

POLYTECHNIC HIGH SCHOOL  
IMPROVEMENTS

**Addendum – 01**  
**A#03-125644 file 19-15**  
**(06/17/26)**

Prepared By: 10760 4th Street, Suite 200  
Rancho Cucamonga, CA 91730

PBK Project No.: 240469

**NOTICE TO BIDDERS:**

- A. Receipt of this Addendum shall be acknowledged on the Proposal Form.
- B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
- C. Each proposer shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

**SPECIFICATIONS**

- Item No. 01: 04 01 23 – Masonry Cleaning
  - A. Spec section has been removed. TOC has been updated.
- Item No. 02: 11 30 13 – Residential Appliances
  - A. Spec section has been added. TOC has been updated.
- Item No. 03: 13 34 23 – Pre-Engineered Modular Buildings – Responsibility Matrix
  - A. See updated.
- Item No. 04: 22 00 00 – General Plumbing Provisions
  - A. Spec section has been added.
- Item No. 05: 22 00 01 – Plumbing
  - A. Spec section has been added.
- Item No. 06: 26 56 68 – Exterior Athletic Lighting
  - A. Spec section has been added. TOC has been updated.
- Item No. 07: 32 92 31 – Playing Field Contractor Qualifications
  - A. Spec section has been updated.

**DRAWINGS**

**CIVIL**

Addendum No. 01

Item No. 08: Sheet C202  
A. Grading at the southwest corner of the field (Softball infield) has been revised to be 0.0% instead of 1.5%.

Item No. 09: Sheet C205  
A. 5 New site drains (12" x 12") on the field.  
B. 55 In-ft New 6" HDPE Storm drain line

#### **LANDSCAPE**

Item No. 10: Sheet L3.01  
A. Lateral layout connected to 3 RCVs #9, #10, & #11 has been revised.

#### **DEMOLITION**

Item No. 11: Sheet DA010  
A. Demolition Site Plan has been updated with newly added keynotes D3.02 & D3.06 at the south-east side and detail lines.  
B. Note 20 has been added to GENERAL DEMOLITION NOTES.

Item No. 12: Sheet DA012  
A. Keynote D2.14 has been added.

#### **ELECTRICAL**

Item No. 13: Sheet E1.1  
A. Revisions were made to the sheet.  
B. Keynote 8 has been removed.

#### **TECHNOLOGY**

Item No. 14: Sheet T0.01  
A. Detail 3 has been added.

Item No. 15: Sheet T6.2  
A. Detail 3 has been added.

#### **SCOREBOARD**

Item No. 16: Sheet SB5.1  
A. Correct Non applicable details have been crossed out.

Item No. 17: Sheet SB5.2  
A. Correct Non applicable details have been crossed out.

**END OF ADDENDUM - 01**

## *Project Manual Cover Sheet and Seal Page.*

### **DOCUMENT 00 01 10 TABLE OF CONTENTS**

#### **DIVISION 00 BIDDING AND CONTRACT REQUIREMENTS**

00 00 00	Project Manual Cover and Seals
00 01 10	Table of Contents

#### **DIVISION 1 GENERAL REQUIREMENTS**

01 11 00	Summary of Work
01 12 10	Contract Forms and Submittals
01 20 00	Price and Payment Procedures
01 21 00	Allowances
01 23 00	Alternates and Unit Pricing
01 25 10	Product Options and Substitutions
01 26 00	Contract Modifications Procedures
01 26 10	Requests for Information
01 31 00	Coordination and Project Meetings
01 32 16	Construction Schedule – Network Analysis
01 33 00	Submittals
01 40 00	Quality Requirements
01 42 13	Abbreviations and Acronyms
01 42 16	General Definitions and References
01 45 23	Testing and Inspecting Services
01 45 24	Environmental Import Materials Testing
01 45 25	Environmental Export Materials Testing
01 45 29	Testing Laboratory Services
01 50 00	Temporary Facilities and Controls
01 52 10	Site Standards
01 57 13	Erosion Control
01 57 23	Storm Water Pollution Prevention Plan
01 60 00	Materials and Equipment
01 66 10	Delivery, Storage and Handling
01 71 23	Field Engineering
01 73 00	Execution
01 73 10	Cutting and Patching
01 74 19	Construction Waste Management and Disposal
01 77 00	Contract Closeout and Final Cleaning
01 78 23	Operation and Maintenance Data
01 78 36	Warranties
01 78 39	Record Documents
01 91 00	Commissioning

#### **DIVISION 2 EXISTING CONDITIONS**

02 41 16	Structure Demolition
----------	----------------------

**DIVISION 3 CONCRETE**

03 02 00	Concrete Resurfacing, Repair, and Moisture Vapor Mitigation
03 10 00	Concrete Forming and Accessories
03 20 00	Concrete Reinforcing
03 30 00	Cast-In-Place Concrete

**DIVISION 4 MASONRY**

04 01 23	Masonry Cleaning
----------	------------------

**DIVISION 5 METALS**

05 12 00	Structural Steel Framing
05 12 13	Architecturally Exposed Structural Steel Framing
05 31 00	Steel Decking
05 40 00	Cold-Formed Metal Framing
05 50 00	Metal Fabrications
05 52 00	Metal Railings

**DIVISION 6 WOOD, PLASTICS, AND COMPOSITES**

06 10 00	Rough Carpentry
06 20 00	Finish Carpentry and Millwork
06 61 16	Solid Surfacing Fabrications
06 73 00	Composite Decking
06 83 16	Fiberglass Reinforced Paneling

**DIVISION 7 THERMAL AND MOISTURE PROTECTION**

07 19 00	Water Repellents
07 41 13	Metal Roof Panels
07 52 16	SBS Modified Bituminous Membrane Roofing
07 62 00	Sheet Metal Flashing and Trim
07 72 00	Roof Accessories
07 84 00	Firestopping
07 92 00	Joint Sealants

**DIVISION 8 OPENINGS**

08 11 13	Hollow Metal Doors and Frames
08 31 13	Access Doors and Frames
08 33 23	Overhead Coiling Doors
08 51 13	Aluminum Windows
08 71 00	Door Hardware
08 80 00	Glazing

**DIVISION 9 FINISHES**

09 21 16	Gypsum Board Assemblies
09 24 23	Cement Plaster and Metal Lath
09 30 00	Tiling
09 50 00	Acoustical Ceiling Panels
09 90 00	Painting
09 96 00	High Performance Coatings
09 96 23	Graffiti-Resistant Coatings

**DIVISION 10 SPECIALTIES**

10 14 00	Signage
10 21 13	Toilet Compartments
10 28 13	Restroom Accessories

**DIVISION 11 EQUIPMENT**

11 30 13	Residential Appliances
----------	------------------------



11 66 43	Electronic Scoreboard
11 68 33.23	Athletic Field Equipment
11 68 53	Outdoor Baseball and Softball Equipment

## DIVISION 12 FURNISHINGS

## DIVISION 13 SPECIAL CONSTRUCTION

11 30 13	Residential Appliances
13 34 16.53	Bleachers
13 34 23.01	Pre-Engineered Modular Buildings – Responsibility Matrix

## DIVISION 14 CONVEYING EQUIPMENT

## DIVISION 21 FIRE SUPPRESSION

## DIVISION 22 PLUMBING

22 00 00	General Plumbing Provisions
22 00 01	Plumbing

## DIVISION 23 MECHANICAL

## DIVISION 26 ELECTRICAL

26 05 00	Common Work Results for Electrical
26 05 19	Low-Voltage Electrical Power Conductors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 33	Raceway and Boxes for Electrical Systems
26 05 53	Identification of Electrical Systems
26 20 00	Electrical Distribution Equipment
26 27 26	Wiring Devices
26 33 23	Central Battery Equipment for Emergency Lighting
26 51 00	Interior Lighting
26 56 00	Exterior Lighting
26 56 68	Exterior Athletic Lighting

## DIVISION 27 COMMUNICATIONS

27 10 00	Structured Cabling
27 20 00	Data Communications Active Infrastructure
27 51 26	Assistive Listening Systems

## DIVISION 28 ELECTRONIC SAFETY AND SECURITY

28 16 00	Intrusion Detection
28 23 00	Digital Video Surveillance
28 31 00	Fire Detection and Alarm

## DIVISION 31 EARTHWORK

31 11 00	Site Clearing
31 20 00	Earthwork
31 22 15	Finish Grading
31 23 33	Trench Excavation and Backfill

## DIVISION 32 EXTERIOR IMPROVEMENTS

32 11 23	Aggregate Base
32 12 16	Asphalt Concrete Paving
32 12 36	Seal Coats
32 13 13	Concrete Paving

32 13 15	Site Concrete Improvements
32 17 23	Pavement Markings
32 18 23	Infield for Softball Fields
32 31 13	Chain Link Fences and Gates
32 31 13.34	Sports Field Barrier Netting
32 31 19	Decorative Metal Fences and Gates
32 84 00	Planting Irrigation
32 91 13	Natural Turf Playing Field Soil Preparation
32 92 00	Lawns and Grasses
32 92 31	Playing Field Contractor Qualifications
32 93 00	Planting
32 94 00	Landscape Grounds Maintenance for Ninety Days

#### **DIVISION 33 UTILITIES**

33 11 00	Site Water Distribution Utilities
33 30 00	Site Sanitary Sewer Systems
33 42 11	Stormwater Gravity Piping and Inlets

**END OF SECTION 00 01 10**

## SECTION 11 30 13 RESIDENTIAL APPLIANCES

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Requirements including but not limited to:
  - 1. Residential appliances
  - 2. Appliance coordination including service connections, supply lines, and power.
  - 3. Accessories necessary for a complete installation.
- B. Related Divisions:
  - 1. Division 22: Plumbing.
  - 2. Division 23: Mechanical.
  - 3. Division 26: Electrical.



#### 1.2 SUBMITTALS

- A. Product Data: Technical data including product specifications, installation, and maintenance instructions.
- B. Product Certificates: Submit certificate from product manufacturer stating compliance with requirements and intended use of product.
- C. Warranties: Submit manufacturer warranty indicated product is warranted in a light commercial application.
- D. Operation and Maintenance Data: Submit for each residential appliance to include in operation and maintenance manuals.

#### 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Accessibility Requirements: Comply with applicable requirements.
    - a. Americans with Disabilities Act of 1990 (ADA), as amended.
      - 1) ADA Title II Regulations & the 2010 ADA Standards for Accessible Design
    - b. 2022 California Building Code (CBC):
      - 2) CBC Chapter 11B, Access to Public Buildings, Public Accommodations, Commercial Buildings and Public Housing.
  - 2. NFPA: Provide electrical appliances listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  - 3. UL and NEMA: Provide electrical components required as part of residential appliances that are listed and labeled by UL and that comply with applicable NEMA standards.
  - 4. Energy Ratings: Provide energy efficient appliances that carry labels indicating energy cost analysis (estimated annual operating costs) and efficiency information.
- B. Product Options: Information on Drawings and in Specifications establishes requirements for product's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more

methods including preconstruction testing, field testing, and in-service performance.

- C. Source Limitations: Obtain light commercial appliances from single source and each type of light commercial appliance from single manufacturer.
- D. Preinstallation Conference: Conduct conference at site.

#### 1.4 WARRANTY

- A. Warranties: Written warranty signed by manufacturer in which manufacturer of the specific appliance specified agrees to repair or replace appliances or components that fail in materials or workmanship within specified warranty period.
  - 1. Provide appliance and equipment rated for light commercial grade or higher. Residential appliances are not acceptable unless manufacturer warrants residential units in a commercial application and only with Architect's approval.
- B. Electric Range: Full warranty, including parts and labor, for on-site service on surface burner elements.
  - 1. Warranty Period: Two years from date of Substantial Completion.

### PART 2 PRODUCTS

#### 2.1 APPLIANCES

- A. Manufacturers: Provide basis of design product or comparable by one of the specified manufacturers.
  - 1. Utility
- B. Refrigerator:
  - 1. Manufacturer: Utility
    - a. Frigidaire <https://www.utilityrefrigerator.com/products/solid-door-two-section-refrigerator>
    - b. Or Approved Equal
  - 2. Finish: Stainless Steel
  - 3. Capacity: 18 (cu. ft)
  - 4. Size: 28 inch depth, 30 inch width, and 84 inch high
  - 5. Model: R-30-SS-1S-N
  - 6. UL Listed/ or ETL Sanitation Listed Frigidaire

#### 2.2 FINISHES

- A. Comply with NAAMM *Metal Finishes Manual for Architectural and Metal Products* for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Stainless Steel Finish: Provide appliances with standard finish complying with manufacturer's written instructions for surface preparation including ground and polished stainless steel surfaces for uniform, directionally textured finish.

### PART 3 EXECUTION

### **3.1 EXAMINATION**

- A. Examine conditions for compliance with requirements for installation tolerances and conditions affecting performance of work. Coordinate installation of equipment, appliances, fixtures, and other items.
  - 1. Examine roughing in for piping systems and verify actual locations of piping connections before equipment installation.
  - 2. Examine electrical circuits and rating and verify locations and sufficient ratings for items requiring electrical power.
  - 3. Examine space to receive items and verify the space is of sufficient size and configuration for items.
- B. Proceed with installation after correcting unsatisfactory conditions.

### **3.2 INSTALLATION**

- A. Comply with manufacturer's written instructions. Install fixtures level and plumb according to roughing in drawings.
- B. Power Supply: Coordinate power supply, grounding, outlets, and electrical wiring with locations indicated for appliances and equipment.
- C. Built in Equipment: Securely anchor units to supporting cabinets or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.
- D. Freestanding Equipment: Place units in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.
- E. Appliance Antitip Device: Install at each appliance according to manufacturer's written instructions.
- F. Utilities: Refer to plumbing and electrical sections for plumbing and electrical requirements.
- G. Connections and Hook ups: Coordinate location of services.
  - 1. Grounding: Ground equipment in accordance with applicable standards and code requirements.
  - 2. Wiring: Connect wiring in accordance with manufacturer recommendations.
  - 3. Provide necessary electrical outlets.

### **3.3 FIELD QUALITY CONTROL**

- A. Perform the following tests and inspections with the assistance of a factory authorized service representative:
  - 1. Perform visual, mechanical, and electrical inspection and testing for each appliance according to manufacturer written recommendations. Certify compliance with each manufacturer appliance performance parameters.
  - 2. Leak Test: After installation, test for leaks. Repair leaks and retest until no leaks exist.
  - 3. Operational Test: After installation, start units to confirm proper operation.
  - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and components.
- B. An appliance will be considered defective if it does not pass tests and inspections.

- C. Prepare test and inspection reports.
- D. Test each equipment item to verify proper operation. Make necessary adjustments. Replace malfunctioning appliances and components, then retest. Repeat procedure until units operate properly.

### **3.4 TESTING AND ADJUSTING**

- A. Test each equipment item to verify proper operation. Make necessary adjustments. Replace malfunctioning appliances and components, then retest. Repeat procedure until units operate properly.

### **3.5 CLEANING**

- A. Clean equipment with manufacturers' recommended cleaning methods and materials. After completing installation of equipment and fixtures, inspect exposed finishes and repair damaged finishes. Remove packing materials from site.

### **3.6 PROTECTION**

- A. Provide protective covering for installed appliances. Do not allow use of equipment items for temporary facilities.

### **3.7 DEMONSTRATION**

- A. Engage a factory authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain residential appliances.

**END OF SECTION 11 30 13**

<b>Responsibility Matrix</b> <b>Long Beach Unifies School District – Poly High School</b>				
<b>Description</b>	<b>General Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
<b>Division 01 – General Requirements:</b>				
<u>All Work Within the Perimeter of the Modular Building</u>		X		Low voltage, design, and installation.
<u>All Work Outside the Perimeter of the Modular Buildings Not Specifically Identified Below</u>	X			
Full-Time Supervision for Crew Onsite	X			
Temporary Facilities:				
Temporary Site Fencing	X			
Field Office for Inspector and CM	X			Optional field office and Space.
Temporary Power Service	X			
Gas and Electrical Utility Charge for Start-Up and Testing	X			
Temporary Water	X			
Temporary Fire Water	X			
<b>Division 02 – Existing Conditions:</b>				
Site Demo and Excavation	X			
Rough Grading	X			
Finish Grading and Re-Grading After the Form Work is Removed by the Modular Contractor	X			Modular Contractor to coordinate ALL utilities hook-up with Site Contractor
Site Fencing	X			
Asphalt Concrete:				
Driveways/Parking	X			
Walkways	X			
Striping	X			

Description	Site Contractor	Modular Contractor	Others	Comments
Site Concrete:				
Mow Strips	X			
Site Flat Work	X			Modular Contractor to coordinate with Site Contractor for placement of stairs and Ramps, including bottom of ramp/stair accessible pads.
Curb and Gutter	X			
Condenser Pads (if applicable)	X			Modular Contractor to coordinate with Site Contractor for placement.
Storm Drains:				
Site	X			
Storm Drain to RWL	X			
Connect RWL to SD	X			
Gas Service:				
Gas Service to Meter Incl. Trenching	N/A			
Gas Service to Meter	N/A			
Gas Meter	N/A			
Gas Line to Buildings	N/A			
Housekeeping Pad for Gas Meter (if applicable)	N/A			
Regulator at Buildings	N/A			
SOV at Buildings	N/A			
Domestic Water:				
Water Service to Meter Inc. Trenching	X			
Water Service to Meter	X			
Water Service (within 5' of buildings)	X			
SOV at Buildings	X			
Connect to Buildings	X			
Chlorination – Site Lines	X			



<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Chlorination – Building Lines	X			
Sanitary Sewer:				
Site to Modular POC	X			
Cleanouts at POC	X			
Connections at Building	X			
<b>Division 03 – Concrete:</b>				
Building Slab:				
Design (Geotech Report by Others)		X		
Over-Excavation and Pad Prep with Certified Pad	X			
Surveying and Foundation Staking	X			
Dig Footings	X			
Off-Haul Footing Spoils	X			
Footings and Required Stem Walls	X			GC RESPONSIBLE TO PROVIDE AND INSTALL EMBEDS (REF 10/F2.50)
Retaining Walls	X			
<b>Division 05 – Metals:</b>				
Design		X		
Steel Framing		X		
Stair Structures (if applicable)				N/A
DI Grates	X			
DF Rails on New Building	X			
DF Rails at Site DFs	X			
Canopies, Trellis'		X		
<b>Division 06 – Wood, Plastics, and Composites:</b>				
Wall Framing		X		
Building Insulation		X		
Interior Trim		X		
Exterior Stucco System		X		

Description	Site Contractor	Modular Contractor	Others	Comments
<b>Division 07 – Thermal and Moisture Protection:</b>				
Roofing:		X		
Gutters and Downspouts		X		
Roof Drains/Scuppers		X		MODULAR CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR PLACEMENT
Skirt Flashing	X			
<b>Division 08 – Openings:</b>				
Doors and Hardware		X		
Windows		X		INCLUDING TRANSACTION WINDOW
Storefront/Curtain Walls (if required)				N/A
Skylights (Solatubes)				N/A
Roll-Up Doors		X		
Room Partitions		X		
<b>Division 09 – Finishes:</b>				
Acoustic Ceilings		X		
Drywall		X		
Ceramic Tile (if required)		X		
FRP Wall Finish (if required)		X		
Lath and Plaster (if required)		X		
Wood or Hardie Siding (if required)				N/A
Tackboard (if required)				N/A
Flooring – Carpet/VCT/Lino		X		
Finish Painting		X		
<b>Division 10 – Specialties:</b>				
Site Sunshades				N/A
Toilet Partitions		X		TO BE PROVIDED BY SCM
Toilet Accessories		X		TO BE PROVIDED BY SCM
Building Fire Extinguishers		X		TO BE PROVIDED BY SCM
Soap Dispenser, Feminine Hygiene Dispenser and Disposal (OF/CI)	X			

1

<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Building ID and ADA Signage	X			
<b>Division 11 – Equipment:</b>				
Food Service Equipment	X			
Projection Screens				N/A
Laboratory Equipment				N/A
<b>Division 12 – Furnishings:</b>				
Casework and Countertops		X		
Window Coverings (if required)				N/A
Furniture				N/A
<b>Division 13 – Special Construction:</b>				
Modular Buildings:				
Design and Engineering, Structural, and MEP		X		
Manufacture Buildings		X		
Deliver, Set, and Connect Including Welding		X		
All Finishes		X		
Elevator (if required)				N/A
<b>Division 23 – Heating, Ventilating, and Air Conditioning (HVAC):</b>				
Design		X		
HVAC Equipment		X		
All Building Plumbing and Trim		X		
Condensate Drain and Drywell	X			
Drinking Fountains at Modular Buildings		X		
Freestanding Drinking Fountains	X			

<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Energy Management System/BMS	X			PATHWAY TO BE PROVIDED BY SCM
Fire Sprinkler Design (if required)				N/A
Fire Sprinkler System (if required)				N/A
Fire Service – Underground to Above Floor				N/A
Fire Riser				N/A
Flow and Tamper Switches				N/A
Site Hydrants	X			N/A
<b>Division 26 – Electrical:</b>				
Design – Power and Lighting		X		
Transformers in Building (if required)	X			
MDP in Building		X		
Subpanels in Building		X		
Power Feeders to Buildings	X			Coordinate with Modular Contractor.
Power in Building, Plugs/Switches		X		
Lighting		X		BUILDING LIGHTING (GC TO PROVIDE SITE LIGHTING AND MUSCO)
Grounding, Install and Test	X			
Site Power, Power to Building and Site Lighting	X			
Integration and Networking to BMS	X			
Solar System/Array				N/A
Telephone/Telecom Systems:				
Design				
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			

Telephone System and Testing		X		SCM TO PROVIDE PATHWAY
<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Data:				
Design				
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Data Equipment and Cabling	X			
IDF Cabinet	X			
Power for IDF		X		
Clock/Bell/Intercom:				
Design				
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Equipment and Cabling	X			
Fire Alarm:				
Design				
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
All Fire Alarm Control and Annunciator Panels	X			
Power for FACP/FAEP (in modular buildings)		X		
Fire alarm devices		X		
Security System:				
Design				
Empty Conduit and Back Boxes in Building		X		
<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Cameras and Equipment	X			

## **SECTION 22 00 00 GENERAL PLUMBING PROVISIONS**

### **PART 1 GENERAL**

#### **1.1 GENERAL CONDITIONS**

- A. The foregoing General and Special Conditions shall form a part of this Division with the same force and effect as though repeated herein. The provisions of this Section shall apply to all the Sections of Division 22.

#### **1.2 CODES AND REGULATIONS**

- A. All work and materials shall be in full accordance with current rules and regulations of applicable codes and all California Amendments. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes. Should the drawings or specifications call for material or methods of construction of a higher quality or standard than required by these codes, the specifications shall govern. Applicable codes and regulations are:
1. California Code of Regulations – CCR:
    - a. Title 8, Industrial Relations.
    - b. Title 24, Building Standards.
  2. California Building Code – CBC.
  3. California Mechanical Code – CMC.
  4. California Plumbing Code – CPC.
  5. California Fire Code – CFC.
  6. California Green Building Code.
  7. American Gas Association – AGA.
  8. American National Standards Institute – ANSI.
  9. American Society of Heating, Refrigerating and Air Conditioning Engineers – ASHRAE.
  10. American Society of Mechanical Engineers – ASME.
  11. American Society for Testing and Materials – ASTM.
  12. American Water Works Association – AWWA.
  13. Cast Iron Soil Pipe Institute – CISPI.
  14. California Electrical Code – CEC.
  15. National Electrical Manufacturers Association – NEMA.
  16. National Fire Protection Association – NFPA.
  17. National Sanitation Foundation – NSF.
  18. Plumbing and Drainage Institute – PDI.
  19. Sheet Metal and Air Conditioning Contractors National Association – SMACNA.
  20. Underwriters' Laboratory – UL.
  21. Occupational Safety and Health Act - OSHA.
  22. California Assembly Bill 1953 (AB1953).
  23. ASCE 7-16, Chapter 13.

#### **1.3 PERMITS AND FEES**

- A. The Contractor shall take out all permits and arrange for all tests in connection with his work as required by local ordinances. All charges are to be included in the work. Permits for equipment connected to a particular system are to be considered as a part of the work included under each system; for example, permits for electric motor connection are part of electrical work, permits for domestic water or gas connections are part of plumbing work. All charges for service connections, meters, etc. by utility companies shall be included in the work.

#### **1.4 COORDINATION OF WORK**

- A. Layout of materials, equipment and systems is generally diagrammatic unless specifically dimensioned. The actual locations of all materials, piping, fixtures, equipment, supports, etc. shall be carefully planned, prior to installation of any work, to avoid all interferences with each other, or with structural, electrical or architectural elements. Verify the proper voltage and phase of all equipment with the electrical plans. All conflicts shall be called to the attention of the Engineer prior to the installation of any work or the ordering of any equipment.

#### **1.5 GUARANTEE**

- A. Guarantee shall be in accordance with the General Conditions. These specifications may extend the period of the guarantee for certain items. Where such extensions are called for, or where items are normally provided with guarantee periods in excess of that called for in the General Conditions, the Certificate of Guarantee shall be furnished to the Owner through the Engineer.

#### **1.6 EXAMINATION OF SITE**

- A. The Contractor shall examine the site, compare it with plans and specifications, and shall have satisfied himself as to the conditions under which the work is to be performed. No allowance shall subsequently be made in his behalf for any extra expense to which he may be put due to failure or neglect on his part to make such an examination.

#### **1.7 SUBMITTALS**

- A. Submit shop drawings in accordance with Division 01.
- B. Shop Drawings: Within 30 days of contract award, the Contractor shall submit six copies of shop drawings for all materials, equipment, etc. proposed for use on this project. Material and equipment shall not be ordered or installed until written review is processed by the Engineer. Any item omitted from the submittal shall be provided as specified without substitution. All shop drawings must comply with the following:
  - 1. Shop drawings are required for all material and equipment items and shall include manufacturer's name and catalog numbers, dimensions, capacities, performance curves, and all other characteristics and accessories as listed in the specifications or on the drawings. Descriptive literature shall be current factory brochures and submittal sheets. Capacities shall be certified by the factory.
  - 2. All shop drawings shall be submitted at one time in a neat and orderly fashion in a suitable binder with title sheet including Project, Engineer and Contractor; Table of Contents; and indexed tabs dividing each group of materials or item of equipment. All items shall be marked with the specification paragraph number for which they are proposed. All equipment shall also be identified by the mark number as indicated on the drawings.
  - 3. All capacities, characteristics, and accessories called for in the specifications or on the drawings shall be highlighted, circled, or underlined on the shop drawings. Calculations and other detailed data indicating how the item was selected shall be included for items that are not scheduled. Data must be complete enough to permit detailed comparison of every significant characteristic which is specified, scheduled, or detailed.
- C. Substitutions: Manufacturers and model numbers listed in the specifications or on the drawings represent the standard of quality and the features desired. Unless otherwise

noted, alternate manufacturers may be submitted for review by the Engineer. Calculations and other detailed data indicating how the item was selected shall be included. The Contractor shall assume full responsibility that substituted items or procedures will meet the specifications and job requirements and shall be responsible for the cost of redesign and modifications to the work caused by these items.

- D. Review: Submittals will be reviewed for general conformance with the design concept, but this review does not guarantee quantity shown, nor does it supersede the responsibility of the Contractor to provide all materials, equipment, and installation in accordance with the drawings and specifications. The Contractor shall agree that shop drawing submittals processed by the Engineer are not Change Orders; that the purpose of shop drawing submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design concept; that he demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods he intends to use. The Contractor shall agree that if deviations, discrepancies or conflicts between shop drawings and design drawings and specifications are discovered either prior to or after shop drawing submittals are processed by the Engineer, the design drawings and specifications shall control and shall be followed.

## 1.8 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Submit one electronic pdf copy for review and after approved submit three hard copies of the Operation and Maintenance Instructions and Wiring Diagrams for all equipment and parts lists for all equipment, etc. shall be submitted to the Engineer. All instructions shall be clearly identified by marking them with the same designation as the equipment item to which they apply (e.g. WH-1). All wiring diagrams shall agree with revised shop drawings and indicate the exact field installation. All instructions shall be submitted at the same time and shall be bound in a suitable binder with tabs dividing each type of equipment (e.g. Water Heaters, Pumps, Motors, etc.). Each binder shall be labeled indicating "Operating and Maintenance Instructions, Project Title, Contractor, Date" and shall have a Table of Contents listing all items included. **(These submittals shall be submitted with regular submittals at start of job so Commissioning Contractor can start on the commissioning check list for Title 24 Requirements)**
- B. Verbal: The Contractor shall verbally instruct the Owner's maintenance staff in the operation and maintenance of all equipment and systems. The controls contractor shall present that portion of the instruction that applies to the control system. The Engineer's office shall be notified 96 hours prior to this meeting.
- C. Acknowledgment: The Contractor shall prepare a letter indicating that all operation and maintenance instructions (printed, verbal and posted) have been given to the Owner, to the Owner's satisfaction. This letter shall be acknowledged (signed) by the Owner and submitted to the Engineer.

## 1.9 RECORD DRAWINGS

- A. The Contractor shall maintain a set of prints for the project as a record of all construction changes made. As the Work progresses, the Contractor shall maintain a record of all deviations in the Work from that indicated on the drawings. Final location of all underground work shall be recorded by depth from finished grade and by offset distance from permanent surface structures, i.e. buildings, curbs and walks. In addition, the water, gas, sewer, etc. within the building shall be recorded by offset distances from building walls. The original drawings will be made available to the Contractor from which he shall have a set of reproducible drawings made. The Contractor shall then transfer the changes, notations, etc. from the marked-up prints to the reproducible drawings. The record drawings (marked-up



prints and reproducibles) shall be submitted to the Engineer for review (as an alternative, the marked-up prints may be photocopied full size on reproducible stock).

## **PART 2 PRODUCTS**

### **2.1 PROTECTIVE COATING FOR UNDERGROUND PIPING**

- A. All ferrous pipe below grade (except cast iron) shall have a factory applied protective coating of extruded high density polyethylene, 35 to 70 mils total thickness, X-Tru Coat, Scotchkote. All fittings and areas of damaged coating shall be covered with two layer double wrap of 10 mil polyvinyl tape to total thickness of 40 mils. Manville Corporation. Protective coating shall be extended 6" above surrounding grade.

### **2.2 CONCRETE ANCHORS**

- A. Concrete Anchors shall comply with CBC 1901A.3. Steel stud with expansion anchor requiring a drilled hole; powder driven anchors are not acceptable. Minimum concrete embedment shall be 4-1/2 diameters. Minimum spacing shall be 10 diameters center-to-center and 5 diameters from center to edge of concrete. Maximum allowable stresses for tension and shear shall be 80% of the test report values "with special inspection". Anchors shall be Hilti, Philips - or Approved equal.

### **2.3 SEISMIC RESTRAINTS**

- A. All plumbing systems (all equipment, piping, etc.) shall be provided with seismic restraints in accordance with "Seismic Restraint Systems Guidelines" OPM-0052-13 by Eaton/ Tolco.

### **2.4 SYSTEM IDENTIFICATION**

- A. Above Grade Piping: Provide markers on piping which is either exposed or concealed in accessible spaces. For piping systems, other than drain and vent lines, indicate the fluid conveyed or its abbreviation, either by preprinted markers or stenciled marking, and include arrows to show the direction of flow. Comply with ANSI A13.1 for colors. Locate markers at ends of lines, near major branches and other interruptions including equipment in the line, where lines pass through floor, walls or ceilings or otherwise pass into inaccessible spaces, and at 50' maximum intervals along exposed portion of lines. Marking of short branches and repetitive branches for equipment connections is not required.
- B. Equipment: All equipment shall be identified with a plastic laminated, engraved nameplate which bears the unit mark number as indicated on the drawings (e.g. WH-1). Provide 1/2" high lettering, white on black background. Nameplates shall be permanently secured to the unit.
- C. Valves: Provide valve tags on all valves of each piping system, excluding check valves, valves within equipment, faucets, stops and shut-off valves at fixtures and other repetitive terminal units. Provide brass tags or plastic laminate tags. Prepare and submit a tagged valve schedule, listing each valve by tag number, location, and piping service. Mount in glazed frame where directed.

