



QUATTROCCHI KWOK
ARCHITECTS

HERITAGE HIGH SCHOOL NEW CLASSROOM BUILDINGS, INCREMENT 2. Bid Clarification 03

May 28th, 2021

DSA File Number: 7-H4
DSA Application Number: 01-119268
PTN: 61721-77



Date: 05/28/2021

Owner:

Liberty Union High School District
20 Oak Street
Brentwood, CA 94513

Architect:

Quattrocchi Kwok Architects
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Architect's Project No.: 1870.00

To: Prospective Bidders

The following changes, modifications and additions to Project Manual and Drawings described below are made a part thereof and are subject to all of the requirements thereof as if originally specified.

The Bidder must acknowledge receipt of the Bid Clarification in the space provided on the Bid Form; failure to do so may subject the Bidder to disqualification.

Table of Contents - Bid Clarification 03

This Bid Clarification consists of 7 pages and the attachments as listed below dated May 28th, 2021.

Deleted Text is shown in ~~strikeout type~~.

Added Text is shown in ***bold italicized type***.

ATTACHMENTS:

Project Manual

07 8123 - INTUMESCENT MASTIC FIREPROOFING

08 4313 - ALUMINUM ENTRANCES and STOREFRONTS

Drawings: (24 inch by 36 inch)

BC 03 C-2.0 HORIZONTAL CONTROL PLAN

BC 03 C-3.2 UTILITY PLAN

BC 03 C-4.0 GRADING AND DRAINAGE PLAN

BC 03 C-4.2 GRADING AND DRAINAGE PLAN

BC 03 L1.0 MATERIAL AND DETAIL REFERENCE PLAN

BC 03 L2.0 LAYOUT PLAN

BC 03 L2.1 BIKE PARKING PLAN

BC 03 L3.0 IRRIGATION PLAN & SCHEDULES

BC 03 L4.0 PLANTING PLAN

BC 03 S-B2.1 BUILDING B FOUNDATION PLAN

BC 03 S-B2.2 BUILDING B SECOND FLOOR FRAMING PLAN

BC 03 S-B2.3 BUILDING B ROOF FRAMING PLAN

BC 03 S-B3.1 EAST/ WEST SHEAR WALL ELEVATIONS

BC 03 S-B3.2 NORTH/ SOUTH SHEAR WALL ELEVATIONS

BC 03 S-B3.3 SEISMICALLY SEPARATE BUILDING SHEAR WALL ELEVATIONS

BC 03 S-4.1 FOUNDATION DETAILS

BC 03 S-5.1 STEEL FRAMING DETAILS

BC 03 S-6.1 ROOF FRAMING DETAILS

BC 03 S-6.2 SECOND FLOOR FRAMING DETAILS

BC 03 S-7.1 RAIN CANOPY DETAILS

BC 03 S-7.2 SHADE CANOPY DETAILS

BC 03 S-7.3 STEEL STAIR DETAILS

BC 03 S-7.4 ELEVATOR ELEVATION AND DETAILS

BC 03 FP-A2.1 PIPING PLAN FIRE PROTECTION

BC 03 FP-A4.1 SECTIONS FIRE PROTECTION

BC 03 FP-B2.1 FIRST FLOOR PIPING PLAN FIRE PROTECTION

BC 03 FP-B2.2 SECOND FLOOR PIPING PLAN FIRE PROTECTION

BC 03 FP-B3.1 FIRST FLOOR CEILING PLAN FIRE PROTECTION

BC 03 FP-B4.1 SECTIONS FIRE PROTECTION
BC 03 FP-6.1 DETAILS PLAN FIRE PROTECTION
BC 03 FP-6.2 DETAILS PLAN FIRE PROTECTION
BC 03 FP-6.3 SEISMIC BRACING CALCULATIONS FIRE PROTECTION

BC Drawings (8.5 inch by 11 inch & 11 inch by 17 inch):

BC 03 BC 03.1 TYP. RWL AT GRADE 8/A-9.2

Project Record

None

End of Table of Contents

A. CHANGES TO PREVIOUS BID CLARIFICATIONS

None

B. CHANGES TO THE BIDDING AND CONTRACT REQUIREMENTS

None

C. CHANGES/ ADDITIONS TO THE SPECIFICATIONS

Item No. 3. 01

The following document denoted Bid Clarification 03 is added to the project manual.

Section 07 8123 - INTUMESCENT MASTIC FIREPROOFING

Section 08 4313 - ALUMINUM ENTRANCES and STOREFRONTS

Revise Table of Contents accordingly.

Item No. 3. 02

Section 12 2100 - WINDOW SHADE SYSTEM

Revise Article 2.03 FABRICS as follows:

A. Fabric for Sun/Glare/Heat Control: Style ~~3000~~ **2100**; PVC coated fiberglass and polyester weave, 3 percent open; 14.6 ounces per square yard (495 g/square m), 0.027 inch (0.69 mm) thick; meet or exceed California flame tests.

D. CHANGES/ ADDITIONS TO THE DRAWINGS

Item No. 3.03

The following drawings dated May 28th denoted **Bid Clarification 03** supersede and replace previous drawings with the same titles:

BC 03 C-2.0 HORIZONTAL CONTROL PLAN
BC 03 C-3.2 UTILITY PLAN
BC 03 C-4.0 GRADING AND DRAINAGE PLAN
BC 03 C-4.2 GRADING AND DRAINAGE PLAN
BC 03 L1.0 MATERIAL AND DETAIL REFERENCE PLAN
BC 03 L2.0 LAYOUT PLAN
BC 03 L2.1 BIKE PARKING PLAN
BC 03 L3.0 IRRIGATION PLAN & SCHEDULES
BC 03 L4.0 PLANTING PLAN
BC 03 S-B2.1 BUILDING B FOUNDATION PLAN
BC 03 S-B2.2 BUILDING B SECOND FLOOR FRAMING PLAN
BC 03 S-B2.3 BUILDING B ROOF FRAMING PLAN
BC 03 S-B3.1 EAST/ WEST SHEAR WALL ELEVATIONS
BC 03 S-B3.2 NORTH/ SOUTH SHEAR WALL ELEVATIONS
BC 03 S-B3.3 SEISMICALLY SEPARATE BUILDING SHEAR WALL ELEVATIONS
BC 03 S-4.1 FOUNDATION DETAILS
BC 03 S-5.1 STEEL FRAMING DETAILS
BC 03 S-6.1 ROOF FRAMING DETAILS
BC 03 S-6.2 SECOND FLOOR FRAMING DETAILS
BC 03 S-7.1 RAIN CANOPY DETAILS
BC 03 S-7.2 SHADE CANOPY DETAILS
BC 03 S-7.3 STEEL STAIR DETAILS
BC 03 S-7.4 ELEVATOR ELEVATION AND DETAILS
BC 03 FP-A2.1 PIPING PLAN FIRE PROTECTION
BC 03 FP-A4.1 SECTIONS FIRE PROTECTION
BC 03 FP-B2.1 FIRST FLOOR PIPING PLAN FIRE PROTECTION
BC 03 FP-B2.2 SECOND FLOOR PIPING PLAN FIRE PROTECTION
BC 03 FP-B3.1 FIRST FLOOR CEILING PLAN FIRE PROTECTION
BC 03 FP-B4.1 SECTIONS FIRE PROTECTION
BC 03 FP-6.1 DETAILS PLAN FIRE PROTECTION
BC 03 FP-6.2 DETAILS PLAN FIRE PROTECTION
BC 03 FP-6.3 SEISMIC BRACING CALCULATIONS FIRE PROTECTION

Item No. 3.04

Sheet A-A2.1 BLDG-A FLOOR PLAN

Revise to window tag at Grid Lines (4) and (A) as follows:

~~W03~~ W02

Item No. 3.05

Sheet A-A3.1 BLDG-A REFLECTED CEILING PLAN

Revise the Ceiling Finish Codes on the Room Tags as follows:

A101 EARTH SCIENCE: ACPI
A101-A SHARED OFFICE: GYPI
A102 SPORTS MED: ACPI
A102-A REHABILITATION AREA: ACPI
A103 CUSTODIAN: ESI
A104 STAFF: GYPI
A105 FIRE RISER: ESI
A106 ICE: GYPI

Item No. 3.06

Sheet A-A5.1 BLDG-A EXTERIOR ELEVATIONS

Revise #2 NORTH ELEVATION and #3 SOUTH ELEVATION as follows:

:

~~Remove keynote -13- and remove the dashed line between grid lines 2 and 3~~

Item No. 3.07

Sheet A-A6.1 BLDG-A BUILDING SECTIONS

Revise BUILDING LONGITUDINAL SECTION

#3 as follows

Keynote ~~6-~~ 2 BEYOND located at the keynote pointing to the mechanical duct work in Sports Medicine A102

Item No. 3.08

Sheet A-A6.2 BLDG-A INTERIOR ELEVATIONS

Revise note on EXTERIOR WALL SECTIONS #1 and #2 as follows:

CEMENT PLASTER, SEE DETAIL ~~7-/A-9.2~~ 4/A-9.1

Item No. 3.09

Sheet A-A7.1 BLDG-A EXTERIOR ELEVATIONS

Revise EARTH SCIENCE A101 / East Elevation / Base Finish Code as follows:

B-1 TYP. (B-1 base for entire room and cabinets bases)

Item No. 3.10

Sheet A-A7.2 BLDG-A EXTERIOR ELEVATIONS

Revise to SPORTS MEDICINE A102 / North, East and South Elevation & PARTIAL HT WALL AT REHAB AREA A102-A as follows:

~~21- 16~~ (at window shades)

Item No. 3.11

Sheet A-9.2 ROOF DETAILS

Replace Detail 8/A-9.2 with the attached:

BC 03 BC 03.1 TYP. RWL AT GRADE

Item No. 3.12

Sheet A-9.3 ROOF DETAILS

Revise to detail #19: TEACHING WALL CABINET SECTION
Edit following detail bubble for the blocking as follows:
4x BLKG, SEE #DrgID/ #LayID 1/A-10.3

Item No. 3. 13

Sheet A-9.6 OPENING DETAILS

Revise detail #15: ALUM STOREFRONT to add the following note:

NOTE: FOR ITEMS SHOWN, BUT NOT NOTED, SEE DETAIL 3/A9.6 & 11/A9.6

Item No. 3. 14

Sheet A-10.2 INTERIOR DETAILS

Revise detail #10: GUTTER AT WOOD FRAMING as follows:
CEMENT PLASTER, SEE DETAIL 7/A-9.2 4/A-9.1

E. BIDDERS QUESTIONS

Item No. 3. 15

1. **Q:** Please clarify if the clouded areas are 8" seat walls or 12" seat walls and the details they coincide with.

A: Those are 12" wide seat walls labeled on C-2.0 and C-2.1 as "SEAT WALL."
This detail is located in the middle of the bottom row of details. This is not to be confused with "12" SEAT WALL WITH FOOTING."

Item No. 3. 16

Q: On page 17 of the Designation of subcontractors it states bidders may submit the phone numbers & email's of listed subs within 24 hours to the District. What's the email address of the District rep that the bidders should submit this to?

A: Anthony D'Amante email: anthony.d'amante@lathropconstruction.com

Item No. 3. 17

Q: Please let us know if this project has been determined as substantially complex. This will help us to know if the retention is 5% or 10%.

A: The project is **not** substantially complex.

Item No. 3. 18

Q: Since the G.S. is responsible for off-site coverage on General Liability, Auto Workman's Comp will the district accept the use of an Umbrella policy to comply with the requested limits?.

A: Yes - the Umbrella Policy will comply with the insurance requirements.

Item No. 3. 19

Q: There aren't any specs for the aluminum storefronts, frames, fire rated glazing, and any glazing. Please provide that info or the basis of design for all of the required products.

A: Refer to the changes to the specifications. Refer to glazing spec section 08 8000, no fire rating glazing.

Item No. 3. 20

Q: Specified fabric is 2100 -10% open...this fabric is far to open for classroom use in our opinion. Has the architect reviewed large samples of this in place?

A: Refer to BC 02

Item No. 3. 21

Q: 30 years' experience, teaches us 3% fabric is best employed in these windows and exposures. Has the architect considered this?

A: Refer to BC 02

Item No. 3. 22

Q: 13/A-9.1 shows 1hr Intumescent mastic fireproofing applied the post inside the 1-hr exterior wall but the specification section 07 8123 is missing. Do you have a spec 07 8123 available for this project?

A: See changes to specifications

Item No. 3. 23

Q: Bid Section 12 3600, Item 2.02C.7 calls out a marine edge in sink areas. A marine edge is not detailed on 16/A-10.2. Please advise if a marine edge is required, and if so, the extent (provide on all exposed sides of the island top and the peninsula tops?)

A: Provide marine edge on all exposed sides of the island top and the peninsula.

END OF BID CLARIFICATION

SECTION 07 8123
INTUMESCENT MASTIC FIREPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Thin-film intumescent fire-resistive coating for structural steel, including surface preparation.
 - 1. Interior items and surfaces concealed from view behind other finishes.
- B. Protective and/or decorative topcoats.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 1200 - Structural Steel Framing. Primers underlying intumescent paint finishes.
- C. Section []: Field-applied paints matching intumescent fireproofing.
- D. Section 09 9000 - Painting and Coatings: Submittals for top coat color selection and general installation requirements for top coat.

1.03 REFERENCE STANDARDS

- A. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2015.
- D. ASTM E605 - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members, 2000 ed.
- E. ASTM E736 - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members, 2000 ed.
- F. ASTM E761 - Standard Test Method for Compressive Strength of Sprayed Fire-Resistive Material Applied to Structural Members, 2000 ed.
- G. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code.
- H. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green".
- I. NFPA 251
- J. SSPC-Paint Standards: Steel Structures Painting Council; Part of Painting Manual, Vol 2.
- K. SSPC-PA 2 - Procedure For Determining Conformance To Dry Coating Thickness Requirements; 2015, with Editorial Revision (2018).
- L. UL Fire Resistance Directory.
- M. UL 263.

1.04 DEFINITIONS

- A. Structural Frame: Structural elements of the buildings resisting gravity and lateral loads including, but not limited to the following; beams, columns, girders, diagonal and horizontal braces, tubular and HSS members and associated connections.

1.05 SUBMITTALS

- A. See Section 01 3000 - Submittals, for submittals procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Performance characteristics and test results.
 - 2. Preparation instructions and recommendations, including ambient conditions required.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.
- C. CAL-GREEN Submittals: Product Data - VOC Limits: For adhesives sealants, fillers, primers and coatings, documentation including printed statement of VOC contents, comply with limits specified in related section.
 - 1. Product Data - Low/No-VOC Paints and Coatings. Provide certification that all primers and coatings meet VOC emission limits specified in Section 01 6116. List manufacturer, brand, application, type (flat or non-flat), number of gallon, and the VOC emissions in grams/liter. Include MSDS and product data sheet indicating VOC limits for each product provided.
- D. Schedule of Fireproofing: List w/d rating for each member to be fireproofed, fire rating of the protected member, fireproofing test or design number, and certification that material is classified or listed for the type and size of member to be fireproofed. Indicate published UL Report tabulated application thickness values for member sizes shown on the drawings and indicate required application thickness for each member.
- E. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, acceptable wind velocity during application, supplementary instructions given, and methods of correcting non-conforming work.
- F. Certificates: Certify that intumescent fireproofing provided for this project meets or exceeds specified requirements in all respects.
- G. Test Reports: Published fire resistive designs for structural elements of the types required for the project, indicating hourly ratings of each assembly.
 - 1. Bond Strength of Fireproofing: ASTM E72, tested to provide minimum bond strength of 20 times weight of fireproofing materials;
 - 2. Compliance with UL Test Standard 263. UL Fire Resistance Test Assembly.
- H. Manufacturer's Qualification Statement.
- I. Evaluation Reports: For fireproofing, from ICC-ES and UL, listing application thickness values.
- J. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company that specializes in manufacturing the type of products specified, with minimum of ten years of documented experience.

- B. Installer Qualifications: Approved, certified, or supervised by manufacturer of intumescent fireproofing, with not less than 5 years of documented experience and written approval of the manufacturer.

1.07 MOCK-UP

- A. Provide a mock-up for evaluation of surface preparation techniques and application workmanship; approved mock-up will serve as a standard of comparison for subsequent work of this section.
- B. Finish at least 100 sq ft (10 sq m) of surface in areas as designated by Architect.
- C. Evaluate mock-up for compliance with specified requirements, including thickness and finish texture.
- D. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
- E. Refinish mock-up area as required to produce acceptable work.
- F. Approved mock-up may remain as part of the project.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers with identification labels and testing agency markings intact and legible.
- B. Store products in manufacturer's unopened packaging until ready for installation.
 - 1. Store at temperatures not less than manufacturer's recommended minimum temperature in dry, protected area.
 - 2. Protect from freezing, and do not store in direct sunlight.
 - 3. Dispose of all materials that have come into contact with contaminants of any kind prior to application.
- C. Dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.09 FIELD CONDITIONS

- A. Coordinate installation with adjacent construction for optimal sequencing of work.
- B. Protect areas of application from windblown dust and rain.
- C. Allow wet surfaces to dry thoroughly and to attain temperature and conditions specified before starting or continuing coating operation.
- D. Maintain ambient field conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under ambient conditions outside manufacturer's absolute limits.
 - 1. Provide temporary enclosures as required to control ambient conditions.
 - 2. Do not apply intumescent fireproofing when ambient temperatures are below 50 degrees F (10 degrees C) without specific approval from manufacturer.
 - 3. Maintain relative humidity between 40 and 60 percent in areas of application.
 - a. Do not apply intumescent paints in snow, rain, fog, or mist; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - 4. Maintain ventilation in enclosed spaces during application and for not less than 72 hours afterward.

5. Do not install products until environmental conditions are as recommended by manufacturer. Maintain installed work in these conditions until completion of construction.
 6. Protect installed work from moisture, humidity and inclement weather. Repair all damage or failure of material prior to covering with other work.
- E. Ventilation: Ventilate building spaces during and after application of fireproofing, providing complete air exchanges according to manufacturer's written instructions. Use natural means or, if they are inadequate, forced-air circulation until fireproofing dries thoroughly.

1.10 WARRANTY

- A. See Section 01 7000 - Project Closeout, for additional warranty requirements.
- B. Five year warranty, stipulating that fireproofing will not crack, check, dust, flake, spall, separate, or blister and stipulating that the manufacturer will re-install or repair failures during the warranty period.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. VOC Limits for adhesives, sealants, fillers, primers and coatings . Comply with limits specified in related section.
- B. Provide fire rated assembly ratings required for structural steel members and all connections in accordance with UL Fire Resistance Tests, classified in accordance with UL 263 (ASTM E119 and NFPA 251) for fire ratings indicated.
- C. Meet requirements of ASTM E605, ASTM E736 and ASTM E761.
- D. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.
- E. Application thicknesses must be based on published UL Report tabulated values for standard member sizes shown on the drawings. Calculated, extrapolated or interpolated application thicknesses will be rejected.
- F. Auxiliary Materials: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

2.02 MANUFACTURERS

- A. Source Limitations: Obtain fireproofing from single source.
- B. Asbestos: Provide products containing no detectable asbestos.
- C. Intumescent Mastic Fireproofing:
 1. Albi Manufacturing Division of StanChem Inc; Albi Clad TF: www.albi.com/#sle.
 2. Carboline Company; A/D Firefilm III: www.carboline.com/#sle.
 3. Isolatek International Corp; CAFCO® SprayFilm® WB 3™: www.isolatek.com/#sle.
 4. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SYSTEM REQUIREMENTS

- A. Fireproofing: Provide intumescent thin-film fire resistive coating systems tested by an independent testing agency in accordance with ASTM E119 and acceptable to authorities having jurisdiction (AHJ).
 1. Provide assemblies listed by UL or FM and bearing listing agency label or mark.

2.04 MATERIALS

- A. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each material or coat, products and spreading rates shall be as recommended in writing by intumescent paint manufacturer for use on substrate indicated. Comply with requirements for fire-retardant coating classification and surface-burning characteristics indicated.
- B. Physical and Performance Properties:
 - 1. Bond Strength: 280 psi (1931 k Pa) per ASTM D 4541.
 - 2. Density: 12.0 lb/gal \pm 0.5.
 - 3. Durometer Hardness: 84 per ASTM D 2240, Shore D.
 - 4. Impact Resistance: 56 inch-lb (0.65 kg-m) per ASTM D 2794.
 - 5. Abrasion Resistance: 0.2850 g/ 1000 cycles per ASTM D 4060.
 - 6. Surface Burning Characteristics: ASTM E 84, Class A.
 - a. Flame Spread: 5.
 - b. Smoke Developed: 35.
 - 7. VOC Content: < 12 g/L.
- C. Fire Resistive Coating System: Thin film intumescent mastic fireproofing system for fire protection of structural steel, gypsum board, wood, oriented strand board (OSB), concrete, and concrete masonry units (CMU).
 - 1. Surface Burning Characteristics: Tested in accordance with ASTM E84.
 - a. Flame Spread Index (FSI): 25, maximum.
 - b. Smoke Developed Index (SDI): 50, maximum.
 - 2. Thickness: As required for fire-resistance design indicated, measured according to requirements of fire-resistance design.
 - 3. For Interior Use:
 - a. Use only water-based products.
 - b. Durometer Hardness, Type D: 65, minimum, in accordance with ASTM D2240.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - 4. For Exterior Use:
 - a. Use only solvent-based products.
 - b. Durometer Hardness, Type D: 45, minimum, in accordance with ASTM D2240.
- D. Protective and Decorative Top Coating: As recommended by fireproofing manufacturer for exposure and substrate conditions.
 - 1. Color and Gloss: As selected..
 - 2. Coordinate with paint as specified in Division 09 for color and sheen to match between intumescent fireproof coating and adjacent painted surfaces.
- E. Sealers and Primer: As required by tested and listed assemblies, and recommended by fireproofing manufacturer to suit specific substrate conditions.
- F. Reinforcement: Glass fiber fabric matching type used in tested and listed assemblies.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates with Applicator present to determine if they are in satisfactory condition to receive intumescent fireproofing. Verify that they are clean and free of oil, grease,

incompatible primers, or other foreign substances capable of impairing bond to fireproofing system.

- B. Do not begin installation until substrates have been properly prepared.
- C. Verify suitability of substrates, including surface conditions, and compatibility with existing finishes and primers.
- D. Verify that clips, hangers, supports, sleeves, and other items required to penetrate fireproofing, are in place.
- E. Verify ducts, piping, equipment, or other items which would interfere with application of fireproofing are not positioned until fireproofing work is complete.
- F. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Thoroughly clean surfaces to receive fireproofing.
 - 1. Remove substances that could impair bond of fireproofing.
- B. Prime substrates where included in fire-resistance design and where recommended in writing by fireproofing manufacturer unless compatible shop primer has been applied and is in satisfactory condition to receive fireproofing.
- C. Do not coat surfaces if surface moisture content or alkalinity exceeds that permitted in manufacturer's written instructions.
 - 1. Remove incompatible primers, and reprime substrate with compatible primers as required to produce coating systems indicated.
 - 2. Perform cleaning and coating application so dust and other contaminants from cleaning process do not fall on wet, newly coated surfaces.
- D. Repair substrates to remove surface imperfections that could affect uniformity of texture and thickness of fireproofing system. Remove minor projections and fill voids that could telegraph through the finished work or reduce effectiveness of fireproofing.
 - 1. For applications visible on completion of Project, repair substrates to remove surface imperfections, minor projections and fill voids that might affect finish appearance after application.
- E. Cover or otherwise protect other work that might be damaged by fallout or overspray of fireproofing system, and provide temporary enclosures as necessary to confine operations and maintain required ambient field conditions.
- F. Close off and seal duct work in areas where fireproofing is being applied.

3.03 APPLICATION

- A. Construct fireproofing assemblies that are identical to fire-resistance design indicated and products as specified, tested, and substantiated by test reports; for thickness, primers, topcoats, finishing, and other materials and procedures affecting fireproofing work.
- B. Coordinate application of fireproofing with other construction to minimize need to cut or remove fireproofing.
- C. Comply with manufacturer's instructions for particular conditions of installation applications.
- D. Apply manufacturer's recommended primer to required coating thickness.
- E. Apply fireproofing to full thickness over entire area of each substrate to be protected.

- F. Install auxiliary materials as required, as detailed, and according to fire-resistance design and fireproofing manufacturer's written instructions for conditions of exposure and intended use. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.
- G. Apply fireproofing to full thickness over entire area of each substrate to be protected. Apply coats at manufacturer's recommended rate to achieve dry film thickness required for fire resistance ratings designated for each condition.
- H. Apply intumescent fireproofing by spraying to maximum extent possible, and as necessary complete coverage by roller application or other method acceptable to manufacturer.
- I. Extend fireproofing in full thickness over entire area of each substrate to be protected.
- J. Install body of fireproofing in a single course unless otherwise recommended in writing by fireproofing manufacturer.
- K. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Produce sharp lines and color breaks.
 - 1. Pigmented Finishes: If undercoats or other conditions show through pigmented topcoat/overcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- L. Cure fireproofing according to fireproofing manufacturer's written instructions.
- M. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

3.04 FIELD QUALITY CONTROL

- A. Testing Laboratory: Owner will employ and pay for field quality control testing of intumescent fireproofing by an independent testing laboratory.
- B. Perform the tests and inspections of completed Work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.
- C. See Section 01 4000 "Quality Requirements" for retesting and reinspecting requirements and Section 01 7300 "Execution" for requirements for correcting the Work.
- D. Fireproofing will be considered defective if it does not pass tests and inspections.
 - 1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
 - 2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.
- E. Manufacturer's Field Reports: Indicate environmental conditions under which fireproofing materials were installed. These reports are separate and complementary to reports provided by the Owner's Testing Agency.
- F. Contractor shall inspect the installed fireproofing after application and curing but prior to concealment or coating for integrity of fire protection.
- G. Contractor shall re-inspect the installed fireproofing for integrity of fire protection, after installation of subsequent work.

- H. Repair or replace intumescent mastic fireproofing at locations where test results indicate fireproofing does not meet specified requirements.

3.05 CLEANING

- A. Immediately after installation of fireproofing in each area, remove overspray and fallout from other surfaces and clean soiled areas.
- B. Protect work of other trades against damage from coating application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

3.06 PROTECTION

- A. Immediately after installation of fireproofing in each area, remove overspray and fallout from other surfaces and clean soiled areas.
- B. Protect installed intumescent mastic fireproofing from damage due to subsequent construction activities, so fireproofing is without damage or deterioration before Date of Substantial Completion.
- C. Touch-up, repair or replace damaged products using same method as original installation before Date of Substantial Completion.

3.07 SCHEDULES

- A. Steel members of building Structural Frame, exposed or concealed in fire-rated walls, floor/ceiling and roof/ceiling assemblies, all horizontal, vertical and diagonal members, unless otherwise specifically detailed to have fireproofing provided by other sections:
 - 1. Fire Resistance Rating to match Wall or Assembly Construction indicated.

END OF SECTION

SECTION 08 4313
ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. Infill panels of metal and glass.
- C. Aluminum doors and frames.
- D. Perimeter sealant.
- E. Section also includes Contractor's responsibility to assume role of "Responsible Party" for NFRC label testing and inspection "Certified Project Option", to obtain Fenestration Acceptance Requirements certification required for occupancy permit. Refer to California Energy Code Section 110.6.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Restrictions.
- B. Section 07 2500 - Weather Barriers: Sealing framing to weather barrier installed on adjacent construction.
- C. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- D. Section 08 5113 - Aluminum Windows.
- E. Section 08 7100 - Door Hardware: Hardware items other than specified in this section.
- F. Section 08 8000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Final Rule; Federal Register, July 26, 1991; updated 2010.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
- C. AAMA 501.2 - Field Check of Metal Storefronts, Curtain Walls, and Sloped Glazing Systems for Water Leakage; 2009.
- D. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems; 2014.
- E. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- F. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.
- G. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- H. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 2013.
- I. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.
- J. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

- K. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- L. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- M. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.
- N. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- O. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- P. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- Q. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.
- R. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors; 2002 (Reapproved 2010).
- S. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).
- T. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2015.
- U. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green", current edition.
- V. California Energy Code "Building Energy Efficiency Standards", 2013.
- W. California Energy Code "Reference Nonresidential Appendix NA7", 2013.
- X. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code, with California Amendments, current edition.
- Y. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).
- Z. SSPC-Paint 25 - Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel, Type I and Type II; Society for Protective Coatings; 1997 (Ed. 2004).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting two weeks before starting work of this section; require attendance by all affected installers.
 - 1. Meet at Project site with Installer, installer of each component of associated work, installers of substrate construction to receive this work, installers of other work that must precede or follow storefront work (including mechanical work if any), Architect/Owner, storefront system manufacturer's representative, and other representatives directly

- concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:
- a. Review preparation and installation procedures and coordinating and scheduling required with related work.
 - b. Review methods and procedures related to storefront and glazing work.
 - c. Review structural loading limitations of new storefront.
 - d. Review storefront systems requirements (drawings, specifications, and other contract documents).
 - e. Review required submittals, both completed and yet to be completed, including deferred approvals, if any.
 - f. Review and finalize construction schedule related to storefront work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - g. Review required inspection, testing, certifying, and material usage accounting procedures.
 - h. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including provision of temporary enclosure of partially completed or occupied spaces.
 - i. Record discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
 - j. Review notification procedures for weather or non-working days.

1.05 SUBMITTALS

- A. See Section 01 3300 - Submittals, for submittal procedures.
- B. Provide submittals coordinated with submittals for related sections referenced in this Section for simultaneous review.
- C. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
- D. VOC Submittals:
 1. Product Data - VOC Limits: For adhesives sealants, fillers and primers, documentation including printed statement of VOC contents, demonstrate compliance with limits specified in Section 01 6116.
- E. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
 1. Shop drawings shall include project-specific integrations to surrounding cladding and waterproofing components, including items specified in other sections.
 2. Provide installation instructions and isometric details indicating how system components will be installed and sealed watertight.
- F. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.
- G. Samples: Submit two samples 12x12 inches (____x____ mm) in size illustrating finished aluminum surface, glass, glazing materials.
- H. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.

- I. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.
- J. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer and testing agency.
- B. Certificate of Acceptance: Refer to California Energy Code Section 110.6.
 - 1. Submit Certificate of Acceptance certifying that the fenestration product meets the required acceptance requirements, completed, signed and submitted to the enforcement agency, with copies to Owner and Architect.
- C. Seismic Qualification Certificates: For aluminum-framed systems, accessories, and components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
- D. Welding certificates.
- E. Preconstruction Test Reports: For sealant.
- F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems, indicating compliance with performance requirements. For each system provide test reports with shop drawings
- G. Source quality-control reports.
 - 1. Field quality-control reports.
- H. NFRC 100 Label Certificate: Submit proof of testing of site-built assembly and compliance with NFRC 100. Manufacturer certificates or factory tests are not acceptable for this requirement.
- I. Warranties: Sample of special warranties.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.
- C. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.
- D. NFRC Compliance: Completed site-built assembly shall conform to NFRC 100 requirements and be tested and labeled in accordance with that standard.
- E. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.
- F. Product Options: Information on Drawings and in Specifications establishes requirements for systems' 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.

1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.
- G. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.09 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.
- B. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating glazed aluminum curtain-wall systems correspond to established dimensions.
- C. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C). Maintain this minimum temperature during and 48 hours after installation.

1.10 WARRANTY

- A. See Section 01 7000 - Contract Closeout, for additional warranty requirements.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Noise or vibration caused by thermal movements.
 - c. Deterioration of metals and other materials beyond normal weathering.
 - d. Adhesive or cohesive sealant failures.
 - e. Water leakage through fixed glazing and framing areas.
 - f. Failure of operating components.
- C. Correct defective Work within a five year period after Date of Substantial Completion.
- D. Provide ten year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 DESIGN REQUIREMENTS

- A. VOC Limits for adhesives sealants, fillers, coatings and primers. Comply with limits specified in Section 01 6116.
- B. Assume role of "Responsible Party" for NFRC label testing and inspection "Certified Project Option". Make all arrangements necessary to perform required testing of site-built assembly and obtain NFRC label as described in NFRC 100.5.6. Contractor is responsible to obtain, including payment of all required fees, a label certificate for the site built fenestration system

meeting requirements of California Energy Code 2013 Section 10-111(a)2 as described in California Energy Code Section 110.6.

- C. Thermally Broken: All components, including doors, to be thermally broken with continuous resilient elastomeric extrusions.
- D. Weather Resistance:
 - 1. Design shall provide waterproofing and an air-vapor retarder that is continuous at all penetrations, transitions, and other conditions. System shall integrate with the building's waterproofing and air-vapor-retarder system to provide a weathertight transition. System shall not allow the movement of the interior or exterior air to flow vertically within the assembly. Methods employed to prevent internal air movement shall not restrict water flow channels or prevent thermal movement of the frames.
 - 2. Water penetration into the system is acceptable only if all of the following conditions are satisfied; any other water penetration is considered water leakage and is unacceptable:
 - a. Water is immediately contained and drained to the exterior.
 - b. There is no wetting of a surface that could be damaged by moisture or that would be visible to building occupants.
 - c. There would be no staining or other damage to completed building or its furnishings.
 - d. This definition of water leakage governs over the other definitions that may appear in referenced documents.
 - 3. Provide internal gutters and weep systems to collect and drain water leakage and condensation to the exterior at the sill of each opening. Glazing assemblies shall have on isolated gutter cavity at each glass perimeter so the leakage is confined to and wept from the opening of origin. Glazing assemblies shall have continuous spliced gutters at mullions splices, with sealed and caps at termination conditions. Systems shall not direct water to contact edges of insulating glass units. Prevent water infiltration at weeps. Coordinate gutter and weep systems with other sections.
- E. Sound Transmission Class (STC): Rated for not less than 30 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
 - 1. Locations per Drawings, coordinate with Section 08 8000 for IGU selection, values as scheduled or as shown on Drawings:

2.02 MANUFACTURERS

- A. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer, same as that specified in Section 08 4413 for Glazed Aluminum Curtain Walls.
- B. Aluminum-Framed Storefront and Doors:
 - 1. EFCO Corporation; Series 433 Thermal TripleSet Storefront, www.efcocorp.com.
 - 2. Kawneer North America; Trifab® VersaGlaze 451T: www.kawneer.com/#sle.
 - 3. Oldcastle BuildingEnvelope; Series 3000-6000 Thermal Multiplane: www.oldcastlebe.com/#sle.
 - 4. Wausau Window and Wall Systems; 14000-14650 Series: www.wausauwindow.com.
- C. Substitutions: See Section 01 6000 - Product Requirements.

2.03 STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Glazing Position: Back-Set.
 - 2. Water Leakage Test Pressure Differential: ____ lbf/sq ft (10 Pa).
 - 3. Air Infiltration Test Pressure Differential: 6.24 psf (300 Pa).
 - 4. Finish: Superior performing organic coatings.

- a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 5. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 6. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 7. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 8. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F (95 degrees C) over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
 9. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 10. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
 11. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glazing and inner sheet of infill panel and heel bead of glazing compound.
- B. Performance Requirements:
1. Structural Loads:
 - a. Wind Loads: As indicated on the Drawings.
 - b. Seismic Loads: As indicated on the Drawings.
 - c. Other Design Loads: As indicated on Drawings.
 2. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Deflection Normal to Glazing Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches (4.1 m) and to 1/240 of clear span plus 1/4 inch (6.35 mm) for spans more than 13 feet 6 inches (4.1 m).
 - b. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch (3.2 mm).
 - 1) Operable Units: Provide a minimum 1/16-inch (1.6-mm) clearance between framing members and operable units.
 - c. At safety loads of 150 percent of design load for metal members supporting glass, residual deflection of framing members shall not exceed 1/1000th of span.
 - d. Accommodate a minimum 1/2 in. live load deflection or greater, as determined by the Structural Engineer of Record, as well as anticipated thermal expansion and elastic shortening of the building. Contractor's Engineer shall be responsible for all necessary project data and ensure that design complies with the Structural Engineer of Record live and dead load deflection criteria.
 3. Water Penetration Resistance: No uncontrolled water as described in paragraph "Weather Resistance" above, when tested in accordance with ASTM E331 at pressure differential of 10 lbf/sq ft (480 Pa).
 4. Water Penetration under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested

- according to AAMA 501.1 under dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than 9.0 lbf/sq. ft. (433 Pa).
5. Air Leakage Laboratory Test: Maximum of 0.06 cu ft/min sq ft (0.3 L/sec sq m) of wall area, when tested in accordance with ASTM E283 at 6.27 psf (300 Pa) pressure differential across assembly.
 6. Thermally Broken: All components, including doors, to be thermally broken with continuous resilient elastomeric extrusions.
 7. Condensation Resistance Factor of Framing: 50, minimum, measured in accordance with AAMA 1503.
 8. Air Infiltration: Limit air infiltration through assembly to 0.06 cu ft/min/sq ft (0.3 L/s/sq m) of wall area, measured at specified differential pressure of 6.24 lbf/sq. ft. across assembly in accordance with ASTM E283.
 9. Failure defined to include any of the following:
 - a. Deflection exceeding specified limits.
 - b. Water penetration, including condensation, in excess of that specified in this section.
 - c. Thermal stresses transferring to building structure.
 - d. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
 - e. Noise or vibration created by wind and by thermal and structural movements.
 - f. Loosening or weakening of fasteners, attachments, and other components.
 - g. Sealant failure.
 - h. Failure of operating units.

2.04 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, drainage holes and internal weep drainage system.
 1. Glazing Stops: Flush.
 2. Cross-Section: As indicated on drawings.
- B. Infill Panels: Insulated, aluminum sheet face and back, with edges formed to fit glazing channel and sealed.
 1. Finish: Same as storefront.
- C. Sun Screens: Shop fabricated, shop finished, extruded aluminum outriggers, louvers, and fascia, free of defects impairing strength, durability or appearance.
 1. Configuration: As indicated on drawings.
 2. Louver Type: Bar.
 3. Sun Screen Angle: As indicated on Drawings. If not shown, request from Architect.
 4. Design Criteria: Design and fabricate to resist the same loads as storefront system as well as the following loads without failure, damage, or permanent deflection:
 - a. Loads as indicated on Structural Drawings.
 - b. Thermal Movement: Plus/minus 1/8 inch (3.175 mm), maximum.
 5. Sizes: As indicated on drawings.

2.05 GLAZING

- A. Glazing: As specified in Division 08 Section "Glazing."
- B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
- D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

- E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
 - 1. VOC Limits, for adhesives sealants, fillers and primers. Comply with limits specified in Section 01 6116.
 - 2. Weatherseal Sealant: If structural sealant is not the weatherseal sealant, provide ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.
 - a. Color: As selected by Architect.

2.06 ENTRANCE DOOR SYSTEMS

- A. Stile-and-Rail Type Entrance Doors for manual-swing operation: Provide storefront manufacturer's heavy duty type complying with all of the following:
 - 1. Door corner construction shall consist of mechanical clip fastening, SIGMA deep penetration and fillet welds.
 - 2. Glazing: Fabricate doors to facilitate replacement of glass or aluminum panels, without disassembly of stiles and rails. Provide beveled, snap-on, extruded-aluminum stops and preformed gaskets with exterior stops anchored for non-removal.
 - 3. Equip each door leaf with an adjusting mechanism located in the top rail near the lock stile, which provides for minor clearance adjustments after installation.
 - 4. Door Construction: Minimum 2 inch overall thickness, with minimum 0.125-inch- (3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
 - 5. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.
 - 6. Door Design: Wide stile; 5-inch (127-mm) nominal width.
 - a. Stile and Rail dimensions as indicated.
 - b. Accessible Doors: Smooth surfaced for width of door in area within 10 inches (255 mm) above floor or ground plane.
- B. Entrance Door Hardware: As specified in Division 08 Section "Door Hardware."

2.07 VENTING WINDOWS

- A. Aluminum Windows: Manufacturer's standard units, complying with AAMA/WDMA/CSA 101/I.S.2/A440, with self-flashing mounting fins, and as follows:
 - 1. AA 900 ISO WEB. Compatible with storefront perimeter frame.
 - 2. Window Type: As indicated on Drawings.
 - 3. Minimum Performance Class: Match criteria specified for Storefront.
 - 4. Minimum Performance Grade: Match criteria specified for Storefront..
 - 5. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish, but not less than 0.064-inch (1.63-mm) thickness at any location for main frame and sash members.
 - a. Thermally Improved Construction: Fabricate window units with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.
 - 6. Mullions: Between adjacent windows where occurring, fabricated of extruded aluminum matching finish of window units.

7. Fasteners, Anchors, and Clips: Nonmagnetic stainless steel, aluminum, or other noncorrosive material, compatible with aluminum window members, trim, hardware, anchors, and other components of window units. Fasteners shall not be exposed, except for attaching hardware.
 - a. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.128 inch (3.26 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard, noncorrosive, pressed-in, spline grommet nuts.
8. Hardware: Manufacturer's standard; of stainless steel, or bronze; including the following:
 - a. Cam-action sweep sash lock and keeper at meeting rails.
 - b. Pole-operated, cam-action locking device on meeting rail where rail is more than 72 inches (1830 mm) above floor.
 - c. Operator Pole: Provide one pole for each room having window operators more than 72 inches (1830 mm) above floor.
 - d. Steel or bronze operating arms.
 - e. Concealed lock operable with hex key at locations indicated in drawings to be lockable.
 - f. Opening Limiters: Window manufacturer standard type of materials matching locks. Limit opening to 4 inches maximum horizontal extension where operable windows are adjacent to a path of travel.
 - g. Where operable windows are provided in accessible spaces for operation by occupants, provide one window in each space within an accessible reach range with accessible operating hardware complying with CBC 11B-308.
9. Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric; complying with AAMA 701/702.

2.08 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M). 6063 alloy, T5 temper.
- B. Sheet Aluminum: ASTM B209 (ASTM B209M).
- C. Fasteners: Stainless steel.
- D. Exposed Flashings: Aluminum sheet, 20 gage, 0.032 inch (0.81 mm) minimum thickness; finish to match framing members.
 1. Break shapes as indicated, as recommended by manufacturer, and as required to fully enclosed and seal system.
- E. Concealed Flashings: Stainless steel, 26 gage, 0.0187 inch (0.48 mm) minimum thickness.
- F. Sill Flashing Sealant: Elastomeric, silicone or polyurethane, compatible with flashing material.
- G. Sealant for Setting Thresholds: Non-curing butyl type.
- H. Concealed Flashings: 0.018 inch (0.5 mm) thick stainless steel, dead soft, as selected by manufacturer for compatibility with other components.
- I. Perimeter Sealant: Silicone, as specified in Section 07 9005.
- J. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- K. Glazing Accessories: As specified in Section 08 8000.
- L. Shop and Touch-Up Primer for Steel Components: SSPC-Paint 25, zinc oxide, alkyd, linseed oil primer.

- M. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.
- N. Protective Backing Paint: Bituminous type, emulsified asphalt, ASTM D1187.

2.09 FINISHES

- A. Superior Performing Organic Coatings System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of aluminum extrusion and panels surfaces having minimum total dry film thickness (DFT) of 1.2 mils, 0.0012 inch (0.030 mm).
 - 1. Manufacturers:
 - a. PPG Metal Coatings; Duranar: www.ppgmetalcoatings.com/#sle.
 - b. Sherwin-Williams Company; SHER-NAR 5000: oem.sherwin-williams.com/#sle.
 - c. Valspar; Fluropon: www.valsparcoilextrusion.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Color(s) as selected by Architect from:
 - 1. Manufacturer's full range of standard colors.
- C. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.10 HARDWARE

- A. Other Door Hardware: As specified in Section 08 7100.

2.11 FABRICATION

- A. General: Fabricate aluminum entrance and storefront components to designs, sizes and thickness indicated, and to comply with specified standards. Sizes and profile requirements are indicated on the drawings.
- B. Prefabrication: Complete fabrication, assembly, finishing, hardware application, and other work before shipment to Project site. Disassemble components only where necessary for shipment and installation.
 - 1. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work to prevent damage to exposed finish surfaces. Complete these operations for hardware prior to application of finishes.
 - 2. Do not drill and tap for surface-mounted hardware items until time of installation at Project site.
- C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations.
 - 2. Accurately fitted joints with ends coped or mitered.
 - 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
 - 4. Physical and thermal isolation of glazing from framing members.
 - 5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 - 6. Provisions for field replacement of glazing from interior for vision glass and exterior for spandrel glazing or metal panels.
 - 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Continuity: Maintain accurate relation of planes and angles with hairline fit of contacting members. Fabricate curved members to true shapes as shown on drawings, segmented or

faceted curves are not acceptable. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, while enabling installation and dynamic movement of perimeter seal.

- E. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- F. Prepare components to receive anchor devices. Fabricate anchors.
- G. Welding: Comply with AWS recommendations. Grind exposed welds smooth to remove weld spatter and welding oxides. Restore mechanical finish.
 - 1. Welding behind finished surfaces shall be performed to minimize distortion and discoloration on the finished surface.
- H. Reinforcing: Install reinforcing as required for hardware, performance requirements, sag resistance and rigidity.
- I. Dissimilar Metals: Separate dissimilar metals and concealed metal surfaces that will be in contact with cementitious materials with bituminous paint, suitable sealant, elastomeric tape, or gasket between the surfaces. Do not use coatings containing lead.
- J. Reinforce components internally for door hardware and door operators.
- K. Reinforce framing members for imposed loads.
- L. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies.
 - 1. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
- M. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.12 OPERABLE UNIT FABRICATION

- A. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
 - 1. At exterior doors, provide compression weather stripping at fixed stops.
 - 2. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.
- B. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
 - 1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
 - 2. At exterior doors, provide weather sweeps applied to door bottoms.
- C. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
- D. Operable Window Frames: Reinforce as required to support loads imposed by window operation and for installing window hardware.
 - 1. Provide compression weather stripping at fixed stops.
- E. Operable Windows: Reinforce as required for installing hardware.
 - 1. At pairs of windows, provide sliding-type weather stripping retained in adjustable strip .

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify, with installer present, dimensions, tolerances, and method of attachment with other work.
- B. Verify that wall openings and adjoining air and vapor seal materials are ready to receive work of this section.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
 - 1. Do not install damaged components.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill and perimeter flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- H. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- I. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- J. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- K. Set thresholds in bed of sealant and secure.
- L. Install glass and infill panels in accordance with Section 08 8000, using glazing method required to achieve performance criteria.
- M. Install perimeter sealant in accordance with Section 07 9005.
- N. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 OPERABLE UNITS

- A. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation, weathertight enclosure and tight fit at weather stripping.
 - 1. Opening Limiters: Adjust to limit opening to 4 inches maximum horizontal extension.
- B. Entrance Doors: Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

3.04 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet (1.5 mm per m) non-cumulative or 0.06 inch per 10 feet (1.5 mm per 3 m), whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch (0.8 mm).

3.05 FIELD QUALITY CONTROL

- A. Provide services of storefront manufacturer's field representative to observe for proper installation of system and submit report.
- B. Water-Spray Test: Provide water spray quality test of installed storefront components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
- C. Provide field testing of installed storefront system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as directed by Architect.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
 - 3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 6.20 psf (___ Pa).
 - a. Maximum allowable rate of water penetration in 15-minute test is 0.5 ounce (14 gram) that is not contained in an area with provisions to drain to exterior, or collected on surface of interior horizontal framing member.
 - 4. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 6.20 psf (300 Pa).
 - a. Maximum allowable rate of air leakage is 0.09 cfm/sq ft (0.5 L/s sq m).
- D. Repair or remove work if test results and inspections indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- F. Aluminum-framed assemblies will be considered defective if they do not pass tests and inspections. Should failure occur, Contractor shall test one additional are for each failed location.
- G. Prepare test and inspection reports.
- H. Fenestration Acceptance Requirements: Refer to California Energy Code Section 110.6.
 - 1. Before an occupancy permit is granted, site-built fenestration products in other than low-rise residential buildings shall be certified as meeting the Acceptance Requirements for Code Compliance, as specified in the Reference Nonresidential Appendix NA7 to ensure that site-built fenestration meet Standards requirements, including a matching label certificate for product(s) installed and be readily accessible at the project location.
 - 2. Contractor is responsible to prepare and obtain a Certificate of Acceptance certifying that the fenestration product meets the acceptance requirements, completed, signed and submitted to the enforcement agency, including payment of all fees, with copies to Owner and Architect.

3.06 ADJUSTING

- A. Adjust operating hardware and sash for smooth operation.

- B. Verify opening limiters prevent extension of operable units more than 4 inches horizontal from the face of the window frame.
- C. Provide window operating poles in each room having operable hardware more than 72 inches (1830 mm) above floor.

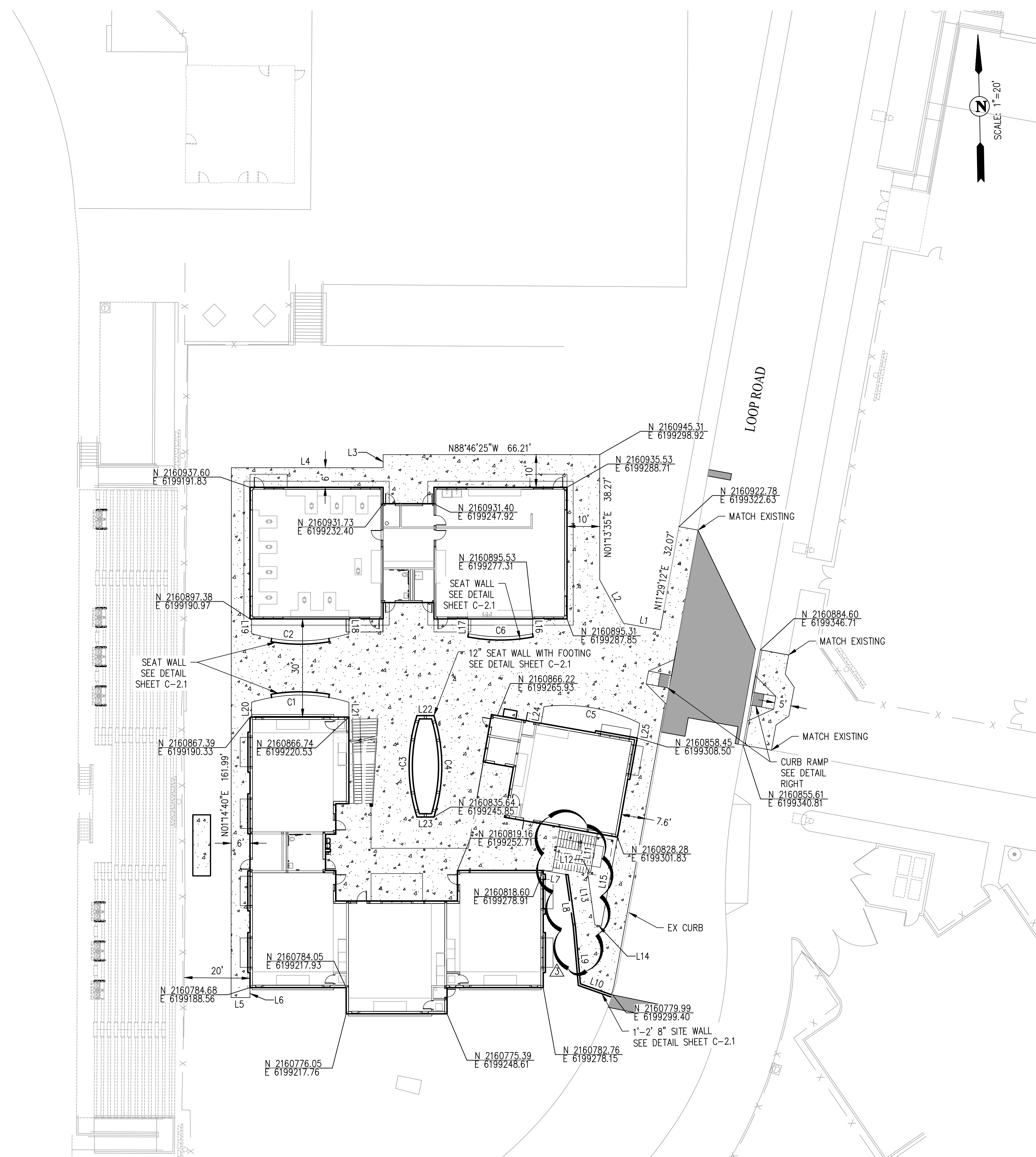
3.07 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
 - 1. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
 - 2. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.
- B. Remove excess sealant by method acceptable to sealant manufacturer and which will not damage pre-finished aluminum surfaces.

3.08 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.
- B. Touch-up minor damage to factory applied finish, no exposed unfinished aluminum allowed in finish work; replace components that cannot be satisfactorily repaired.

END OF SECTION



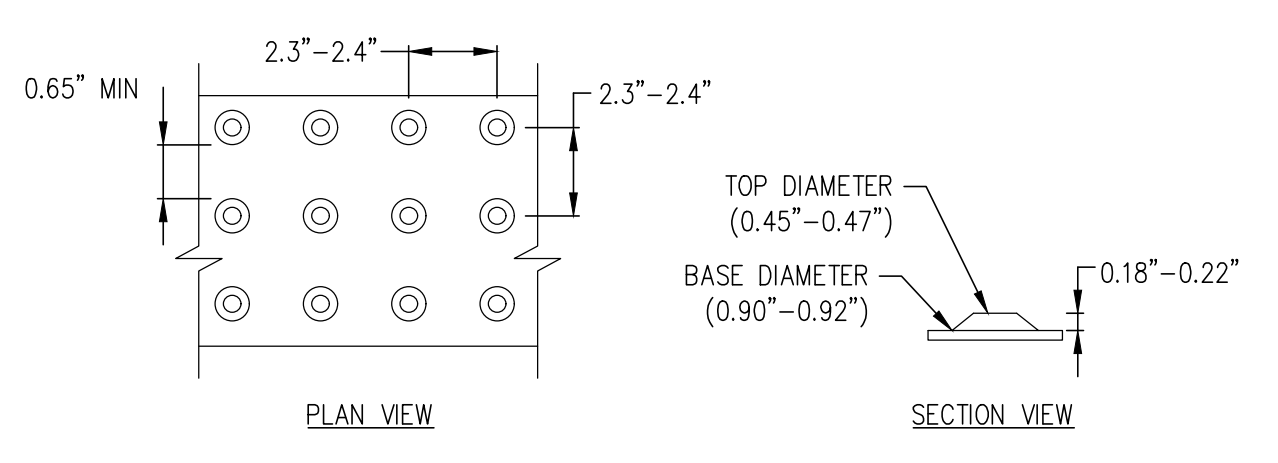
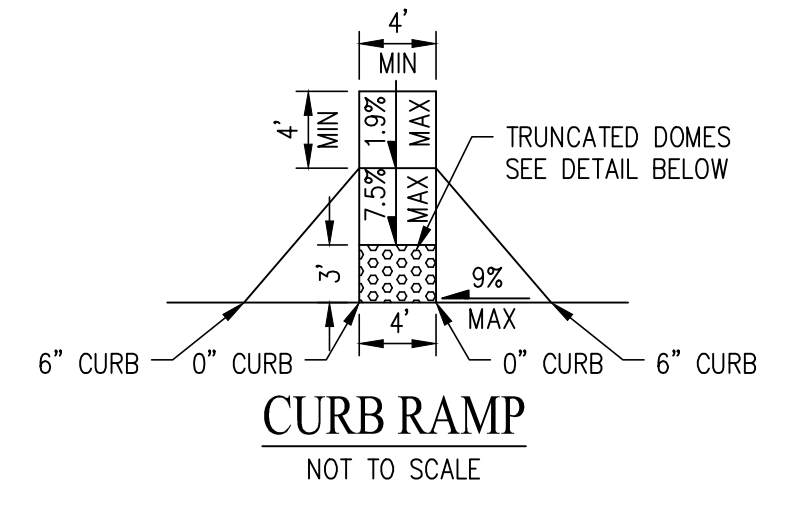
LEGEND

- AC PAVEMENT (SEE SHEET C-2.1 FOR SECTION)
- CONCRETE SIDEWALK/GUTTER/PAVEMENT
- VALLEY GUTTER (SEE SHEET C-3.0 FOR DETAIL)
- CURB AND GUTTER
- CURB CUT (SEE SHEET C-2.1 FOR DETAIL)

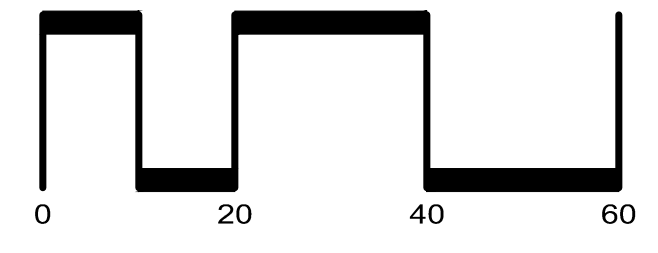
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L1	11.402	N78° 29' 10.71"W
L2	15.123	N27° 25' 18.86"W
L3	4.000	N01° 13' 35.20"E
L4	46.396	N88° 46' 24.80"W
L5	5.761	N88° 46' 10.77"W
L6	3.032	N01° 13' 49.23"E
L7	7.728	N78° 48' 01.10"W
L8	16.167	N06° 46' 28.78"W
L9	17.411	N03° 46' 28.78"W
L10	10.519	N69° 30' 04.31"W
L11	12.091	N11° 13' 34.53"E
L12	0.922	S78° 46' 25.26"E
L13	16.324	N06° 46' 28.78"W

NO	BEARING	LENGTH
L14	2.000	N78° 31' 29.84"W
L15	27.625	N11° 28' 30.16"E
L16	4.500	N01° 13' 34.33"E
L17	4.500	N01° 13' 34.53"E
L18	4.500	N01° 13' 34.33"E
L19	4.500	N01° 13' 34.33"E
L20	4.501	N01° 16' 15.22"E
L21	4.501	N01° 13' 34.33"E
L22	5.172	N88° 46' 25.47"W
L23	5.172	N88° 46' 25.47"W
L24	5.167	N11° 13' 34.53"E
L25	4.493	S11° 13' 34.53"W

NO	RADIUS	DELTA	LENGTH
C1	51.00'	033°52'17"	30.15'
C2	51.00'	033°52'05"	30.15'
C3	51.00'	035°23'12"	31.50'
C4	51.00'	035°23'12"	31.50'
C5	50.99'	033°52'37"	30.15'
C6	51.00'	022°09'59"	19.73'

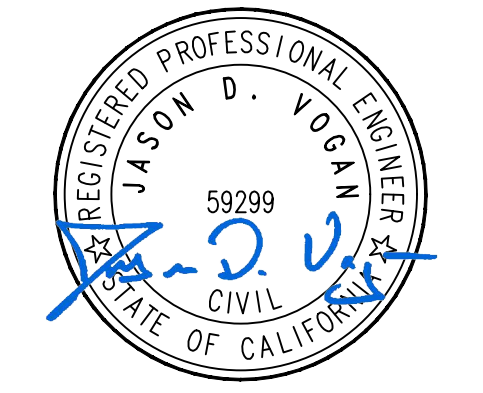


TYPICAL TRUNCATED DOME DETAIL
 PER CBC 11B-705.1.1
 COLOR TO BE YELLOW
 NOT TO SCALE



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE,
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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

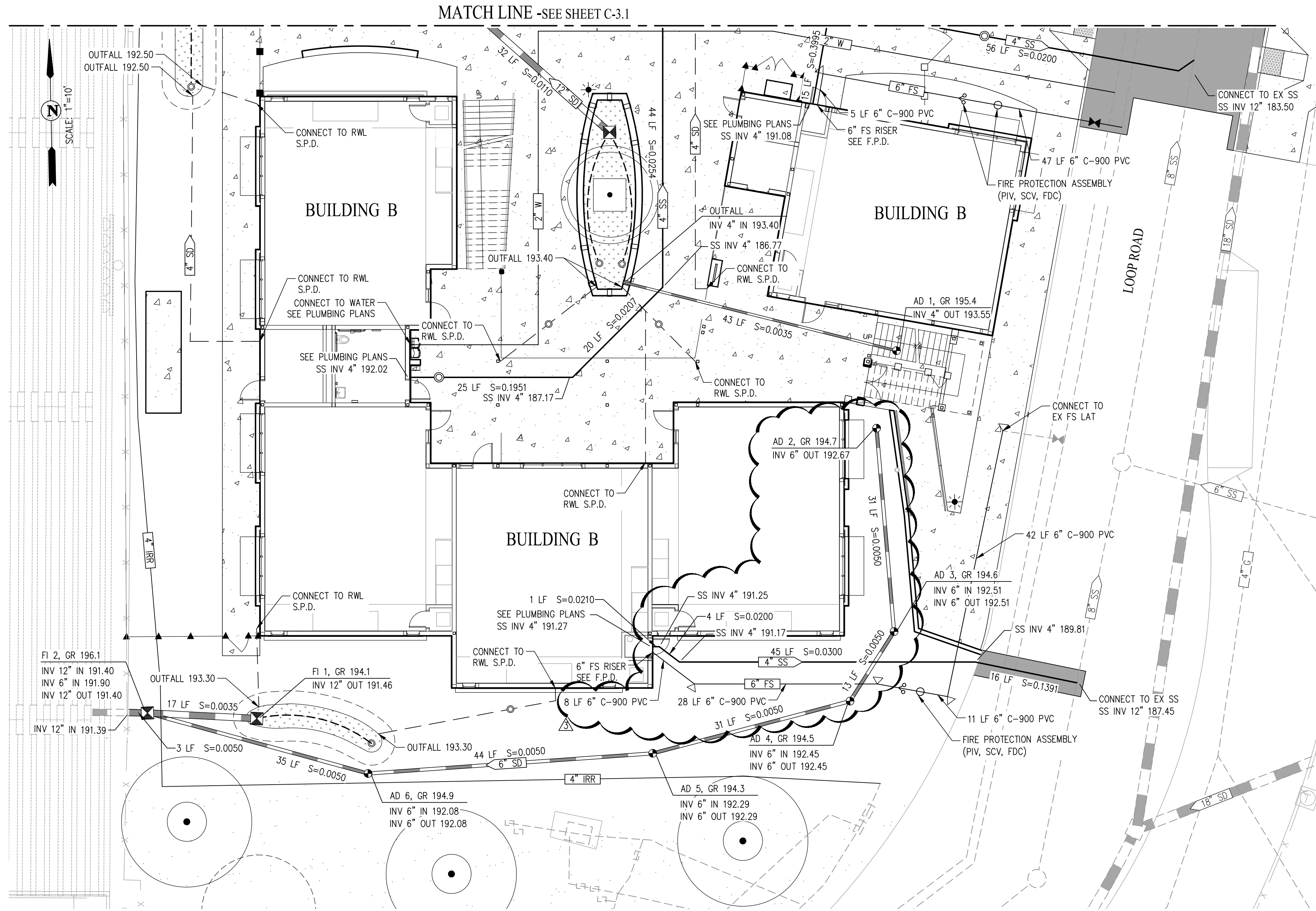
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DSA APP NO. 01-119268
 ARCH PROJECT NO. 1870.00
 DRAWN BY: MJV
 DRAWING SCALE:
 PTN: 61721-77 FILE NO: 7-H4

BID SET
 MAY 10, 2021

HORIZONTAL CONTROL PLAN

SHEET NUMBER
C-2.0



LEGEND	
	AC PAVEMENT
	CONCRETE SIDEWALK/GUTTER
	BIO-RETENTION AREA
	PROPOSED STORM DRAIN
	PROPOSED PERFORATED STORM DRAIN
	PROPOSED SEWER LATERAL
	PROPOSED WATER LATERAL
	PROPOSED FIRE SERVICE
	IRRIGATION SLEEVE - SEE LANDSCAPE PLANS
	RAIN WATER LEADER / COMMON AREA DRAIN
	THRUST BLOCK - SEE DETAIL BELOW
	PIV
	FDC
	PROPOSED MANHOLE
	PROPOSED CATCH BASIN
	AREA DRAIN
	PROPOSED SD OR SS CLEANOUT
	PROPOSED CURB CUT
	PROPOSED STREET LIGHT, SEE ELECTRICAL PLANS
	EXISTING SEWER
	EXISTING STORM DRAIN
	EXISTING WATER
	EXISTING IRRIGATION
	EXISTING FIELD INLET
	EXISTING MANHOLE

DIABLO WATER DISTRICT STANDARD DRAWING CONCRETE THRUST BLOCKS

PIPE SIZE	DEAD END, TEE, BD OR PLUG	CROSS (EA BLOCK)	90° ELBOW & WYE	45° ELBOW	22 1/2° ELBOW	MULTIPLIERS FOR THRUST BLOCK AREAS	
						ACTUAL SOIL BEARING VALUE	MULTIPLIER
4"	1.5	1.0	2.0	1.5	1.0	1,000 PSF	2.0
8"	3.0	2.5	4.0	2.5	1.5	1,500 PSF	1.33
12"	5.0	4.0	6.0	4.0	2.0	2,000 PSF	1.0
16"	7.5	5.0	8.0	6.0	3.0	2,500 PSF	0.8
20"	10.5	7.0	10.0	8.0	4.5	3,000 PSF	0.67

NOTES:
1. THRUST BLOCKS SHALL BE CLASS B CONCRETE (5 SACK MIX)
2. MAXIMUM TEST PRESSURE = 150 PSI
3. THRUST BLOCK HORIZONTAL WIDTH (A) SHALL BE AT LEAST TWICE THE VERTICAL HEIGHT (B)
4. TOP OF THRUST BLOCK SHALL NOT BE PLACED WITHIN 2' OF FINISHED GRADE.
5. REFER TO SPEC SECTIONS 03100 AND 03304.

