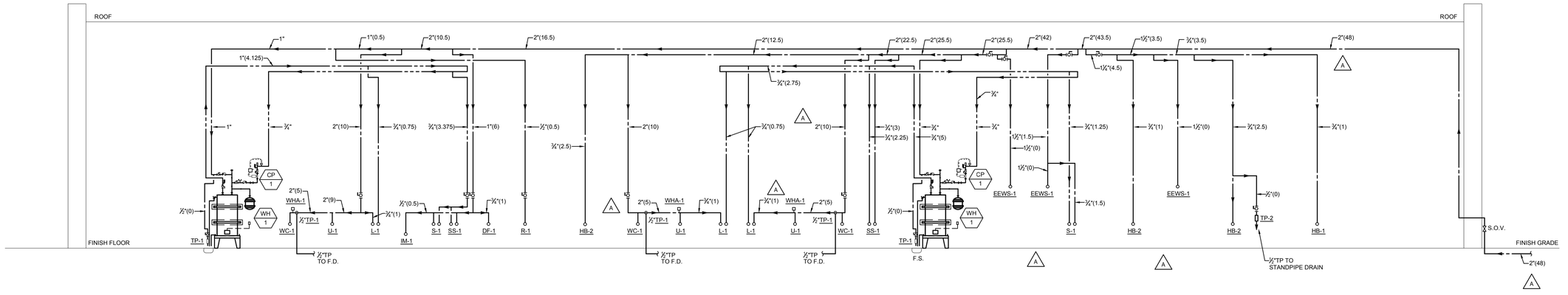
HOT WATER SYSTEM SIZING IS BASED ON 3 PSI /100' OR 5 FT. PER SECOND MAXIMUM VELOCITY, WHICHEVER RESTRICTION IS GREATER.

NOTE:
DOMESTIC HOT AND COLD WATER PIPE SIZING IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2022 CALIFORNIA PLUMBING CODE, APPENDIX "A"

DOMESTIC WATER PIPE SIZING SCHEDULE

(BASED ON 3 PSI/100 FT. OR MAX. VELOCITY OF 8 FPS COLD & 5 FPS HOT)

SIZE	MAXIMUM FIXTURE UNITS			VELOCITY (FT./SEC.)		G.P.M.	
	FLUSH TANK		FLUSH VALVE				
	HW	CW		HW	CW	HW	CW
½"	1	1	0	2.6	2.6	1.9	1.9
¾"	4	4	0	3.2	3.2	4.9	4.9
1"	12	12	0	3.9	3.9	10	10
1¼"	24	24	0	4.4	4.4	17.4	17.4
1½"	46	46	10	4.9	4.9	27	27
2"	119	155	63	5.0	5.9	48	56.5

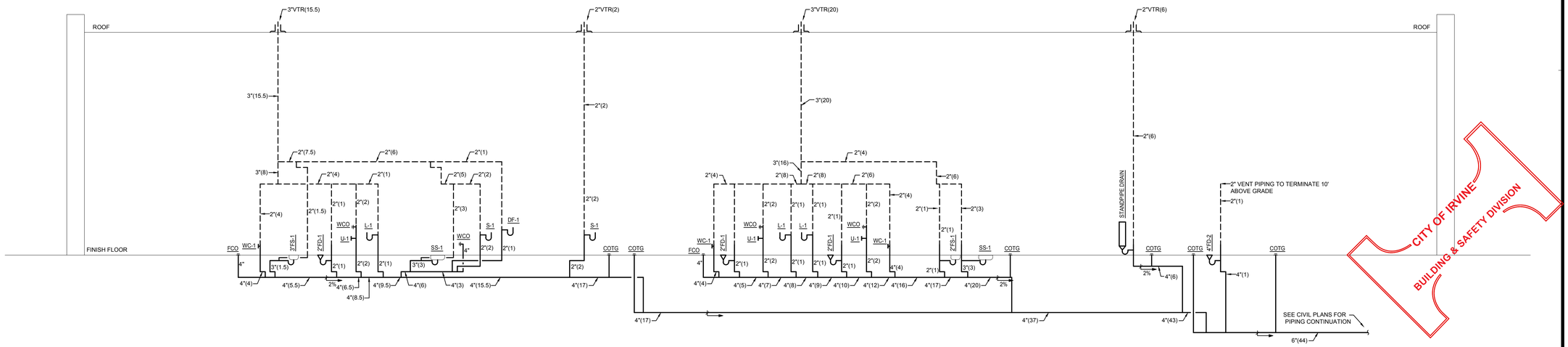


RISER DIAGRAM - WATER

SCALE: NONE

1

A



RISER DIAGRAM - WASTE AND VENT

SCALE: NONE

2

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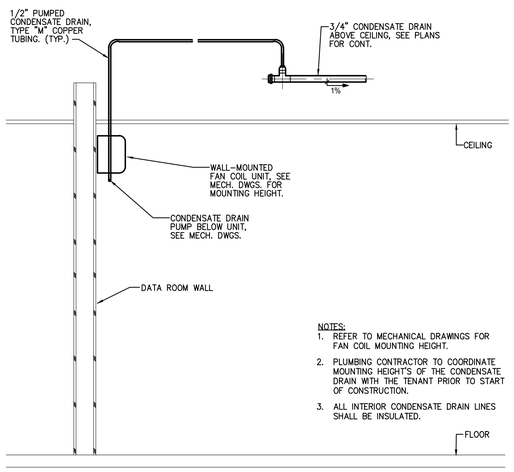


NOTES:
1. REFER TO MECHANICAL DRAWINGS FOR FAN COIL MOUNTING HEIGHT.
2. PLUMBING CONTRACTOR TO COORDINATE MOUNTING HEIGHT'S OF THE CONDENSATE DRAIN WITH THE TENANT PRIOR TO START OF CONSTRUCTION.
3. ALL INTERIOR CONDENSATE DRAIN LINES SHALL BE INSULATED.

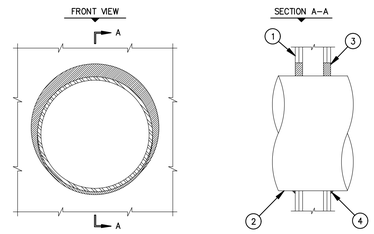
WALL MOUNTED FAN COIL UNIT

SCALE	
NONE	9

UL/cUL SYSTEM NO. WL1054

METAL PIPE THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

F RATING = 1-HR. OR 2-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = 4 CFM/SQ. FT.



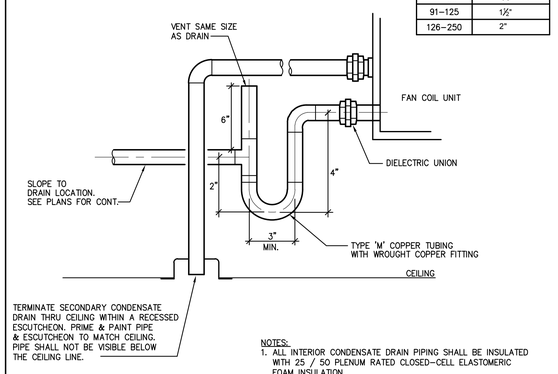
1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (1-HR OR 2-HR FIRE-RATING) (2-HR SHOWN).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 30" NOMINAL DIAMETER STEEL PIPE (SCH 10 OR HEAVIER).
   B. MAXIMUM 30" NOMINAL DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   E. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT:
   A. MINIMUM 5/8" DEPTH, FOR A 1-HR FIRE-RATING.
   B. MINIMUM 1-1/4" DEPTH, FOR A 2-HR FIRE-RATING.
4. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING:
A. 32-1/4" FOR STEEL STUD WALLS.
B. 14-1/2" FOR WOOD STUD WALLS.
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".

WALL PENETRATION

SCALE	
NONE	7

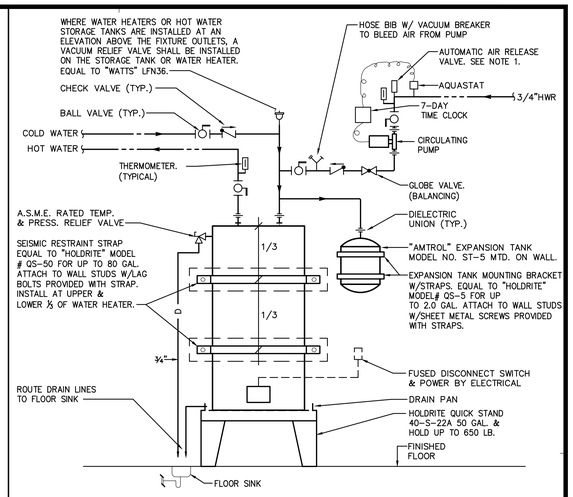
TONS	DRAIN SIZE
0-20	¾"
21-40	1"
41-90	1½"
91-125	1½"
126-250	2"



NOTES:
1. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 25 / 50 PLENUM RATED CLOSED-CELL ELASTOMERIC FOAM INSULATION.
2. SLOPE ALL HORIZONTAL CONDENSATE DRAIN PIPING AT MINIMUM 1% TOWARD DRAIN.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL UNITS & COORDINATE DRAIN CONNECTION SIZE & LOCATION WITH MECHANICAL CONTRACTOR.

CONDENSATE DRAIN TRAP & OVERFLOW / FC UNIT

SCALE	
NONE	4



GENERAL NOTES:
1. AN AUTOMATIC AIR RELEASE VALVE SHALL BE INSTALLED ON THE RECIRCULATION LOOP PIPING ON THE INLET SIDE OF THE RECIRCULATION PUMP AND NO MORE THAN 4 FEET FROM THE PUMP. WHERE CIRCULATING PUMP IS MOUNTED ON THE HORIZONTAL LINE, THIS VALVE SHALL BE MOUNTED ON TOP OF A VERTICAL RISER AT LEAST 12" IN LENGTH AND SHALL BE ACCESSIBLE FOR REPLACEMENT AND REPAIR. ALTERNATIVELY, THE PUMP SHALL BE INSTALLED ON A VERTICAL SECTION OF THE RETURN LINE.

ELECTRIC WATER HEATER W/NEW HOT WATER RETURN

SCALE	
NONE	1

ALL PIPING MUST BE SUPPORTED, BRACED AND SECURED TO RESIST THRUSTING FORCES AND MINIMIZED MOVEMENT.

ALL PIPING MUST BE BRACED PER ACORNVAC SPECS OR PER LOCAL CODE REQUIREMENTS WHICHEVER IS MORE RESTRICTIVE.

ALL BRACING ASSEMBLIES MUST BE ATTACHED TO STRUCTURAL STEEL, RIGID STUDS, OR WOODEN BACKINGS. DRYWALL, THIN SHEET METAL CASE BACKING, AND HVAC DUCT WORK ARE NOT ACCEPTABLE ANCHOR POINTS.

BRACING OF HORIZONTAL PIPING SHOULD BE IN FIVE FOOT INTERVALS WHEN INSTALLATION IS DONE IN PVC, AND EIGHT FOOT INTERVALS FOR COPPER, OR AS REQUIRED BY LOCAL CODE.

SAGGING OF THE PIPING BETWEEN SUPPORTS IS NOT PERMITTED; 1/4" PER FOOT OF SLOPE IS TO BE MAINTAINED AT ALL TIMES.

LATERAL OR SEISMIC BRACING SHOULD BE ADDED EVERY 25' WHEN THE HANGER ASSEMBLY IS GREATER THAN 36" LONG, OR AS REQUIRED BY LOCAL CODE.

WHEN A UNI-STRUT TRAPEZE IS USED, PIPING MUST BE CLAMPED DOWN SECURELY.

VERTICAL LIFTS ARE TO BE SECURED IN SIX FOOT INTERVALS.

BRACING IS REQUIRED AT THE TOP OF ALL VERTICAL LIFTS.

AN APPROVED BRACING ASSEMBLY MUST BE INSTALLED WITHIN ONE FOOT OF EVERY DIRECTIONAL CHANGE, ON BOTH SIDES OF THE FITTING.

AN APPROVED BRACING ASSEMBLY MUST BE INSTALLED WITHIN ONE FOOT OF EVERY EXTRACTION VALVE, ON BOTH THE INLET AND THE OUTLET SIDE.

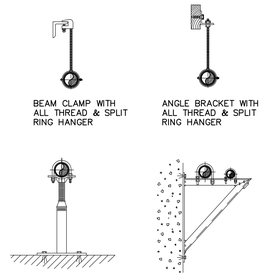
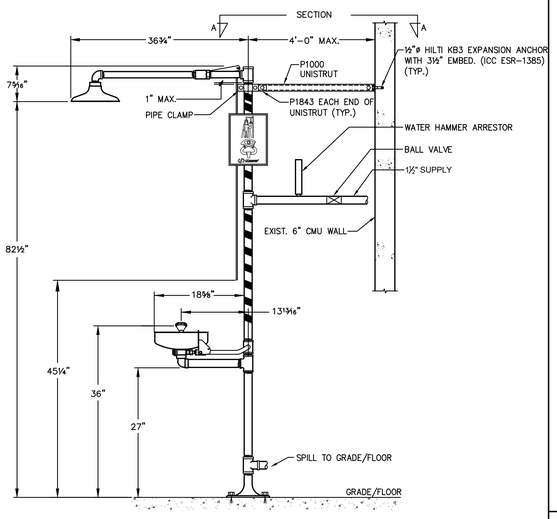


FIG. 27

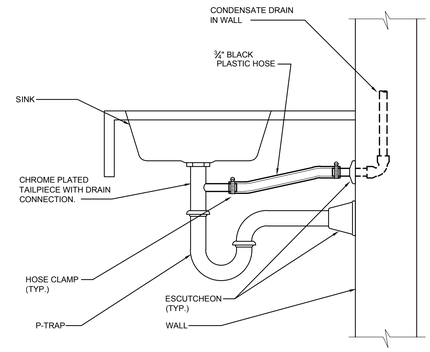
TYPICAL BRACING DETAILS

SCALE	
NONE	10



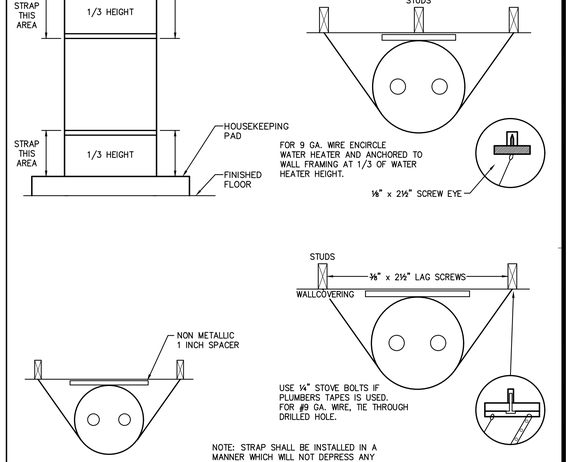
EMERGENCY SHOWER & EYE WASH

SCALE	
NONE	8



CONDENSATE DRAIN TO TAILPIECE

SCALE	
NONE	5



CITY OF IRVINE WATER HEATER SEISMIC STRAPPING

SCALE	
NONE	2

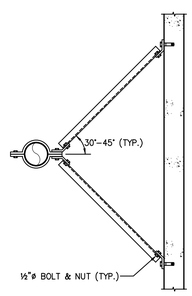
2022 CPC, TABLE 313.3
HANGERS AND SUPPORT

PIPE MATERIAL	TYPE OF JOINTS	HORIZONTAL	VERTICAL
CAST-IRON HUBLESS	SHIELDED COUPLING	EVERY OTHER JOINT, UNLESS OVER 4 FEET THEN SUPPORT EACH JOINT [3,4,5]	BASE AND EACH FLOOR A MAXIMUM OF 15 FEET
COPPER TUBE AND PIPE	SOLDERED OR BRAZED	1-1/2" AND SMALLER, 6 FEET; 2" AND LARGER, 10 FEET	EACH FLOOR NOT TO EXCEED 10 FEET
STEEL PIPE FOR GAS	THREADED OR WELDED	1/2", 6 FEET; 3/4" AND 1", 8 FEET; 1 1/4" AND LARGER, 10 FEET	1/2", 6 FEET; 3/4" AND 1", 8 FEET; 1 1/4" AND LARGER, EVERY FLOOR

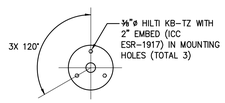
NOTES:
1. SUPPORT ADJACENT TO JOINT, NOT TO EXCEED 18 INCHES (457 mm).
2. BRACE NOT TO EXCEED 40 FEET (12,192 mm) INTERVALS TO PREVENT HORIZONTAL MOVEMENT.
3. SUPPORT AT EACH HORIZONTAL BRANCH CONNECTIONS.
4. HANGERS SHALL NOT BE PLACED ON THE COUPLING.
5. VERTICAL WATER LINES SHALL BE PERMITTED TO BE SUPPORTED IN ACCORDANCE WITH RECONIZED ENGINEERING PRINCIPLES WITH REGARD TO EXPANSION AND CONTRACTION, WHERE FIRST APPROVED BY THE AUTHORITY HAVING JURISDICTION.

HANGER SUPPORT TABLE

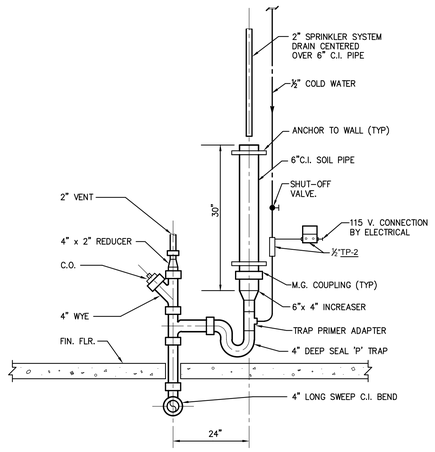
SCALE	
NONE	11



A-A PLAN SECTION

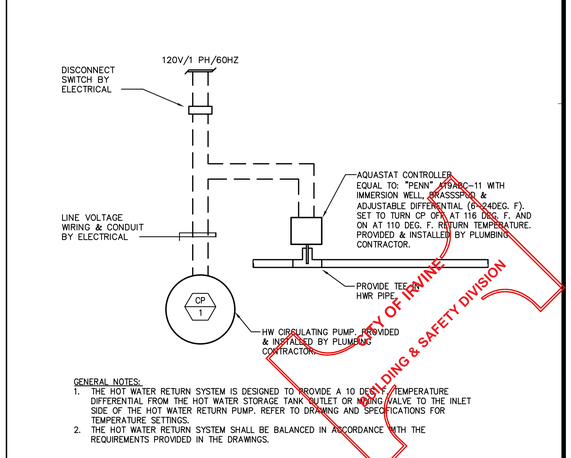


MOUNTING DETAIL



STANDPIPE DRAIN

SCALE	
NONE	6



GENERAL NOTES:
1. THE HOT WATER RETURN SYSTEM IS DESIGNED TO PROVIDE A 10 DEG. F. TEMPERATURE DIFFERENTIAL FROM THE HOT WATER STORAGE TANK OUTLET OR MIXING VALVE TO THE INLET SIDE OF THE HOT WATER RETURN PUMP. REFER TO DRAWING AND SPECIFICATIONS FOR TEMPERATURE SETTINGS.
2. THE HOT WATER RETURN SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THE DRAWINGS.

CIRCULATION PUMP WIRING W/AQUASTAT

SCALE	
NONE	3

CITY OF IRVINE - GREAT PARK
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DETAILS

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PLAN CHECK #00856737-CNEW

ABBREVIATIONS

4S/DP	4" SQUARE BY 2-1/8" DEEP BOX
ADA	AMERICAN WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AWG	AMERICAN WIRE GAUGE
AMP, A	AMPERE
A.I.C. or AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
A.F.C. or AFC	AVAILABLE FAULT CURRENT
AF/AT	AMP FRAME, AMP TRIP
AHJ	AUTHORITY HAVING JURISDICTION
AS/AF	AMP SWITCH, AMP FUSE
ATS	AUTOMATIC TRANSFER SWITCH
AVG	AVERAGE
BJ	BONDING JUMPER
BDF	BUILDING DISTRIBUTION FRAME
BR	BRANCH
BLDG	BUILDING
CBC	CALIFORNIA BUILDING CODE
CEC	CALIFORNIA ELECTRICAL CODE
CIRC., CKT.	CIRCUIT
CB	CIRCUIT BREAKER
CSFD	COMBINATION SMOKE FIRE DAMPER
C	CONDUIT
C.O.	CONDUIT ONLY, COMPLETE WITH PULLSTRING
CONN	CONNECTED
CPT	CONTROL POWER TRANSFORMER
CLCB	CURRENT LIMITING CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
(D)	EXISTING DEVICE TO BE DEMOLISHED
DAS	DISTRIBUTED ANTENNA SYSTEM
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
D.P.C.S.	DIMMING PANEL CONTROL STATION
E.C.	ELECTRICAL CONTRACTOR
EMS	ENERGY MANAGEMENT CONTROL SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EWC	ELECTRIC WATER COOLER
E.P.O.	EMERGENCY POWER OFF
E-O-L	END-OF-LINE CIRCUIT TERMINATOR
EF	EXHAUST FAN
EGC or EG or E/G	EQUIPMENT GROUND (GREEN)
(E)	EXISTING DEVICE TO REMAIN
EP	EXPLOSION PROOF
(ER)	EXISTING DEVICE TO BE RELOCATED
FT or '	FEET
FA or F.A.	FIRE ALARM
FLA	FULL LOAD AMPS
GRD	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GE or GEC	GROUNDING ELECTRODE CONDUCTOR
HACR	HEATING AIR CONDITIONING REFRIGERATION
HOA	HAND-OFF-AUTO
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
H.,W.,D.,L.	HEIGHT, WIDTH, DEPTH, LENGTH
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
IN. or "	INCHES
I/G	ISOLATED GROUND
IBC	INTERNATIONAL BUILDING CODE
I.D.C.S.	INTEGRATED DIMMING CONTROL PANEL
IDF	INTERMEDIATE DISTRIBUTION FRAME
JBOX	JUNCTION BOX
K	DEGREE KELVIN
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LCL	LONG CONTINUOUS LOAD
LF, L.F.	LINEAR FEET
LTG, LTS	LIGHTING
LPS	LOW PRESSURE SODIUM
MAX.	MAXIMUM
MBJ	MAIN BONDING JUMPER
MDF	MAIN DISTRIBUTION FRAME
MOCP	MAXIMUM OVERCURRENT PROTECTION
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
M.C.	MECHANICAL CONTRACTOR
M	METER
M/M	METER MAIN
MV	MERCURY VAPOR
MH	METAL HALIDE
MIN.	MINIMUM
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MFR.	MANUFACTURER
MTD	MOUNTED
MW	MICROWAVE
NATS	NON AUTOMATIC DISCONNECT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
NF	NON-FUSED
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NL	NIGHT LIGHT
NO. or #	NUMBER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
%Z	PERCENT IMPEDANCE
PH. or ø	PHASE
PC	PHOTOCELL
P.C.	PLUMBING CONTRACTOR
P	POLE
PVC	POLY VINYL CHLORIDE
PDU	POWER DISTRIBUTION UNIT
PRIMARY	OVER 600 VOLTS
PROVIDE	FURNISH, INSTALL AND CONNECT
PT	POTENTIAL TRANSFORMER
PA	PUBLIC ADDRESS
(R)	DENOTES RELOCATED DEVICE LOCATION.
REC, RECEPT	RECEPTACLE
REF	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SCC	SHORT CIRCUIT CURRENT
SCCR	SHORT CIRCUIT CURRENT RATING
SCS	STRUCTURED CABLING SYSTEM
SFD	SMOKE FIRE DAMPER
SECONDARY	600 VOLTS AND LESS
SMACNA	SHEET METAL AND AIR COND. CONTRACTOR'S NAT'L ASSOC.
SQ.	SQUARE
SSBJ	SUPPLY SIDE BONDING JUMPER
SBJ	SYSTEM BONDING JUMPER
TC	TIMECLOCK
TEL/DATA	TELEPHONE AND DATA
TV	TELEVISION
T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
U.G.P.S.	UNDERGROUND PULL SECTION
U.O.N.	UNLESS OTHERWISE NOTED
U.P.S. or UPS	UNINTERRUPTABLE POWER SYSTEM
VAV	VARIABLE AIR VOLUME
V	VOLTS
VA	VOLT AMPERES
VD	VOLTAGE DROP
WP	WEATHERPROOF
W	WIRE
XFMR	TRANSFORMER

FIRE ALARM SYSTEM SYMBOLS

SEE FIRE ALARM OR CENTRAL MONITORING SYSTEM DRAWINGS FOR FIRE ALARM SYMBOLS.

SIGNAL SYSTEM SYMBOLS

- B — WALL MOUNTED CLOCK. FIELD VERIFY MOUNTING HEIGHT PRIOR TO INSTALLATION. "B" INDICATES BATTERY OPERATED CLOCK. "D" INDICATES DIGITAL CLOCK, "NO LETTER" INDICATES ANALOG CLOCK. REFER TO SPECIFICATIONS.
- — C — CONCEALED CLOCK CONDUIT RUN 1/2" CONDUIT, OR AS NOTED, WITH CONDUCTORS PER SPECIFICATIONS.
- TV — TV OUTLET, WALL MOUNTED. STUB A 3/4" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE BUSHING.
- TV — TV OUTLET FLUSH CEILING MOUNTED.
- — TV — CONCEALED TELEVISION CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
- M — MICROPHONE OUTLET, WALL MOUNTED. PROVIDE 3/4" C.O. (WITH PULL ROPE) UP TO 6" ABOVE ACCESSIBLE CEILING SPACE. PROVIDE BUSHING AT EACH END.
- M — MICROPHONE OUTLET, FLUSH CEILING MOUNTED.
- — M — CONCEALED MICROPHONE CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
- S V — SURFACE WALL MOUNTED SPEAKER, "V" INDICATES VOLUME CONTROL.
- S V — SURFACE MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
- S V — FLUSH WALL MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
- S V — CEILING FLUSH MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
- SM V — ABOVE CEILING MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
- V — VOLUME CONTROL, WALL MOUNTED.
- — S — CONCEALED SPEAKER CONDUIT RUN 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.

SECURITY ALARM SYSTEM SYMBOLS

- SACP — SECURITY ALARM CONTROL PANEL - SEE SPECIFICATIONS.
- SPS — SECURITY SYSTEM POWER SUPPLY - SEE SPECIFICATIONS.
- ID — SECURITY ALARM PASSIVE INFRARED MOTION SENSOR - SEE SPECIFICATIONS.
- DT — SECURITY ALARM DUAL TECHNOLOGY MOTION SENSOR - SEE SPECIFICATIONS.
- UD — SECURITY ALARM ULTRASONIC MOTION SENSOR - SEE SPECIFICATIONS.
- DC — SECURITY ALARM DOOR CONTACT - SEE SPECIFICATIONS.
- PB — SECURITY ALARM PANIC BUTTON - SEE SPECIFICATIONS.
- KP — SECURITY ALARM KEY PAD - SEE SPECIFICATIONS.
- GB — SECURITY ALARM GLASS BREAK INDICATOR - SEE SPECIFICATIONS.
- — SA — SECURITY ALARM SYSTEM BRANCH CIRCUIT PER SECURITY ALARM RISER DIAGRAM AND/OR SPECIFICATIONS.

ACCESS CONTROL SYSTEM SYMBOLS

- ACCP — ACCESS CONTROL PANEL - SEE SPECIFICATIONS.
- APS — ACCESS CONTROL SYSTEM POWER SUPPLY - SEE SPECIFICATIONS.
- LPS — ACCESS CONTROL SYSTEM LOCK POWER SUPPLY - SEE SPECIFICATIONS.
- KS — ACCESS CONTROL KEY SWITCH - SEE SPECIFICATIONS.
- LA — ACCESS CONTROL LOCAL ALARM SOUNDER - SEE SPECIFICATIONS.
- PR — ACCESS CONTROL PROXIMITY READER - SEE SPECIFICATIONS.
- CR — ACCESS CONTROL CARD READER - SEE SPECIFICATIONS.
- KP — ACCESS CONTROL KEY PAD - SEE SPECIFICATIONS.
- ES — ACCESS CONTROL REQUEST TO EXIT SENSOR - SEE SPECIFICATIONS.
- — AC — ACCESS CONTROL SYSTEM BRANCH CIRCUIT PER ACCESS CONTROL RISER DIAGRAM AND/OR SPECIFICATIONS.

PROJECT SPECIFIC SYMBOLS

REQUIRED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE REQUIRED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS AND SHOULD BE INCLUDED AS PART OF THE BASE BID. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

ALLOWED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE ALLOWED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

DEDUCTIVE/ADDITIVE ALTERNATE PRICING

IN ADDITION TO ANY DEDUCTIVE OR ADDITIVE LINE ITEM PRICING CALLED FOR ON THE DRAWING OR IN THE SPECIFICATIONS, CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM DEDUCTIVE/ADDITIVE ALTERNATE PRICING FOR EACH OF THE FOLLOWING ITEM(S):

NONE

ANNOTATIONS

- A — PANEL CALLOUT, "A" INDICATES PANELBOARD OR EQUIPMENT DESIGNATION.
- AC / 2 — MECHANICAL EQUIPMENT CALLOUT, "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
- 3 / E-1 — DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
- 2 — PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
- 4 — REVISION REFERENCE.
- WYE CONFIGURATION — DELTA CONFIGURATION — GROUND

CCTV SYSTEM SYMBOLS

- CCVMS — VIDEO MANAGEMENT SYSTEM - CCTV HEADEND - SEE SPECIFICATIONS.
- CCWS — CCTV WORKSTATION AND MONITOR - SEE SPECIFICATIONS.
- CCTV FIXED POSITION CAMERA - SEE SPECIFICATIONS.
- CCTV PAN/TILT CAMERA - SEE SPECIFICATIONS.
- — CC — CCTV SYSTEM BRANCH CIRCUIT PER CCTV SYSTEM RISER DIAGRAM AND/OR SPECIFICATIONS.

TELEPHONE/DATA SYMBOLS

- TELEPHONE OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
  - "W" = WALL MOUNTED PHONE
  - "P" = PUBLIC (PAY) PHONE. VERIFY ALL REQUIREMENTS WITH THE TELEPHONE UTILITY COMPANY. PROVIDE 1" C.O. (MIN) TO THE MAIN TELEPHONE BACKBOARD. MOUNTING HEIGHT AS REQUIRED.
- DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
- COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
- TELEPHONE OUTLET BOX, FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- COMBINATION TELEPHONE AND DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- TELEPHONE OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
- DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
- COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
- COMBINATION TELEPHONE AND DATA OUTLET BOX MOUNTED IN ACCESSIBLE CEILING SPACE OR IN FLOOR BOX PER PLAN FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- COMBINATION TELEPHONE AND DATA OUTLET, WALL MOUNTED AT +18-INCHES A.F.F. FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. PROVIDE THE FOLLOWING:
  - IN A NON-RATED INSULATED WALL, OR NON-RATED UNINSULATED WALL, PROVIDE A 2-GANG MUD RING OR CADDY #RBS SERIES BOX MOUNTING BRACKET (EQUAL BY B-LINE OR RAYCO) WITH (2) 1-1/2"C.O. WITH PULL STRING TO ACCESSIBLE CEILING. PROVIDE 1-1/2" BUSHINGS AT CONDUIT ENDS. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS.
  - IN A RATED WALL, PROVIDE (1) 4S/DP BOX WITH (2) 1-1/4" C.O. AND (1) 4S/DP BOX WITH (1) 1-1/4" C.O. WITH PULL STRINGS IN EACH CONDUIT TO ACCESSIBLE CEILING. PROVIDE 1-1/4" BUSHINGS AT CONDUIT ENDS. UTILIZE CADDY #RBS SERIES BOX MOUNTING BRACKET TO MAINTAIN BOX ALIGNMENT (EQUAL BY B-LINE OR RAYCO). UTILIZE FIRESTOPPING SYSTEM PADS RATED FOR USE ON THE INSIDE OR OUTSIDE OF THE BOX (STI OR EQUAL) AS REQUIRED TO MAINTAIN RATING OF WALL OR MEMBRANE. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS.
- — T1 — CONCEALED TELEPHONE/DATA CONDUIT RUN, 1-INCH CONDUIT ONLY (MIN). SEE TABLE FOR CONDUIT SIZE VARIATIONS.
  T2 = 1-1/4" C.O. T3 = 1-1/2" C.O. T4 = 2" C.O.
- FLUSH MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
- SURFACE MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
- TELEPHONE TERMINAL BACKBOARD SIZED AS NOTED, REFER TO SYSTEM GROUND DETAIL.

LIGHTING SYMBOLS

SITE LIGHTING FIXTURE SYMBOLS DEPICTED WITH CAPITAL LETTER(S) ADJACENT TO RESPECTIVE SYMBOL(S) INDICATE(S) LIGHT FIXTURE MOUNTING BASE DETAIL(S). SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE SYMBOL INFORMATION.

- 1a — LIGHTING FIXTURE CALL OUT, NUMBER(S) AND/OR UPPER CASE LETTER(S) (i.e. "1") INDICATES FIXTURE TYPE (REFER TO LIGHTING FIXTURE SCHEDULE). LOWER CASE LETTER (i.e. "a") ADJACENT TO FIXTURE TYPE INDICATES BALLAST OPTION (SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES).
- J — INDICATES FINAL CONNECTION TO A LIGHTING FIXTURE, NUMBER OF CONDUCTORS AS REQUIRED.

LIGHTING CONTROL SYMBOLS

SEE THE DISTRIBUTED LIGHTING CONTROL (DLCS) SPECIFICATIONS AND SEQUENCE OF OPERATIONS (SOO) FOR MORE INFORMATION.

- LOW VOLTAGE WIRING INTERCONNECTING DLCS COMPONENTS AS REQUIRED. SEE DLCS SPECIFICATIONS FOR MORE INFORMATION.
- D — WALL MOUNTED DIMMER. SEE SINGE POLE SWITCH SYMBOL FOR RELATED SUBSCRIPTS. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF DIMMERS REQUIRED. PROVIDE DIMMER TYPE TO MATCH INDICATED BALLAST TYPE AND CONTROL REQUIREMENTS.
- X_y — WALL MOUNTED STAND ALONE OCCUPANCY SENSOR.
- ^H_y — WALL MOUNTED SYSTEM-BASED OCCUPANCY SENSOR.
- $^{H,AV,DM,P}_y$ — 1-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.
- $^{H,AV,DM,P}_y$ — 2-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.
- $L^{K,V}_y$ — LOW VOLTAGE MOMENTARY SWITCHES, WALL MOUNTED, FOR MANUAL ON/OFF SWITCHING, DIMMING, AND OVERRIDE CONTROL OF LIGHTING.
- S_{y+} — AUTOMATIC SWITCHING/STEP-DIMMING DAYLIGHTING CONTROLLER USED TO SWITCH OFF LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.
- D_{y+} — AUTOMATIC CONTINUOUS DIMMING DAYLIGHTING CONTROLLER USED TO DIM LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.

LIGHTING CONTROL SYMBOL SUPERSCRIPT & SUBSCRIPT KEY:

1. "y" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED PER THE SOO. ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF SWITCHLEGS TO BE CONTROLLED. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/DRIVER/FIXTURE TYPE.
2. ADJACENT UPPER CASE LETTER(S) INDICATE THE FOLLOWING:
   AV INDICATES CONNECTION TO A/V CONTROL SYSTEM.
   DM INDICATES DUAL MODE CONTROL AT CORRIDORS, STAIRWELLS AND WAREHOUSE AISLEWAYS
   H INDICATES CONNECTION TO HVAC SYSTEM CONTROLS VIA CONTROLLED DRY-CONTACT CLOSURE.
   K INDICATES LOCKING SWITCH FOR THE SUBSEQUENT LOWER CASE LETTER.
   P INDICATES CONNECTION TO MOVEABLE PARTITION INTERFACE, SENSOR AND STATUS INDICATOR.
   V INDICATES VANDAL RESISTANT SWITCH.
3. ADJACENT LOWER CASE LETTER(S) INDICATE SWITCH LEG(S) CONTROLLED EXCEPT WHERE "DM" INDICATES DUAL MODE CONTROL SWITCH.
4. ADJACENT "+, ++ AND *" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR WHERE "+" INDICATES PRIMARY SIDELIT DAYLIT ZONE, "++" INDICATES SECONDARY SIDELIT DAYLIT ZONE, AND "*" INDICATES SKYLIT DAYLIT ZONE.

MISCELLANEOUS SYSTEM SYMBOLS

- ICP — INVERTER CONTROL PANEL - SEE INVERTER SPECIFICATIONS.
- IAP — INVERTER ANNUNCIATOR PANEL - SEE INVERTER SPECIFICATIONS.
- GAP — GENERATOR ANNUNCIATOR PANEL - SEE GENERATOR SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- IDCS — INTEGRATED DIMMING CONTROL STATION (IDCS) PANEL - WALL MOUNTED. SEE IDCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- DPCS — DIMMING PANEL CONTROL STATION (DPCS) PANEL - WALL MOUNTED. SEE DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- L — LIGHTING CONTROL SYSTEM LOCAL SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- O — LIGHTING CONTROL SYSTEM OVERRIDE SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- M — LIGHTING CONTROL SYSTEM MASTER SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- R — IDCS/DPCS SYSTEM REMOTE STATION SWITCH - WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
- P — IDCS/DPCS SYSTEM PARTITION STATION SWITCH - WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.

BRANCH CIRCUIT SYMBOLS

- A-1,3,5 — HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. HASH MARKS INDICATE NUMBER OF CONDUCTORS IN CONDUIT RUN, #12 AWG MINIMUM UNLESS OTHERWISE NOTED.
- A-1&3&5 — HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS WITH SEPARATE NEUTRALS. "&" INDICATES SEPARATE NEUTRALS.
- A-1+3+5 — HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. "+" INDICATES SEPARATE #10 NEUTRAL THROUGHOUT BRANCH CIRCUIT. HASH MARK " " INDICATES AN ISOLATED GROUND CONDUCTOR.
- CONCEALED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
- CONDUIT OR BRANCH CIRCUIT CONCEALED BELOW GRADE, 3/4" CONDUIT MINIMUM WITH (2) 12 AWG CONDUCTORS MINIMUM AND A CODE SIZED EQUIPMENT GROUND.
- SURFACE-MOUNTED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
- TANDEM WIRING CONNECTION.
- CONDUIT STUB OUT, CAP, MARK AND RECORD ON AS-BUILT DRAWINGS
- CONDUIT CONTINUATION.
- FLEXIBLE CONNECTION AS REQUIRED. NUMBER OF CONDUCTORS AS REQUIRED. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
- CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION DOWN WALL TO FLOOR BELOW
- CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION UP WALL TO FLOOR ABOVE

FLOOR BOX / SPECIALTY WALL BOX / PEDESTAL BOX SYMBOLS

- # — ON-GRADE FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX SCHEDULE, DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- # — ABOVE GRADE POKE-THRU DEVICE. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX SCHEDULE, DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- AV — RECESSED, ADJUSTABLE DEPTH, FLAT PANEL TV/DISPLAY WALL BOX WITH FLUSH GROMMETED COVER PANEL (CHIEF #PAC525F) AND MINIMUM OF (1) 1-1/4"C.O. FROM TOP-MOUNTED L.V. CONDUIT ENTRY BOX TO ACCESSIBLE CEILING. SEE PLANS FOR ANY ADDITIONAL CONDUIT REQUIREMENTS. PROVIDE ADDITIONAL L.V. AND LINE VOLTAGE CONDUIT ENTRY BOXES AS REQUIRED TO ACCOMPLISH WALL BOX CONFIGURATION DEPICTED ON PLANS. FLUSH GROMMETED COVER SHALL BE WHITE, BLACK OR CUSTOM COLOR PER ARCHITECT. WHEN FIELD CONDITIONS PROHIBIT INSTALLATION OF THIS DEVICE (SUCH AS WALL STUD/CAVITY DEPTH OF LESS THAN 2.5" ETC), CONFIRM VIA WRITTEN RFI THE INSTALLATION OF A TRADITIONAL POWER AND DATA RECEPTACLE INSTALLATION ALONG SIDE CCTV/AV JUNCTION BOX CONSISTING OF 2-GANG DEEP JUNCTION BOX/2-GANG RING WITH 1-1/4"C.O. TO ACCESSIBLE CEILING IN ADDITION TO ANY OTHER CONDUIT REQUIREMENTS DEPICTED ON PLANS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHT.
- SINGLE OR DUAL SERVICE RECESSED EXTERIOR WALL BOX - TYPE "WP-A". PROVIDE DEVICES PER PLAN. EACH LV OR UNUSED COMPARTMENT SHALL BE EQUIPPED WITH A 1"C.O. TO THE NEAREST ACCESSIBLE CEILING SPACE U.O.N. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- SINGLE OR DUAL SERVICE EXTERIOR PEDESTAL - TYPE "WP-C". PROVIDE DEVICES PER PLAN. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION. ARROW DENOTES DEVICE DOOR LOCATION.

CITY OF IRVINE SPECIFIC NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION. TESTING LABORATORY SHALL BE A CITY OF IRVINE RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED CITY OF IRVINE ELECTRICAL CODE, 2022 CALIFORNIA ELECTRICAL CODE, 2020 NATIONAL ELECTRICAL CODE, AND TITLE 24 - 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
3. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
4. APPROVAL OF AN EMPTY CONDUIT IS NOT A WARRANTY OF FUTURE APPROVAL FOR USING THE SAME CONDUIT FOR PARTICULAR WIRES.
5. NO PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
6. ALL LOW VOLTAGE SYSTEMS, PHONE/DATA DEVICES AND CONDUIT PROVISIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT REVIEWED AS PART OF CITY OF IRVINE'S BUILDING AND SAFETY PLAN CHECK REVIEW AND ARE NOT PART OF THE ELECTRICAL PERMIT.

POWER SYMBOLS

ALL RECEPTACLE OUTLETS SHOWN WITH A DIAGONAL SLASH SHALL BE CONTROLLED BY OCCUPANCY SENSOR OR LIGHTING CONTROL PANEL. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS. WHERE DOUBLE DUPLEX RECEPTACLE OUTLETS ARE INDICATED AS CONTROLLED, ONLY A SINGLE DUPLEX RECEPTACLE OUTLET (NON-IG, NON-GCFI TYPE) SHALL BE CONTROLLED. WITHIN ANY CONTROLLED DUPLEX RECEPTACLE OUTLET, ONLY ONE RECEPTACLE SHALL BE CONTROLLED. NOTE THAT FOR FLOOR BOXES OR POKE-THRU DEVICES, THE ASSOCIATED CONTROL RELAY MAY NEED TO BE LOCATED WITHIN THE ELECTRICAL ROOM WHERE THE CONTROLLED CIRCUIT ORIGINATES.

- R_a — OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY. WHERE LETTER DESIGNATION "a" REPRESENTS OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROL ZONE. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION.
- DUPLEX RECEPTACLE, WALL MOUNTED.
- DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED.
- DUPLEX, GFCI RECEPTACLE, WALL MOUNTED. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DUPLEX RECEPTACLE, ONE HALF SWITCHED, WALL MOUNTED.
- DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED.
- 1,3 / 1,3a — COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED.
- COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND RECEPTACLES, WALL MOUNTED.
- SIMPLEX RECEPTACLE, WALL MOUNTED.
- SPECIAL RECEPTACLE, WALL MOUNTED. REFER TO PLAN NOTES.
- DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DOUBLE DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX RECEPTACLE, ONE HALF SWITCHED, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX, ISOLATED GROUND RECEPTACLE, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- 1,3 / 1,3a — COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, MOUNTED FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
- COMBINATION DOUBLE DUPLEX FLUSH IN CEILING: TWO ISOLATED GROUND RECEPTACLES - MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
- SIMPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- SPECIAL RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
- DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DUPLEX, GFCI RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DOUBLE DUPLEX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
- DUPLEX RECEPTACLE, BOTTOM HALF SWITCHED, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- 1,3 / 1,3a — COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND DUPLEX RECEPTACLES, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- SIMPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
- SPECIAL RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. REFER TO PLAN NOTES.
- WP-B — WET LOCATION-LISTED (RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
- WP-D — DAMP LOCATION-LISTED (NOT-RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
- DUPLEX RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
- QUAD RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
- J — JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. OR AS NOTED. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.
- J — JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.
- J — JUNCTION BOX, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C., OR CEC, WHERE ADOPTED.
- J — JUNCTION BOX, 4S MINIMUM OR AS REQUIRED BY N.E.C., OR CEC, WHERE ADOPTED. MOUNTED IN ACCESSIBLE CEILING SPACE PER PLAN FOR FLEXIBLE CONNECTION TO PRE-WIRED FURNITURE SYSTEM. MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALL OUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
- J — JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F., 4S/DP MINIMUM OR AS REQUIRED BY N.E.C., OR CEC, WHERE ADOPTED, FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
- SURFACE MOUNTED MULTI-OUTLET ASSEMBLY. REFER TO GENERAL PRODUCT SPECIFICATIONS. PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION.
- T — THERMOSTAT OUTLET BOX, PROVIDE 1/2" C.O. TO RESPECTIVE MECHANICAL UNIT.
- EXHAUST FAN, OR MOTOR LOAD. REFER TO MECHANICAL, PLUMBING OR KITCHEN DRAWINGS FOR SPECIFIC LOAD REQUIREMENTS OR AS NOTED.
- FLUSH MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
- DISTRIBUTION SWITCHBOARD. REFER TO SINGLE LINE DIAGRAM.
- T — TRANSFORMER, REFER TO SINGLE LINE DIAGRAM.
- F — FUSED DISCONNECT SWITCH, HP RATED, OR COMBINATION MOTOR STARTER/DISCONNECT SWITCH WITH FUSES PER EQUIPMENT MANUFACTURER AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT AND STARTER SIZES.
- NON-FUSED DISCONNECT SWITCH, HP RATED AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT SIZES.
- M — UTILITY COMPANY METER. PROVIDE "CT's" AND "PT's" AS REQUIRED, REFER TO SINGLE LINE DIAGRAM.
- A B C — CIRCUIT BREAKER: "A" REPRESENTS CIRCUIT BREAKER AMPERE RATING, "B" REPRESENTS NUMBER OF POLES AND "C" REPRESENTS MISCELLANEOUS BREAKER FEATURES.
  - SHUNT= PROVIDE SHUNT TRIP MECHANISM
  - GFP= GROUND FAULT PROTECTION
  - CLCB= CURRENT LIMITING CIRCUIT BREAKER
  - SS= PROVIDE SOLID STATE CIRCUIT BREAKER
  - LO= PROVIDE PERMANENT LOCK-OPEN (OFF) HARDWARE
  - LC= PROVIDE PERMANENT LOCK-CLOSED (ON) HARDWARE
- A B C D — FUSIBLE SWITCH: "A" REPRESENTS SWITCH/FRAME AMPERE RATING, "B" REPRESENTS THE FUSE AMPERE RATING, "C" INDICATES NUMBER OF POLES AND "D" REPRESENTS MISCELLANEOUS FUSE/SWITCH FEATURES.
  - SHUNT= PROVIDE SHUNT TRIP MECHANISM
  - GFP= GROUND FAULT PROTECTION
  - CLF= CURRENT LIMITING FUSE
- GROUND CONNECTION, SIZE AS INDICATED OR AS REQUIRED.
- $a,b — SINGLE POLE SWITCHES, WALL MOUNTED. SUBSCRIPTS AT SYMBOL INDICATE THE FOLLOWING:

2 - DOUBLE POLE	LV - LOW VOLTAGE	RL - ROTARY LOCK KEY TYPE
3 - THREE WAY	P - PILOT LIGHT	PB - PUSHBUTTON
4 - FOUR WAY	R - REMOTE CONTROL	S - PROJECTION SCREEN
K - KEY OPERATED	M - MOTOR STARTING	

  a, b, c, ETC. - DESIGNATES QUANTITY OF SWITCHES AT EACH LOCATION.
  NOTE: ALL WALL SWITCHES CONTROLLING EMERGENCY CIRCUITS SHALL BE ENGRAVED WITH "EMERGENCY"
- EMERGENCY POWER OFF STATION, WALL MOUNTED PER EPO SYSTEM DETAIL.
- PB , OR P — PULLBOX, SIZED PER N.E.C. OR AS NOTED.

WALL MOUNTED DEVICE MOUNTING HEIGHT NOTE:

ALL WALL-MOUNTED EQUIPMENT MOUNTING HEIGHTS SHALL BE VERIFIED PRIOR TO ROUGH-IN PER REQUIREMENTS OF THE DEVICE ALIGNMENT AND MOUNTING HEIGHT DETAILS AND SPECIFICATIONS. A

DEFERRAL NOTE:

FINAL AIC VALUES FOR THE SERVICE ARE NOT CURRENTLY AVAILABLE. PROJECT ASSUMES WORST CASE BASED ON SCE'S ELECTRICAL SERVICE REQUIREMENTS (ESR). FAULT CURRENT VALUES WILL BE ADJUSTED WHEN FAULT CURRENT LETTER ARE RECEIVED.

SCOPE OF WORK:

1. NEW BUILDING CONSTRUCTION INCLUDING SWITCHGEAR, PANELBOARDS, LIGHTING, LIGHTING CONTROLS, POWER WITH ASSOCIATED BRANCH CIRCUITING, AND POWER CONNECTIONS TO HVAC EQUIPMENT. EXTERIOR YARD WILL CONSIST OF EXTERIOR LIGHTING FROM POLES AND WALL PACKS. THERE WILL BE AVAILALE ELECTRIC VEHICLE STALLS FOR CHARGING WITHIN THE PROJECT SCOPE.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

wsp
WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 EX. 2/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: **E00.1**
SHEET TITLE:

SYMBOLS LIST

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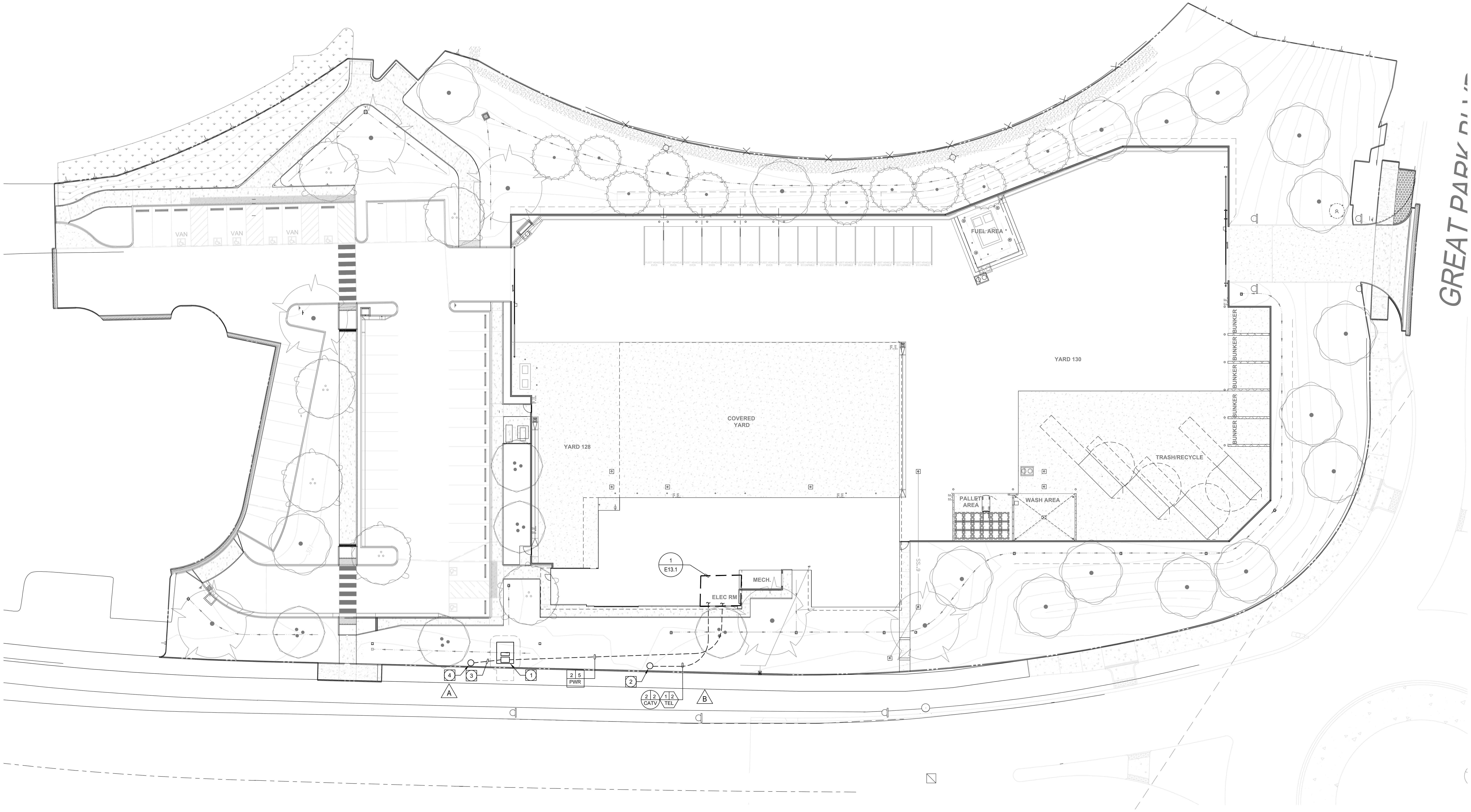
PLAN CHECK #00856737-CNEW



1 SITE UTILITY PLAN
SCALE: 1"=20'

SITE UTILITY PLAN CONSTRUCTION NOTES:

THESE NOTES ESTABLISH MINIMUM QUALITY LEVELS AND COORDINATION REQUIREMENTS. RESPECTIVE UTILITY COMPANY PLANS AND REQUIREMENTS TAKE PRECEDENCE OVER THESE NOTES WITH REGARD TO RESPECTIVE UTILITY COMPANY CONDUIT AND UNDERGROUND STRUCTURE SYSTEMS.

1. CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
2. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
3. VAULTS, MAINTENANCE HOLES (MH's), FORMERLY KNOWN AS MANHOLES, AND CONDUITS SHALL MAINTAIN A MINIMUM COVER OF 24" BELOW FINAL SURFACE AT ALL CONDITIONS. INCLUDE ALL COSTS IN BASE BID TO MEET UTILITY COMPANY REQUIREMENTS WHICH MAY REQUIRE GREATER MINIMUM CONDUIT DEPTHS.
4. VAULTS, MH's AND PULLBOXES (PB's) SHALL BE EQUIPPED WITH KNOCKOUT PANELS OR PRE-CAST INDIVIDUAL CONDUIT OPENINGS. CONDUITS SHALL ONLY ENTER AND EXIT ON END/SHORT WALLS. CONDUITS MAY NOT ENTER AND EXIT ON SIDE/LONG WALLS, CEILINGS OR FLOORS UNLESS OTHERWISE NOTED.
5. CUT DUCTS FLUSH WITH INTERIOR VAULT/MH/PB WALL.
6. GROUT AROUND DUCT ENTRANCES ON VAULT/MH/PB WALLS BY GREAT PARK.

B

7. SLURRY BACKFILL AROUND DUCTS WITHIN 5 FEET OF VAULT/MH/PB TO PREVENT SHEARING.
8. CONDUITS PASSING UNDER THE BUILDING PERIMETER SHALL BE ENCASED IN LIGHTWEIGHT CONCRETE OR WATER-IMPERVIOUS CLAY TO PREVENT WATER INFILTRATION. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. CONDUIT BEND RADIUS FOR BUILDING ENTRANCES AND AT POLES SHALL BE A MINIMUM OF 24" FOR CONDUITS WITH LESS THAN 2" INTERNAL DIAMETER AND A MINIMUM OF 48" FOR CONDUITS WITH MORE THAN 2" INTERNAL DIAMETER.
10. PREFERRED CONDUIT SWEEP RADIUS BETWEEN VAULTS IS 25 FEET. UNDER NO CIRCUMSTANCES SHALL THE CONDUIT SWEEP RADIUS BE LESS THAN 12.5 FEET. MAXIMUM OF 90 DEGREES PER SWEEP AND LIMITED TO NO MORE THAN (2) 90 DEGREE SWEEPS BETWEEN VAULTS.
11. VAULTS/MH's/PB's ARE TO BE EQUIPPED WITH RACKING, GROUNDING LUGS, AND BOLT-DOWN LIDS UNLESS OTHERWISE NOTED.
12. VAULTS AND MH's TO BE EQUIPPED WITH ROUND COVERS, EXTENSION RINGS AS REQUIRED, LADDERS AND (3) SEGMENTS OF 6 FOOT HIGH CABLE RACKING PER EACH LONG WALL.
13. LABEL ALL NON-UTILITY COMMUNICATION VAULT/MH/PB COVERS WITH "COMMUNICATIONS" UNLESS OTHERWISE NOTED ON PLANS.
14. COORDINATE FINAL VAULT/MH/PB OPENING HEIGHT WITH G.C. PRIOR TO ROUGH-IN TO ENSURE FINAL GRADE DOES NOT SLOPE INTO VAULT/MH/PB OPENING.
15. CONTRACTOR TO PROVIDE A MINIMUM OF 8" DEEP COMPACTED 1/2" DIAMETER GRAVEL, UNDER ALL VAULTS, MH's OR PB's TO ENSURE UNIFORM DISTRIBUTION OF SOIL PRESSURE ON THE FLOOR AND BE ABLE TO DISSIPATE WATER OUT OF THE VAULT, MH OR PB.
16. ALL VAULTS/MH's/PB's WITHOUT GROUNDING LUGS SHALL HAVE AN 8' x 3/4" COPPER GROUND ROD DRIVEN THRU THE FLOOR TO ALLOW GROUNDING OF ITEMS WITHIN.
17. ALL VAULTS/MH's/PB's SHALL BE PROVIDED WITH TRAFFIC RATED COVERS WHEN LOCATED IN PAVED AREAS UTILIZED FOR VEHICLE TRAFFIC.
18. IF THE WATER OR MOISTURE BARRIER ON OR NEAR THE FOUNDATION OF A BUILDING IS DISTURBED IN ANY MANNER BY EXCAVATION OR OTHER CONSTRUCTION WORK, THE MOISTURE BARRIER MUST BE REPAIRED FOLLOWING THE RECOMMENDATIONS OF THE MANUFACTURER OF THE ORIGINAL BARRIER PRODUCT.
19. THE CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS TO COMPLY WITH ALL REQUIREMENTS FOR CONFINED SPACE ENTRY PER THE OSHA REQUIREMENTS 29 CFR-1910.146, 29 CFR-1910.268, ETC. DURING ANY CONFINED SPACE ENTRY.
20. ANY DUCTS LEAVING A VAULT, MH OR PB ROUTED INTO A FACILITY SHALL BE PLUGGED AT EACH END USING REMOVABLE MECHANICAL PLUGS DESIGNED TO PREVENT WATER AND GAS FROM ENTERING THE FACILITY.
21. SEE ELECTRICAL SPECIFICATIONS AND PLAN DETAILS FOR ADDITIONAL REQUIREMENTS REGARDING UNDERGROUND CONDUITS AND IN-GRADE VAULT/MH/PB/JUNCTION BOXES.

SITE UTILITY PLAN NOTES:

1. UTILITY POINTS OF SERVICE AND WORK/MATERIAL SHOWN ARE BASED UPON PRELIMINARY INFORMATION ONLY BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK/MATERIAL REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL WIRES, CABLES, PULLBOXES, CONCRETE ENCASEMENT OF CONDUITS, TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING AND BACKFILL, AND PAY ALL UTILITY CO. FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.
3. LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, OR CONDUITS, ETC., AND TO PREVENT HAZARD TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
4. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
5. UTILITY CONTACTS:

POWER:
KATIE MORROW
MORROW MANAGEMENT
949-218-8500
KATIE@MORROWMGMT.COM
-

TELEPHONE:
KATIE MORROW
MORROW MANAGEMENT
949-218-8500
KATIE@MORROWMGMT.COM
-

CATV:
KATIE MORROW
MORROW MANAGEMENT
949-218-8500
KATIE@MORROWMGMT.COM
-

B

SPECIFIC PLAN NOTES:

1. UTILITY TRANSFORMER LOCATION. REFER TO DRY UTILITY CONSULTANT PLANS FOR ADDITIONAL INFORMATION.
2. TEL/COM POINT OF CONNECTION. REFER TO DRY UTILITY CONSULTANT PLANS FOR ADDITIONAL INFORMATION.
3. APPROXIMATE LOCATION OF SCE CO. PRIMARY FEEDERS. REFER TO DRY UTILITY CONSULTANT PLANS.
4. SCE UTILITY POWER POINT OF CONNECTION. REFER TO DRY UTILITY CONSULTANT PLANS FOR ADDITIONAL INFORMATION.

CITY OF IRVINE PLANNING DIVISION NOTE:

PER SECTION 3-20-1(B) IRVINE ZONING CODE (IRVINE, CA), SCREENING SHALL BE PROVIDED SO THAT MATERIALS STORED IN ANY OUTDOOR STORAGE AREAS AND/OR EQUIPMENT AT GRADE OR ON ROOF ARE SCREENED FROM VIEW FROM ALL ADJACENT STREETS, NO MATTER THE STREET GRADE, AND ALL PROPERTIES AT THE SAME GRADE.

LEGEND OF CONDUIT SYMBOLS (B)

NO. OF CONDUIT REQUIRED — PWR — SIZE OF CONDUIT IN INCHES; PWR = UTILITY COMPANY POWER CONDUIT SYMBOL.
GEN = GENERATOR CONDUIT SYMBOL.
ATS = ATS CONDUIT SYMBOL.

NO. OF CONDUIT REQUIRED — TEL — SIZE OF CONDUIT IN INCHES (B); UTILITY COMPANY TELEPHONE CONDUIT SYMBOL.

NO. OF CONDUIT REQUIRED — CATV — SIZE OF CONDUIT IN INCHES (B); UTILITY COMPANY CABLE TV CONDUIT SYMBOL.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 EX. 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E11.1
SHEET TITLE:

SITE UTILITY PLAN

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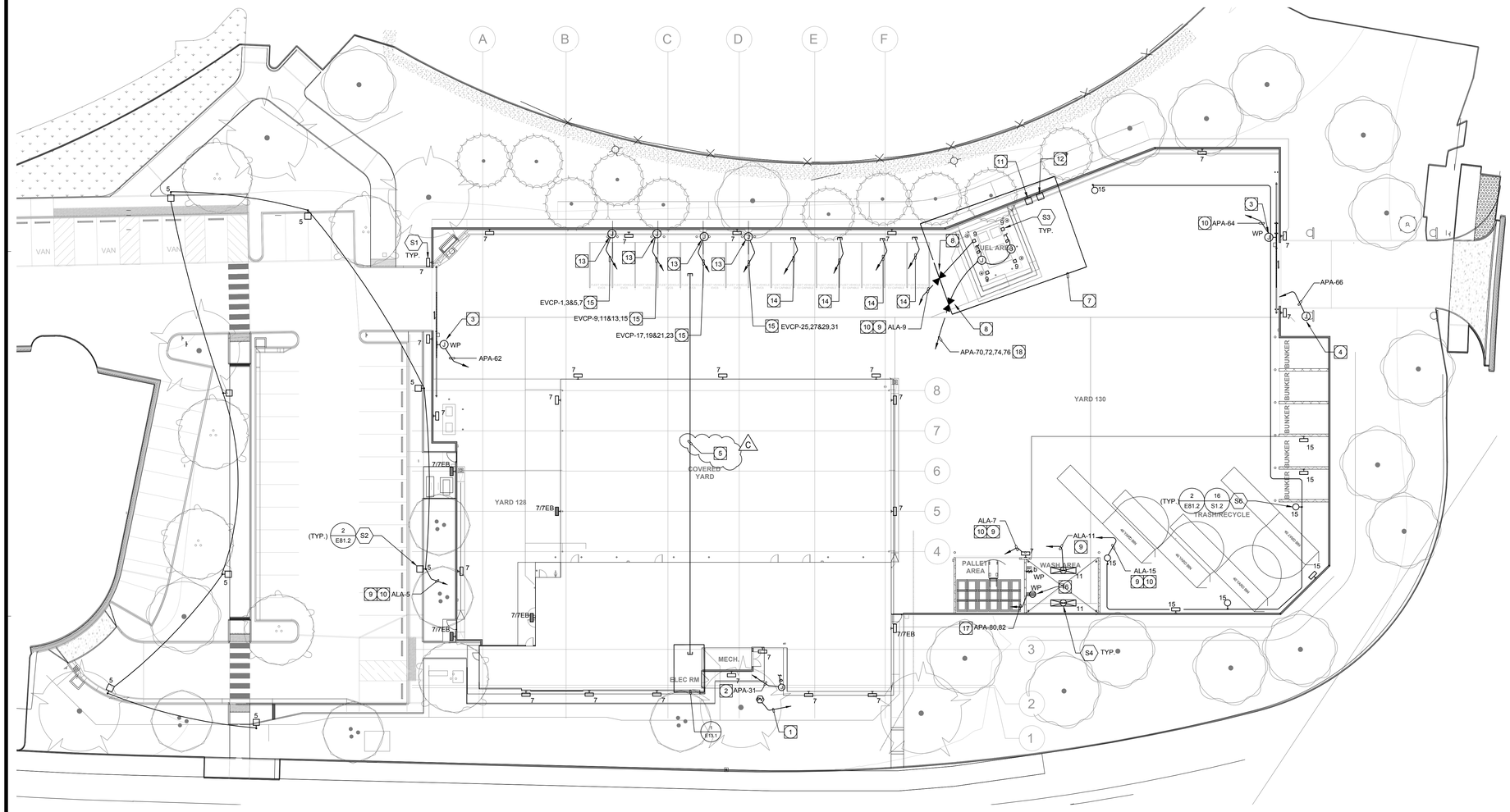
PLAN CHECK #00856737-CNEW



1 SITE ELECTRICAL PLAN

SCALE: 1"=20'

PLAN NOTES:

1. CONNECT ALL REQUIRED FIRE ALARM DEVICES TO FIRE WATER LINE OSY/PIV/DOUBLE BACK CHECK VALVES ETC TO FIRE ALARM OR CENTRAL MONITORING SYSTEM. PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS. SEE FIRE ALARM OR CENTRAL MONITORING SYSTEM SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONNECT TO IRRIGATION CONTROLLER(S) AS REQUIRED. VERIFY CONNECTION REQUIREMENTS AND EXACT LOCATION WITH IRRIGATION CONTRACTOR PRIOR TO ROUGH-IN.
3. CONNECT TO GATE CONTROLLER AS REQUIRED. VERIFY CONNECTION REQUIREMENTS AND EXACT LOCATION PRIOR TO ROUGH-IN. REFER TO DETAIL #3 ON SHEET T50.2 FOR ADDITIONAL INFORMATION.
4. PEDESTAL FOR GATE CONTROL ACCESS. PROVIDE CONDUIT AND WIRING PER MANUFACTURER.
5. CONTRACTOR TO FOLLOW CONDUIT ROUTE FOR ELECTRIC EV CHARGERS TO ELECTRICAL ROOM.
6. PROVIDE SINGLE EV CHARGER WITH 1-1/4"C., 2#4 & 1#6 E/G.BACK TO ELECTRICAL ROOM. CONTRACTOR SHALL VERIFY EXACT ROUTING TO OF BRANCH CIRCUITING WITH STRUCTURAL ENGINEER AVOID FOOTINGS AND ARCHITECT PRIOR TO ROUGH-IN.
7. CLASS 1 DIVISION 2 HAZARDOUS LOCATION, CEC SECTION 500.5(B)(2). ALL WORK WITHIN THIS ZONE SHALL COMPLY WITH CEC SECTION 514. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION. ALL CONDUIT AND FITTINGS WITHIN THIS AREA SHALL BE PVC COATED GRS.
8. PROVIDE EXPLOSION PROOF CONDUIT SEALS, CROUSE HINDS EYE SERIES, SIZE AS REQUIRED, WITH CHICO SEALING COMPOUND AND FIBER, IN ACCORDANCE WITH CEC SECTION 514.9(A) AND (B).
9. ROUTE VIA LIGHTING TIMECLOCK. PROVIDE RELAY AS REQUIRED FOR CONTROL OF EXTERIOR LIGHTING BY PHOTOCELL ON/ TIMECLOCK OFF. MOUNT RELAY IN SEPARATE BARRIERED COMPARTMENT OF PANELBOARD.
10. PROVIDE 3/4"C-2#10+1#10 E.G.
11. EMERGENCY DISCONNECT SWITCH FOR DIESEL FUEL DISPENSING TANK. VERIFY EXACT MOUNTING LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE SHEET A1.0 FOR ADDITIONAL INFORMATION.
12. EMERGENCY DISCONNECT SWITCH FOR GASOLINE FUEL DISPENSING TANK. VERIFY EXACT MOUNTING LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE SHEET A1.0 FOR ADDITIONAL INFORMATION.
13. SIEMENS VERSICHARGE 32A POWER SELECT EV SINGLE PORT/DUAL PORT CHARGING STATION WITH TO BE PROVIDED AND INSTALLED BY CONTRACTOR. CONNECT COMPLETE TO EV CHARGING STATION AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH EV CHARGER STATION SUPPLIER PRIOR TO ROUGH-IN. VERIFY EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
14. FUTURE EV CHARGER. PROVIDE 1-1/4" CONDUIT BELOW GRADE AND OVER TO THE ELECTRICAL ROOM AT EVCP PANEL ON THIS LEVEL. VERIFY FINAL LOCATION AND CONDUIT TERMINATION WITH ARCHITECT. CONTRACTOR SHALL COORDINATE COLUMN REQUIREMENTS WITH STRUCTURAL ENGINEER. PRIOR TO ROUGH-IN.
15. PROVIDE DUAL EV CHARGER WITH 1-1/4"C., 4#4 & 1#6 E/G.BACK TO ELECTRICAL ROOM. CONTRACTOR SHALL VERIFY EXACT ROUTING OF BRANCH CIRCUITING, WITH STRUCTURAL ENGINEER AND ARCHITECT TO, AVOID ALL FOOTINGS PRIOR TO ROUGH IN.
16. PROVIDE 208V-1PH. RECEPTACLE FOR CONNECTION TO POWER WASH. VERIFY XACT LOCATION AND CONFIGURATION WITH OWNER PRIOR TO ROUGH-IN.
17. PROVIDE 3/4"C-3#6+1#8 E.G.
18. PROVIDE 3/4"C-6#10+1#10 E.G.
19. PROVIDE 3/4"C-6#10+1#10 E.G.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NOTED BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

CITY OF IRVINE PLANNING DIVISION NOTE:

PER SECTION 3-20-1(B) IRVINE ZONING CODE (IRVINE, CA), SCREENING SHALL BE PROVIDED SO THAT MATERIALS STORED IN ANY OUTDOOR STORAGE AREAS AND/OR EQUIPMENT AT GRADE OR ON ROOF ARE SCREENED FROM VIEW FROM ALL ADJACENT STREETS, NOT LESS THE STREET GRADE, AND ALL PROPERTIES AT THE SAME GRADE.

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WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SHATTUCK No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
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PROJECT NO: 2023-40108

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SHEET NUMBER: E11.2

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SITE ELECTRICAL PLAN

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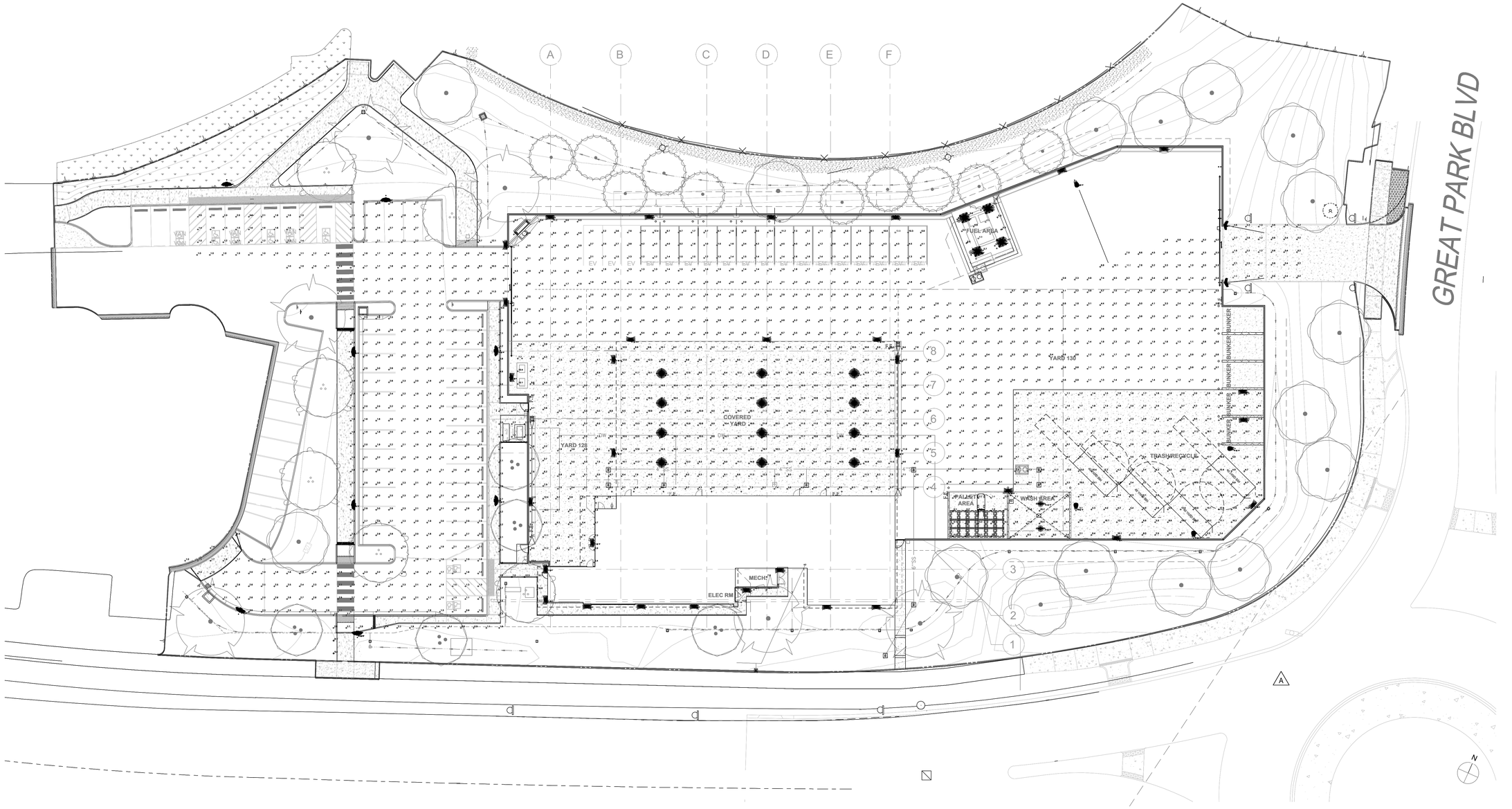

SITE PHOTOMETRIC PLAN | 1" = 20'-0" | 1

LEGEND OF BUG CALLOUT RATINGS:

DISTANCE	0'-0"		
HEIGHT	0'-0"		
RATIO	1:1		
	B	U	G
ALLOWED	--	--	--
PROPOSED	--	--	--

- THIS ROW INDICATES THE FIXTURE DISTANCE TO PROPERTY LINE.
- THIS ROW INDICATES THE FIXTURE MOUNTING HEIGHT.
- THIS ROW INDICATES THE DISTANCE-TO-HEIGHT RATIO.
- THIS ROW IS THE CALGREEN ALLOWED BUG RATING FOR THE DISTANCE-TO-HEIGHT RATIO. SEE THE "CALGREEN ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATING" TABLE ON THIS SHEET FOR MORE INFORMATION.
- THIS ROW IS THE PROPOSED BUG RATING FOR THE FIXTURE AT THIS LOCATION.

CALGREEN MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS (SEE NOTE 1,2)					
RATING DESCRIPTIONS	FIXTURE LOCATION (MULTIPLES OF HEIGHT FROM PROPERTY LINE)	LIGHTING ZONE			
		LZ1	LZ2	LZ3	LZ4
BACKLIGHT RATING (SEE NOTE 3)	> 2 (SITE FIXTURES)	No Limit	No Limit	No Limit	No Limit
	> 1 BUT <= 2 (SITE FIXTURES)	B2	B3	B4	B4
	>= 0.5 BUT <= 1 (SITE FIXTURES)	B1	B2	B3	B3
	< 0.5 (SITE FIXTURES)	B0	B0	B1	B2
UPLIGHTING RATING	FOR AREA LIGHTING (SEE NOTE 4)	U0	U0	U0	U0
	FOR OTHER OUTDOOR LIGHTING, INCLUDING DECORATIVE	U1	U2	U3	U4
GLARE RATING (SEE NOTE 5)	> 2 (BUILDING MOUNTED)	G1	G2	G3	G4
	> 1 BUT <= 2 (BUILDING MOUNTED)	G0	G1	G1	G2
	>= 0.5 BUT <= 1 (BUILDING MOUNTED)	G0	G0	G1	G1
	< 0.5 (BUILDING MOUNTED)	G0	G0	G0	G1

1: IESNA LIGHTING ZONES 0 ARE NOT APPLICABLE; REFER TO LIGHTING ZONES AS DEFINED IN THE CALIFORNIA ENERGY CODE AND CHAPTER 10 OF THE CALIFORNIA ADMINISTRATIVE CODE.

2: FOR PROPERTY LINES THAT ABUT PUBLIC WALKWAYS, BIKEWAYS, PLAZAS AND PARKING LOTS, THE PROPERTY LINE MAY BE CONSIDERED TO BE 5 FEET BEYOND THE ACTUAL PROPERTY LINE FOR PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION. FOR PROPERTY LINES THAT ABUT PUBLIC ROADWAYS AND PUBLIC TRANSIT CORRIDORS, THE PROPERTY LINE MAY BE CONSIDERED TO BE THE CENTERLINE OF THE PUBLIC ROADWAY OR PUBLIC TRANSIT CORRIDOR FOR THE PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION.

3: IF THE NEAREST PROPERTY LINE IS LESS THAN OR EQUAL TO TWO MOUNTING HEIGHTS FROM THE BACK HEMISPHERE OF THE LUMINAIRE DISTRIBUTION, THE APPLICABLE REDUCED BACKLIGHT RATING SHALL BE MET.

4: GENERAL LIGHTING LUMINAIRES IN AREAS SUCH AS OUTDOOR PARKING, SALES OR STORAGE LOTS SHALL MEET THESE REDUCED RATINGS. DECORATIVE LUMINAIRES LOCATED IN THESE AREAS SHALL MEET U-VALUE LIMITS FOR "ALL OTHER OUTDOOR LIGHTING."

5: IF THE NEAREST PROPERTY LINE IS LESS THAN OR EQUAL TO TWO MOUNTING HEIGHTS FROM THE FRONT HEMISPHERE OF THE LUMINAIRE DISTRIBUTION, THE APPLICABLE REDUCED GLARE RATING SHALL BE MET.

SITE PHOTOMETRIC NOTES:

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Canopy	+	10.9 fc	21.9 fc	2.3 fc	9.5:1	4.7:1
East Driveway	+	1.4 fc	4.9 fc	0.2 fc	24.5:1	7.0:1
EV Parking Area	+	3.5 fc	13.9 fc	0.6 fc	23.2:1	5.8:1
Fuel Area	+	5.7 fc	6.9 fc	4.6 fc	1.5:1	1.2:1
Gate Entry	+	4.2 fc	11.8 fc	1.5 fc	7.9:1	2.8:1
Open Yard Area	+	1.9 fc	10.2 fc	0.2 fc	51.0:1	9.5:1
Parking Lot	+	2.5 fc	13.8 fc	1.0 fc	17.3:1	3.1:1
Walkway	+	4.7 fc	16.0 fc	0.9 fc	17.8:1	5.2:1
Wash Area	+	10.6 fc	22.3 fc	2.9 fc	7.7:1	3.7:1
West Yard	+	6.9 fc	15.6 fc	1.8 fc	8.7:1	3.8:1
Yard Bin	+	7.1 fc	24.1 fc	0.5 fc	48.2:1	14.2:1

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SMITH
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
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SITE PHOTOMETRIC PLAN

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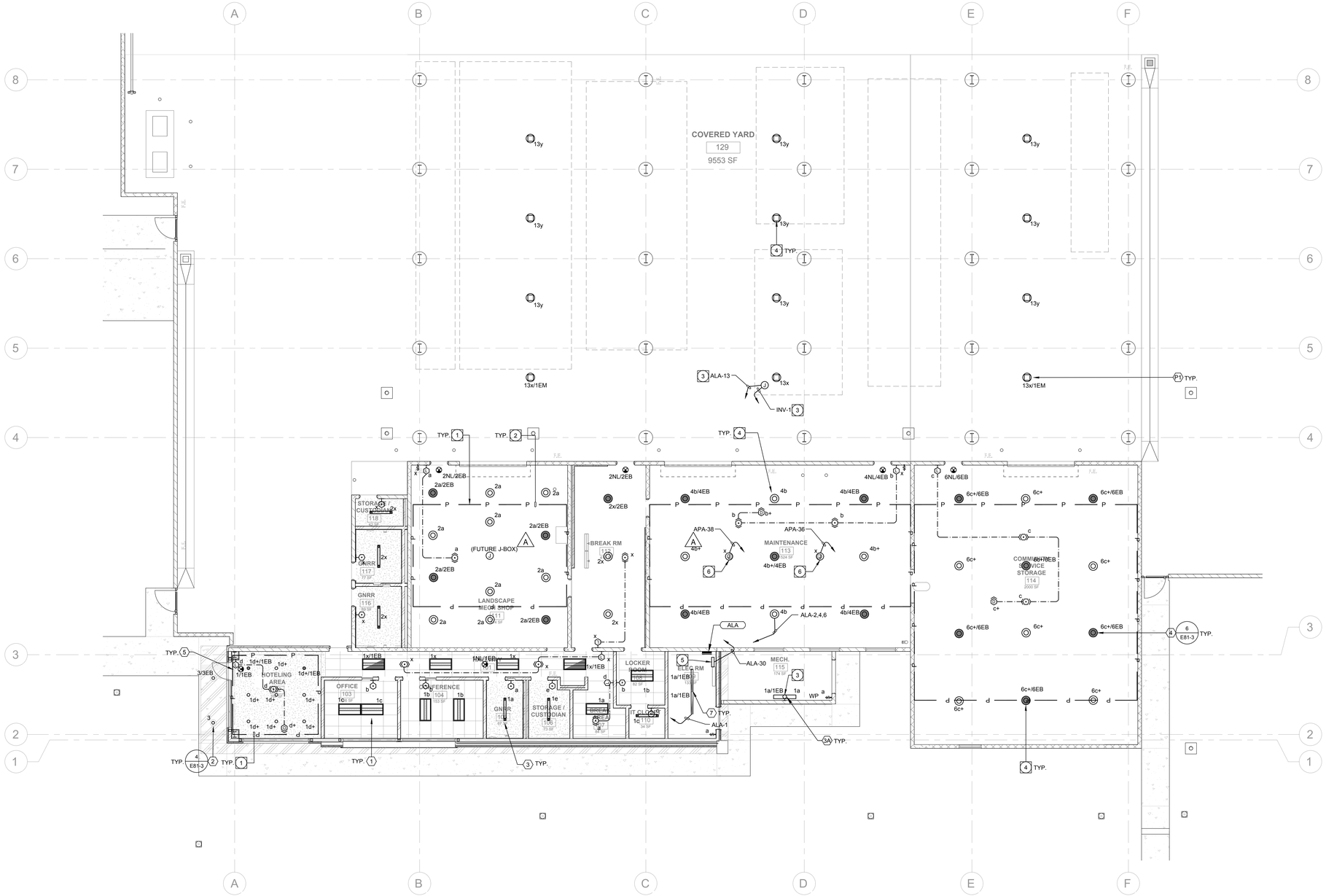

LIGHTING PLAN GENERAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ALL DEVICES. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
2. VERIFY EXACT CEILING CONSTRUCTION WITH ARCHITECTURAL REFLECTED CEILING PLAN AND SPECS. PROVIDE LIGHTING FIXTURES WITH ALL NECESSARY MOUNTING HARDWARE.
3. ALL RECESSED FIXTURES SHALL BE PROVIDED WITH ALL STRUCTURAL SUPPORTS AS REQUIRED BY THE IBC, OR CBC WHERE ADOPTED, IN ADDITION TO ANY LOCAL CODES.
4. ALL PERIMETER AND COVE LIGHTING SHALL EXTEND THE FULL LENGTH OF THE WALLS OR COVE. CONTRACTOR TO FIELD MEASURE COVE LENGTH AND ORDER QUANTITY OF FIXTURES AS REQUIRED.
5. ALL LINE VOLTAGE DIMMING BRANCH CIRCUITS SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
6. RECESSED FIXTURES LOCATED IN A FIRE-RATED CEILING OR WALL SHALL BE PROVIDED WITH A 5-SIDED, RATED ENCLOSURE SO CONSTRUCTED AS TO ALLOW CODE AND MANUFACTURER-REQUIRED CLEARANCES BETWEEN THE FIXTURE AND THE ENCLOSURE.

OPEN CEILING COORDINATION NOTES:

IN AREAS WITH "OPEN" CEILINGS, "EXPOSED" CEILINGS, OR OPEN GRID (NO TILES INSERTED) OR GRID CEILINGS WITH MORE THAN 25% OPEN OR TRANSPARENT AREA ALLOWING BEAMS AND OTHER STRUCTURAL ELEMENTS, HVAC DUCT WORK, ETC., TO BE VIEWABLE BY THE OCCUPANTS. THE ELECTRICAL CONTRACTOR SHALL TAKE EXTRA CARE WITH INSTALLATION OF CONDUIT TO INCLUDE MEETING THE FOLLOWING ADDITIONAL INSTALLATION CRITERIA:

- ALL BRANCH CIRCUITS, FIRE ALARM CIRCUITS, LIGHTING CONTROL CONDUCTORS, AND CONDUITS/SLEEVES FOR AV/TEL/DATA/SECURITY AND OTHER TECHNOLOGY SYSTEMS INFRASTRUCTURE SHALL BE ROUTED IN EMT WITHIN SUCH AREA. OPEN CONDUCTORS AND MC CABLES SHALL NOT BE UTILIZED IN THESE AREAS.
- ALL CONDUITS/SLEEVES IN THESE SPACES SHALL BE EXTENDED INTO/ABOVE CONCEALED ACCESSIBLE CEILING SPACES - TERMINATING A MINIMUM OF 5FT HORIZONTALLY FROM THE OPEN OR EXPOSED CEILING CONDITION.
- CONDUIT FOR ALL BRANCH CIRCUITS, FIRE ALARM CIRCUITS, LIGHTING CONTROL CONDUCTORS AV/TEL/DATA INFRASTRUCTURE SHALL BE ROUTED NEATLY, TIGHT TO THE DECK ABOVE AND PARALLEL TO STRUCTURAL BEAMS/FRAMING, DUCT WORK AND PLUMBING RELATED PIPING.

REVIEW PROPOSED ROUTING OF CONDUIT WITH ARCHITECT PRIOR TO INSTALLATION. VISUALLY OBJECTIONABLE BRANCH CIRCUITS/CONDUIT SHALL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.

PLAN NOTES:

1. PRIMARY DAYLIGHT AREA SHOWN PER TITLE 24 REQUIREMENTS.
2. SKYLIT DAYLIGHT AREA SHOWN PER TITLE 24 REQUIREMENTS.
3. ROUTE VIA LIGHTING TIMECLOCK. PROVIDE RELAY AS REQUIRED FOR CONTROL OF EXTERIOR LIGHTING BY PHOTOCELL ON/ TIMECLOCK OFF. MOUNT RELAY IN SEPARATE BARRIERED COMPARTMENT OF PANELBOARD.
4. SEE DETAIL 1, SHEET A31.1 FOR MOUNTING HEIGHT OF LIGHT FIXTURES, TYPICAL.
5. PROVIDE (1) 250W, 120V. WALL MOUNTED, SEISMICALLY CERTIFIED, INVERTER SHALL HAVE 95% EFFICIENCY RATING. INPUT/OUTPUT TRANSFORMER SHALL NOT BE ALLOWED. MEYERS ILLUMINATOR LVM SERIES #LVM-250-W. EQUAL BY ISOLITE AND EVENLITE. PROVIDE ALL HARDWARE FOR A COMPLETE CONNECTION PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. VERIFY LOCATION IN FIELD PRIOR TO ROUGH-IN.
6. CONTRACTOR TO PROVIDE 120V CONNECTION TO CEILING FAN. VERIFY ALL REQUIREMENTS WITH MANUFACTURER AND PROVIDE ALL COMPONENTS FOR A COMPLETE AND OPERABLE INSTALLATION.