### **2.5 EQUIPMENT SUPPORT FRAMES**

- A. Unless specifically noted otherwise, it shall be the responsibility of Plumbing Contractor to furnish and install all support frames for its equipment.

## **PART 3 EXECUTION**

### **3.1 SCHEDULING OF WORK**

- A. All work shall be scheduled subject to the approval of the Engineer and Owner. No work shall interfere with the operation of the existing facilities on or adjacent to the site.

### **3.2 CONDUCT OF WORK**

- A. The Contractor shall have at all times, as conditions permit, a sufficient force of workmen and quantity of materials to install the work contracted for as rapidly as possible consistent with good work and shall cause no delay to other Divisions engaged upon this project or to the Owner.
- B. Plumbing Contractor shall arrange for all cutting necessary for the proper installation of its work, providing all sleeves and chases necessary. Cutting shall not be done in such a manner to impair the strength of the structure. Any damage resulting from work shall be repaired by the Contractor at his expense to the satisfaction of the Engineer.
- C. Progressively, daily at the completion of each day's work, and at completion of the job, the Contractor shall thoroughly clean all of his work, removing all debris, stain and marks resulting from his work.
- D. **IAQ Management plan will be in effect for Cal Green requirements. Adhesives and mastic must comply with low VOC requirements and documentation (MSDS, etc.) shall be provided with submittals.**

### **3.3 EXCAVATION AND BACKFILL**

- A. Excavation: Trenches are to be excavated to grade and depth established by drawings. Unless otherwise noted, minimum earth cover above top of pipe shall be 24", not including base and paving in paved areas. Width of trenches at top of pipe shall be a minimum of 16" plus the outside diameter of the pipe. Provide all shoring required by site conditions. Barrel of pipe shall have uniform support on trench bottom, hand excavate additional depth at bells, hubs, and fittings. Where over-excavation occurs, provide compacted selected backfill to pipe bottom. Where ground water is encountered, remove to keep excavation dry, using well points and pumps as required.
- B. Backfill:
  - 1. Around Pipe and to One Foot Above Pipe: Material shall be river run sand or native granular free flowing material, free of clay lumps, silt or vegetable matter and shall have 100% passing through the No. 4 sieve and a maximum of 3% passing through the No. 200 sieve. Place carefully around and on top of pipe, taking care not to disturb piping. Consolidate with vibrator.
  - 2. One Foot Above Pipe to Grade: Material to be sandy or silty loam, free of lumps, laid in 6" layers, uniformly mixed, to proper moisture and compacted to required density. If backfill is determined to be suitable and required compaction is demonstrated by laboratory test, water compaction in 6" layers may be used, subject to approval by the Engineer.
  - 3. Remove all water sensitive settlement from trench backfill regardless of location and compaction requirements.
- C. Compaction: Compact to a density of 95% within building and 90% outside building. Demonstrate proper compaction by testing at one-half of the trench depth. Perform three

tests per 100' of trench.

### **3.4 OPENINGS, CUTTING AND PATCHING**

- A. The locations and dimensions for openings through walls, floors, ceilings, foundations, footings, etc. required to accomplish the work under this Specification Division shall be provided under this Division. The actual openings and the required cutting and patching shall be provided. Coring through existing concrete or masonry walls, floors, ceilings, foundations, footings, etc., and saw cutting of concrete floors or asphaltic concrete required to accomplish the work under this Specification Division shall be provided under this Division. Patching of these surfaces shall also be provided. Cutting and coring shall not impair the strength of the structure. Any damage resulting from this work shall be repaired at the Contractor's expense to the satisfaction of the Engineer.

### **3.5 MANUFACTURER'S RECOMMENDATIONS**

- A. All material, equipment, devices, etc., shall be installed in accordance with the recommendations of the manufacturer of a particular item. The Contractor shall be responsible for all installations contrary to the manufacturer's recommendations. The Contractor shall make all necessary changes and revisions to achieve such compliance. Manufacturer's installation instructions shall be delivered to and maintained at the job site through the construction of the project.

### **3.6 QUIETNESS**

- A. Piping and equipment shall be arranged and supported so that vibration is a minimum and is not carried to the building structure or spaces.

### **3.7 DAMAGES BY LEAKS**

- A. The Contractor shall be responsible for damages to other work caused by leaks in the temporary or permanent piping systems prior to completion of work and during the period of the guarantee, and for damages to other work caused by disconnected pipes or fittings, and the overflow of equipment prior to completion of the work.

### **3.8 CLEANING**

- A. Progressively and at completion of the job, the Contractor shall thoroughly clean all of his work, removing all debris, stain and marks resulting from his work.

**END OF SECTION 22 00 00**

## **SECTION 22 00 01 PLUMBING**

### **PART 1 GENERAL**

#### **1.1 GENERAL CONDITIONS**

- A. The foregoing Section 22 00 00, General Plumbing Provisions shall form a part of this specification.

#### **1.2 SCOPE**

- A. Included: Perform all work necessary and required to complete construction as indicated. Such work includes the furnishings of all labor, materials, and services necessary for a complete, lawful, and operating plumbing system with all equipment as shown or noted on the drawings or as specified herein. The work includes, but is not necessarily limited to, the following:
1. Sanitary sewer system.
  2. Domestic water system.
  3. Plumbing fixtures.
  4. Plumbing equipment.
  5. Condensate drains.
  6. Storm drain system.
  7. Gas piping.
- B. Work Specified Elsewhere:
1. Line voltage power wiring (60 volts or greater), motor starters in motor control centers, and disconnect switches are included in the Electrical Division, unless otherwise noted.
  2. Access doors.
  3. Concrete and reinforcing steel.
  4. 23 00 01, Heating, Ventilating and Air Conditioning.

#### **1.3 CODES AND STANDARDS**

- A. All pipe, pipe or plumbing fittings or fixture, solder, or flux shall be lead free that provides water for human consumption per California Assembly Bill 1953 (AB1953).
- B. See Section 22 00 00 for additional requirements.

#### **1.4 SUBMITTALS**

- A. Provide product data for all materials per Division 01.

### **PART 2 MATERIALS**

#### **2.1 PIPING MATERIALS**

- A. Sanitary Sewer:
1. Soil, Waste and Vent Piping:
    - a. Inside Building and Within Five Feet of Building Walls: Standard weight coated cast iron pipe and fittings. Plain end with neoprene gasket and stainless steel retaining sleeve, CISPI 301, ASTM A888 hubless cast-iron, or hub end with rubber gasket, ASTM A74, ASTM C564. Size 2" and smaller above grade may be standard weight galvanized steel, ASTM A53, with coated cast iron recessed drainage

fittings, ANSI B16.12. All cast iron pipe and couplings shall be American made and tested, no imported pipe or coupling is acceptable. Use heavy-duty (4-Band) couplings for all soil and waste piping. Use standard (2-Band) couplings for all vent piping. Tyler Pipe, AB & I Foundry or Charlotte Pipe. Couplings shall be Tyler, Anaco or Husky.

**OR**

- b. Inside Building and Within Five Feet of Building Walls: PVC-DWV sewer pipe with solvent weld, ASTM D2665. Schedule 40 wall thickness. Traps, sink outlets, cleanouts, etc., shall be same material. Traps shall have union connections.
  - 1) Piping over food prep centers, food serving facilities, food storage areas and other critical areas shall be kept to a minimum and shall not be exposed.
- c. Outside Building:
  - 1) For domestic waste only: Polyvinyl chloride gravity sewer pipe with bell and rubber Z-gasket, ASTM D3034, SDR 35. Carlon, J.M.
  - 2) PVC-DWV sewer pipe with solvent weld, ASTM D2665. Schedule 40 wall thickness. Traps, sink outlets, cleanouts, etc., shall be same material. Traps shall have union connections.
  - 3) Where cover is less than 15", pipe shall be cast iron, same as for inside of building.
- 2. Cleanouts: Floor cleanouts: Smith 4020 with nickel bronze top in finished areas; Smith 4220 in utility areas. Wall cleanouts: Smith 4530 with stainless steel cover and screw. Comparable models of Josam, Wade, Zurn or equal.
- 3. Cleanout Box: Precast reinforced concrete. Cast iron lid marked for service. Christy or equal; F22 in foot traffic area; G5 in roadways.

B. Storm Drain:

- 1. Piping:
  - a. Inside Building and Within Five Feet of Building walls: Same as Soil, Waste, and Vent Piping.
  - b. Outside Building:
    - 1) 10" and Smaller: Standard strength non-reinforced concrete bell and spigot, ASTM C14, or Polyvinyl chloride gravity sewer pipe with bell and rubber Z-gasket, ASTM D3034, SDR 35. Carlon, J.M. Where cover is less than 15", same as for inside building.
    - 2) 12" and Larger: Reinforced concrete, Class III, 2000 D-load, ASTM C76.
    - 3) Fittings: Fittings and couplings shall be specifically designed for the type of pipe used. Fittings and couplings designed for perforated or under drain piping will not be allowed.

C. Water and Gas:

- 1. Hot and Cold Water Piping:
  - a. Inside Building: Type L hard temper seamless copper, ASTM B88. Wrought copper fittings ANSI B16.22. Vacuum pipe shall have long sweeping elbow fittings. 95/5 tin-silver soldered joints. Brazesafe, Silcan or equal brazing material.
  - b. Outside Building Below Grade: Same as Inside Building with protective coating on ferrous pipe or Schedule 40 PVC pipe thru 2", Class 315 2" thru 4".
- 2. Gas Piping:
  - a. Above Grade: Schedule 40 black steel pipe, ASTM A53. 150 psi black malleable iron screwed fittings, ANSI B16.3, ANSI B31.8. Galvanized pipe and fittings will not be allowed. Flexible connections shall be convoluted brass with dielectric couplings, AGA approved. Outside building flexible connections shall be convoluted stainless steel with dielectric couplings, AGA approved. Prime and paint all piping.
  - b. Outside Building – Below Grade: Same as Inside Building – Above Grade, with protective coating of ferrous pipe or medium density polyethylene (MDPE) PE2708

or PE2406 pipe manufactured in accordance with ASTM D2513 and IAPMO Standards.

- D. Condensate Drain Piping: Same as cold water piping.
- E. Valves and Specialties:
1. Valves:
    - a. General: Manufacturer's model numbers are listed to complete description. Milwaukee, Kitz, Apollo, Nibco, Stockham or equal. All valves shall be full size of upstream piping. **Ball valves shall be substituted for gate valves 2" and smaller. Butterfly valves shall be substituted for gate valves 2-1/2" and larger. Cv factors for ball valves shall not be less than equal size gate valves.**
    - b. Check Valve: 2" and smaller: All bronze swing check, regrinding. 200 psi WOG. Milwaukee No. 509, 1509 or equal. 2-1/2" and larger: Non-slam type, 125 psi iron body wafer type with renewable seats and stainless steel spring. Milwaukee 1400 series or equal.
    - c. Plug Valve: Eccentric bronze plug. Nickel chromium alloy iron body. Bronze bushings. Buna-N O-rings. UL approved for gas distribution. 175 psi WOG. DeZurick Series 400 or equal.
    - d. Ball Valves: Two or three piece construction, forged bronze body, chrome plated brass ball, threaded ends, teflon seats, PTFE or reinforced teflon stem seals, lever handle. Underground valves shall have "T" handle. Provide one operating "T" extension handle for all underground valves. Milwaukee BA100/150, BA300/350, Nibco or equal.
    - e. Gas Valves: 2" and smaller, Milwaukee BB2-100; 2-1/2" and larger, Rockwell #142 or equal.
    - f. Valve Box: Precast reinforced concrete. Cast iron lid marked for service. Christy or equal; F22 in foot traffic areas: G5 in roadways.
    - g. Butterfly Valve: Iron Body, Aluminum bronze disk (connection to shaft shall not be by pins, screws, or bolts). Ductile body PPS coated with EPPM coated ductile disc. O-ring seals. Resilient removable seat. 416 stainless steel two piece shaft. 6" and smaller valves shall have multi-position lever handle. Underground valves shall have square operating nut. Provide one operating "T" handle for underground valves. Provide 2" extension neck at insulated pipes. Milwaukee "C" series, Kitz or equal.
  2. Miscellaneous Specialties:
    - a. Temperature and Pressure Relief Valve: ASME rated fully automatic, reseating combination temperature and pressure relief valve sized in accordance with energy input. Sensing element immersed within upper 6" of tank. Watts.
    - b. Union: 2" and Smaller: AAR malleable iron, bronze to iron ground seat. 300 psi.
    - c. Dielectric Coupling: Insulating coupling rated for 250 psig. EPCO or equal.
    - d. Shock Absorbers: Sioux Chief "Hydra-Rester", Zurn "Shoktrol", PPP "SC Series" or equal.
- F. Miscellaneous Piping Items:
1. Pipe Support:
    - a. Pipe Hanger: Adjustable split ring, swivel hanger and rod. Black malleable iron. Size and maximum load per manufacturer's recommendation. Felt lined, B-Line B3690F, Unistrut or equal.
    - b. Construction Channel: 12 gage 1-5/8" x 1-5/8" steel channel. Single or multiple section. Self-locking nuts and fittings. B-Line, Unistrut, Superstrut or equal.
  2. Pipe Sleeves: 24 gage galvanized steel. Adjus-to-Crete #10 with #99 thimble for floors. #100 for walls.
  3. Flashing: Vent flashing and flashing for piping through roof shall be prefabricated 24

gauge galvanized steel roof jacks with 8" square flange around pipe sealed with weatherproofing mastic.

## **2.2 PIPING INSULATION MATERIALS**

- A. General: All piping insulation materials shall have fire and smoke hazard ratings as tested under ASTM E-84 and UL 723 not exceeding a flame spread of 25 and smoke developed of 50.
- B. Pipe Insulation: Elastomeric type, ASTM C534, with a thermal conductivity of 0.27 at 75°F when measured in accordance with ASTM C177 or ASTM C518.
  - 1. Wall thickness: 3/4 in.
  - 2. Adhesive: Conform to Manufacturer's recommendations.
- C. Pre-molded Fiberglass: Heavy density sectional pre-molded fiberglass with vapor barrier laminated all-service jacket and pressure sealing vapor barrier lap. Thermal conductivity shall not exceed 0.25 Btu-in/hr-sq. ft-degrees F, at a mean temperature of 50 degrees F. Perm rating 0.02, ASTM E96. Puncture rating 50 Beach units, ASTM D781. Provide 3" (min.) wide tape of same material as lap for butt joints. For hot water piping, thickness shall be 1" for pipe sizes less than 2", 1-1/2" thickness for pipe sizes 2" and larger. CSG Insulation Corp., Manville, Owens-Corning or equal.
- D. Fiberglass Blanket: Unfaced. Thermal conductivity shall not exceed 0.25 Btu-in/hr sq. ft-degrees F, at a mean temperature of 50 degrees F. 1-1/2" thickness. Manville, Owens-Corning or equal.
- E. PVC Jacket (for exposed pipes and fittings): Pre-molded polyvinyl chloride (PVC) jackets. Size to match application. Provide PVC vapor barrier, pressure-sealing tape by same manufacturer. Zeston or equal.

## **2.3 FIXTURES**

- A. General: This Division shall rough-in for and install all plumbing fixtures shown on drawings. All trim not concealed shall be brass with polished chromium plate finish unless otherwise noted. All enameled fixtures shall be acid resisting. Standard color is white unless otherwise noted.
- B. Schedule: Refer to Plumbing Fixture Schedule on the drawings for list of fixtures. Manufacturer's model numbers are listed to complete description. Water consumption quantities listed on schedule are maximum. Equivalent models of American Standard, Crane, Haws, Kohler, Eljer, Zurn or equal. For drainage fixtures, equivalent models of Josam, Smith, Wade, Zurn or equal.
- C. Stops and P-traps: All fixtures shall be provided with stops and p-traps as applicable.
  - 1. Stops: All hot and cold water supplies shall be 1/2" angle stops with IPS inlets and compression outlets, stuffing box, screwdriver lock shield, and 1/2" flexible brass tubing riser. Speedway. Wall mounted trim shall have concealed loose key wall stop. Chicago 1771 or equal.
  - 2. P-traps: Brass, ground joint. 17 gage. American Standard, California Tubuler or equal.
    - a. Trap primers shall be provided with ball valve and cylinder key-lock access panel for all floor drains and floor sinks. PPP, Inc. or equal.

## **2.4 EQUIPMENT**

- A. General Requirements:
1. General: These equipment specifications are to supplement the drawings. Refer to schedules on drawings for the specific equipment to be provided. Capacities shall be in accordance with the schedules shown on the drawings. Capacities are to be considered minimum.
  2. Dimensions: Equipment must conform to space requirements and limitations as indicated on the drawings and as required for operation and maintenance. Equipment will not be accepted that does not readily conform to space conditions.
  3. Ratings: Electrical equipment shall be in accordance with NEMA Standards and UL listed where applicable standards have been established.
  4. Basis of Design: Manufacturers and model numbers listed in schedules as the basis of design are intended to represent the standard of quality and the features desired.
  5. Piping: Each item or assembly of items shall be furnished completely piped for connection to services. Control valves and devices shall be provided. Equipment requiring domestic water for non-potable use shall be provided with backflow preventer acceptable for intended use by local governing authorities.
  6. Electrical:
    - b. General: Each item or assembly of items shall be furnished completely wired to individual terminal blocks for connection to single branch electrical circuit. All electrical accessories and controls required by equipment shall be furnished. Provide terminal blocks for controls not included in equipment package. Manual and magnetic starters shall have ambient compensating running over-current protection in all ungrounded conductors. Magnetic starters shall be manual reset. Controllers and other devices shall be in NEMA 3 or 12 enclosures as applicable.
    - c. Wiring: Conductors, conduit, and wiring shall be in accordance with Electrical Specifications. Individual items within assembly shall be separately protected with dead front, fused disconnect, fuse block, or circuit breaker for each ungrounded conductor, all accessible on operating side of equipment. Switches, contacts, and other devices shall be in ungrounded conductors.
    - d. Motors: Shall be rated, constructed, and applied in accordance with NEMA and ANSI Standards without using service factor. Single-phase motor shall be of type to suit application. Three-phase motors shall be open drip-proof, NEMA B design on pumps and fans, NEMA C on reciprocating equipment, sealed ball bearing, three-phase induction. Design shall limit starting inrush current and running current to values shown on drawings.
    - e. Starters: Motor starters shall be provided for all equipment except where starter is in a motor control center as designated on the electrical drawings.
    - f. Control Voltage: Equipment connected to greater than 240 volts shall be provided with 120 volt transformer if separate source is not indicated on plans. 240 volt control is acceptable if confined within control panel.
    - g. Submittals: Included in shop drawings shall be internal wiring diagrams and manufacturer's recommended external wiring.
- B. Electric Drinking Fountain: Wall hung, Dual height with Bottle Filler. Provide steel mounting brackets. Stainless steel basin. Removable grid drain. Chrome plated brass bubbler with automatic flow regulator and self-closing valve. Nonferrous evaporator. Hermetic compressor with automatic reset overload protection. Air cooled condenser. Adjustable thermostat. UL listed. ARI certified. Oasis, Sunroc.
- C. Water Heater, Electric: Glass lined tank. 150 psi working pressure. Fully insulated. Automatic temperature control. High limit control. Provide ASME rated temperature and pressure relief valve sized in accordance with energy input, dielectric couplings and drain cock. UL listed and CEC approved. Extended warranty for a period of 3 years minimum. State, A.O. Smith, National, Rheem or equal.



- D. Sewage Pumps:
1. General: Furnish all labor, materials, equipment, and incidentals required to provide duplex pumping system as specified herein. The system shall be by the same manufacturer as supplying the pump and motor control panel. Hydro-pneumatic Pumps or equal.
  2. System shall consist of sewage grinder pumps with explosion proof motors, level control switches, discharge plumbing with hydraulically sealed discharge flange, pump mounting plates with bottom rail supports, upper rail supports, lifting chain, pedestal mount and cord sealing plate for panel or NEMA 4 junction box; to be installed in factory fabricated fiberglass basin with cover. A NEMA 4X weatherproof control box shall be supplied for mounting at the sump site or remote from the basin as required. Structure and dimensions to be as shown on drawings.
  3. Sump Level Controls: Float switches shall be supplied to control sump level and alarm signal. The switches shall be sealed in a solid polypropylene float for corrosion and shock resistance. The support wire shall have a heavy Neoprene jacket. A weight shall be attached to cord above the float to hold switch in place in sump and efficiently prevent sharp bends in the cord when the float operates. A quantity of 4 floats shall be provided to control level. An additional switch shall be provided with alarm.
  4. Check Valve and Piping: The discharge piping shall include a ball check valve with hydraulically sealed discharge flange and gate valve for each pump. Discharge from station shall be fitted with NPT couplings.
  5. Basin Cover: Cover shall be of gas tight steel construction with an O.D. equal to the O.D. of the top flange on the basin. Cover shall be secured by the stainless steel bolts and coated with a 3-4 mil thick rust-inhibiting paint.
- E. Circulation Pump: Bronze pump with stainless steel or non-metallic impeller. Shaft shall be stainless steel or ceramic with carbon bearings with EPDM O-ring and gaskets. Replaceable cartridge type circulators shall have stainless steel cartridge. Connections shall be sweat, threaded, or flanged. Taco, Bell & Gossett, Grundfos, Armstrong or equal.

## **PART 3 EXECUTION**

### **3.1 PIPING INSTALLATION**

- A. General:
1. Piping Layout: Piping shall be concealed in walls, above ceilings, or below grade unless otherwise noted. Exposed piping shall run parallel to room surfaces; location to be approved by Owner's Representative. No structural member shall be cut, notched, bored, or otherwise altered unless specifically allowed by structural drawings and/or specifications. Where such cutting is required, reinforcement shall be provided as specified or detailed. All piping shall be installed in a manner to ensure unrestricted flow, eliminate air pockets, prevent any unusual noise, and permit complete drainage of the system. All piping shall be installed to permit expansion and contraction without strain on piping or equipment. Expansion joints shall be installed as required. Vertical lines shall be installed to allow for building settlement without damage to piping. All exposed piping to be primed and painted, see painting section.
  2. Joints:
    - a. Threaded: Pipe shall be cut square and reamed to full size. Threads shall be in accordance with ANSI B2.1. Joint compound or tape suitable for conveyed fluid shall be applied to male thread only. Joints shall be made with three threads exposed.
    - b. Welded or Brazed: Filler rod shall be of the same suitable alloy as pipe. Welding or brazing shall be performed in accordance with requirements of recognized published standards of practice and by licensed or otherwise certified contractors.

Welder or Brazer shall be a person who specialized in welding or brazing of pipes and holds a recognized certificate of competency from a recognized testing laboratory, based on the requirements of the ASME Boiler and Pressure Vessels Code, Section 9.

- c. Other: Joints other than threaded or welded shall be installed in accordance with manufacturer's recommendations.
  - d. Open Ends: Open ends of piping shall be capped during progress of work to preclude foreign matter.
  - e. Electrical Equipment: Joints shall be avoided, where possible, over electrical equipment.
  - f. Copper pipe 1-1/2" or less may be soldered. Above 1-1/2" and all below grade shall be brazed.
3. Fittings:
- a. Standard Fittings: All joints and changes in direction shall be made with standard fittings. Close nipples shall not be used.
  - b. Reducers: Pipe size reduction shall be made with bell reducer fittings. Bushings shall not be used.
  - c. Unions: A union shall be installed on the leaving side of each valve, at equipment connections, and elsewhere as necessary for assembly or disassembly of piping.
  - d. Valves: All valves shall be full line size. At equipment connections, valves shall be full size of upstream piping.
4. Pipe Support:
- a. General: Hangers shall be placed to support piping without strain on joints or fittings. Maximum spacing between supports shall be as specified below. Actual spacing requirements will depend on structural system. Refer to drawings for additional requirements and attachment to structure. Vertical piping shall be supported at floor and ceiling. Support pipe within 12" of all changes in direction. Support individual pipes with pipe hanger. All pressure piping, drainage piping above grade and metallic piping of dissimilar metal from hangers shall have isolating shield, or felted hangers.

1) Screwed Pipe:

Pipe Size Between Supports*	Max. Spacing
(in)	(ft)
1/2	6
3/4	8
1	8
1-1/4 & larger	10

\* Based on straight lengths of pipe with couplings only. Provide additional supports for equipment, valves, or other fittings.

- 2) Copper Tubing: Copper tubing shall be supported at approximately six (6) foot intervals for piping one and one-half (1-1/2) inches and smaller in diameter and ten (10) foot intervals for piping two (2) inches and larger in diameter.
  - 3) Gravity Drainpipe: Piping shall be supported at each length of pipe or fitting, but in no case at greater spacing than indicated above for pressure pipe.
  - b. Trapeze: Trapeze hangers of construction channel and pipe clamps may be used. Submit design to Engineer for approval.
5. Excavation and Backfill: Minimum cover on all piping shall be as follows unless otherwise noted:
- a. Up to 2-1/2" pipe - 24" cover.
  - b. 3" and larger pipe - 30".
6. Miscellaneous:
- a. Escutcheons: Provide chromium plated escutcheons where piping penetrates walls, ceilings, or floors in finished areas.

- b. Pipe Sleeves: All piping passing through concrete shall be provided with pipe sleeves. Allow 1" clearance between sleeve and pipe or pipe insulation.
  - c. Dielectric Couplings: Dielectric couplings shall be installed wherever piping of dissimilar metals are joined.
  - d. Shock Absorbers: Install per manufacturers recommendations.
- B. Sanitary Sewer Piping:
  - 1. General: Where inverts are not indicated, sanitary sewer piping shall be installed at 1/4" per foot pitch. Piping 4" and larger may be installed at 1/8" per foot pitch where structural or other limitations prevent installation at a greater pitch.
  - 2. Cleanouts: Install cleanouts at ends of lines, at changes of direction greater than 45 degrees, and at not greater than 100 foot intervals. Locate interior cleanouts in accessible locations and bring flush to finished surface. Cleanouts at urinals shall be installed above urinal.
  - 3. Vents: Vents shall terminate not less than 6" above the roof nor less than 12" from any vertical surface nor within 10 feet of any outside air intake. Install horizontal vent lines at 1/4" per foot pitch. Offset vents 2 feet minimum from gutters, parapets, ridges, and roof flashing.
- C. Water Piping: Connections to branches shall be made from the top side of the main. Supply header in fixture battery shall be full size to last fixture, reducing in size only on individual connections to each fixture in battery. Provide ball valve shutoff for each building and at each connection to equipment and trap primers. Shock absorbers shall be installed in a vertical position at end of branch runs as specified in this section whether specifically shown or not on drawings. Connections to equipment shall be made with flexible connectors. Non-metallic pipe shall have 18 AWG copper tracer wire laid on top of pipe and taped in place at 15-foot spacing, terminate 4" above grade at ends of pipe runs.
- D. Gas Piping: Shall be pitched to drain to drip legs at each piece of equipment. No unions shall be installed except at connections to equipment. Provide shutoff at each equipment connection. Connections to equipment shall be made with flexible connectors. Under floor piping shall be sleeved, sealed, and vented. Polyethylene or polyvinyl chloride pipe and fittings shall be joined in accordance with manufacturer's recommendation. Metal-to-plastic transition fittings shall be installed at all transitions. Non-metallic pipe shall have 18 AWG copper tracer wire laid on top of pipe and taped in place at 15-foot spacing, terminate 4" above grade at ends of pipe runs. All gas below grade shall have continuous caution tape installed 12" above gas line. All exposed gas piping shall be primed and painted, see painting section.
- E. Condensate Drain Piping: Install with constant pitch to receptacle, 1/4" per foot where possible, otherwise 1/8" per foot minimum. Provide trap at each air handling unit to prevent air leakage. Connections to equipment shall be made with flexible connection unless connection is internally isolated.
- F. Storm Drain Piping: Install at 1/4" per foot pitch.

### **3.2 PIPING INSULATION INSTALLATION**

- A. Domestic Tempered Water Supply:
  - 1. General: All domestic tempered water supply piping, except for exposed connections to fixtures, shall be insulated. Do not insulate unions or valves less than 2", unless exposed to weather.
  - 2. Install elastomeric pipe insulation by slipping over end of pipe. Where not feasible, slit insulation longitudinally, snap over piping and seal with adhesive. Insulate fittings with larger diameter sleeves or insulation, lapping pipe insulation a minimum of 2 in.

3. Butt sections of insulation tightly together and seal with adhesive to provide a continuous vapor and thermal barrier.
  4. Pipe: Apply pre-molded fiberglass sections to pipe using integral pressure sealing lap adhesive in accordance with manufacturer's recommendations. Stagger longitudinal joints. Seal butt joints with factory supplied sealing tape.
  5. Fittings and Valves:
    - a. Wrap fitting with pre-cut fiberglass blanket to thickness matching adjoining insulation. Cover blanket with PVC jacket in accordance with manufacturer's recommendations. Seal all joints with factory supplied pressure sealing vapor barrier tape with 2" (min.) overlap on both sides of joint. Insulate valves to stem.
    - b. For miscellaneous fittings for which PVC jackets are not available or where proximity of fittings precludes a neat-appearing installation, the contractor may cover the fiberglass blanket with stretchable glass fabric and at least two coats of vapor barrier coating. All exposed ends of insulation shall be adequately sealed.
- B. ADA Compliant Fixtures:
1. At sinks/ lavatories which are to be ADA Compliant, the p-trap and angle stop assemblies shall be insulated with Trap Wrap Protective Kit 500R by Brocar, Truebro Handi Lav-Guard #102W or #105W or equal. Abrasion resistant exterior cover shall be smooth and have 1/8" wall minimum over cushioned foam insert. Fasteners shall remain substantially out of sight.

### **3.3 FIXTURE INSTALLATION**

- A. Fixture Height: Shall be standard height except those specified as ADA Compliant. Such fixtures shall be mounted in accordance with CBC, Section 11B, Division 6 and drawing details.
- B. Wall Hung Fixtures: Shall be provided with proper backing and hanger plates secured to wall. Fixtures mounted on carriers shall bear against stop nuts, clear of wall surface. Caulk fixtures against walls with white G.E. "Sanitary SCS1700" silicone sealant. Caulking shall be smooth and flush with fixture surface (not concave).
- C. Floor Drains or Floor Sinks: Shall be placed parallel to room surfaces, set level, flush with floor, and adjusted at proper height to drain and easily accessible for inspection and cleaning. Cover openings during construction to keep all foreign matter out of drain line.
- D. Other Connections: Rough-in and connection for trim or fixtures supplied by others shall be included in this specification section.
- E. Floor Mounted Fixtures: Shall be provided with proper support plates. Caulk fixtures against floors with white G.E. "Sanitary SCS1700" silicone sealant. Caulking shall be smooth and flush with fixture surface (not concave).

### **3.4 EQUIPMENT INSTALLATION**

- A. General: It shall be the responsibility of the equipment installer to ensure that no work done under other specification sections shall in any way block, or otherwise hinder the equipment.
- B. Connections to Equipment: Where size reductions are required for connections to equipment, they shall be made immediately adjacent to the equipment and, if possible, inside the equipment cabinet.