EXAMPLE: ACTUAL SOIL BEARING VALUE = 1,000 PSF FOR 8" BLOW OFF
REQUIRED AREA IS: (2.0)(5.0 SQ FT) = 10.0 SQ FT

MUST ADDITIONALLY REFER TO NFPA 24 TABLE A10.6.1(b)

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REGISTERED PROFESSIONAL ENGINEER
JASON D. YOGAN 59299
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STATE OF CALIFORNIA

HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE, BRENTWOOD, CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS
1. 5/28/21 BID CLARIFICATION 3

DSA APP NO. 01-119268
ARCH PROJECT NO. 1870.00
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DRAWING SCALE: PTN: 61721-77 FILE NO: 7-H4

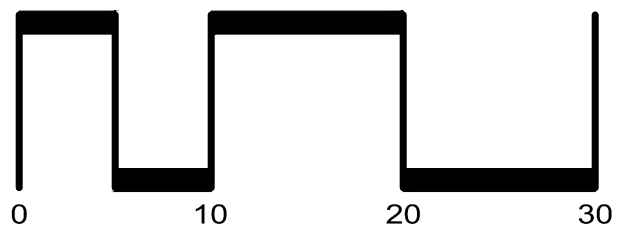
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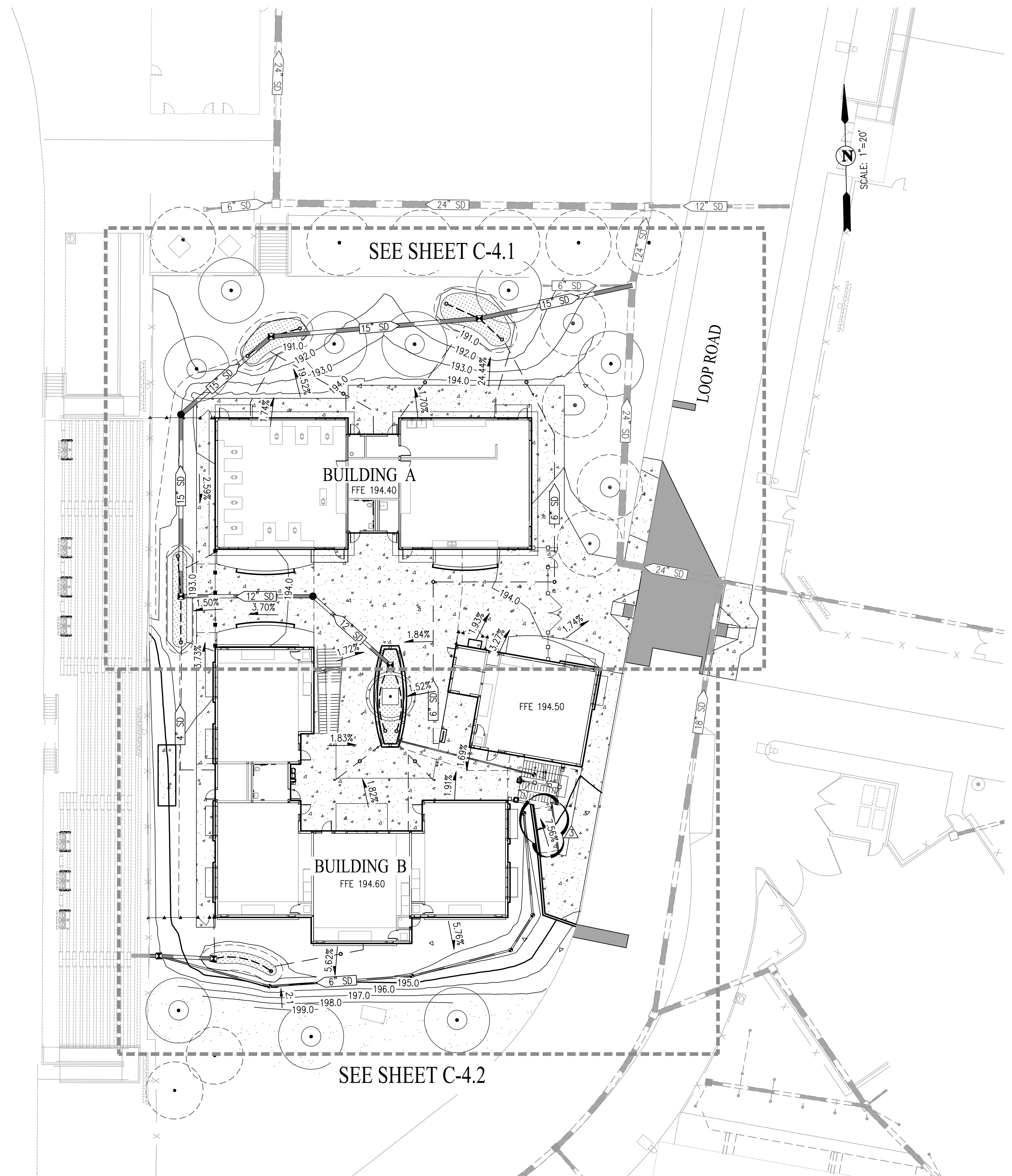
SHEET TITLE

UTILITY PLAN


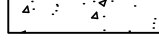

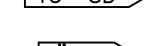









SHEET NUMBER

C-3.2





LEGEND

-  AC PAVEMENT
-  CONCRETE SIDEWALK/GUTTER
-  BIO-RETENTION AREA
-  PROPOSED STORM DRAIN
-  PROPOSED PERFORATED STORM DRAIN
-  PROPOSED MANHOLE
-  PROPOSED CATCH BASIN
-  AREA DRAIN
-  PROPOSED SD CLEANOUT
-  PROPOSED CURB CUT
-  EXISTING STORM DRAIN
-  EXISTING FIELD INLET
-  EXISTING MANHOLE

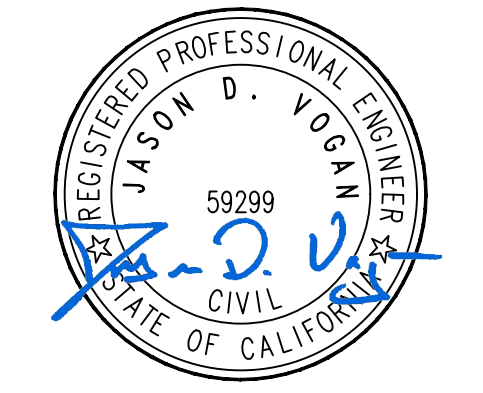
NOTE

ALL EARTHWORK, TRENCHING, EXCAVATION, SUBGRADE AND FOOTING PREPARATION, BACKFILLING, ETC. SHALL BE PER RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING AND GEOLOGIC HAZARDS REPORT, HERITAGE HIGH SCHOOL CULINARY ARS BUILDING AND FUTURE TWO-STORY CLASSROOMS BY WALLACE KUHLMANN & ASSOCIATES DATED OCTOBER 29, 2018.



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HERITAGE HIGH SCHOOL

**NEW CLASSROOM BUILDINGS
 INCREMENT 2 OF 2**

101 AMERICAN AVE,
 BRENTWOOD, CA 94513

LIBERTY UNION
 HIGH SCHOOL
 DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	5/28/21	BID CLARIFICATION 3

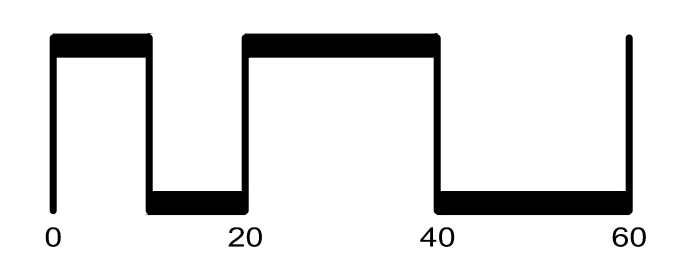
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 DRAWN BY: MJV
 DRAWING SCALE:
 PTN: 61721-77 FILE NO: 7-H4

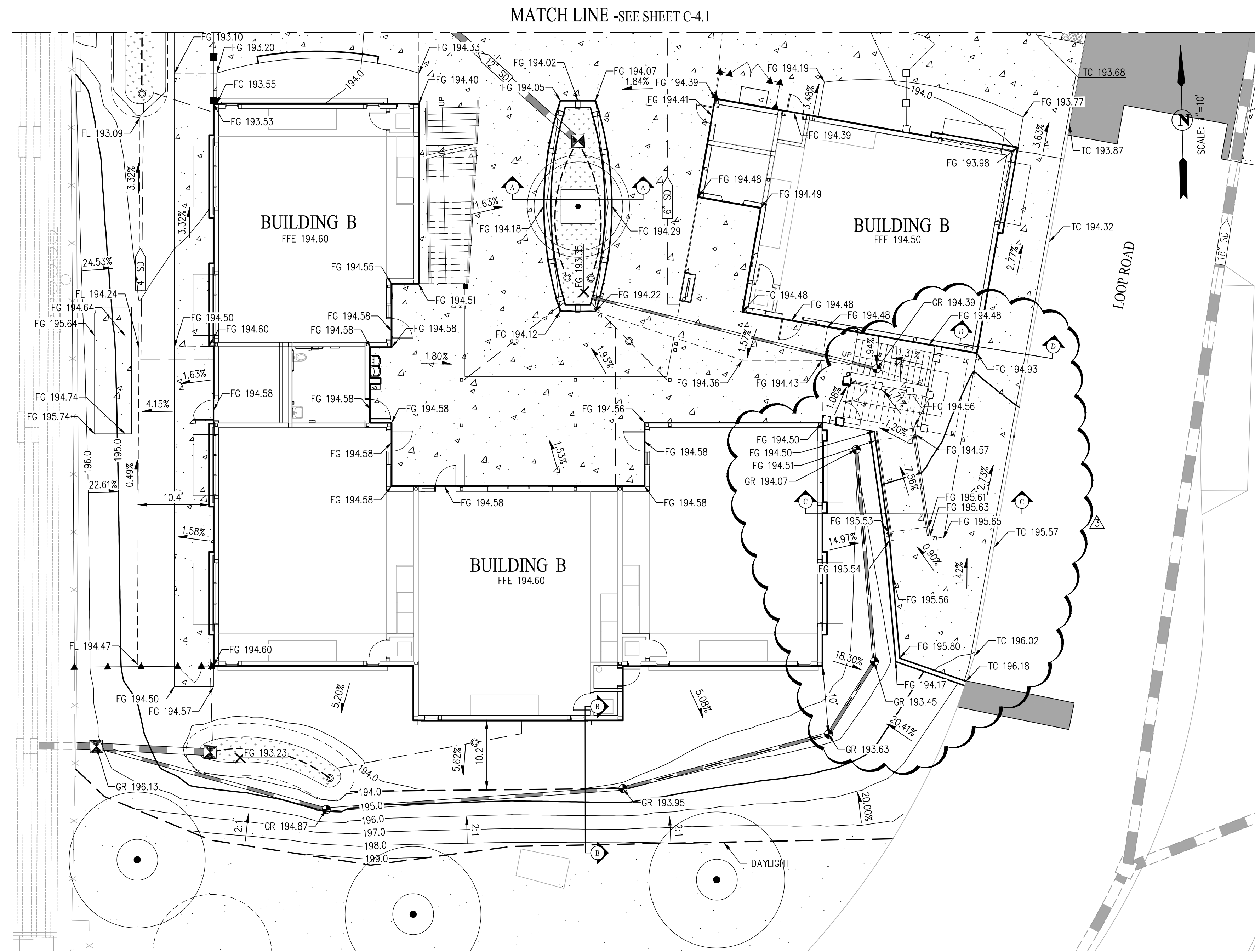
BID SET
 MAY 10, 2021

GRADING AND DRAINAGE PLAN

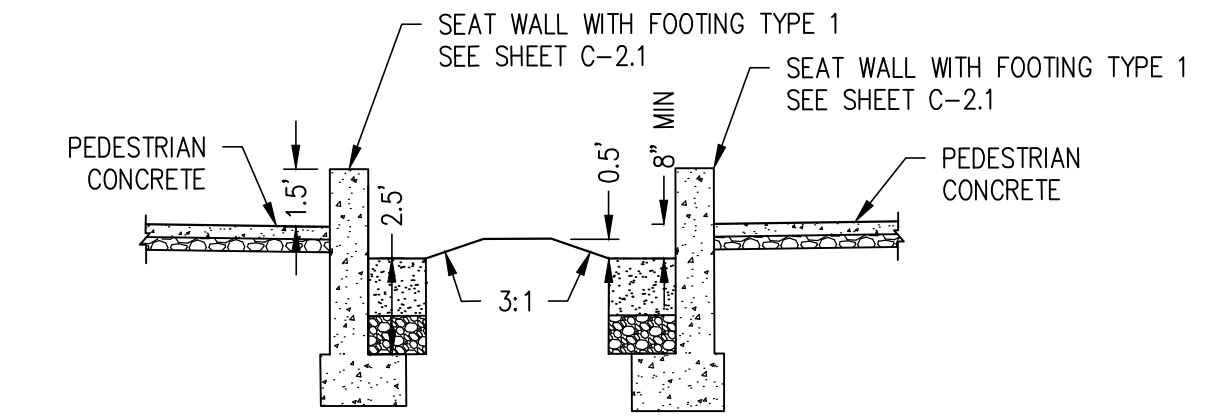
SHEET NUMBER

C-4.0

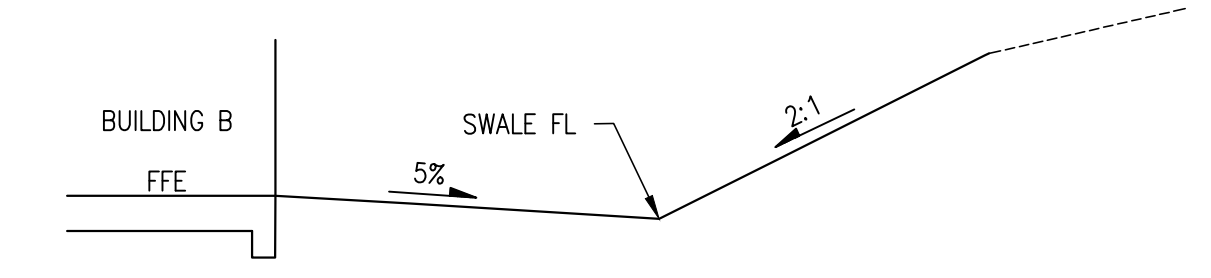




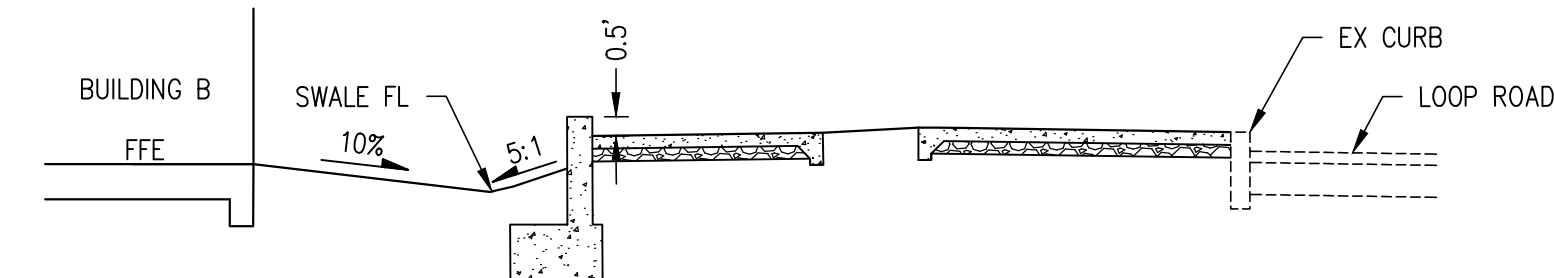
- LEGEND**
- AC PAVEMENT
 - CONCRETE SIDEWALK/GUTTER
 - BIO-RETENTION AREA
 - PROPOSED STORM DRAIN
 - PROPOSED PERFORATED STORM DRAIN
 - PROPOSED MANHOLE
 - PROPOSED CATCH BASIN
 - AREA DRAIN
 - PROPOSED SD CLEANOUT
 - PROPOSED CURB CUT
 - EXISTING STORM DRAIN
 - EXISTING FIELD INLET
 - EXISTING MANHOLE



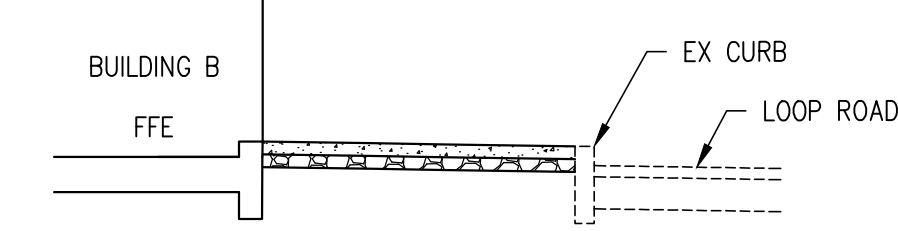
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B-B DETAIL
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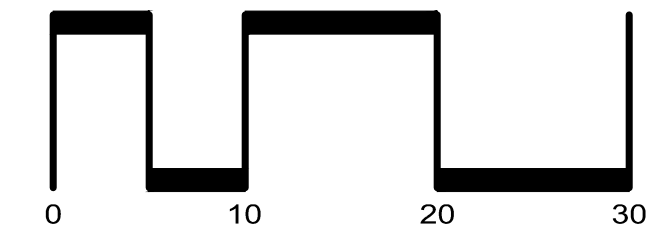
C-C DETAIL
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D-D DETAIL
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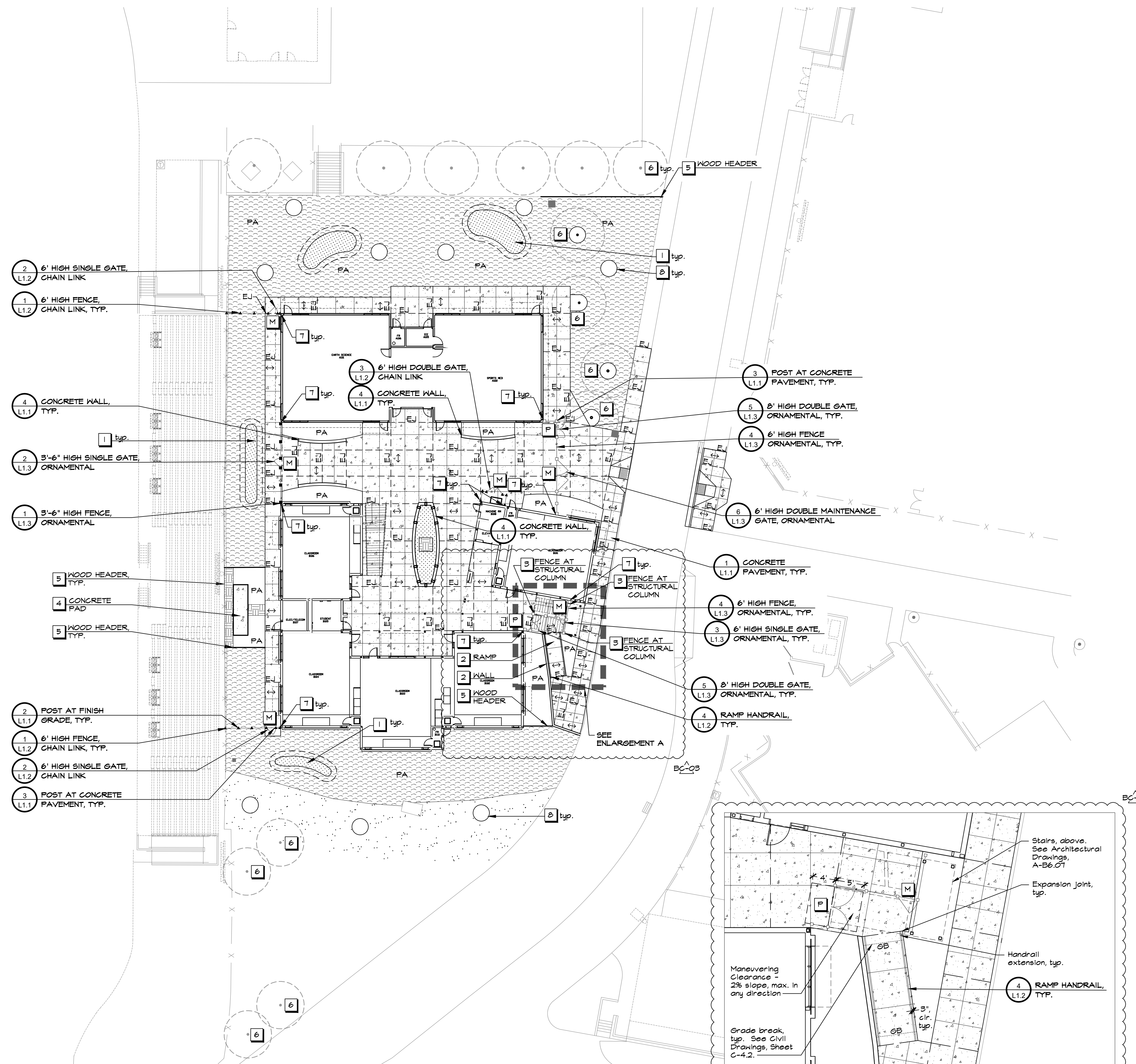
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MAY 10, 2021

SHEET TITLE

GRADING AND DRAINAGE PLAN

SHEET NUMBER

C-4.2



KEY NOTES

- 1 Biofiltration Facilities. See Civil Drawings.
- 2 See Civil Drawings.
- 3 See Structural Drawings.
- 4 See Mechanical Drawings.
- 5 Wood Header. See Planting Details on L4.2.
- 6 Existing tree to remain, typ. Comply with Tree Preservation Standards on L4.1.
- 7 Clearance shall be less than 4", typ.
- 8 3' radius shovel-cut circle around tree, typ. See Planting Plan.

MATERIAL LEGEND

- Concrete Pavement. Concrete shall have a slip resistant broom finish in the direction shown on this sheet.
- Asphalt Pavement. See Civil Drawings.
- Biofiltration Facilities. See Civil Drawings.
- Expansion Joint. See Civil Drawings.
- Tooled Control Joint. See Civil Drawings.
- Direction of broom finish
- Planting Area. See L4.0.
- Concrete Seat Wall
- Handrail
- 3'-6" High Fence, Ornamental
- 6' High Fence, Ornamental
- 6' High Fence, Black Vinyl with 1.25" Mesh
- 3'-6" High Single Gate, Ornamental
- 6' High Single Gate, Ornamental
- 6' High Single Gate, Black Vinyl with 1.25" Mesh
- 6' High Double Gate, Black Vinyl with 1.25" Mesh
- 8' High Double Gate, Ornamental
- 6' High Double Maintenance Gate, Ornamental

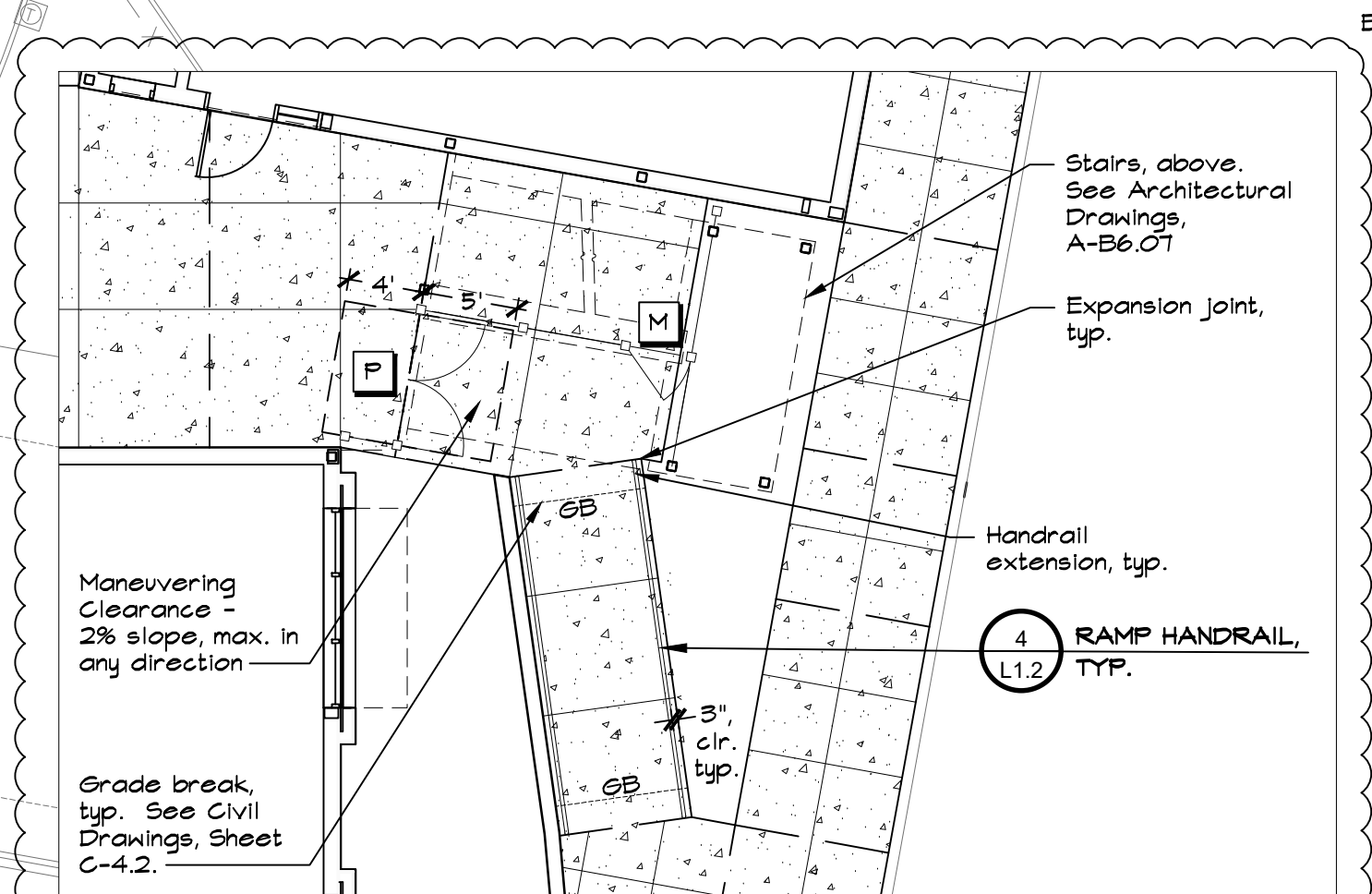
P	Panic Hardware Gate
M	Maintenance Gate
Refer to General Fencing and Gate Notes and Schedules on L1.3	

CONCRETE NOTES

1. Subgrade preparation shall be done in accordance with the recommendations in the Geotechnical Report.
2. Tooled control joints shall run continuously and extend through integral curbs and thickened edges. Tooled control joint layout shall be as shown on the Layout Plan, and coincide with the corners of objects, structures and the beginning and ends of curves. Joints should have a minimum depth of 25% of the slab thickness, unless otherwise noted on plans.
3. Expansion joints shall be laid out as shown on the Layout Plan.
4. Contractor shall place 3/8" asphalt impregnated fiber board where new concrete meets building walls, curbs and planters.
5. The base rock layer, prior to placement of concrete, shall be sprinkled with clean water several times to restore any moisture that may have been lost after completion of compaction.
6. Cure concrete with curing compound or keep continuously moist for a minimum of 7 days.
7. Contractor shall prepare a 4"x4" sample of all flatwork and 4' length of all walls and curbs in the field prior to construction, for review and approval by the District.
8. Concrete pavement with slopes less than 6% shall receive a medium broom finish and slopes greater than 6% shall receive a heavy broom finish. Finish shall be in the direction shown on this sheet.

NOTE

1. Provide and install on campus at District approved locations:
 - (2) Bike racks, 6/L1.1
 - (2) Bike lockers, 7/L1.1
2. See Bike Parking Plan on sheet L2.1.

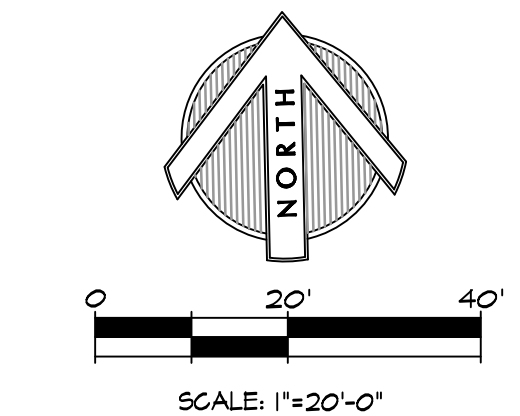


NOTES:

1. Gates shall comply with Maneuvering Clearances 2019 C.B.C. 11B-404.2.4.1.
2. Ramp shall comply with 2019 C.B.C. 11B-405.
3. Handrails shall comply with 2019 C.B.C. 11B-505.

ENLARGEMENT A
SCALE: 1/8"=1'-0"

Existing features and topographic information have been taken from a Survey provided by CBS, dated September 17, 2020. GSM landscape architects, inc. assumes no liability, real or alleged, regarding the accuracy of existing features or topographic information shown.



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707-255-4630
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HERITAGE HIGH SCHOOL
NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2
101 AMERICAN AVE, BRENTWOOD, CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

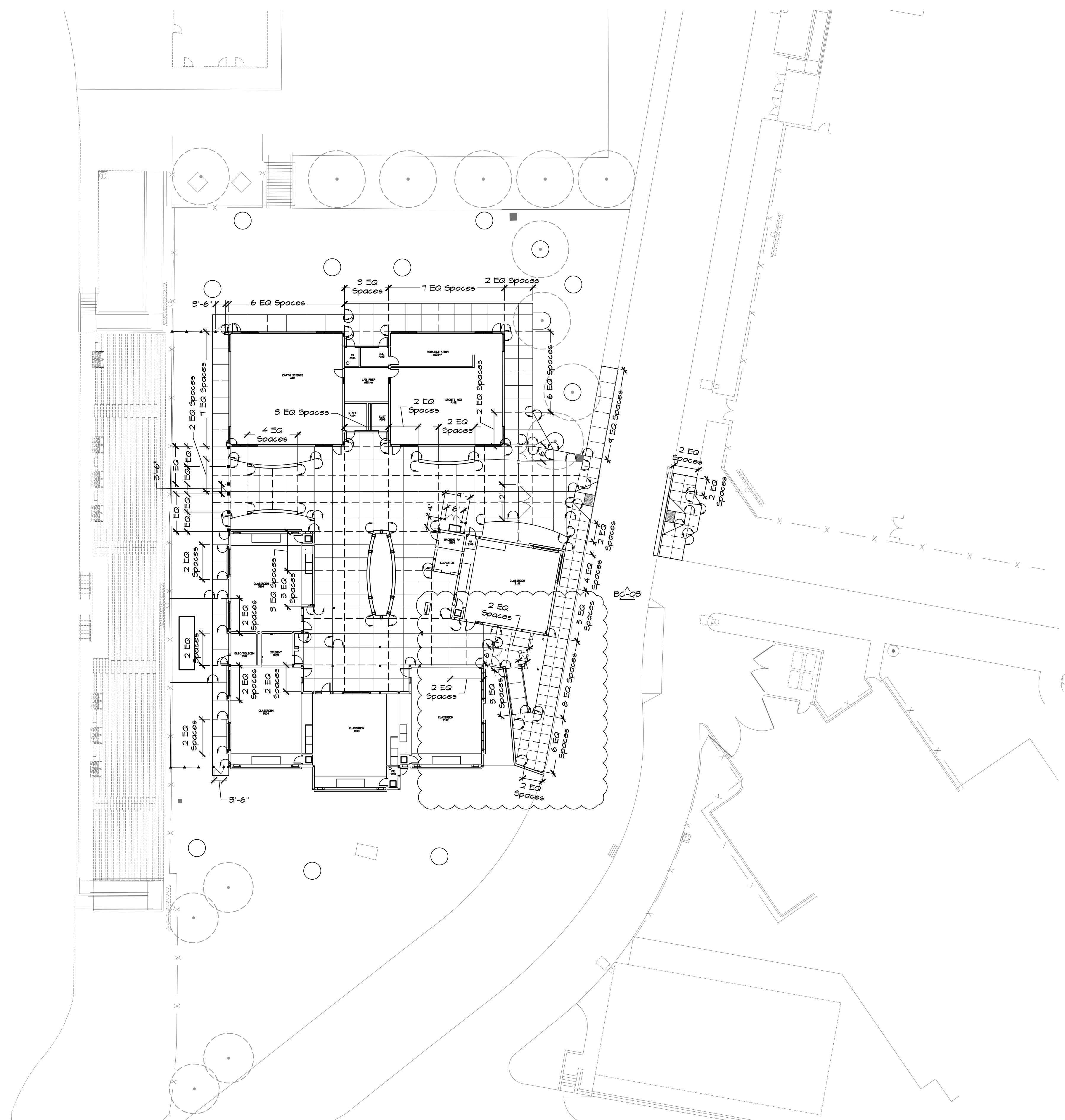
REVISIONS		
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268
ARCH PROJECT NO. 1870.00
DRAWN BY:
DRAWING SCALE: 1"=20'-0"
PTN: 61721-77 FILE NO: 7-H4

BID SET
MAY 10, 2021

MATERIAL AND DETAIL REFERENCE PLAN

SHEET NUMBER
L1.0



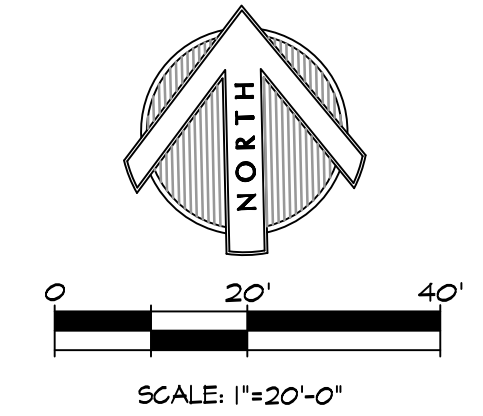
LAYOUT LEGEND

- R'X'-Y'-> Radial Dimension
- ⌒ Arc Dimension
- X'-Y'-> Linear Dimension
- ⊖ Align
- Sideline to show alignment
- ⊖ Centerline
- Clr Clear Opening
- EQ Equal
- MA Midpoint of Arc
- OC On Center
- PT Point of Tangency
- 90 Degree Angle
- ⊙ Control Points

LAYOUT NOTES

1. Contractor shall notify all public or private utility companies two (2) working days prior to commencement of work on this project to verify the locations of existing utility lines. Call Underground Service Alert (U.S.A.) toll free at 1-800-227-2600 or 811, 7:00am to 5:00pm, Monday through Friday.
2. All coordinates and dimensions shown are in a horizontal plane.
3. Written dimensions always take precedence over scaled dimensions. If there is a conflict, notify the District and Landscape Architect and obtain a clarification. No deviation or substitution shall be allowed without obtaining written approval from the District and Landscape Architect.
4. See CIVIL Drawings for additional layout information.
5. This Plan does not represent a Property Line Survey. Property lines shown hereon may not represent the true position of the line.
6. The Contractor shall coordinate all construction elements including utility locations and required sleeving prior to installation of any underground utilities.
7. The Contractor shall verify critical dimensions, reference and control point locations and construction conditions prior to construction.
8. All dimensions shall be verified in the field, chalked, painted, and/or string lined. Any adjustments, major or minor, required to achieve overall design layout shall be reviewed and approved by the District and Landscape Architect prior to construction.
9. All materials shall be furnished and installed by the Contractor per Manufacturer's specifications, unless otherwise noted in these Plans or Specifications.
10. Existing features and topographic information have been taken from a survey performed by Carlson, Barbee and Gibson and provided by Quattrocchi Kwok Architects. G&M landscape architects, inc. assumes no liability, real or alleged, regarding the accuracy of the existing features or topographic information shown.

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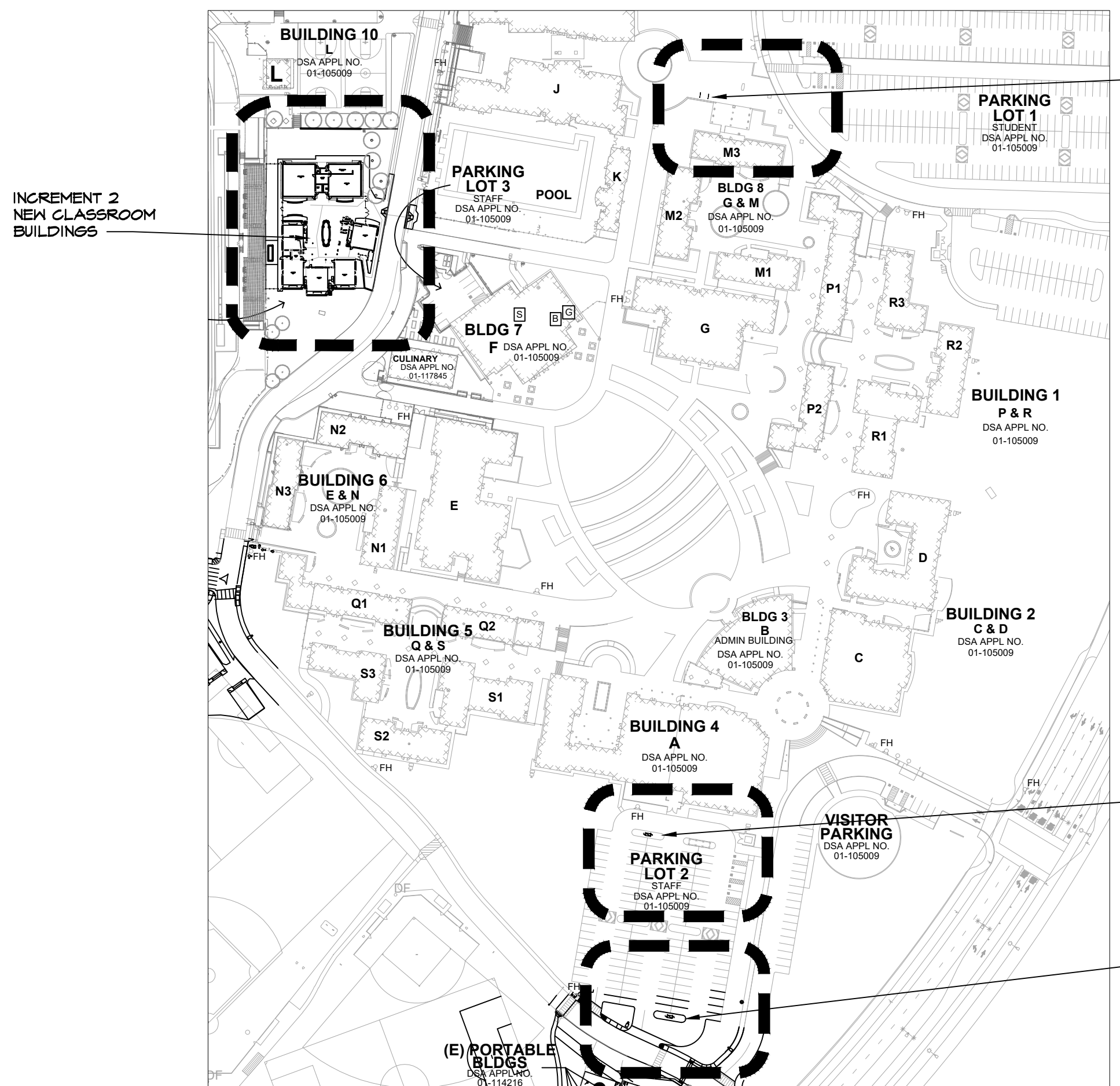
REVISIONS		
NO.	DATE	DESCRIPTION
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268
 ARCH PROJECT NO. 1870.00
 DRAWN BY: ECD
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 PTN: 61721-77 FILE NO: 7-H4

BID SET
 MAY 10, 2021
 SHEET TITLE

LAYOUT PLAN

SHEET NUMBER
L2.0



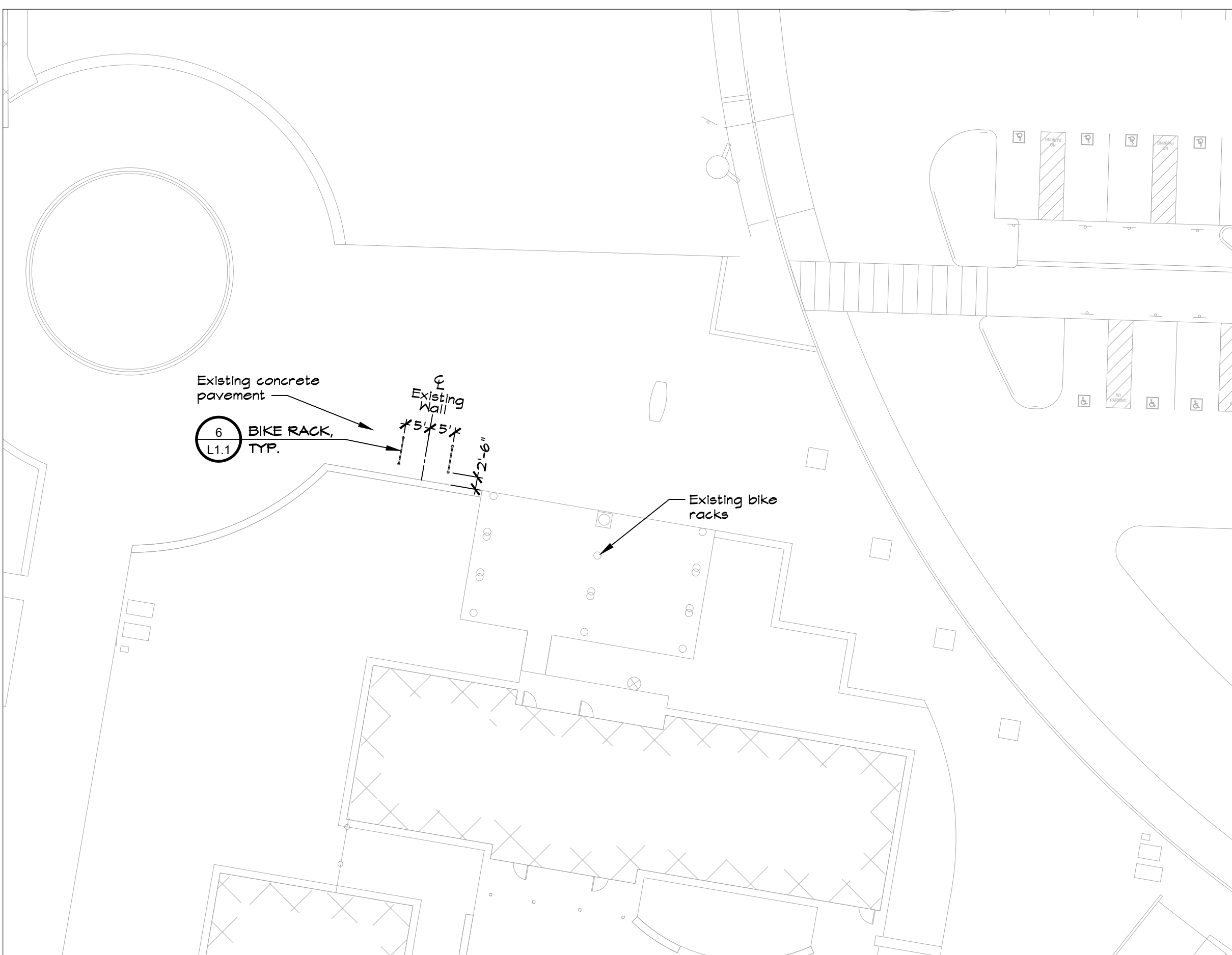
KEY MAP
NOT TO SCALE

STUDENT BIKE PARKING. SEE DETAIL 1 ON THIS SHEET.

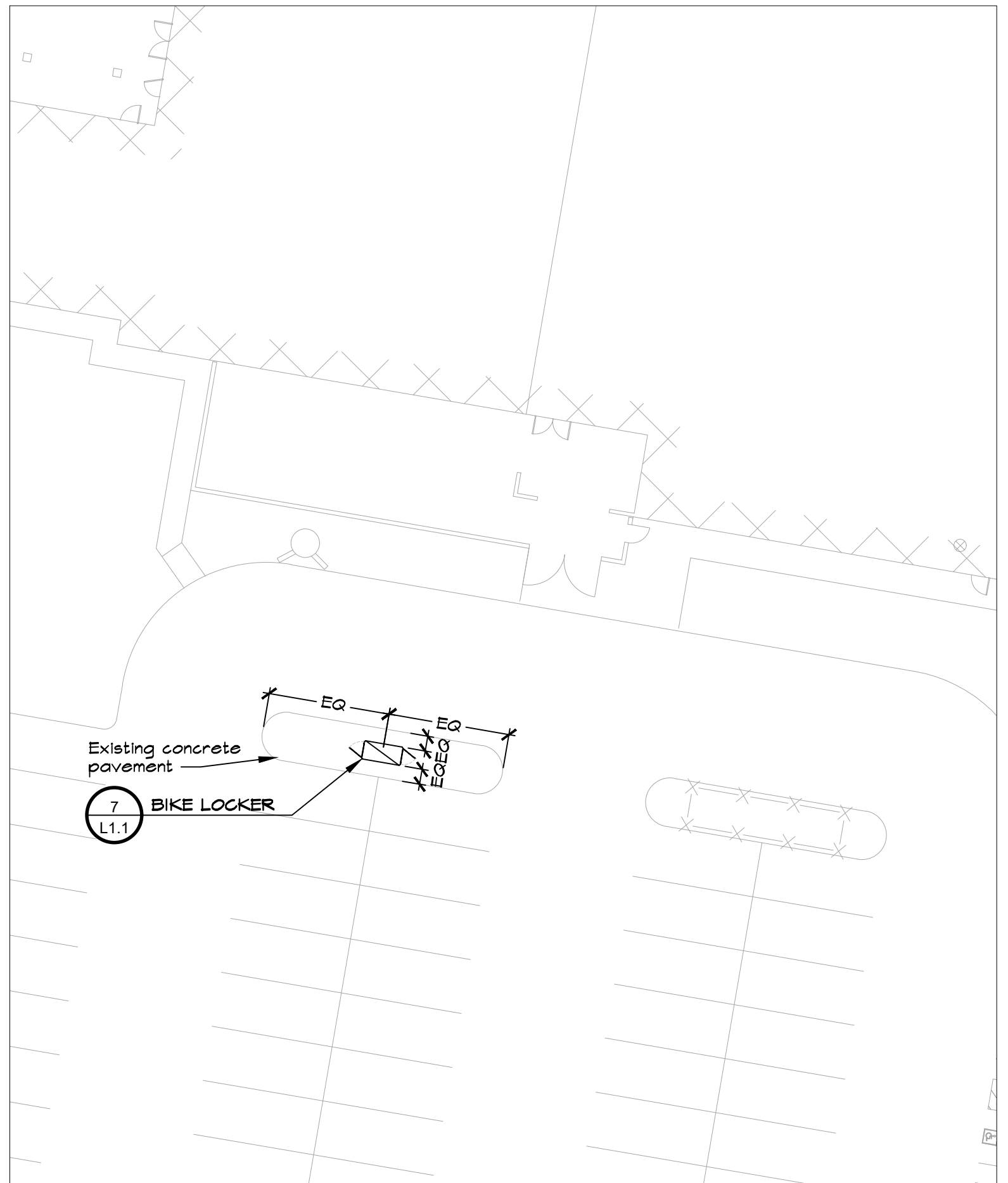
STAFF BIKE PARKING ENLARGEMENT A. SEE DETAIL 2 ON THIS SHEET.

STAFF BIKE PARKING ENLARGEMENT B. SEE DETAIL 3 ON THIS SHEET.

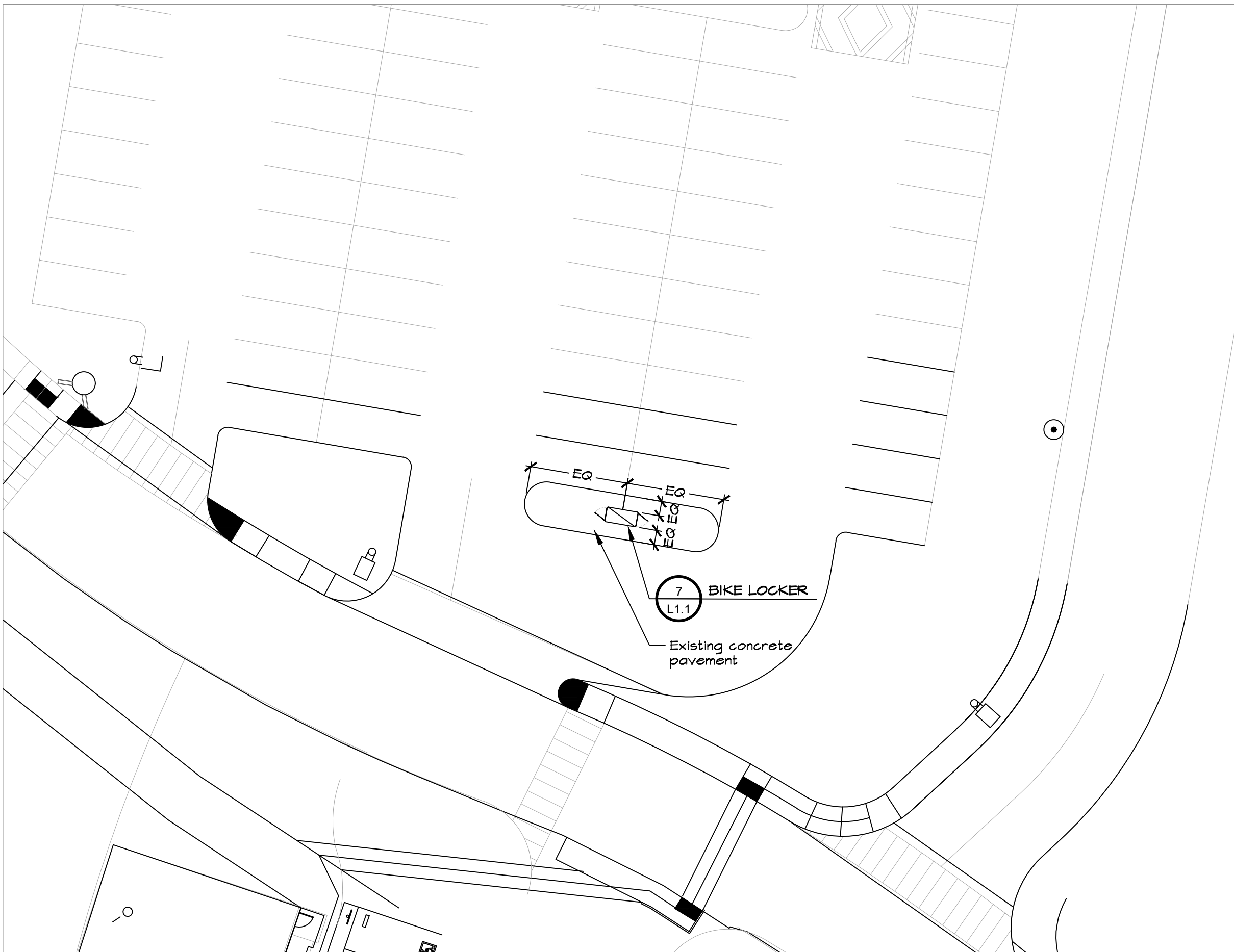
INCREMENT 2 NEW CLASSROOM BUILDINGS



1 STUDENT BIKE PARKING
SCALE: 1"=20'-0"



2 STAFF BIKE PARKING ENLARGEMENT A
SCALE: 1"=20'-0"

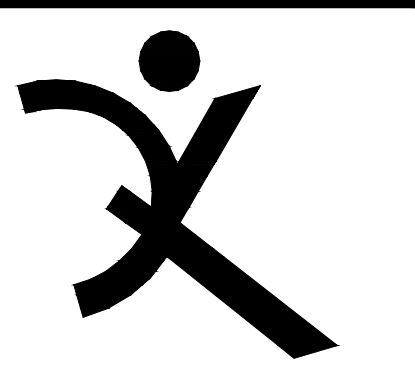
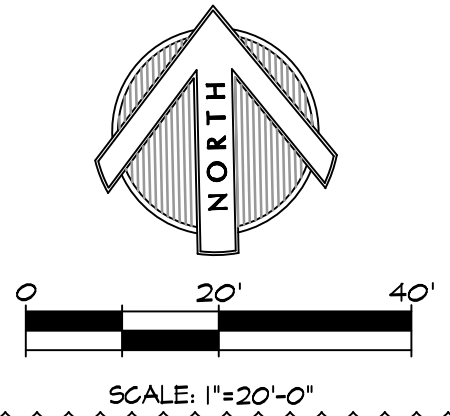


3 STAFF BIKE PARKING ENLARGEMENT B
SCALE: 1"=20'-0"

LAYOUT LEGEND

- RX'-Y'- Radial Dimension
- EQ Equal
- MA Midpoint of Arc
- OC On Center
- PT Point of Tangency
- 90 Degree Angle
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- X'-Y'- Arc Dimension
- Linear Dimension
- Align
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- Centerline

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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

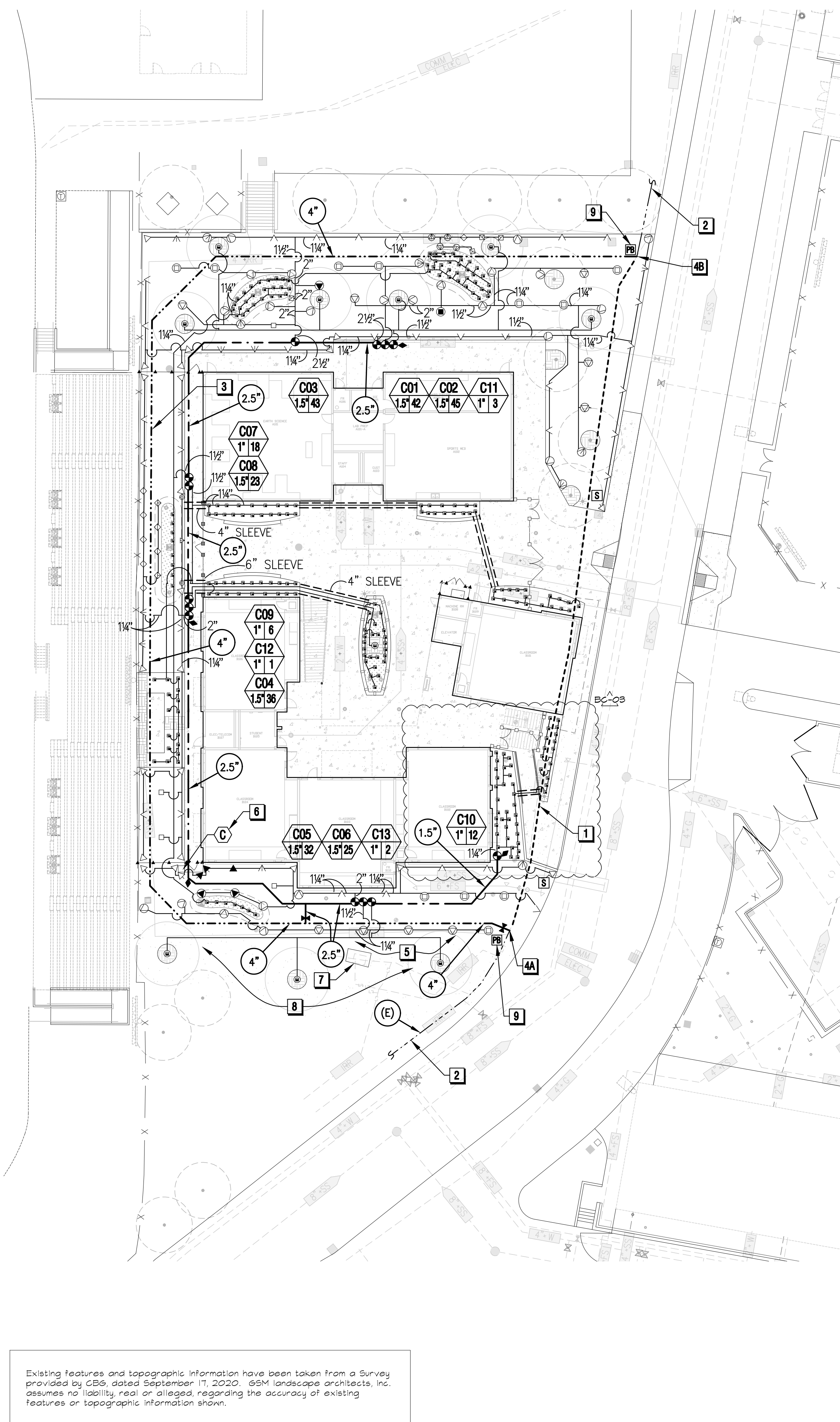
NO.	DATE	DESCRIPTION

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BID SET
MAY 10, 2021
SHEET TITLE

BIKE PARKING PLAN

SHEET NUMBER
L2.1



SHEET NOTES

GENERAL NOTE: THE DRAWING IS DIAGRAMMATIC AND LOCATION OF EXISTING IRRIGATION EQUIPMENT HAS NOT BEEN FIELD MEASURED. LOCATE ACTUAL EXISTING PIPE, VALVE, AND HEAD LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION. CONFIRM IN THE FIELD THAT AFTER CONSTRUCTION ALL (E) HEADS OUTSIDE OF THE CONTRACT WORK AREA REMAIN AS-IS AND ARE CONNECTED TO AN RCV TO CONTROL THE HEAD(S). MAKE CONSTRUCTION CORRECTIONS TO OBTAIN FULL IRRIGATION COVERAGE FOR THE (E) IRRIGATION SYSTEM, AS NEEDED.

- 1 (E) NON-POTABLE IRR MAIN LINE TO BE ABANDONED. EXCAVATE AND REMOVE (E) PIPING, CONDUIT, AND WIRE. (E) MAIN LINE SHALL REMAIN IN SERVICE UNTIL INSTALLATION OF (N) MAIN LINE AND LOW VOLTAGE CONTROL WIRE IS FINISHED AND OPERATIONAL.
- 2 (E) NON-POTABLE IRR MAIN LINE TO REMAIN IN SERVICE, AS-IS. CONFIRM ACTUAL LOCATION IN THE FIELD.
- 3 REROUTE AND INSTALL (N) 4" DIA. MAIN LINE AROUND CONTRACT WORK AREA AS SHOWN.
- 4A POINT OF WATER CONNECTION TO (E) NON-POTABLE 4" DIA. IRRIGATION MAIN LINE PIPING, LOCATION "A": CONNECT (N) MAIN LINE PIPE TO (E) MAIN LINE PIPE AND REROUTE (E) MAIN LINE AS SHOWN. LOCATE BURIED (E) LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM (E) CONTROLLER. INSTALL A PULL BOX, CUT WIRES, SPLICE (E) CONTROL WIRE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONGSIDE (N) MAIN LINE TO LOCATION "B".
- 4B POINT OF WATER CONNECTION TO (E) NON-POTABLE 4" DIA. IRRIGATION MAIN LINE PIPING, LOCATION "B": CONNECT (N) MAIN LINE PIPE TO (E) MAIN LINE PIPE AND REROUTE (E) MAIN LINE AS SHOWN. LOCATE BURIED (E) LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM (E) CONTROLLER. INSTALL A PULL BOX, CUT WIRES, SPLICE (E) CONTROL WIRE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONGSIDE (N) MAIN LINE TO LOCATION "A".
- 5 PROVIDE A 10-FOOT SEPARATION BETWEEN POTABLE WATER AND NON-POTABLE PIPES, TYPICAL.
- 6 IRRIGATION CONTROLLER (PEDESTAL MOUNT):
IRRIGATION CONTRACTOR SHALL PROVIDE AND INSTALL:
1. THE CONTROLLER, PEDESTAL MOUNTED AT SITE LOCATION AS DIRECTED BY THE DISTRICT.
2. THE 120 VAC ELECTRICAL CONNECTIONS TO THE CONTROLLER TERMINALS.
3. THE RAIN SHUT-OFF DEVICE.
4. LAMINATED IRRIGATION PLANS AND SCHEDULES AS THE SPECIFICATIONS INDICATE.
5. GROUNDING OF CONTROLLER.
6. COMMUNICATION WITH THE RAINMASTER CENTRAL SERVICE
ELECTRICAL CONTRACTOR IS TO PROVIDE AND INSTALL:
1. THE 120 VAC/15 AMP SERVICE (1 AMP DEMAND) ELECTRICAL SERVICE TO CONTROLLER LOCATION.
2. THE RIGID STEEL ELECTRICAL CONDUIT, PULL BOXES AND SWEEP ELLS FROM ELECTRICAL PEDESTAL TO CONTROLLER LOCATION. WIRE TYPE IN CONDUIT TO MATCH THE PROJECT'S ELECTRICAL SPECIFICATIONS.
NOTE: LOCATE CONTROLLER TO AVOID OBSTRUCTING WINDOW VIEWS AND OPERATION OF DOORS OR GATES.
- 7 (E) IRRIGATION PUMP TO REMAIN AS-IS
- 8 SEE "IRRIGATION INSTALLATION NOTES" NOTE #28/L3.1
- 9 STUB 2-WIRE CABLE FROM CONTROLLER TO THIS PULL BOX FOR FUTURE EXPANSION.

CONSTRUCTION NOTES:

1. (E) IRRIGATION INSIDE THE (N) WORK AREA SHALL BE DEMOLISHED AS REQUIRED TO MAKE WAY FOR THE (N) HARDSCAPE/LANDSCAPE CONSTRUCTION. THIS INCLUDES (E) LATERAL LINE PIPE. WHEN IN DOUBT, CONFER WITH ARCHITECT FOR DIRECTION.
2. THE (E) NON-POTABLE IRRIGATION MAIN LINE SERVING HERITAGE HIGH SCHOOL CAMPUS LANDSCAPE AND FIELDS SHALL REMAIN IN SERVICE AND IN GOOD WORKING ORDER AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING RESEARCH AND SERVICES PRIOR TO ACTUAL CONSTRUCTION OF THE NEW WORK:
A. DISCUSS THE ACTUAL IRRIGATION MAIN LINE PIPE LOCATIONS WITH THE ARCHITECT. STAKE LOCATIONS AS REQUIRED.
B. POT HOLE TO ESTABLISH WHAT BURIED PIPES ARE IRRIGATION MAIN LINES SERVING THE CAMPUS AND FIELDS (NON-POTABLE WATER) AND THE SCHOOL CAMPUS QUAD AND CULINARY ARTS (POTABLE WATER).
3. WIRING NOTE FOR (E) RCV WIRING FOUND IN THIS CONTRACT AREA: (E) RCV'S CONTROLLED FROM AND WIRED TO (E) ON-SITE CONTROLLERS MAY BE FOUND DURING EXCAVATION. SALVAGE AND PROTECT (E) CONVENTIONAL CONTROL WIRING FOUND NEXT TO THE (E) PVC MAIN LINE. REROUTE WITH (N) WIRE WHERE NECESSARY TO KEEP THE (E) IRRIGATION SYSTEM IN OPERATION. (E) SPLICED WIRES SHALL BE CONTAINED WITHIN AN APPROVED 14x19 BURIED SPLICE BOX WITH LID SURFACE AT GRADE.

IRRIGATION SCHEDULES

NOTE: USE OF NON-POTABLE WATER ESTABLISHES THE WATERED AREAS AS "SPECIAL LANDSCAPED AREAS" OR "SLA".
BUBBLER IRRIGATION @ TREES - (SLA)

MANUFACTURER: RAIN BIRD		TREE CANOPY(SQ.FT.): 19.6											
MODEL: RWS	PSI: 30	SPECIES FACTOR(Kc): 1.0											
GPM OF BUBBLER: 0.25	NO. OF BUBBLERS: 2	MICROCLIMATE FACTOR(Kmc): 1.0											
GPM OF ALL BUBBLERS(S): 0.5	NO. OF BUBBLERS(S): 2	DENSITY FACTOR(Kd): 1.0											
TREE CANOPY(FT.): 5		IRRIGATION EFFICIENCY: 0.81											
		SOIL INFILTRATION RATE(INCHES): 0.2											
		YEAR 2 REDUCTION AMOUNT(%): 10											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
ADJUSTED ETO/MONTH(INCHES)	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
ADJUSTED ETO/WEEK(INCHES)	0.2	0.3	0.7	1.0	1.4	1.6	1.8	1.5	1.2	0.7	0.3	0.2	
MINUTES PER WEEK	YEAR 1	7	11	21	31	42	49	54	46	36	22	10	5
	YEAR 2	7	10	19	28	38	45	49	42	33	20	9	5
DAYS PER WEEK	YEAR 1	1	1	2	2	3	3	3	3	3	2	1	
	YEAR 2	1	1	2	2	3	3	3	3	3	2	1	
MINUTES OF WATER PER DAY	YEAR 1	7	11	11	16	14	17	18	16	12	8	5	5
	YEAR 2	7	10	10	15	13	16	17	15	11	8	5	5
CYCLES PER DAY TO MEET SOIL INFILTRATION RATE	YEAR 1	2	2	2	3	3	3	3	2	2	1	1	
	YEAR 2	2	2	2	3	3	3	3	2	2	1	1	
MAX. RUN TIME (MINUTES) PER CYCLE	YEAR 1	4	6	6	6	5	6	6	6	4	5	5	
	YEAR 2	4	5	5	5	5	6	6	6	4	5	5	

NOTE: APPLY LESS WATER TO TREES IN TURF ZONES.

BUBBLER IRRIGATION @ SHRUBS - (SLA)

MANUFACTURER: RAIN BIRD		SHRUB CANOPY(SQ.FT.): 3.1											
MODEL: 1401	PSI: 30	SPECIES FACTOR(Kc): 1.0											
GPM OF BUBBLER: 0.25	NUMBER OF BUBBLERS: 1	MICROCLIMATE FACTOR(Kmc): 1.0											
GPM OF ALL BUBBLERS(S): 0.25	SHRUB CANOPY(FT.): 2	DENSITY FACTOR(Kd): 1.0											
		IRRIGATION EFFICIENCY: 0.81											
		SOIL INFILTRATION RATE(INCHES): 0.2											
		YEAR 2 REDUCTION AMOUNT(%): 10											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
ETO/YEAR(INCHES)	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
ETO/MONTH(INCHES)	0.2	0.3	0.7	1.0	1.4	1.6	1.8	1.5	1.2	0.7	0.3	0.2	
MINUTES PER WEEK	YEAR 1	3	4	7	10	14	16	18	15	12	7	4	2
	YEAR 2	3	4	7	9	13	15	17	14	11	7	4	2
DAYS PER WEEK	YEAR 1	1	1	2	2	3	3	3	3	3	2	1	
	YEAR 2	1	1	2	2	3	3	3	3	3	2	1	
MINUTES OF WATER PER DAY	YEAR 1	3	4	4	5	5	6	6	5	4	3	2	2
	YEAR 2	3	4	4	5	5	6	6	5	4	3	2	2
CYCLES PER DAY TO MEET SOIL INFILTRATION RATE	YEAR 1	2	2	2	3	3	3	3	2	2	1	1	
	YEAR 2	2	2	2	3	3	3	3	2	2	1	1	
MAX. RUN TIME (MINUTES) PER CYCLE	YEAR 1	2	2	2	2	2	2	2	2	2	2	2	
	YEAR 2	2	2	2	2	2	2	2	2	2	2	2	

SPRAY IRRIGATION @ SHRUB AREAS - (SLA)

MANUFACTURER: HUNTER		Pr RATE(INCHES/HOUR): 2.0											
MODEL: PROS	PSI: 30	SPECIES FACTOR: 1.0											
SPACING(Feet): 14.5	GPM: 3.7	IRRIGATION EFFICIENCY: 0.75											
		SOIL INFILTRATION RATE(INCHES): 0.2											
		YEAR 2 REDUCTION AMOUNT(%): 10											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
EtO/MONTH(INCHES)	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
EtO/WEEK(INCHES)	0.2	0.3	0.7	1.0	1.4	1.6	1.8	1.5	1.2	0.7	0.3	0.2	
MINUTES PER WEEK	YEAR 1	10	15	28	42	57	66	74	62	49	30	13	7
	YEAR 2	9	14	26	38	52	60	67	56	45	27	12	7
DAYS PER WEEK	YEAR 1	1	1	2	2	3	3	3	3	2	1		
	YEAR 2	1	1	2	2	3	3	3	3	2	1		
MINUTES OF WATER PER DAY	YEAR 1	10	15	14	14	12	14	15	13	10	7	7	
	YEAR 2	9	14	13	13	11	13	14	12	9	7	7	
CYCLES PER DAY TO MEET SOIL INFILTRATION RATE	YEAR 1	2	2	2	2	2	2	2	2	2	1	1	
	YEAR 2	2	2	2	2	2	2	2	2	2	1	1	
MAX. RUN TIME (MINUTES) PER CYCLE	YEAR 1	5	8	7	7	6	7	8	7	5	5	7	7
	YEAR 2	5	7	7	7	6	7	7	6	5	5	7	7

THE SCHEDULES ARE INTENDED AS A GUIDE ONLY. ACTUAL WATERING TIMES WILL BE DEPENDANT ON ACTUAL Eto RATES, SOIL INFILTRATION RATE, AND SOIL WATER HOLDING CAPACITY.