BUILDING SAFETY OF IRVINE BUILDING SAFETY DIVISION

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CITY OF IRVINE - GREAT PARK
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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SIMPSON No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

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	100% DD	01-13-25
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PROJECT NO: 2023-40108
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SHEET NUMBER: E12.1
SHEET TITLE:

LIGHTING PLAN

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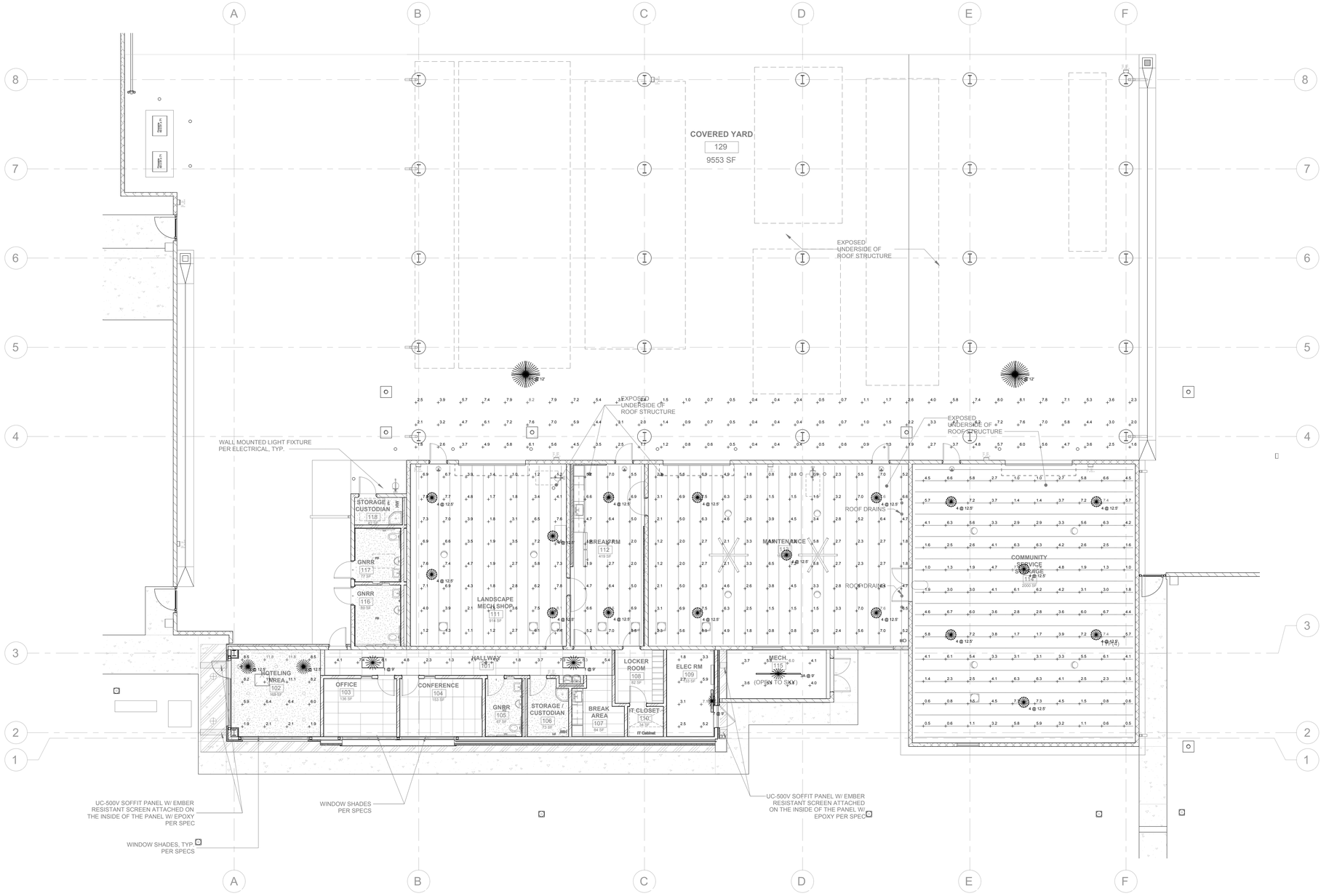

PHOTOMETRIC PLAN | 1/8" = 1'-0" | **1**

PHOTOMETRIC STATISTICS:

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Break RM 112	+	5.1 fc	7.5 fc	1.9 fc	3.9:1	2.7:1
Covered Yard 129	+	3.4 fc	8.2 fc	0.4 fc	20.5:1	8.5:1
Elec Rm 109	+	3.9 fc	7.1 fc	1.8 fc	3.9:1	2.2:1
Hallway 101	+	4.4 fc	8.3 fc	1.1 fc	7.5:1	4.0:1
Hoteling Area 102	+	7.0 fc	11.8 fc	1.8 fc	6.2:1	3.7:1
Landscape Mech Shop 111	+	4.5 fc	8.1 fc	1.0 fc	8.1:1	4.5:1
Maintenance 114	+	4.0 fc	7.8 fc	0.8 fc	9.9:1	5.0:1
Mech 116	+	4.8 fc	6.0 fc	3.6 fc	1.7:1	1.3:1
Storage 115	+	3.9 fc	7.4 fc	0.5 fc	14.8:1	7.8:1

NOTE:

THIS LIGHTING CALCULATION REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS.

LEGEND OF REFLECTANCES:

SURFACE RELFECTANCES ARE ASSUMED STANDARDS USED IN CALCULATION MODEL

GENERAL

CEILING	80%
WALLS	50%
FLOOR	20%

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SHAFFER
No. E15610
12/31/2025
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STATE OF CALIFORNIA

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PHOTOMETRIC PLAN

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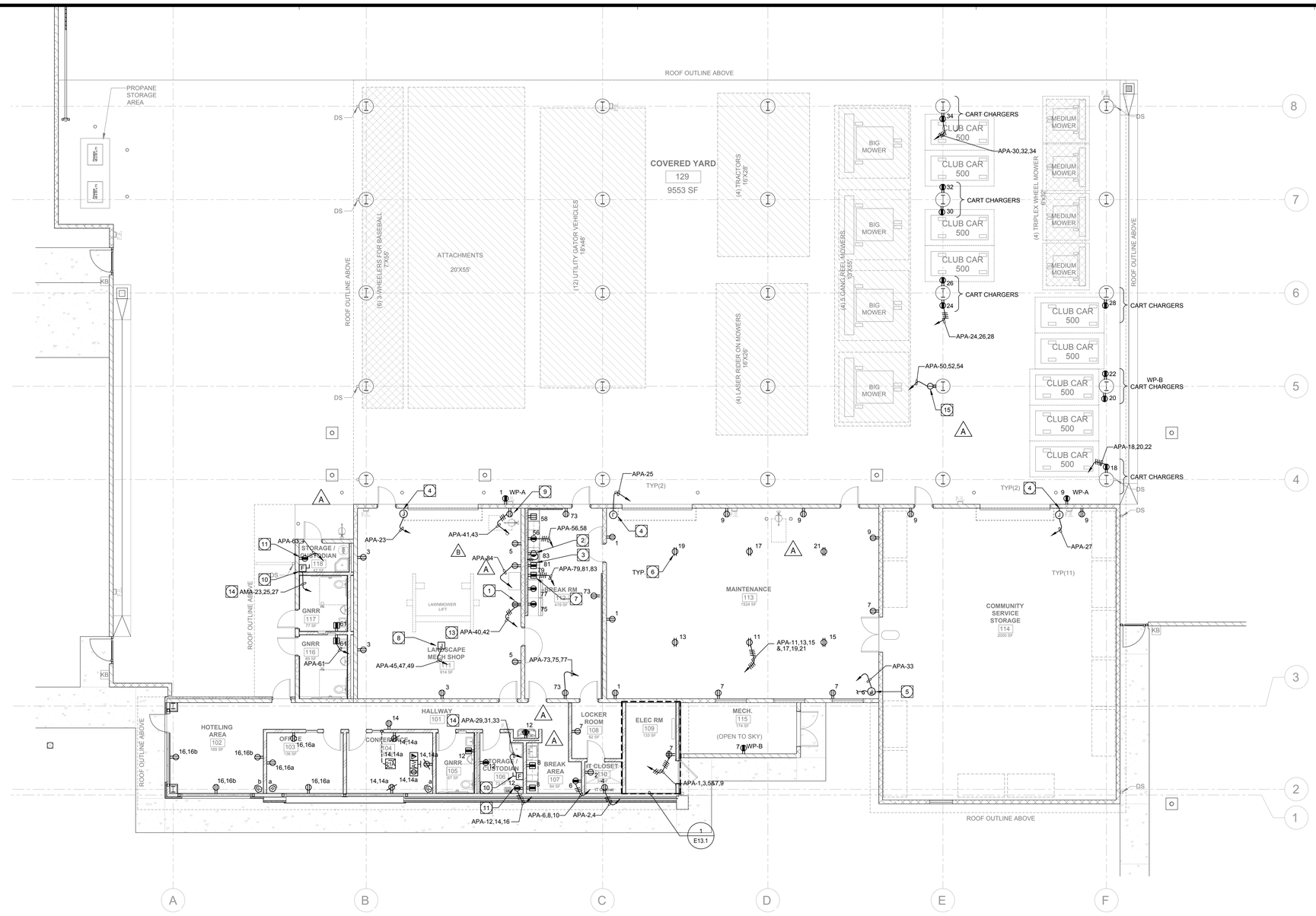


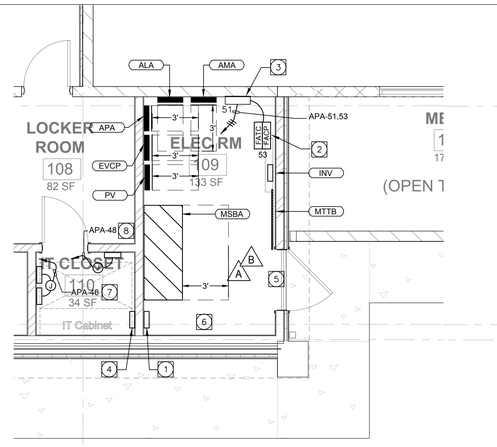
POWER & COMMUNICATIONS PLAN 1/8" = 1'-0" **1**

ELECTRICAL ROOM GENERAL NOTES:

1. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL ROOM ARE A CRITICAL COORDINATION ITEM. CONTRACTOR SHALL PROVIDE 1/4" = 1'-0" SCALE DRAWINGS WITH SWITCHGEAR SUBMITTALS SHOWING THAT ALL PROPOSED EQUIPMENT WILL FIT IN THE SPACE PROVIDED. SUBMITTALS WITHOUT THIS DRAWING SHALL BE REJECTED AS INCOMPLETE.
2. SEE LIGHTING PLAN GENERAL NOTES, POWER PLAN GENERAL NOTES AND COMMUNICATIONS PATHWAYS GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. FOR ELECTRICAL ROOMS THAT REQUIRE TWO (2) EXITS, OR DOUBLE WORKING SPACE DEPTH, OR CONTAIN EQUIPMENT WITH OCPD/SWITCHING EQUIPMENT IS RATED 800A OR LARGER, ALL EGRESS DOORS SHOWN SHALL OPEN IN THE DIRECTION OF EGRESS AND SHALL BE PROVIDED WITH PANIC HARDWARE.

ELECTRICAL/IT ROOM SPECIFIC NOTES:

1. MAIN ELECTRICAL SYSTEM GROUND BUS. SEE TELECOMMUNICATIONS PATHWAYS AND GROUNDING RISER (IF PROVIDED ON PROJECT) AND SYSTEM GROUNDING DETAIL FOR MORE INFORMATION.
2. CONNECT TO FIRE ALARM PANEL(S) AS REQUIRED.
3. CONNECT TO HVAC CONTROL/BAS/BMS PANEL AS REQUIRED.
4. MPOE GROUND BUS BAR. SEE TELECOMMUNICATIONS PATHWAYS AND GROUNDING RISER FOR MORE INFORMATION.
5. DOORS SHALL OPEN IN THE DIRECTION OF EGRESS AND SHALL BE PROVIDED WITH PANIC HARDWARE.
6. LOCATION RESERVED FOR FUTURE PV SYSTEM DISCONNECT SWITCH AND METER.
7. PROVIDE CONNECTION TO ACCESS CONTROL POWER SUPPLY PANELS.
8. PROVIDE CONNECTION TO FIRE ALARM CONTROL PANEL.



ENLARGED ELECTRICAL / IT PLAN 1/4" = 1'-0" **2**

PLAN NOTES:

1. PROVIDE DEDICATED 208V, 1Ø, 50A RECEPTACLE FOR WELDING EQUIPMENT. VERIFY EXACT LOCATION AND CONFIGURATION PRIOR TO ROUGH-IN.
2. PROVIDE A SPLIT WIRED RECEPTACLE FOR GARBAGE DISPOSAL AND UNDER COUNTER CONVENIENCE.
3. DEDICATED 20A RECEPTACLE FOR MICROWAVE GFCI WHERE INDICATED.
4. PROVIDE CONNECTION TO ROLL UP DOOR MOTOR. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROLS FOR OPERATION AS REQUIRED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. PROVIDE 120V TO TRAP PRIMER AND CONNECT AS REQUIRED. COORDINATE WITH P.C. FOR EXACT LOCATION PRIOR TO ROUGH-IN. REFER TO PLUMBING DRAWINGS FOR MORE INFORMATION.
6. PROVIDE RETRACTABLE CORD REEL. REELCRAFT#L4050-163-9, MOUNTED TO P1001 UNISTRUT. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED.
7. DEDICATED 20A RECEPTACLE FOR COFFEE MAKER GFCI WHERE INDICATED.
8. CONNECT AS REQUIRED TO MOTORIZED LIFT PER MANUFACTURER'S REQUIREMENTS.
9. PROVIDE 208V-1PH. RECEPTACLE FOR CONNECTION TO AIR COMPRESSOR. VERIFY EXACT LOCATION AND CONFIGURATION WITH OWNER PRIOR TO ROUGH-IN.
10. CONNECT COMPLETE TO WATER HEATER AS REQUIRED. PROVIDE DISCONNECT AS REQUIRED.
11. CONNECT CIRCULATION PUMP, TIME CLOCK OR/AND AQUASTAT AS REQUIRED. SEE PLUMBING PLANS FOR MORE INFORMATION. PROVIDE DISCONNECT(S) AS REQUIRED.
12. CONNECT TO WALL MOUNTED FAN PER MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROLS AND WIRING FOR OPERATION AS REQUIRED BY MANUFACTURER INSTALLATION INSTRUCTIONS. VERIFY EXACT MOUNTING LOCATION IN FIELD PRIOR TO ROUGH-IN.
13. PROVIDE 3/4"C-3#6+1#8 E.G
14. PROVIDE 3/4"C-3#10+1#10 EG
15. 208V, 3P, 4W GROUNDING, 250V 60A SURFACE MOUNTED RECEPTACLE RECEPTACLE CONSISTING OF:
    (1) L15-60R STRAIGHT BLADE RECEPTACLES 1"C. W/ 3#4s & 1#10 E.G.

POWER PLAN GENERAL NOTES:

1. ALL RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 24-INCHES MINIMUM.
2. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
3. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
4. ALL FURNITURE FEED LOCATIONS TO BE VERIFIED WITH ARCHITECT AND FURNITURE VENDOR PRIOR TO ROUGH-IN.
5. ALL FURNITURE WHIPS SHALL BE TRIMMED TO REDUCE EXCESS WHIP LENGTH.
6. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:
   a. ALL BRANCH CIRCUITS SHALL BE EMT.
   b. ALL BRANCH CIRCUITS SHALL BE ROUTED ORTHOGONALLY, NEATLY TRAINED, IN PARALLEL TO STRUCTURES OR DUCTWORK. THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS.
   c. VISUALLY OBJECTIONABLE BRANCH CIRCUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
7. EXPOSED CABLE/CONDUCTORS INSTALLED IN A PLENUM SPACE SHALL CONFORM TO NEC, OR CEC WHERE ADOPTED, ARTICLE 300.22(C).
8. PROVIDE G.F.C.I. TYPE RECEPTACLE(S) OR RECEPTACLE(S) PROTECTED BY A GFCI CIRCUIT BREAKER(S) WHEN RECEPTACLES ARE 50A OR LESS, 150V TO GROUND OR LESS AND ARE LOCATED WITHIN 6-FEET OF ANY SINK OR THERAPEUTIC TUB, LAUNDRY AREA, SERVING ANY DRINKING FOUNTAIN OR VENDING MACHINE, WITHIN ANY KITCHEN SPACE, LOCKER ROOM AREA, GARAGE AND BATHROOM SPACE AND/OR LOCATED OUTDOORS. WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE, PROVIDE GFCI CIRCUIT BREAKER(S) TO PROTECT THE RESPECTIVE BRANCH CIRCUIT AND PROVIDE ADDITIONAL NEUTRAL CONDUCTORS IN THE BRANCH CIRCUITING AS REQUIRED TO ENSURE PROPER GFCI FUNCTION.
9. PROVIDE OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY(S) AS REQUIRED TO SWITCH CONTROLLED RECEPTACLES. CONNECT BRANCH CIRCUITRY AND CONTROL WIRING AS REQUIRED TO ALLOW OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM RELAY TO SWITCH STANDALONE AND/OR SYSTEMS FURNITURE CONTROLLED RECEPTACLES AS INDICATED ON PLANS. PROVIDE ADDITIONAL CONDUIT, WIRING AND PATHWAYS NECESSARY TO CONNECT BRANCH CIRCUITRY AND CONTROL WIRING TO REMOTE RELAYS TO INCLUDE RELAY(S) LOCATED ON ALTERNATE FLOORS, IN ELECTRICAL ROOMS, ETC.
10. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. PROVIDE REDUNDANT GROUND PATH IN ALL BRANCH CIRCUITS SERVING PATIENT CARE AREAS CONSISTING OF A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR PER NEC, OR CEC WHERE ADOPTED, ART 517.13.

COMMUNICATIONS PATHWAYS GENERAL NOTES:

1. CONDUITS SHALL (a) CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.), AND (b) CONTAIN NO MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULL BOX. SPLIT CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.
2. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF EXTRA PULL TAPE COILED AT EACH END.
3. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2-INCHES IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2-INCHES IN DIAMETER.
4. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2-INCHES TO 3-INCHES ABOVE THE FLOOR SURFACE.
5. INSTALL BUSHINGS OR BELL ENDS AS REQUIRED ON ALL CONDUITS.
6. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER.
7. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
8. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI-TIA-569-C. PULL BOXES FOR IN/UNDER SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITH THE ACCESSIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT SUPPORTS. PULL BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATED. PULL BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING:

CONDUIT SIZE	WIDTH	LENGTH	DEPTH	WIDTH INCREASE PER ADDITIONAL CONDUIT
1"	4"	16"	3"	2"
2"	8"	30"	4"	5"
3"	12"	48"	6"	6"
4"	15"	60"	8"	8"

FOR OTHER CONDUIT SIZES REFER TO ANSI/TIA-569-C TABLE 12. - LATEST PUBLISHED EDITION.

9. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
10. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.
11. PROVIDE INTERNAL/EXTERNAL GAS AND WATER TIGHT MECHANICAL SEALING/PLUGGING OF EACH BUILDING ENTRY CONDUIT AS SPECIFIED ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS.

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MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SVA No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E13.1
SHEET TITLE:

POWER & COMMUNICATIONS PLAN

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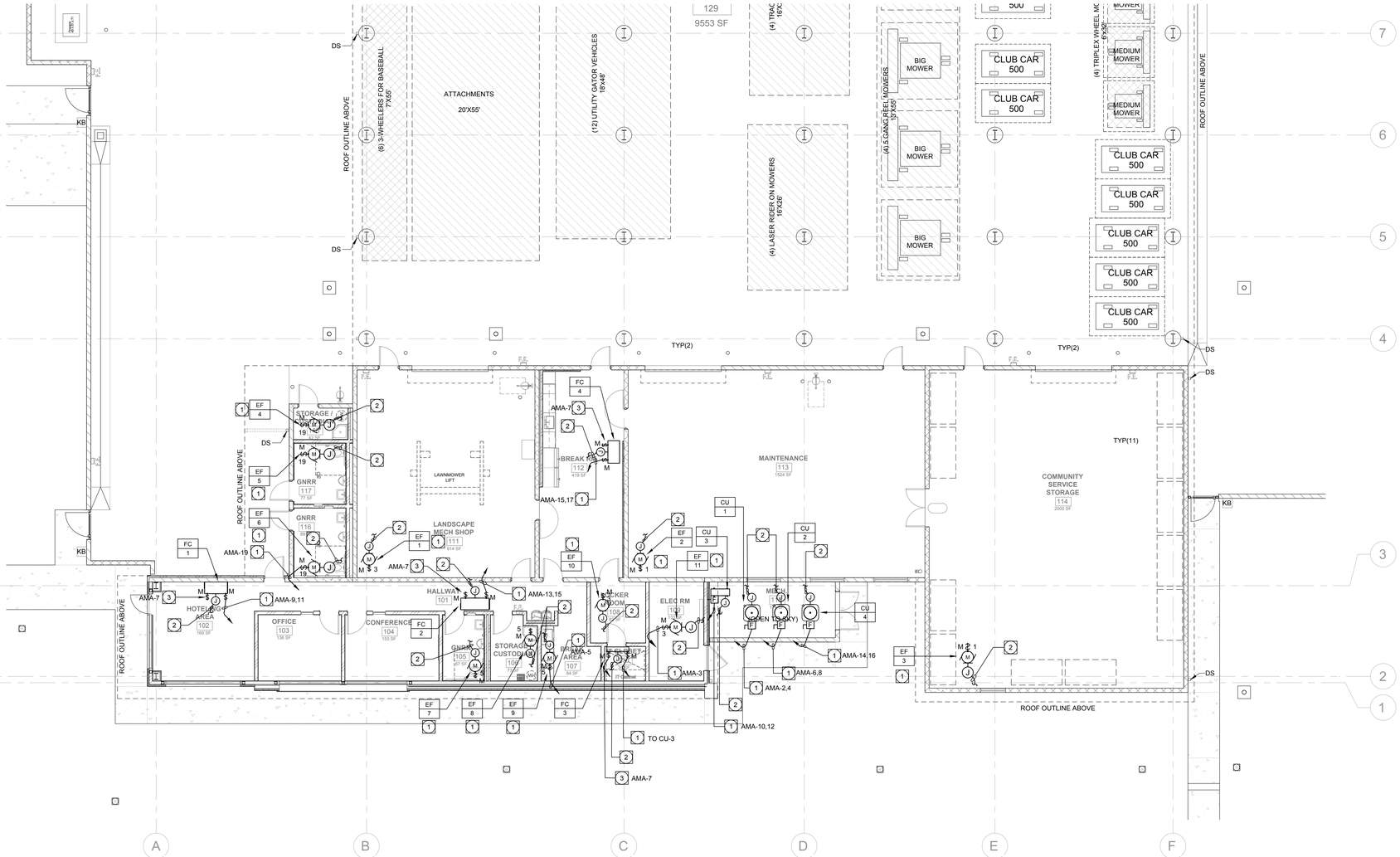
PLAN CHECK #00856737-CNEW



PLAN NOTES:

1. REFER TO MOTORIZED EQUIPMENT SCHEDULE FOR MOTOR FEEDER/ BRANCH CIRCUIT INFORMATION.
2. PROVIDE 3/4" C.O.(S) TO RESPECTIVE CONTROL DEVICE(S) FOR CONTROL WIRING. REFER TO THE EQUIPMENT CONTROL WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
3. PROVIDE CONNECTION TO FAN COIL CONDENSATE PUMP AS REQUIRED. VERIFY LOCATION IN FIELD WITH MECHANICAL EQUIPMENT INSTALLER.

POWER PLAN GENERAL NOTES:

1. ALL RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 24-INCHES MINIMUM.
2. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
3. ALL WALL-MOUNTED DEVICE HEIGHTS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO ROUGH-IN.
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6. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, THE CONTRACTOR WILL NEED TO PROVIDE THE FOLLOWING ITEMS:
   a. ALL BRANCH CIRCUITS SHALL BE EMT.
   b. ALL BRANCH CIRCUITS SHALL BE ROUTED ORTHOGONALLY, NEATLY TRAINED, IN PARALLEL TO STRUCTURES OR DUCTWORK. THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS.
   c. VISUALLY OBJECTIONABLE BRANCH CIRCUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.
7. EXPOSED CABLE/CONDUCTORS INSTALLED IN A PLENUM SPACE SHALL CONFORM TO NEC, OR CEC WHERE ADOPTED, ARTICLE 300.22(C).
8. PROVIDE G.F.C.I. TYPE RECEPTACLE(S) OR RECEPTACLE(S) PROTECTED BY A GFCI CIRCUIT BREAKER(S) WHEN RECEPTACLES ARE 50A OR LESS, 150V TO GROUND OR LESS AND ARE LOCATED WITHIN 6-FEET OF ANY SINK OR THERAPEUTIC TUB, LAUNDRY AREA, SERVING ANY DRINKING FOUNTAIN OR VENDING MACHINE, WITHIN ANY KITCHEN SPACE, LOCKER ROOM AREA, GARAGE AND BATHROOM SPACE AND/OR LOCATED OUTDOORS. WHERE RECEPTACLES ARE NOT READILY ACCESSIBLE, PROVIDE GFCI CIRCUIT BREAKER(S) TO PROTECT THE RESPECTIVE BRANCH CIRCUIT AND PROVIDE ADDITIONAL NEUTRAL CONDUCTORS IN THE BRANCH CIRCUITING AS REQUIRED TO ENSURE PROPER GFCI FUNCTION.
9. PROVIDE OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY(S) AS REQUIRED TO SWITCH CONTROLLED RECEPTACLES. CONNECT BRANCH CIRCUITRY AND CONTROL WIRING AS REQUIRED TO ALLOW OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM RELAY TO SWITCH STANDALONE AND/OR SYSTEMS FURNITURE CONTROLLED RECEPTACLES AS INDICATED ON PLANS. PROVIDE ADDITIONAL CONDUIT, WIRING AND PATHWAYS NECESSARY TO CONNECT BRANCH CIRCUITRY AND CONTROL WIRING TO REMOTE RELAYS TO INCLUDE RELAY(S) LOCATED ON ALTERNATE FLOORS, IN ELECTRICAL ROOMS, ETC.
10. PROVIDE ADDITIONAL J-BOX NEAR PANEL FOR MULTIPLE HOMERUN CIRCUITRY.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. PROVIDE REDUNDANT GROUND PATH IN ALL BRANCH CIRCUITS SERVING PATIENT CARE AREAS CONSISTING OF A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR PER NEC, OR CEC WHERE ADOPTED, ART 517.13.

MECHANICAL POWER PLAN | 1/8" = 1'-0" | 1

MOTORIZED EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	EQUIPMENT RATING								DISC. SW. SIZE STARTER SIZE	CIRCUIT DATA CONDUIT - WIRE	SPECIFIC NOTES
				MOTOR		VFD						
		VOLTS	PH.	HP	FLA	FLA	MCA	MOCP	SCCR			
CU 1	SPLIT CONDENSING UNIT	208	1	-	-	-	10.9	15	5	30AS/2P	SEE PLAN 3/4"C-2#12+1#12EG	A
CU 2	SPLIT CONDENSING UNIT	208	1	-	-	-	19.2	30	5	30AS/2P	SEE PLAN 3/4"C-2#10+1#12EG	A
CU 3	SPLIT CONDENSING UNIT	208	1	-	-	-	17	25	5	30AS/2P	SEE PLAN 3/4"C-2#10+1#12EG	A
CU 4	SPLIT CONDENSING UNIT	208	1	-	-	-	10.9	15	5	30AS/2P	SEE PLAN 3/4"C-2#12+1#12EG	A
FC 1	FAN COIL UNIT -	208	1	-	-	-	3.6	15	-	30AS/2P	SEE PLAN 3/4"C-2#12+1#12EG	A
FC 2	FAN COIL UNIT -	208	1	-	-	-	5.3	15	-	30AS/2P	SEE PLAN 3/4"C-2#12+1#12EG	A
FC 3	FAN COIL UNIT	POWERED FROM OUTDOOR CONDENSING UNIT							-	- -	-	
FC 4	FAN COIL UNIT -	208	1	-	-	-	3.6	15	-	30AS/2P	SEE PLAN 3/4"C-2#12+1#12EG	A
EF 1	EXHAUST FAN -	120	1	1/6	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 2	EXHAUST FAN -	120	1	1/4	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 3	EXHAUST FAN -	120	1	1/4	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 4	EXHAUST FAN -	120	1	11W	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 5	EXHAUST FAN -	120	1	0.33 A	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 6	EXHAUST FAN -	120	1	0.33 A	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 7	EXHAUST FAN -	120	1	0.33 A	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 8	EXHAUST FAN -	120	1	11W	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 9	EXHAUST FAN -	120	1	0.2 A	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 10	EXHAUST FAN -	120	1	0.33 A	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-
EF 11	EXHAUST FAN -	120	1	1/15	-	-	-	15	-	MANUAL MOTOR SWITCH	SEE PLAN 3/4"C-2#12+1#12EG	-

MECHANICAL POWER PLAN GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT LISTED IN SCHEDULE. ANY MODIFICATIONS AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
2. ALL TEMPERATURE CONTROL AND INTERLOCK CONDUIT AND WIRING SHALL BE BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. SEE MECHANICAL/PLUMBING DRAWINGS FOR ALL INFORMATION.
3. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS WITH THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE LOCAL REMOTE DISCONNECTING MEANS FOR ALL ELECTRIC HEATING EQUIPMENT IF REQUIRED BY THE LOCAL ELECTRICAL CODE.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF CONDUIT/WIRING TO ROOF-MOUNTED EQUIPMENT WITH EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. WHERE ROOF-MOUNTED EQUIPMENT IS MANUFACTURED TO BE FED FROM WITHIN MECHANICAL CURB ASSEMBLY - SEPARATE ROOF PENETRATIONS FOR WIRING CONNECTIONS SHALL NOT BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.
6. ALL ROOF MOUNTED EQUIPMENT SHALL BE NEMA 3R RATED.
7. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

MOTORIZED EQUIPMENT SCHEDULE SPECIFIC NOTES:

A. FUSED AS RECOMMENDED BY MANUFACTURER.

B. MAGNETIC MOTOR STARTER WITH CONTROL TRANSFORMER, AUXILIARY CONTACTS, INDICATOR LIGHT AND H.O.A. SWITCH. VERIFY CONTROL TRANSFORMER VOLTAGE WITH M.C. PRIOR TO ORDERING MATERIAL.

C. ROUTE THROUGH LINE VOLTAGE CONTROL. SEE MECHANICAL AND/OR PLUMBING PLANS FOR ADDITIONAL REQUIREMENTS.

D. VERIFY LOCATION WITH PLUMBING PLANS PRIOR TO ROUGH-IN. CONNECT TO AQUASTAT AND TIME CLOCK AS REQUIRED.

E. REMOTE VFD. PROVIDE EARLY BREAK CONTACTS ON ANY DISCONNECT SWITCHES REQUIRED BY CODE OR SHOWN ON PLANS THAT ARE DOWNSTREAM OF THE REMOTE VFD. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO INTERCONNECT THE CONTACT WITH VFD "ENABLE" TERMINALS. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. PROVIDE FEEDER(S) TO CONNECT REMOTE VFD AND MOTOR(S) AS REQUIRED.

F. INTEGRAL VFD PROVIDED WITH EQUIPMENT. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO VFD AS REQUIRED.

G. INTEGRAL DISCONNECT PROVIDED WITH EQUIPMENT. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO INTEGRAL DISCONNECT AS REQUIRED.

H. INTEGRAL DISCONNECT PROVIDED WITH VFD. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO INTEGRAL DISCONNECT AS REQUIRED.

J. ROUTE 1 PHASE CONDUCTOR OF EACH UPS ROOM/DATA ROOM EXHAUST FAN BRANCH CIRCUIT THROUGH/AROUND A DEDICATED, CURRENT-OPERATED LOAD MONITORING SWITCH THAT DETECTS OVERLOADS AND UNDERLOADS (INCLUDING FAN BELT BREAKAGE) WITHIN +/- 15 PERCENT OF AVERAGE CURRENT DRAW. LOCATE IN BARRIERED PULL BOX - NEMA 3R FOR WET LOCATIONS - AND CONNECT N.O. CONTACT TO FIRE ALARM MONITORING MODULE (SUPERVISORY SIGNAL). LOCATE PULL BOX WITH DEVICES INDOORS WHERE POSSIBLE AND ADJACENT TO THE SERVING ELECTRICAL DISTRIBUTION EQUIPMENT. PROVIDE LABEL "USPA BATTERY EX. FAN MONITOR" PER LABELING SPECIFICATIONS. (NK TECHNOLOGIES #ASM-NOU-OU-FT - www.nktechnologies.com).

K. ROUTE THROUGH LINE VOLTAGE CONTROL FOR KITCHEN HOOD FIRE SUPPRESSION SYSTEM. SEE MECHANICAL, FIRE ALARM AND FOOD SERVICE PLANS FOR ADDITIONAL REQUIREMENTS.

COMMUNICATIONS PATHWAYS GENERAL NOTES:

1. CONDUITS SHALL (a) CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.), AND (b) CONTAIN NO MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULL BOX. SPLIT CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.
2. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF EXTRA PULL TAPE COILED AT EACH END.
3. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2-INCHES IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2-INCHES IN DIAMETER.
4. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2-INCHES TO 3-INCHES ABOVE THE FLOOR SURFACE.
5. INSTALL BUSHINGS OR BELL ENDS AS REQUIRED ON ALL CONDUITS.
6. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER.
7. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
8. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI-TIA-569-C. PULL BOXES FOR IN/UNDER SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT SUPPORTS. PULL BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATED. PULL BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING:

CONDUIT SIZE	WIDTH	LENGTH	DEPTH	WIDTH INCREASE PER ADDITIONAL CONDUIT
1"	4"	16"	3"	2"
2"	8"	36"	4"	4"
3"	12"	48"	5"	6"
4"	15"	60"	8"	8"

FOR OTHER CONDUIT SIZES REFER TO ANSI/TIA-569-C TABLE 12. - LATEST PUBLISHED EDITION.

9. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
10. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.
11. PROVIDE INTERNAL/EXTERNAL GAS AND WATER TIGHT MECHANICAL SEALING/PLUGGING OF EACH BUILDING ENTRY CONDUIT AS SPECIFIED ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SVA
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

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PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E14.1
SHEET TITLE: MECHANICAL POWER PLAN

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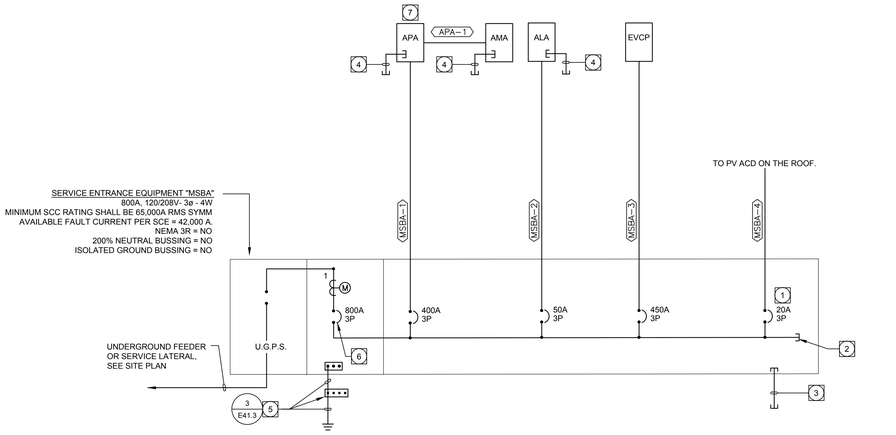
PLAN CHECK #00856737-CNEW



1 SINGLE LINE DIAGRAM

SCALE: N.T.S

GENERAL SINGLE LINE DIAGRAM NOTES:

1. ALL SWITCHGEAR SHALL BE SQUARE D OR EQUAL BY CUTLER-HAMMER, G.E., SIEMENS, IEM, OR Z-POWER AND DISTRIBUTION.
2. ALL ITEMS DEPICTED ON THE SINGLE LINE DRAWINGS SHALL BE ASSUMED AS NEW U.O.N.
3. ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT. SERIES-RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED. SEE SPECIFICATIONS FOR MORE INFORMATION.
4. ALL SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS SHALL HAVE A SHORT-CIRCUIT CURRENT RATING NOT LESS THAN THE AVAILABLE FAULT CURRENT. THE AVAILABLE FAULT CURRENT AND THE DATE THE CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON THE ENCLOSURE AT THE POINT OF SUPPLY.
5. SERIES RATED DEVICES SHALL HAVE BEEN INVESTIGATED BY U.L. IN COMBINATION WITH THE END USE EQUIPMENT AND IN THE EQUIPMENT IN WHICH THESE DEVICES ARE USED AND SHALL BE MARKED WITH A SERIES RATING. ALL EQUIPMENT SHALL BE MARKED IN ACCORDANCE WITH NEC (OR CEC-WHERE ADOPTED) REQUIREMENTS. SEE SPECIFICATIONS FOR MORE INFORMATION. WHERE SERIES RATINGS ARE ALLOWED, THE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE A SERIES COMBINATION RATING WHICH SHALL BE READILY VISIBLE AND STATE THE FOLLOWING:

   CAUTION - SERIES COMBINATION SYSTEM RATED AT ??,???
   AMPERES. USE ONLY IDENTIFIED REPLACEMENT COMPONENTS IN
   THIS SYSTEM.

   WHERE ??,??? REPRESENTS AVAILABLE FAULT CURRENT. SEE SPECIFICATIONS FOR PLACARD REQUIREMENTS.
6. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE CELSIUS CONDUCTORS.
7. ALL SERVICE ENTRANCE EQUIPMENT RATED AT 400A OR GREATER SHALL BE PROVIDED WITH A BACKFEED-RATED, SOLID STATE MAIN OVERCURRENT DEVICE AND BUSSING RATED AT 100% OPERATION (1000A/sq.in. FOR CU, 750A/sq.in. FOR AL). NO HEAT RISE RATED BUSSING ALLOWED. NON-SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARDS LARGER THAN 600A SHALL BE PROVIDED WITH BUSSING RATED FOR 100% OPERATION - SEE SPECIFICATION FOR CIRCUIT BREAKER REQUIREMENTS. ALL NON-SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARD MAIN OVERCURRENT DEVICES SHALL BE BACKFEED-RATED. BACKFEED RATINGS SHALL COMPLY WITH NEC, OR CEC WHERE ADOPTED, 710.15 (E) AND 705.12(B)(4). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING CIRCUIT BREAKERS.
8. PROVIDE CIRCUIT BREAKER ARC ENERGY REDUCTION MAINTENANCE SWITCHING PER NEC, OR CEC WHERE ADPOPTED, 240.87(B)(3) FOR ANY CIRCUIT BREAKER, 1200A FRAME AND LARGER. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL HAVE:
   a. TIN-PLATED ALUMINUM BUSSING WITH RECTANGULAR CROSS SECTION. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH AND SHALL HAVE PROVISIONS FOR FUTURE EXTENSIONS. ALL BUSSING SHALL HAVE MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED. ALL VERTICAL AND HORIZONTAL BUSSING SHALL BE RATED AT FULL CAPACITY IN ALL SWITCHBOARD AND DISTRIBUTION BOARD SECTIONS. PROVIDE 100% NEUTRAL BUSSING MINIMUM UNLESS OTHERWISE NOTED. PROVIDE FULL LENGTH GROUND BUS AND, WHERE INDICATED ON PLANS, ISOLATED GROUND BUSSING. PROVIDE REAR WIRE WAY IN ALL SWITCHBOARD SECTIONS.
   b. LUGS SUITABLE FOR USE WITH COPPER OR ALUMINUM CONDUCTORS LISTED FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS.
   c. PERMANENT PLACARD(S) MARKED PER THE SPECIFICATIONS AND PER NEC (OR CEC-WHERE ADOPTED) SECTIONS 225.37, 230.2(E), 690.56, 692.56, 700.7, 701.7, 702.7, AND 705.10 AND IFC (OR CFC - WHERE ADOPTED) SECTION 608.2.6.1. DENOTING THE PRESENCE OF ADDITIONAL SERVICES, PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY, STATIONARY BATTERY STORAGE SYSTEMS, OR STAND-BY POWER SOURCES AS APPLICABLE.
10. CONTRACTOR SHALL SUBMIT SWITCHBOARD SHOP DRAWINGS TO THE SERVING UTILITY FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR SHALL SECURE CONFIRMATION THAT THE PROPOSED SWITCHBOARD COMPLIES WITH ELECTRIC UTILITY COMPANY REGULATIONS.
11. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS FOR SWITCHBOARDS, DISTRIBUTION BOARDS, TRANSFORMERS, PANEL BOARDS, AND ALL OTHER DEVICES SHOWN ON THE SINGLE LINE, PRIOR TO FABRICATION.
12. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL ROOM ARE A CRITICAL COORDINATION ITEM. CONTRACTOR SHALL PROVIDE 1/4"= 1'-0" SCALE DRAWINGS WITH SWITCHGEAR SUBMITTALS SHOWING THAT ALL PROPOSED EQUIPMENT WILL FIT IN THE SPACE PROVIDED. SUBMITTALS WITHOUT THIS DRAWING SHALL BE REJECTED AS INCOMPLETE.
13. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
14. WHERE REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION OR WHERE A NEW GROUND FAULT PROTECTIVE DEVICE IS BEING INSTALLED, A GROUND FAULT SYSTEM TEST SHALL BE CONDUCTED BY AN INDEPENDENT TESTING AGENCY PER NEC (OR CEC-WHERE ADOPTED) 230.95(C). THE GROUND FAULT SYSTEM TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION. VERIFICATION OF DEVICE SETTINGS PER THE POWER SYSTEMS STUDY SPECIFICATION SHALL BE PERFORMED BY THE SAME INDEPENDENT TESTING AGENCY. THE GROUND FAULT TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL NEW GROUND FAULT RELAYS SHALL BE SET AT THE LOWEST AVAILABLE TIME DELAY AND PICK-UP SETTINGS.
15. SEE POWER SYSTEMS STUDY SPECIFICATION FOR ADDITIONAL REQUIREMENTS. ALL REQUIRED POWER SYSTEMS STUDIES MUST BE COMPLETED AND SUBMITTED WITH ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL. FAILURE TO DO SO WILL PREVENT THE ENGINEER FROM EFFECTIVELY EVALUATING THE SUBMITTAL AND SHALL RESULT IN REJECTION OF THE ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL AS INCOMPLETE.

SPECIFIC SINGLE LINE NOTES:

1. PROVIDE PV SYSTEM 3-POLE CIRCUIT BREAKER. COORDINATE WITH PV SYSTEM PLAN.
2. BUSSING SHALL BE PROVIDED FOR FUTURE BUS EXTENSION TO FUTURE DISTRIBUTION SYSTEM.
3. PROVIDE (1) 4" C.O. FOR EVERY 800 AMPS OF SERVICE SIZE (MINIMUM OF ONE) STUBBED OUTSIDE THE BUILDING TO THE NEAREST PLANTER AREA. CAP AND MARK.
4. PROVIDE (4) 1" C.O. STUBBED OUTSIDE THE BUILDING TO THE NEAREST PLANTER AREA. CAP AND MARK.
5. SEE MAIN SYSTEM GROUNDING DETAIL OR FEEDER TO REMOTE BUILDING / STRUCTURE GROUNDING DETAIL FOR MORE INFORMATION.
6. PROVIDE FUSES/CIRCUIT BREAKERS TESTED/LISTED FOR BACK FEED OPERATION PER NEC, OR CEC WHERE ADOPTED, 690.59 AND 705.12.
7. PROVIDE 84 CKT PANEL.

MSBA LOAD CALCUALTIONS:

FEEDER	LOAD (VA)
MSBA-1	82258 VA
MSBA-2	5161 VA
MSBA-3	141440 VA
TOTAL LOAD =	228858 VA
800A AT 120/208V 3-PHASE 4 WIRE	636 A

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CITY OF IRVINE - GREAT PARK
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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SNYDER
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E41.1
SHEET TITLE:

SINGLE LINE DIAGRAM

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PLAN CHECK #00856737-CNEW

POWER SYSTEMS STUDY SPECIFICATIONS:

THE CONTRACTOR SHALL PROVIDE, WITH THE ASSISTANCE OF THE SWITCHGEAR MANUFACTURER, POWER SYSTEMS STUDIES CONSISTING OF A SHORT CIRCUIT STUDY, A COORDINATION STUDY, AND AN ARC FLASH STUDY - ALL PER LATEST PUBLISHED EDITIONS OF THE FOLLOWING STANDARDS: ANSI C37, IEEE 141, IEEE 242, IEEE 399 - BROWN BOOK, NFPA 70E AND IEEE STD 1584/1584a. ADDITIONALLY:

a. CONTRACTOR SHALL PERFORM STUDY USING SKM "SYSTEMS ANALYSIS POWER TOOLS FOR WINDOWS" COMPUTER SOFTWARE PROGRAM - LATEST AVAILABLE VERSION OR EQUAL BY ETAP.

b. CONTRACTOR SHALL FURNISH/OBTAIN ALL DATA REQUIRED FOR POWER SYSTEMS STUDIES. DATA COLLECTION EFFORT SHALL BE PERFORMED IN AN EXPEDITIOUS MANNER AND AS SOON AS POSSIBLE AFTER CONTRACT AWARD TO ENSURE STUDY COMPLETION FOR SUBMISSION AS PART OF THE ELECTRICAL DISTRIBUTION EQUIPMENT SHOP DRAWINGS AND SUBMITTALS. DATA COLLECTION EFFORTS MAY INCLUDE, BUT ARE NOT LIMITED TO, CALCULATED UTILITY COMPANY FAULT VALUES, SERVICE TRANSFORMER PRIMARY PROTECTIVE DEVICE AND APPLIED VOLTAGE, ELECTRICAL CHARACTERISTICS AND FAULT CONTRIBUTION FROM EXISTING MOTORS/GENERATORS, EXISTING CONDUCTOR QUANTITIES, SIZE AND LENGTHS, EXISTING/ NEW OVERCURRENT PROTECTIVE DEVICE SPECIFICATIONS AND PART NUMBERS, TRANSFER SWITCH CHARACTERISTICS AND SHORT CIRCUIT CURRENT RATINGS IN ADDITION TO ANY OTHER DATA REQUIRED TO PERFORM COMPREHENSIVE POWER SYSTEM STUDIES. RANGES OF FAULT CURRENT VALUES OR GENERIC FAULT CURRENT VALUES PROVIDED BY THE UTILITY COMPANY ARE UNACCEPTABLE AS ARE ANY FAULT CURRENT VALUES SHOWN ON THE SINGLE LINE DIAGRAM OR FEEDER SCHEDULE.

DATA GATHERING SHALL BE CONDUCTED IN A SAFE MANNER WITH 1) EQUIPMENT COMPLETELY DE-ENGERIZED IN COORDINATION WITH THE OWNER DURING A SCHEDULED POWER SHUTDOWN OR 2) UTILIZING A LICENSED ELECTRICIAN WEARING APPROPRIATE PERSONNEL PROTECTIVE EQUIPMENT PER NFPA 70E STANDARDS.

CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING UTILITY DATA FROM THE UTILITY COMPANY - INCLUDE ALL COSTS IN BASE BID FOR ANY UTILITY COMPANY FEES FOR PROVIDING NECESSARY DATA. WHERE THE PROJECT IS LOCATED ON A CAMPUS WITH AN OWNER-FURNISHED ELECTRICAL DISTRIBUTION SYSTEM, CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN SUFFICIENT ELECTRICAL SYSTEM DATA TO DEMONSTRATE COORDINATION OF THE PROJECT'S ELECTRICAL SYSTEM WITH CAMPUS DISTRIBUTION SYSTEM. THIS DATA MAY BE AVAILABLE IN THE FORM OF AN OWNER-PROVIDED CAMPUS POWER SYSTEM STUDY. WHERE SUCH STUDIES ARE NOT AVAILABLE, THE CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO PERFORM NECESSARY FIELD INVESTIGATION OF CAMPUS DISTRIBUTION SYSTEM INCLUDING CAMPUS SERVICE ENTRANCE AND SERVING UTILITY DATA AS REQUIRED TO DEMONSTRATE COORDINATION OF THE PROJECT'S ELECTRICAL SYSTEM WITH CAMPUS DISTRIBUTION SYSTEM. INCLUDE ALL COSTS FOR RECOMMENDING ADJUSTMENTS TO EXISTING CAMPUS DISTRIBUTION SYSTEM SETTINGS DISCOVERED TO BE INCORRECT. OWNER SHALL BE RESPONSIBLE TO UNDERTAKE ANY PHYSICAL ADJUSTMENTS TO EXISTING MEDIUM OR HIGH VOLTAGE DISTRIBUTION EQUIPMENT WITH THE EXCEPTION OF FUSES, RELAYS OR OTHER CIRCUIT PROTECTIVE DEVICES LOCATED IN EXISTING DISTRIBUTION EQUIPMENT THAT ARE DEDICATED TO SERVE ONLY THIS PROJECT'S ELECTRICAL SYSTEM.

CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING EQUIPMENT SCCR RATING FROM ALL OTHER PROJECT TRADES AND FOR ANY OWNER-FURNISHED OR TENANT-FURNISHED EQUIPMENT CONNECTED TO THE ELECTRICAL SYSTEM IN ORDER TO VALIDATE AVAILABLE FAULT CURRENT AT THE EQUIPMENT CONNECTIONS IS LESS THAN THE RESPECTIVE EQUIPMENT SCCR.

c. THE SHORT CIRCUIT STUDY SHALL INCLUDE CALCULATED SHORT-CIRCUIT MOMENTARY AND INTERRUPTING DUTIES FOR 3-PHASE BOLTED FAULTS AND LINE-TO-GROUND FAULTS THROUGHOUT THE SINGLE LINE TO INCLUDE UTILITY SERVICE SUPPLY, GENERATORS AND TRANSFER SWITCHES, SUBSTATIONS, SWITCHGEAR, PANEL BOARDS ETC. STUDY SHALL EVALUATE ALL ELECTRICAL DISTRIBUTION EQUIPMENT AND PROTECTIVE DEVICES AGAINST SHORT CIRCUIT CURRENT RATINGS. THIS STUDY EFFORT SHALL EXTEND TO SCCR RATINGS OF EQUIPMENT, EQUIPMENT CONTROL PANELS, VARIABLE FREQUENCY DRIVES ETC PROVIDED BY OTHER TRADES THAT ARE CONNECTED TO THE ELECTRICAL SYSTEM. NOTE ANY EXISTING CIRCUIT PROTECTIVE DEVICE(S)/ELECTRICAL DISTRIBUTION THAT IS INADEQUATELY RATED TO WITHSTAND CALCULATED FAULT VALUES OR WHERE EQUIPMENT SCCR IS EXCEEDED. WHERE THE UTILITY COMPANY PROVIDES MULTIPLE FAULT CURRENT VALUES REFLECTING INITIAL TRANSFORMER CAPACITY AND WORST CASE TRANSFORMER CAPACITY, THE CONTRACTOR SHALL PROVIDE SHORT CIRCUIT ANALYSIS PRIMARILY BASED ON WORST CASE TRANSFORMER CAPACITY. ALL SERVICE EQUIPMENT SHALL BE LABELED WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND FAULT CURRENT CALCULATION DATE PER NEC (OR CEC WHERE ADOPTED) 110.24. SEE LABELING SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

d. THE COORDINATION STUDY SHALL INCLUDE TIME-CURRENT CURVES (TCC) FOR OVER CURRENT PROTECTIVE DEVICES (OCPDs) ALONG WITH TRANSFORMER FULL-LOAD CURRENT, INRUSH CURRENT, AND THROUGH-FAULT PROTECTION CURVES, CONDUCTOR DAMAGE CURVES, GROUND FAULT PROTECTIVE DEVICE CURVES, MOTOR STARTING CURVE(S)/DAMAGE POINT(S), GENERATOR SHORT-CIRCUIT CURVE(S) /DAMAGE POINT(S) ETC. - CLEARLY IDENTIFIED AND PLOTTED ON LOG-LOG SCALE GRAPH(S). TCC GRAPH(S) SHALL INCLUDE A ONE-LINE DIAGRAM IDENTIFYING THE SPECIFIC PORTION COVERED BY THE GRAPH. DEMONSTRATE THAT ADEQUATE CLEARING TIME/SELECTIVE OPERATION EXISTS BETWEEN PROTECTIVE DEVICES WHILE PROVIDING PROPER SYSTEM PROTECTION & COORDINATION. STUDY SHALL INCLUDE ALL MAIN AND FEEDER OCPDs INCLUDING SECONDARY SIDE OF EACH TRANSFORMER DOWN TO BREAKERS IN PANEL BOARDS AND INDIVIDUAL BREAKERS IN DISTRIBUTION BOARDS. IN ALL CASES, SOLID STATE AND/OR ADJUSTABLE OCPDs SHALL BE ANALYZED WITH UPSTREAM AND DOWNSTREAM OCPDs AS REQUIRED TO ESTABLISH PROPER COORDINATION SETTINGS. SPECIAL EMPHASIS SHALL BE PLACED ON ANALYZING PORTIONS OF THE ELECTRICAL SYSTEM REQUIRING SELECTIVE COORDINATION WHICH INCLUDE, BUT ARE NOT LIMITED TO, NEC (OR CEC WHERE ADOPTED) ARTICLES 517, 620, 700, 701 & 708, ALONG WITH ANY ARTICLE 702 OPTIONAL STANDBY SYSTEMS SERVING SERVER ROOMS/DATA CENTERS OR OTHER AREAS REQUIRING HIGH AVAILABILITY/PROPER COORDINATION SUCH AS MANUFACTURING, CLEAN ROOM OR LAB FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE TO RECOMMEND SETTINGS OF ALL DEVICES, TO INCLUDE GROUND FAULT SETTINGS, TO ACHIEVE SYSTEM COORDINATION. THE CONTRACTOR SHALL FIELD ADJUST NEW AND EXISTING DEVICES ACCORDINGLY UTILIZING A QUALIFIED MANUFACTURER'S REPRESENTATIVE OR A THIRD-PARTY ELECTRICAL TESTING AGENCY.

e. THE ARC FLASH ANALYSIS SHALL BE BASED ON THE INCIDENT ENERGY ANALYSIS METHOD (NFPA 70E 130.5). THE ARC FLASH ANALYSIS SHALL DETERMINE THE FLASH BOUNDARY, THE WORKING DISTANCE, THE INCIDENT ENERGY AND MINIMUM ARC RATING OF CLOTHING(CAL/CM²) AT LOCATIONS IN THE ELECTRICAL SYSTEM WHERE WORK CAN OR MIGHT BE PERFORMED ON ENERGIZED COMPONENTS WHERE MULTIPLE SYSTEM CONFIGURATION SCENARIOS ARE POSSIBLE, THE CONFIGURATION WITH GREATEST INCIDENT ENERGY MUST BE SHOWN. DECREMENT FAULT CONTRIBUTIONS FROM MOTOR(S) AND GENERATOR(S) BASED ON INDUSTRY STANDARDS. THE CONTRACTOR SHALL MAKE RECOMMENDATIONS WITH REGARD TO SYSTEM ADJUSTMENTS OR OTHER MITIGATION MEASURES TO OPTIMIZE THE RESULTS OF THE STUDY AS IT RELATES TO SAFE AND RELIABLE ELECTRICAL SYSTEM OPERATION (E.G. OVERCURRENT DEVICE SETTINGS, WORKING DISTANCES, CURRENT LIMITING DEVICES). THIS INCLUDES MITIGATION, WHERE POSSIBLE, OF INCIDENT ENERGY LEVELS THAT EXCEED 40 CAL/CM². PERFORM ITERATIVE CALCULATIONS TO DEMONSTRATE EFFECTS OF OPENING PROTECTIVE DEVICES UTILIZING A VARIETY OF DIFFERENT SETTINGS TO BEST MITIGATE ARC FLASH ENERGY WHILE MAINTAINING AN ACCEPTABLE LEVEL OF SYSTEM COORDINATION. WHERE SUCH RECOMMENDATIONS COMPROMISE SELECTIVE COORDINATION SETTINGS, SO STATE IN THE ANALYSIS.

INCLUDE INCIDENT ENERGY/FLASH PROTECTION BOUNDARY CALCULATIONS FOR BOTH LINE/LOAD SIDE OF ALL SEPARATELY ENCLOSED MAIN CIRCUIT BREAKERS. ALL CALCULATIONS SHALL BE BASED ON ACTUAL OVERCURRENT DEVICE CLEARING TIMES.

f. BASED ON THE RESULTS OF THE ARC FLASH ANALYSIS, THE CONTRACTOR SHALL PRODUCE AND INSTALL A WARNING LABEL (ORANGE <40 CAL/CM2) OR DANGER LABEL (RED > 40 CAL/CM2) FOR EACH PIECE OF EQUIPMENT PER NEC (OR CEC WHERE ADOPTED) 110.16 AND IN ACCORDANCE WITH ANSI Z535.4-2007 OR LATEST PUBLISHED EDITION. THE LABEL MUST BE READABLE IN BOTH INDOOR AND OUTDOOR ENVIRONMENTS FOR AT LEAST 3 YEARS AND CONTAIN THE FOLLOWING INFORMATION: NOMINAL SYSTEM VOLTAGE, ARC HAZARD BOUNDARY (INCHES), WORKING DISTANCE (INCHES), AVAILABLE ARC FLASH INCIDENT ENERGY AT THE WORKING DISTANCE (CAL/CM²), MINIMUM ARC RATING OF CLOTHING, EQUIPMENT/BUS NAME, DATE PREPARED, SUPPLIER'S NAME AND ADDRESS. PROVIDE LABEL AS MANUFACTURED BY BRADY OR EQUAL. PRIOR TO PLACING ARC FLASH LABELS, CONTRACTOR SHALL SET ALL PROTECTIVE DEVICE SETTINGS PER THE APPROVED COORDINATION STUDY.

g. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL GROUND FAULT RELAYS SHALL BE SET AT THE LOWEST AVAILABLE TIME DELAY AND PICK-UP SETTINGS.

h. POWER SYSTEMS STUDIES SHALL BE SUBMITTED AS PART OF THE OVERALL SWITCHGEAR SUBMITTAL. THE RESULTS OF THE POWER SYSTEMS STUDY SHALL BE PRESENTED IN A COMPREHENSIVE REPORT THAT INCLUDES:

- REPORT SUMMARY WITH ANALYSIS METHODOLOGY, FINDINGS AND RECOMMENDATIONS
- SUMMARY OF INPUT DATA FOR UTILITY SOURCE, EQUIPMENT AND CABLES
- AVAILABLE FAULT CURRENT AT EACH EQUIPMENT LOCATION WITH COMPARISON TO EQUIPMENT RATING
- OVERCURRENT DEVICE SETTINGS (E.G. PICK-UP, TIME DELAY, CURVE), "AS FOUND" AND "AS RECOMMENDED"
- OVERCURRENT DEVICE COORDINATION CURVES INCLUDING RELATED SECTION OF THE SINGLE-LINE DIAGRAM
- COMPLETE SYSTEM SINGLE-LINE DIAGRAM FOR THE SYSTEM ANALYZED
- INCIDENT ENERGY LEVEL (CAL/CM²) FOR EACH EQUIPMENT LOCATION, RECOMMENDED PPE AND SAMPLE ARC FLASH WARNING LABELS
- A DVD OR CD CONTAINING ELECTRONIC PROJECT FILES USED TO DEVELOP THE STUDY TO INCLUDE SKM OR ETAP PROJECT AND REFERENCE LIBRARY FILES. ALL FILES SHALL BE AVAILABLE FOR REVIEW AND/OR FUTURE MODIFICATION WITHOUT LIMITATION. LOCKING OR SECURING FILES BY OTHER MEANS IS NOT ACCEPTABLE. FAILURE TO SUBMIT COMPLETE STUDIES AND FULLY ACCESSIBLE FILES SHALL RESULT IN THE REJECTION OF THE ENTIRE SWITCHGEAR SUBMITTAL.

i. AS A PART OF A CLOSEOUT SUBMITTAL TO BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL PROJECT CONSTRUCTION OBSERVATIONS, CONTRACTOR SHALL PROVIDE PHOTOS OF ALL ADJUSTABLE CIRCUIT BREAKERS DEPICTING THEIR FINAL SETTINGS BASED ON THE POWER SYSTEMS STUDY. SUBMITTAL SHALL BE ORGANIZED WITH OCPD IDENTIFICATION, OCPD PHOTO IMAGE AND RESPECTIVE POWER SYSTEM STUDY OCPD SETTING REQUIREMENTS TO ALLOW EFFICIENT CONFIRMATION OF RECORD SETTINGS. PLEASE NOTE THAT IMAGES MAY NEED TO BE TAKEN PRIOR TO INSTALLATION OF EQUIPMENT COVERS/EQUIPMENT ENERGIZATION SINCE OCPD SETTINGS MAY BE OBSTRUCTED BY EQUIPMENT COVERS.

j. THE STUDY SHALL INCLUDE ALL PORTIONS OF ELECTRICAL SINGLE LINE DIAGRAM TO INCLUDE UPSTREAM OR DOWNSTREAM ELEMENTS THAT MAY NOT BE SHOWN INCLUDING, BUT NOT LIMITED TO, UTILITY SOURCE CONTRIBUTION, RELEVANT PORTIONS OF THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITHIN A BUILDING AND/OR CAMPUS ELECTRICAL DISTRIBUTION SYSTEMS AS DESCRIBED ABOVE.

THE STUDY SHALL BE LIMITED IN SCOPE TO INCLUDE JUST NEW PORTIONS OF ELECTRICAL SINGLE LINE DIAGRAM TO INCLUDE UPSTREAM OR DOWNSTREAM ELEMENTS THAT MAY INFLUENCE STUDY RESULTS INCLUDING, BUT NOT LIMITED TO, UTILITY SOURCE CONTRIBUTION, RELEVANT PORTIONS OF THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITHIN A BUILDING AND/OR CAMPUS ELECTRICAL DISTRIBUTION SYSTEMS AS DESCRIBED ABOVE. IN THIS CASE APPLICATION OF ARC FLASH LABELING SHALL BE LIMITED TO THE NEW PORTIONS OF THE SINGLE LINE AND ANY CONNECTED UPSTREAM ELECTRICAL SYSTEM COMPONENTS UP TO AND INCLUDING THE MAIN ELECTRICAL SERVICE, ANY LIFE-SAFETY, EMERGENCY, LEGALLY REQUIRED OR OPTIONAL STANDBY SYSTEMS, ELEVATORS, AND FIRE PUMPS.

FEEDER SCHEDULE

FEEDER	CONDUIT AND CONDUCTORS	LOAD (A)	DISTANCE (FT)	V.D. (%)	AVAILABLE FAULT CURRENT (A)	NOTES
MSBA-1	3-1/2"C., 4#500kcmil, #3 E/G	286 A	30'	0.25%	41,177 A	
MSBA-2	3"C., 4#6, #10 E/G	34 A	35'	0.71%	7,397 A	
MSBA-3	(2) 2-1/2"C., 4#4/0, #2 E/G	416 A	40'	0.47%	39,430 A	
MSBA-4	3/4"C., 4#10, #10 E/G		50'	1.50%	2,276 A	SOLAR
APA-1	1-1/2"C., 4#1, #6 E/G	57 A	10'	0.13%	28,260 A	

GENERAL FEEDER SCHEDULE NOTES:

1. ALL FEEDERS SHOWN, UNLESS SPECIFICALLY NOTED OTHERWISE, ARE PRESUMED TO BE ROUTED IN METAL RACEWAYS. IF P.V.C. CONDUITS ARE UTILIZED, THE CONTRACTOR SHALL PROVIDE AN EQUIPMENT GROUND PER NEC, OR CEC WHERE ADOPTED, TABLE 250.122 OR, WHERE REQUIRED, PROVIDE A MAIN BONDING JUMPER PER TABLE 250.66 AND INCREASE THE CONDUIT SIZE ACCORDINGLY.
2. LOADS INDICATED WITH " ( ) " REPRESENT WORST CASE LOAD IN AMPS.
3. DISTANCE SHOWN IS FOR DESIGN PURPOSES ONLY. IT IS NOT A MATERIAL TAKEOFF.
4. VOLTAGE DROP VALUE INDICATED IS AT THE END OF THE FEEDER.

   AVAILABLE FAULT CURRENT VALUE AT THE END OF THE FEEDER INDICATED. CALCULATIONS ARE BASED UPON INITIAL VALUES RECEIVED FROM THE SERVING UTILITY AND THE LENGTH AND IMPEDANCE OF THE FEEDER. THE SHORT CIRCUIT CURRENT RATING, EQUIPMENT BUS BRACING, AND/OR AMP INTERRUPTING CURRENT OF EQUIPMENT CONNECTED ON THE LOAD SIDE OF THE FEEDER SHALL BE GREATER THAN THE AVAILABLE FAULT CURRENT.

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SNEATHEN
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
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3		
4		
5		
6		
7		
8		

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E41.2

SHEET TITLE:

FEEDER SCHEDULE AND TRANSFORMER SCHEDULE

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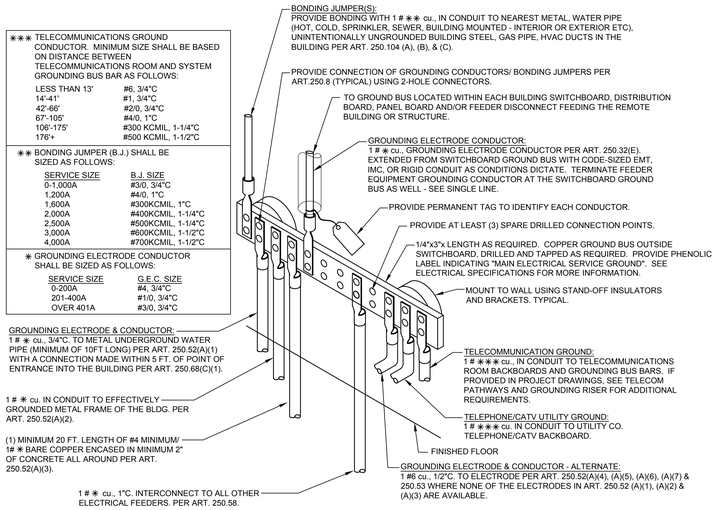
PLAN CHECK #00856737-CNEW



✱✱✱ TELECOMMUNICATIONS GROUND CONDUCTOR. MINIMUM SIZE SHALL BE BASED ON DISTANCE BETWEEN TELECOMMUNICATIONS ROOM AND SYSTEM GROUNDING BUS BAR AS FOLLOWS:

LESS THAN 13'	#6, 3/4"C
14'-41'	#1, 3/4"C
42'-66'	#2/0, 3/4"C
67'-105'	#4/0, 1"C
106'-175'	#300 KCMIL, 1-1/4"C
176'+	#500 KCMIL, 1-1/2"C

✱✱ BONDING JUMPER (B.J.) SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	B.J. SIZE
0-1,000A	#3/0, 3/4"C
1,200A	#4/0, 1"C
1,600A	#300KCMIL, 1"C
2,000A	#400KCMIL, 1-1/4"C
2,500A	#500KCMIL, 1-1/4"C
3,000A	#600KCMIL, 1-1/2"C
4,000A	#700KCMIL, 1-1/2"C

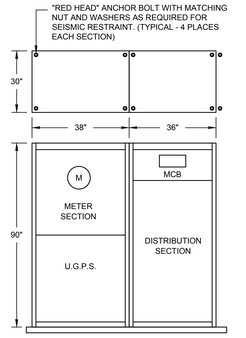
✱ GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	G.E.C. SIZE
0-200A	#4, 3/4"C
201-400A	#1/0, 3/4"C
OVER 401A	#3/0, 3/4"C

THIS DETAIL APPLIES TO BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS GOVERNED BY ART. 250.32 AND SPECIFICALLY BY ART. 250.32(B)(1) WHERE THE GROUNDED CONDUCTOR IS NOT CONNECTED TO THE GEC IN THE SUPPLIED BUILDING DUE TO THE POSSIBILITY OF PARALLEL CIRCUIT PATHS FOR NEUTRAL CURRENT. WHERE THE STUCTURE OR BUILDING SUPPLIED IS EXISTING, CONTRACTOR SHALL MAKE EVERY EFFORT TO EXTEND/RECONNECT EXISTING GROUNDING ELECTRODE(S)/SYSTEM.

2 FEEDER TO REMOTE BUILDING / STRUCTURE GROUNDING DETAIL

SCALE: NTS

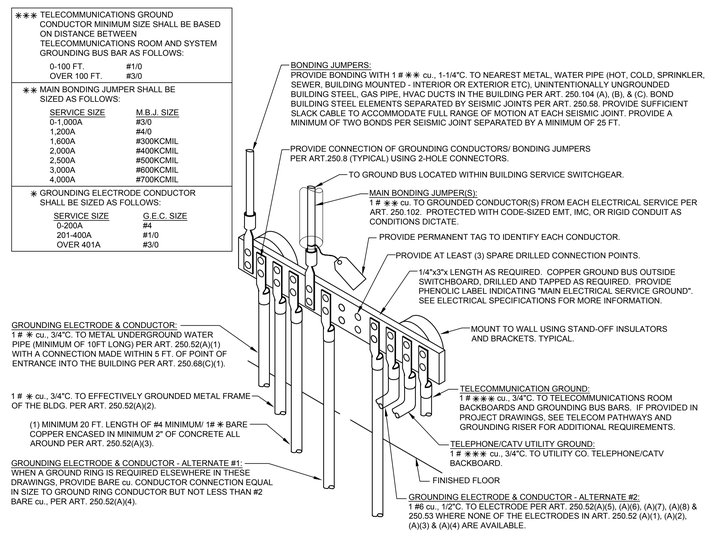


ELEVATION NOTES:

1. PROVIDE A 1-1/2" HIGH HOUSEKEEPING PAD FOR SERVICE EQUIPMENT LOCATED INDOORS - SEE SPECIFICATIONS REGARDING OTHER INSTALLATION CONDITIONS. PAD SHALL BE FLUSH WITH FACE OF SWITCHGEAR WHEN LOCATED INDOORS AND EXTEND 4' FROM THE FACE OF THE SWITCHGEAR WHEN LOCATED OUTDOORS. PRIOR TO PAD ROUGH-IN, CONTRACTOR SHALL:
   A. VERIFY SERVING UTILITY COMPANY'S MAXIMUM METER HEIGHT REQUIREMENTS AND, IF NECESSARY, ADJUST HEIGHT OF HOUSEKEEPING PAD TO COMPLY WITH THOSE REQUIREMENTS.
   B. CONFIRM PAD DIMENSIONS WITH LOCAL INSPECTOR PRIOR TO FORMING PAD(S) TO ENSURE ANY LOCAL CODE INTERPRETATIONS/CONDITIONS REGARDING HOUSEKEEPING PADS ARE MET.
2. THIS ELEVATION IS FOR SCHEMATIC INFORMATION ONLY. ORIENTATION MAY BE REVERSE. REFERENCE FLOOR PLANS AND COORDINATE WITH LOCAL UTILITY COMPANY.
3. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL ROOM ARE A CRITICAL COORDINATION ITEM. CONTRACTOR SHALL PROVIDE 1/4" = 1'-0" SCALE DRAWINGS WITH SWITCHGEAR SUBMITTALS SHOWING THAT ALL PROPOSED EQUIPMENT WILL FIT IN THE SPACE PROVIDED. SUBMITTALS WITHOUT THIS DRAWING SHALL BE REJECTED AS INCOMPLETE.
4. SERVICE ENTRANCE EQUIPMENT DIMENSIONS ARE BASED UPON SQUARE "D" EQUIPMENT. LOS ANGELES CONTACT KEITH JOHNSON, TEL. NO. (909) 217-8585. ORANGE & SAN DIEGO COUNTY CONTACT: ROB RYAN TEL. NO. (714) 831-7651. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COST TO THE JOB DUE TO THE USE OF ALTERNATE EQUIPMENT.

1 MAIN SERVICE ELEVATION/PLAN

SCALE: NTS



✱✱✱ TELECOMMUNICATIONS GROUND CONDUCTOR MINIMUM SIZE SHALL BE BASED ON DISTANCE BETWEEN TELECOMMUNICATIONS ROOM AND SYSTEM GROUNDING BUS BAR AS FOLLOWS:

0-100 FT.	#1/0
OVER 100 FT.	#3/0

✱✱ MAIN BONDING JUMPER SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	M.B.J. SIZE
0-1,000A	#3/0
1,200A	#4/0
1,600A	#300KCMIL
2,000A	#400KCMIL
2,500A	#500KCMIL
3,000A	#600KCMIL
4,000A	#700KCMIL

✱ GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	G.E.C. SIZE
0-200A	#4
201-400A	#1/0
OVER 401A	#3/0

3 MAIN SERVICE SYSTEM GROUNDING DETAIL

SCALE: NTS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2025
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E41.3
SHEET TITLE:

ELECTRICAL ROOM DETAIL

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

PANEL ALA

MOUNTING SURFACE | DOUBLE LUG NO | VOLTS 120/208 | MAIN 50A-3P
NEMA 3R NO | 200% NEUTRAL NO | PHASE 3 | BUS 100A
FEED THRU NO | I/G BUS NO | WIRE 4 | A.I.C. 65,000

NOTES	LOCATION	A	B	C	LTG	CONT	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	L HOTEL 102 - MECH. 114	641			25					20/1	1		2	20/1				12	924			L MECH SHOP 112	
	L EXTERIOR		336		17					20/1	3		4	20/1				12		924		L MAINTENANCE 112	
	L PARKING LOT			608	8					20/1	5		6	20/1				12			924	L STORAGE 113	
	L EXTERIOR GATES	640			32					20/1	7		8	20/1								SPARE	
	L FUEL AREA		72		4					20/1	9		10	20/1								SPARE	
	L GNRR, WASH AREA 118			150	5					20/1	11		12	20/1								SPARE	
	L CANOPY LTG	1296			12					20/1	13		14	20/1								SPARE	
	L YARD BIN POLE LTG		420		4					20/1	15		16	20/1								SPARE	
	SPARE									20/1	17		18	20/1								SPARE	
	SPARE									20/1	19		20	20/1								SPARE	
	SPARE									20/1	21		22	20/1								SPARE	
	SPARE									20/1	23		24	20/1								SPARE	
	SPARE									20/1	25		26	20/1								SPARE	
	SPARE									20/1	27		28	20/1								SPARE	
	SPARE									20/1	29		30	20/1							250	CANOPY EM REMOTE INVERTER	E
	SPACE										31		32									SPACE	
	SPACE										33		34									SPACE	
	SPACE										35		36									SPACE	
	SPACE										37		38									SPACE	
	SPACE										39		40									SPACE	
	SPACE										41		42									SPACE	

A= 3501 VA | B= 1752 VA | C= 1932 VA
PHASE A LCL= 875 VA | PHASE B LCL= 438 VA | PHASE C LCL= 421 VA
PHASE A W/LCL= 4377 VA | PHASE B W/LCL= 2189 VA | PHASE C W/LCL= 2353 VA
TOTAL VA= 7185 | TOTAL LCL= 1734 | TOTAL VA W/LCL= 8918
AMPS= **25** | HIGH PHASE AMPS= **36**

PANEL EVCP

MOUNTING SURFACE | DOUBLE LUG NO | VOLTS 120/208 | MAIN 450A/3P
NEMA 3R NO | 200% NEUTRAL NO | PHASE 3 | BUS 600A
FEED THRU NO | I/G BUS NO | WIRE 4 | A.I.C. 65,000

NOTES	LOCATION	A	B	C	LTG	CONT	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONT	LTG	A	B	C	LOCATION	NOTES
	EV CHARGER	3328			1					40/2	1		2	40/2				1	3328				EV CHARGER	
	----		3328		-					---	3		4	---				-			3328		----	
	EV CHARGER			3328	1					40/2	5		6										FUTURE EV CHARGER	
	----	3328			-					---	7		8										----	
	EV CHARGER		3328		1					40/2	9		10										FUTURE EV CHARGER	
	----			3328	-					---	11		12										----	
	EV CHARGER	3328			1					40/2	13		14										FUTURE EV CHARGER	
	----		3328		-					---	15		16										----	
	EV CHARGER			3328	1					40/2	17		18										FUTURE EV CHARGER	
	----	3328			-					---	19		20										----	
	EV CHARGER		3328		1					40/2	21		22										FUTURE EV CHARGER	
	----			3328	-					---	23		24										----	
	EV CHARGER	3328			1					40/2	25		26										FUTURE EV CHARGER	
	----		3328		-					---	27		28										----	
	SPACE										29		30										FUTURE EV CHARGER	
	SPACE										31		32										B	
	SPACE										33		34										SPACE	
	SPACE										35		36										SPACE	
	SPACE										37		38										SPACE	
	SPACE										39		40										SPACE	
	SPACE										41		42										SPACE	

A= 19968 VA | B= 19968 VA | C= 13312 VA
PHASE A LCL= 4992 VA | PHASE B LCL= 4992 VA | PHASE C LCL= 3328 VA
PHASE A W/LCL= 24960 VA | PHASE B W/LCL= 24960 VA | PHASE C W/LCL= 16640 VA
TOTAL VA= 53248 | TOTAL LCL= 13312 | TOTAL VA W/LCL= 66560
AMPS= **185** | HIGH PHASE AMPS= **208**

PANEL APA

MOUNTING SURFACE | DOUBLE LUG NO | VOLTS 120/208 | MAIN 400A/3P
NEMA 3R NO | 200% NEUTRAL YES | PHASE 3 | BUS 400A
FEED THRU NO | I/G BUS YES | WIRE 4 | A.I.C. 65,000

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	R MAINTENANCE 111, EXT.	1080						6		20/1	1		2	20/1		1			500			R IT 110	
	R MECH SHOP 111		540					3		20/1	3		4	20/1		1				500		R IT 110	
	R MECH SHOP 111			360				2		20/1	5		6	20/1		1					1000	R BREAK RM 107 FRIDGE	
	R ELEC 109 - 114, EXT.	1260						7		20/1	7		8	20/1		2			360			R BREAK RM 107	
	R 112, 113, EXT.		1080					6		20/1	9		10	20/1								SPARE	
	CORD REEL 112			540				3		15/1	11		12	20/1		5					1080	GNRR 105, STOR. 106	
	CORD REEL 112	540						3		15/1	13		14	20/1		6			1080			R CONFERENCE 104	
	CORD REEL 112		540					3		15/1	15		16	20/1		6				1080		R HOTELING 102, OP FICE 103	
	CORD REEL 112			540				3		15/1	17		18	15/1		1					1152	CART CHARGER	
	CORD REEL 112	540						3		15/1	19		20	15/1		1			1152			CART CHARGER	
	CORD REEL 112		540					3		15/1	21		22	15/1		1				1152		CART CHARGER	
	P SHOP 111 MOTOR DOOR			1130					1	20/1	23		24	15/1		1					1152	CART CHARGER	
	P MAINT. 112 MOTOR DOOR	1130							1	20/1	25		26	15/1		1			1152			CART CHARGER	
	P STOR. 113 MOTOR DOOR		1130						1	20/1	27		28	15/1		1				1152		CART CHARGER	
	P MOTORIZED GATE			1130					1	20/1	29		30	15/1		1					1152	CART CHARGER	
	P IRRIGATION CONTROL	100							1	20/1	31		32	15/1		1			1152			CART CHARGER	
	P TRAP PRIMER		100						1	20/1	33		34	15/1		1				1152		CART CHARGER	
	P SHOP 111 CLG FAN			400					1	20/1	35		36	20/1			1				1200	SHOP CLG FAN	
	P MAINT 114 CLG FAN	400							1	20/1	37		38	20/1			1		1200			SHOP CLG FAN	
	P BREAK 112 CLG FAN		400						1	20/1	39		40	50/2		1				4900		P MECH. 111 WELDER	
	P SHOP 111 COMPRESSOR			2760					1	50/2	41		42	---		-					4900	----	
	----	2760							-	---	43		44	20/1								SPARE	
	P SHOP 111 LIFT		2133						1	30/3	45		46	20/1						500		CNTRL PWR SPLY PANELS	
	----			2133					-	---	47		48	20/1							500	FA CNTRL PANEL	
	----	2133							-	---	49		50	60/3			1		4666			ROBOT MOWER	D
	P ELEC. 109 BMS		250						1	20/1	51		52	--			-			4666		----	D
A,E	FACP			250					1	20/1	53		54	--			-				4666	----	D
	PANEL AMA	10882								100/3	55		56	20/1		1			1000			RM 112 WTR DISP RECEP	
	----		9728							---	57		58	20/1		1				180		BREAK RM 112 RECEP	
	----			8598						---	59		60									SPACE	
	R GNRR 120, 121	360						2		20/1	61		62	20/1					1000			P MOTORIZED GATE	
	R JANITOR 121		180					1		20/1	63		64	20/1						1000		P MOTORIZED GATE	
	SPARE					1			1	30/2	65		66	20/1							200	GATE CONTROL	
	SPARE					1			-	---	67		68	20/1								SHUNT TRIP	
	H EF-4, EF-5, EF-6		57						3	15/1	69		70	20/2	1					500		DIESEL TANK PUMP	C
	P TRAP PRIMER			100					1	20/1	71		72	---	-						500	----	
	BREAK RM 112 RECEP	540							3	20/1	73		74	20/2	1				500			GASOLINE TANK PUMP	C
	RM 112 REFRIG RECEP		1000						1	20/1	75		76	--	-					500		----	
	RM 112 REFRIG RECEP			1000					1	20/1	77		78	20/1								SHUNT TRIP	
	RM 112 COFFEE RECEP	1200							1	20/1	79		80	50/2					3200			R WASH 118 POWER WASH	
	RM 112 MICRO RECEP		1000						1	20/1	81		82	---	1					3200		----	
	RM 112 GARB DISPO RECEP			1650					1	20/1	83		84	20/1	1						1200	CHARGING CABINET	

A= 39887 | B= 39160 | C= 39293
TOTAL VA= 118341 | W/LCL= 122440 | AMPS= **340** | TOTAL LCL= 16398 X .25 = 4100
HIGH PHASE VA= 39887 | W/LCL= 41354 | HIGH PHASE AMPS= **345** | HIGH PHASE LCL= 5866 X .25 = 1467

PANEL AMA

MOUNTING SURFACE | DOUBLE LUG NO | VOLTS 120/208 | MAIN M.L.O.
NEMA 3R NO | 200% NEUTRAL NO | PHASE 3 | BUS 100A
FEED THRU NO | I/G BUS NO | WIRE 4 | A.I.C. 65,000

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
	H EF-2, EF-3	1392						2	15/1	1			2	15/2	1				1134			H CU-1	
	H EF-1, EF-10, EF-11		666					3	15/1	3			4	---	-					1134		----	
	H EF-7, EF-8, EF-9			85				3	15/1	5			6	30/2	1						1997	H CU-2	
	P CONDENSATE PUMPS	300						1	15/1	7			8	---	-				1997			----	
	H FC-1		374					1	15/2	9			10	25/2	1					1768		H CU-3	
	----			374				-	---	11			12	---	-						1768	----	
	H FC-2	551						1	15/2	13			14	15/2	1				1134			H CU-4	
	----		551					-	---	15			16	---	-					1134		----	
	H FC-4			374				1	15/2	17			18	20/1								SPARE	
	----	374						-	---	19			20	20/1								SPARE	
	H EF-4, EF-5, EF-6		101					3	15/1	21			22	20/1								SPARE	
	P JANITOR 121 EWH			2000				1	30/3	23			24	20/1								SPARE	
	----	2000						-	---	25			26	20/1								SPARE	
	----		2000					-	---	27			28	20/1								SPARE	
	P JANITOR 106 EWH			2000				1	30/3	29			30	20/1								SPARE	
	----	2000						-	---	31			32									SPACE	
	----		2000					-	---	33			34									SPACE	
	SPACE									35			36									SPACE	
	SPACE									37			38									SPACE	
	SPACE									39			40									SPACE	
	SPACE									41			42									SPACE	

A= 10882 VA | B= 9728 VA | C= 8598 VA
PHASE A LCL= 0 VA | PHASE B LCL= 0 VA | PHASE C LCL= 0 VA
PHASE A W/LCL= 10882 VA | PHASE B W/LCL= 9728 VA | PHASE C W/LCL= 8598 VA
TOTAL VA= 29209 | TOTAL LCL= 0 | TOTAL VA W/LCL= 29209
AMPS= **81** | HIGH PHASE AMPS= **91**

GENERAL PANEL SCHEDULE NOTES:

1. WHERE PANEL IS INDICATED TO INCLUDE FEED THRU LUGS, PROVIDE FEED THROUGH LUGS AT THE OPPOSITE END OF THE PANELBOARD FROM THE PANELBOARD MAIN LUGS.
2. WHERE PANEL IS INDICATED TO INCLUDE DOUBLE LUGS, PROVIDE A DOUBLE LUG KIT AT THE SAME END OF THE PANELBOARD AS THE PANELBOARD MAIN LUGS.
3. WHERE PANEL IS INDICATED TO INCLUDE 200% NEUTRAL, PROVIDE PANELBOARDS UL LISTED AS HAVING NEUTRAL BUSSES RATED TO CARRY 200 PERCENT OF THE CURRENT CARRYING CAPACITY OF THE PHASE BUSSING. OTHERWISE, NEUTRAL BUSSING TO BE FULL SIZE AND RECTANGULAR.
4. WHERE PANEL IS INDICATED TO INCLUDE AN I/G BUS, PROVIDE PANELBOARDS WITH AN ISOLATED GROUND BUS, DRILLED AND TAPPED FOR NUMBER OF ISOLATED GROUND CONDUCTORS SHOWN, AS WELL AS FOR ALL SPARES AND SPACES SHOWN ON THE PANELBOARD.
5. WHERE PANEL CIRCUIT BREAKER RATING IS SHOWN AS SERIES RATED, PROVIDE CIRCUIT BREAKERS IN PANELBOARD WHICH ARE SERIES RATED WITH THE UPSTREAM SYSTEM FOR THE AVAILABLE FAULT CURRENT. THE PANELBOARD SHALL BE MARKED WITH THE SERIES CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY THE NEC, OR CEC WHERE ADOPTED, 240.86(B).
6. WHERE PANEL IS INDICATED AS RECESSED OR FLUSH MOUNTED, PROVIDE SPARE CONDUITS STUBBED UP INTO THE ACCESSIBLE CEILING SPACE. PROVIDE ONE (1) 3/4" CONDUIT ONLY FOR EACH THREE (3) SPARES OR SPACES, MINIMUM OF TWO (2). EACH CONDUIT SHALL BE TAGGED, CAPPED AND MARKED FOR FUTURE USE.
7. ALL BUSSING SHALL BE TIN PLATED ALUMINUM.
8. ALL CIRCUIT BREAKERS USED AS SWITCHES SHALL BE UL LISTED AND LABELED "SWD" FOR SWITCHING DUTY.
9. PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI-WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, 210.4(B),) COMMON YOKE (NEC, OR CEC WHERE ADOPTED, 210.7), OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, 605.5 AND 605.7). WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI-WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
10. PROVIDE BREAKER LOCK OFF DEVICE ON ANY CIRCUIT BREAKER FEEDING A TRANSFORMER AS REQUIRED, PER NEC, OR CEC WHERE ADOPTED, 450.14. WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER LOCK-OFF DEVICES TO EXISTING TRANSFORMER CIRCUIT BREAKERS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
11. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE AND SHALL BE SUITABLE FOR 75 DEGREE AMPACITY CONDUCTORS.
12. PANELS SHALL BE OF THE DEAD FRONT SAFETY TYPE. PANELS SHALL BE MINIMUM 20" WIDE AND 5-3/4" DEEP UNLESS OTHERWISE NOTED ON PLAN.
13. COORDINATE WITH APPLICABLE TRADE TO INSURE RECESSED MOUNTED PANELBOARDS WILL SEAT FLUSH IN THE WALLS PROVIDED. PANEL TRIMS SHALL HAVE CONCEALED DOORS AND FASTENERS WITH FLUSH TYPE COMBINATION LOCK AND CATCH, TWO MILLED TYPE KEYS SUPPLIED WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE AND EACH DOOR SHALL HAVE A PLASTIC COVERED DIRECTORY FRAME WITH A TYPED IDENTIFICATION CARD OF ALL CIRCUIT AND PANEL NUMBERS FOR BRANCH CIRCUIT PANELBOARDS.
14. UPON PROJECT COMPLETION, CONTRACTOR SHALL INSTALL TYPED AS-BUILT PANEL DIRECTORIES IN EACH PANEL WITHIN THE MFGR-PROVIDED DIRECTORY HOLDER. THE DIRECTORY SHALL CLEARLY IDENTIFY EACH CIRCUIT TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. EACH CIRCUIT IDENTITY SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS PER NEC, OR CEC WHERE ADOPTED, ART 408.1 AND 408.4. HANDWRITTEN DIRECTORIES ARE UNACCEPTABLE. COPIES OF AS-BUILT PANEL SCHEDULES SHALL BE PLACED IN PANEL DIRECTORIES. E.C. TO INCLUDE ALL COSTS REQUIRED FOR LARGER-THAN-STANDARD CUSTOM PANEL DIRECTORY HOLDERS TO ACCOMMODATE COPIES OF AS-BUILT PANEL SCHEDULES.
15. PANELBOARDS SHALL BE MANUFACTURED BY G.E., CUTLER-HAMMER, SIEMENS, OR SQUARE "D". FUSED PANEL BOARDS SHALL BE BY COOPER BUSSMANN.
16. PROVIDE SHOP DRAWING SUBMITTAL PER THE ELECTRICAL SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH PANEL DEPICTING CONFORMANCE WITH THE ABOVE NOTES AND SCHEDULES.

SPECIFIC PANEL SCHEDULE NOTES:

"A" PROVIDE LOCK-ON DEVICE.

"B" PROVIDE PERMANENT LOCK-OFF DEVICE THAT SHALL REMAIN IN PLACE WITH OR WITHOUT THE LOCK INSTALLED, PER NEC, OR CEC WHERE ADOPTED, SECTION 110.25.

"C" PROVIDE SHUNT TRIP DEVICE.

"D" PROVIDE GFCI TYPE DEVICE.

"E" PROVIDE A RED CIRCUIT BREAKER.

"F" PROVIDE A NEW BREAKER TO MATCH THE EXISTING IN PANEL.

"G" EXISTING BREAKER WITH NEW LOAD.

"H" PROVIDE AFCI TYPE DEVICE COMPLYING WITH NEC, OR CEC WHERE ADOPTED, 210.12(A),(B),(C).

PANEL SCHEDULE INDEX

-	ALA	APA
-	EVCP	AMA
-	-	

AS-BUILT PANEL DIRECTORY NOTE:

BRANCH CIRCUIT LOCATIONS NOTED WITH "(E)" INDICATE EXISTING CIRCUIT(S). THE IDENTITIES OF THESE CIRCUITS ARE BASED ON EXISTING PANEL DIRECTORIES AND/OR LIMITED AS-BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY EACH BRANCH CIRCUIT AND PROVIDE COMPLETE, TYPED AS-BUILT PANEL DIRECTORIES AS REQUIRED THAT DISTINGUISH EACH CIRCUIT PER NEC, OR CEC WHERE ADOPTED, ART 408.1 AND 408.4. COMPLETED DIRECTORIES SHALL BE SUBMITTED TO THE ELECTRICAL INSPECTOR PRIOR TO FINAL ELECTRICAL INSPECTION. INCLUDE ALL COSTS IN BID.

EXISTING CIRCUIT BREAKER NOTE:

PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI-WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, 210.4(B),) COMMON YOKE (NEC, OR CEC WHERE ADOPTED, 210.7) OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, 605.5 AND 605.7). WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI-WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.