### **3.5 TESTS AND ADJUSTMENTS**

- A. General: Unless otherwise directed, tests shall be witnessed by the Owner's Representative. Work to be concealed shall not be enclosed until prescribed tests are made. Should any work be enclosed before such tests, the Contractor shall, at his expense, uncover, test, and repair his work, and that of other contractors, to original conditions. Leaks and defects shown by tests shall be repaired and entire work retested. Tests may be made in sections. However, all connections between sections previously tested and new section shall be included in the new test. New sections shall be isolated from existing sections for testing purposes. There shall be no drop in pressure during test except that due to ambient temperature changes. All components of system not rated for test pressure shall be isolated from system before test is made. Test the new sections or branches of piping only.
- B. Gravity System:
  - 1. Sanitary Sewer: All ends of the new sections of sewer system shall be capped and lines filled with water to the top of the highest vent, 10 feet above grade minimum. This test shall be made before any fixtures are installed. Test shall be maintained until all joints have been inspected, but no less than 2 hours.
  - 2. Condensate Piping: Maintain 15 psig water pressure for a duration of 4 hours.
- C. Pressure Systems:
  - 1. General: There shall be no drop in pressure during test except that due to ambient temperature changes. All components of system not rated for test pressure shall be isolated from system before test is made. Test the new sections or branches of piping only.
  - 2. Domestic Tempered & Cold Water Piping: Maintain 60 psig water pressure for a minimum duration of 2 hours.
  - 3. Gas Piping: Maintain 60 psig air pressure for a minimum duration of 2 hours.
- D. Accessible Lavatories:
  - 1. Faucet controls and operating mechanisms shall be installed and tested to comply per CBC Section 11B-606.4.

**END OF SECTION 22 00 01**

## SECTION 32 92 31 PLAYING FIELD CONTRACTOR QUALIFICATIONS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### PART 1 – GENERAL

#### 1.1 QUALIFICATIONS

- A. The Playing Field Contractor business must be fully licensed in the State of California for all work associated with the construction for natural turf sand-based athletic playing fields.
- B. It is preferred that the Playing Field Contractor currently holds a general contractor license issued by the State of California. The Playing Field Contractor shall be fully responsible for obtaining all the necessary local building permits and permit fees associated with the construction of the natural turf playing field system.
- C. It is preferred that the Playing Field Contractor has an individual assigned to this project that is currently a certified field builder (CFB) with the American Sport Builders Association (ASBA).
- D. The Playing Field Contractor must have successfully completed ten (10) similar Professional, NCAA, High School natural turf sand-based playing field projects in the State of California within the last five (5) years.
- E. The Playing Field Contractor must be capable of installing the Athletic Playing Field on a turnkey basis, inclusive of compacted sub-grade, sub-surface drainage, irrigation installation, rootzone installation, fine grading, seeding or turf installation, infield clay installation, and all maintenance requirements.
- F. The Playing Field Contractor and its subcontractor's must hold all the necessary active licenses in the State of California for all work associated with this project.

#### 1.2 REQUIRED SUBMITTALS:

- A. The Playing Field Contractor: At the time of bid submission, the Playing Field Contractor and all subcontractors must provide a copy of current company, and professional business licenses issued by the State of California. Failure to provide this proof of current licenses may result in the Playing Field Contractors submission package being non-responsive.
- B. All bidders must provide a minimum of ten (10) similar Professional, NCAA, and or State of California high school playing field projects synthetic turf projects in the State of Florida or other additional coastal communities with the same level of rainfall intensity and duration, all similar projects must have also been completed within the last five (5) years that are similar in scope and size.

1

1. The ten (10) similar projects submitted must include the following minimum information:
  - a) Name of the project.
  - b) Location and description of the project.
  - c) The overall original playing field budget, completion date, and if the project was constructed within the original playing field budget and schedule.
  - d) Contact name, title, phone number, Team, University, or High School responsible for overseeing the work performed.

The Playing Field Contractor is encouraged to update the contact names and phone numbers prior to formal bid submission.

2. All bidders must provide five (5) successful similar projects in the State of Florida (Only) that are utilizing the same proposed synthetic turf system profile utilizing a turf between 2.0" – 2.5" in pile height, total pile weight, and all infill mix products. All successful projects submitted must include the following minimum information:
  - a) Name of the project.
  - b) Location and description of the project.
  - c) The overall original playing field budget, completion date, and if the project was constructed within the original playing field budget and schedule.
  - d) Contact name, title, phone number, Team, University, High School, City, or County responsible for overseeing the work performed.

All bidders are encouraged to update the contact names and phone numbers before bid submission.

- C. The Playing Field Contractor and subcontractors shall submit a written statement signed by a corporate officer; "stating that the corporation has NO present, past legal action or pending arbitration or litigation against the corporation over the past ten (10) years as a direct result of product manufacturing failure, poor workmanship, unresolved warranty issues, failure to meet owners expectations, non-payment to any sub-contractors and has been terminated based on failure to meet the project schedule.
- D. The Playing Field Contractor shall prepare an organization chart that identifies all key staff members, names, years of experience, direct roles and responsibilities, and contact cellphone numbers, and e-mail addresses. The organization chart must also list any subcontractors being utilized during any pre-or post-construction activities.
- E. The Playing Field Contractor shall submit a preliminary master bar chart for all tasks associated with the playing field construction that lists the types of work to be performed, length of time for each task, and key milestone dates.
- F. The Playing Field Contractor shall provide the name of the individual that is currently in good standing as a certified field builder (CFB) with the American Sport Builders Association (ASBA).

### **1.3 RELATED WORK**

- A. All work listed below is related to the overall scope of playing field services:
  1. Section 32 84 00 - Planting Irrigation
  2. Section 32 91 13 - Natural Turf Playing Field Soil Preparation
  3. Section 32 92 00 – Lawns and Grasses
  4. Section 32 93 00 – Planting
  5. Section 32 94 00 – Landscape Grounds Maintenance for Ninety (90) Days

### **PART 2 – MATERIALS**

Not Used

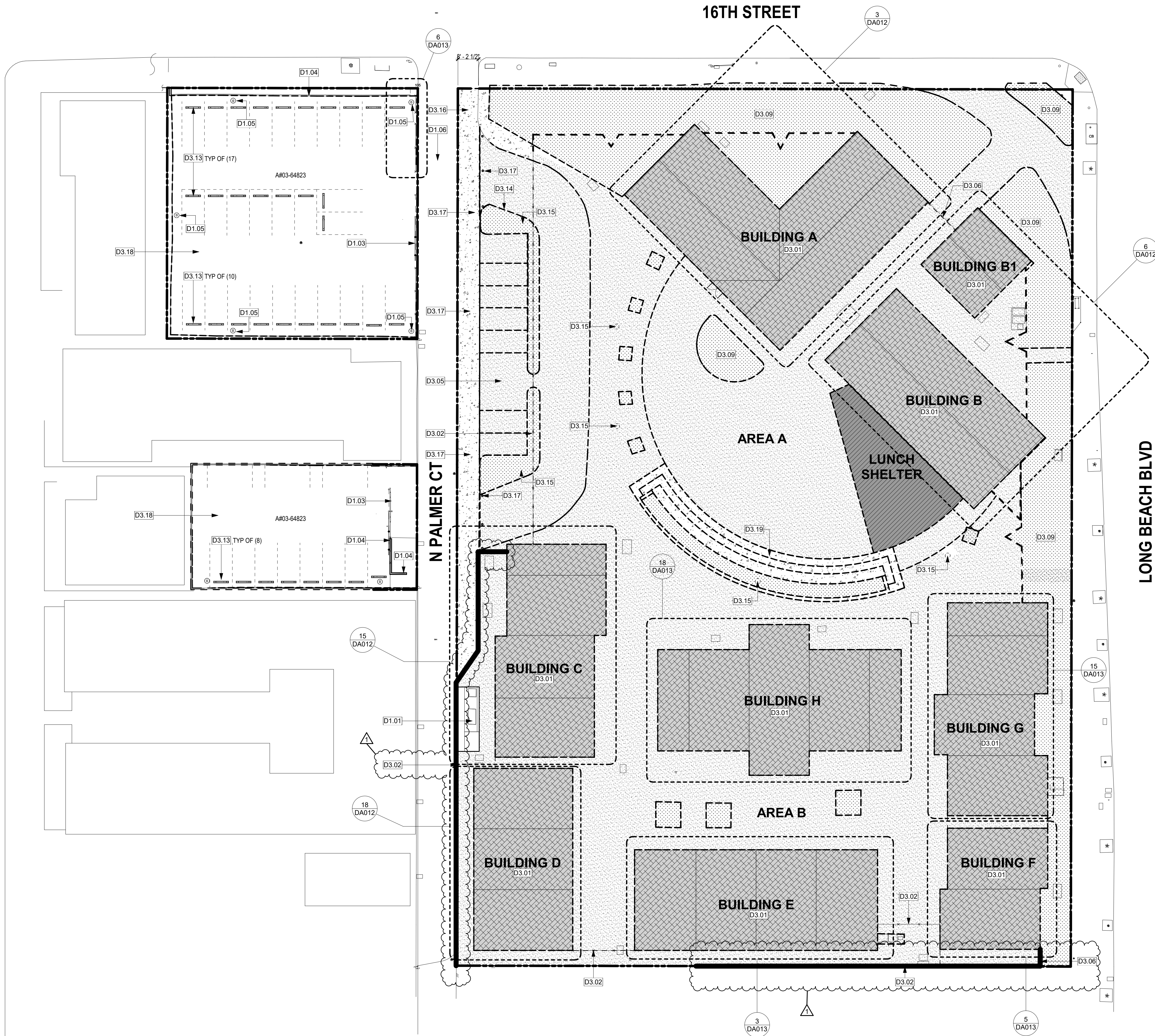
### **PART 3 – EXECUTION**

Not Used

**END OF SECTION 32 92 31**



LOCUST AVENUE



## KEYNOTES

- D1.01 EXISTING ELECTRICAL EQUIPMENT & PAD TO REMAIN, PROTECT IN PLACE  
D1.03 EXISTING CHAINLINK FENCE AND ROLLING GATE TO REMAIN, PROTECT IN PLACE  
D1.04 EXISTING CMU WALL TO REMAIN, PROTECT IN PLACE  
D1.05 EXISTING CONCRETE BASE & LIGHTING POLE TO REMAIN, PROTECT IN PLACE  
D1.06 EXISTING CONCRETE TO REMAIN, PROTECT IN PLACE  
D3.01 DEMOLISH EXISTING BUILDING ON SITE & ALL ASSOCIATED FOOTINGS  
D3.02 DEMOLISH (E) CHAINLINK FENCING, GATES, POSTS, AND FOOTINGS, U.N.O  
D3.05 DEMOLISH (E) ASPHALT AND SUBGRADE  
D3.06 DEMOLISH EXISTING TUBE STEEL GATES / FENCE AND ALL ASSOCIATED FOOTINGS  
D3.09 DEMOLISH EXISTING LANDSCAPE, IRRIGATION DEVICES TO BE SALVAGED.  
D3.13 EXISTING CONCRETE WHEEL STOP TO BE DEMOLISHED  
D3.14 EXISTING CONCRETE CURB TO BE DEMOLISHED  
D3.15 EXISTING CONCRETE BASE, LIGHTING POLE, & ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY  
D3.16 EXISTING CONCRETE TO BE SAWCUT AND DEMOLISH  
D3.17 EXISTING BOLLARD AND FOOTING TO BE DEMOLISHED IN ITS ENTIRETY  
D3.18 GRIND EXISTING ASPHALT PAVING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION  
D3.19 EXISTING CONCRETE STEPS AND ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY

## SITE PLAN LEGEND

- PROPERTY LINE / AREA OF WORK  
EXISTING PERIMETER WALLS / FENCES TO BE DEMOLISHED  
EXISTING LANDSCAPE TO BE DEMOLISHED  
EXISTING SHADING STRUCTURE TO BE DEMOLISHED  
EXISTING ASPHALT PAVEMENT TO BE DEMOLISHED  
EXISTING BUILDING (AF 03-64823) AND ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY  
EXISTING CONCRETE TO BE DEMOLISHED  
(E) HARDSCAPE TO REMAIN

## GENERAL DEMOLITION NOTES:

- DEMOLITION PLANS INDICATE SOME OF THE SCOPE-OF-WORK INVOLVED FOR THE DEMOLITION PHASE OF THIS PROJECT. CONTRACTOR SHALL REVIEW ALL SHEETS FOR ADDITIONAL DEMOLITION SCOPE.
- 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 EXECUTION OF THIS WORK.
- CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCING WORK.
- CONTRACTOR SHALL NOTIFY ARCHITECT AND OWNER OF ANY POSSIBLE ASBESTOS CONTAINING MATERIALS DISCOVERED BEFORE PROCEEDING WITH WORK. PROTECT INTERIOR CONSTRUCTION TO REMAIN DURING DEMOLITION AND CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF TEMPORARY DUST AND OR SOUND PARTITION BETWEEN CONSTRUCTION AREA AND AREAS NOT IN SCOPE AS NECESSARY. DEMOLITION ACTIVITIES SHALL BE PERFORMED SO AS TO PRODUCE MINIMAL DISTURBANCE TO EXISTING FACILITY AND OCCUPANTS (I.E. MINIMIZE EXCESSIVE AND PROLONGED NOISE LEVELS AND DUST).
- CONTRACTOR SHALL REPAIR, REPLACE, OR PATCH EXISTING BUILDINGS, DRIVEWAYS, SIDEWALKS, CANOPIES, AND OR PARKING AREAS DAMAGED, MODIFIED, AND OR DISTURBED BY DEMOLITION WORK AT NO COST TO THE OWNER.
- ALL EXISTING EQUIPMENT THAT REMAINS SHALL BE PROTECTED DURING DEMOLITION AND OR CONSTRUCTION TO PREVENT DAMAGE. ANY DAMAGE TO REMAINING EXISTING EQUIPMENT SUSTAINED DURING DEMOLITION AND OR CONSTRUCTION SHALL BE EQUIVALENTLY REPLACED OR EQUIVALENTLY REPAIRED AT NO COST TO THE OWNER.
- CONTRACTOR SHALL REMOVE DEBRIS REGULARLY AS NECESSARY TO ELIMINATE INTERFERENCE WITH ROADS, STREET, WALKS, AND ALL OTHER ADJACENT FACILITIES.
- CONTRACTOR SHALL PROVIDE TRAFFIC HANDLING MEASURES TO PROTECT THE GENERAL PUBLIC AT ALL TIMES, AS NECESSARY AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- DO NOT INTERRUPT EXISTING UTILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- WHEN UTILITY SERVICES ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE BYPASS CONNECTIONS TO MAINTAIN CONTINUITY OF SERVICE BEFORE PROCEEDING WITH DEMOLITION.
- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO THE FOLLOWING: ELECTRIC, GAS, WATER, TELEPHONE, STORM SEWER, AND SANITARY SEWER FOR FIELD LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITY LINES. PRIOR TO COMMENCEMENT OF ANY DEMOLITION WORK, CONTRACTOR SHALL IDENTIFY ALL ELECTRICAL CIRCUITS SERVICING THE AREA INVOLVED WITH THIS DEMOLITION. THOSE CIRCUITS SHALL THEN BE LOCKED OUT AND TAGGED OUT IF THEY DO NOT SERVICE ANY OF THE REMAINING BUILDING.
- CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES.
- PROTECT EXISTING SITE ELEMENTS AND EXISTING LANDSCAPING TO REMAIN. PROTECTION SHALL INCLUDE BUT NOT BE LIMITED TO EXISTING TREES AND OTHER EXISTING VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIAL OR EXCAVATED MATERIAL WITHIN DRIP LINES.
- CONTRACTOR SHALL REGRADE AND HYDROMULCH AREAS AFFECTED BY DEMOLITION.
- OWNER HAS RIGHT OF FIRST REFUSAL OF ALL ITEMS REMOVED AS PART OF THE SCOPE OF WORK, WHETHER IDENTIFIED AS SALVAGE OR NOT. CONTRACTOR TO REVIEW DEMOLITION FLOOR PLANS FOR ITEMS TO BE SALVAGED.
- NOTIFY THE BUILDING OWNER OF ANY MATERIALS, FIXTURES, ETC. TO BE REMOVED THAT ARE DEEMED SALVAGEABLE. TURN OVER ANY REQUESTED ITEMS TO THE BUILDING OWNER IN GOOD AND CLEAN CONDITION.
- ALL FURNITURE WILL BE REMOVED OR RELOCATED BY THE OWNER AS NECESSARY PRIOR TO THE DEMOLITION WORK OF THIS PROJECT. CONTRACTOR SHALL COORDINATE WITH OWNER AS REQUIRED.
- ALL DASHED LINES ARE DEMOLITION LINES U.N.O.

Agency Approval

**Long Beach Unified School District**  
2425 Webster Avenue  
Long Beach, CA 90810

LBUSD No.: 9216-654  
PTN No.: 64725-585  
Facilities Management

Stamps

**PBK**  
ARCHITECT  
8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA  
91730  
Tel: 909-987-0909  
www.pbk.com

Architect

Consultant

Project

DSA #03-125644 File 19-H15

REV.	DATE	DESCRIPTION
1	06/17/26	ADDENDUM 01

Issue

JOB No.: 240469  
SCALE: As indicated  
PROJ MGR: Author  
DATE: 11/21/25

**DEMOLITION SITE PLAN**

Sheet Title

**DA010**

## SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

### Lighting System with LED Light Source

1

#### **PART 1 – GENERAL**

##### **1.1 SUMMARY**

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the lighting system performance and design standards for Long Beach Poly Softball and Soccer using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- C. The sports lighting will be for the following venues:
  - 1. Softball 185'x185'x185'
  - 2. Soccer 300'x195'
- D. The primary goals of this sports lighting project are:
  - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impacts the safety of players and the enjoyment of spectators. Therefore, light levels are guaranteed to not drop below specified target values for a period of 25 years.
  - 2. **Environmental Light Control:** It is the primary goal of this project to minimize spill light to adjoining properties and glare to players, spectators, and neighbors.
  - 3. **Cost of Ownership:** To reduce the operating budget, the preferred lighting system shall be energy-efficient and cost-effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
  - 4. **Control and Monitoring** – To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

##### **1.2 ONFIELD LIGHTING PERFORMANCE**

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting manufacturers will provide a guarantee that light levels will be sustained over the life of the warranty period. Lighting calculations shall be developed, and field measurements taken on the grid spacing with the minimum number of grid points specified below.

Manufacturers will provide lumen maintenance data of the LED luminaires used per TM-21-11 and will incorporate the lumen maintenance projections into the lighting designs to ensure target light levels are achieved throughout the guaranteed period of the system. Per IES guidelines, lumen maintenance hours should be reported based on the 6x multiplier of testing hours.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Softball	Infield: 50fc Outfield: 30fc	Infield: 2:1 Outfield: 2.5:1	Infield: 25 Outfield: 59	20'x20'



Soccer	30fc	2:1	70	30'x30'
--------	------	-----	----	---------

- B. Color Temperature: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.
- C. Playability: Lighting design and luminaire selection should be optimized for playability by reducing glare onfield and providing sufficient upright.
1. Aiming Angles: To reduce glare, luminaire aiming should ensure the top of the luminaire field angle (based on sample photometric reports) is a minimum of 10 degrees below horizontal.
  2. Glare Control Technology: Luminaires selected should have glare control technology including, but not limited to: external visors, internal shields and louvers.
    - i. For offsite glare a maximum candela shall not exceed 7,500 cd measured 150 ft from perimeter of field 5 ft above grade.
    - ii. Player glare limits:
      1. Home plate: Player glare shall not exceed 1,000 cd from any outfield pole fixture.
      2. Outfield positions (LF, CF, RF): Glare shall not exceed 4,500 cd from any A-pole fixture.
  3. Beam Restriction: No symmetrical beam patterns are acceptable. To minimize player glare, NEMA beam types 1–3 shall not be used on the field of play.
  4. Aerial lighting – Adequate illumination must be provided above the field to see the ball in flight. It is recommended that a lighting analysis be performed above the field of play to evaluate the visibility of the ball over its typical trajectory to ensure the participants will adequately see the ball. Calculation planes should be evaluated up to the maximum anticipated height for the level of play.
  5. Mounting Heights: To ensure proper aiming angles, minimum mountings heights shall be as described below. Higher mounting heights may be necessary for luminaires with lesser glare control to meet field angle requirements of section 1.2.C.1.

# of Poles	Pole Designation	Pole Height
2	A1, A2	60'
2	B2, S2	70'
1	S1	80'

### 1.3 ENVIRONMENTAL LIGHT CONTROL

- A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers, and external shields. No symmetrical beam patterns are accepted.
- B. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following levels taken at 3 ft above grade.

	Average	Maximum
Building Specified Spill Line Horizontal Footcandles Taken at 3' Above grade	< 0.3 fc	< 0.5 fc
Building Specified Spill Line Max Vertical Footcandles Take at 3' Above Grade	< 0.5 fc	< 0.9 fc

Building Specified Spill Line Max Candela Taken at 3' Above Grade	< 2,500 cd	< 5,800 cd
--	------------	------------

- C. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be provided in 30-foot intervals along the boundary line at 3 ft above grade.
- D. Sample Photometry: The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.
- E. Field Verification: Lighting manufacturer shall supply field verification of environmental light control using a meter calibrated within the last 12 months:
  - 1. Spill verification: Illumination levels shall be taken in accordance with IESNA RP-6-22. The light sensing surface of the light meter should be held 36 inches above the playing surface with the sensing surface horizontal (for horizontal readings) or vertically pointed at the brightest light bank (for max vertical readings)

#### **1.4 COST OF OWNERSHIP**

- A. Manufacturer shall submit a 25-year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

### **PART 2 – PRODUCT**

#### **2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION**

- A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.
- C. System Description: Lighting system shall consist of the following:
  - 1. Galvanized steel poles and cross-arm assembly.
  - 2. Non-approved pole technology:
    - a. Square static cast concrete poles will not be accepted.

- b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
- 3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
  - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
  - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
- 4. Manufacturer will supply all drivers and supporting electrical equipment.
  - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 ft above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
  - b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2\_2002.
- 5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
- 6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
- 7. Control cabinet to provide remote on-off control, monitoring, and entertainment features of the lighting system. See Section 2.3 for further details.
- 8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
  - a. Integrated grounding via concrete encased electrode grounding system.
  - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 ft long, with a minimum of 10 ft embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 ft mounting height or less, and 2/0 AWG for poles with more than 75 ft mounting height.
- 9. Enhanced corrosion protection package: Due to the potentially corrosive environment for this project, manufacturers must provide documentation that their products meet the following enhanced requirements in addition to the standard durability protection specified above:
  - a) Exposed carbon steel horizontal surfaces on the crossarm assembly shall be galvanized to no less than a five (5) mil average thickness.
  - b) Exposed die cast aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.

- c) Exposed extruded aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.
- D. Safety: All system components shall be UL listed for the appropriate application.

## **2.2 ELECTRICAL**

- A. Electric Power Requirements for Sports Lighting Equipment:
  - 1. Electric power: 480 Volt, 3 Phase
  - 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the field lighting system not to exceed 30 kW.
- C. Circuits: Homerun all circuits to poles. If electrical plans require daisy-chained circuits, make connections on the dual-conductor rated disconnects in Musco electrical components enclosures or within precast base above ground level. Do not create underground wiring connections.
- D. In ground pull box requirements: Only 12 in deep (minimum) concrete polymer underground handholes and lids are allowed. Place on top of 12 in compacted  $\frac{3}{4}$  in aggregate rock. Lids must be marked with "ELECTRIC." Steel lids are not allowed. Do not create underground wiring connections in pull box.

## **2.3 CONTROL**

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual Off/On/Auto selector switches shall be provided.
- C. Contactor control of lights: To minimize wear on drivers and other electrical components and prevent lights from turning on due to communication loss, circuits must be controlled via contactor switching, not dimming driver output to zero.
- D. Dimming: System shall provide for 3-stage dimming (high-medium-low). Dimming will be set via scheduling options (Website, app, phone, email)
- E. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

- F. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The

controller shall determine switch position (manual or auto) and contactor status (open or closed).

- G. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show status of luminaire outages, control operation and service. Mobile app will be provided suitable for IOS and Android devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility.
2. Report hours saved by using early off and push buttons by users.

- H. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.
- I. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.
- J. Auxiliary Lighting Interface Cabinet (ALIC): provide cabinet to connect emergency power circuits to lighting system to energize lighting in the occurrence of a power outage. Allows emergency egress fixtures to be used as part of event lighting and to be scheduled via Control-Link control system. Controls up to 4 emergency egress lighting contactors simultaneously. In the event of power interruption, dimming override resets selected luminaires to 100% output. Once power is restored, egress lighting will remain on for twenty minutes. If more than one egress zone, additional ALICs will be required.

## **2.4 STRUCTURAL PARAMETERS**

- A. Wind Loads: Wind loads shall be based on the 2022 California Building Code. Wind loads to be calculated using ASCE 7-16, a design wind speed of 95 mi/h, exposure category C and wind importance factor of 1.0.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to AISC 360-16 Specification for Structural Steel Buildings.
- C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report. Verdantas Inc. Project No. 036.00000383939 December 5, 2025

## **PART 3 – EXECUTION**

### **3.1 SOIL QUALITY CONTROL**

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
  1. Providing engineered foundation embedment design by a registered engineer in the State of California for soils other than specified soil conditions;
  2. Additional materials required to achieve alternate foundation;
  3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

### **3.2 DELIVERY TIMING**

- B. Delivery Timing Equipment On-Site: The equipment must be on-site 10 to 12 weeks from receipt of approved submittals and receipt of complete order information.

### **3.3 FIELD QUALITY CONTROL**

- A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-22.
- B. Field Light Level Accountability
  - 1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
  - 2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
  - 3. The contractor/manufacturer will be held responsible for all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.
- C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles, uniformity ratios, uplight for aerial visibility, and offsite candela readings are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

### **3.4 WARRANTY AND GUARANTEE**

- A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather condition events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

## **PART 4 – DESIGN APPROVAL**

### **4.1 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)**

- A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.1.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- B. Approved Product: Musco's Light-Structure System™ with TLC for LED® is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing



any other approved lighting manufacturers and designs.

- C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid, listing approved lighting manufacturers and the design method to be used.
- D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

**REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID**

*All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. **Submit checklist below with submittal.***

Yes / No	Tab	Item	Description
	<b>A</b>	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	<b>B</b>	Equipment Layout	Drawing(s) showing field layouts with pole locations
	<b>C</b>	On Field Lighting Design	Lighting design drawing(s) showing: <ul style="list-style-type: none"> <li>a. Field Name, date, file number, prepared by</li> <li>b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x &amp; y), Illuminance levels at grid spacing specified</li> <li>c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics</li> <li>d. Height of light test meter above field surface.</li> <li>e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaires, total kilowatts, average tilt factor; light loss factor.</li> </ul>
	<b>D</b>	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	<b>E</b>	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years' experience.
	<b>F</b>	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed not to fall below target levels for warranty period.
	<b>G</b>	Structural	Pole structural calculations and foundation design showing foundation shape, depth

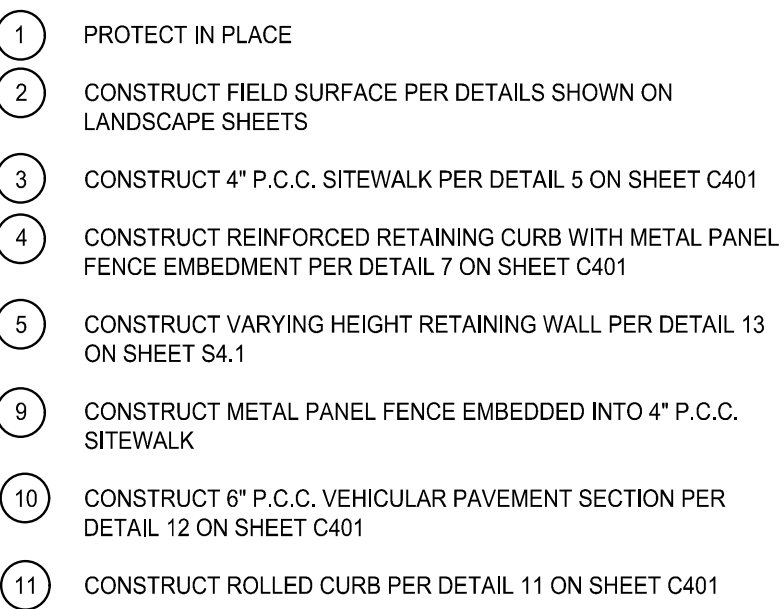
		Calculations	backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of California, if required by owner. (May be supplied upon award).
	<b>H</b>	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system. They will also provide ten (10) references of customers currently using proposed system in the state of California.
	<b>I</b>	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of California.
	<b>J</b>	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of California.
	<b>K</b>	Project References	Manufacturer to provide a list of five (5) projects where the technology and specific fixture proposed for this project has been installed in the state of California. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	<b>L</b>	Product Information	Complete bill of material and current brochures/cut sheets for all products being provided.
	<b>M</b>	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	<b>N</b>	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	<b>O</b>	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years

The information supplied herein shall be used for the purpose of complying with the specifications for Long Beach Poly Softball and Soccer. By signing below, I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

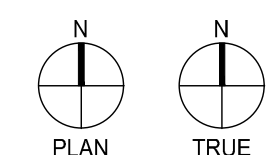
**Manufacturer:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_ **Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Contractor:** \_\_\_\_\_ **Signature:** \_\_\_\_\_



LONG BEACH BLVD



1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813

**POLYTECHNIC HIGH SCHOOL  
IMPROVEMENTS**

**100% CONSTRUCTION DOCUMENT**

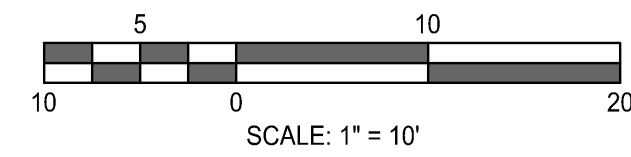
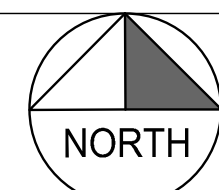
DSA #03-125644 File 19-H15

[illegible]

JOB No.:	240469
SCALE:	As indicated
PROJ MGR:	MC
DATE:	11/10/25

GRADING AND  
PAVING PLAN  
(2 OF 3)

# C202



LEGEND

TC TOP OF CURB  
FL FLOW LINE  
TP TOP OF PAVEMENT  
TSub TOP OF SUBGRADE  
TRN TOP OF RIM  
TG TOP OF GRADE  
TN TOP OF NAILET  
A-X AREA INLET  
ID-X INLINE DRAIN  
CB-X CATCH BASIN  
C-X CURB INLET

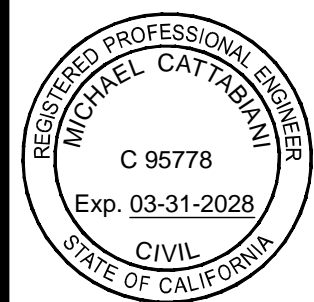
- PROPOSED BUILDING
- EXISTING BUILDING
- EXISTING ELECTRICAL LINE
- EXISTING COMMUNICATION LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPERTY ROW LINE
- MATCHLINE
- VARYING HEIGHT RETAINING WALL

WATER AND SEWER IMPROVEMENT KEY NOTES

- THE PROPOSED 1" POTABLE WATER LINE SHALL BE SEAMLESS COPPER WATER PIPE CONFORMING TO ASTM B88, TYPE L PER DETAIL 3 ON SHEET C401.
- INSTALL 1" X 1" SOLDER COPPER FITTING.
- THE PROPOSED 2" POTABLE WATER LINE SHALL BE SEAMLESS COPPER WATER PIPE CONFORMING TO ASTM B88, TYPE L.
- INSTALL SALVAGED BACK FLOW PREVENTER.
- INSTALL 6" HDPE STORM DRAIN LINE (PERIMETER COLLECTOR PIPE)
- INSTALL 4" PERFORATED COLLECTOR PIPE (REFER TO DETAIL 2 ON L2.00 FOR MORE INFORMATION)