THE DATA IS AVERAGED AND TAKEN FROM CIMIS STATION: BRENTWOOD



JDE
JAMES D. EDDY ASSOCIATES
 LANDSCAPE IRRIGATION ENGINEERS
 P.O. BOX 2291
 DANVILLE, CALIFORNIA 94526
 P: (925) 867-3339
 EMAIL: JDE@EDDYASSOCIATES.COM
 PLANNING-DESIGN-MANAGEMENT
 JDE PROJECT NO: 20036

IRRIGATION DESIGNER:
 JAMES D. EDDY ASSOCIATES, DANVILLE, CALIFORNIA
 NOTE: NO LICENSE FOR THE LANDSCAPE IRRIGATION SYSTEM DESIGN PROFESSION IS AVAILABLE IN THE STATE OF CALIFORNIA.
 MEMBER: AMERICAN SOCIETY OF IRRIGATION CONSULTANTS

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REVISIONS

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BC-03	5/28/21	BID CLARIFICATION 3

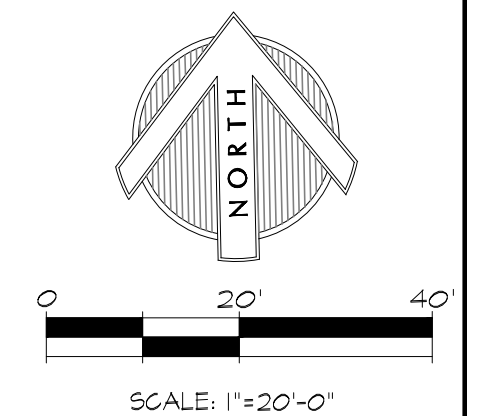
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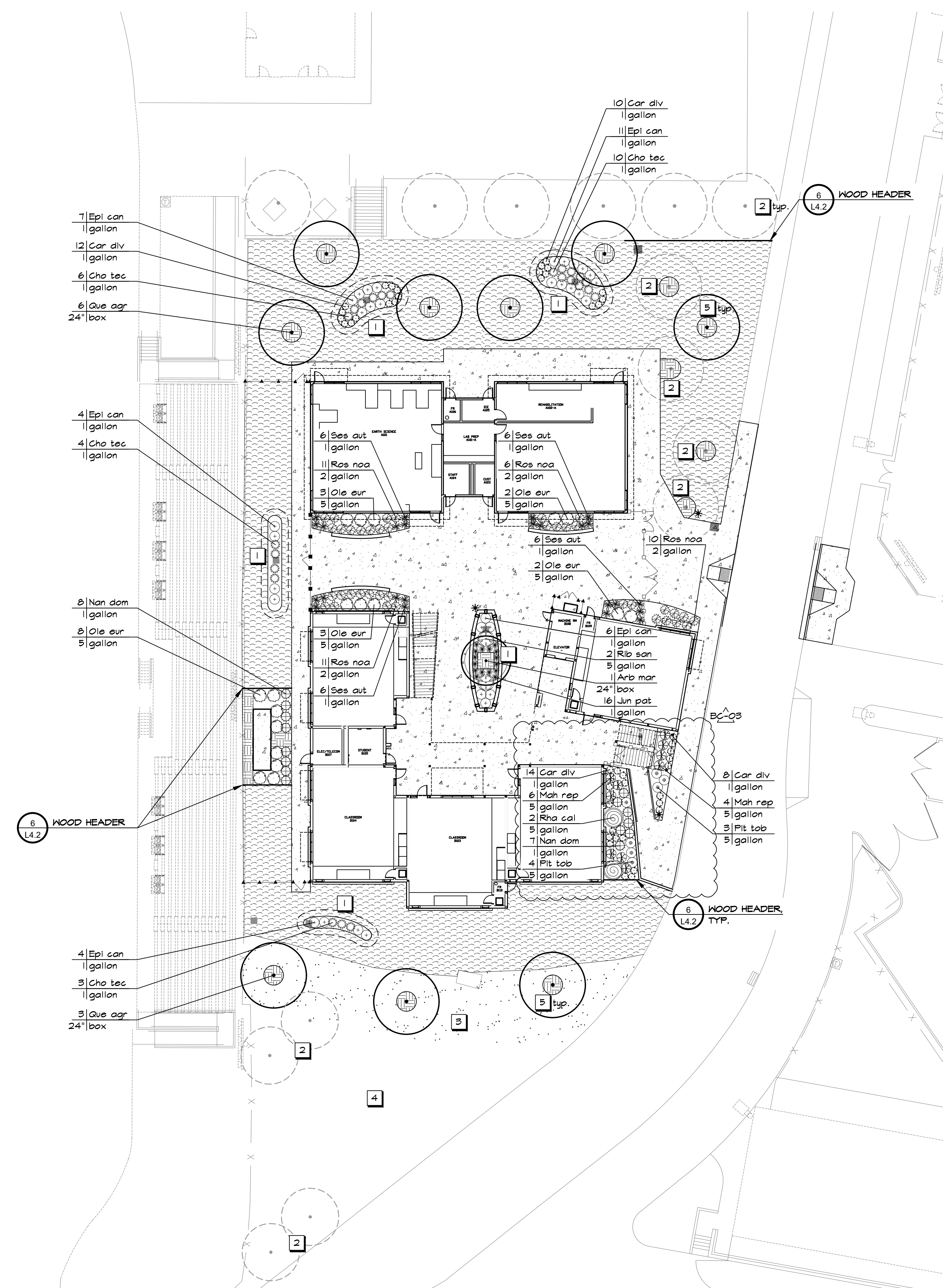
BID SET
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IRRIGATION PLAN & SCHEDULES

SHEET NUMBER
L3.0

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PLANT LEGEND

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	WATER USE	QUANTITY
TREES				
	Arb mar Arbutus 'Marina' Marina Madrone	24" box	L	1
	Que agr Quercus agrifolia Coast Live Oak	24" box	L	9
SHRUBS				
	Car div Carex divisa Berkeley Sedge	1 gallon	L	22
	Mah rep Mahonia repens Creeping Oregon Grape	5 gallon	L	10
	Nan dom Nandina domestica 'Gulf Stream' Gulf Stream Heavenly Bamboo	1 gallon	L	15
	Ole eur Olea europaea 'Little Olive' Dwarf Olive	5 gallon	L	18
	Pit tob Pittosporum tobira 'Cream de Mint' Variegated Dwarf Mock Orange	5 gallon	L	7
	Rha cal Rhamnus californica 'Mound San Bruno' Mound San Bruno Coffeeberry	5 gallon	L	2
	Rib san Ribes sanguineum Flowering Currant	5 gallon	L	2
	Ros noa Rosa 'Noaschnee' White Flowercarpet Rose	2 gallon	M	38
	Ses aut Sesleria autumnalis Autumn Moor Grass	1 gallon	M	24
BIOFILTRATION FACILITIES				
	Car div Carex divisa Berkeley Sedge	1 gallon	L	22
	Cho tec Chondropetalum testorum Cape Rush	1 gallon	L	23
	Epi can Epilobium canum California Fuchsia	1 gallon	L	32
	Jun pat Juncus patens California Gray Rush	1 gallon	L	16
TURF				
	Mow Free Sod, as available through Delta Bluegrass Company. Sod shall be a blend of Sheeps Fescue, Hard Fescue, and Creeping Red Fescue.	Sod	L	10,900 SF±
	Delta 90/10 Tall Fescue, non-netted sod as available through Delta Bluegrass Company.	Sod	SLA	2,400 SF±

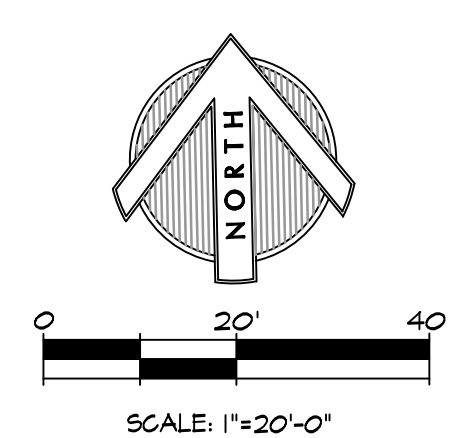
LANDSCAPE MATERIALS

Landscape Mulch, Weed fabric and 3" thick mulch (shown graphically for areas not planted). All planting areas shall have weed fabric and 3" depth of mulch applied. See Planting Notes on L4.1 for mulch type.

KEY NOTES

- 1 Biofiltration Facilities. See CIVIL Drawings.
- 2 Existing tree to remain, typ. Comply with Tree Preservation Standards on L4.1.
- 3 Replace all turf and irrigation impacted by construction.
- 4 Existing turf and irrigation to remain in service.
- 5 3' radius shovel-cut circle around tree, typ.

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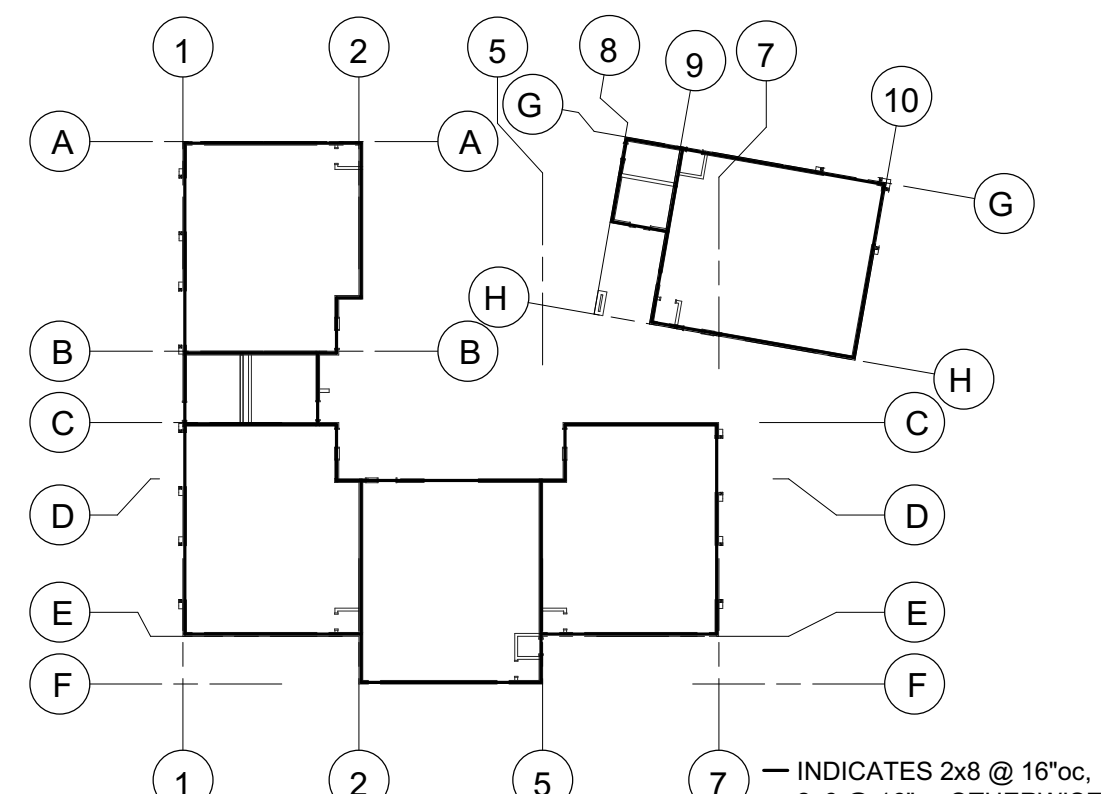
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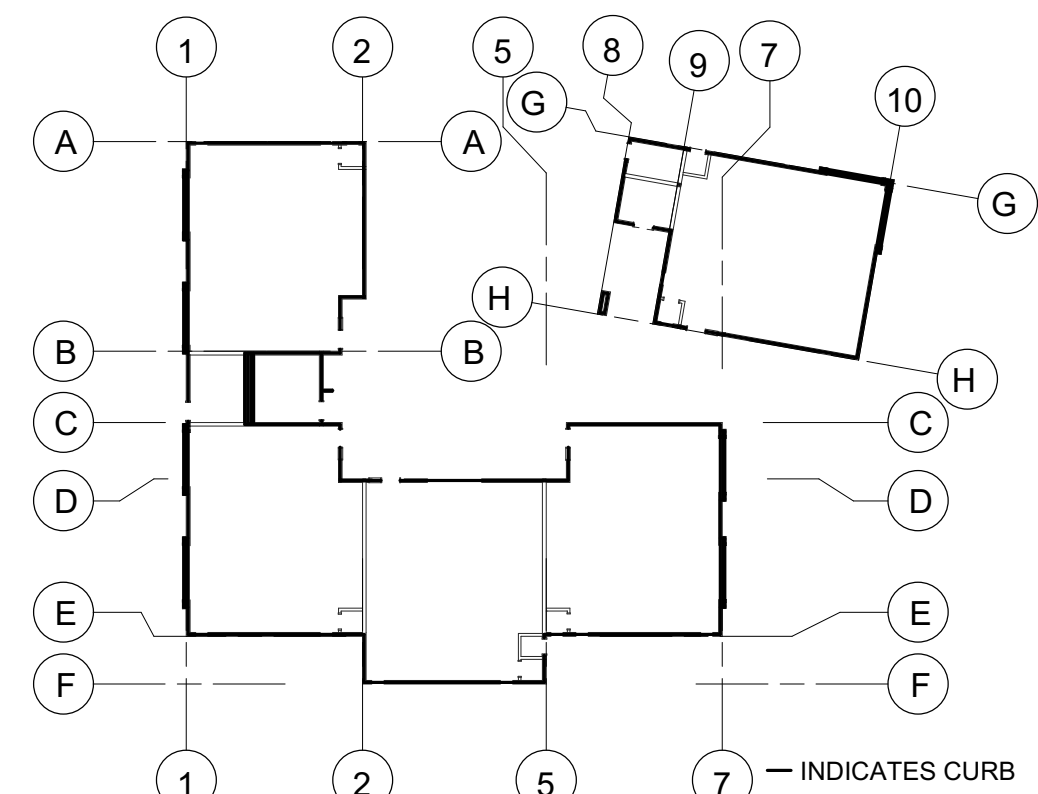
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DRAWN BY:
DRAWING SCALE: 1"=20'-0"
PTN: 61721-77 FILE NO: 7-H4
BID SET
MAY 10, 2021
SHEET TITLE

PLANTING PLAN
SHEET NUMBER
L4.0



FIRST FLOOR STUD PLAN

1/32" = 1'-0"



CURB PLAN

1/32" = 1'-0"

FOUNDATION PLAN NOTES:

- REFER TO SHEETS S-0.1 THROUGH S-1.5 FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- SEE DETAILS OR CURB PLAN FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES. PROVIDE LONGER ANCHOR BOLTS AT CURBS PER C/S-0.1.
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS (INCLUDING WALLS ADJACENT TO SEISMIC GAPS) SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNO.
- PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THROUGH COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ENGINEER/ARCHITECT PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

PIPES THROUGH FOOTINGS SHALL BE PER 2/S-1.1 AND 3/S-1.1.
 PIPES PARALLEL TO FOOTINGS SHALL BE PER 4/S-1.1.
 PIPES AT SLAB ON GRADE SHALL BE PER 7/S-1.1.
 PIPES THROUGH WOOD FRAMING SHALL BE PER 2/S-1.2 AND 5/S-1.3.

- CONTRACTOR SHALL DETERMINE FOUNDATION STEP LOCATIONS BASED ON GEOTECHNICAL REPORT, CIVIL, ARCHITECTURAL AND LANDSCAPE DRAWINGS. STEP FOOTING PER S/S-1.1.
- SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.

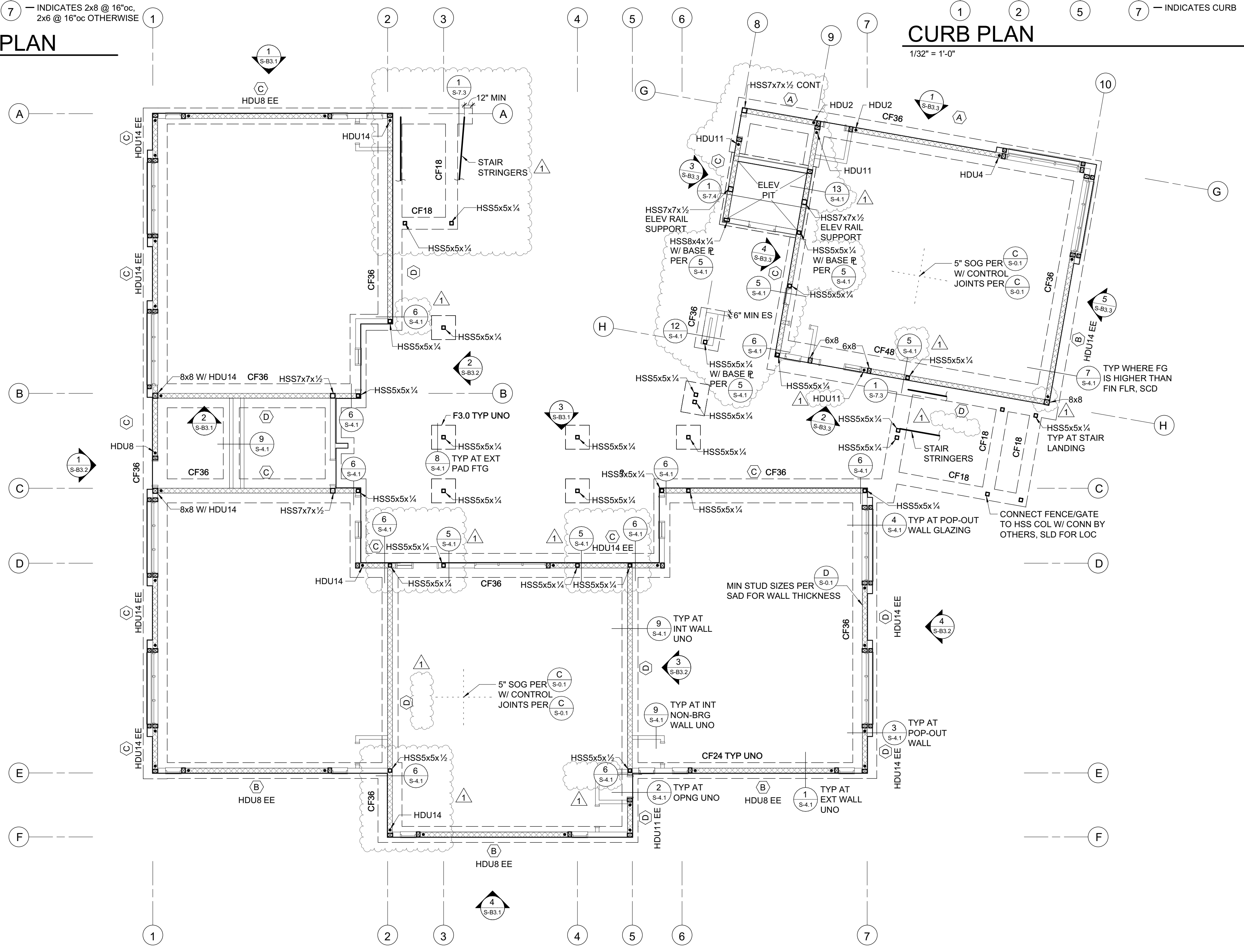
PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
(88)		INDICATES GRIDLINE.
(1)	S-3.1	INDICATES ELEVATION.
(---)		INDICATES FOUNDATION.
CF24		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
F2.0		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE.
(=)	1/S-1.2	INDICATES STRUCTURAL WALL.
(A)	7/S-1.2 E/S-0.1	INDICATES SHEAR WALL TYPE. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE. SEE ELEVATIONS FOR SHEAR WALL LENGTH.
(A)	7/S-1.2 E/S-0.1	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE.
(□)	D/S-0.1	INDICATES WOOD POST.
(□)	8/S-1.2	INDICATES POST WITH HOLDOWN. SEE ELEVATIONS FOR HOLDOWN SIZES. POSTS WITH HOLDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
(□)	6/S-1.3	INDICATES STEEL COLUMN.

CONTINUOUS FOOTING SCHEDULE				
MARK	'b'	'd'	REINF	TIES
CF18	18"	18"	(2) #6 T&B	#3 @ 32"oc
CF24	24"	18"	(3) #6 T&B	#3 @ 32"oc
CF36	36"	18"	(4) #6 T&B	#3 @ 32"oc
CF48	48"	18"	(5) #6 T&B	#3 @ 32"oc

PAD FOOTING SCHEDULE		
MARK	SIZE	REINF
F2.0	2'-0" SQ x 18" DEPTH	(3) #5 T&B EW
F3.0	3'-0" SQ x 18" DEPTH	(4) #5 T&B EW

SHEAR WALL SCHEDULE								
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE				REMARKS	
			1/2" BOLT FDN	AT FRAMING				
			2x SILL	3x SILL	16d	A35	SDS*	
(A)	1/2" * (32/16) STR 1	10d @ 6"oc	32"oc	48"oc	6"oc	24"oc	16"oc	
(B)	1/2" * (32/16) STR 1	10d @ 4"oc	24"oc	32"oc	4"oc	16"oc	10"oc	3x MIN AT ALL ADJOINING PANEL EDGES
(C)	1/2" * (32/16) STR 1	10d @ 3"oc	16"oc	24"oc	3"oc	8"oc	8"oc	
(D)	1/2" * (32/16) STR 1	10d @ 2"oc	-	16"oc	(2) ROWS @ 4"oc	8"oc	6"oc	

* 2x SILL: SDS 1/4x1 1/2". 3x SILL: SDS 1/4x1 1/2". FOR SDS @ 6"oc OR LESS, PROVIDE 4x BLKG BLW.



FOUNDATION PLAN

1/8" = 1'-0"

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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS
 INCREMENT 2 OF 2

101 AMERICAN AVE
 BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

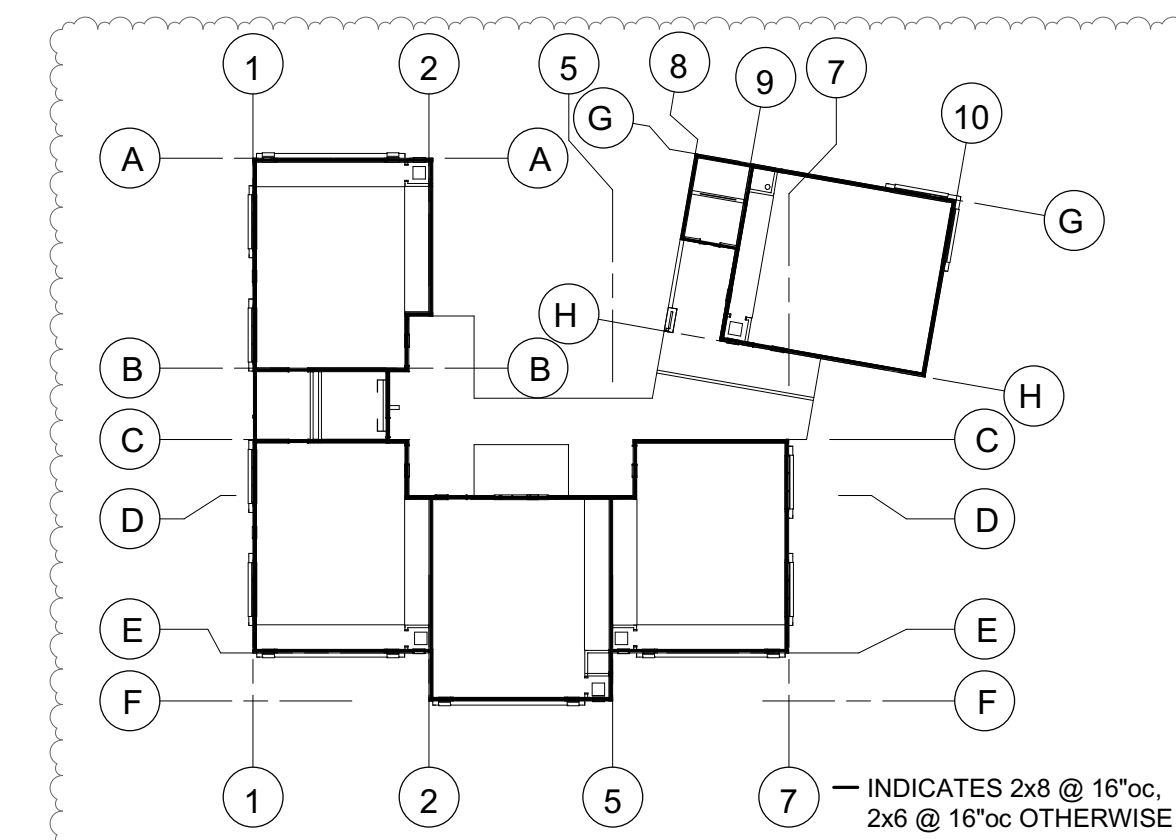
DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
 ENGR / PM: KPB / DM / SCH
 DRAWING SCALE: As indicated
 PTN: 61721-77 FILE NO: 7-H4

CD
 JUNE 3, 2021

SHEET TITLE
BUILDING B FOUNDATION PLAN

SHEET NUMBER
S-B2.1



SECOND FLOOR STUD PLAN

1/32" = 1'-0"

TIE STRAP SCHEDULE					
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)		MIN. END LENGTH (EL)
			CASE 1	CASE 2	
(A)	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	12"
(B)	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	16"
(C)	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	24"
(D)	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	32"
(E)	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	48"

1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

TOP PLATE SPLICE SCHEDULE		
MARK	LAP SPLICE (CASE 1)	STRAP SPLICE (CASE 2)
(A)	(12) 16d PER 4'-0" MIN LAP	MSTC28
(B)	(22) 16d PER 4'-0" MIN LAP	MSTC40
(C)	(26) 16d PER 6'-0" MIN LAP	MSTC52
(D)	(32) 16d PER 6'-0" MIN LAP	MSTC66
(E)	(36) 16d PER 6'-0" MIN LAP	MSTC28 EA SIDE
(F)	-	2" x 4" x 2'-6" W/ MB10 EE

LEDGER SPLICE SCHEDULE			
MARK	CASE	STRAP/PLATE	CASE STRAP/PLATE
(A)	1	MSTA24	MSTA24
(B)	1	MSTA30	MSTA30
(C)	2	MST148	MST160

FRAMING PLAN NOTES:

- REFER TO SHEETS S-0.1 THROUGH S-1.5 FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.
PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER 6/S-1.2.
PENETRATIONS THROUGH FLOORS SHALL BE PER 5/S-1.2.
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
(88)		INDICATES GRIDLINE
(1/8-1.2)		INDICATES ELEVATION.
---	1/S-1.2	INDICATES STRUCTURAL WALL.
----	1/S-1.2	INDICATES STRUCTURAL WALL ABOVE.
(A)	7/S-1.2 E/S-0.1	INDICATES SHEAR WALL TYPE. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE. SEE ELEVATIONS FOR SHEAR WALL LENGTH.
(X)	D/S-0.1	INDICATES WOOD POST.
(X+)	8/S-1.2	INDICATES POST WITH HOLDDOWN. POSTS WITH HOLDDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
(□)	6/S-1.3	INDICATES STEEL COLUMN.
3/4x12 GLB C-11	D/S-0.1	INDICATES BEAM SIZE AND CAMBER. WHERE NO CAMBER IS SPECIFIED SEE WOOD FRAMING NOTES FOR TYPICAL GLULAM BEAM CAMBER.
----	12/S-1.2	INDICATES PANEL EDGE NAILING ALONG FULL LENGTH OF MEMBER.
---	D/S-0.1	INDICATES HANGER.
(A)	1/S-1.3	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(A)	2/S-1.3	INDICATES LEDGER/RIM SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(A) 4'-0"	3/S-1.3	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
(1)	1/S-1.5	INDICATES CONCRETE OVER METAL DECK
(MIU)	12/S-7.1	INDICATES RAIN CANOPY METAL DECK
(MIU) 1,000#	7/S-1.3	INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
(X)	10/S-5.1	INDICATES NON-FRAME MOMENT RESISTING CONNECTION.

I - JOIST SCHEDULE			
DEPTH	MANUFACTURER	MODEL	CODE REPORT
1 1/2"	REDBUILT	RED-165	ICC ESR - 2994
20	REDBUILT	RED-165	ICC ESR - 2994
28	REDBUILT	RED-190H	ICC ESR - 2994

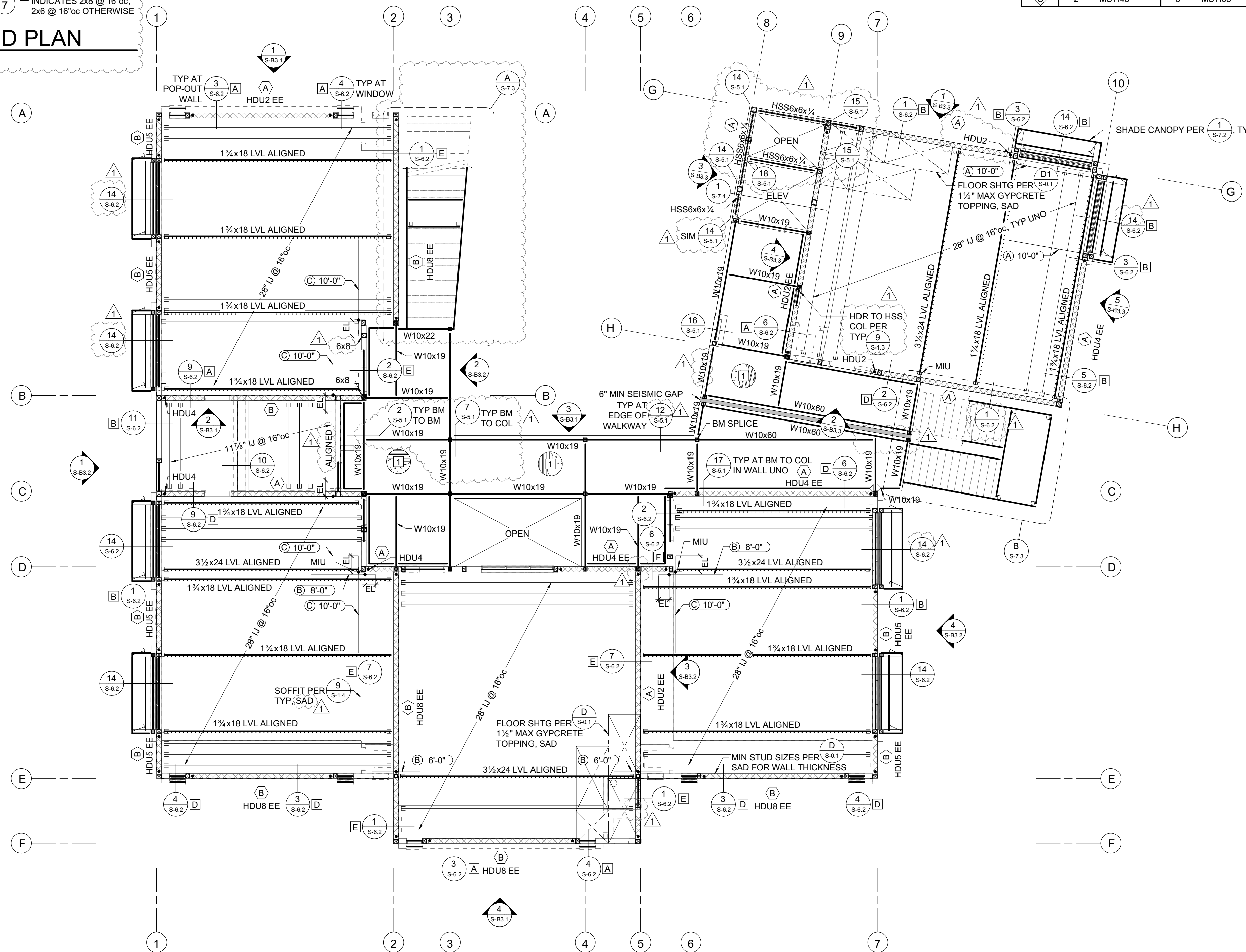
SHEAR WALL SCHEDULE								
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE				REMARKS	
			2x SILL	3x SILL	16d AT FRAMING	3x SILL		
(A)	1/2" (32/16) STR 1	10d @ 6"oc	32"oc	48"oc	6"oc	24"oc	16"oc	
(B)	1/2" (32/16) STR 1	10d @ 4"oc	24"oc	32"oc	4"oc	16"oc	10"oc	3x MIN AT ALL ADJOINING PANEL EDGES
(C)	1/2" (32/16) STR 1	10d @ 3"oc	16"oc	24"oc	3"oc	8"oc	8"oc	
(D)	1/2" (32/16) STR 1	10d @ 2"oc	-	16"oc	(2) ROWS @ 4"oc	8"oc	6"oc	

* 2x SILL: SDS 1/4x4 1/2". 3x SILL: SDS 1/4x6". FOR SDS @ 6"oc OR LESS, PROVIDE 4x BLKG BLW.



SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

CD
JUNE 3, 2021

BUILDING B SECOND FLOOR FRAMING PLAN

SHEET NUMBER

S-B2.2

TIE STRAP SCHEDULE					
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)		MIN. END LENGTH (EL)
			CASE 1	CASE 2	
A	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	12"
B	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	16"
C	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	24"
D	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	32"
E	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	48"

1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

TOP PLATE SPLICE SCHEDULE		
MARK	LAP SPLICE (CASE 1)	STRAP SPLICE (CASE 2)
A	(12) 16d PER 4'-0" MIN LAP	MSTC28
B	(22) 16d PER 4'-0" MIN LAP	MSTC40
C	(26) 16d PER 6'-0" MIN LAP	MSTC52
D	(32) 16d PER 6'-0" MIN LAP	MSTC66
E	(36) 16d PER 8'-0" MIN LAP	MSTC28 EA SIDE
F	-	1/2" x 4x2'-6" W/ MB10 EE

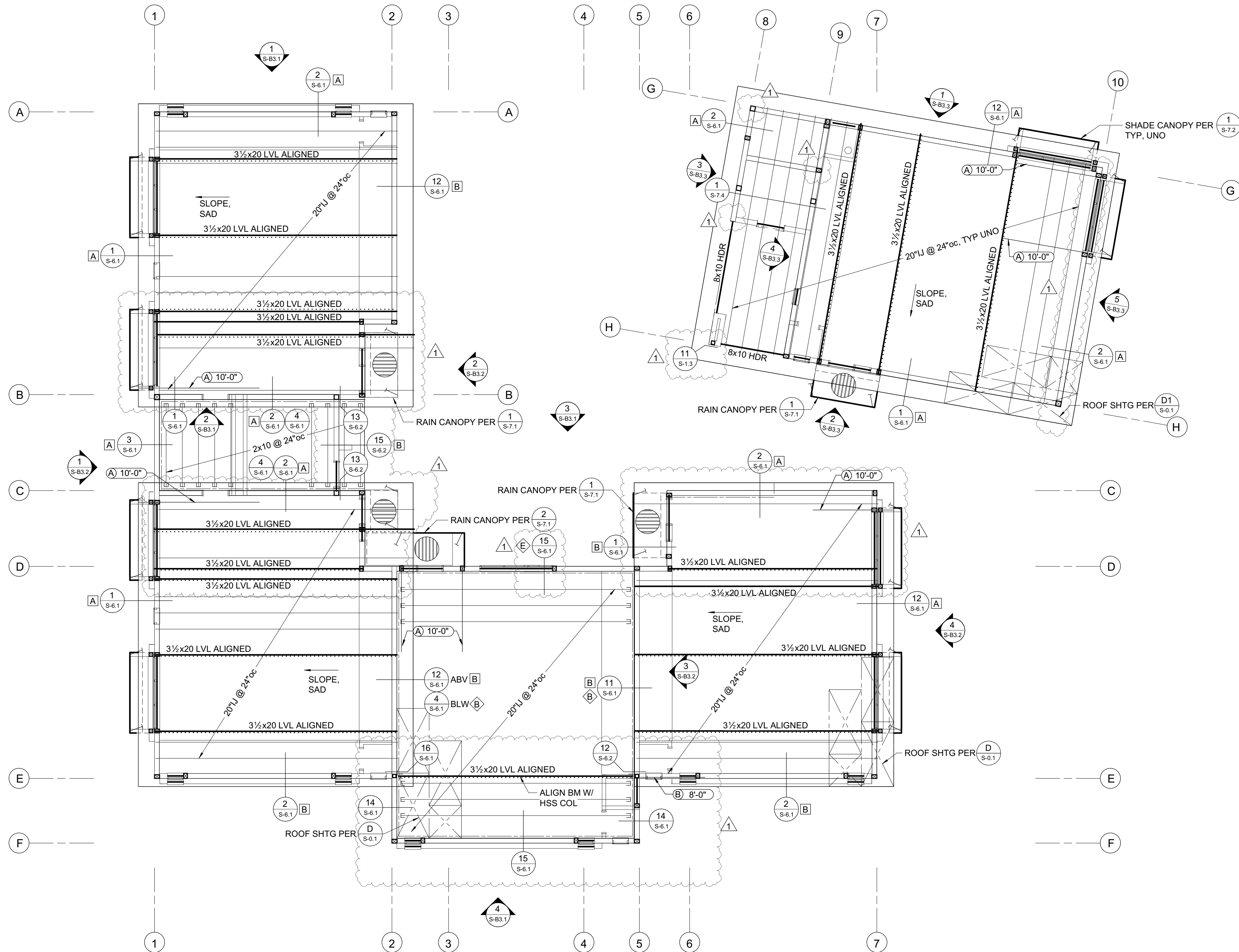
LEDGER SPLICE SCHEDULE			
MARK	CASE	STRAP/PLATE	STRAP/PLATE
A	1	MSTA24	MSTA24
B	1	MSTA30	MSTA30
C	2	MSTI48	MSTI60

FRAMING PLAN NOTES:

- REFER TO SHEETS S-0.1 THROUGH S-1.6 FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.
 - PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER 6/S-1.2.
 - PENETRATIONS THROUGH ROOFS SHALL BE PER 5/S-1.2.
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC GAPS.

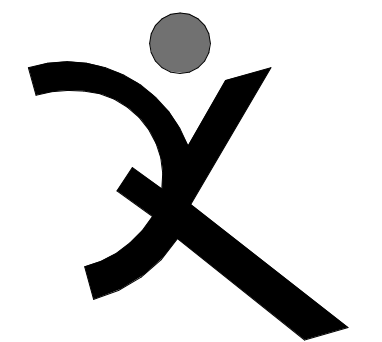
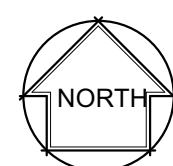
PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
88		INDICATES GRIDLINE
1	S-3.1	INDICATES ELEVATION.
1/S-1.2		INDICATES STRUCTURAL WALL.
D/S-0.1		INDICATES WOOD POST.
6/S-1.3		INDICATES STEEL COLUMN.
3/4x12 GLB C=1"	D/S-0.1	INDICATES BEAM SIZE AND CAMBER. WHERE NO CAMBER IS SPECIFIED SEE WOOD FRAMING NOTES FOR TYPICAL GLULAM BEAM CAMBER.
12/S-1.2		INDICATES PANEL EDGE NAILING ALONG FULL LENGTH OF MEMBER.
D/S-0.1		INDICATES HANGER.
		INDICATES LEDGER. SEE PLAN FOR SIZE AND ANCHORAGE.
MU	7/S-1.3	INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
A	1/S-1.3	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
2/S-1.3		INDICATES LEDGER/RIM SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
A 4'-0"	3/S-1.3	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
12/S-7.1		INDICATES RAIN CANOPY METAL DECK

I - JOIST SCHEDULE			
DEPTH	MANUFACTURER	MODEL	CODE REPORT
11 1/2	REDBUILT	RED-165	ICC ESR - 2994
20	REDBUILT	RED-165	ICC ESR - 2994
28	REDBUILT	RED-190H	ICC ESR - 2994



ROOF FRAMING PLAN

1/8" = 1'-0"



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

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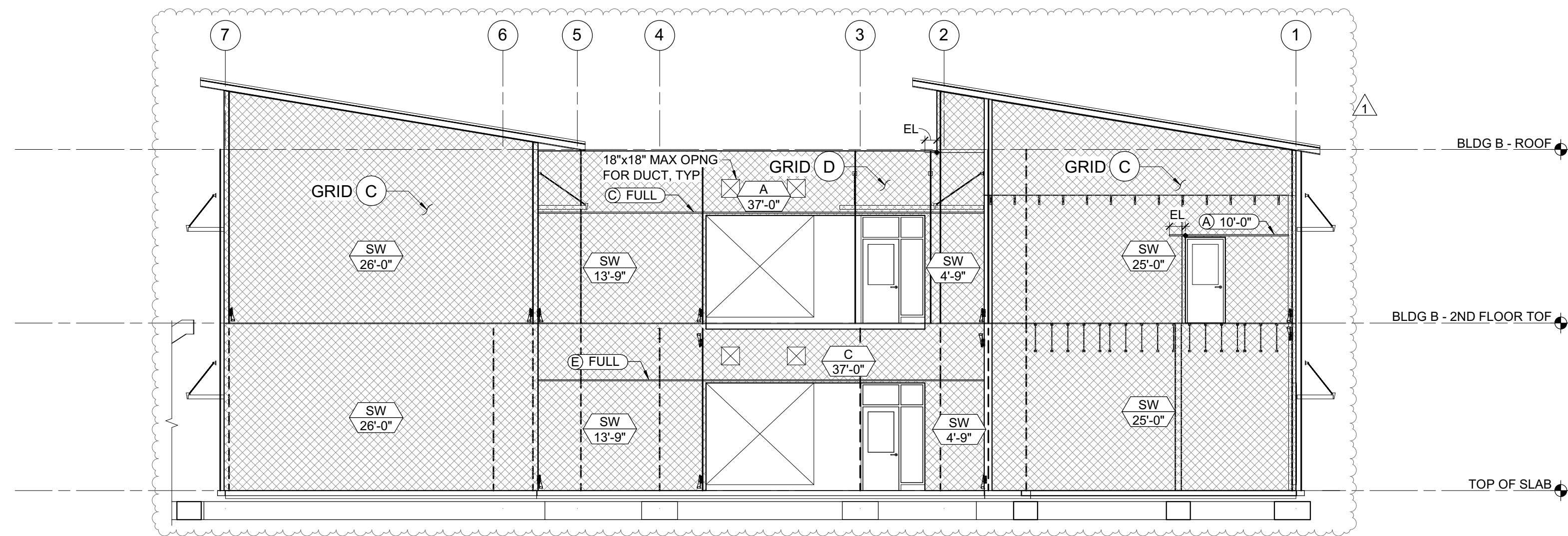
JUNE 3, 2021

SHEET TITLE

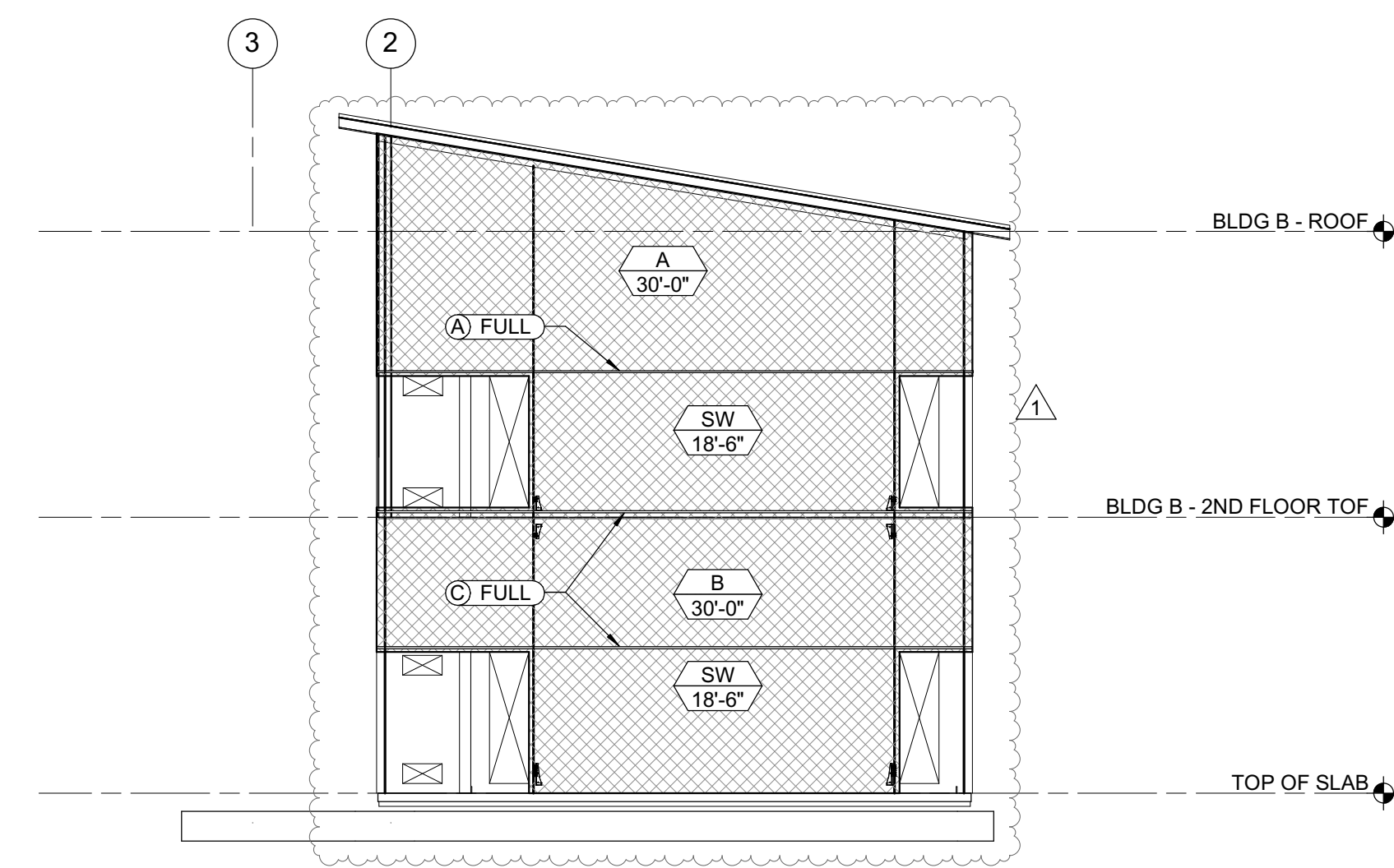
BUILDING B ROOF FRAMING PLAN

SHEET NUMBER

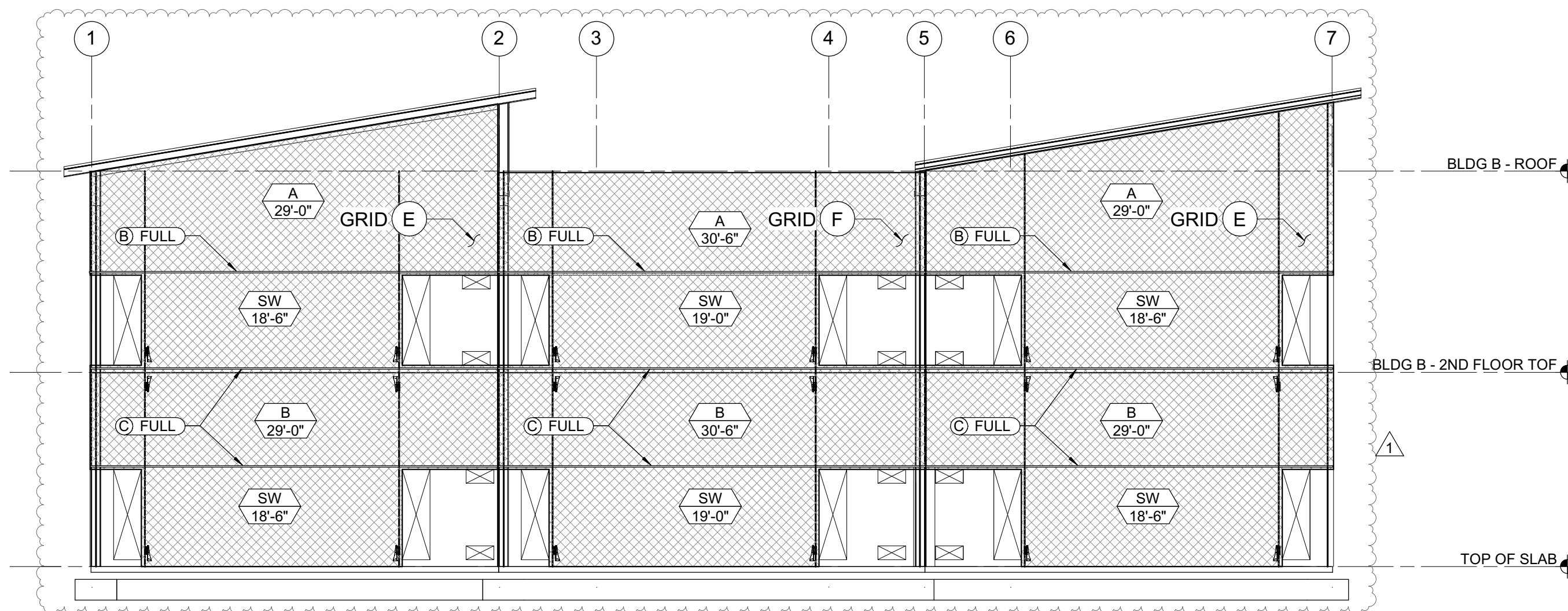
S-B2.3



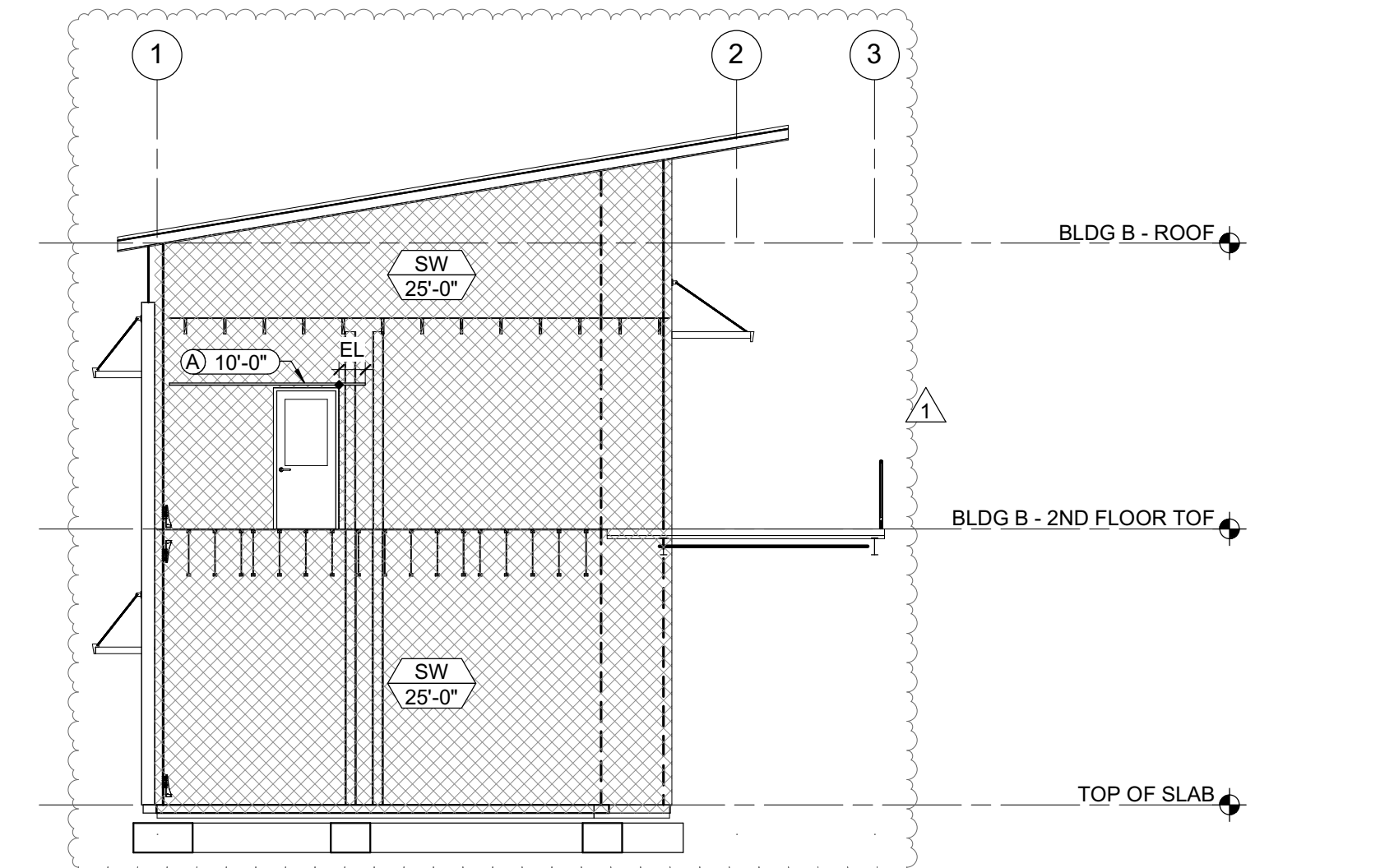
3 GRIDS C & D - SHEAR WALL ELEVATION
1/8" = 1'-0"



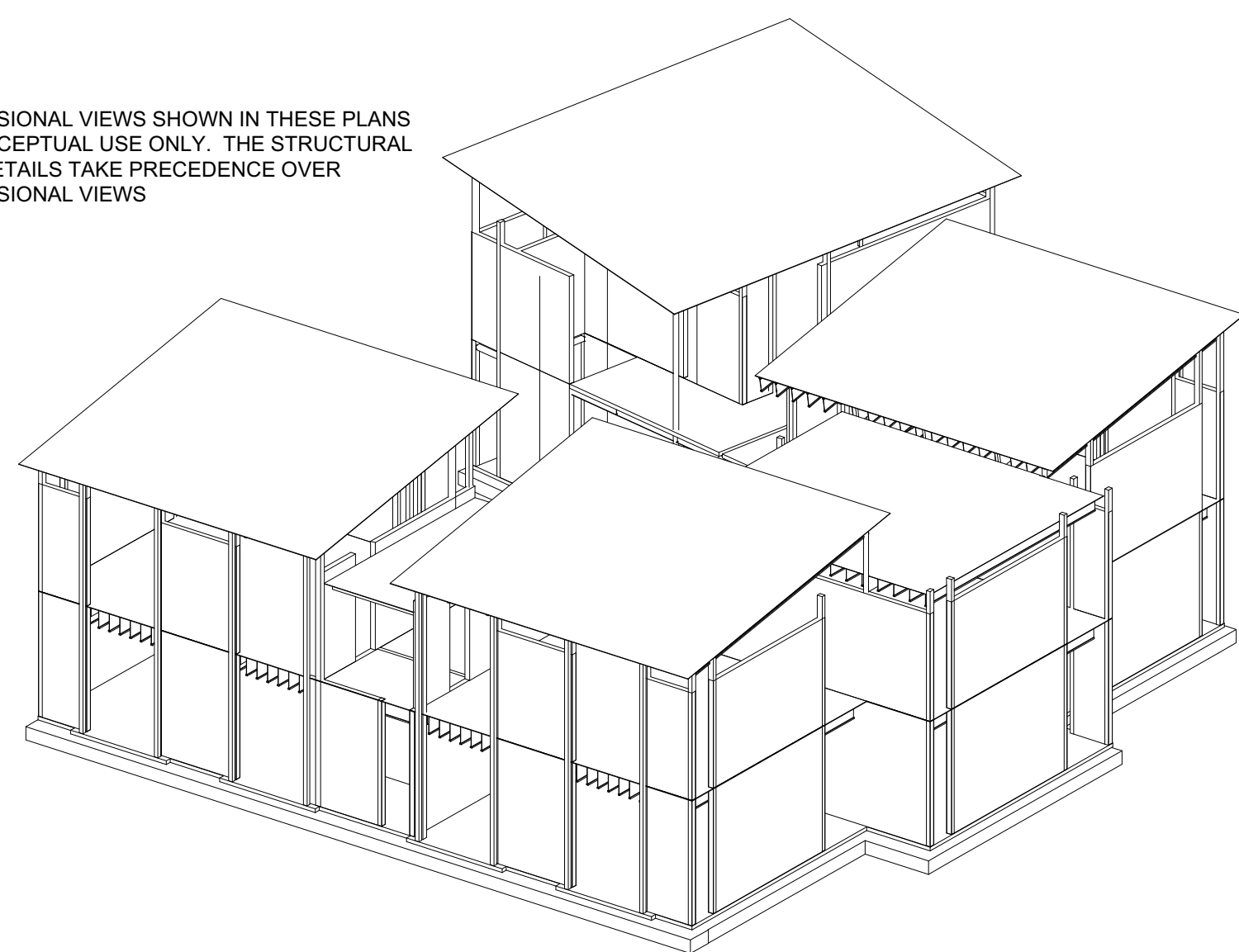
1 GRID A - SHEAR WALL ELEVATION
1/8" = 1'-0"



4 GRIDS E & F - SHEAR WALL ELEVATION
1/8" = 1'-0"



2 GRID B - SHEAR WALL ELEVATION
1/8" = 1'-0"



THREE-DIMENSIONAL VIEWS SHOWN IN THESE PLANS ARE FOR CONCEPTUAL USE ONLY. THE STRUCTURAL PLANS AND DETAILS TAKE PRECEDENCE OVER THREE-DIMENSIONAL VIEWS

3D SCHEMATIC STRUCTURE

NOT TO SCALE

SHEAR WALL SCHEDULE						
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE			REMARKS
			2x SILL	3x SILL	AT FRAMING	
(A)	1/2" * (32/16) STR 1	10d @ 6"oc	32"oc	48"oc	6"oc 24"oc	16"oc
(B)	1/2" * (32/16) STR 1	10d @ 4"oc	24"oc	32"oc	4"oc 16"oc	10"oc
(C)	1/2" * (32/16) STR 1	10d @ 3"oc	16"oc	24"oc	3"oc 8"oc	8"oc
(D)	1/2" * (32/16) STR 1	10d @ 2"oc	-	16"oc	2 ROWS @ 4"oc	8"oc 6"oc

* 2x SILL: SDS 1/4"x4 1/2". 3x SILL: SDS 1/4"x6". FOR SDS @ 6"oc OR LESS, PROVIDE 4x BLKG BLW.

TIE STRAP SCHEDULE					
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)		MIN. END LENGTH (EL)
			CASE 1	CASE 2	
(A)	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR
(B)	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR
(C)	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	10d @ 3"oc STGR
(D)	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR
(E)	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR

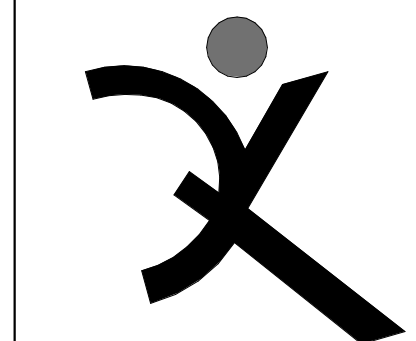
1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

ELEVATION NOTES:

- ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
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- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.
 - PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER S/S-1.2.
 - PENETRATIONS THROUGH FLOORS SHALL BE PER S/S-1.2.
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

ELEVATION LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
(88)		INDICATES GRIDLINE
(A)	7/S-1.2 E/S-0.1	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE. SEE PLANS FOR SHEAR WALL TYPES NOTED AS 'SW'.
(A) 10'-0"	8/S-1.2 9/S-1.2	INDICATES HOLDDOWN SEE PLAN FOR SIZE. POSTS WITH HOLDDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
(A) 4'-0"	D/S-0.1	INDICATES WOOD POST. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
(A)	8/S-1.3	INDICATES STEEL COLUMN. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
(A) 4'-0"	3/S-1.3	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
(A)	1/S-1.3	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL. UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(A)	2/S-1.3	INDICATES LEDGER/RIM SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL. UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(MO) 18"x24"	7/S-1.3	INDICATES APPROXIMATE LOCATION AND SIZE OF MECHANICAL OPENING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

CD

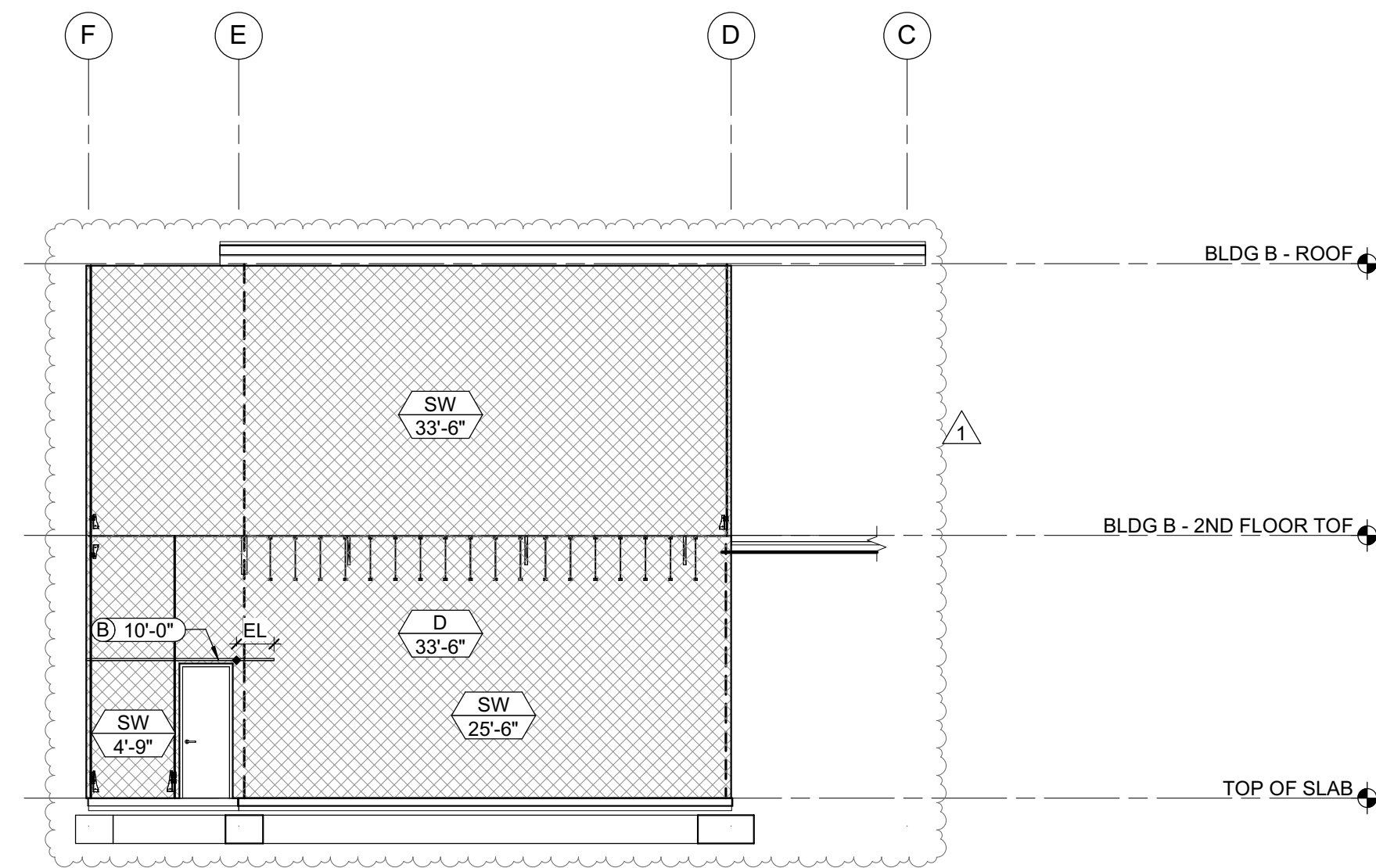
JUNE 3, 2021

SHEET TITLE

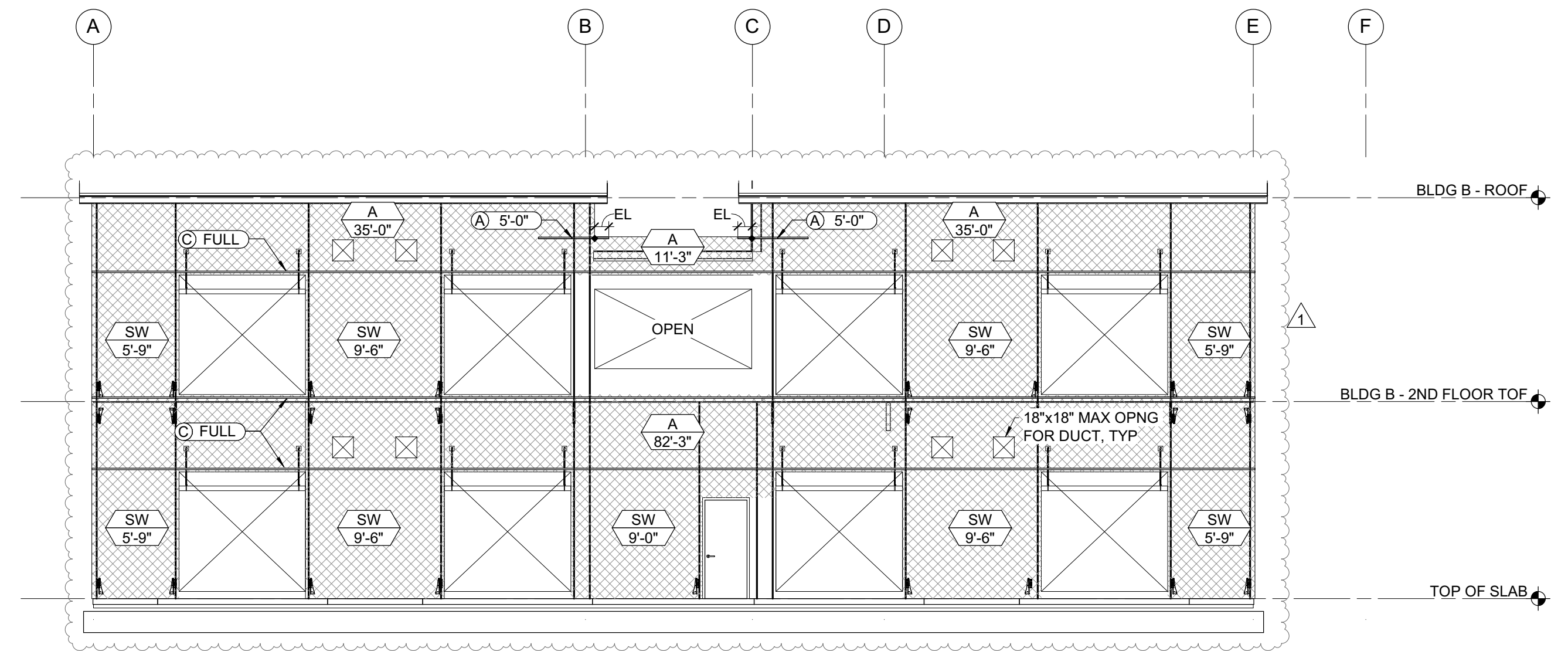
EASTWEST SHEAR WALL ELEVATIONS

SHEET NUMBER

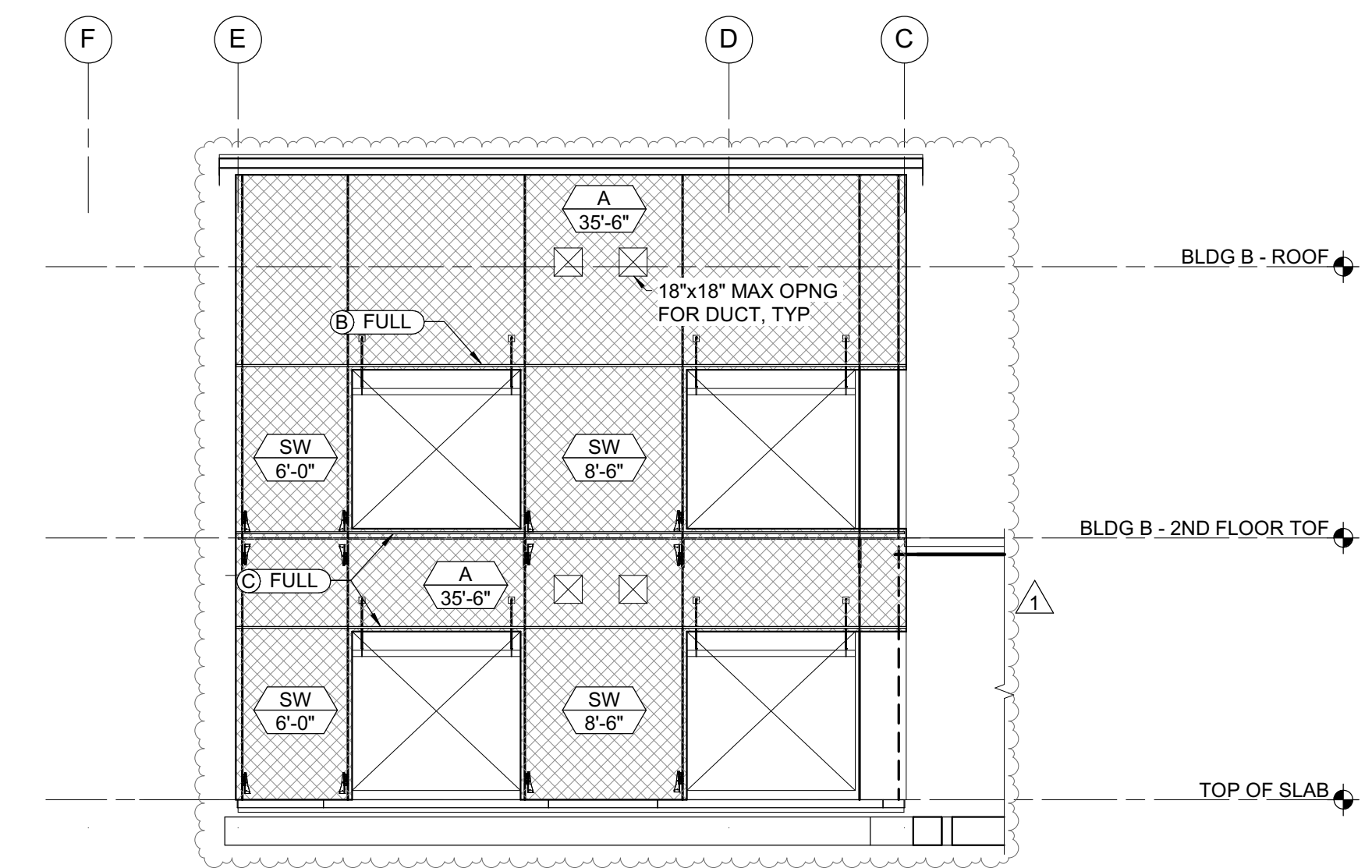
S-B3.1



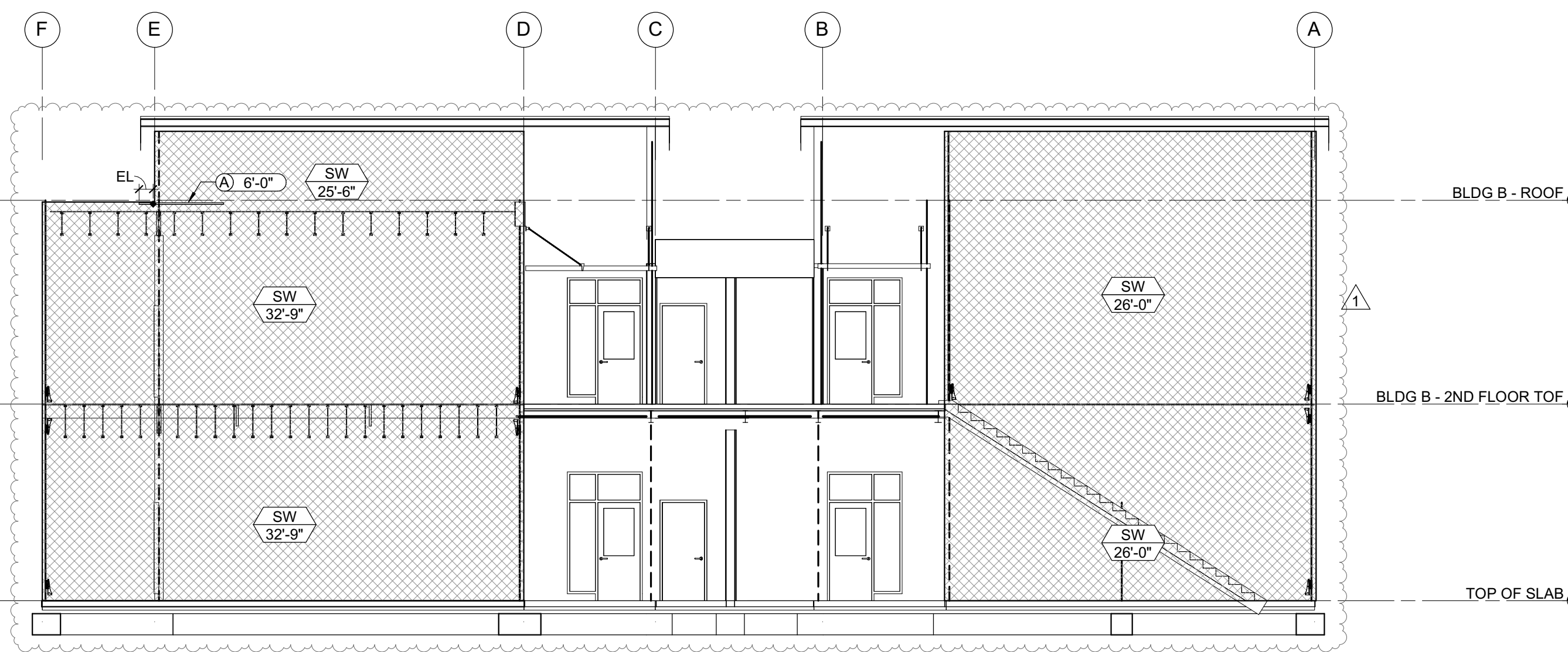
3 GRID 5 - SHEAR WALL ELEVATION
1/8" = 1'-0"



1 GRID 1 - SHEAR WALL ELEVATION
1/8" = 1'-0"



4 GRID 7 - SHEAR WALL ELEVATION
1/8" = 1'-0"



2 GRID 2 - SHEAR WALL ELEVATION
1/8" = 1'-0"

SHEAR WALL SCHEDULE								
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE				REMARKS	
			1/2" BOLT FDN		AT FRAMING			
			2x SILL	3x SILL	16d	A35	SDS*	
(A)	1/2" (32/16) STR 1	10d @ 6"oc	32"oc	48"oc	6"oc	24"oc	16"oc	
(B)	1/2" (32/16) STR 1	10d @ 4"oc	24"oc	32"oc	4"oc	16"oc	10"oc	3x MIN AT ALL ADJOINING PANEL EDGES
(C)	1/2" (32/16) STR 1	10d @ 3"oc	16"oc	24"oc	3"oc	8"oc	8"oc	
(D)	1/2" (32/16) STR 1	10d @ 2"oc	-	16"oc	(2) ROWS @ 4"oc	8"oc	6"oc	

* 2x SILL: SDS 1/4"x4 1/2". 3x SILL: SDS 1/4"x6". FOR SDS @ 6"oc OR LESS, PROVIDE 4x BLKG BLW.