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IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SNITCHLER No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E41.4
SHEET TITLE:

PANEL SCHEDULES

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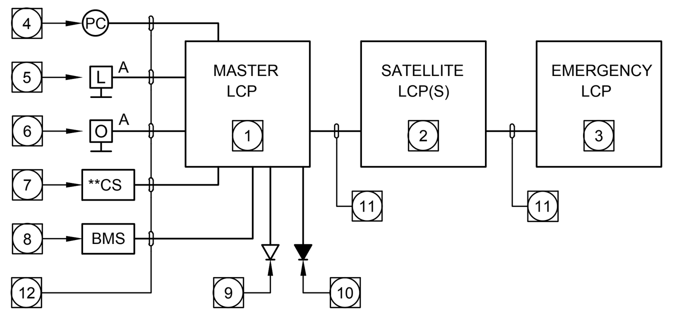
PLAN CHECK #00856737-CNEW

LIGHTING CONTROL SYSTEM SCHEMATIC:



LIGHTING CONTROL SYSTEM SCHEMATIC PLAN NOTES:

1. MASTER LIGHTING CONTROL PANEL. SEE PLANS FOR EXACT LOCATION. REFER TO MASTER LIGHTING CONTROL PANEL SCHEDULE FOR MORE INFORMATION. PROVIDE 120V POWER AS REQUIRED. DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

2. SATELLITE LIGHTING CONTROL PANEL(S). SEE PLANS FOR EXACT LOCATION AND QUANTITY. REFER TO SATELLITE LIGHTING CONTROL PANEL SCHEDULE(S) FOR MORE INFORMATION.DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

3. EMERGENCY LIGHTING CONTROL PANEL(S). PROVIDE 120V OR 277V UNSWITCHED NORMAL AND/OR EMERGENCY CIRCUIT. CONNECT CIRCUIT(S) AS REQUIRED SUCH THAT THE EMERGENCY LCP(S) FUNCTIONS IN A POWER OUTAGE BY TURNING ALL LIGHTING CIRCUITS CONTROLLED BY RESPECTIVE EMERGENCY LCP(S). SEE PLANS FOR EXACT LOCATION. REFER TO EMERGENCY LIGHTING CONTROL PANEL SCHEDULE FOR MORE INFORMATION.

4. EXTERIOR PHOTOCELL MOUNTED AT EXTERIOR ROOFTOP LOCATION FACING NORTH. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5. LOCAL SWITCH(ES) UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND LIGHTING CONTROL SWITCH FACEPLATE CONFIGURATION(S) FOR ADDITIONAL REQUIREMENTS.

6. OVERRIDE SWITCH(ES) UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND CONFIGURATION(S).

7. WHEN "IDCS/DPCS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO EACH IDCS AND/OR DPCS PANEL OR INTERFACE DEVICES PER THEIR RESPECTIVE SCHEDULES, IF PROVIDED ON PROJECT. SEE LIGHTING CONTROL SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

8. WHEN "BMS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO NEAREST BMS GATEWAY/INTERFACE DEVICE. COORDINATE LOCATION, CONDUCTOR QUANTITIES/TYPES, AND TERMINATION LOCATIONS WITH MECHANICAL CONTROLS CONTRACTOR. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

9. WHEN "MODEM" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 5 ANALOG FAX/MODEM LINE FROM LCP TELEPHONE MODEM TO NEAREST TELEPHONE BACKBOARD. TERMINATE CABLE AS REQUIRED TO OBTAIN CONNECTION SERVICE PROVIDER DIAL TONE. TEST CONNECTION WITH LCP MANUFACTURER TO ENSURE MANUFACTURER CAN PROVIDE REMOTE TROUBLESHOOTING SUPPORT, ETC. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

10. WHEN "SNMP" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 6 DATA CABLE FROM LCP SNMP INTERFACE DEVICE TO NEAREST IDF CLOSET TO ALLOW COMMUNICATIONS PER THE LIGHTING CONTROL SYSTEM SCHEDULE AND SPECIFICATIONS. COIL 30' OF EXTRA CABLE WITHIN IDF CLOSET. COILED CABLE SHALL BE TAGGED NOTING FAR-END TERMINATION LOCATION AND "LIGHTING CONTROL SYSTEM LAN INTERFACE CABLE". ALL CONDUIT/PULL BOXES SHALL BE INSTALLED PER GENERAL COMMUNICATIONS PATHWAY NOTES. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

11. PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS, PER MANUFACTURER'S RECOMMENDATIONS, FOR INTERCONNECTION MASTER AND SATELLITE PANELS. REFER TO MASTER RELAY SCHEDULE FOR NETWORKING TYPE.

12. PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS.

LIGHTING CONTROL SYSTEM REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.

2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.

3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURERS INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY - UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.

4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.

LIGHTING CONTROL SYSTEM SPECIFICATIONS:

1. ALL EQUIPMENT SHALL BE NEW, OF CURRENT DESIGN, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF IEEE, NEMA, UL, ANSI AS WELL AS LOCAL JURISDICTION REQUIREMENTS. ALL EQUIPMENT SHALL BE FACTORY ASSEMBLED AND TESTED. THE LATEST PUBLISHED EDITION OF THE FOLLOWING DOCUMENTS SHALL APPLY TO THE MANUFACTURING AND INSTALLATION OF THE LIGHTING CONTROL SYSTEM:
   - UL 916
   - UL 924
   - ASHRAE 90.1
   - CALIFORNIA TITLE 24- WHERE ADOPTED
   - ALL OTHER APPLICABLE STATE AND LOCAL ENERGY CODES
   - NEC, OR CEC WHERE ADOPTED, ART. 409
   - NEC, OR CEC WHERE ADOPTED, ART. 725
   - NEC, OR CEC WHERE ADOPTED, ART. 700.10(B)

2. ALL COMPONENTS OF THE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY A SINGLE MANUFACTURER. THE ENTIRE SYSTEM SHALL BE COVERED BY A TWO YEAR WARRANTY. TELEPHONE FACTORY SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE CONTRACTOR OR OWNER BOTH DURING AND AFTER THE WARRANTY PERIOD.

3. THE LIGHTING CONTROL PANELS SHALL BE FACTORY PRE-ASSEMBLED AND UL LISTED. PROVIDE COMPLETE WITH ALL REQUIRED CONTROL TRANSFORMERS AND REQUIRED VOLTAGE BARRIERS. WHEN DESIGNATED AS SURFACE MOUNTING, PROVIDE A SCREW-ON COVER. WHEN DESIGNATED AS FLUSH MOUNTING, PROVIDE A HINGED DOOR ASSEMBLY.

4. LIGHTING CONTROL RELAYS SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   - RATED FOR FULL CIRCUIT LOAD AND SUITABLE FOR ALL TYPES OF LAMP LOADS TO A MINIMUM OF 20 AMPERES AT 347 VAC (SINGLE POLE) AND 600 VAC (DOUBLE POLE).
   - CONTAINED IN A MOLDED CASE CONTAINING BOTH HIGH AND LOW VOLTAGE TERMINALS AND SHALL HAVE A BUILT-IN OPERATING LEVER MARKED ON/OFF FOR MANUAL SWITCHING AT THE RELAY PANEL.
   - RELAY LOAD CONTACTS SHALL BE ABLE TO SUSTAIN AVAILABLE FAULT CURRENTS AT THE LOCATION OF THE RELAY WITHIN THE ELECTRICAL SYSTEM AS INDICATED IN THE LIGHTING CONTROL SCHEDULE(S). ALL RELAYS SHALL BE CONSPICUOUSLY MARKED WITH THEIR RESPECTIVE SHORT CIRCUIT CURRENT RATING (SCCR). IN NO CASE SHALL A RELAY HAVE AN SCCR LESS THAN 14,000 AMPS.
   - SHOULD A RELAY(S) INTERRUPTING CAPACITY BE INADEQUATE BASED ON AVAILABLE SYSTEM FAULT CURRENT, THE CONTRACTOR SHALL MAKE ONE OR MORE OF THE FOLLOWING MODIFICATIONS:
     a. EXTEND THE LENGTH OF THE BRANCH CIRCUIT WIRING TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
     b. RELOCATE LCP(S) IN ORDER TO EXTEND BRANCH CIRCUIT CONDUCTORS TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
     c. UTILIZE A MECHANICALLY-HELD LATCHING LIGHTING CONTACTOR(S) WITH SUFFICIENT SCCR-RATING(S) - MINIMUM SCCR SHALL BE 14,000A. CONTACTOR(S) SHALL BE OF THE TYPE THAT AUTOMATICALLY CLOSES UPON LOSS OF CONTROL POWER. CONTACTOR(S) SHALL CARRY CIRCUIT CURRENT WHICH, IN TURN, SHALL BE CONTROLLED BY THE LCP RELAY. NUMBER OF CONTACTOR POLES SHALL EQUAL NUMBER OF RELAY POLES SHOWN IN THE LIGHTING CONTROL PANEL SCHEDULE(S) FOR THAT PARTICULAR LOAD (EXAMPLE A 2-POLE RELAY REQUIRES USE OF A 2-POLE LIGHTING CONTACTOR). USING MULTI-POLE CONTACTORS TO COMBINE OUTPUTS/SWITCH LEGS OF DIFFERENT RELAYS IS EXPRESSLY PROHIBITED. EACH CONTACTOR SHALL BE LABELED WITH THE CONTROLLING RELAY LCP NAME AND CONTROLLING RELAY ID #. SEE LABELING REQUIREMENTS WITHIN THE GENERAL ELECTRICAL SPECIFICATION. CONTACTORS SHALL BE LOCATED IN A NEMA ENCLOSURE ABOVE OR ADJACENT TO THEIR SERVING LIGHTING CONTROL PANEL. CONTRACTOR SHALL INCLUDE CONTACTOR CABINET LOCATION ON 1/4" SCALE ELECTRICAL ROOM SHOP DRAWING SUBMITTAL(S).

LIGHTING CONTROL SYSTEM SPECIFICATIONS - CONT'D:

5. OVERRIDE AND LOCAL SWITCHES SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   - INTEGRAL LED'S INDICATING BOTH LOCATION (GREEN LIGHT ALWAYS ON), ON (RED LIGHT ON), AND OFF POSITIONS (RED LIGHT OFF).
   - IDENTIFIED/LABELLED WITH A DESCRIPTION OF THE AREA CONTROLLED PER THE CONTROL PANEL SCHEDULE. SEE LCP FACE PLATE DETAILS FOR MORE INFORMATION.
   - EACH SWITCH BUTTON SHALL BE 100% FIELD PROGRAMMABLE VIA LIGHTING CONTROL PANEL OR REMOTELY VIA LIGHTING CONTROL SOFTWARE TO CONTROL ANY RELAY(S) IN ANY LIGHTING CONTROL PANEL(S).
   - EACH BUTTON SHALL BE CAPABLE OF BEING PROGRAMMED FOR ON ONLY, OFF ONLY, ON/OFF (TOGGLE), RAISE (DIM UP) AND LOWER (DIM DOWN). SWITCHES REQUIRING LOW VOLTAGE CONTROL WIRES TO BE MOVED FROM ONE INPUT TERMINAL TO ANOTHER TO ACCOMPLISH THESE FUNCTIONS ARE NOT ACCEPTABLE.
   - IN ADDITION, SWITCHES LOCATED IN HIGH ABUSE AREAS OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES (GYMNASIUMS, MECHANICAL EQUIPMENT ROOMS, MACHINE ROOMS, EXTERIOR SPORT COURTS, KITCHENS, ETC.) SHALL BE VANDAL RESISTANT, CONTAIN NO MOVING PARTS, AND BE TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. MULTI GANG VERSIONS SHALL ALSO BE AVAILABLE. HIGH ABUSE SWITCHES SHALL BE STAINLESS STEEL AND CAPABLE OF HANDLING BOTH HIGH ABUSE AND WASH DOWN LOCATIONS. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (1CMSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.
   - KEYED SWITCHES, IF REQUIRED ON PLANS, SHALL BE PROGRAMMABLE WITH PILOT LIGHT, AVAILABLE AS MOMENTARY "ON/OFF" OR AS CAPTIVE AS REQUIRED BY CALIFORNIA TITLE 24.

6. THE LIGHTING CONTROL SYSTEM CONTROLLER(S) SHALL BE LOCATED IN EACH MASTER AND EACH EMERGENCY LIGHTING CONTROL PANEL AND HAVE THE FOLLOWING CHARACTERISTICS:
   - CONTAIN 1 OR MORE DIGITAL TIME CLOCK(S) (DTCs)THAT CONTROL AND PROGRAM THE ENTIRE LIGHTING CONTROL SYSTEM AND SUPPLY ALL TIME FUNCTIONS AND ACCEPT INTERFACE INPUTS AS DEFINED IN THE MASTER LIGHTING CONTROL SCHEDULE.
   - LOCAL PROGRAMMING SHALL BE USER-FRIENDLY VIA BUTTONS ON AN LED OR LCD DISPLAY WITH ALL NECESSARY INSTRUCTIONS PRINTED ON THE "CONTROLLER" LABEL. NO AUXILIARY INSTRUCTION MANUALS SHALL BE REQUIRED.
   - DIGITAL TIMECLOCK(S) FEATURES INCLUDE SEVEN DAY / HOLIDAY CONTROL, MINIMUM OF 32 DISCRETE SCHEDULES, EACH OF WHICH HAS ONE SET OF "ON" AND "OFF" TIMES PER DAY FOR EACH DAY OF THE WEEK AND FOR EACH OF TWO HOLIDAY LISTS, 15 YEAR NON-VOLATILE MEMORY TO MAINTAIN PROGRAMMING AND CLOCK TIME UPON LOSS OF POWER.
   - ALLOW FOR AUXILIARY INPUT OF A MAINTAINED OR A MOMENTARY PULSE FROM OTHER BUILDING SYSTEMS (SECURITY, HVAC, BMS, CCTV, ETC)
   - PROVIDE A FLICK WARN OPTION FOR ALL OF THE VARIOUS CONTROL ZONES. A LOCAL SWITCH SHALL BE CAPABLE OF OVERRIDING AN OFF SWEEP WITHIN ITS RESPECTIVE LIGHTING CONTROL ZONE(S) DURING THE 5 MINUTE WARNING PERIOD. FLICK-WARN OPTION SHALL NOT BE ENABLED ON CIRCUITS SUPPORTING HID LAMP TYPES.
   - SHALL CONTAIN PRE LOADED SOFTWARE CONFIGURED TO PRESENT A VISUAL REPRESENTATION OF EACH DEVICE ON THE SYSTEM, SHOW REAL TIME STATUS AND THE ABILITY TO CHANGE THE STATUS OF ANY INDIVIDUAL DEVICE, RELAY OR ZONE. THE SYSTEM SHALL BE CAPABLE OF RUNNING AN UPGRADED VECTOR-BASED GRAPHICS LIGHTING CONTROL SOFTWARE. THE SOFTWARE SHALL BE ACCESSIBLE TO A PC VIA MODEM AND/OR LOCAL AREA NETWORK CONNECTION.

7. THE PHOTOMETRIC SENSOR SHALL BE:
   - CAPABLE OF SENSING LIGHT LEVEL CHANGES AS FOLLOWS: 1 TO 10, 1 TO 100, 1 TO 1000, AND 1 TO 10,000 FOOTCANDLES.
   - UNITS USED FOR EXTERIOR LIGHT CONTROL SHALL PROVIDE MULTIPLE TRIPS POINT FROM 1 ROOF MOUNTED UNIT. ALL TRIPS POINTS SHALL BE ABLE TO BE CHANGED LOCALLY AT THE NEAREST LIGHTING CONTROL PANEL CONTROLLER OR REMOTELY VIA LAN OR MODEM.

8. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES COPPER COMMUNICATIONS MEDIA, PROVIDE MULTICONDUCTOR #18 COPPER WIRE OR LARGER AS RECOMMENDED BY THE MANUFACTURER AS NECESSARY TO CONNECT ALL ELEMENTS OF THE LIGHTING CONTROL SYSTEM. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE INDICATES FIBER COMMUNICATIONS MEDIA, PROVIDE FIBER OPTIC TRANSCEIVERS AS REQUIRED TO CONNECT VARIOUS MASTER AND/OR SATELLITE LIGHTING CONTROL PANELS TOGETHER VIA FIBER OPTIC CABLING. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING/EXAMINING TERMINATION POINTS, ROUTING AND GRADE OF FIBER OPTIC CABLING ALLOCATED FOR USE BY THE LIGHTING CONTROL SYSTEM AND ACCOMMODATE SUCH IN THE DESIGN OF THE LIGHTING CONTROL SYSTEM. SHOULD ANY ASPECT OF THE NEW OR EXISTING FIBER OPTIC CABLING SYSTEM BE UNCLEAR, THE CONTRACTOR SHALL ISSUE PRE-BID RFIS AS NECESSARY TO GAIN A COMPLETE UNDERSTANDING OF THE SYSTEM IN ORDER TO MAKE A COMPLETE LIGHTING CONTROL SYSTEM BID.

9. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "IDCS/DPCS" INTERFACE, PROVIDE A DIGITAL INTERFACE OR CONTACT CLOSURE OUTPUTS(S) FOR "FLICK-WARN", SWEEP-OFF AND SWEEP-ON OPERATION OF ANY DPCS UNIT(S) AND/OR IDCS UNIT(S) AS INDICATED IN IDCS OR DPCS SCHEDULES.

10. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "BMS" OPTION, PROVIDE ONE OR MORE OF DIRECT DIGITAL INTERFACES TO BUILDING AUTOMATION SYSTEMS:

    "BACNET", "METASYS (N2)", "LON WORKS" AND "MODBUS" INTERFACE OPTIONS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS, TIME SCHEDULES AND REPORT STATUS OF ALL RELAYS IN ALL PANELS IN REAL TIME VIA THE RESPECTIVE COMMUNICATIONS PROTOCOL(S). INTERFACE CARDS SHALL SELF POPULATE EACH INDIVIDUAL RELAY AND EACH GROUP TO THE BMS.

    "DMX512A" INTERFACES SHALL ALLOW THE LCP SYSTEM TO ACCEPT 14 GLOBAL DMX512A COMMANDS, EACH OF WHICH CAN BE MODIFIED LOCALLY OR REMOTELY USING LIGHTING CONTROLS MANUFACTURER SUPPLIED SOFTWARE. DMX INTERFACE CARD SHALL BE CONNECTED TO THE LIGHTING CONTROL SYSTEM IN SUCH A WAY AS TO PROVIDE REAL TIME RESPONSE FROM THE LIGHTING CONTROL SYSTEM TO DMX COMMANDS.

    "CONTACT" INTERFACES SHALL CONSIST OF DRY CONTACT INPUT INTERFACE CARD(S) THAT PROVIDES 14 PROGRAMMABLE DRY CONTACT CLOSURE INPUTS PER CARD. USE SHIELDED CABLE TO CONNECT INPUT DEVICES TO INTERFACE CARD(S). CONTACT CLOSURE INTERFACE CARDS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS FOR INDIVIDUAL RELAYS OR GROUPS OF RELAYS BASED ON BMS TIME SCHEDULES.

    CONTRACTOR SHALL PROVIDE PROTOCOL POINT ID/REGISTERS/BITMAPS FOR USE BY OTHERS TO ENABLE REPORTING/MONITORING/CONTROLLING/ADJUSTING OF THE LIGHTING CONTROL SYSTEM EQUIPMENT OPERATING PARAMETERS TO BUILDING MANAGEMENT SYSTEM (BMS) VIA BMS GATEWAY INTERFACE DEVICE AND OTHER REQUIRED ACCESSORIES. SEE BMS DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

    THE E.C. SHALL INCLUDE ALL COSTS IN THE BASE BID TO INTEGRATE THE LIGHTING CONTROL SYSTEM WITH THE SPECIFIED BMS SYSTEM AND SYSTEM PROTOCOL WHICH INCLUDES, BUT IS NOT LIMITED TO, COMMUNICATIONS INTERFACE MODULES, ALONG WITH POINT ID LISTS/REGISTERS, BITMAPS AND/OR CAD FILES OF EACH PIECE OF ELECTRICAL EQUIPMENT (PLAN VIEW AND ELEVATION VIEW), AND MAN-HOURS AS NECESSARY TO ASSIST THE BMS CONTRACTOR IN COMMISSIONING THE BMS SYSTEM AS IT RELATES TO THE LIGHTING CONTROL SYSTEM WITH WHICH IT COMMUNICATES.

11. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "NETWORK INTERFACE" OPTION, PROVIDE ONE OR MORE OF THE FOLLOWING:
    - "SNMP" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE INSTALLED LIGHTING CONTROL SYSTEM SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING LCP MANUFACTURER-FURNISHED CLIENT PC-COMPATIBLE SOFTWARE. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO INSTALL AND CONFIGURE 1 COPY OF SOFTWARE ON OWNER-FURNISHED PC OR SERVER AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.
    - "WEB" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE INSTALLED LIGHTING CONTROL SYSTEM HMTL WEB SERVER SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING ANY WEB BROWSER. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON OWNER-FURNISHED LOCAL AREA NETWORK AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.

12. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "MODEM" COMMUNICATIONS ARE REQUIRED, PROVIDE A PROGRAMMABLE FAX MODEM TO REMOTELY COMMUNICATE WITH THE LIGHTING CONTROL SYSTEM AND ITS PRE-LOADED SOFTWARE DESCRIBED ELSEWHERE IN THIS SPECIFICATION. CONTRACTOR SHALL INCLUDE ALL COSTS TO PROVIDE AN ANALOG LINE/PHONE JACK AS REQUIRED FOR THIS CONNECTION. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON INSTALL ONE COPY OF SOFTWARE ON OWNER-FURNISHED COMPUTER AND MAKE SYSTEM SOFTWARE FULLY FUNCTIONAL IN ALL ASPECTS.

13. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE PROGRAMMED / APPROVED BY A MANUFACTURER'S REPRESENTATIVE. CONTRACTOR TO INCLUDE THREE (3) HOURS OF INSTRUCTION PER MASTER PANEL. INSTRUCTIONS SHALL BE BY THE MANUFACTURER'S REPRESENTATIVE IN THE PRESENCE OF THE OWNER. SET-UP, COMMISSIONING OF THE LIGHTING CONTROL SYSTEM, AND OWNER INSTRUCTION INCLUDES:
    - CONFIRMATION OF ENTIRE SYSTEM OPERATION AND COMMUNICATION TO EACH DEVICE.
    - CONFIRMATION OF OPERATION OF INDIVIDUAL RELAYS, SWITCHES, OCCUPANCY SENSORS AND DAYLIGHT SENSORS.
    - CONFIRMATION OF SYSTEM PROGRAMMING, PHOTOCELL SETTINGS, OVERRIDE SETTINGS, ETC.
    - PROVIDE TRAINING TO COVER INSTALLATION, MAINTENANCE, TROUBLESHOOTING, PROGRAMMING, AND REPAIR AND OPERATION OF THE LIGHTING CONTROL SYSTEM.

14. COMPLY WITH APPLICABLE ENERGY CODE LIGHTING CONTROL SYSTEM ACCEPTANCE REQUIREMENTS TO INCLUDE VERIFICATION THAT LIGHTING CONTROLS WERE INSTALLED AND CALIBRATED CORRECTLY. THESE TESTS MAY REQUIRE THAT A RESPONSIBLE PARTY CERTIFY THAT CONTROLS ARE INSTALLED AND CALIBRATED PROPERLY. THIS SHALL BE THE INSTALLING CONTRACTOR'S RESPONSIBILITY.

15. SHOP DRAWINGS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT - GENERIC SUBMITTALS SHALL BE REJECTED.

16. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY COOPER, WATTSTOPPER OR EQUAL SYSTEM BY NLIGHT

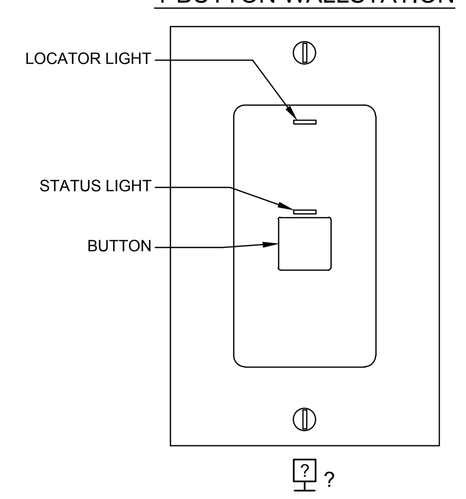
MASTER LIGHTING CONTROL PANEL SCHEDULE - LCP

MOUNTING	EXTERIOR PHOTO CELL	COMM. MEDIA	DPCS / IDCS INTERFACE	BMS INTERFACE	NETWORK INTERFACE	MODEM	AVAILABLE FAULT CURRENT	REMARKS
SURFACE	YES	-	YES	NONE	NONE	NONE	65K	- -

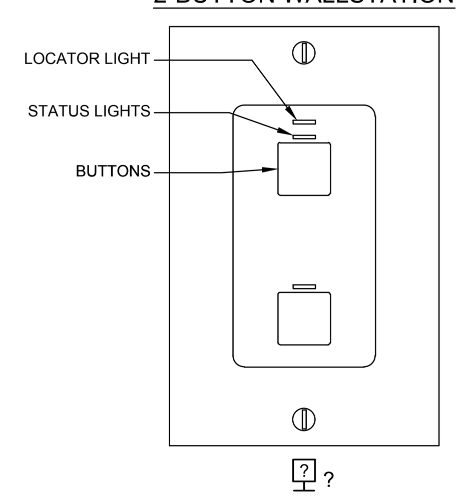
PANEL#	CKT#	RELAY	DESCRIPTION	LOCAL SWITCH	OVERRIDE SWITCH	ZONE NUMBER	MISCELLANEOUS
ALA	5	1	PARKING LOT LIGHTING	-	-	1	-
ALA	7	2	EXTERIOR GATES LIGHTING	-	-	1	-
ALA	9	3	FUEL AREA LIGHTING	-	-	2	-
ALA	11	4	GNRR, WASH AREA LIGHTING	-	-	2	-
ALA	13	5	CANOPY YARD LIGHTING	-	-	2	-
ALA	15	6	TRASH RECYCLE POLES/WALL PACKS	-	-	2	-
-	-	7	SPARE	-	-	-	-
-	-	8	SPARE	-	-	-	-
-	-	9	SPARE	-	-	-	-
-	-	10	SPARE	-	-	-	-
-	-	11	SPARE	-	-	-	-
-	-	12	SPARE	-	-	-	-
-	-	13	SPARE	-	-	-	-
-	-	14	SPARE	-	-	-	-
-	-	15	SPARE	-	-	-	-
-	-	16	SPARE	-	-	-	-
-	-	17	SPARE	-	-	-	-
INV	1	18	EMERGENCY CANOPY YARD LIGHTING	-	-	2	-
-	-	19	SPARE	-	-	-	-
-	-	20	SPARE	-	-	-	-
-	-	21	SPARE	-	-	-	-
-	-	22	SPARE	-	-	-	-
-	-	23	SPARE	-	-	-	-
-	-	24	SPARE	-	-	-	-

ZONE NUMBER	TIME		PHOTO		DESCRIPTION	ZONE NUMBER	TIME		PHOTO		DESCRIPTION
	ON	OFF	ON	OFF			ON	OFF	ON	OFF	
1	-	-	X	X	SECURITY LIGHTING	5	-	-	-	-	-
2	0600	2100	-	-	NORMAL BUSINESS HOURS	6	-	-	-	-	-
3	-	2200	X	-	SITE SIGNAGE	7	-	-	-	-	-
4	-	-	-	-	-	8	-	-	-	-	-

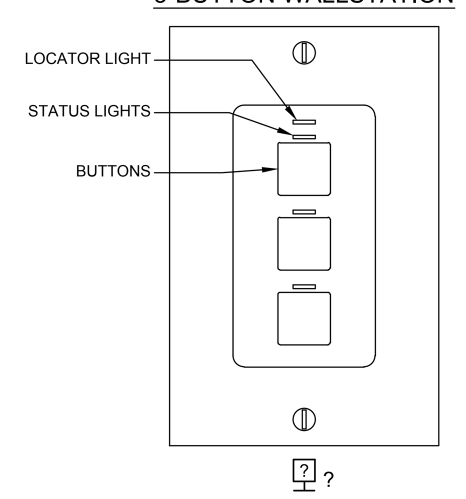
1-BUTTON WALLSTATION



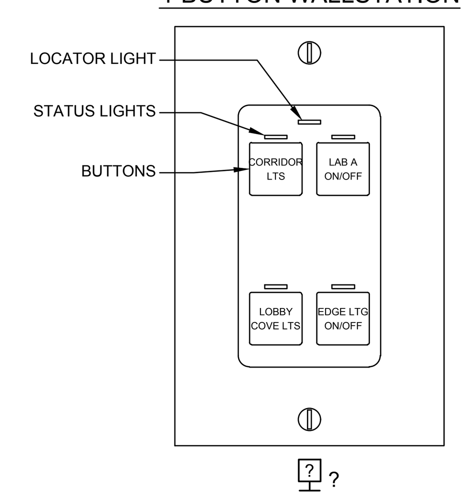
2-BUTTON WALLSTATION



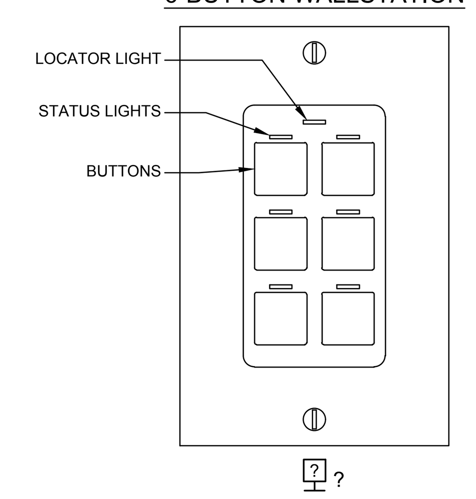
3-BUTTON WALLSTATION



4-BUTTON WALLSTATION



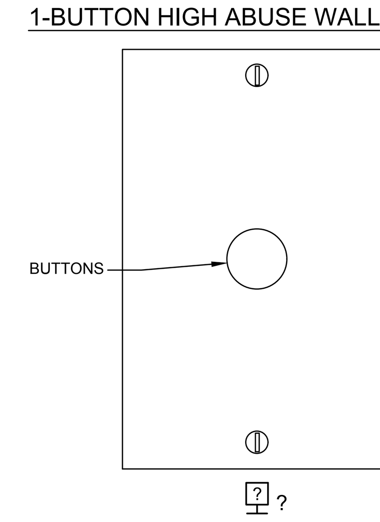
6-BUTTON WALLSTATION



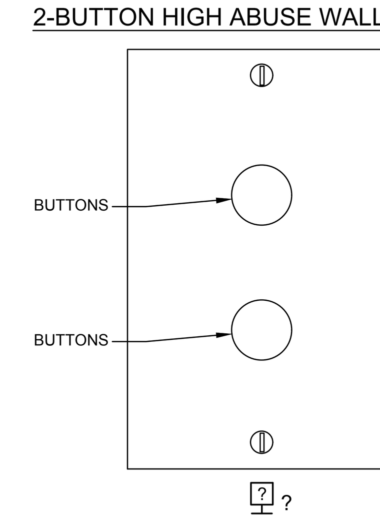
OVERRIDE AND LOCAL SWITCH FACEPLATE DETAIL NOTES:

1. ALL FACEPLATE BUTTON LABELS ARE SUBJECT TO CHANGE AND SHOULD NOT BE CONSIDERED FINAL UNTIL SHOP DRAWING/ SUBMITTALS ARE ACCEPTABLE TO THE ARCHITECT. INCLUDE ALL COSTS FOR CUSTOM BUTTON LABEL TEXT IN BASE BID.
2. ALL FACEPLATE FINISHES ARE SUBJECT TO CHANGE AND SHOULD NOT BE CONSIDERED FINAL UNTIL SHOP DRAWING/ SUBMITTALS ARE ACCEPTABLE TO THE ARCHITECT. INCLUDE ALL COSTS FOR SPECIAL/CUSTOM METAL FACEPLATE FINISHES IN BASE BID.
3. INCLUDE ALL COSTS FOR PROGRAMMING OF LIGHTING CONTROL SETTINGS, ETC., PER BUTTON.
4. INCLUDE ALL COSTS IN BASE BID TO INCLUDE REPLACEMENT OF UP TO 50% OF BUTTONS/BUTTON LABELS FOR UP TO 1 YEAR AFTER COMPLETION OF THE PROJECT.
5. ALL CONTROL STATIONS SHALL BE FIELD CONVERTIBLE TO ACCOMMODATE FUTURE CHANGES.
6. STANDARD OVERRIDE AND LOCAL SWITCH FACEPLATES/BUTTONS SHALL BE LC&D CHELSEA OR EQUAL BY LC&D OR LUTRON. HIGH ABUSE SWITCHES SHALL BE LC&D SWITCHBOLT WITH HOSE-DOWN AND DIGITAL ENABLE OPTIONS - CONTRACTOR TO PROVIDE STAINLESS STEEL FACEPLATES WITH GASKETTING AND WATERPROOF CONNECTIONS.

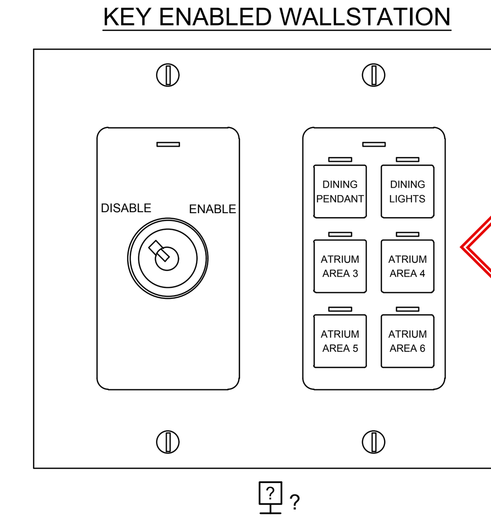
1-BUTTON HIGH ABUSE WALLSTATION



2-BUTTON HIGH ABUSE WALLSTATION



KEY ENABLED WALLSTATION



CITY OF IRVINE
BUILDING & SAFETY DIVISION

REMOTE STATION AND PARTITION STATION FACEPLATE DETAILS

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 EX. 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E51.1
SHEET TITLE:

LIGHTING CONTROL PANEL

SVA ARCHITECTS

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T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

DLCS SCHEDULE

SYSTEM TOPOLOGY	COMMUNICATION TOPOLOGY	FIXTURE INTEGRATED SENSING	BAS INTEGRATION	WIRELESS DLCS COMPONENT BATTERY USAGE	REMARKS
STAND ALONE	WIRED	NO	NO	NONE	

DISTRIBUTED LIGHTING CONTROL SYSTEM REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY - UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.
5. CONTRACTOR IS RESPONSIBLE TO VERIFY LIGHT FIXTURE DIMMING PROTOCOLS ARE COMPATIBLE WITH THE DLCS.
6. SECURITY STANDARD CERTIFICATIONS, SHOP DRAWINGS AND COMPONENT SUBMITTALS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SCALED SHOP DRAWINGS DEPICTING/IDENTIFYING ALL SYSTEM COMPONENT LOCATIONS SHALL BE PROVIDED. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT - GENERIC SUBMITTALS AND SUBMITTALS WITHOUT SCALED SHOP DRAWINGS SHALL BE REJECTED.

nLIGHT:

WALL BOX SENSORS:
- STANDALONE SINGLE RELAY = #WSXA-PDT
- STANDALONE DUAL RELAY = #WSXA-PDT-2P
- SYSTEM-BASED DIMMING CONTROL = #nWSXA-PDT-LV-DX

CEILING SENSORS:
- ONE-WAY DIRECTIONAL = (WIRED) #NRM-PDT-9 W/MASKING AS REQUIRED; (WIRELESS/LOW VOLTAGE) #RCMS-PDT-9-G2 W/ MASKING AS REQUIRED; (WIRELESS/BATTERY) #RCMSB-7/45/45A-G2
- 360 DEGREE COVERAGE = #NRM-PDT-9 STANDARD RANGE #(WIRED) NRM-PDT-10 EXTENDED RANGE/CORRIDOR #RCMS-PDT-9-G2 (WIRELESS/LOW VOLTAGE) #RCMS-PDT-10 EXTENDED RANGE/ CORRIDOR
- EMBEDDED FIXTURE SENSOR = (WIRELESS/LOW VOLTAGE) #RES7-PDT-G2 INDOOR (WIRELESS/LOW VOLTAGE) #RMSOD, RSDGR-127-G2 (WIRELESS/LOW VOLTAGE) RSBOR EXTERIOR (WIRELESS/BATTERY) #RCMSB-7/45/45A-G2

DAYLIGHT SENSORS:
- CLOSED LOOP SENSOR = (WIRED) #NES-ADCX OR #NRM-ADCX (ONLY IF REQUIRED BY CLG. TYPE)
- ONE-WAY DIRECTIONAL = (WIRELESS) #RCMS-G2
- EMBEDDED FIXTURE SENSOR = (WIRELESS) #RES7

CONTROL UNITS:
- SWITCH / STEPPED DIMMING = (WIRED) #NPP-16/#NSP-16 (WIRELESS) #RPP20-G2 NUMBER OF RELAYS AS REQUIRED.
- CONTINUOUS DIMMING (0-10V) = (WIRED) #NPP16-D (WIRELESS) #RPP20-D-G2 NUMBER OF RELAYS AS REQUIRED.
- CONTINUOUS DIMMING (UNIVERSAL) = (WIRED) #NSP5-PCD. NUMBER OF RELAYS AS REQUIRED. (WIRELESS) UTILIZE 0-10V PHASE DIMMING ADAPTER.
- AUXILIARY INPUT/ OUTPUT CONTROL = #NAR-40
- RECEPTACLE CONTROL = (WIRED) #NPP20 PL (WIRELESS) #RPP20-G2
- AV SYSTEM SERIAL INTERFACE = #nIO X (SCREENS / AV SYSTEM INTEGRATION)
- HVAC CONTROL = #NAR-40
- MOVEABLE PARTITION INTERFACE & SENSOR = #FRESCO TOUCH PANEL #NFCS-7TSN (PER SPACE), #NIO-1S POWER PACK (SENSOR POWER), & #ENTERTAINMENT NETWORKS PARTITION SENSOR W/BOTTOM COVER (www.entertainmentworks.com).
- DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = #NDTC

WALL CONTROLS:
- DIMMING = (WIRED) #NPODMA-DX SERIES (WIRELESS) #RPODB-DX (# OF DIMMERS AS REQUIRED - 4 / YOKE MAX)
- KEYED SWITCH = #NIO INPUT INTERFACE W/LEVITON #1221-2L-? KEYED SWITCH
- TOUCH SCREEN = 7-INCH CAPACITIVE TOUCH #FCS-7TSN-[DMX?]-[FINISH?] W/ ACUITY FCS-PS10 24V POWER SUPPLY; 3.5-INCH CAPACITIVE TOUCH #NPOD TOUCH INCLUDES ACUITY PS150 24V POWER SUPPLY

NETWORK COMM COMPONENTS:
- GATEWAY = #NECY-MVOLT BAC ADR ENC GFXK WITH ENCLOSURE
- BRIDGE = #NBRG-8-KIT

NETWORK RELAY PANELS:
- ARP INTENCXX NLT XXFCR MVOLT, QTY AS REQUIRED, TO INCLUDE SPARE RELAYS SHOWN IN SCHEDULES.

EMERGENCY POWER INTERFACE:
- SWITCHING / STEP DIMMING = (WIRED) NPP16-ER (WIRELESS) #RPP20-ER-G2 NUMBER OF RELAYS AS REQUIRED, NORMAL CIRCUIT REQUIRED.
- SWITCH / STEPPED DIMMING = (WIRELESS) #RPP20-EM-G2. NUMBER OF RELAYS AS REQUIRED, NORMAL CIRCUIT NOT REQUIRED, GENERATOR AND DELAYED TRANSFER INVERTER ONLY.
- CONTINUOUS DIMMING = (WIRED) #NPP16-D-ER
- CONTINUOUS DIMMING (0-10V) = (WIRELESS) #RPP20-D-ER-G2. NUMBER OF RELAYS AS REQUIRED, NORMAL CIRCUIT REQUIRED. (WIRELESS) #RPP20-D-EM-G2. NUMBER OF RELAYS AS REQUIRED, NORMAL CIRCUIT REQUIRED EXCEPT WHERE GENERATOR AND DELAYED TRANSFER INVERTER POWER IS USED.

LOAD INTERFACE DEVICE:
- LUTRON COMPONENTS = LUTRON #BCI-0-10.
- REVERSE PHASE DIMMING COMPONENTS = (WIRED) #NSP5-PCD-ELV120 OR LUTRON #PHPM-PA-DV-WH (WIRELESS) #PCDM & RPP20DG2/
- FORWARD PHASE DIMMING COMPONENTS = (WIRED) #NSP5-PCD-MLV OR LUTRON #PHPM-PA-DV-WH (WIRELESS) LUTRON #BCI-0-10/LUTRON #PHPM-PA-DV-WH
- 2 & 3 WIRE DIMMING COMPONENTS = (WIRED) #NSP5-PCD-2W/3W OR LUTRON #PHPM-PA-DV-WH

Current / NX Controls

WALL BOX SENSORS:
- STANDALONE SINGLE RELAY PIR OR US/PIR = #LHRIRS1-N-[FINISH] or LHRMTS1-N-[FINISH]
- STANDALONE 0-10V DIMMING W/ SINGLE RELAY PIR or US/PIR = #LHRDMIRS3-N-[FINISH] or LHRDMMTS3-N-[FINISH]
- STANDALONE DUAL RELAY, DUAL CIRCUIT PIR or US/PIR = #LHRDCIRD2-N-[FINISH] or LHRDCMTD2-N-[FINISH]
- SYSTEM-BASED DIMMING CONTROL PIR or US/PIR = #NXSMIR-LH1-[FINISH] or NXSMDT-LH1-[FINISH]

CEILING MOTION/DAYLIGHT SENSORS (AVAILABLE STD. FINISHES = WHITE (WH), GREY (GY), BLACK (BK)):
- STANDALONE 180 DEGREE (REQUIRES POWERPACK) US/PIR = OMNIDT500
- STANDALONE 360 DEGREE (REQUIRES POWERPACK) US/PIR = OMNIDT2000
- POWER PACK = UVPP
- SYSTEM-BASED OPEN OFFICE PIR (200-450 SQFT) = NXSMP2-LMI
- SYSTEM-BASED GEN PURPOSE PIR or US/PIR (2000 SQFT) = NXSMP2-OMNI-[FINISH] or NXSMDT-OMNI-[FINISH]
- SYSTEM-BASED LOW BAY PIR (8 - 16 FT MOUNT) = NXSMP2-LMO-[FINISH]
- SYSTEM-BASED HIGH BAY PIR (16 - 45 FT MOUNT) = NXSMP2-HMO-[FINISH]

DAYLIGHT SENSORS:
- SYSTEM-BASED INDOOR DAYLIGHT SENSOR = NXDS
- SYSTEM-BASED OUTDOOR DAYLIGHT SENSOR = NXDS-O

CONTROL UNITS:
- ROOM CONTROLLER W/ 1 RELAY, 1 CH 0-10V DIMMING = NXRCFX2-1RD-UNV
- ROOM CONTROLLER W/ 2 RELAYS, 2 CH 0-10V DIMMING = NXRCFX2-2RD-UNV
- UL924 ROOM CONTROLLER W/ 1 RELAY, 2 CH 0-10V DIMMING = NXRC-UL924-UNV
- PHASE DIM INTERFACE = NXFRD

WALL CONTROLS (# = BUTTONS = 1, 2, 3, 4, 5, 6, 8. (AVAILABLE STD. FINISHES = WH, LA, GY, BK, RD, IV):
- NETWORK SMART SWITCH = NXSW2-#-[FINISH]
- NETWORK WIRELESS SWITCH = NXSW-WRS-WH
- NETWORK KEYED SWITCH = NXSW2-KEY-[FINISH]
- NETWORK TIMED SWITCH = NXSW2-TO-[FINISH]
- NETWORK ON/RAISE/LOWER/OFF = NXSW2-ORLO-[FINISH]
- NETWORK SCENE SELECT SWITCH = NXSW2-SS-[FINISH]
- NETWORK TOUCHSCREEN (1 GANG) = NXSW-TH3-WH

NETWORK COMM COMPONENTS:
- NETWORK BRIDGE = NXHNB2
- AREA MANAGER (UP TO 1000 DIGITAL DEVICES) = NXAC2-120
- SITE MANAGER (UP TO 100 AREAS) = NXSITMGR-OADR2

NETWORK RELAY PANELS:
- NETWORK RELAY PANEL: NXP2 SERIES (8, 16, 24, 32, 48 CAPACITY. DIMMING CHANNELS INCL. TO MATCH RELAY CAPACITY. AVAILABLE UL924 OPTION

EMERGENCY POWER INTERFACE:
- UL924 ROOM CONTROLLER W/ 1 RELAY, 2 CH 0-10V DIMMING = NXRC-UL924-UNV
- AUTOMATIC LOAD CONTROL RELAY W/ DIMMING = ALCR1277
- UL1008 BRANCH CIRCUIT TRANSFER = UL1008CELTS1277
- LOW VOLTAGE REMOTE TEST SWITCH = LVS-ETRB

NX CONNECT-WIRELESS ROOM CONTROL SOLUTION (# = BUTTONS = 2, 4)
- WIRELESS ROOM CONTROLLER, 1 RELAY, 1 0-10 DIMMER = NXC-WA210-PM
- WIRELESS ROOM CONTROLLER, 2 RELAY, 2 0-10 DIMMER = NXC-WA220-PM
- WIRELESS ROOM CONTROLLER, 3 RELAY, 3 0-10 DIMMER = NXC-WA230-PM
- WIRELESS BATTERY OCCUPANCY SENSOR W/ PHOTO SENSOR = NXC-WOS3-PC
- WIRELESS IN FIXTURE SENSOR (8-11 FT MOUNT) = NXC-WIZ20
- WIRELESS IN FIXTURE SENSOR (8-40 FT MOUNT) = NXC-WHS20-L (8'), -M (20'), or -H (40')
- WIRELESS BATTERY SWITCH, SURFACE MOUNT = NXC-WWD-#SM
- WIRELESS BATTERY SWITCH, IN-WALL MOUNT = NXC-WWD-#IW
- WIRELESS KINETIC SWITCH, SURFACE MOUNT = NXC-ZBT

WATTSTOPPER:

WALL BOX SENSORS:
- STANDALONE SINGLE RELAY = #DW-100
- STANDALONE 0-10V DIMMING WITH SINGLE RELAY = #PW-311
- STANDALONE DUAL RELAY = #DW-200
- SYSTEM-BASED DIMMING CONTROL = #LMDW-102

CEILING SENSORS:
- ONE-WAY DIRECTIONAL = (WIRED) #LMDC-100 WITH MASKING AS REQUIRED (PIR-ONLY WIRELESS) #LMPC-600 SERIES WITH MASKING AS REQUIRED.
- 360 DEGREE COVERAGE = (WIRED) #LMDC-100 (PIR-ONLY WIRELESS) #LMPC-600 SERIES

DAYLIGHT SENSORS:
- OPEN LOOP SENSOR = (WIRED) #LMLS-500 (1-3 ZONE) (WIRELESS) #LMDL-600 (1-3 ZONE)
- CLOSED LOOP SENSOR = (WIRED) #LMLS-400 (1 ZONE ONLY)
- REMOTE CONTROL = #LMCT-100 (HAND TO OWNER AT COMPLETION OF PROJECT.)

CONTROL UNITS:
- SWITCHED = (WIRED) #LMRC-10? (NUMBER OF RELAYS AS REQUIRED) (WIRELESS) #LMRC-6??MCC
- CONTINUOUS DIMMING (O-10V, WIRED) = #LMRC-21? (NUMBER OF RELAYS AS REQUIRED).
- CONTINUOUS DIMMING (O-10V, WIRELESS) = #LMRC-6??MCC (NUMBER OF RELAYS AS REQUIRED).
- CONTINUOUS DIMMING (UNIVERSAL, WIRED) = #LMRC-22? (NUMBER OF RELAYS AS REQUIRED).
- RECEPTACLE CONTROL = #LMPL-101 OR LMPL-201 (WHERE MORE THAN 4 RECEPTACLE CONTROL UNIT SARE TIED TOGETHER) #BZ-250 (WHEN USING WIRELESS CONTROL UNIT) #LMPL-6?? (WHEN AVAILABLE)
- HVAC CONTROL = (WIRED) #LMRL-100 (WIRELESS) #LMRC-6??MCC
- AV SYSTEM SERIAL INTERFACE = (WIRED) #LMDI-100 ADD WIRELESS BRIDGE FOR WIRELESS SYSTEM.
- MOVEABLE PARTITION INTERFACE & SENSOR = PARTITION INTERFACE - #LMIO-102 PARTITION SWITCH/STATUS INDICATOR - #LMPS-104 POWER PACK - #BZ-50 (SENSOR POWER) PARTITION SENSOR - #ENTERTAINMENT NETWORKS SENSOR W/ BOTTOM COVER (www.entertainmentworks.com). ADD WIRELESS BRIDGE FOR WIRELESS SYSTEM.
- DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = #LMZC-301, UNLESS OTHERWISE NOTED.

WALL CONTROLS:
- DIMMING = (WIRED) #LMSW-101/102/103/104/108 (# OF SWITCHES AS REQUIRED 4/YOKE MAX) (WIRELESS) #LMDM-601 (# OF SWITCHES AS REQUIRED 4/YOKE MAX)
- KEYED SWITCH = #LMIO-101 INPUT INTERFACE W/ LEVITON #1221-2L-? KEYED SWITCH
- TOUCH SCREEN = 4.3-INCH CAPACITIVE TOUCH #LMEQ-41 W/ WATTSTOPPER #LMTI-100-[VOLT] INJECTOR

NETWORK COMM COMPONENTS:
- ZONE SEGMENT MANAGER = (WIRED OR WIRELESS) #LMSM-3E/#LMSM-6E W/#LMSM-ENC1 ENCLOSURE.
- NETWORK BRIDGE / ROUTER / SWITCH = (WIRED) #LMBC-300/#NB-ROUTER/#NB-SWITCH (WIRELESS) #LMBC-600/#LMBR-650/#NB-SWITCH
- NETWORK WIRING = (WIRED) #LM-MSTP.

NETWORK RELAY PANEL: LMCP8, 24, OR 48

EMERGENCY POWER INTERFACE:

POWER FAILURE ONLY:
- SWITCHING / STEP DIMMING = #ELCU-200 BYPASS DEVICE.
- CONTINUOUS DIMMING = #ELCU-200 BYPASS DEVICE.

POWER FAILURE OR FIRE ALARM ACTIVATION:
- SWITCHING / STEP DIMMING = LVS #EPC2 BYPASS DEVICE W/ LVS REMOTE POWER SUPPLY (#TR-A-2)
- 0-10V DIMMING = LVS #EPC2D BYPASS DEVICE W/ LVS REMOTE POWER SUPPLY (#TR-A-2)
- REVERSE/FORWARD PHASE DIMMING = LVS #EPCDFATS BRANCH CIRCUIT EMERGENCY TRANSFER SWITCH (BCELTS)

REMOTE POWER SUPPLY SHALL UTILIZE UNSWITCHED EMERGENCY CIRCUIT SERVING RESPECTIVE EMERGENCY FIXTURES.

LOAD INTERFACE DEVICE:
- LUTRON COMPONENTS = LUTRON #BCI-0-10.
- REVERSE/FORWARD PHASE DIMMING COMPONENTS = LUTRON #PHPM-PA-DV-WH.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
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IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER — RAYMOND W. SNYDER — No. E15610 — 12/31/2025 — STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E51.2
SHEET TITLE:

DISTRIBUTED LIGHTING CONTROL SCHEDULE & PRODUCT SPECS

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PLAN CHECK #00856737-CNEW

DISTRIBUTED LIGHTING CONTROLS SYSTEM SPECIFICATIONS (OCCUPANCY / VACANCY SENSORS AND DAYLIGHTING CONTROLS):

1. SEE LIGHTING PLAN DRAWINGS FOR DISTRIBUTED LIGHTING CONTROL SYSTEM (DLCS) SPECIFICS, SPACE SPECIFIC CONFIGURATIONS/REQUIREMENTS, AS WELL AS FIXTURE BALLAST/DRIVER CONFIGURATIONS.

2. ALL PRODUCTS SHALL BE BACKED BY A FIVE YEAR MANUFACTURER'S WARRANTY.

3. ALL PRODUCTS LISTED IN THIS SPECIFICATION ARE BASED UPON PRODUCTS LISTED ON THIS SHEET. THE FEATURES AND CHARACTERISTICS OF THE PRODUCT LITERATURE AND SPECIFICATION SHEETS AVAILABLE ON THE VARIOUS MANUFACTURER'S WEB-SITES ARE INCLUDED IN THE REQUIREMENT OF THESE SPECIFICATIONS. ALL DLCS NETWORKED/NON-NETWORKED SYSTEM-BASED AND STANDALONE COMPONENTS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

4. DLCS COMPONENTS SHALL BE COMPLIANT WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL ENERGY CODES.

5. ALL NETWORKED AND NON-NETWORKED SYSTEM-BASED DLCS SYSTEMS SHALL BE COMPLIANT WITH AND CERTIFIED TO THE FOLLOWING SECURITY STANDARDS SET FORTH IN THE LATEST PUBLISHED VERSION OF THE DESIGNLIGHTS CONSORTIUM'S "NETWORKED LIGHTING CONTROL SYSTEM TECHNICAL REQUIREMENTS" DOCUMENT (VERSION 4.0 OR LATEST PUBLISHED VERSION):

   - DLCS COMPONENTS: UL2900-1 UL STANDARD FOR SOFTWARE CYBER SECURITY FOR NETWORK-CONNECTABLE PRODUCTS.

   - DLCS DESIGN PROCESS: UL 2900-1 UL STANDARD FOR SOFTWARE CYBER SECURITY FOR NETWORK- CONNECTABLE PRODUCTS AND/OR ISO/IEC 27001 STANDARD FOR INFORMATION SECURITY MANAGEMENT SYSTEMS.

   - DLCS CLOUD SERVICES: ANY ASSOCIATED DLCS CLOUD SERVICES SHALL MEET THE REQUIREMENTS OF ISO/IEC 27017 (WITH 27001) STANDARD FOR CODE OF PRACTICE FOR INFORMATION SECURITY CONTROLS FOR CLOUD SERVICES.

   WHERE THE MANUFACTURER CANNOT DEMONSTRATE COMPLIANCE WITH THE ABOVE REQUIREMENTS, THE DLCS MANUFACTURER SHALL PROVIDE A COMPREHENSIVE PRODUCT-SPECIFIC IT SECURITY STATEMENT FOR REVIEW BY THE OWNER. THE DLCS SHALL NOT BE CONNECTED TO AN OWNER-FURNISHED NETWORK WITHOUT PRIOR WRITTEN PERMISSION BY THE OWNER,

   ADDITIONALLY, WHERE INSTALLED IN THE STATE OF CALIFORNIA, SYSTEM-BASED DLCS SYSTEMS SHALL BE COMPLIANT WITH CA STATE ASSEMBLY BILL NO. 375 CALIFORNIA PRIVACY ACT OF 2018 AND CA STATE SENATE BILL NO 327 INFORMATION PRIVACY FOR CONNECTED DEVICES.

6. WHERE THE DLCS SCHEDULE INDICATES A SPECIFIC "SYSTEM TOPOLOGY" OPTION, PROVIDE ONE OF THE FOLLOWING:

   "NETWORKED" - PROVIDE A SYSTEM-BASED DLCS THAT COMMUNICATES USING A MANUFACTURER-SPECIFIC DLCS NETWORK ALLOWING BI-DIRECTIONAL FLOW OF INFORMATION BETWEEN DEVICES SUCH AS ROOM CONTROLLERS, SENSORS, RELAY PANELS AND NETWORK CONTROLLERS. PROVIDE A DLCS GUI AND RELATED SOFTWARE TO FACILITATE REMOTE DLCS DEVICE PARAMETERS CHANGES, REMOTE CONTROL ANY DLCS ELEMENT OR DEVICE, REMOTE SCHEDULE CHANGES/IMPLEMENTATIONS, AND REMOTE DLCS COMMISSIONING AND TROUBLESHOOTING. A NETWORKED SYSTEM TOPOLOGY SHALL BE CONFIGURED TO RESPOND TO LOCAL UTILITY DEMAND RESPONSE SIGNALS.

   "NON-NETWORKED" - PROVIDE A SYSTEM-BASED DLCS THAT COULD BE MADE TO COMMUNICATE USING A MANUFACTURER-SPECIFIC DLCS NETWORK, BUT FOR THIS PROJECT IS CONFIGURED WITHOUT ANY NETWORK CONNECTIVITY OR NETWORK COMPONENTS, EXCEPT FOR ANY NETWORK COMPONENTS REQUIRED FOR DUAL MODE CONTROL FOR CORRIDORS, WAREHOUSE AISLES ETC OR WHERE REQUIRED FOR BAS INTEGRATION REQUIRED IN THE DLCS SCHEDULE OR ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS. IN A "NON-NETWORKED" DLCS, DEMAND RESPONSE CAPABILITY IS NOT REQUIRED.

   "STAND ALONE" - PROVIDE INDIVIDUAL WALL SENSORS/CONTROLS - OPERATING AT 120V OR 277V. GENERALLY, STANDALONE COMPONENT INSTALLATIONS ARE TO BE AVOIDED AND ARE LIMITED TO USE IN SMALL ROOMS WHERE ADVANCED CONTROLS, DIMMING CAPABILITY, DEMAND RESPONSE, DUAL MODE CONTROL AND/OR NETWORK CONNECTIVITY ARE NOT REQUIRED BY APPLICABLE ENERGY CODE AND WHERE ACCEPTABLE TO AN END-USER.

7. WHERE THE DLCS SCHEDULE INDICATES A SPECIFIC "COMMUNICATIONS TOPOLOGY" OPTION, PROVIDE ONE OF THE FOLLOWING:

   "WIRED" - PROVIDE WIRING, AS REQUIRED, TO INTERCONNECT DLCS DEVICES. WIRING MAY BE A COMBINATION OF LOW AND LINE VOLTAGE CONDUCTORS BASED ON SPECIFIC MANUFACTURER REQUIREMENTS.

   "WIRELESS" - PROVIDE WIRELESS CONNECTIVITY BETWEEN WALL CONTROLS, WALL, CEILING OR FIXTURE-INTEGRATED SENSORS, ROOM CONTROLLERS, WIRELESS ROUTER(S), AND WIRELESS NETWORK BRIDGES. CONTRACTOR SHALL PROVIDE WIRELESS ROUTERS, QTY AS REQUIRED, TO MAINTAIN ROBUST COMMUNICATIONS WITH ALL WIRELESS DEVICES. ROBUST MEANS THAT A CHANGE OF VALUE FROM OR TO ANY DLCS SYSTEM COMPONENT FROM OR TO AN APPLICABLE WIRELESS ROUTER/BRIDGE OCCURS IN LESS THAN 3 SECONDS.

   "HYBRID" - WHERE A SOLELY WIRELESS DLCS TOPOLOGY IS DEEMED INADEQUATE BASED ON OPERATIONAL OR AESTHETIC REASONS, A WIRELESS TOPOLOGY SHALL BE AUGMENTED WITH WIRED SYSTEM TO FORM A HYBRID COMMUNICATIONS TOPOLOGY. AREAS REQUIRING WIRED CONNECTIVITY SHALL BE OUTLINED ON THE LIGHTING PLANS AND UNLESS OTHERWISE INDICATED, ALL RESTROOMS SHALL BE PROVIDED WITH DUAL TECHNOLOGY OCCUPANCY SENSORS WHICH REQUIRE WIRED CONNECTIVITY AND WIRED POWER SUPPLY. A NETWORKED, SYSTEM-BASED DLCS INSTALLED WITH A HYBRID COMMUNICATIONS TOPOLOGY SHALL APPEAR IN THE USER GUI/SOFTWARE AS A SINGLE UNIFIED SYSTEM. SEPARATE GUI SOFTWARE INTERFACES FOR THE WIRED AND WIRELESS PORTIONS OF THE DLCS ARE UNACCEPTABLE.

9. WHERE THE DLCS SCHEDULE REQUIRES FIXTURE-INTEGRATED SENSORS, PROVIDE OCCUPANCY AND/OR DAYLIGHT SENSORS INTEGRATED WITHIN SPECIFIED FIXTURE TYPE THAT ALSO INTEGRATE INTO THE DLCS. SEE THE LIGHTING FIXTURE SCHEDULE FOR AFFECTED FIXTURE TYPE(S). WHERE INTEGRATED SENSORS DO NOT MEET OCCUPANCY/DAYLIGHT SENSOR COVERAGE REQUIREMENTS, CONTRACTOR SHALL AUGMENT COVERAGE WITH ADDITIONAL CEILING MOUNTED SENSORS AS REQUIRED AND AS A PART OF THE BASE BID.

10. WHERE THE DLCS SCHEDULE REQUIRES THE DLCS TO INTEGRATE WITH THE PROJECT'S BUILDING AUTOMATION SYSTEM (BAS) - SEE THE DLCS START-UP, BUILDING AUTOMATION SYSTEM (BAS) INTEGRATION, COMMISSIONING, & TRAINING PORTION OF THIS SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

11. WHERE THE DLCS SCHEDULE INDICATES "WIRELESS" OR "HYBRID" COMMUNICATIONS TOPOLOGIES AND ALSO ALLOWS WIRELESS DLCS COMPONENT BATTERY USAGE, PROVIDE BATTERIES WITHIN THE WIRELESS DLCS COMPONENTS INDICATED IN LIEU OF LINE OR LOW VOLTAGE POWER SOURCES.

12. DLCS COMPONENTS SHALL BE BE PROVIDED AS FOLLOWS:

   a. STANDALONE: WALL MOUNTED OCCUPANCY SENSORS SHALL BE UL LISTED AND HAVE A MINIMUM LOAD CAPACITY OF 800 WATTS AT 120 VOLTS AND 1200 WATTS AT 277 VOLTS. WALL SENSORS SHALL ALSO BE DECORA STYLE, WITH A LOW-PROFILE APPEARANCE AND A HARD LENS FOR DURABILITY. SENSOR SHALL UTILIZE PASSIVE INFRARED TECHNOLOGY (PIR) AND ULTRASONIC/MICROPHONIC TECHNOLOGY. UNIT SHALL BE RATED FOR 120/277 VOLT WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS, PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. SENSOR SHALL BE UTILIZED IN SPACES NOT EXCEEDING 150 SQ.FT. SINGLE RELAY SENSORS SHALL BE CONFIGURED WITH THE RELAY IN A "MANUAL ON/ AUTO OFF" SETTING. DUAL RELAY SENSORS SHALL BE CONFIGURED WITH THE FIRST RELAY IN A "AUTOMATIC ON/ AUTOMATIC OFF" SETTING AND THE SECOND RELAY IN A "MANUAL ON/ AUTOMATIC OFF" SETTING. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

   b. SYSTEM-BASED (NETWORK OR NON-NETWORK): THE OCCUPANCY SENSOR SYMBOL SHALL REPRESENT A LOW VOLTAGE, WALL MOUNTED OCCUPANCY SENSOR CONNECTED TO A CONTROL UNIT(S) AS REQUIRED. SENSOR SHALL BE DECORA STYLE WITH A LOW-PROFILE APPEARANCE, HAVE ON/OFF/RAISE/LOWER BUTTONS, AND A HARD LENS FOR DURABILITY. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

      SYSTEM-BASED (NETWORK OR NON-NETWORK) OR STANDALONE CEILING MOUNTED OCCUPANCY SENSORS SHALL SHALL REPRESENT A LOW VOLTAGE, CEILING-MOUNTED OCCUPANCY SENSOR WITH A LOW-PROFILE APPEARANCE AND SHALL BE CONFIGURED IN ONE OF THE FOLLOWING WAYS AS INDICATED ON THE DRAWINGS:

      - AUTO ON: a/b

      - SWITCHED: AUTO ON a / MANUAL ON b

      - CONTINUOUS DIMMED: AUTO ON 50% a / MANUAL ON 100% a

   c. SENSOR(S) SHALL UTILIZE DUAL TECHNOLOGY (PIR AND ULTRASONIC/MICROPHONIC TECHNOLOGY) WITH 360 DEGREE COVERAGE. IN SPACES WITH DESKTOP ACTIVITIES, THE COVERAGE SHALL BE "HAND MOTION" AND SHALL NOT EXCEED 500 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT. IN CORRIDORS, STORAGE ROOMS AND OTHER SPACES WITH NON-DESKTOP ACTIVITIES, COVERAGE SHALL BE "HALF-STEP, WALKING MOTION" AND SHALL NOT EXCEED 1200 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT. PIR-ONLY WIRELESS OCCUPANCY SENSORS SHALL NOT BE UTILIZED IN RESTROOMS OR LOCKER ROOMS.

   d. "H" AT THE OCCUPANCY SENSOR INDICATES CONNECTION TO AUXILIARY OUTPUT CONTROL DEVICE FOR CONTROL OF A THIRD PARTY DEVICE VIA LOW-VOLTAGE CONTACT CLOSURES - 1 AMP @ 24V AC/DC. NC/NO RELAYS SHALL BE CONNECTED TO A CONTROLLER TO PERFORM THE AUXILIARY CONTROL REQUIREMENTS INDICATED BY THE DRAWINGS.

   e. OCCUPANCY SENSORS LOCATED WITHIN CORRIDORS, HALLWAYS, STAIRWAYS/WELLS, AISLEWAYS WITHIN WAREHOUSE SPACES, AND IN OTHER AREAS PER PLANS AND/OR SOO SHALL BE CONFIGURED TO CREATE DUAL MODE CONTROL FUNCTIONALITY PER THE SOO/ZONE SCHEDULE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DEVICES AND WIRING REQUIRED FOR DUAL MODE OPERATIONS AND ANY PROGRAMMING/CONFIGURATION OF TIME-BASED OPERATING PARAMETERS. COORDINATE WITH OWNER TO DETERMINE BUSINESS HOUR/AFTER BUSINESS HOUR MODES. IF THE PLANS IDENTIFY A NEW OR EXISTING LIGHTING CONTROL PANEL AS THE SOURCE OF DUAL MODE TIMING, E.C. SHALL INCLUDE ALL COSTS TO INSTALL ANY NECESSARY I/O TERMINALS, CARDS, ETC. TO MAKE THE SYSTEM FULLY FUNCTIONAL.

   f. NETWORK SYSTEM-BASED DLCS SYSTEMS SHALL PROVIDE/RESULT IN "LADDERLESS COMMISSIONING" OF DAYLIGHT CONTROLS. AT A MINIMUM, NETWORK ACQUIRED DATA SHALL PROVIDE CT-BASED LIGHTING POWER (WATTS) MEASUREMENTS PER THE COMMISSIONING PORTION OF THESE REQUIREMENTS. PROVIDE NETWORKED CONTROL UNITS/POWER PACKS/INTERFACES AND MISCELLANEOUS EQUIPMENT AS FOLLOWS:

      1) NETWORK SEGMENT MANAGER OR BORDER ROUTER WITH NATIVE BACnet IP - QUANTITY AS REQUIRED BASED UPON A MAXIMUM OF 100 LOCAL ROOM NETWORKS PER SEGMENT AND A MINIMUM OF ONE SEGMENT MANAGER PER FLOOR. THIS EQUIPMENT SHALL BE LOCATED IN THE TYPICAL FLOOR ELECTRICAL ROOM.

      2) NETWORK BRIDGE CONNECTING THE SEGMENT MANAGER TO THE CONTROLLER SUB/LOCAL NETWORK.

      3) ALL CORRIDORS, WAREHOUSE AISLE WAYS, AND STAIRWELLS SHALL BE PROVIDED WITH DUAL MODE CORRIDOR/STAIRWAY CONTROLS TO INCLUDE CEC-LISTED TIME CLOCK(S), ROUTERS, OR SYSTEM GATEWAYS, INTERPOSING RELAYS (WHEN INTERFACING WITH EXISTING CEC-LISTED RELAY PANELS), WIRING, 120V POWER, PROGRAMMING, ETC. NECESSARY FOR A COMPLETE AND FUNCTIONING CONTROL SYSTEM.

      4) INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL DEMAND RESPONSE EQUIPMENT.

      5) PROVIDE DATA OUTLET/PATHWAY, DATA CABLING (IF REQUIRED ELSEWHERE BY PROJECT DOCUMENTS), AND CONNECTION TO THE PROJECT'S LOCAL AREA NETWORK.

      6) INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL NETWORK SEGMENT MANAGERS, SWITCHES AND ROUTERS.

      7) DEMONSTRATE DLCS RESPONSE TO A SIMULATED DEMAND RESPONSE REQUEST AS PART OF THE LIGHTING COMMISSIONING PROCESS. WHERE MORE THAN ONE WIRING TOPOLOGY AND/OR ZONE IS REQUIRED TO ACCOMPLISH DEMAND RESPONSE - ALL WIRING TOPOLOGIES AND ZONES SHALL BE TESTED ACCORDINGLY. SEE DLCS SOO FOR POWER REDUCTION PERCENTAGES BY ROOM TYPE THAT SHALL BE UTILIZED IN THE SIMULATED DEMAND RESPONSE TESTING.

   g. WHERE INDICATED ON DRAWINGS, PROVIDE DLCS DAYLIGHTING CONTROLS AS FOLLOWS:

      1) AUTOMATIC SWITCHING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO SWITCH SELECTED FIXTURES AND/OR LAMPS OFF AND ON BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE DAYLIGHTING CONTROLS SHALL BE CONNECTED TO THE CONTROL UNIT. THE SENSOR SHALL UTILIZE AN INTEGRAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. CONTROLS SHALL BE FULLY ADJUSTABLE FROM 1 TO 6,500 FOOTCANDLES AND SHALL BE PROVIDED WITH AN ADJUSTABLE TIME DELAY AND ADJUSTABLE DEAD BAND SETTINGS.

      2) AUTOMATIC DIMMING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO CONTINUOUSLY DIM SELECTED FIXTURES/LAMPS UP AND DOWN BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE SENSOR SHALL UTILIZE AN INTERNAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. 0-10 VOLT DIMMING CONTROLS SHALL RANGE FROM 0.2 VOLTS TO 10 VOLTS, WITH AMBIENT LIGHTING SET POINTS FROM 1-6,500 FOOTCANDLES.

      3) AUTOMATIC DAYLIGHTING CONTROLS SHALL BE CONNECTED TO CONTROL UNITS TO PERFORM THE FIXTURE SWITCHING/DIMMING REQUIREMENTS INDICATED BY THE DRAWINGS - CONNECTIONS DIRECTLY TO A BALLAST ARE NOT ALLOWED.

      4) DAYLIGHT SENSOR SHALL PROVIDE CONTROLS FOR UP TO THREE DISTINCT LIGHTING ZONES TO ALLOW SEPARATE CONTROL OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND SKYLIT ZONES.

   h. PROVIDE CONTROL UNITS AND SYSTEM FUNCTIONALITY AS FOLLOWS:

      1) CONTINUOUS DIMMING CONTROLS: SYSTEM-BASED WALL OR CEILING MOUNTED OCCUPANCY SENSORS (CONTINUOUS DIMMED - AUTO ON 50%/MANUAL ON 100%) SHALL BE PROVIDED WITH CONTROL UNITS TO PERFORM THE FIXTURE DIMMING REQUIREMENTS INDICATED BY THE BALLAST AND FIXTURE TYPE. SWITCH LEG INDICATED OUTSIDE THE PARENTHESIS TO BE CONFIGURED AS "AUTO ON 50%/MANUAL ON 100%" FOR CONTINUOUS DIMMED. SWITCH LEGS INSIDE PARENTHESIS INDICATES A MANUAL ACTION REQUIRED TO INCREASE LIGHTING LEVELS ABOVE 50%. CONTROL UNITS WITH INTEGRAL TRANSFORMERS SHALL BE UTILIZED TO PROVIDE POWER TO OCCUPANCY SENSORS AND OTHER CONTROL DEVICES. CONTROL UNITS SHALL BE LOCATED WITHIN JUNCTION BOXES AND NOT EXPOSED IN THE CEILING SPACE. CONTROL UNIT SHALL BE 120/277 VOLT RATED WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. ADDITIONAL RELAY ZONES MAY BE REQUIRED FOR THE ADDITION OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND PRIMARY SKYLIT UTILIZING THE SAME CONTROL CHANNEL. (I.E. EVEN THOUGH A SINGLE LETTER "a" IS INDICATED AT THE PRIMARY SENSOR), ADDITIONAL RELAYS WOULD BE REQUIRED FOR THE "a+" (PRIMARY SIDELIT DAYLIT ZONE), "a++" (SECONDARY SIDELIT DAYLIT ZONE), AND "a*" (SKYLIT DAYLIT ZONE). WHERE MORE THAN ONE CIRCUIT/THREE SWITCH LEGS/THREE RELAY ZONES ARE REQUIRED, PROVIDE ADDITIONAL FULL FEATURE CONTROL UNITS AS REQUIRED.

      2) WHERE ADDITIONAL 120/ 277 VOLT DEVICES, RECEPTACLES, OR BRANCH CIRCUITS ARE BEING CONTROLLED BY THE ROOM CONTROLLER, AN ADDITIONAL CONTROL UNIT SHALL BE PROVIDED AS REQUIRED.

      3) THE OCCUPANCY SENSOR CONTROLLED RECEPTACLE BRANCH CIRCUIT RELAY, CONNECTED TO THE SPACE'S DISTRIBUTED LIGHTING CONTROL OCCUPANCY SENSOR RELAY, SHALL TURN ON WHEN THE ROOM IS OCCUPIED, REGARDLESS OF THE CONFIGURATION OF THE LIGHTING CONTROL STATE - I.E. AUTO ON/MANUAL ON. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION. EVEN THOUGH A SINGLE SYMBOL IS INDICATED, MULTIPLE RELAYS MAY BE REQUIRED TO CONTROL THE REQUIRED NUMBER OF SWITCHLEGS/CIRCUITS.

      4) LOW VOLTAGE WALL CONTROLS SHALL BE DECORA STYLE, LOW-VOLTAGE, MOMENTARY SWITCHES WITH COLOR TO MATCH OTHER WALL DEVICES/SWITCHES. LOWER CASE LETTERS INDICATE SWITCHING CONFIGURATION. PROVIDE SWITCHING OR DIMMING CONTROL DEVICES AS REQUIRED BY DRAWINGS.

         DIMMING - NUMBER OF SWITCHES AS REQUIRED - 4 ZONES/YOKE MAX. EACH CONTROL ZONE TO HAVE A DEDICATED RAISE AND LOWER BUTTONS. FACTORY STANDARD COLOR BY ARCHITECT. EACH MULTI-ZONE DIMMING CONTROL STATION SHALL BE PROVIDED WITH MASTER ON AND MASTER OFF BUTTON IN ADDITION TO THE INDIVIDUAL CONTROL ZONE BUTTONS.

         WHERE INDICATED, PROVIDE VANDAL RESISTANT, HIGH ABUSE SWITCH CONNECTED TO THE DLCS INPUT/OUTPUT INTERFACE DEVICE FOR ON/ OFF AND DIMMING CONTROLS. SWITCHES LOCATED IN HIGH ABUSE AREAS (EXTERIOR AREAS OR AREAS SUBJECT TO WASH-DOWN ETC.) OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES SHALL BE VANDAL RESISTANT, STAINLESS STEEL, TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (1CMSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.

         WHERE INDICATED, PROVIDE A LOCKING SINGLE POLE SWITCH CONNECTED TO THE ROOM CONTROLLER VIA A INPUT/OUTPUT INTERFACE DEVICE FOR ON/OFF CONTROLS. DIRECT CONNECTION OF THE KEYED SWITCH ON THE LOAD SIDE OF THE CONTROLLER IS PROHIBITED. PROVIDE AT LEAST THREE (3) KEYS TO OWNER AT CONCLUSION OF PROJECT. ADJACENT SWITCH SHALL ONLY BRING LIGHTS FULL ON. KEYED SWITCH ALLOWS MANUAL OFF FUNCTIONALITY. DIMMER SWITCH ALLOWS AUTO-ON 50% OVERRIDE TO 100% ALL-ON AND SHALL NOT ALLOW LIGHTING LEVELS TO DECREASE IN ANY WAY.

   i. WHEN LIGHTING SYSTEM IS INDICATED WITH A CONNECTION TO A REMOTE EMERGENCY POWER SOURCE (I.E. AN INVERTER OR GENERATOR) PROVIDE UL924 LISTED INTERFACE EQUIPMENT TO ALLOW THE OVERRIDE OF THE LOCAL SWITCHING AND/OR DIMMING CONTROLS DURING A POWER OUTAGE.

   j. WHEN LIGHTING FIXTURES/CONTROLS ARE PROVIDED WITH LUTRON 3-WIRE DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW 0-10V CONTROL OF LUTRON 3-WIRE DIMMING BALLASTS. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.

   k. WHEN LIGHTING FIXTURES/CONTROLS ARE LINE VOLTAGE DIMMED OR PROVIDED ELECTRONIC LOW-VOLTAGE, MAGNETIC LOW-VOLTAGE, NEON/COLD CATHODE, LUTRON "TU-WIRE" DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW LINE VOLTAGE CONTROL. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.

   l. WHEN AV SYSTEM INTERFACE IS INDICATED, PROVIDE TWO-WAY CAPABLE RS-232 COMMUNICATIONS INTERFACE TO ALLOW AV CONTROL SYSTEM TO CALL ADDRESSABLE LIGHTING/ROOM SCENES. COMMUNICATIONS INTERFACE SHALL PROVIDE FEEDBACK TO THE AV CONTROL SYSTEM FOR LIGHT LEVEL STATUS.

   m. WHEN MOVEABLE PARTITION INTERFACE IS INDICATED, PROVIDE ALL COMPONENTS, SENSORS, WIRING, POWER SUPPLIES AND PROGRAMMING NECESSARY TO MONITOR AND REPORT MOVEABLE PARTITION(S) OPEN/CLOSED STATUS. DLCS SYSTEM SHALL AUTOMATICALLY ADOPT SINGLE ROOM OR MULTI-ROOM CONTROL PROFILES AS REQUIRED BY PARTITION STATUS.

   n. WHEN NETWORKED LIGHTING CONTROL RELAY PANEL(S) ARE INDICATED, PROVIDE ALL COMPONENTS, WIRING, AND PROGRAMMING NECESSARY TO INTEGRATE RELAY PANELS WITHIN THE DLCS SYSTEM.

13. GENERAL SYSTEM REQUIREMENTS:

   a. ALL EQUIPMENT SHALL FEATURE A PRE-SET DEFAULT OPERATION. UPON INITIAL POWER UP, THE SYSTEM SHALL AUTOMATICALLY IDENTIFY THE DEVICES ON THE LOCAL NETWORK, THEN ENTERS THE PRE-SET CONFIGURATION TO ALLOW BASIC OPERATION OF ALL DEVICES. IN MOST APPLICATIONS THE RELATIONSHIP BETWEEN QUANTITY OF LOADS, SWITCHES AND OCCUPANCY SENSORS WILL NOT REQUIRE ANY ADJUSTMENTS - ALTHOUGH AN ADJUSTMENT TO THE AUTOMATIC SETTINGS SHALL BE INCLUDED IN THE BASE BID.

   b. ALL EQUIPMENT SHALL FEATURE A CONFIGURATION (CONFIG) BUTTON ON MOST DEVICES THAT ALLOWS EASY ACCESS TO THE INTEGRATED AUTO-CONFIGURATION TECHNOLOGY TO MODIFY SYSTEM OPERATION. FUNCTIONALITY OF THE CONFIG BUTTON SHALL BE STANDARDIZED THROUGHOUT THE PRODUCT LINE, AS IS THE OPERATION OF THE CONFIG LED INDICATORS.

   c. NETWORK DLCS SYSTEM CONTROL/CONFIGURATION SOFTWARE SHALL BE PRE-CONFIGURED TO THE MAXIMUM EXTENT POSSIBLE OFF-SITE AT THE DLCS FACTORY OR ENGINEERING FACILITY. THE CONTRACTOR SHALL DOCUMENT EVERY NETWORK COMPONENT'S LOCATION (ROOM AND FLOOR NUMBER) AND ITS' RESPECTIVE SERIAL NUMBER OR OTHER DEVICE IDENTIFIER ON A FULL SIZE FLOOR PLAN IN PDF FORMAT. HANDWRITTEN DOCUMENTATION IS UNACCEPTABLE. THE PREFERRED ACCEPTABLE METHOD OF NETWORK COMPONENT DOCUMENTATION IS COLLECTION OF FACTORY-PROVIDED, SELF-ADHESIVE, BAR-CODE IDENTIFIERS DESIGNED TO BE REMOVED FROM NETWORK COMPONENTS AS THEY ARE INSTALLED IN THE FIELD. BAR CODES IDENTIFIERS SHALL BE APPLIED TO A PAPER COPY OF A FLOOR PLAN WHICH SHALL BE PROVIDED TO THE FACTORY FOR USE IN OFF-SITE DLCS NETWORK PROGRAMMING AND CONFIGURATION. THE RESULTS OF EITHER METHOD SHALL BE SCANNED AND SUBMITTED AS A PART OF THE PROJECT CLOSEOUT DOCUMENTATION.

   d. NETWORK SYSTEMS SHALL BE INSTALLED BY VENDOR-CERTIFIED CONTRACTOR FIELD PERSONNEL TO PERFORM NETWORK INSTALLATIONS INCLUDING ACCURATE, REPEATABLE COMMUNICATIONS CABLING TERMINATIONS (BOTH LAN AND MS/TP TYPE). INCLUDE CERTIFICATES FOR EACH CERTIFIED INSTALLER TO BE UTILIZED ON THE PROJECT AS A PART OF THE PROJECT SUBMITTALS. A CERTIFIED FIELD INSTALLER SHALL BE ON-SITE SUPERVISING COMMUNICATIONS CABLING AND CABLING TERMINATIONS AT ALL TIMES WHEN THIS WORK IS OCCURRING ON THE PROJECT.

   e. ANY BATTERY-POWERED DLCS COMPONENTS SHALL BE PROVIDED WITH A 10 YEAR EXPECTED BATTERY LIFE. EACH COMPONENT SHALL BE PROVIDED WITH BOTH A LOCAL LOW BATTERY INDICATION ON EACH DEVICE AND A SOFTWARE-BASED LOW BATTERY ALARM. WHERE A WIRELESS DLCS SYSTEM COMPONENT IS AVAILABLE EITHER AS A BATTERY POWERED DEVICE OR A LINE/LOW VOLTAGE POWERED DEVICE, PROVIDE THE LINE/LOW VOLTAGE VERSION ALONG WITH ANY LINE OR LOW VOLTAGE WIRING, CONDUIT AND BACK BOXES TO LIMIT THE NUMBER OF BATTERIES WITHIN THE DLCS INSTALLATION TO A MINIMUM.

14. INSTALLATION OF CONTROL UNITS, OCCUPANCY/VACANCY SENSORS AND DAYLIGHTING CONTROLS:

   a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE NINETY (90) TO ONE HUNDRED (100) PERCENT COVERAGE AND SHALL ACCOMMODATE ALL HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM. THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS THAT ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOM. WHERE PIR-ONLY WIRELESS CEILING OR FIXTURE-INTEGRAL OCCUPANCY SENSORS ARE UTILIZED, PROVIDE QUANTITY AS REQUIRED TO MAINTAIN THE SAME COVERAGE AND SAME MOVEMENT DETECTION SENSITIVITY AS PROVIDED BY WIRED DUAL TECHNOLOGY SENSORS. ADDITIONALLY, IT MAY BE NECESSARY FOR THE CONTRACTOR TO MAKE ADJUSTMENTS, CHANGE THE LOCATION OR TYPE OF SENSOR TO OBTAIN PROPER OPERATION IN A SPECIFIC ROOM. THE USE OF FACTORY-SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY. WHERE MASKING IS NOT AVAILABLE AS A FACTORY-SUPPLIED ITEM, ALTERNATE FACTORY-SUPPLIED MEANS OF COMPLIANCE OR METHODS MAY BE ACCEPTABLE. THE CONTRACTOR SHALL HAVE FINAL RESPONSIBILITY FOR PROPER OPERATION OF THE SYSTEM IN EACH ROOM AND SHOULD THEREFORE MAKE LABOR ALLOWANCES FOR CHANGES AND ADJUSTMENTS.

   b. CEILING MOUNTED SENSORS SHOULD BE LOCATED IN THE SPACE TO BE COVERED, A MINIMUM OF 4', PREFERABLY 5', AWAY FROM THE LATCH SIDE OF THE DOOR, 2" TO 3" AWAY FROM THE WALL AND 3' TO 4' FROM AN AIR SUPPLY REGISTER. DO NOT MOUNT SENSORS OVER A DOORWAY OR BEHIND A FULL HEIGHT DOOR. SENSORS SHALL BE AIMED IN THE DIRECTION OF THE SPACE TO BE COVERED. DO NOT AIM SENSORS TOWARD A DOORWAY. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY.

   c. ALL SENSORS SHALL BE ADJUSTED PER THE DLCS SOO/ZONE SCHEDULE. WHERE A ROOM TYPE IS NOT INDICATED ON THE DLCS SOO, ADJUST FOR FOR A TIME DELAY OF TWENTY (20) MINUTES.

   d. EACH DAYLIGHTING CONTROL SYSTEM/ZONE SHALL BE INSTALLED/ADJUSTED AS FOLLOWS:

      1) AUTOMATIC SWITCHING/DIMMING CONTROL PLACEMENT: IT IS IMPORTANT TO SELECT A LOCATION IN THE DAYLIGHTING ZONE WHERE THE DAYLIGHT CONTRIBUTION IS REPRESENTATIVE OF THE DAYLIGHTING THROUGHOUT THE ZONE. A GOOD LOCATION IS OFTEN BETWEEN THE WINDOW AND/OR DAYLIGHTING SOURCE AND THE FIRST ROW OF LIGHTING FIXTURES. AVOID INSTALLATIONS WITHIN 6'-0" OF A WINDOW, MORE THAN 15'-0" FROM A WINDOW, AND LESS THAN 4'-0" TO A LIGHTING FIXTURE WITH INDIRECT DISTRIBUTION.

      2) AUTOMATIC STEP-DIMMED/CONTINUOUS DIMMING CONTROLS SHALL NOT BE OPERATIONAL UNTIL THE LAMPS HAVE HAD AN OPPORTUNITY TO "BURN IN" - TYPICALLY A MINIMUM OF 10 HOURS - OR GREATER AS RECOMMENDED BY THE RESPECTIVE LAMP AND BALLAST MANUFACTURERS.

      3) AUTOMATIC SWITCHING/STEP-DIMMED CONTROL SETTINGS:

         CONTRACTOR TO UTILIZE THE PHOTOSENSOR AUTOMATIC CALIBRATION AND SETPOINT FUNCTIONS TO ESTABLISH THE OPTIMAL ON/OFF SETPOINTS, TIME DELAYS AND DEADBAND SETTINGS FOR EACH CONTROL ZONE INDICATED WITH DAYLIGHTING CONTROLS.

      4) AUTOMATIC CONTINUOUS DIMMING CONTROL SETTINGS SHALL BE SET USING AN ILLUMINANCE METER, AT A LOCATION FURTHEST FROM THE DAYLIGHT SOURCE, AS FOLLOWS:

         - NIGHT CONDITIONS/SETTING: SET AND ADJUST THE ILLUMINANCE LEVELS TO BE PER THE "TARGET ILLUMINATION" SYMBOL VALUE - SEE DLCS SOO/ZONE SCHEDULE. THE VALUE MUST BE AT OR BELOW THE "TARGET ILLUMINATION" SYMBOL VALUE.

         - DAY CONDITIONS/SETTING: WITH WINDOW COVERINGS IN THE "OPEN" POSITION AND THE DAYLIGHT CONTRIBUTION (LIGHTS OFF) AT A MAXIMUM OF 75% OF THE "TARGET ILLUMINATION" SYMBOL VALUE, SET AND ADJUST THE COMBINED ARTIFICIAL ILLUMINATION AND DAYLIGHTING ILLUMINATION TO MEET THE SYMBOL VALUE AT THE SAME LOCATION/POSITION OF THE NIGHT SETTINGS.

         - RAMP UP/DOWN RATES/CUT-OFF TIME DELAY.

   e. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A PRE-INSTALLATION MEETING WITH THE MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE, AT THE PROJECT, TO VERIFY PLACEMENT OF SENSORS AND INSTALLATION CRITERIA.

   f. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF BUILDING STRUCTURAL COMPONENTS.

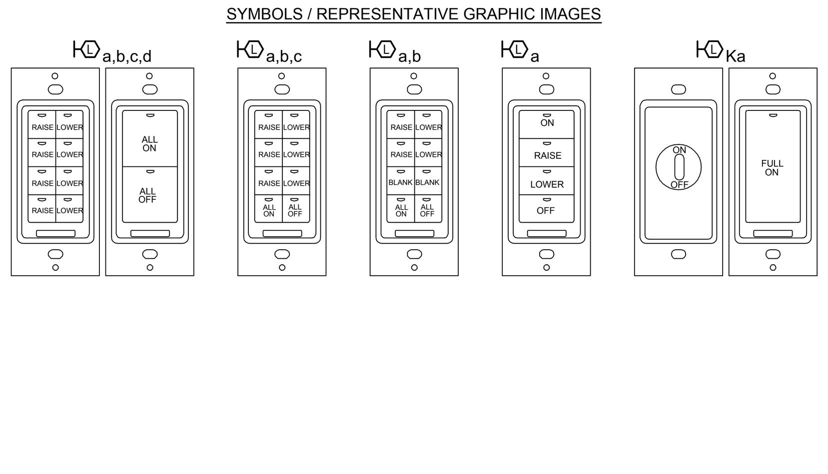
   g. CONNECT ALL DEVICES AS REQUIRED. UNLESS PROHIBITED BY LOCAL CODE, CONNECTIONS SHALL BE MADE WIRELESSLY OR WITH PLENUM-RATED CABLING ROUTED NEATLY INTO AND ABOVE THE ACCESSIBLE CEILING. CABLES SHALL BE SUPPORTED WITH DEDICATED SUPPORT WIRES AND J-HOOKS. WHERE LOCAL CODE OR PROJECT SPECIFICATIONS REQUIRES LOW VOLTAGE CABLING TO BE ROUTED IN CONDUIT, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED SYSTEM OF CONDUITS AND JUNCTION BOXES TO ROUTE CONNECTION CABLING. J-BOXES/CONTROLLERS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS AND NEVER IN HARD-LID CEILING AREAS. PRE-TERMINATED CABLING SHALL BE PROVIDED BY THE SYSTEM MANUFACTURER AND SHALL BE GREEN IN COLOR UNLESS IT IS ROUTED IN AN EXPOSED CEILING CONDITION WHERE IT SHALL BE BLACK, WHITE OR GRAY AS DIRECTED BY THE ARCHITECT.

   h. INSTALL LINE VOLTAGE CONDUCTORS, LOW VOLTAGE CONDUCTORS AND COMMUNICATIONS CABLING BETWEEN LIGHTING FIXTURES AND DLCS COMPONENTS PER THE DLCS MANUFACTURER'S RECOMMENDATIONS REGARDING CONDUCTOR ROUTING, CONDUCTOR SEPARATION AND CONDUCTOR TERMINATIONS. CONTRACTOR SHALL UTILIZE INSTALLATION MEANS AND METHODS THAT DO NOT COMPROMISE THE DLCS SYSTEM WARRANTY.

   i. WHERE CODE OR LOCAL AHJ REQUIREMENTS REQUIRE THE INSTALLATION OF ALL LOW-VOLTAGE CONDUCTORS TO BE INSTALLED IN CONDUIT - CONTRACTOR TO PROVIDE ALL REQUIRED MANUFACTURER SPECIFIC EQUIPMENT JUNCTION BOXES AND CONDUIT ADAPTERS AS REQUIRED.

   j. UNLESS PROHIBITED BY LOCAL CODE, ALL CONTROL UNITS SHALL BE PLENUM-RATED. WHERE CONTROL UNITS ARE LOCATED IN EXPOSED CEILING SPACES, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED VENTILATED CONTROL UNIT ENCLOSURES FOR CONCEALMENT. COLOR OF ENCLOSURE PER ARCHITECT.