**Long Beach Unified School District**  
2425 Webster Avenue  
Long Beach, CA 90810

LBUSD No.: 9216-654  
PTN No.: 64725-585



**PBK**  
ARCHITECT  
8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA 91730  
Tel: 909-987-0909  
www.pbk.com

**DIG ENGINEERS**  
2400 E KATELLA AVE.  
ANAHEIM, CA 92806  
Tel: 949-648-5000  
CONTACT: MICHAEL CATTABIANI

1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813

**POLYTECHNIC HIGH SCHOOL IMPROVEMENTS**

100% CONSTRUCTION DOCUMENT

DSA #03-125644 File 19-H15

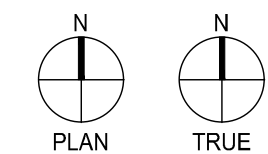
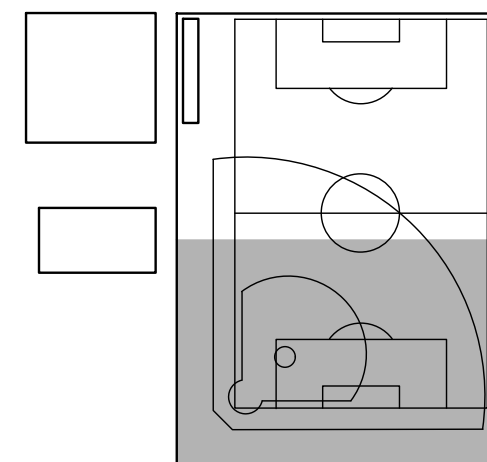
REV.	DATE	DESCRIPTION
1	6/15/26	ADDENDUM 01

JOB No.: 240469  
SCALE: As indicated  
PROJ MGR: MC  
DATE: 11/10/25

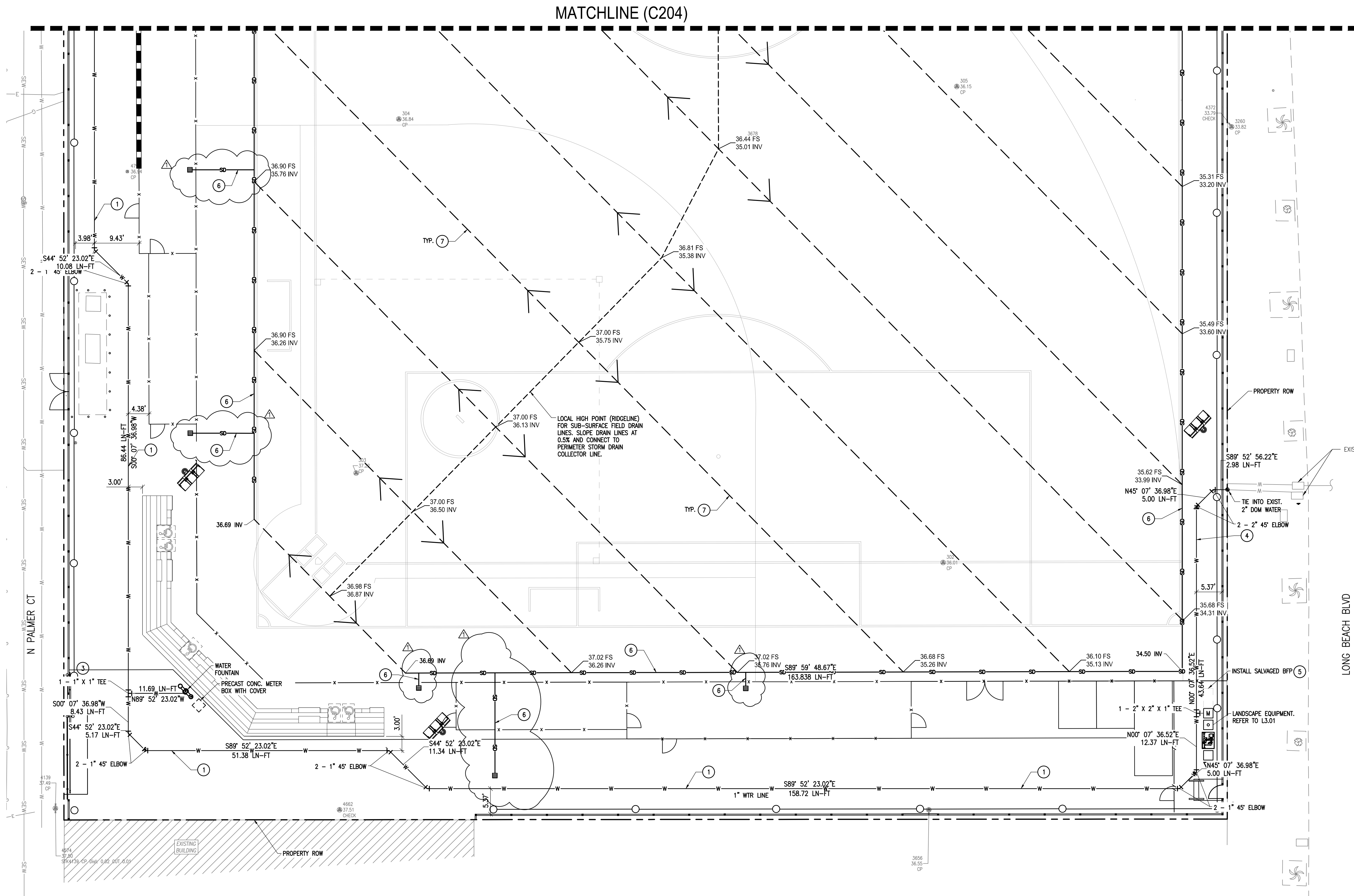
WET UTILITY PLAN  
(2 OF 2)

**C205**

KEY PLAN



PLAN TRUE





LOCUST AVENUE

16TH STREET

N PALMER CT

LONG BEACH BLVD

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

D

C

B

A

G

F

E

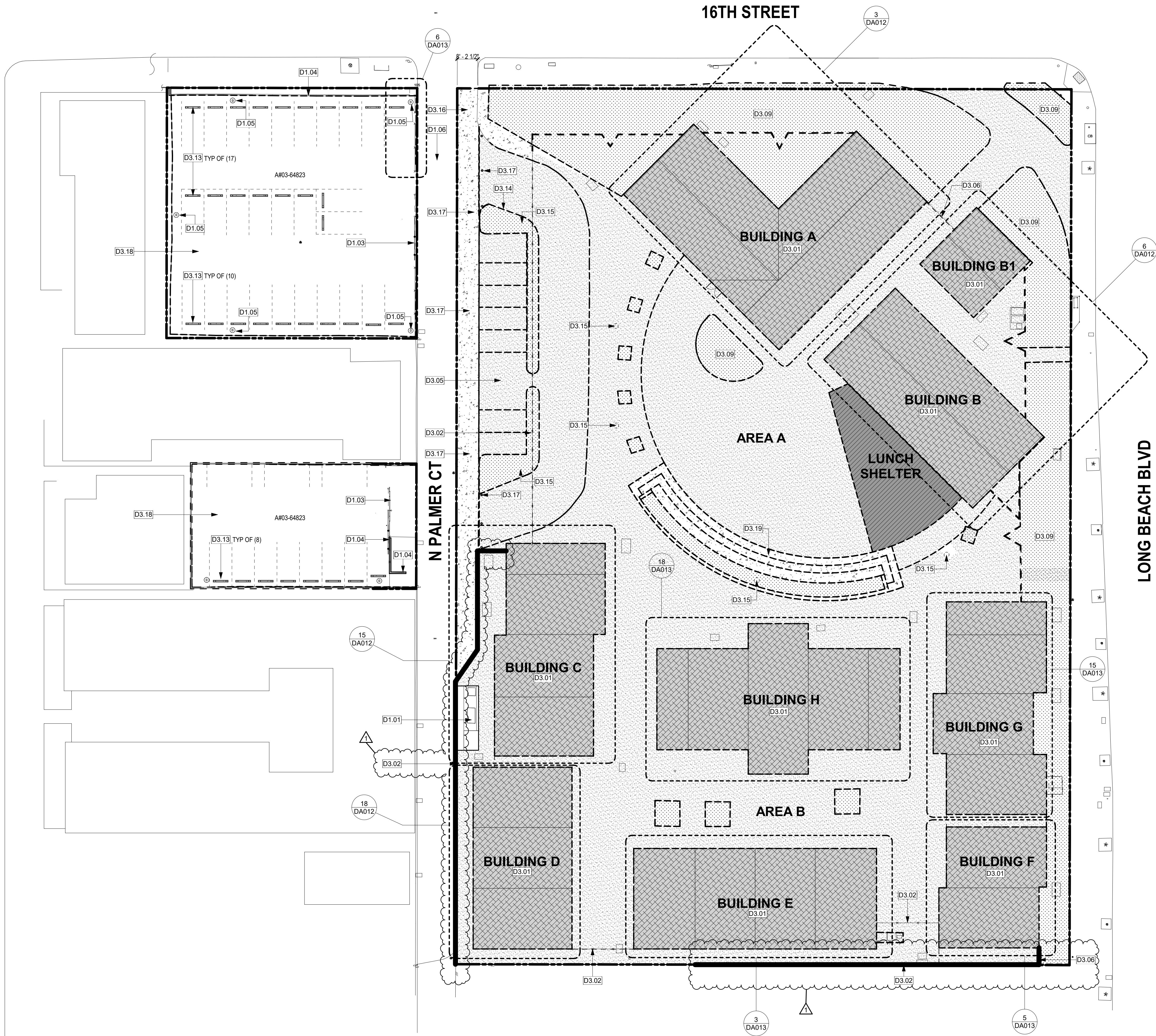
D

C

B



LOCUST AVENUE



KEYNOTES

- D1.01 EXISTING ELECTRICAL EQUIPMENT & PAD TO REMAIN, PROTECT IN PLACE  
D1.03 EXISTING CHAINLINK FENCE AND ROLLING GATE TO REMAIN, PROTECT IN PLACE  
D1.04 EXISTING CMU WALL TO REMAIN, PROTECT IN PLACE  
D1.05 EXISTING CONCRETE BASE & LIGHTING POLE TO REMAIN, PROTECT IN PLACE  
D1.06 EXISTING CONCRETE TO REMAIN, PROTECT IN PLACE  
D3.01 DEMOLISH EXISTING BUILDING ON SITE & ALL ASSOCIATED FOOTINGS  
D3.02 DEMOLISH (E) CHAINLINK FENCING, GATES, POSTS, AND FOOTINGS, U.N.O  
D3.05 DEMOLISH (E) ASPHALT AND SUBGRADE  
D3.06 DEMOLISH EXISTING TUBE STEEL GATES / FENCE AND ALL ASSOCIATED FOOTINGS  
D3.09 DEMOLISH EXISTING LANDSCAPE, IRRIGATION DEVICES TO BE SALVAGED.  
D3.13 EXISTING CONCRETE WHEEL STOP TO BE DEMOLISHED  
D3.14 EXISTING CONCRETE CURB TO DE DEMOLISHED  
D3.15 EXISTING CONCRETE BASE, LIGHTING POLE, & ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY  
D3.16 EXISTING CONCRETE TO BE SAWCUT AND DEMOLISH  
D3.17 EXISTING BOLLARD AND FOOTING TO BE DEMOLISHED IN ITS ENTIRETY  
D3.18 GRIND EXISTING ASPHALT PAVING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION  
D3.19 EXISTING CONCRETE STEPS AND ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY

SITE PLAN LEGEND

- PROPERTY LINE / AREA OF WORK  
EXISTING PERIMETER WALLS / FENCES TO BE DEMOLISHED  
EXISTING LANDSCAPE TO BE DEMOLISHED  
EXISTING SHADING STRUCTURE TO BE DEMOLISHED  
EXISTING ASPHALT PAVEMENT TO BE DEMOLISHED  
EXISTING BUILDING (A# 03-64823) AND ASSOCIATED FOOTINGS TO BE DEMOLISHED IN ITS ENTIRETY  
EXISTING CONCRETE TO BE DEMOLISHED  
(E) HARDSCAPE TO REMAIN

GENERAL DEMOLITION NOTES:

1. DEMOLITION PLANS INDICATE SOME OF THE SCOPE-OF-WORK INVOLVED FOR THE DEMOLITION PHASE OF THIS PROJECT. CONTRACTOR SHALL REVIEW ALL SHEETS FOR ADDITIONAL DEMOLITION SCOPE  
2. 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 DETAIL 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 EXECUTION OF THIS WORK.  
3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCING WORK.  
4. CONTRACTOR SHALL NOTIFY ARCHITECT AND OWNER OF ANY POSSIBLE ASBESTOS CONTAINING MATERIALS DISCOVERED BEFORE PROCEEDING WITH WORK. PROTECT INTERIOR CONSTRUCTION TO REMAIN DURING DEMOLITION AND CONSTRUCTION.  
5. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF TEMPORARY DUST AND OR SOUND PARTITION BETWEEN CONSTRUCTION AREA AND AREAS NOT IN SCOPE AS NECESSARY. DEMOLITION ACTIVITIES SHALL BE PERFORMED SO AS TO PRODUCE MINIMAL DISTURBANCE TO EXISTING FACILITY AND OCCUPANTS (I.E. MINIMIZE EXCESSIVE AND PROLONGED NOISE LEVELS AND DUST).  
6. CONTRACTOR SHALL REPAIR, REPLACE, OR PATCH EXISTING BUILDINGS, DRIVEWAYS, SIDEWALKS, CANOPIES, AND OR PARKING AREAS DAMAGED, MODIFIED, AND OR DISTURBED BY DEMOLITION WORK AT NO COST TO THE OWNER.  
7. ALL EXISTING EQUIPMENT THAT REMAINS SHALL BE PROTECTED DURING DEMOLITION AND OR CONSTRUCTION TO PREVENT DAMAGE. ANY DAMAGE TO REMAINING EXISTING EQUIPMENT SUSTAINED DURING DEMOLITION AND OR CONSTRUCTION SHALL BE EQUIVALENTLY REPLACED OR EQUIVALENTLY REPAIRED AT NO COST TO THE OWNER.  
8. CONTRACTOR SHALL REMOVE DEBRIS REGULARLY AS NECESSARY TO ELIMINATE INTERFERENCE WITH ROADS, STREET, WALKS, AND ALL OTHER ADJACENT FACILITIES.  
9. CONTRACTOR SHALL PROVIDE TRAFFIC HANDLING MEASURES TO PROTECT THE GENERAL PUBLIC AT ALL TIMES, AS NECESSARY AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.  
10. DO NOT INTERRUPT EXISTING UTILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.  
11. WHEN UTILITY SERVICES ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE BYPASS CONNECTIONS TO MAINTAIN CONTINUITY OF SERVICE BEFORE PROCEEDING WITH DEMOLITION.  
12. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO THE FOLLOWING: ELECTRIC, GAS, WATER, TELEPHONE, STORM SEWER, AND SANITARY SEWER FOR FIELD LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITY LINES. PRIOR TO COMMENCEMENT OF ANY DEMOLITION WORK, CONTRACTOR SHALL IDENTIFY ALL ELECTRICAL CIRCUITS SERVICING THE AREA INVOLVED WITH THIS DEMOLITION. THOSE CIRCUITS SHALL THEN BE LOCKED OUT AND TAGGED OUT IF THEY DO NOT SERVICE ANY OF THE REMAINING BUILDING.  
13. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES.  
14. PROTECT EXISTING SITE ELEMENTS AND EXISTING LANDSCAPING TO REMAIN. PROTECTION SHALL INCLUDE BUT NOT BE LIMITED TO EXISTING TREES AND OTHER EXISTING VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIAL OR EXCAVATED MATERIAL WITHIN DRIP LINES.  
15. CONTRACTOR SHALL REGRADE AND HYDROMULCH AREAS AFFECTED BY DEMOLITION.  
16. OWNER HAS RIGHT OF FIRST REFUSAL OF ALL ITEMS REMOVED AS PART OF THE SCOPE OF WORK, WHETHER IDENTIFIED AS SALVAGE OR NOT. CONTRACTOR TO REVIEW DEMOLITION FLOOR PLANS FOR ITEMS TO BE SALVAGED.  
17. NOTIFY THE BUILDING OWNER OF ANY MATERIALS, FIXTURES, ETC. TO BE REMOVED THAT ARE DEEMED SALVAGEABLE. TURN OVER ANY REQUESTED ITEMS TO THE BUILDING OWNER IN GOOD AND CLEAN CONDITION.  
18. ALL FURNITURE WILL BE REMOVED OR RELOCATED BY THE OWNER AS NECESSARY PRIOR TO THE DEMOLITION WORK OF THIS PROJECT. CONTRACTOR SHALL COORDINATE WITH OWNER AS REQUIRED.  
19. ALL DASHED LINES ARE DEMOLITION LINES U.N.O.  
20. BIDDERS ARE TO ASSUME EXISTING FOUNDATION THAT WILL BE DEMOLISHED ARE SIMILAR TO THE FOUNDATION AND CRAWL SPACES FOR THE NEW BUILDING.



2425 Webster Avenue  
Long Beach, CA 90810

LBUSD No.: 9216-654  
PTN No.: 64725-585  
Facilities Management



8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA  
91730  
Tel: 909-987-0909  
www.pbk.com

PROJECT ADDRESS  
1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813  
POLYTECHNIC HIGH SCHOOL  
IMPROVEMENTS  
100% CONSTRUCTION DOCUMENTS

DSA #03-125644 File 19-H15

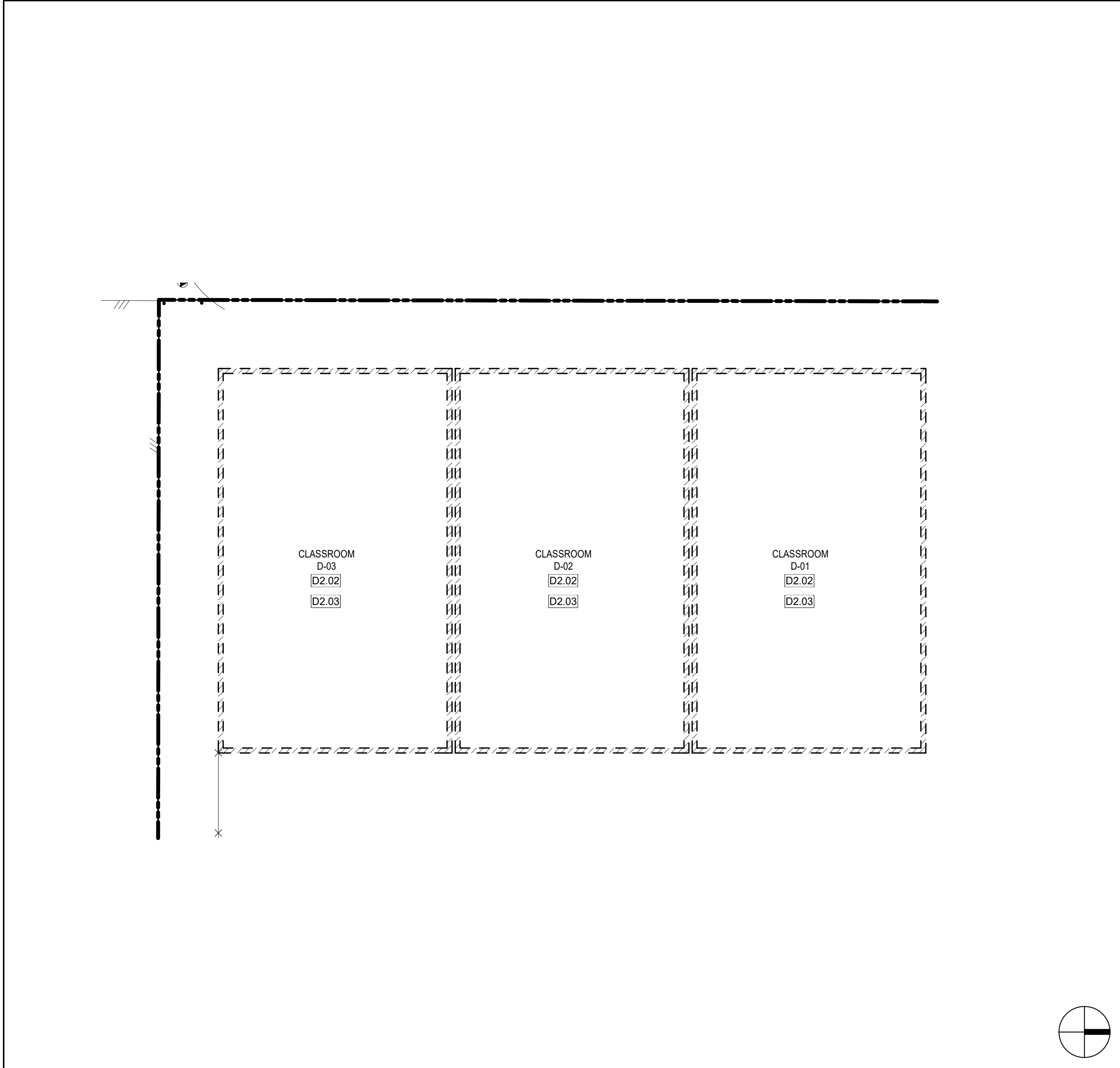
REV. DATE DESCRIPTION  
1 06/17/26 ADDENDUM 01

JOB No.: 240469  
SCALE: As indicated  
PROJ MGR: Author  
DATE: 11/21/25

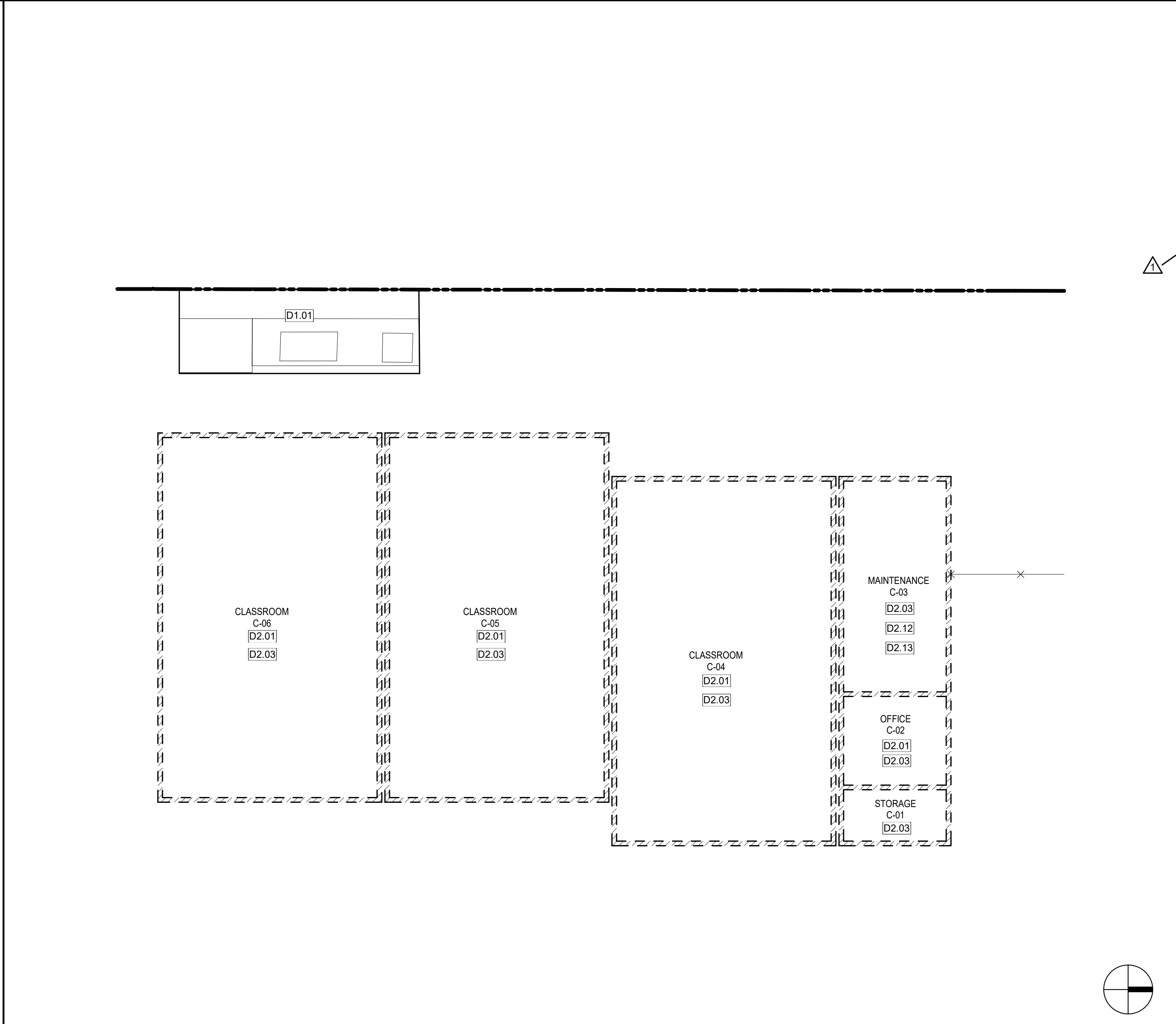
DEMOLITION  
SITE PLAN

DA010

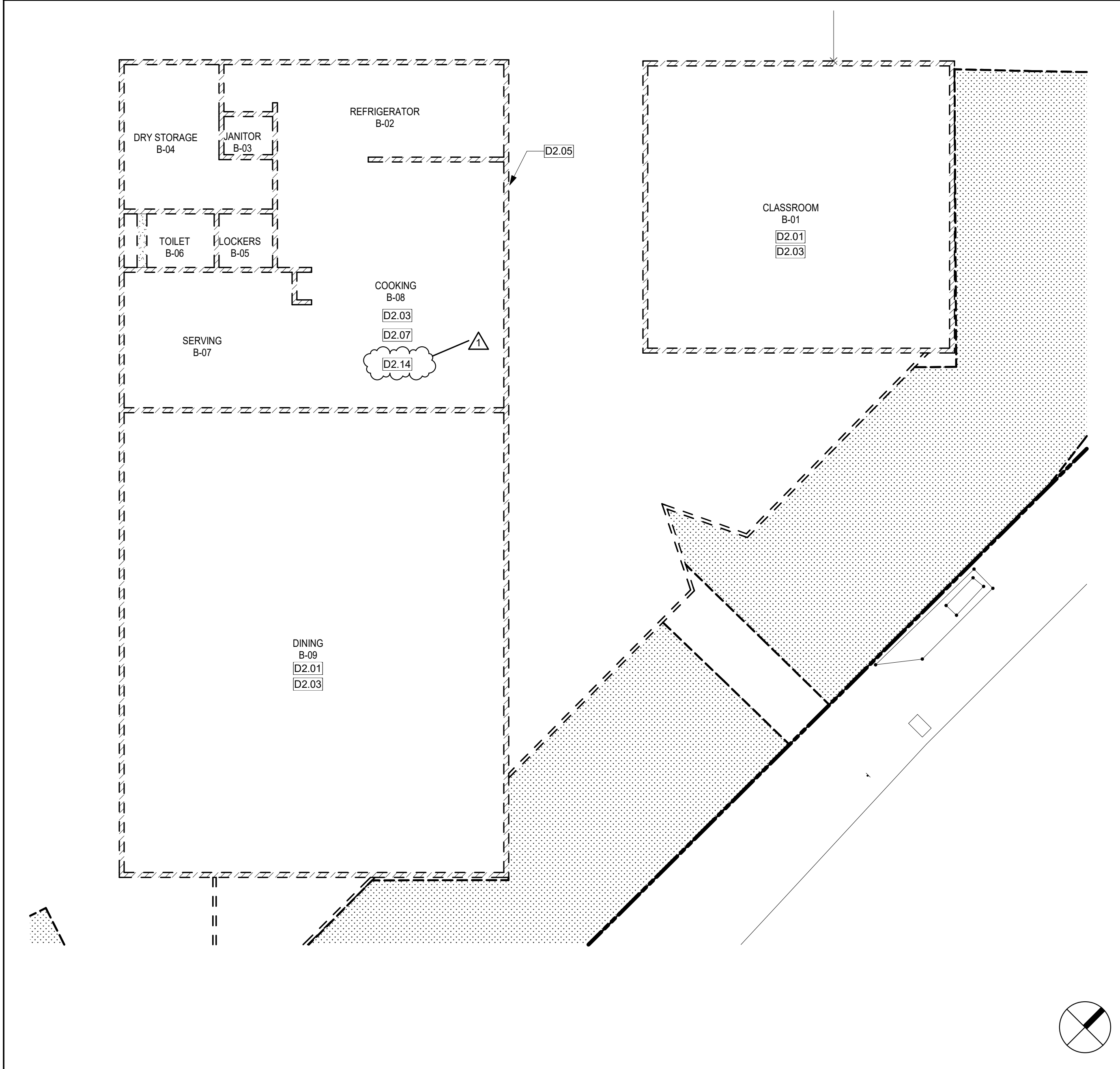




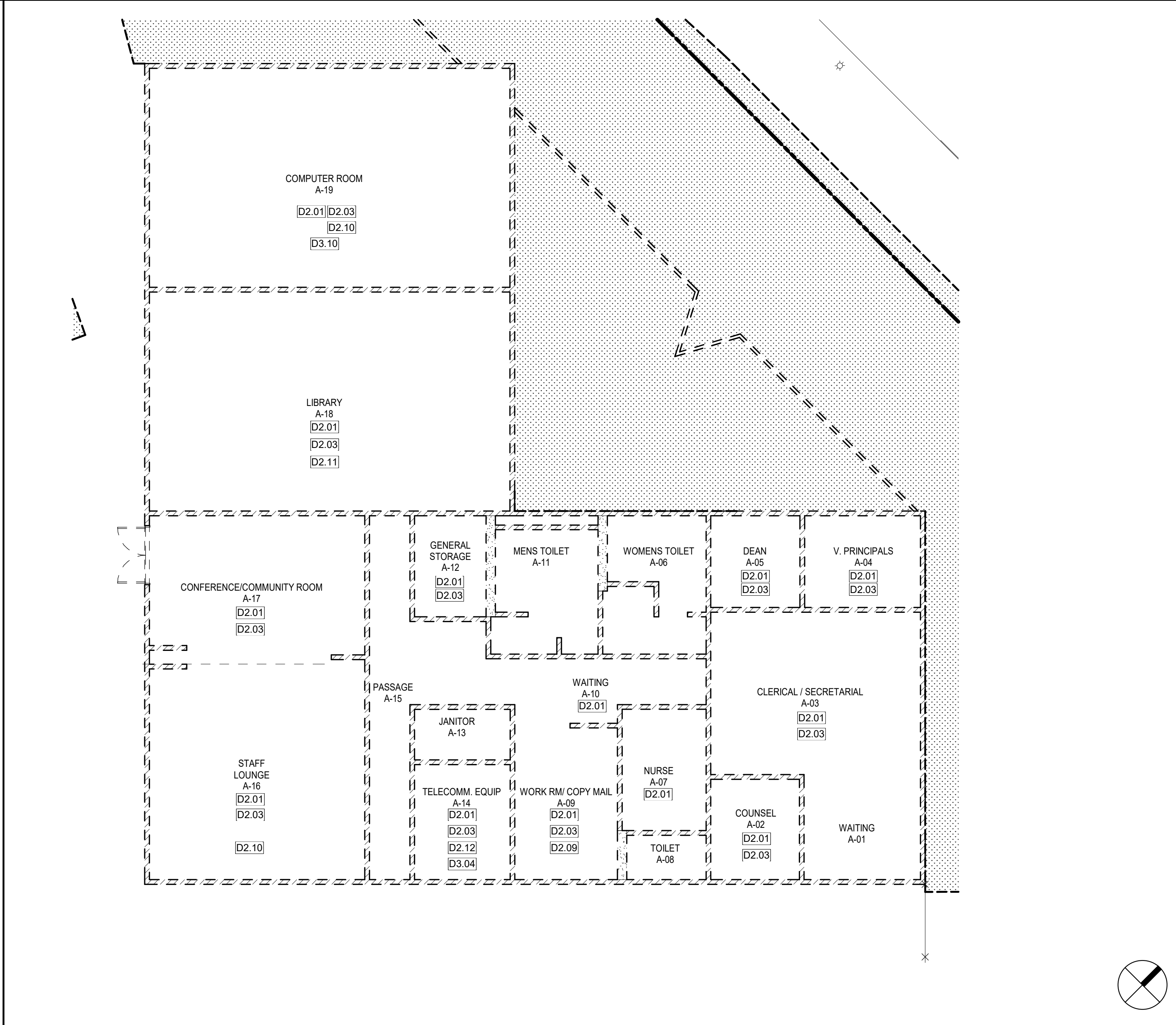
18 BLDG D DEMO FLOOR PLAN  
1/8" = 1'-0"