TIE STRAP SCHEDULE					
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)		MIN. END LENGTH (EL)
			CASE 1	CASE 2	
(A)	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR
(B)	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR
(C)	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	10d @ 3"oc STGR
(D)	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR
(E)	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR

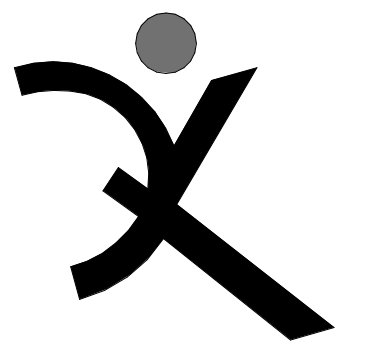
1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

ELEVATION NOTES:

- ELEVATIONS ARE SCHEMATIC. SEE PLANS FOR ADDITIONAL INFORMATION.
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 - PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER S/S-1.2.
 - PENETRATIONS THROUGH FLOORS SHALL BE PER S/S-1.2.
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

ELEVATION LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
(88)		INDICATES GRIDLINE
(A 10'-0")	7/S-1.2 E/S-0.1	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE. SEE PLANS FOR SHEAR WALL TYPES NOTED AS 'SW'.
(A 10'-0")	8/S-1.2 9/S-1.2	INDICATES HOLDDOWN SEE PLAN FOR SIZE. POSTS WITH HOLDDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
(A 10'-0")	D/S-0.1	INDICATES WOOD POST. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
(A 10'-0")	8/S-1.3	INDICATES STEEL COLUMN. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
(A 4'-0")	3/S-1.3	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
(A)	1/S-1.3	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(A)	2/S-1.3	INDICATES LEDGER/RIM SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
(MO)	7/S-1.3	INDICATES APPROXIMATE LOCATION AND SIZE OF MECHANICAL OPENING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

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1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

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CD

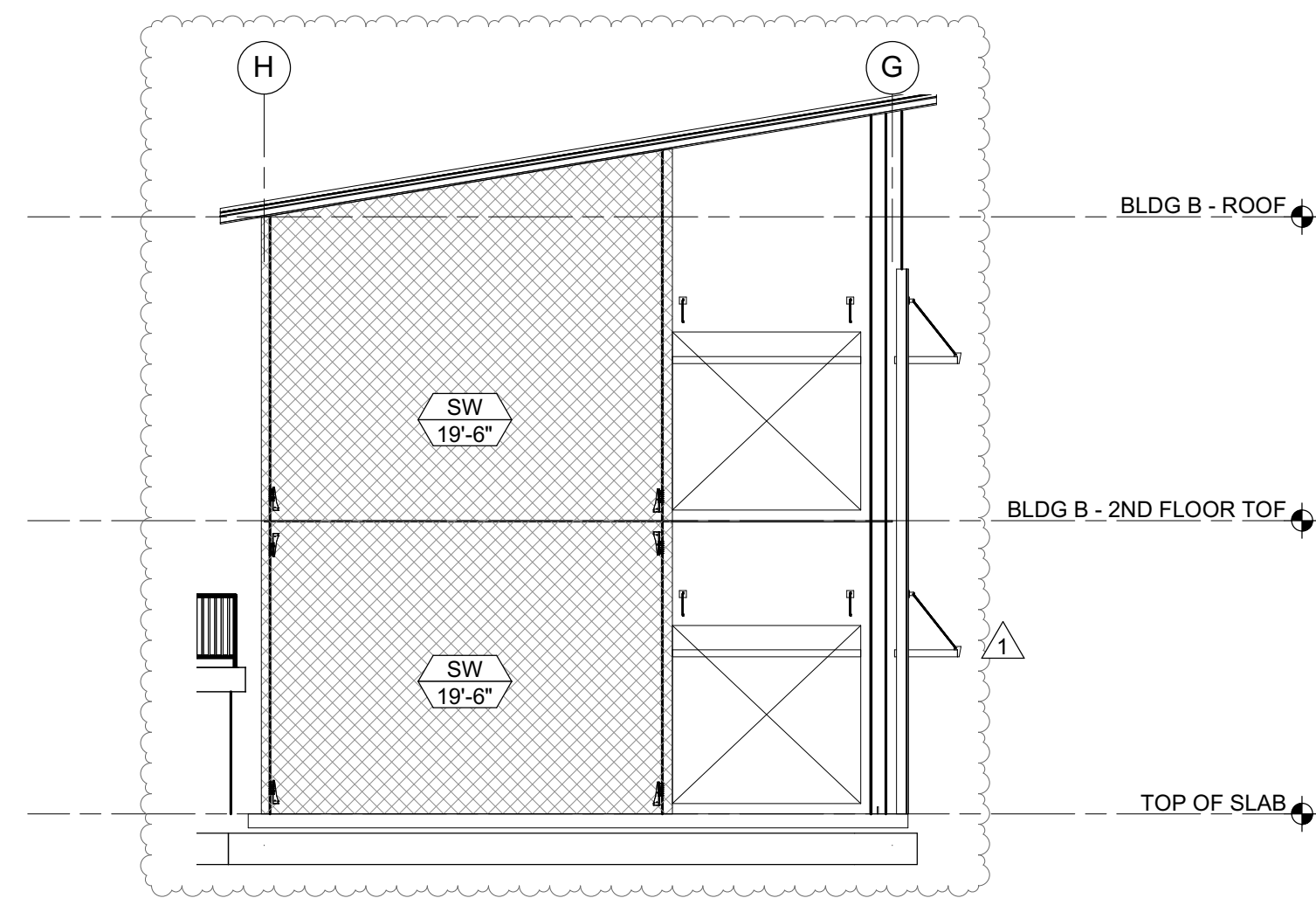
JUNE 3, 2021

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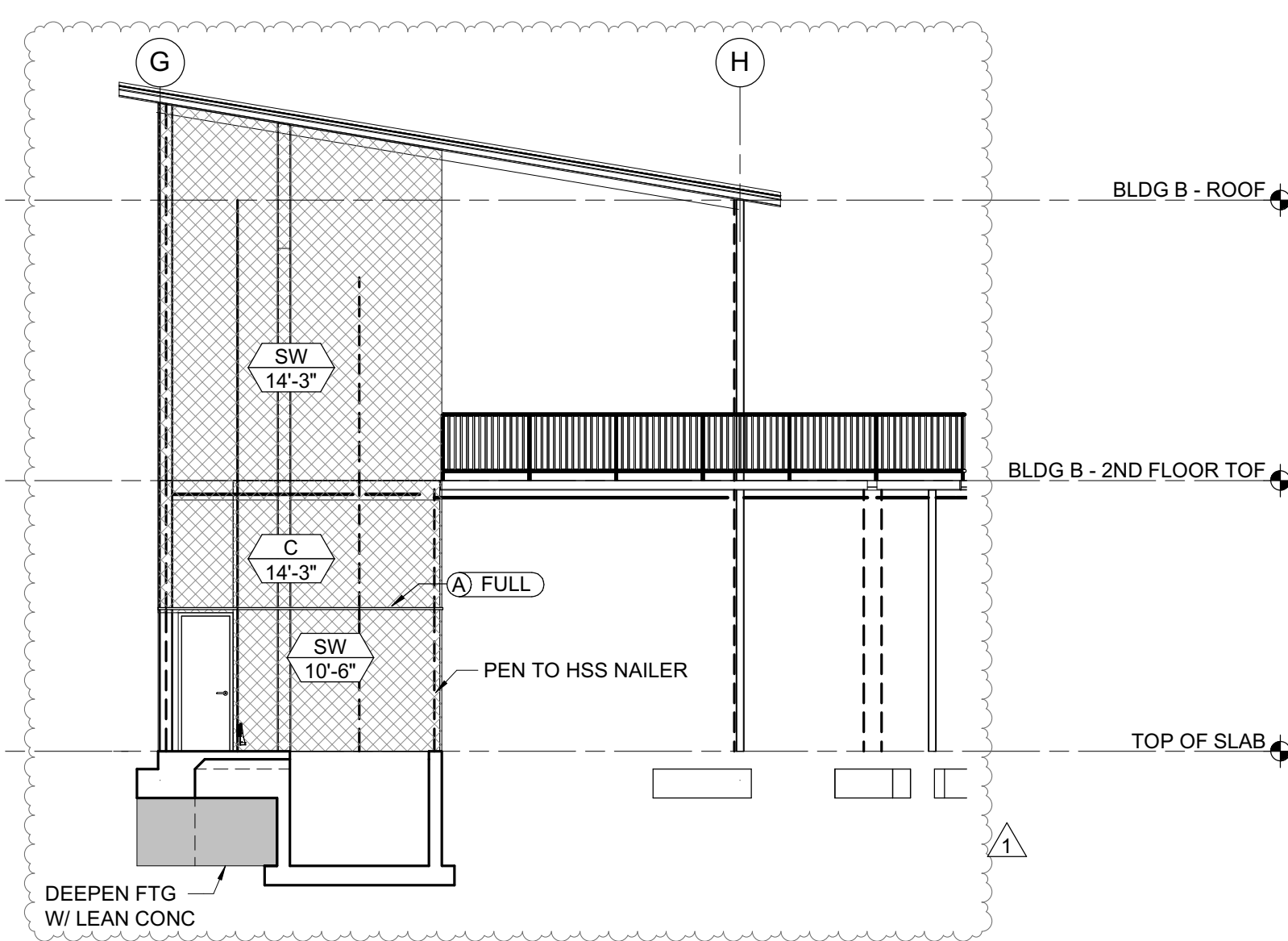
NORTH/SOUTH SHEAR WALL ELEVATIONS

SHEET NUMBER

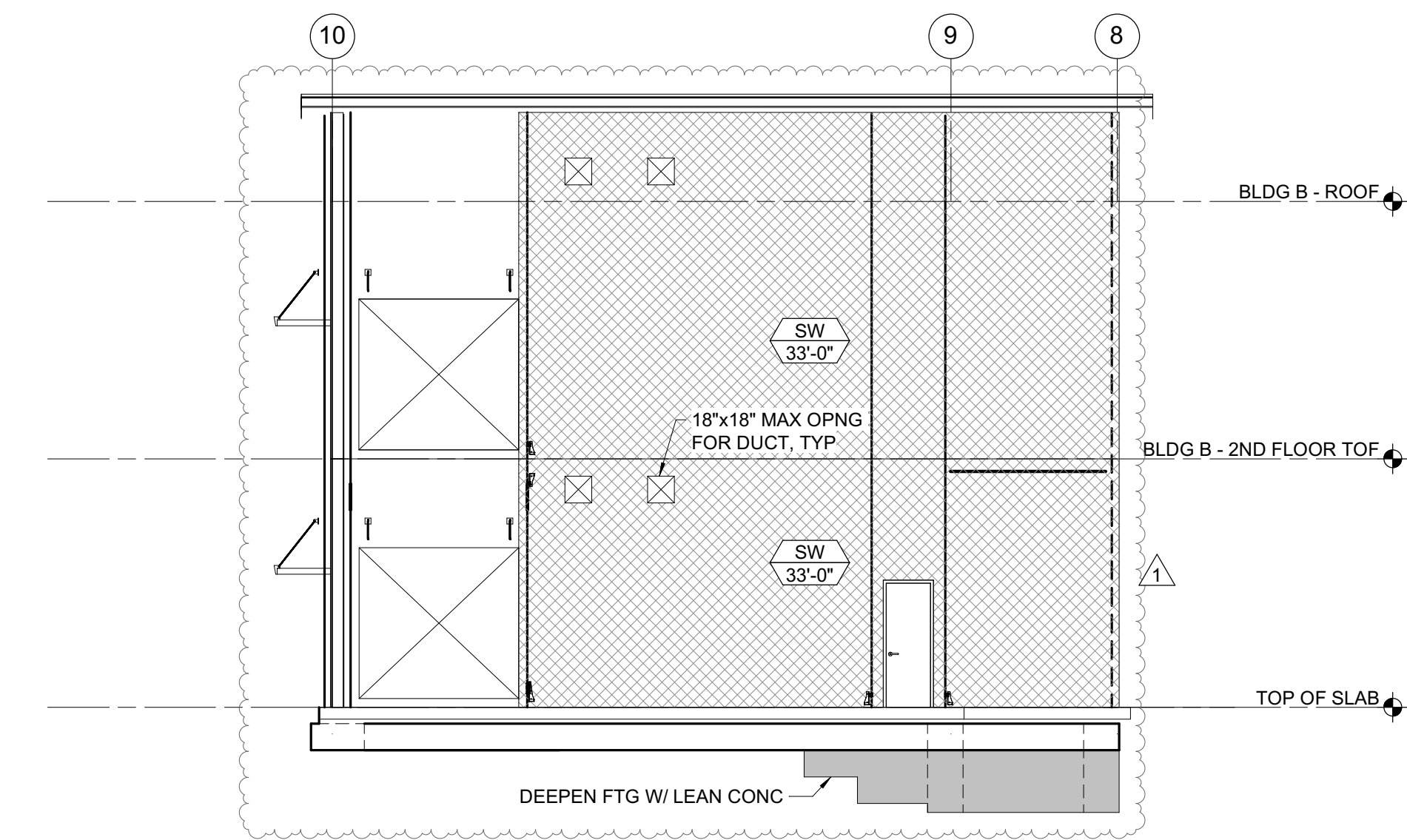
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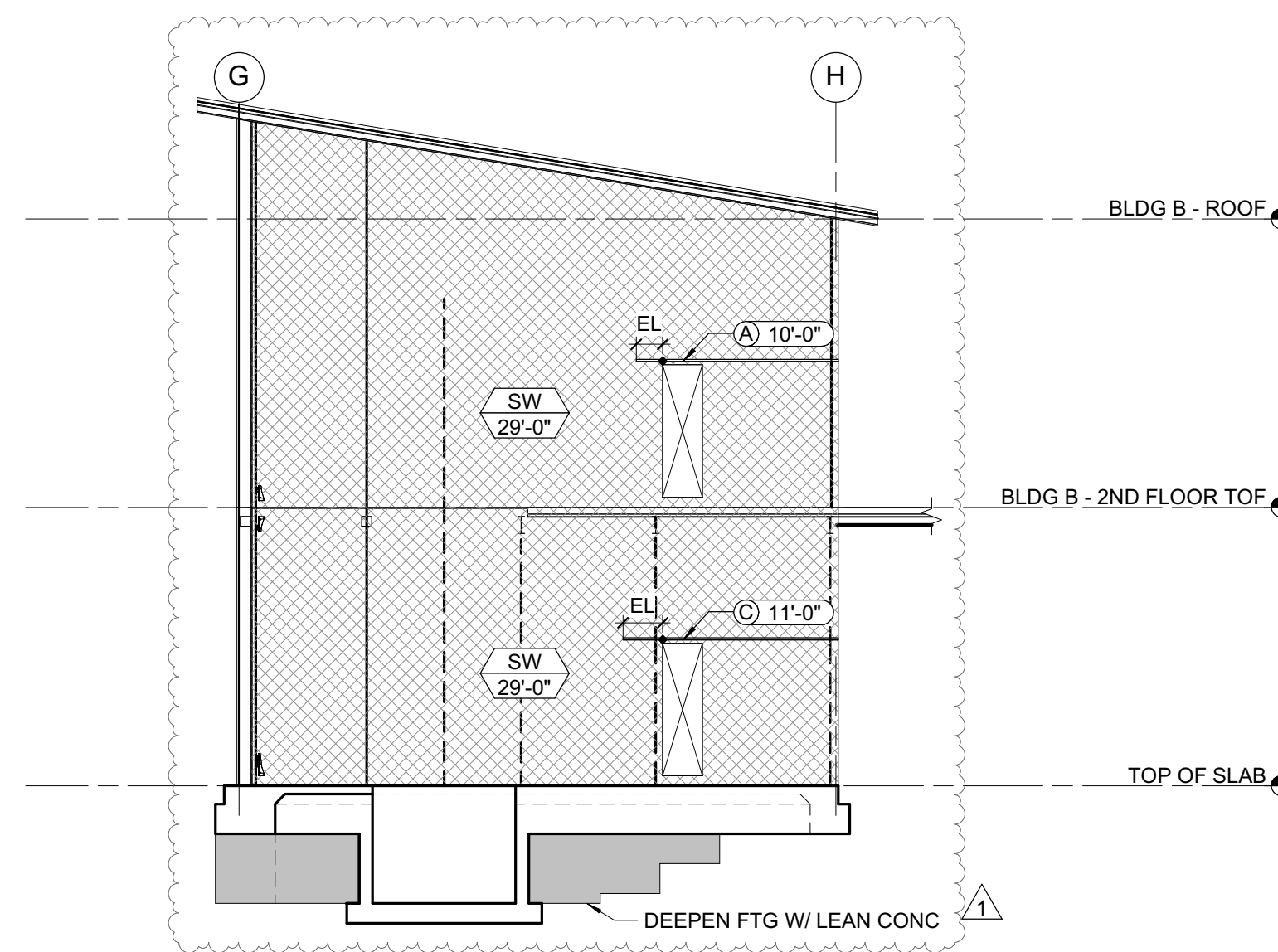
5 GRID 10 - SHEAR WALL ELEVATION
1/8" = 1'-0"



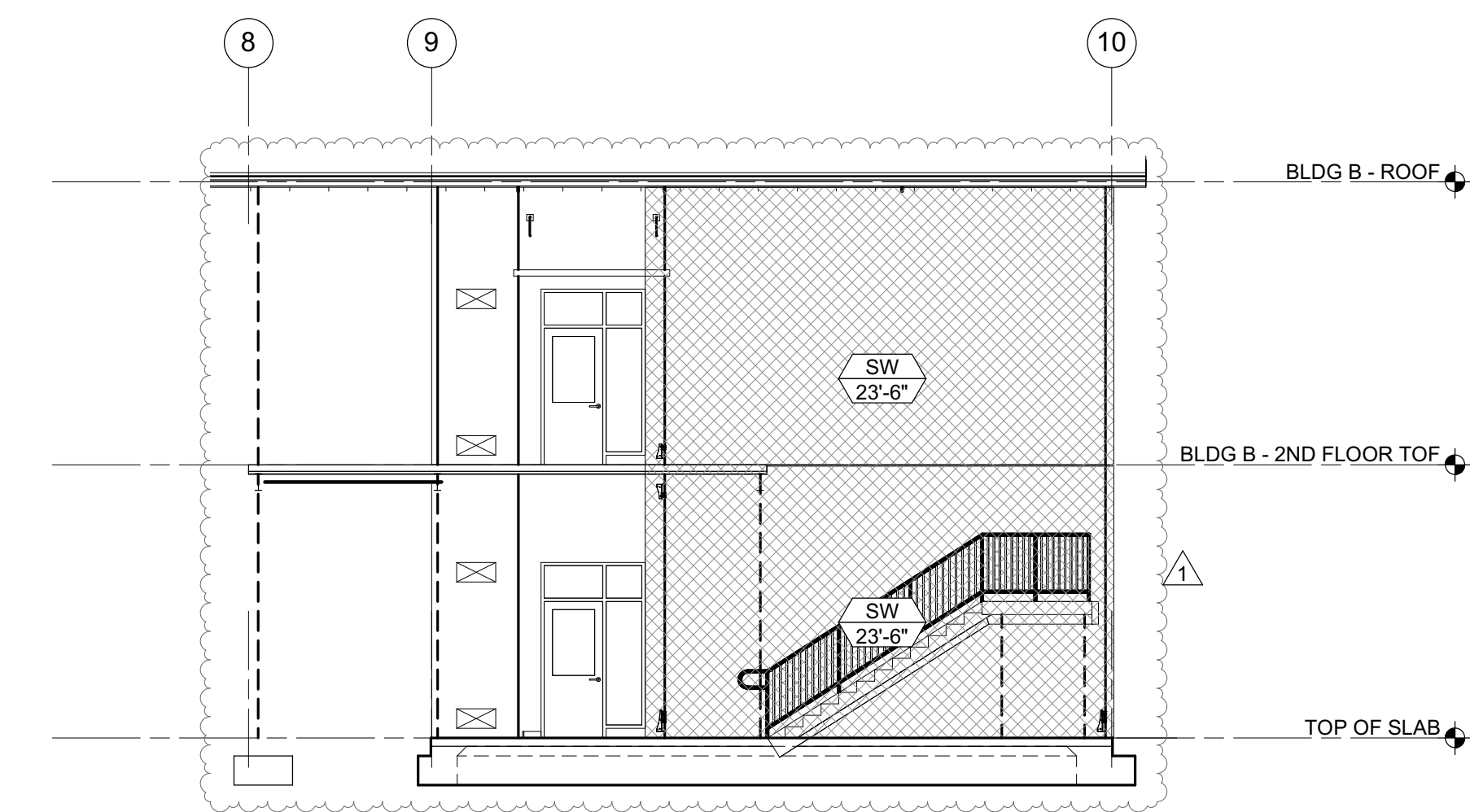
3 GRID 8 - SHEAR WALL ELEVATION
1/8" = 1'-0"



1 GRID G - SHEAR WALL ELEVATION
1/8" = 1'-0"



4 GRID 9 - SHEAR WALL ELEVATION
1/8" = 1'-0"



2 GRID H - SHEAR WALL ELEVATION
1/8" = 1'-0"

SHEAR WALL SCHEDULE								
SW	APA RATED SHEATHING	NAILING (PEN)	ANCHORAGE				REMARKS	
			1/2" BOLT FDN	AT FRAMING				
			2x SILL	3x SILL	16d	AS5	SDS*	
(A)	1/2" (32/16) STR 1	10d @ 6"oc	32"oc	48"oc	6"oc	24"oc	16"oc	
(B)	1/2" (32/16) STR 1	10d @ 4"oc	24"oc	32"oc	4"oc	16"oc	10"oc	3x MIN AT ALL ADJOINING PANEL EDGES
(C)	1/2" (32/16) STR 1	10d @ 3"oc	16"oc	24"oc	3"oc	8"oc	8"oc	
(D)	1/2" (32/16) STR 1	10d @ 2"oc	-	16"oc	(2) ROWS @ 4"oc	8"oc	6"oc	

* 2x SILL: SDS 1/4"x4 1/2"; 3x SILL: SDS 1/2"x6". FOR SDS @ 6"oc OR LESS, PROVIDE 4x BLK BLW.

TIE STRAP SCHEDULE						
MARK	STRAP	MIN. NAILING ES OF *	MAX. NAIL SPACING (SEE NOTES #1 & #2)			MIN. END LENGTH (EL)
			CASE 1	CASE 2	RL	
(A)	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	12"
(B)	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	16"
(C)	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	10d @ 3"oc STGR	24"
(D)	CMST14	(33) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR	32"
(E)	CMST12	(43) 10d	10d @ 3 1/2"oc STGR	FILL ALL NAIL HOLES	10d @ 3 1/2"oc STGR	48"

1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

ELEVATION NOTES:

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PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER 6/S-1.2
PENETRATIONS THROUGH FLOORS SHALL BE PER 5/S-1.2
- ALL EXTERIOR WALLS NOT DESIGNATED AS SHEAR WALLS ON PLANS SHALL BE SHEATHED AS SHEAR WALL TYPE 'A' PER SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

ELEVATION LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
(88)		INDICATES GRIDLINE
[Hatched Box]	7/S-1.2	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE. SEE PLANS FOR SHEAR WALL TYPES NOTED AS 'SW'.
[A 10'-0"]	E/S-0.1	
[Triangle]	8/S-1.2 9/S-1.2	INDICATES HOLDDOWN SEE PLAN FOR SIZE. POSTS WITH HOLDDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.
[Vertical Line]	D/S-0.1	INDICATES WOOD POST. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
[Vertical Line]	6/S-1.3	INDICATES STEEL COLUMN. SEE PLANS FOR SIZE UNLESS NOTED OTHERWISE.
[A 4'-0"]	3/S-1.3	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.
[A]	1/S-1.3	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
[A]	2/S-1.3	INDICATES LEDGER/RIM SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.
[MO 18"x24"]	7/S-1.3	INDICATES APPROXIMATE LOCATION AND SIZE OF MECHANICAL OPENING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

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HERITAGE HIGH SCHOOL

**NEW CLASSROOM BUILDINGS
INCREMENT 2 OF 2**

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REVISIONS

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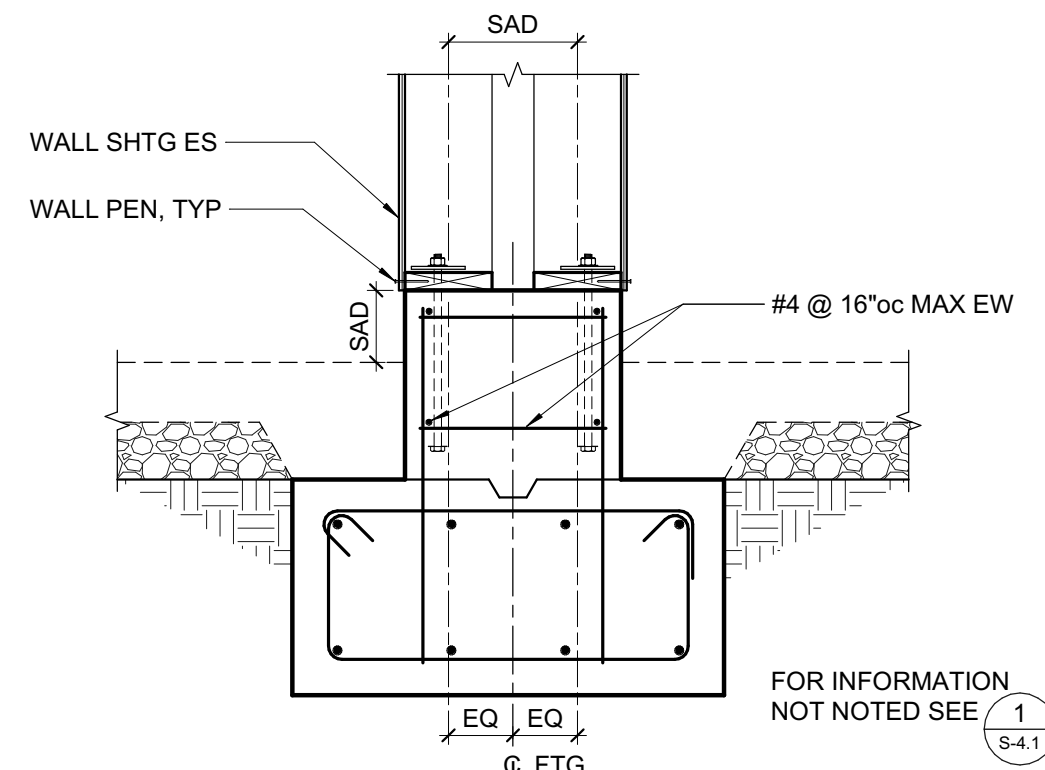
JUNE 3, 2021

SHEET TITLE

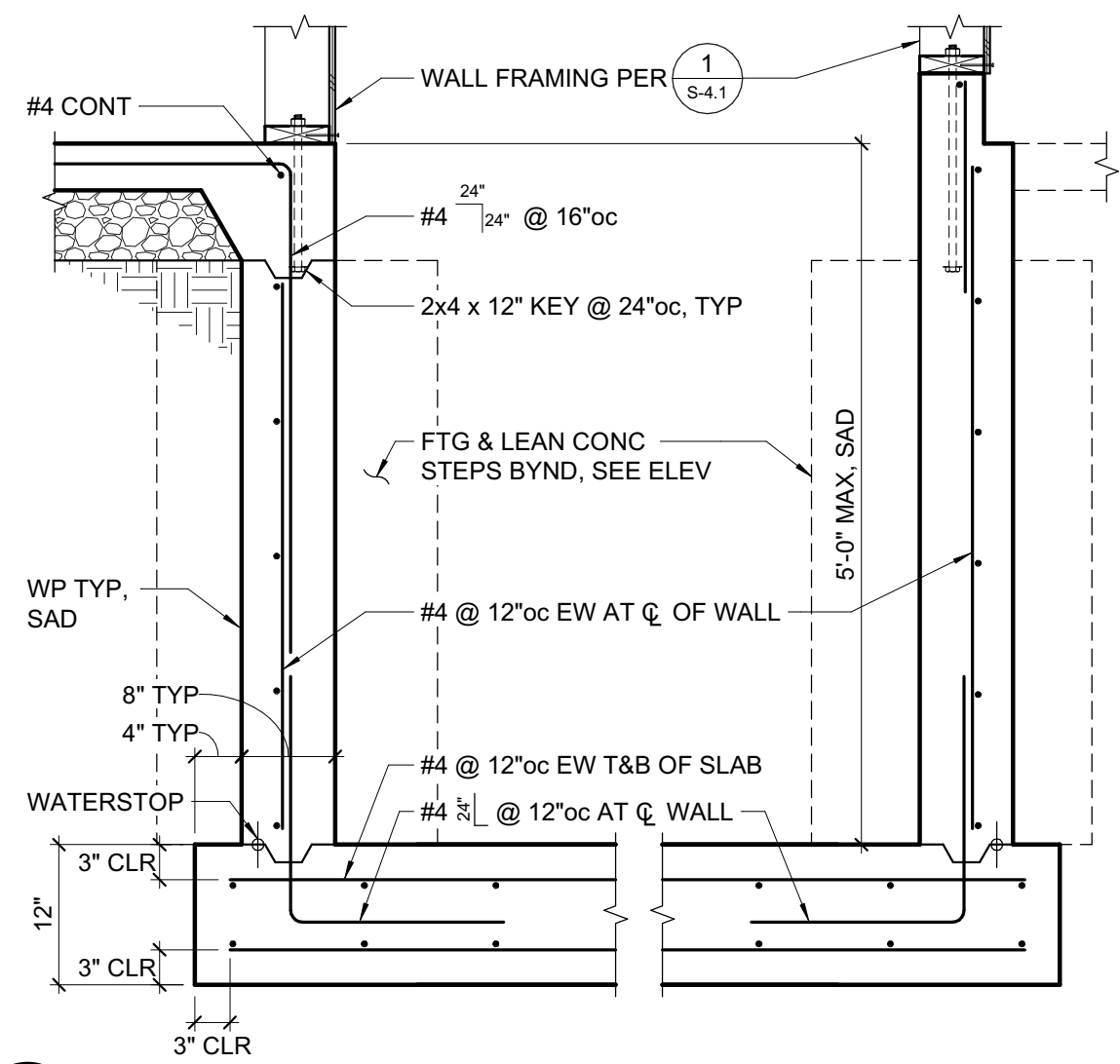
SEISMICALLY SEPARATE BUILDING SHEAR WALL ELEVATIONS

SHEET NUMBER

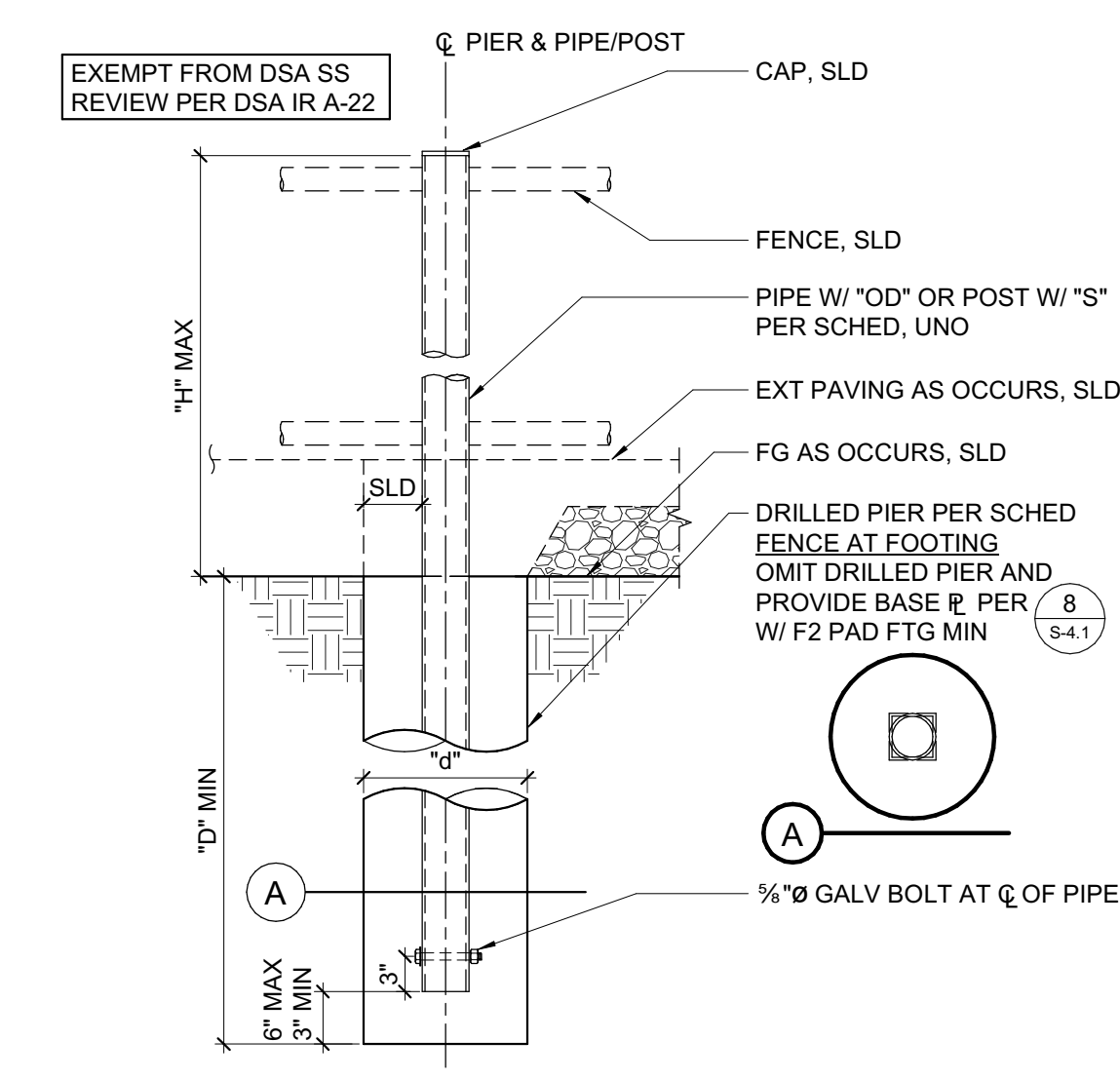
S-B3.3



12 EXTERIOR FOOTING (WITH CURB)
3/4" = 1'-0"



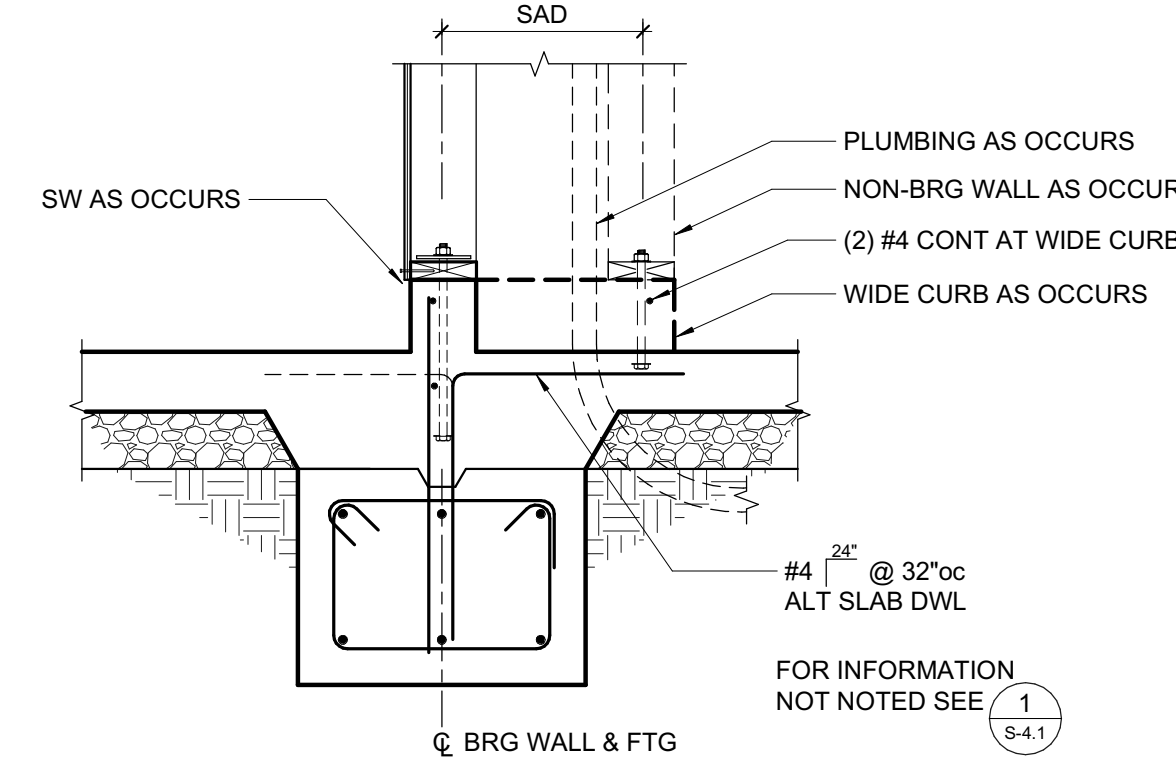
13 ELEVATOR PIT
3/4" = 1'-0"



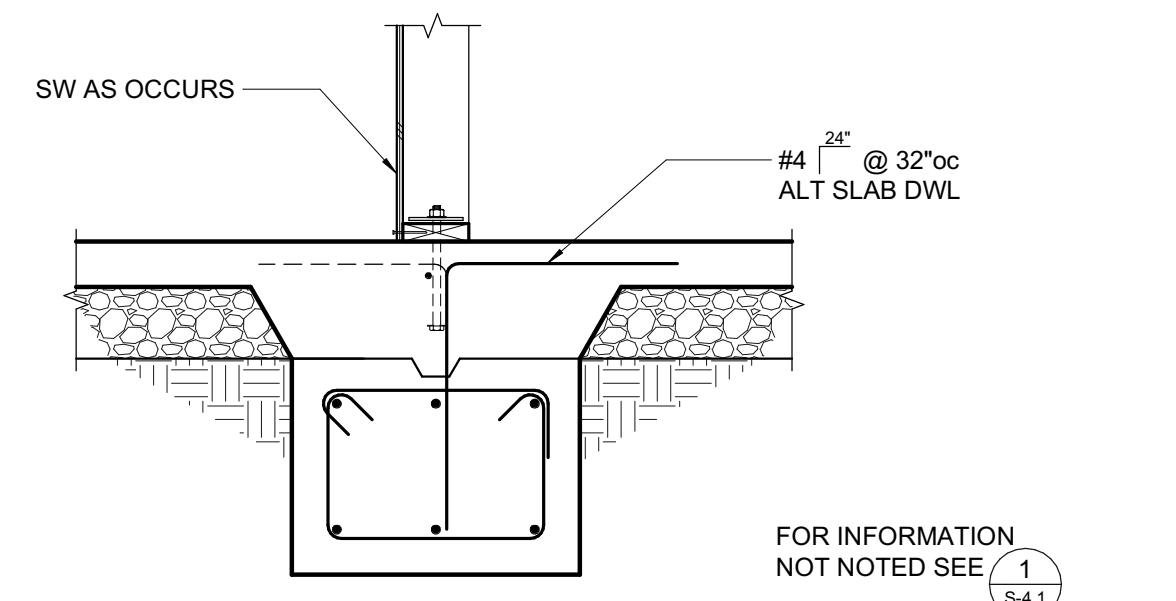
FENCE/GATE TYPE ¹	"H" MAX HT ABV GR	"OD"/"S" MIN SIZE ²	MAX SPCG BTWN PIERS	"D" MIN PIER DEPTH	"d" PIER DIA
3'-6" HIGH FENCE, ORNAMENTAL ⁴	3'-6"	2 1/2" x 12GA	8'-0"	3'-0"	12"
3'-6" HIGH SINGLE GATE, ORNAMENTAL ⁴	3'-6"	2 1/2" x 12GA	8'-0"	5'-0"	12"
6'-0" HIGH FENCE, 1 1/2" MESH	6'-0"	2 1/2"	10'-0"	5'-0"	12"
6'-0" HIGH GATE, 1 1/2" MESH	6'-0"	2 1/2"	10'-0"	5'-0"	12"
6'-0" HIGH FENCE, ORNAMENTAL ⁴	6'-0"	2 1/2" x 12GA	8'-0"	5'-0"	12"
8'-0" HIGH DOUBLE GATE, ORNAMENTAL ⁴	8'-0"	3" x 12GA	8'-0"	5'-0"	14"
6'-0" HIGH DOUBLE MAINTENANCE GATE, ORNAMENTAL ⁴	6'-0"	6" x 3/16"	8'-0"	6'-0"	14"

NOTES:
 1. IF GROUND WATER IS ENCOUNTERED AT PIERS CONSULT GEOTECHNICAL ENGINEER FOR PEIR CASTING REQUIREMENTS.
 2. WINDSCREENS, PRIVACY NETTINGS, SLATS, ETC. ARE NOT PERMITTED FOR THE LIFETIME OF THE FENCE/GATE, UNLESS NOTED OTHERWISE.
 3. PERFORATED METAL PANEL PERMITTED ON GATE PANEL AND FOR 4'-0" MAX ON FENCE PANEL.
 4. ORNAMENTAL FENCE & GATE PIER DESIGN IS BASED ON AEGIS II INDUSTRIAL ORNAMENTAL STEEL FENCE BY AMERISTAR. ORNAMENTAL FENCE & GATE POSTS ARE PER THE MANUFACTURER. IF AN ALTERNATIVE IS USED, CONTACT ZFA IMMEDIATELY.
 5. F_y = 30KSI MIN UNO OR AS SPECIFIED BY MANUFACTURER.

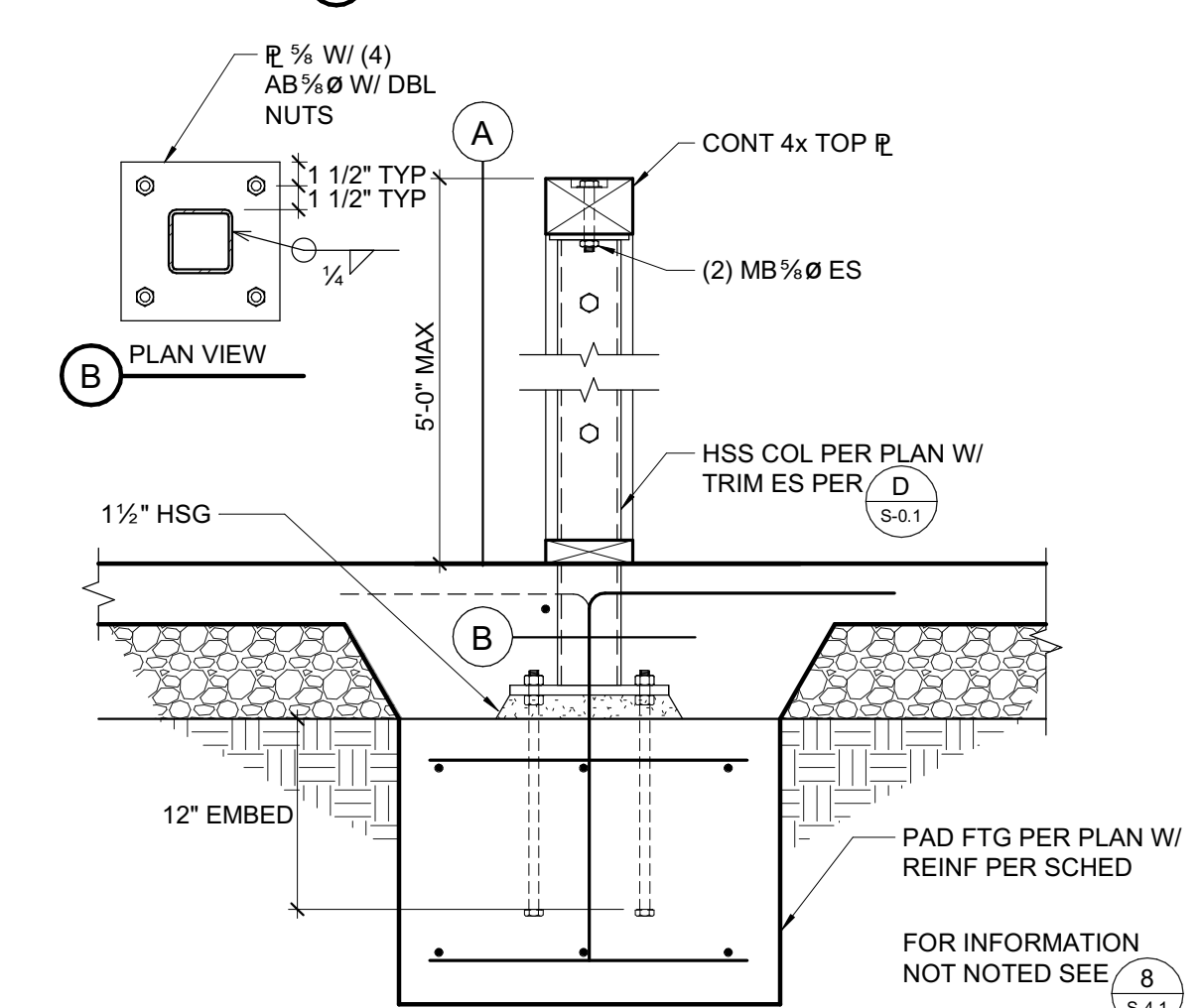
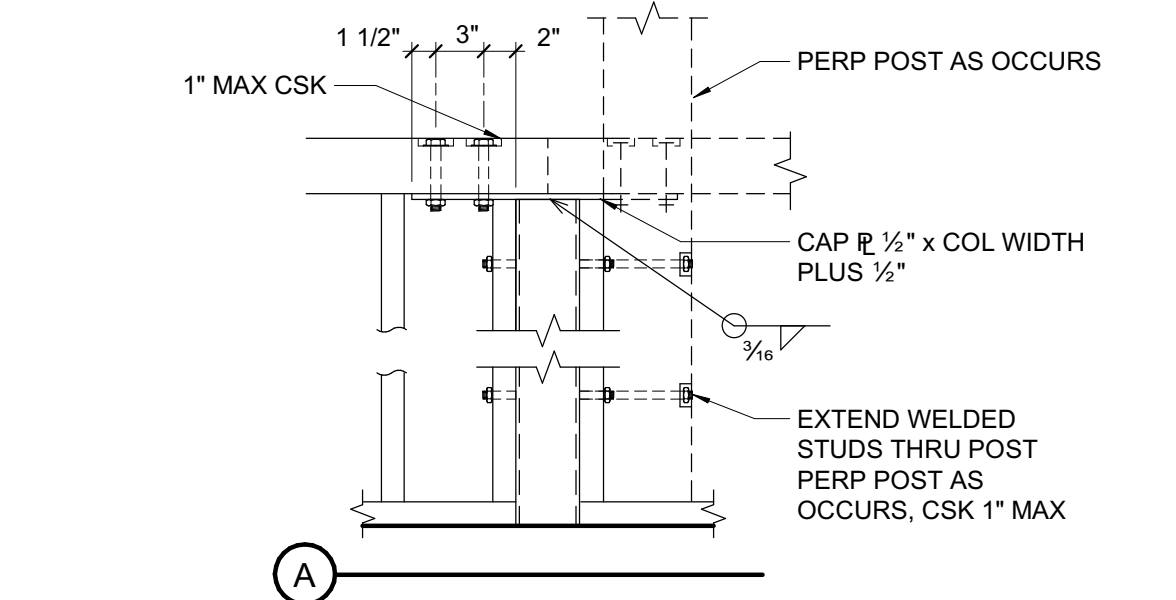
14 DRILLED PIERS FOR FENCING
3/4" = 1'-0"



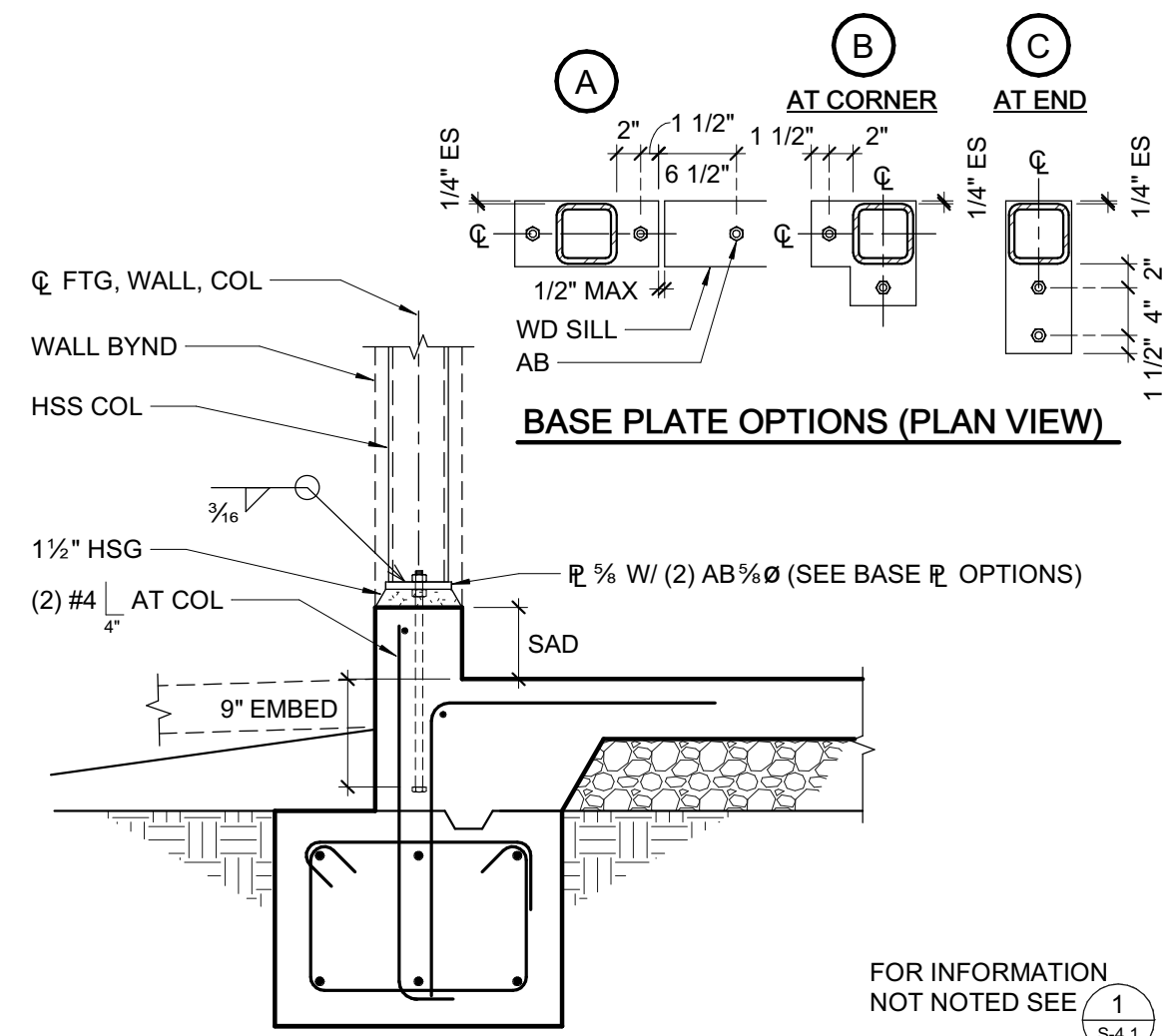
9 INTERIOR FOOTING (WITH CURB)
3/4" = 1'-0"



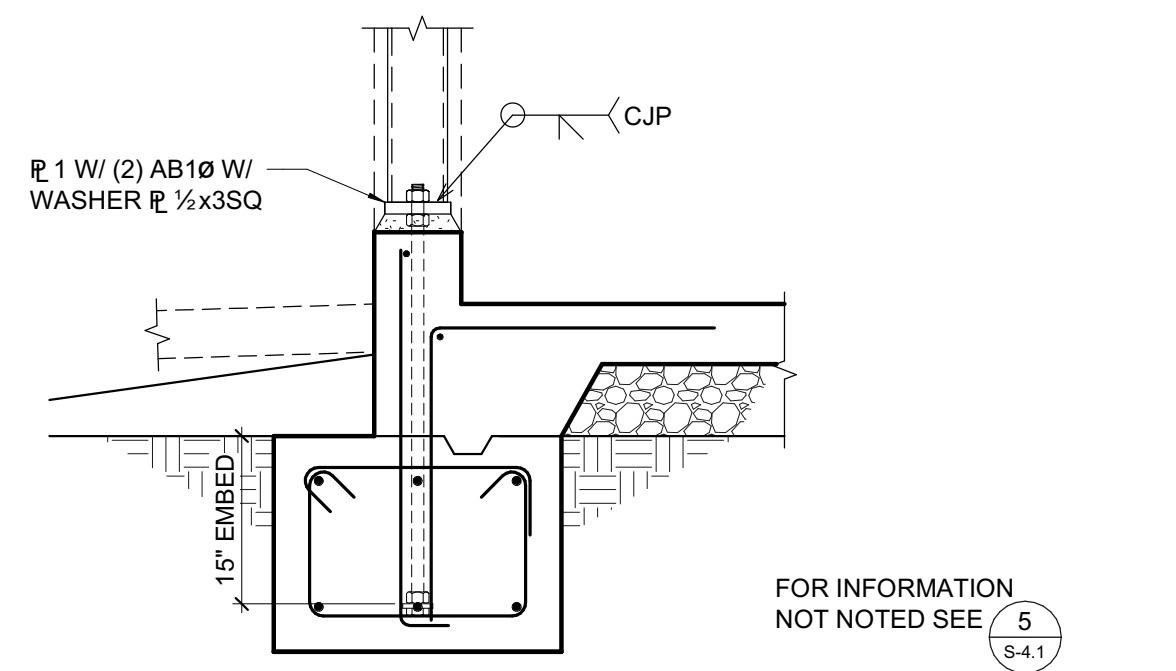
10 INTERIOR FOOTING (NO CURB)
3/4" = 1'-0"



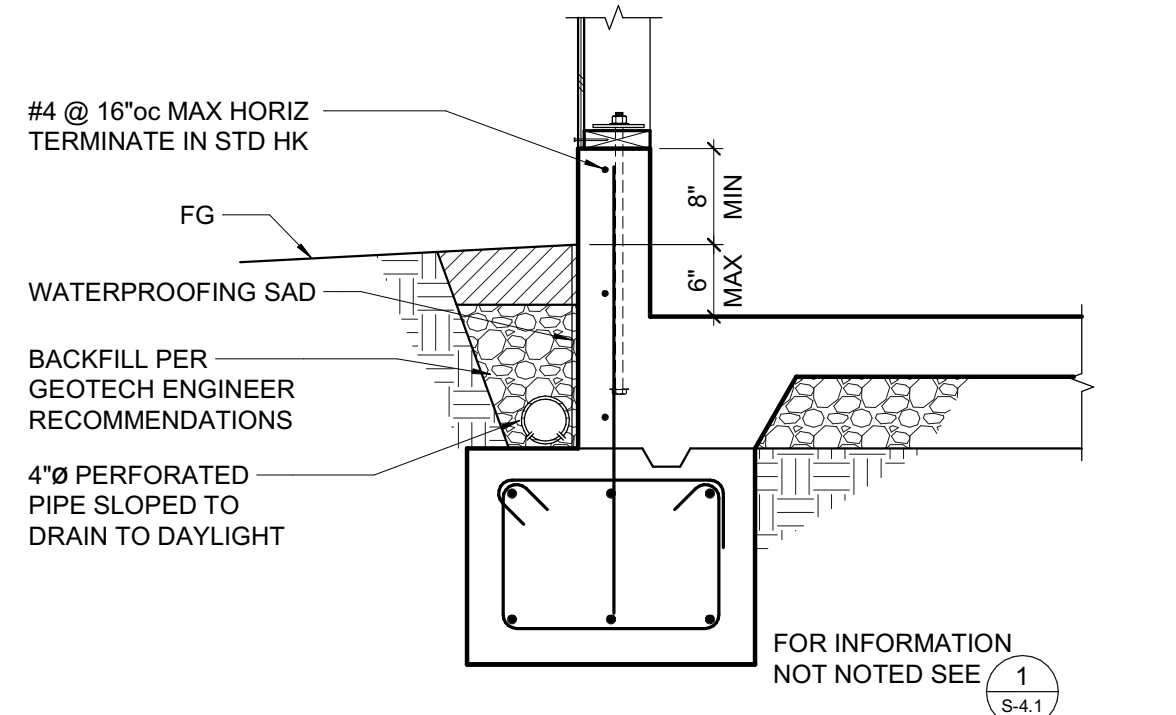
11 TYPICAL SECTION AT PARTIAL HEIGHT WALL
1" = 1'-0"



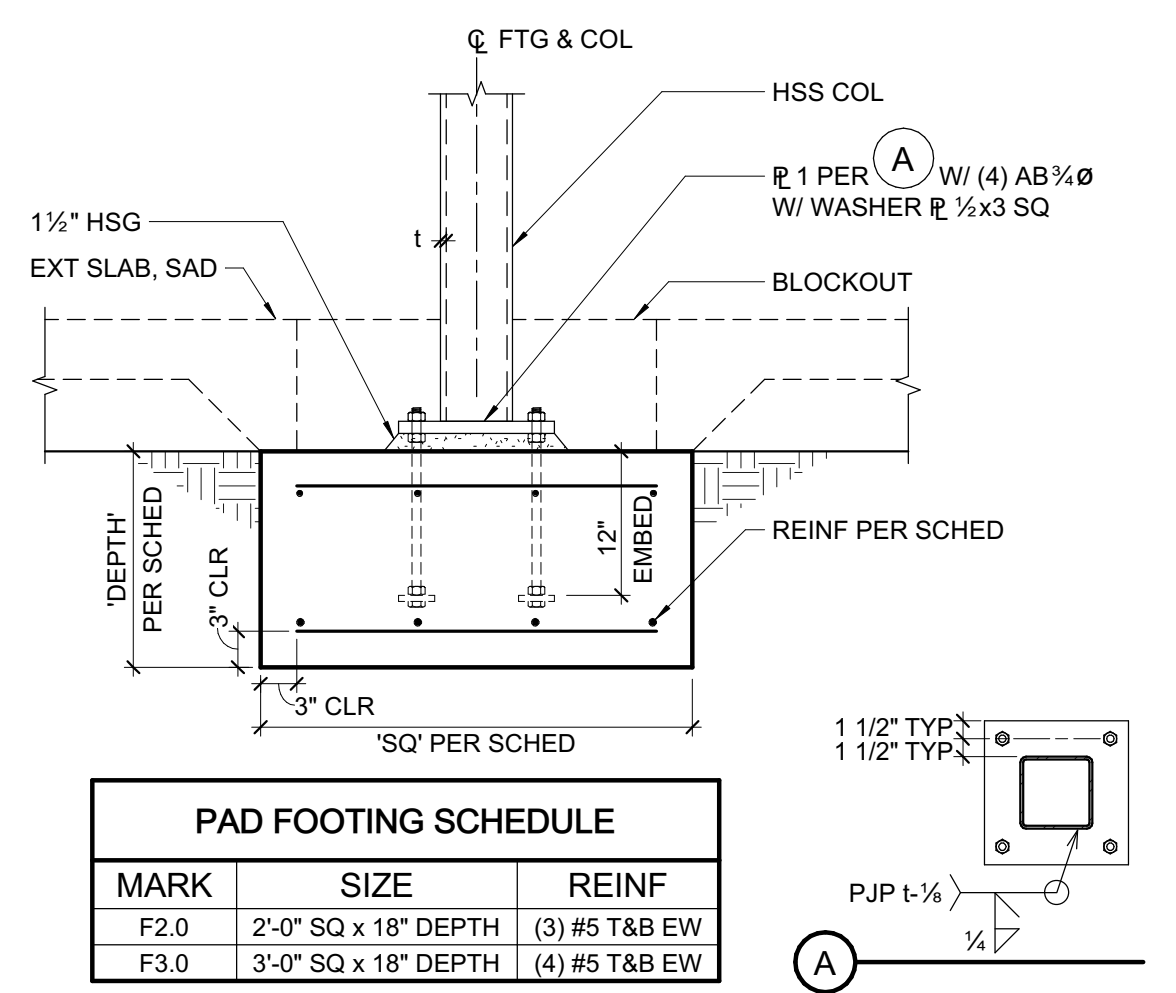
5 HSS COLUMN FOOTING
3/4" = 1'-0"