SYMBOLS / REPRESENTATIVE GRAPHIC IMAGES



15. DLCS START-UP, BUILDING AUTOMATION SYSTEM (BAS) INTEGRATION, COMMISSIONING, & TRAINING

   a. PRIOR TO NETWORK SYSTEM FACTORY START-UP, THE CONTRACTOR SHALL 1) TEST ALL COMMUNICATIONS CABLING FOR SHORTS, POLARITY REVERSALS AND BAD TERMINATIONS/CONNECTIONS AND MAKE NECESSARY REPAIRS AND 2) DEMONSTRATE FULL CONNECTIVITY TO ALL NETWORK AND LOCAL (IN-ROOM) DEVICES VIA MS/TP CAPTURE OR OTHER VENDOR SPECIFIC TESTING PROCESS. CONTRACTOR SHALL PROVIDE A TEST REPORT OUTLINING TEST COMPLETION AND ANY REPAIRS MADE AND CERTIFY THAT NETWORK DEVICE AND LOCAL DEVICE CONNECTIVITY HAS BEEN ACHIEVED PRIOR TO SCHEDULED FACTORY START-UP. BASED ON PAST PROJECT EXPERIENCE, FAILURE TO PERFORM ANY OF THE ABOVE STEPS HAS RESULTED IN BOTH VERY INEFFICIENT FACTORY START-UP AND PROJECT DELIVERY DELAY. ANY ADDITIONAL COSTS ARISING OUT OF A FAILURE TO COMPLETE THIS TESTING SHALL BE BORNE SOLELY BY THE CONTRACTOR.

   b. NETWORK SYSTEMS SHALL BE INSPECTED, STARTED UP, CONFIGURED AND PROGRAMMED BY FACTORY START-UP TECHNICIANS TO MEET THE INTENDED INTEGRATION AND CONTROLS SCENARIOS AND FUNCTIONALITY DESIRED BY THE SYSTEM USER. EFFORT SHALL INCLUDE REQUESTING ANY END-USER SPECIFIC NETWORK ADDRESSING OR OTHER INSTRUCTIONS FOR THE DLCS TO RESIDE ON THE END-USER LAN. FOR PROJECTS WHERE THE END-USER DOES NOT WANT THE DLCS TO COMMUNICATE WITH THE END-USER LAN, CONTRACTOR SHALL PROVIDE AND CONFIGURE ALL DLCS NETWORK COMPONENTS AS REQUIRED FOR THE SYSTEM TO FUNCTION IN ISOLATION WITHOUT PERMANENT LAN OR INTERNET ACCESS.

   c. WHERE THE DLCS SCHEDULE INDICATES BAS INTEGRATION IS REQUIRED OR WHERE REQUIRED PER MECHANICAL & MECHANICAL CONTROLS DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR'S DLCS FACTORY TECHNICIAN SHALL ASSIST THE BAS CONTRACTOR WITH DLCS POINT INTEGRATION. THE PRIMARY OBJECTIVE OF DLCS INTEGRATION WITH THE BAS IS TO ALLOW FOR OCCUPANCY-BASED HVAC SETBACK, TO ENABLE/CONTROL LIGHTING SCHEDULES AND TO INTEGRATE ZONE OR AREA OCCUPANCY LIGHTING STATUS INTO A BAS GRAPHICAL USER INTERFACE DISPLAY BASED ON ARCHITECTURAL FLOOR PLAN(S). SECONDARY OBJECTIVES INCLUDE; REMOTE TROUBLESHOOTING OF USER COMPLAINTS, INTEGRATION INTO FUTURE CONTINUOUS COMMISSIONING SYSTEMS ETC AND AS OUTLINED IN THE MECHANICAL CONTROLS DRAWINGS AND SPECIFICATIONS AND AS FOLLOWS:

      1) THE PRIMARY PROTOCOL FOR INTEGRATION SHALL BE BACNET PER ANSI/ASHRAE 135-2016 – OR LATEST PUBLISHED STANDARD.

      2) WHERE A DLCS NETWORK COMPONENT IS BTL (BACNET TESTING LAB)-LISTED, IT SHALL BE LABELED AS SUCH. WHERE A DLCS NETWORK COMPONENT IS FOUND TO CAUSE BACNET INTEGRATION ISSUES, THE DLCS MANUFACTURER SHALL BE RESPONSIBLE FOR ALL COSTS RELATED TO BOTH TROUBLESHOOTING THE ISSUE AND THE ULTIMATE RESOLUTION OF THE ISSUE TO INCLUDE COSTS ASSOCIATED WITH USE OF BACNET PROTOCOL ANALYZERS TO IDENTIFY THE PROBLEM UP TO AND INCLUDING LABOR, MATERIAL, EQUIPMENT, SOFTWARE CODING, FIRMWARE REVISIONS, AND RECOMMISSIONING ASSOCIATED WITH REPAIR, REPLACEMENT AND/OR ADDITIONAL COMPONENTS NEEDED TO CORRECT THE INTEGRATION ISSUE.

      3) THE DLCS NETWORK SHALL BROADCAST ANY OCCUPANCY SENSOR STATUS VIA CHANGE OF VALUE TO THE BAS IN LESS THAN 5 SECONDS. POLLING BY THE DLCS AS A METHOD OF OBTAINING OCCUPANCY SENSOR VALUES IS UNACCEPTABLE DUE TO EXCESSIVE LATENCY AND RESULTANT SLOW SYSTEM RESPONSE TIME.

      4) WHILE THE DLCS SHALL BE CAPABLE OF PROVIDING A MUCH LARGER VARIETY OF BACNET POINTS, THE FOLLOWING ARE REQUIRED FOR BASIC INTEGRATION AT A MINIMUM (SEE MECHANICAL DRAWINGS AND SPECIFICATIONS FOR SPECIFIC POINT INTEGRATION REQUIREMENTS):

         - INTERIOR DLCS POINTS
         -- ROOM OCCUPANCY STATE: REPORTS OCCUPIED VS UNOCCUPIED.
         -- INDIVIDUAL OCCUPANCY SENSOR STATE: REPORTS OCCUPIED VS UNOCCUPIED AREA(S).
         -- LOAD/RELAY STATE: REPORTS LIGHT FIXTURE ON /OFF STATUS.
         -- LOAD DIMMING LEVEL: REPORTS AUTOMATIC OR MANUAL DIMMING STATUS.
         -- DAYLIGHT SENSOR INHIBITING: REPORTS DAY LIGHT SENSOR HOLDING LIGHTS AT A DIMMED LEVEL.
         -- ROOM SCHEDULE STATE: REPORTS NORMAL VS AFTER HOURS SCHEDULE MODE.

         - EXTERIOR DLCS POINTS
         -- RELAY PANEL SCHEDULE STATE: REPORTS NORMAL VS AFTER HOURS SCHEDULE MODE.
         -- INDIVIDUAL RELAY STATE: REPORTS LIGHT FIXTURE ZONE ON /OFF STATUS.

      5) A PROJECT-SPECIFIC BACNET OBJECT NAMING PROTOCOL SHALL BE DEVELOPED AND PROVIDED BY THE MECHANICAL CONTROLS/BAS CONTRACTOR TO BE USED BY THE DLCS CONTRACTOR IN NAMING DLCS BACNET OBJECTS INTEGRATED INTO THE BAS. CONFIRM DLCS ADDRESSING/OBJECT NAMING SCHEME WITH MECHANICAL CONTROLS/BAS CONTRACTOR PRIOR TO IMPLEMENTING IN ORDER TO REDUCE INTEGRATION CONFLICTS.

      6) ALL OF THE ABOVE POINTS, USING THE OBJECT NAMING SCHEME PROVIDED BY THE MECHANICAL CONTROLS/BAS CONTRACTOR, SHALL BE PROVIDED TO THE BAS CONTRACTOR IN AN ELECTRONIC TABLE FORMAT TO INCLUDE; BACNET OBJECT NAME, OBJECT SERIAL NUMBER, ROOM NAME AND NUMBER FOR EACH DEVICE ON THE PROJECT. FOR RELAY PANEL-BASED OBJECTS, PROVIDE ROOM NAMES OR EXTERIOR LIGHTING ZONE NAMES AS APPROPRIATE. PROVIDE BUILDING NUMBER FOR EACH DEVICE WHERE THE PROJECT CONSISTS OF MORE THAN ONE BUILDING. SEE MECHANICAL CONTROLS DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL FORMATTING REQUIREMENTS.

      7) IN ADDITION TO A POINTS LIST TABLE, PROVIDE A SHOP DRAWING DEPICTING; THE LOCATION OF EACH OCCUPANCY AND DAYLIGHT SENSOR AND EACH SENSOR OBJECT NAME. WHERE RELAY PANELS ARE PROVIDED, ALSO INDICATE EACH INTERIOR AND EXTERIOR RELAY PANEL ZONE CONTROL AREA.

      8) INCLUDE SUFFICIENT MEETING AND COORDINATION EFFORT WITH THE BAS AND MECHANICAL CONTRACTORS TO REVIEW THE ABOVE INFORMATION. WHERE OCCUPANCY SENSOR ZONES DO NOT CORRESPOND TO HVAC VARIABLE AIR VOLUME (VAV) ZONES, EC/DLCS VENDOR SHALL ASSIST THE BAS AND MECHANICAL CONTRACTORS IN RESOLVING THE CONFLICT THROUGH TROUBLESHOOTING DEVICE/OBJECT NAMING SCHEMES.

   d. UPON COMPLETION OF THE INSTALLATION, THE SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE-FREE INSTALLATION. THIS COMMISSIONING EFFORT SHALL BE PERFORMED IN A MANNER THAT MEETS ALL APPLICABLE FEDERAL, STATE, LOCAL ENERGY CODES AND/OR LEED CERTIFICATION PROGRAMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILLING OUT ALL APPLICABLE PAPERWORK AND/OR FORMS. CONTRACTOR TO PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER OF RECORD PRIOR TO THE PUNCH LIST SITE VISIT FOR REVIEW AND POSSIBLE RECOMMENDATION OF SETTING REVISIONS.

      CONTRACTOR SHALL INCLUDE ALL COST IN THE BASE BID AND PROVIDE THE FOLLOWING WORK FOR EVERY CONTROL ZONE:

      - INITIAL SETTINGS AS INDICATED ON SOO/ZONE SCHEDULE.

      - COMMISSIONING OF EACH LIGHTING CONTROL DEVICE/ZONE PER NOTES BELOW.

      - A FOLLOW UP SETTING(S) ADJUSTMENT, AS DICTATED BY THE ELECTRICAL ENGINEER, BASED UPON A REVIEW OF THE RESULTS OF THE CONTRACTOR'S COMMISSIONING EFFORT AND FINAL PUNCH LIST.

   e. REGARDLESS OF THE LESSER REQUIREMENTS OF ANY AHJ COMMISSIONING FORMS, THE FOLLOWING MINIMUM COMMISSIONING ITEMS MUST BE COMPLETED FOR EACH DEVICE/LIGHTING CONTROL ZONE:

      - MEASURED LIGHTING POWER (KW) AT THE FULLY DIMMED CONDITION.

      - MEASURED LIGHTING POWER (KW) AT FULL LIGHT OUTPUT.

      - ONLY LIGHTING FIXTURES IN THE DAYLIGHTING ZONE ARE AFFECTED BY THE DAYLIGHTING CONTROLS.

      - LIGHTING POWER IS REDUCED BY AT LEAST 50% IN WINDOW DAYLIT AREAS AND 65% IN SKYLIGHT DAYLIT AREAS.

      - DEMAND RESPONSE TESTING, RECORDING, PRE-TEST, "OCCUPIED" STEADY-STATE LIGHTING POWER (KW) & SIMULATED DEMAND RESPONSE LIGHTING POWER (KW) DEMONSTRATING AN OVERALL 10% ENERGY REDUCTION.

      - DIMMING SYSTEMS PROVIDE FLICKER FREE OPERATION.

      - ILLUMINATION LEVELS, LOCATIONS OF MEASUREMENTS, SPECIFIC DEVICE SETTINGS ARE DOCUMENTED ON AS-BUILTS.

   f. AS PART OF THE "RECORD DRAWINGS", INDICATE ON THE REFLECTED CEILING PLAN THE EXACT LOCATION (CEILING TILE OR ACCESS PANEL) OF ANY ABOVE CEILING DEVICE.

   g. WHEN THE PROJECT REQUIRES TWENTY-FIVE (25) OR MORE CEILING MOUNTED SENSORS, CONTRACTOR TO PROVIDE A REMOTE CONTROL PROGRAMMING/CONTROL DEVICE, AND HAND IT TO THE OWNER AT THE END OF THE PROJECT.

   h. THE CONTRACTOR TO INCLUDE ALL COSTS TO ENSURE THAT PROGRAMMING IS PERFORMED BY A FACTORY PERSON OR AUTHORIZED TECHNICIAN. FACTORY TECHNICIAN TO ALSO PROVIDE USER/OWNER TRAINING AT TURNOVER OF BUILDING WITH A SECOND TRAINING 60 TO 90 DAYS AFTER OCCUPANCY. TRAINING TO INCLUDE SYSTEM OVERVIEW, TRAINING ON SYSTEM SOFTWARE, PREVENTATIVE MAINTENANCE, SERVICE AND SUPPORT INFORMATION THAT IS DEEMED NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, MAINTENANCE, ADJUSTMENT, AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES AND LIGHTING CONTROL SYSTEMS.

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WSP Job #: US0022861.0069

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901 SKYHAWK
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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
EX. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108

DATE ISSUED: 11/19/2024

SCALE: As indicated

SHEET NUMBER: **E51.3**

SHEET TITLE:

DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS

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PLAN CHECK #00856737-CNEW

AREA TYPE	OCC SENSOR					INTERIOR DAYLIGHT SENSOR			EXTERIOR PHOTOCELL		ASTRONOMICAL TIME CLOCK CONTROLS			LOCAL CONTROL			SYSTEM		NOTES	REMARKS
	AUTO ON (PERCENTAGE OF NOMINAL FC)	MANUAL ON (WHEN SWITCH / BUTTON IS PRESSED)	REDUCED OUTPUT OR OFF	REDUCED OUTPUT OR OFF DURING NORMAL HOURS	REDUCED OUTPUT OR OFF AFTER NORMAL HOURS	AUTO OFF AT TARGET FC FIXTURES DIM TO OFF	FIXTURES REMAIN ON AT LOWEST LEVEL	TARGET ILLUMINATION LEVEL NOMINAL FOOTCANDLE & METER HEIGHT	EXTERIOR PHOTOCELL ON	EXTERIOR PHOTOCELL OFF	BEGIN NORMAL OPERATING HOURS (ASTRONOMICAL TIME CLOCK TURN ON)	END NORMAL OPERATING HOURS (ASTRONOMICAL TIME CLOCK TURN OFF)	AFTER NORMAL HOURS OVERRIDE CANNOT EXCEED 2 HOURS PER §130.1(c)3.B	ON / OFF	ON / OFF / RAISE / LOWER DIMMING	SCENE SELECTOR	PLUG LOAD CONTROL	DEMAND RESPONSE LIGHTING REDUCTION MIN. 15% COMMERCIAL BLDG >10,000 SQ FT	PROGRAMMING NOTES PLEASE SEE BELOW	
ALL VALUES ARE BASED ON CALIFORNIA TITLE 24 2016																				PLEASE REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. O = INDICATES OPTIONAL COMPLIANCE. MAY NOT BE USED. PLEASE REFER TO PLANS. ● = INDICATES REQUIRED COMPLIANCE ALL LIGHTING WITHIN DAYLIGHTING ZONES SHALL BE COMMISSIONED AT NIGHT, WITH NO DAYLIGHT CONTRIBUTION, IN ORDER TO ESTABLISH BASELINE ILLUMINATION LEVELS. "NORMAL HOURS" REFERS TO OWNER-DETERMINED OPERATING HOURS. "AFTER HOURS" REFERS TO ANY TIME PERIOD BEFORE OR AFTER OWNER-DETERMINED OPERATING HOURS. WHERE EXTERIOR PHOTOCELL CONTROL IS INDICATED, PLEASE PROVIDE EXTERIOR NORTH FACING DAYLIGHT SENSOR.
CONFERENCE ROOM / MEETING / HUDDLE ROOM	ON AT 70%	ON AT 100%	OFF AFTER 5 MIN.	-	-	-	●	40-50 FC +0" AFF	-	-	-	-	-	-	●	○	●	●	A,C,D,F	
CORRIDOR	ON AT 100%	-	-	DIM 50% AFTER 5 MIN.	OFF AFTER 5 MIN.	-	●	5-10 FC +0" AFF	-	-	06:00	18:00	●	-	●	-	-	●	A,B,C,J,M	§130.1(a)1 EXCEPTION 1 - MANUAL CONTROL MAY BE LOCATED IN A SEPARATE, SECURED LOCATION. PROVIDE DUAL MODE CONTROL PER DLCS SPECIFICATIONS.
ELECTRICAL ROOM, MECHANICAL ROOM, TELECOMMUNICATIONS ROOM	-	-	-	-	-	-	-	10 FC +5' AFF	-	-	-	-	-	●	-	-	-	-	-	LOCAL TOGGLE SWITCH ONLY
LOBBY MAIN BUILDING	-	-	-	-	-	-	●	15 FC +30" AFF	-	-	6:00	21:00	●	-	-	●	●	●	A,B,C,D,J, M	ALL LIGHTING TRANSITIONS DURING OPERATING HOURS SHALL BE MINIMUM 5-MINUTE FADE TIMES. §130.1(a)2 EXCEPTION 1 - MANUAL CONTROL MAY BE SECURED, OR LOCATED IN ANOTHER LOCATION WITH VISUAL INDICATION OF LIGHTING STATUS.
OFFICE, LARGE >250 SQ FT	ON AT 70%	ON AT 100%	OFF AFTER 20 MIN.			'○	●	40-50 FC +30" AFF	-	-	-	-	-		●	○	●	●	A,B,D,F	
OFFICE, SMALL ≤250 SQ FT	ON AT 70%	ON AT 100%	OFF AFTER 20 MIN.			'○	●	40-50 FC +30" AFF	-	-	-	-	-		●	○	●	●	A,B,D,F	
OPEN OFFICE / OFFICE KITCHEN AREA / LOUNGE / BREAK ROOM / WORKROOM	ON AT 80%	ON AT 100%	OFF AFTER 20 MIN.			'○	●	40-50 FC +30" AFF	-	-	-	-	-		●	○	●	●	A,B,D,F	
RESTROOMS (2) OR MORE STALLS	ON AT 100%	-	5 MIN. TO OFF	-	-	-	-	20-30 FC	-	-	-	-	-	●	-	-	-	-	-	§130.1(b) EXCEPTION 2 - DIMMABLE LUMINAIRES NOT REQUIRED. §130.1(c)5 - [DUAL MODE] OCCUPANCY SENSORS REQUIRED. §130.1(a)1 EXCEPTION 1 - MANUAL CONTROL MAY BE LOCATED IN A SEPARATE, SECURED LOCATION.
RESTROOMS (1) STALL	ON AT 100%	-	5 MIN. TO OFF	-	-	-	-	20-30 FC	-	-	-	-	-	●	-	-	-	-	-	§130.1(b) EXCEPTION 2 - DIMMABLE LUMINAIRES NOT REQUIRED. §130.1(c)5 - OCCUPANCY SENSORS REQUIRED. §130.1(a) - PROVIDE MANUAL AREA CONTROL IN RESTROOM.
PARKING GARAGE																				
Exterior Lighting, Timeclock / Photocell Control																				
EXTERIOR LIGHTING ≤24 FT & >76W 24 FT OR SHORTER 76W OR MORE	ON AT 100%	ON AT 100%	PERIOD 1: 50% 10 MIN. PERIOD 2: 40% 10 MIN.	-	-	-	-	-	●	-	ON 100% AT DUSK	OFF AT DAWN	-	-	-	-	-	-	B,J	§130.2(c) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALL CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c)3Di - FACADE, ORNAMENTAL HARDSCAPE, OUTDOOR DINING AND SALES FRONTAGE LIGHTING ARE EXEMPT FROM MOTION SENSOR REQUIREMENT. OCCUPANCY SENSOR REQUIRED; LIGHTING SHALL REMAIN ON FROM DUSK UNTIL DAWN, REDUCED OUTPUT BETWEEN 40% AND 80% WHEN VACANT OR AFTER LOCAL CURFEW, IF REQUIRED. NO MORE THAN 1,500W OF LIGHTING CONTROLLED TOGETHER.
EXTERIOR FAÇADE & OUTDOOR DINING	-	-	-	-	-	-	-	-	●	●	ON 100% AT DUSK	OFF AT DAWN	-	-	-	-	-	-	J,L	§130.2(C) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALLY CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c) 3 NO MORE THAN 1,500W OF LIGHTING CONTROLLED FROM A SINGLE SENSOR. §130.2(c)3Di - EXTERIOR FACADE & OUTDOOR DINING ARE EXEMPT FROM MOTION SENSOR REQUIREMENT.
LANDSCAPE LIGHTING, ORNAMENTAL HARDSCAPE LIGHITNG	-	-	-	-	-	-	-	-	●	●	ON 100% AT DUSK	OFF AT DAWN	-	-	-	-	-	-	J	§130.2(C) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALLY CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c) 3 NO MORE THAN 1,500W OF LIGHTING CONTROLLED FROM A SINGLE SENSOR. §130.2(c)3 - LUMINAIRES WITH A MAXIMUM RATED WATTAGE OF 40W EACH ARE NOT REQUIRED TO HAVE MOTION SENSING CONTROLS.

PROGRAMMING NOTES

NOTES:

A. PROVIDE DAYLIGHTING CONTROL FOR PRIMARY AND SECONDARY DAYLIT OR SKYLIT ZONES WERE REQUIRED. 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.

B. CONTROLLED BY OCCUPANCY SENSOR: AUTO AND / OR MANUAL ON UNLESS OVERRIDDEN BY DAYLIGHTING SENSORS.

C. MANUAL CONTROL WALL STATIONS FOR THESE AREAS SHALL BE LOCATED IN THE NEAREST BACK OF HOUSE CLOSET, CONTROL BOOTH, ELECTRICAL ROOM, ETC. TO PREVENT UNAUTHORIZED USERS FROM ADJUSTING LIGHTING LEVELS.

D. CONFIGURE LIGHTING CONTROL TO PROVIDE PROPORTIONATE RAISE / LOWER OF ALL ROOM LIGHTING TOGETHER, REGARDLESS OF LOCATION IN DAYLIGHTING AND NON-DAYLIGHTING ZONES WHERE THEY OCCUR.

E. PROVIDE RS-232 OR ETHERNET CONNECTION TO AV SYSTEM TO ALLOW RECALL OF LIGHTING PRESETS BY AV SYSTEM WITHIN THIS ROOM, IF REQUESTED BY OWNER.

F. PROVIDE CONTROLLED RECEPTACLES IN THIS ROOM AS REQUIRED. CONTROLLED RECEPTACLE MUST BE WITHIN 6'-0" OF UNCONTROLLED RECEPTACLE.

G. PROVIDE MOMENTARY CONTACT CLOSURE FROM FACP TO FORCE ALL LIGHTING IN THIS AREA TO 100% DURING AN ALARM EVENT. AUTOMATICALLY RESTORE LIGHTING TO NORMAL WHEN EVENT HAS CLEARED.

H. LIGHTING IN THIS SPACE MAY BE CONTROLLED FROM A STAGE LIGHTING SYSTEM. THE STAGE LIGHTING SYSTEM SHALL BE PROVIDED WITH A TITLE 24 COMPLIANT LIGHTING CONTROL PROCESSOR AND COMPATIBLE OCCUPANCY AND DAYLIGHT SENSORS AS REQUIRED FOR

I. NOT USED

J. CONFIRM OPERATING HOURS WITH OWNER PRIOR TO FINAL PROGRAMMING.

K. REQUIRES CONNECTION TO BUILDING AUTOMATION SYSTEM (BAS) WHEN SUCH SYSTEM IS PRESENT.

L. FIXTURES WITHOUT OCCUPANCY SENSORS SHALL HAVE LOW END TRIM ADJUSTED TO MAINTAIN MINIMUM ILLUMINATION LEVELS.

M. LIGHTING CONTROL SYSTEM SHALL HAVE ASTRONOMICAL TIME CLOCK AND DUAL MODE CAPABILITY FOR "AFTER HOURS" CONTROL OF LIGHTING.

N. PERFORMANCE SPACE, NO DAYLIGHTING REQUIRED. TARGET ILLUMINATION LISTED ONLY FOR REFERENCE IN THIS COLUMN.

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWATTZER
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
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SHEET NUMBER: E51.4
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SEQUENCE OF OPERATION

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PLAN CHECK #00856737-CNEW

LIGHTING FIXTURE SCHEDULE NOTES:

A. GENERAL NOTES:

1. THE LIGHTING FIXTURES, LAMPS, BALLASTS, POWER SUPPLIES, DRIVERS AND TRANSFORMERS FOR THIS PROJECT HAVE BEEN SPECIFIED TO ENSURE THAT SPECIFIC AESTHETIC AND PERFORMANCE REQUIREMENTS WILL BE SATISFIED. THESE PRODUCTS HAVE BEEN CAREFULLY RESEARCHED AND EACH SPECIFIED ITEM HAS UNIQUE QUALITIES WHICH WERE DETERMINED TO BE ESSENTIAL IN SATISFYING THE OWNER'S, ARCHITECT'S, ENGINEER'S AND LIGHTING CONSULTANT'S DESIGN CRITERIA.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS AS DETAILED ON DRAWINGS AND/OR SCHEDULES, AND LABOR AS REQUIRED TO ACHIEVE A COMPLETE AND OPERATING LIGHTING SYSTEM.
3. CONTRACTOR SHALL NOTIFY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT OF ANY PROVISIONS OF THE SPECIFICATION THAT IS IN CONFLICT WITH LOCALLY ENFORCED CODES.
4. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY REQUIRED MODIFICATIONS THAT ARE NOT SHOWN ON THE DRAWINGS.
5. ALL ELECTRICAL MATERIAL SHALL BE IN NEW & UNDAMAGED CONDITION WHEN INSTALLED. ALL EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
6. ALL DIMENSIONS & MEASUREMENTS FOUND ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL VALIDATE ALL DIMENSIONS PRIOR TO ORDERING MATERIAL TO INCLUDE MAKING FIELD MEASUREMENTS BASED ON ACTUAL SITE CONDITIONS TO DEVELOP COMPLETE ORDERS AND INSTALL SYSTEMS PER DRAWINGS AND SPECIFICATIONS.
7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ASSOCIATED DEVICES AND EQUIPMENT.
8. PRIOR TO AIMING/ADJUSTING ACTIVITIES, COMMISSIONING OR PUNCHWALK COMMENCEMENT, CONTRACTOR SHALL PROPERLY TEST AND VERIFY ALL CIRCUITRY AND CONTROL WIRING AND IMPLEMENT ALL CONTROLS PROGRAMMING.

B. INSTALLATION:

1. LOCATIONS OF THE FIXTURES SHALL BE PER THE ARCHITECTURAL REFLECTED CEILING PLAN(S) AND SHALL BE COORDINATED AT TIME OF ROUGH IN. CONFLICTS BETWEEN THE ARCHITECTURAL REFLECTED CEILING PLAN(S) AND THE ELECTRICAL/LIGHTING DESIGN PLAN(S) SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING PRIOR TO ORDERING FIXTURES.
2. LIGHTING DRAWINGS REPRESENT THE DESIGN INTENT OF THE EQUIPMENT, DEVICES, ETC. TO BE CONNECTED AND THE CIRCUITS TO WHICH THEY ARE TO BE CONNECTED. CONTRACTOR SHALL INSTALL ALL CONDUIT, J-BOXES AND ADDITIONAL HARDWARE AND DEVICES AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
3. ALL LIGHTING FIXTURES SHALL BE MOUNTED AND INDIVIDUALLY SUPPORTED IN ACCORDANCE WITH APPLICABLE CODES. FIXTURES SHALL BE FURNISHED AND INSTALLED WITH ALL REQUIRED MOUNTING DEVICES, HARDWARE AND ACCESSORIES.
4. CONTRACTOR TO VERIFY LIGHTING FIXTURE MOUNTING HARDWARE IS COMPATIBLE WITH APPROVED MOUNTING CONDITIONS. MOUNTING CONDITIONS MUST ALLOW FOR AIMING AND ADJUSTING OF LIGHTING FIXTURES ON SITE.
5. CONTRACTOR TO INCLUDE AIMING/ADJUSTING LABOR AFTER DARK AS REQUIRED FOR ANY ADJUSTABLE LIGHTING FIXTURE AND FOR EACH INDIVIDUAL LIGHTING FIXTURE HEAD OR LAMP HOLDER IN A MULTI-FIXTURE/MULTI-LAMP ASSEMBLY. LIGHTING FIXTURES TO BE AIMED/ADJUSTED PER THE DIRECTION OF OWNER, ARCHITECT AND/OR LIGHTING CONSULTANT.
6. CONTRACTOR TO SUPPLY ADEQUATE SUPPORT INCLUDING LADDERS, LIFTS OR OTHER EQUIPMENT REQUIRED TO ACCESS LIGHTING FIXTURES AT THE TIME OF FOCUS, INCLUDING EVENING OR NIGHT WORK AS MAY BE REQUIRED DUE TO SCHEDULE CONFLICT OR DAYLIGHT IMPACT. AIMING/ADJUSTING LABOR SHALL BE PREPARED FOR WORK WITH COMMON HAND TOOLS TO MAKE ADJUSTMENTS AND MINOR REPAIRS DURING AIMING.
7. ALL COVE MOUNTED LIGHTING FIXTURES SHALL EXTEND THE FULL LENGTH OF THE COVE. CONTRACTOR TO FIELD MEASURE COVE LENGTH AND ORDER QUANTITY OF LIGHTING FIXTURES AS REQUIRED. PROVIDE COMPLETE MANUFACTURER SHOP DRAWINGS OF BUILT-IN COVE OR LINEAR LIGHTING SYSTEMS.
8. CONTRACTOR TO REPLACE ALL INOPERATIVE LAMPS, LED ARRAYS OR SYSTEMS AT THE END OF THE CONSTRUCTION PHASE PRIOR TO THE FOCUS AND PROGRAMMING PHASE AND AGAIN PRIOR TO OWNER OCCUPANCY OR PROJECT OPENING.
9. ALL POLE MOUNTED FIXTURES, POST MOUNTED FIXTURES AND BOLLARDS SHALL BE PROVIDED WITH A STRUCTURAL FOOTING AS DETAILED ELSEWHERE IN THE DRAWINGS. FOOTING SIZE TO BE PROVIDED BY STRUCTURAL ENGINEER. REFERENCE FIXTURE SCHEDULE AND DETAILS FOR MORE INFORMATION.
10. ALL EXIT SIGNS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LOCAL FIRE PREVENTION CODE AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY HARDWARE SUCH THAT ALL EXIT SIGNS ARE INSTALLED IN AN APPROVED VISIBLE LOCATION. THE CONTRACTOR SHALL VERIFY CHEVRONS AND NUMBER OF FACES PER EXIT SIGN WITH ARCHITECTURAL REFLECTED CEILING PLAN(S). ANY DISCREPANCIES BETWEEN EXIT SIGNS DEPICTED ON ARCHITECTURAL AND ELECTRICAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.

C. SUBMITTALS AND SUBSTITUTIONS:

1. CONTRACTOR TO SUBMIT FOR APPROVAL ON THE PRODUCTS THEY INTEND TO FURNISH WITHIN TEN (10) DAYS OF AWARD OF CONTRACT. FAILURE TO SUBMIT WITHIN DEADLINE CONSTITUTES A GUARANTEE THAT ONLY THE BASE SPECIFIED PRODUCTS WILL BE SUPPLIED AND THAT NO OTHER PRODUCTS, WHETHER LISTED AS ALTERNATES OR NOT, WILL BE CONSIDERED.
2. CONTRACTOR TO PROVIDE A SUBMITTAL/SHOP DRAWING SUBMITTAL FOR EACH LIGHTING FIXTURE TYPE INCLUDING ACCESSORIES, BALLAST(S), POWER SUPPLIES, DRIVER(S) TRANSFORMER(S), AND INTEGRAL EMERGENCY BATTERIES AND TEST SWITCHES. ANY LIGHTING FIXTURE SUBMITTAL PROVIDED WITHOUT SPECIFIC LIGHTING FIXTURE'S ACCESSORIES, BALLAST, POWER SUPPLY, DRIVER, TRANSFORMER OR BATTERY INFORMATION SHALL BE REJECTED AS INCOMPLETE.
3. SUBSTITUTIONS OF THE SPECIFIED PRODUCTS ARE STRICTLY PROHIBITED - UNLESS APPROVED AS STATED HEREIN. LIGHTING FIXTURE SUBSTITUTIONS SHALL BE FORMALLY PRESENTED TO THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT, BY APPOINTMENT ONLY, AT LEAST TEN (10) WORKING DAYS PRIOR TO BID TIME. THE SUBMITTAL MATERIAL SHALL INCLUDE THE FOLLOWING ITEMS.
   a. A COMPLETE AND OPERATING SAMPLE, WIRED FOR 120V OPERATION, WITH LAMP, CORD AND PLUG.
   b. A COMPLETE PHOTOMETRIC REPORT, FOR THE PROPOSED SUBSTITUTE PRODUCT, USING THE SPECIFIED LAMP OR LED TYPE AND WATTAGE, INCLUDING TABULATED CANDLEPOWER VALUES, COEFFICIENT OF UTILIZATION, AND AN ISO-FOOT-CANDLE DIAGRAM. PRORATED DATA WILL NOT BE ACCEPTABLE. THE PHOTOMETRIC REPORT MUST BE DONE IN ACCORDANCE WITH PUBLISHED I.E.S. TESTING PROCEDURES AND CERTIFIED BY A REGISTERED ELECTRICAL ENGINEER.
   c. A CURRENT ORIGINAL CATALOG DATA SHEET WITH LIGHTING FIXTURE CATALOG NUMBERS. MODIFIED DATA SHEETS WILL NOT BE ACCEPTABLE.
   d. A SIGNED COPY OF THE "SUBSTITUTION COMPLIANCE FORM", LOCATED IN THE DIVISION 1 SPECIFICATION, STATING THAT IF THE PROPOSED SUBSTITUTION IS ACCEPTED, THE PROJECT SCHEDULE WILL NOT BE NEGATIVELY AFFECTED. IF THE COMPLETION OF THE PROJECT IS DELAYED BECAUSE OF THE APPROVED SUBSTITUTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYMENT OF ANY ESTABLISHED LIQUIDATED DAMAGES.
   e. FOR SPECIFIC INTERIOR FIXTURE SUBSTITUTIONS, WHEN DIRECTED BY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT, A POINT-BY-POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE SPECIFIC INTERIOR AREA. IF THE SUBSTITUTED FIXTURE IS AN EMERGENCY FIXTURE, THE REPORT SHALL BE RUN IN BOTH NORMAL AND EMERGENCY MODES. THIS REPORT SHALL BE CONFIGURED WITH SPECIFIC CONSTRAINTS, AS DIRECTED BY THE ENGINEER OF RECORD. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO OR BETTER THAN THE LIGHTING LEVELS OF THE SPECIFIED PRODUCT.
   f. FOR ALL EXTERIOR FIXTURE SUBSTITUTIONS, A POINT-BY-POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE ENTIRE SITE PLAN BASED ON USING THE PROPOSED ALTERNATIVE FIXTURES. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO, OR BETTER THAN THE LIGHTING LEVELS AND UNIFORMITY RATIOS (MAX:MIN AND AVG:MIN) OF THE SPECIFIED PRODUCT. THIS REPORT SHALL BE CONFIGURED WITH THE FOLLOWING CONSTRAINTS.
      i. THE SPACING INCREMENT OR POINTS ON THE VERIFICATION REPORT SHALL NOT EXCEED TEN (10) FEET IN EITHER DIRECTION.
      ii. THE PHOTOMETRIC CALCULATION SHALL BE BASED ON PROVIDING MAINTAINED FOOT-CANDLE LEVELS USING MEAN LAMP LUMENS AND A LIGHT LOSS FACTOR, AS DIRECTED BY THE ENGINEER OF RECORD.
      iii. THE PHOTOMETRIC CALCULATION SHALL SHOW ANY ADDITIONAL ENERGY AND/OR ENERGY COSTS, FOR A TEN YEAR PERIOD, AS COMPARED TO THE ORIGINALLY SPECIFIED ITEM. THE TOTAL COSTS FOR THESE EXPENSES WILL BE DEDUCTED FROM THE CONTRACT COST.
4. DURING THE BIDDING PROCESS, THE CONTRACTOR SHALL REFER TO THE LIGHTING FIXTURE SCHEDULES ON THE ARCHITECTURAL PLANS (IF PROVIDED ON PROJECT), LIGHTING DESIGN PLANS/SPECIFICATIONS (IF PROVIDED ON PROJECT), AND THE ELECTRICAL PLANS. ANY DISCREPANCIES BETWEEN THEM INCLUDING, BUT NOT LIMITED TO, PART NUMBERS AND FIXTURE DESCRIPTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, ELECTRICAL ENGINEER, AND LIGHTING DESIGNER WITH PRE-BID RFI(S). WHERE DISCREPANCIES ARE DISCOVERED WHEN THERE IS INSUFFICIENT TIME TO ISSUE PRE-BID RFI(S), THE BASE BID SHALL INCORPORATE THE MOST COSTLY VERSION OF THE DISCREPANCY AND SHALL BE MEMORIALIZED IN AN RFI OR AS A BID CLARIFICATION. PROVIDING A VOLUNTARY DEDUCTIVE ALTERNATE BID CLARIFYING FIXTURE SCHEDULE DISCREPANCIES IS ALSO AN ACCEPTABLE FORM OF DISCREPANCY DOCUMENTATION.
5. FIXTURE FINISHES:
   a. ALL FIXTURE FINISHES AND COLORS, UNLESS NOTED AS PREMIUM OR CUSTOM, SHALL BE SELECTED FROM THE MANUFACTURERS STANDARD COLOR OPTIONS AS LISTED ON THE FIXTURE SPECIFICATION SHEET. STANDARD FINISH SHALL BE SELECTED BY THE ARCHITECT, INTERIOR DESIGNER OR OWNER. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS.
   b. ALL FIXTURES INDICATED WITH A PREMIUM OR CUSTOM COLOR SHALL BE ASSIGNED A CUSTOM COLOR REFERENCE NUMBER (SUCH AS RAL#) OR PROVIDE FIVE (5) PAINT CHIPS FOR MANUFACTURER TO USE TO MATCH COLOR. PREMIUM OR CUSTOM FINISH SHALL BE SELECTED BY THE ARCHITECT, INTERIOR DESIGNER OR OWNER. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS.
6. THE LIGHTING FIXTURE MODEL NUMBER MAY INDICATE A FIXTURE OPTION THAT THE CONTRACTOR MUST IDENTIFY PRIOR TO ORDERING/PROVIDING SUBMITTALS, INCLUDING, BUT NOT LIMITED TO: VOLTAGE, MOUNTING CONDITION/HARDWARE, FINISH, DIMMING REQUIREMENTS/BALLAST INFORMATION. GENERALLY, CONTRACTOR-SELECTED OPTIONS ARE DENOTED IN THE PART NUMBER WITH BRACKETS EX: [VOLTS?]
   a. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND PROVIDING ALL HANGERS, CLIPS AND NECESSARY HARDWARE TO INSTALL THE FIXTURE IN THE ENVIRONMENT AS SHOWN ON THE ARCHITECTURAL PLANS. ALL FIXTURES SHALL BE PROVIDED WITH ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY THE CURRENTLY ADOPTED CODES.
   b. VOLTAGES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING - SEE ELECTRICAL DRAWINGS FOR BRANCH CIRCUIT INFORMATION. IT IS POSSIBLE THAT FIXTURES WILL BE REQUIRED IN VARIOUS VOLTAGES.
7. "NO KNOWN EQUAL" LIGHTING FIXTURE PRICING/BIDDING NOTES:
   a. EACH FIXTURE IDENTIFIED AS "NO KNOWN EQUAL" ON THIS PROJECT SHALL BE BID IN A "LINE ITEM" FORMAT. A PER UNIT MATERIAL COST SHALL BE PROVIDED FOR EACH "NO KNOWN EQUAL" FIXTURE. THIS PRICE SHALL INCLUDE LAMPS AS WELL AS ALL OTHER REQUIRED MATERIALS REQUIRED FOR INSTALLATION. THE FIXTURE PRICE QUOTED WILL BE UTILIZED, PRIOR TO SHOP DRAWING APPROVAL, FOR "ADDING" AND/OR "DELETING" ANY QUANTITY OF THE FIXTURE.
   b. A UNIT COST SHALL BE SUBMITTED FOR EACH "NO KNOWN EQUAL" FIXTURE. SUBMIT THE PRICING AS PART OF THE BID FORM ON A SEPARATE 8 1/2" X 11" SHEET.
   c. FAILURE TO SUBMIT A LINE ITEM FOR EACH "NO KNOWN EQUAL" FIXTURE MAY RESULT IN THE REJECTION, REFUSAL, OR NON-ACCEPTANCE OF THE CONTRACTOR'S BID.
8. FIXTURES IDENTIFIED AS "NO KNOWN EQUAL - OWNER STANDARD" OR "CAMPUS STANDARD" ARE TO BE PROVIDED AS SPECIFIED, WITH SUBSTITUTIONS STRICTLY PROHIBITED. SEE ADDITIONAL NOTES FOR "NO KNOW EQUAL" BIDDING REQUIREMENTS.

D. LIGHTING FIXTURE SPECIFICATIONS:

1. ALL EXTERIOR LIGHTING EQUIPMENT SHALL BE RATED FOR WET LOCATION AND THE IP RATING OF ALL EQUIPMENT, INCLUDING BALLAST, POWER SUPPLY AND TRANSFORMER ENCLOSURES SHALL CONFORM TO THE CONDITIONS IN WHICH THE LIGHTING FIXTURE IS MOUNTED.
2. ALL BALLASTS, POWER SUPPLIES, DRIVERS AND/OR TRANSFORMERS THAT ARE REMOTELY LOCATED SHALL BE INSTALLED AS NEAR TO THE LIGHTING FIXTURE(S) AS POSSIBLE, HIDDEN FROM PUBLIC VIEW IN AN ACCESSIBLE COMPARTMENT THAT IS WELL VENTILATED. CONTRACTOR TO COORDINATE LOCATION(S) WITH ARCHITECT PRIOR TO ROUGH-IN.
3. ALL TRANSFORMERS SHALL BE FUSED ON THE SECONDARY SIDE.
4. COLOR FILTERS SHALL BE GLASS OR DICHROIC UNLESS OTHERWISE INDICATED ON DRAWINGS.
5. CONTRACTOR TO PROVIDE 20% ADDITIONAL COLOR FILTERS FOR EACH COLOR AND SIZE.
6. CONTRACTOR TO VERIFY THAT ALL LIGHTING FIXTURES SPECIFIED WITH A COLOR FILTER ARE SUPPLIED WITH ANY AND ALL ATTACHMENT DEVICES FOR THE FILTER.
7. ALL TRACK LIGHTING FIXTURES SHALL BE PROVIDED WITH THE APPROPRIATE TRACK SYSTEM WHICH SHALL INCLUDE ALL MISCELLANEOUS COMPONENTS REQUIRED, AS WELL A ANY REQUIRED CIRCUIT LIMITERS FOR A COMPLETE INSTALLATION. TRACK LENGTH(S) SHALL BE PER DRAWINGS.

E. DRIVERS / TRANSFORMERS:

1. [OPTION?] IN FIXTURE MODEL NUMBER INDICATE THAT THE FIXTURE DRIVER TYPE AND QUANTITY MUST BE VERIFIED BY THE CONTRACTOR USING FIXTURE CALLOUT INFORMATION AND FIXTURE SWITCHING CONFIGURATION INFORMATION.
2. CONTINUOUS DIMMING AND CONTROLLABLE LED:
   a. PROVIDE CONTROLLABLE LED DIMMING DRIVERS (INTEGRAL OR REMOTE) WITH POWER FACTOR GREATER THAN 0.85 AND MAXIMUM THD OF 20% AT FULL LOAD.
   b. PRIOR TO BID CONTRACTOR TO VERIFY DRIVER COMPATIBILITY WITH DIMMERS, DIMMING CONTROL SYSTEM(S) AND DISTRIBUTED LIGHTING CONTROL SYSTEM(S) WITH RESPECTIVE LIGHTING MANUFACTURER(S) AND LIGHTING/DIMMING CONTROL SYSTEM MANUFACTURERS. IF COMPATIBILITY DOCUMENTATION IS UNAVAILABLE FOR A GIVEN LED FIXTURE/LIGHTING CONTROL SYSTEM COMBINATION, CONTRACTOR SHALL INCLUDE COSTS IN THE BASE BID FOR RESPECTIVE LIGHTING MANUFACTURER AND LIGHTING CONTROLS MANUFACTURER TO TEST/WARRANT COMPATIBILITY OF SAID COMBINATIONS.
   c. CONTINUOUS LED DIMMING DRIVERS SHALL BE AT MINIMUM 4-WIRE 0-10V 10% DIMMING (HOT, NEUTRAL, DIM+, DIM-).

F. EMERGENCY FIXTURES / BATTERY PACKS:

1. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE IDENTIFIED / PROVIDED AS FOLLOWS:
   a. INTEGRAL BATTERY PACK (EB):
      3a/3EB - FIXTURE CONNECTED TO CIRCUIT "3", CONTROL SWITCHLEG "a" - WITH THE BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".
      3NL/3EB - FIXTURE CONNECTED TO A CONSTANT HOT CIRCUIT "#3". BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".
   b. REMOTE BACK-UP SOURCE (EM):
      3a/3EM - ROUTED THROUGH A U.L. LISTED TRANSFER RELAY (LC & D #GR-2001E/S) FOR SWITCHED CONTROLS OR A U.L. LISTED TRANSFER SWITCH (BODINE #GTD SERIES DEVICE) FOR DIMMING CONTROLS. CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3". SEE DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS FOR DEVICE REQUIREMENTS WHEN CONTROLLED BY OCCUPANCY SENSORS.
      3NL/3EM - FIXTURE CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3".
   c. REMOTE BACK-UP SOURCE (EM) NOTES:
      - ALL REMOTE BACK UP SOURCE (EM) FIXTURES SHALL BE PROVIDED WITH AN IN LINE FUSE. PROVIDE ADDITIONAL LABELING TO INDICATE FIXTURE IS PROTECTED BY A FUSE.
2. EMERGENCY BATTERY PACK NOTES:
   a. PROVIDE INTEGRAL TEST SWITCH / CHARGE LIGHT OPTION FOR ALL EMERGENCY BATTERY PACKS INSTALLED IN LIGHT FIXTURES.
   b. ALL RECESSED DOWNLIGHTS SUPPLIED WITH A BATTERY PACK SHALL BE PROVIDED WITH AN INTEGRAL COMBINATION TEST SWITCH / CHARGING INDICATOR LIGHT- MOUNTED INSIDE THE REFLECTOR. REMOTE TEST SWITCH / CHARGING LIGHTS ARE NOT ALLOWED. THE TEST SWITCH / CHARGING INDICATOR LIGHT SHALL BE SECURELY ATTACHED TO THE REFLECTOR WITH 18" OF SLACK LEADS, FOR EASY REMOVAL OF THE REFLECTOR ASSEMBLY.
   c. ALL BATTERY PACKS AND ALL COMBINATION LED BATTERY PACK/EMERGENCY DRIVERS SHALL BE UL924 LISTED.
   d. PRIOR TO BID, CONTRACTOR SHALL VERIFY WITH FIXTURE MANUFACTURER(S) THAT EMERGENCY BATTERY PACKS ARE MANUFACTURED TO BE INTEGRAL TO FIXTURE HOUSINGS.
   e. SHOULD THE SPECIFIED LED EMERGENCY BATTERY PACK(S) NOT FIT WITHIN A GIVEN FIXTURE(S) OR SHOULD THE FIXTURE NOT BE MANUFACTURED TO ACCOMMODATE A BATTERY PACK, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO LOCATE/CONNECT SELF-TESTING MINI INVERTER(S) (IOTA #ILS SERIES OF BODINE#ELI-S-[WATT?]) REMOTELY FROM THE FIXTURE(S) IN THE NEAREST ELECTRICAL ROOM OR TO LOCATE EMERGENCY BATTERY PACK(S) REMOTELY FROM THE FIXTURE ABOVE THE NEAREST ACCESSIBLE CEILING.
   f. LED BATTERY PACKS SHALL PROVIDE A MINIMUM OF 90 MINUTES OF EMERGENCY ILLUMINATION, AND SHALL BE RATED AT A MINIMUM OF 10 WATTS, OR AS SPECIFIED. WHERE A FIXTURE TYPE IS UNAVAILABLE WITH A 10W BATTERY PACK OR WHERE THE WATTAGE IS NOT SPECIFIED ON THE PLANS, INCLUDE ALL COST IN BASE BID TO PROVIDE THE HIGHEST WATTAGE AVAILABLE ON THE FIXTURE CUTSHEET. ANY LISTED EQUAL FIXTURE OR ANY SUBSTITUTION OFFERED BY THE CONTRACTOR MUST ALSO HAVE BATTERY PACKS CAPABLE OF PRODUCING THE SAME OR MORE LUMENS WHEN ON BATTERY AS OUTLINED ABOVE. ACCEPTABLE MANUFACTURES: BODINE OR IOTA.
   g. TO MAINTAIN UL LISTING OF LED FIXTURE, FIXTURE MANUFACTURER(S) SHALL INSTALL LED EMERGENCY BATTERY PACKS AT THE FACTORY AND OBTAIN A UL LISTING FOR THE FIXTURE WITH EMERGENCY BATTERY PACK. FIELD-INSTALLATION OF LED EMERGENCY BATTERY PACK(S) IS PROHIBITED.
   h. PROVIDE DAMP LOCATION VERSION IN ALL DAMP LABEL INSTALLATIONS.

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURER AND MODEL NUMBER	FIXTURE VA/ WATTS	LAMP/ LAMP OPTION	GENERAL DESCRIPTION
	1	METALUX 24RLN-42-UNV-L835-CD-1 – EQUAL BY: DAY-BRITE	31.2	LED/3500K	2'x4' RECESSED LED TROFFER WITH 4200 LUMEN LED MODULE, 0-10V DIMMING DRIVER, PERFORATED CENTER BASKET DIFFUSER. SHADED SYMBOL INDICATES EMERGENCY FIXTURE EQUIPPED WITH A 90 MINUTE EMERGENCY BATTERY PACK. –
	2	HALO HC6-15-D010-HM6-12-835-61-WD-C – EQUAL BY: LIGHTOLIER	17	LED/3500	RECESSED LED DOWNLIGHT 6" APERTURE WITH CLEAR SPECULAR REFLECTOR, 0-10V DRIVER. WIDE DISTRIBUTION, 1500 LUMEN OUTPUT. – – –
	3	METALUX 4SNLED-LD5-22SL-LN-UNV-L835-CD1 – EQUAL BY: DAY-BRITE	16	LED/3500	ROUND SEMI-FROST LENSED STRIPLIGHT FOR USE WITH 16W, 2276 LUMEN MODULE 4 FOOT BY 3-INCH BY 3 11/16-INCH. FROSTED ACRYLIC LENS VERIFY HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. PAINTED AFTER FABRICATION. 0-10V DIMMING. HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH.
	3A	METALUX 8SNLED-LD5-60SL-LN-UNV-L835-CD1 – EQUAL BY: DAY-BRITE	42	LED/3500	ROUND SEMI-FROST LENSED STRIPLIGHT FOR USE WITH 16W, 5975 LUMEN MODULE 8 FOOT BY 3-INCH BY 3 11/16-INCH. FROSTED ACRYLIC LENS VERIFY HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. PAINTED AFTER FABRICATION. 0-10V DIMMING. HIGH REFLECTANCE BAKED WHITE ENAMEL FINISH.
	4	SPECTRUM LIGHTING PROCTV22GV-110L-35K-DS10X-SC1-PM-DF22-PP-WAG22-CC-EMCR EQUAL BY: DAY BRITE	77	LED/3500	PENDANT MOUNTED LED HIGH BAY 22" DIAMETER WITH PRISMATIC POLYCARBONATE REFRACTOR, RIGID PENDANT MOUNTING, WIRE GUARD, AND DIMMING DRIVER. PROVIDE 90 MINUTE EMERGENCY BATTERY PACK WHERE SHOWN ON PLANS. FINISH COLOR PER ARCHITECT. FIXTURE WEIGHT = 27 POUNDS. VERIFY PENDANT LENGTH IN FIELD. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
OR	5	SURE-LITES LPX-7-[FACES?]-[FINISH?]-[OPTION?]-[SD OPTION?]-[PROTECTION?] EQUAL BY: CHLORIDE	2/2	LED/GREEN	THERMOPLASTIC EXIT SIGN FOR USE WITH LED LAMPS. EMERGENCY BATTERY PACK. REFER TO ARCHITECTURAL PLANS FOR NUMBER OF FACES AND CHEVRONS. GREEN LETTERS AND WHITE HOUSING.
	7	METALUX 4SWLED-28HL-LN-UNV-L835-CD1 – EQUAL BY: DAY-BRITE	29/29	LED/3500K	1'X4' WALL MOUNTED LED WITH FROSTED ACRYLIC WRAP LENS, STEEL HOUSING, AND 0-10V DIMMING DRIVER. 2800 LUMEN OUTPUT. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. – –
	S1	MCGRAW-EDISON IST-SA1-A-740-U-T4W-BZ-CEC – EQUAL BY: GARDCO	20.1	LED/4000	SURFACE MOUNTED LED WALL PACK, DIE-CAST ALUMINUM HOUSING, FULL CUTOFF, MEDIUM THROW, APPROXIMATE LUMEN OF PACKAGE 2,700 LUMENS, WET LOCATION IP66 RATED. VERIFY FINISH COLOR WITH ARCHITECT PRIOR TO ORDERING. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
	S2	BEGA 88053-MODLED-K3-2908GP – EQUAL BY: NONE – PARK STANDARD	76	LED/4000K	SINGLE HEAD FULL CUTOFF POLE TOP LUMINAIRE FOR USE WITH 76W LED AT 4000K. WITH INTEGRAL DIMMING DRIVER. FIXTURE MOUNTED TO 8-FOOT ARMATURE AT LEVEL POSITION. 27'-6" ROUND TAPERED METAL POLE. FINISH TBD. – –
	S3	RAYON T720LED-30W-UNI12-40-BZ-S – EQUAL BY: STONCO	18	LED/4000K	SURFACE MOUNTED LED CANOPY LIGHT WITH DIE-CAST ALUMINUM HOUSING, POWDERCOAT FINISH, 0-10V DIMMING DRIVER, AND POLYCARBONATE LENS. – – –
	S4	METALUX 4VT2-LD5-6-DR-UNV-L840-CD1-WL-SSL – EQUAL BY: ENVOY	38	LED/4000K	SURFACE MOUNTED 4' VAPOR TIGHT LED WITH FIBERGLASS HOUSING, WATERTIGHT HUBS, POLYURETHANE GASKET, STAINLESS STEEL LATCHES, DIMMING DRIVER, AND ACRYLIC PRISMATIC HIGH IMPACT LENS. 6000 LUMENS – –
	S6	BEGA 99527-MODLED-K3-2908GP – EQUAL BY: NONE – PARK STANDARD	105	LED/4000K	SINGLE HEAD FULL CUTOFF POLE TOP LUMINAIRE FOR USE WITH 105W LED AT 4000K. WITH INTEGRAL DIMMING DRIVER. FIXTURE MOUNTED TO 8-FOOT ARMATURE AT LEVEL POSITION. 15'-6" ROUND TAPERED METAL POLE. FINISH TBD. – –
	P1	LITHONIA LIGHTING VCVL-LED-P6-40K-T5M-MVOLT – EQUAL BY: VCLV LED	108	LED/4000K	THE VCVL LED, VISUALLY COMFORTABLE VERSATILE LUMINAIRE, IS DESIGNED TO BRING GLARE CONTROL, OPTICAL PERFORMANCE AND ENERGY SAVINGS INTO ONE PACKAGE. THE RECESSED LENS DESIGN OF VCVL LED MINIMIZE HIGH ANGLE GLARE, WHILE ITS PRECISION MOLDED ACRYLIC LENS ELIMINATE. –

SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES FOR CRITICAL FIXTURE SPECIFICATION AND ORDERING INFORMATION.

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SNYDER
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E61.1
SHEET TITLE:

LIGHTING FIXTURE SCHEDULES

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 6 of 9)**
	Date Prepared:	9/8/2025

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 3 of 9)**
	Date Prepared:	9/8/2025

F. INDOOR LIGHTING FIXTURE SCHEDULE

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 is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
1	1 - 2 X 4 RECESSED LED TROFFER	No	NA	31.2	Mfr. Spec	10	No	312	☐	☐
2	2 - RECESSED LED DOWNLIGHT 6" APERTURE	No	NA	17	Mfr. Spec	9	No	153	☐	☐
3	3 - ROUND SEMI-FROST LENSED STRIPLIGHT	No	NA	16	Mfr. Spec	6	No	96	☐	☐
3A	3A - ROUND SEMI-FROST LENSED STRIPLIGHT	No	NA	42	Mfr. Spec	1 B	No	42	☐	☐
4	4 - PENDANT MOUNTED LED HIGH BAY 22"	No	NA	77	Mfr. Spec	36	No	2,772	☐	☐
7	7 - 1 X 4 WALL MOUNTED LED	No	NA	29	Mfr. Spec	2	No	58	☐	☐
							Total Designed Watts: CONDITIONED SPACES	3,433		

[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.*

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 1 of 9)**
Project Address: 901 Skyhawk	**Date Prepared:**	9/8/2025

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. 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.

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	04	Total Conditioned Floor Area (ft²)	6,999
02	Climate Zone	8	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

● Convention Center ● Office ● Support Areas ● All Other Occupancies

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 (ft²)	Calculation Method	Area (ft²)
☒ New Lighting System	Area Category Method	6999	Area Category Method	0
☐ New Lighting System - Parking Garage				
Total Area of Work (ft²)	6999		0	

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
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R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

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 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

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 4 of 9)**
	Date Prepared:	9/8/2025

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	Field Inspector	
		Pass	Fail
NA < 4,000W subject to multilevel	See Area/Space Level Controls	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) // 160.5(b)4C	Primary/Skylit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1/ 170.2(e)2A	Field Inspector	
								Pass	Fail
Office Area (>250 Sq Ft)	Office (>250 square feet)	Readily Accessible	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: General Ltg < 120W	No	☐	☐
Office Area (<250 Sq Ft)	Office (<=250 square feet)	Readily Accessible	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: General Ltg < 120W	No	☐	☐
Conference Area	Convention, Conference, Multipurpose and Meeting Center	Readily Accessible	Dimmer	Occupancy Sensor	NA: General Ltg < 120W	NA: General Ltg < 120W	No	☐	☐
Storage	All Other Space Types	Readily Accessible	Dimmer	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐
Lounge Area	Lounge	Readily Accessible	Dimmer	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐
Corridor Area	Corridor	Readily Accessible	Dimmer	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐
Electrical Room	Electrical Mechancial Telephone Room	Readily Accessible	Dimmer	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐

A

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 2 of 9)**
	Date Prepared:	9/8/2025

C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)						Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)				Compliance Results
	01	02	03	04		05	06	07		08	09
	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)4Au (+)	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 Adjusted** (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		3,538.2	0		=	3,538	≥ 3,433	0	=	3433	COMPLIES
Unconditioned					=		≥		=		
Controls Compliance (See Table H for Details)											COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)											

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 8 of 9)**
	Date Prepared:	9/8/2025

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). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	Office Area (>250 Sq Ft) ; Office Area (<250 Sq Ft) ; Conference Area; Storage; Lounge Area; Corridor Area; Electrical Room; Maintenance Area; Hoteling Area;
NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	Maintenance Area; Hoteling Area;

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
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	Date Prepared:	9/8/2025

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Maintenance Area	Auto Repair	Readily Accessible	Dimmer	Occupancy Sensor	Included	Included	No	☐	☐
Hoteling Area	All Other Space Types	Readily Accessible	Dimmer	Occupancy Sensor	Included	Included	No	☐	☐
							13		
							Plan Sheet Showing Daylit Zones:		

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	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
Office Area (>250 Sq Ft)	Office (>250 square feet)	0.6	273	163.8	No	No
Office Area (<250 Sq Ft)	Office (<=250 square feet)	0.65	281	182.6	No	No
Conference Area	Convention, Conference, Multipurpose and Meeting Center	0.75	167	125.2	No	No
Storage	All Other Space Types	0.4	2,186	874.4	No	No
Lounge Area	Lounge	0.55	569	313	No	No
Corridor Area	Corridor	0.4	276	110.4	No	No
Electrical Room	Electrical Mechancial Telephone Room	0.4	274	109.6	No	No
Maintenance Area	Auto Repair	0.55	2,733	1,503.2	No	No
Restroom	Restroom	0.65	240	156	No	No
		TOTALS:	6,999	3,538.2	See Tables J, or P for detail	

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES, INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 14.1.2.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 14 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

TITLE 24 PROCEDURES FOR TESTING AND ADJUSTING

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTIONS 13.1.2.2 AND 13.1.2.3.

LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

AUTOMATIC DAYLIGHT CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-03-A DOCUMENTS.

DEMAND RESPONSE LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-04-A DOCUMENTS.

INSTITUTIONAL TUNING PAF ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-05-A DOCUMENTS.

OUTDOOR LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTO-02-A DOCUMENTS.

ALL LIGHTING CONTROLS TESTING AND ADJUSTING DOCUMENTS NOTED ABOVE ARE AVAILABLE FROM THE CALIFORNIA ENERGY COMMISSION WEB SITE AT:
https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-5

BUILDING & SAFETY DIVISION
REVIEWED FOR CODE COMPLIANCE

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SHU
No. E15610
12/31/2025
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25
3		
4		
5		
6		
7		
8		

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E61.2
SHEET TITLE: TITLE 24

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Outdoor Lighting CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 5 of 9)**
	Date Prepared:	9/8/2025

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
Parking Area	Astronomical Timer	Provided	Provided	☐	☐
Walkway	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
EV Parking Area	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
Fuel Area	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
East Driveway	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
Pallet Area	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
Wash Area	Astronomical Timer	Provided	WallGTE24Ft	☐	☐
Canopy	Astronomical Timer	Provided	WallGTE24Ft	☐	☐

[1] *FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.*
[2] *Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.*
[3] *Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.*

STATE OF CALIFORNIA
Outdoor Lighting CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 2 of 9)**
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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations 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 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
1,775	+	---	+	---	+	---	+	1,464.1	OR	---	=	3,239	≥	3,197	COMPLIES
Shielding Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

STATE OF CALIFORNIA
Indoor Lighting CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 9 of 9)**
Project Address: 901 Skyhawk	**Date Prepared:**	9/8/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: RaySwartz	Documentation Author Signature:
Company: WSP USA	Signature Date: 2025-09-08
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine CA 92618	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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documents the builder provides to the building owner at occupancy.

Responsible Designer Name: RaySwartz	Responsible Designer Signature:
Company: WSP	Date Signed: 2025-09-08
Address: 15231 Laguna Canyon Road, Suite 100	License: E-15610
City/State/Zip: Irvine CA 92618	Phone: 9497515800

STATE OF CALIFORNIA
Outdoor Lighting CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 6 of 9)**
	Date Prepared:	9/8/2025

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). 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. Indicate which allowances are being used to expand sections for user input. 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.

	01				
	"Use it or lose it" Allowance (select all that apply) (select all that apply)				
	☒ General Hardscape Allowance Table I (below)	☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☒ Per Specific Area 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 (ft^2)	Allowed Density (W/ft^2)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
Parking Area	18239	0.021	383	1016	0.2	203.2	586
Walkway	2728	0.021	57.3	863	0.2	172.6	230
EV Parking Area	9596	0.021	201.5	468	0.2	93.6	295
East Driveway	1153	0.021	24.2	143	0.2	28.6	53
West Pedestrian Hardscape	4221	0.021	88.6	313	0.2	62.6	151
East Pedestrian Hardscape	6585	0.021	138.3	356	0.2	71.2	209
Initial Wattage Allowance for Entire Site (Watts):							250
Instances of Initial Wattage Allowance (LZ 0 only)[1]							
Total General Hardscape Allowance (Watts):							1775

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

STATE OF CALIFORNIA
Outdoor Lighting CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 3 of 9)**
	Date Prepared:	9/8/2025

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new 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 (ie, 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 is Wattage determined	Total Number Luminaires[2]	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)1[4]	Field Inspector	
										Pass	Fail
3A	3A - ROUND SEMI-FROST LENSED STRIPLIGHT	☐ Linear	42	Mfr. Spec	1	New	☐	42	NA: < 6200 lumens	☐	☐
P1	P1 - VISUALLY COMPARTABLE VERSATILE LUMINARE	☐ Linear	108	Mfr. Spec	12	New	☐	1,296	NA: < 6200 lumens	☐	☐
S1	S1 - SURFACE MOUNTED LED WALL PACK	☐ Linear	20.1	Mfr. Spec	34	New	☐	683.4	NA: < 6200 lumens	☐	☐
S2	S2 - SINGLE HEAD FULL CUTOFF POLE	☐ Linear	76	Mfr. Spec	8	New	☐	608	NA: < 6200 lumens	☐	☐
S3	S3 - SURFACE MOUNTED LED	☐ Linear	18	Mfr. Spec	4	New	☐	72	NA: < 6200 lumens	☐	☐
S4	S4 - SURFACE MOUNTED 4'	☐ Linear	38	Mfr. Spec	2	New	☐	76	NA: < 6200 lumens	☐	☐
S6	S6 - SINGLE HEAD FULL CUTOFF POLE	☐ Linear	105	Mfr. Spec	4	New	☐	420	NA: < 6200 lumens	☐	☐
							Total Design Watts:	3197			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[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 should be indicated in column 05 instead of number of luminaires.*

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Outdoor Lighting CALIFORNIA ENERGY COMMISSION

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Project Address: 901 Skyhawk	**Date Prepared:**	9/8/2025

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.

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	04	Total Illuminated Hardscape Area (ft^2)	42522
02	Climate Zone	8			
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	☒ LZ-3: Moderately High - Urban Areas			
05	Occupancy Types within Project				

● Convention Center ● Office ● Support Areas ● Warehouse

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	
☒ 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] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.*

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L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This table includes areas using the wattage allowance per specific area from Table 140.7-B /Table 170.2-S. More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
Area Description	Specific Area Type per Table 140.7-B	CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				Additional Allowance (Watts)
		Specific Area (ft^2)[1]	Allowed Density (W/ft^2)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
Fuel Area	ServiceStationHardscape	586	0.1 [1]	80.9	S3	18	4	72	72
							Total Design Watts for this Area:	72	
Pallet Area	NonSalesCanopy	603	0.3 [1]	162.8	S1	20.1	1	20.1	20.1
							Total Design Watts for this Area:	20.1	
Wash Area	NonSalesCanopy	632	0.3 [1]	170.6	S4	38	2	76	76
							Total Design Watts for this Area:	76	
Canopy	NonSalesCanopy	9561	0.3 [1]	2581.5	P1	108	12	1,296	1296
							Total Design Watts for this Area:	1296	
							Total Allowance (Watts) All Areas:		1464.1

[1] *FOOTNOTES: See Table 140.7-B /Table 170.2-S for rules for calculating the specific areas (ft^2 for these additional lighting allowances.*
[2] *For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.*

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

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F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new 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 (ie, 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

[1] *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)*

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

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Outdoor Lighting CALIFORNIA ENERGY COMMISSION

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O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by 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

Form/Title
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 selection has been changed by 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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	Parking Area; Walkway ; EV Parking Area; Fuel Area; East Driveway; Pallet Area; Wash Area; Canopy;

SPECIFIC PLAN NOTES:

1 OUTDOOR LIGHTING CALCULATIONS HAVE BEEN PERFORMED UNDER LIGHTING ZONE 3 PER SECTION 6.3 TABLE 6-2 WITH THE PERMISSION OF THE AHJ TO INCREASE THE LIGHTING ZONE FROM ZONE 2 TO ZONE 3 TO ACHIEVE THE SECURITY AND SAFETY ILLUMINATION REQUIRED BY THE CITY OF IRVINE.

B

TITLE 24 PROCEDURES FOR TESTING AND ADJUSTING

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: CONSTRUCTION INSPECTION; MEASUREMENTS; MONITORING; FUNCTIONAL TESTING; CALIBRATING; ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTIONS 13.1.2.2 AND 13.1.2.3.

LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

AUTOMATIC DAYLIGHT CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-03-A DOCUMENTS.

DEMAND RESPONSE LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-04-A DOCUMENTS.

INSTITUTIONAL TUNING PAF ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-05-A DOCUMENTS.

OUTDOOR LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

ALL LIGHTING CONTROLS TESTING AND ADJUSTING DOCUMENTS NOTED ABOVE ARE AVAILABLE FROM THE CALIFORNIA ENERGY COMMISSION WEB SITE AT:
https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-5

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: CONSTRUCTION INSPECTION; MEASUREMENTS; MONITORING; FUNCTIONAL TESTING; CALIBRATING; ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 14.1.2.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 14 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2025 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E61.3
SHEET TITLE: TITLE 24

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION

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G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with 130.5(b)/ 160.6(b). Any load types that are not included in the service do not need to be shown. For multifamily occupancies, submetered systems that provide power to dwelling units do not need to meet these separation requirements and therefore load types on those submetered systems also do not need to be shown.

01	02	03	04	05	
Load Type per Table 130.5-B[1]	Minimum Required Separation of Load per Table 130.5-B	Compliance Method[2]	Location of Requirements in Construction Documents	Field Inspector	
				Pass	Fail
MSBA					
Lighting including exit, egress and exterior	All lighting disaggregated by floor, type or area	NA: System subject to CA Elec Code Article 517	E41.1, E41.4	☐	☐
HVAC systems and components	All HVAC in aggregate and each HVAC load rated at least 50 kVA	NA: System subject to CA Elec Code Article 517	E41.1, E41.4	☐	☐
Charging stations for electrical vehicle	All loads in aggregate	NA: System subject to CA Elec Code Article 517	E41.1, E41.4	☐	☐
Plug Loads and appliances less than 25kVA	All plug loads separated by floor, type or area Groups of plug loads exceeding 25 kVA connected load in an area less than 5000 sf	NA: System subject to CA Elec Code Article 517	E41.1, E41.4	☐	☐

** NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

[1] FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.
[2] Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type.
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type.
Method 3: Branch circuits serve load types individually and provisions for adding future branch circuit monitoring.
Method 4: Complete metering system measures and reports loads by type.
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

H. VOLTAGE DROP

This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with 130.5(c)/ 160.6(c). For alterations, only the altered circuits must demonstrate compliance per 141.0(b)2Pii// 180.2(b)4Bvic.

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H. VOLTAGE DROP

01	02			03	04	05	
Electrical Service Designation/Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method			Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
						Pass	Fail
MSBA	☒	Voltage drop less than 5%	☐	Permitted by CA Elec Code (Exception to 130.5(c))*	In construction documents	E41.2	☐	☐

** NOTES: If "Permitted by CA Elec Code *" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".

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 Receptacles[1]	Shut-Off Controls	Demand Responsive Controls	Permanent Durable Marking Will be Used	Location of Requirements in Construction Documents	Field Inspector	
						Pass	Fail
MSBA	Within 6ft of uncontrolled receptacle	Occupancy Sensor	NA: Building does not require demand responsive lighting controls per 110.12(c)	☒	E13.1	☐	☐

** NOTES: If "Other*" is selected under Shut-Off Controls above, please indicate how compliance has been achieved in the space provided below.*

[1] FOOTNOTES: Receptacles dedicated to refrigerators and water dispensers in kitchens, located a minimum of 6ft above the floor specifically for clocks, network capiers, 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. .

J. ELECTRIC READY BUILDINGS

This section does not apply to this project.

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O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by 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

Form/Title
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 selection has been changed by 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

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	Parking Area; Walkway ; EV Parking Area; Fuel Area; East Driveway; Pallet Area; Wash Area; Canopy;

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K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by 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

Form/Title
NRCI-ELC-E - Must be submitted for all buildings

STATE OF CALIFORNIA
Electrical Power Distribution
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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through J. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01		02		03		04	05	06
Service Electrical Metering 130.5(a)/ 160.6(a) (See Table F)	AND	Separation for Monitoring 130.5(b)/ 160.6(b) (See Table G)	AND	Voltage Drop 130.5(c)/ 160.6(c) (See Table H)	AND	Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I)	Electric Ready 160.9 (See Table J)	**Compliance Results**
Yes	AND	Yes	AND	Yes	AND	Yes	Yes	COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. SERVICE ELECTRICAL METERING

This table includes new or replacement electrical service systems OR equipment to demonstrate compliance with 130.5(a) / 160.6(a). For multifamily occupancies, submetered systems that provide power to common use areas must meet the following metering requirements. Submetered systems providing power to dwelling units do not.

01	02	03				04	05	
Electrical Service Designation/ Description	Rating[1] (kVA)	Required Metering Capabilities per Table 130.5-A				Location of Requirements in Construction Documents	Field Inspector	
		Instantaneous Demand (kW)	Historical Peak Demand (kW)	Tracking kWh for user-defined period	kWh per rate period		Pass	Fail
MSBA	288	☒	☒	☒	☐	E41.1	☐	☐

[1] FOOTNOTES: If common use areas in a multifamily are submetered, rating is for submeter size serving common use areas.

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 9 of 9)**
Project Address: 901 Skyhawk	**Date Prepared:**	9/8/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: RaySwartz	Documentation Author Signature:
Company: WSP	Signature Date: 2025-09-08
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine CA 92618	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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: RaySwartz	Responsible Designer Signature:
Company: WSP	Date Signed: 2025-09-08
Address: 15231 Laguna Canyon Road, Suite 100	License: E-15610
City/State/Zip: Irvine CA 92618	Phone: 9497515800

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 6 of 6)**
Project Address: 901 Skyhawk	**Date Prepared:**	9/11/2025

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Company: WSP USA	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: RaySwartz	Responsible Designer Signature:
Company: WSP	Date Signed: 2025-09-11
Address: 15231 Laguna Canyon Road, Suite 100	License: E-15610
City/State/Zip: Irvine CA 92618	Phone: 9497515800

STATE OF CALIFORNIA
Electrical Power Distribution
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
This document is used to demonstrate compliance with mandatory requirements in 130.5, for electrical systems in newly constructed nonresidential and hotel/motel occupancies and 160.6 and 160.9 for electrical systems in newly constructed multifamily occupancies. Additions and alterations to electrical service systems in nonresidential and hotel/motel occupancies will also use this document to demonstrate compliance per 141.0(a) or 141.0(b)2P for alterations. For multifamily addition or alterations compliance will be documented per 180.1(a) or 180.2 (b)4Bvii		
Project Name: City of Irvine - Great Park Landscape Maintenance Facility	**Report Page:**	**(Page 1 of 6)**
Project Address: 901 Skyhawk	**Date Prepared:**	9/11/2025

A. GENERAL INFORMATION

01	Project Location (city)	Irvine	02	Climate Zone	8
			03	Occupancy Types Within Project:	All Other OccupanciesConvention CenterOfficeSupport Areas

B. PROJECT SCOPE

This table includes electrical systems that are within the scope of the permit application.

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Scope of Work[1]	Rating[2] (kVA)	Utility Provided Metering System Exception to 130.5(a)/ 160.6(a)[3]	System subject to CA Elec Code Article 517 Exception to 130.5(a)and (b)	Demand Response Controls	Provides power to dwelling units/common living areas only in multifamily occupancy
MSBA	New electrical service equipment and meter	288	☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections 120.2/ 160.3, 130.1/ 160.5, and 130.3/ 160.5, and mechanical, indoor lighting, and sign lighting Certificate of Compliance documents will indicate when demand response controls are required.	☐

[1] FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c)/160.6(c), no other requirements from 130.5/160.6 are required.
[2] If common use areas in a multifamily are submetered, rating is for submeter size serving common use areas.
[3] Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.

TITLE 24 PROCEDURES FOR TESTING AND ADJUSTING

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO; CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTIONS 13.1.2.2 AND 13.1.2.3.

LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

AUTOMATIC DAYLIGHT CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-03-A DOCUMENTS.

DEMAND RESPONSE LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-04-A DOCUMENTS.

INSTITUTIONAL TUNING PAF ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-05-A DOCUMENTS.

OUTDOOR LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

ALL LIGHTING CONTROLS TESTING AND ADJUSTING DOCUMENTS NOTED ABOVE ARE AVAILABLE FROM THE CALIFORNIA ENERGY COMMISSION WEB SITE AT:
https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-5

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO; CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 14.1.2.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 14 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US00022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTWERT
No. E15610
12/31/2025
CIVIL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E61.4
SHEET TITLE:

TITLE 24

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

CENTRAL MONITORING SYSTEM SPECIFICATIONS

PART 1 - GENERAL REQUIREMENTS

GENERAL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL FINAL DESIGN, AGENCY APPROVALS, PLAN CHECK FEES, LABOR, EQUIPMENT, MATERIALS, AND PERFORMANCE OF OPERATIONS IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING CODE APPROVED CENTRAL MONITORING SYSTEM.

THE COMPLETE INSTALLATION SHALL CONFORM TO APPLICABLE SECTIONS OF NFPA-72 2016 EDITION OR LATEST ADOPTED VERSION, LOCAL CODE REQUIREMENTS AND NATIONAL ELECTRICAL CODE.

IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC, "DESIGN-BUILD" FORMAT, FOR THE CONTRACTOR TO DESIGN, PROVIDE AND INSTALL A COMPLETE AND FULLY FUNCTIONING, CODE APPROVED CENTRAL MONITORING SYSTEM. IN THE EVENT THAT ADDITIONAL DETAILS OR SPECIAL CONSTRUCTION IS REQUIRED FOR WORK INDICATED OR SPECIFIED IN THIS SECTION OR WORK SPECIFIED IN OTHER SECTIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL MATERIAL AND EQUIPMENT WHICH IS USUALLY FURNISHED WITH SUCH SYSTEMS, IN ORDER TO PROVIDE A COMPLETE AND FULLY FUNCTIONING INSTALLATION, WHETHER MENTIONED HEREIN OR NOT.

DESIGN REQUIREMENTS: THE CENTRAL MONITORING SYSTEM SHALL BE RESPONSIBLE FOR CONTINUALLY SUPERVISING AND MONITORING BY ZONE THE FOLLOWING INITIATING, SIGNALING AND MONITORING CIRCUITS (AT A MINIMUM):

MANUAL FIRE PULL STATIONS.
SMOKE AND HEAT DETECTORS - INCLUDING THOSE REQUIRED UNDER OTHER SECTIONS.
(FOR HVAC, SHUTOFF, SMOKE FIRE DAMPER CONTROL, ETC.)
SPRINKLER FLOW / TAMPER SWITCHES - INCLUDING THOSE IN OTHER SECTIONS.
PIV / OS&Y DEVICES - INCLUDING THOSE INSTALLED IN OTHER SECTIONS.
ALARM SIGNALING CIRCUITS.
REMOTE ANNUNCIATOR.

SYSTEM CONTROLS SHALL BE U.L. LISTED FOR POWER LIMITED APPLICATIONS PER NEC (OR CEC WHERE ADOPTED) ART. 760.121. SYSTEM SHALL BE CAPABLE OF COMMUNICATING WITH AN OFFICE SITE CENTRAL MONITORING SYSTEM.

ALL WIRING SHALL BE INSTALLED IN CONCEALED CONDUIT. ROUTE FIRE ALARM SYSTEM WIRING IN SEPARATE CONDUITS FROM ALL OTHER WIRING. ADDITIONALLY:

1. WHEN CONDUIT CANNOT BE CONCEALED, CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM ARCHITECT/ENGINEER TO PROVIDE SURFACE RACEWAYS OR CONDUITS PRIOR TO ANY ROUGH-IN. SURFACE RACEWAYS AND CONDUITS SHALL BE PROPERLY PREPARED AND PAINTED- COLOR AS SELECTED BY ARCHITECT/ENGINEER.
2. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, CONDUITS SHALL BE ROUTED NEATLY AND IN PARALLEL TO STRUCTURES OR DUCT WORK.
3. VISUALLY OBJECTIONABLE CONDUITS SHALL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.

CONTROL PANEL SHALL EMPLOY AUTOMATIC DRIFT COMPENSATION OF SMOKE DETECTORS. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF NFPA CHAPTER 7 FOR CALIBRATED TEST.

MANUAL STATIONS SHALL BE DUAL ACTION WITH A KEYED RESET. KEY SHALL MATCH THE CONTROL PANEL. STATIONS SHALL BE ADA 5 LB. PULL FORCE APPROVED.

ALL AUDIO VISUAL DEVICES SHALL BE MANUFACTURER'S STANDARD WHITE UNLESS OTHERWISE NOTED.

PROVIDE ALL NECESSARY CONDUIT(S) AND CONDUCTORS AS REQUIRED TO CONNECT DEVICES REQUIRED TO BE MONITORED BY THE LOCAL AUTHORITIES HAVING JURISDICTION. THESE INCLUDE, BUT ARE NOT LIMITED TO, PIV(S), BACKFLOW PREVENTER(S), DETECTOR CHECK VALVE(S), OS&Y VALVE(S), ETC. REFER TO CIVIL/PLUMBING DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES OF THESE DEVICES.

CONTROL PANEL SHALL BE FIELD PROGRAMMABLE WITHOUT THE USE OF A LAP TOP COMPUTER OR OTHER SPECIAL INSTRUMENTS.

REQUIRED APPROVALS: THE CENTRAL MONITORING SYSTEM SHALL BE APPROVED BY THE LOCAL FIRE AUTHORITY IN ADDITION TO ANY OTHER REQUIRED APPROVALS. THIS APPROVAL SHALL BE OBTAINED PRIOR TO THE SUBMITTAL OF SHOP DRAWING DOCUMENTATION TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.

INSTALLATION OF THE CENTRAL MONITORING SYSTEM SHALL NOT BE STARTED UNTIL DRAWINGS, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS OF FIRE ALARM COMPONENTS, ARE SUBMITTED TO AND APPROVED BY THE LOCAL FIRE MARSHAL. WRITTEN CERTIFICATION BY FIRE ALARM EQUIPMENT DISTRIBUTOR OR MANUFACTURER SHALL BE SUBMITTED TO THE ARCHITECT AND THE STATE FIRE MARSHAL STATING THAT THE NEW SYSTEM AND ITS COMPONENT PARTS ARE AS "APPROVED AND LISTED" BY THE STATE FIRE MARSHAL AND THAT INSTALLATION CONFORMS IN ALL RESPECTS TO REQUIREMENTS SET FORTH IN ARTICLE 72, TITLE 24, PART 2, CALIFORNIA CODE OF REGULATIONS. FIRE ALARM SYSTEM CONSTRUCTION SHALL NOT BE STARTED UNTIL FIRE ALARM DRAWINGS ARE APPROVED BY AHJ AND ENGINEER.

SYSTEM PERFORMANCE: FURNISH AND INSTALL A COMPLETE CENTRAL MONITORING SYSTEM AS DESCRIBED HEREIN AND AS INDICATED ON DRAWINGS TO BE WIRED, CONNECTED, AND LEFT IN FIRST CLASS OPERATING CONDITION. SYSTEM SHALL USE CLOSED LOOP INITIATING DEVICE CIRCUITS WITH INDIVIDUAL ZONE SUPERVISION, INDIVIDUAL INDICATING APPLIANCE CIRCUIT SUPERVISION, INCOMING AND STANDBY POWER SUPERVISION. INCLUDE A CONTROL PANEL, MANUAL PULL STATIONS, AUTOMATIC FIRE DETECTORS, HORNS, BELLS, FLASHING LIGHTS, ANNUNCIATOR, ALL WIRING, CONNECTIONS TO DEVICES, OUTLET BOXES, JUNCTION BOXES, AND ALL OTHER NECESSARY MATERIAL FOR A COMPLETE OPERATING SYSTEM.

SUBMITTALS: SUBMIT IN ACCORDANCE WITH PROJECT GENERAL REQUIREMENTS SPECIFICATIONS. SHOW EQUIPMENT LOCATIONS, WIRING SCHEMATICS, DETAILS, PANEL CONFIGURATION AND SIZES AND A POINT-TO-POINT SCHEMATICS OF CIRCUITS AND ZONE SCHEDULES. INCLUDE FRONT ELEVATIONS, CABINET DIMENSIONS, TYPE OF MOUNTING, DOORS, BARRIERS, CATALOG NUMBER OF LOCKS, AND FINISHES FOR ALL TERMINAL CABINETS. SHOW INTERFACES TO EQUIPMENT FURNISHED BY OTHERS, IDENTIFYING NUMBERS OF WIRES AND TERMINATION REQUIREMENTS. PROVIDE MANUFACTURER CUT SHEETS FOR ALL SYSTEM COMPONENTS INDICATING U.L. AND CSFM LISTINGS. GENERIC CUT SHEETS ARE UNACCEPTABLE - EACH CUT SHEET SHALL INDICATE/IDENTIFY SPECIFIC COMPONENTS ALONG WITH ANY REQUIRED COMPONENT OPTIONS/ACCESSORIES UTILIZED ON THE PROJECT. PROVIDE COMPLETE SEQUENCE OF OPERATIONS OF SYSTEM. PROVIDE COMPLETE SYSTEM WIRING DIAGRAMS FOR COMPONENTS CONNECTED TO SYSTEM AND INTERFACES TO EXISTING EQUIPMENT. PROVIDE A COPY OF ANY STATE OR LOCAL FIRE ALARM SYSTEM EQUIPMENT APPROVALS. PROVIDE ONE COPY OF ACCEPTANCE TEST PROCEDURES FOR REVIEW.

CERTIFICATION OF INSTALLATION COMPANY:

A. PROOF THAT THE FIRE ALARM CONTRACTOR IS UNDERWRITERS LABORATORIES, INC. (U.L.) LISTED UNDER THE CLASSIFICATION OF "PROTECTIVE SIGNALING SERVICES - LOCAL, AUXILIARY, REMOTE STATION AND PROPRIETARY (UUJS) AND CENTRAL STATION PROTECTIVE SIGNALING SERVICES (UUFX)."
B. COPY OF THE FOLLOWING (NICET) CERTIFICATES. PROOF THAT THE CERTIFICATE HOLDERS ARE A PART OF THE FIRE ALARM CONTRACTOR'S LOCAL FACILITY SERVICING THIS PROJECT AND WILL INSTALL THE FIRE ALARM SYSTEM. NON-NICET INSTALLERS MAY BE UTILIZED ON THE PROJECT TO ASSIST NICET-CERTIFIED INSTALLER ONLY IF DIRECTLY SUPERVISED BY NICET-CERTIFIED INSTALLER. THE RATIO OF NICET-TO-NON-NICET INSTALLERS SHALL NOT EXCEED 1:3.
   1. CERTIFIED NICET TECHNICIAN LEVEL 2 (INSTALLER).
   2. CERTIFIED NICET TECHNICIAN LEVEL 4 (SUPERVISOR).
C. QUALITY ASSURANCE: WORK SHALL BE PERFORMED BY A QUALIFIED SYSTEMS CONTRACTOR HOLDING A C-10 LICENSE.

WARRANTY: CONTRACTOR SHALL WARRANT COMPLETED CENTRAL MONITORING SYSTEM WIRING AND EQUIPMENT TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF COMPLETION AND CERTIFIED TEST, OR FROM DATE OF FIRST BENEFICIAL USE. THE EQUIPMENT MANUFACTURER SHALL MAKE AVAILABLE TO THE OWNER A MAINTENANCE CONTRACT PROPOSAL TO PROVIDE A MINIMUM OF (2) INSPECTIONS AND TESTS PER YEAR IN COMPLIANCE WITH NFPA-72 GUIDELINES.

PART II - EXECUTION

ZONING: THE BUILDING SHALL BE DIVIDED INTO ZONES FOR ALARM ANNUNCIATION AND SYSTEM CONFIGURATION PER THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL AND/OR AUTHORITY. A ZONE WILL BE ASSIGNED FOR EACH SPRINKLER FLOW SWITCH AND EACH TAMPER SWITCH. AIR-HANDLING SYSTEMS REQUIRING IN-DUCT DETECTION SHALL BE ZONED PER UNIT. UNIT SHALL BE SHUT DOWN DIRECTLY BY AUXILIARY RELAY CONTROLLED BY DUCT SMOKE DETECTOR.