15 BLDG C DEMO FLOOR PLAN  
1/8" = 1'-0"



6 BLDG B & B1 DEMO FLOOR PLAN  
1/8" = 1'-0"



3 BLDG A DEMO FLOOR PLAN  
1/8" = 1'-0"

KEYNOTES

D1.01 EXISTING ELECTRICAL EQUIPMENT & PAD TO REMAIN, PROTECT IN PLACE  
D2.01 EXISTING OF CABINET, CLOCK/ SPEAKER COMBO, TV, NEW PHONES & THERMOSTATS TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.02 EXISTING FUME HOOD TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.03 EXISTING MOVABLE FURNITURE TO BE REMOVED BY DISTRICT'S MOVING TEAM  
D2.05 EXISTING BIKE RACKS TO BE SALVAGED AN RETURNED TO DISTRICT  
D2.07 EXISTING KITCHEN EQUIPMENT TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.09 EXISTING DEFIBRILLATOR TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.10 EXISTING WIRELESS ACCESS POINTS (WAP)AND ACCESS POINT TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.11 EXISTING SECURITY DETECTORS TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.12 EXISTING INTERCOM DEVICE TO BE SALVAGED AND RETURNED TO DISTRICT  
D2.13 EXISTING EXTERIOR LIGHTING ELECTRICAL PANEL TO BE SALVAGED  
D2.14 EXISTING 3-COMPARTMENT TO BE SALVAGED AND RETURNED TO DISTRICT  
D3.04 EXISTING LARGE STORAGE, ELECTRICAL PANEL AND POWER SUPPLY EXPANDER TO BE DEMOLISHED  
D3.10 EXISTING PROJECTION SCREENS TO BE DEMOLISHED

5

DEMO LEGEND

WALL TO BE DEMOLISHED

4

GENERAL DEMOLITION NOTES:

1. THE DEMOLITION PLAN OUTLINES SOME OF THE SCOPE OF THE WORK INVOLVED FOR THE DEMOLITION PHASE OF THIS PROJECT. CONTRACTOR SHALL REVIEW ALL SHEETS FOR ADDITIONAL DEMO SCOPE  
2. CONTRACTOR SHALL VERIFY EXISTING SITE AND BUILDING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO COMMERCIAL DEMOLITION ACTIVITIES. CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR WILL NOTIFY ARCHITECT OF ANY DISCREPANCIES IN WRITING  
3. AFTER AWARD OF THE CONTRACT, CHANGE ORDER REQUESTS FOR ADDITIONAL MONEY WILL NOT BE APPROVED IF THE WORK COULD HAVE BEEN ANTICIPATED DURING A SITE VISIT BY THE CONTRACTOR  
4. CONTRACTOR WILL BE REQUIRED TO REPAIR, REPLACE, OR PATCH EXISTING BUILDINGS, DRIVEWAYS, SIDEWALKS, CANOPIES, AND/OR PARKING AREAS DISTURBED BY DEMOLITION  
5. CONTRACTOR WILL BE REQUIRED TO REGRADE AND HYDROMULCH AREAS AFFECTED BY DEMOLITION  
6. ALL FURNITURE WILL BE REMOVED OR RELOCATED BY THE OWNER AS NECESSARY PRIOR TO THE DEMOLITION WORK OF THIS PROJECT. CONTRACTOR SHALL COORDINATE WITH OWNER AS REQUIRED  
7. REMOVE EXISTING CONSTRUCTION TO THE EXTENT INDICATED ON THE DRAWINGS. SHOULD ANY DAMAGE OCCUR TO ANY EXISTING CONSTRUCTION TO REMAIN, THE CONTRACTOR SHALL REPAIR THE DAMAGE. TO MATCH EXISTING ADJACENT CONSTRUCTION  
8. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES  
9. CONTRACTOR SHALL REMOVE DEBRIS REGULARLY AS NECESSARY TO ELIMINATE INTERFERENCE WITH ROADS, STREET, WALKS, AND ALL OTHER ADJACENT FACILITIES.  
10. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF TEMPORARY DUST AND/OR SOUND PARTITION BETWEEN CONSTRUCTION AREA AND AREAS NOT IN SCOPE AS NECESSARY. DEMOLITION ACTIVITIES SHALL BE PERFORMED SO AS TO PRODUCE MINIMAL DISTURBANCE TO EXISTING FACILITY AND OCCUPANTS (I.E. MINIMIZE EXCESSIVE AND PROLONGED NOISE LEVELS AND DUST)  
11. NOTIFY THE BUILDING OWNER OF ANY MATERIALS, FIXTURES, ETC. TO BE REMOVED THAT ARE DEEMED SALVAGEABLE. TURN OVER ANY REQUESTED ITEMS TO THE BUILDING OWNER IN GOOD CONDITION  
12. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS  
13. MAINTAIN THE INTEGRITY OF ALL EXISTING RATED WALLS, FIRE SEAL ANY PENETRATIONS WITH U.L. APPROVED ASSEMBLY  
14. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH THE INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, DETERMINE THE NATURE AND EXTENT OF THE CONFLICT AND NOTIFY THE ARCHITECT IMMEDIATELY FOR RESOLUTION  
15. PROTECT EXISTING SITE IMPROVEMENTS AND LANDSCAPING TO REMAIN, INCLUDING BUT NOT LIMITED TO EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOOTHING OF TREES BY STOKING CONSTRUCTION MATERIAL OR EXCAVATED MATERIAL WITHIN DRIP LINES  
16. CONTRACTOR SHALL PROVIDE TRAFFIC HANDLING MEASURES AS NECESSARY TO PROTECT THE GENERAL PUBLIC AT ALL TIMES, AND AS REQUIRED BY GOVERNING AUTHORITIES  
17. DO NOT INTERRUPT EXISTING UTILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO GOVERNING AUTHORITIES.  
18. WHEN UTILITY SERVICES ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE BYPASS CONNECTIONS TO MAINTAIN CONTINUITY OF SERVICE BEFORE PROCEEDING WITH DEMOLITION  
19. CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO THE FOLLOWING: ELECTRIC, GAS, WATER, TELEPHONE, STORM SEWER, AND SANITARY SEWER FOR FIELD LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITY LINES. PRIOR TO COMMENCEMENT WITH ANY DEMOLITION WORK, CONTRACTOR SHALL IDENTIFY ALL ELECTRICAL CIRCUITS SERVING THE AREA INVOLVED WITH THIS DEMOLITION. THOSE CIRCUITS SHALL THEN BE LOCKED OUT AND TAGGED OUT IF THEY DO NOT SERVICE ANY OF THE REMAINING BUILDINGS. THOSE CIRCUITS WHICH ARE IDENTIFIED TO SERVICE BOTH THE AREA TO BE DEMOLISHED AND THE REMAINING BUILDING SHALL BE SPLIT SO AS TO KILL ALL ELECTRICAL POWER TO THE AREA TO BE DEMOLISHED WHILE MAINTAINING POWER TO THE REMAINDER OF THE BUILDING  
20. CONTRACTOR TO RE-LOCATE UTILITIES & EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW HVAC, ELECTRICAL & PLUMBING REQUIREMENTS FOR NEW RENOVATION WORK.  
21. REFER TO DEMOLITION PLUMBING PLANS FOR EXTENT OF CONCRETE SLAB TO BE REMOVED AND REPLACED FOR UNDER FLOOR PIPING INSTALLATION.  
22. EXISTING WALLS (OR PORTIONS OF WALLS) TO BE REMOVED SHALL BE CUT FLUSH WHERE INTERSECTING WITH WALLS TO REMAIN. REMAINING WALLS TO BE PATCHED AND FINISHED SMOOTH  
23. NEW OPENING TO BE CUT IN EXISTING WALLS SHALL BE SAW-CUT AT LOCATIONS INDICATED TO THE HEIGHT AND WIDTH INDICATED. NEW LINTELS SHALL BE INSTALLED TO SUPPORT EXISTING WALL CONSTRUCTION ABOVE AS INDICATED ON THE DRAWINGS, OR IF NOT INDICATED, AS REQUIRED FOR NEW WALL CONSTRUCTION PER STRUCTURAL DRAWINGS  
24. WHERE EXISTING INTERIOR WALLS ARE REPLACED OR REMOVED, REMOVE MEP SYSTEMS BACK TO PANEL OR MECHANICAL ROOM OR FARTHEST POSSIBLE POINT WITHOUT DISTURBING EXISTING CONSTRUCTION. REMOVE EXISTING MECHANICAL EQUIPMENT. RELOCATE POWER PER MEP DRAWINGS  
25. REFER TO MEP DRAWINGS FOR DEMOLITION OF MEP SYSTEMS. IDENTIFY WORK REQUIRED BY THIS CONTRACTOR WHICH MAY AFFECT DEMOLITION AND/OR REPAIRS OF ARCHITECTURAL ELEMENTS. COORDINATE WITH RELATED SUBS THE EXTENT OF ALL DEMOLITION WORK  
26. PATCH FLOORS, WALLS CEILINGS WHICH REMAIN AT LOCATIONS WHERE PIPES, CONDUITS, ETC. ARE REMOVED AS REQUIRED TO MATCH EXISTING CONDITIONS OR TO RECEIVE NEW FINISHES  
27. WHERE EXISTING FINISH FLOOR IS REMOVED, PREPARE SURFACE TO RECEIVE NEW FLOORING  
28. NOTIFY ARCHITECT & OWNER OF ANY POSSIBLE ASBESTOS CONTAINING MATERIALS DISCOVERED BEFORE PROCEEDING WITH WORK, PROTECT INTERIOR CONSTRUCTION TO REMAIN DURING DEMOLITION AND CONSTRUCTION  
29. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCING WORK  
30. CONTRACTOR TO PROVIDE ALL NECESSARY SHORING FOR PROTECTION OF EXISTING STRUCTURE AND FOUNDATION TO REMAIN  
31. ALL DASHED LINES ARE DEMOLITION LINES UNLESS NOTED OTHERWISE.

3

2

1

Project

Issue

Sheet Info

Sheet Title

Sheet No.

Agency Approval

Client

Stamps

Architect

Consultant

Project

Issue

Sheet Info

Sheet Title

Sheet No.

Long Beach Unified School District

2425 Webster Avenue  
Long Beach, CA 90810

LBUSD No.: 9216-654  
PTN No.: 64725-585

Facilities Management

PBK ARCHITECT

8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA 91730  
Tel: 909-987-0909  
www.pbk.com

PROJECT ADDRESS  
1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813

POLYTECHNIC HIGH SCHOOL IMPROVEMENTS

100% CONSTRUCTION DOCUMENTS

DSA #03-125644 File 19-H15

REV. 1 DATE 06/17/26 DESCRIPTION ADDENDUM 01

JOB No.: 240469  
SCALE: As indicated  
PROJ MGR: Author  
DATE: 11/21/25

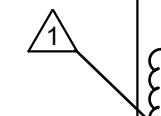
BLDG A, B, C, & D DEMOLITION FLOOR PLAN

DA012

NOTE: MUSCO LIGHTING SHALL BE INTEGRATED INTO THE DISTRICT'S EXISTING MUSCO LIGHTING ControlLink CONTROL SYSTEM EMS.

1. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
2. UNLESS NOTED OTHERWISE ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1/2" ID IN SIZE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.
4. MUSCO LIGHTING CONTROLS SHALL BE INCLUDED WITH MUSCO SPORT LIGHTING FIXTURES. ENSURE THAT MUSCO CONTROL MONITORING FOR THE SITE IS INCLUDED WITH ALL THE OTHER MUSCO SPORTS LIGHTING SITES FOR LEASD.
5. PROVIDE #4 CONDUCTORS FOR 120V CIRCUITS ROUTED ON THE SITE PER THE PLAN TO ACCOUNT FOR VOLTAGE DROP ACROSS THE SITE.

1	PROVIDE 1-1/2" CMT FROM SCORE BOARD TO BACK OF BACKSTOP AND TO SOCCER CENTER FIELD/SOCCER BOARD CONTROL.
2	PROVIDE 120V POWER CONNECTION LOCATED IN GRADE BOX.
3	REFER TO SINGLE LINE DIAGRAM ON SHEET E7.1.
4	PROVIDE (2) 20A WEATHERPROOF, TOGGLE SWITCHES FOR SCOREBOARD IN LOCKABLE ENCLOSURE WITH COVER (NEMA-3R). PLACE SWITCHES AWAY FROM FENCE.
5	MOUNT 120V GFCI-TYPE RECEPTACLE IN CONTAINER AS REQUIRED.
6	MOUNT 30A, 220V GFCI-TYPE RECEPTACLE IN CONTAINER AS REQUIRED.
7	PROVIDE 400Y 30A/3P DISCONNECT FOR LANDSCAPE BOOSTER PUMP.
8	NOT USED.
9	PROVIDE IN-GROUND PULLBOX FOR TECHNOLOGY CONDUIT. SIZE PULLBOX AS REQUIRED.
10	PROVIDE SURFACE-MOUNTED PULL BOX ON BACK OF BACKSTOP FOR TECHNOLOGY CONDUIT. PULL BOX SHALL BE SIZE AS REQUIRED.
11	PROVIDE CONNECTION FOR ASSISTED LISTENING TRANSMITTER. COORDINATE EXACT LOCATION WITH CAMPUS REPRESENTATIVE AND TECHNOLOGY DRAWINGS PRIOR TO ROUGH-IN.
12	PROVIDE 18"x18" PULLBOX FOR LIGHTING POLE.
13	PROVIDE THE FOLLOWING: • 2" - C & 1/4" IFCG FOR NORMAL POWER (PER CIRCUIT CALLED OUT AT EACH POLE) • 2" - 288 & 1810G FOR EMERGENCY POWER (PER CIRCUIT CALLED OUT AT EACH POLE) • 2" - 400V LOW VOLTAGE



LBUSD No.:	9216-654
PTN No.:	64725-585



**PBK**  
**ARCHITECT**  
8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA  
91730  
Tel: 909-987-0909  
[www.pbk.com](http://www.pbk.com)

 **LEAF**  
ENGINEERS

163 Rochester Avenue, Suite 100  
Rancho Cucamonga, CA 91730  
909.987-0909  
leafengineers.com

1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813

---

**POLYTECHNIC HIGH SCHOOL  
IMPROVEMENTS**

---

**100% CONSTRUCTION DOCUMENTS**

DSA #03-125644 File 19-H15

[illegible]

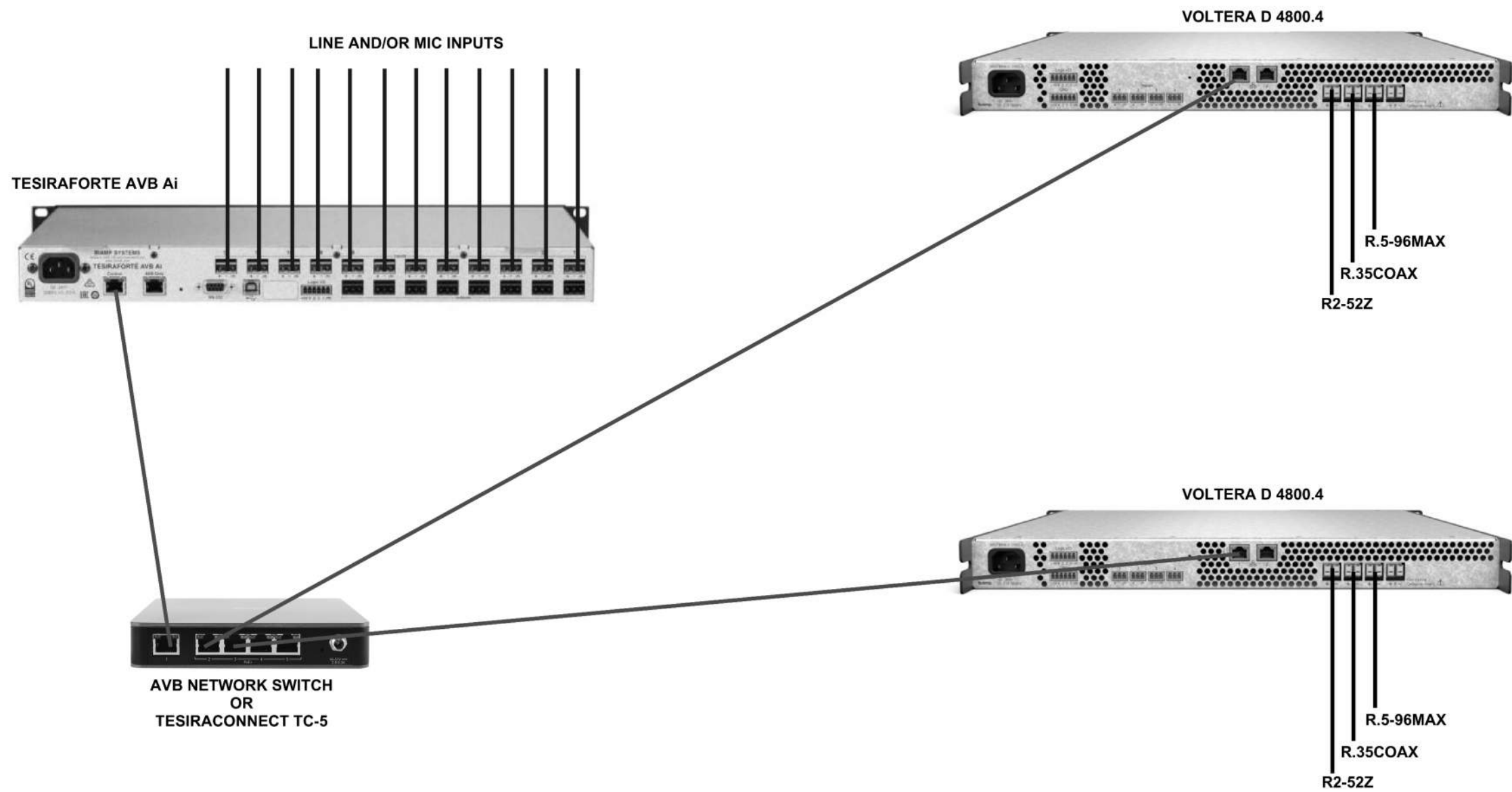
# ELECTRICAL SITE PLAN

## E1.1



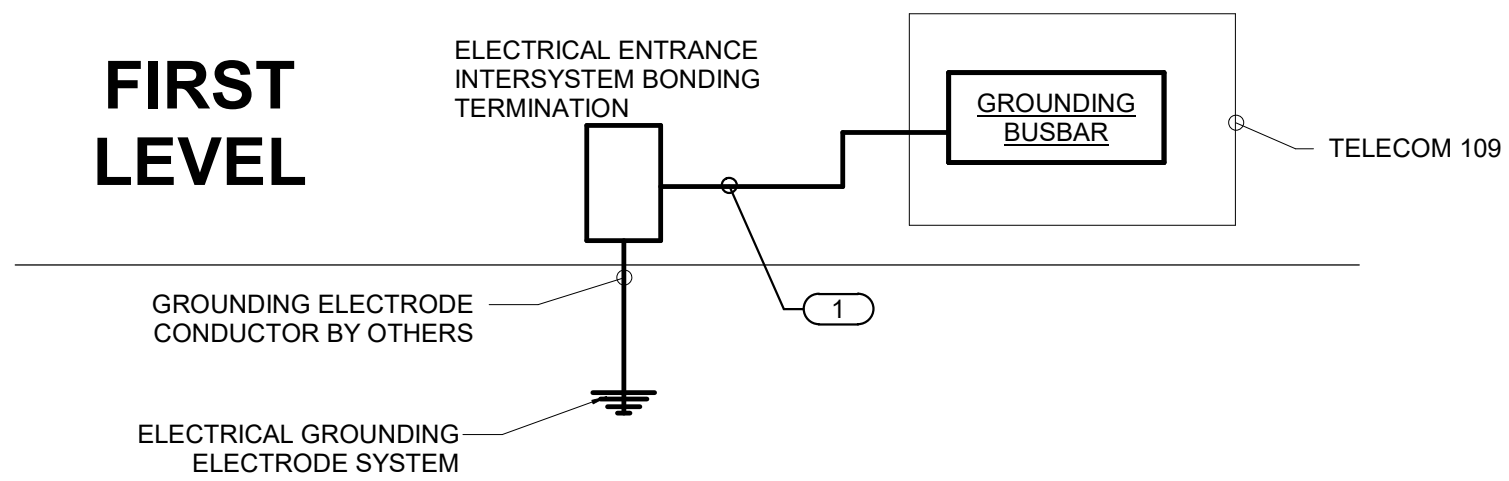
3 AV WIRING DIAGRAM

12" = 1'-0"



biamp.™

FIRST LEVEL



NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 30 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 86 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 86 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
4. REFER TO [2]/[76.1] FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

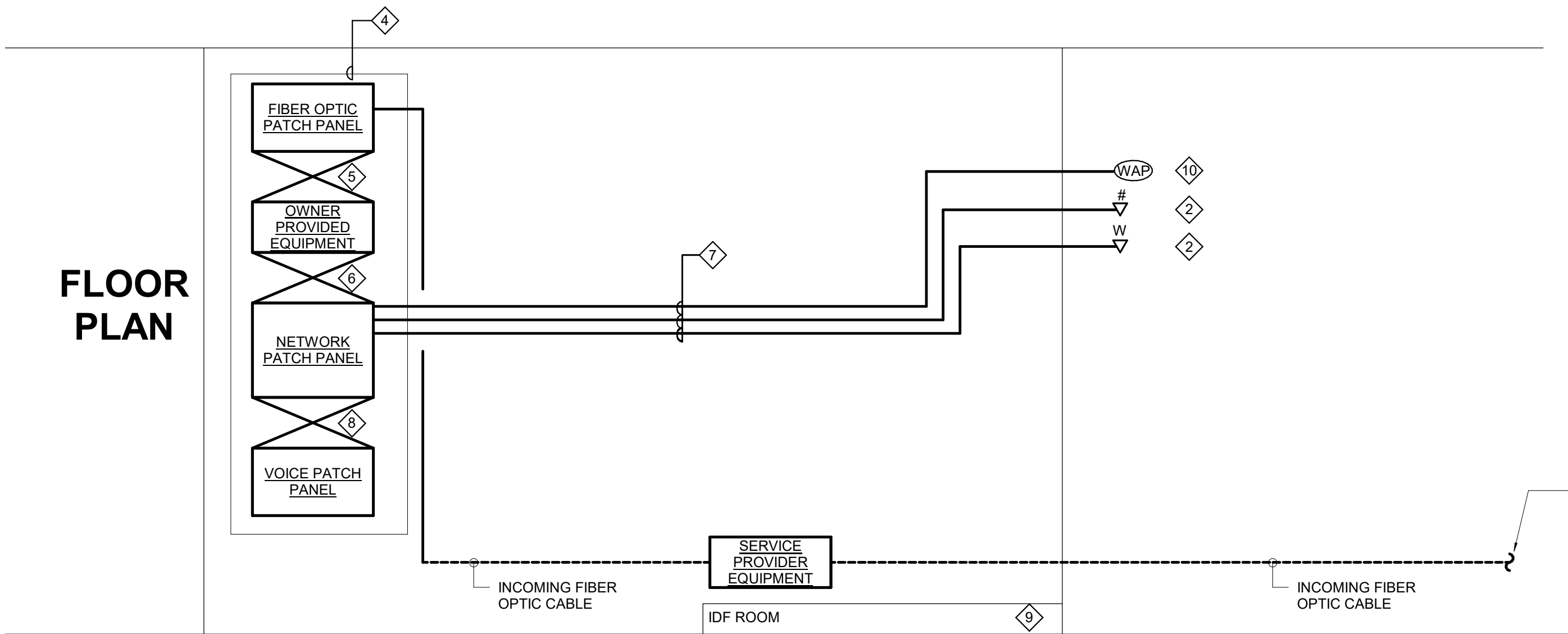
KEYNOTES:

1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). BCT SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

BONDING CONDUCTOR SIZING SCHEDULE	
CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
GREATER THAN 66'	3/0

TECHNOLOGY BONDING RISER DIAGRAM

12" = 1'-0" 1



NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. REFER TO FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLET.
3. RUN CAT6 CABLES FROM THE TENANT OFFICES TO A IDF CABINET IN THE TELECOMMUNICATIONS ROOM AND SHALL BE TERMINATED ON A SEPARATE CABINET FROM FBO WIRING.

KEYNOTES:

1. CROSS-CONNECT BACKBONE RISER CABLE TO THE INCOMING SERVICE PROVIDER CABLE.
2. # INDICATES VOICE/DATA FACEPLATE CONFIGURATION. REFER TO TECHNOLOGY FLOOR PLANS FOR ADDITIONAL INFORMATION.
3. DATA OUTLET INSTALLED IN E.C. PROVIDED AND INSTALLED FLOOR BOX.
4. RACK OR CABINET AS DEFINED ON THE TELECOM ROOM LAYOUT.
5. REFER TO SPECIFICATIONS FOR FIBER PATCH CORD REQUIREMENTS.
6. RJ-45 TO RJ45 CATEGORY 6 UTP PATCH CORDS. REFER TO SPECIFICATIONS.
7. 28 GAUGE 4-PAIR, CATEGORY 6A, UNSHIELDED TWISTED PAIR CABLE, REFER TO SPECIFICATIONS.
8. REFER TO SPECIFICATIONS FOR COPPER PATCH CORD REQUIREMENTS.
9. REFER TO FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.
10. PROVIDE 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING.

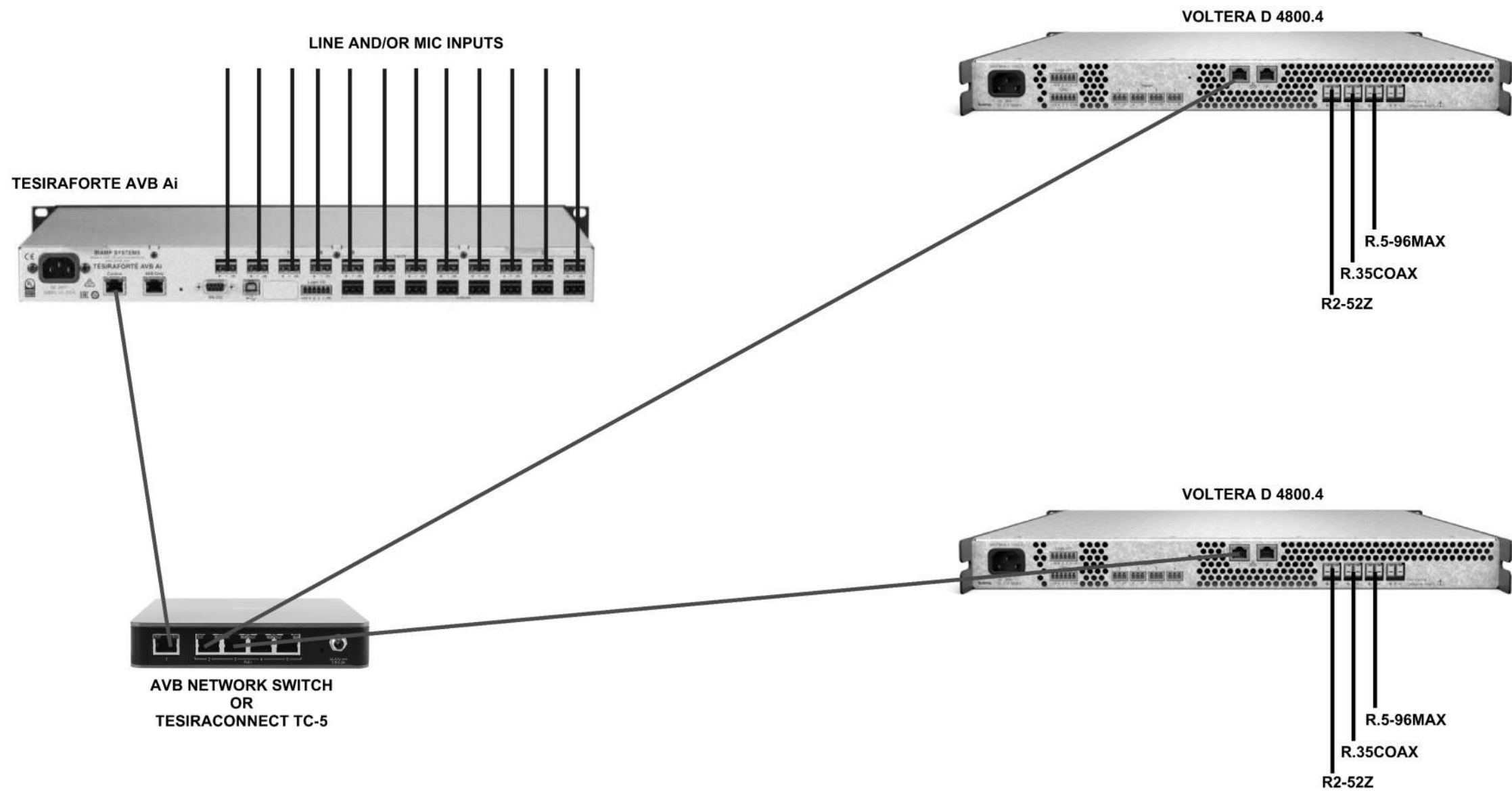
FIBER RISER DIAGRAM

12" = 1'-0" 2

3

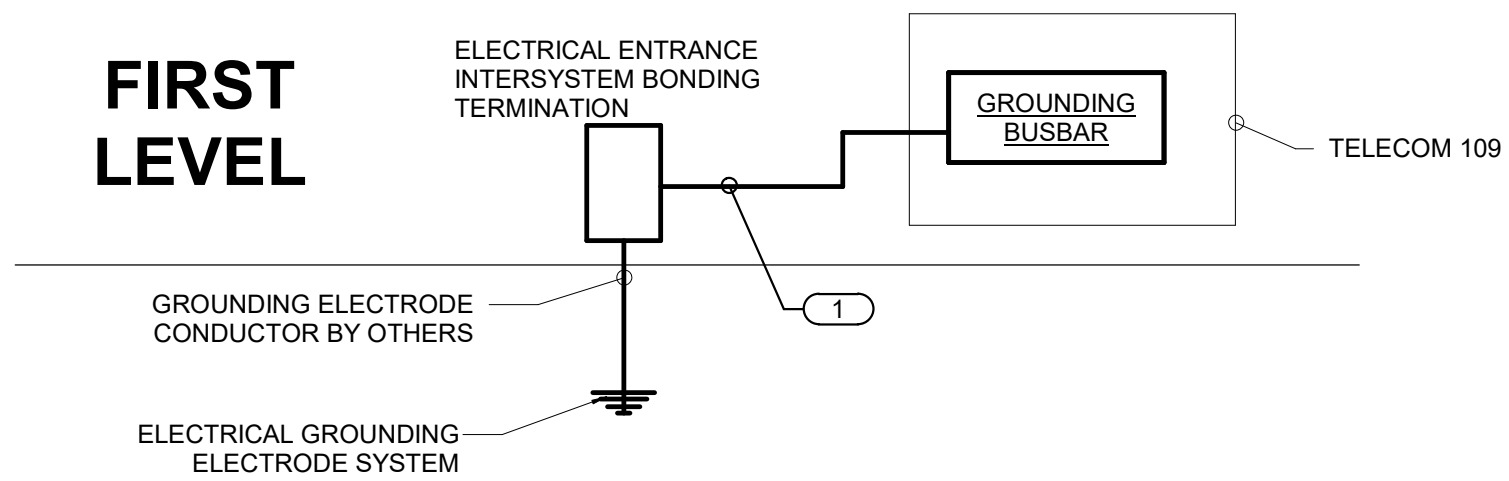
AV WIRING DIAGRAM

12" = 1'-0"



biamp.™

FIRST LEVEL



NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 30 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 86 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 86 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
4. REFER TO [2]/[76.1] FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