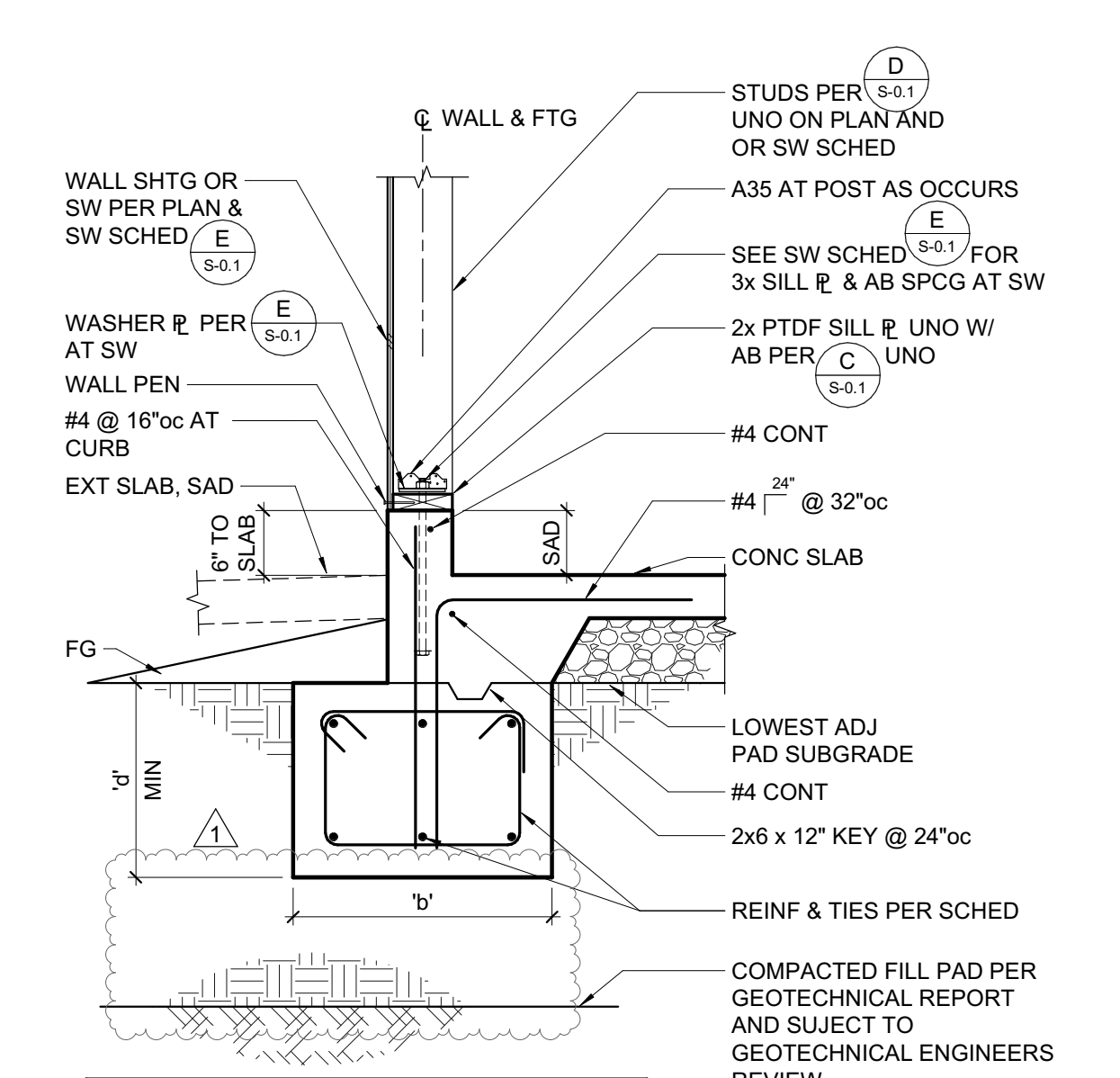
6 HSS COLUMN AT CURB
3/4" = 1'-0"



7 EXTERIOR FOOTING AT FINISH GRADE ABOVE FINISH FLOOR
3/4" = 1'-0"

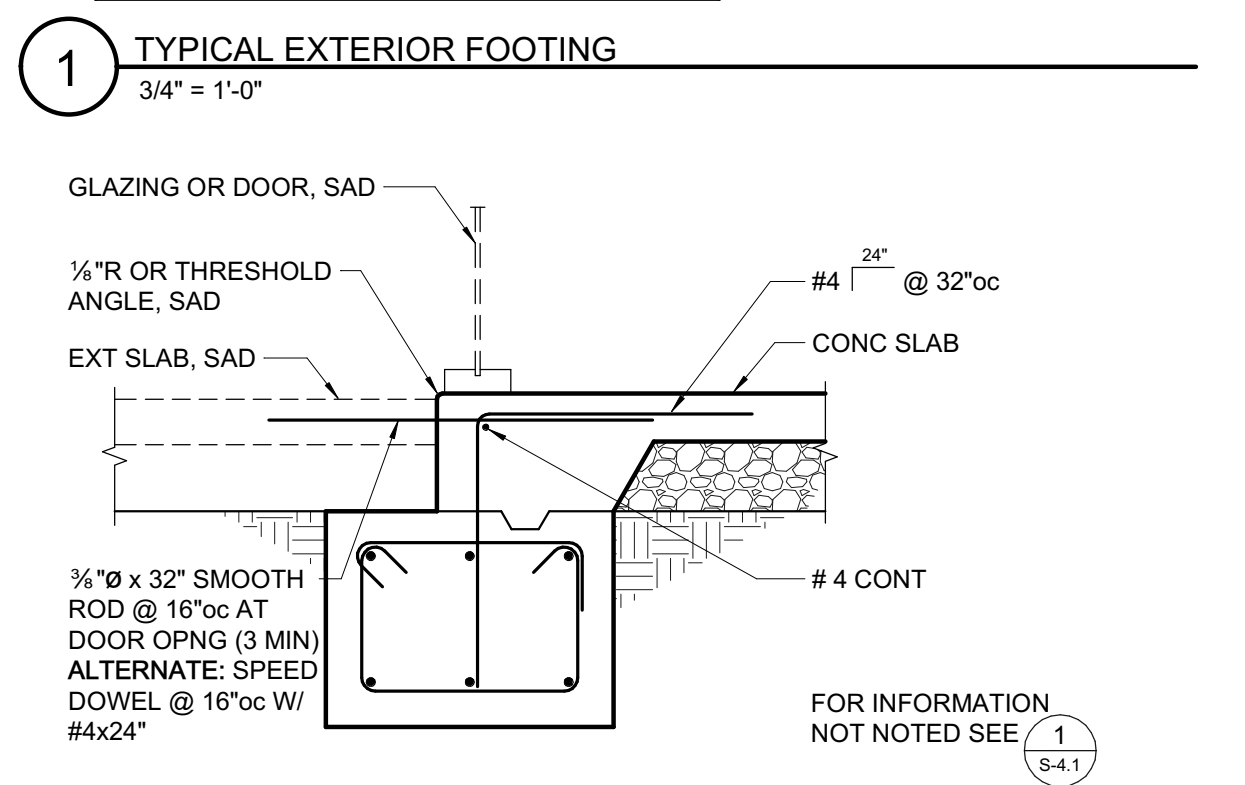


8 HSS COLUMN AT EXTERIOR PAD FOOTING
3/4" = 1'-0"

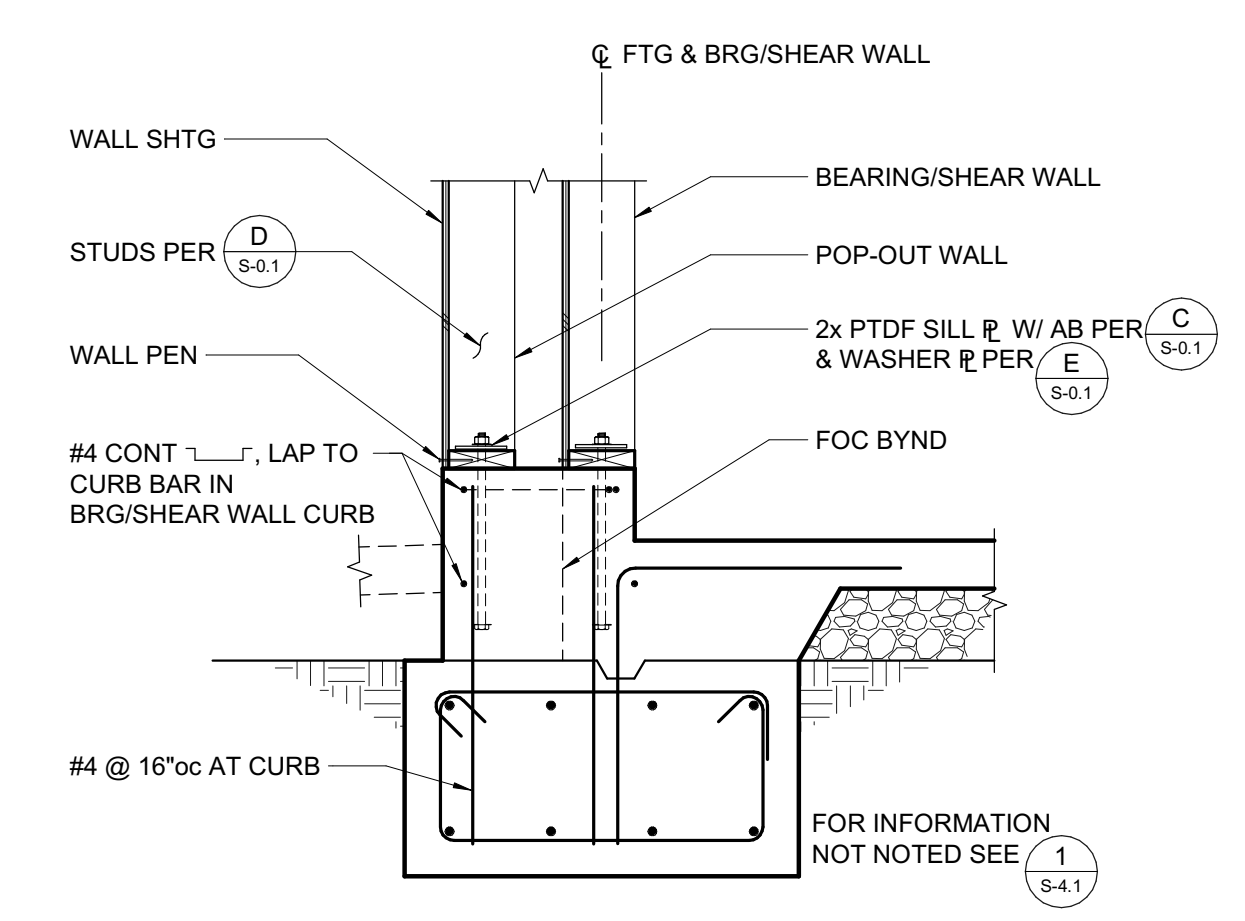


1 TYPICAL EXTERIOR FOOTING
3/4" = 1'-0"

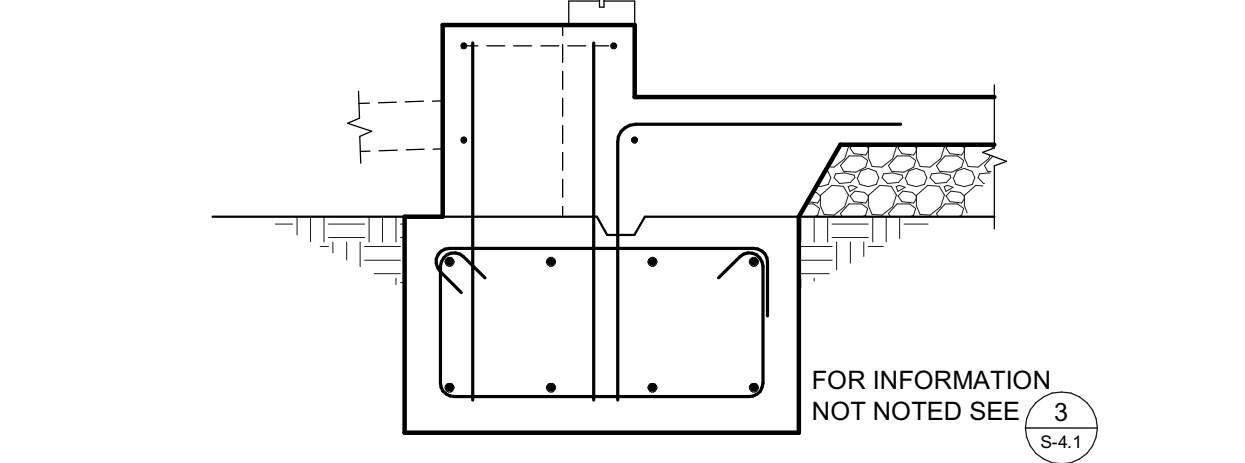
MARK	"b"	"d"	REINF	TIES
CF18	18"	18"	(2) #6 T&B	#3 @ 32"oc
CF24	24"	18"	(3) #6 T&B	#3 @ 32"oc
CF36	36"	18"	(4) #6 T&B	#3 @ 32"oc
CF48	48"	18"	(5) #6 T&B	#3 @ 32"oc



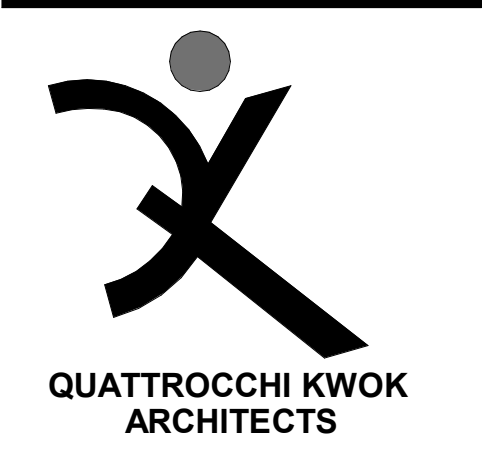
2 EXTERIOR FOOTING AT GLAZING OR DOOR
3/4" = 1'-0"



3 EXTERIOR FOOTING AT POP-OUT WALL
3/4" = 1'-0"



4 EXTERIOR FOOTING AT POP-OUT WALL GLAZING
3/4" = 1'-0"



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

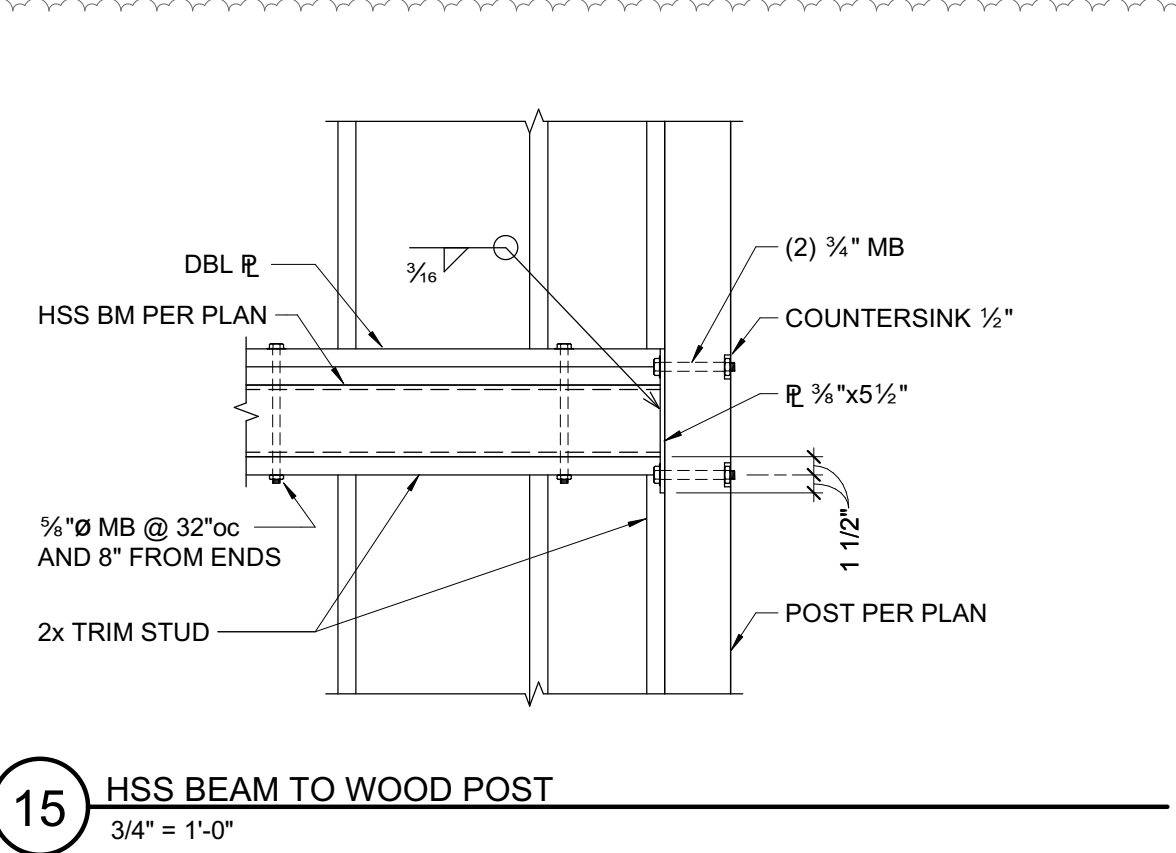
CD
JUNE 3, 2021

SHEET TITLE

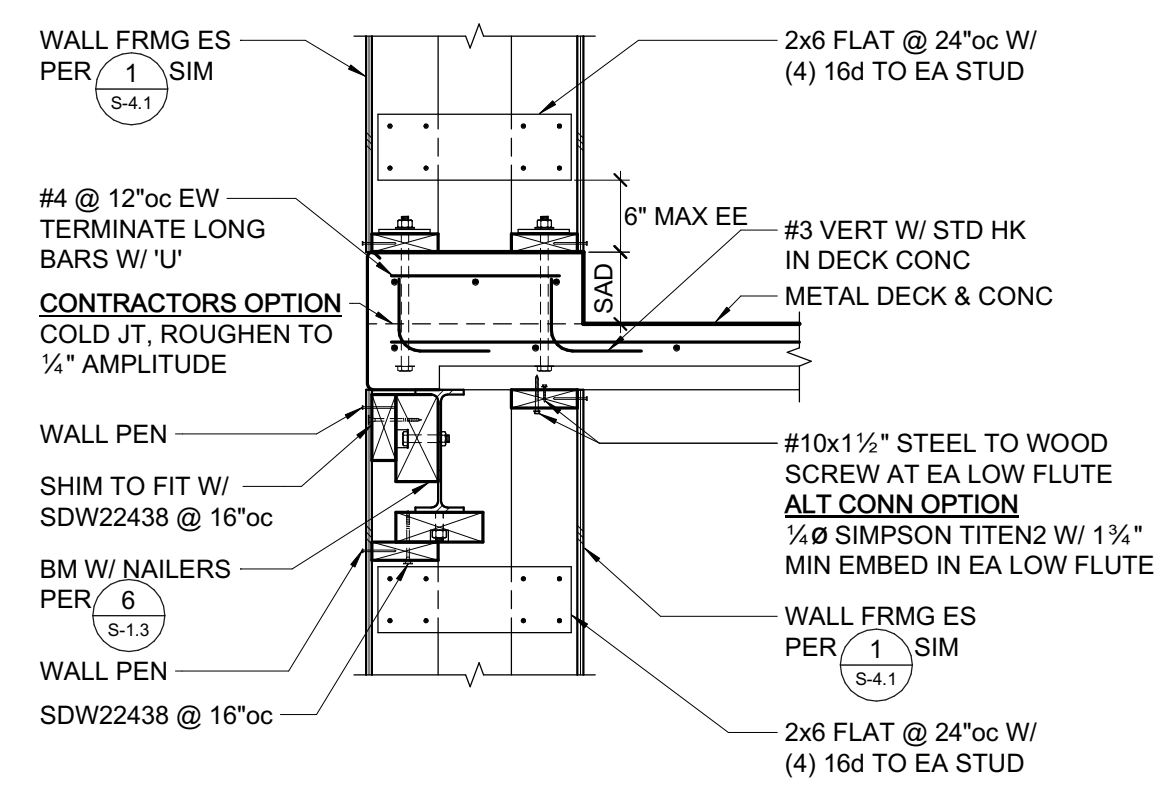
FOUNDATION DETAILS

SHEET NUMBER

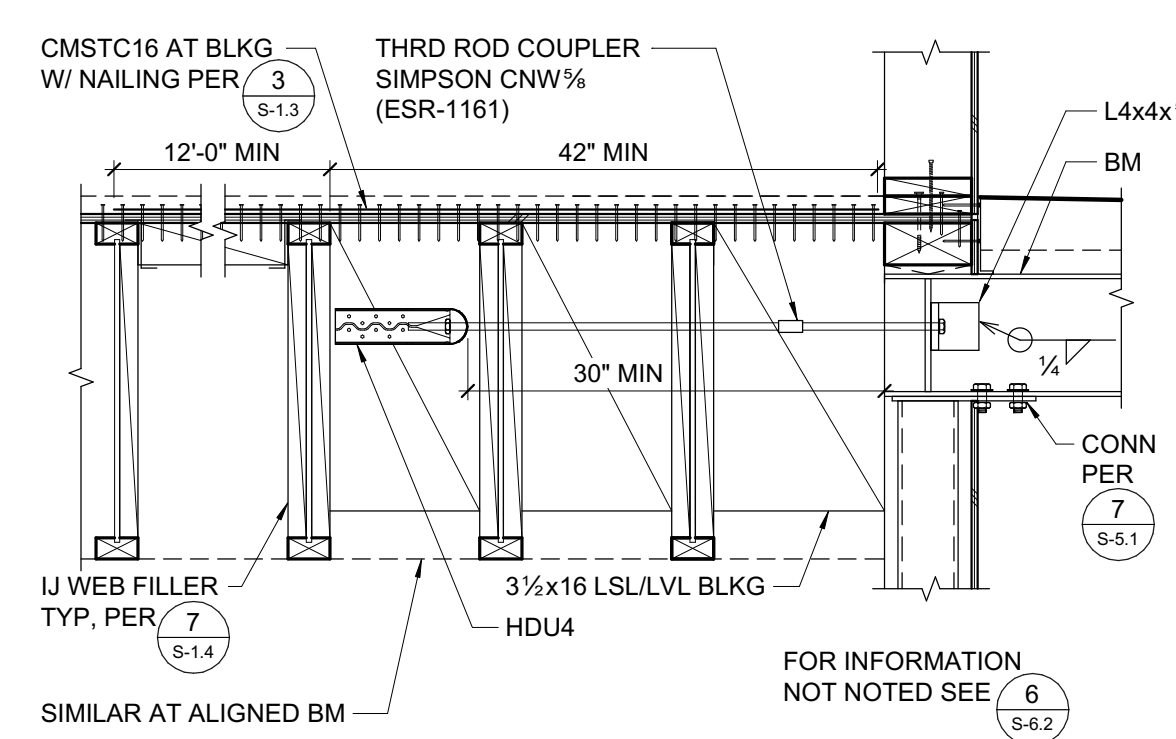
S-4.1



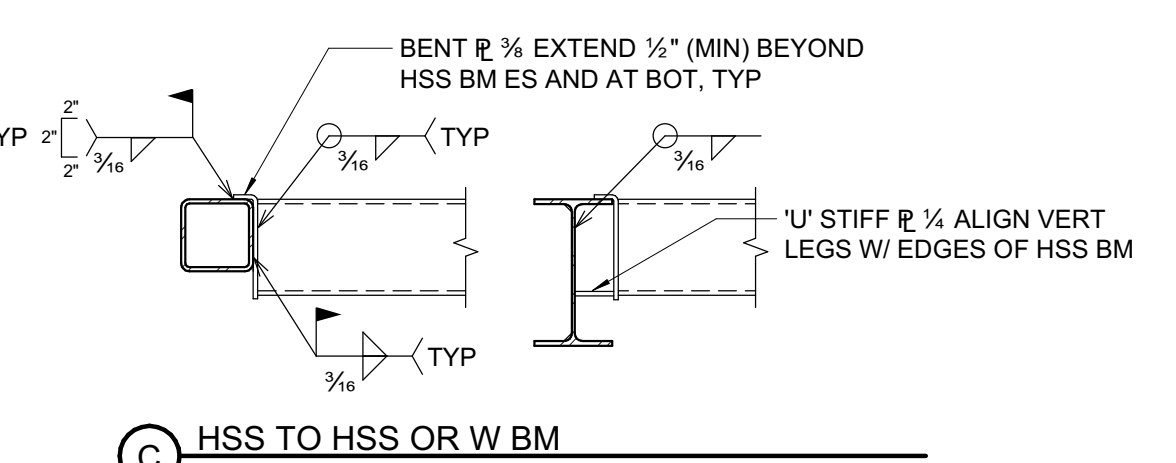
15 HSS BEAM TO WOOD POST
3/4" = 1'-0"



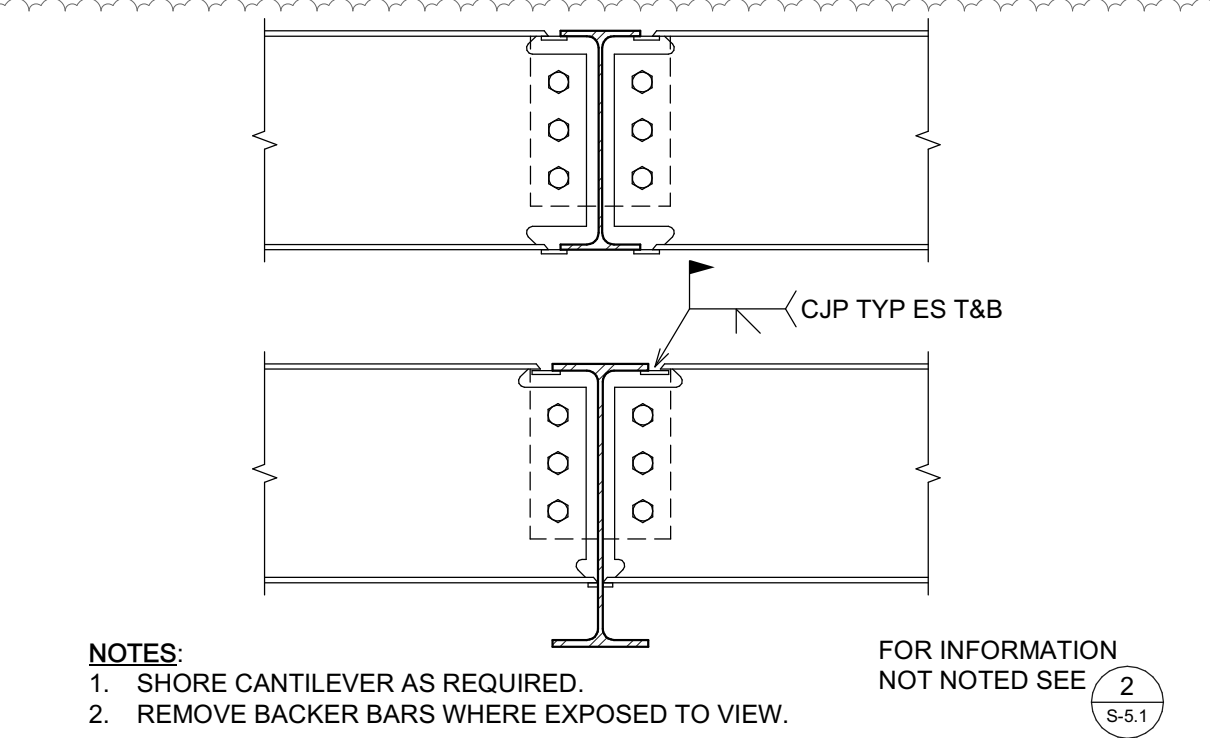
16 CURB AND WALLS AT CONCRETE OVER METAL DECK
3/4" = 1'-0"



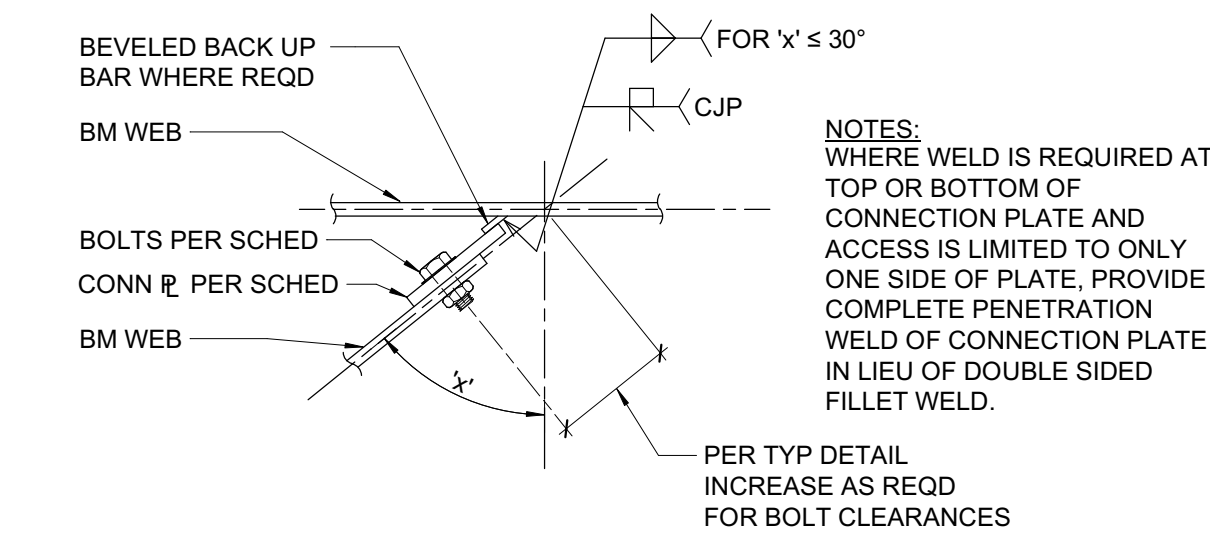
17 WALKWAY CONNECTION AT PARALLEL FLOOR FRAMING
3/4" = 1'-0"



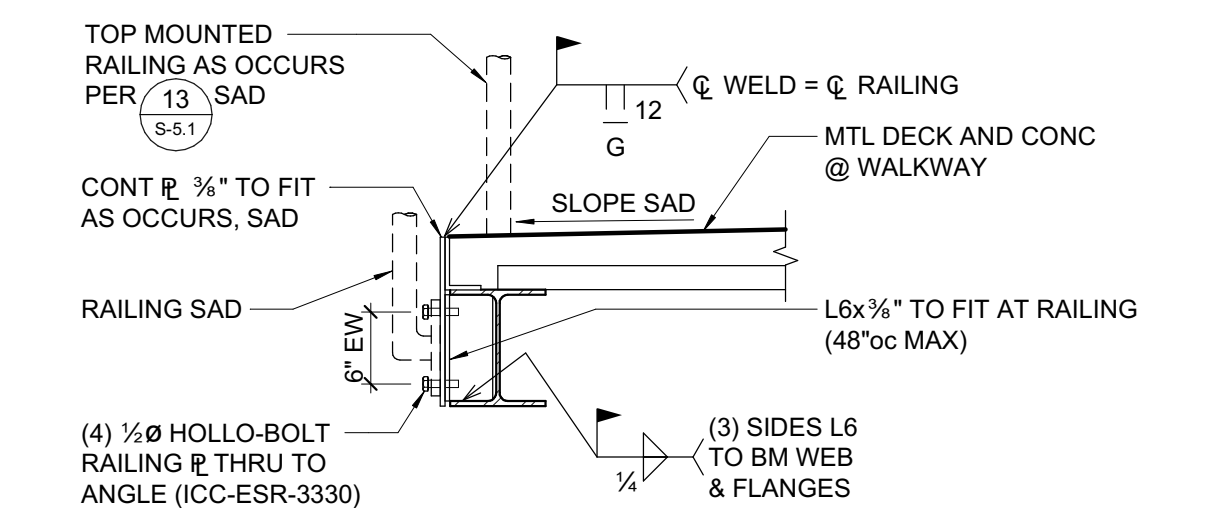
18 BEAM TO HSS OR C CHANNEL
3/4" = 1'-0"



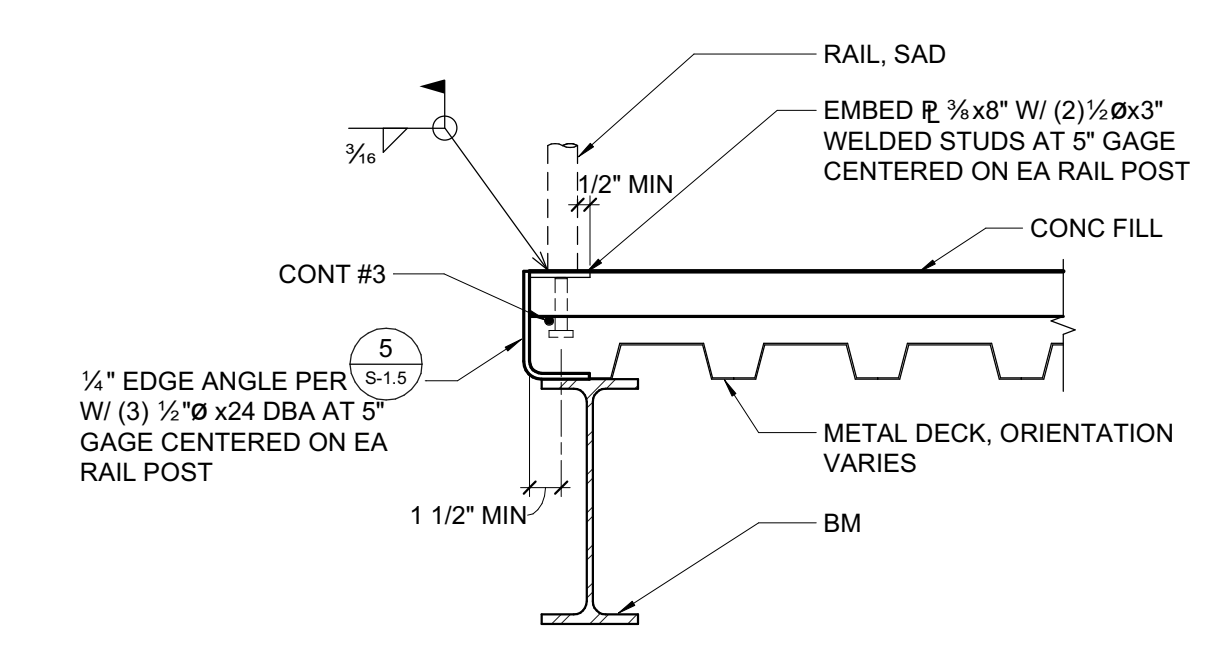
10 BEAM TO BEAM MOMENT CONNECTION
1" = 1'-0"



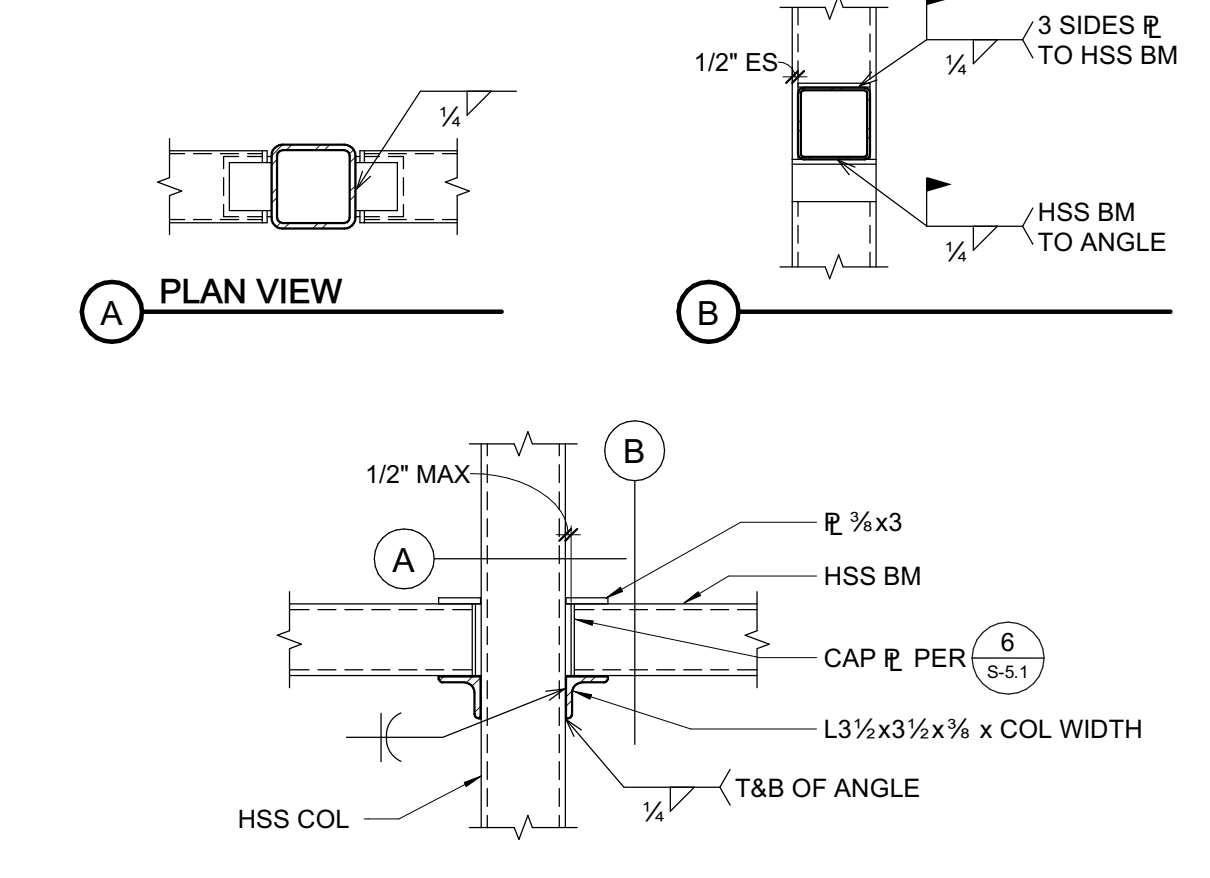
11 SKEWED BEAM CONNECTION - AT WEB
1 1/2" = 1'-0"



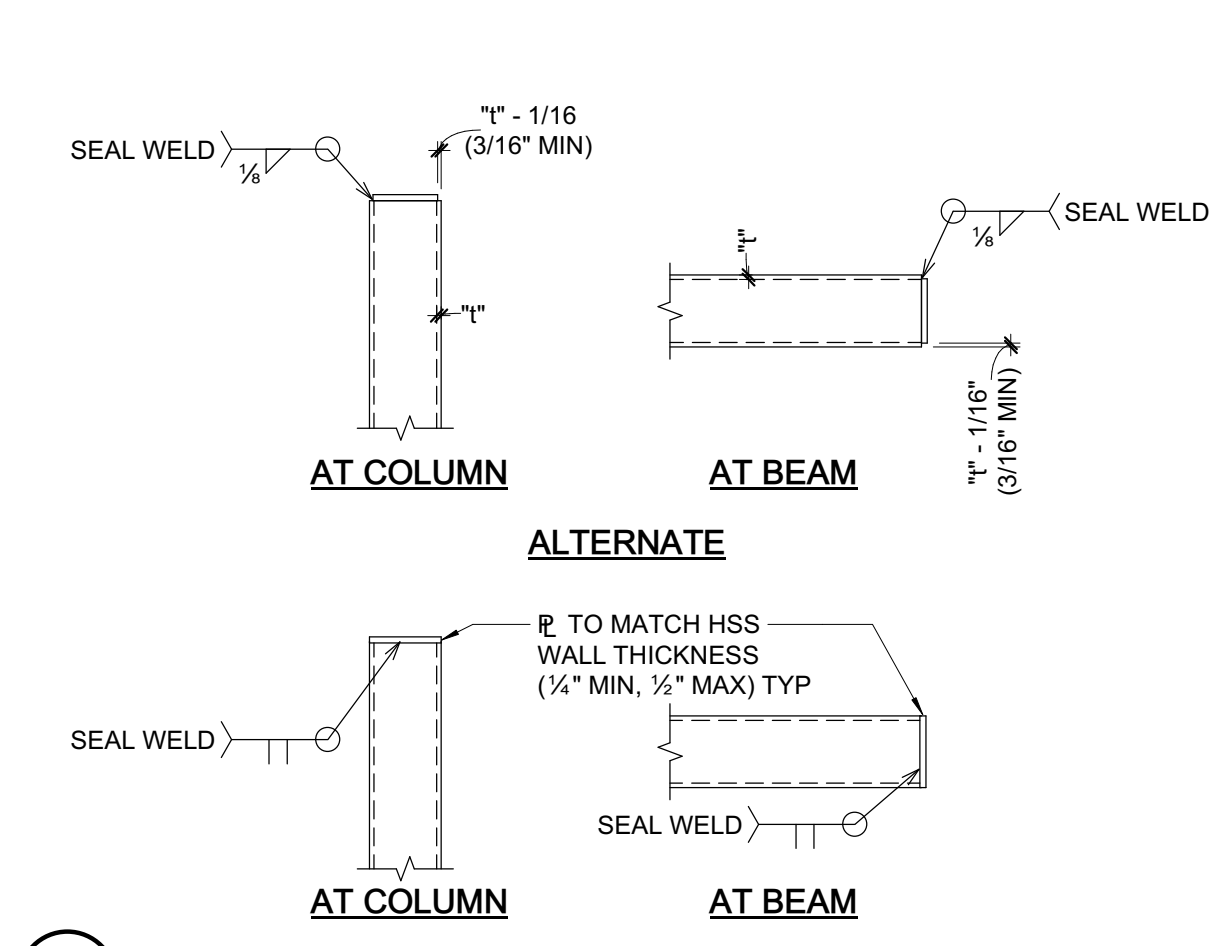
12 EDGE OF EXTERIOR WALKWAY
3/4" = 1'-0"



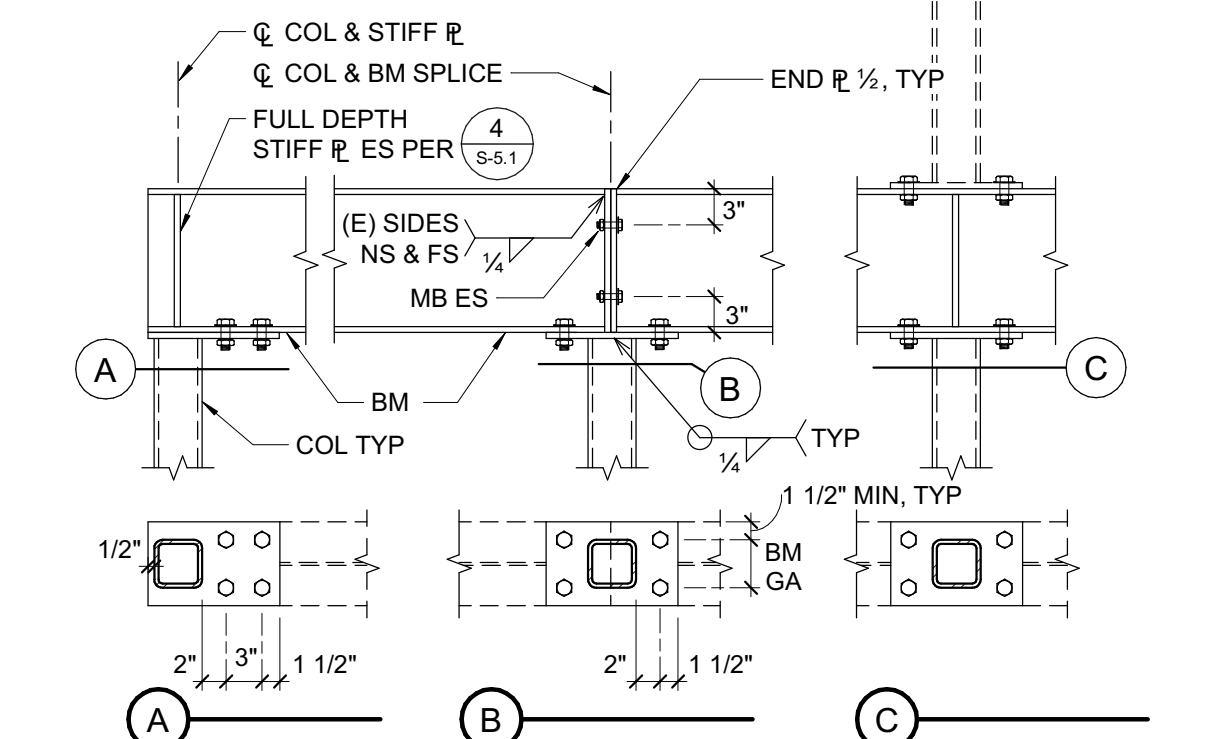
13 TOP MOUNTED RAIL
1 1/2" = 1'-0"



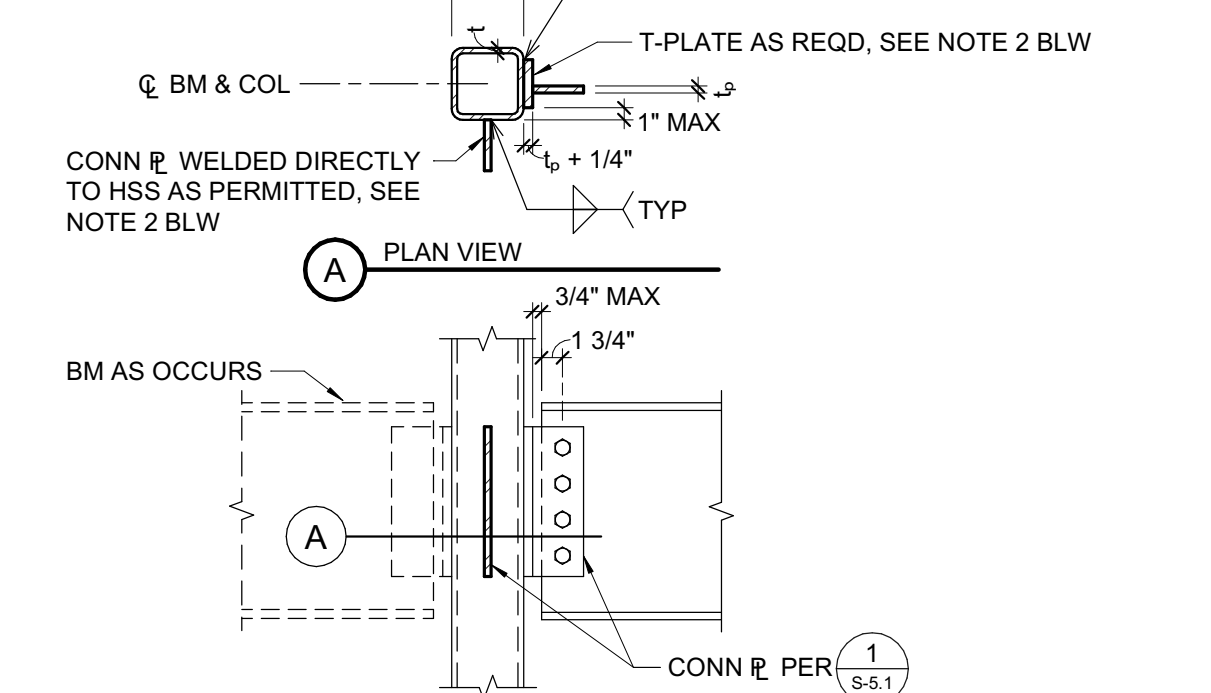
14 HSS BEAM TO HSS COLUMN
3/4" = 1'-0"



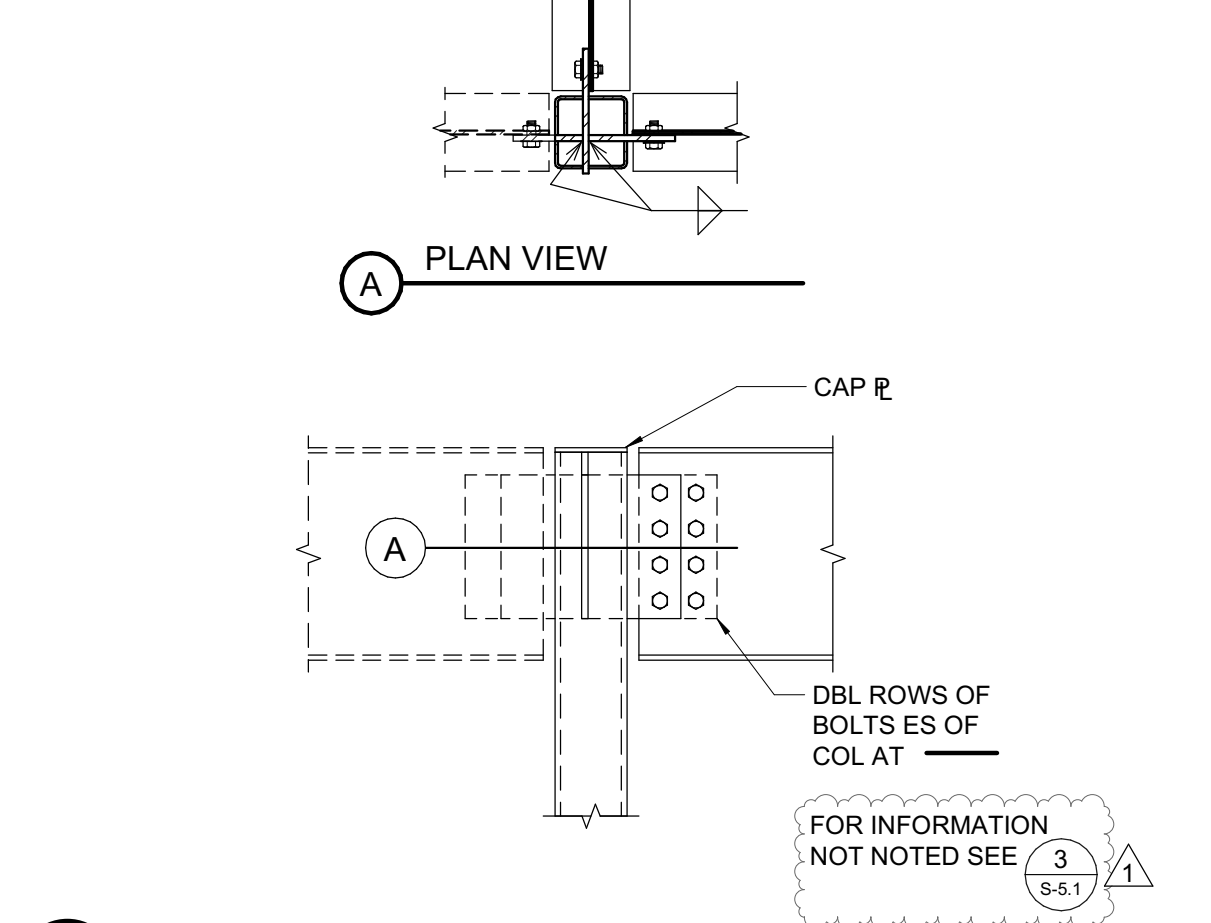
6 TYPICAL CAP PLATE
3/4" = 1'-0"



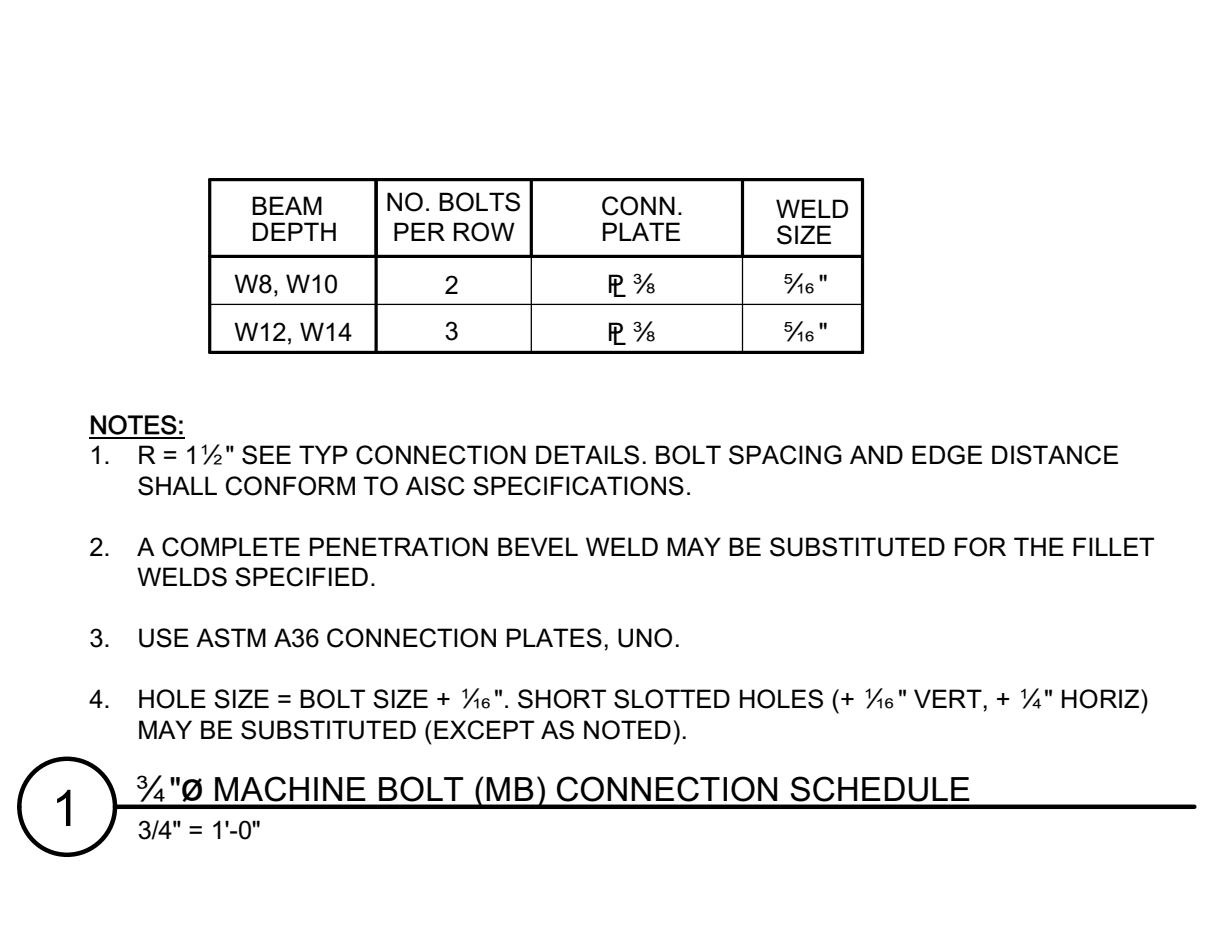
7 COLUMN ABOVE AND BELOW
3/4" = 1'-0"



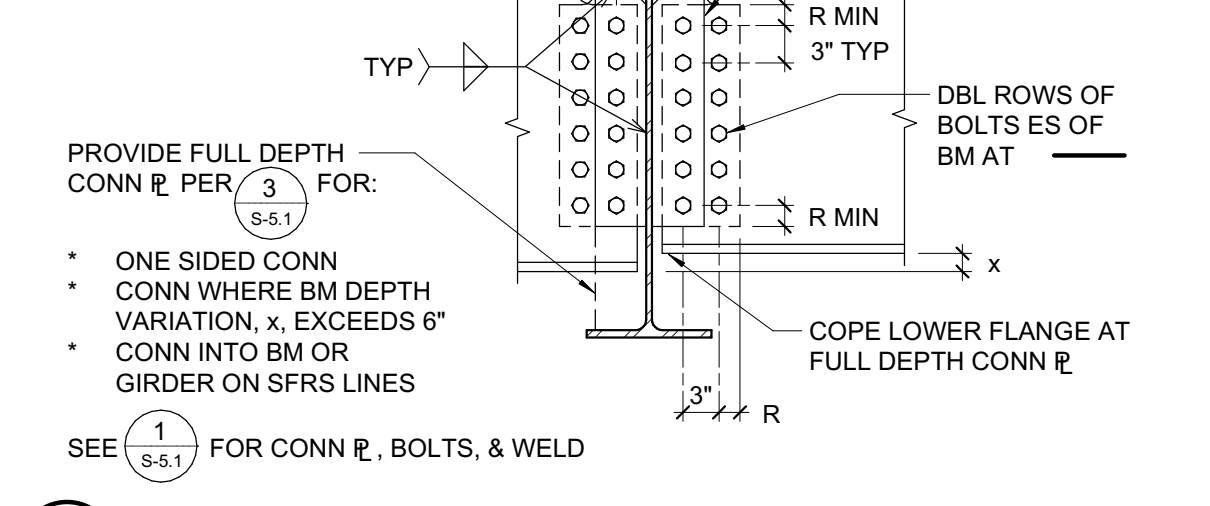
8 BEAM TO HSS COLUMN ('T' PLATE)
3/4" = 1'-0"



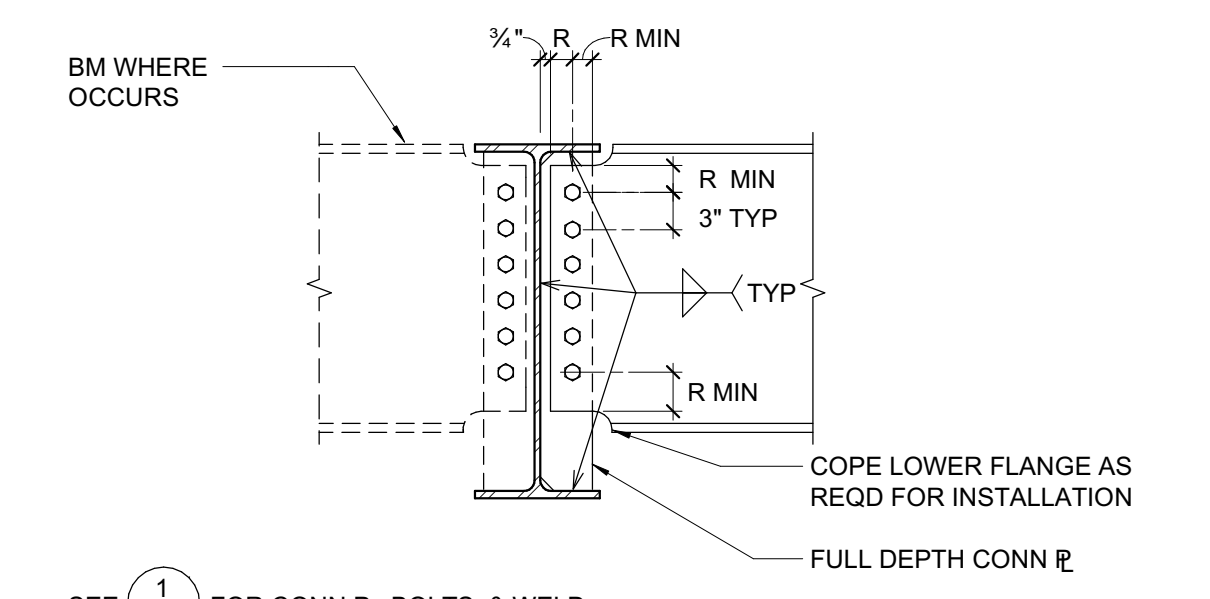
9 BEAM TO HSS COLUMN (2-WAY)
3/4" = 1'-0"



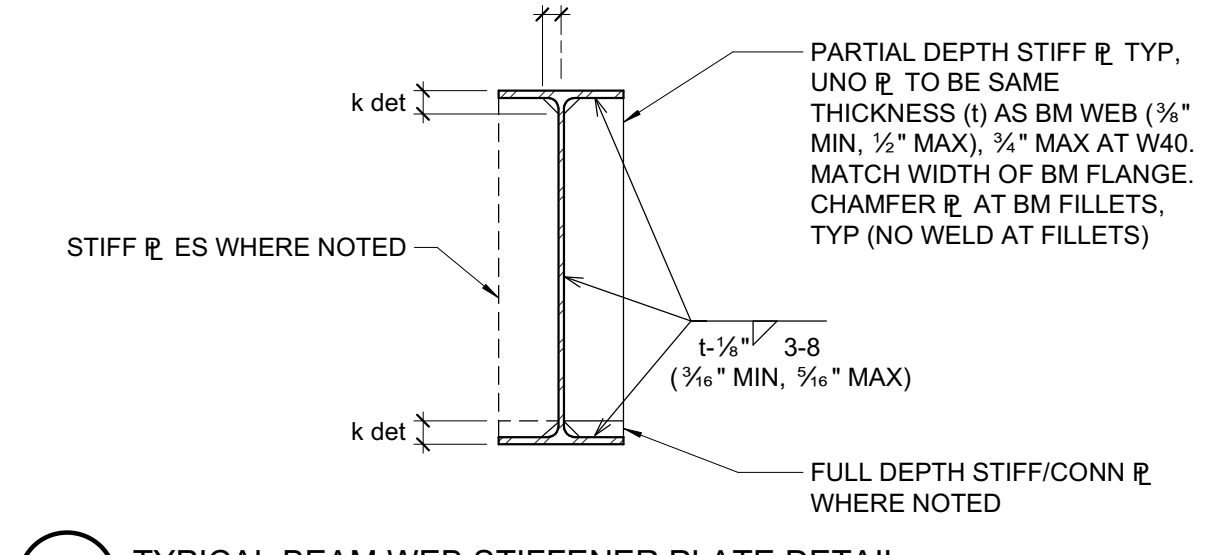
1 TYPICAL FULL DEPTH BEAM TO BEAM CONNECTION
3/4" = 1'-0"



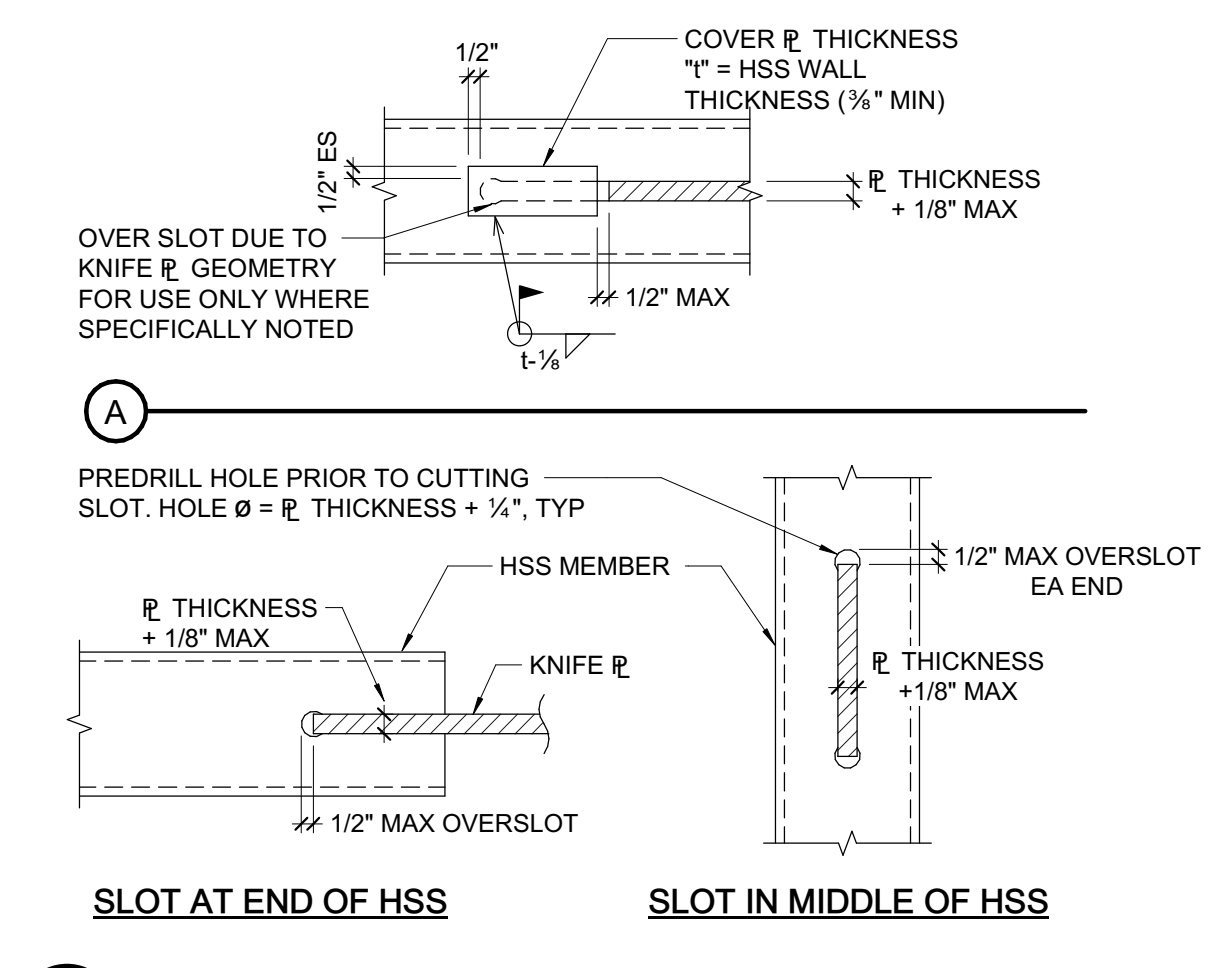
2 TYPICAL BEAM TO BEAM CONNECTION
3/4" = 1'-0"



3 TYPICAL FULL DEPTH BEAM TO BEAM CONNECTION
3/4" = 1'-0"



4 TYPICAL BEAM WEB STIFFENER PLATE DETAIL
3/4" = 1'-0"



5 TYPICAL SLOTTED HSS FOR GUSSET CONNECTION
1 1/2" = 1'-0"

BEAM DEPTH	NO. BOLTS PER ROW	CONN. PLATE	WELD SIZE
W8, W10	2	1/2"	3/8"
W12, W14	3	1/2"	3/8"

- NOTES:
- R = 1 1/2" SEE TYP CONNECTION DETAILS. BOLT SPACING AND EDGE DISTANCE SHALL CONFORM TO AISC SPECIFICATIONS.
 - A COMPLETE PENETRATION BEVEL WELD MAY BE SUBSTITUTED FOR THE FILLET WELDS SPECIFIED.
 - USE ASTM A36 CONNECTION PLATES, UNO.
 - HOLE SIZE = BOLT SIZE + 1/16". SHORT SLOTTED HOLES (+ 1/16" VERT., + 1/4" HORIZ.) MAY BE SUBSTITUTED (EXCEPT AS NOTED).