ACCEPTANCE TESTING: FINAL ACCEPTANCE WILL BE GIVEN AFTER SUCCESSFUL ACCEPTANCE TESTING AND SUBMISSION OF APPROVED AS-BUILT DOCUMENTATION AND OPERATION AND MAINTENANCE MANUALS. ACCEPTANCE TESTING OF FIRE DETECTION SYSTEM SHALL BE AS REQUIRED BY THE STATE FIRE MARSHAL AND LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING REQUIRED TESTING, COORDINATING SCHEDULING, AND CONDUCTING TEST NECESSARY TO ACHIEVE OCCUPANCY CERTIFICATION. TESTS SHALL INCLUDE THE FOLLOWING:

AN OPERATION OF EACH INITIATING DEVICE.
AN OPERATION OF EACH INDICATING DEVICE (ALARM, HORN, AND ALARM LAMP).
OPERATION OF ALL FEATURES OF SYSTEM UNDER NORMAL OPERATION.
OPERATION OF SUPERVISORY FEATURES OF SYSTEM.
OPERATION OF SYSTEM ON STANDBY POWER WITH PRIMARY POWER OFF.

UPON COMPLETION OF INSTALLATION OF CENTRAL MONITORING/FIRE ALARM EQUIPMENT, ELECTRICAL CONTRACTOR SHALL PROVIDE TO THE ENGINEER A SIGNED, WRITTEN STATEMENT CONFIRMING THAT THE FIRE ALARM EQUIPMENT WAS INSTALLED IN ACCORDANCE WITH SPECIFICATIONS, WIRING DIAGRAMS, INSTRUCTIONS AND DIRECTIONS PROVIDED BY MANUFACTURER. A COMPLETE DESCRIPTION OF NATURE AND SCOPE OF TRAINING PROGRAM FOR MAINTENANCE TECHNICIANS, OPERATORS, SYSTEM USERS, AND MANAGEMENT PERSONNEL SHALL BE PROVIDED. CONTRACTOR SHALL PROVIDE A COMPLETE TRAINING PROGRAM FOR SYSTEM USERS, AND A MINIMUM OF (4) COPIES OF OPERATING INSTRUCTIONS. IN ADDITION, CONTRACTOR SHALL PROVIDE A TRAINING PROGRAM FOR THE OWNER'S MAINTENANCE PERSONNEL. THIS TRAINING SHALL BE PROVIDED FOR A MINIMUM OF (3) PERSONS WITHIN ONE YEAR OF COMPLETION DATE. COSTS FOR INSTRUCTION SHALL BE PAID BY CONTRACTOR. TRAINING SHALL BE SCHEDULED AND COORDINATED BY THE OWNER.

NFPA 72, CHAPTER 7, INSPECTION TESTING AND MAINTENANCE COMPLETE THE INSPECTION AND TESTING FORM IN ITS ENTIRETY. SUBMIT A COPY TO THE OWNER, ARCHITECT AND FIRE AUTHORITY.

PART III - PRODUCTS (CMCP)

CENTRAL MONITORING EQUIPMENT SHALL BE U.L. LISTED AND C.S.F.M. LISTED. CATALOG AND MODEL NUMBERS LISTED ARE INTENDED TO ESTABLISH TYPE AND QUALITY OF EQUIPMENT AND SYSTEM DESIGN AS WELL AS OPERATING FEATURES REQUIRED. MANUFACTURER'S SPECIFICATION SHEETS OF EACH ITEM SO LISTED SHALL BE CONSIDERED TO BE A PART OF THESE SPECIFICATIONS AND BINDING HEREIN. ANY DEVIATION FROM INTENDED FUNCTIONS OF SYSTEM SPECIFIED MAY NOT BE APPROVED, AT OPTION OF THE OWNER/ENGINEER.

EQUIPMENT SUBSTITUTIONS MUST BE PRE-APPROVED BY THE ELECTRICAL ENGINEER (10) DAYS PRIOR TO THE BID DATE. CONTRACTOR MUST SHOW OPERATION OF EQUIPMENT AND COMPLIANCE WITH ALL FUNCTIONS AND FEATURES SPECIFIED. EQUIPMENT SUBSTITUTIONS NOT PRE-APPROVED PRIOR TO BID DATE WILL BE REJECTED.

CENTRAL MONITORING CONTROL PANEL (CMCP): WHERE INDICATED ON DRAWINGS, PROVIDE AND INSTALL A CENTRAL MONITORING CONTROL PANEL.

ANNUNCIATOR/NETWORK SYSTEM ANNUNCIATOR: WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ, PROVIDE AND INSTALL A CHARACTER DISPLAY REMOTE ANNUNCIATOR. REMOTE ANNUNCIATOR SHALL BE ELECTRICALLY SUPERVISED FROM CONTROL PANEL. REMOTE ANNUNCIATOR SHALL BE INSTALLED IN A FLUSH OR SURFACE MOUNTED CABINET WITH HINGED DOOR AND LOCK. COORDINATE FINAL LOCATION OF ALL ANNUNCIATORS WITH THE ARCHITECT AND LOCAL AHJ PRIOR TO ROUGH-IN.

FATC: PROVIDE FIRE ALARM TERMINAL CABINET AS REQUIRED OR AS SHOWN ON DRAWINGS.

HORN/STROBE: HORN/STROBE DEVICES SHALL BE WALL OR CEILING MOUNTED PER THE DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SOUNDER/STROBE SHALL OPERATE ON 24 VDC POLARIZED CIRCUIT AND SHALL BE PROVIDED WITH A SEMI-FLUSH MOUNTING PLATE. STROBE LIGHT SHALL BE WHITE LEXAN WITH "FIRE" ON 2 SIDES. HORN SHALL HAVE A MINIMUM SOUND OUTPUT OF 100 DB AT 10'-0". THE STROBE SHALL HAVE A CANDELA DISTRIBUTION/RATING TO MEET ADA REQUIREMENTS.

SPRINKLER BELL: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. INCLUDE ALL COSTS IN BASE BID TO PROVIDE AND INSTALL A FLUSH HORN OR BELL PER THE EXTERIOR FLUSH HORN DETAIL. AN EXPOSED EXTERIOR BELL OR HORN IS NOT ACCEPTABLE UNLESS ITS USE IS DIRECTED BY THE LOCAL FIRE MARSHAL. THE FIRE ALARM CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE USE OF SURFACE MOUNTED BELLS/HORNS PRIOR TO ROUGH-IN.

MANUAL STATIONS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. DEVICE SHALL BE ADDRESSABLE UNLESS OTHERWISE NOTED. STATION SHALL BE KEYED ALIKE AS THE CONTROL PANEL.

SMOKE DETECTORS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SENSORS SHALL BE ANALOG ADDRESSABLE TYPE.

DUCT SMOKE DETECTORS: DUCT SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE AND THE INSTALLATION MUST COMPLY WITH NFPA-90A. PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ.

HEAT DETECTORS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SENSORS SHALL BE ADDRESSABLE.

WATERFLOW SWITCHES: WATERFLOW SWITCHES SHALL BE PROVIDED WITH A TAPPED 1/2" CONDUIT CONNECTION. THE FLOW SWITCH SHALL BE U.L. LISTED FOR ITS INTENDED PURPOSE. DEVICE TO BE FURNISHED AND INSTALLED BY SPRINKLER CONTRACTOR.

TAMPER SWITCHES: SPRINKLER VALVE TAMPER SWITCHES COVER REMOVAL SHALL BE SUPERVISED. SWITCH SHALL BE PROVIDED WITH EITHER ONE OR TWO SETS OF S.P.D.T. MICRO SWITCHES AS REQUIRED. TAMPER SWITCH SHALL BE UL LISTED FOR ITS INTENDED PURPOSE. DEVICE TO BE FURNISHED AND INSTALLED BY SPRINKLER CONTRACTOR.

MONITOR MODULE: MONITOR RELAYS FOR MONITORING SMOKE DOORS, GENERATORS, AUTOMATIC TRANSFER SWITCHES, FIRE SUPPRESSION SYSTEMS, ETC. AND WHERE INDICATED ON THE DRAWINGS OR AS REQUIRED BY LOCAL AHJ.

CONTROL MODULE: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ.

RELAY MODULE: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. RELAY(S) SHALL BE RATED FOR CONTINUOUS MOTOR OR INDUCTIVE LOADS SUCH AS COMBINATION SMOKE FIRE DAMPERS (CSFDs), MAGNETIC HOLD OPENS, ETC. QUANTITY OF RELAYS SHALL BE BASED ON PROJECT-SPECIFIC CSFD LOADS WHICH SHALL NOT EXCEED 80% OF MOTOR LOAD RATING OF THE RELAY. INCLUDE ALL COSTS IN BASE BID TO ADD ADDITIONAL 120V CONDUCTORS AS REQUIRED TO PARTITION LOADS ON INDIVIDUAL RELAYS TO MEET THE 80% RELAY MOTOR LOAD LIMIT.

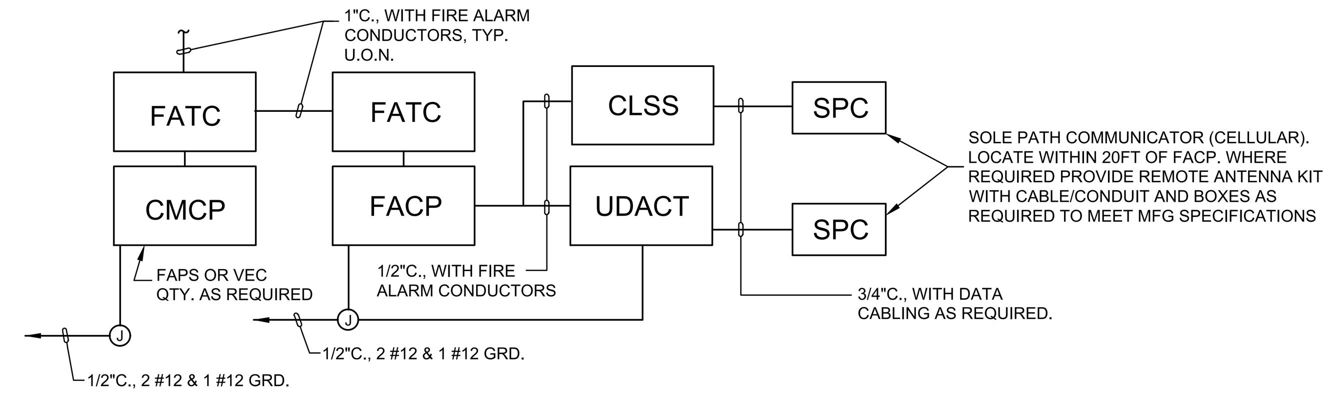
REMOTE LED: PROVIDE REMOTE LED AND/OR REMOTE LED/TEST STATION WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. DEVICE LOCATION SHALL BE COORDINATED WITH LOCAL AHJ AND ARCHITECT PRIOR TO ROUGH-IN.

UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER (UDACT): THE UDACT IS AN INTERFACE FOR COMMUNICATING DIGITAL INFORMATION BETWEEN A FIRE ALARM CONTROL PANEL AND A URL LISTED CENTRAL STATION.

1. THE UDACT SHALL INCLUDE CONNECTIONS FOR DUAL TELEPHONE LINES (WITH VOLTAGE DETECT), PER U.L./NFPA REQUIREMENTS. IT SHALL INCLUDE THE ABILITY FOR SPLIT REPORTING OF PANEL EVENTS.
2. THE UDACT SHALL BE CAPABLE OF TRANSMITTING EVENTS IN AT LEAST NINE DIFFERENT FORMATS. THIS ENSURES COMPATIBILITY WITH EXISTING AND FUTURE TRANSMISSION FORMATS. ACCEPTED FORMATS INCLUDE 3+1 STANDARD, 4+1 STANDARD, DECO CONTACT ID OR 4+1 AND 4+2 DECO.
3. COMMUNICATION SHALL INCLUDE VITAL SYSTEM STATUS SUCH AS:

   INDEPENDENT ZONE (ALARM, TROUBLE, NON-ALARM)
   INDEPENDENT ZONE SUPERVISORY SIGNAL
   AC (MAINS) POWER LOSS
   LOW BATTERY AND EARTH FAULT
   SYSTEM OFF NORMAL
   12 AND 24 HOUR TEST SIGNAL
   ABNORMAL TEST SIGNAL (PER URL REQUIREMENTS)
   EIA-485 COMMUNICATIONS FAILURE

4. UDACT PROVISIONING SHALL BE INCLUDED IN THE BASE BID BASED ON THE FOLLOWING ASSUMPTIONS:
5. ASSUME THE FOLLOWING INFORMATION WILL BE PROVIDED BY THE OWNER TO PROGRAM AN INSTALLED UDACT TO A THIRD-PARTY CENTRAL STATION:
   a. MONITORING ACCOUNT NUMBER
   b. PRIMARY RECEIVER PHONE NUMBER
   c. SECONDARY RECEIVER PHONE NUMBER
   d. RECEIVER TYPE
   e. TRANSMISSION FORMAT
   f. MONITORING COMPANY NAME
   g. MONITORING COMPANY MAIN PHONE
   h. CONTACT PERSON AT MONITORING COMPANY
6. ASSUME THIRD-PARTY CENTRAL STATION PROVIDER SHALL PROVIDE 72 HOURS ADVANCE NOTICE FOR FIRE ALARM CONTRACTOR/INSTALLER TO BE PRESENT FOR UDACT PROGRAMMING, PRE-TESTING, TESTING, AND CONNECTION.
7. ASSUME A REPRESENTATIVE FROM THE THIRD-PARTY CENTRAL STATION IS REQUIRED AT LOCATION AT TIME OF PROGRAMMING, PRETEST AND CONNECTION. ADDITIONALLY, THIRD-PARTY CENTRAL STATION PROVIDER SHALL PROVIDE ANY MONITORING REPORTS REQUIRED BY THE FIRE DEPARTMENT. A SEPARATE PERMIT WILL BE SUBMITTED AND PAID FOR BY THE THIRD-PARTY CENTRAL STATION PROVIDER.
8. CONNECTED LIFE SAFETY SERVICES (CLSS): THE CLSS IS AN INTERFACE FOR COMMUNICATING SYSTEM EVENTS VIA CELLULAR COMMUNICATOR OR OWNER LOCAL AREA NETWORK (LAN). WHEN CONNECTED VIA OWNER LAN, CLSS GATEWAY SHALL BE CONFIGURED WITH A FIXED IP ADDRESS (FURNISHED BY OWNER-IMPLEMENTED BY CONTRACTOR) TO ALLOW AUTOMATIC EMAIL OR CELL PHONE TEXT MESSAGING IN RESPONSE TO ANY SYSTEM EVENT. ADDITIONALLY, CLSS UNITS SHALL ALLOW VIEWING OF SYSTEM STATUS, SYSTEM EVENT HISTORY AND DEVICE PROPERTIES BASED ON ACCESS PERMISSIONS DEFINED BY THE OWNER. CONTRACTOR SHALL CONFIGURE CLSS GATEWAY BASED ON OWNER INPUT AS A PART OF BASE BID.



CENTRAL MONITORING SYSTEM SCHEMATIC

CENTRAL MONITORING SYSTEM PRODUCTS (NOTIFIER)

SYSTEM SHALL BE NOTIFIER. GENE KNUST-GRAICHEN, AVCOM SYSTEMS/CALLIIDE TECHNICAL. (714) 878-4582, gene@avcomsystems.com.

CMCP:	NOTIFIER #NFW-100X - FOR USE IN ONE THRU THREE STORY BUILDING. NOTIFIER #N16E - FOR USE IN ONE THRU FIVE STORY BUILDINGS
PACP:	NOTIFIER TYPE #RP 2001
ANNUNCIATOR:	NOTIFIER TYPE N-ANN-80 (FOR USE WITH NFW-100X) NOTIFIER TYPE RLD (FOR USE WITH N16 SERIES) NOTIFIER TYPE NCA-2 (FOR USE AS CAMPUS/NETWORK ANNUNCIATOR)
FATC:	18"x18"x4" METAL CABINET WITH SCREW COVER
HORN / STROBE:	SYSTEM SENSOR #LED-SERIES
SPRINKLER BELL:	SYSTEM SENSOR #SSM SERIES
MANUAL STATION:	NOTIFIER #NBG-12LX.
PREACTION RELEASING STATION:	NOTIFIER #NBG-12LR W/FMM-101
SMOKE DETECTORS: (RETURN AIR, AREA, IN-DUCT AREA)	NOTIFIER #FSP-951 PHOTOELECTRIC
DUCT DETECTORS (SMOKE):	NOTIFIER #DNR W/FSP-951 SMOKE DETECTOR HEAD, NOTIFIER #DNR W/FSP-951R SMOKE DETECTOR HEAD (WHERE REMOTE TEST SWITCH IS REQUIRED), DNR-W (WEATHERPROOF, WHERE REQUIRED)
HEAT DETECTORS:	NOTIFIER #FST-951
WATERFLOW:	NOTIFIER #WFD SERIES.
TAMPER:	NOTIFIER #PIBV2 SERIES NOTIFIER #OSY2 SERIES.
MONITOR MODULE:	NOTIFIER #FMM-1, #FDM-1, OR FMM-101
CONTROL MODULE:	NOTIFIER #FCM-1
ADDRESSABLE CONTROL RELAY:	NOTIFIER #FRM-1 WITH SYSTEM SENSOR #PR-1 OR #RIB01BDC AS REQUIRED
REMOTE LED:	NOTIFIER #RA100Z
COMMUNICATOR:	NOTIFIER MODEL #UDACT2 AND /OR CLSS
SOLE PATH COMMUNICATOR (SFC):	NAPCO OR EQUAL (WITH CELLULAR SERVICE)
ALL OTHER MISCELLANEOUS ITEMS:	NOTIFIER / WHEELOCK / SYSTEM SENSOR

EXISTING SYSTEM EXTENSION REQUIREMENTS

1. ALL SYSTEM EXTENSIONS AND FINAL CONNECTIONS TO THE EXISTING FIRE ALARM (FA) OR CENTRAL MONITORING (CM) SYSTEM SHALL BE MADE BY THE BUILDING OWNER'S FIRE ALARM CONTRACTOR, CONTRACTING DIRECTLY WITH THE ELECTRICAL/GENERAL CONTRACTOR, INCLUDING FINAL TESTING AND COORDINATION WITH THE FIRE MARSHAL AND BUILDING OWNER'S SECURITY DEPARTMENT.
2. THE CONTRACTOR SHALL COORDINATE THE LOGISTICS AND WORK IMPLEMENTATION WITH THE BUILDING OWNER, BUILDING OWNER'S SECURITY STAFF, ALARM MONITORING COMPANY AND FIRE ALARM CONTRACTOR BEFORE STARTING ANY WORK.
3. EVERY SURPLUS FA/CM DEVICE, RESULTING FROM THIS PROJECT, SHALL BE TURNED OVER TO THE BUILDING OWNER.
4. THE CONTRACTOR SHALL COORDINATE WITH THE BUILDING OWNER'S FIRE ALARM CONTRACTOR TO DETERMINE THE EXTENT OF THEIR WORK INCLUDING, BUT NOT LIMITED TO, SUCH ITEMS AS CONDUITS, WIRES, "J" BOXES, ETC. THE ACTUAL FINAL CONNECTIONS OF ALL FA/CM DEVICES SHALL BE THE RESPONSIBILITY OF THE BUILDING OWNER'S FIRE ALARM CONTRACTOR.
5. ALL ROUGH ELECTRICAL, CONDUITS, "J" BOXES AND WIRING SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL/GENERAL CONTRACTOR. THE ELECTRICAL/GENERAL CONTRACTOR SHALL PROVIDE "J" BOXES, AT MINIMUM, WHERE SMOKE DETECTORS ARE SHOWN. USE STANDARD 4" OCTAGONAL BOX UNLESS OTHERWISE DIRECTED BY BUILDING OWNER'S FIRE ALARM CONTRACTOR.
6. COORDINATE AND SECURE APPROVAL FROM BUILDING OWNER PRIOR TO THE START OF NOISY CONSTRUCTION ACTIVITIES TO PREVENT COMPLAINTS FROM ADJACENT TENANT SUITES.
7. COORDINATE ALL SMOKE DETECTOR PROTECTION WITH BUILDING OWNER'S ALARM MONITORING COMPANY TO PREVENT ACTIVATION OF FALSE ALARMS WHEN PUT BACK ON LINE.
8. TO PRECLUDE EXISTING FA/CM SMOKE DETECTOR ACTIVATION DUE TO THE PROXIMITY OF ANY DEMOLITION OR CONSTRUCTION RELATED ACTIVITIES, THE CONTRACTOR SHALL, WHEN WORKING IN THE PROXIMITY OF ANY SENSOR, REQUEST THAT BUILDING OWNER'S ALARM MONITORING COMPANY PUT THE SYSTEM OFF LINE. ON AND OFF LINE ACTIVATION OF THE SYSTEM SHALL BE THOROUGHLY COORDINATED WITH THE BUILDING OWNER AND BUILDING OWNER'S ALARM MONITORING COMPANY. THERE IS A $2,000 PENALTY, ENFORCED BY THE BUILDING OWNER, FOR EACH OCCURRENCE OF A FALSE ALARM CAUSED BY THE NEGLIGENCE OF CONSTRUCTION ACTIVITIES.
9. SMOKE DETECTORS SHALL BE PROTECTED/PROVIDED IN ACCORDANCE WITH CURRENTLY ADOPTED NFPA 72 STANDARD (17.7.1.11.2 &.3) AND LOCAL AHJ REQUIREMENTS FOR SMOKE DETECTION DURING CONSTRUCTION.
10. ALL INITIAL DISCONNECTION/ DEMOLITION OR FINAL CONNECTION TO THE FA/CM SYSTEM SHALL BE MADE BY THE BUILDING OWNER'S FIRE ALARM CONTRACTOR CONTRACTING DIRECTLY WITH THE ELECTRICAL/GENERAL CONTRACTOR, INCLUDING FINAL TESTING AND COORDINATION WITH THE FIRE MARSHAL AND OWNER'S ALARM MONITORING COMPANY. IN ESSENCE, THE CONTRACTOR SHALL SECURE A BID FROM THE BUILDING OWNER'S FIRE ALARM CONTRACTOR FOR ALL THE WORK AND MATERIALS FURNISHED AND INSTALLED BY THEM IN FULL COORDINATION WITH OWNER. THE BUILDING OWNER'S FIRE ALARM CONTRACTOR SHALL SPECIFICALLY CONFIRM WITH THEIR BID ALL RELATED EXCLUSIONS FOR WHICH THE CONTRACTOR SHALL BE RESPONSIBLE IN ORDER TO FURNISH A FULLY OPERATIONAL SYSTEM.
11. SYSTEM EXTENSION SHALL BE BY BUILDING OWNER'S DESIGNATED FIRE ALARM CONTRACTOR. FOR QUOTES AND ADDITIONAL REQUIREMENTS TO BE INCLUDED IN THE ELECTRICAL/GENERAL CONTRACTOR'S BASE BID CONTACT:

   COMPANY: -
   CONTACT PERSON: -
   PHONE: -

FIRE ALARM/CENTRAL MONITORING SYSTEM SYMBOLS

FACP	FIRE ALARM CONTROL PANEL - SEE SPECIFICATIONS.
CMCP	CENTRAL MONITOR CONTROL PANEL- SEE SPECIFICATIONS
FAAP	FIRE ALARM ANNUNCIATOR PANEL - SEE SPECIFICATIONS.
FATC	FIRE ALARM TERMINAL CABINET - SEE SPECIFICATIONS.
FAPS	FIRE ALARM SYSTEM POWER SUPPLY/TRANSPONDER PANEL - SEE SPECIFICATIONS.
PACP	FIRE ALARM PRE-ACTION CONTROL PANEL - SEE SPECIFICATIONS.
VEC	FIRE ALARM VOICE EVACUATION SYSTEM CONTROL PANEL - SEE SPECIFICATIONS.
H	FIRE ALARM HORN, WALL MOUNTED - SEE SPECIFICATIONS.
HF	FIRE ALARM HORN/FLASHING LIGHT (ADA APPROVED), WALL MOUNTED - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
HF	FIRE ALARM HORN/FLASHING LIGHT (ADA APPROVED), CEILING DEVICE SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F	FIRE ALARM FLASHING LIGHT (ADA APPROVED), WALL MOUNTED - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F	FIRE ALARM FLASHING LIGHT (ADA APPROVED), CEILING MOUNTED DEVICE - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F E / F E	SMOKE/CO ALARM STROBE LIGHT - 120V, WALL/CEILING MOUNTED. DEVICE TO BE USED IN CONJUNCTION WITH A 120V SMOKE/CO ALARM DEVICE. UNIT SHALL BE LISTED PER UL1971. BRK #SL177.
SF	FIRE ALARM SPEAKER/FLASHING LIGHT, WALL MOUNTED - SEE SPECIFICATIONS.
SF	FIRE ALARM SPEAKER/FLASHING LIGHT, CEILING MOUNTED DEVICE - SEE SPECIFICATIONS.
S	FIRE ALARM SPEAKER, CEILING MOUNTED - SEE SPECIFICATIONS.
S	FIRE ALARM SPEAKER, WALL MOUNTED - SEE SPECIFICATIONS.
B	FIRE ALARM BELL - SEE SPECIFICATIONS.
MS	FIRE ALARM MANUAL PULL STATION, WALL MOUNTED - SEE SPECIFICATIONS.
MS PA	FIRE ALARM DUAL ACTION/PREACTION RELEASING STATION, WALL MOUNTED - SEE SPECIFICATIONS.
SD	FIRE ALARM SMOKE DETECTOR, CEILING MOUNTED - SEE SPECIFICATIONS.
SD E	STAND ALONE SMOKE DETECTORS: AREA SMOKE DETECTORS FOR THE CONTROL OF COMBINATION SMOKE/FIRE DAMPERS (CSFD'S) SHALL BE GENTEX MODEL 8100PY (CSFM #7272-0569:102). THE DETECTORS SHALL BE 120VAC POWERED AND SHALL NOT CONNECT TO THE FIRE ALARM PANEL. THE DETECTORS SHALL PROVIDE AN AUDIBLE AND VISUAL INDICATION AND SHALL AUTOMATICALLY CAUSE THE RESPECTIVE CSFD'S TO CLOSE. THE DETECTORS SHALL INCORPORATE A SELF RESETTING FEATURE WHEN SMOKE HAS CLEARED. THE AREA SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 90A AND APPLICABLE SECTIONS OF NFPA 72 - AND ARE ONLY ALLOWED WHEN SPECIFICALLY SHOWN ON PLANS.
SC E	SMOKE/CO ALARM DEVICE - 120V. 120V SINGLE/MULTIPLE STATION SMOKE AND CARBON MONOXIDE SENSOR WITH MONITORED 9V BATTERY BACKUP. DEVICE TO HAVE DISTINCT SMOKE AND CO SENSORS AND SOUND PATTERNS. UNIT SHALL BE U.L. LISTED PER UL217 AND UL2034. BRK #SC9120B. IF THIS DEVICE IS TO BE SUPERVISED - CONNECT VIA A BRK #RM4 RELAY.
SC	SMOKE/CO ALARM DEVICE - ADDRESSABLE. SMOKE AND CARBON MONOXIDE SENSOR MOUNTED TO AN ADDRESSABLE SOUNDER BASE. UNIT SHALL BE U.L. LISTED PER UL268 AND UL2075.
SA E	SMOKE ALARM DEVICE - 120V. 120V SINGLE/MULTIPLE STATION SMOKE ALARM WITH MONITORED 9V BATTERY BACKUP. DEVICE TO HAVE DISTINCT SMOKE SENSOR AND SOUND PATTERNS. UNIT SHALL BE U.L. LISTED PER UL217 AND UL2034. BRK #SC9120. IF THIS DEVICE IS TO BE SUPERVISED - CONNECT VIA A BRK #RM4 RELAY.
SA	FIRE ALARM SMOKE DETECTOR, CEILING MOUNTED TO AN ADDRESSABLE SOUNDER BASE - SEE SPECIFICATIONS.
ID	FIRE ALARM SMOKE DETECTOR, IN-DUCT - SEE SPECIFICATIONS.
RA	FIRE ALARM SMOKE DETECTOR, RETURN AIR - SEE SPECIFICATIONS.
DD	FIRE ALARM DUCT DETECTOR PHOTOELECTRIC TYPE - SEE SPECIFICATIONS.
DD E	STAND ALONE DUCT DETECTORS: DUCT DETECTORS SHALL BE PROVIDED ON THE SUPPLY OF EACH AIR HANDLER EXCEEDING 2,000 CFM OR ALL AIR HANDLERS SERVING A COMMON AREA WHERE THEIR COMBINED SUPPLY EXCEEDS 2,000 CFM. THE DUCT DETECTORS SHALL BE SYSTEM SENSOR MODEL D4120, PHOTOELECTRIC TYPE (CSFM #3240-1653:207). THE DUCT SMOKE DETECTOR SHALL CAUSE THE RESPECTIVE AIR HANDLER UNIT TO AUTOMATICALLY SHUTDOWN. THE DUCT SMOKE DETECTOR SHALL BE PROVIDED WITH A REMOTE TEST/RESET INDICATOR, SYSTEM SENSOR MODEL #RTS2 (CSFM #7135-1653:196). THE TEST INDICATOR SHALL PROVIDE AUDIBLE AND VISUAL ALARM INDICATION AND SHALL PROVIDE MEANS TO RESET THE DUCT DETECTOR. THE DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 90A AND APPLICABLE SECTIONS AND OF NFPA 72 - AND ARE ONLY ALLOWED WHEN SPECIFICALLY SHOWN ON PLANS.
HD	FIRE ALARM HEAT DETECTOR, CEILING MOUNTED - SEE SPECIFICATIONS.
BT	FIRE ALARM BEAM DETECTOR - TRANSMITTER - MOUNTED AS INDICATED ON PLANS.
BR	FIRE ALARM BEAM DETECTOR - RECEIVER - MOUNTED AS INDICATED ON PLANS.
W	FIRE ALARM FLOW SWITCH - SEE SPECIFICATIONS.
T	FIRE ALARM TAMPER SWITCH - SEE SPECIFICATIONS.
PV	FIRE ALARM POST INDICATING VALVE/OS&Y/DOUBLE BACK CHECK VALVE - SEE SPECIFICATIONS.
M	FIRE ALARM SYSTEM MONITOR MODULE - SEE SPECIFICATIONS.
C	FIRE ALARM SYSTEM CONTROL MODULE - SEE SPECIFICATIONS.
CR	FIRE ALARM SYSTEM CONTROL RELAY MODULE - SEE SPECIFICATIONS.
R	CA FIRE MARSHAL-LISTED FIRE ALARM RELAY - SEE SPECIFICATIONS.
/	FIRE ALARM MAGNETIC HOLD OPEN DEVICE - SEE SPECIFICATIONS.
I	FIRE ALARM REMOTE L.E.D. INDICATOR. IF REQUIRED BY AHJ, PROVIDE REMOTE LED WITH TEST STATION.
PH	FIRE ALARM SYSTEM FIREMANS PHONE JACK - SEE SPECIFICATIONS.
— FA —	FIRE ALARM BRANCH CIRCUIT PER FIRE ALARM WIRING DIAGRAMS & SPECIFICATIONS.
—/\/\/\	FIRE ALARM END-OF-LINE RESISTOR - SEE SPECIFICATIONS.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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MAINTENANCE & OPERATION FACILITY
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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 EX. 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
△	100% DD	01-13-25
△	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25
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PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E71.1
SHEET TITLE:

CENTRAL MONITORING SYSTEM SPEC - SYMBOL LIST

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

FIRE ALARM SYSTEM SPECIFICATIONS

PART 1 - GENERAL REQUIREMENTS

GENERAL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL FINAL DESIGN, AGENCY APPROVALS, PLAN CHECK FEES, LABOR, EQUIPMENT, MATERIALS, AND PERFORMANCE OF OPERATIONS IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING CODE APPROVED FIRE ALARM SYSTEM.

THE COMPLETE INSTALLATION SHALL CONFORM TO APPLICABLE SECTIONS OF NFPA-72 2016 EDITION OR LATEST ADOPTED VERSION, LOCAL CODE REQUIREMENTS AND NATIONAL ELECTRICAL CODE.

IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC, "DESIGN-BUILD" FORMAT, FOR THE CONTRACTOR TO DESIGN, PROVIDE AND INSTALL A COMPLETE AND FULLY FUNCTIONING, CODE APPROVED FIRE ALARM SYSTEM. IN THE EVENT THAT ADDITIONAL DETAILS OR SPECIAL CONSTRUCTION IS REQUIRED FOR WORK INDICATED OR SPECIFIED IN THIS SECTION OR WORK SPECIFIED IN OTHER SECTIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL MATERIAL AND EQUIPMENT WHICH IS USUALLY FURNISHED WITH SUCH SYSTEMS, IN ORDER TO PROVIDE A COMPLETE AND FULLY FUNCTIONING INSTALLATION, WHETHER MENTIONED HEREIN OR NOT.

DESIGN REQUIREMENTS: THE FIRE ALARM SYSTEM SHALL BE RESPONSIBLE FOR CONTINUALLY SUPERVISING AND MONITORING BY ZONE THE FOLLOWING INITIATING, SIGNALING AND MONITORING CIRCUITS (AT A MINIMUM):

MANUAL FIRE PULL STATIONS.
SMOKE AND HEAT DETECTORS - INCLUDING THOSE REQUIRED UNDER OTHER SECTIONS.
(FOR HVAC, SHUTOFF, SMOKE FIRE DAMPER CONTROL, ETC.)
SPRINKLER FLOW / TAMPER SWITCHES - INCLUDING THOSE IN OTHER SECTIONS.
PIV / OS&Y DEVICES - INCLUDING THOSE INSTALLED IN OTHER SECTIONS.
ALARM SIGNALING CIRCUITS.
REMOTE ANNUNCIATE.

SYSTEM CONTROLS SHALL BE U.L. LISTED FOR POWER LIMITED APPLICATIONS PER NEC (OR CEC WHERE ADOPTED) ART. 760.121. SYSTEM SHALL BE CAPABLE OF COMMUNICATING WITH AN OFFICE SITE CENTRAL MONITORING SYSTEM.

ALL WIRING SHALL BE INSTALLED IN CONCEALED CONDUIT. ROUTE FIRE ALARM SYSTEM WIRING IN SEPARATE CONDUITS FROM ALL OTHER WIRING. ADDITIONALLY:

1. WHEN CONDUIT CANNOT BE CONCEALED, CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM ARCHITECT/ENGINEER TO PROVIDE SURFACE RACEWAYS OR CONDUITS PRIOR TO ANY ROUGH-IN. SURFACE RACEWAYS AND CONDUITS SHALL BE PROPERLY PREPARED AND PAINTED - COLOR AS SELECTED BY ARCHITECT/ENGINEER.
2. WHEN EXPOSED CEILINGS OR OPEN GRID CONDITIONS OCCUR, CONDUITS SHALL BE ROUTED NEATLY AND IN PARALLEL TO STRUCTURES OR DUCT WORK.
3. VISUALLY OBJECTIONABLE CONDUITS SHALL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.

CONTROL PANEL SHALL EMPLOY AUTOMATIC DRIFT COMPENSATION OF SMOKE DETECTORS. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF NAPA CHAPTER 7 FOR CALIBRATED TEST.

MANUAL STATIONS SHALL BE DUAL ACTION WITH A KEYED RESET. KEY SHALL MATCH THE CONTROL PANEL. STATIONS SHALL BE ADA 5 LB. PULL FORCE APPROVED.

ALL AUDIO VISUAL DEVICES SHALL BE MANUFACTURER'S STANDARD WHITE UNLESS OTHERWISE NOTED. ALL VISUAL DEVICES WITHIN THE SAME AREA SHALL BE SYNCHRONIZED.

PROVIDE ALL NECESSARY CONDUIT(S) AND CONDUCTORS AS REQUIRED TO CONNECT DEVICES REQUIRED TO BE MONITORED BY THE LOCAL AUTHORITY HAVING JURISDICTION. THESE INCLUDE, BUT ARE NOT LIMITED TO, PIV(S), BACKFLOW PREVENTER(S), DETECTOR CHECK VALVE(S), OS&Y VALVE(S), ETC. REFER TO CIVIL/PLUMBING DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES OF THESE DEVICES.

CONTROL PANEL SHALL BE FIELD PROGRAMMABLE WITHOUT THE USE OF A LAP TOP COMPUTER OR OTHER SPECIAL INSTRUMENTS.

REQUIRED APPROVALS: THE FIRE ALARM SYSTEM SHALL BE APPROVED BY THE LOCAL FIRE AUTHORITY IN ADDITION TO ANY OTHER REQUIRED APPROVALS. THIS APPROVAL SHALL BE OBTAINED PRIOR TO THE SUBMITTAL OF SHOP DRAWING DOCUMENTATION TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.

INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DRAWINGS, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS OF FIRE ALARM COMPONENTS, ARE SUBMITTED TO AND APPROVED BY THE LOCAL FIRE MARSHAL. WRITTEN CERTIFICATION BY FIRE ALARM EQUIPMENT DISTRIBUTOR OR MANUFACTURER SHALL BE SUBMITTED TO THE ARCHITECT AND THE STATE FIRE MARSHAL STATING THAT THE NEW SYSTEM AND ITS COMPONENT PARTS ARE AS "APPROVED AND LISTED" BY THE STATE FIRE MARSHAL AND THAT INSTALLATION CONFORMS IN ALL RESPECTS TO REQUIREMENTS SET FORTH IN ARTICLE 72, TITLE 24, PART 2, CALIFORNIA CODE OF REGULATIONS. FIRE ALARM SYSTEM CONSTRUCTION SHALL NOT BE STARTED UNTIL FIRE ALARM DRAWINGS ARE APPROVED BY AHJ AND ENGINEER.

SYSTEM PERFORMANCE: FURNISH AND INSTALL A COMPLETE FIRE ALARM SYSTEM AS DESCRIBED HEREIN AND AS INDICATED ON DRAWINGS TO BE WIRED, CONNECTED, AND LEFT IN FIRST CLASS OPERATING CONDITION. SYSTEM SHALL USE CLOSED LOOP INITIATING DEVICE CIRCUITS WITH INDIVIDUAL ZONE SUPERVISION, INDIVIDUAL INDICATING APPLIANCE CIRCUIT SUPERVISION, INCOMING AND STANDBY POWER SUPERVISION. INCLUDE A CONTROL PANEL, MANUAL PULL STATIONS, AUTOMATIC FIRE DETECTORS, HORNS, BELLS, FLASHING LIGHTS, ANNUNCIATOR, ALL WIRING, CONNECTIONS TO DEVICES, OUTLET BOXES, JUNCTION BOXES, AND ALL OTHER NECESSARY MATERIAL FOR A COMPLETE OPERATING SYSTEM.

SUBMITTALS: SUBMIT IN ACCORDANCE WITH PROJECT GENERAL REQUIREMENTS SPECIFICATIONS. SHOW EQUIPMENT LOCATIONS, WIRING SCHEMATICS, DETAILS, PANEL CONFIGURATION AND SIZES AND A POINT-TO-POINT SCHEMATICS OF CIRCUITS AND ZONE SCHEDULES. INCLUDE FRONT ELEVATIONS, CABINET DIMENSIONS, TYPE OF MOUNTING, DOORS, BARRIERS, CATALOG NUMBER OF LOCKS, AND FINISHES FOR ALL TERMINAL CABINETS. SHOW INTERFACES TO EQUIPMENT FURNISHED BY OTHERS, IDENTIFYING NUMBERS OF WIRES AND TERMINATION REQUIREMENTS. PROVIDE MANUFACTURER CUT SHEETS FOR ALL SYSTEM COMPONENTS INDICATING U.L. AND CSFM LISTINGS. GENERIC CUT SHEETS ARE UNACCEPTABLE - EACH CUT SHEET SHALL INDICATE/IDENTIFY SPECIFIC COMPONENTS ALONG WITH ANY REQUIRED COMPONENT OPTIONS/ACCESSORIES UTILIZED ON THE PROJECT. PROVIDE COMPLETE SEQUENCE OF OPERATIONS OF SYSTEM. PROVIDE COMPLETE SYSTEM WIRING DIAGRAMS FOR COMPONENTS CONNECTED TO SYSTEM AND INTERFACES TO EXISTING EQUIPMENT. PROVIDE A COPY OF ANY STATE OR LOCAL FIRE ALARM SYSTEM EQUIPMENT APPROVALS. PROVIDE ONE COPY OF ACCEPTANCE TEST PROCEDURES FOR REVIEW.

CERTIFICATION OF INSTALLATION COMPANY:

A. PROOF THAT THE FIRE ALARM CONTRACTOR IS UNDERWRITERS LABORATORIES, INC. (U.L.) LISTED UNDER THE CLASSIFICATION OF "PROTECTIVE SIGNALING SERVICES- LOCAL, AUXILIARY, REMOTE STATION AND PROPRIETARY (UUJS) AND CENTRAL STATION PROTECTIVE SIGNALING SERVICES (UUFX)."
B. COPY OF THE FOLLOWING (NICET) CERTIFICATES. PROOF THAT THE CERTIFICATE HOLDERS ARE A PART OF THE FIRE ALARM CONTRACTOR'S LOCAL FACILITY SERVICING THIS PROJECT AND WILL INSTALL THE FIRE ALARM SYSTEM. NON-NICET INSTALLERS MAY BE UTILIZED ON THE PROJECT TO ASSIST NICET-CERTIFIED INSTALLER ONLY IF DIRECTLY SUPERVISED BY NICET-CERTIFIED INSTALLER. THE RATIO OF NICET-TO-NON-NICET INSTALLERS SHALL NOT EXCEED 1:3.
   1. CERTIFIED NICET TECHNICIAN LEVEL 2 (INSTALLER).
   2. CERTIFIED NICET TECHNICIAN LEVEL 4 (SUPERVISOR)
C. QUALITY ASSURANCE: WORK SHALL BE PERFORMED BY A QUALIFIED SYSTEMS CONTRACTOR HOLDING A C-10 LICENSE.
D. AUTHORIZATION LETTERS: LETTER FROM THE FIRE ALARM EQUIPMENT MANUFACTURER STATING THAT THE FIRE ALARM CONTRACTOR IS A FACTORY AUTHORIZED DISTRIBUTOR, AND IS TRAINED AND CERTIFIED FOR THE EQUIPMENT PROPOSED ON THIS PROJECT AND IS LICENSED TO PURCHASE AND INSTALL THE SOFTWARE REQUIRED TO PROVIDE THE SPECIFIED FUNCTIONS.

WARRANTY: CONTRACTOR SHALL WARRANT COMPLETED FIRE ALARM SYSTEM WIRING AND EQUIPMENT TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF COMPLETION AND CERTIFIED TEST, OR FROM DATE OF FIRST BENEFICIAL USE. THE EQUIPMENT MANUFACTURER SHALL MAKE AVAILABLE TO THE OWNER A MAINTENANCE CONTRACT PROPOSAL TO PROVIDE A MINIMUM OF (2) INSPECTIONS AND TESTS PER YEAR IN COMPLIANCE WITH NFPA-72 GUIDELINES.

PART II - EXECUTION

ZONING: THE BUILDING SHALL BE DIVIDED INTO ZONES FOR ALARM ANNUNCIATION AND SYSTEM CONFIGURATION PER THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL AND/OR AUTHORITY. A ZONE WILL BE ASSIGNED FOR EACH SPRINKLER FLOW SWITCH AND EACH TAMPER SWITCH. AIR-HANDLING SYSTEMS REQUIRING IN-DUCT DETECTION SHALL BE ZONED PER UNIT. UNIT SHALL BE SHUT DOWN DIRECTLY BY AUXILIARY RELAY CONTROLLED BY DUCT SMOKE DETECTOR.

ACCEPTANCE TESTING: FINAL ACCEPTANCE WILL BE GIVEN AFTER SUCCESSFUL ACCEPTANCE TESTING AND SUBMISSION OF APPROVED AS-BUILT DOCUMENTATION AND OPERATION AND MAINTENANCE MANUALS. ACCEPTANCE TESTING OF FIRE DETECTION SYSTEM SHALL BE AS REQUIRED BY THE STATE FIRE MARSHAL AND LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING REQUIRED TESTING, COORDINATING SCHEDULING, AND CONDUCTING TEST NECESSARY TO ACHIEVE OCCUPANCY CERTIFICATION. TESTS SHALL INCLUDE THE FOLLOWING:

AN OPERATION OF EACH INITIATING DEVICE.
AN OPERATION OF EACH INDICATING DEVICE (ALARM, HORN, AND ALARM LAMP).
OPERATION OF ALL FEATURES OF SYSTEM UNDER NORMAL OPERATION.
OPERATION OF SUPERVISORY FEATURES OF SYSTEM.
OPERATION OF SYSTEM ON STANDBY POWER WITH PRIMARY POWER OFF.

UPON COMPLETION OF INSTALLATION OF FIRE ALARM EQUIPMENT, ELECTRICAL CONTRACTOR SHALL PROVIDE TO THE ENGINEER A SIGNED, WRITTEN STATEMENT CONFIRMING THAT THE FIRE ALARM EQUIPMENT WAS INSTALLED IN ACCORDANCE WITH SPECIFICATIONS, WIRING DIAGRAMS, INSTRUCTIONS AND DIRECTIONS PROVIDED BY MANUFACTURER. A COMPLETE DESCRIPTION OF NATURE AND SCOPE OF TRAINING PROGRAM FOR MAINTENANCE TECHNICIANS, OPERATORS, SYSTEM USERS, AND MANAGEMENT PERSONNEL SHALL BE PROVIDED. CONTRACTOR SHALL PROVIDE A COMPLETE TRAINING PROGRAM FOR SYSTEM USERS, AND A MINIMUM OF (4) COPIES OF OPERATING INSTRUCTIONS. IN ADDITION, CONTRACTOR SHALL PROVIDE A TRAINING PROGRAM FOR THE OWNER'S MAINTENANCE PERSONNEL. THIS TRAINING SHALL BE PROVIDED FOR A MINIMUM OF (3) PERSONS WITHIN ONE YEAR OF COMPLETION DATE. COSTS FOR INSTRUCTION SHALL BE PAID BY CONTRACTOR. TRAINING SHALL BE SCHEDULED AND COORDINATED BY THE OWNER.

NFPA 72, CHAPTER 7, INSPECTION TESTING AND MAINTENANCE COMPLETE THE INSPECTION AND TESTING FORM IN ITS ENTIRETY. SUBMIT A COPY TO THE OWNER, ARCHITECT AND FIRE AUTHORITY.

PART III - PRODUCTS (FACP)

FIRE ALARM EQUIPMENT SHALL BE U.L. LISTED AND C.S.F.M. LISTED. CATALOG AND MODEL NUMBERS LISTED ARE INTENDED TO ESTABLISH TYPE AND QUALITY OF EQUIPMENT AND SYSTEM DESIGN AS WELL AS OPERATING FEATURES REQUIRED. MANUFACTURER'S SPECIFICATION SHEETS OF EACH ITEM SO LISTED SHALL BE CONSIDERED TO BE A PART OF THESE SPECIFICATIONS AND BINDING HEREIN. ANY DEVIATION FROM INTENDED FUNCTIONS OF SYSTEM SPECIFIED MAY NOT BE APPROVED, AT OPTION OF THE OWNER/ENGINEER.

EQUIPMENT SUBSTITUTIONS MUST BE PRE-APPROVED BY THE ELECTRICAL ENGINEER (10) DAYS PRIOR TO THE BID DATE. CONTRACTOR MUST SHOW OPERATION OF EQUIPMENT AND COMPLIANCE WITH ALL FUNCTIONS AND FEATURES SPECIFIED. EQUIPMENT SUBSTITUTIONS NOT PRE-APPROVED PRIOR TO BID DATE WILL BE REJECTED.

FIRE ALARM CONTROL PANEL (FACP): WHERE INDICATED ON DRAWINGS, PROVIDE AND INSTALL A FIRE ALARM CONTROL PANEL.

FIRE ALARM SYSTEM POWER SUPPLY (FAPS): THE FAPS IS A DEVICE DESIGNED FOR USE AS EITHER A REMOTE 24 VOLT POWER SUPPLY OR USED TO POWER NOTIFICATION APPLIANCES. THE FAPS SHALL OFFER UP TO 10.0 AMPS (10.0 AMPS CONTINUOUS) OF REGULATED 24 VOLT POWER. IT SHALL INCLUDE AN INTEGRAL CHARGER DESIGNED TO CHARGE 33.0 AMP HOUR BATTERIES AND TO SUPPORT 24 HOUR STANDBY. THE FAPS SHALL HAVE TWO INPUT TRIGGERS. THE INPUT TRIGGER SHALL BE A NOTIFICATION APPLIANCE CIRCUIT (FROM THE FIRE ALARM CONTROL PANEL) OR A RELAY. UP TO FIVE OUTPUTS (FIVE STYLE Y OR FIVE Z ZNAC-PS) SHALL BE AVAILABLE FOR CONNECTION TO THE NOTIFICATION DEVICES. THE FAPS SHALL INCLUDE THE ABILITY TO DELAY THE AC FAIL DELAY PER NFPA REQUIREMENTS.

VOICE EVACUATION PANEL (VEC): THE (VEC) SHALL INCLUDE A PAGING MICROPHONE IN A LOCKED CABINET KEYED THE SAME AS THE FIRE ALARM CONTROL PANEL. MINIMUM OF TWO SUPERVISED SPEAKER CIRCUITS CAPABLE OF 50 WATTS AT 25.5 OR 70.7 VOLTS. THE SYSTEM SHALL CONTAIN AN INTEGRAL POWER SUPPLY AND BATTERY CHARGER CAPABLE OF A MINIMUM OF 24 HOURS OF STANDBY BATTERY BACK-UP FOLLOWED BY 15 MINUTES OF ALARM. THE SYSTEM SHALL BE CAPABLE OF PLAYING A MINIMUM OF EIGHT MESSAGES TO INCLUDE A 520HZ SQUARE WAVE TONE TO MEET NFPA LOW FREQUENCY REQUIREMENTS.

ANNUNCIATOR/NETWORK SYSTEM ANNUNCIATOR: WHERE INDICATED ON DRAWINGS, PROVIDE AND INSTALL A CHARACTER DISPLAY REMOTE ANNUNCIATOR. REMOTE ANNUNCIATOR SHALL BE ELECTRICALLY SUPERVISED FROM CONTROL PANEL. REMOTE ANNUNCIATOR SHALL BE INSTALLED IN A FLUSH OR SURFACE MOUNTED CABINET WITH HINGED DOOR AND LOCK. COORDINATE FINAL LOCATION OF ALL ANUNNCIATORS WITH THE ARCHITECT AND LOCAL AHJ PRIOR TO ROUGH-IN.

FATC: PROVIDE FIRE ALARM TERMINAL CABINET AS REQUIRED OR AS SHOWN ON DRAWINGS.

HORN/STROBE: HORN/STROBE DEVICES SHALL BE WALL OR CEILING MOUNTED PER DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SOUNDER/STROBE SHALL OPERATE ON 24 VDC POLARIZED CIRCUIT AND SHALL BE PROVIDED WITH A SEMI-FLUSH MOUNTING PLATE. STROBE LIGHT SHALL BE WHITE LEXAN WITH "FIRE" ON (2) SIDES. HORN SHALL HAVE A MINIMUM SOUND OUTPUT OF 100 DB AT 10'-0". THE STROBE SHALL HAVE A CANDELA DISTRIBUTION/RATING TO MEET ADA REQUIREMENTS.

SPEAKER/STROBE: SPEAKER/STROBE DEVICES SHALL BE WALL OR CEILING MOUNTED PER THE DRAWINGS OR AS REQUIRED BY LOCAL AH. SPEAKER/STROBE SHALL OPERATE ON 24 VC POLARIZED CIRCUIT AND SHALL BE PROVIDED WITH A SEMI-FLUSH MOUNTING PLATE. STROBE LIGHT SHALL BE WHITE LEAN WITH "FIRE" ON (2) SIDES. SPEAKER SHALL HAVE DUAL VOLTAGE CAPABILITY AND FIELD SELECTABLE TAPS ADJUSTABLE FROM 1/8 TO 8 WATTS. THE STROBE SHALL HAVE A CANDELA DISTRIBUTION/RATING TO MEET ADA REQUIREMENTS.

SPEAKER: SPEAKER DEVICES SHALL BE WALL OR CEILING MOUNTED PER THE DRAWINGS. SPEAKER SHALL OPERATE ON 24 VC POLARIZED CIRCUIT AND SHALL BE PROVIDED WITH A SEMI-FLUSH MOUNTING PLATE. SPEAKER SHALL HAVE DUAL VOLTAGE CAPABILITY AND FIELD SELECTABLE TAPS ADJUSTABLE FROM 1/4 TO 2 WATTS.

SPRINKLER BELL: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AH. INCLUDE ALL COSTS IN BASE BID TO PROVIDE AND INSTALL A FLUSH HORN OR BELL PER THE EXTERIOR FLUSH HORN DETAIL. AN EXPOSED EXTERIOR BELL OR HORN IS NOT ACCEPTABLE UNLESS ITS USE IS DIRECTED BY THE LOCAL FIRE MARSHAL. THE FIRE ALARM CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE USE OF SURFACE MOUNTED BELLS/HORNS PRIOR TO ROUGH-IN.

MANUAL STATIONS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AH. DEVICE SHALL BE ADDRESSABLE UNLESS OTHERWISE NOTED. STATION SHALL BE KEYED ALIKE AS THE CONTROL PANEL.

SMOKE DETECTORS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SENSORS SHALL BE ANALOG ADDRESSABLE TYPE.

DUCT SMOKE DETECTORS: PROVIDE DUCT SMOKE DETECTORS WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. DUCT SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE AND THE INSTALLATION MUST COMPLY WITH NFPA-90A.

HEAT DETECTORS: FURNISH AND INSTALL WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. SENSORS SHALL BE ADDRESSABLE.

BEAM DETECTORS: BEAM DETECTORS SHALL BE REFLECTIVE TRANSMITTER/RECEIVER TYPE WITH INTEGRAL SENSITIVITY TRANSMITTING AN INFRARED SIGNAL TO A REFLECTIVE SURFACE OR RECEIVER. THE BEAM DETECTOR SHALL HAVE A KEYED REMOTE TEST AND ALARM INDICATOR MOUNTED WITHIN 100 FEET OF THE BEAM DETECTOR. FINAL LOCATION TO BE DETERMINED BY ARCHITECT. THE BEAM DETECTOR SHALL HAVE AN INTEGRAL OPTICS ALIGNMENT (TOOL) BUILT IN THE TRANSMITTER.

WATERFLOW SWITCHES: WATERFLOW SWITCHES SHALL BE PROVIDED WITH A TAPPED 1/2" CONDUIT CONNECTION. THE FLOW SWITCH SHALL BE U.L. LISTED FOR ITS INTENDED PURPOSE. DEVICE TO BE FURNISHED AND INSTALLED BY SPRINKLER CONTRACTOR.

TAMPER SWITCHES: SPRINKLER VALVE TAMPER SWITCHES COVER REMOVAL SHALL BE SUPERVISED. SWITCH SHALL BE PROVIDED WITH EITHER ONE OR TWO SETS OF S.P.D.T. MICRO SWITCHES AS REQUIRED. TAMPER SWITCH SHALL BE URL LISTED FOR ITS INTENDED PURPOSE. DEVICE TO BE FURNISHED AND INSTALLED BY SPRINKLER CONTRACTOR.

MONITOR MODULE: MONITOR RELAYS FOR MONITORING SMOKE DOORS, GENERATORS, AUTOMATIC TRANSFER SWITCHES, FIRE SUPPRESSION SYSTEMS, ETC. AND WHERE INDICATED ON THE DRAWINGS OR AS REQUIRED BY LOCAL AH.

CONTROL MODULE: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AH.

MAGNETIC DOOR HOLDER: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AH.

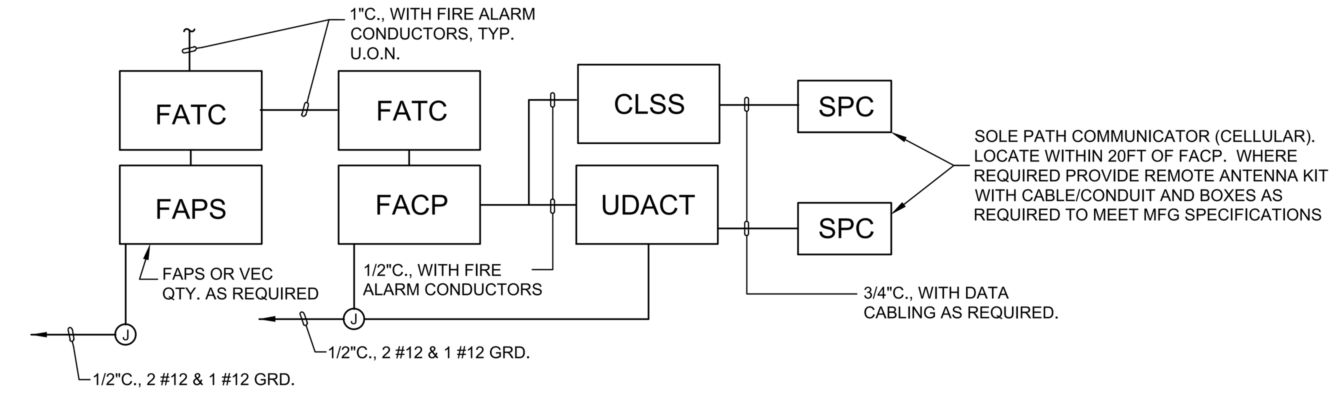
RELAY MODULE: PROVIDE WHERE INDICATED ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. RELAY(S) SHALL BE RATED FOR CONTINUOUS MOTOR OR INDUCTIVE LOADS SUCH AS COMBINATION SMOKE FIRE DAMPERS (CSFDs), MAGNETIC HOLD OPENS, ETC. QUANTITY OF RELAYS SHALL BE BASED ON PROJECT-SPECIFIC CSFD LOADS WHICH SHALL NOT EXCEED 80% OF MOTOR LOAD RATING OF THE RELAY. INCLUDE ALL COSTS IN BASE BID TO ADD ADDITIONAL 120V CONDUCTORS AS REQUIRED TO PARTITION LOADS ON INDIVIDUAL RELAYS TO MEET THE 80% RELAY MOTOR LOAD LIMIT.

REMOTE LED: PROVIDE REMOTE LED AND/OR REMOTE LED/TEST STATION WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY LOCAL AHJ. DEVICE LOCATION SHALL BE COORDINATED WITH LOCAL AHJ AND ARCHITECT PRIOR TO ROUGH-IN.

UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER (UDACT): THE UDACT IS AN INTERFACE FOR COMMUNICATING DIGITAL INFORMATION BETWEEN A FIRE ALARM CONTROL PANEL AND A URL LISTED CENTRAL STATION.

1. THE UDACT SHALL INCLUDE CONNECTIONS FOR DUAL TELEPHONE LINES (WITH VOLTAGE DETECT), PER U.L./NFPA REQUIREMENTS. IT SHALL INCLUDE THE ABILITY FOR SPLIT REPORTING OF PANEL EVENTS.
2. THE UDACT SHALL BE CAPABLE OF TRANSMITTING EVENTS IN AT LEAST NINE DIFFERENT FORMATS. THIS ENSURES COMPATIBILITY WITH EXISTING AND FUTURE TRANSMISSION FORMATS. ACCEPTED FORMATS INCLUDE 3+1 STANDARD, 4+1 STANDARD, DECO CONTACT ID OR 4+1 AND 4+2 DECO.
3. COMMUNICATION SHALL INCLUDE VITAL SYSTEM STATUS SUCH AS:

   INDEPENDENT ZONE (ALARM, TROUBLE, NON-ALARM)
   INDEPENDENT ZONE SUPERVISORY SIGNAL
   AC (MAINS) POWER LOSS
   LOW BATTERY AND EARTH FAULT
   SYSTEM OFF NORMAL
   12 AND 24 HOUR TEST SIGNAL
   ABNORMAL TEST SIGNAL (PER URL REQUIREMENTS)
   EIA-485 COMMUNICATIONS FAILURE
4. UDACT PROVISIONING SHALL BE INCLUDED IN THE BASE BID BASED ON THE FOLLOWING ASSUMPTIONS:
5. ASSUME THE FOLLOWING INFORMATION WILL BE PROVIDED BY THE OWNER TO PROGRAM AN INSTALLED UDACT TO A THIRD-PARTY CENTRAL STATION:
   a. MONITORING ACCOUNT NUMBER
   b. PRIMARY RECEIVER PHONE NUMBER
   c. SECONDARY RECEIVER PHONE NUMBER
   d. RECEIVER TYPE
   e. TRANSMISSION FORMAT
   f. MONITORING COMPANY NAME
   g. MONITORING COMPANY MAIN PHONE
   h. CONTACT PERSON AT MONITORING COMPANY
6. ASSUME THIRD-PARTY CENTRAL STATION PROVIDER SHALL PROVIDE 72 HOURS ADVANCE NOTICE FOR FIRE ALARM CONTRACTOR/INSTALLER TO BE PRESENT FOR UDACT PROGRAMMING, PRE-TESTING, TESTING, AND CONNECTION.
7. ASSUME A REPRESENTATIVE FROM THE THIRD-PARTY CENTRAL STATION IS REQUIRED AT LOCATION AT TIME OF PROGRAMMING, PRETEST AND CONNECTION. ADDITIONALLY, THIRD-PARTY CENTRAL STATION PROVIDER SHALL PROVIDE ANY MONITORING REPORTS REQUIRED BY THE FIRE DEPARTMENT. A SEPARATE PERMIT WILL BE SUBMITTED AND PAID FOR BY THE THIRD-PARTY CENTRAL STATION PROVIDER.
8. CONNECTED LIFE SAFETY SERVICES (CLSS): THE CLSS IS AN INTERFACE FOR COMMUNICATING SYSTEM EVENTS VIA CELLULAR COMMUNICATOR OR OWNER LOCAL AREA NETWORK (LAN). WHEN CONNECTED VIA OWNER LAN, CLSS GATEWAY SHALL BE CONFIGURED WITH A FIXED IP ADDRESS (FURNISHED BY OWNER-IMPLEMENTED BY CONTRACTOR) TO ALLOW AUTOMATIC EMAIL OR CELL PHONE TEXT MESSAGING IN RESPONSE TO ANY SYSTEM EVENT. ADDITIONALLY, CLSS UNITS SHALL ALLOW VIEWING OF SYSTEM STATUS, SYSTEM EVENT HISTORY AND DEVICE PROPERTIES BASED ON ACCESS PERMISSIONS DEFINED BY THE OWNER. CONTRACTOR SHALL CONFIGURE CLSS GATEWAY BASED ON OWNER INPUT AS A PART OF BASE BID.



FIRE ALARM SYSTEM SCHEMATIC

FIRE ALARM SYSTEM PRODUCTS (NOTIFIER)

SYSTEM SHALL BE NOTIFIER. GENE KNUST-GRAICHEN, AVCOM SYSTEMS/CALLIIDE TECHNICAL. (714) 878-4582, gene@avcomsystems.com.

FACP:	NOTIFIER #NFW-100X- FOR USE IN ONE THRU THREE STORY BUILDING WITH OR WITHOUT VEC REQUIREMENT. NOTIFIER #N16E - FOR USE IN ONE THRU FIVE STORY BUILDINGS WITH OR WITHOUT VEC REQUIREMENT. UP TO 3 LOOPS WITHOUT SMOKE CONTROL. NOTIFIER #NFS2-3030 (WITH OR WITHOUT SMOKE CONTROL) OR N16X (W/OUT SMOKE CONTROL) - FOR USE IN ONE THRU FIVE STORY BUILDINGS WITH ELEVATORS IN A CAMPUS ENVIRONMENT WITH OR WITHOUT VEC REQUIREMENT
PACP:	NOTIFIER TYPE #RP 2001
ANNUNCIATOR:	NOTIFIER TYPE N-ANN-80 (FOR USE WITH NFW-100X) NOTIFIER TYPE RLD (FOR USE WITH N16 SERIES) NOTIFIER TYPE LCD-160 (FOR USE WITH NFS2-3030) OR LDM-32 CUSTOM GRAPHICS PANEL (WHERE REQUIRED BY LOCAL AHJ OR INDICATED ON PLANS) NOTIFIER TYPE NCA-2 (FOR USE AS CAMPUS/NETWORK ANNUNCIATOR)
FATC:	18"x18"x4" METAL CABINET WITH SCREW COVER (FOR USE WITH NFW-100X) 24"x24"x6" METAL CABINET WITH SCREW COVER (FOR USE WITH N16 SERIES)
POWER SUPPLY(FAPS):	NOTIFIER #HPF-PS10B NOTIFIER #ACPS-610
HORN / STROBE:	SYSTEM SENSOR #LED-SERIES
STROBE:	SYSTEM SENSOR #LED-SERIES
SPEAKER/ STROBE:	SYSTEM SENSOR #LED-SERIES
SPEAKER:	SYSTEM SENSOR #LED-SERIES
SPRINKLER BELL:	SYSTEM SENSOR #SSM SERIES
MANUAL STATION:	NOTIFIER #NBG-12LX.
PREACTION RELEASING STATION:	NOTIFIER #NBG-12LR W/FMM-101
SMOKE DETECTORS: (RETURN AIR, AREA, IN-DUCT AREA)	NOTIFIER #FSP-951 PHOTOELECTRIC
SMOKE / CO DETECTORS:	SYSTEM SENSOR #FCO-951
SOUNDER BASE (INTELLIGENT):	SYSTEM SENSOR #B200S (WHERE COMBINATION CO/ SMOKE DETECTORS ARE REQUIRED) SYSTEM SENSOR #B200LF (LOW FREQUENCY SOUND FOR USE IN SLEEPING AREAS)
DUCT DETECTORS (SMOKE):	NOTIFIER #DNR W/FSP-951 SMOKE DETECTOR HEAD, NOTIFIER #DNR W/FSP-951R SMOKE DETECTOR HEAD (WHERE REMOTE TEST SWITCH IS REQUIRED), DNR-W (WEATHERPROOF WHERE REQUIRED)
HEAT DETECTORS:	NOTIFIER #FST-951
BEAM SMOKE DETECTORS:	NOTIFIER #FS-OSI-R1
WATERFLOW:	NOTIFIER #WFD SERIES.
TAMPER:	NOTIFIER #PIBV2 SERIES NOTIFIER #OSY2 SERIES.
MONITOR MODULE:	NOTIFIER #FMM-1, #FDM-1, OR FMM-101
CONTROL MODULE:	NOTIFIER #FCM-1
ADDRESSABLE CONTROL RELAY:	NOTIFIER #FRM-1 WITH SYSTEM SENSOR #PR-1 OR #R-10T AS REQUIRED
MAG DOOR HOLDER:	NOTIFIER #FM SERIES
REMOTE LED:	NOTIFIER #RA100Z
COMMUNICATOR:	NOTIFIER MODEL #UDACT2 AND/OR CLSS
SOLE PATH COMMUNICATOR (SFC):	NAPCO OR EQUAL (WITH CELLULAR SERVICE)
VOICE EVACUATION SYSTEM:	NOTIFIER #NFC-50/100 (FOR USE WITH NFW-100X OR N16E) NOTIFIER #DVC (FOR USE WITH NFS2-3030 OR N16 SERIES)
ALL OTHER MISCELLANEOUS ITEMS:	NOTIFIER / WHEELOCK / H.R. KIRKLAND / SYSTEM SENSOR

FIRE ALARM/CENTRAL MONITORING SYSTEM SYMBOLS

Symbol	Description
FACP	FIRE ALARM CONTROL PANEL - SEE SPECIFICATIONS.
CMCP	CENTRAL MONITOR CONTROL PANEL- SEE SPECIFICATIONS
FAAP	FIRE ALARM ANNUNCIATOR PANEL - SEE SPECIFICATIONS.
FATC	FIRE ALARM TERMINAL CABINET - SEE SPECIFICATIONS.
FAPS	FIRE ALARM SYSTEM POWER SUPPLY/TRANSPONDER PANEL - SEE SPECIFICATIONS.
PACP	FIRE ALARM PRE-ACTION CONTROL PANEL - SEE SPECIFICATIONS.
VEC	FIRE ALARM VOICE EVACUATION SYSTEM CONTROL PANEL - SEE SPECIFICATIONS.
H	FIRE ALARM HORN, WALL MOUNTED - SEE SPECIFICATIONS.
HF	FIRE ALARM HORN/FLASHING LIGHT (ADA APPROVED), WALL MOUNTED - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
HF	FIRE ALARM HORN/FLASHING LIGHT (ADA APPROVED), CEILING DEVICE SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F	FIRE ALARM FLASHING LIGHT (ADA APPROVED), WALL MOUNTED - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F	FIRE ALARM FLASHING LIGHT (ADA APPROVED), CEILING MOUNTED DEVICE - SEE SPECIFICATIONS. CANDELA RATING AS REQUIRED TO MEET ADA COVERAGE REQUIREMENTS.
F E / F E	SMOKE/CO ALARM STROBE LIGHT - 120V, WALL/CEILING MOUNTED. DEVICE TO BE USED IN CONJUNCTION WITH A 120V SMOKE/CO ALARM DEVICE. UNIT SHALL BE LISTED PER UL1971. BRK #SL177.
SF	FIRE ALARM SPEAKER/FLASHING LIGHT, WALL MOUNTED - SEE SPECIFICATIONS.
SF	FIRE ALARM SPEAKER/FLASHING LIGHT, CEILING MOUNTED DEVICE - SEE SPECIFICATIONS.
S	FIRE ALARM SPEAKER, CEILING MOUNTED - SEE SPECIFICATIONS.
S	FIRE ALARM SPEAKER, WALL MOUNTED - SEE SPECIFICATIONS.
B	FIRE ALARM BELL - SEE SPECIFICATIONS.
MS	FIRE ALARM MANUAL PULL STATION, WALL MOUNTED - SEE SPECIFICATIONS.
MS PA	FIRE ALARM DUAL ACTION/PREACTION RELEASING STATION, WALL MOUNTED - SEE SPECIFICATIONS.
SD	FIRE ALARM SMOKE DETECTOR, CEILING MOUNTED - SEE SPECIFICATIONS.
SD E	STAND ALONE SMOKE DETECTORS: AREA SMOKE DETECTORS FOR THE CONTROL OF COMBINATION SMOKE/FIRE DAMPERS (CSFD'S) SHALL BE GENTEX MODEL 8100PY (CSFM #7272-0569:102). THE DETECTORS SHALL BE 120VAC POWERED AND SHALL NOT CONNECT TO THE FIRE ALARM PANEL. THE DETECTORS SHALL PROVIDE AN AUDIBLE AND VISUAL INDICATION AND SHALL AUTOMATICALLY CAUSE THE RESPECTIVE CSFD'S TO CLOSE. THE DETECTORS SHALL INCORPORATE A SELF RESETTING FEATURE WHEN SMOKE HAS CLEARED. THE AREA SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 90A AND APPLICABLE SECTIONS OF NFPA 72 - AND ARE ONLY ALLOWED WHEN SPECIFICALLY SHOWN ON PLANS.
SC E	SMOKE/CO ALARM DEVICE - 120V. 120V SINGLE/MULTIPLE STATION SMOKE AND CARBON MONOXIDE SENSOR WITH MONITORED 9V BATTERY BACKUP. DEVICE TO HAVE DISTINCT SMOKE AND CO SENSORS AND SOUND PATTERNS. UNIT SHALL BE U.L. LISTED PER UL217 AND UL2034. BRK #SC9120B. IF THIS DEVICE IS TO BE SUPERVISED - CONNECT VIA A BRK #RM4 RELAY.
SC	SMOKE/CO ALARM DEVICE - ADDRESSABLE. SMOKE AND CARBON MONOXIDE SENSOR MOUNTED TO AN ADDRESSABLE SOUNDER BASE. UNIT SHALL BE U.L. LISTED PER UL268 AND UL2075.
SA E	SMOKE ALARM DEVICE - 120V. 120V SINGLE/MULTIPLE STATION SMOKE ALARM WITH MONITORED 9V BATTERY BACKUP. DEVICE TO HAVE DISTINCT SMOKE SENSOR AND SOUND PATTERNS. UNIT SHALL BE U.L. LISTED PER UL217 AND UL2034. BRK #SC9120. IF THIS DEVICE IS TO BE SUPERVISED - CONNECT VIA A BRK #RM4 RELAY.
SA	FIRE ALARM SMOKE DETECTOR, CEILING MOUNTED TO AN ADDRESSABLE SOUNDER BASE - SEE SPECIFICATIONS.
ID	FIRE ALARM SMOKE DETECTOR, IN-DUCT - SEE SPECIFICATIONS.
RA	FIRE ALARM SMOKE DETECTOR, RETURN AIR - SEE SPECIFICATIONS.
DD	FIRE ALARM DUCT DETECTOR PHOTOELECTRIC TYPE - SEE SPECIFICATIONS.
DD E	STAND ALONE DUCT DETECTORS: DUCT DETECTORS SHALL BE PROVIDED ON THE SUPPLY OF EACH AIR HANDLER EXCEEDING 2,000 CFM OR ALL AIR HANDLERS SERVING A COMMON AREA WHERE THEIR COMBINED SUPPLY EXCEEDS 2,000 CFM. THE DUCT DETECTORS SHALL BE SYSTEM SENSOR MODEL D4120, PHOTOELECTRIC TYPE (CSFM #3240-1653:207). THE DUCT SMOKE DETECTOR SHALL CAUSE THE RESPECTIVE AIR HANDLER UNIT TO AUTOMATICALLY SHUTDOWN. THE DUCT SMOKE DETECTOR SHALL BE PROVIDED WITH A REMOTE TEST/RESET INDICATOR, SYSTEM SENSOR MODEL #RTS2 (CSFM #7135-1653:196). THE TEST INDICATOR SHALL PROVIDE AUDIBLE AND VISUAL ALARM INDICATION AND SHALL PROVIDE MEANS TO RESET THE DUCT DETECTOR. THE DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 90A AND APPLICABLE SECTIONS AND OF NFPA 72 - AND ARE ONLY ALLOWED WHEN SPECIFICALLY SHOWN ON PLANS.
HD	FIRE ALARM HEAT DETECTOR, CEILING MOUNTED - SEE SPECIFICATIONS.
BT	FIRE ALARM BEAM DETECTOR - TRANSMITTER/RECEIVER - MOUNTED AS INDICATED ON PLANS.
BR	FIRE ALARM BEAM DETECTOR - REFLECTOR - MOUNTED AS INDICATED ON PLANS.
W	FIRE ALARM FLOW SWITCH - SEE SPECIFICATIONS.
T	FIRE ALARM TAMPER SWITCH - SEE SPECIFICATIONS.
PV	FIRE ALARM POST INDICATING VALVE/OS&Y/DOUBLE BACK CHECK VALVE - SEE SPECIFICATIONS.
M	FIRE ALARM SYSTEM MONITOR MODULE - SEE SPECIFICATIONS.
C	FIRE ALARM SYSTEM CONTROL MODULE - SEE SPECIFICATIONS.
CR	FIRE ALARM SYSTEM CONTROL RELAY MODULE - SEE SPECIFICATIONS.
R	CA FIRE MARSHAL-LISTED FIRE ALARM RELAY - SEE SPECIFICATIONS.
	FIRE ALARM MAGNETIC HOLD OPEN DEVICE - SEE SPECIFICATIONS.
I	FIRE ALARM REMOTE L.E.D. INDICATOR. IF REQUIRED BY AHJ, PROVIDE REMOTE L.E.D. WITH TEST STATION.
PH	FIRE ALARM SYSTEM FIREMANS PHONE JACK - SEE SPECIFICATIONS.
— FA —	FIRE ALARM BRANCH CIRCUIT PER FIRE ALARM WIRING DIAGRAMS & SPECIFICATIONS.
—/\/\/\	FIRE ALARM END-OF-LINE RESISTOR - SEE SPECIFICATIONS.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E71.2
SHEET TITLE:

FIRE ALARM SPEC.

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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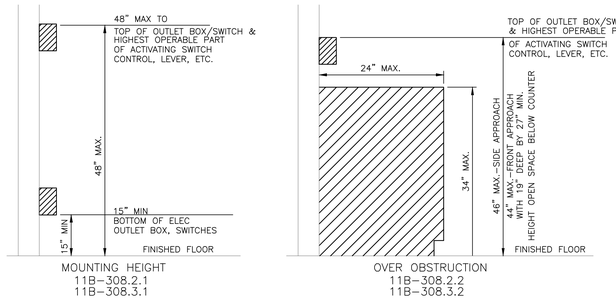
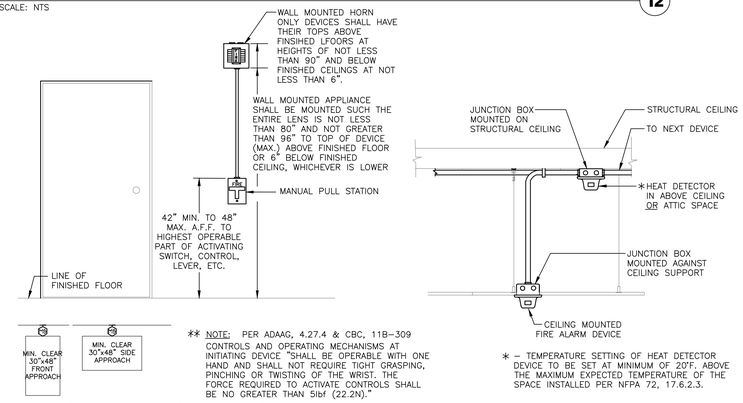
PLAN CHECK #00856737-CNEW



ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER – CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

MOUNTING HEIGHT OVER OBSTRUCTION DETAIL 12

SCALE: NTS

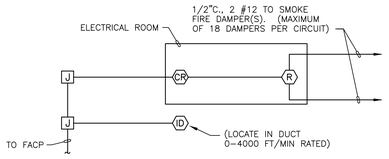


** NOTE: PER ADAAG, 4.27.4 & CBC, 11B-309 CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE "SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbf (22.2N)."

* – TEMPERATURE SETTING OF HEAT DETECTOR DEVICE TO BE SET AT MINIMUM OF 20°F. ABOVE THE MAXIMUM EXPECTED TEMPERATURE OF THE SPACE INSTALLED PER NFPA 72, 17.6.2.3.

DEVICE MOUNTING DETAILS 11

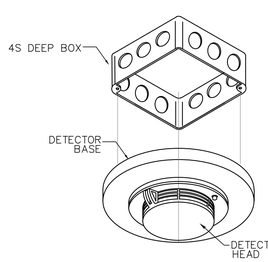
SCALE: N.T.S.



Note:
PER CMC 605.8, When the automatic activation of a smoke damper or a combination smoke-fire damper occurs, the HVAC system serving such dampers shall immediately shut down. ALL HVAC UNITS CONTAINING COMBINATION SMOKE FIRE DAMPERS AS PART OF THEIR DUCTING SYSTEM SHALL BE PROVIDED WITH SHUNT RELAYS AND DEVICES FOR IMMEDIATE SHUT DOWN UPON THE ACTIVATION / CLOSURE OF ASSOCIATED COMBINATION SMOKE FIRE DAMPERS.

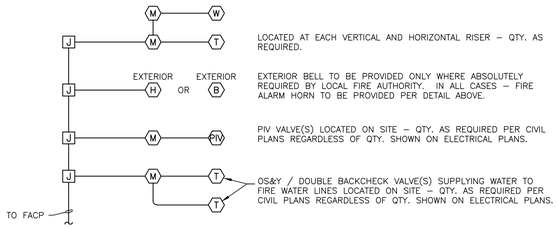
SMOKE/FIRE DAMPER SCHEMATIC 3

SCALE: N.T.S. **(SMOKE DETECTOR LOCATED IN DUCT)**



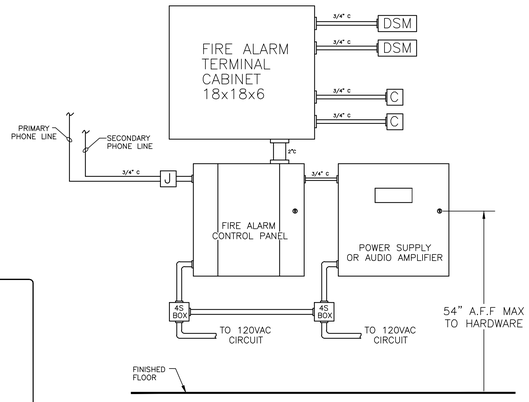
DETECTOR MOUNTING DETAIL 8

SCALE: N.T.S.



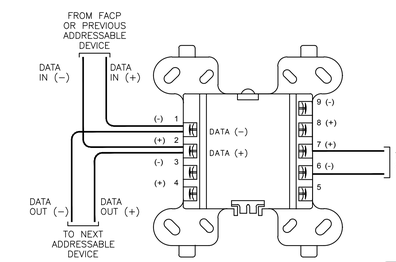
SPRINKLER SYSTEM CONNECTION SCHEMATIC 7

SCALE: N.T.S.

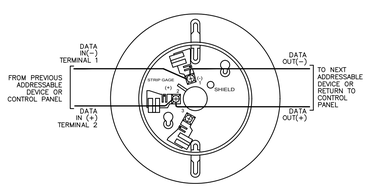


FIRE ALARM PANEL/POWER SUPPLY MOUNTING ELEVATION 6

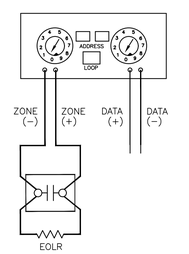
SCALE: N.T.S.



CONTROL MODULE WIRING



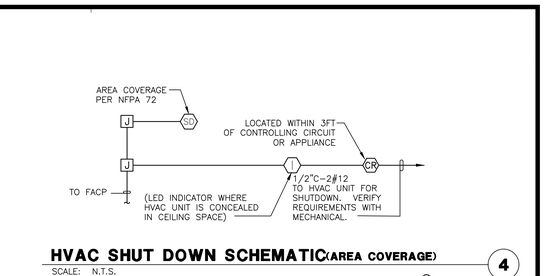
ADDRESSABLE SMOKE/HEAT DETECTOR



MANUAL PULL STATION

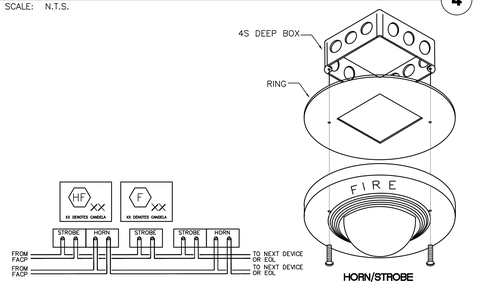
DEVICE WIRING DETAILS 5

SCALE: N.T.S.



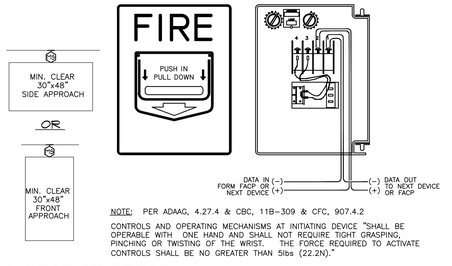
HVAC SHUT DOWN SCHEMATIC (AREA COVERAGE) 4

SCALE: N.T.S.



CEILING MTD. AUDIBLE/VISUAL 3

SCALE: N.T.S.

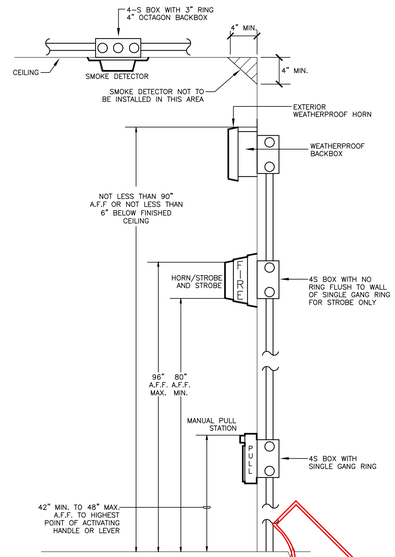


NOTE: PER ADAAG, 4.27.4 & CBC, 11B-309 & CFC, 907.4.2

CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE "SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5lbs (22.2N)."

PULL STATION DETAIL 2

SCALE: N.T.S.

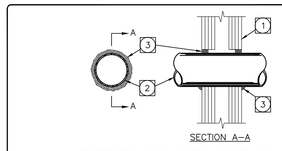


GENERAL NOTES:

1. THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80" AND 96" ABOVE FLOOR FINISH. (NFPA 72, 18.5.5)
2. MANUAL FIRE ALARM BOXES SHALL BE INSTALLED, IN ACCORDANCE WITH CBC, SECTIONS 907.4 THROUGH 907.5.
3. WHEN APPLICABLE, MANUAL FIRE ALARM BOXES SHALL BE LOCATED NOT MORE THAN 5 FEET FROM THE ENTRANCE TO EACH EXIT. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT TRAVEL DISTANCE TO THE NEAREST BOX DOES NOT EXCEED 200 FEET. (CFC 907.4.2.1)

MOUNTING HEIGHT DETAIL 1

SCALE: N.T.S.



SECTION A–A

PENETRATION THRU GYPSUM BOARD WALL
NO SCALE

System No.W-L-1252
January 22, 2015
F Ratings – 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Ratings – 0 Hr
L Rating At Ambient – less than 1 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft

1. Wall Assembly – The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

   A. Studs – Wall framing may consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* – Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

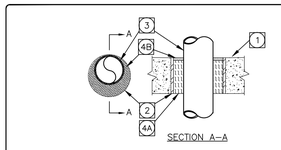
   The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrant – One metallic pipe, conduit or tube to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe, conduit or tube and periphery of opening shall be min 0 in. (point contact) to max 7/8 in. (22 mm). Pipe, conduit or tube to be rigidly supported on both sides of wall assembly.
   A. Steel Pipe – Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
   C. Conduit – Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit.
   D. Conduit – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic conduit.
   E. Copper Tubing – Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
   F. Copper Pipe – Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Fill, Void or Cavity Material* – Sealant – 1. Fill material applied within annulus , flush with both surfaces of wall. Type and thickness of sealant is dependent on F and FH Ratings as indicated in Table below. An additional 1/2 in. (13 mm) diameter bead of sealant applied at penetrant/gypsum board interface at point contact location on both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-ONE Sealant, FS-ONE MAX Intumescent Sealant or CP 606 Sealant

F, FH RATINGS (HR)	SEALANT TYPE	SEALANT THICKNESS, IN. (MM)
1-2	FS-ONE, FS-ONE MAX OR CP 606	5/8 (16)
3	FS-ONE, FS-ONE MAX OR CP 606	1 (25)
4	FS-ONE, FS-ONE MAX	1 (25)

*Bearing the UL Classification Marking



SECTION A–A

PENETRATION THRU CONCRETE WALL OR FLOOR
NO SCALE

System No. C-AJ-1630
DECEMBER 20, 2013
F Ratings – 2, 3, and 4 Hr (See Item 4)
T Rating – 0 Hr
L Rating At Ambient – less than 1 CFM/sq ft
L Rating At 400 F – less than 1 CFM/sq ft
W Rating – Class 1 (See Item 4)

1. Floor or Wall Assembly – 1. See Configuration A above. Reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/cu meter) concrete as specified in the Table in Item 4 below. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of sleeved opening is 32 in. (813 mm).
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

1A. Floor Assembly – See Configuration B above. Min 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*. Max diam of opening is 7 in. (178 mm).
See Precast Concrete Units (CFTV) category in the Fire Resistance Directory for names of manufacturers.

2. Steel Sleeve (Optional) – Nom 32 in. (813 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with both surfaces of floor or wall. As an option, sleeve may extend max 2 in. above top surface of floor or beyond one or both surfaces of wall. Steel sleeve may be used in 2 and 3 hr F Rated systems only.

3. Through Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. See Table in Item 4 for sizes of penetrants A, B, D and E that may be used. See Item 3C below for size of conduit that may be used. The annular space shall be as specified in Table in Item 4 below. The following types and sizes of metallic pipes, conduits or tubing may be used:

   A. Steel Pipe – Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Cast or ductile iron pipe.
   C. Conduit – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or nom 6 in. (152 mm) diam (or smaller) steel conduit.
   D. Copper Tubing – Type L (or heavier) copper tubing.
   E. Copper Pipe – Regular (or heavier) copper pipe.

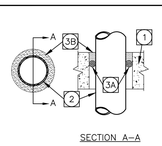
4. Firestop System – The F Rating of the system is dependent upon the type of concrete, thickness of concrete, annular space, fill and packing material thickness, packing material density and penetrant size as shown in the Table below. W Rating applies to annular spaces of min 0 in. (point contact) to max 1-7/8 in. and to Configuration A detail only.

F RATING HR	MIN THICK CONCRETE IN.	ANNULAR SPACE IN.	MIN THICK PACKING MTL IN.	MIN DENSITY PACKING MTL PCF KG/CU MTR	MIN THICK FILL MTL IN.	PENETRANT SIZE IN. DIAM (OR SMALLER) T/L COPPER	PENETRANT SIZE IN. DIAM (OR SMALLER) A/B STEEL IRON
2	5-1/2(140)	0 TO 1-7/8 (0 TO 48)	5 (127)	4 (64)	1/2 (13)	4 (102)	16 (406)
3	4-1/2(114)	0 TO 2-1/8 (0 TO 54)	4-1/4 (108)	4 (64)	1/4 (6)	6 (152)	30 (762)
4	5-1/2(140)	0 TO 1-7/8 (0 TO 48)	5 (127)	4 (64)	1/2 (13)	4 (102)	8 (203)

A. Packing Material – Min 4-1/4 or 5 in. (108 or 127 mm) thickness of min 4.0 pcf (64 kg/cu meter) mineral wool batt insulation firmly packed into opening as a permanent form as specified in the Table above. Packing material to be recessed from top surface of floor or top end of sleeve, or from both surfaces of wall or ends of sleeve, as required to accommodate the required thickness of fill material. For hollow-core floor applications as shown in Configuration B, one half of the required thickness of mineral wool packing material shall be installed flush with the bottom surface of the floor and the remaining half of the mineral wool packing material installed at the top of the opening and recessed from the top surface of the floor to accommodate the required thickness of the fill material.