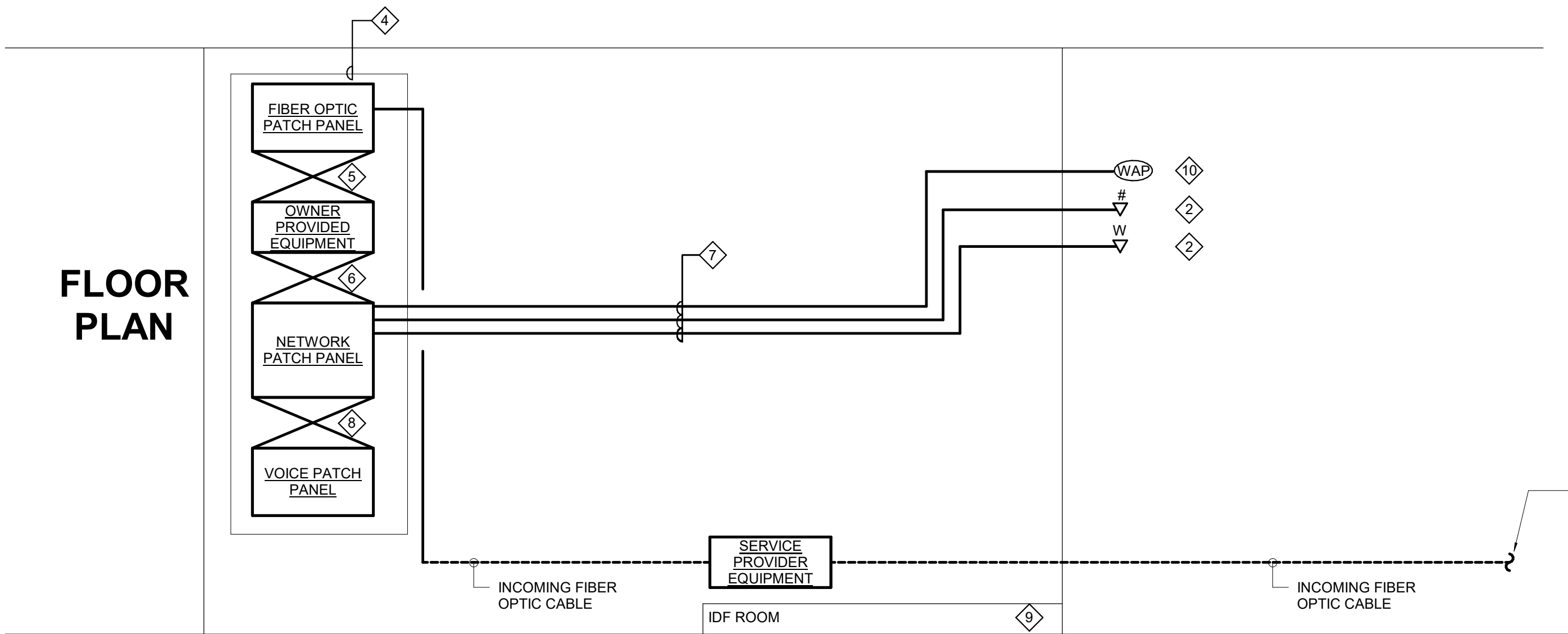
KEYNOTES:

1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT). BCT SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

BONDING CONDUCTOR SIZING SCHEDULE	
CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
GREATER THAN 66'	3/0

TECHNOLOGY BONDING RISER DIAGRAM

12" = 1'-0" 1



NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. REFER TO FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLET.
3. RUN CAT6 CABLES FROM THE TENANT OFFICES TO A IDF CABINET IN THE TELECOMMUNICATIONS ROOM AND SHALL BE TERMINATED ON A SEPARATE CABINET FROM FBO WIRING.

KEYNOTES:

1. CROSS-CONNECT BACKBONE RISER CABLE TO THE INCOMING SERVICE PROVIDER CABLE.
2. # INDICATES VOICE/DATA FACEPLATE CONFIGURATION. REFER TO TECHNOLOGY FLOOR PLANS FOR ADDITIONAL INFORMATION.
3. DATA OUTLET INSTALLED IN E.C. PROVIDED AND INSTALLED FLOOR BOX.
4. RACK OR CABINET AS DEFINED ON THE TELECOM ROOM LAYOUT.
5. REFER TO SPECIFICATIONS FOR FIBER PATCH CORD REQUIREMENTS.
6. RJ-45 TO RJ45 CATEGORY 6 UTP PATCH CORDS. REFER TO SPECIFICATIONS.
7. 28 GAUGE 4-PAIR, CATEGORY 6A, UNSHIELDED TWISTED PAIR CABLE, REFER TO SPECIFICATIONS.
8. REFER TO SPECIFICATIONS FOR COPPER PATCH CORD REQUIREMENTS.
9. REFER TO FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.
10. PROVIDE 2-PORT PLENUM RATED SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING.

FIBER RISER DIAGRAM

12" = 1'-0" 2

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

2

DATE

6/17/2026

DESCRIPTION

ADDENDUM-002

Agency Approval

Client

Stamps

Architect

Consultant

Project

REV.

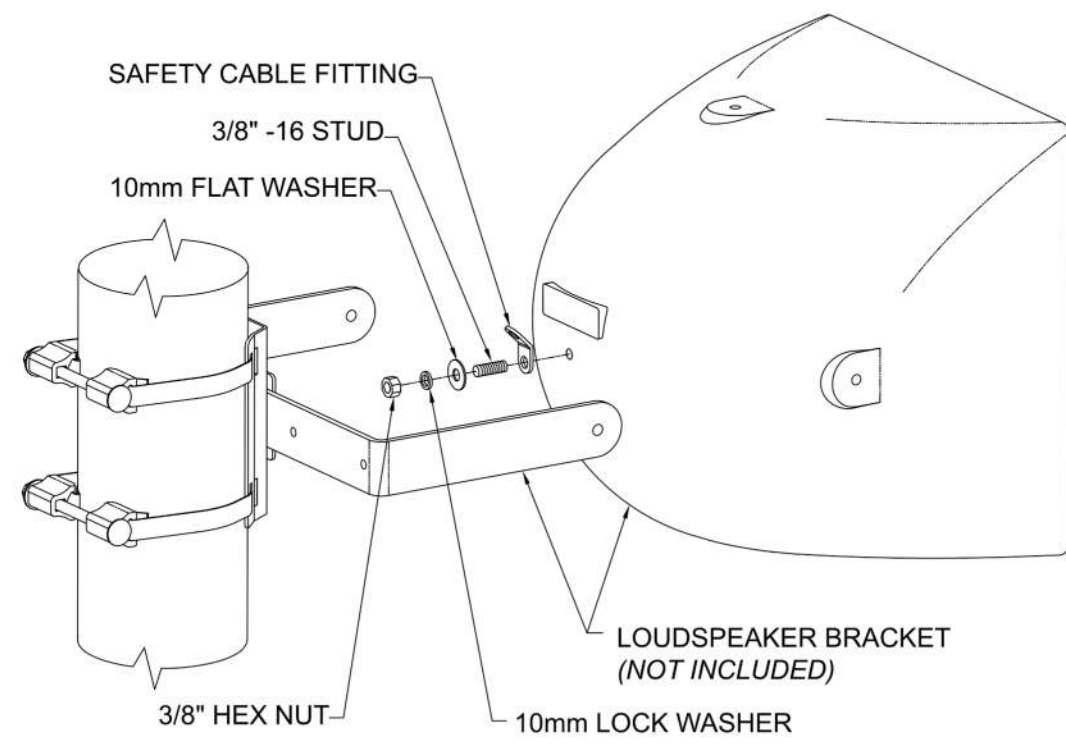
2

DATE

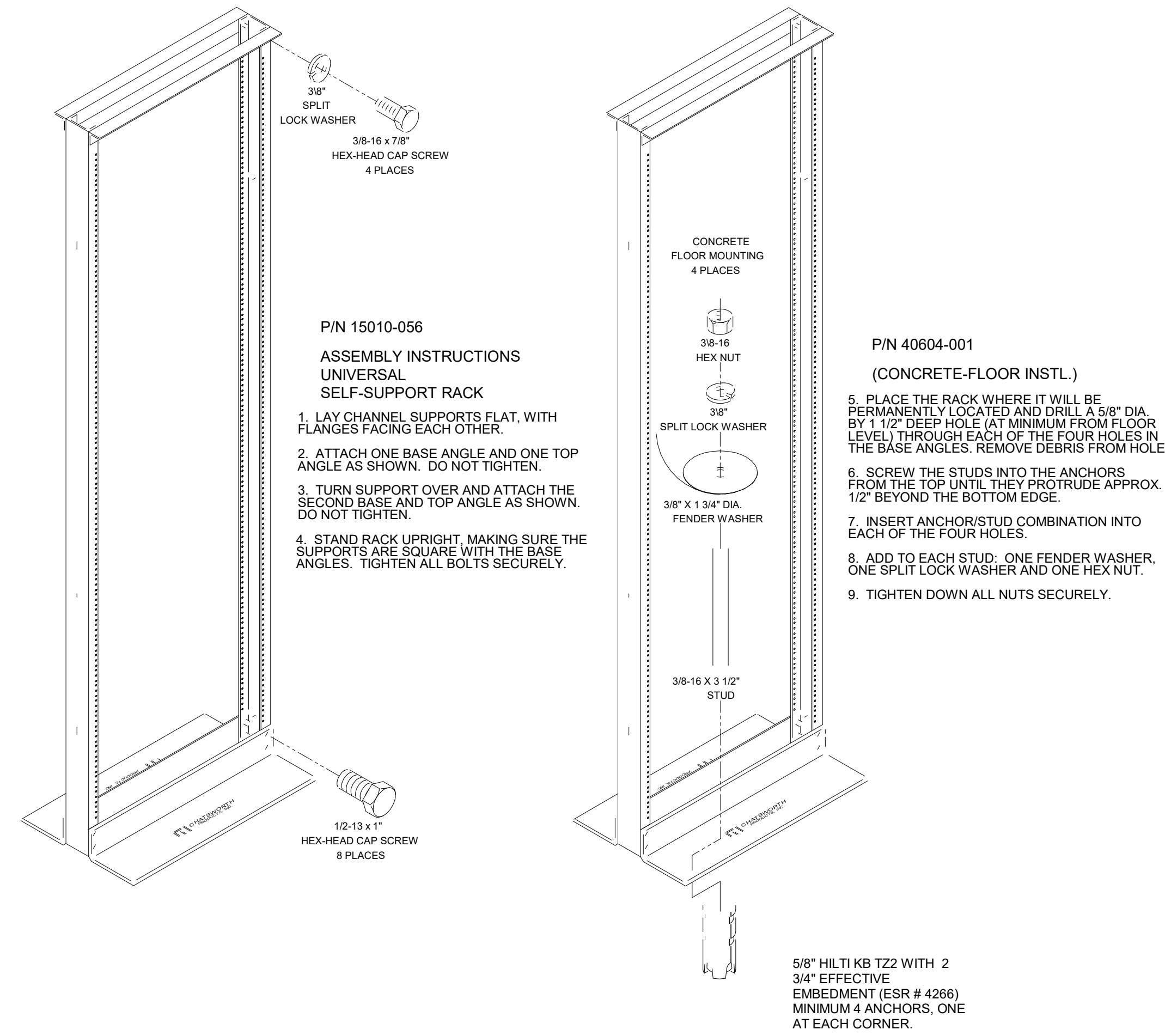
6/17/2026

DESCRIPTION

ADDENDUM-002

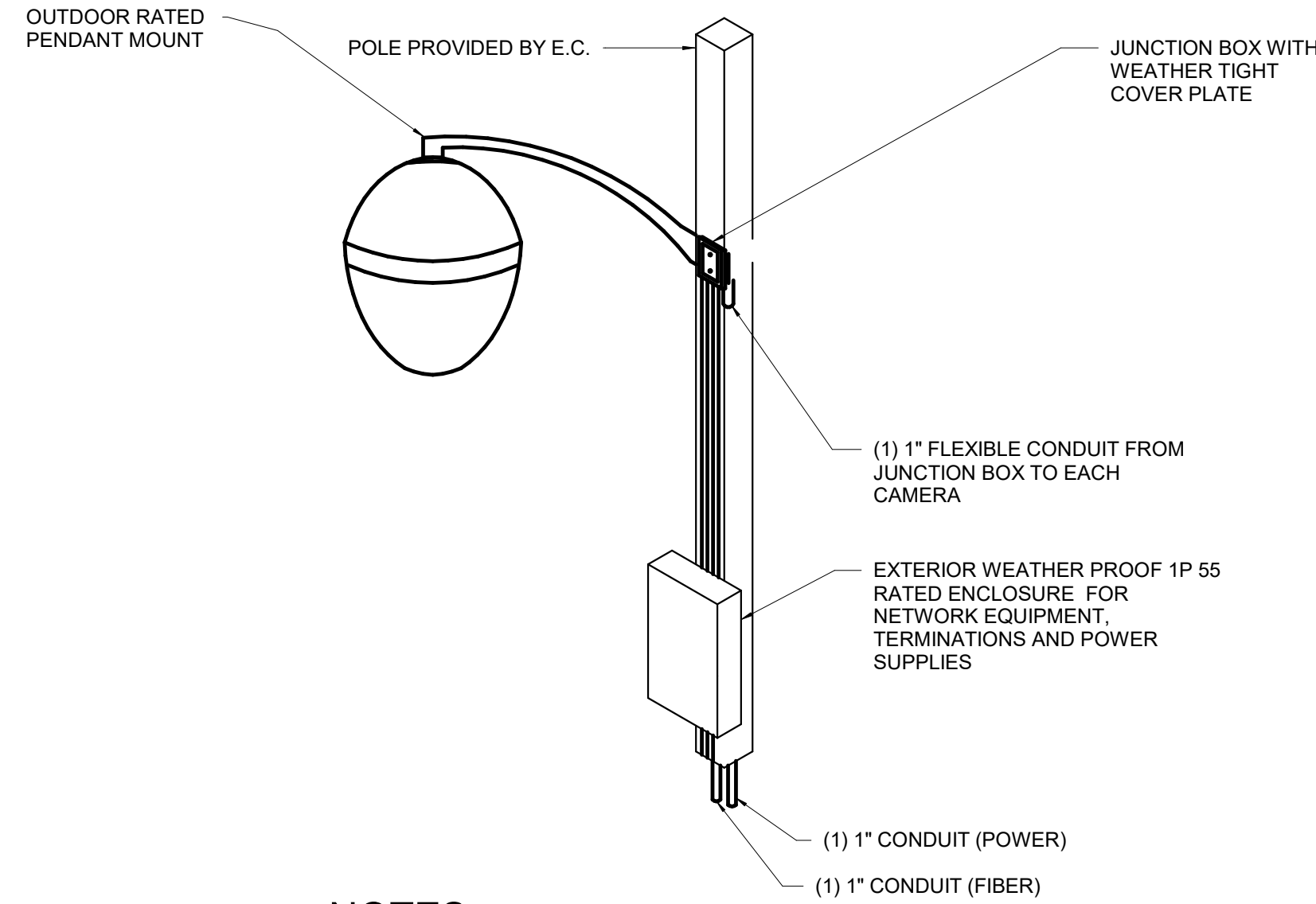


3 POLE SPEAKER MOUNTING DETAIL  
12" = 1'-0"



1 FLOOR RACK MOUNTING DETAILS  
12" = 1'-0"

THE MAX OPERTIONAL WEIGHT 800 LBS



- NOTES:**
- THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2 EXTERIOR POLE MOUNTING  
3/4" = 1'-0"

Agency Approval

Client

Stamps

Architect

Consultant

Project

Issue

Sheet Info

Sheet Title

Sheet No.

long beach unified school district

Long Beach Unified School District

2425 Webster Avenue  
Long Beach, CA 90810

LBUSD No.: 9216-654  
PTN No.: 64725-585

Facilities Management

PBK

ARCHITECT

8163 ROCHESTER AVE.  
SUITE 100  
RANCHO CUCAMONGA, CA 91730  
Tel: 909-987-0909  
www.pbk.com

LEAF

ENGINEERS

8163 Rochester Avenue, Suite 100  
Rancho Cucamonga, CA 91730  
909.987-0909  
leafengineers.com

1545 LONG BEACH BLVD.  
LONG BEACH, CA 90813

POLYTECHNIC HIGH SCHOOL  
IMPROVEMENTS

100% CONSTRUCTION DOCUMENTS

DSA #03-125644 File 19-H15

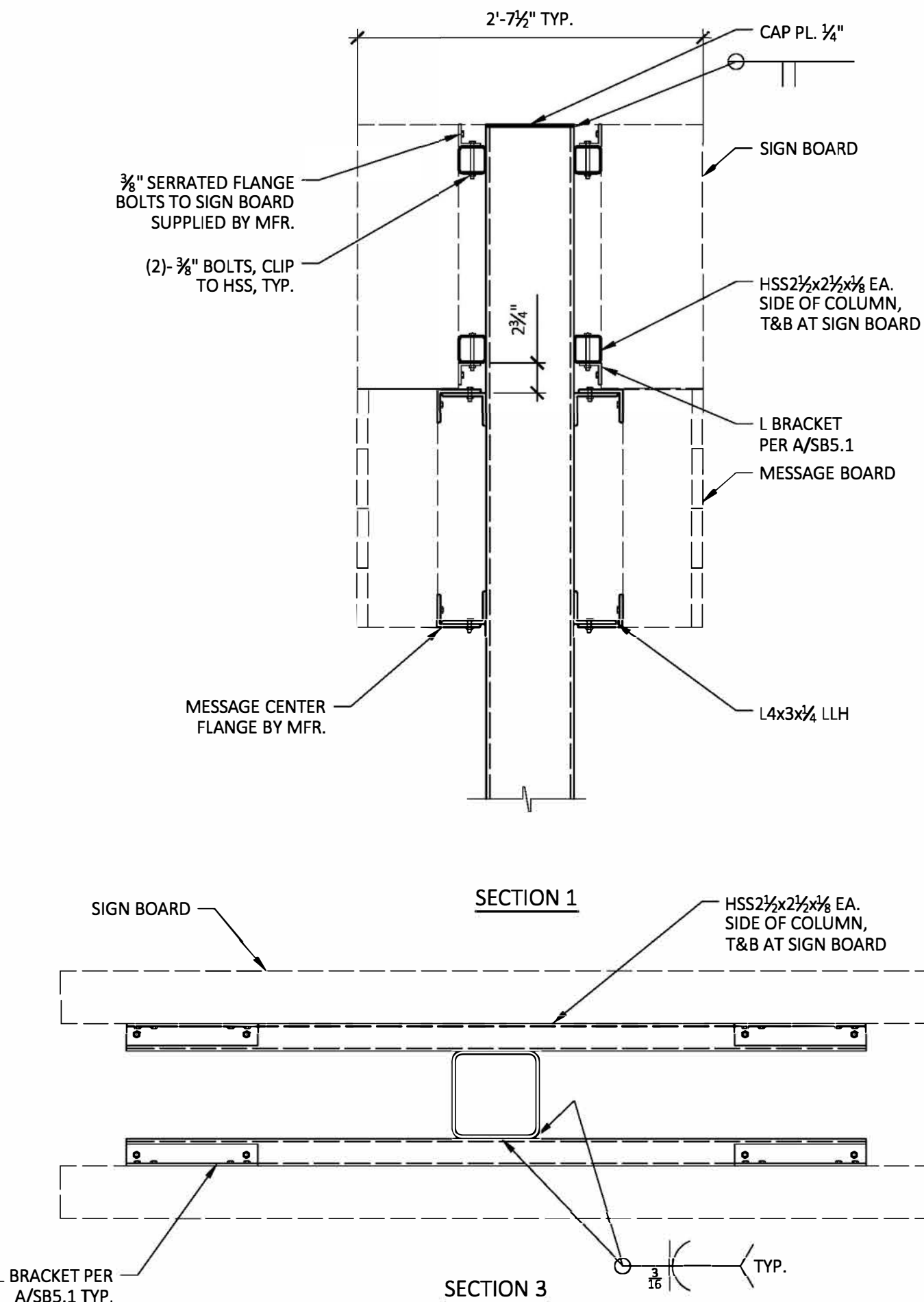
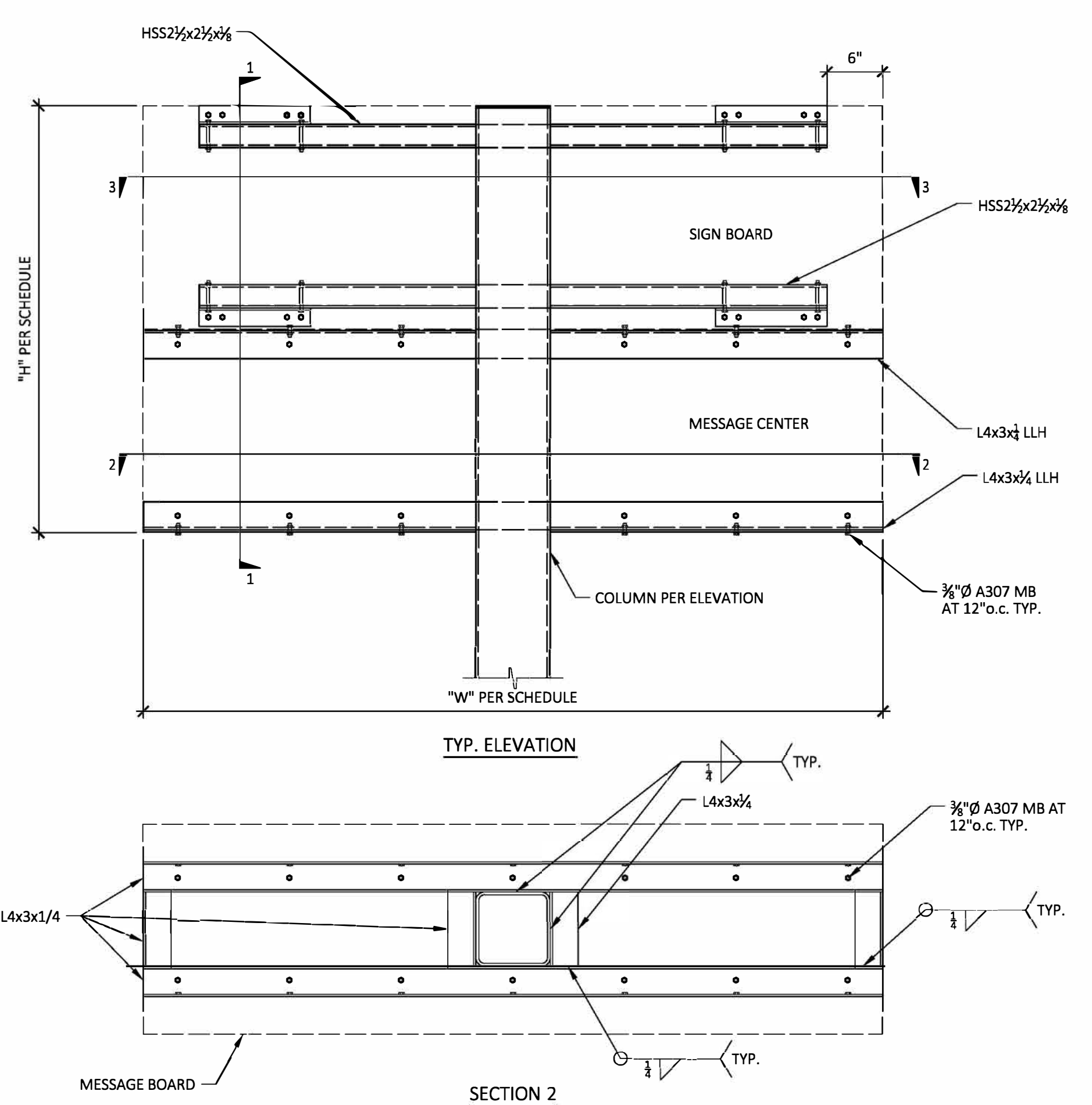
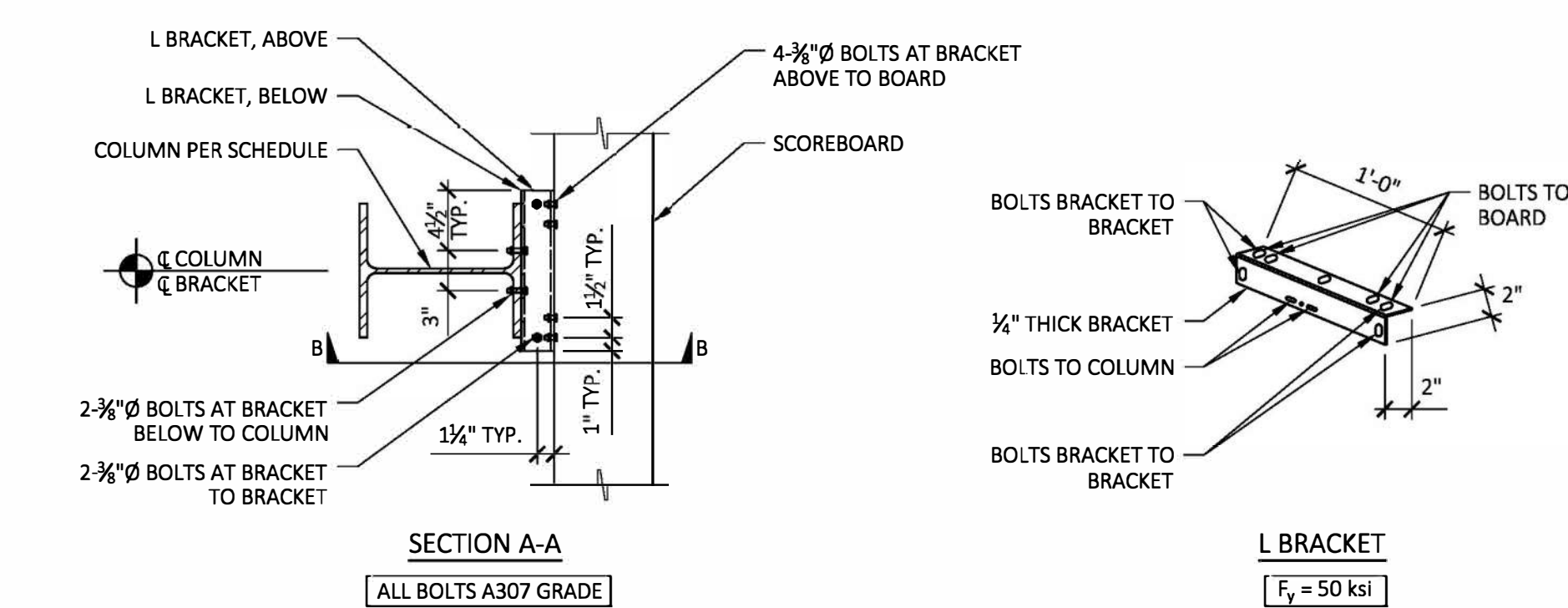
REV.	DATE	DESCRIPTION
2	6/17/2026	ADDENDUM-002