1 3/4" MACHINE BOLT (MB) CONNECTION SCHEDULE
3/4" = 1'-0"

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NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
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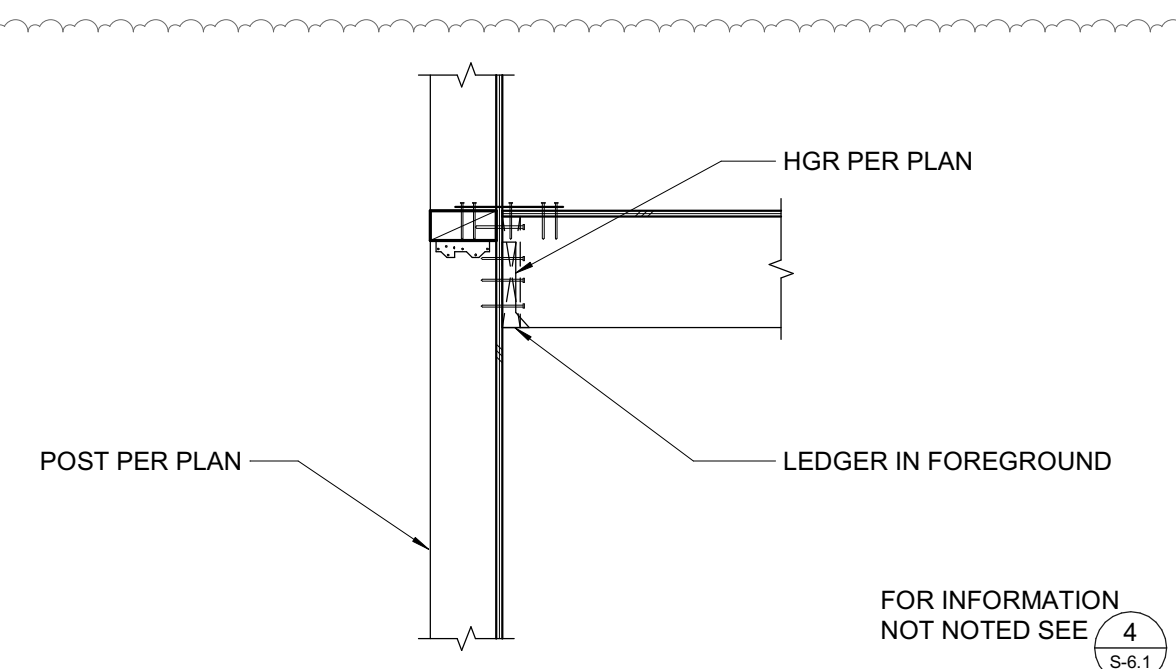
ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As Indicated
PTN: 61721-77 FILE NO: 7-H4

CD
JUNE 3, 2021
SHEET TITLE

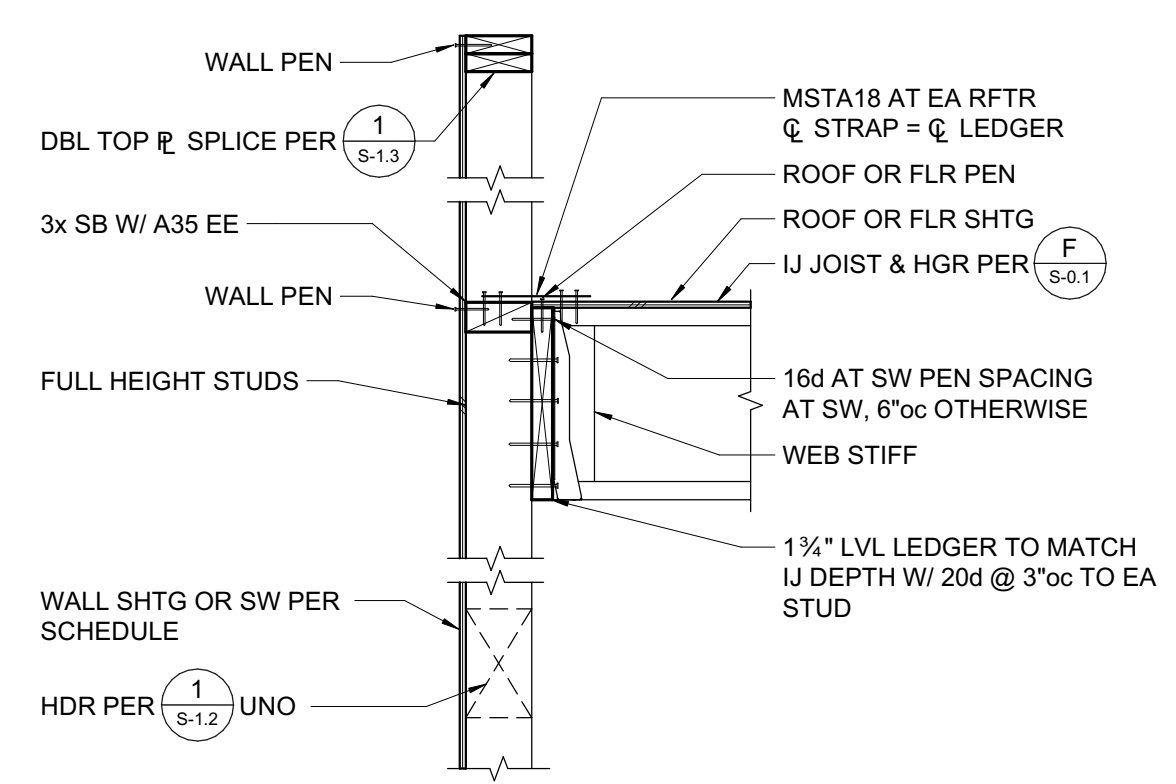
STEEL FRAMING DETAILS

SHEET NUMBER

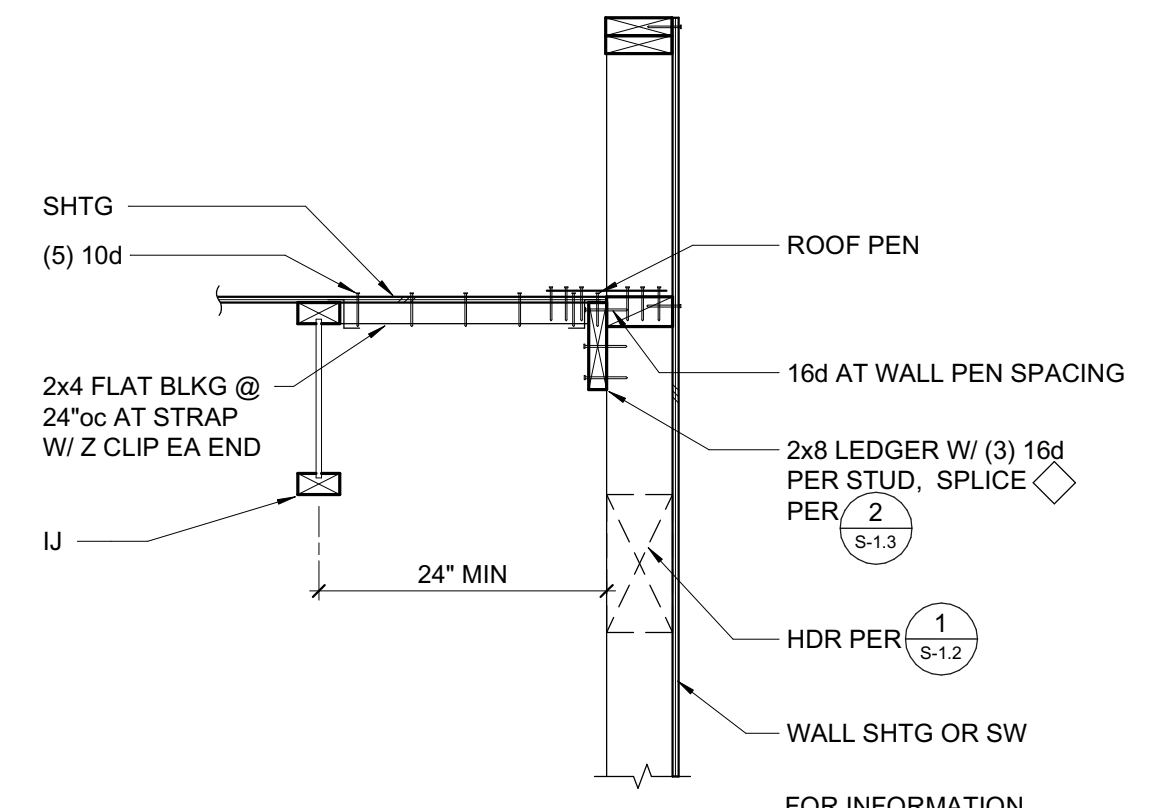
S-5.1



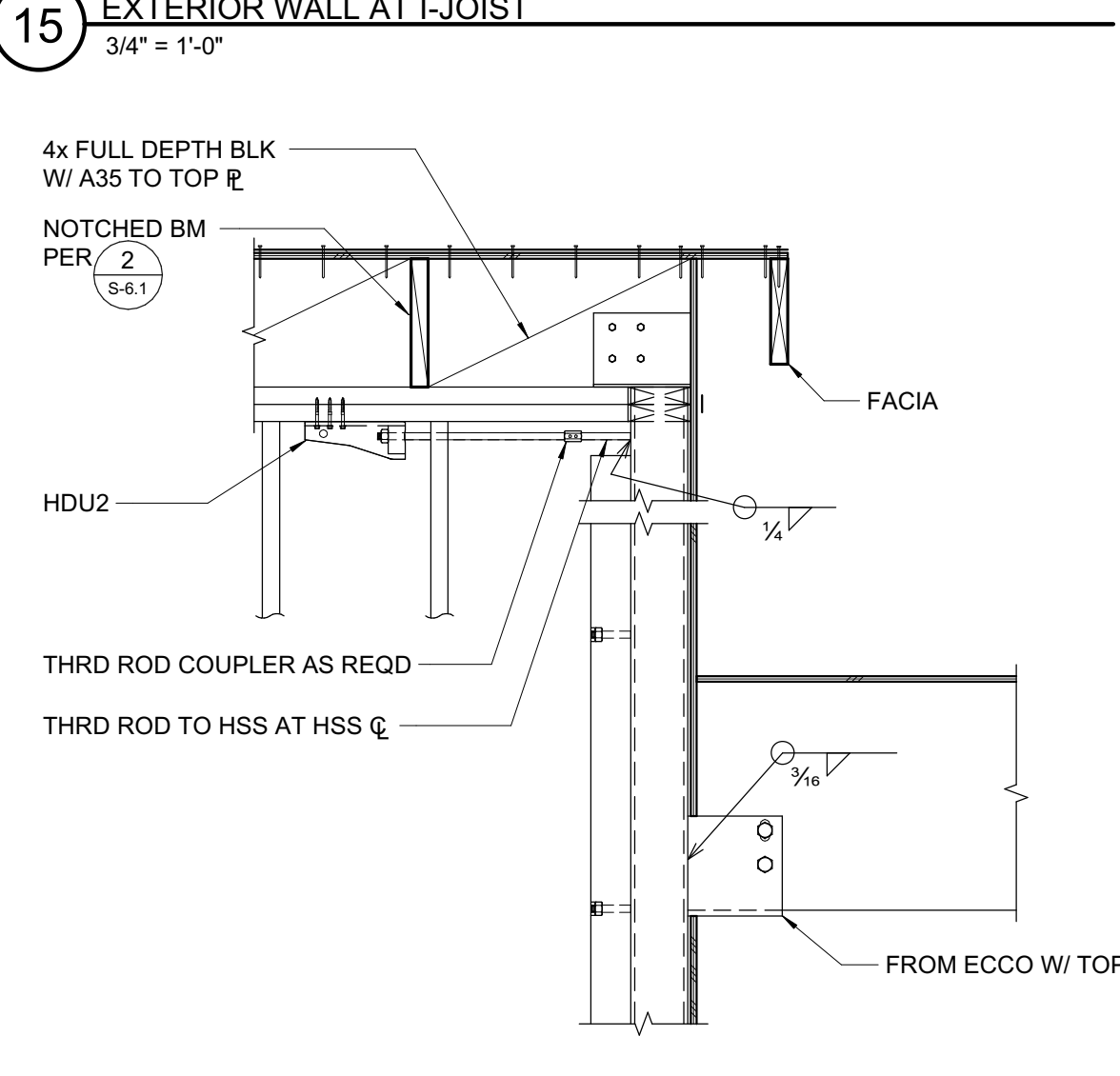
13 BEAM THROUGH LEDGER AT EXTERIOR SHEAR WALL
3/4" = 1'-0"



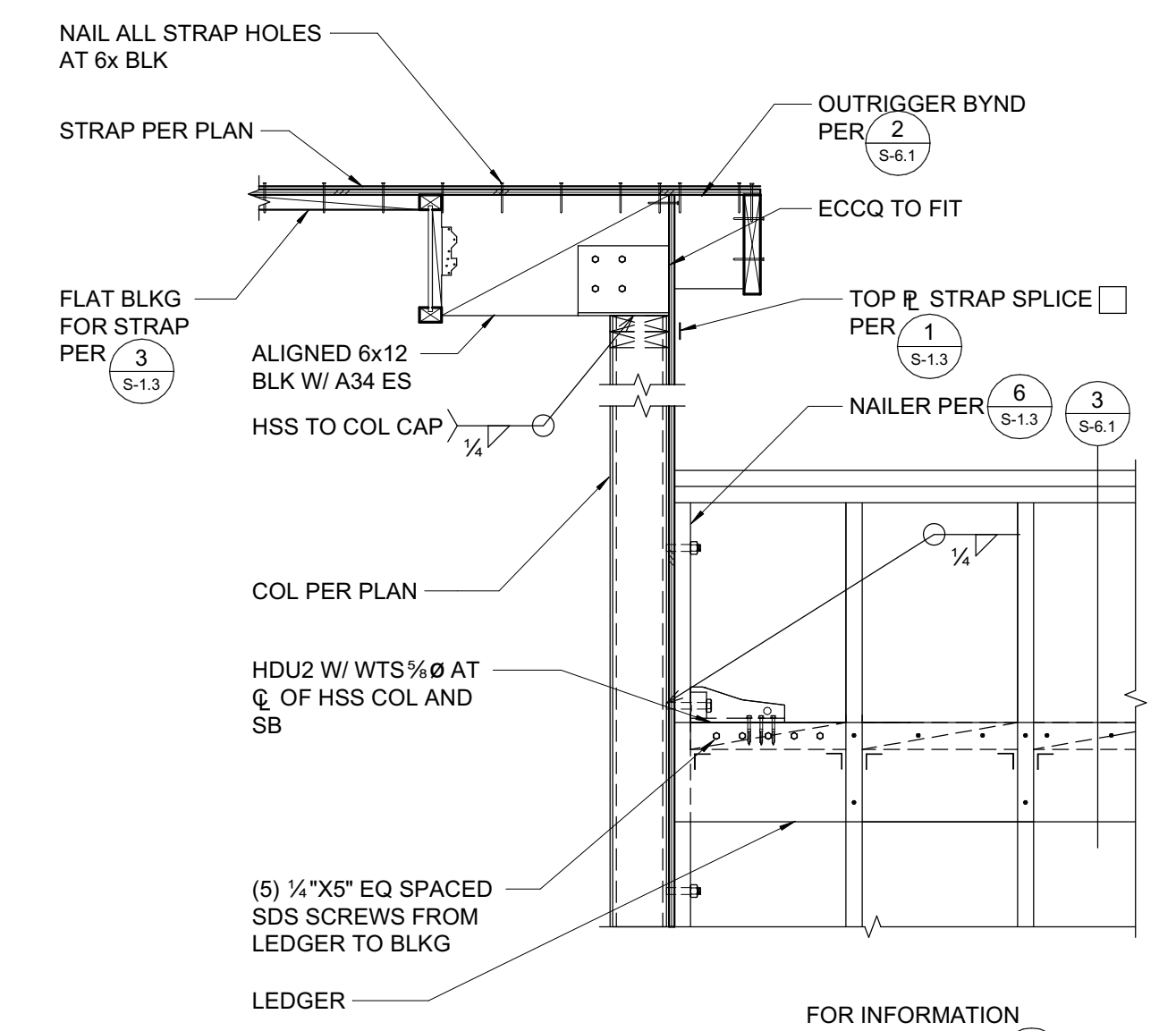
14 EXTERIOR WALL AT I-JOIST
3/4" = 1'-0"



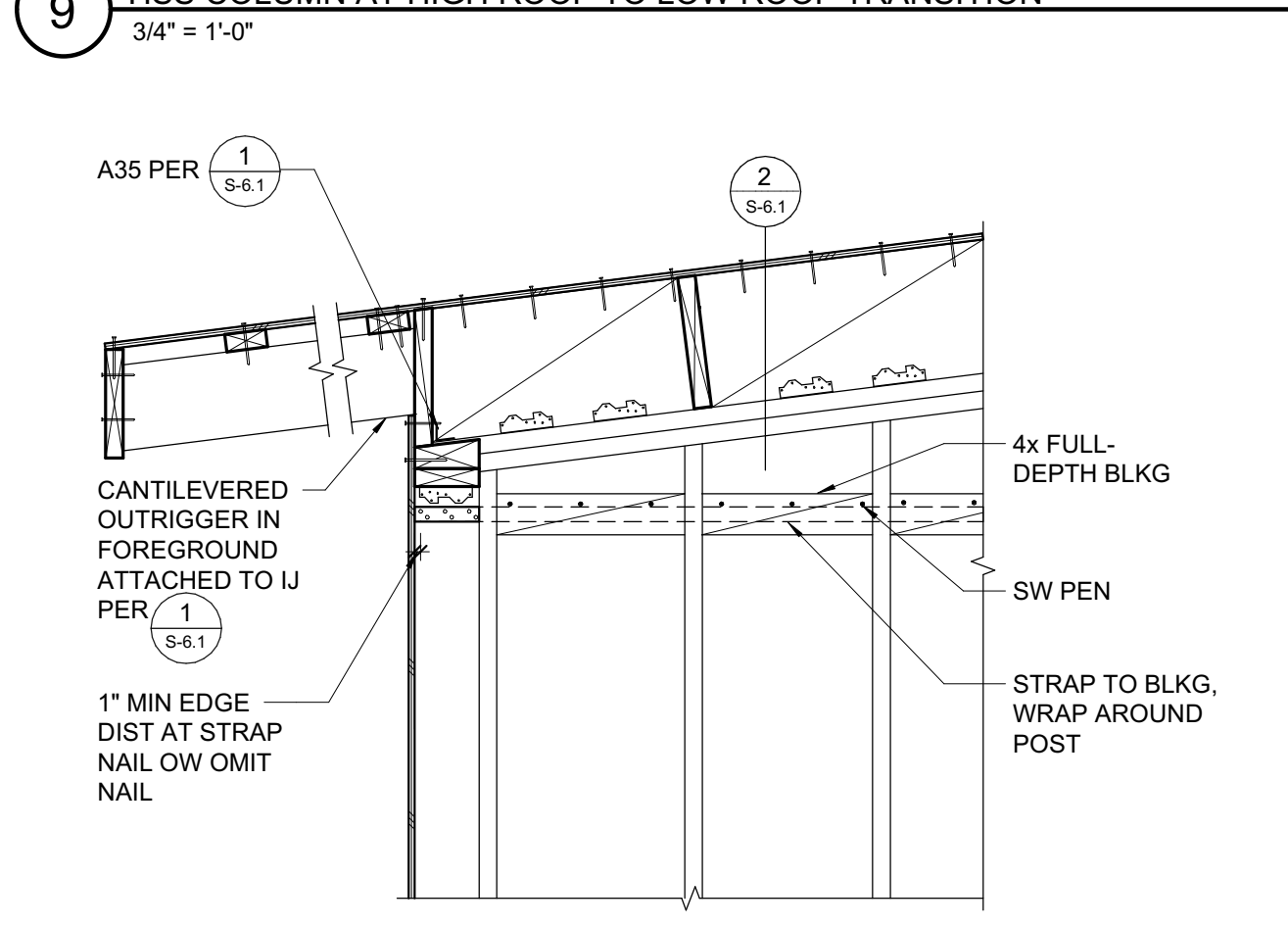
15 EXTERIOR WALL AT I-JOIST
3/4" = 1'-0"



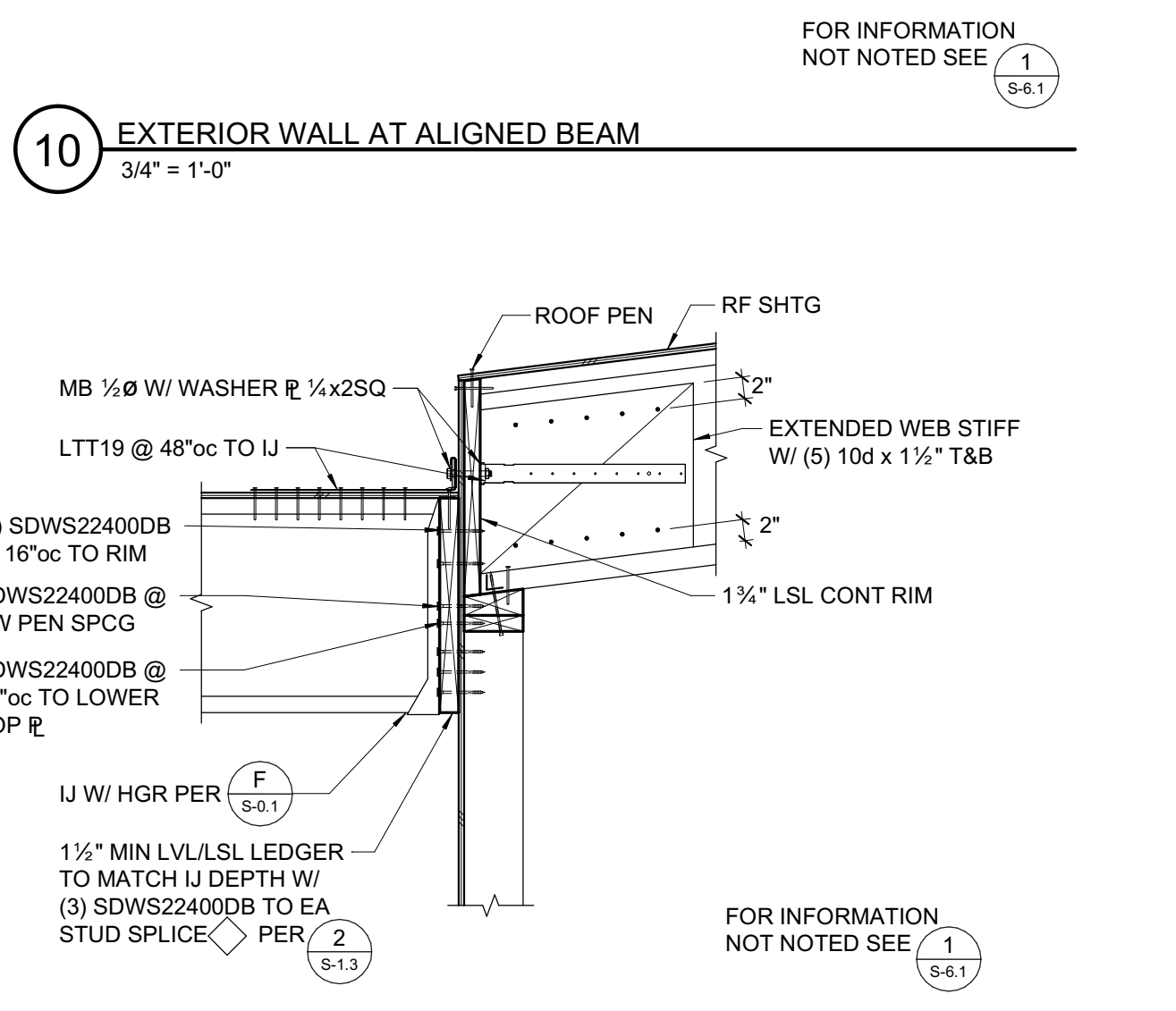
16 HSS COLUMN AT HIGH ROOF TO LOW ROOF TRANSITION
3/4" = 1'-0"



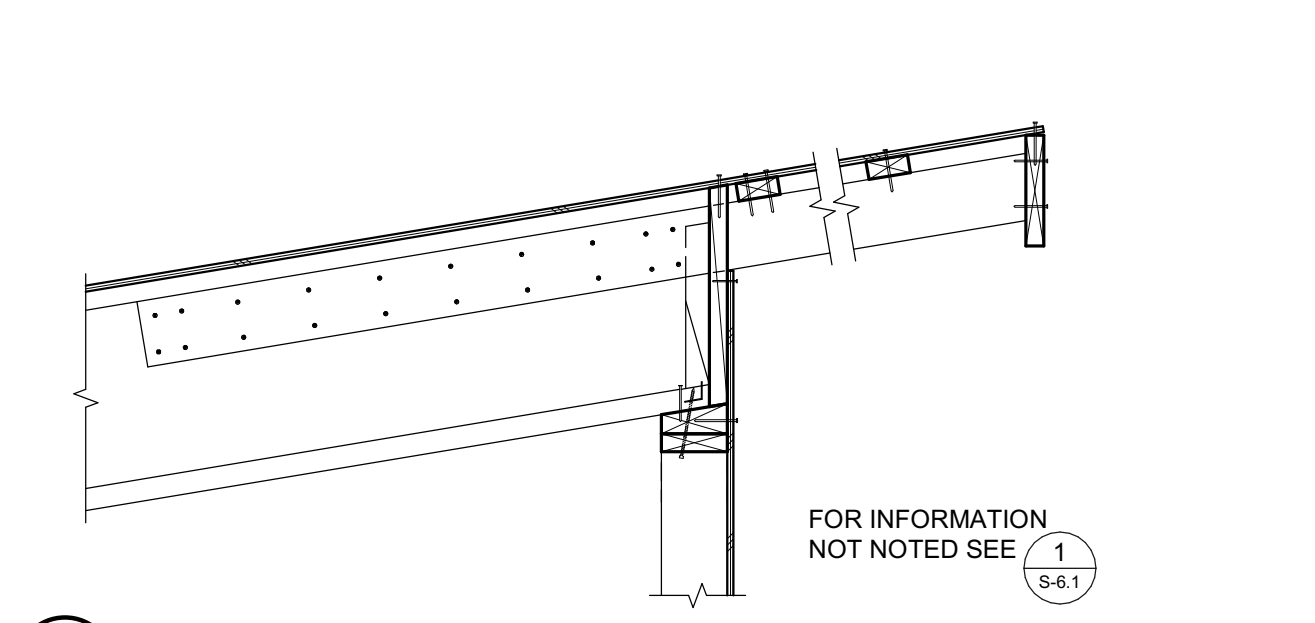
9 HSS COLUMN AT HIGH ROOF TO LOW ROOF TRANSITION
3/4" = 1'-0"



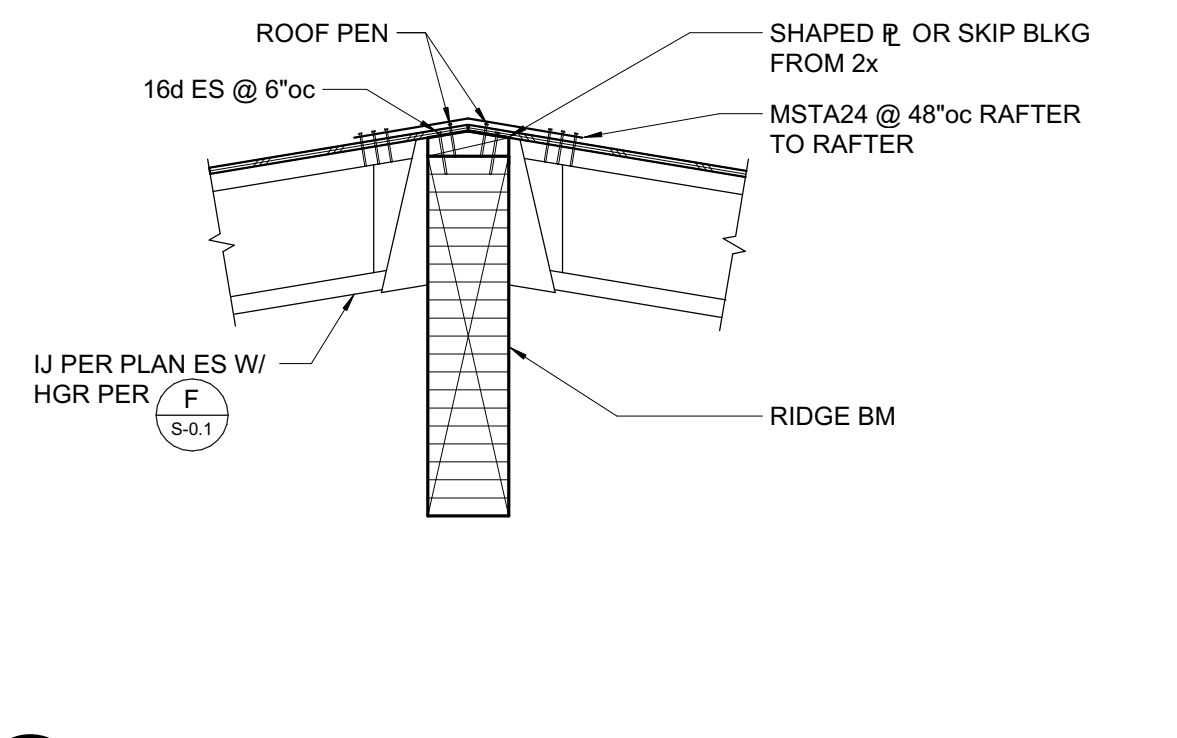
10 EXTERIOR WALL AT ALIGNED BEAM
3/4" = 1'-0"



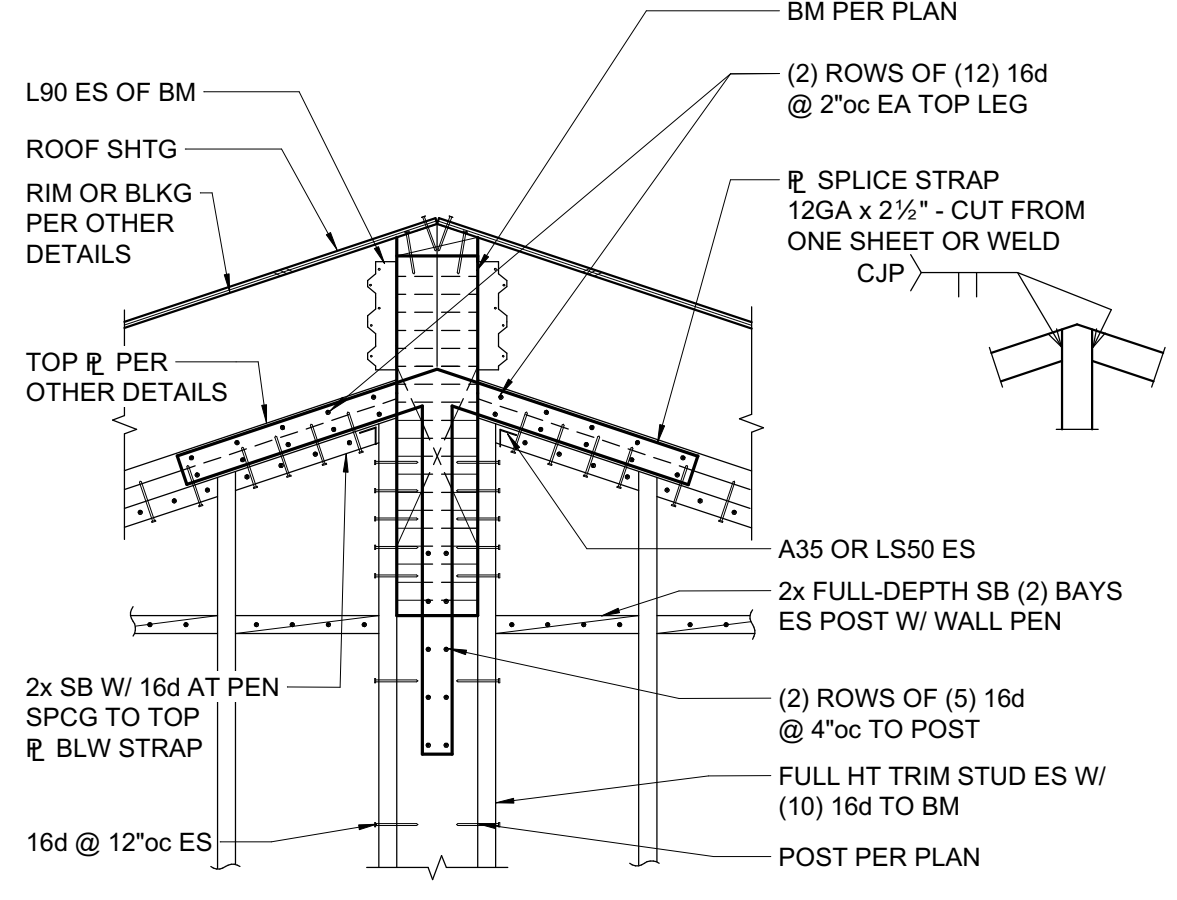
11 EXTERIOR WALL AT ROOF STEP
3/4" = 1'-0"



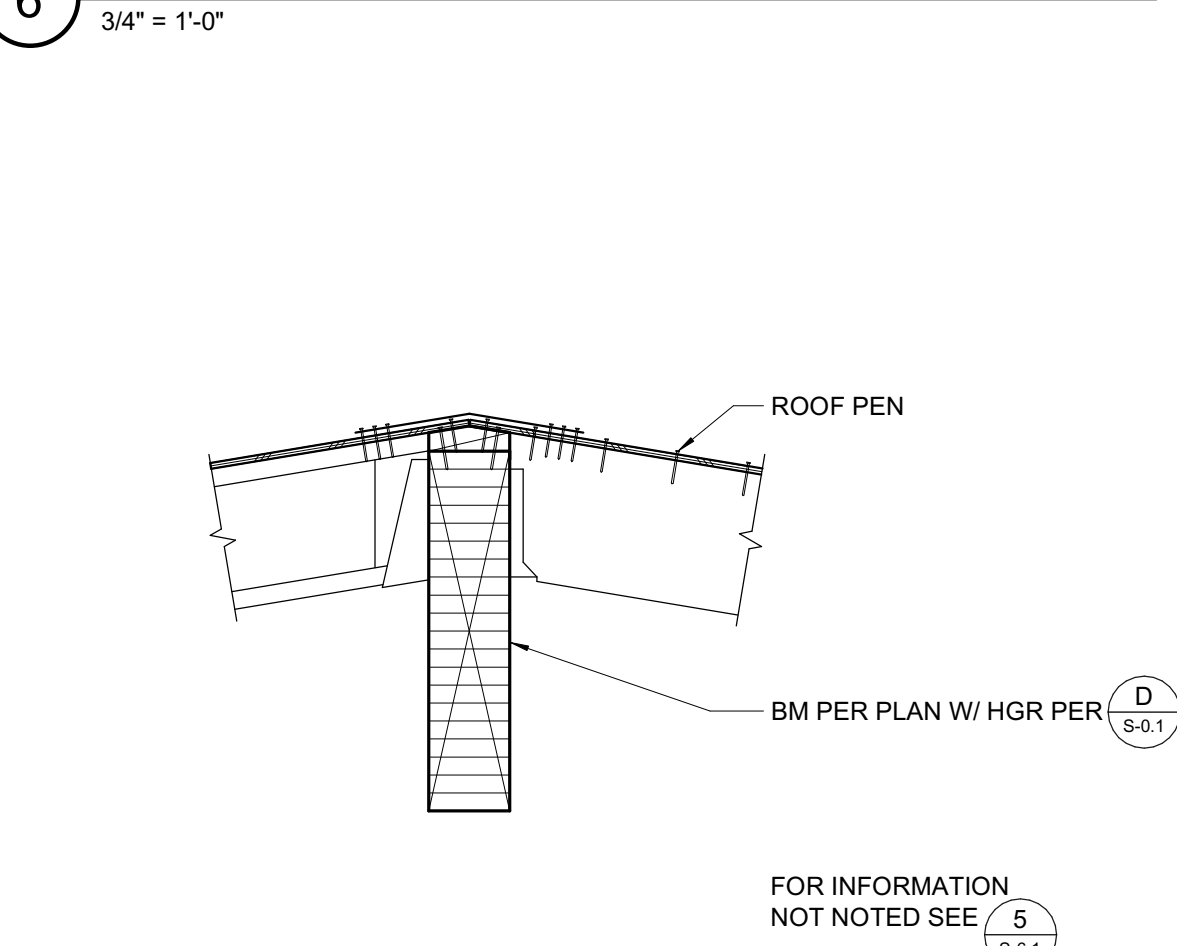
12 EXTERIOR WALL AT I-JOIST (OVERHANG SLOPED UP)
3/4" = 1'-0"



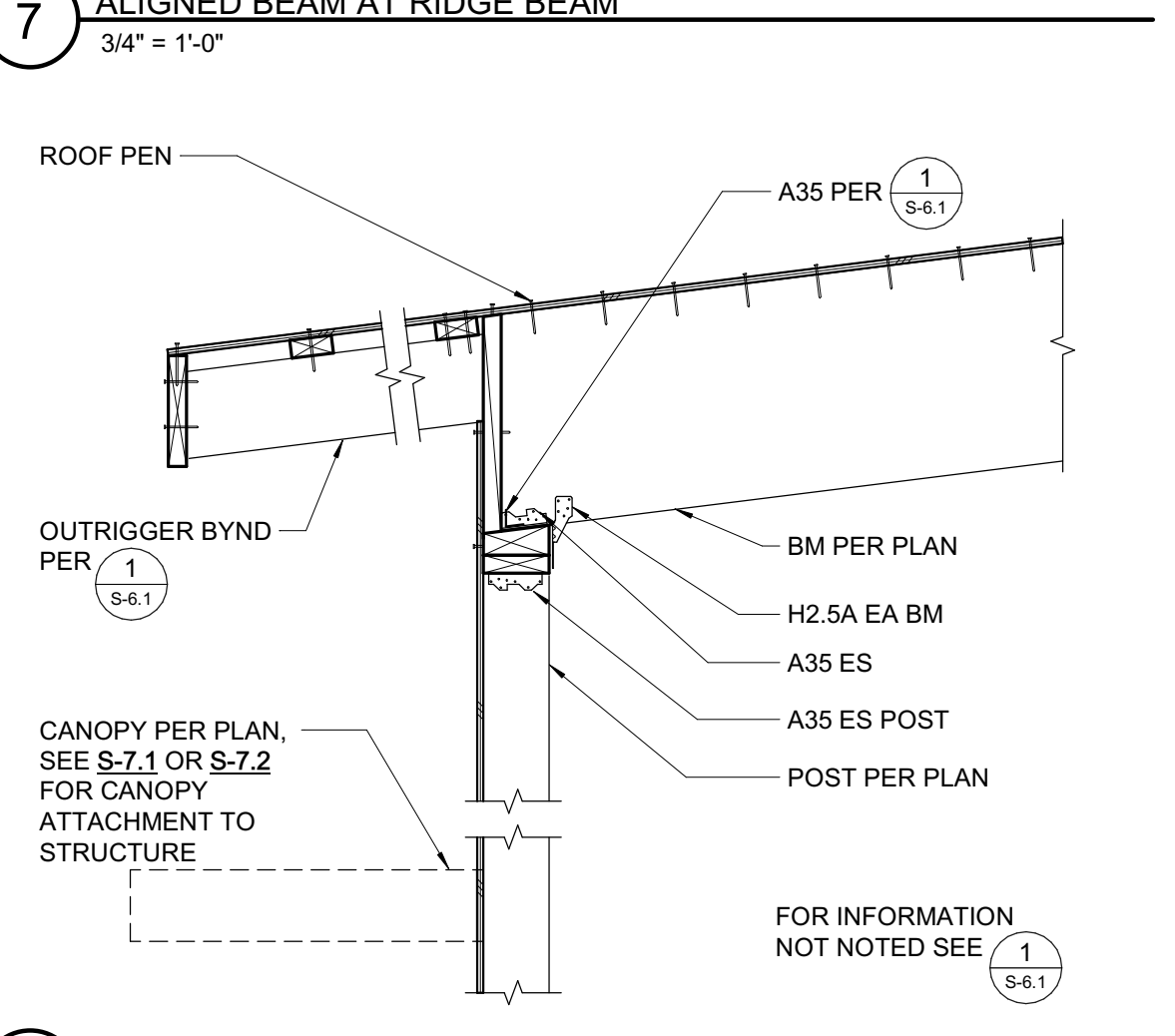
5 FRAMING AT RIDGE BEAM
3/4" = 1'-0"



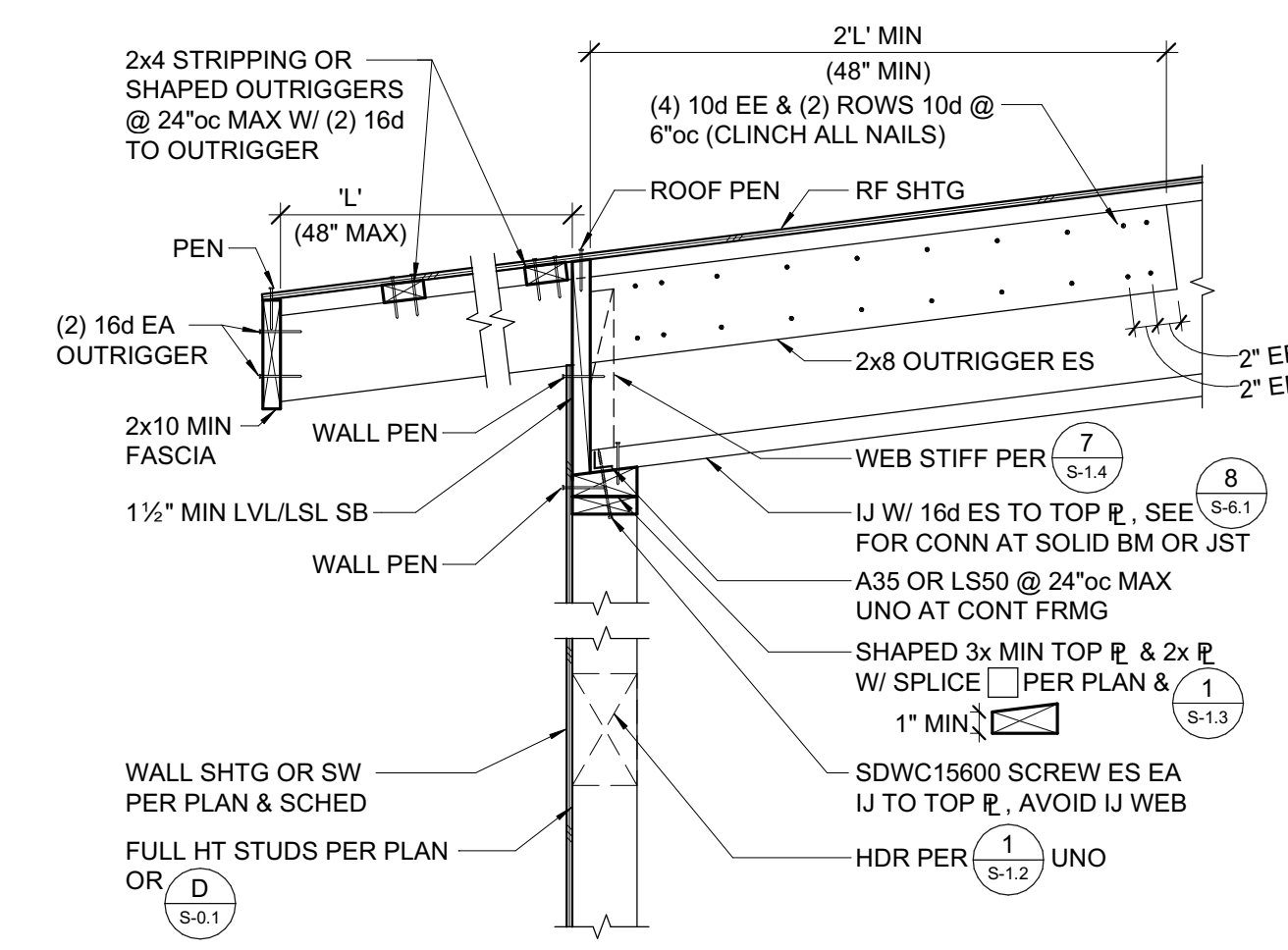
6 RIDGE BEAM AT WALL
3/4" = 1'-0"



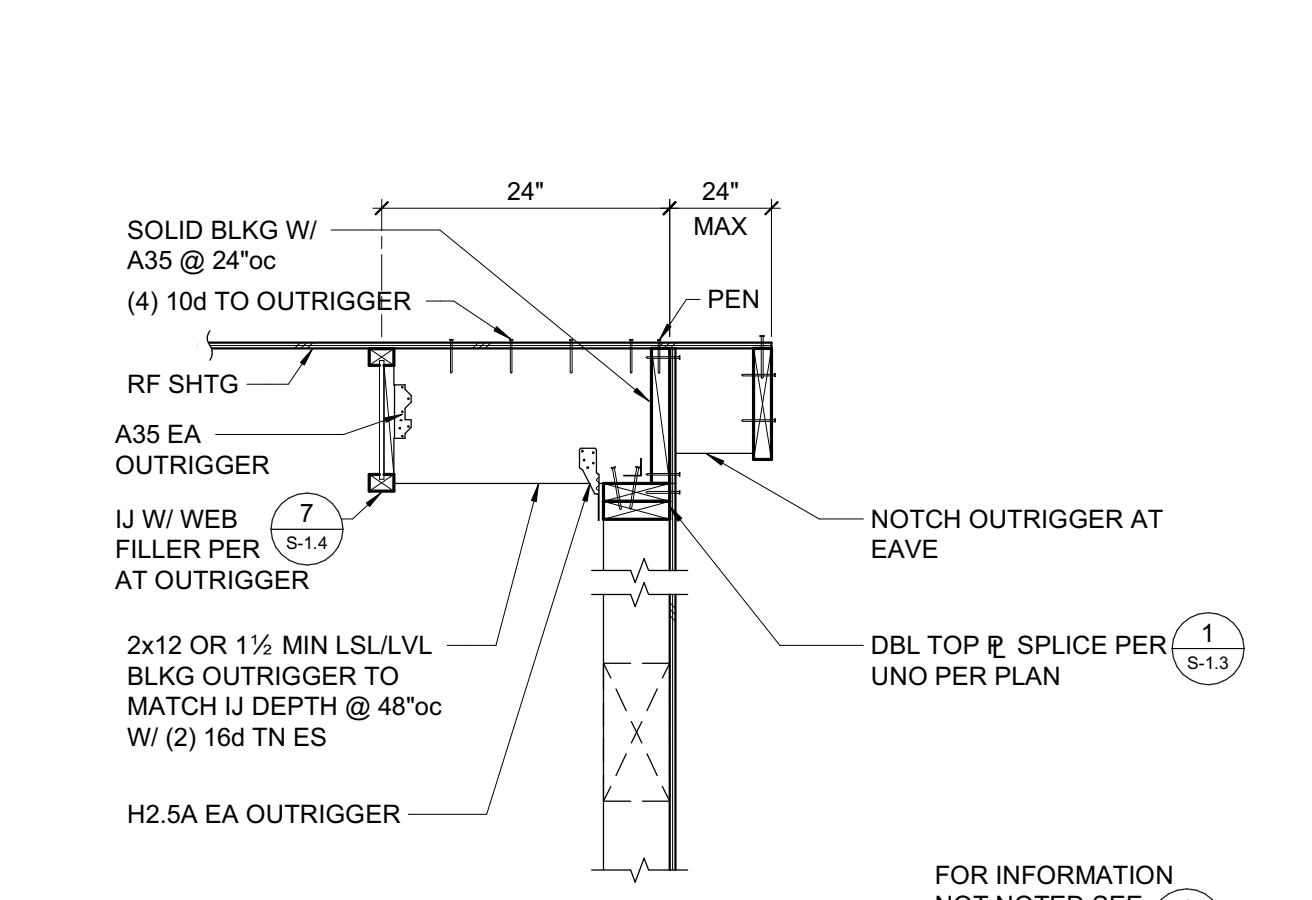
7 ALIGNED BEAM AT RIDGE BEAM
3/4" = 1'-0"



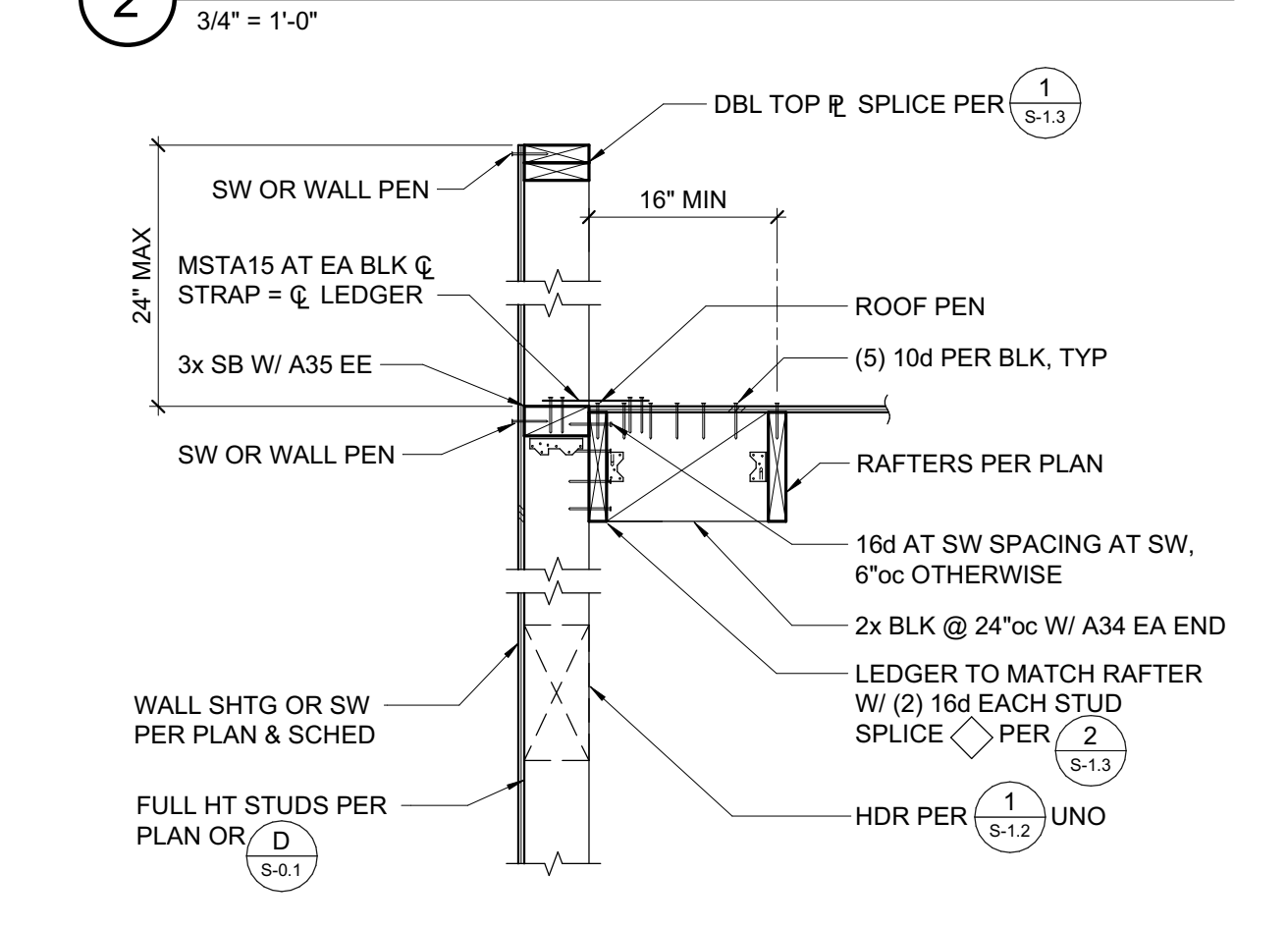
8 EXTERIOR WALL AT ALIGNED BEAM
3/4" = 1'-0"



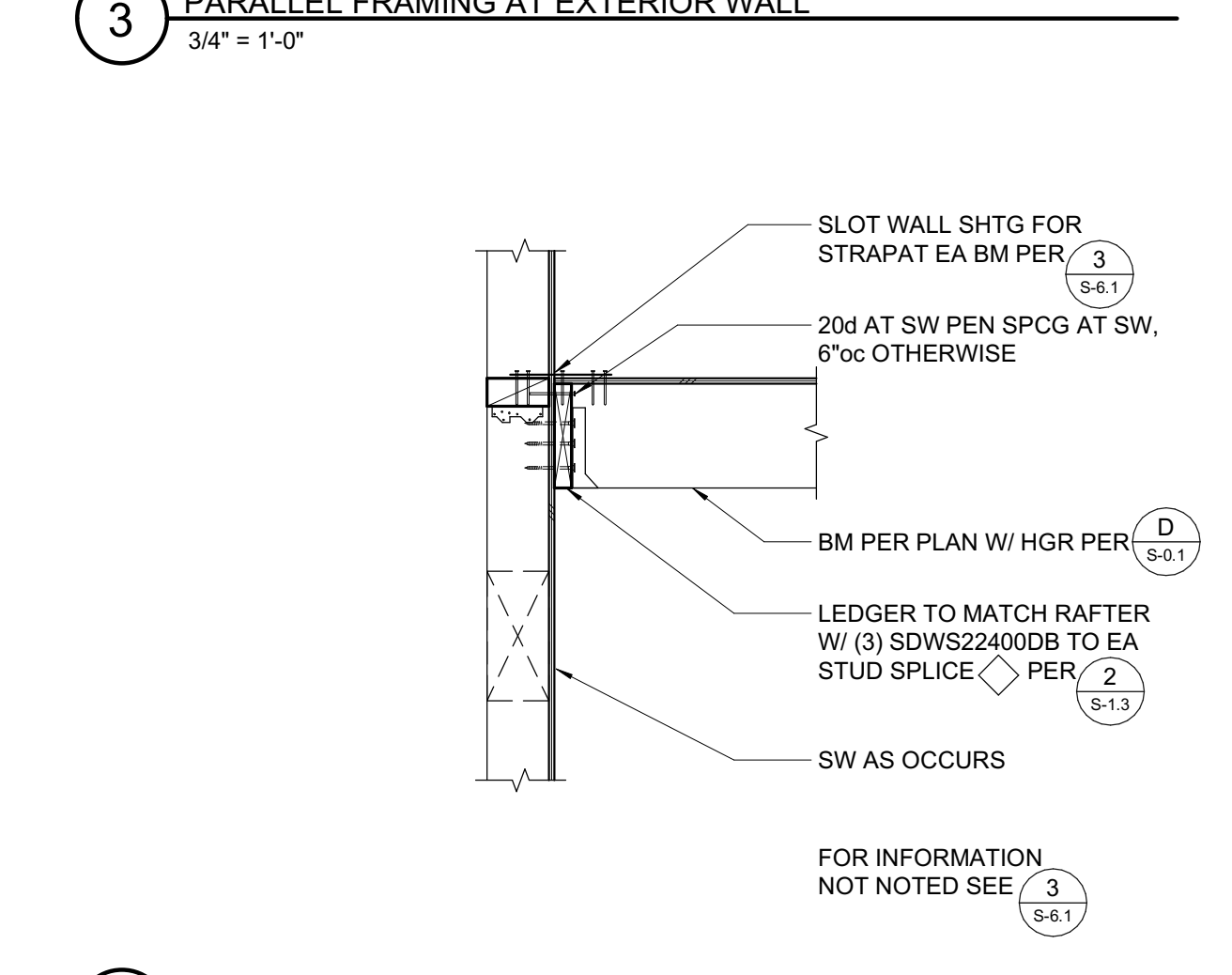
1 EXTERIOR WALL AT I-JOIST (OVERHANG SLOPED DOWN)
3/4" = 1'-0"



2 EXTERIOR WALL PARALLEL TO FRAMING
3/4" = 1'-0"



3 PARALLEL FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



4 LEDGER AT EXTERIOR SHEAR WALL
3/4" = 1'-0"



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NEW CLASSROOM BUILDINGS
INCREMENT 2 OF 2
101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268
ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: 3/4" = 1'-0"
PTN: 61721-77 FILE NO: 7-H4

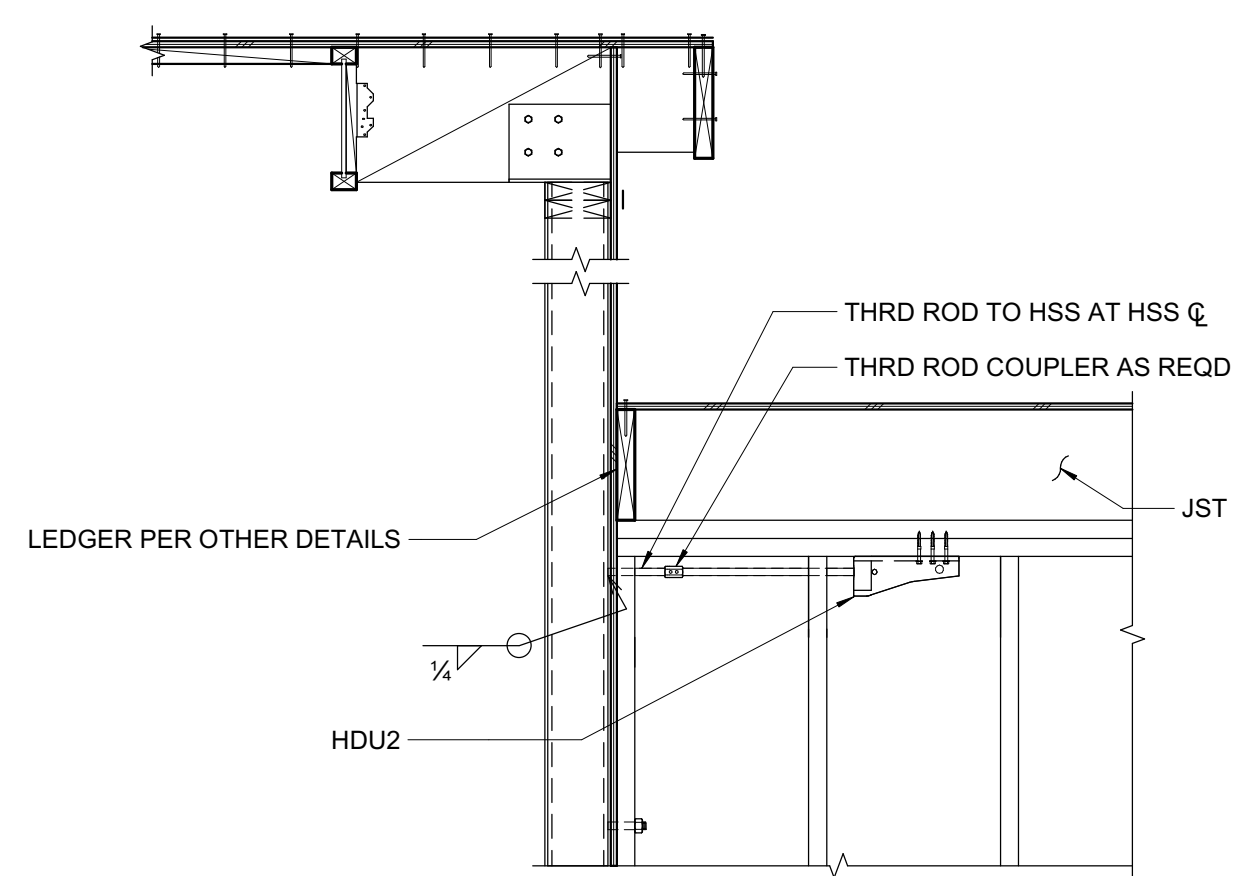
CD
JUNE 3, 2021
SHEET TITLE

ROOF FRAMING DETAILS

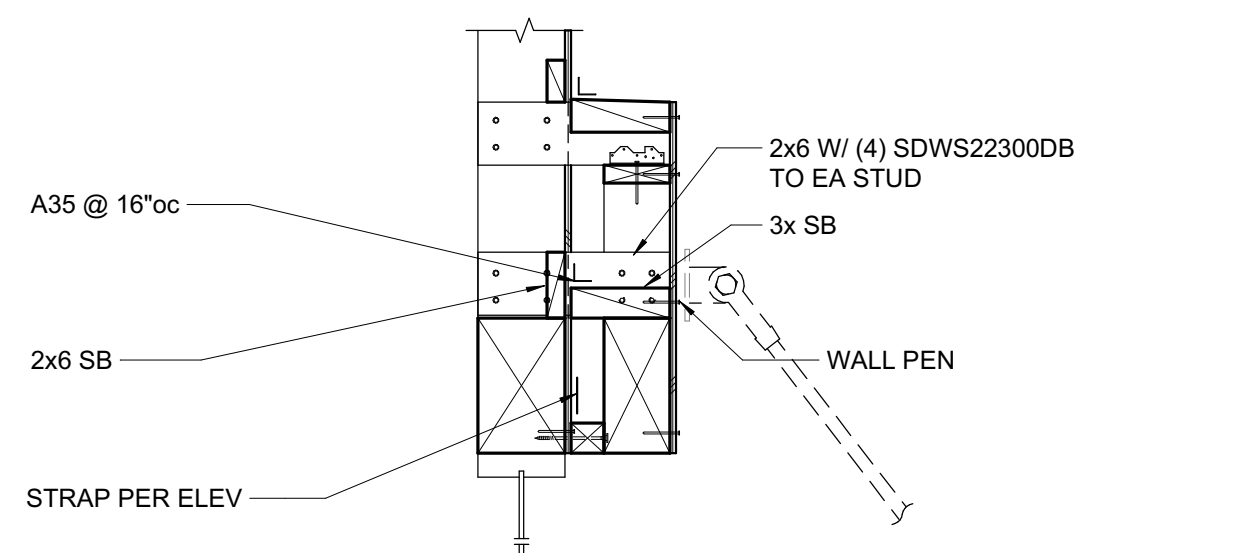
SHEET NUMBER

S-6.1

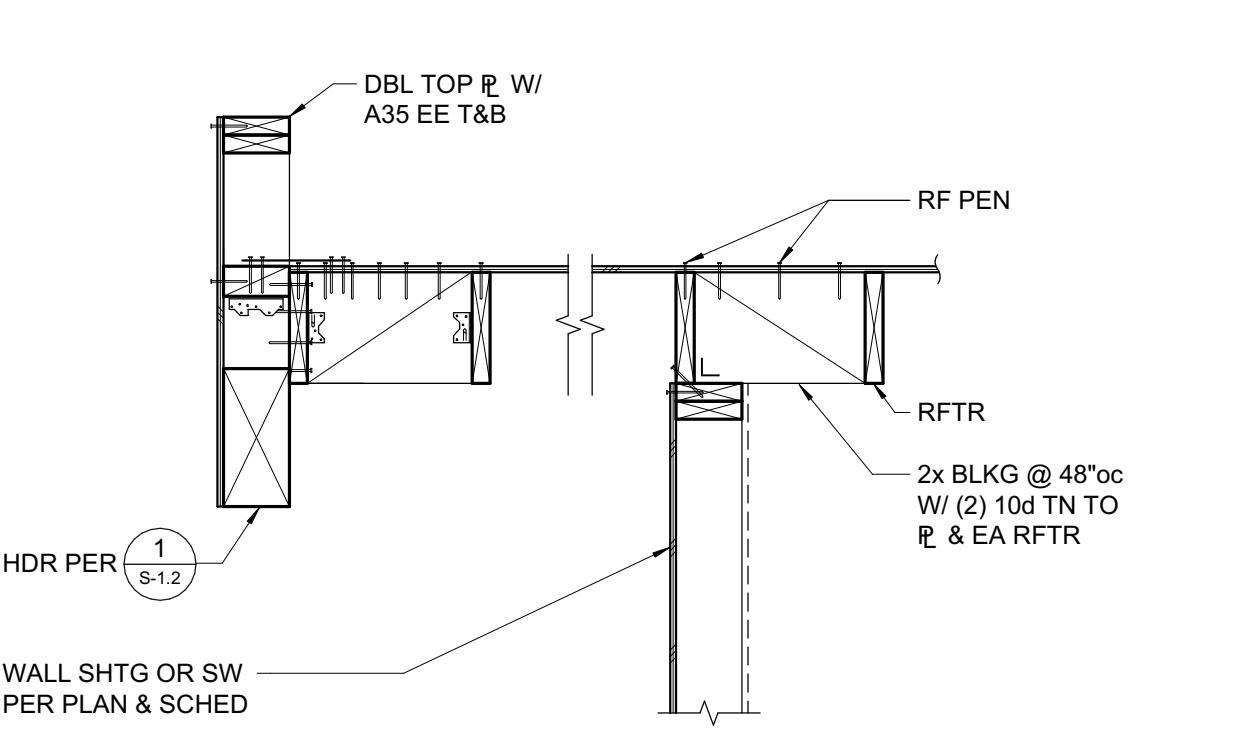
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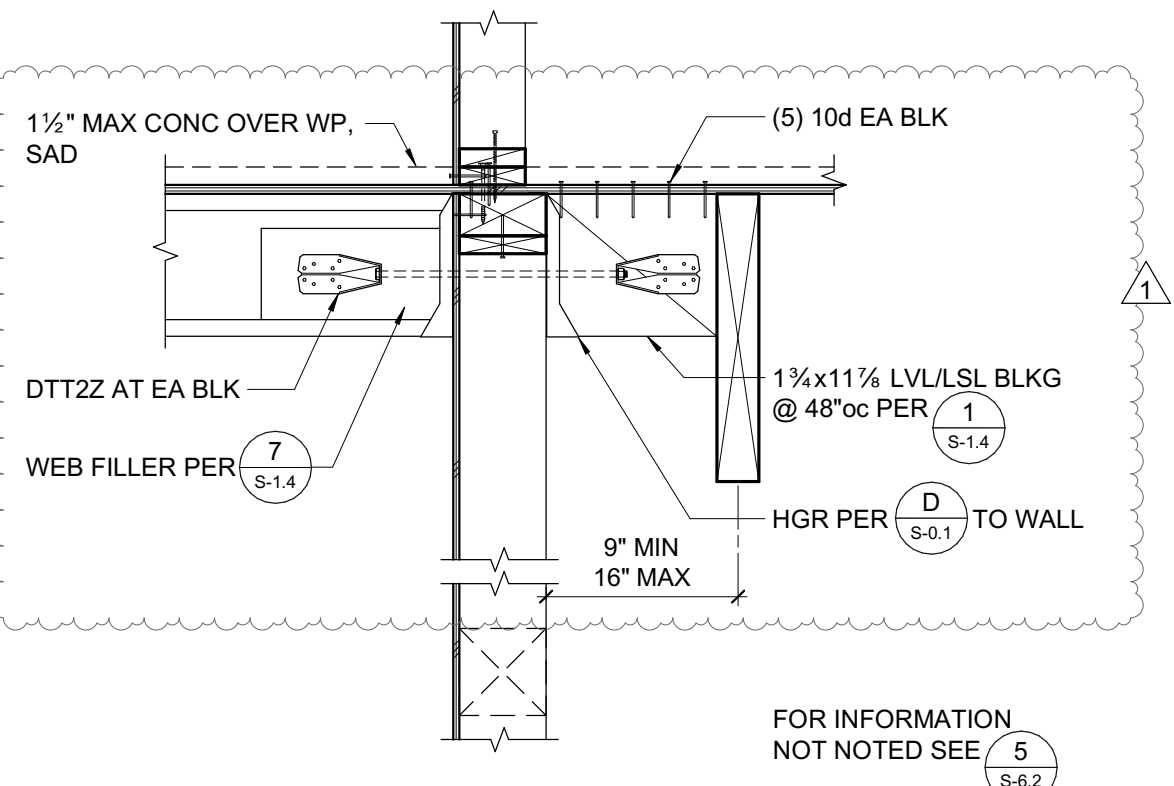
13 HSS COLUMN AT HIGH ROOF TO LOW ROOF TRANSITION
3/4" = 1'-0"



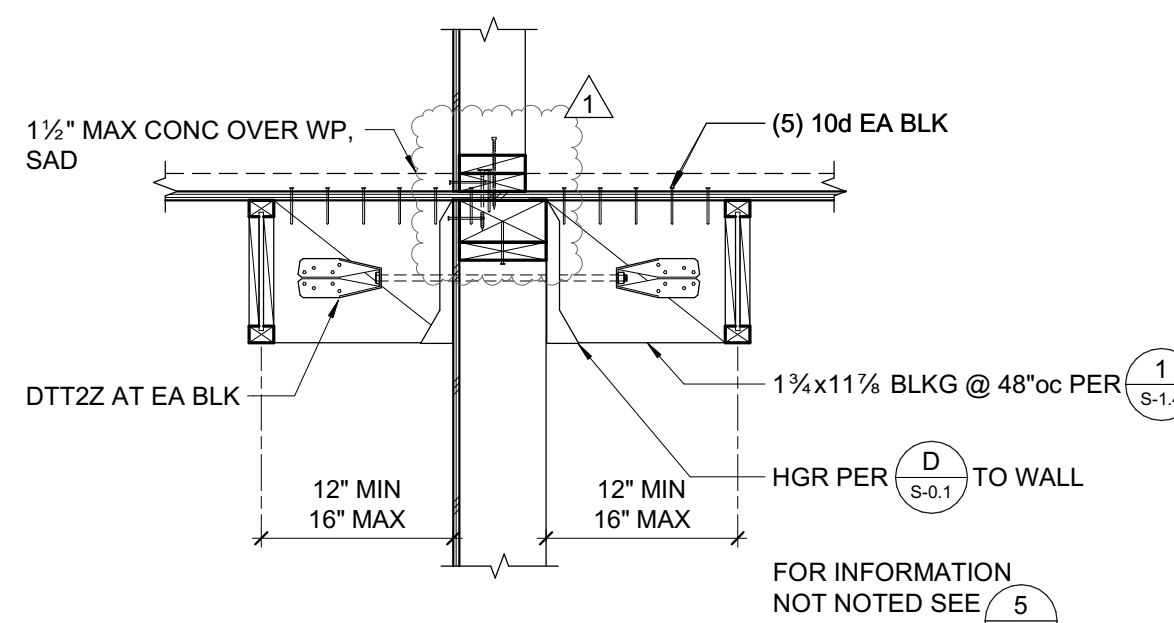
14 SECOND FLOOR POP-OUT FRAMING AT LARGE GLAZING
3/4" = 1'-0"