B. Fill, Void or Cavity Material* – Caulk – Min 1/4 or 1/2 in. (6 or 13 mm) thickness of fill material as specified in the Table above applied within the annulus, flush with top surface of floor or top end of sleeve, or with both surfaces of wall or ends of sleeve. At the point contact location between pipe and concrete or sleeve, a min 1/2 in. (13 mm) diam bead of fill material shall be applied. As an option, where concrete floor is poured around sleeve, the annulus between the sleeve and floor may be recessed to accommodate a 1/4 in. (6 mm) depth of fill material installed flush with bottom surface of floor.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CFS-S SIL GG (floors or walls) and CFS-S SIL SL (floors only)

*Bearing the UL Classification Mark



SECTION A–A

PENETRATION THRU CONCRETE FLOOR
NO SCALE

SYSTEM NO C-AJ-1278
April 20, 2012
F RATING–3 HR
T RATING–0 HR

Floor or Wall Assembly – 1. Floor or Wall Assembly -- Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in. (152 mm).

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants – One metallic pipe, conduit or tubing to be centered within the firestop system. A nom annular space of 3/4 in. (19 mm) is required within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

   A. Steel Pipe – Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Conduit – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.

3. Firestop System – The firestop system shall consist of the following:
A. Packing or Forming Materials -- Optional -- One of the following packing or forming materials may be used:

A1. Foam Backer Rod -- Foam backer rod tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty.

A2. Mineral Wool Batt Insulation -- Min 4 pcf (64 kg/m3), tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty.

A3. Forming Material* -- Forming material to be foamed into the opening as a permanent form. Forming material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CFB12 or CF-AS CJP Foam Sealant

B. Fill, Void or Cavity Material* -- Putty -- Min 1 in. (25 mm) thickness of putty applied within the annulus, flush with top surface of floor or with both surfaces of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP 618 Firestop Putty Stick

*Bearing the UL Classification Mark

THROUGH RATED WALL OR FLOOR PENETRATIONS (U.L. LISTINGS) 10

SCALE: N.T.S.

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SNOOTHER No. E15610 12/31/2025 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO:	2023-40108
DATE ISSUED:	11/19/2024
SCALE:	As indicated
SHEET NUMBER:	E71.3
SHEET TITLE:	

FIRE ALARM DETAILS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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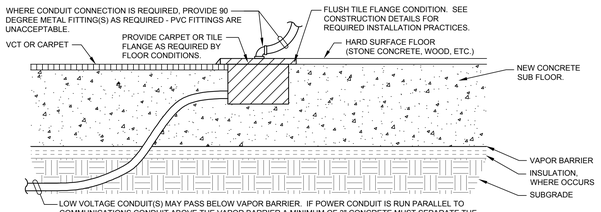
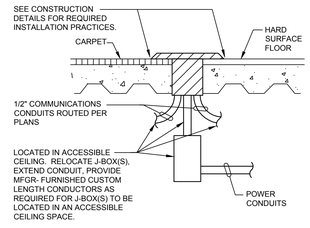
PLAN CHECK #00856737-CNEW

CITY OF IRVINE BUILDING & SAFETY DIVISION



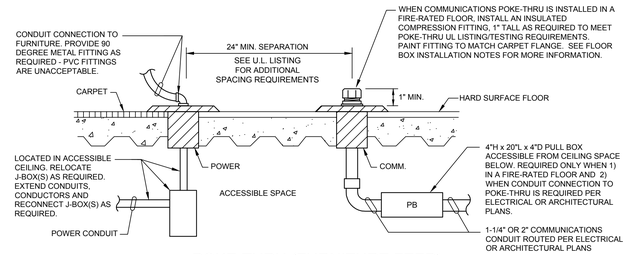
SLAB-ON-GRADE FLOOR BOX

N.T.S.



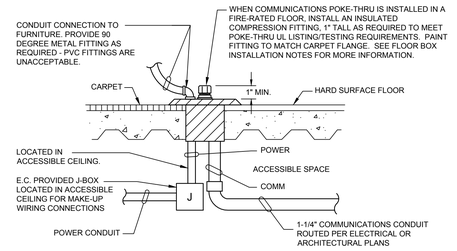
POKE-THRU (NON-FURNITURE FEED)

N.T.S.



POKE-THRU (FURNITURE FEED)

N.T.S.



COMBINATION POKE-THRU FURNITURE FEED

N.T.S.

FLOOR BOX SCHEDULE

SYMBOL(S)	ISOMETRIC DIAGRAM	FLOOR LOCATION	DESCRIPTION	MAX. CONDUIT SIZE	FACTORY STANDARD FINISH/COLOR OPTIONS	COMPARTMENTS
1A T24 CONTROLLED 1A UNCONTROLLED		ON GRADE	WIREMOLD RFBA2C300G, 6CTC COVER, AND (?) RFBADEC DECORA-STYLE PLATE FOR EACH ELECTRICAL AND COMMUNICATIONS OUTLET. WHERE INSTALLED IN FINISHED CONCRETE OR TERRAZZO FLOORS, PROVIDE CONCRETE TRIM RING TO ALLOW COMPLETELY FLUSH INSTALLATION. PROVIDE (?) RFBAB BLANK PLATE FOR EACH A/V OUTLET OR UNUSED COMPARTMENT. QUANTITY OF PLATES AS NECESSARY TO SUPPORT DEVICE CONFIGURATION(S) SHOWN ON PLANS.	2"	FACTORY STANDARD FINISH/COLOR SELECTED BY ARCHITECT: BK - BLACK POWDER COATED COVER GY - GRAY POWDER COATED COVER BZ - BRONZE POWDER COATED COVER AA - BRUSHED ALUMINUM DURABLE FINISH COVER SB - SATIN BRASS DURABLE FINISH COVER SN - SATIN NICKEL DURABLE FINISH COVER FINAL FLANGE CONFIGURATION BY ARCHITECT.	GANG 1 = DUPLEX SEE NOTE 1.

FLOOR BOX SCHEDULE NOTES:

1. WHERE CONTROLLED RECEPTACLES ARE REQUIRED, U.O.N. PROVIDE A MINIMUM OF 1 PERMANENTLY MARKED, CONTROLLED RECEPTACLE. WHERE SHOWN AS A PWR FEED - SEE DLCS SPECIFICATIONS.

   PROVIDE NEMA RECEPTACLE CONFIGURATION PER PLAN OR FLOOR BOX SCHEDULE.

   THE CONTRACTOR, AFTER OBTAINING APPROVAL OF THE ARCHITECT, SHALL PROVIDE WIREMOLD 6FF-AFB WITH 6CFFTC?? SERIES COVER WHEN ANY OF THE SINGLE GANG POKE-THRU DEVICES SHOWN ABOVE ARE LOCATED WHERE THE MINIMUM THICKNESS OF STRUCTURAL CONCRETE FLOOR IS LESS THAN 2-1/4" THICK. FACTORY FINISH PER ARCHITECT.

   THE CONTRACTOR, AFTER OBTAINING APPROVAL OF THE ARCHITECT, SHALL PROVIDE WIREMOLD 6FF-AFB WITH 6CFFTC?? SERIES COVER WHEN DEVICES SHOWN TOGETHER IN ABOVE-GRADE FLOOR FURNITURE FEED AND WHEN MINIMUM THICKNESS OF STRUCTURAL CONCRETE FLOOR IS LESS THAN 2-1/4" THICK.

   THE CONTRACTOR, AFTER OBTAINING APPROVAL OF THE ARCHITECT, SHALL PROVIDE WIREMOLD CRFB4 WITH 8CTC2?? SERIES COVER WHEN DEVICES SHOWN TOGETHER IN ABOVE-GRADE FLOOR FURNITURE FEED AND WHEN MINIMUM THICKNESS OF STRUCTURAL CONCRETE FLOOR IS LESS THAN 2-1/4" THICK. WHERE REPLACING A 10-GANG POKE-THRU, PROVIDE (2) WIREMOLD CRFB4 WITH 8CTC2?? SERIES COVERSFOR CAPACITY.

FLOOR BOX INSTALLATION NOTES:

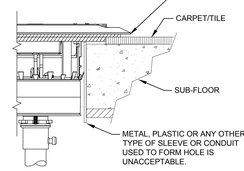
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY - UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE USE OF PVC BOXES ON-GRADE IS ACCEPTABLE WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) PRIOR TO BID. SHOULD THE AHJ REQUIRE THE USE OF CAST BOXES WHEN ON-GRADE, THE CONTRACTOR SHALL PROVIDE CAST WALKER BOXES COMPLETE WITH DEVICE PLATES/ADAPTERS AS REQUIRED TO MEET THE INTENT OF THE DRAWINGS. ALL COSTS FOR CAST BOXES SHALL BE INCLUDED IN THE BASE BID.
6. ALL FLOOR BOXES SHALL BE LISTED TO MEET U.L. 514A AND 514C SCRUB WATER TEST.
7. CONTRACTOR SHALL BID THE MOST EXPENSIVE STANDARD TRIM FINISH/MATERIAL AS PART OF BASE BID. SHOULD THE ARCHITECT SELECT LESS EXPENSIVE TRIM FINISHES/MATERIAL FOR SOME OR ALL FLOOR BOXES DURING THE SUBMITTAL PROCESS, CONTRACTOR SHALL PROVIDE A CREDIT TO THE OWNER FOR THE DIFFERENCE IN COST THE TRIM FINISHES/MATERIALS.
8. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES AS REQUIRED TO ENSURE THAT FLOOR BOX AND POKE-THRU FLANGES/TOPS FIT FLUSH WITH FINAL FINISHED FLOOR COVERING/SURFACE. GAPS BETWEEN FLANGES/TOPS AND CARPET, TILE OR OTHER FLOOR SURFACES ARE UNACCEPTABLE AND SHALL BE CORRECTED AT NO ADDITIONAL COST. REFER TO FLOOR BOX SCHEMATIC AND SPECIFICATIONS FOR MORE INFORMATION.
9. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF FLOOR BOXES WITH ARCHITECT, OWNER, AND FURNITURE VENDOR PRIOR TO ROUGH-IN.
10. CONTRACTOR SHALL PROVIDE ANY SPARE/ADDITIONAL ADAPTERS, BEZELS, ETC., TO THE OWNER OR STRUCTURED CABLING CONTRACTOR.
11. FLOOR BOXES SHALL BE CAPABLE OF ACCEPTING A/V, DATA AND TELEPHONE COMMUNICATIONS JACKS FROM A WIDE VARIETY OF COMMUNICATIONS DEVICE MANUFACTURERS. FLOOR BOXES THAT ACCEPT ONLY A SINGLE VENDOR'S A/V, DATA AND COMMUNICATIONS JACKS ARE UNACCEPTABLE.
12. WHEN LOCATED IN AREAS SUBJECT TO VEHICLE TRAFFIC, PROVIDE TRAFFIC RATED FLANGE.
13. FURNITURE SYSTEM DATA-ONLY POKE-THRU FLOOR DEVICES REQUIRE USE OF 90 DEGREE CONDUIT FITTING AND CONDUIT NIPPLE AS SHOWN WHEN LOCATED IN FIRE-RATED FLOOR AND SHALL BE INSTALLED ONLY AFTER COORDINATION WITH THE OWNER AND THE STRUCTURED CABLING CONTRACTOR. E.C. TO COMPLY WITH MANUFACTURER'S POKE-THRU INSTALLATION INSTRUCTIONS FOR THIS AND OTHER REQUIREMENTS NECESSARY TO MAINTAIN FIRE RATING OF POKE-THRU.
14. CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ACCOMODATE RELOCATING FACTORY-FURNISHED POKE-THRU WIRING JUNCTION BOXES FROM ANY POKE-THRU LOCATIONS THAT OCCUR 1) IN A FLOOR WITH A THICKNESS THAT PREVENTS ACCESS TO THE J-BOX(S) AND/OR 2) ABOVE AN INACCESSIBLE CEILING TO AN AREA WITH NO CEILING OR AN ACCESSIBLE CEILING. THIS EFFORT SHALL INCLUDE ORDERING CUSTOM EXTENDED LENGTH POWER WIRING FOR PRE-WIRED POKE-THRUS AND SHALL INCLUDE COORDINATING WITH THE MODULAR SYSTEMS FURNITURE VENDOR, IF ANY, TO PROVIDE MODULAR SYSTEMS FURNITURE POWER WHIPS WITH EXTRA CONDUCTOR LENGTHS AS REQUIRED TO REACH ANY RELOCATED POKE-THRU JUNCTION BOXES.
15. WHERE THE SPECIFIED POKE-THRU OR FLOOR BOX CANNOT BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND/OR CANNOT BE PROPERLY SUPPORTED SUCH AS IN SHALLOW, NON-RATED FLOORS, GYPSUM BOARD RATED FLOORS OR WOOD FLOORS, ETC., CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO PROVIDE ANY NECESSARY ADDITIONAL BLOCKING/SUPPORT STRUCTURES REQUIRED TO ENSURE FIRM CONNECTION OF THE POKE-THRU OR FLOOR BOX TO THE BUILDING/FACILITY STRUCTURE.
16. VERIFY FLOOR-BOX AND POKE-THRU CONDUIT REQUIREMENTS USING BOTH ELECTRICAL, STRUCTURAL AND ARCHITECTURAL PLANS. IF THE PLANS CONFLICT, THE ELECTRICAL CONTRACTOR SHALL INCLUDE THE MOST COSTLY VERSION OF THE PLAN IN THE BASE BID. WHERE POKE-THRUS ARE LOCATED ABOVE INACCESSIBLE CEILING SPACES, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD OR EXTEND PATHWAYS TO ENSURE POKE-THRU ACCESSIBILITY FOR FUTURE USE. IN ADDITION, AT EACH ON-GRADE FLOOR BOX COMPARTMENT USED FOR OTHER THAN POWER AND WHERE NO CONDUIT CONNECTION IS SHOWN ON THE PLANS, INCLUDE ALL COST IN THE BASE BID TO PROVIDE (1) 1-1/4"C.O. FROM COMPARTMENT(S) TO THE NEAREST ACCESSIBLE CEILING. ISSUE A PRE/POST BID RFI TO CLARIFY THE ACTUAL REQUIREMENT PRIOR TO ROUGH-IN.
17. ALL NEW WIRING DEVICES INDICATED TO BE CONTROLLED RECEPTACLES SHALL BE NEMA-APPROVED, ELECTRICAL CODE-COMPLIANT WITH FACTORY MARKINGS ON THE FACE OF THE RECEPTACLE(S) OR RECEPTACLE PRE-ASSEMBLIES WITH THE WORD "CONTROLLED" AND UTILIZE FURTHER MARKINGS AND SYMBOLS TO INDICATE WHICH RECEPTACLES ON EACH OUTLET IS/ARE CONTROLLED. STICKERS, FIELD-APPLIED MARKINGS OR OTHER NON-PERMANANT MARKINGS ARE NOT ACCEPTABLE. SEE GENERAL ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
18. ALL LOW VOLTAGE CONDUITS TO FLOOR BOXES SHALL BE RUN IN THE SLAB ABOVE A VAPOR BARRIER.
19. PRIOR TO ANY FLOOR CORING ACCOMODATE TO ANY 8" AND 10" POKE-THRUS, OBTAIN WRITTEN APPROVAL AND FOLLOW ANY SPECIAL DIRECTIONS FROM THE PROJECT STRUCTURAL ENGINEER. IN GENERAL, THESE LARGE CAPACITY DEVICES SHALL BE NO CLOSER THAN 3 FEET ON CENTER WITHOUT SPECIAL PERMISSION OF A LICENSED STRUCTURAL ENGINEER NOR ANY CLOSER THAN PRESCRIBED BY THEIR UL LISTINGS.
20. PROVIDE SHOP DRAWING SUBMITTAL PER THE GENERAL SPECIFICATION REQUIREMENTS FOR EACH TYPE OF FLOOR BOX USED.

CONSTRUCTION DETAILS

INCORRECT INSTALLATION:

N.T.S.

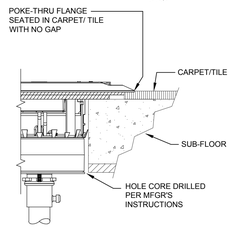
GAP BETWEEN POKE-THRU FLANGE AND CARPET/TILE. CONTRACTOR SHALL REMOVE POKE-THRU, CUT TILE AND CARPET AS REQUIRED AND, IF NECESSARY, REMOVE HIGH SPOTS IN SUB-FLOOR AS REQUIRED FOR CORRECT INSTALLATION.



CORRECT INSTALLATION:

N.T.S.

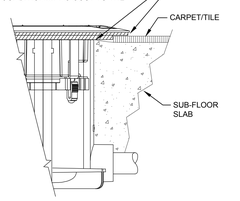
POKE-THRU FLANGE SEATED IN CARPET/ TILE WITH NO GAP



INCORRECT INSTALLATION:

N.T.S.

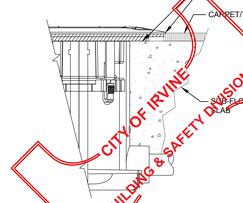
FLOOR FLANGE NOT SEATED PROPERLY DUE TO SUB FLOOR HIGH SPOT CREATED DURING CONCRETE FINISHING/ POURING. IN ADDITION CARPET/TILE/ FINISHED FLOOR SURFACE HAS NOT BEEN TRIMMED PROPERLY UNDER FLANGE TO ALLOW PROPER SEATING. GAP CREATED IS A TRIPPING HAZARD AND AN AESTHETIC ISSUE THAT IS UNACCEPTABLE. CONTRACTOR TO CORRECT CONDITION AT NO COST TO THE OWNER.



CORRECT INSTALLATION:

N.T.S.

FLOOR FLANGE SEATED PROPERLY. SUB FLOOR HAS BEEN GROUND FLUSH OR TO A LEVEL BELOW FINISHED FLOOR TO ALLOW UNDER-FLANGE PROTRUSIONS TO SEAT PROPERLY AND AT THE CORRECT ELEVATION SO THAT FLANGE SITS PROPERLY ON CARPET/TILE/FINISHED FLOOR TO ELIMINATE ANY GAPS.



CITY OF IRVINE
BUILDING & SAFETY DIVISION

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15231 Laguna Canyon Road, Suite 100
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Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SNYDER
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108

DATE ISSUED: 11/19/2024

SCALE: As indicated

SHEET NUMBER: E81.1

SHEET TITLE: FLOOR BOX DETAILS

SVA ARCHITECTS
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T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

Area/Roadway luminaire · Asymmetric · Single

BEGA

Application
Pole-top luminaire with asymmetric light distribution designed for the illumination of parking areas and roadways. Tool-less entry with hinged door for ease of maintenance. Provided with slip fitter to fit 3" O.D. poles. DarkSky Approved (2700K and 3000K only).

Materials
Clear safety glass
Marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
High temperature silicone gasket
Mechanically captive stainless steel fasteners
Silicone applied robotically to casting, plasma treated for increased adhesion
Integral surge protector
Pure anodized aluminum reflector

NRTL listed to North American Standards, suitable for wet locations
Protection class IP 66

Weight: 24.9lbs.

EPA (Effective projection area): 0.9 sq. ft.

Electrical

Operating voltage	120-277VAC
Minimum start temperature	-40° C
LED module wattage	94.2 W
System wattage	115.0 W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	12995 lm
LED service life (L70)	60000 hrs

LED color temperature
☐ 4000K (K4)
☐ 3500K (K35)
☐ 3000K (K3) (DarkSky Approved)
☐ 2700K (K27) (DarkSky Approved)

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unidure® finish provides superior fade protection in Black, Bronze, and Silver. BEGA standard White is a super durable polyester powder. Optionally available RAL, custom, and premium colors provided in polyester powder and/or liquid paint.

Available colors
☐ Black (BLK)
☐ Silver (SLV)
☐ RAL:
☐ Bronze (BRZ)
☐ White (WHT)
☐ CUS:

Type:
BEGA Product:
Project:
Modified:

Available options

☐ 347V	347V input
☐ CUS	Custom finish
☐ FSC	Fusing
☐ IMS-L2	Integral motion sensor (48' ⊡ coverage at 8' AFG)
☐ IMS-L3	Integral motion sensor (40' ⊡ coverage at 20' AFG)
☐ IMS-L4	Integral motion sensor (60' ⊡ coverage at 40' AFG)
☐ IMS-L7	Integral motion sensor (100' ⊡ coverage at 40' AFG)
☐ MGU	Marine grade undercoat
☐ RAL	RAL finish

Available accessories
☐ BFSIR-100 Handheld configuration tool

See individual accessory spec sheet for details.

Area/Roadway luminaire · Asymmetric · Single

	LED	A	B	C
B99527	94.2 W	13⁹⁄₁₆	3	32¹⁄₄

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us.com
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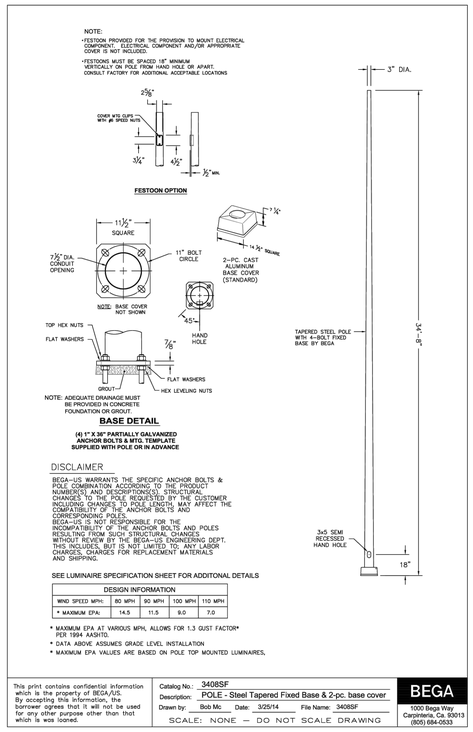
Updated 05/02/25



BASE DETAIL

(4) 1" X 36" PARTIALLY GALVANIZED ANCHOR BOLTS & MTG. TEMPLATE SUPPLIED WITH POLE OR IN ADVANCE

DISCLAIMER

BEGA-US WARRANTS THE SPECIFIC ANCHOR BOLTS & POLE COMBINATION ACCORDING TO THE PRODUCT NUMBER(S) AND DESCRIPTION(S). STRUCTURAL CHANGES TO THE POLE REQUESTED BY THE CUSTOMER INCLUDING CHANGES TO POLE LENGTH, MAY AFFECT THE COMPATIBILITY OF THE ANCHOR BOLTS AND FOUNDATION DESIGN.
BEGA-US IS NOT RESPONSIBLE FOR THE INCOMPATIBILITY OF THE ANCHOR BOLTS AND POLES RESULTING FROM SUCH STRUCTURAL CHANGES WITHOUT REVIEW BY THE BEGA-US ENGINEERING DEPT. THIS INCLUDES, BUT IS NOT LIMITED TO: ANY LABOR CHARGES, CHARGES FOR REPLACEMENT MATERIALS AND SHIPPING.

SEE LUMINAIRE SPECIFICATION SHEET FOR ADDITONAL DETAILS

DESIGN INFORMATION				
WIND SPEED MPH:	80 MPH	90 MPH	100 MPH	110 MPH
* MAXIMUM EPA:	14.5	11.5	9.0	7.0

* MAXIMUM EPA AT VARIOUS MPH, ALLOWS FOR 1.3 GUST FACTOR* PER 1994 AASHTO.
* DATA ABOVE ASSUMES GRADE LEVEL INSTALLATION
* MAXIMUM EPA VALUES ARE BASED ON POLE TOP MOUNTED LUMINAIRES,

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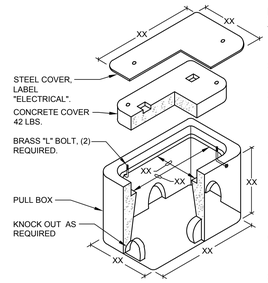
Catalog No.: 340BSF
Description: POLE - Steel Tapered Fixed Base & 2-pc. base cover
Drawn by: Bob Mc Date: 3/25/14 File Name: 340BSF
SCALE: NONE – DO NOT SCALE DRAWING

BEGA
1000 Bega Way
Carpinteria, Ca 93013
(805) 684-0533

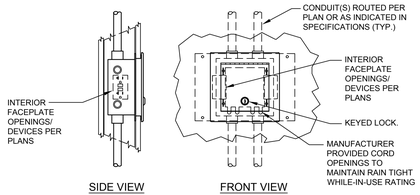
B



PULL BOX NOTES

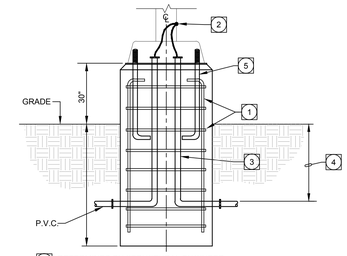
1. ALL BOXES SHALL BE SET ON A MINIMUM 8" GRAVEL BASE WITH 1/2" DIAMETER GRAVEL.
2. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
3. PROVIDE WATERTIGHT SPLICES AND CAPS FOR POWER CONDUCTORS LISTED FOR WET LOCATIONS PER NEC OR CEC WHERE ADOPTED, 314.30 (C).
4. PROVIDE SEALING GEL IN ALL CONDUITS (BOTH WITH CONDUCTORS AND IN EMPTY SPARE CONDUITS). THE GEL SHALL BE INSERTED IN THE CONDUIT TO A DEPTH OF 6" AND FLUSH WITH THE END OF THE CONDUIT. THE GEL SHALL BE MANUFACTURED BY 3M #8882 RE-ENTERABLE ENCAPSULANT.
5. PROVIDE IDENTIFYING TAGS ON ALL POWER AND COMMUNICATION CONDUCTORS IN PULLBOXES.
6. PULLBOX SHALL BE SIZED PER N.E.C. REQUIREMENTS.

6 PULLBOX DETAIL
SCALE: N.T.S.



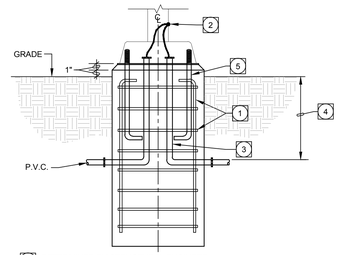
NOTE: DO NOT PROVIDE A REVEAL WHEN FIXTURE IS RECESSED IN A STONE-CLAD SURFACE.

9 FLUSH OUTLET BOX "WP-A" DETAIL (SHALLOW)
SCALE: N.T.S.



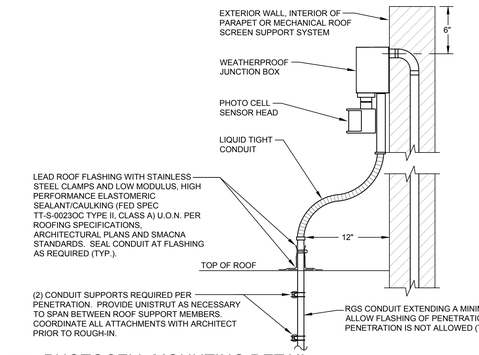
1. DETERMINED BY STRUCTURAL ENGINEER.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM COVER OF 24" FROM FINISH GRADE.
5. POLE ANCHOR BOLTS PER MANUFACTURER SPEC'S.

2 POLE BASE "B" DETAIL
SCALE: N.T.S.



1. DETERMINED BY STRUCTURAL ENGINEER.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM COVER OF 24" FROM FINISH GRADE.
5. POLE ANCHOR BOLTS PER MANUFACTURER SPEC'S.

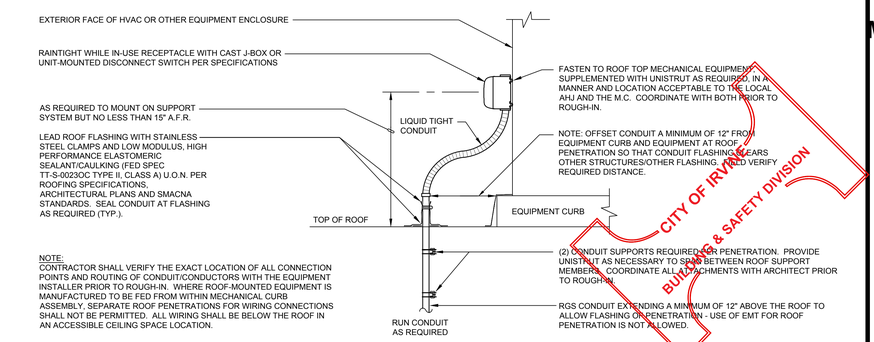
1 POLE BASE "A" DETAIL
SCALE: N.T.S.



NOTES:

1. MOUNT PHOTOCELL SENSOR TO THE UNDERSIDE OF THE JUNCTION BOX.
2. PHOTOCELL SENSOR SHALL BE POINTED TO THE NORTHERN SKY.
3. WHEN PHOTO CELL IS MOUNTED ON MECH. ROOF SCREEN SUPPORT SYSTEM, OFFSET CONDUIT ROOF PENETRATION A MINIMUM OF 12" FROM SCREEN WALL SUPPORTS TO ALLOW CONDUIT FLASHING TO CLEAR OTHER STRUCTURES/OTHER FLASHING. FIELD VERIFY REQUIRED DISTANCE. PHOTO CELL CONDUIT AND J-BOX SIZES, CONDUCTOR QUANTITY AND TYPE AS REQUIRED.
4. PHOTO CELL SHALL ONLY BE MOUNTED ON PARAPET WALLS IF PARAPET WALL SURFACE IS NOT PART OF/COVERED BY THE ROOFING SYSTEM. IF THE WALLS ARE PART OF THE ROOFING SYSTEM, MOUNT PHOTO CELL TO MECHANICAL SCREEN WALL SUPPORT SYSTEM. IF MECHANICAL SCREEN SYSTEM IS NOT PROVIDED ON PROJECT, PHOTO CELL SHALL BE MOUNTED PER HOLIDAY ROOF RECEPTACLE DETAIL.
5. WHEN MOUNTING PHOTO CELL ON EXTERIOR WALL, IT MAY BE ACCEPTABLE TO RECESS THE CONDUIT WITHIN WALL ONLY AS ALLOWED BY THE ARCHITECT, STRUCTURAL OR CIVIL ENGINEER.

1 PHOTOCELL MOUNTING DETAIL
SCALE: NTS



NOTE:
CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS AND ROUTING OF CONDUIT/CONDUCTORS WITH THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. WHERE ROOF-MOUNTED EQUIPMENT IS MANUFACTURED TO BE FED FROM WITHIN MECHANICAL CURB ASSEMBLY, SEPARATE ROOF PENETRATIONS FOR WIRING CONNECTIONS SHALL NOT BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.

3 EQUIPMENT MOUNTED SWITCH/RECEPTACLE MOUNTING DETAIL
SCALE: NTS

CITY OF IRVINE
PUBLIC WORKS & SAFETY DIVISION
BUILDING

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

WSP USA
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Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SNIFFEN
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
△	100% DD	01-13-25
△	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25
△		
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PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: E81.2

SHEET TITLE: MISCELLANEOUS DETAILS - EXTERIOR

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T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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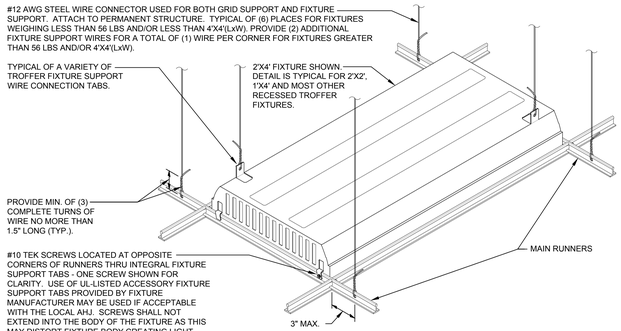
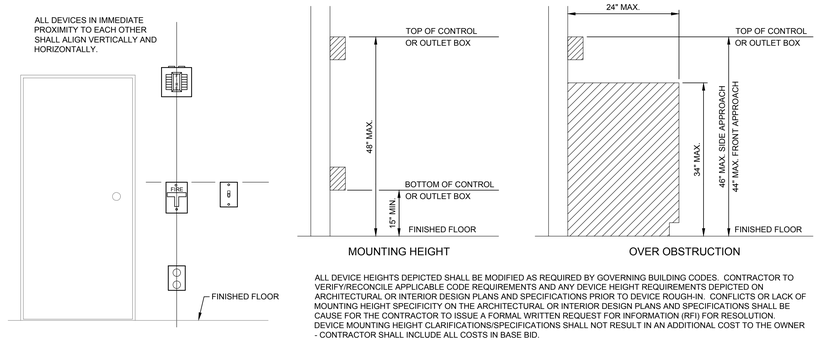
PLAN CHECK #00856737-CNEW

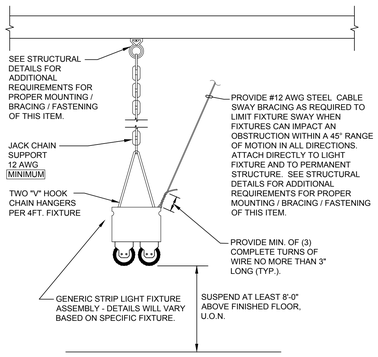


2 FIXTURE SUPPORT DETAIL
SCALE: NTS

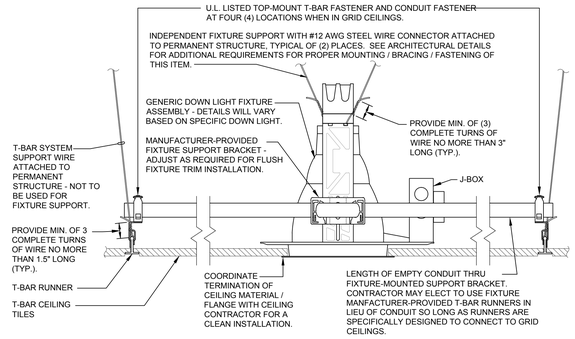


1 DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS
SCALE: NTS

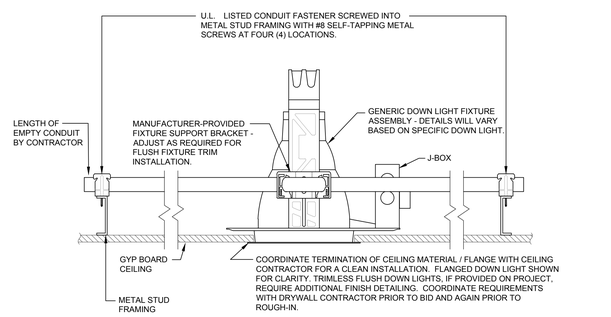
ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS AND SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS AND SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN REQUEST FOR INFORMATION (RFI) FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER - CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.



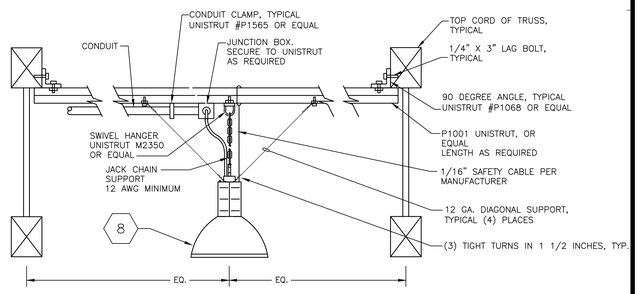
5 FIXTURE SUPPORT DETAIL
SCALE: NTS



4 DOWN LIGHT FIXTURE SUPPORT DETAIL (T-BAR)
SCALE: NTS



3 DOWN LIGHT FIXTURE SUPPORT DETAIL (HARD LID)
SCALE: NTS



NOTES:
1. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BOLTS, NUTS, WASHERS, ETC. AS REQUIRED FOR A COMPLETE SYSTEM.

6 HIGH-BAY FIXTURE MOUNTING DETAIL
SCALE: NTS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SMITH
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E81.3
SHEET TITLE:

MISCELLANEOUS DETAILS - INTERIOR

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

VersiCharge™ 48 A AC & VersiCharge Blue™ 48 A AC Series – Technical Data

Features and functions	
Charging mode	Level 2
Vehicle connection	J1772 plug with 20-foot cable, (25 ft. for VersiCharge™ Blue) 40 A / 48 A / integrated cable management
AC power output	Split phase up to 9.6 kW (40 A) - requires a 50 A breaker, or 11.5 kW (48 A) - requires a 60 A breaker
Mounting options	Wall and post mounting, see accessories
Touch button	Reset faults, reconfiguration
Charging status LEDs	Power, charging state, authentication
Communication status LEDs	Connected / not connected during operation
Network Sharing	Connects to one non-cellular charger by Wi-Fi within 20 feet line of sight
Load management	Via OCPP and Modbus
Communication	
Interfaces	Wi-Fi, Ethernet, RS485 (Modbus RTU) and LTE, WCDMA with optional cellular plan
User authentication	RFID (local Whitelist, MIFARE); ISO15118-2 HW-ready
Configuration	Via Sifinity Go (Up to 10 chargers) or Sifinity Setup (Android / iOS)
Back-end protocol	OCPP 1.6, upgradeable to OCPP 2.0.1
Software upgrade	Over-the-air (OTA)
Electrical design	
Power supply voltage	Single phase: 208 V / 240 V AC, 60 Hz
Rated current settings (A)	12, 16, 24, 32, 40, 48
Wire size	8 AWG / 6 AWG (90 °C rated wire)
Network type	Split phase
Energy metering	NTEP-certified metering, 1% accuracy
Ground fault protection	20 mA
Over voltage protection	267 V (maximum 275 V)
Operating altitude	6,562 ft
General design	
Environmental rating	Indoor and outdoor, NEMA 4X, IK 8
Dimensions (H x W x D)	16.10 in x 7.09 in x 3.78 in
Weight	22 lbs
Ambient conditions	Operating temperature: -30 °F to +122 °F, storage temperature: -40 °F to +140 °F, 98% non-condensing
Colors	Silver metallic (Pantone 10077), black holster; Dark Blue (Pantone 7700) for VersiCharge Blue AC
Certificates and standards	
cUL listed	According to UL 1998, UL 991, UL2594/CSA C22.2 No.280/NMX-J-677-ANCE, UL 2231-1/CSA C22.2 No.281.1/ NMX-J-668-1, UL 2231-2/CSA C22.2 No.281.2/NMX-J-668/2-ANCE, UL 2251/CSA C22.2 No.282/NMX-J-678-ANCE
EMC	FCC Part 15 Class A (commercial variants); FCC Part 15 Class B (residential variants)
Certifications	Energy Star 1.2 & Energy Star + Connected certified, NTEP certified
Warranty	3 year warranty

	Maximum current	Model number	Wi-Fi and Ethernet	RFID identification	LTE WCDMA	Installed SIM card	NTEP certification	Buy-American compliant
VersiCharge™ AC	48 A	8EM1310-5HF14-1GA2	✓	✓	✓	✓	✓	
VersiCharge Blue™ (Buy American compliant)	48 A	8EM1315-5HG14-1GA2	✓	✓	✓	✓	✓	✓

Back-end protocol: OCPP 1.6, upgradeable to OCPP 2.0.1

Data plans for chargers: Siemens offers chargers with data plans for customer convenience. A cellular plan is required for cell activation. See table below for data plans.

Description	Catalog number
1-Year Cell Data Plan, USA / Puerto Rico / Canada. This is an annual fee.	US2:DATAPLAN1
1 additional year of extended warranty per charger. Parts Only. No On-Site services. Only available at time of hardware purchase.	US2:VCEXWAR1YR
2 additional years of extended warranty per charger. Parts Only. No On-Site services. Only available at time of hardware purchase.	US2:VCEXWAR2YR

Legal Manufacturer
Siemens Industry, Inc.
3617 Parkway Ln
Peachtree Corners, GA 30092
United States of America
Telephone: +1 (855) 950-6339 or (800) 333-7421
www.usa.siemens.com/emobility for service questions or inquiries
Article No. SIE-B40010-01-4AUS

This document contains a general description of available technical options only and its effectiveness will be subject to specific variables, including field conditions and project parameters. Siemens does not make representations, warranties, or assurances as to the accuracy or completeness of the content contained herein. Siemens reserves the right to modify the technology and product specifications in its sole discretion without advance notice.
Version 1

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Setting the stage

Benefits designed for you

Smart Building Integration
- Monitor and control through third-party systems
- Modbus RTU and TCP communication
- OCPP communication

Flexibility
- Various communication possibilities
- Wall or post mounted
- Remote upgradeability

Robust and Reliable
- Indoor outdoor capable (NEMA 4X)
- Designed to meet highest cybersecurity standards
- Industry leading safety features

State of the Art and Future Proof
- Energy Star certified
- NTEP-certified and CTEP-compliant
- Buy American compliant
- Can be purchased through Sourcewell, GSA, BPA, and through our Siemens partners

Intuitive Design
- Smart interface and easy usability
- Quick setup using the mobile app for iPhone and Android
- Integrated upstream electrical protection

Integrity
- Cost effective
- Third generation VersiCharge AC charger
- Quality by Siemens

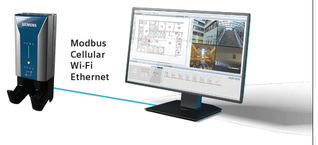
NTEP Certification

Siemens is proud to announce one of the first NTEP-certified AC charger solution in the market that does not rely on a physical screen or credit card reader and complies with the California Type Evaluation Program (CTEP) requirements for public charger deployment. The Siemens NTEP AC charger offering coupled with our Sifinity Setup mobile app (Android/iOS) and web-based dashboard provides a simple solution for public applications in California. Siemens is partnering with various software providers for the required cloud service, whose offerings include a mobile display that fulfills the stringent requirements for NTEP certification. This expansion of the Siemens Versicharge™ AC charger offering continues our commitment to openness and ease of use in the EV charging market.

Flexibility for the future

Smart building integration

VersiCharge AC chargers offer various communication interfaces for seamless integration to local and remote networks.



Network sharing from one cellular device to a non-cellular device

Modular system configuration

Whether you are using the VersiCharge cellular units just as a communications gateway or to execute more extensive local networking and control functions, our network sharing configuration options will reduce investment and operational costs.

Flexible posts for all applications

- PV fade-resistant and rust-resistant
- Multiple wiring options
- Single and dual post options
- Cable retraction system
- Posts come with install kits for easy installation

Description	Catalog Numbers
VersiCharge dual post: 95 inches (side by side), with dual cable retraction system for 20 or 25-foot cable	US2:VCPOSTCR2A
VersiCharge single post: 95 inches, with cable retraction system for 25-foot charging cable	US2:VCPOSTCR1A
Two VersiCharge™ AC NTEP, 1 year cell service for network sharing, 1 year of cloud services for two devices, 1 Dual side-by-side 95" integrated post with cable retraction system	US2:VERSIPACK4BCLO
Two VersiCharge Blue™ NTEP, 1 year cell service for network sharing, 1 year of cloud services for two devices, 1 Dual side-by-side 95" integrated post with cable retraction system	US2:VERSIPACK4BBAC
One VersiCharge™ AC NTEP, 1 year cell service, 1 year of cloud services, 1 single 95" integrated post with cable retraction system	US2:VERSIPACK4BAB1
One VersiCharge Blue™ NTEP, 1 year cell service, 1 year of cloud services, 1 single 95" integrated post with cable retraction system	US2:VERSIPACK4BBA1

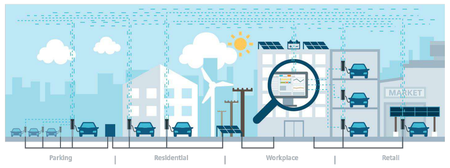
VersiCharge™ 48 A AC and VersiCharge Blue™ 48 A AC Series

Powerful, versatile, cost-efficient

Siemens VersiCharge chargers have stood for superior quality, ruggedness, and proven technology for more than a decade and have reliably provided millions of charges to EV drivers worldwide. The new third generation VersiCharge AC charger is continuing this tradition with numerous enhancements including a fresh and appealing design, up to 11.5 kW of AC charging power and optional Buy-America compliance (VersiCharge Blue™ AC). It also provides various communication options, including the option to establish network sharing.

The VersiCharge AC charger can be connected to the customer's preferred back-end system, making it scalable and cost-efficient. It also can interact with a building management system via Modbus. The rugged and slender VersiCharge AC charger is suitable for both indoor and outdoor use and can either be mounted on a wall or a supplementary post.

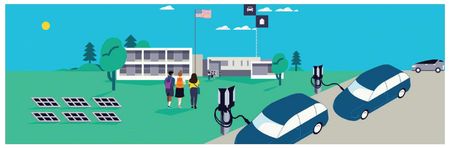
The VersiCharge AC Series is NTEP-certified which do not rely on a physical screen or credit card reader and comply with the California Type Evaluation Program (CTEP) requirements for public charger deployment. Siemens is partnering with various SW-providers for the required cloud service.



The ideal solution for any application

VersiCharge is perfect for all applications, including workspaces, retail, hospitals, parking garages, airports, school campuses and multi-residential dwellings, as well as light to medium-duty fleets. This AC charger comes with an easy-to-use mobile application and can charge any standard EV.

As an addition to our portfolio, the VersiCharge Blue offers cutting-edge technology that meets Buy American compliance. VersiCharge Blue aims to reduce dependence on other countries for key raw materials, components and other products vital to growing EV infrastructure.

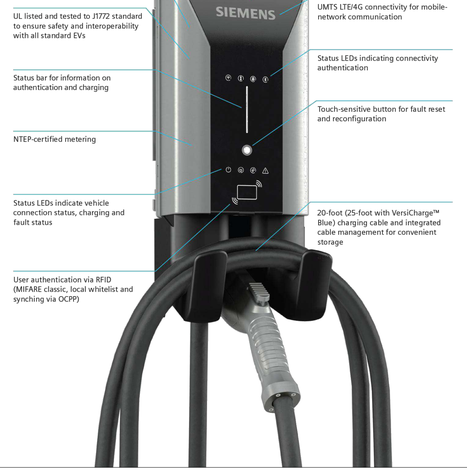


Making a difference

Key features

The VersiCharge 48 A AC and VersiCharge Blue 48 A AC chargers are easy to use and are compatible with all applicable charging standards.

Note: This image depicts a VersiCharge AC model, VersiCharge Blue AC is available in dark blue.



VERSICHARGE™ 48 A AC & VERSICHARGE BLUE™ 48 A AC SERIES

Energizing the evolution of eMobility

usa.siemens.com/versicharge

SIEMENS

The evolution of eMobility

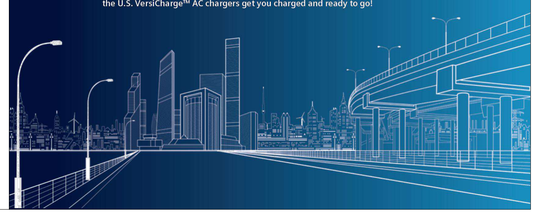
The future builds on experience

Electromobility has become one of the most important technology trends as the world moves toward a cleaner, more sustainable future. As of 2018, over three million electric vehicles (EVs) worldwide were on the road. Climate conscious consumers are responding to more competitively priced EVs due to government rebates, lower up-front and maintenance costs, batteries with extended range and more stringent state and federal emissions regulations, but charging infrastructure is still needed.

eMobility innovation has always been in Siemens' DNA. The evolution of transportation began with the company's introduction of the world's first electric railway in 1879. Soon after came the invention of the electric generator, the first trolleybus in 1882 and a four-seater electric car in 1905.

Siemens' PlugtoGrid™ end-to-end solutions make it possible to design and execute EV charging infrastructure projects of any size. Chargers can be easily connected to the grid with Siemens' eMobility™ open-protocol, charging technology and electrical power distribution solutions as well as flexible options like energy storage, renewable power integration, smart building management and managed cloud services.

Building on the VersiCharge product line, Siemens presents the third generation of the award-winning VersiCharge alternating current (AC) chargers with added functionality such as smart building integration, flexibility with configurations and communications, secure and certified billing and more. The Buy America-compliant VersiCharge Blue™ AC represents Siemens commitment to local manufacturing in the U.S. VersiCharge™ AC chargers get you charged and ready to go!



CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

WSP USA
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Project Leader - Jeff Mixer
Electrical Lead - William Hubner
WSP Job #: US0022861.0069

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SMITH
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: E81.4
SHEET TITLE:

EV CHARGER SPECFICATION SHEET

B
CITY OF IRVINE
BUILDING & SAFETY DIVISION

SVA ARCHITECTS
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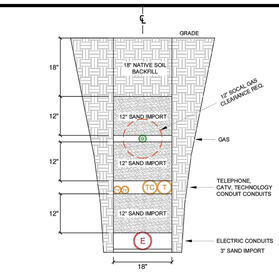
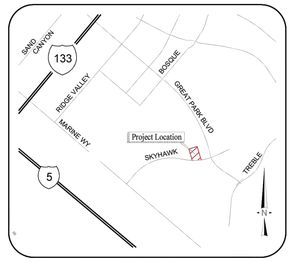
PLAN CHECK #00856737-CNEW

GENERAL NOTES:

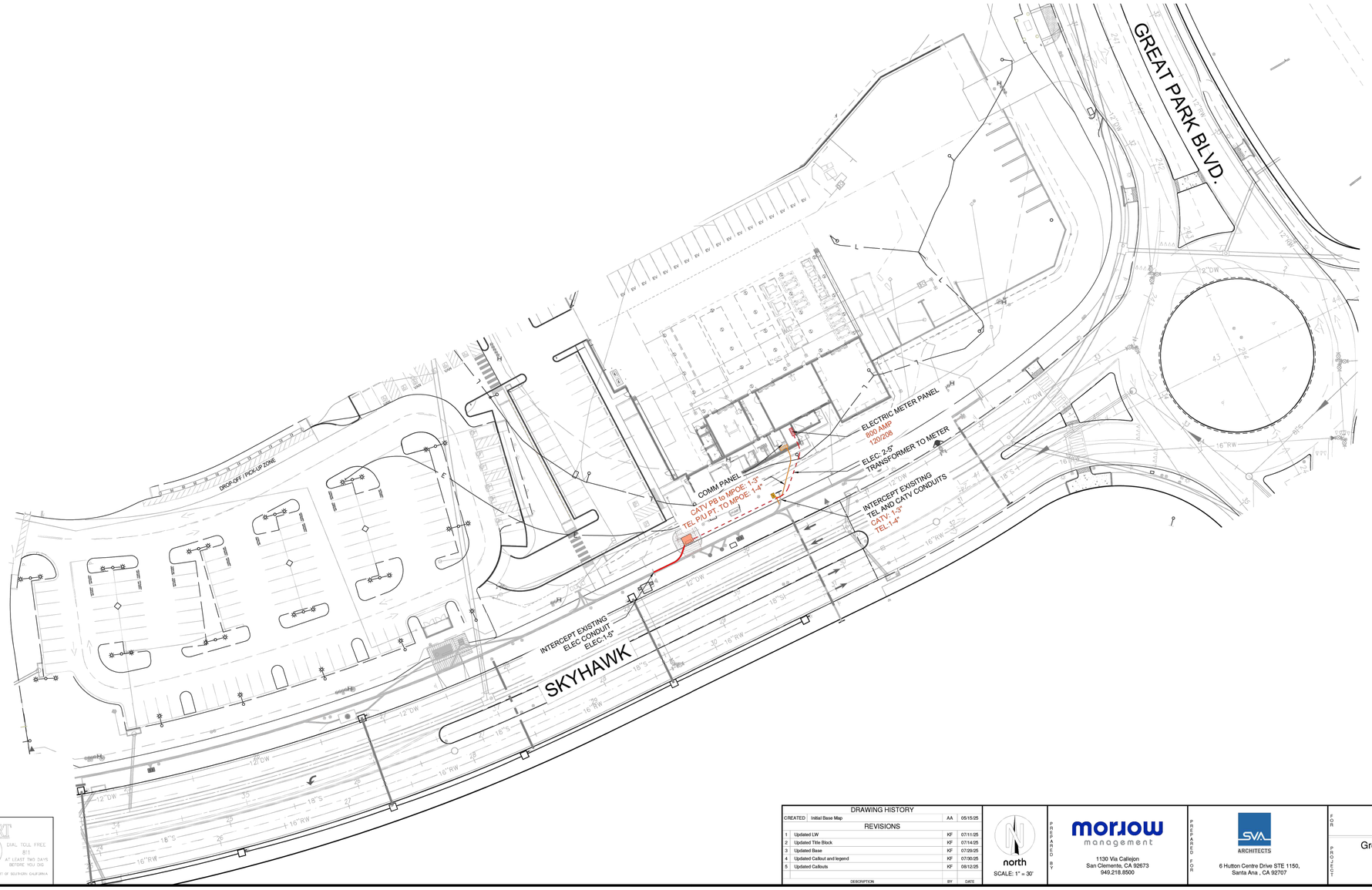
1. DRY UTILITY COMPOSITE EXHIBIT IS FOR DESIGN STUDY AND CONFLICT CHECK ONLY. UTILITIES SHOULD NOT BE INSTALLED BASED ON THIS EXHIBIT. REFER TO RESPECTIVE UTILITY FINAL DESIGN(S) FOR SPECIFIC INSTALLATION REQUIREMENTS
2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF EACH DRY UTILITY SYSTEM IN ACCORDANCE WITH EACH DRY UTILITY AGENCY'S CURRENT SPECIFICATIONS, POLICIES AND PRACTICES OF WHICH THE CONTRACTOR IS TO BE THOROUGHLY FAMILIAR.
3. LOCATIONS OF EXISTING DRY UTILITIES ARE BASED UPON UTILITY MAPS, AS-BUILTS AND FIELD OBSERVATIONS. POT HOLING IS RECOMMENDED TO VERIFY LOCATION OF ANY EXISTING FACILITIES.



TYPICAL JOINT TRENCH PROFILE
JOINT TRENCH IS TWO OR MORE UTILITIES WHICH ARE LISTED BELOW
(Electric, Telephone, CATV & Gas)
18" WIDE*
JOINT TRENCH WIDTH AND DEPTH MAY VARY*
JOINT TRENCH WILL INCLUDE A MINIMUM OF TWO UTILITIES BUT MAY NOT INCLUDE ALL FOUR
SEE UTILITY DESIGN FOR SPECIFIC DETAIL



VICINITY MAP
NOT TO SCALE



LEGEND

- EXISTING ELEC 48"x54" TRANSFORMER
- EXISTING ELEC 7'x14' TUB-STYLE TYPE 1
- EXISTING CATV GLB 36"x60"
- EXISTING FO 30" ROUND MH-B
- EXISTING FO 30" ROUND MH-A
- EXISTING AT&T 12'x6'x10' MH
- EXISTING METER PEDESTAL
- EXISTING ELEC 17"x30" PULL BOX
- ELEC 72"x94" 3Ø TRANSFORMER PAD
- CATV PULL BOX
- EXISTING DU CAP
- EXISTING JOINT TRENCH
- EXISTING ELECTRIC CONDUIT
- ELECTRIC SERVICE
- COMMUNICATION CONDUIT
- EXISTING COMMUNICATIONS CONDUIT
- EXISTING DU SLEEVE
- EXISTING DU SLEEVE-IRR
- EXISTING DU SLEEVE-PVT LT
- WORKING CLEARANCE
- WINDOW CLEARANCE

DIGALERT
DIAL TOLL FREE 811
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

DRAWING HISTORY

CREATED	Initial Base Map	AA	05/15/25

REVISIONS

1	Updated LW	KF	07/11/25
2	Updated Title Block	KF	07/14/25
3	Updated Base	KF	07/29/25
4	Updated Callout and legend	KF	07/30/25
5	Updated Callouts	KF	08/12/25
	DESCRIPTION	BY	DATE

north
SCALE: 1" = 30'

morlow management
1130 Via Callejon
San Clemente, CA 92673
949.218.8500

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Santa Ana , CA 92707

City of Irvine
Irvine, CA
Great Park Neighborhoods
Irvine, CA
OCGP Maintenance Building
Dry Utility Composite

CITY OF IRVINE
BUILDING & SAFETY DIVISION

FOR REFERENCE ONLY

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949.751.5800 wsp.com
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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

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IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWITZER
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
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C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: C E81.5
SHEET TITLE:

DRY UTILITY COMPOSITE DESIGN

SVA ARCHITECTS

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PLAN CHECK #00856737-CNEW

ABBREVIATIONS

4S/DP	4" SQUARE BY 2-1/8" DEEP BOX
ADA	AMERICAN WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AMP, A	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS POINT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AVC	AUDIO VISUAL CONTRACTOR
AVR	AUDIO VISUAL EQUIPMENT RACK
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BBC	BACKBONE BONDING CONDUCTOR
BDF	BUILDING DISTRIBUTION FRAME
BKBD	BACKBOARD
BLDG	BUILDING
BNC	BAYONET-NEILL-CONCELMAN
C	CONDUIT
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CBC	CALIFORNIA BUILDING CODE
CCTV	CLOSED CIRCUIT TELEVISION
CEC	CALIFORNIA ELECTRICAL CODE
CIRC., CKT.	CIRCUIT
CM, CMG	COMMUNICATIONS GENERAL-PURPOSE CABLE.
CMP	COMMUNICATIONS PLENUM CABLE.
CMR	COMMUNICATIONS RISER CABLE.
CMUC	UNDER-CARPET COMMUNICATIONS WIRE AND CABLE.
CMX	COMMUNICATIONS CABLE, LIMITED USE.
C.O.	CONDUIT ONLY, COMPLETE WITH PULLSTRING
COMP	COMPUTER
CP	CONSOLIDATION POINT
CR	CARD READER
(D)	EXISTING DEVICE TO BE DEMOLISHED
DA	DISTRIBUTION AMPILIFER
DAS	DISTRIBUTED ANTENNA SYSTEM
DB	DECIBEL
DIA	DIAMETER
DIST	DISTRIBUTION
(E)	EXISTING DEVICE TO REMAIN
E.C.	ELECTRICAL CONTRACTOR
EGC or EG or E/G	EQUIPMENT GROUND (GREEN)
EIA	ELECTRONIC INDUSTRY ASSOCIATION
ELFEXT	EQUAL LEVEL FAR END CROSSTALK
EMI:	ELECTROMAGNETIC INTERFERENCE.
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EO	EQUIPMENT OUTLET
E-O-L	END-OF-LINE CIRCUIT TERMINATOR
EP	EXPLOSION PROOF
EPO OR E.P.O.	EMERGENCY POWER OFF
ER	EQUIPMENT ROOM
(ER)	EXISTING DEVICE TO BE RELOCATED
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FA or F.A.	FIRE ALARM
FCC	FEDERAL COMMUNICATIONS COMMISSION
FEXT.	FAR-END CROSSTALK
FT or '	FEET
FTP	FOIL TWISTED PAIR
GRD	GROUND
HC	HORIZONTAL CROSS-CONNECT
HH	HAND HOLE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
H.,W.,D.,L.	HEIGHT, WIDTH, DEPTH, LENGTH
IN. or "	INCHES
IBC	INTERNATIONAL BUILDING CODE
IC	INTERMEDIATE CROSS-CONNECT
IDC	INSULATION DISPLACEMENT CONNECTION
IDF	INTERMEDIATE DISTRIBUTION FRAME
ITE	INFORMATION TECHNOLOGY EQUIPMENT
JBOX	JUNCTION BOX
K	THOUSAND
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LF, L.F.	LINEAR FEET
LTG, LTS	LIGHTING
M	METER
MM	MULTI MODE
MAX.	MAXIMUM
MC	MAIN CROSS-CONNECT
MBJ	MAIN BONDING JUMPER
MDF	MAIN DISTRIBUTION FRAME
M.C.	MECHANICAL CONTRACTOR
MIN.	MINIMUM
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MFR	MANUFACTURER
MH	MAINTENANCE HOLE
MHZ	MEGAHERTZ
MPOE	MAIN POINT OF ENTRY
MR	MECHANICAL ROOM
MTD	MOUNTED
MUTOA	MULTI-USER TELECOMMUNICATIONS OUTLET ASSEMBLY
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NEXT	NEAR END CROSSTALK
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO. or #	NUMBER
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY
N.T.S.	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFC	CONDUCTIVE OPTICAL FIBER GENERAL-PURPOSE CABLE.
OFCG	CONDUCTIVE OPTICAL FIBER GENERAL-PURPOSE CABLE.
OFCP	CONDUCTIVE OPTICAL FIBER PLENUM CABLE.
OFCR	CONDUCTIVE OPTICAL FIBER RISER CABLE.
OFN	NONCONDUCTIVE OPTICAL FIBER GENERAL-PURPOSE CABLE.
OFNG	NONCONDUCTIVE OPTICAL FIBER GENERAL-PURPOSE CABLE.
OFNP	NONCONDUCTIVE OPTICAL FIBER PLENUM CABLE.
OFNR	NONCONDUCTIVE OPTICAL FIBER RISER CABLE.
OFOI	OWNER FURNISHED, OWNER INSTALLED
OSP	OUTSIDEPLANT
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PBB	PRIMARY BONDING BACKBONE
P.C.	PLUMBING CONTRACTOR
PDU	POWER DISTRIBUTION UNIT
POE	POWER OVER ETHERNET
POS	POSITION
PR	PAIR
PVC	POLY VINYL CHLORIDE
PROVIDE	FURNISH, INSTALL AND CONNECT
PSNEXT	POWER SUM NEXT
(R)	DENOTES RELOCATED DEVICE LOCATION.
REC, RECEPT	RECEPTACLE
RBC	RACK BONDING CONDUCTOR
RF	RADIO FREQUENCY
RFID	RADIO FREQUENCY IDENTIFICATION SYSTEMS
RGB	RACK GROUNDING BUSBAR
RGS	RIGID GALVANIZED STEEL
RMU	RACK MOUNTING UNIT
RTLS	REAL TIME LOCATING SYSTEM
SBB	SECONDARY BONDING BACKBONE
SCS	STRUCTURED CABLING SYSTEM
SCTP	SCREENED TWISTED PAIR
STP	SHIELDED TWISTED PAIR
SM	SINGLE MODE.
SQ.	SQUARE
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TCP/IP	TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL.
TC	TELECOMMUNICATIONS CLOSET
TE	TELECOMMUNICATIONS ENCLOSURE
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TEF	TELECOMMUNICATIONS ENTRANCE FACILITY
TEL/DATA	TELEPHONE AND DATA
TGB	TELECOMMUNICATIONS GROUNDING BUS BAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
TO	TELECOMMUNICATIONS OUTLET
TR	TELECOMMUNICATIONS ROOM
TSB	TELECOMMUNICATIONS SYSTEM BULLETIN
TV	TELEVISION
SPD	SURGE SUPPRESSION DEVICE
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
U.O.N or UON	UNLESS OTHERWISE NOTED
U.P.S. or UPS	UNINTERRUPTABLE POWER SYSTEM
UTP	UNSHIELDED TWISTED PAIR
VAV	VARIABLE AIR VOLUME
V	VOLTS
VA	VOLT AMPERES
VD	VOLTAGE DROP
VSS	VIDEO SUREILLANCE SYSTEM
WA	WORK AREA
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
W	WIRE OR WATTS
XFMR	TRANSFORMER

7-GANG AV FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

RECESSED, ADJUSTABLE DEPTH, FLAT PANEL TV/DISPLAY WALL BOX WITH FLUSH GROMMETED COVER PANEL (CHIEF #PAC525F) AND MINIMUM OF (1) 1-1/4"C.O. FROM TOP-MOUNTED L.V. CONDUIT ENTRY BOX TO ACCESSIBLE CEILING. SEE PLANS FOR ANY ADDITIONAL CONDUIT REQUIREMENTS. PROVIDE ADDITIONAL L.V. AND LINE VOLTAGE CONDUIT ENTRY BOXES AS REQUIRED TO ACCOMPLISH WALL BOX CONFIGURATION DEPICTED ON PLANS. FLUSH GROMMETED COVER SHALL BE WHITE, BLACK OR CUSTOM COLOR PER ARCHITECT. WHEN FIELD CONDITIONS PROHIBIT INSTALLATION OF THIS DEVICE (SUCH AS WALL STUD/CAVITY DEPTH OF LESS THAN 2.5" ETC), CONFIRM VIA WRITTEN RFI THE INSTALLATION OF A TRADITIONAL POWER AND DATA RECEPTACLE INSTALLATION ALONG SIDE CCTV/AV JUNCTION BOX CONSISTING OF 2-GANG DEEP JUNCTION BOX/2-GANG RING WITH 1-1/4"C.O. TO ACCESSIBLE CEILING IN ADDITION TO ANY OTHER CONDUIT REQUIREMENTS DEPICTED ON PLANS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHT.

SECURITY ALARM SYSTEM SYMBOLS

- SACP — SECURITY ALARM CONTROL PANEL – SEE SPECIFICATIONS.
- SPS — SECURITY SYSTEM POWER SUPPLY – SEE SPECIFICATIONS.
- DT — SECURITY ALARM DUAL TECHNOLOGY MOTION SENSOR – SEE SPECIFICATIONS.
- DC — SECURITY ALARM DOOR CONTACT – SEE SPECIFICATIONS.
- KP — SECURITY ALARM KEY PAD – SEE SPECIFICATIONS.
- GB — SECURITY ALARM GLASS BREAK INDICATOR – SEE SPECIFICATIONS.

ACCESS CONTROL SYSTEM SYMBOLS

- ACCP — ACCESS CONTROL PANEL – SEE SPECIFICATIONS.
- APS — ACCESS CONTROL SYSTEM POWER SUPPLY – SEE SPECIFICATIONS.
- LPS — ACCESS CONTROL SYSTEM LOCK POWER SUPPLY – SEE SPECIFICATIONS.
- KS — ACCESS CONTROL KEY SWITCH – SEE SPECIFICATIONS.
- LA — ACCESS CONTROL LOCAL ALARM SOUNDER – SEE SPECIFICATIONS.
- CR — ACCESS CONTROL CARD READER – SEE SPECIFICATIONS.
- ES — ACCESS CONTROL REQUEST TO EXIT SENSOR – SEE SPECIFICATIONS.

CCTV SYSTEM SYMBOLS

- CCTV — CLOSED CIRCUIT TELEVISION CONTROL PANEL – SEE SPECIFICATIONS.
- CCTV FIXED POSITION CAMERA – SEE SPECIFICATIONS.
- CCTV PAN/TILT CAMERA – SEE SPECIFICATIONS.

TELEPHONE/DATA SYMBOLS

VOIP TELEPHONE OUTLET BOX, WALL MOUNTED. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 4S/DP MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

"W" = WALL MOUNTED PHONE

"C" = CONVENTIONAL TELEPHONE/FAX OUTLET

DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 4S/DP MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

COMBINATION VOIP TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED. STUB A 1- 1/4"C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 4S/DP MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. PROVIDE 1"C. (WITH CONDUCTORS) UP 6" ABOVE THE ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

VOIP TELEPHONE OUTLET BOX, WALL MOUNTED 6" ABOVE COUNTER OR SPLASH. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 4S/DP MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

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COMBINATION VOIP TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED 6" ABOVE COUNTER OR SPLASH. STUB A 1" C. (WITH CONDUCTORS) UP 6" ABOVE THE NEAREST ACCESSIBLE CEILING OR TO NEAREST HEAD-END EQUIPMENT AS REQUIRED. 4S/DP MINIMUM WITH SINGLE GANG RING. PROVIDE CABLING BACK TO NEAREST HEAD-END UTILIZING CONDUIT SLEEVES.

REQUIRED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE REQUIRED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS AND SHOULD BE INCLUDED AS PART OF THE BASE BID. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

ALLOWED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE ALLOWED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

DEDUCTIVE/ADDITIVE ALTERNATE PRICING

IN ADDITION TO ANY DEDUCTIVE OR ADDITIVE LINE ITEM PRICING CALLED FOR ON THE DRAWING OR IN THE SPECIFICATIONS, CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM DEDUCTIVE/ADDITIVE ALTERNATE PRICING FOR EACH OF THE FOLLOWING ITEM(S):

NONE

CONCEALED WIRING AND CABLING GENERAL NOTES:

WHEN IN AREAS WITH NO CEILING OR AREAS WITH OPEN GRID OR OTHER ARCHITECTURAL SUSPENDED CEILING SYSTEMS WHERE THE STRUCTURAL DECK ABOVE IS EXPOSED TO VIEWING FROM BELOW, THE CONTRACTOR SHALL INSTALL/EXTEND CONDUITS BASED ON THE FOLLOWING CRITERIA:

- ALL BRANCH SHALL BE IN EMT WITHIN THIS AREA SHALL BE EXTENDED DIRECTLY OVER AN ACCESSIBLE CEILING TO A POINT AT LEAST 3FT FROM THE EDGE/START OF THAT CEILING BEFORE TRANSITIONING TO MC OR OTHER CONDUIT TYPE.
- ALL CONDUIT/SLEEVES FOR AV/TEL/DATA/SECURITY/BMS/DAS/FA INFRASTRUCTURE SHALL BE EXTENDED DIRECTLY TO CABLE TRAY OR BE EXTENDED OVER AN ACCESSIBLE CEILING AT LEAST 3FT FROM THE EDGE/START OF THAT CEILING BEFORE TRANSITIONING TO J-HOOKS OR CABLE TRAY. SEE COMMUNICATIONS GENERAL PATHWAY NOTES FOR ADDITIONAL REQUIREMENTS TO INCLUDE PULL BOX REQUIREMENTS.
- ALL CONDUIT SHALL BE ROUTED ORTHOGONALLY, NEATLY TRAINED, IN PARALLEL TO STRUCTURES OR DUCTWORK, THE TERM "TRAINED" MEANS ALL PARALLEL CONDUITS SHALL MAINTAIN THE SAME SPATIAL RELATIONSHIP WITH EACH OTHER FOR THE ENTIRE RUN TO INCLUDE RADIUS BENDS AND SWEEPS. USE OF MC OR FLEXIBLE CONDUIT SYSTEMS WITHIN THESE AREAS SHALL BE LIMITED TO FINAL CONNECTIONS (6FT OR LESS) TO LIGHTING FIXTURES OR MECHANICAL EQUIPMENT.

REVIEW PROPOSED ROUTING OF CONDUIT WITH ARCHITECT PRIOR TO INSTALLATION. VISUALLY OBJECTIONABLE BRANCH CIRCUITS/CONDUITS WILL BE REROUTED AT THE REQUEST OF THE ARCHITECT AT NO ADDITIONAL COST.

COMMUNICATIONS PATHWAYS GENERAL NOTES:

1. CONDUITS SHALL (a) CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.), AND (b) CONTAIN NO MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULL BOX. SPLIT CONDUITS IN PLACE OF PULL BOXES ARE UNACCEPTABLE.
2. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF EXTRA PULL TAPE COILED AT EACH END.
3. CONDUIT BEND RADIUS SHALL BE (a) A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2-INCHES IN DIAMETER OR LESS, AND (b) 10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2-INCHES IN DIAMETER.
4. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2-INCHEST TO 3-INCHES ABOVE THE FLOOR SURFACE.
5. INSTALL BUSHINGS OR BELL ENDS AS REQUIRED ON ALL CONDUITS.
6. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER.
7. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
8. ALL PULL BOXES SHALL BE SIZED AND INSTALLED PER ANSI-TIA-569-C. PULL BOXES FOR IN/UNDER SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL BOXES FOR OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT SUPPORTS. PULL BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATED. PULL BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING:

CONDUIT SIZE	WIDTH	LENGTH	DEPTH	WIDTH INCREASE PER ADDITIONAL CONDUIT
1"	4"	16"	3"	2"
2"	8"	36"	4"	5"
3"	12"	48"	5"	6"
4"	15"	60"	8"	8"

FOR OTHER CONDUIT SIZES REFER TO ANSI/TIA-569-C TABLE 12. - LATEST PUBLISHED EDITION.

9. CONDUIT(S) SHALL EXIT A PULL BOX ON THE WALL OPPOSITE THE WALL ENTERED.
10. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.
11. PROVIDE INTERNAL/EXTERNAL GAS AND WATER TIGHT MECHANICAL SEALING/PLUGGING OF EACH BUILDING ENTRY CONDUIT AS SPECIFIED ELSEWHERE IN THE DRAWINGS AND SPECIFICATIONS.

ANNOTATIONS

- A — PANEL CALLOUT, "A" INDICATES PANELBOARD OR EQUIPMENT DESIGNATION.
- AC / 2 — MECHANICAL EQUIPMENT CALLOUT, "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
- 3 / T-1 — DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
- 2 — PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
- 4 — REVISION REFERENCE.
- WYE CONFIGURATION — DELTA CONFIGURATION — GROUND

GENERAL NOTES:

1. INSTALLATION OF EQUIPMENT AND WIRING MUST MEET ALL APPLICABLE CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO NEC, NFPA, ANSI/EIA/TIA AND ISO 9001.
2. EQUIPMENT AND MATERIALS MUST COMPLY WITH UL LISTING AND EACH ITEM STAMPED OR LABELED AS SUCH.
3. COMPLIANCE WITH ANSI/TIA/EIA 569-E, COMMERCIAL BUILDING STANDARDS FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
4. COMPLIANCE WITH ANSI/TIA/EIA 568-D, COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARDS.
5. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC, CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
6. CONTRACTOR SHALL NOTE IN WRITING, ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS. AS SUCH DISCREPANCIES ARISE, THE MORE STRINGENT SHALL TAKE PRECEDENCE.
7. COMMUNICATIONS CABLES (ANY TYPE) ROUTED THRU FURNITURE SYSTEMS SHALL BE ROUTED VIA DEDICATED COMMUNICATIONS PATHWAY, WHEN AVAILABLE. WHEN DEDICATED COMMUNICATIONS PATHWAY IS UNAVAILABLE, THE ABOVE-MENTIONED CABLES SHALL BE ROUTED IN A BARRIERED SYSTEMS FURNITURE RACEWAY SEPARATE FROM POWER CONDUCTORS PER EIA/TIA STANDARDS AND NEC REQUIREMENTS.
8. CONTRACTOR SHALL VERIFY SYSTEMS FURNITURE TYPE AND CABLE ROUTING/ FACEPLATE LOCATION WITHIN SYSTEMS FURNITURE PRIOR TO BID. INCLUDE ALL COSTS IN BASE BID.
9. REFERENCE ALL ELECTRICAL DRAWINGS (SHELL & T.I.).
10. REFERENCE ALL TECHNOLOGY DRAWINGS (T-SHEETS).
11. REFERENCE ALL ARCHITECTURAL DRAWINGS (SHELL & T.I.).
12. REFERENCE ALL ELECTRICAL AND STRUCTURED CABLING SYSTEM SPECIFICATIONS (DIVISION 26, 27 & 28 NUMBERED SPECIFICATIONS).
13. CONTRACTOR SHALL UTILIZE CONDUIT(S)/SLEEVE(S) SEQUENTIALLY, MAXIMIZING THE CABLE FILL IN EACH BEFORE UTILIZING THE NEXT CONDUIT(S)/SLEEVE(S). MAXIMUM ALLOWABLE CONDUIT FILL SHALL BE BASED ON NEC TABLES FOR CONDUIT FILL.

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Technology Lead - Rick Brysacz
WSP Job #: US00022861.0069

A

NOTE: LOW VOLTAGE IS NOT PART OF PLAN CHECK; PERMIT ONLY

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWATZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: T00.1

SHEET TITLE: LEGEND, SYMBOLS & NOTES

SVA ARCHITECTS
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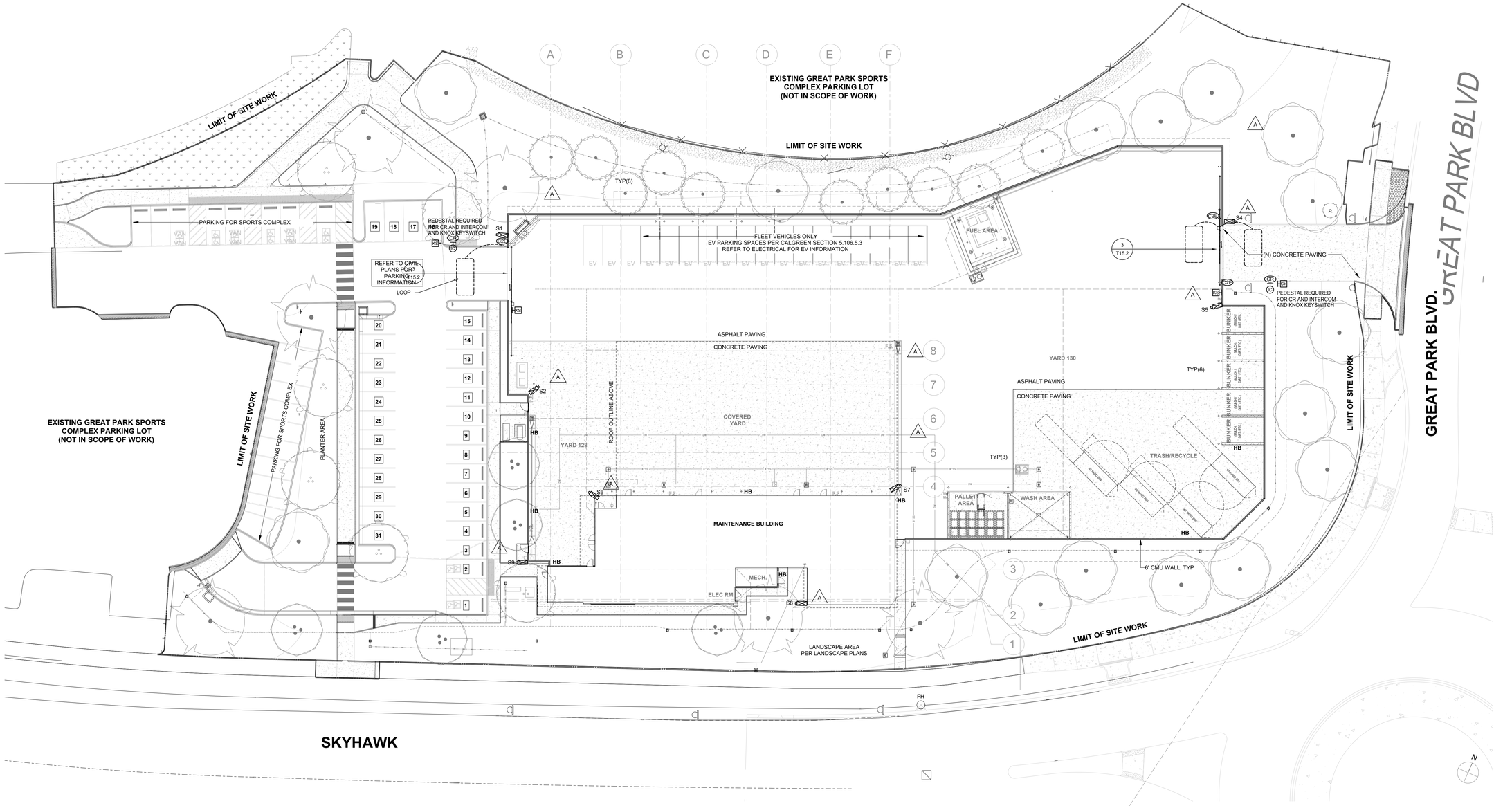
PLAN CHECK #00856737-CNEW



TECHNOLOGY SITE PLAN | 1" = 20'-0" | **1**

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CITY OF IRVINE - GREAT PARK MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
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ELECTRICAL
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REVISIONS:

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C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: T10.0

SHEET TITLE:

TECHNOLOGY SITE PLAN

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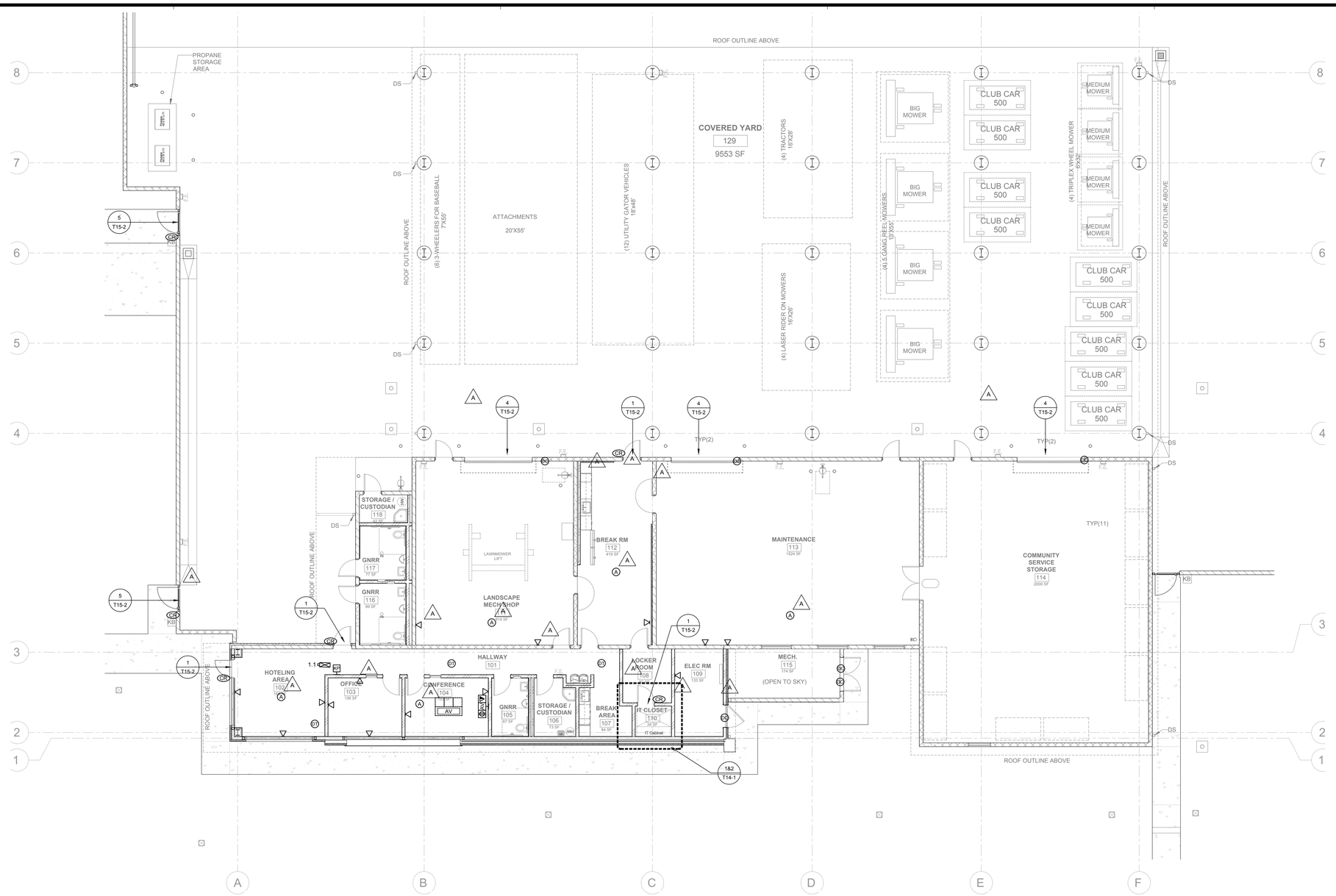

ENLARGED TECHNOLOGY FLOOR PLAN | 1/8" = 1'-0" | **1**

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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWATZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
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A	CITY PC #2	06-25-25
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C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: T11.1
SHEET TITLE:

ENLARGED TECHNOLOGY FLOOR PLAN

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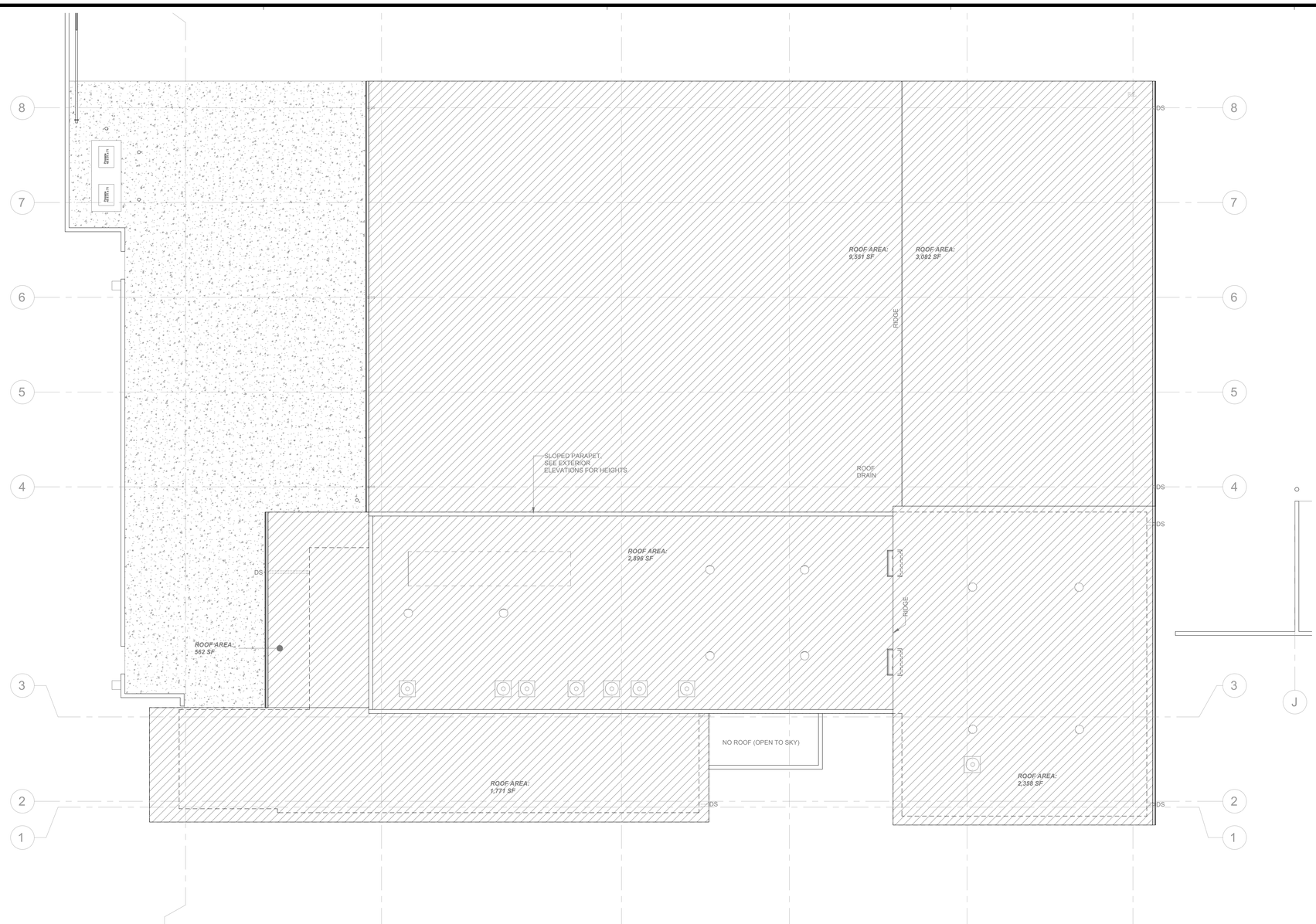
PLAN CHECK #00856737-CNEW



ENLARGED TECHNOLOGY ROOF PLAN | 1/8" = 1'-0" | **1**

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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: T12.1
SHEET TITLE:

ENLARGED TECHNOLOGY ROOF PLAN

SVA ARCHITECTS
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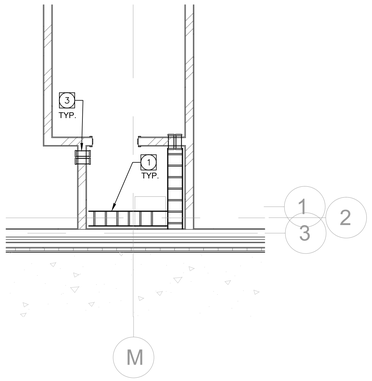
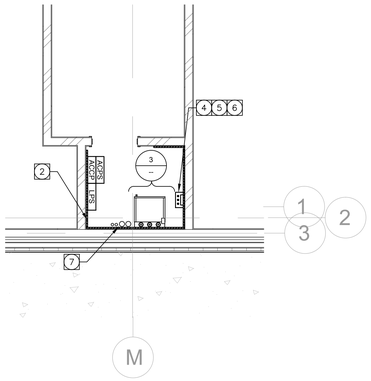
PLAN CHECK #00856737-CNEW



ENLARGED IDF TRAY PLAN | 1/4" = 1'-0" | 2



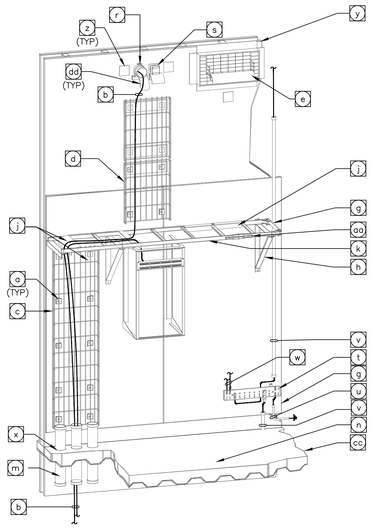
ENLARGED IDF ROOM PLAN | 1/4" = 1'-0" | 1

PLAN NOTES:

1. LADDER TRAY, SIZE PER PLANS. LADDER TRAY TO BE ANCHORED TO WALLS AND MOUNTED TO RACKS WITH RACK-TO-RUNWAY MOUNTING PLATE. USE CABLE RUNWAY RADIUS DROP AND CABLE RUNWAY RADIUS DROP WITH MOVEABLE RUNWAY CROSS MEMBER AS REQUIRED. SCS CONTRACTOR TO INSTALL RADIUS WHEREVER CABLE LEAVES TRAY. LADDER TRAY TO BE SUPPORTED EVERY 4 FEET. SUPPORT FROM DECK ABOVE WHERE NECESSARY.
2. PLYWOOD BACKBOARD AND TELECOMMUNICATIONS BUSBAR BY E.C. SCS CONTRACTOR SHALL INSTALL #6 WITH GREEN INSULATION TO EACH DATA EQUIPMENT RACK/CABINET, OVERHEAD LADDER TRAY/LADDER RACK, TELECOMMUNICATIONS CONDUITS, TELECOMMUNICATIONS CABLE TRAY(S), ANTI STATIC TILE GROUNDING POINTS ETC. AS REQUIRED. CONNECTIONS SHALL BE MADE WITH 2 HOLE COMPRESSION CONNECTORS. ALL CONNECTIONS SHALL BE BARE METAL TO BARE METAL USING APPROPRIATE ANTIOXIDANT COMPOUND.
3. STI EZ-PATH SERIES EZ44+ FIRESTOP SYSTEMS LOCATED IN LINE WITH OVERHEAD CABLE TRAY SYSTEM, IF TRAY IS UTILIZED, OR LOCATED IN IDF WALLS. QUANTITY AS REQUIRED. PROVIDE COMPLETE UL LISTED ASSEMBLIES OF APPROPRIATE SIZE AND QUANTITY TO ACCOMMODATE ALL INCOMING CABLES.
4. 1/2"C., 1#6 GROUND CONDUCTOR WITH GREEN INSULATION EXOTHERMICALLY CONNECTED TO NEAREST EFFECTIVELY GROUNDED BUILDING STEEL AND TO TMGB/TGB(S) VIA 2-HOLE COMPRESSION CONNECTION (BY E.C.).
5. ANSI-J-STD 607-C COMPLIANT SECONDARY BONDING BUSBAR(S) BY E.C. (CHATSWORTH PRODUCTS #13622-010 OR EQUAL FOR IDF'S). FOR PRIMARY BONDING BUSBAR IN MDF OR BDF USE (CHATSWORTH #40153-020 OR EQUAL).
6. #6 WITH GREEN INSULATION TO EACH DATA EQUIPMENT RACK/CABINET, OVERHEAD LADDER TRAY/LADDER RACK, TELECOMMUNICATIONS CONDUITS, TELECOMMUNICATIONS CABLE TRAY(S), ANTI STATIC TILE GROUNDING POINTS ETC. AS REQUIRED. CONDUIT SLEEVES LESS THAN 10 FEET IN LENGTH DO NOT REQUIRE BONDING TO TMGB/TGB. CONNECTIONS SHALL BE MADE WITH 2 HOLE COMPRESSION CONNECTORS. ALL CONNECTIONS SHALL BE BARE METAL TO BARE METAL USING APPROPRIATE ANTIOXIDANT COMPOUND.
7. INCOMING CONDUITS BY E.C. SEE ELECTRICAL SITE PLAN. SCS CONTRACTOR TO FIRE SEAL INSIDE ALL OPENINGS INCLUDING UNUSED SPARES AFTER CABLE INSTALLATION. SEE CONDUIT RISER DIAGRAM AND SITE PLAN FOR MORE INFORMATION.