JOB No.: 240469  
SCALE: As indicated  
PROJ MGR: Author  
DATE: 06/24/25

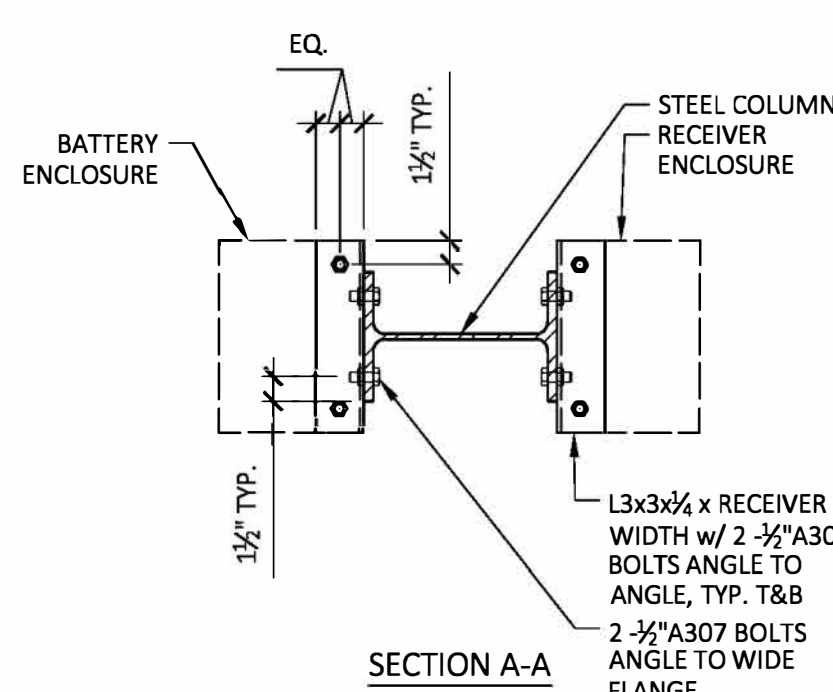
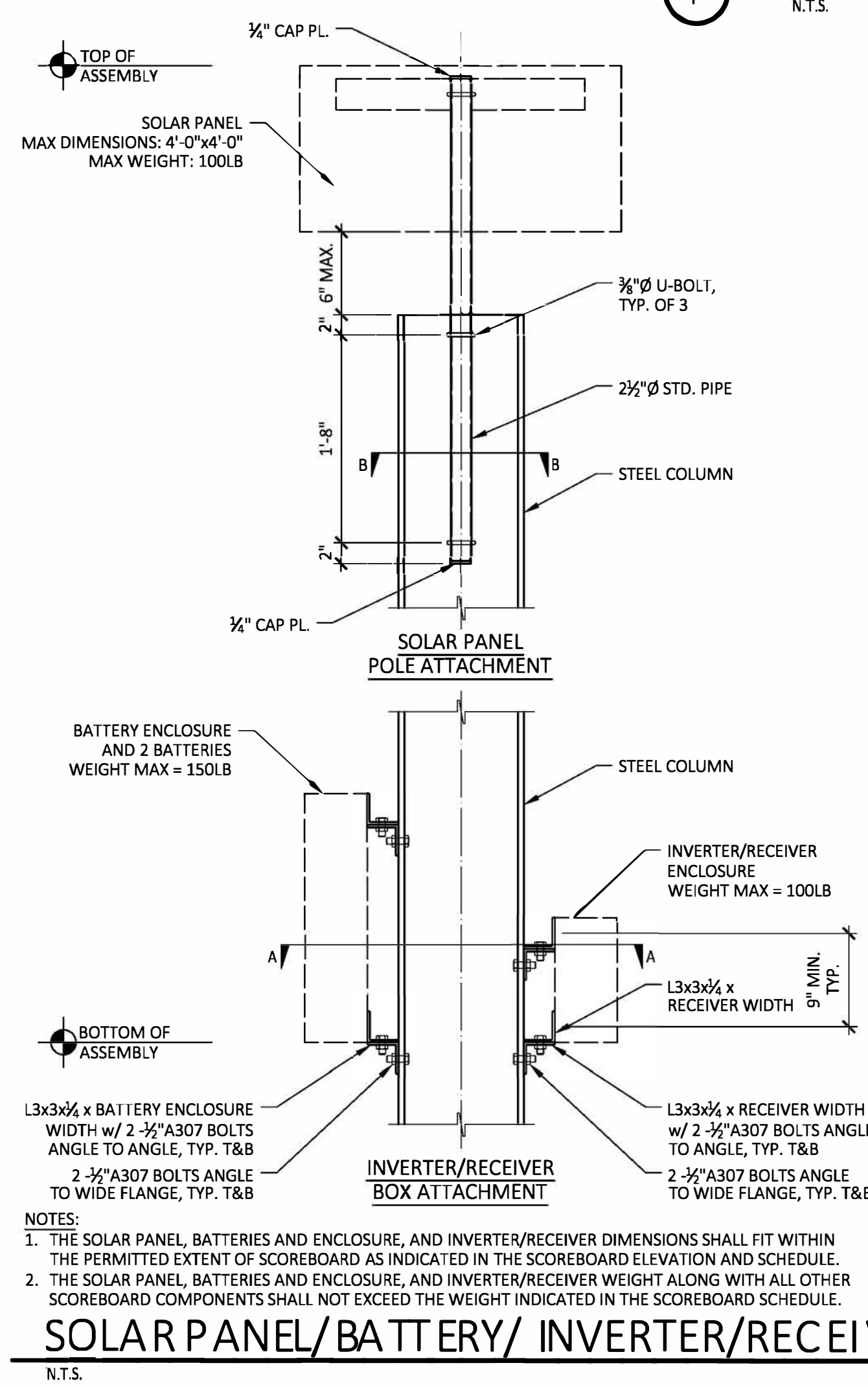
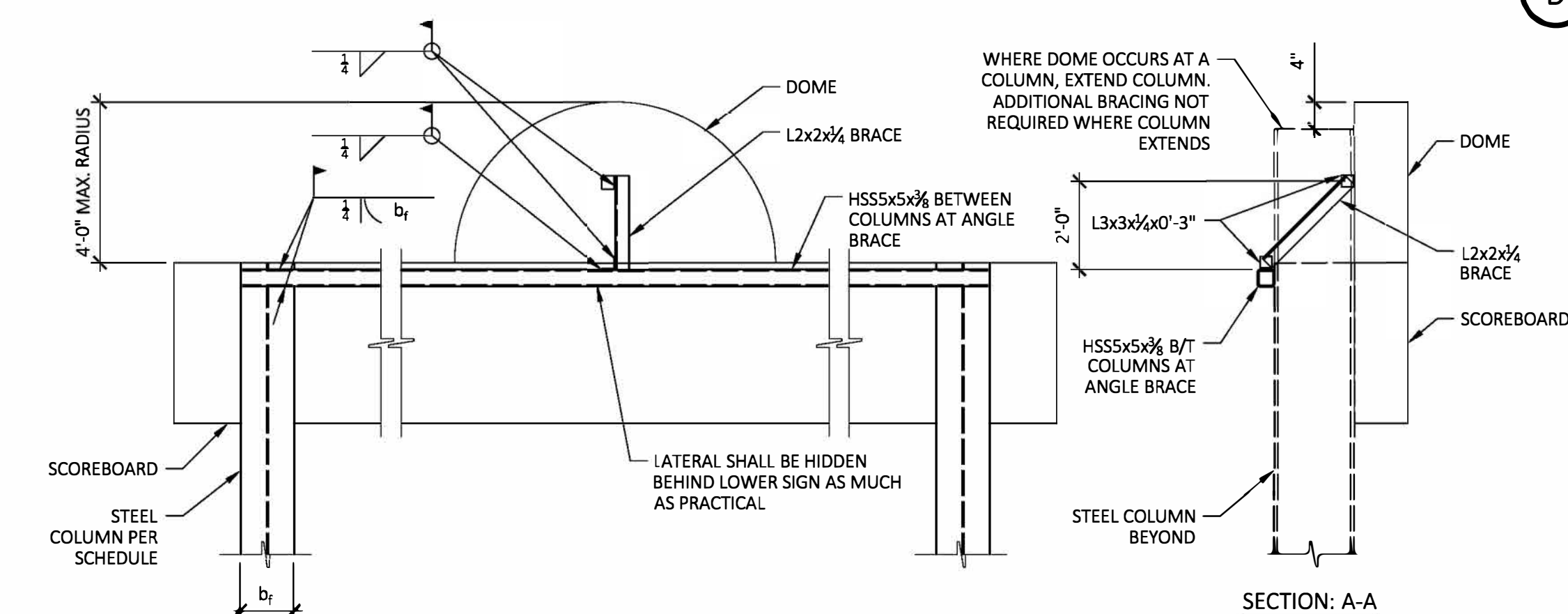
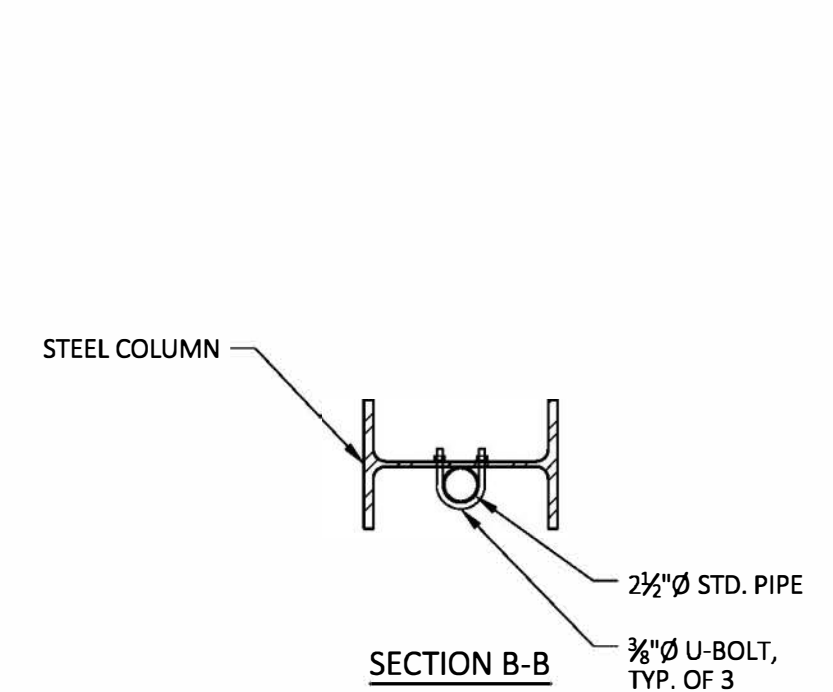
TECHNOLOGY  
DETAILS

T6.2

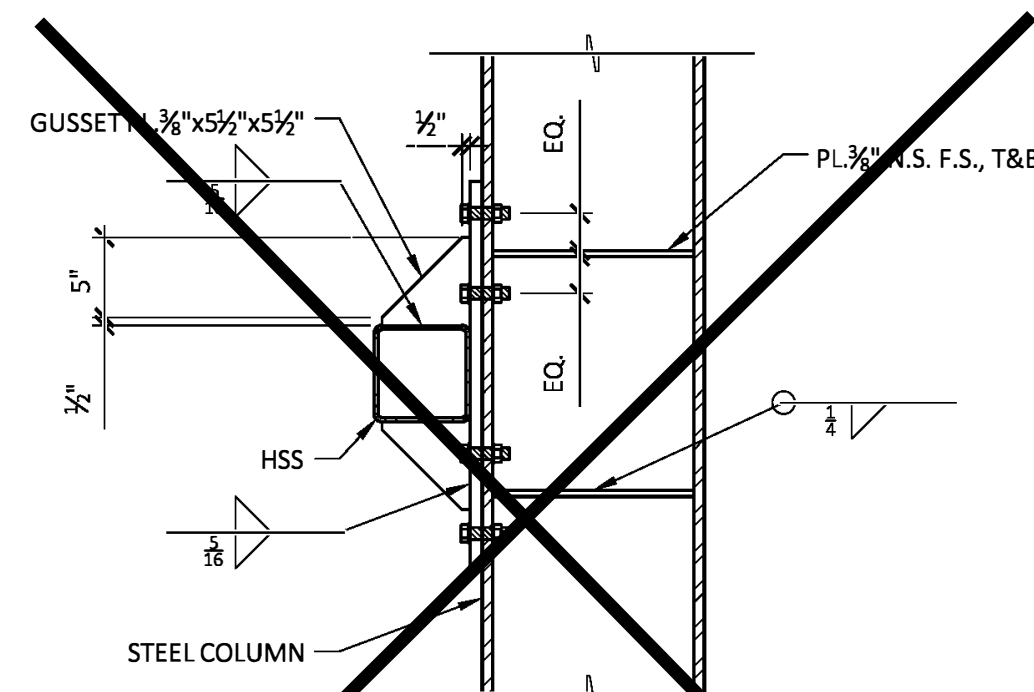




HSS SCHEDULE	
COLUMN SPACING, S	HSS SIZE
10'-0"	HSS4x3x $\frac{3}{8}$ LLV
12'-0"	HSS4x3x $\frac{3}{8}$ LLV
14'-0"	HSS4x3x $\frac{3}{8}$ LLV

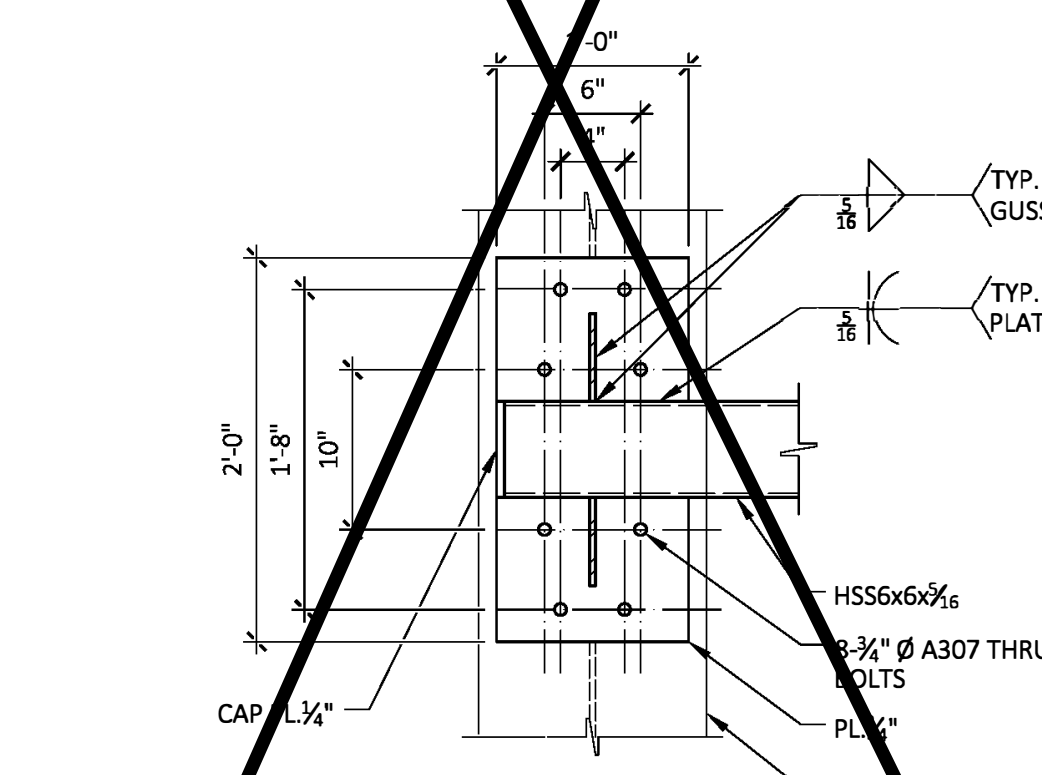






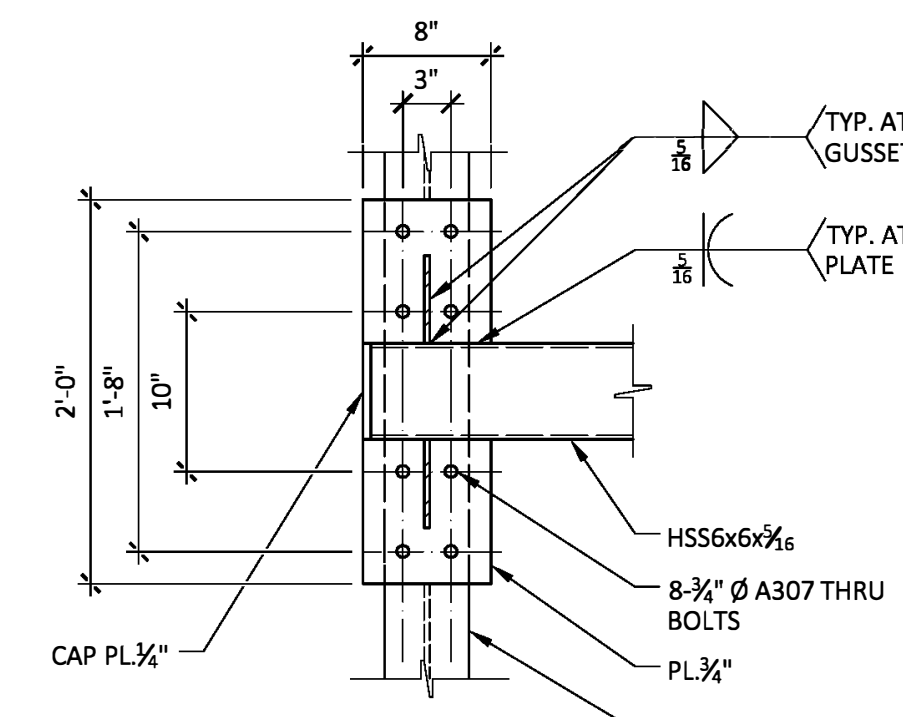
NET MOUNT PLATE

N.T.S.

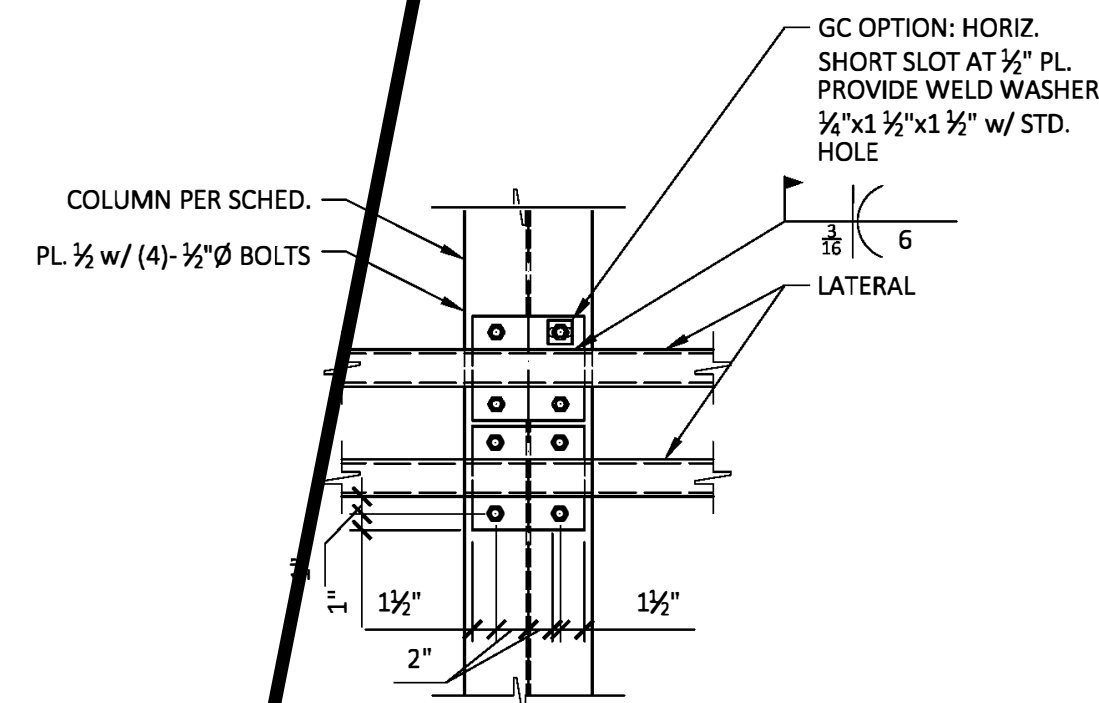


NET MOUNT PLATE

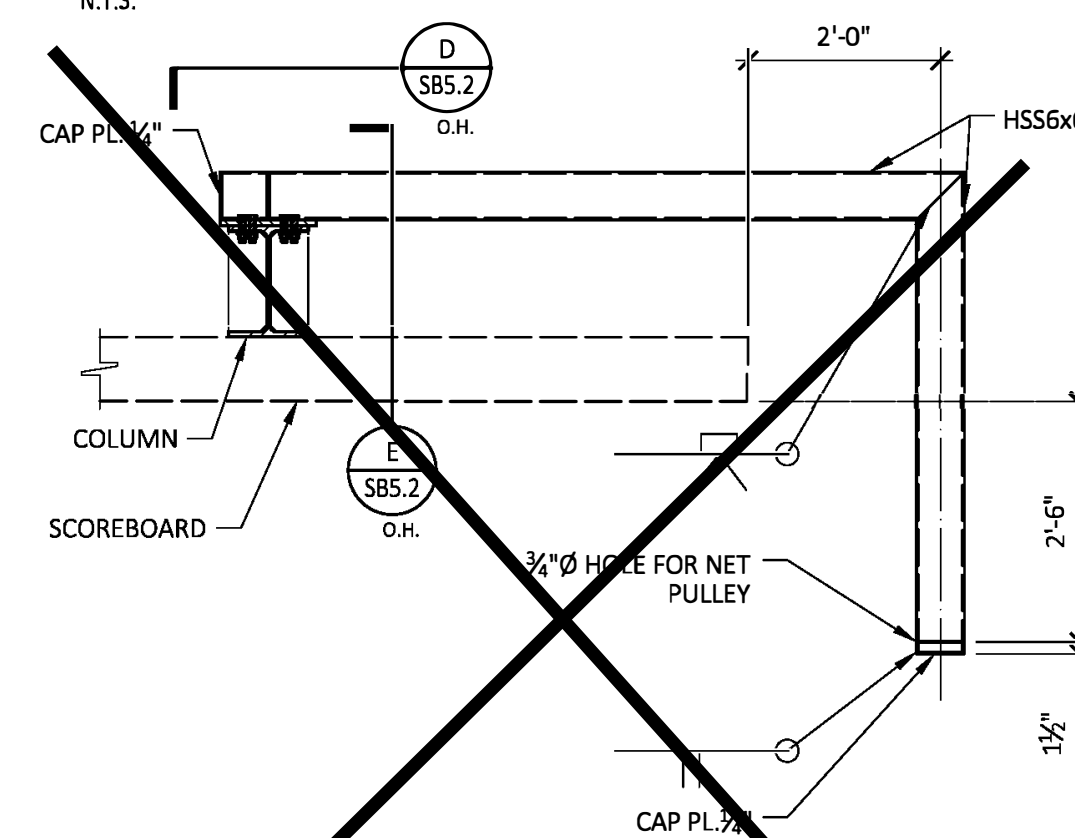
N.T.S.



COLUMN WIDTH LESS THAN 9"

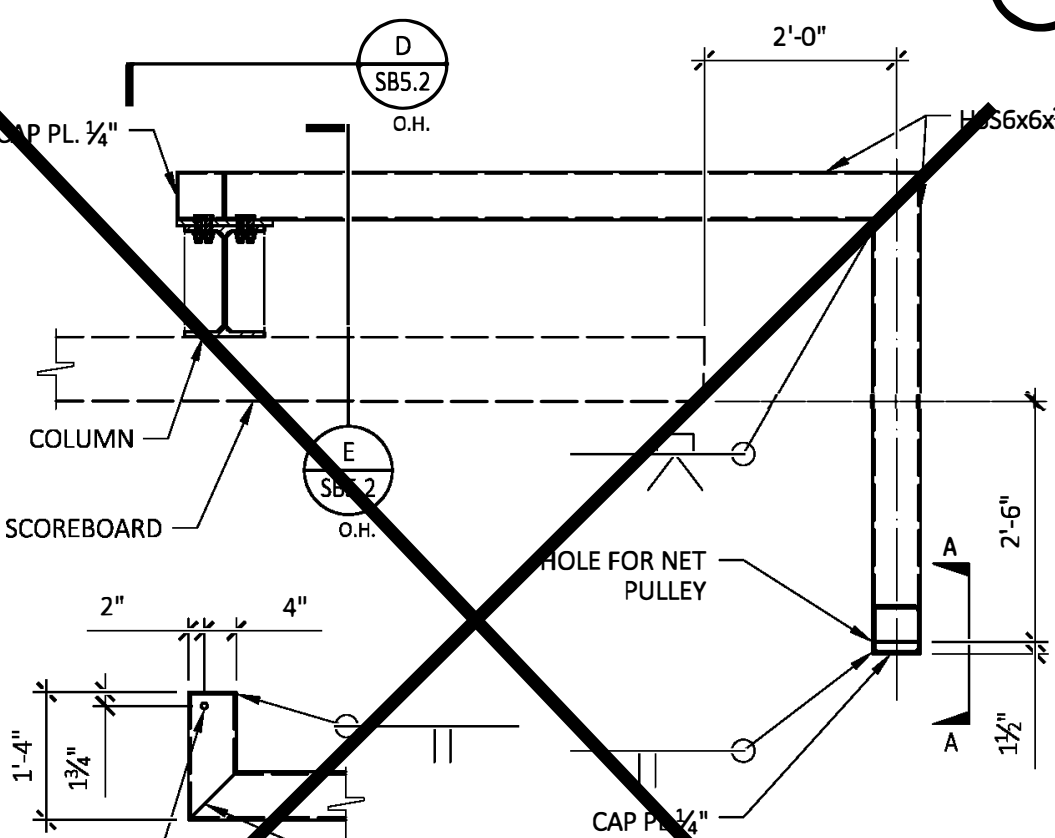


ELEVATION: OPTION C&D-BOLTED LATERAL



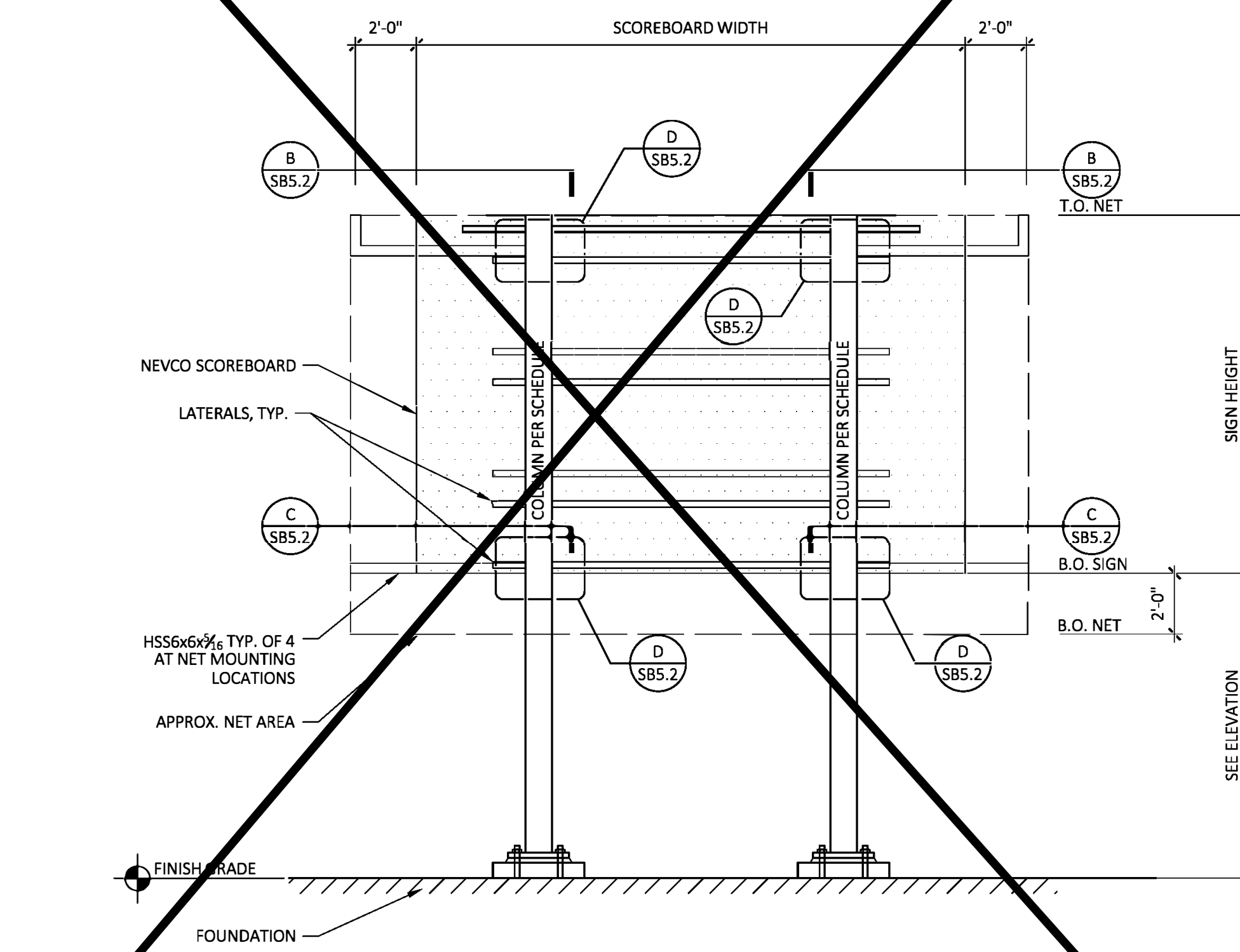
BOTTOM NET MOUNT-PLAN

N.T.S.



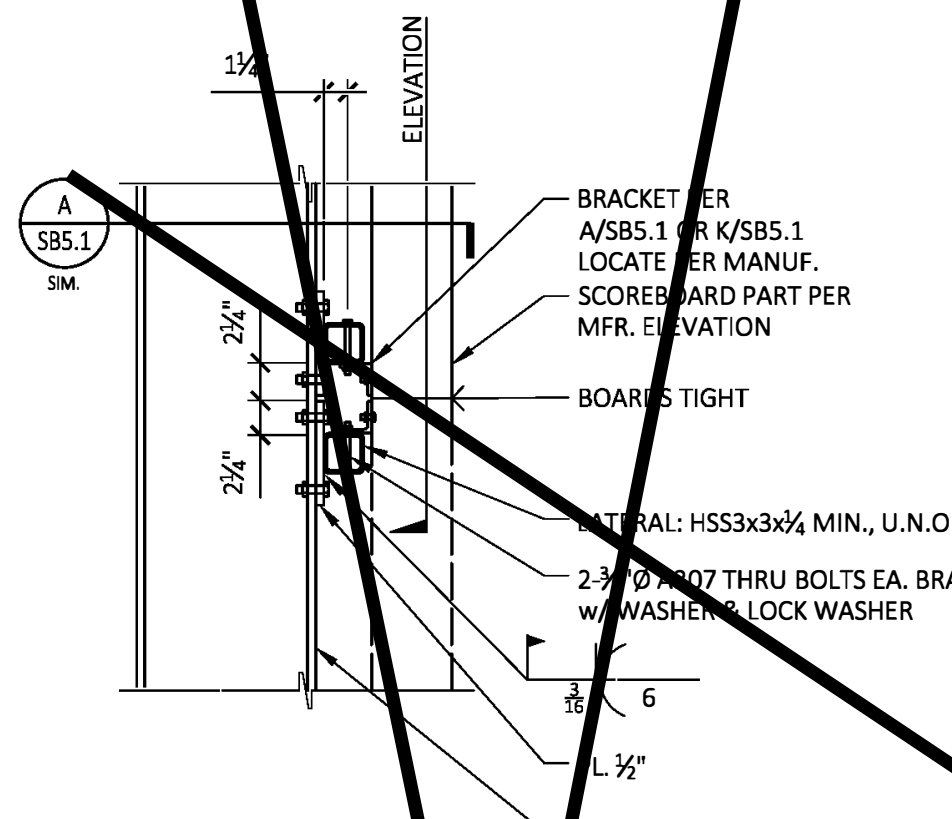
TOP NET MOUNT-PLAN

N.T.S.