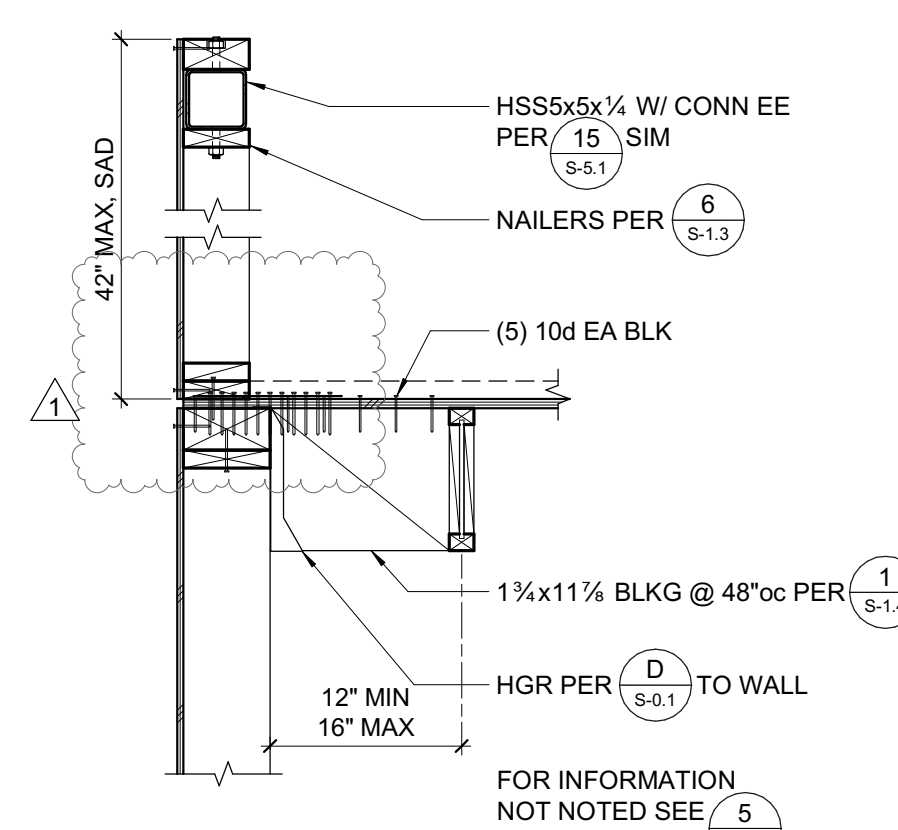
15 PARALLEL FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



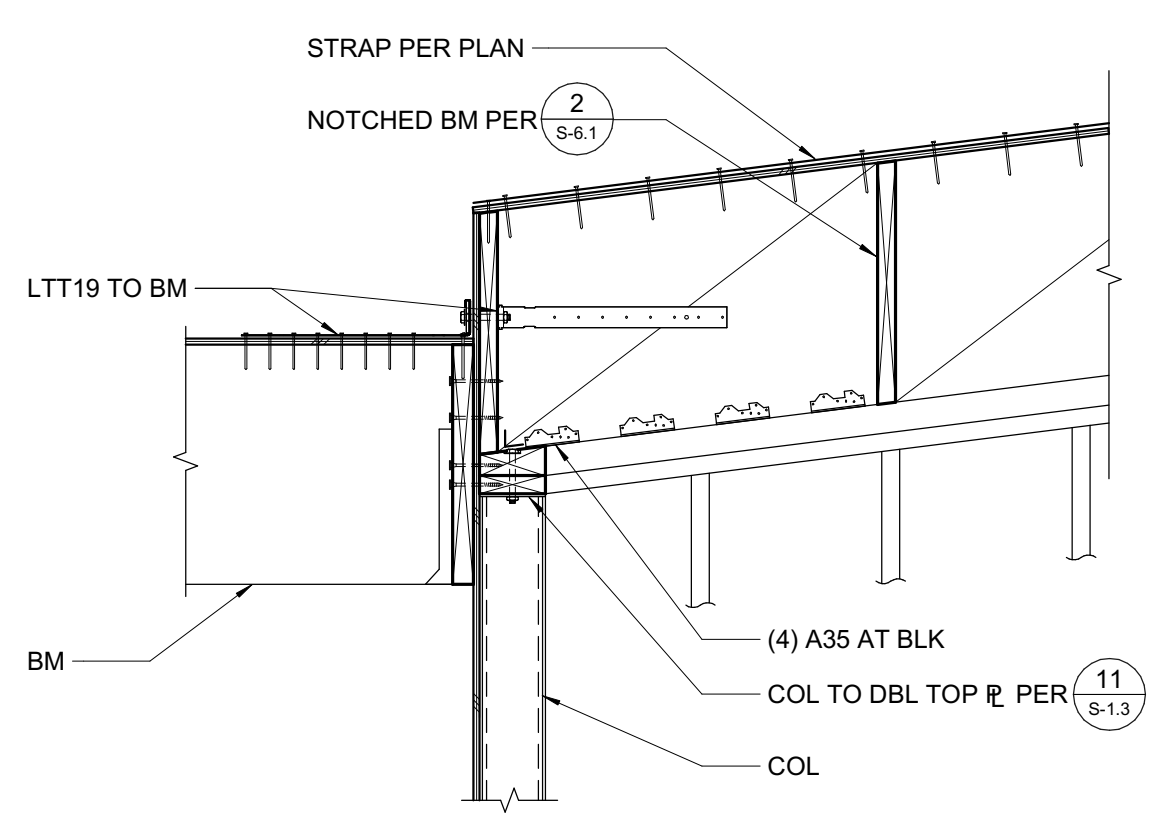
9 DECK FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



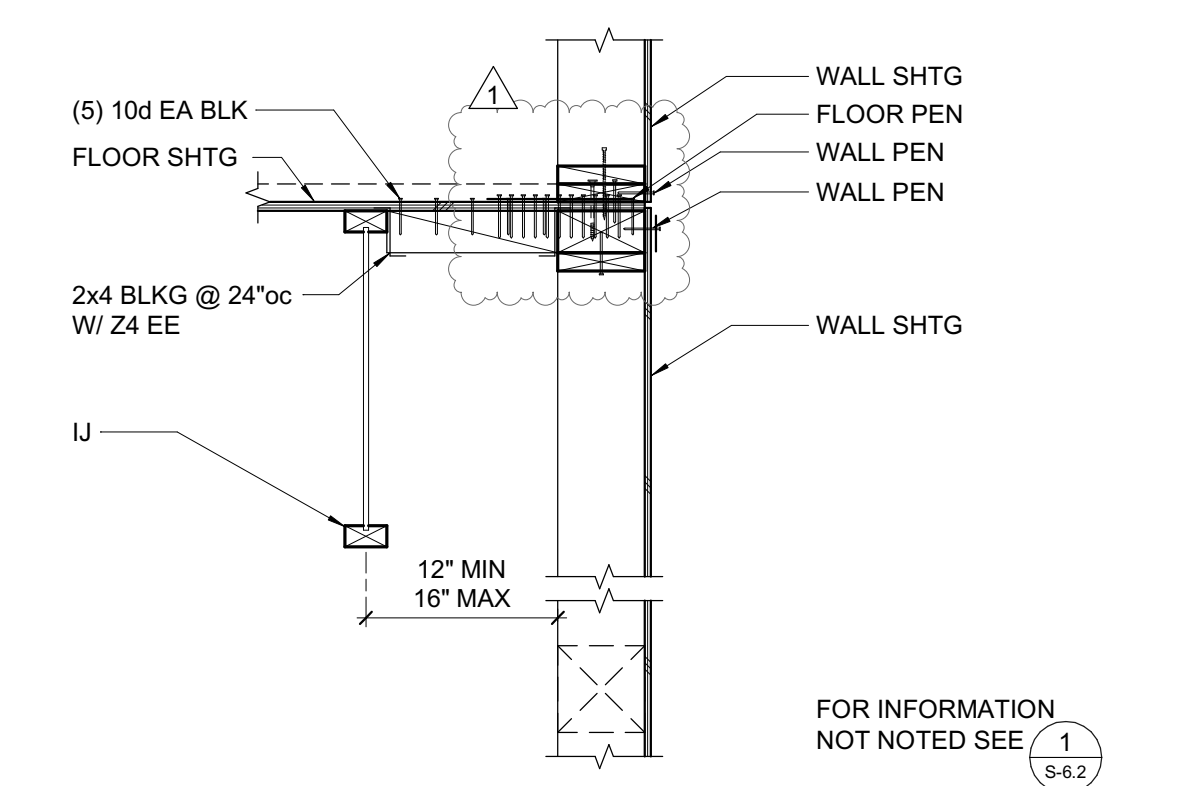
10 DECK FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



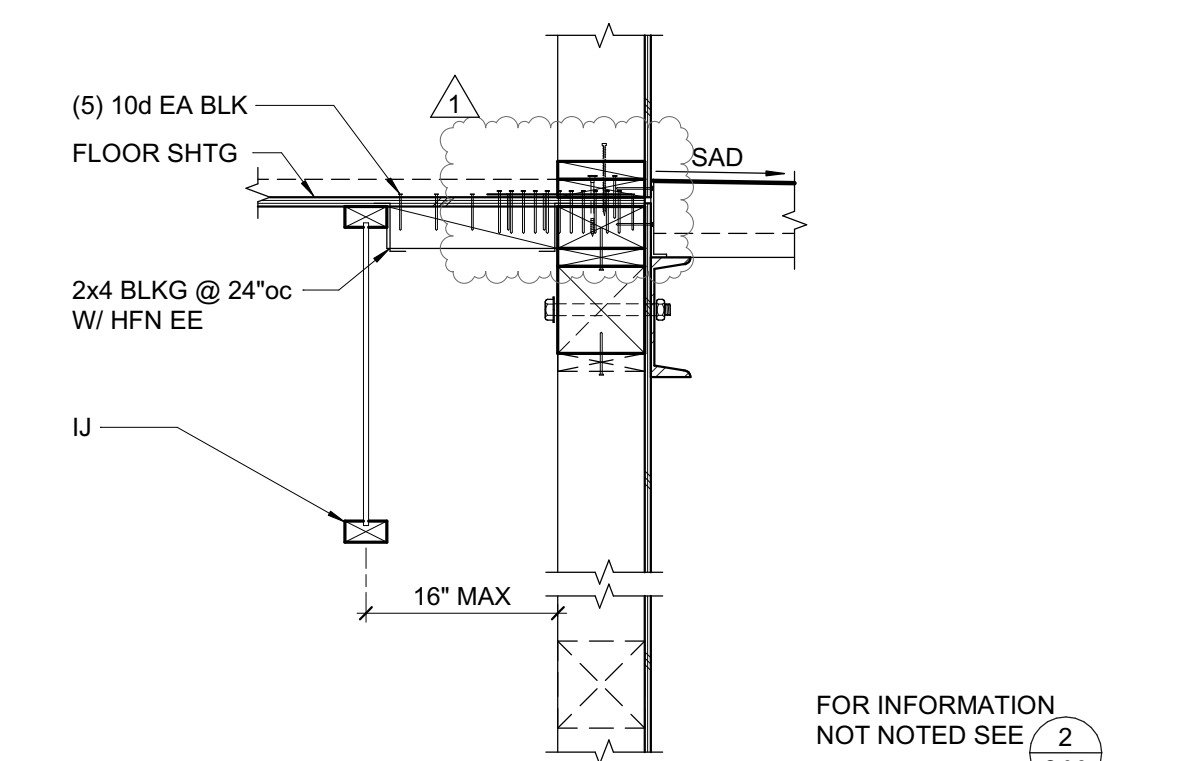
11 DECK FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



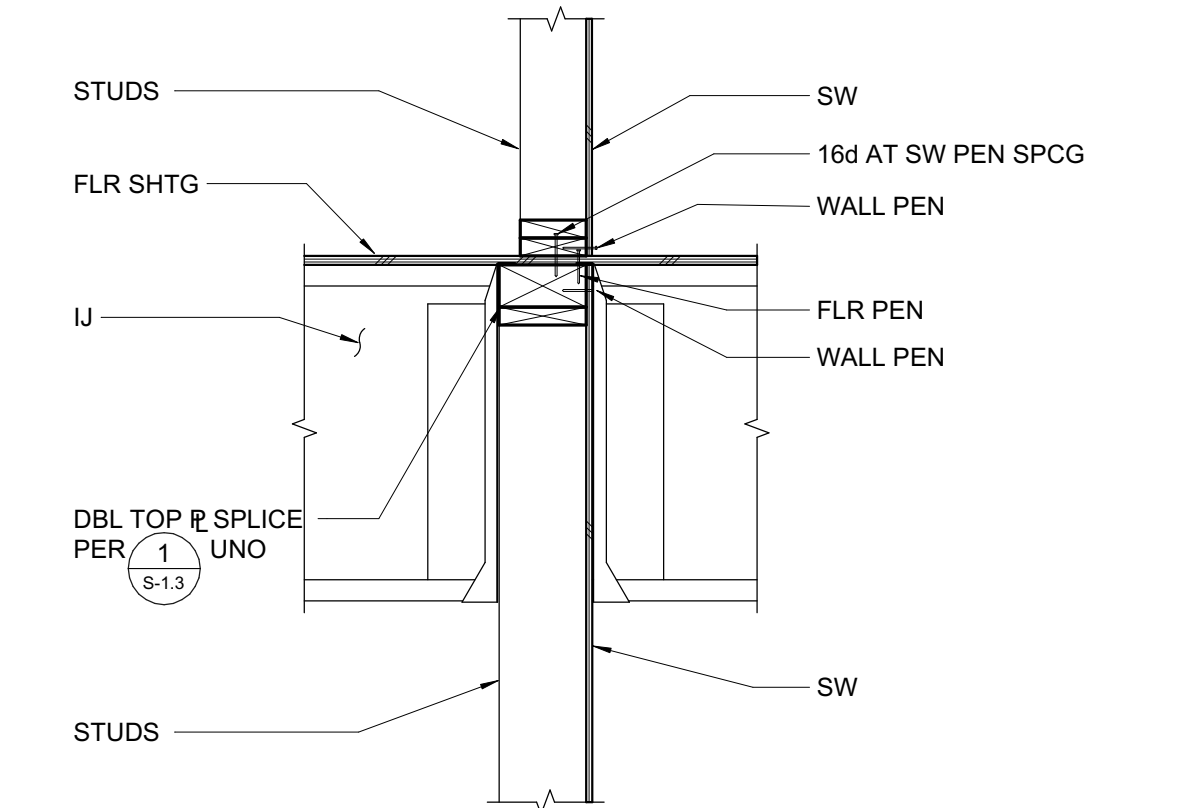
12 EXTERIOR WALL AT ROOF STEP
3/4" = 1'-0"



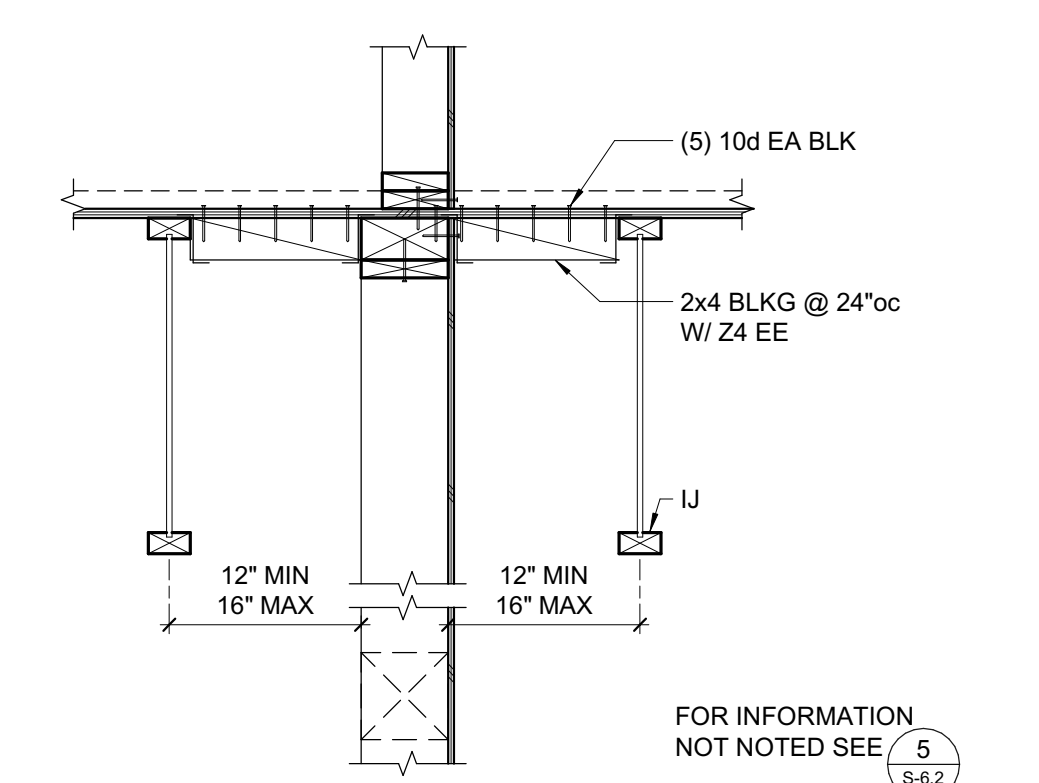
5 PARALLEL FLOOR FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



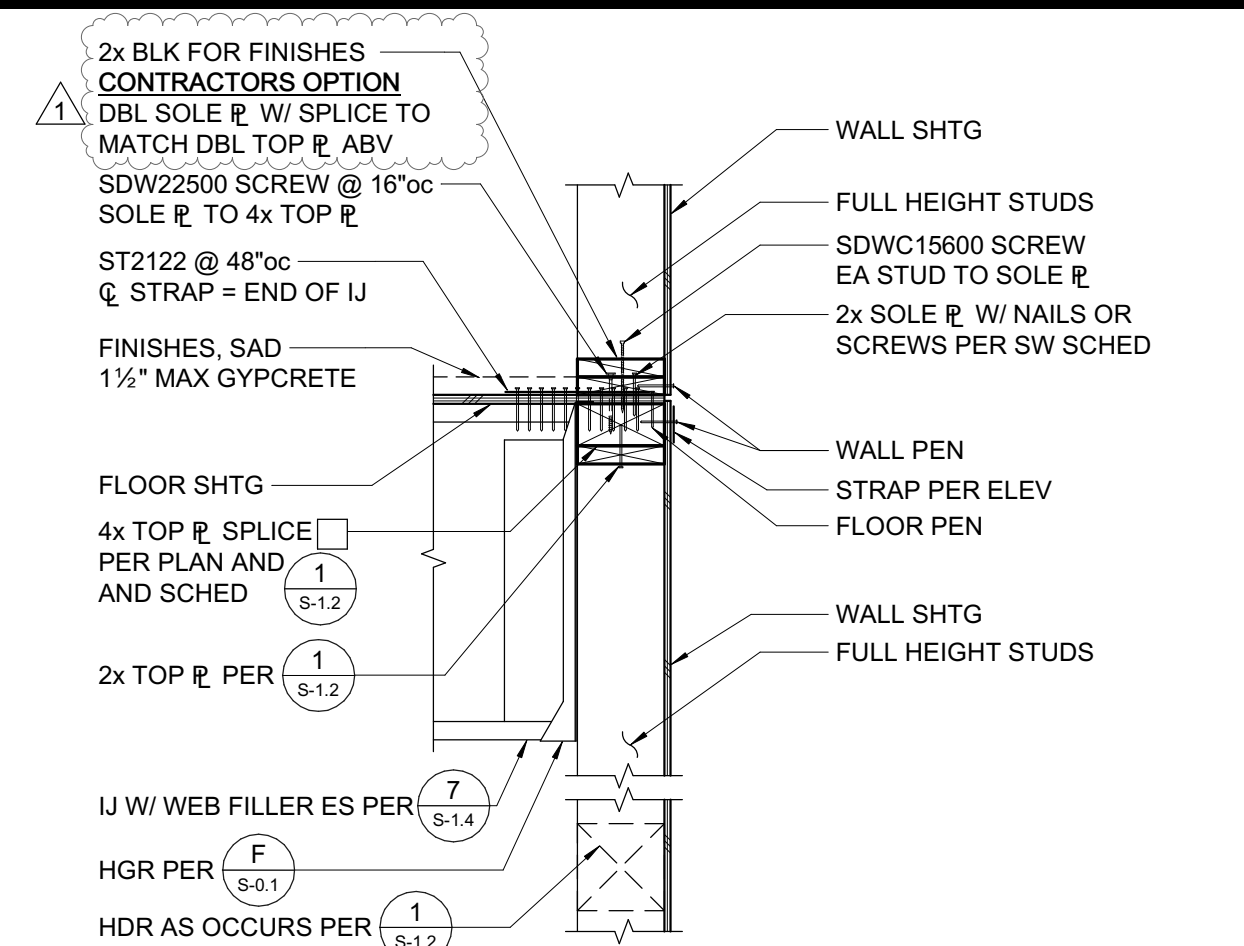
6 WALKWAY CONNECTION AT PARALLEL FLOOR FRAMING
3/4" = 1'-0"



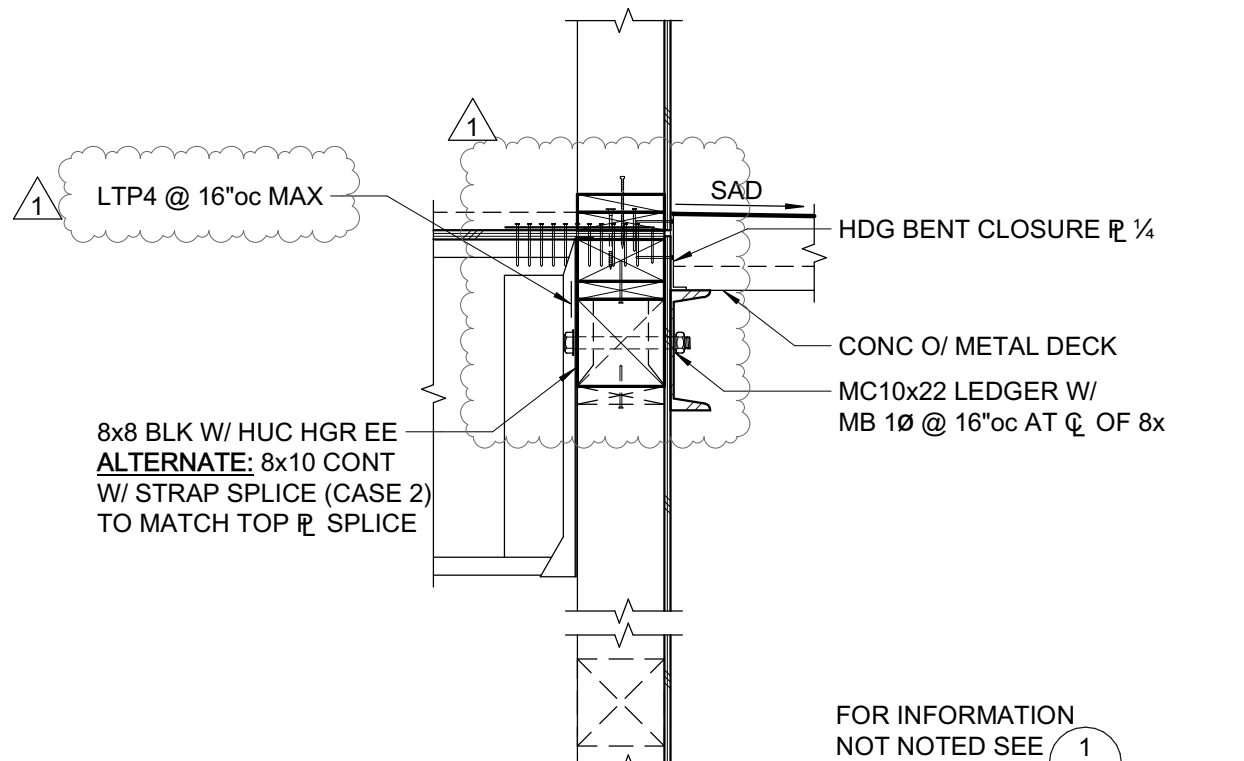
7 INTERIOR BEARING WALL
3/4" = 1'-0"



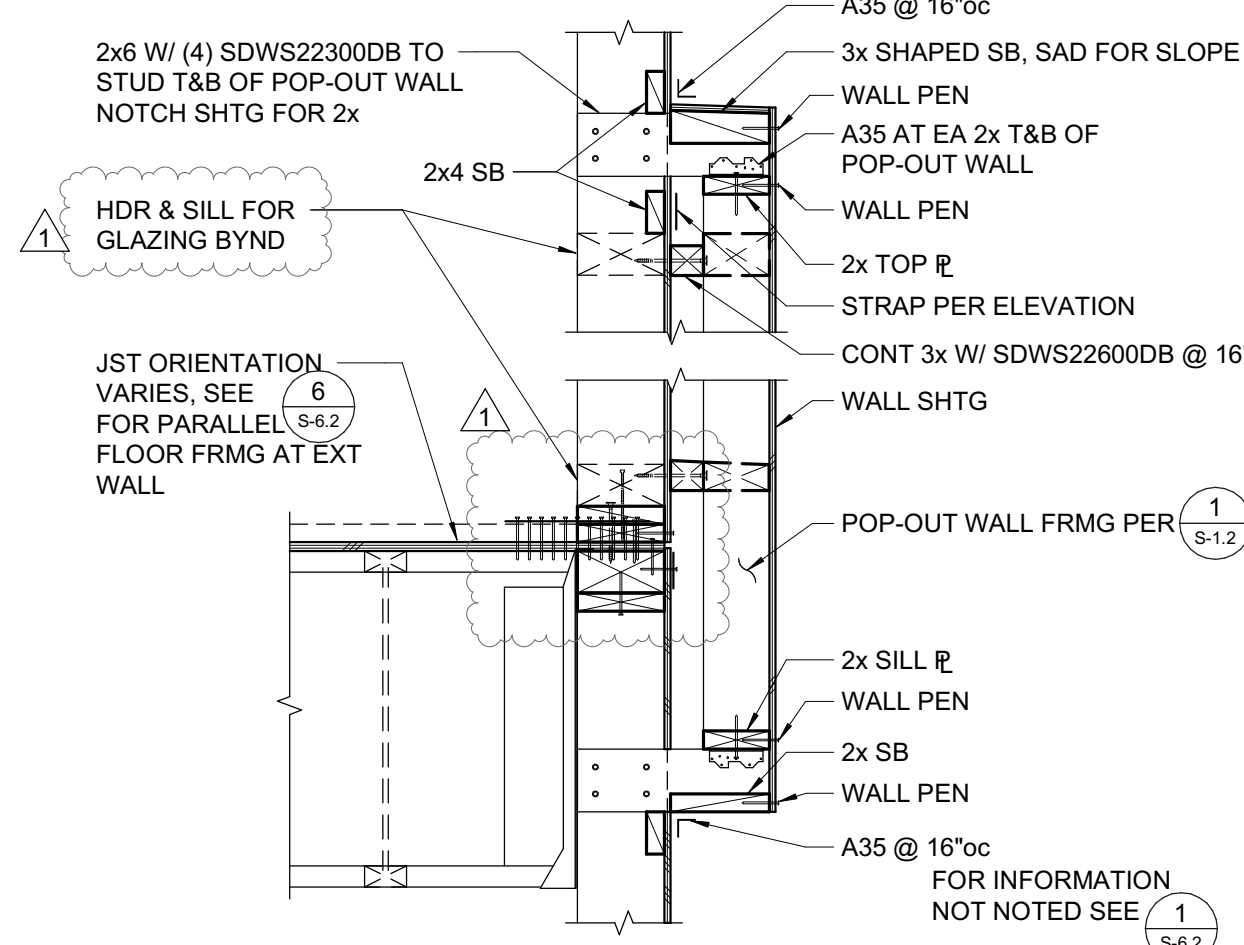
8 INTERIOR SHEAR WALL
3/4" = 1'-0"



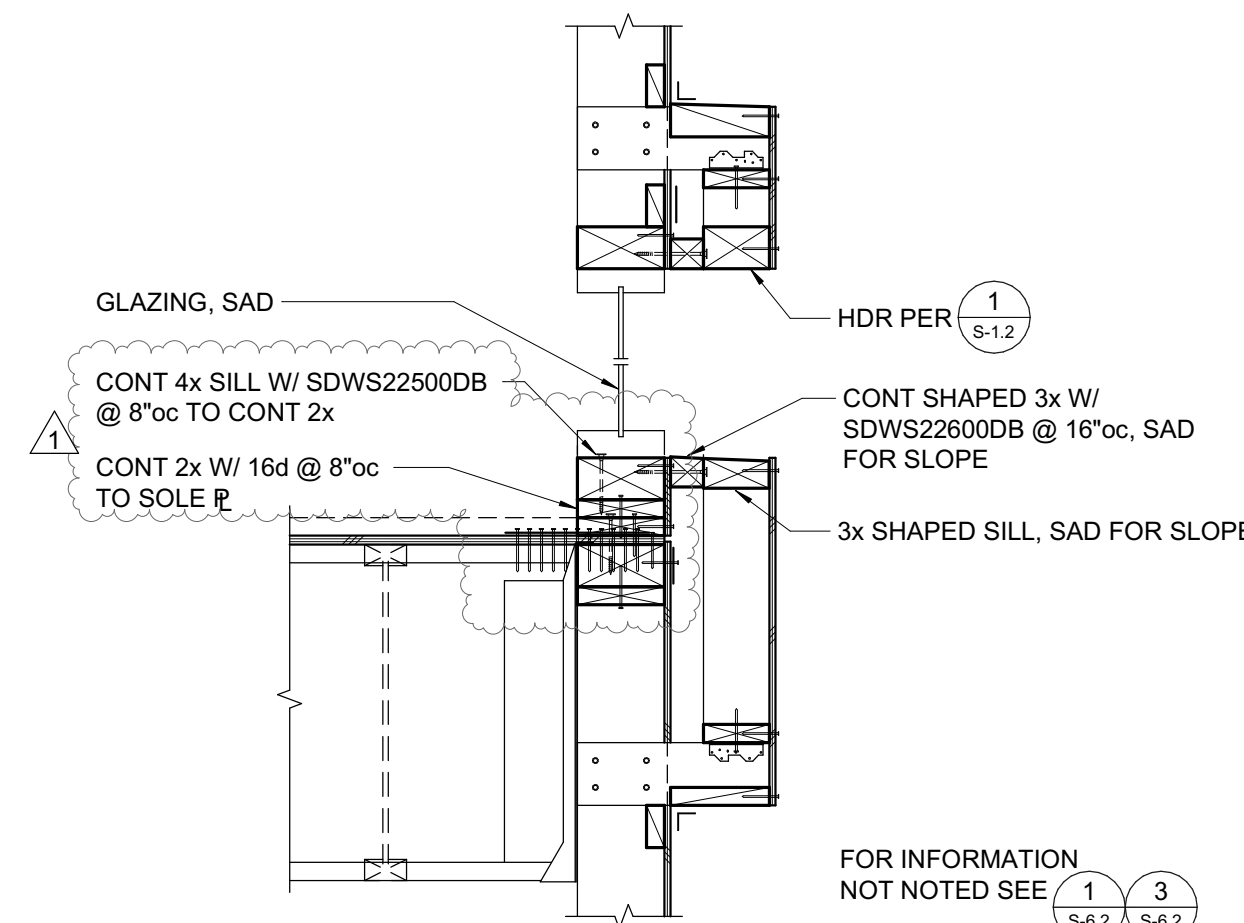
1 PERPENDICULAR FLOOR FRAMING AT EXTERIOR WALL
3/4" = 1'-0"



2 WALKWAY CONNECTION AT PERPENDICULAR FLOOR FRAMING
3/4" = 1'-0"



3 SECOND FLOOR POP-OUT FRAMING AT GLAZING
3/4" = 1'-0"



4 SECOND FLOOR POP-OUT FRAMING AT GLAZING
3/4" = 1'-0"

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ENGR / PM: KPB / DM / SCH

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JUNE 3, 2021
SHEET TITLE

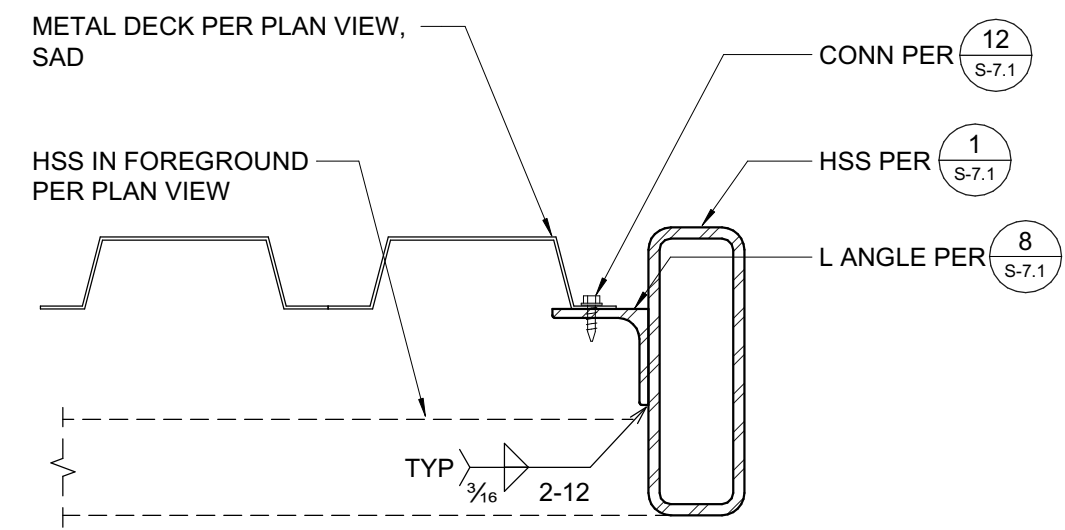
SECOND FLOOR FRAMING DETAILS

SHEET NUMBER

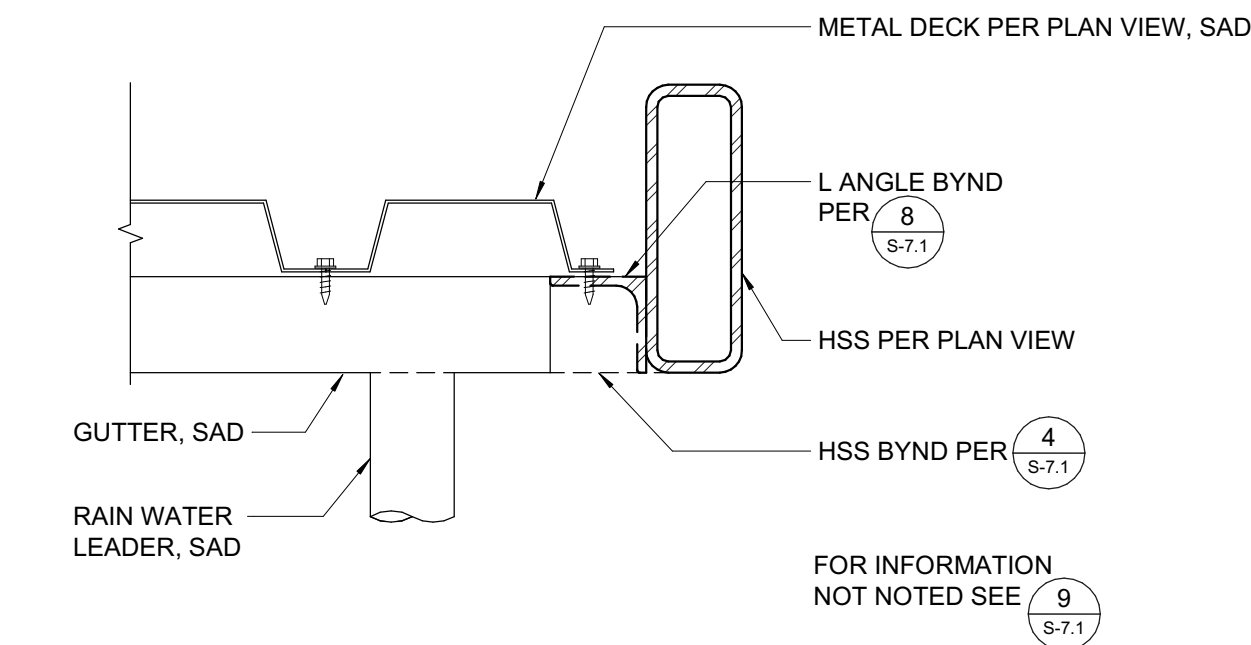
S-6.2

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5/28/2021 10:17:53 AM



9 RAIN CANOPY RAKE
3" = 1'-0"



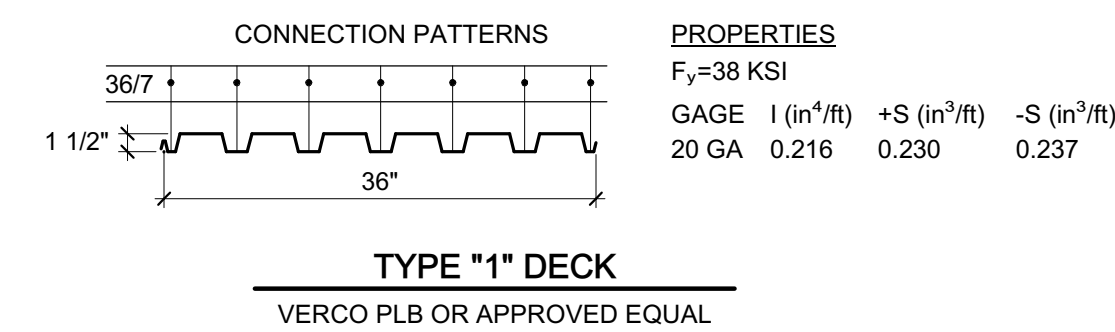
10 RAIN CANOPY AT GUTTER
3" = 1'-0"

11 NOT USED
3" = 1'-0"

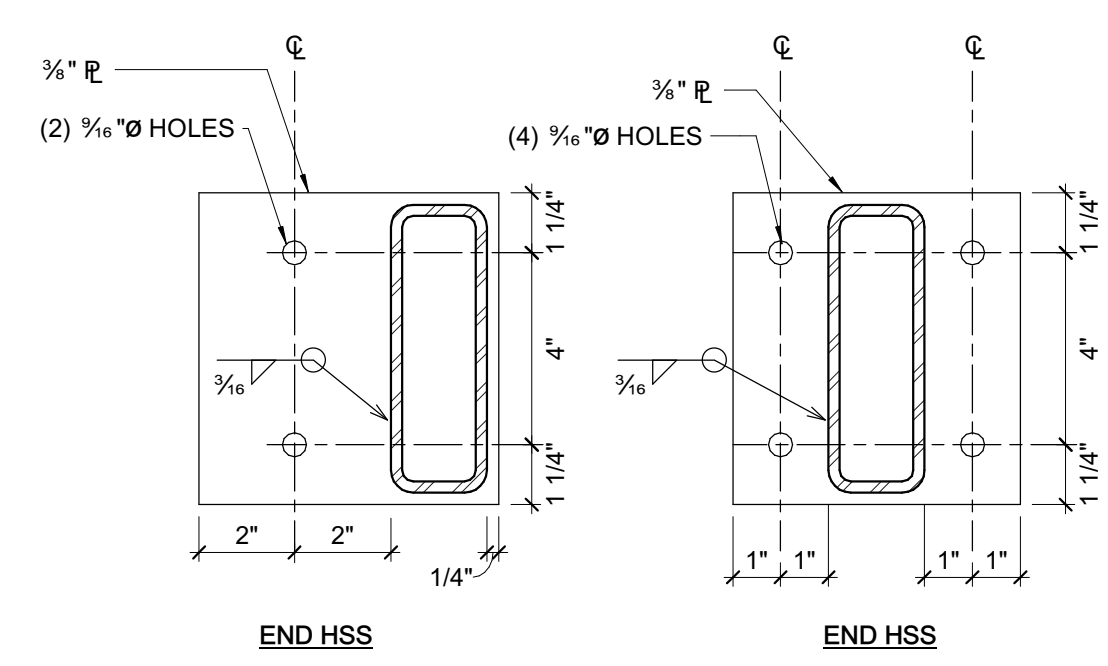
MARK	STEEL DECK GAGE & PROFILE TYPE SEE 13	DECK CONNECTIONS					
		END/INT BEARING CONN (A)		SIDE BEARING CONN (B)		SIDELAP CONNECTION (C)	
		SIZE & TYPE	PATTERN	SIZE & TYPE	SPACING	SIZE & TYPE	SPACING
1	20 GA	SCREWS	36/7	SCREWS	12"	SCREWS	12"

- NOTES:**
- ATTACH DECK TO ALL STEEL SUPPORT FRAMING AS OCCURS.
 - SCREWS = STEEL DECK INSTITUTE (SDI) RECOGNIZED #12 SELF-DRILLING SCREWS, HILTI S-SLC01 M HW/H, OR HILTI S-SLC02 M HW/H, EXTERIOR-RATED AND W/ INTEGRAL NEOPRENE WASHER AT EXTERIOR CONDITIONS.
 - ABOVE REFERENCED DECK IS BASED ON ALLOWABLE DESIGN LOADS PER IAPMO ER-0217 VERO MANUFACTURING - EQUIVALENT DECK MUST HAVE EQUIVALENT ALLOWABLE VERTICAL LOADS, DIAPHRAGM SHEAR VALUES, AND FLEXIBILITY FACTORS.

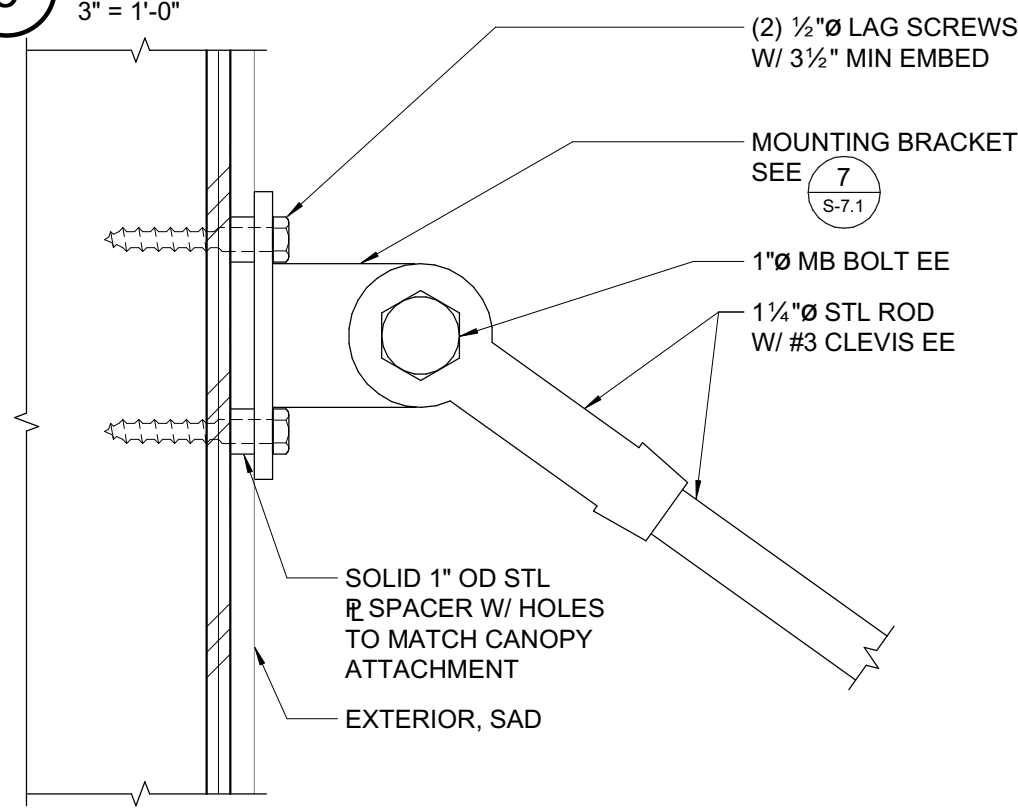
12 DECKING SCHEDULE
3/4" = 1'-0"



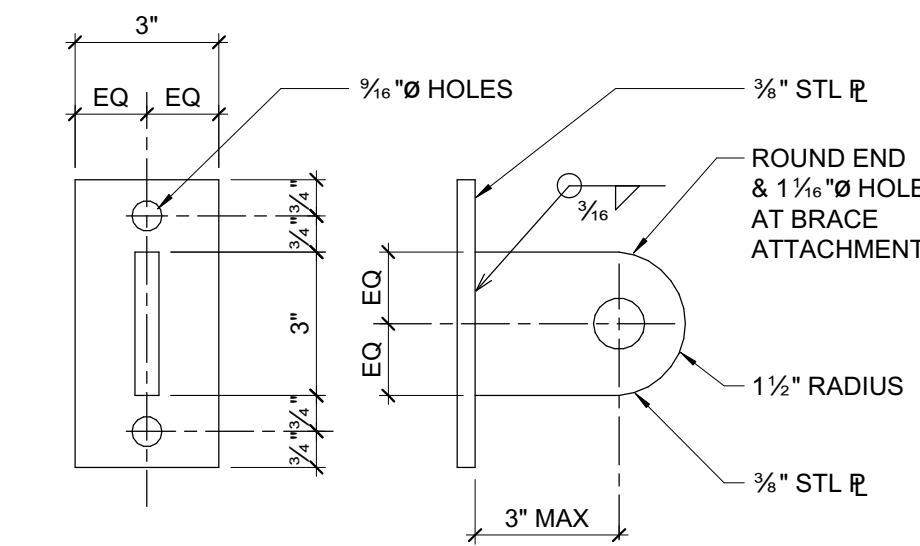
13 DECKING TYPE AND CONNECTION PATTERN
3/4" = 1'-0"



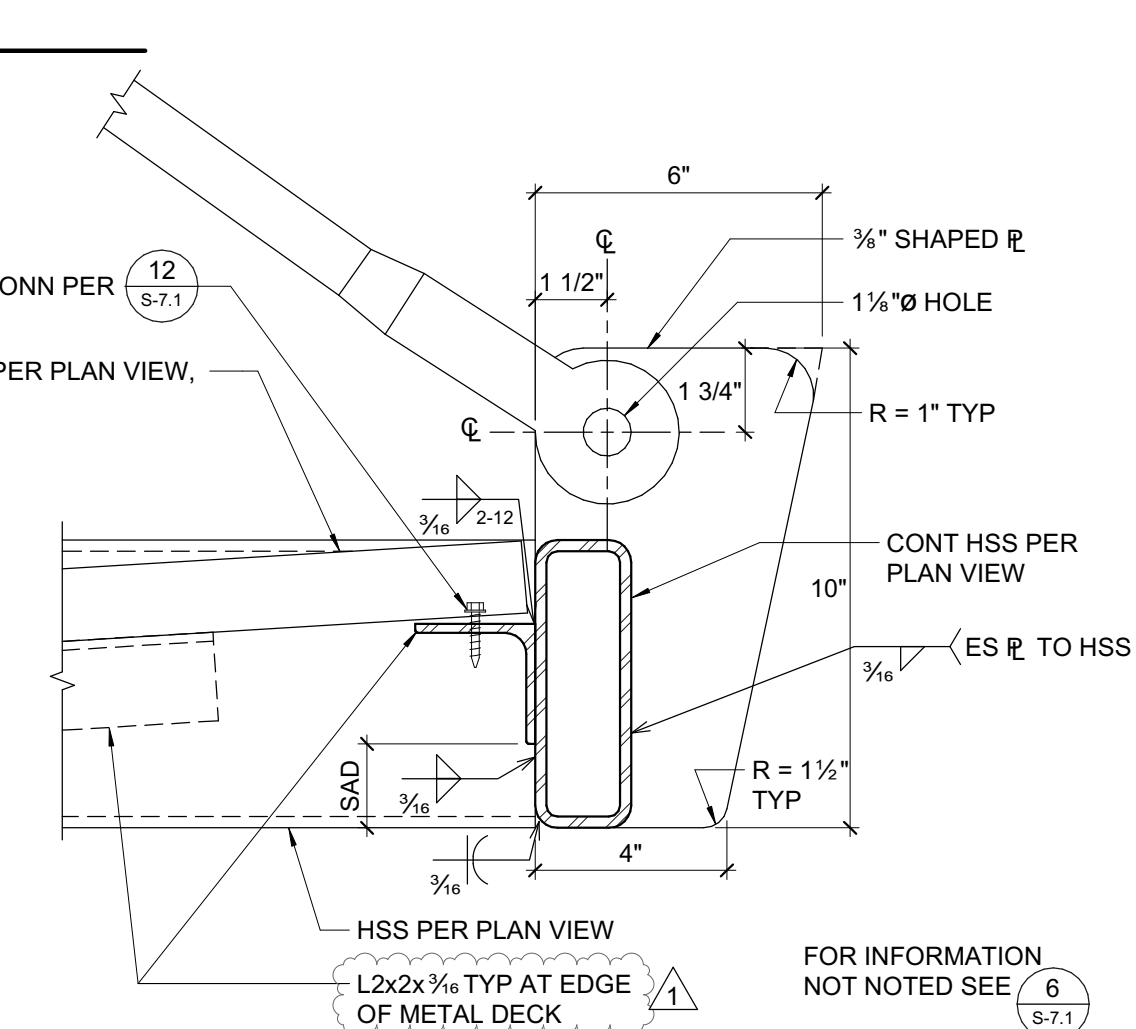
5 CANOPY ATTACHMENT
3" = 1'-0"



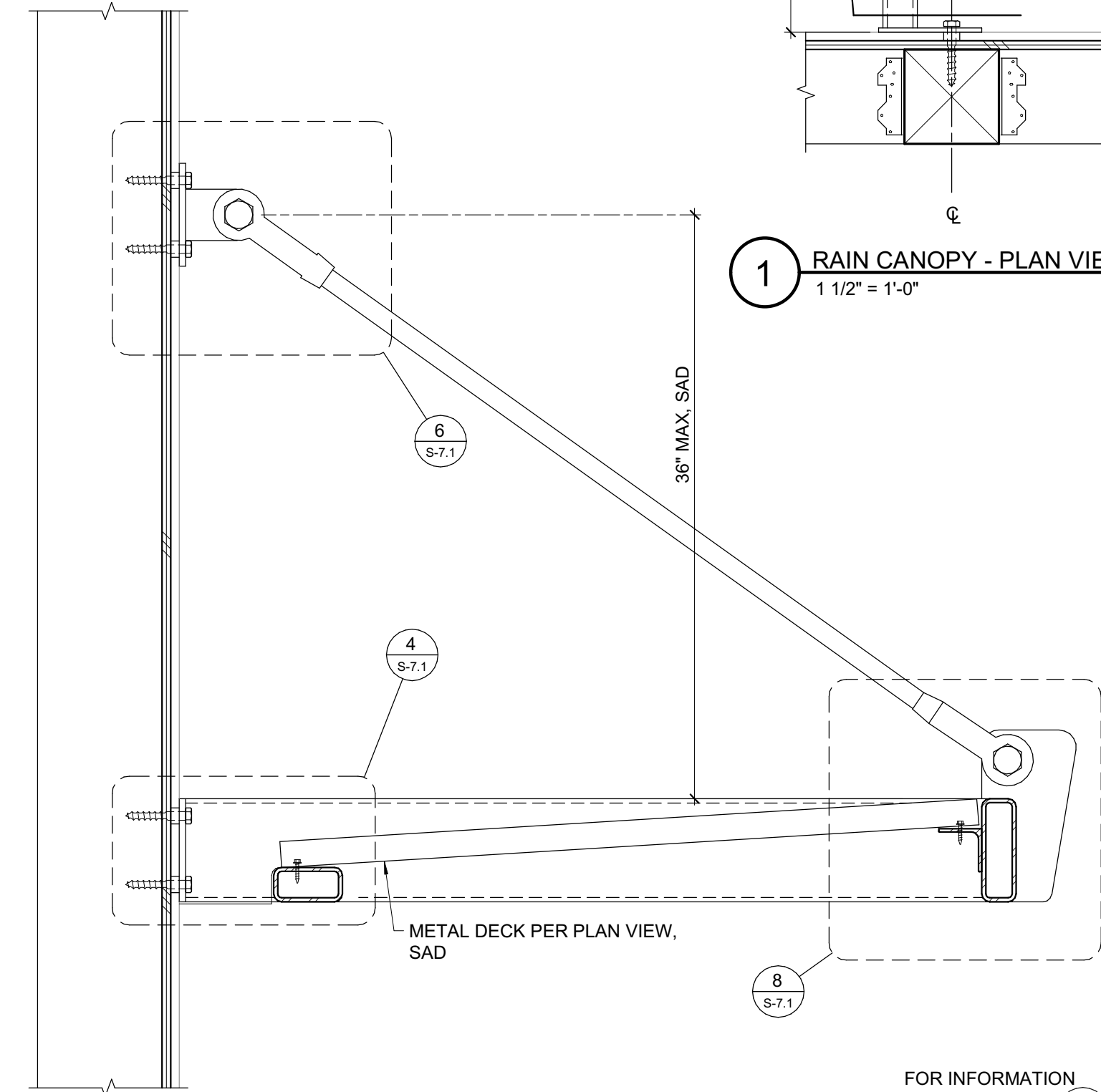
6 DIAGONAL BRACE MOUNTING BRACKET
3" = 1'-0"



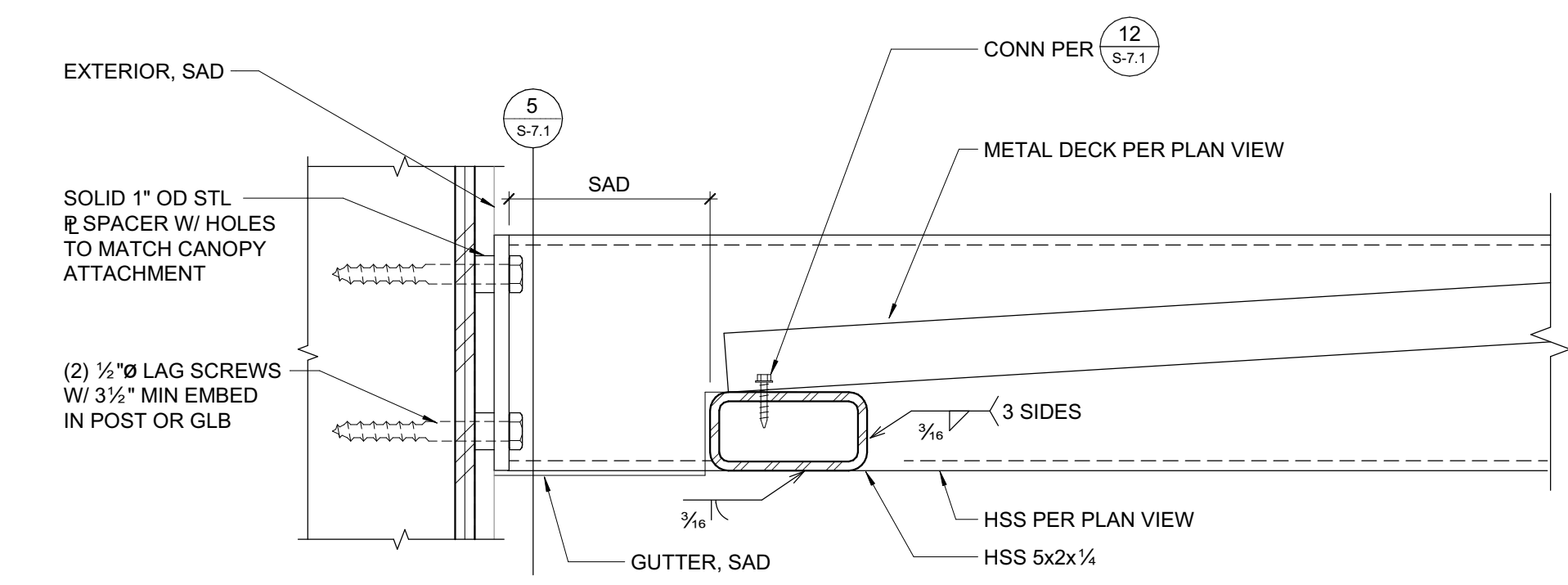
7 DIAGONAL BRACE MOUNTING
3" = 1'-0"



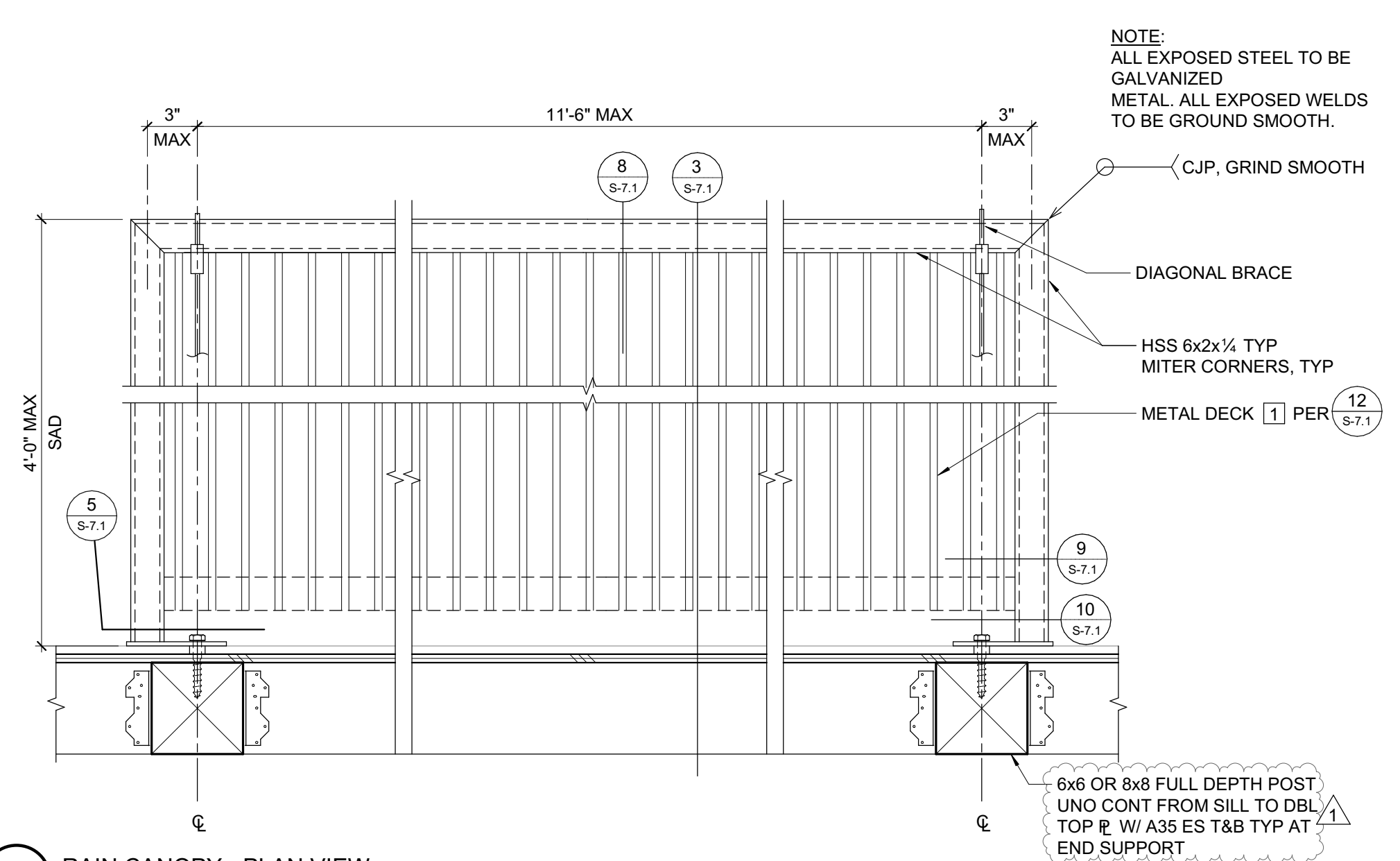
8 RAIN CANOPY HEAD
3" = 1'-0"



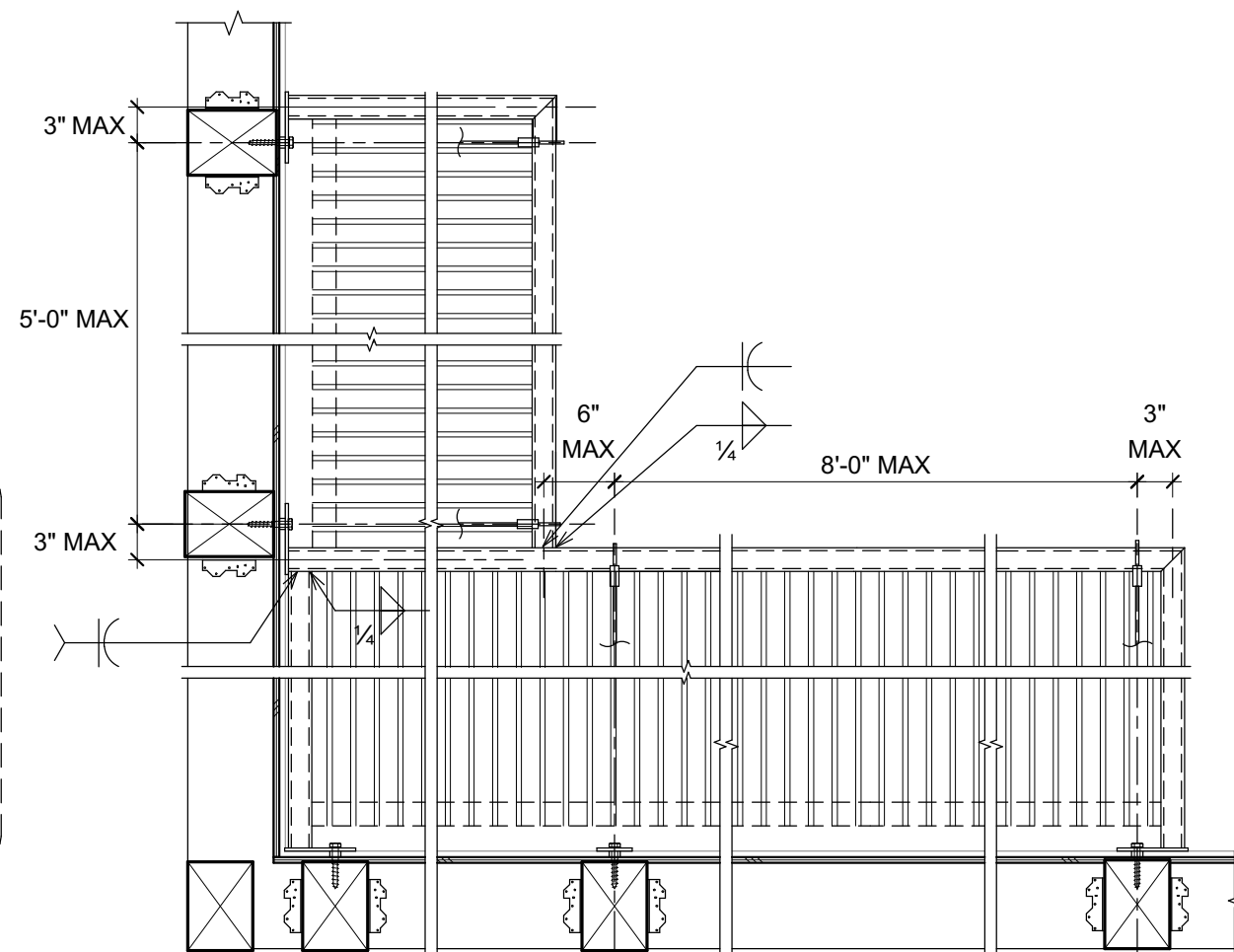
3 RAIN CANOPY - SECTION
1 1/2" = 1'-0"



4 RAIN CANOPY LOWER CANOPY ATTACHMENT
3" = 1'-0"



1 RAIN CANOPY - PLAN VIEW
1 1/2" = 1'-0"



2 L-SHAPED RAIN CANOPY - PLAN VIEW
3/4" = 1'-0"

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NEW CLASSROOM BUILDINGS
INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