GENERAL CABLE ROUTING DETAIL NOTES:

1. THIS DETAIL IS GENERIC IN NATURE AND IS INTENDED TO DEPICT A VARIETY OF CABLE TRANSITION SCENARIOS-NOT ALL OF WHICH APPLY TO A GIVEN PROJECT. IT IS THE SCS CONTRACTORS RESPONSIBILITY TO EXAMINE ALL PROJECT PLANS AND PROVIDE CABLE TRANSITIONS APPROPRIATE TO THE SITUATION, UTILIZING PORTIONS OF THIS DETAIL AS APPLICABLE, THAT RESULT IN NEAT WORKMANSHIP AND COMPLY WITH ANSI/EIA/TIA STANDARDS.
2. SCS CONTRACTOR TO COORDINATE CABLE/ LADDER TRAY TRANSITION WITH E.C. PRIOR TO ROUGH-IN.
3. SCS CONTRACTOR TO PROVIDE CABLE SUPPORT ABOVE FLOOR AND BELOW FLOOR TO PREVENT CABLE MOVEMENT, TAKING CARE NOT TO STRESS CABLE JACKETS.
4. ALL ITEMS BY SCS CONTRACTOR UNLESS OTHERWISE NOTED.

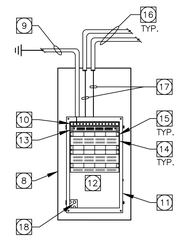


TYPICAL MDF

CABLE ROUTING DETAIL NOTES:

a. 1/4" STANDOFF MOUNTING TO ALLOW VELCRO TO PASS BEHIND FLEXTRAY.
b. STATION/RISER CABLES.
c. ?" X 2" DEEP FLEXIBLE CABLE TRAY. WIDTH TO SPAN CONDUITS OR CONDUIT/GUTTER SYSTEM. HEIGHT TO BE FROM CONDUITS TO BOTTOM OF LADDER TRAY. FASTEN CABLE TO FLEXIBLE CABLE TRAY WITH VELCRO TIES.
d. FLEXIBLE CABLE TRAY NOT REQUIRED IF VERTICAL SPAN IS LESS THAN 24". FOR ROOMS WITH NO ACOUSTICAL CEILING EXTEND FLEXIBLE CABLE TRAY FROM LADDER TRAY TO 6" BELOW INCOMING CONDUITS OR FIREWALL PENETRATION.
e. CABLE SPILLWAY/WATERFALL. TYPICAL AT ALL CONDUITS, INCOMING CABLE TRAY, OR FIREWALL PENETRATIONS.
f. D-RINGS AS REQUIRED. ALL CABLE ON WALLFIELD SHALL BE ROUTED AT RIGHT ANGLES AND PROPERLY SUPPORTED.
g. END CLOSING KIT. LADDER TRAY TERMINATIONS NOT ADJACENT TO A WALL OR JUNCTION SHALL BE COVERED BY AN END CLOSING KIT OR PROTECTIVE GROMMETS.
h. TRIANGULAR SUPPORT BRACKET. LADDER TRAY SHALL BE SUPPORTED AT 4' INTERVALS.
j. CABLE DROPOUTS SHALL BE USED WHEREVER CABLES LEAVE LADDER TRAY.
k. LADDER TRAY. SIZE PER PLANS.
m. (?) IMC C.O. WITH PULL STRING - QUANTITY AND SIZE PER PLANS OR BY E.C. SCS CONTRACTOR TO FIRESEAL INSIDE OF ALL CONDUITS TO MEET LOCAL, STATE, AND NATIONAL FIRE CODES.
n. WALL MOUNTED SWING GATE RACK PER SPECIFICATIONS AND DRAWINGS.
p. 66-BLOCKS AND PROTECTOR BLOCKS AS REQUIRED PER SPECIFICATIONS AND DRAWINGS.
q. PLYWOOD BACKBOARD BY E.C..
r. FIREWALL PENETRATION SLEEVE(S) WITH BUSHINGS. SIZE AND QUANTITY PER PLANS. SCS CONTRACTOR TO FIRESEAL INSIDE OF SLEEVE AFTER CABLE INSTALLATION.
s. RE-ENTERABLE FIREWALL PENETRATION (STI EZ-PATH #EZDP33FWS OR EQUAL BY WIREMOLD). QUANTITY AS REQUIRED. MAY BE USED IN-LIEU-OF OR IN-ADDITION-TO CONVENTIONAL FIREWALL PENETRATION SLEEVES. NOT ACCEPTABLE IN ROOMS WITH GASEOUS FIRE SUPPRESSION SYSTEMS.
t. ANSI-J-STD 607-C COMPLIANT TELECOMMUNICATIONS GROUND BUS BAR(S) BY E.C. (CHATSWORTH PRODUCTS #13622-010 OR EQUAL FOR IDF'S). IN MDF OR BDF USE (CHATSWORTH #40153-020 OR EQUAL).
u. 1/2"C., 1#6 GROUND WITH EXOTHERMIC CONNECTION TO NEAREST EFFECTIVELY GROUNDED BUILDING STEEL AND 2-HOLE COMPRESSION CONNECTION TO TMGB/TGB(S) BY E.C.
v. TELECOMMUNICATIONS BONDING CONDUCTOR (TBC) CONSISTING OF (1) 1"C., W/ #3/0 WITH GREEN INSULATION (OR #1/0 IF THE LENGTH OF THE TBC IS LESS THAN 100 FT). E.C. TO BOND EACH END OF METAL CONDUIT TO TBC W/#6 WITH GREEN INSULATION. SEE TELECOMMUNICATIONS GROUNDING RISER DIAGRAM FOR MORE INFORMATION.
w. COPPER GROUND WIRE(S) WITH GREEN INSULATION TO EQUIPMENT RACK, LADDER TRAY, CABLE TRAY, CONDUITS, ETC.. SEE GROUNDING DETAIL.
x. UL FIRESTOP AROUND EXTERIOR OF CONDUIT PENETRATION AS REQUIRED BY E.C. (TYP).
y. WALL OF IDF, MDF, OR BDF.
z. FIRESTOP LABEL PER CODE.
aa. LADDER TRAY SECTIONS SHALL BE SPLICED UTILIZING BUTT SPLICE KIT (CHATSWORTH PRODUCT #16301-701) OR JUNCTION SPLICE KIT (CHATSWORTH PRODUCT #16302-701). ALL LADDER TRAY SECTIONS SHALL BE BONDED TOGETHER WITH CABLE RUNWAY GROUND STRAP KIT (CHATSWORTH PRODUCT #40164-001) UON.
bb. WALL MOUNTED CABINET PER SPECIFICATION.
cc. STRUCTURAL FLOOR/CEILING.
dd. CONDUIT WATERFALL. PANDUIT CWF400 OR EQUAL. PROVIDE WATERFALL TO FIT ENTRANCE CONDUITS.

CABLE ROUTING DETAIL | NTS | 4



36" IDF WALL MOUNTED CABINET | 1/2" = 1'-0" | 3

IDF WALL MOUNTED CABINET NOTES:

8. PAINTED A/C GRADE BACKBOARD BY E.C.. SEE ELECTRICAL PLANS FOR MORE INFORMATION.
9. E.C. PROVIDED 1/2"C. WITH #6-AWG GREEN GROUND CONDUCTOR EXOTHERMICALLY CONNECTED TO NEAREST BUILDING STEEL. CONNECT TO RACK MOUNTED BUS BAR WITH 2-HOLE COMPRESSION LUG.
10. SCS CONTRACTOR TO INSTALL 19" RACK MOUNTED COPPER BUSBAR (GREAT LAKES #CBB-19 OR EQUAL). MOUNT TO REAR RAILS AT TOP.
11. SCS CONTRACTOR TO INSTALL BLACK 36" WALL MOUNTED CABINET (CHATSWORTH #11901-736 OR EQUAL). SCS CONTRACTOR TO MOUNT CABINET TO E.C. INSTALLED PLYWOOD. PROVIDE EXTERIOR MOUNTED FAN KIT AND FILTER KIT (CHATSWORTH #12804-701 AND 12805-201).
12. SCS CONTRACTOR TO PATCH IN AND CROSS-CONNECT ALL EQUIPMENT PER OWNERS INSTRUCTIONS.
13. FIBER OPTIC ENCLOSURE PER SPECIFICATION. SCS CONTRACTOR TO TERMINATE OSP BACKBONE FIBER AS SPECIFIED. SEE SCS ONE-LINE DIAGRAMS FOR MORE INFORMATION.
14. PATCH PANEL AS REQUIRED PER SPECIFICATION. SCS CONTRACTOR SHALL PROVIDE QUANTITY OF PATCH PANELS AND JACKS NECESSARY TO TERMINATE ALL DATA CABLES. PROVIDE (1) ADDITIONAL SPARE PATCH PANEL.
15. 1U HORIZONTAL WIRE MANAGEMENT. SCS CONTRACTOR TO INSTALL (1) WIRE MANAGER ABOVE AND BELOW EACH PATCH PANEL AND (1) BELOW EACH OWNER SUPPLIED DATA SWITCH.
16. CONDUITS FOR HORIZONTAL, RISER AND BACKBONE CABLES. QUANTITY AS REQUIRED. TERMINATE CONDUITS ON BACKBOARD.
17. SECURE AND NEATLY DRESS ALL HORIZONTAL, RISER AND BACKBONE CABLES TO BACKBOARD UTILIZING VELCOR AND D-RINGS. TYE-WRAPS ARE PROHIBITED. CABLES SHALL ENTER CABINET VIA TOP KNOCKOUTS WITH RUBBER GROMMETS.
18. E.C. TO MOUNT 20 AMP DEDICATED CIRCUIT QUAD OUTLET ON THE INSIDE BACK WALL OF CABINET. COORDINATE LOCATION WITH SCS CONTRACTOR.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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949.751.5800 wsp.com
Project Leader - Jeff Mixer
Technology Lead - Rick Brysacz
WSP Job #: US0022861.0069

A
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SHEET NUMBER: T14.1
SHEET TITLE: DIAGRAMS

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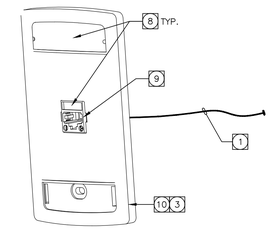
PLAN CHECK #00856737-CNEW

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURED CABLING SYSTEM DRAWINGS:

THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.



VOICE ONLY DEVICE | 1

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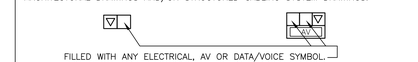

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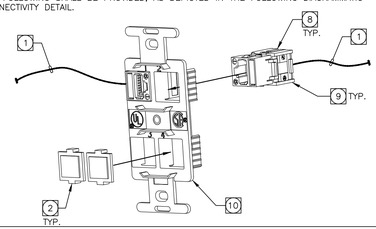

CONF RM & TRNG RM FLOOR DEVICE | 4

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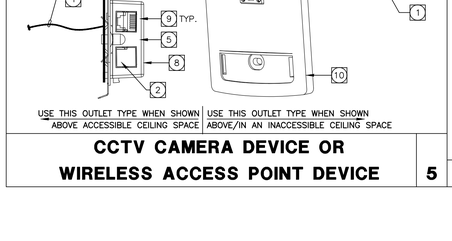

USE THIS OUTLET TYPE WHEN SHOWN ABOVE ACCESSIBLE CEILING SPACE

USE THIS OUTLET TYPE WHEN SHOWN ABOVE/IN AN INACCESSIBLE CEILING SPACE

CCTV CAMERA DEVICE OR WIRELESS ACCESS POINT DEVICE | 5

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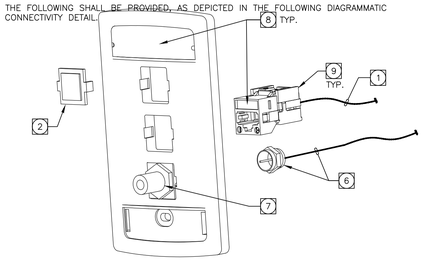

AV DISPLAY DEVICE | 2

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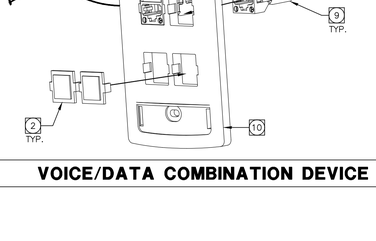

VOICE/DATA COMBINATION DEVICE | 3

SPECIFIC NOTES

1. PROVIDE (1) CAT 6, 4 PAIR UTP CABLE(S) TO RESPECTIVE IDF. COLOR OF CABLE(S) SHALL BE WHITE. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON PATCH PANEL(S) PER SPECIFICATIONS.
2. BLANK INSERT. ALL UNUSED OPENINGS SHALL BE COVERED WITH A BLANK INSERT MATCHING THE COLOR OF THE FACEPLATE.
3. FOR WALL PHONE DEVICES, PROVIDE A STAINLESS STEEL FACEPLATE WITH STANDARD MOUNTING POSTS TOP AND BOTTOM. MOUNT AT 44" AFF UNLESS OTHERWISE INDICATED ON PLANS.
4. INSTALL DEDICATED SUSPENDED CEILING WIRE/HANGAR OR SUPPORT ROD/ROD HANGAR DIRECTLY TO STRUCTURAL CEILING ABOVE TO SUPPORT WAP 2-PORT HOUSING.
5. PROVIDE (1) SURFACE MOUNT, PLENUM-RATED TWO-PORT HOUSING. (LEVITON 41089-2WP OR EQUAL) MOUNTED TO IN-CEILING BRACKET WITH SPRING WIRE MOUNT(LEVITON 49223-CBC OR EQUAL) WHERE APPLICABLE. PROVIDE 15FT SLACK LOOP NEAR WAP SUSPENSION POINT.
6. PROVIDE RG6 QUAD SHIELD COAX W/SOLID 18 AWG COPPER CENTER CONDUCTOR TO THE TELECOM ROOM AND CATV COMPRESSION CONNECTOR (LEVITON #40985-CPF OR EQUAL) ON BOTH ENDS.
7. PROVIDE SNAP-IN F-TYPE CATV STATION COUPLER ASSEMBLY. (SYSTIMAX #M81C-COUPLER OR EQUAL). COLOR TO MATCH NEARBY POWER & DATA DEVICE COVER PLATES.
8. PROVIDE COVERPLATE LABELING PER SPECIFICATIONS. SEE SPECIFICATIONS FOR ALL OTHER LABELING REQUIREMENTS.
9. PROVIDE STATION CONNECTOR PER SPECIFICATIONS.
10. PROVIDE COVERPLATE PER SPECIFICATIONS. COVERPLATE MATERIAL AND FINISH SHALL MATCH ADJACENT/NEARBY POWER COVERPLATES. PROVIDE FLOOR BOX, POWER POLE & MODULAR FURNITURE DEVICE BRACKETS/CUSTOM ADAPTERS AS REQUIRED FOR A COMPLETE INSTALLATION. INCLUDE ALL COSTS IN BASE BID.

GENERAL NOTES

1. INSTALLATION OF EQUIPMENT AND WIRING MUST MEET ALL APPLICABLE CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO NEC, NFPA, ANSI/EIA/TIA AND ISO 9001.
2. EQUIPMENT AND MATERIALS MUST COMPLY WITH UL LISTING AND EACH ITEM STAMPED OR LABELED AS SUCH.
3. COMPLIANCE WITH ANSI/TIA/EIA 569-C. COMMERCIAL BUILDING STANDARDS FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
4. COMPLIANCE WITH ANSI/TIA/EIA 568-D. COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARDS.
5. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
6. CONTRACTOR SHALL NOTE IN WRITING. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS. AS SUCH DISCREPANCIES ARISE, THE MORE STRINGENT SHALL TAKE PRECEDENCE.
7. COMMUNICATIONS CABLES (ANY TYPE) ROUTED THRU FURNITURE SYSTEMS SHALL BE ROUTED VIA DEDICATED COMMUNICATIONS PATHWAY, WHEN AVAILABLE. WHEN DEDICATED COMMUNICATIONS PATHWAY IS UNAVAILABLE, THE ABOVE-MENTIONED CABLES SHALL BE ROUTED IN A BARRIERED SYSTEMS FURNITURE RACEWAY SEPARATE FROM POWER CONDUCTORS PER EIA/TIA STANDARDS AND NEC REQUIREMENTS.
8. CONTRACTOR SHALL VERIFY SYSTEMS FURNITURE TYPE AND CABLE ROUTING/ FACEPLATE LOCATION WITHIN SYSTEMS FURNITURE PRIOR TO BID. INCLUDE ALL COSTS IN BASE BID.
9. REFERENCE ALL ELECTRICAL DRAWINGS (SHELL & T.I.).
10. REFERENCE ALL STRUCTURED CABLING SYSTEM DRAWINGS (SCS-SHEETS).
11. REFERENCE ALL ARCHITECTURAL DRAWINGS (SHELL & T.I.).
12. REFERENCE ALL ELECTRICAL AND STRUCTURED CABLING SYSTEM SPECIFICATIONS (ALL 16600 NUMBERED SPECIFICATIONS).
13. CONTRACTOR SHALL UTILIZE CONDUIT(S)/SLEEVE(S) SEQUENTIALLY, MAXIMIZING THE CABLE FILL IN EACH BEFORE UTILIZING THE NEXT CONDUIT(S)/SLEEVE(S). MAXIMUM ALLOWABLE CONDUIT FILL SHALL BE BASED ON NEC TABLES FOR CONDUIT FILL.

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Project Leader - Jeff Mixer
Technology Lead - Rick Brysacz
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FACEPLATE DETAILS

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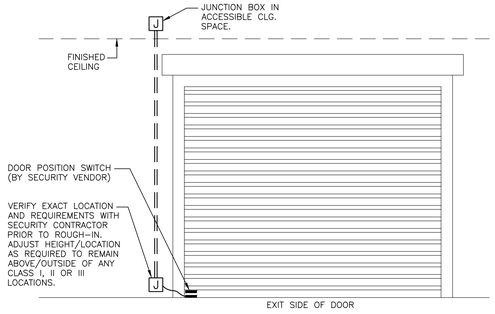
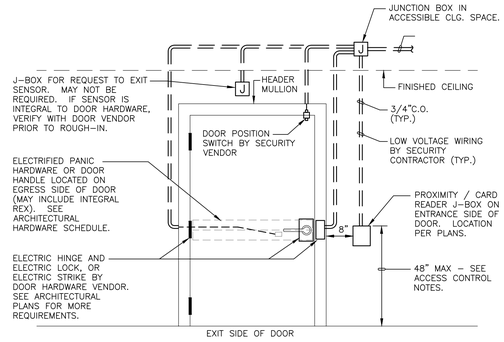


-	SCALE -	10



-	SCALE -	7

ROLL UP DOOR

SCALE NTS	4

SINGLE DOOR WITH CONTACT, CR, EL & REX

SCALE NTS	1

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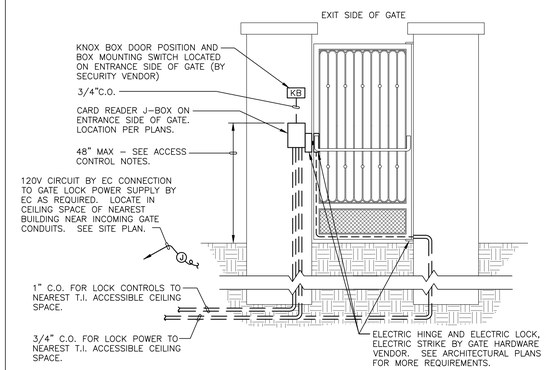

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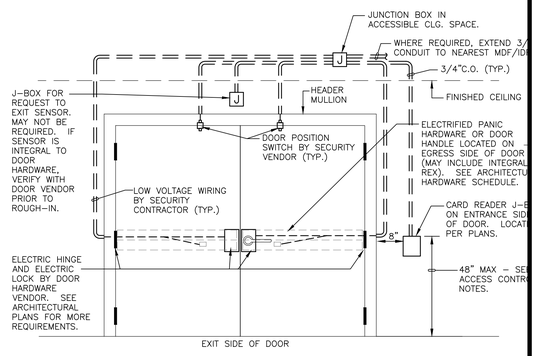
-	SCALE -	8

PEDESTRIAN GATE

SCALE NTS	5

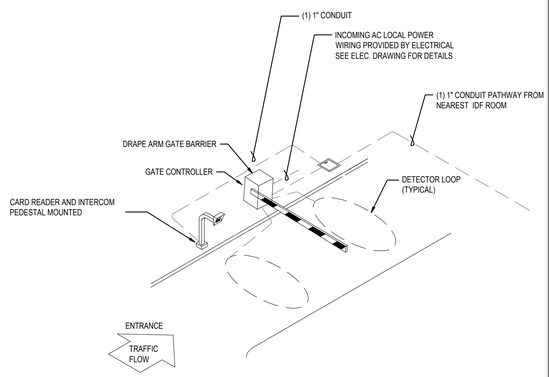


-	SCALE -	12

-	SCALE -	9

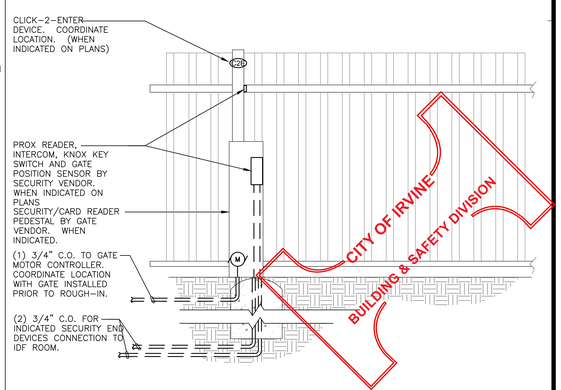
GATE ARM SECURITY DETAIL

SCALE NTS	6



VEHICLE GATE

SCALE NTS	3



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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

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DATE ISSUED: 11/19/2024
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SHEET NUMBER: T15.2
SHEET TITLE: DETAILS

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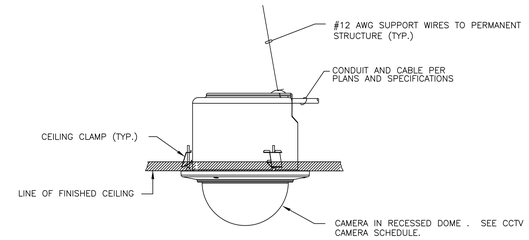
PLAN CHECK #00856737-CNEW

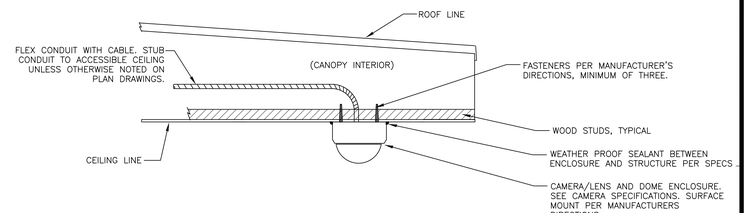
CCTV CAMERA #	LOCATION	res	TYPE	FOV	MTG. DETAIL #	NOTES
S1	T1.0	5MP	EXTERIOR	105	3/T15.3	
S2	T1.0	5MP	EXTERIOR	105	3/T15.3	
S4	T1.0	5MP	EXTERIOR	105	3/T15.3	
S5	T1.0	5MP	EXTERIOR	105	3/T15.3	
S6	T1.0	5MP	EXTERIOR	105	2/T15.3	
S7	T1.0	5MP	EXTERIOR	105	2/T15.3	
S8	T1.0	5MP	EXTERIOR	105	3/T15.3	
S9	T1.0	5MP	EXTERIOR	105	3/T15.3	
1.1	T11.1	5MP	INTERIOR	105	1/T15.3	

CAMERA SCHEDULE | SCALE NTS | 4



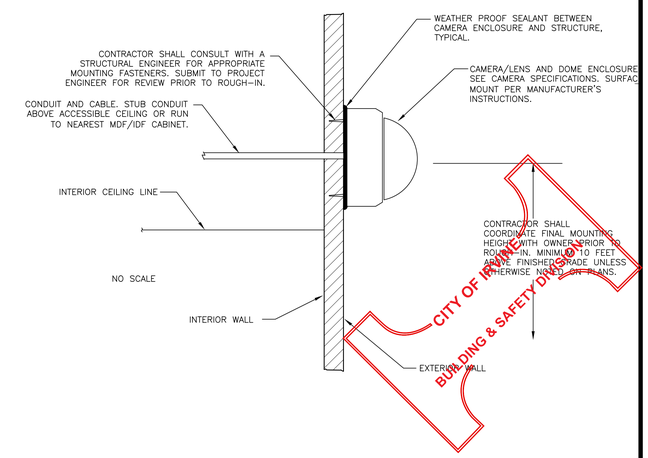
NOTE:
1. CONTRACTOR SHALL MOUNT ACCORDING TO MANUFACTURERS INSTRUCTIONS.
2. IN HARD-LID / GYPSUM BOARD CEILING APPLICATIONS, CONTRACTOR TO PROVIDE AND INSTALL ACCESS PANELS TO ABOVE CEILING LOCATION WHERE NONE EXIST. SUBMIT VIA FORMAL RFI FOR VERIFICATION OF LOCATION AND MINIMUM SIZE OF ACCESS PANEL.

INTERIOR CAMERA - FLUSH CEILING MOUNT | SCALE NTS | 1



NOTES:
1. SECURE CAMERA ENCLOSURE TO WOOD STUDS INSIDE CANOPY AREA.
2. STUB CONDUIT ABOVE NEAREST ACCESSIBLE CEILING SPACE. CONDUIT SHALL BE SECURED PER CEC CODE.

EXTERIOR CAMERA - BELOW CANOPY MOUNT | SCALE NTS | 2



EXTERIOR CAMERA - SURFACE WALL MOUNT | SCALE NTS | 3

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PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWATZ
No. E15610
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SHEET TITLE: DETAILS

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PLAN CHECK #00856737-CNEW

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT. JUNCTION BOXES, CABLE TRAYS, COVER PLATES, PULL STRING, ENCLOSURES, FLOOR BOXES, POWER RECEPTACLES AND POWER CONNECTIONS IDENTIFIED IN THESE DRAWINGS AND SPECIFICATIONS. UNLESS OTHERWISE NOTED.
2. ALL JUNCTION BOXES IN WALLS AND CEILINGS SHALL BE FLUSH MOUNTED. CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
3. ALL AUDIO-VISUAL CONDUIT RUNS SHALL BE CONTINUOUS FROM END TO END. NO CONDUIT RUNS SHALL EXCEED 100 FEET. ALL CONDUIT RUNS EXCEEDING 100 FEET MUST HAVE LARGE RADIUS BENDS. TOTAL BENDS PER RUN IS 360 DEGREES.
4. GENERAL CONTRACTOR SHALL PROVIDE STRUCTURAL SUPPORT FOR MOUNTING OF AUDIO-VISUAL EQUIPMENT PROVIDED BY OTHERS AT LOCATIONS DESIGNATED IN THESE DRAWINGS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, BLOCKING FOR WALL MOUNTED DEVICES AND OVERHEAD SUPPORT FOR CEILING MOUNTED PROJECTORS AND PROJECTION SCREENS.
5. REFER TO ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR SUPPORT DETAILS AND REQUIREMENTS.
6. DIMENSIONS ARE INDICATED ON AUDIOVISUAL DRAWINGS WHERE CRITICAL TO THE INSTALLATION AND PERFORMANCE OF THE AUDIOVISUAL DEVICES. WHERE INFORMATION AND REQUIREMENTS CONFLICT WITH SPECIFICATIONS AND DESIGNS DELINEATED ELSEWHERE, THE GENERAL CONTRACTOR SHALL IMMEDIATELY BRING SUCH CONFLICTS TO THE ATTENTION OF THE ARCHITECT.
7. THE ARCHITECTURAL, FURNITURE AND FINISH CONFIGURATIONS ILLUSTRATED ON THE AUDIOVISUAL DRAWINGS ARE FOR REFERENCE ONLY. REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS AND REQUIREMENTS.
8. ALL EQUIPMENT INSTALLATION AND MOUNTING DETAILS PROVIDED IN THE AUDIO-VISUAL DRAWINGS ARE FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND ENGINEERING DRAWINGS FOR SPECIFIC REQUIREMENTS.
9. DATA/COMMUNICATION OUTLETS AND POWER OUTLETS ARE SHOWN FOR REFERENCE ONLY. REFER TO THE TELECOMMUNICATION DRAWINGS FOR EXACT LOCATION OF THE DATA/COMMUNICATION OUTLETS AND TO THE ELECTRICAL DRAWINGS FOR THE EXACT LOCATION OF THE POWER RECEPTACLES.
10. CEILING MOUNTED SPEAKER ENCLOSURES SHALL BE SUPPORTED FROM OVERHEAD STRUCTURE. DO NOT HANG SPEAKER ENCLOSURES FROM FINISHED CEILING.
11. GENERAL CONTRACTOR SHALL PROVIDE PULL STRINGS IN ALL CONDUIT SPECIFIED IN AUDIO-VISUAL DRAWINGS. GENERAL CONTRACTOR SHALL LABEL ALL AUDIO-VISUAL JUNCTION BOXES WITH DESIGNATED BOX ID NUMBER (E.G., AV100).
12. GENERAL CONTRACTOR SHALL PROVIDE BLANK COVER PLATES AT ALL AUDIO-VISUAL JUNCTION BOXES. VERIFY ALL DEVICE PLATE FINISHES WITH ARCHITECT. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF ALL AUDIOVISUAL JUNCTION BOXES AND DEVICES WITH ARCHITECT.
13. SOME JUNCTION BOXES AND ENCLOSURES SPECIFIED IN AUDIO-VISUAL DRAWINGS MAY BE DEEPER THAN STANDARD WALL DEPTH. COORDINATE WITH MANUFACTURER AND/OR ARCHITECT TO VERIFY INSTALLATION REQUIREMENTS AND DETAILING.
14. WHERE SPECIFIED, LOW VOLTAGE CONTROL INTERFACE ELECTRONICS SHALL BE PROVIDED TO ENABLE OPERATION OF LINE VOLTAGE DEVICES (E.G., PROJECTION SCREENS, LIGHTING, WINDOW COVERINGS) VIA THE AUDIO=VISUAL CONTROL SYSTEM. PROVIDE SERIAL DIGITAL (E.G., RS232) INTERFACE CONTROL WHERE AVAILABLE WHERE MORE THAN ONE CONDUIT TERMINATES IN A JUNCTION BOX THE ELECTRICAL CONTRACTOR SHALL LABEL EACH CONDUIT IN A MANNER ALLOWING IDENTIFICATION OF CONDUITS AFTER WALL FINISHES ARE APPLIED.
15. AUDIO-VISUAL INFRASTRUCTURE DIAGRAM IDENTIFY SIGNAL CABLE CONTAINMENT REQUIREMENTS ONLY. AUDIOVISUAL CABLING AND SPECIALTY CONNECTOR PLATES ARE BY AUDIO-VISUAL CONTRACTOR.
16. ALL CONDUITS SPECIFIED SHALL BE EMT OR RIGID TYPE. FLEXIBLE CONDUITS MAY BE USED IN RUNS OF 72" OR LESS. FLEXIBLE CONDUITS SHALL NOT BE ALLOWED WHERE ACCESS CANNOT BE PROVIDED TO THE FULL LENGTH OF THE CONDUIT RUN.
17. GENERAL CONTRACTOR TO INSTALL PROJECTION SCREEN HOUSING FOR ALL FUTURE PROJECTION SCREEN LOCATIONS. U.O.N.
18. DEVICE MOUNTING HEIGHT IS TO THE CENTER, UON.
19. POWER RECEPTACLES ARE SHOWN FOR COORDINATION ONLY. REFER TO THE ELECTRICAL DRAWINGS FOR COMPLETE POWER LAYOUT AND CIRCUITING.
20. WHERE SHOWN A TECHNICAL GROUND IS REQUIRED (TGS). PROVIDE AN INSULATED GROUND CONDUCTOR ISOLATED FROM THE BACK BOX/CONDUIT SYSTEM. THIS GROUND CONDUCTOR WILL ONLY BE TERMINATED AT THE ELECTRICAL PANEL'S DEDICATED TGS GROUND BUSS. NO OTHER GROUNDS SHALL BE TERMINATED AT THIS TGS GROUND BUSS. LABEL TGS RECEPTACLE WITH THE TGS DESIGNATION AND CIRCUIT NUMBER.

WIRE TYPE AUDIO, VIDEO, CONTROL CABLES SCHEDULE

1. LOUDSPEAKER SPEAKER CABLE, 70-VOLT DISTRIBUTION, PLENUM RATED 2-CONDUCTOR, 16 AWG, UNSHIELDED PAIR: WEST PENN, BELDEN OR EQUAL.
2. STADIUM LOUD SPEAKER CABLE SHALL BE 8/2 AWG OR 10/2 AWG RATED FOR WATER IMMERSION OR AS SPECIFIED : WEST PENN, BELDEN OR EQUAL
3. LOUDSPEAKER CABLE, PLENUM RATED 2-CONDUCTOR, 12 AWG, UNSHIELDED PAIR: WEST PENN, BELDEN OR EQUAL.
4. LOUDSPEAKER CABLE, PLENUM RATED 2-CONDUCTOR, 14 AWG, UNSHIELDED PAIR: WEST PENN, BELDEN OR EQUAL.
5. ANALOG MICROPHONE/LINE LEVEL INSTALLATION CABLE, 22 AWG CONDUCTOR, JACKETED, SHIELDED, TWISTED-PAIR, PLENUM RATED: WEST PENN, BELDEN OR EQUAL.
6. PRE-TERMINATED HDMI, DVI DISPLAY PORT CABLES: EXTRON, OR EQUAL. (NOTE, CABLES MUST BE RATED FOR HDMI 2.0 SPECIFICATIONS OR BETTER, CAPABLE OF PASSING UHD AND 4K RESOLUTION AT DISTANCES LESS THAN 35' WITHOUT AN ACTIVE EQUALIZER.)
7. DIGITAL VIDEO SWITCHER. EXTRON XTP/DTP 24, OR CRESTRON ULTRA SHIELDED TWISTED PAIR CABLE… WITH EXTRON OR CRESTRON ONLY SHIELDED RJ-45 CONNECTORS.
8. CONTROL SYSTEM DEVICE CONTROL (RS232. RELAY OR CONTACT CLOSURE): (DUAL 22 AWG SHIELDED TWISTED PAIRS WITH INDIVIDUAL DRAIN WIRES, EACH PAIR IS COLOR-CODED RED/BLACK AND GREEN/WHITE TO SIMPLIFY IDENTIFICATION.) PLENUM RATED: WEST PENN, BELDEN OR EQUIVALENT.
9. DATA NETWORK: PLENUM-RATED CATEGORY 6, SEE STRUCTURED CABLING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. SERIAL DIGITAL INTERFACE CABLE RG6, 75 OHM COAXIAL CABLE BELDEN 4694R OR EQUAL.
11. FIBER, OM4. MM, 50 MICRON WITH LC CONNECTIONS PER EXTRON OR CRESTRON SPECIFICATIONS. FIBER, SINGLE MODE. PROVIDE CONNECTORS AS SHOWN. PROVIDE PLENUM RATED CABLE FOR ALL CABLE WHERE REQUIRED BY CODE. PROVIDE CABLE RATED FOR WATER IMMERSION AS REQUIRED OR AS SPECIFIED
12. ANY CABLE CHANGES OR SUBSTITUTIONS MUST BE SUBMITTED AND APPROVED PRIOR TO INSTALLATION. NON-COMPLIANT CABLE THAT HAS BEEN INSTALLED WITHOUT APPROVAL SHALL BE REPLACED AT THE CONTRACTOR EXPENSE.

DRAWING REFERENCES

ANNOTATIONS

- X / X-X — DETAIL CALLOUT, "x" INDICATES DETAIL NUMBER "AVx-xx" INDICATES SHEET NUMBER.
- 2 — PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
- 4.XXX — PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
- 1 — REVISION REFERENCE.

AV SYMBOLS

- J — WALL MOUNTED J-BOX
- J — CEILING MOUNTED J-BOX
- FLEX CONNECTION
- J — BOX WITH FLEX CONNECTION
- SP — CEILING SPEAKER
- SP X — SPEAKER - TYPE. REFER TO KEYNOTE FOR DEVICE TYPE
- XX — FLUSH WALL MOUNTED DEVICE
- AV — WALL MOUNTED DEVICE. REFER TO KEYNOTE FOR DEVICE TYPE
- DISPLAY WALL BOX
- MULTI-GANG FLOOR BOX
- R — AUDIOVISUAL EQUIPMENT RACK
- PROJECTOR
- SCREEN — VIDEO SCREEN
- VIDEO DISPLAY

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REGISTERED PROFESSIONAL ENGINEER
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Ex. 12/31/2025
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REVISIONS:

	DESCRIPTION	DATE
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PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: AV00.1
SHEET TITLE:

LEGEND SYMBOLS & NOTES

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PLAN CHECK #00856737-CNEW

CONFERENCE ROOM		
MANUFACTURER	MODEL	DESCRIPTION
EXTRON	TLP PRO 725T	AV SYSTEM TOUCH PANEL CONTROLLER
LOGITECH	MK270	WIRELESS KEYBOARD AND MOUSE
EXTRON	DTP T HWP 4K 231 D	HDMI - AUDIO INPUT EXTENDER
CUSTOM	Decora Network RJ-45	DESKTOP TOUCH PANEL CONNECTOR
TBD	NUK - LOCAL COMPUTER	LOCAL VIDEO CONFERENCING COMPUTER
EXTRON	SB-33-A 75-80	SOUND BAR
LOGITECH	C930E	VIDEO CONFERENCING CAMERA - MICROPHONE
EXTRON	IPLO PRO S1	AV CONTROL PROCESSOR
QSC	NS-1108P	NETWORK SWITCH
EXTRON	DTP3 R 201	HDMI EXTENDER - AUDIO STRIPPER
SAMSUNG	QM75C	75" LED DISPLAY
CHIEF	LSM1U	75" DISPLAY MOUNT
FSR	PWB-450	DISPLAY BACK BOX
BELDEN	CAT 6 SHIELDED	HDMI EXTENSION CABLE
BELDEN	SHIELDED PAIR CABLE	MIC/LINE CABLE
C2GO	HDMI CABLES	HDMI CABLES

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PROJECT NO: 2023-40108
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SHEET NUMBER: AV00.2
SHEET TITLE:

EQUIPMENT SCHEDULES

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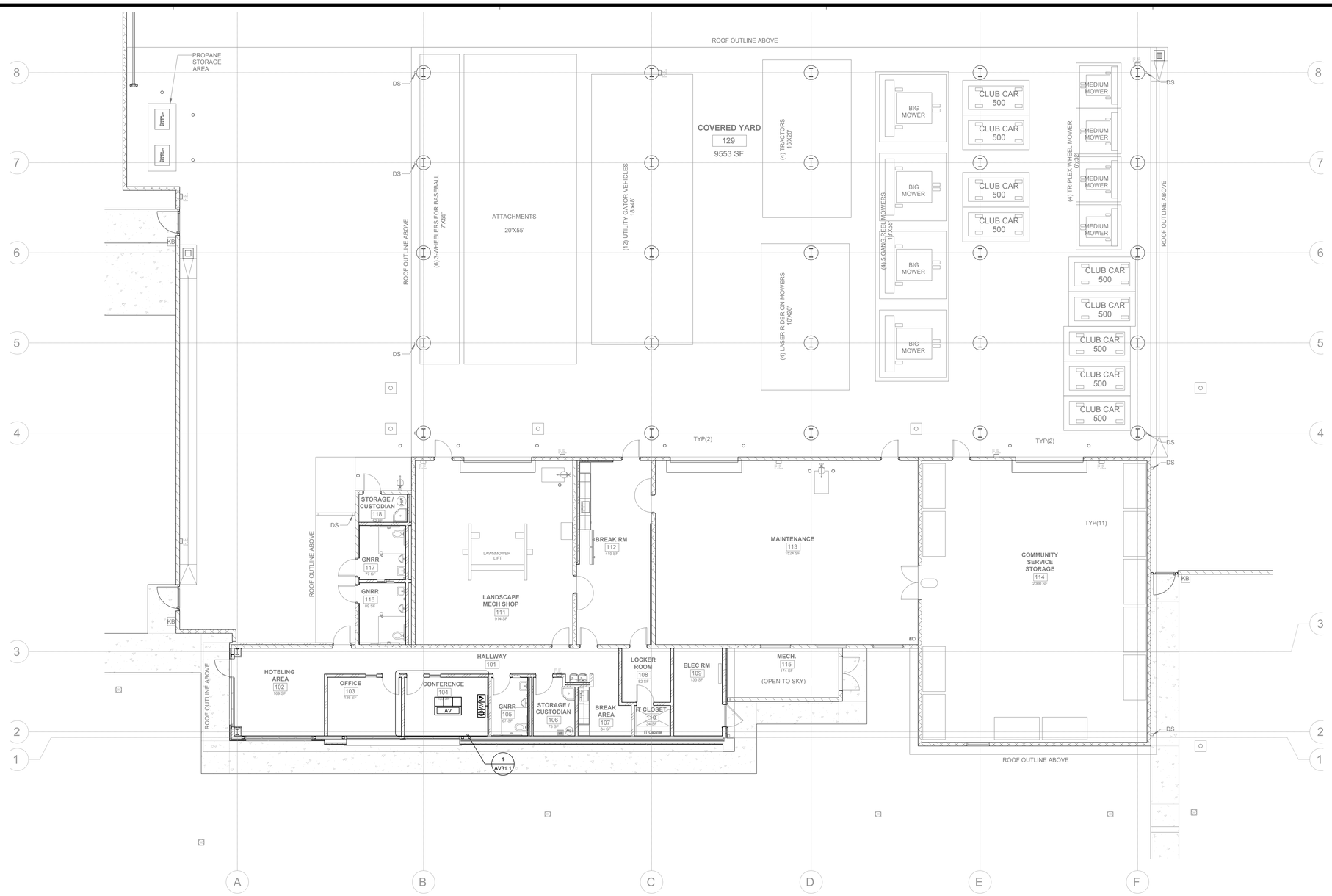
PLAN CHECK #00856737-CNEW



ENLARGED AUDIOVISUAL FLOOR PLAN | 1/8" = 1'-0" | **1**

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ENLARGED AUDIOVISUAL PLAN

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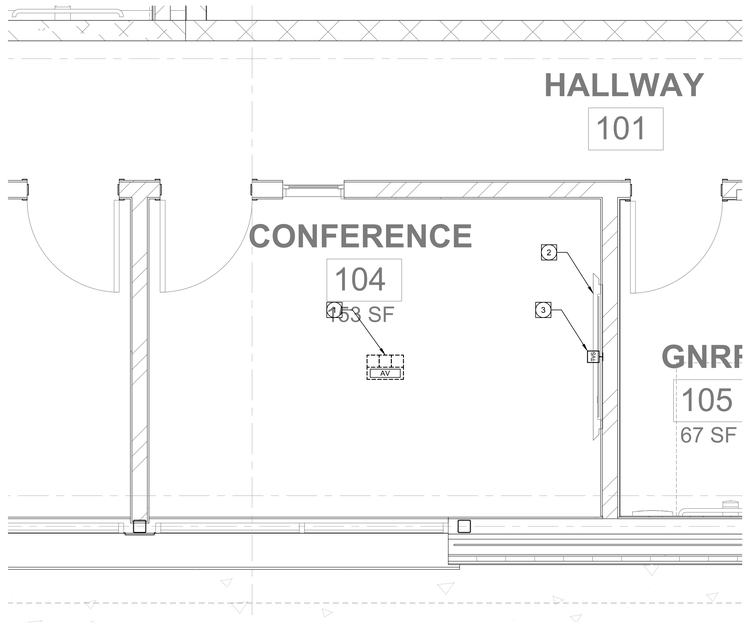

ENLARGED AUDIOVISUAL FLOOR PLAN | 1/2" = 1'-0" | **1**

PLAN NOTES

1. FLOOR BOX - HDMI-TOUCH PANEL-DATA AND POWER. FSR FL-500P. PROVIDE (2) 1.25" CONDUIT TO ACCESSIBLE CEILING SPACE.PROVIDE 120V 20A CIRCUIT. CAN BE SHARED WITH DISPLAY CIRCUIT. PROVIDE CAT6 AND HDMI CABLES FROM FLOOR BOX TO AV BACKBOX. PROVIDE CAT6 AND HDMI CABLES FROM FLOOR TO TABLE.
2. 75" DISPLAY, PROVIDE FSR BACK BOX - COMPUTER AND CONTROL ELECTRONICS. + 60" PROVIDE (2) 1.25" CONDUIT TO ACCESSIBLE CEILING SPACE.. PROVIDE 120V 20A POWER RECEPTACLE IN BACK BOX
3. SOUND - CAMERA BAR - UNDER THE DISPLAY. PROVIDE TRUE 5S DEEP J-BOX ABOVE CAMERA AND BEHIND DISPLAY. PROVIDE 1"C TO AV BACK-BOX. PROVIDE POWER FOR SOUND-BAR NEAR SOUND-BAR, BEHIND THE DISPLAY.

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SHEET TITLE:

ENLARGED AUDIOVISUAL FLOOR PLAN

SVA ARCHITECTS
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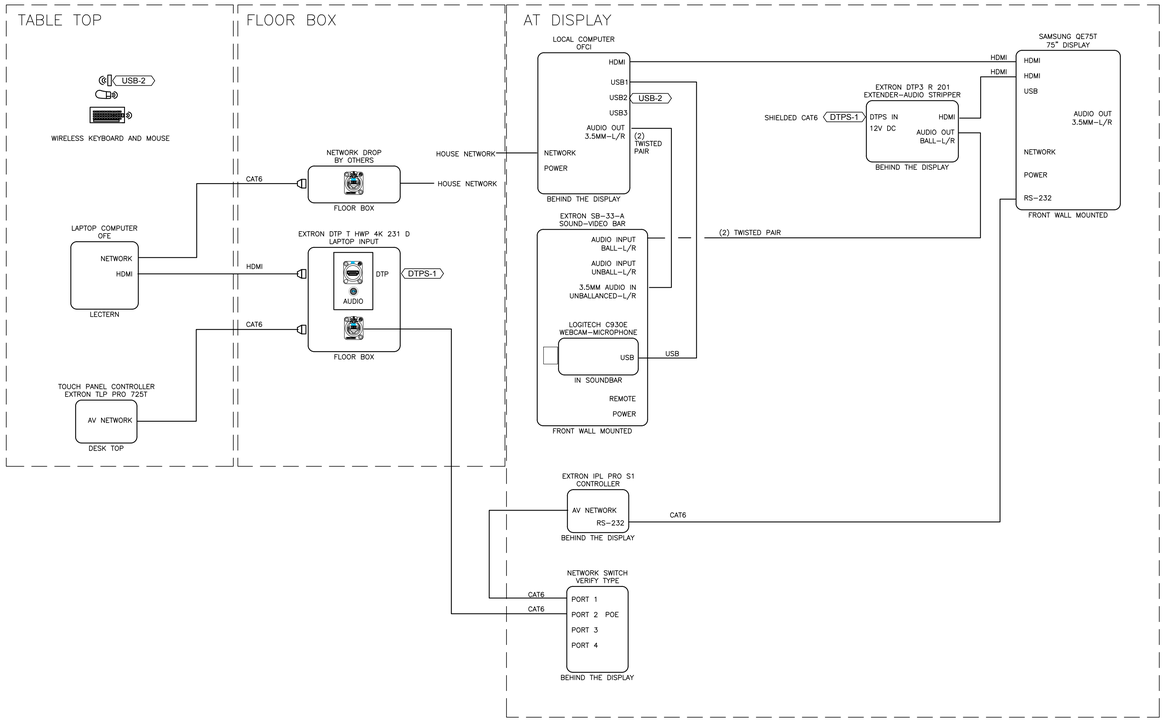
PLAN CHECK #00856737-CNEW



ENLARGED TECHNOLOGY FLOOR PLAN | 1/2" = 1'-0" | **1**

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
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Irvine, California 92618
949.751.5800 wsp.com

Project Leader - Jeff Mixer
Audio Visual Lead - Rick Brysacz
WSP Job #: US00022861.0069

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CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #4

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
C	CITY PC #4	10-15-25

PROJECT NO: 2023-40108
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SHEET NUMBER: **AV40.1**
SHEET TITLE:

AUDIOVISUAL SINGLE LINE DIAGRAM

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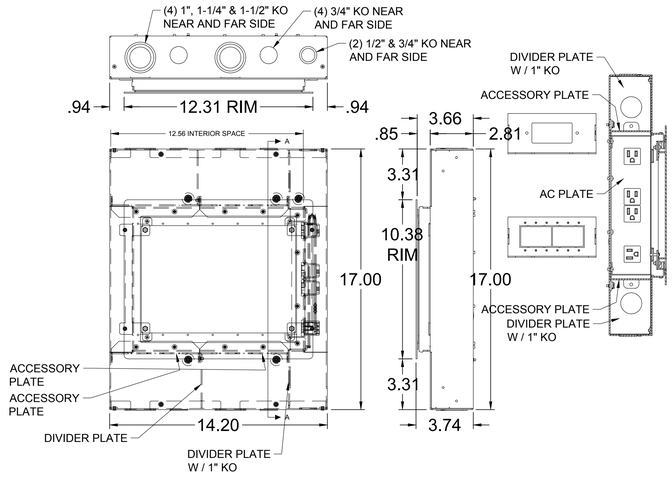
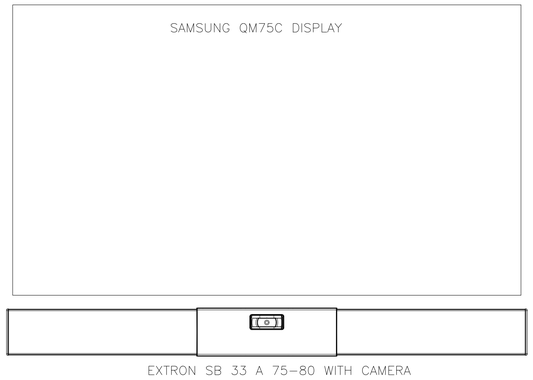
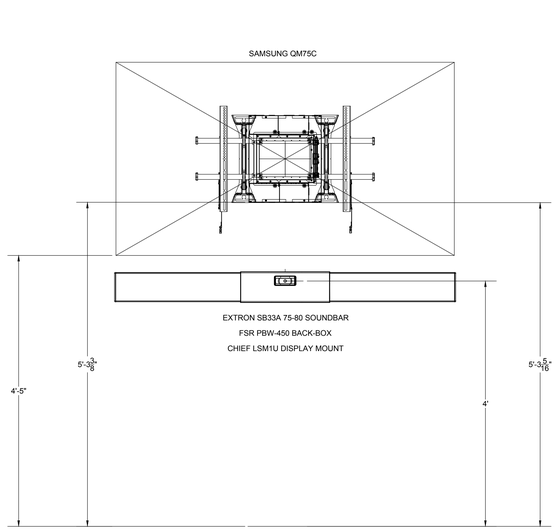


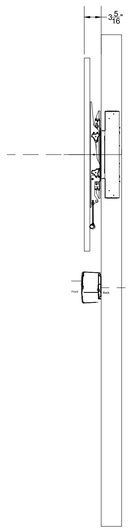
FSR PWB-450

FSR BACK BOX - CONFERENCE ROOM | 3" = 1'-0" | **2**



SOUNDBAR-CAMERA | 1-1/2" = 1'-0" | **1**

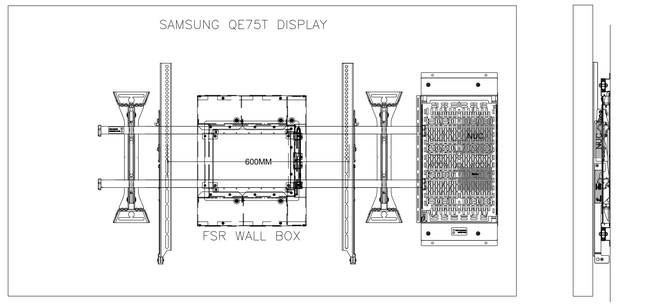


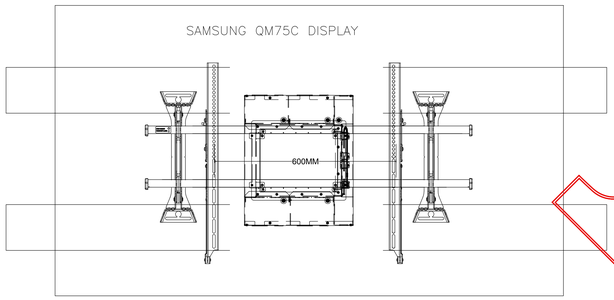


DISPLAY ELEVATION DETAIL - CONFERENCE ROOM | 3" = 1'-0" | **4**

1. WEIGHT LIMIT = 200 LBS INCLUDING MOUNT, HARDWARE AND DISPLAY.
98" DISPLAY = 169 LBS, 75" DISPLAY = 83 LBS, 55" DISPLAY = 40 LBS.
2. COORDINATE BACKING INSTALLATION WITH STRUCTURAL DETAILS.
3. PROVIDE A MINIMUM OF (4) #12 SHEET METAL SCREWS TO FASTEN MOUNT TO BACKING.
4. PROVIDE CHEIF XSM1U FOR 98" AND LSM1U FOR SMALLER DISPLAYS.
5. COORDINATE POWER AND SIGNAL J-BOX LOCATION WITH BUILDING STRUCTURE.

NOTE: SEE AV DRAWINGS FOR J-BOX AND CONDUIT FOR TYPE AND SIZE.





DISPLAY CONFERENCE ROOM | 1-1/2" = 1'-0" | **3**

CITY OF IRVINE
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REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2025
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PROJECT NO: 2023-40108
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SHEET NUMBER: AV60.1
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AUDIOVISUAL DETAILS

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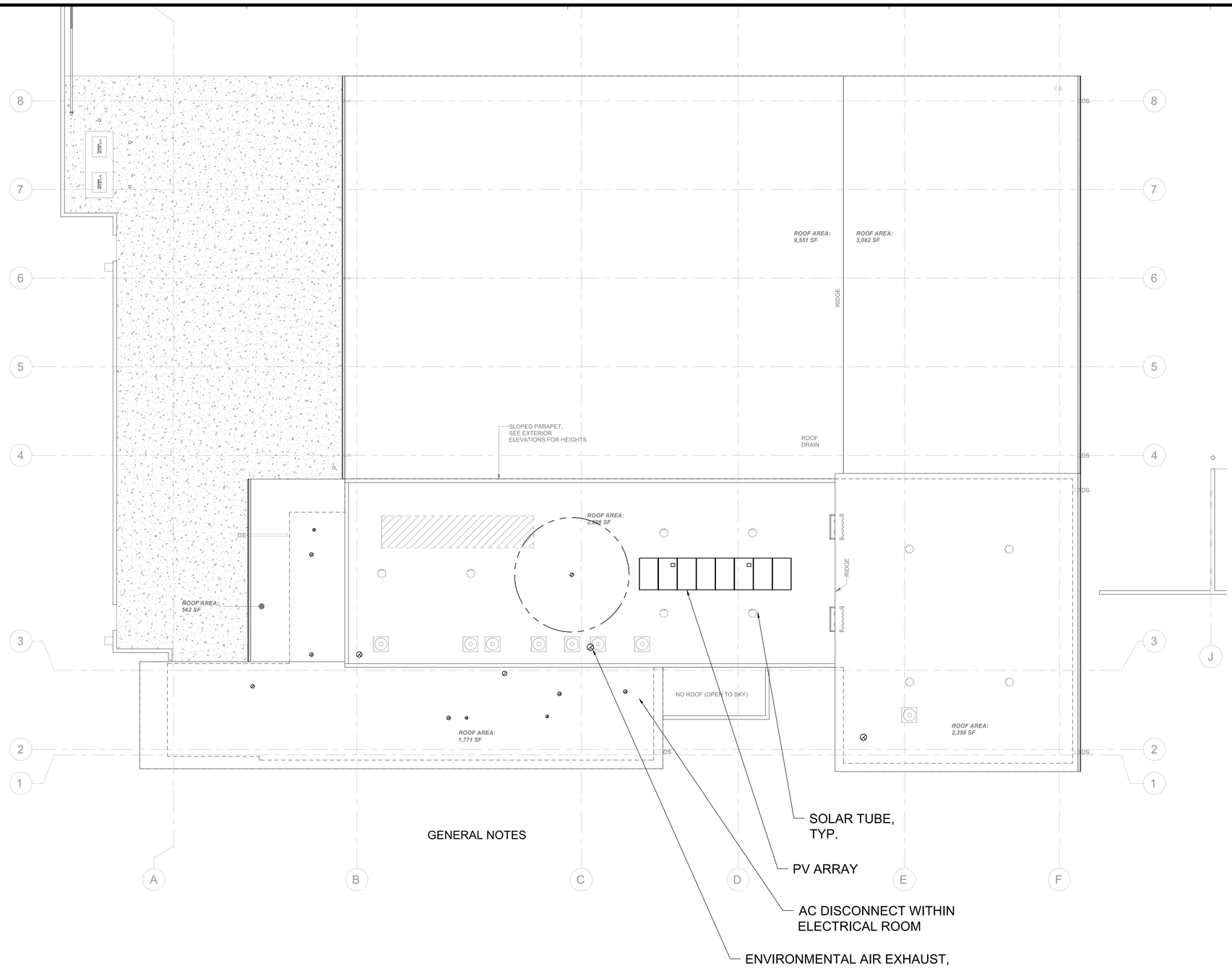
PLAN CHECK #00856737-CNEW



GENERAL NOTES

PV ARRAY LAYOUT | 1/8" = 1'-0" | 1

GENERAL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND COORDINATE THE INFORMATION AND DIMENSIONS SHOWN IN THE CONTRACT DOCUMENTS PRIOR TO PROCEEDING WITH CONSTRUCTION. WHERE CONFLICTS OR DISCREPANCIES ARE FOUND WITHIN THE CONTRACT DOCUMENTS, THE MOST STRINGENT REQUIREMENT SHALL BE ASSUMED TO GOVERN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER.
2. COORDINATION BETWEEN TRADES (INCLUDING DIMENSIONS AND LOCATIONS OF OPENINGS AND INSERTS) IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR IS RESPONSIBLE TO VERIFY SITE CONDITIONS, INCLUDING DIMENSIONS, CONDITIONS, AND ELEVATIONS OF GRADE, AND LOCATION, DEPTH, AND EXTENTS OF UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION. ALL WORK NECESSARY FOR INSTALLATION WITHIN EXISTING FACILITY SHALL BE INCLUDED IN THE CONTRACTOR'S SCOPE.
5. NOISE, VIBRATION, BUILDING CLOSURES, AND CONTRACTOR ACCESS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. ALL MEASURES SHALL BE TAKEN TO MINIMIZE DISRUPTION TO OWNER AND TENANT OPERATIONS. SAFETY OF THE BUILDING STAFF, PATRONS, AND WORKERS IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL EXISTING BUILDING MATERIALS AND EQUIPMENT TO REMAIN IN SERVICE SHALL BE PROTECTED FROM DAMAGE. DAMAGED ITEMS MAY REQUIRE REPLACEMENT AT THE CONTRACTOR'S COST.
7. WEATHERPROOFING AND OR BUILDING ENVELOPE DETAILS ARE NOT SHOWN AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.

PV SYSTEM DETAILS

DC SIZE:	4.72 KWDC
MODULE:	(8) HANWHA Q.PEAK DUO XL-G11S.3 BFG (590W)
INVERTER:	(2) YOTTA DPI-208 3PH MICROINVERTER
AZIMUTH/TILT:	180°/9°
RACKING:	IRONRIDGE XR TILT-MOUNT MOUNTING SOLUTION

PROJECT DESCRIPTION

DESIGN AND INSTALLATION OF GRID-TIED FIXED-TILT ROOFTOP PHOTOVOLTAIC (PV) SYSTEM . THE SYSTEM SHALL BE INTERCONNECTED AT A DEDICATED BREAKER AT MAIN SWITCHBOARD "MSBA" WITHIN THE ELECTRICAL ROOM. THE SYSTEM IS COMPLIANT WITH RAPID SHUTDOWN REQUIREMENTS BY MEANS OF MICROINVERTER TECHNOLOGY.

B

PLAN NOTES:

1. 4" PERIMETER SETBACK (CA FIRE CODE)
2. 10' SETBACK (OSHA FALL PROTECTION MITIGATION, AS NEEDED)
3. 10' SETBACK (ENVIRONMENTAL EXHAUST TERMINATION)

PV LAYOUT GENERAL NOTES:

1. LAYOUT IS FOR REFERENCE ONLY. REFER TO RACKING MANUFACTURER DRAWINGS FOR EXACT INSTALLATION REQUIREMENTS.
2. BASIS OF DESIGN FOR PV RACKING IS IRONRIDGE XR FIXED TILT MOUNT FOR FLAT ROOF SYSTEMS.
3. PROVIDE EXPANSION JOINTS WHERE THE DISTANCE OF CONDUIT IN ANY DIRECTION EXCEEDS 100' OR WHERE CONDUIT CROSSES A BUILDING EXPANSION JOINT.
4. ACCESS AND PATHWAYS ARE COMPLIANT WITH CFC SECTION 1205.3.

CITY OF IRVINE
BUILDING & SAFETY DIVISION

CODES & STANDARDS

2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE (CEC)

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PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
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E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

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SHEET TITLE:

PV ARRAY LAYOUT

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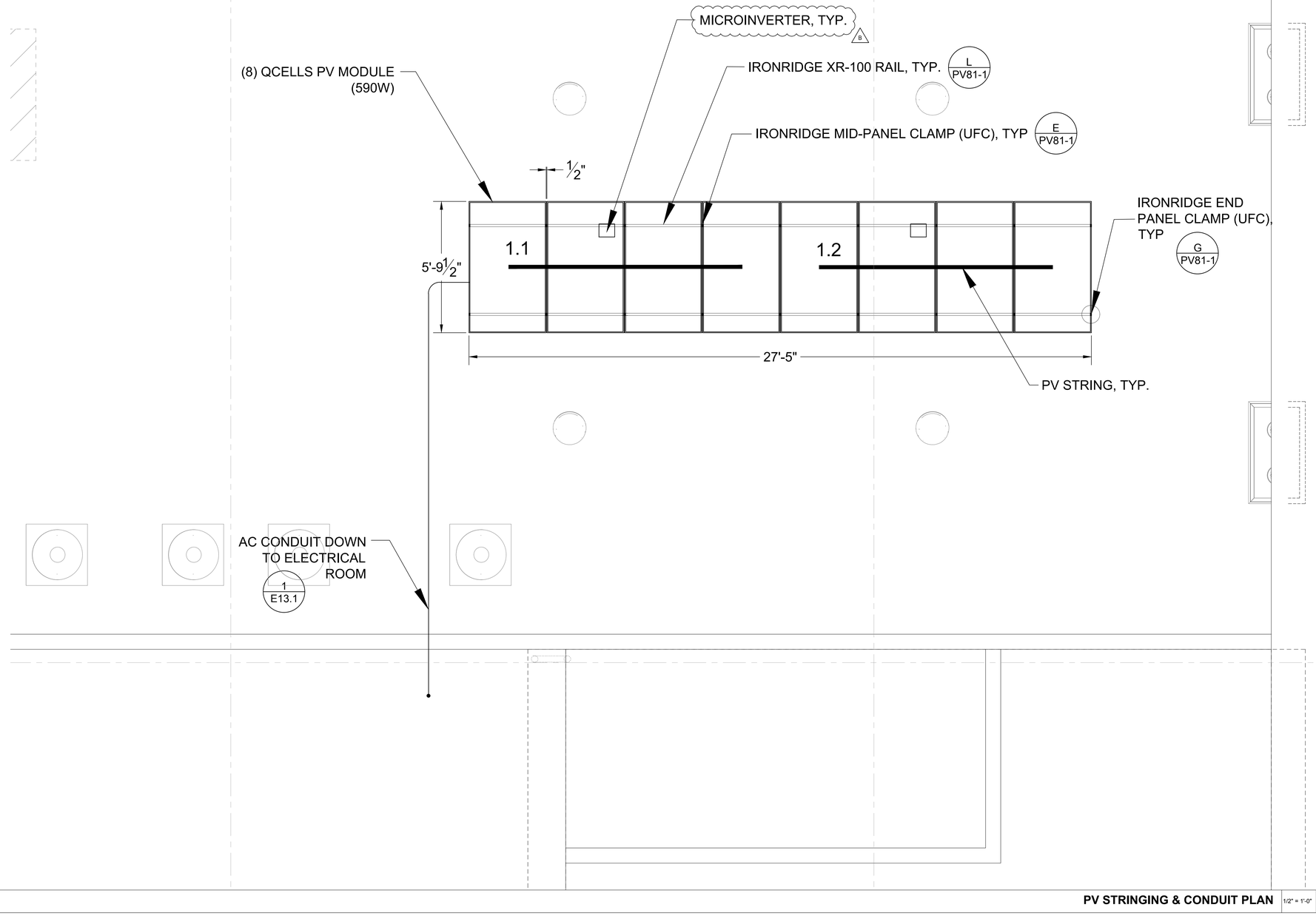
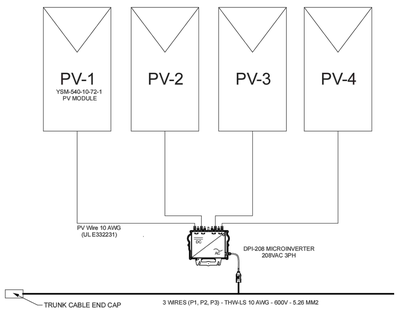


PV STRINGING & CONDUIT PLAN 1/2" = 1'-0" **1**

BRANCH CIRCUIT / TRUNK 1 (1-5) 20 PV MODULES



STRINGING KEY:

BRANCH CIRCUIT #.MICROINVERTER #

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REGISTERED PROFESSIONAL ENGINEER
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SHEET NUMBER: PV12.2
SHEET TITLE:

PV STRINGING & CONDUIT PLAN

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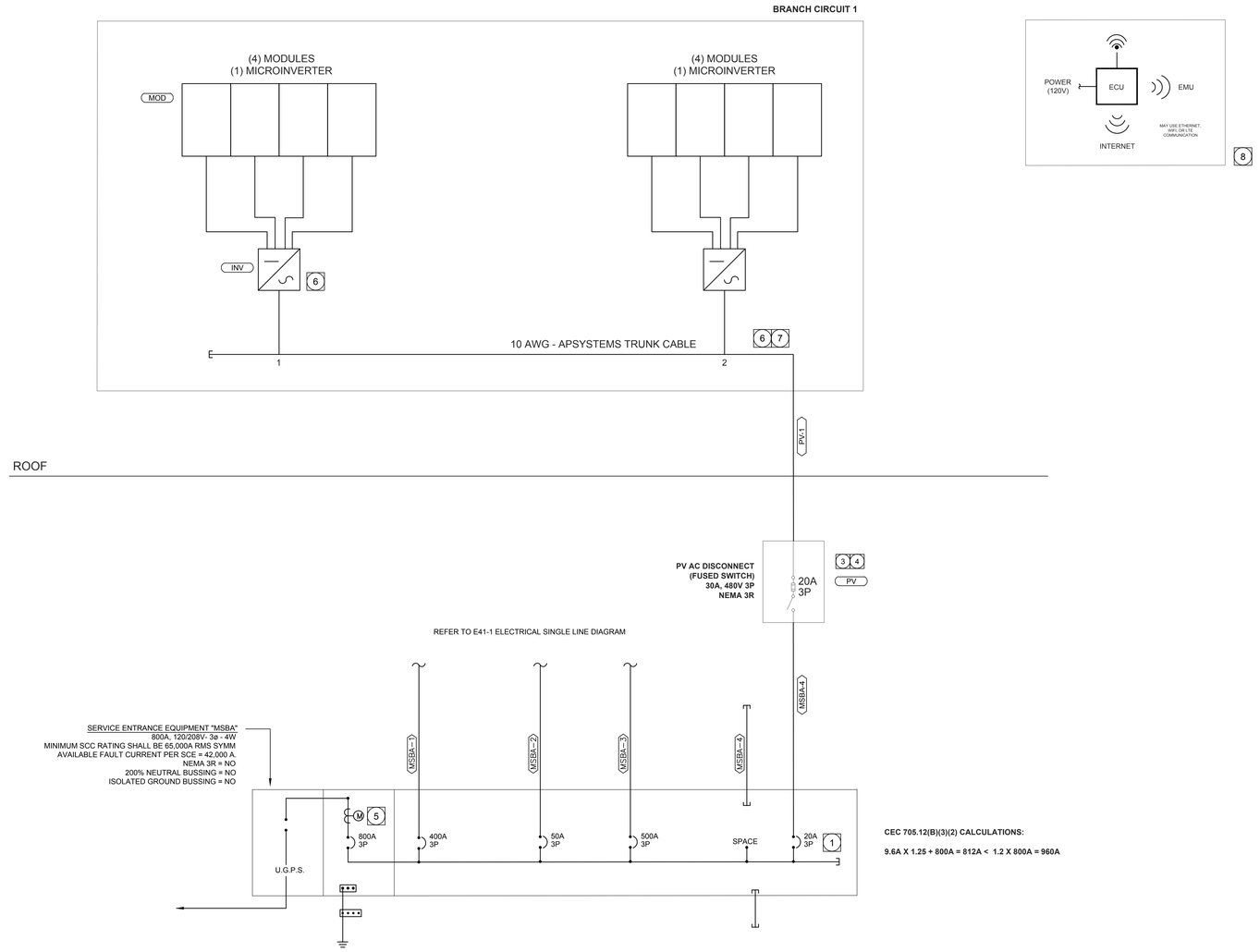

SINGLE LINE DIAGRAM

SCALE: N.T.S.

1

CABLE SCHEDULE, BREAKER SIZING, AMPACITY CALCS

CABLE	CABLE TYPE	TYPE	CABLE TEMP RATING	AMBIENT TEMPERATURE (°C)	DISTANCE ABOVE ROOF TO BOTTOM OF CONDUIT	ADJUSTED AMBIENT TEMPERATURE (°C)	CONDUIT	CONDUIT TYPE	# OF CONDUCTORS PER PHASE	WIRE SIZE	NEUTRAL	GROUND	TOTAL CC CONDUCTORS IN RACEWAY	BASE AMPACITY	DERATING FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	DERATING FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	OVERALL DERATING FACTOR	DERATED AMPACITY (A)	CIRCUIT LOAD (A)	CIRCUIT LOAD (A) X 1.25	MINIMUM BREAKER PER LOAD	MAXIMUM BREAKER PER DERATED CABLE	CONDUIT FILL PERCENTAGE
PV-1	THWN-2 (CU)	AC	75°C	33°C	BELOW 7/8"	66°C	3/4"	EMT	1	Set(s) of #10 AWG	N/A	#10 AWG	3	35	1.00	0.33	0.33	11.55	9.6	12	15	15	15.83%
MSBA-4	THWN-2 (CU)	AC	75°C	33°C	NOT ON ROOF	33°C	3/4"	EMT	1	Set(s) of #10 AWG	N/A	#10 AWG	3	35	1.00	0.94	0.94	32.9	9.6	12	15	35	15.83%

VOLTAGE DROP CALCULATIONS

CABLE ID	TYPE	PHASE	CONDUIT TYPE	# OF CONDUCTORS PER PHASE	WIRE SIZE	VOLTAGE (V)	Length (FT)	POWER FACTOR	POWER FACTOR θ	CIRCUIT LOAD (A)	VOLTAGE DROP%	VOLTAGE DROP CUM. %
PV-1	AC	3	STEEL	1	Set(s) of #10 AWG	208	25	1.00	0.00	9.6	0.24%	0.24%
MSBA-4	AC	3	STEEL	1	Set(s) of #10 AWG	208	10	1.00	0.00	9.6	0.10%	0.10%

SHORT-CIRCUIT CALCULATIONS

EQUIPMENT	PHASE	SOURCE ISC (A)	CONDUIT TYPE	#	WIRE SIZE	C VALUE	VOLTAGE (V)	LENGTH (FT)	f	M	FAULT CURRENT (A)
AC DISCONNECT	3	42,000	STEEL	1	Set(s) of #10 AWG	981	208	10	3.565	0.22	9,200

CALCULATIONS

SCALE: N.T.S.

2

SPECIFIC SINGLE LINE NOTES:

1. CONTRACTOR SHALL CONFIRM PV BREAKERS ARE SUITABLE FOR BACKFEED.
2. N/A
3. DISCONNECT SHALL BE 24/7 ACCESSIBLE, LOCKABLE, VISIBLE TYPE PER UTILITY REQUIREMENTS.
4. EACH PV SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED PER NEC 690.13(B).
5. UTILITY METER SHALL BE NET METERED PER UTILITY INTERCONNECTION REQUIREMENTS.
6. GROUND THE MICROINVERTER SYSTEM VIA GROUNDING WASHER OR GROUNDING COPPER WIRE. REFER TO MANUFACTURERS' INSTRUCTIONS.
7. WHEN AC EXTENSION CABLE IS NEEDED, INSTALL IN A JUNCTION BOX OR USE OPTIONAL AC CONNECTORS
8. ECU-R TO RECEIVE MICROINVERTER PERFORMANCE DATA AS PER BUILDING ENERGY EFFICIENCY STRADARDS JA11.5. NINETY (90) MICROINVERTERS MAX PER ECU-R. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR MAXIMUM DISTANCE TO MICROINVERTERS. ECU-R UNITS INSTALLED OUTDOORS SHALL BE LOCATED IN A NON-METAL OUTDOOR-RATED ENCLOSURE.

GENERAL FEEDER NOTES:

1. CONDUCTORS SHALL BE COPPER ONLY. DC CONDUCTORS SHALL BE RATED FOR A MINIMUM OF 90°C.
2. ALL FEEDERS SHOWN, UNLESS SPECIFICALLY NOTED OTHERWISE, ARE PRESUMED TO BE ROUTED IN METAL RACEWAYS. IF P.V.C. CONDUITS ARE UTILIZED, THE CONTRACTOR SHALL PROVIDE AN EQUIPMENT GROUND PER NEC, OR CEC WHERE ADOPTED, TABLE 250.122 OR, WHERE REQUIRED, PROVIDE A MAIN BONDING JUMPER PER TABLE 250.66 AND INCREASE THE CONDUIT SIZE ACCORDINGLY.
3. DISTANCE SHOWN IS FOR DESIGN PURPOSES ONLY. IT IS NOT A MATERIAL TAKEOFF.
4. VOLTAGE DROP VALUE INDICATED IS AT THE END OF THE FEEDER.
5. AVAILABLE FAULT CURRENT VALUE AT THE END OF THE FEEDER INDICATED. CALCULATIONS ARE BASED UPON INITIAL VALUES RECEIVED FROM THE SERVING UTILITY AND THE LENGTH AND IMPEDANCE OF THE FEEDER. THE SHORT CIRCUIT CURRENT RATING, EQUIPMENT BUS BRACING, AND/OR AMP INTERRUPTING CURRENT OF EQUIPMENT CONNECTED ON THE LOAD SIDE OF THE FEEDER SHALL BE GREATER THAN THE AVAILABLE FAULT CURRENT.

GENERAL SINGLE LINE DIAGRAM NOTES:

1. REFER TO MANUFACTURERS SPECIFICATIONS FOR PROPER INSTALLATION OF EQUIPMENT.
2. ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT-SERIES RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED.
3. BOND METAL STRUCTURE TO SYSTEM GROUND. PV SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH NEC 690.43.
4. BOND PV RACKING PER MANUFACTURER'S INSTALLATION REQUIREMENTS. INSTALL 6 AWG CU UNLESS OTHERWISE NOTED BY RACKING MANUFACTURER.

EQUIPMENT SCHEDULE

ID	EQUIPMENT	QTY
MOD	HANWHA Q.PEAK DUO XL-G11S.3 BFG (590W)	8
INV	YOTTA MICROINVERTER DPI-208	2
ACD	30A, 208V 3PH, NEMA 3R VISIBLE LOCKABLE AC DISCONNECT	1

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PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWANSON E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

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SHEET NUMBER: PV41.1
SHEET TITLE:

PV SINGLE LINE DIAGRAM

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

28357 Industrial Blvd.
Hayward, CA 94545
1-800-227-9523
IronRidge.com

Attn: Sean McDonald, CEO, IronRidge Inc.
Date: February 14th, 2025

Re: Engineering Certification for the IronRidge Design Assistant-XR and AIRE Flat Roof Systems

The IronRidge Design Assistant (DA) software includes structural analysis for the IronRidge XR system (XR10, XR100 and XR1000 rails) and AIRE system (A1 and A2 Rails), when used in flat or low-pitched roofs defined as where the roof slope does not exceed 7 degrees from the horizontal. The IronRidge XR and AIRE Flat Roof Systems include two proprietary systems, including the Flush Mount System which is applied when modules are set parallel to the roof, and Tilt Mount System which accommodates module tilts ranging from 4 degrees to 30 degrees relative to the roof surface. Both systems are capable of supporting photovoltaic (PV) modules installed in portrait or landscape orientation. PV modules are supported by extruded aluminum rails and secured to the rails with IronRidge mounting clamps. The rails are side mounted to a selected roof attachment with stainless steel bonding hardware and the attachment is secured directly to the underlying roof structure.

This letter certifies that the IronRidge Design Assistant, used for the structural analysis of the IronRidge XR or Aire Flat Roof Systems, complies with the following codes and design criteria. When the IronRidge XR and AIRE Flat Roof systems are installed according to the IronRidge DA project report and manufacturer's installation guidance, compliance with below codes and design criteria is met.

Building Codes:

1. California Building Code 2022
2. ASCE/SEI 7-10, 7-16, 7-22, Minimum Design Loads for Buildings and Other Structures, by American Society of Civil Engineers
3. International Building Code, 2012-2024 Edition
4. International Residential Code 2012-2024 Edition
5. AC428, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES
6. Aluminum Design Manual 2015 & 2020, by The Aluminum Association, Inc.
7. ANSI/AWC NDS-2015 & 2018, National Design Specification for Wood Construction, by the American Wood Council
8. SEAOC (Structural Engineer Association of California) report PV2-2017 Wind Design for Solar Arrays

Sincerely,

LICENSED PROFESSIONAL ENGINEER · MATTHEW STEVEN KUZILA · C 95382 · EXP. 12.31.2025 · CIVIL · STATE OF CALIFORNIA

Digitally signed by Matthew S Kuzila
Reason: I am the author of this document
Date: 2025.02.14 16:24:41 -07'00'

Matthew S Kuzila, P.E.

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IRONRIDGE
2800 INDUSTRIAL BLVD, HAYWARD, CA 94545

Project Details

Name	Irvine Great Park Maintenance Bldg. - PV Array (single row)	**Date**	06/23/2025
Location	Irvine, CA 92618	**Total modules**	8
Module	Hanwha Q.Cells: Q.PEAK DUO XL-G11S.3/BFG 590 (35mm)	**Total watts**	4,720
Dimensions	Dimensions: 96.93" x 44.65" x 1.38" (2462.0mm x 1134.0mm x 35.0mm)	**Attachments**	10
ASCE	7-16	**Tilt**	9°
Inter-row spacing	0.0"		

Roof Information

Roof material family	Membrane	**Roof material**	PVC
Roof attachment	Flat Roof Attachment	**Rafter spacing**	24"
Roof manufacturer	Sika Sarnafil	**Color**	White
Thickness	Unknown	**Roof material**	PVC

Load Assumptions

Wind exposure	C
Wind speed	96 mph
Ground snow load	0 psf
Attachment spacing	8.0'
Site Elevation	720.0 ft
S_{DS}	1.16

Building Details

Roof slope	0-7°
Risk category	II
Building height	25 ft
Building north-south	30.0 ft
Building east-west	120.0 ft
Parapet height	0.0 in

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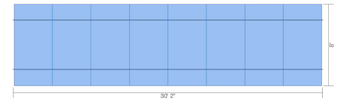
Roof Section 1

Definition	Roof Section Weights	Roof Section (all segments)
8 modules	Total weight: 683.6 lbs	Provided rail: 61' 4" [4 x 184"]
East-West rail orientation	Weight/attachment: 68.4 lbs	Attachments: 10
Portrait module orientation	Total Area: 240.6 sq ft	Splices: 2
Graphical entry	Distributed weight: 2.8 psf	

Diagram



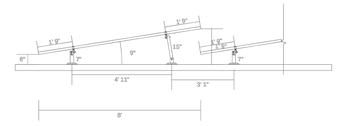
Segments

Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices
8	30' 2"	30' 2"	3' 1" *	**61' 4" [4 x 184"]**	8	2

Cantilever value does not take extra attachments into account

Cantilever violations Fixed with extra attachments

Side View Portrait



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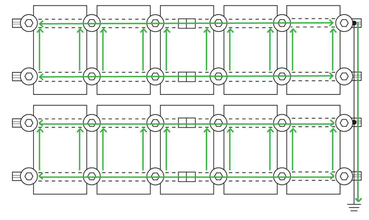
Grounding Diagram



UFO Clamp
Grounding Lug *
Fault Current Ground Path
Min 10 AWG Copper Wire *
Bonded Splice (Rail Connection)

* Grounding Lugs and Wire are not required in systems using Enphase microinverters.

28357 Industrial Blvd.
Hayward, CA 94545
1-800-227-9523
IronRidge.com

The IronRidge DA meets the above code requirements provided the following Design Criteria.

Design Criteria:

a. Structure Risk Category II, III.
b. Basic Wind Speed 90-180 (mph) per ASCE 7 Chapter 26 Figures 26.5-1B & 26.5-1C.
c. Wind Exposure Category = B, C & D.
d. Topographic Factor Kzt = 1.0.
e. Roof Zones per ASCE 7-16 / 7-22 Chapter 29.
f. Exposed modules per ASCE 7-16 / 7-22 Chapter 29.
g. Ground Snow Load = 0-120 (psf) per ASCE 7 Fig. 7.2-1.
    a. No other special snow conditions are considered including unbalanced, drifting, sliding, retention, ponding snow or rain on snow surcharge.
h. Building Height Max=60', defined as the average of the roof eave height measured from grade.
i. Roof Pitch = 0-7 degrees.
j. Seismic Importance = 1.0.
k. Flush System minimum 2" clearance and maximum 10" clearance from top of PV panel to roof surface.
l. Tilt System maximum 2' clearance from roof to the leading edge of the module and maximum 4' clearance from the roof to the rear edge of the module.

Roof Attachments that are analyzed in the Ironridge DA online tool are limited to IronRidge and QuickMount branded products. Third party supplied roof attachments are not reviewed; when using third party attachments the structural capacity, connection to IronRidge Rails and applicability to a specific project are to be verified by a registered design professional.

The IronRidge DA online tool is intended to be used under the responsibility of a registered design professional where required by the authority having jurisdiction. Any user of the IronRidge DA shall have sufficient structural engineering knowledge and experience to understand the required design criteria per the above applicable building codes, verify if the IronRidge DA is applicable to the project, and select the appropriate values for all input parameters within the IronRidge DA.

This certification excludes evaluation of:

1. The structure to support the loads imposed on the building by the array; including, but not limited to, strength and deflection of structural framing members, fastening and/or strength of roofing materials, and/or the effects of snow accumulation on the structure.
2. The capacity of the solar module frame to resist the loads.

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IRONRIDGE
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Span Details XR100 - Portrait

Zone	Module Position	Max span	Max cantilever
Zone1	Normal	9' 3"	3'
	Exposed	9' 3"	3'
Zone2	Normal	8' 6"	3'
	Exposed	8' 3"	3'
Zone3	Normal	7' 11"	3'
	Exposed	7' 6"	3'

Reaction Forces XR100 - Portrait

Zone	Module Position	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Perp (lbs)	Lateral Par (lbs)	Moment (lbs-ft)
Zone1	Normal	9	405	246	125	138	60
	Exposed	14	405	393	125	138	72
Zone2	Normal	12	500	341	125	138	64
	Exposed	19	500	542	125	138	96
Zone3	Normal	N/A	N/A	N/A	N/A	N/A	N/A
	Exposed	N/A	N/A	N/A	N/A	N/A	N/A

Attachment capacity testing does not include the connection of the assembly to the underlying roof deck. Further evaluation of the screw requirement as well as verifying the structural capacity of the roof deck and adequacy of FRA's connection to the roof will be the responsibility of the system designer.

Weights and Loads

Total system weight	683.6 lbs
Weight/attachment	68.4 lbs
Racking weight	68.0 lbs
Distributed weight	2.8 psf

IRONRIDGE
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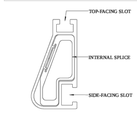
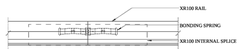
Splice Details

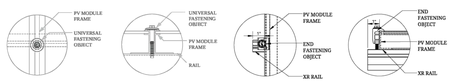


XR100



Splice Connection

Clamp Detail



Mid Clamp, Plan | Mid Clamp, Front | End Clamp, Plan | End Clamp, Front

CHECKLIST

PRE-INSTALLATION

- ❒ Verify module compatibility. See Page 13 for info.

TOOLS REQUIRED

- ❒ Cordless Drill (non-impact)
- ❒ Impact Driver (for lag bolts)
- ❒ Torque Wrench (0-250 in-lbs)
- ❒ 5/16" Socket
- ❒ 7/16" Socket
- ❒ 9/16" Socket (deep)
- ❒ String Line

TORQUE VALUES

- ❒ Tilt Leg Nuts (9/16" Socket): 250 in-lbs
- ❒ Rail Grounding Lug Nut (7/16" Socket): 80 in-lbs
- ❒ Rail Grounding Lug Nut (7/16" Socket): 80 in-lbs
    - ❒ Rail Grounding Lug Terminal Screws (7/16" Socket): 20 in-lbs
- ❒ Module Grounding Lug Nut (3/8" Socket): 60 in-lbs
    - ❒ Module Grounding Lug Terminal Screws (1/2" Socket): 20 in-lbs
- ❒ Universal Fastening Objects (7/16" Socket): 80 in-lbs
- ❒ Expansion Joint Nuts (7/16"): 80 in-lbs
- ❒ Microinverter Kit Nuts (7/16" Socket): 80 in-lbs
- ❒ Frameless Module Kit Nuts (7/16" Socket): 80 in-lbs

IRONRIDGE COMPONENTS

XR Rail

Tilt Leg Kit

Wire Clip

BOSS

UFO (30-46mm)

CAMO

Rail Grounding Lug

Module Grounding Lug

Expansion Joint

End Cap

Stopper Sleeve

Frameless Module Kit

Frameless End/Mid Clamp

Microinverter Kit

Flat Roof Attachment

Membrane Flashing

Lynx

➢ **If using previous version of: Integrated Grounding Mid Clamps, End Clamps, and Expansion Joints please refer to Alternate Components Addendum (Version 1.9)**
➢ **Unless otherwise noted, all components have been evaluated for multiple use. They can be uninstalled and reinstalled in the same or new location.**

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Photovoltaic Lead - Jessica Kendrick
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER · RAYMOND W. SWARTZ · E15610 · 12/31/2025 · ELECTRICAL · STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: PV41.2
SHEET TITLE:

RACKING DESIGN REPORT

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

DC CONDUITS & BOXES

WARNING: PHOTOVOLTAIC POWER SOURCE

PER NEC 690.31(G)(3), IFC 605.11.1.2
RED BACKGROUND WITH REFLECTIVE LETTERING
PLACE AT CONDUITS, RACEWAYS, ENCLOSURES, COMBINER BOXES AND DISCONNECTS
PLACE EVERY 10' ON CONDUITS.