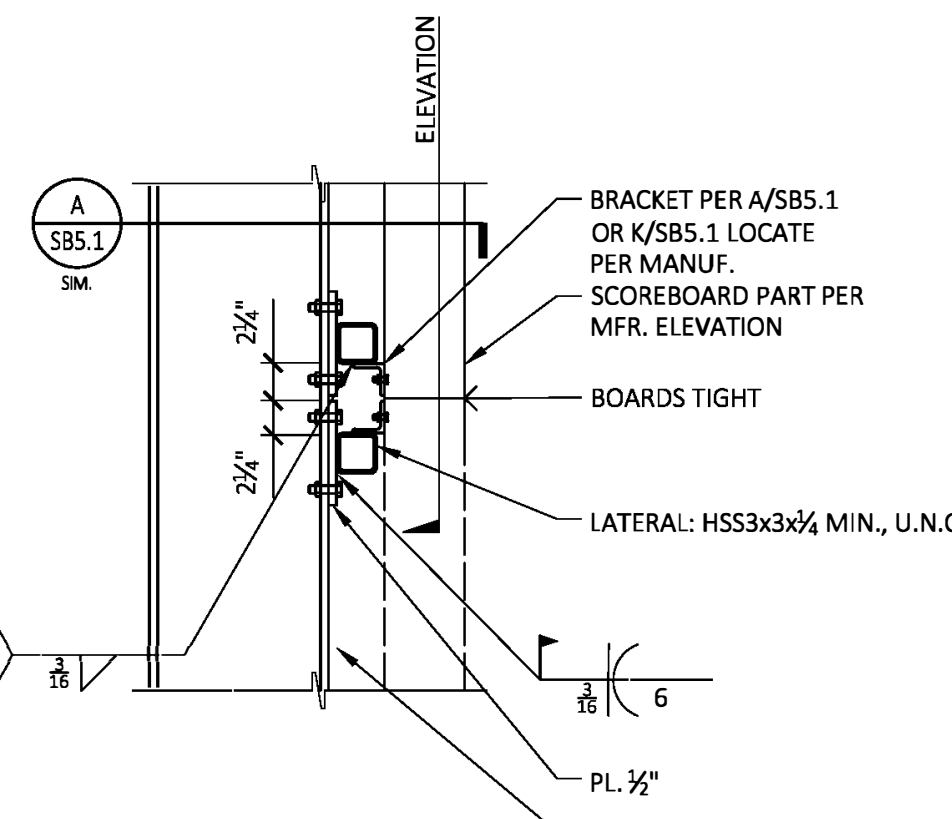


SCOREBOARD NETTING SUPPORTS

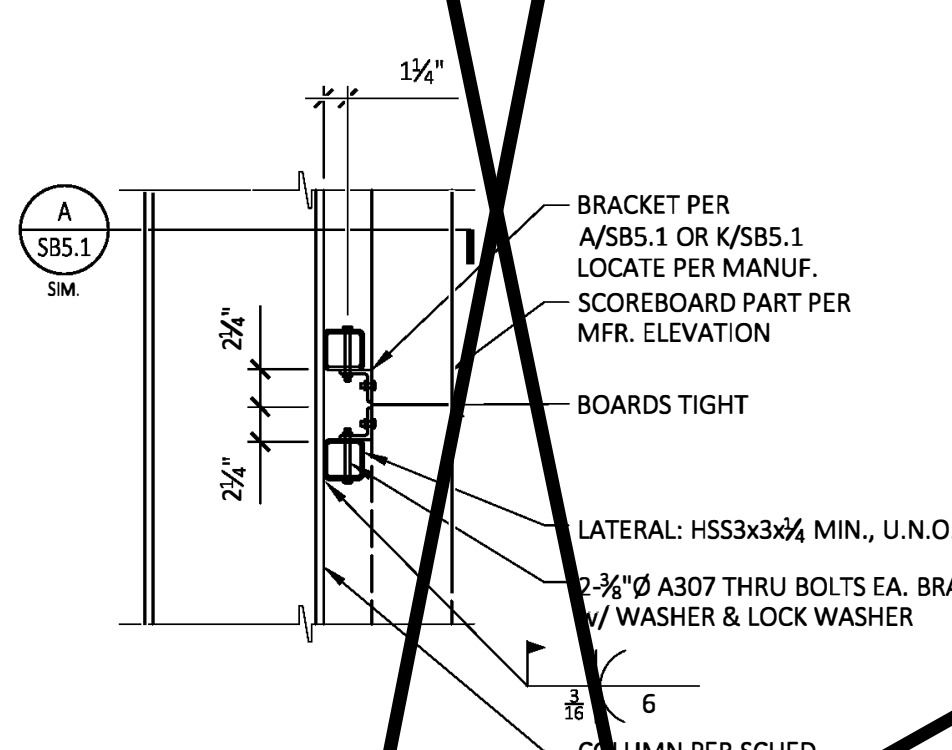
NOTES:  
1. ELEVATION SHOWN WITH TWO COLUMNS FOR GRAPHICAL PURPOSES. NET SUPPORT DETAILS APPLICABLE TO TWO, THREE, AND FOUR COLUMN ASSEMBLIES



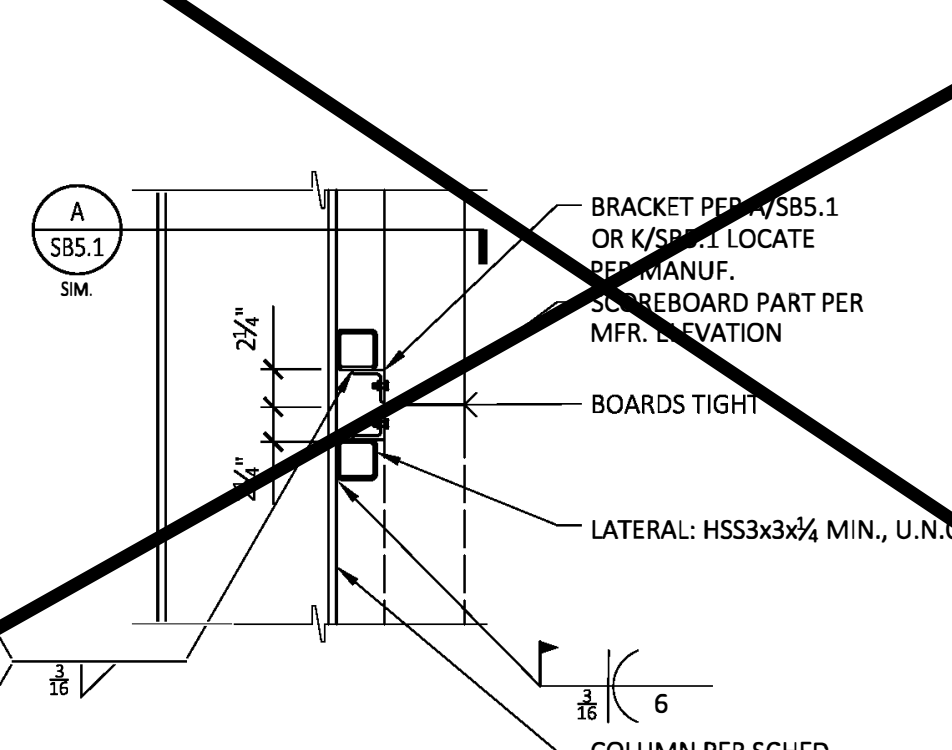
OPTION C: LATERAL BOLTED/CLIP BOLTED



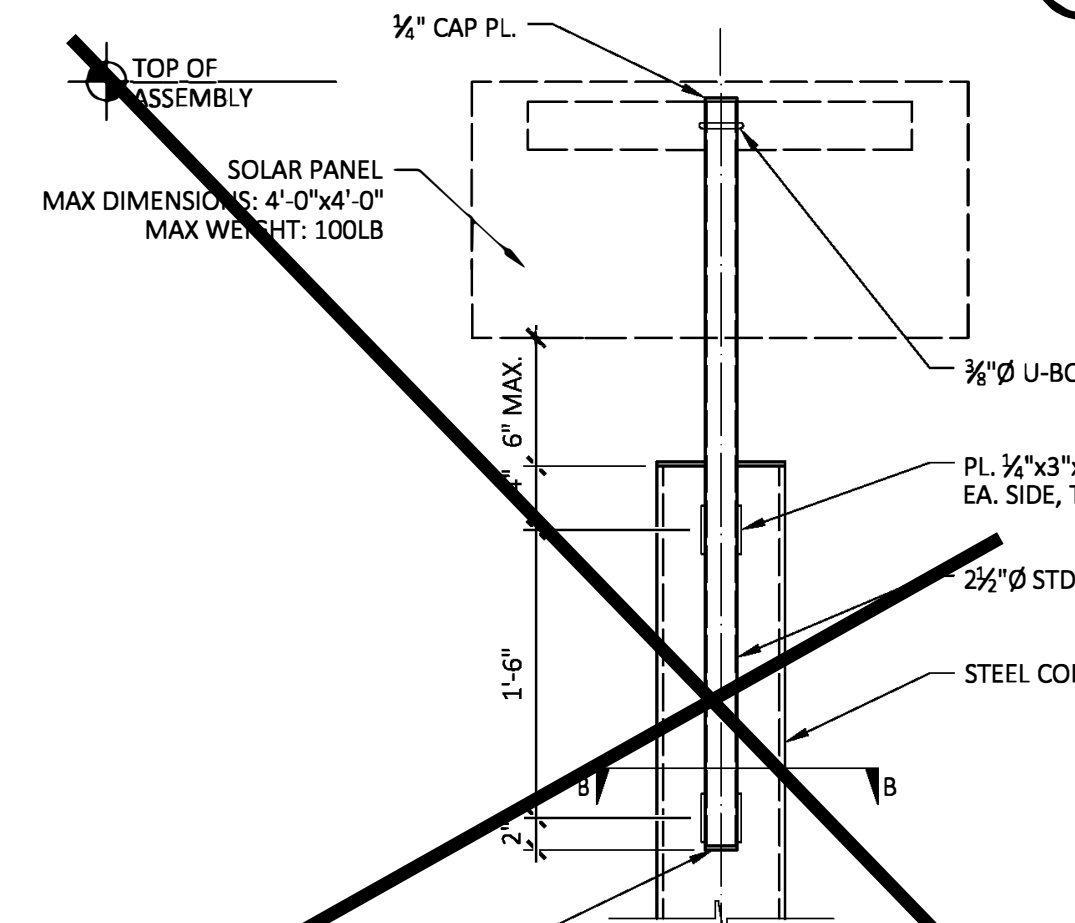
OPTION D: LATERAL BOLTED/CLIP WELDED



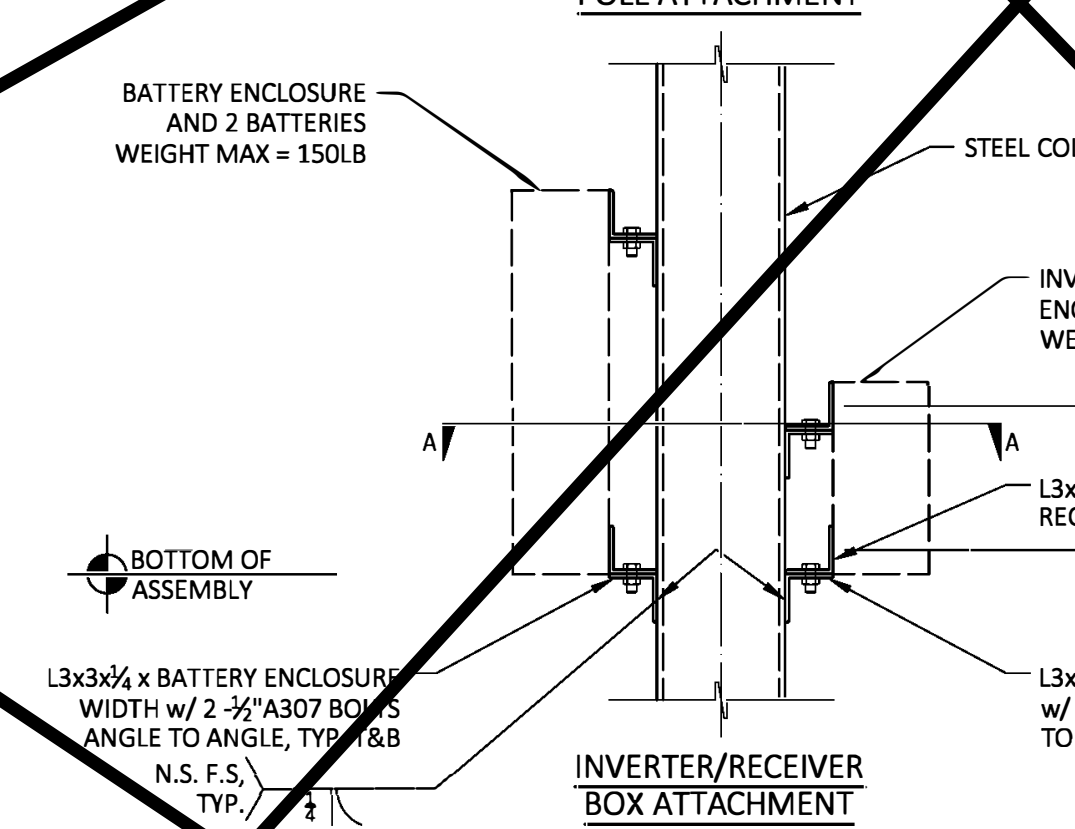
OPTION A: LATERAL WELDED/CLIP BOLTED



OPTION B: LATERAL WELDED/CLIP WELDED



SOLAR PANEL POLE ATTACHMENT

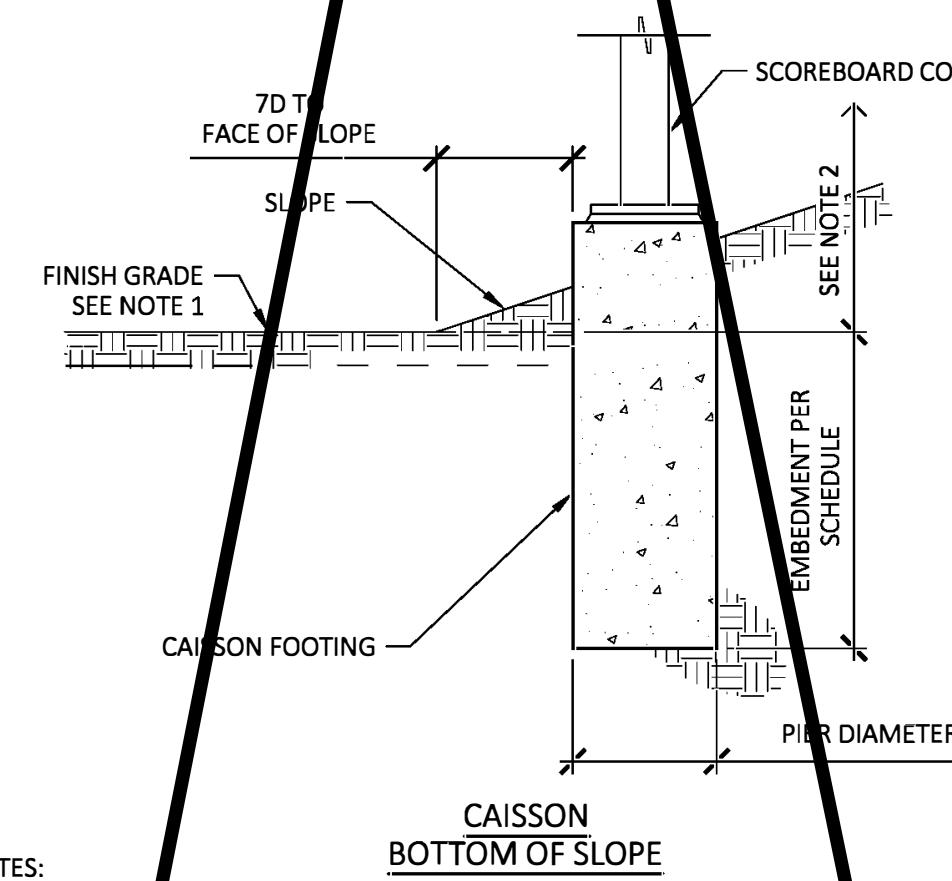


SOLAR PANEL/BATTERY/ INVERTER/RECEIVER ATTACHMENT

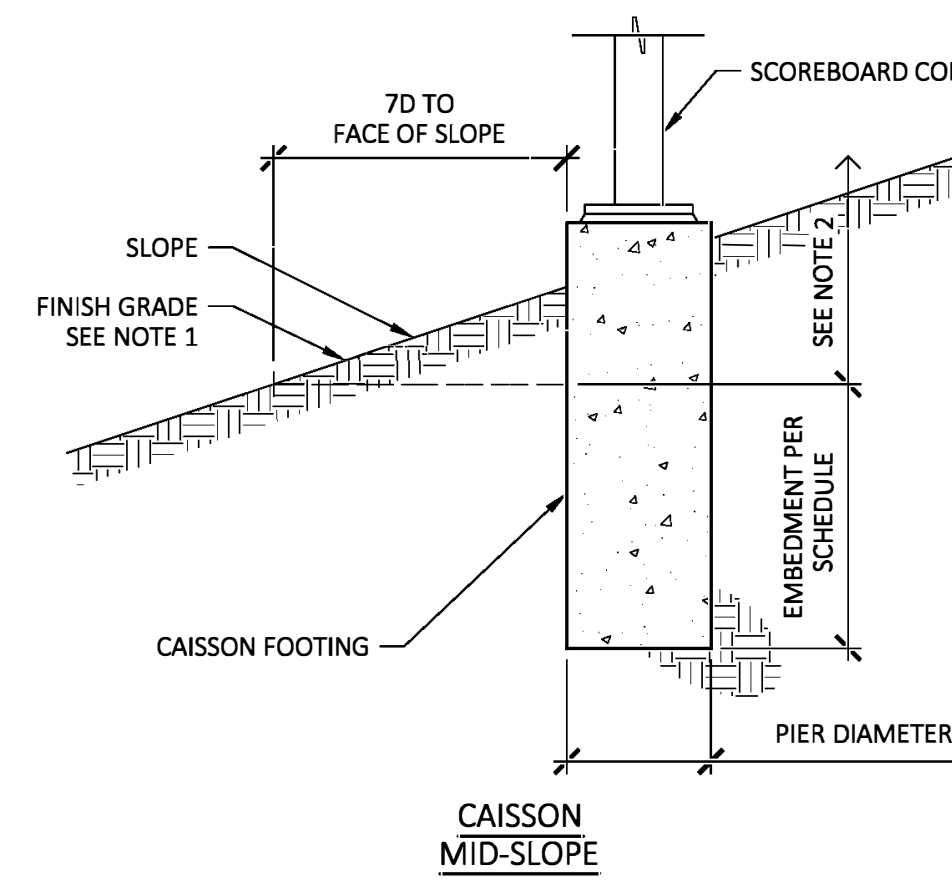
NOTES:  
1. THE SOLAR PANEL, BATTERIES AND ENCLOSURE, AND INVERTER/RECEIVER DIMENSIONS SHALL FIT WITHIN THE PERMITTED EXENT OF SIGN AS INDICATED IN THE MARQUEE ELEVATION AND SCHEDULE.  
2. THE SOLAR PANEL, BATTERIES AND ENCLOSURE, AND INVERTER/RECEIVER WEIGHT ALONG WITH ALL OTHER SIGN COMPONENTS SHALL NOT EXCEED THE WEIGHT INDICATED IN THE MARQUEE SCHEDULE.

LATERAL/BOARD ATTACHMENT

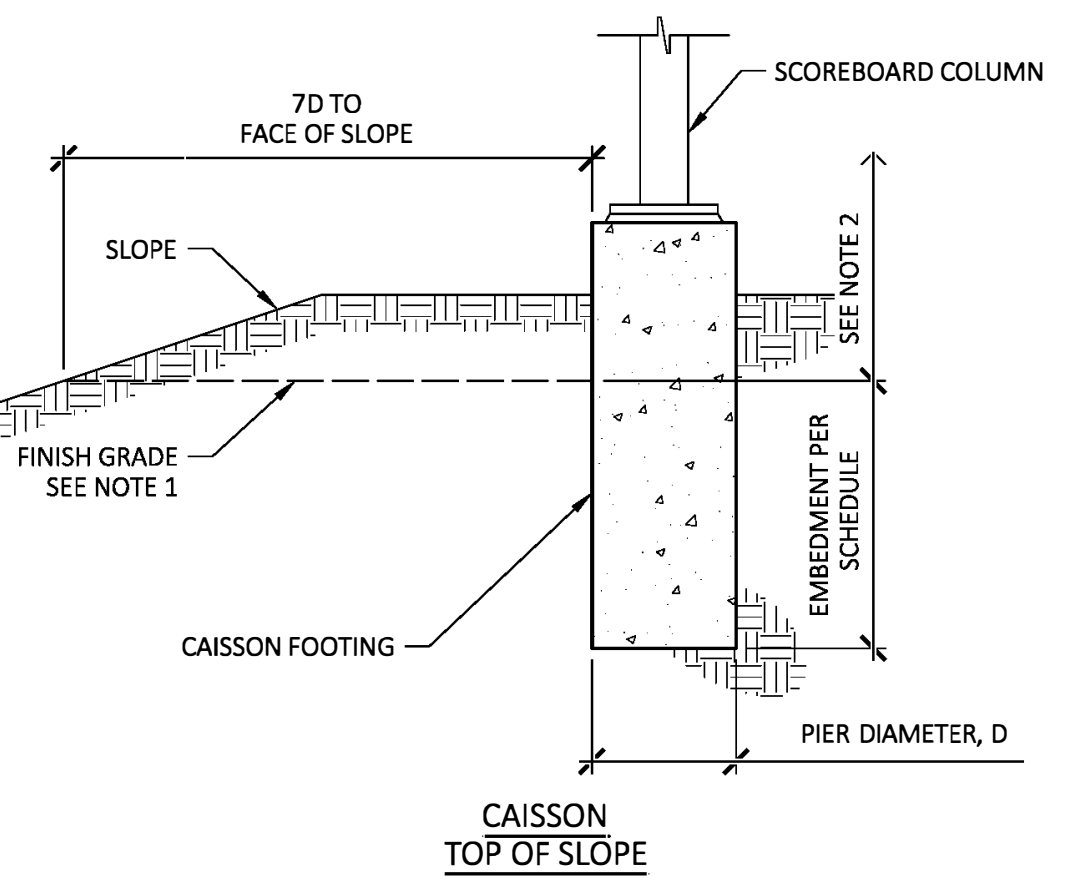
N.T.S.



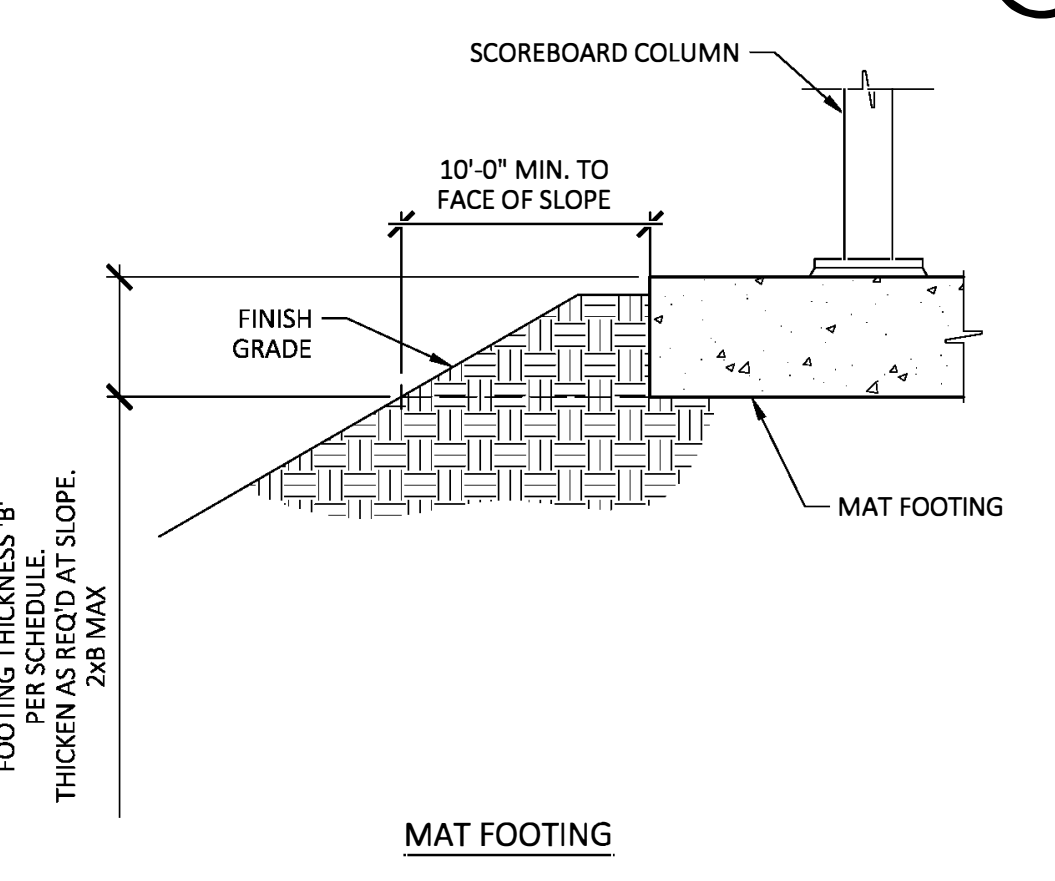
CAISSON BOTTOM OF SLOPE



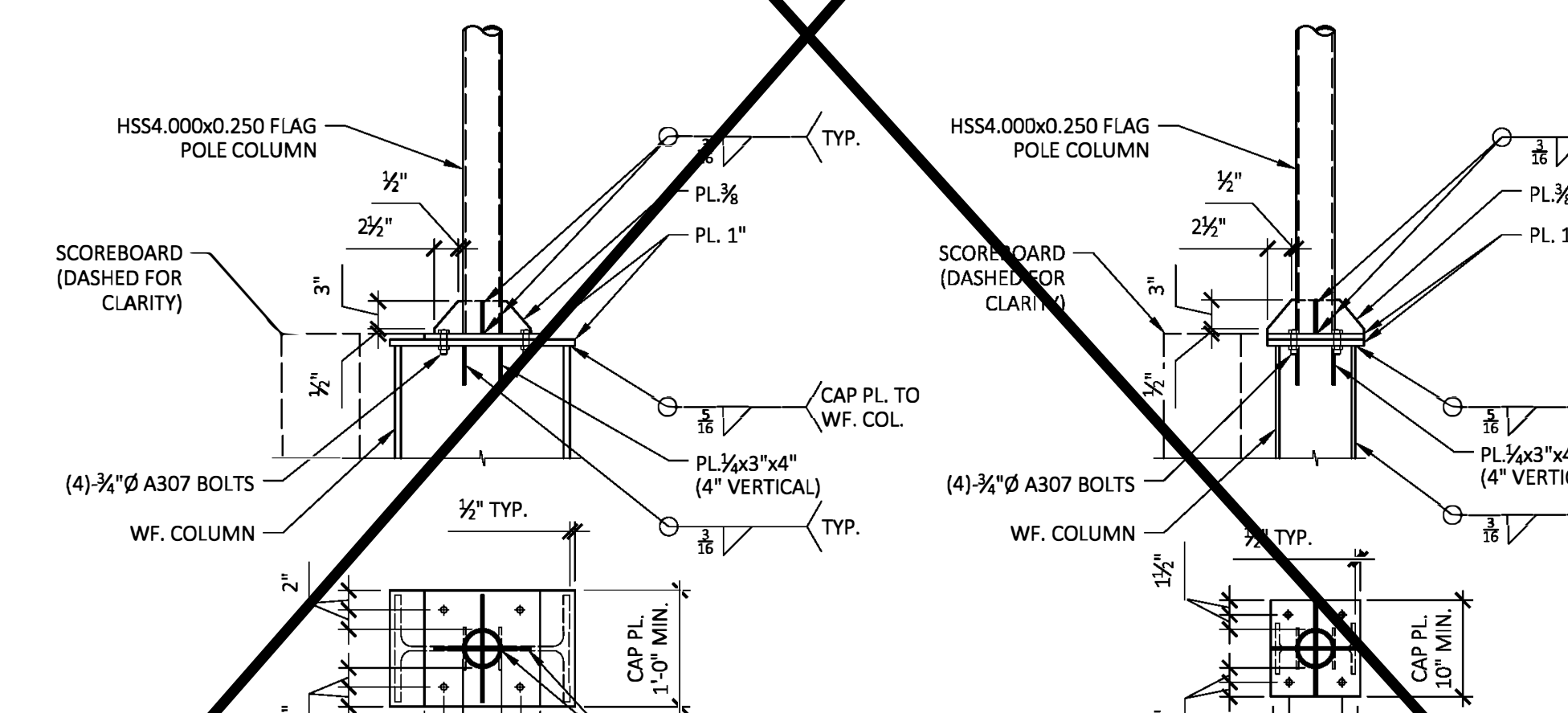
CAISSON MID-SLOPE



CAISSON TOP OF SLOPE

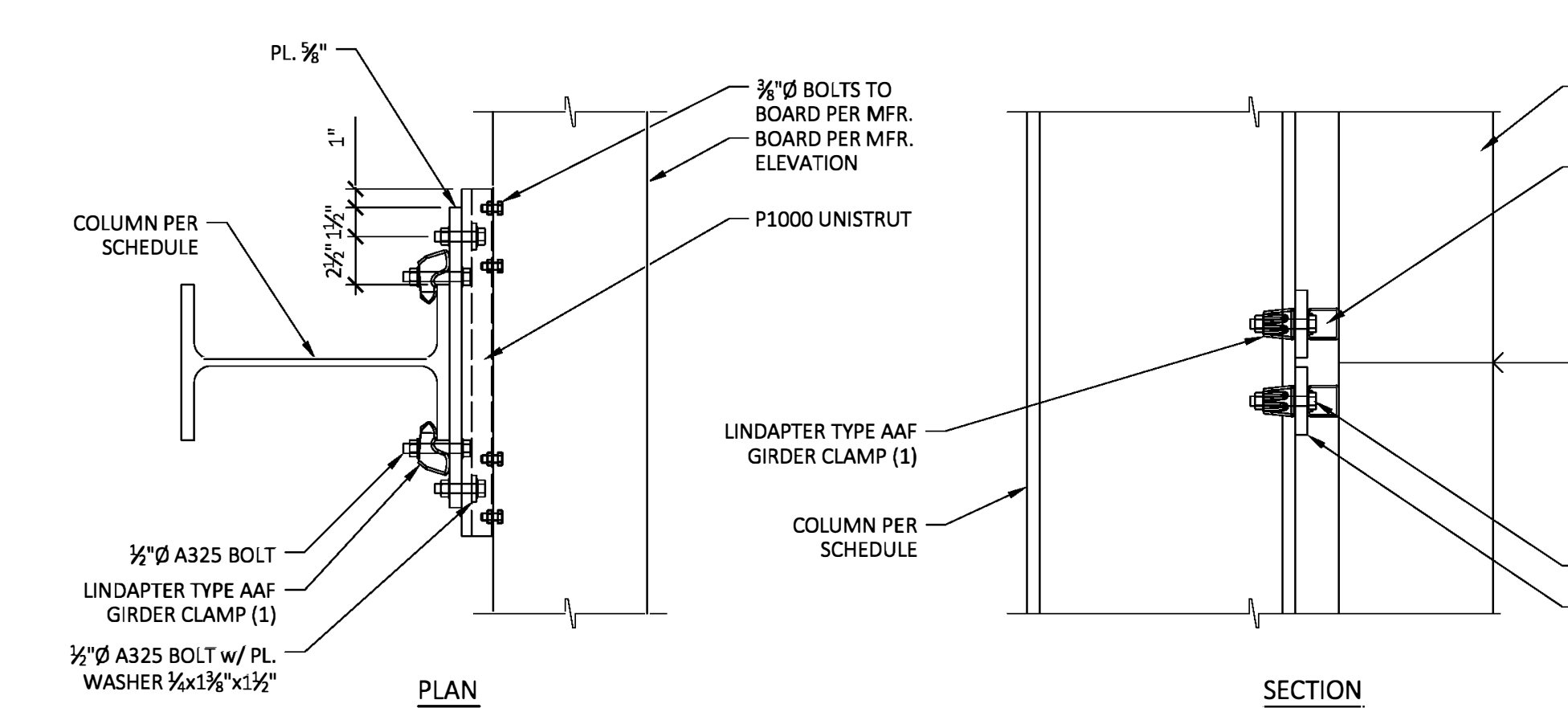


MAT FOOTING



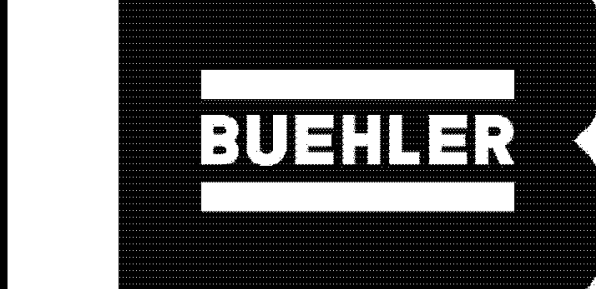
FLAG POLE COLUMN TO WF BEAM

N.T.S.



ALTERNATE BOARD ATTACHMENT

NOTES: (H)  
1. LAAFO50 CLAMP WITH ROCKING WASHER - INSTALL PER ICC ESR-3976



PC SB5.2  
THESE DRAWINGS, NOTES AND DETAILS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF BUEHLER ENGINEERING INC. ALL DRAWINGS, INFORMATION, SPECIFICATIONS, NOTES, REVISIONS AND AMENDMENTS REPRESENTED WITHIN THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF THE ENGINEER. NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THAT SPECIFIC PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ENGINEER. COPYRIGHT 2022  
THANK YOU FOR YOUR INTEREST IN NEVCO SCOREBOARD PRODUCTS



APPROVED  
DIV. OF THE STATE ARCHITECT  
APP: 04-124534 PC  
REVIEWED FOR  
SS ☒ FLS ☒ ACS ☒ CG ☐  
DATE: 05/14/2025

PRE-CHECK (PC) DOCUMENT  
CODE: 2022  
A separate project application for construction is required.

OPTIONAL SCOREBOARD  
FEATURE ATTACHMENT  
DETAILS

SHEET INFORMATION	
DATE	04.11.2025
DRAWN	JMK
CHECKED	MEP
DESIGN JOB #	S23109
SHEET	SB5.2