AC J-BOXES

⚠ WARNING

PV AC POWER SOURCE

NO OTHER CIRCUITS

PLACE AT DC JUNCTION BOXES

INVERTERS

INVERTER 1

PLACE AT INVERTER

INVERTER 2

PLACE AT INVERTER

PV SYSTEM DISCONNECT

⚠ WARNING

ELECTRIC SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

PLACE AT PV SYSTEM DISCONNECT
NEC 690.13(B)

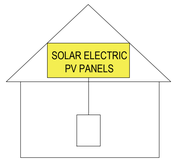
PV SYSTEM DISCONNECT

PLACE AT PV SYSTEM DISCONNECT
NEC 690.13(B)

AT MAIN SERVICE DISCONNECT

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



PER 690.56(C)
LOCATE ON OR NO MORE THAN 3FT FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEM IS CONNECTED. MUST INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT SAME LOCATION

⚠ CAUTION

POWER TO THIS SERVICE IS SUPPLIED FROM MULTIPLE SOURCES:

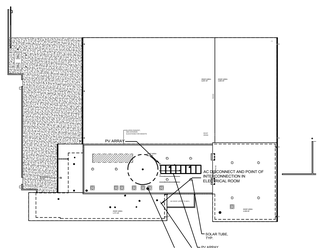
1. **UTILITY**:
   DISCONNECT LOCATED AT ELECTRICAL ROOM SWITCHGEAR
2. **SOLAR PV**:
   DISCONNECT LOCATED IN INTERIOR ELECTRICAL ROOM

PER 705.10
PLACE AT SERVICE EQUIPMENT LOCATION

MAP 6" X 10" RED W/ WHITE LETTERS

CAUTION:

PHOTOVOLTAIC POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCE WITH DISCONNECTS AS SHOWN



QTY - 1

- TO BE MOUNTED AT SWITCHBOARD "MSBA"
  NEC 705.10

AC DISCONNECTS (OTHER THAN MAIN)

PHOTOVOLTAIC SYSTEM AC DISCONNECT

OPERATING VOLTAGE 208 V 3

OPERATING CURRENT 10 AMPS

PER NEC 690.54, 690.13
PLACE AT AC DISCONNECT / POINT OF INTERCONNECTION

POINT OF CONNECTION TO BUILDING ELECTRICAL CIRCUITS

⚠ WARNING

POWER SOURCE OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

PER NEC 705.12(B)(2)(3)(b)
PLACE AT INTERCONNECTION BREAKER FOR LOAD SIDE CONNECTION

⚠ CAUTION

SOLAR ELECTRIC BREAKER IS BACKFED

PLACE AT INTERCONNECTION BREAKER FOR LOAD SIDE TAP

NET METER

NET METER

[**PLACARD**] PLACE AT NET METER

AT PV SUBPANEL/AC COMBINER

⚠ WARNING

PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

PLACE AT AC COMBINER PANELS

THIS PANEL SUPPLIED BY TWO POWER SOURCES

SOLAR PV 208 VOLTS, 10 AMPS

UTILITY 208 VOLTS, 800 AMPS

PLACE AT PANELBOARDS FED FROM MULTIPLE SOURCES

INV-1 INV-2

CIRCUIT LABELS

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
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MAINTENANCE & OPERATION FACILITY
901 SKYHAWK
IRVINE, CA 92618
PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWANSON E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: PV41.4
SHEET TITLE:

PV SIGNAGE

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

STATE OF CALIFORNIA
Solar And Battery CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
This document is used to demonstrate compliance with prescriptive PV and battery requirements in 140.10/ 170.2 for nonresidential, multifamily and mixed-use buildings and prescriptive solar thermal requirements in 170.2(d)3C for multfamily and hotel/ motel occupancies. When PV/battery/solar thermal requirements don't apply or are traded using the performance approach, this document demonstrates compliance with mandatory solar readiness requirements in 110.10/ 160.8 for newly constructed buildings which are either multifamily ten stories or fewer, hotel/motel ten stories or fewer or all other nonresidential buildings three stories or fewer. It is also used to demonstrate compliance with solar readiness in 110.10/ 160.8 for additions to nonresidential, multifamily or hotel/motel building types which add more than 2,000 ft² of roof area. Alterations, or additions of less than 2,000 ft² of roof area, are not required to comply with solar readiness, solar PV and battery requirements and do not need to complete this document.	
Project Name: Irvine Great Park Maintenance PV	**Report Page:** (Page 1 of 5)
Project Address:	**Date Prepared:** 2025-03-06T12:50:26-05:00

A. GENERAL INFORMATION					
01	Project Location (city)	Irvine	04	Building Occupancies	Commercial IndustrialOffice
02	Climate Zone	8	05	Construction Type	New construction
03	Conditioned Floor Area (ft²)	1515	06	Number of Stories	Bldg <= 3 stories

B. PROJECT SCOPE
The compliance path the project is using to comply per 110.10(b)1B/ 140.10/ 170.2(g and h) is indicated below.

Compliance with Solar Photovoltaic (PV) and Battery Requirements in 140.10/ 170.2(g and h)		
	01	
☒	Provided PV system and battery storage sized per 140.10/ 170.2 (g and h)	The project has included an installed PV system and battery storage system per requirements in 140.10/ 170.2(g and h) as documented in Table J.
☐	Exception to PV and Battery: Not enough Solar Access Roof Area	The total of all available Solar Access Roof Area(s) of the project site is less than three percent of the conditioned floor area as documented in Table J.
☐	Exception to PV and Battery: Required PV < 4kW	The required PV system size is less than 4 kW dc as documented in Table J..
☐	Exception to PV and Battery: No contiguous Solar Access Roof Area	The Solar Access Roof Area(s) of the project site contains less than 80 contiguous square feet as documented in Table J.
☐	Exception to PV and Battery: Can't meet snow load	The project has a roof design where the enforcement authority has verified it is not possible for the PV system, including panels, modules, components, supports, and attachments to the roof structure, to meet ASCE 7-16 Chapter 7, Snow Loads.
☐	Exception to PV and Battery: Multi-tenant without VNEM or Community Solar	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.
☐	The prescriptive PV/battery requirement has been traded off using the performance compliance approach as documented on the PRF Certificate of Compliance form.	

STATE OF CALIFORNIA
Solar And Battery CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: Irvine Great Park Maintenance PV	**Report Page:** (Page 2 of 5)
	Date Prepared: 2025-03-06T12:50:26-05:00

Compliance with Solar Thermal Water Heating Requirements in 170.2(d)3C (Multifamily and hotel/ motel occupancies only)	
	01
☐	The project includes a hotel/motel or multifamily occupancy with a gas or propane central water-heating system (serves 2+ dwelling units) and includes a permanently installed domestic solar water-heating system to comply with 170.2(d)3C and Reference Residential Appendix RA4, as documented in Table H. Compliance meets Exception 2 to solar ready requirements in 110.10(b).

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance or see the applicable Table referenced below.

Allocated Solar Zone				Installed PV System				Installed SWH System				Smart Tstat and Alternative EE Measure		Compliance Results
01		02		03		04		05		06		07	08	
Required Minimum Area (ft²)	<=	Designated Area (ft²)	OR	Required Minimum DC Power Rating (Watts)	<=	Designed DC Power Rating (Watts)	OR	Required Minimum Solar Savings Fraction	<=	Designed/Rated Solar Savings Fraction	OR	JA5 Compliant Thermostat Specified?	Alternative Energy Efficiency Measure	
(See Table F)				(See Tables G or J)				(See Table H)				(See Table I)		
	<=		OR	4,740	<=	4,740	OR		<=		OR			
				Location in construction documents showing the location for inverters and metering equipment and a pathway for the routing of conduit/ plumbing to the electrical service/ water heating system per §110.10(c).										
Battery storage system design meets the minimum requirements in Joint Appendix JA12 and the minimum energy (kWh)/ power (kW) capacity per Table J.														COMPLIES

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.
One or more tenant spaces within your project has less than 5,000 sf of conditioned space. The space will not be factored into the battery sizing calculation per Exception 3 to Section 140.10(b)

STATE OF CALIFORNIA
Solar And Battery CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: Irvine Great Park Maintenance PV	**Report Page:** (Page 3 of 5)
	Date Prepared: 2025-03-06T12:50:26-05:00

E. ADDITIONAL REMARKS
This table is includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. ALLOCATED SOLAR ZONE
This section does not apply to this project.

G. PERMANENTLY INSTALLED SOLAR PV FOR SOLAR READY EXCEPTION
This section does not apply to this project.

H. PERMANENTLY INSTALLED SOLAR HOT WATER SYSTEMS
This section does not apply to this project.

I. SMART THERMOSTATS AND ALTERNATIVE EFFICIENCY MEASURE FOR SOLAR READY EXCEPTION
This section does not apply to this project.

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: Irvine Great Park Maintenance PV	**Report Page:** (Page 4 of 5)
	Date Prepared: 2025-03-06T12:50:26-05:00

J. PHOTOVOLTAIC (PV) AND BATTERY SYSTEMS

This table documents compliance with prescriptive photovoltaic and battery system requirements in 140.10/ 170.2(g and h). Unless the project meets one of the listed exceptions, or trades-off PV in an energy model using performance path, 140.10/ 170.2(g and h) requires installed photovoltaic and battery systems for newly constructed buildings. The installed PV systems must meet the minimum requirements in Joint Appendix 11.

Photovoltaic (PV) System

01	02	03	04	05	06	07	08
Occupancy	Conditioned Floor Area (ft²)	Area of New Roof[1] (ft²)	Roof Area < 70% Solar Access[2] (ft²)	Plansheet or Document showing Solar Access Calculations	Occupied Roof Area[3] (ft²)	Solar Access Roof Area (SARA) (ft²)	Min Size of PV System Required (kWdc)
Office	1,515	4,960	0	PV-11.1	0	4,960	4.74
					Total Min Size PV System Required for all Spaces (kWdc):		4.74
					Total Size PV System in Design (kWdc):		4.74

[1]FOOTNOTES: Includes the area of the building's roof space capable of structurally supporting a PV system and the area of all roof space on covered parking areas, carports, and all other newly constructed structures on the site that are compatible with supporting a PV system per Title 24, Part 2 Section 1511.2.
[2]Solar access must be determined using CEC approved solar access calculation tools found at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/solar-assessment-tools.
[3]As specified by CBC Section 503.1.4.

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 Table E. Additional Remarks and ExceptionalConditionMessageCCSABE += UserChangedSelectionInCI. These documents must be provided to the building inspector during construction and can be found online
Form/Title
NRCI-SAB-01-E - Must be submitted for all buildings that must comply with solar readiness or PV/Battery requirements.

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no forms required for this project.

STATE OF CALIFORNIA
Solar And Battery CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-SAB-E
Project Name: Irvine Great Park Maintenance PV	**Report Page:** (Page 5 of 5)
Project Address:	**Date Prepared:** 2025-03-06T12:50:26-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Ray Swartz	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	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 will ensure that a completed signed 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. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Ray Swartz	Responsible Designer Signature:
Company: WSP	Date Signed: 2025-06-20
Address: 15231 Laguna Canyon Road, Suite 100	License:
City/State/Zip: 92618	Phone: 9497515800

TITLE 24 CALCULATIONS - PRESCRIPTIVE (SECTION 140.10)

MAINTENANCE BUILDING

CONDITIONED FLOOR AREA (CFA): 1,515 SQ.FT
CLIMATE ZONE: 8
OCCUPANCY TYPE: OFFICE
PV CAPACITY FACTOR FROM TABLE 140.10-A ("A"): 3.13

MINIMUM PRESCRIPTIVE PV SYSTEM SIZE (DC): KW (PV DC) = (CFA X A)/1000
KW (PV DC) = 4.74KW

ENERGY CAPACITY FACTOR FROM TABLE 140.10-B ("B"): 1.68
POWER CAPACITY FACTOR FROM TABLE 140.10-B ("C"): 0.42
~~MINIMUM PRESCRIPTIVE BATTERY STORAGE CAPACITY: KWH (BATT) = KW (PV DC) X B / D*0.5~~
KWH (BATT) = 4.74 KW X 1.68 / 0.9*0.5 = 8.39 KWH < 10 KWH EXCEPTION #2 ⚠
~~BESS NOT REQUIRED~~

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 14.1.2.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3 AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 14 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2022 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

CITY OF IRVINE BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com
Project Leader - Jeff Mixer
Photovoltaic Lead - Jessica Kendrick
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
1	100% DD	01-13-25
2	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25
3		
4		
5		
6		
7		
8		
9		
10		

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: PV61.2
SHEET TITLE:

PV TITLE 24

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
T 949.809.3380 WWW.SVA-ARCHITECTS.COM

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PLAN CHECK #00856737-CNEW

Q.PEAK DUO XL-G11S SERIES

585-600Wp | 156Cells
21.5% Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11S.3/BFG

Bifacial energy yield gain of up to 21%
Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.

Low electricity generation costs
Q.ANTUM DUO technology with optimized module layout to boost module power and improve LCOE.

A reliable investment
Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty[1].

Enduring high performance
Long-term yield security with Anti LID and Anti PID Technology[2], Hot-Spot Protect.

Frame for versatile mounting options
High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).

Innovative all-weather technology
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015, method B (-1500 V, 168 h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)

The ideal solution for:
Ground-mounted solar power plants

Q.PEAK DUO XL-G11S SERIES

■ Mechanical Specification

Format	96.9 in × 44.6 in × 1.38 in (including frame) (2462 mm × 1134 mm × 35 mm)
Weight	76.9 lbs (34.9kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 29.5 in (750 mm), (-) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4-Evo2

■ Electrical Characteristics

POWER CLASS			585		590		595		600	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W/ -0 W)										
				BSTC*		BSTC*		BSTC*		BSTC*
Minimum	Power at MPP[3]	P_{MPP} [W]	585	639.9	590	645.4	595	650.8	600	656.3
	Short Circuit Current[2]	I_{SC} [A]	13.72	15.01	13.74	15.04	13.77	15.07	13.80	15.10
	Open Circuit Voltage[3]	V_{OC} [V]	53.57	53.76	53.60	53.79	53.63	53.82	53.66	53.85
	Current at MPP	I_{MPP} [A]	13.07	14.30	13.12	14.36	13.17	14.41	13.22	14.46
	Voltage at MPP	V_{MPP} [V]	44.75	44.74	44.96	44.95	45.18	45.17	45.39	45.38
	Efficiency[3]	η [%]	≥21.0		≥21.1		≥21.3		≥21.5	

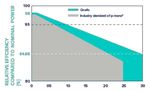
Bifaciality of P_{MPP} and I_{SC} 70 % ± 5 % • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

[1]Measurement tolerances P_{MPP} ± 3 %; I_{SC}; V_{OC} ± 5 % at STC: 1000 W/m²; [2]at BSTC: 1000 W/m² + φ × 135 W/m², φ = 70 % ± 5 %, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[4]						
Minimum	Power at MPP	P_{MPP} [W]	440.5	444.2	448.0	451.8
	Short Circuit Current	I_{SC} [A]	11.05	11.07	11.09	11.11
	Open Circuit Voltage	V_{OC} [V]	50.67	50.69	50.72	50.75
	Current at MPP	I_{MPP} [A]	10.30	10.34	10.38	10.42
	Voltage at MPP	V_{MPP} [V]	42.79	42.97	43.15	43.34

[4]Measurement tolerances P_{MPP} ± 3 %; I_{SC}; V_{OC} ± 5 % at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

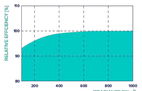


At least 98 % of nominal power during first year. Thereafter max. 0.45 % degradation per year. At least 93.95 % of nominal power up to 10 years. At least 84.95 % of nominal power up to 20 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m²).

TEMPERATURE COEFFICIENTS							
Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	-0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	-0.34	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

■ Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1500	PV module classification	Class II
Maximum Series Fuse Rating		[A DC]	25	Fire Rating based on ANSI/UL 61730	TYPE 29*
Max. Design Load, Push/ Pull[5]		[lbs/ft²]	75 (3600 Pa)/33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40 °C up to +85 °C)
Max. Test Load, Push/ Pull[5]		[lbs/ft²]	113 (5400 Pa)/50 (2400 Pa)		

[5] See Installation Manual

* New Type is similar to Type 3 but with metallic frame

■ Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells).

* Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc., 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

Specifications subject to technical changes © Qcells Q-PEAK_DUO_XL-G11S.BFG_Irvine_585-600_CA_2023-6_Rev02

YOTTA ENERGY

DPI-208 & DPI-480
3-Phase Microinverters

Yotta's Dual Power Inverters (DPI-208 and DPI-480) are native 3-phase microinverters that each support **four high capacity solar modules** and deliver outstanding **performance**. The internals are protected with silicone to **reduce stress** on the electronics, increase its **waterproof** properties, **dissipate heat,** and to provide **maximum system reliability**. Yotta's DPI-208 and DPI-480 are powerful **plug-and-play** MLPE inverters that install faster than any other solution in the market and comply with **rapid shutdown requirements**. Their design improves **thermal dissipation** while maximizing **power production**.

- **DPI** (Dual Power Inverter) designed to work with PV or Yotta's SolarLEAF energy storage technology
- **Native 3-phase power output (208V or 480V)**
- **Low Voltage** DC input (<60V)
- **4 Solar Module Input Channels, 2 MPPT's**
- **Continuous** rated AC output power **1728VA @208V** and **1800VA @480V**
- **Engineered** for high-capacity PV modules
- **Maximum** input current 20A
- Integrated **Safety Protection Relay**
- **Rapid Shutdown Compliant**
- **Adjustable Power Factor**

3 PHASE GRID
208 OR 480V OUTPUT VOLTAGE
PLUG & PLAY STORAGE READY
RAPID SHUTDOWN COMPLIANT
SAFETY PROTECTION RELAY
ADJUSTABLE POWER FACTOR
ADVANCED HEAT DISSIPATION TECHNOLOGY
REMOTE DIAGNOSIS

YottaVision Monitoring

- **Monitors** and **Analyzes** each solar module and microinverter
- Allows **Remote Access** to the solar array
- Displays **Performance Issues** and **Alerts** the user to events
- **Real Time Communication**
- **Graphs** system solar output over time to boost troubleshooting

Ver. 2.2
September 2022

www.yottaenergy.com

DPI-208 & DPI-480 3-phase Microinverter Datasheet

Model	DPI-208	DPI-480
Input Data (DC)		
Peak Power Tracking Voltage	32V-45V	
Operating Voltage Range	26V-60V	
Maximum Input Voltage	60V	
Maximum Input Current	20A x 4	
Maximum Input Short Circuit Current	25A per input	
Output Data (AC)		
Maximum Continuous Output Power	1728VA	1800VA
Nominal Output Voltage/Range (1)	208V/183V-229V	480V/422V-528V
Adjustable Output Voltage Range	166V-240V	385V-552V
Nominal Output Current	4.8Ax3	2.17Ax3
Nominal Output Frequency/Range (1)	60Hz/59.3Hz-60.5Hz	
Adjustable Output Frequency Range	55Hz-65Hz	
Power Factor	0.99/0.8 leading...0.8 lagging	
Maximum Units per 30A branch (2)	5	11
AC Bus Cable	AWG 10	
Efficiency		
Peak Efficiency	96.5%	
Nominal MPPT Efficiency	99.5%	
Night Power Consumption	40mW	
Mechanical Data		
Operating Ambient Temperature Range (3)	-40°F to +149°F(-40°C to +65°C)	
Storage Temperature Range	-40°F to +185°F(-40°C to +85°C)	
Dimensions (W x H x D)	14" × 9.5" × 1.8" (359mm X 242mm X 46mm)	
Weight	13 lbs (6kg)	
DC Connector Type	Stäubli MC4 PV-ADBP4-S2&ADSP4-S2	
Cooling	Natural Convection - No Fans	
Enclosure Environmental Rating	Type 6	
Features		
Communication (Inverter To ECU) (4)	Encrypted ZigBee	
Isolation Design	High Frequency Transformers, Galvanically Isolated	
Energy Management	Yotta Vision EMA	
Warranty	10 Years Standard ; 25 Years Optional	
Certificate&Compliance		
Safety, EMC & Grid Compliances	UL-1741; CSA C22.2 No. 107.1-16; CA Rule 21 (UL 1741 SA); FCC Part15; ANSI C63.4; ICES-003; IEEE1547; NEC2014 & NEC2017 Section 690.11 DC Arc-Fault circuit; Protection NEC2014 & NEC2017 & NEC2020 Section 690.12 Rapid Shutdown of PV systems on Building	

*(1) Nominal voltage/frequency range can be extended beyond nominal if required by the utility.
(2) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.
(3) Inverter may enter low power mode in environments with poor ventilation or limited heat dissipation
(4) Recommend no more than 80 inverters register to one ECU for stable communication.*

Meets the standard requirements for Distributed Energy Resources (UL-1741) and identified with the CSA Listed Mark

YOTTA ENERGY INC.
2101 E. Saint Elmo Road, Suite 150
Austin, TX 78744
+1 (512) 856 7788

www.yottaenergy.com

IRONRIDGE

Datasheet

Tilt Mount System

Trust your system at every angle.

The IronRidge Tilt Mount System supports a wide range of solar module tilting angles, while also resisting the extreme wind and snow forces experienced over a building's lifetime.

Every component has been carefully engineered and rigorously tested, and the entire system uses only aluminum and stainless steel materials to resist corrosion.

Roof Friendly
Lightweight and compatible with industry-standard attachments.

PE Certified
Pre-stamped engineering letters available in most states.

Strength Tested
All components evaluated for superior structural performance.

Design Assistant
Online software makes it simple to create, share, and price projects.

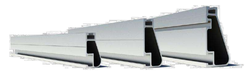
UL 2703 Listed System
Meets newest effective UL 2703 standard.

25-Year Warranty
Products guaranteed to be free of impairing defects.

Datasheet

XR Rails & Tilt Legs

XR Rails



Attach directly to Tilt Legs. Available in three targeted sizes to support specific wind and snow loads.
- Unique curved profile
- Spanning capabilities up to 12'
- Clear and black finish

Tilt Legs

Tilt assembly to desired angle, up to 30 degrees. Kits include South and North Tilt Leg and all hardware.
- Available in multiple lengths for a wide angle range
- Assembled South Tilt Legs include angle indicators
- Legs are electrically bonded to rails

Grounding Clamps

UFOs

Universal Fastening Objects secure and bond modules to rails.
- Fully assembled and lubricated
- Single, universal size
- Clear and black finish

Stopper Sleeves

Snap onto the UFO to transform into a bonded end clamp.
- Bonds modules to rails
- Sized to match modules
- Clear and black finish

CAMO

Bond modules to rails while staying completely hidden.
- Universal end-cam clamp
- Tool-less installation
- Fully assembled

Accessories

BOSS™ Bonded Splices

Bonded Structural Splices connect and bond XR Rails together.
- Integrated bonding
- No tools or hardware
- Self-centering stop tab

Grounding Lugs

Connects Tilt Mount system to equipment ground.
- Low profile
- Single tool installation
- Mounts in any direction

Ends Caps & Wire Clips

Provide a finished look and organize electrical wires.
- Simple snap-in installations
- Clips hold up to ten 5mm wires
- UV-stabilized polymer

Resources

Design Assistant
Go from rough layout to fully engineered system. For free.
Go to IronRidge.com/design

NABCEP Certified Training
Earn free continuing education credits, while learning more about our systems.
Go to IronRidge.com/training

© 2020 IronRidge, Inc. All rights reserved. U.S. Patents: #8,695,290; #9,819,303; #10,865,935; Others Pending. Version 1.45

CITY OF IRVINE
BUILDING & SAFETY DIVISION

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Project Leader - Jeff Mixer
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901 SKYHAWK
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PLAN CHECK SUBMITTAL #3

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RAYMOND W. SWANEY
E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

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	100% DD	01-13-25
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A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated
SHEET NUMBER: PV71.1
SHEET TITLE:

PV EQUIPMENT DATA SHEETS

SVA ARCHITECTS
6 HUTTON CENTRE DR, SUITE 1150 SANTA ANA, CA 92707
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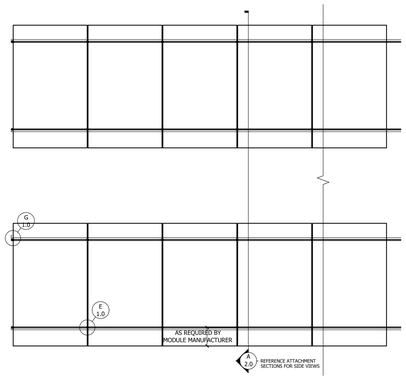
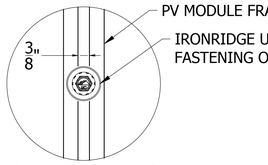
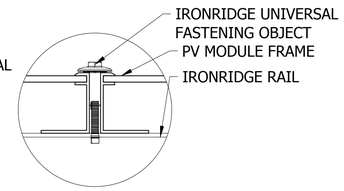
PLAN CHECK #00856737-CNEW



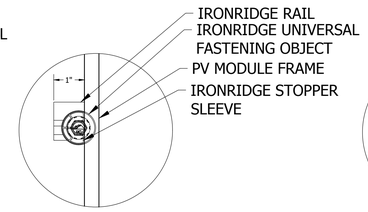
A PLAN VIEW, UFO/STOPPER SLEEVE, PORTRAIT MODULE
Scale: 3/8"=1'-0"



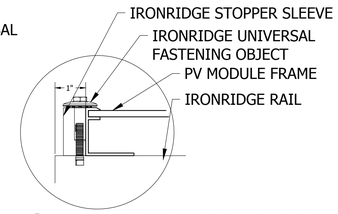
E DETAIL, MID CLAMP PLAN
Scale: 6"=1'-0"



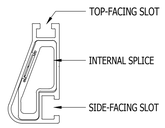
F DETAIL, MID CLAMP FRONT
Scale: 6"=1'-0"



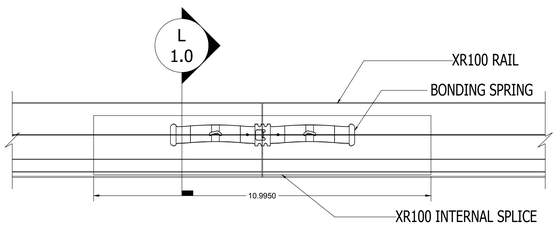
G DETAIL, END CLAMP (UFO) PLAN
Scale: 6"=1'-0"



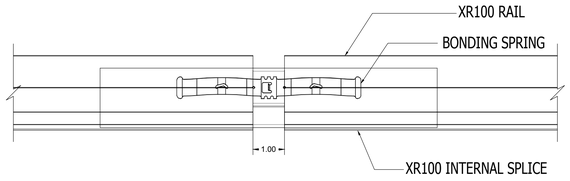
H DETAIL, END CLAMP (UFO) FRONT
Scale: 6"=1'-0"



L DETAIL, INTERNAL SPLICE, XR100
8"=1'-0"



O DETAIL, SPLICE CONNECTION, XR100
6"=1'-0"



R DETAIL, THERMAL EXPANSION CONNECTION, XR100
6"=1'-0"

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
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949.751.5800 wsp.com
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PLAN CHECK SUBMITTAL #3

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RAYMOND W. SWARTZ
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ELECTRICAL
STATE OF CALIFORNIA

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SHEET NUMBER: PV81.1
SHEET TITLE:

MOUNTING DETAILS (1 OF 2)

SVA ARCHITECTS
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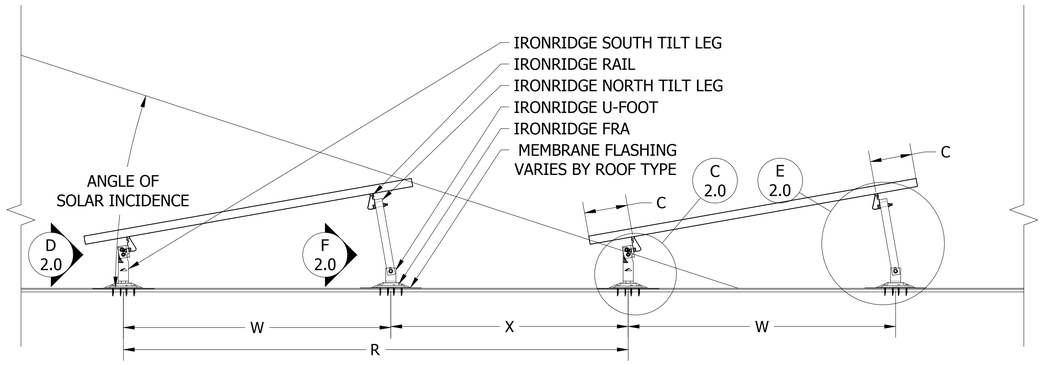
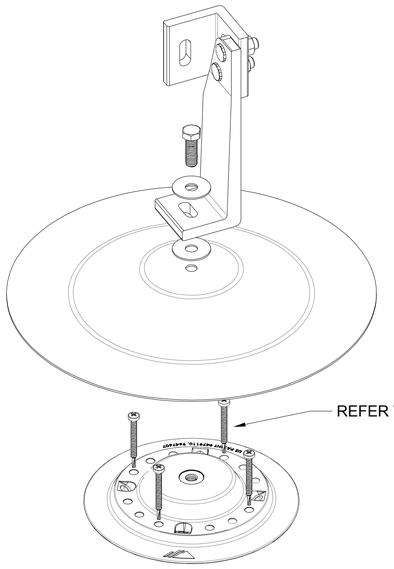
PLAN CHECK #00856737-CNEW

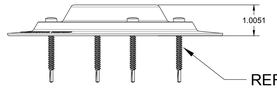


A SIDE VIEW, FRA, PORTRAIT MODULE

Scale: 1"=1'-0"

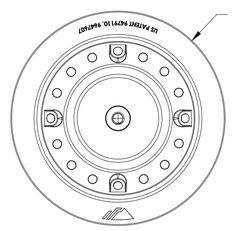


G FRA, PERSPECTIVE VIEW

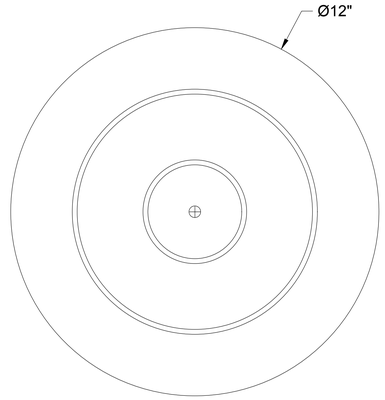


I FRA, SIDE VIEW

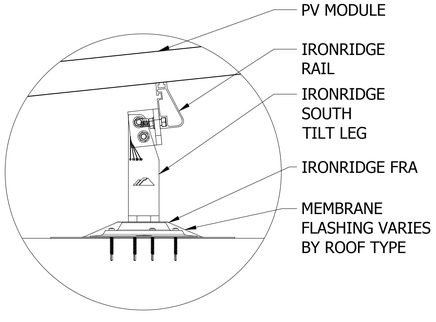
J MEMBRANE FLASHING, SIDE VIEW



H FLAT ROOF ATTACHMENT (FRA), PLAN VIEW

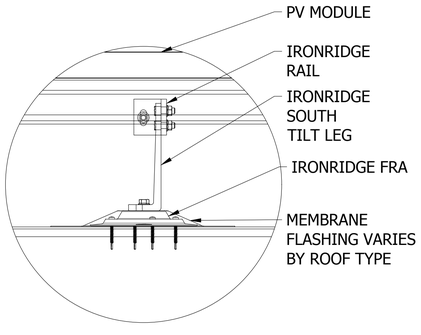


K MEMBRANE FLASHING, PLAN VIEW



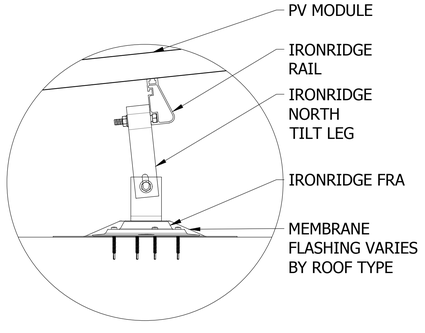
C STANDOFF DETAIL

Scale: 3"=1'-0"



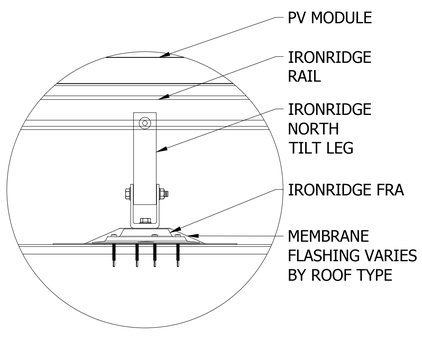
D STANDOFF DETAIL

Scale: 3"=1'-0"



E STANDOFF DETAIL

Scale: 3"=1'-0"



F STANDOFF DETAIL

Scale: 3"=1'-0"

Design Load Review

Reviewed for design loads only as they affect the primary structure.
Not responsible for design, dimensions or quality of material

BY: Jahn DATE 06/20/2025

VCA Engineers, Inc

CITY OF IRVINE

BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com

Project Leader - Jeff Mixer
Photovoltaic Lead - Jessica Kendrick
WSP Job #: US0022861.0069

CITY OF IRVINE - GREAT PARK
MAINTENANCE & OPERATION FACILITY

901 SKYHAWK
IRVINE, CA 92618

PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
	100% DD	01-13-25
	PLAN CHECK	03-26-25
A	CITY PC #2	06-25-25
B	CITY PC #3	09-12-25

PROJECT NO: 2023-40108

DATE ISSUED: 11/19/2024

SCALE: As indicated

SHEET NUMBER: PV81.2

SHEET TITLE:

MOUNTING DETAILS (2 OF 2)

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

intertek
Total Quality. Assured.

8431 Murphy Drive
Middleton, WI 53562 USA

Telephone: 608.836.4400
Facsimile: 608.831.9279
www.intertek.com

Test Verification of Conformity

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

Applicant Name & Address:	Enstall US, Inc. 41 West Putnam Avenue, Suite 303 Greenwich, CT 06830-5300 USA
Product Description:	Tilt Mount System with XR Rails.
Ratings & Principle Characteristics:	Fire Class Resistance Rating: -Tilt Mount (Asymmetrical). Class A Fire Rated for Low Slope applications when using Type 1, 2 3, 13, 19, 25,29 and 38 listed photovoltaic modules. Class A Fire Rated for Steep Slope applications with Type 1 and 2, listed photovoltaic modules. "Angle of tilt allowed by the system is any greater than or equal to 1° and specified in the installation instructions. This system was evaluated with a 5" gap between the bottom of the module and the roof's surface. Per UL 2703 this product can be installed with any gap stated in the manufacturer's installation instructions. No perimeter guard is required. Installed with components per IronRidge installation manual and as reviewed by Intertek Engineering Evaluation 102241487MID-001.1. This rating is applicable with any 3rd party roof attachment with similar construction and material.
Models:	IronRidge Tilt Mount with XR Rails
Brand Name:	IronRidge Tilt Mount
Relevant Standards:	UL 2703 (2023) Standard for Safety Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels, Referencing UL61730-2, Standard for Safety Photovoltaic Module Safety Qualification – Part 2: Requirements for Testing.
Verification Issuing Office:	Intertek Testing Services NA, Inc. 8431 Murphy Drive Middleton, WI 53562
Date of Tests:	Tests: 08/27/2014 to 03/17/2015; Evaluations: 08/19/2015
Test Report Number(s):	101769343MID-001r1, 101769343MID-001a, 101915978MID-001, 101999492MID-001ar1-cr1 & 102241487MID-001.1 (Evaluation for South Tilt Leg Assembly) 105499394MID-008 PEV
Revised Date:	1/5/24 changed the word anchor to attachment.

This verification is part of the full test report(s) and should be read in conjunction with them. This report does not automatically imply product certification.

Completed by:	Brian Brunson	**Reviewed by:**	Chad Naggs
Title:	Operations Manager, Middleton	**Title:**	Technical Team Lead, Fire Resistance
Signature:		**Signature:**	
Date:	1/5/24	**Date:**	1/5/24

This Verification is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to permit copying or distribution of this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test/inspection results referenced in this Verification are relevant only to the sample tested/inspected. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

GFT-OP-11a (24-MAR-2014)

CITY OF IRVINE
BUILDING & SAFETY DIVISION

WSP USA
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 wsp.com

Project Leader - Jeff Mixer
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CITY OF IRVINE - GREAT PARK
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901 SKYHAWK
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PLAN CHECK SUBMITTAL #3

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWANEY
E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
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3		
4		
5		
6		
7		
8		
9		

PROJECT NO: 2023-40108
DATE ISSUED: 11/19/2024
SCALE: As indicated

SHEET NUMBER: PV81.3
SHEET TITLE:

CLASS A FIRE RATING DOCUMENTATION

SVA ARCHITECTS
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PLAN CHECK #00856737-CNEW

ORANGE COUNTY FIRE AUTHORITY

FIRE MASTER PLAN

VICINITY MAP

ORANGE COUNTY FIRE AUTHORITY

Reviewed by Planning & Development

Service Request Expires After 6 Months of Inactivity

Approval subject to field inspection and required test, notations hereon, conditions in correspondence and conformance with applicable regulations. The stamping of these plans shall not be held to permit or approve the violation of any law.

OCFA SR #: 25001447
Fee Codes: PR 145
Plan Type: Fire Master Plan
By: benverburg
Date: 07/24/2025

ONLY STAMPED SHEETS REVIEWED BY ORANGE COUNTY FIRE AUTHORITY

Call at least 72 hours in advance to schedule inspections: (714) 573-6150

Notes:

OCFA STAMP

PROJECT INFORMATION REQUIREMENTS

PROJECT LOCATION: 901 SKYHAWK, IRVINE, CA 92618
PARCEL MAP NUMBER: 580-765-41
TRACT NUMBER: PM 390-17 POR OF PAR 1 / MAP # PM 2016-152
LOT NUMBER: 1
○ EMERGENCY ACCESS EASEMENTS

DETAILED SCOPE OF WORK
NOTE: OCFA WILL ONLY REVIEW WORK OUTLINED IN SCOPE OF WORK
NEW MAINTENANCE FACILITY LOCATED AT THE CORNER OF SKYHAWK AND GREAT PARK BLVD. INCLUDING A ONE-STORY TYPE V-B, MIXIED OCCUPANCY SPRINKLERED MAIN BUILDING CONTAINING OFFICE AREAS; STORAGE AREAS AND EXTERIOR COVERED STORAGE AND WORK AREAS. A ONE-STORY, TYPE V-B DETACHED WASH AND STORAGE STRUCTURE WITH U OCCUPANCIES; AND A COVERED DETACHED EXTERIOR FUEL STORAGE & DISPENSING SYSTEM.
NUMBER OF UNITS OR HOMES IN DEVELOPMENT

SPECIAL CONDITIONS
○ FIRE HAZARD SEVERITY ZONE ○ STATE RESPONSE AREA ● LOCAL RESPONSE AREA
○ STATE LICENSED FACILITY
○ AM&M ○ PENDING ○ COMPLETE SR:
○ METHANE MITIGATION

NUMBER OF STORIES 01 (ONE)

BUILDING HEIGHT 22' - 5"; 11' - 5"; 15' - 0"

BUILDING AREA 7,022 SF + 13,817 SF + 538 SF + 648 SF + 5,506 SF (TOTAL: 27,531 SF).

OCCUPANCY TYPE (CHECK ALL THAT APPLY)
* INDICATES SFM REGULATED OCCUPANCY. OCFA PLAN SUBMITTAL REQUIRED
\# GROUP S MOTOR VEHICLE REPAIR AND AIRCRAFT REPAIR REQUIRE OCFA PLAN SUBMITTAL

○ GROUP A1*	○ GROUP A2*	○ GROUP A3*	○ GROUP A4*	○ GROUP A5*
● GROUP B	○ GROUP E*	○ GROUP F1	○ GROUP F2	○ GROUP H1*
○ GROUP H2*	○ GROUP H3*	○ GROUP H4*	○ GROUP H5*	○ GROUP I1*
○ GROUP I2*	○ GROUP I3*	○ GROUP I4*	○ GROUP M	○ GROUP R1*
○ GROUP R2*	○ GROUP R2.1	○ GROUP R2.2	○ GROUP R3	○ GROUP R3.1
○ GROUP R4*	● GROUP S1#	○ GROUP S2#	● GROUP U	

TYPE OF CONSTRUCTION
○ TYPE IA ○ TYPE IB
○ TYPE IIA ○ TYPE IIB
○ TYPE IIIA ○ TYPE IIIB
○ TYPE IV
○ TYPE VA ● TYPE VB

MIXED USE AND OCCUPANCY (PER CBC 508 & 509)
○ ACCESSORY OCCUPANCIES (CBC 508.2)
(ACCESSORY OCCUPANCY < 10% OF STORY)
○ INCIDENTAL USES (CBC 509)
● NONSEPARATED OCCUPANCIES (CBC 508.3)
○ SEPARATED OCCUPANCIES (CBC 508.4)

SPECIAL DETAILED REQUIREMENTS
○ HIGH RISE (CBC 403)
○ ATRIUM (CBC 404)
○ OPEN PARKING GARAGE (CBC 406.5)
○ GROUP I2 (CBC 407) SMOKE COMPARTMENTS REFUGE AREAS
● HAZARDOUS MATERIALS (CBC 414, CFC CHAPTER 50)

SPRINKLERS
● NEW ○ MANDATORY ○ VOLUNTARY
○ TENANT IMPROVEMENT
TYPE
● NFPA 13
○ NFPA 13D
○ NFPA 13R

○ FIRE PUMP
○ STANDPIPES

FIRE ALARM
● NEW ○ MANDATORY ○ VOLUNTARY
○ TENANT IMPROVEMENT
○ VOICE EVACUATION

FIRE FLOW REQUIREMENT PER OCFA GUIDELINE B-01 ATTACHMENT 23
FLOW (IN GPM @ 20 PSI): 2104 PSI. SEE SHT 4B FOR IRWD

WATER AVAILIBILITY
PROVIDE COPY OF OCFA WATER AVAILABILITY FORM COMPLETED BY WATER DISTRICT ON FIRE MASTER PLAN
FLOW:
PRESSURE:
● ON SITE FIRE HYDRANTS
TOTAL NUMBER: 1 (EXISTING)

EMERGENCY RESPONDER RADIO COVERAGR (BDA)
○ THIS BUILDING SHALL BE EQUIPPED WITH AN EMERGENCY RESPONDER DIGITAL RADIO SYSTEM PER THE REQUIREMENTS OF THE ORANGE COUNTY SHERIFF'S DEPARTMENT-COMMUNICATIONS & TECHNOLOGY DIVISION. FOR THE INITIAL SUBMITTAL, OCSD/COMM REQUIRES THE ERRCS/BDA/DAS SYSTEM DESIGNER TO PROVIDE THE FOLLOWING FOR PRE-EVALUATION: A. PROJECT NAME. B. SITE ADDRESS. C. PROJECT DESCRIPTION. D. CONTRACTOR CONTACT INFORMATION. E. BDA MODEL (S/N IF AVAILABLE). F. PROPOSED MODE OF OPERATION (CLASS A/B). G. PROPOSED PROJECT TIMELINE. THIS INFORMATION IS TO BE SUBMITTED BY THE DESIGNER VIA EMAIL TO ERRCS@OCSD.ORG AND BDACERT@OCFA.ORG. CFC 510

OCFA STANDARD FIRE MASTER PLAN NOTES

INSPECTION REQUIREMENTS
1. OCFA SITE INSPECTIONS ARE REQUIRED FOR THIS PROJECT. PLEASE SCHEDULE ALL FIELD INSPECTIONS AT LEAST 48 HOURS IN ADVANCE. INSPECTIONS CANCELED AFTER 1 P.M. ON THE DAY BEFORE THE SCHEDULED DATE WILL BE SUBJECT TO A RE-INSPECTION FEE. CALL OCFA INSPECTION SCHEDULING AT (714) 573-6150.
2. A LUMBER DROP INSPECTION SHALL BE PERFORMED PRIOR TO BRINGING COMBUSTIBLE MATERIALS (OR COMBUSTIBLE FIXTURES AND FINISHES FOR STRUCTURES OF NON-COMBUSTIBLE CONSTRUCTION). ALL-WEATHER ACCESS ROADS CAPABLE OF SUPPORTING 94,000 LBS., TOPPED WITH ASPHALT, CONCRETE, OR EQUIVALENT SHALL BE IN PLACE AND HYDRANTS OPERATIONAL AT TIME OF LUMBER DROP INSPECTION.
3. FOR PROJECTS WITH FUEL MODIFICATION, A VEGETATION CLEARANCE INSPECTION IS REQUIRED PRIOR TO A LUMBER DROP INSPECTION. USE THE FUEL MODIFICATION PLAN SERVICE REQUEST NUMBER TO SCHEDULE THE VEGETATION CLEARANCE INSPECTION.
4. PHASED INSTALLATION OF FIRE ACCESS ROADS REQUIRES ADDITIONAL INSPECTIONS NOT COVERED BY THE FEES PAID AT PLAN SUBMITTAL. CONTACT INSPECTION SCHEDULING TO ARRANGE FOR ADDITIONAL INSPECTIONS THAT MAY BE NEEDED AND ANY FEES THAT MAY BE DUE.
5. AN ORIGINAL APPROVED, SIGNED, WET-STAMPED OCFA FIRE MASTER PLAN SHALL BE AVAILABLE ON-SITE AT TIME OF INSPECTION.
6. ACCESS ROADS AND HYDRANTS SHALL BE MAINTAINED AND REMAIN CLEAR OF OBSTRUCTIONS AT ALL TIMES DURING AND AFTER CONSTRUCTION. AREAS WHERE PARKING IS NOT PERMITTED SHALL BE CLEARLY IDENTIFIED AT ALL TIMES. OBSTRUCTION OF FIRE LANES AND HYDRANTS MAY RESULT IN CANCELLATION OR SUSPENSION OF INSPECTIONS.
7. TEMPORARY FUEL TANKS OF 60 OR MORE GALLONS SHALL BE REVIEWED, INSPECTED, AND PERMITTED BY THE OCFA PRIOR TO USE.
8. THE PROJECT ADDRESS SHALL BE CLEARLY POSTED AND VISIBLE FROM THE PUBLIC ROAD DURING CONSTRUCTION.
9. ALL GATES IN CONSTRUCTION FENCING SHALL BE EQUIPPED WITH EITHER A KNOX OR BREAKAWAY PADLOCK.
10. BUILDINGS OF FOUR OR MORE STORIES SHALL BE PROVIDED WITH STAIRS AND A STANDPIPE BEFORE REACHING 40 FEET IN HEIGHT.

GENERAL REQUIREMENTS
11. FIRE LANE WIDTHS SHALL BE MEASURED FROM TOP FACE OF THE CURB TO TOP FACE OF THE CURB FOR FIRE LANES WITH STANDARD CURBS AND GUTTERS AND FROM FLOW-LINE TO FLOW-LINE FOR FIRE LANES WITH MODIFIED CURB DESIGNS (E.G., ROLLED, RAMPED, ETC.). THE DEVELOPER IS RESPONSIBLE TO VERIFY THAT ALL APPROVED PUBLIC WORKS OR GRADING DEPARTMENT STREET IMPROVEMENT PLANS OR PRECISE GRADING PLANS CONFORM TO THE MINIMUM STREET WIDTH MEASUREMENTS PER THE APPROVED OCFA FIRE MASTER PLAN AND STANDARDS IDENTIFIED IN OCFA GUIDELINE B-01 FOR ALL PORTIONS OF THE FIRE ACCESS ROADS.
12. PERMANENT, TEMPORARY, AND PHASED EMERGENCY ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT AN IMPOSED LOAD OF 94,000 LBS. AND SURFACED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES.
13. FIRE LANE SIGNS AND RED CURBS SHALL MEET THE SPECIFICATIONS SHOWN IN OCFA GUIDELINE B-01 AND SHALL BE INSTALLED AS DESCRIBED THEREIN. ADDITIONAL FIRE LANE MARKINGS MAY BE REQUIRED AT THE TIME OF INSPECTION DEPENDING ON FIELD CONDITIONS.
14. ALL FIRE HYDRANTS SHALL HAVE A "BLUE REFLECTIVE PAVEMENT MARKER" INDICATING THEIR LOCATION PER THE OCFA STANDARD. ON PRIVATE PROPERTY MARKERS ARE TO BE MAINTAINED IN GOOD CONDITION BY THE PROPERTY OWNER.
15. ADDRESS NUMBERS SHALL BE LOCATED AND BE OF A COLOR AND SIZE SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE ROADWAY FROM WHICH THE BUILDING IS ADDRESSED IN ACCORDANCE WITH OCFA GUIDELINE B-01. WAYFINDING SIGNS, WHEN REQUIRED BY THE LOCAL AHJ, SHALL COMPLY WITH THE STANDARDS OF THAT AGENCY. WHEN WAYFINDING SIGNS ARE ALSO REQUIRED BY THE OCFA, THEY MAY BE DESIGNED TO LOCAL AHJ REQUIREMENTS PROVIDED THAT SUCH STANDARDS FACILITATE LOCATION OF STRUCTURES, SUITES, AND DWELLING UNITS BY EMERGENCY PERSONNEL.
16. ACCESS GATES SHALL BE APPROVED PRIOR TO INSTALLATION AND SHALL BE IN COMPLIANCE WITH CHAPTER 5 OF THE CFC AND OCFA GUIDELINES.
17. APPROVED ACCESS WALKWAYS SHALL BE PROVIDED TO ALL REQUIRED OPENINGS AND ALL RESCUE WINDOWS.
18. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS, AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OR BUILDING FEATURES SHALL NOT OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS, OR STROBES.
19. DUMPSTERS AND TRASH CONTAINERS LARGER THAN 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM.
20. ANY FUTURE MODIFICATION TO THE APPROVED FIRE MASTER PLAN OR APPROVED SITE PLAN, INCLUDING BUT NOT LIMITED TO ROAD WIDTH, GRADE, SPEED HUMPS, TURNING RADII, GATES OR OTHER OBSTRUCTIONS, SHALL REQUIRE REVIEW, INSPECTION, AND APPROVAL BY THE OCFA.
21. APPROVAL OF THIS PLAN SHALL NOT BE CONSTRUED AS APPROVAL OF ANY INFORMATION OR PROJECT CONDITIONS OTHER THAN THOSE ITEMS AND REQUIREMENTS IDENTIFIED IN OCFA GUIDELINE B-01 AND RELATED PORTIONS OF THE 2022 CFC AND CBC. THIS PROJECT MAY BE SUBJECT TO ADDITIONAL REQUIREMENTS NOT STATED HEREIN UPON EXAMINATION OF ACTUAL SITE AND PROJECT CONDITIONS OR DISCLOSURE OF ADDITIONAL INFORMATION.

PROJECT-SPECIFIC REQUIREMENTS
22. AN UNDERGROUND PIPING PLAN IS REQUIRED FOR THE INSTALLATION OF AN AUTOMATIC FIRE SPRINKLER SYSTEM OR FOR A PRIVATE FIRE HYDRANT SYSTEM. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
23. AN ARCHITECTURAL PLAN IS REQUIRED TO BE SUBMITTED TO THE OCFA FOR REVIEW AND APPROVAL FOR PROJECTS CONTAINING A, C, E, F, H, I, L, AND R-4 OCCUPANCIES. A PLAN MAY ALSO BE REQUIRED FOR R-1 AND R-2 OCCUPANCIES OVER TWO STORIES OR THOSE UTILIZING SPRINKLERS OR FIRE WALLS TO INCREASE THE MAXIMUM BUILDING SIZE ALLOWED--SEE OCFA INFO BULLETIN 02-13.
24. A CHEMICAL CLASSIFICATION AND HAZARDOUS MATERIALS COMPLIANCE PLAN SHALL BE APPROVED BY THE OCFA PRIOR TO ANY HAZARDOUS MATERIALS BEING STORED OR USED ON SITE. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
25. BUILDINGS USED FOR HIGH-PILED STORAGE SHALL COMPLY WITH CFC REQUIREMENTS. A SEPARATE PLAN SUBMITTAL IS REQUIRED IF MATERIALS WILL BE STORED HIGHER THAN 12 FEET FOR LOWER-HAZARD COMMODITIES, OR HIGHER THAN SIX FEET FOR HIGH-HAZARD COMMODITIES SUCH AS PLASTICS, RUBBER, FLAMMABLE/COMBUSTIBLE LIQUIDS, TIRES, CARPET, ETC.
26. AN AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND LOCAL ORDINANCES, AMENDMENTS, AND GUIDELINES. SPRINKLER SYSTEMS, OTHER THAN THOSE LISTED IN CFC 903.4, SHALL BE MONITORED BY AN APPROVED CENTRAL STATION. SEPARATE PLAN SUBMITTALS FOR THE SPRINKLER AND MONITORING SYSTEMS ARE REQUIRED.
27. BUILDINGS CONTAINING INDUSTRIAL REFRIGERATION SYSTEMS SHALL COMPLY WITH CFC REQUIREMENTS. A SEPARATE PLAN SUBMITTAL IS REQUIRED IF REFRIGERANT QUANTITIES EXCEED THRESHOLDS.
28. A FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND LOCAL ORDINANCES, AMENDMENTS, AND GUIDELINES. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
29. STRUCTURES LOCATED IN A FIRE HAZARD SEVERITY ZONE OR WILDLAND-URBAN INTERFACE AREA ARE SUBJECT TO THE CONSTRUCTION REQUIREMENTS PRESCRIBED IN CHAPTER 7A OF THE 2022 CBC AND/OR SECTION 337 OF THE 2022 CRC. CONSTRUCTION MATERIALS/METHODS ARE REVIEWED AND INSPECTED BY THE BUILDING DEPARTMENT.
30. ONE OR MORE STRUCTURES SHOWN ON THIS PLAN ARE LOCATED ADJACENT TO A FUEL MODIFICATION AREA. CHANGES TO THE FUEL MODIFICATION ZONE LANDSCAPING, NEW STRUCTURES, OR ADDITION/ALTERATION TO EXISTING STRUCTURES REQUIRES REVIEW AND APPROVAL BY THE OCFA.
31. PROJECTS LOCATED IN STATE RESPONSIBILITY AREAS AND IN LOCAL RESPONSIBILITY AREA VHFHSZ SHALL ALSO COMPLY WITH ALL APPLICABLE REQUIREMENTS FROM TITLE 14, DIV. 1.5, CH. 7, SUBCH. 2 "SRA FIRE SAFE REGULATIONS" AND GUIDELINE B-01A.
32. STRUCTURES MEETING THE CRITERIA IN CFC 510.1 SHALL BE PROVIDED WITH AN EMERGENCY RESPONDER RADIO SYSTEM. REFER TO CFC 510.2 THROUGH 510.6.3 AND DAS/BDA GUIDELINES PUBLISHED BY OC SHERIFF'S COMMUNICATION AND TECHNOLOGY DIVISION FOR TECHNICAL AND SUBMITTAL INFORMATION.

GATES

○ MANUAL ● ELECTRIC

OCFA NOTES FOR ELECTRIC VEHICLE GATES
1. A REMOTE OPENING DEVICE IS REQUIRED. THE REMOTE GATE OPENING DEVICE THAT WILL BE INSTALLED IS (CHECK ONE):
○ 3M OPTICOM
● CLICK2ENTER* (SINGLE-PULSE MODE WITH 1.5 SECOND TRANSMISSION WINDOW)
○ FIRE STROBE ACCESS PRODUCTS, INC.
○ TOMAR
2. IN THE EVENT OF LOSS OF NORMAL POWER TO THE GATE OPERATING MECHANISM, IT SHALL BE AUTOMATICALLY TRANSFERRED TO A FAIL-SAFE MODE ALLOWING THE GATE TO BE PUSHED OPEN BY A SINGLE FIREFIGHTER WITHOUT ANY OTHER ACTIONS, KNOWLEDGE, OR MANIPULATION OF THE OPERATING MECHANISM BEING NECESSARY.
A) A BATTERY MAY ONLY BE USED IN PLACE OF FAIL-SAFE MANUAL OPERATION WHEN THE GATE OPERATOR HAS A FAIL-OPEN MODE THAT WILL AUTOMATICALLY, IMMEDIATELY, AND COMPLETELY OPEN THE GATE AND KEEP IT OPEN UPON REACHING A LOW POWER THRESHOLD, REGARDLESS OF THE PRESENCE OF NORMAL POWER.
B) SHOULD THE GATE BE TOO LARGE OR HEAVY FOR A SINGLE FIREFIGHTER TO OPEN MANUALLY, A SECONDARY SOURCE OF RELIABLE POWER BY MEANS OF AN EMERGENCY GENERATOR OR A CAPACITOR WITH ENOUGH RESERVE TO AUTOMATICALLY, IMMEDIATELY, AND COMPLETELY OPEN THE GATE UPON LOSS OF PRIMARY POWER SHALL BE PROVIDED FOR FAIL-OPEN OPERATION.
3. IN ADDITION TO THE REMOTE OPERATOR, THE GATE CONTROL SHALL BE OPERABLE BY A KNOX EMERGENCY OVERRIDE KEY SWITCH EQUIPPED WITH A DUST COVER. UPON ACTIVATION OF THE KEY SWITCH, THE GATE SHALL OPEN AND REMAIN OPEN UNTIL RETURNED TO NORMAL OPERATION BY MEANS OF THE KEY SWITCH. WHERE A GATE CONSISTS OF TWO LEAVES, THE KEY SWITCH SHALL OPEN BOTH SIMULTANEOUSLY IF OPERATION OF A SINGLE LEAF ON THE INGRESS SIDE DOES NOT PROVIDE FOR THE WIDTH, TURNING RADII, OR SETBACKS NECESSARY FOR FIRE APPARATUS TO NAVIGATE THE VEHICLE ENTRY POINT.
4. THE KEY SWITCH SHALL BE PLACED BETWEEN 42" AND 48" ABOVE THE ROADWAY SURFACE AT THE RIGHT SIDE OF THE ACCESS GATE WITHIN TWO FEET OF THE EDGE OF THE ROADWAY. IN IRVINE, THE SWITCH SHALL BE ON THE LEFT SIDE IN ACCORDANCE WITH IRVINE'S UNIFORM SECURITY ORDINANCE.
5. THE KEY SWITCH SHALL BE READILY VISIBLE AND UNOBSTRUCTED FROM THE FIRE LANE LEADING TO THE GATE.
6. THE KEY SWITCH SHALL BE LABELED WITH A PERMANENT RED SIGN WITH NOT LESS THAN ½" CONTRASTING LETTERS READING "FIRE DEPT" OR WITH A "KNOX" DECAL.

APPLICABLE CODES

- ● 2022 CALIFORNIA FIRE CODE
- ● 2022 CALIFORNIA BUILDING CODE
- ○ 2022 CALIFORNIA RESIDENTIAL CODE
- ● 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
- ● 2022 CALIFORNIA MECHANICAL CODE
- ● 2022 CALIFORNIA ELECTRICAL CODE
- ● 2022 CALIFORNIA PLUMBING CODE
- ● 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
- ● APPLICABLE NFPA STANDARDS
- ● LOCALLY ADOPTED ORDINANCES CITY: IRVINE
- ● OCFA GUIDELINES
- ● CONDITIONS OF APPROVAL CITY: IRVINE

DEFERRED SUBMITTALS (CHECK ALL THAT APPLY)

THIS PROJECT HAS BEEN PERMITTED WITHOUT REVIEW AND/OR APPROVAL OF THE FOLLOWING DEFERRED SUBMITTALS. PLANS APPROVED BY OCFA SHALL BE OBTAINED FOR EACH DEFERRED ITEM LISTED BELOW PRIOR TO COMMENCING ANY WORK WITHIN THE SCOPE OF SUCH DEFERRAL. DEFERRALS MUST BE REVIEWED AND ACCEPTED BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO SUBMITTING FOR REVIEW WITH OCFA. PORTIONS OF THE PROJECT THAT ARE DEFERRED SHALL BE SUBJECT TO THE CODES, STANDARDS, AND OTHER APPLICABLE REQUIREMENTS IN FORCE ON THE DATE THAT THE DEFERRED PLAN IS SUBMITTED TO OCFA.

○ ARCHITECTURAL PLAN
○ HIGH PILED COMBUSTIBLE STORAGE
○ CHEMICAL USE AND/OR STORAGE
● FUEL TANK (FOR GENERATOR, IF OVER 60 GALLONS)
● BATTERY/ENERGY STORAGE SYSTEM
○ UNDERGROUND SYSTEM SERVING SPRINKLERS, STANDPIPES, AND/OR PRIVATE HYDRANTS
● SPRINKLER SYSTEM
○ STANDPIPE SYSTEM
○ FIRE PUMP
○ HOOD AND DUCT EXTINGUISHING SYSTEM
● ALARM SYSTEM

PREREQUISITE PLANS
○ PLANNING APPLICATION SR:
○ METHANE MITIGATION SR:
○ FUEL MODIFICATION PLAN SR:

REVISION
○ ORIGINAL PLAN SR:
COPY OF ORIGINAL APPROVED PLAN REQUIRED TO BE SUBMITTED WITH ALL REVISED PLANS.

REVISION SCOPE OF WORK

N/A

STAKEHOLDERS

BUILDING DEPARTMENT: CITY OF IRVINE
PLANNING DEPARTMENT: CITY OF IRVINE
PUBLIC WORKS DEPARTMENT: CITY OF IRVINE
WATER DISTRICT: IRVINE RANCH WATER DISTRICT

PROJECT DIRECTORY

ARCHITECT/ENGINEER
BUSINESS NAME: SVA Architects
CONTACT NAME: Doug Brown
ADDRESS: 6 Hutton Centre Drive, Suite 1150
CITY: Santa Ana STATE: CA ZIP: 92707
PHONE: (949) 809-3380
EMAIL: dbrown@sva-architects.com

PROPERTY OWNER/HOA
BUSINESS NAME: CITY OF IRVINE
CONTACT NAME: TIM CALLAHAN
ADDRESS: 1 CIVIC CENTER PLAZA
CITY: IRVINE STATE: CA ZIP: 92606
PHONE: (949) 724-7152
EMAIL: tcallahan@cityofirvine.org

TENANT
BUSINESS NAME:
CONTACT NAME:
ADDRESS:
CITY: STATE: ZIP:
PHONE:
EMAIL:

CITY OF IRVINE
BUILDING & SAFETY DIVISION

DESIGNED:
DRAWN:
CHECKED:
DATE:
SCALE:

NO	DATE	REVISIONS

OCFA REVIEW AND INSPECTIONS (OCFA USE ONLY)
☐ NO OCFA REVIEW REQUIRED
☐ PLAN REVIEW ONLY
☐ PLAN REVIEW AND INSPECTION

PLANS PREPARED BY:
DMC ENGINEERING
CIVIL • SURVEYING • PLANNING • CONSTRUCTION
17 Technology Drive, Suite 108, Irvine, California 92618
Tel: (949) 753-9393
E-Mail: dmc@dmcengineers.com • www.dmcengineers.com

LANDSCAPE MAINTENANCE YARD FIRE MASTER PLAN
GREAT PARK, IRVINE, CALIFORNIA

ORANGE COUNTY FIRE AUTHORITY
COMMUNITY RISK REDUCTION - PLANNING AND DEVELOPMENT SECTION

SERVICE REQUEST NUMBER

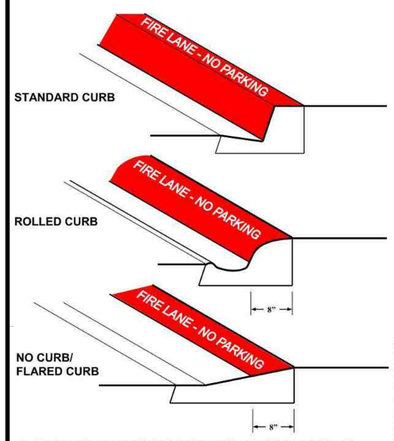
SHEET 4A OF 4

07-08-2025
02-20-2025

I:\OCBS\11153\GP Overall Fire Master Plan\11153_GP Overall Fire Master Plan.dwg, SHT4A, 2/26/2025 10:42:53 AM, mbayat

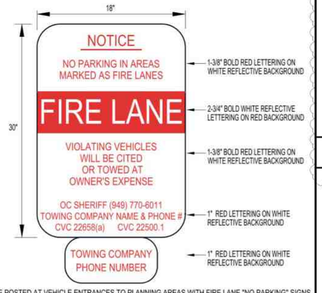
ATTACHMENT 9

Fire Lane Identification – Red Curbs



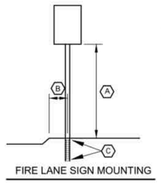
1. Fire lane entrance sign(s) shall also be provided per Attachment 10 or 11.
2. Curbs shall be painted OSHA safety red.
3. "FIRE LANE – NO PARKING" shall be painted on top of curb in 3" white lettering at a spacing of 30' on center or portion thereof.

FIRE LANE



NOTES:
1. THIS SIGN SHALL BE POSTED AT VEHICLE ENTRANCES TO PLANNING AREAS WITH FIRE LANE "NO PARKING" SIGNS.
2. ADDITIONAL ENTRY SIGNS NOT REQUIRED TO INTERIOR PROJECTS WITHIN PLANNING AREAS.
3. TOWING COMPANY CONTACT INFORMATION IS REQUIRED FOR ALL PROPERTIES WITH A STANDING WRITTEN AGREEMENT FOR SERVICES WITH A TOWING COMPANY PER THE CALIFORNIA VEHICLE CODE.

NOTE:
1. ALL SIGN AND LETTERING DIMENSIONS SHOWN ARE MINIMUMS.
2. SIGNS SHALL BE SECURELY MOUNTED FACING THE DIRECTION OF TRAVEL AND CLEARLY VISIBLE TO ONCOMING TRAFFIC ENTERING THE DESIGNATED AREA.



FIRE LANE SIGN MOUNTING

- (A) HEIGHT OF SIGN IN SIDEWALK OR PEDESTRIAN AREA SHALL BE 7'-0", AND 5'-0" IN ALL OTHER AREAS.
- (B) DEPTH OF SIGN SHALL BE 18 INCHES FROM STANDARD CURB AND 24 INCHES WITH ROLLED CURB TO CENTER OF POST.
- (C) BURY DEPTH SHALL BE A MINIMUM OF 24 INCHES.

THE SIGN SHALL BE SECURELY MOUNTED FACING THE DIRECTION OF TRAVEL AND CLEARLY VISIBLE TO ONCOMING TRAFFIC ENTERING THE DESIGNATED AREA. SIGNS SHALL BE OF DURABLE MATERIAL

FIRE LANE SIGNAGE DETAILS

IRVINE RANCH WATER DISTRICT 15600 Sand Canyon Ave., P.O. Box 57000, Irvine, CA 92619-7000 (949) 453-5300

Water Flow Test Results

Location: Skyhawk and Great Park

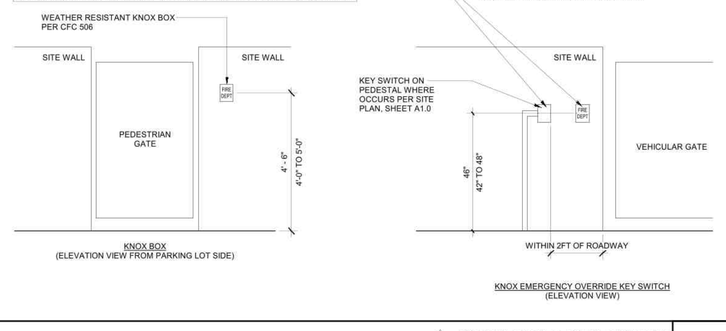
Test Date: 11/7/2024

IDENTIFIED BY TEST OR HYDRANTS FLOWED
Test # 1

HGL	470
Differential psi	8
Outlet Size (inches)	4
Outlet Coefficient	0.9
Pitot Pressure	24
Flow - GPM	2104

FIRE HYDRANT WATER FLOW TEST

NOTES:
1. PROVIDE KNOX BOX FOR IRVINE POLICE DEPT WHERE REQUIRED, ADJACENT TO FIRE DEPT KNOX BOX. LABEL AS REQUIRED. COMBO FIRE & POLICE KNOX BOX: VERIFY WITH AHJ.
2. REFER TO SHEET A1.0 & TECH PLANS FOR LOCATIONS
3. ALL KEY SWITCHES, KEY VAULTS, AND PADLOCKS SHALL BE SUB-METERED TO AN ORANGE COUNTY FIRE AUTHORITY KEY FOR ACCESS BY THE POLICE DEPARTMENT.



A **KNOX BOX & KEY SWITCH** 1/2" = 1'-0" 2

OCFA NOTES FOR ELECTRIC VEHICLE GATES
1) A REMOTE OPENING DEVICE IS REQUIRED. THE REMOTE GATE OPENING DEVICE THAT WILL BE INSTALLED IS (CHECK ONE):
__ 3M OPTICOM
X CLICK2ENTER* (SINGLE-PULSE MODE WITH 1.5 SECOND TRANSMISSION WINDOW)
__ FIRE STROBE ACCESS PRODUCTS, INC.
__ TOMAR

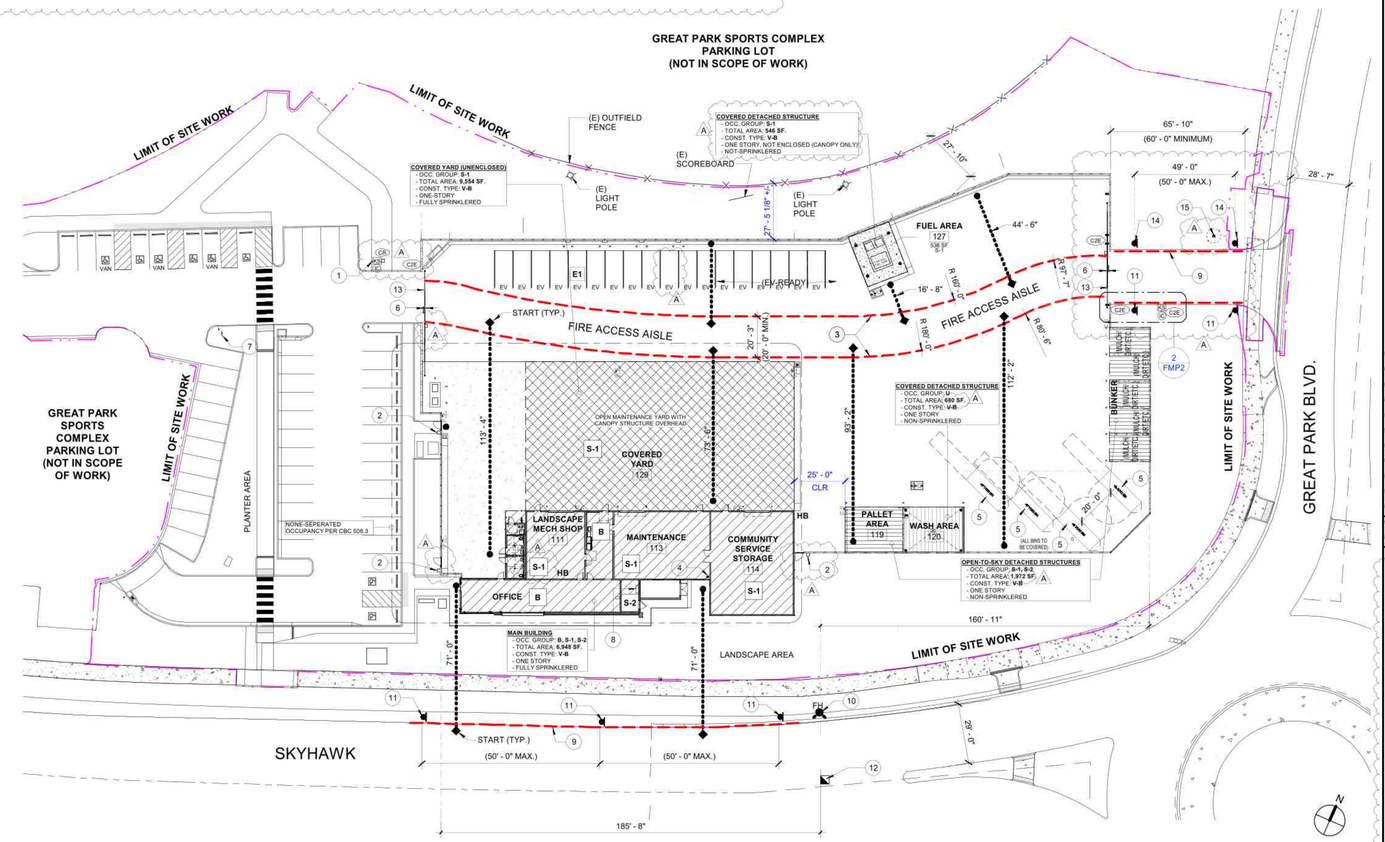
2) IN THE EVENT OF LOSS OF NORMAL POWER TO THE GATE OPERATING MECHANISM, IT SHALL BE AUTOMATICALLY TRANSFERRED TO A FAIL-SAFE MODE ALLOWING THE GATE TO BE PUSHED OPEN BY A SINGLE FIREFIGHTER WITHOUT ANY OTHER ACTIONS, KNOWLEDGE, OR MANIPULATION OF THE OPERATING MECHANISM BEING NECESSARY.
A) A BATTERY MAY ONLY BE USED IN PLACE OF FAIL-SAFE MANUAL OPERATION WHEN THE GATE OPERATOR HAS A FAIL-OPEN MODE THAT WILL AUTOMATICALLY, IMMEDIATELY, AND COMPLETELY OPEN THE GATE AND KEEP IT OPEN UPON REACHING A LOW POWER THRESHOLD, REGARDLESS OF THE PRESENCE OF NORMAL POWER.
B) SHOULD THE GATE BE TOO LARGE OR HEAVY FOR A SINGLE FIREFIGHTER TO OPEN MANUALLY, A SECONDARY SOURCE OF RELIABLE POWER BY MEANS OF AN EMERGENCY GENERATOR OR A CAPACITOR WITH ENOUGH RESERVE TO AUTOMATICALLY, IMMEDIATELY, AND COMPLETELY OPEN THE GATE UPON LOSS OF PRIMARY POWER SHALL BE PROVIDED FOR FAIL-OPEN OPERATION.
3) IN ADDITION TO THE REMOTE OPERATOR, THE GATE CONTROL SHALL BE OPERABLE BY A KNOX EMERGENCY OVERRIDE KEY SWITCH EQUIPPED WITH A DUST COVER. UPON ACTIVATION OF THE KEY SWITCH, THE GATE SHALL OPEN AND REMAIN OPEN UNTIL RETURNED TO NORMAL OPERATION BY MEANS OF THE KEY SWITCH. WHERE A GATE CONSISTS OF TWO LEAVES, THE KEY SWITCH SHALL OPEN BOTH SIMULTANEOUSLY IF OPERATION OF A SINGLE LEAF ON THE INGRESS SIDE DOES NOT PROVIDE FOR THE WIDTH, TURNING RADII, OR SETBACKS NECESSARY FOR FIRE APPARATUS TO NAVIGATE THE VEHICLE ENTRY POINT.
4) THE KEY SWITCH SHALL BE PLACED BETWEEN 42" AND 48" ABOVE THE ROADWAY SURFACE AT THE RIGHT SIDE OF THE ACCESS GATE WITHIN TWO FEET OF THE EDGE OF THE ROADWAY. IN IRVINE, THE SWITCH SHALL BE ON THE LEFT SIDE IN ACCORDANCE WITH IRVINE'S UNIFORM SECURITY ORDINANCE.
5) THE KEY SWITCH SHALL BE READILY VISIBLE AND UNOBSTRUCTED FROM THE FIRE LANE LEADING TO THE GATE.
6) THE KEY SWITCH SHALL BE LABELED WITH A PERMANENT RED SIGN WITH NOT LESS THAN ½" CONTRASTING LETTERS READING "FIRE DEPT" OR WITH A "KNOX" DECAL.

PROJECT-SPECIFIC REQUIREMENTS
22. AN UNDERGROUND PIPING PLAN IS REQUIRED FOR THE INSTALLATION OF AN AUTOMATIC FIRE SPRINKLER SYSTEM OR FOR A PRIVATE FIRE HYDRANT SYSTEM. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
23. AN ARCHITECTURAL PLAN IS REQUIRED TO BE SUBMITTED TO THE OCFA FOR REVIEW AND APPROVAL FOR PROJECTS CONTAINING A, C, E, F, H, I, L, AND R-4 OCCUPANCIES. A PLAN MAY ALSO BE REQUIRED FOR R-1 AND R-2 OCCUPANCIES OVER TWO STORIES OR THOSE UTILIZING SPRINKLERS OR FIRE WALLS TO INCREASE THE MAXIMUM BUILDING SIZE ALLOWED—SEE OCFA INFO BULLETIN 02-13.
24. A CHEMICAL CLASSIFICATION AND HAZARDOUS MATERIALS COMPLIANCE PLAN SHALL BE APPROVED BY THE OCFA PRIOR TO ANY HAZARDOUS MATERIALS BEING STORED OR USED ON SITE. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
25. AN AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND LOCAL ORDINANCES, AMENDMENTS, AND GUIDELINES. SPRINKLER SYSTEMS, OTHER THAN THOSE LISTED IN CFC 903.4, SHALL BE MONITORED BY AN APPROVED CENTRAL STATION. SEPARATE PLAN SUBMITTALS FOR THE SPRINKLER AND MONITORING SYSTEMS ARE REQUIRED.
26. A FIRE ALARM SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND LOCAL ORDINANCES, AMENDMENTS, AND GUIDELINES. A SEPARATE PLAN SUBMITTAL IS REQUIRED.
27. STRUCTURES MEETING THE CRITERIA IN CFC 510.1 SHALL BE PROVIDED WITH AN EMERGENCY RESPONDER RADIO SYSTEM. REFER TO CFC 510.2 THROUGH 510.6.3 AND DAS/BDA GUIDELINES PUBLISHED BY OC SHERIFF'S COMMUNICATION AND TECHNOLOGY DIVISION FOR TECHNICAL AND SUBMITTAL INFORMATION.

GENERAL REQUIREMENTS
12. PERMANENT, TEMPORARY, AND PHASED EMERGENCY ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT AN IMPOSED LOAD OF 84,000 LBS. AND SURFACED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES.
13. FIRE LANE SIGNS AND RED CURBS SHALL MEET THE SPECIFICATIONS SHOWN IN OCFA GUIDELINE B-09 AND SHALL BE INSTALLED AS DESCRIBED THEREIN. ADDITIONAL FIRE LANE MARKINGS MAY BE REQUIRED AT THE TIME OF INSPECTION DEPENDING ON FIELD CONDITIONS.
14. ALL FIRE HYDRANTS SHALL HAVE A "BLUE REFLECTIVE PAVEMENT MARKER" INDICATING THEIR LOCATION PER THE OCFA STANDARD. ON PRIVATE PROPERTY MARKERS ARE TO BE MAINTAINED IN GOOD CONDITION BY THE PROPERTY OWNER.
15. ADDRESS NUMBERS SHALL BE LOCATED AND BE OF A COLOR AND SIZE SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE ROADWAY FROM WHICH THE BUILDING IS ADDRESSED IN ACCORDANCE WITH OCFA GUIDELINE B-09. WAYFINDING SIGNS, WHEN REQUIRED BY THE LOCAL AHJ, SHALL COMPLY WITH THE STANDARDS OF THAT AGENCY. WHEN WAYFINDING SIGNS ARE ALSO REQUIRED BY THE OCFA, THEY MAY BE DESIGNED TO LOCAL AHJ REQUIREMENTS PROVIDED THAT SUCH STANDARDS FACILITATE LOCATION OF STRUCTURES, SUITES, AND DWELLING UNITS BY EMERGENCY PERSONNEL.
16. ACCESS GATES SHALL BE APPROVED PRIOR TO INSTALLATION AND SHALL BE IN COMPLIANCE WITH CHAPTER 5 OF THE CFC AND OCFA GUIDELINES.
17. APPROVED ACCESS WALKWAYS SHALL BE PROVIDED TO ALL REQUIRED OPENINGS AND ALL RESCUE WINDOWS.
18. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS, AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OR BUILDING FEATURES SHALL NOT OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS, OR STROBES.
19. DUMPSTERS AND TRASH CONTAINERS LARGER THAN 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM.
20. ANY FUTURE MODIFICATION TO THE APPROVED FIRE MASTER PLAN OR APPROVED SITE PLAN, INCLUDING BUT NOT LIMITED TO ROAD WIDTH, GRADE, SPEED HUMPS, TURNING RADII, GATES OR OTHER OBSTRUCTIONS, SHALL REQUIRE REVIEW, INSPECTION, AND APPROVAL BY THE OCFA.
21. APPROVAL OF THIS PLAN SHALL NOT BE CONSTRUED AS APPROVAL OF ANY INFORMATION OR PROJECT CONDITIONS OTHER THAN THOSE ITEMS AND REQUIREMENTS IDENTIFIED IN OCFA GUIDELINE B-09 AND RELATED PORTIONS OF THE 2016 CFC AND CBC. THIS PROJECT MAY BE SUBJECT TO ADDITIONAL REQUIREMENTS NOT STATED HEREIN UPON EXAMINATION OF ACTUAL SITE AND PROJECT CONDITIONS OR DISCLOSURE OF ADDITIONAL INFORMATION.

INSPECTION REQUIREMENTS
1. OCFA SITE INSPECTIONS ARE REQUIRED FOR THIS PROJECT. PLEASE SCHEDULE ALL FIELD INSPECTIONS AT LEAST 48 HOURS IN ADVANCE. INSPECTIONS CANCELED AFTER 1 P.M. ON THE DAY BEFORE THE SCHEDULED DATE WILL BE SUBJECT TO A RE-INSPECTION FEE. CALL OCFA INSPECTION SCHEDULING AT (714) 573-6150.
2. A LUMBER DROP INSPECTION SHALL BE PERFORMED PRIOR TO BRINGING COMBUSTIBLE MATERIALS (OR COMBUSTIBLE FIXTURES AND FINISHES FOR STRUCTURES OF NON-COMBUSTIBLE CONSTRUCTION). ALL-WEATHER ACCESS ROADS CAPABLE OF SUPPORTING 94,000 LBS., TOPPED WITH ASPHALT, CONCRETE, OR EQUIVALENT SHALL BE IN PLACE AND HYDRANTS OPERATIONAL AT TIME OF LUMBER DROP INSPECTION.
3. FOR PROJECTS WITH FUEL MODIFICATION, A VEGETATION CLEARANCE INSPECTION IS REQUIRED PRIOR TO A LUMBER DROP INSPECTION. USE THE FUEL MODIFICATION PLAN SERVICE REQUEST NUMBER TO SCHEDULE THE VEGETATION CLEARANCE INSPECTION.
4. PHASED INSTALLATION OF FIRE ACCESS ROADS REQUIRES ADDITIONAL INSPECTIONS NOT COVERED BY THE FEES PAID AT PLAN SUBMITTAL. CONTACT INSPECTION SCHEDULING TO ARRANGE FOR ADDITIONAL INSPECTIONS THAT MAY BE NEEDED AND ANY FEES THAT MAY BE DUE.
5. AN ORIGINAL APPROVED, SIGNED, WET-STAMPED OCFA FIRE MASTER PLAN SHALL BE AVAILABLE ON-SITE AT TIME OF INSPECTION.
6. ACCESS ROADS AND HYDRANTS SHALL BE MAINTAINED AND REMAIN CLEAR OF OBSTRUCTIONS AT ALL TIMES DURING AND AFTER CONSTRUCTION. AREAS WHERE PARKING IS NOT PERMITTED SHALL BE CLEARLY IDENTIFIED AT ALL TIMES. OBSTRUCTION OF FIRE LANES AND HYDRANTS MAY RESULT IN CANCELLATION OR SUSPENSION OF INSPECTIONS.
7. TEMPORARY FUEL TANKS OF 60 OR MORE GALLONS SHALL BE REVIEWED, INSPECTED, AND PERMITTED BY THE OCFA PRIOR TO USE.
8. THE PROJECT ADDRESS SHALL BE CLEARLY POSTED AND VISIBLE FROM THE PUBLIC ROAD DURING CONSTRUCTION.
9. ALL GATES IN CONSTRUCTION FENCING SHALL BE EQUIPPED WITH EITHER A KNOX OR BREAKAWAY PADLOCK.
10. BUILDINGS OF FOUR OR MORE STORIES SHALL BE PROVIDED WITH STAIRS AND A STANDPIPE BEFORE REACHING 40 FEET IN HEIGHT.
11. FIRE LANE WIDTHS SHALL BE MEASURED FROM TOP FACE OF THE CURB TO TOP FACE OF THE CURB FOR FIRE LANES WITH STANDARD CURBS AND GUTTERS AND FROM FLOW-LINE TO FLOW-LINE FOR FIRE LANES WITH MODIFIED CURB DESIGNS (E.G., ROLLED, RAMPED, ETC.). THE DEVELOPER IS RESPONSIBLE TO VERIFY THAT ALL APPROVED PUBLIC WORKS OR GRADING DEPARTMENT STREET IMPROVEMENT PLANS OR PRECISE GRADING PLANS CONFORM TO THE MINIMUM STREET WIDTH MEASUREMENTS PER THE APPROVED OCFA FIRE MASTER PLAN AND STANDARDS IDENTIFIED IN OCFA GUIDELINE B-09 FOR ALL PORTIONS OF THE FIRE ACCESS ROADS.

A ORANGE COUNTY FIRE AUTHORITY NOTES



FIRE MASTER PLAN 1" = 30'-0" 1

#	KEYNOTE DESCRIPTION
1	KNOX EMERGENCY OVERRIDE KEY SWITCH W/ DUST COVER: THE KEY SWITCH SHALL BE PLACED BETWEEN 42" TO 48" ABOVE ROADWAY SURFACE AT LEFT SIDE OF THE ACCESS GATE WITHIN 2' OF THE EDGE OF THE ROADWAY. THE KEY SWITCH SHOULD BE READILY VISIBLE AND UNOBSTRUCTED FROM THE FIRE LANE LEADING TO GATE. THE KEY SWITCH SHALL BE CLEARLY LABELED "FIRE DEPT". SEE DETAIL 1/FMP2
2	WEATHER-RESISTANT KNOX BOX: SHALL BE PLACED 4' - 8" ABOVE ROADWAY SURFACE AT THE RIGHT SIDE OF THE ACCESS GATE IN A CONSPICUOUS LOCATION THAT IS READILY VISIBLE AND ACCESSIBLE. THE KEY BOX MUST BE CLEARLY LABELED "FIRE DEPT." PER CFC 506. SEE DETAIL 2/FMP2
3	FIRE LANE STRIPING: PER OCFA GUIDELINE B-01. COORDINATE WITH OCFA AND AHJ FOR FINAL LOCATION / EXTENTS.
4	FIRE WATER RISER
5	WASTE BINS BY OWNER.
6	"FIRE LANE NO PARKING" SIGNAGE ON BOTH SIDES OF GATE, PER OCFA GUIDELINE B-01. SEE DETAIL 1/FMP2
7	"TOW AWAY ZONE" SIGN: SEE DETAIL 1/FMP2
8	MAIN FIRE ALARM CONTROL PANEL: SEE ELECTRICAL PLANS FOR ADDITIONAL INFO.
9	CURBS PAINTED RED AND LABELED "NO PARKING FIRE LANE", BOTH SIDES OF ROAD, PER OCFA GUIDELINE B-01.
10	EXISTING FIRE HYDRANT TO REMAIN AND PROTECT IN-PLACE
11	FIRE LANE 'NO PARKING' SIGN PER OCFA GUIDELINE B-01 FOR FIRE LANE. COORDINATE WITH OCFA AND AHJ FOR FINAL LOCATION / EXTENTS OF NO-PARKING LOCATIONS. SEE DETAIL 1/FMP2
12	FIRE HYDRANT BLUE REFLECTIVE MARKER. SHALL BE PLACED 6" FROM CENTER LINE OF HYDRANT SIDE OF STREET (OR AISLE, OR LANE).
13	MOTORIZED ROLLING METAL GATE PER OCFA GUIDELINE B-01 AND IRVINE UNIFORM SECURITY CODE SECTION 5-9-519 EMERGENCY ACCESS. SEE DETAIL 1/FMP2. REFER TO ELECTRICAL AND TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION. 3/A52.1
14	FIRE LANE ENTRANCE SIGN PER OCFA GUIDELINE B-01 FOR FIRE LANE COORDINATE WITH OCFA AND AHJ FOR FINAL LOCATION / EXTENTS OF NO-PARKING LOCATIONS. SEE DETAIL 1/FMP2
15	MOUNTABLE HYDRANT AND BOLLARDS PER OCFA GUIDELINE B-01. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.

C2E	'CLICK-2-ENTER' PER OCFA GUIDELINE B-01 FOR FIRE DEPARMENT ACCESS. REFER TO TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
KB	KNOX KEYSWITCH PER OCFA GUIDELINE B-01 FOR FIRE DEPARMENT ACCESS. REFER TO TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
IC	INTERCOM PER OCFA GUIDELINE B-01 FOR FIRE DEPARMENT ACCESS. REFER TO TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
CR	CARD READER. REFER TO TECHNOLOGY PLANS FOR ADDITIONAL INFORMATION.
•	CURB RADIUS DIMENSION PER CIVIL PLANS.

A SITE PLAN KEYNOTES & LEGEND

PROJECT DESCRIPTION:
NEW TYPE V-B ONE-STORY MAINTENANCE FACILITY FOR THE IRVINE GREAT PARK, OWNED AND OPERATED BY THE CITY OF IRVINE, LOCATED AT THE INTERSECTION OF SKYHAWK AND GREAT PARK BLVD. MAIN BUILDING INCLUDES AN OFFICE, MECHANICAL SHOP AND STORAGE ROOM, AND RELATED SUPPORT ROOMS. PARK MAINTENANCE EQUIPMENT TO BE PARKED UNDER THE CANOPY ATTACHED TO THE MAIN BUILDING. A DETACHED CANOPY STRUCTURE COVERS A FUEL STORAGE (4 LARGEST TANK: 1,000 GALLONS) AND DISPENSING AREA. A DETACHED COVERED ENCLOSURE FOR VEHICLE WASH AREA. DETACHED OPEN-TO-SKY ENCLOSURES FOR STORAGE OF PALLETS, MULCH, DIRT. DEDICATED AREA IN OPEN YARD FOR LARGE WASTE CONTAINERS. NEW FIRE HYDRANT ON GREAT PARK BLVD. EMPLOYEE PARKING SPACES PROVIDED. FLEET VEHICLE PARKING, INCLUDING ELECTRIC VEHICLE PARKING, PROVIDED WITHIN SITE WALLS. CLIMATE ZONE 8.

PARCEL/TRACT # 2016-152 / 00522051-PTT (AVTTM 17008)
LOT # 01 / L OF 2ND AVTTM

CODE ANALYSIS
SEE SHEET GEN-2 FOR COMPLETE CODE ANALYSIS INCLUDING AREA TABULATIONS.

PROJECT SUMMARY

FIRE ORANGE COUNTY REVIEWED CALIFORNIA AUTHORITY 25001447 FOR CODE COMPLIANCE

CITY OF IRVINE - GREAT PARK
LANDSCAPE MAINTENANCE FACILITY
901 SKYHAWK IRVINE, CA 92618
PLAN CHECK SUBMITTAL# 2

LICENSED ARCHITECT ROBERT M. SIMON No. C-17601 JAN 31, 2026 STATE OF CALIFORNIA

REVISIONS:

	DESCRIPTION	DATE
A	City PC #2	6/25/2025

PROJECT NO: 2023-40108
DATE ISSUED: JUNE 25, 2025
SCALE: As indicated
SHEET NUMBER: FMP2
SHEET TITLE: FIRE MASTER PLAN

SVA ARCHITECTS
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