CD
JUNE 3, 2021

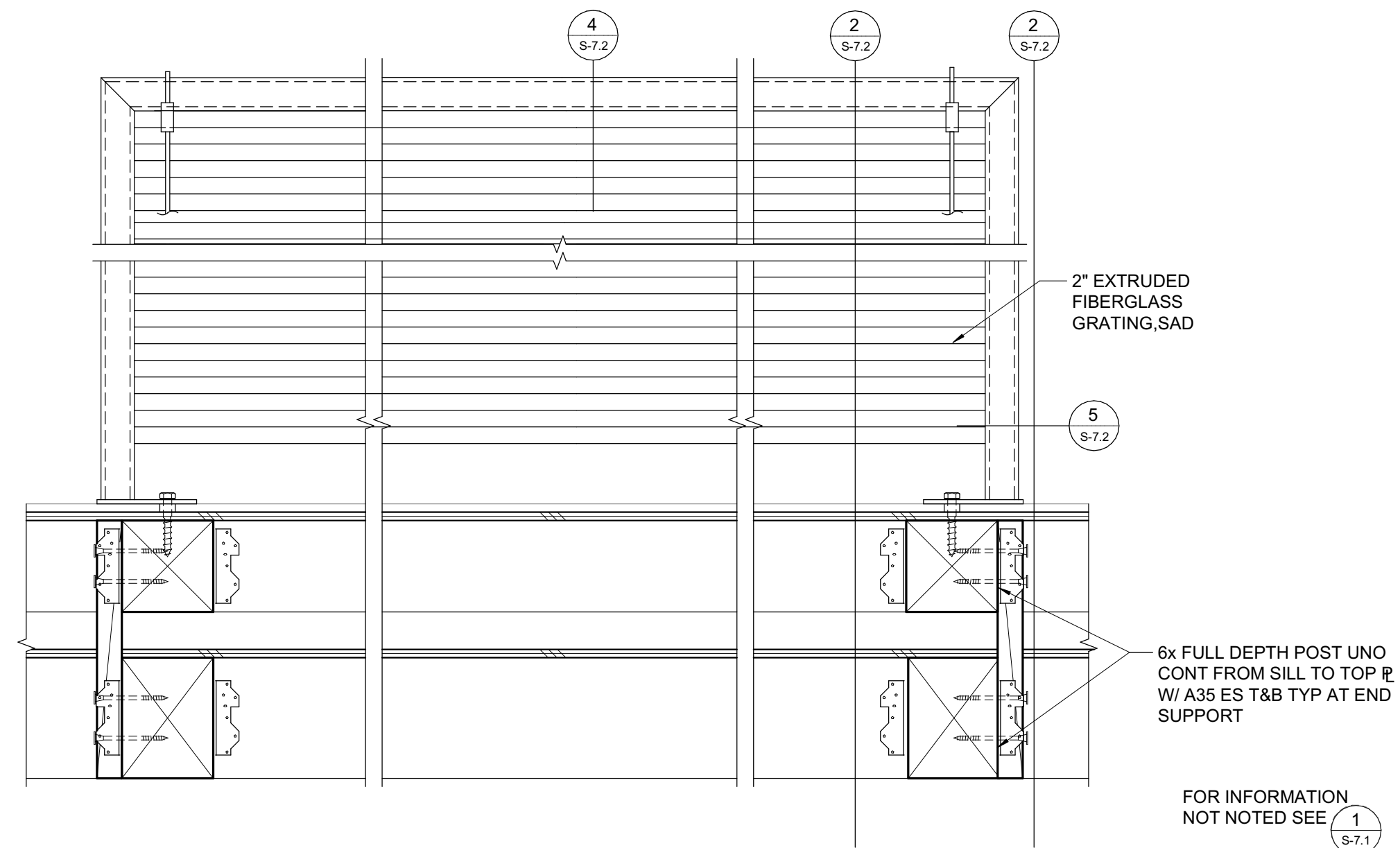
RAIN CANOPY DETAILS

SHEET NUMBER

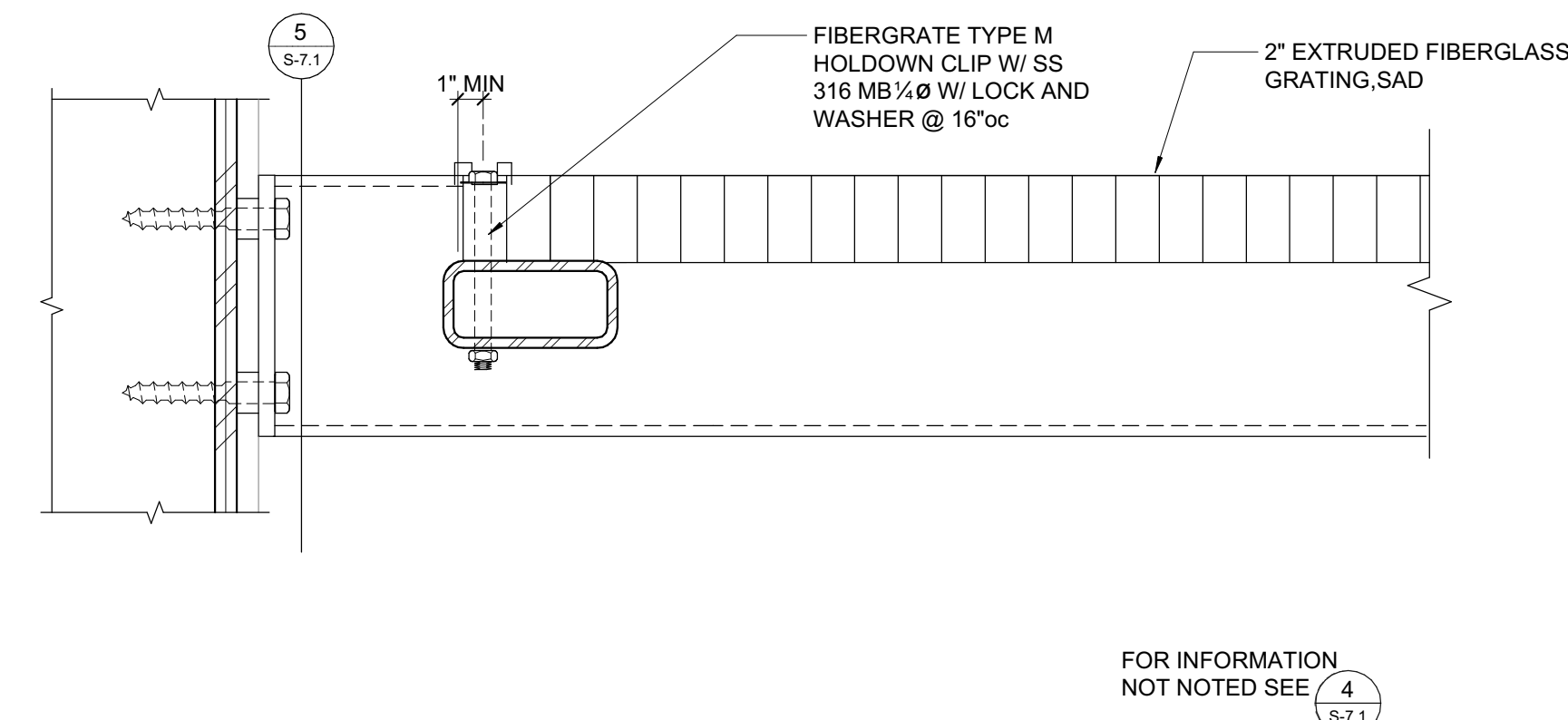
S-7.1

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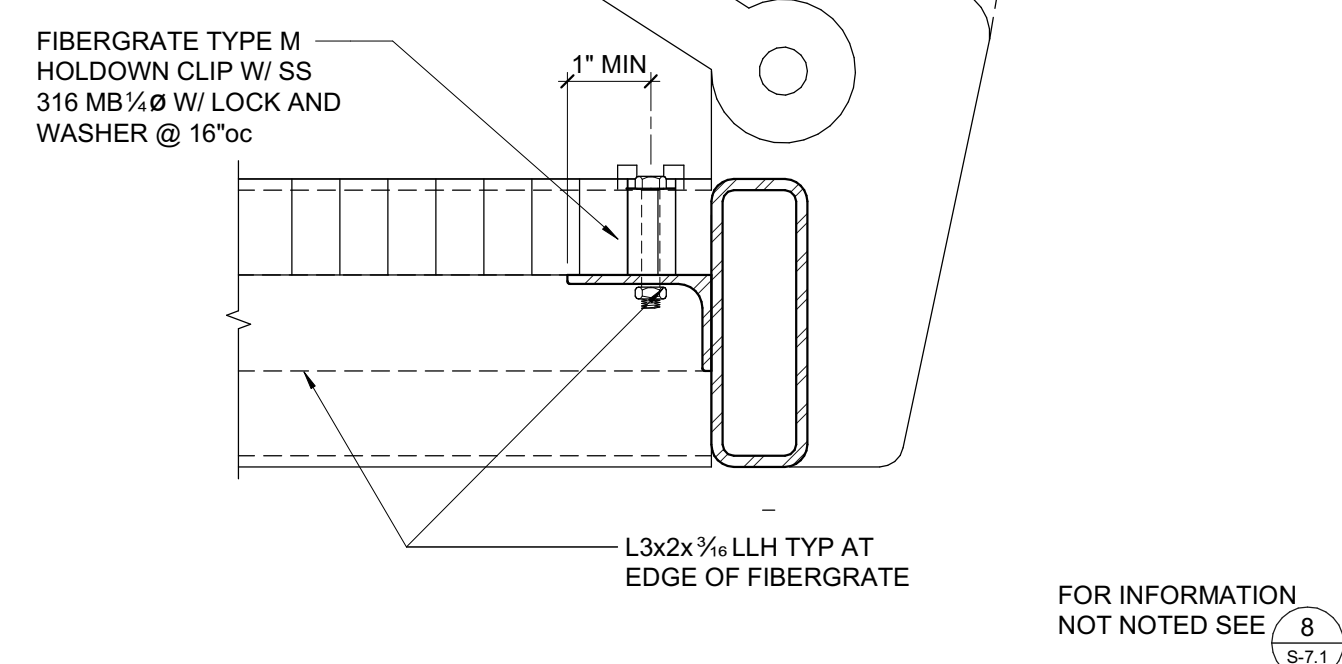
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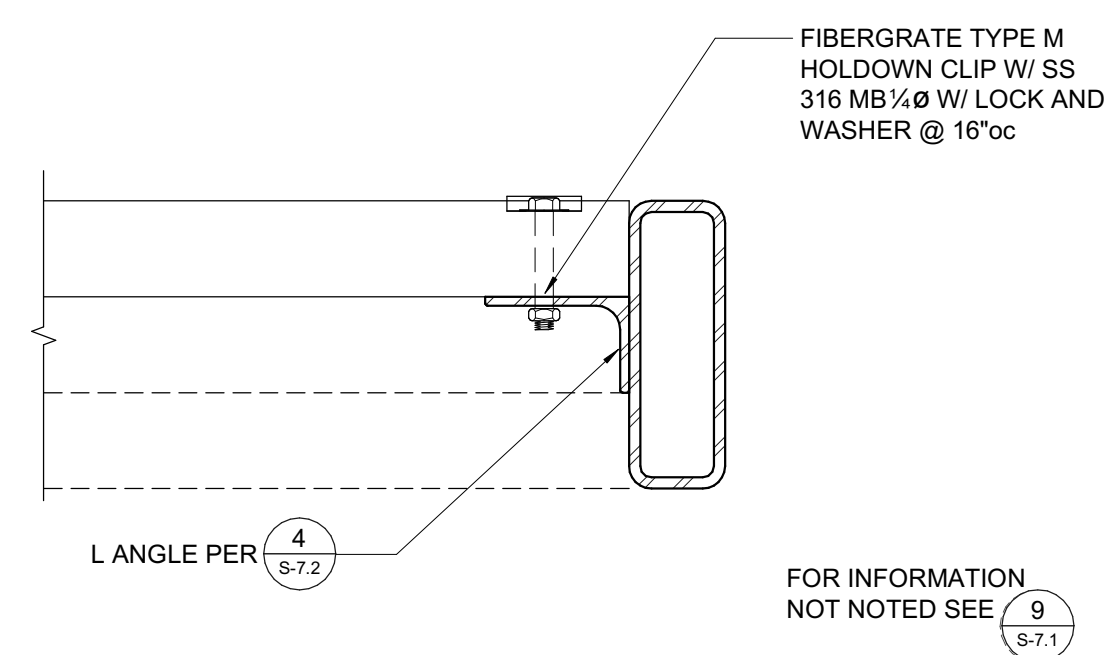
1 SHADE CANOPY - PLAN VIEW
1 1/2" = 1'-0"



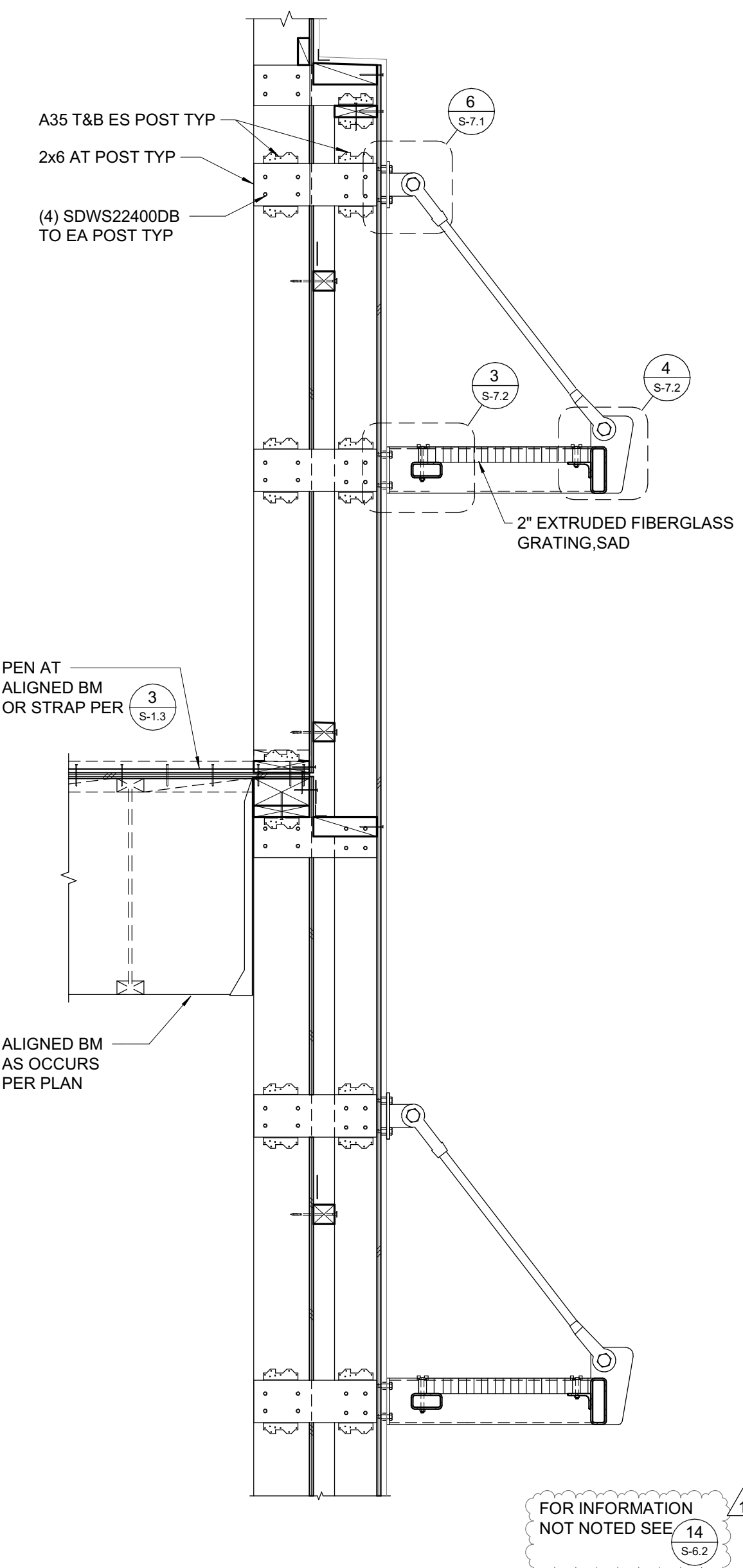
3 SHADE CANOPY LOWER CANOPY ATTACHMENT
3" = 1'-0"



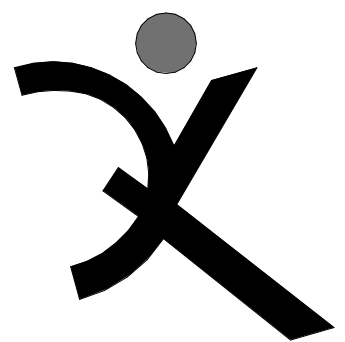
4 SHADE CANOPY HEAD
3" = 1'-0"



5 SHADE CANOPY RAKE
3" = 1'-0"



2 SHADE CANOPY - SECTION
3/4" = 1'-0"



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LIBERTY UNION HIGH SCHOOL DISTRICT

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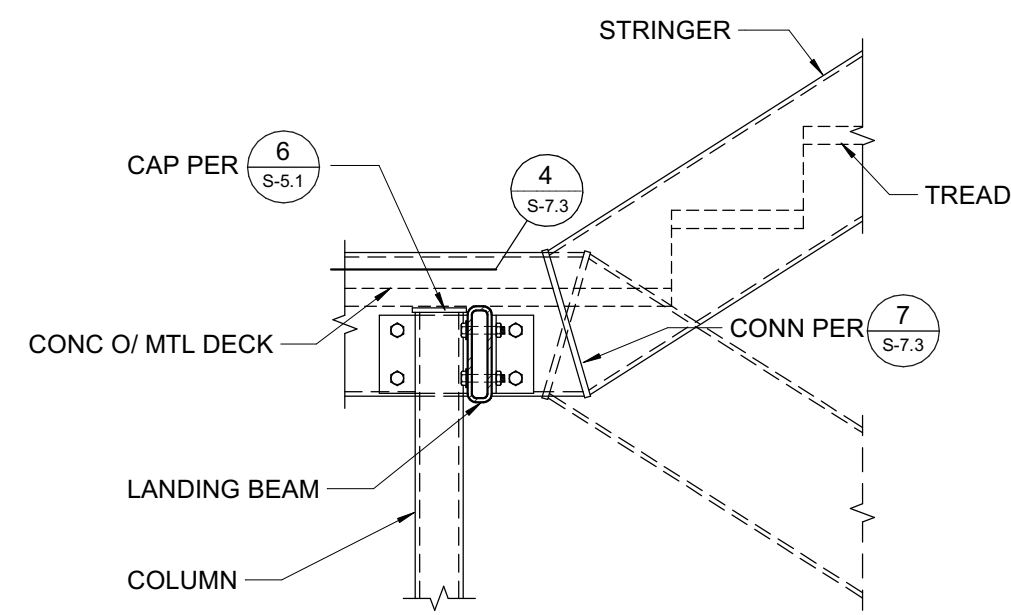
DSA APP NO. 01-119268
ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

CD
JUNE 3, 2021

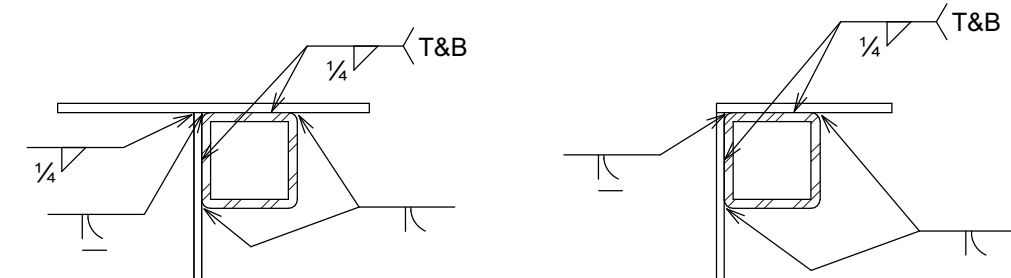
SHEET TITLE
SHADE CANOPY DETAILS

SHEET NUMBER

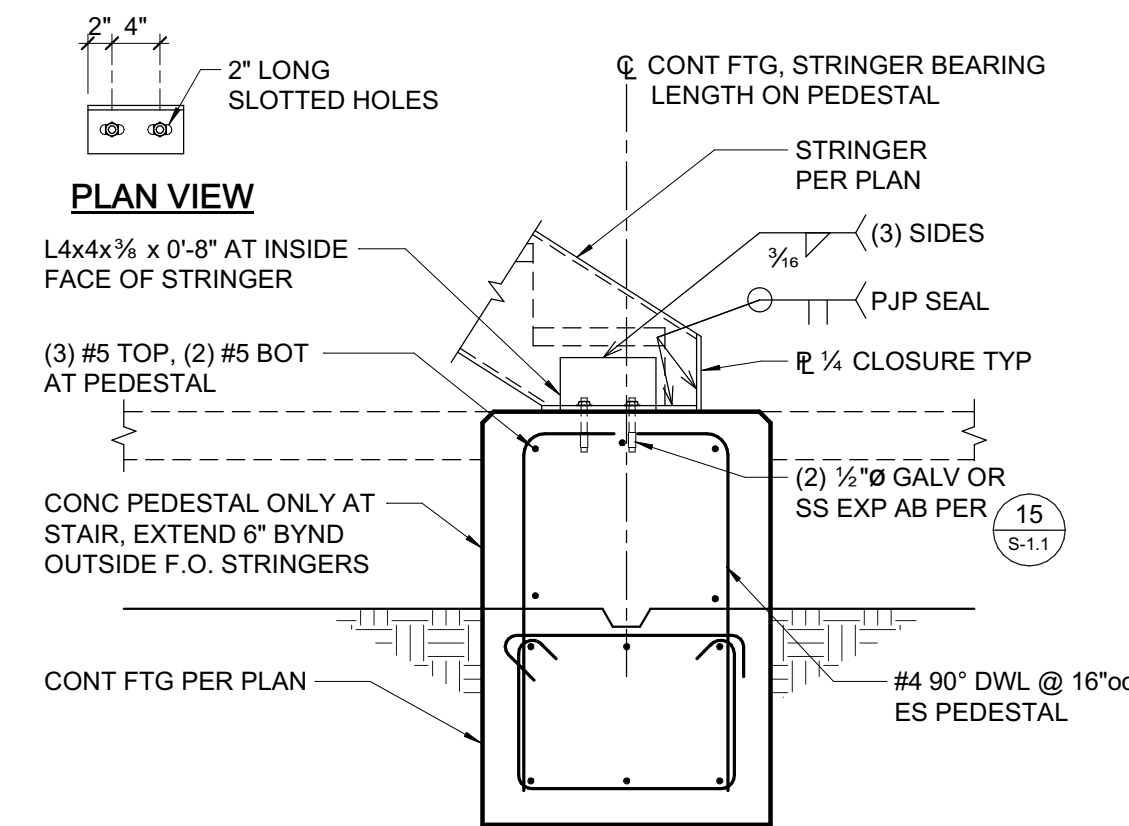
S-7.2



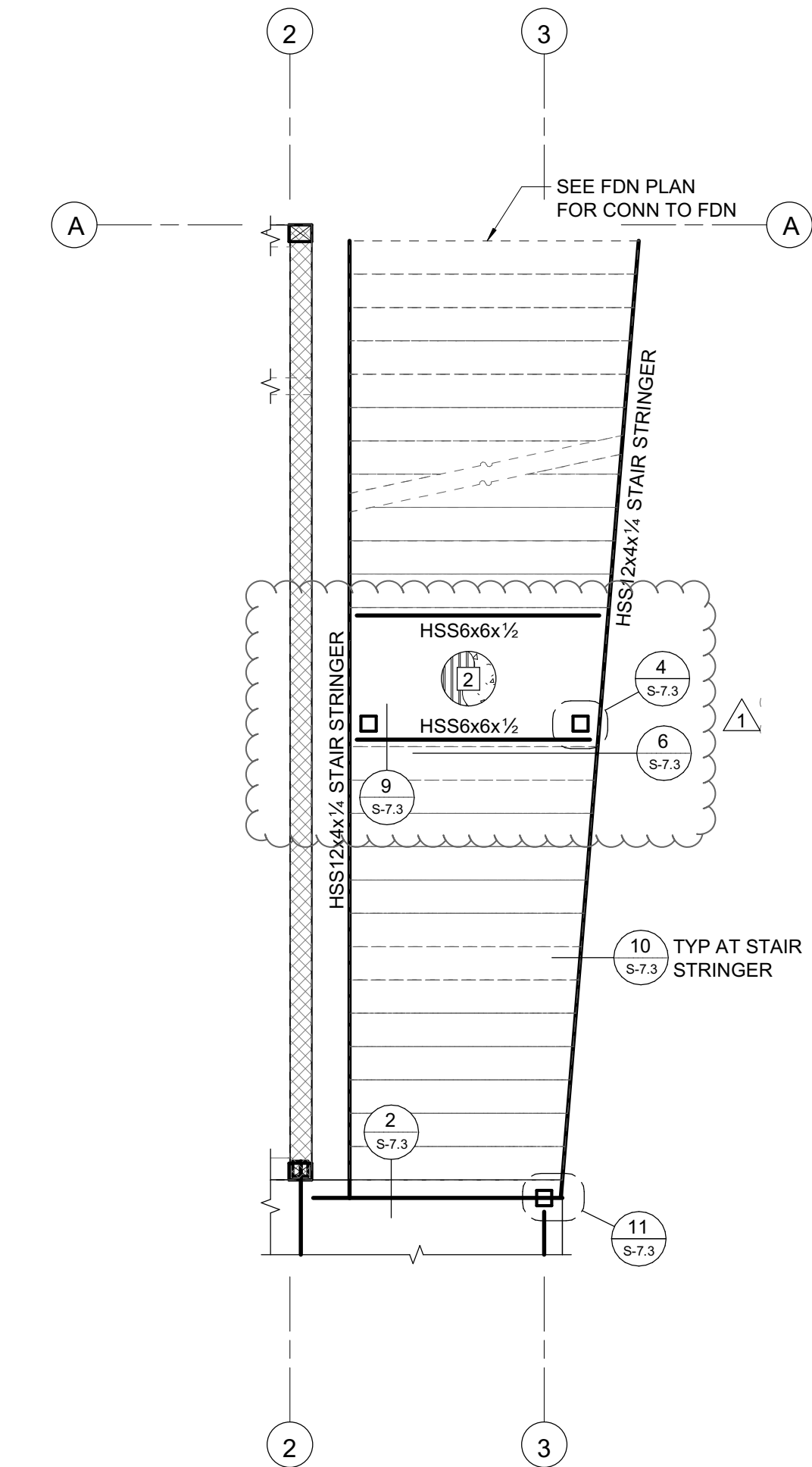
9 HSS COLUMN AT STRINGER
3/4" = 1'-0"



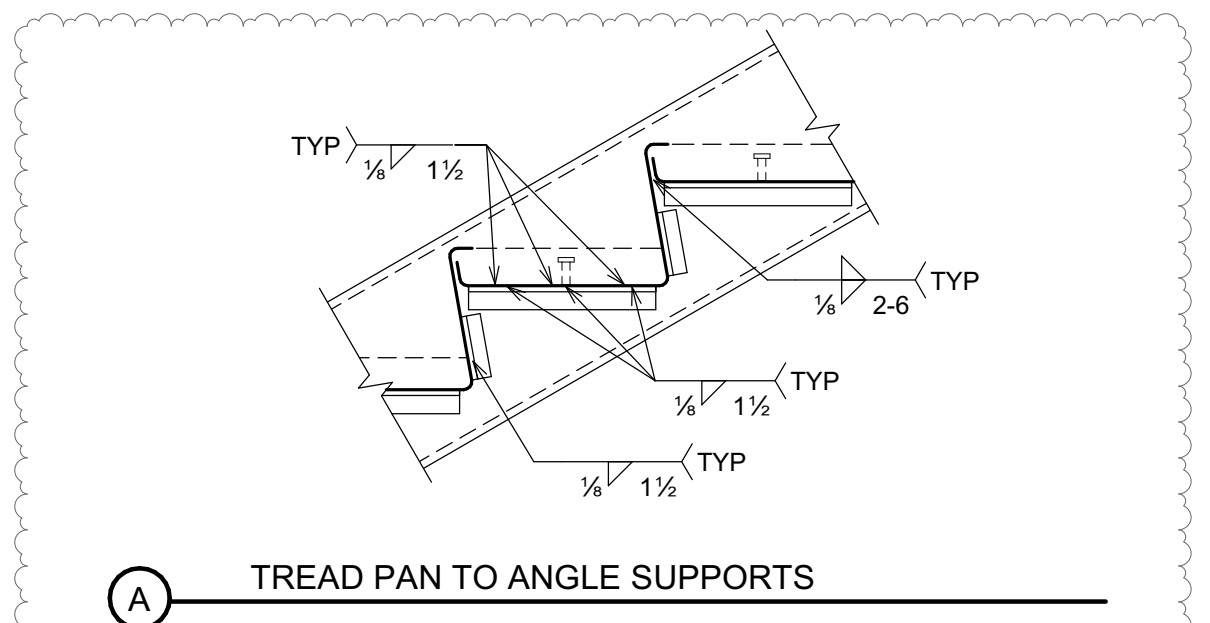
4 VERTICAL HSS BASE CONNECTION
3/4" = 1'-0"



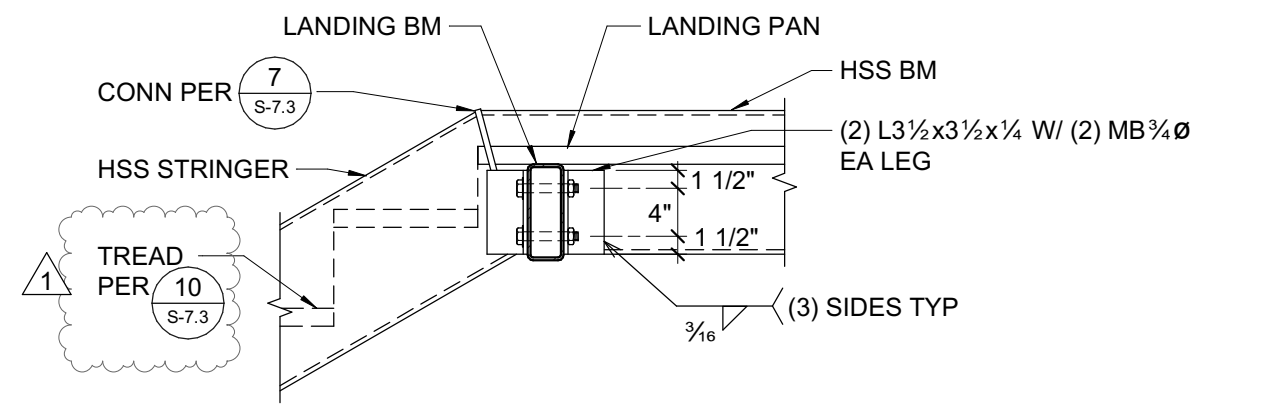
1 BOTTOM OF STRINGER TO FOUNDATION
3/4" = 1'-0"



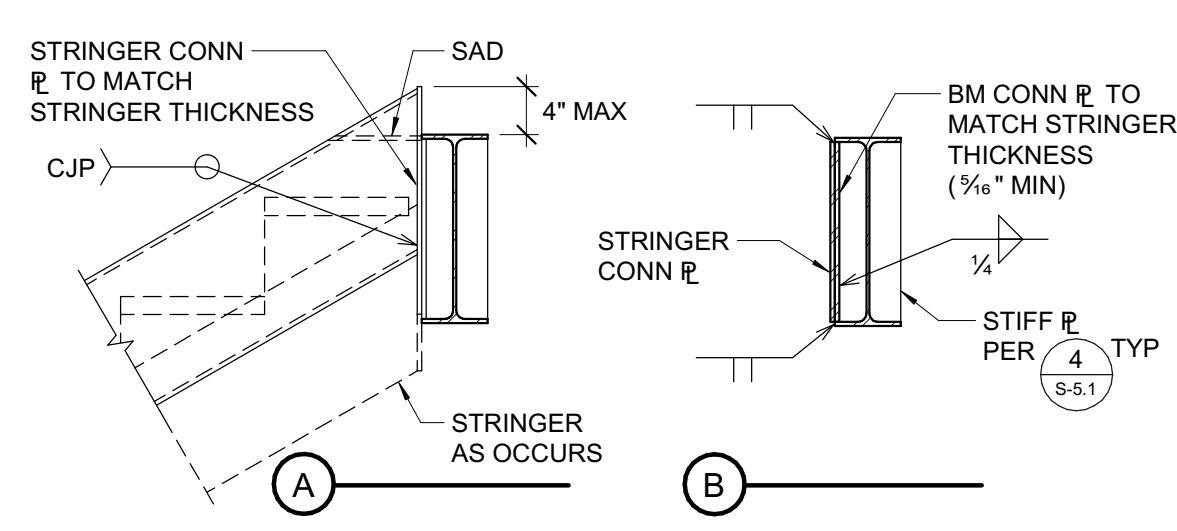
A BLDG B - STAIR #1 PLAN
1/4" = 1'-0"



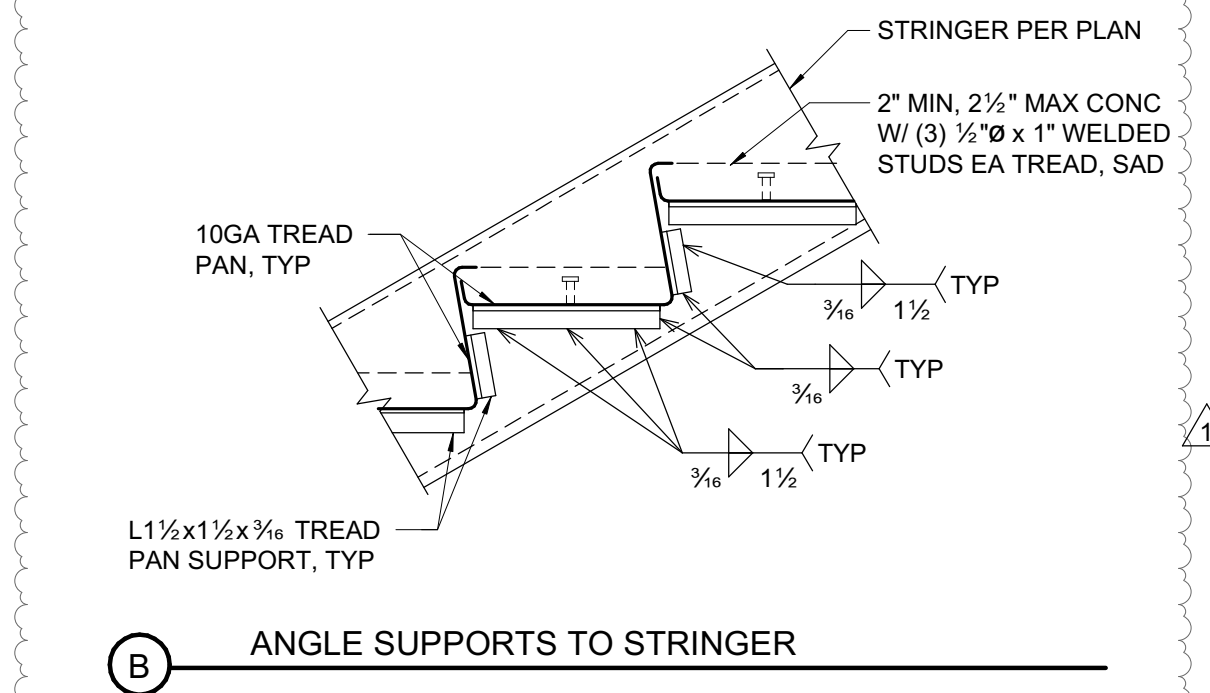
A TREAD PAN TO ANGLE SUPPORTS



5 SHAPED STRINGER SUPPORTING LANDING BEAM
3/4" = 1'-0"

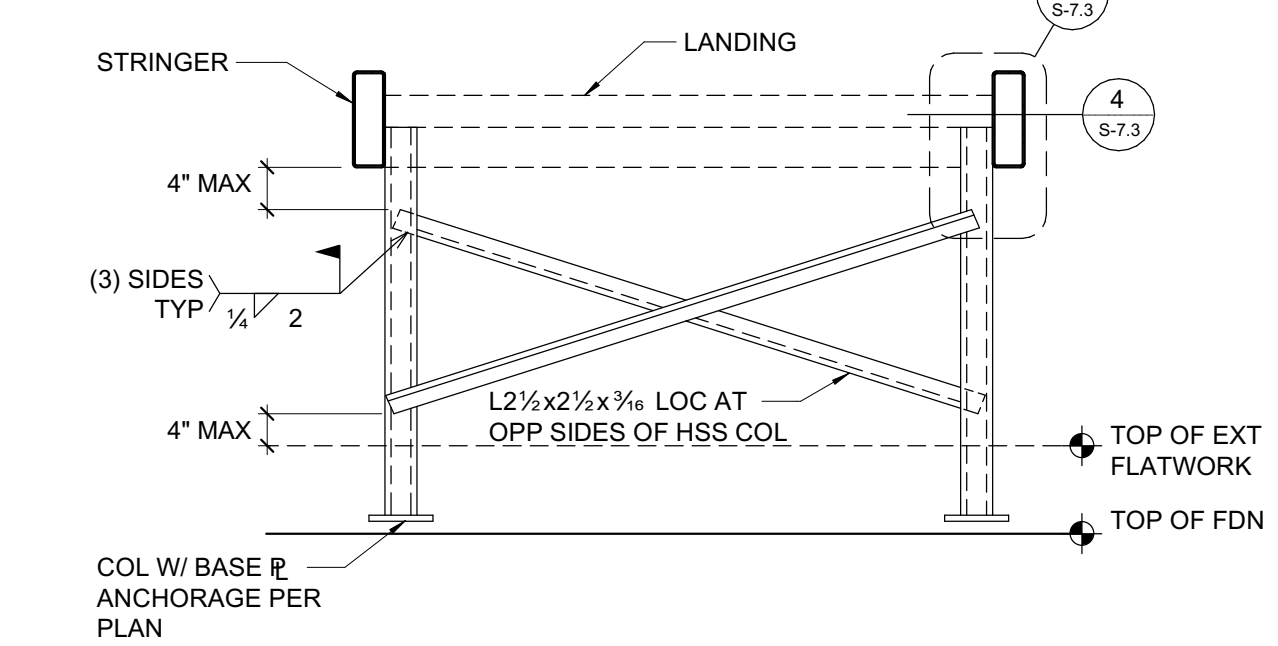


2 STRINGER CONNECTION TO W SHAPE
3/4" = 1'-0"

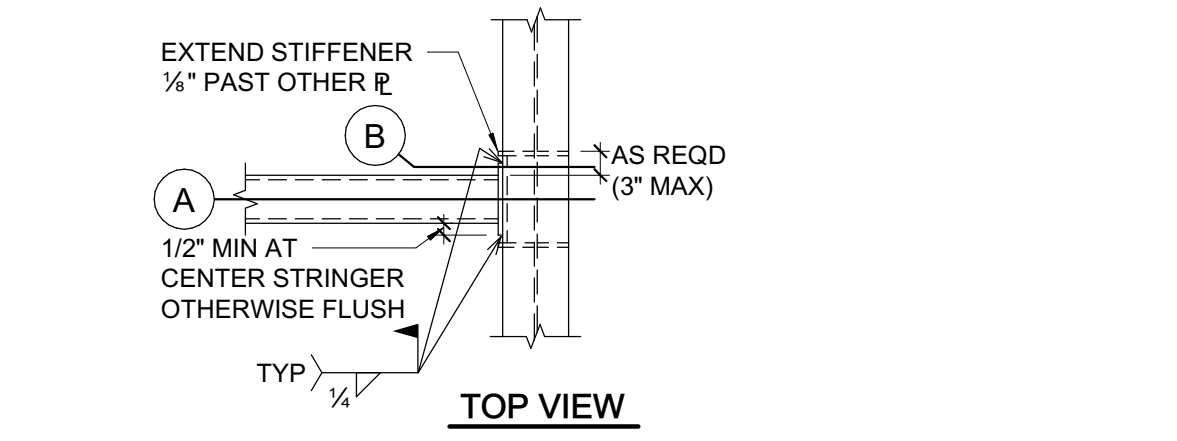


B ANGLE SUPPORTS TO STRINGER

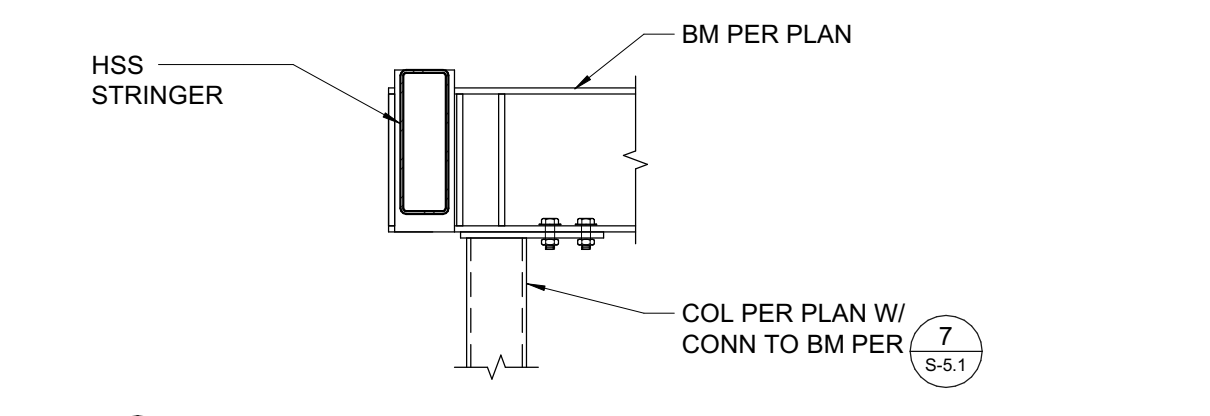
10 TREAD TO STRINGER CONNECTION
1" = 1'-0"



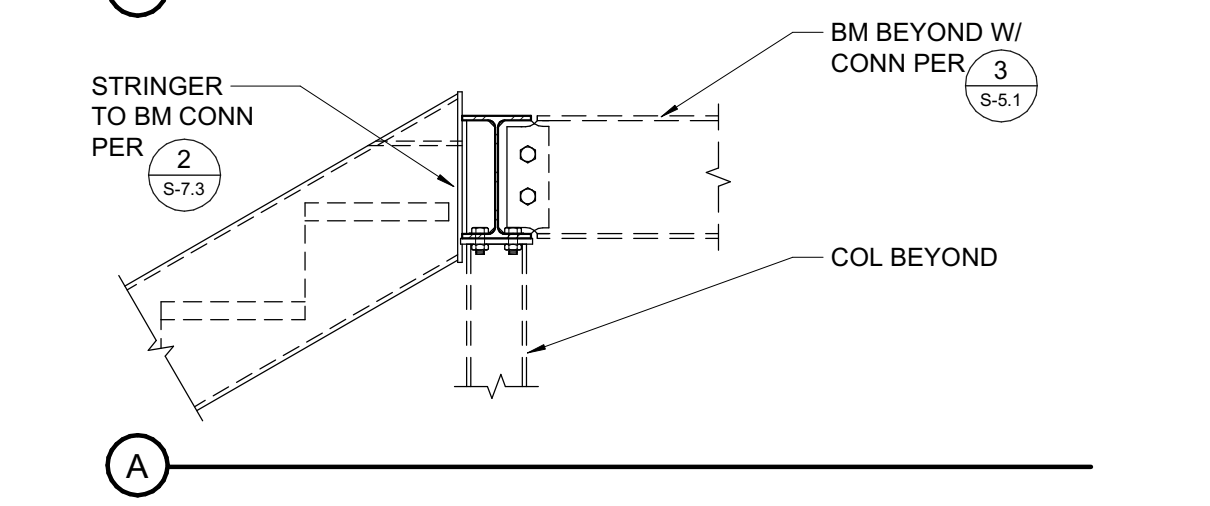
6 DIAGONAL CROSS BRACING
1/2" = 1'-0"



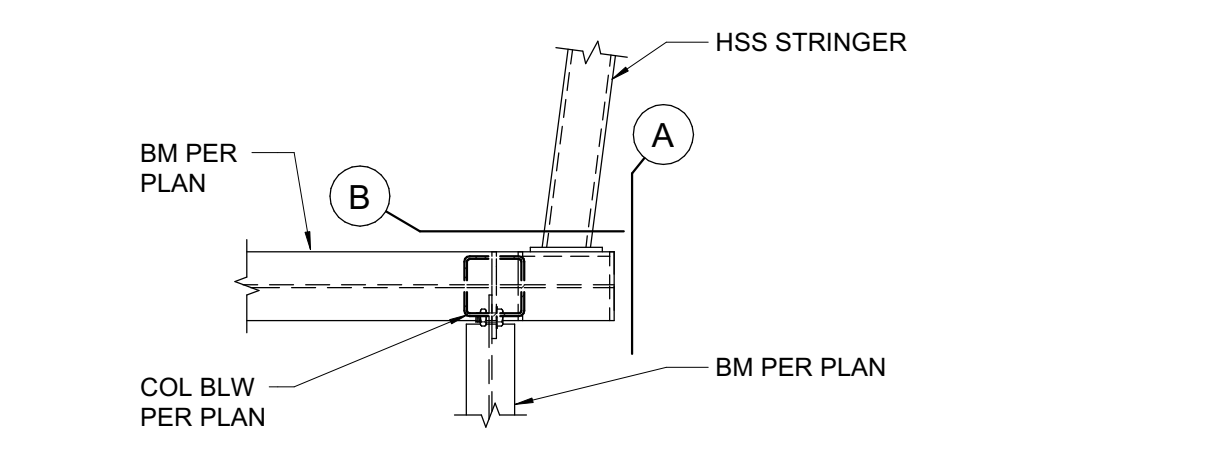
7 SHAPED STRINGER CONNECTION
3/4" = 1'-0"



B

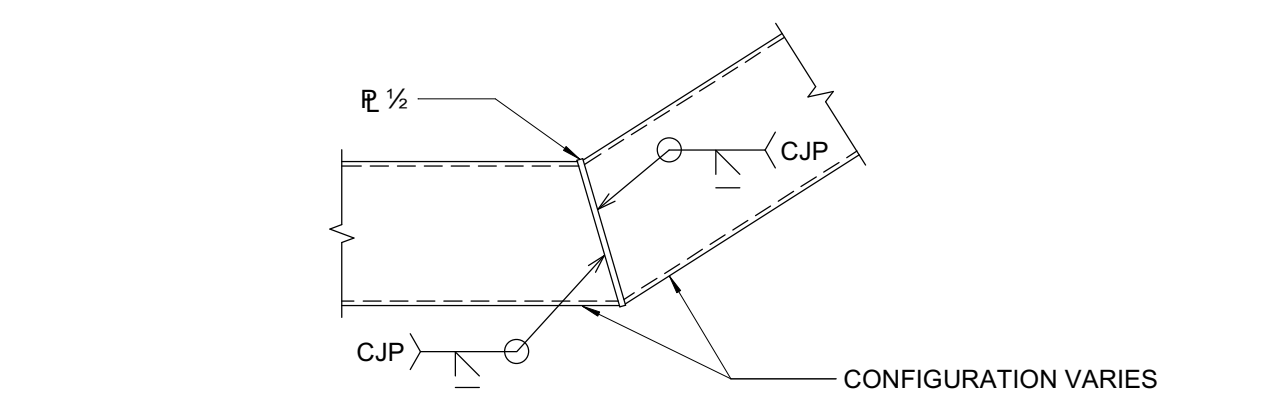


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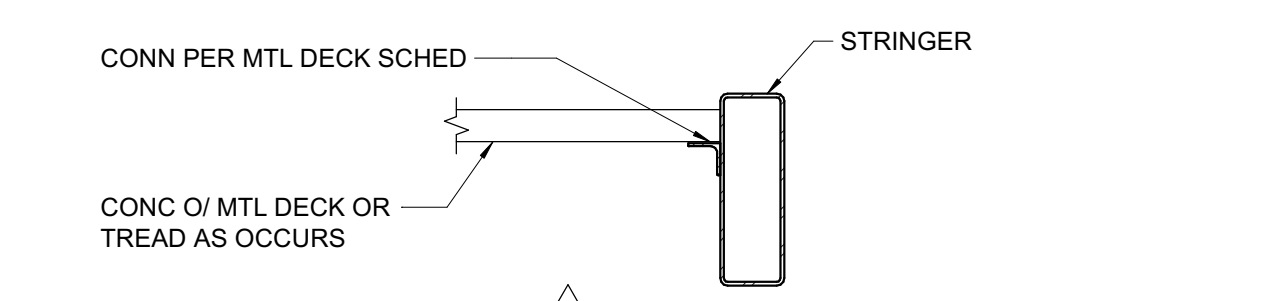


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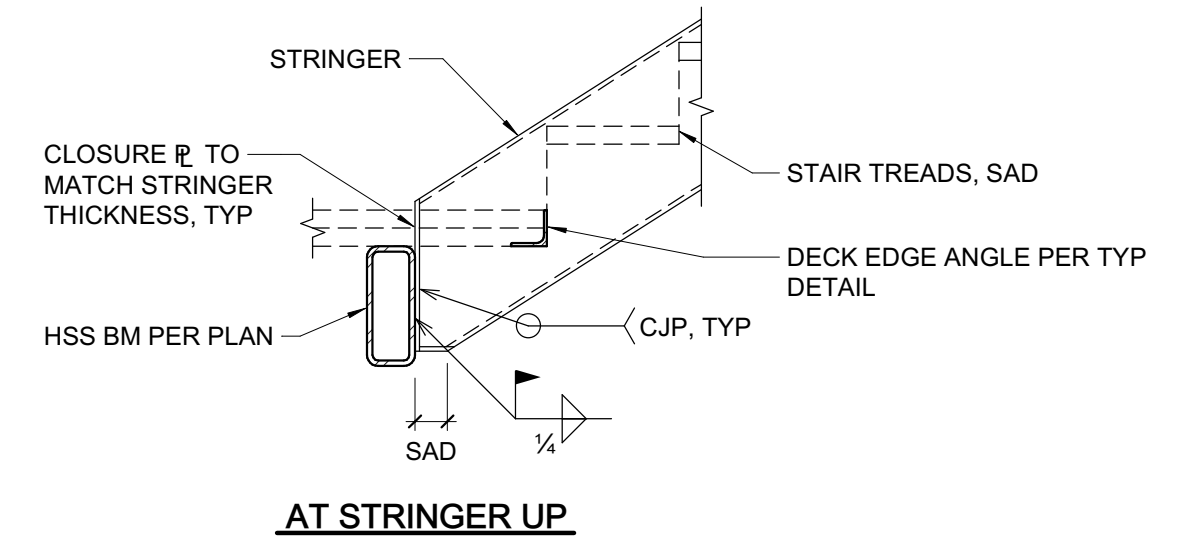
11 STRINGER CONNECTION TO W SHAPE
3/4" = 1'-0"



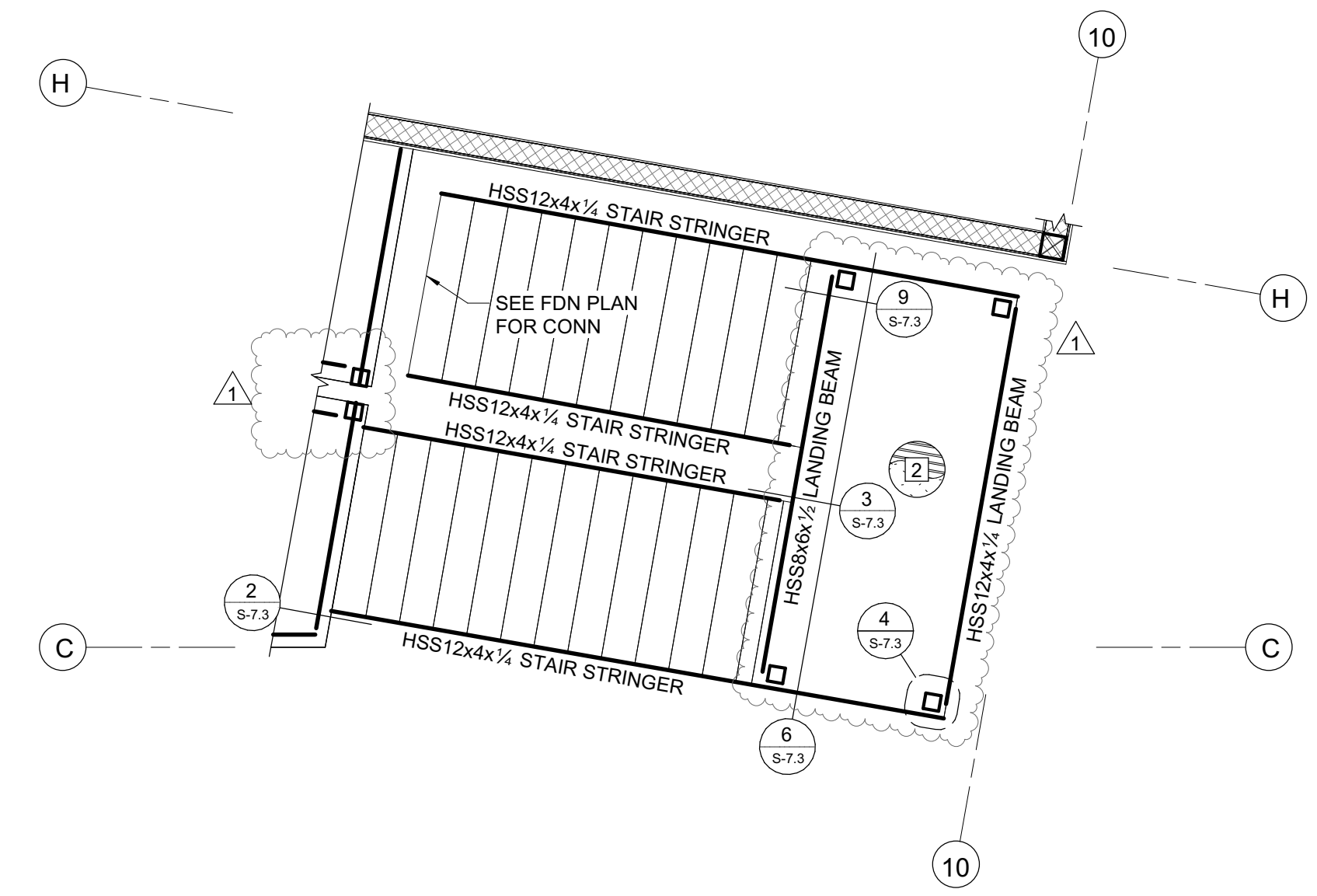
7 SHAPED STRINGER CONNECTION
3/4" = 1'-0"



8 DECK AT LANDING OR TREAD TO BEAM CONNECTION
1" = 1'-0"



3 STRINGER TO HSS BEAM
3/4" = 1'-0"



B BLDG B - STAIR #2
1/4" = 1'-0"

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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS
INCREMENT 2 OF 2

101 AMERICAN AVE
BRENTWOOD CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
1	2021-05-28	Bid Clarification 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00
ENGR / PM: KPB / DM / SCH
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PTN: 61721-77 FILE NO: 7-H4

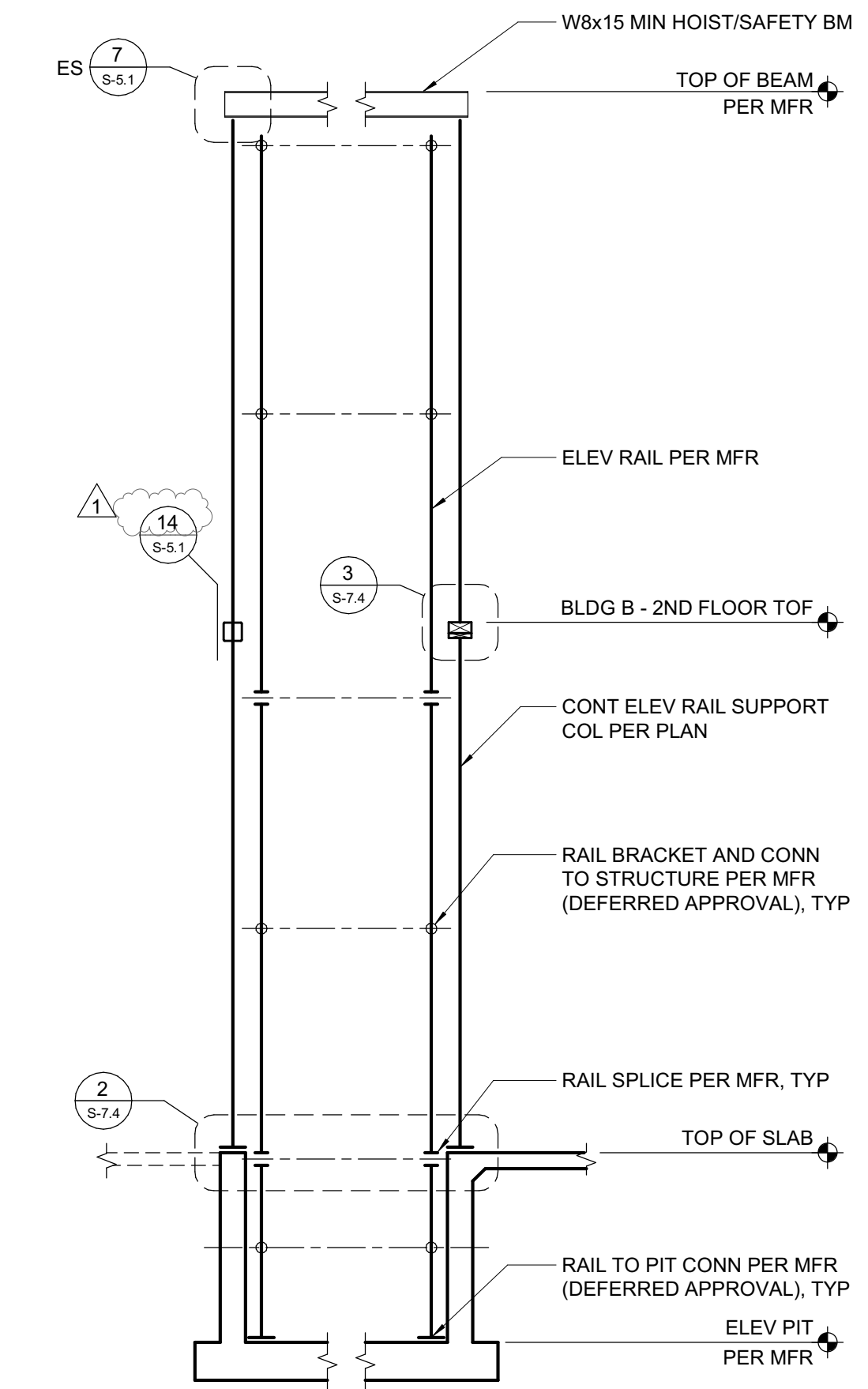
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JUNE 3, 2021
SHEET TITLE

STEEL STAIR DETAILS

SHEET NUMBER
S-7.3

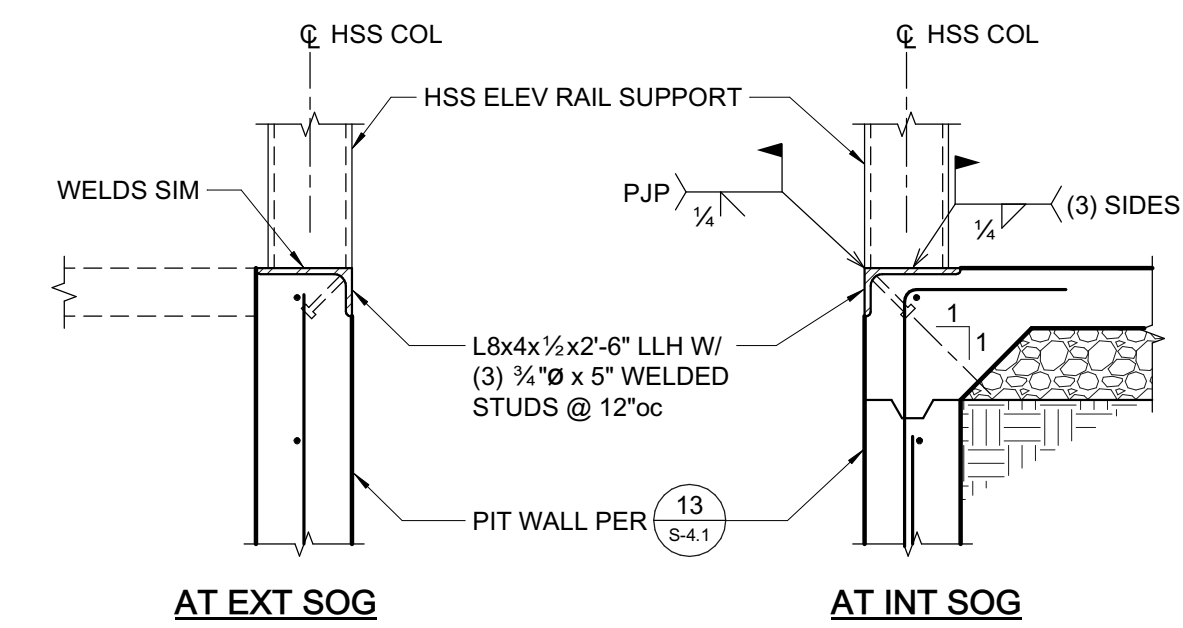
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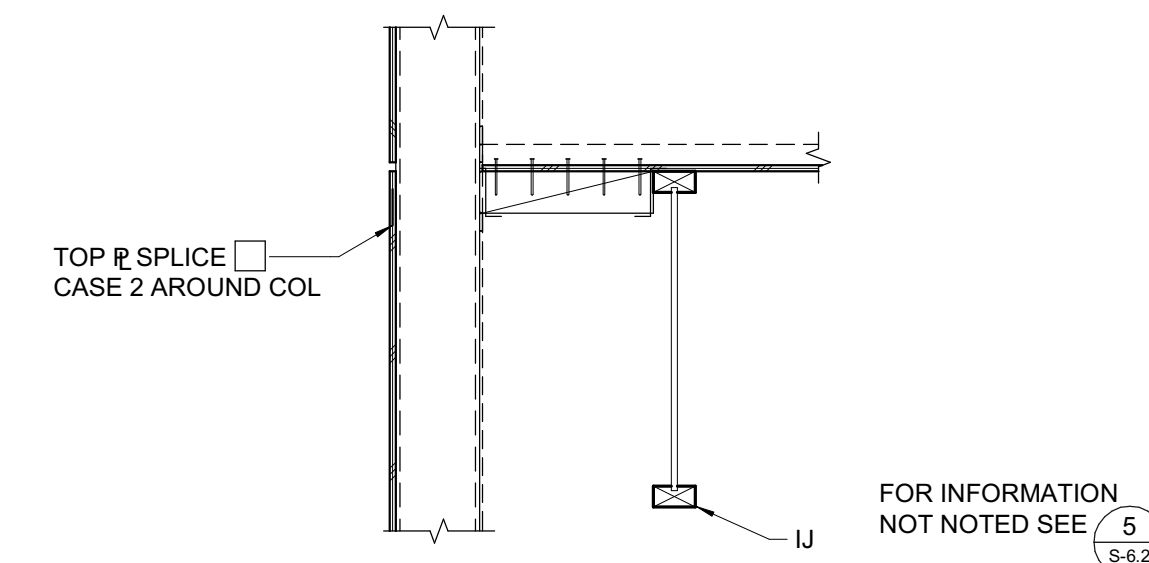


- ELEVATOR NOTES:**
- IF ELEV LOAD IS DIFFERENT THAN SHOWN, NOTIFY STRUCTURAL ENGINEER FOR MODIFICATION OF SUPPORT.
 - LATERAL RAIL LOADS:
 - 1800#
 - 200#
 - ELEVATOR CAPACITY = 3500#
 - CAR WT = 3500# MAX
 - MAXIMUM BRACKET SPACING = 12'-0"
 - FOR SUBMITTAL ITEMS RELATED TO DETAILS ON THIS SHEET SEE **B** S-6.1

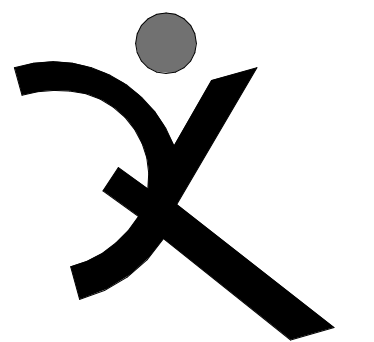
1 ELEVATOR SECTION
1/4" = 1'-0"



2 ELEVATOR RAIL SUPPORT AT PIT
3/4" = 1'-0"



3 ELEVATOR RAIL SUPPORT AT FLOOR
3/4" = 1'-0"



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LIBERTY UNION HIGH SCHOOL DISTRICT

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ENGR / PM: KPB / DM / SCH
DRAWING SCALE: As indicated
PTN: 61721-77 FILE NO: 7-H4

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JUNE 3, 2021
SHEET TITLE

ELEVATOR ELEVATION AND DETAILS

SHEET NUMBER

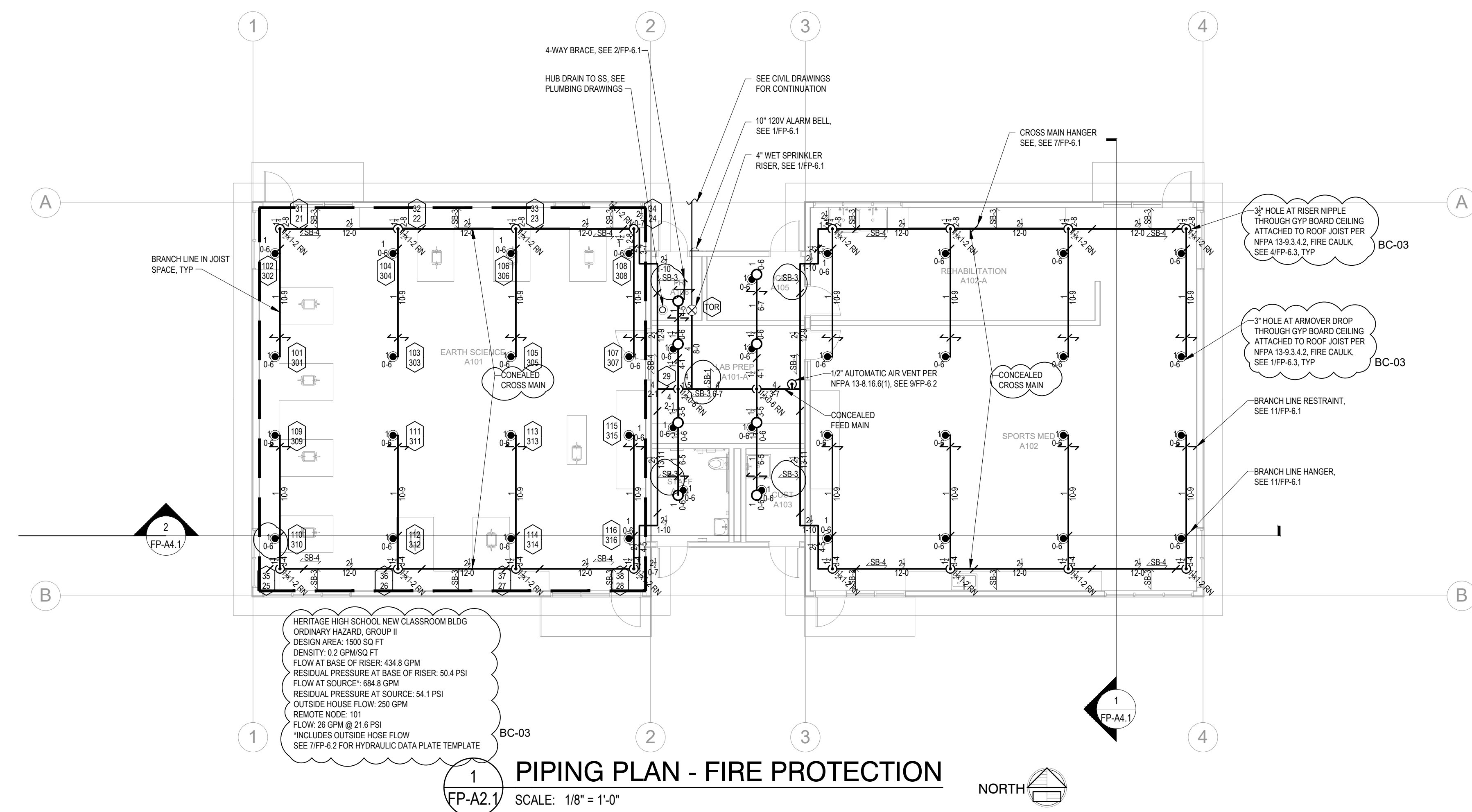
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SPRINKLER									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP RATING	QTY	NOTES
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	155 °F	39	1, 2, 3, 4,
○	UPRIGHT ON BRANCH LINE	TYCO	TY-FRB	3131	SSU	5.6	155 °F	0	
○	CONCEALED UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	155 °F	8	
TOTAL SPRINKLER (THIS SHEET)								47	
TOTAL SPRINKLERS BLDG A								47	

- FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- PROVIDE ON 401 EXTENSION
- PROVIDE STYLE 10 RECESSED ESCUTCHEON. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZED HOLE WITH VIKING 1260 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

- ### GENERAL NOTES
- ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
 - ALL PIPE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH CAST IRON THREADED FITTINGS IN ACCORDANCE WITH ANSI B16.4.
 - ALL PIPE 2" AND GREATER SHALL BE SCHEDULE 10 BLACK STEEL WITH GROOVED COUPLINGS AND WELDED OUTLETS.
 - ALL PIPE 1-1/2" AND SMALLER SHALL HAVE SUPPORT SPACING LESS THAN 12 FEET.
 - ALL PIPE 2" AND GREATER SHALL HAVE SUPPORT SPACING LESS THAN 15 FEET.
 - BRANCH LINES SHALL BE RESTRAINED AT THE END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 26 FT PER NFPA-13 TABLE 9.3.6.4(a).
 - PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.
 - PAINT ALL EXPOSED PIPING TO MATCH ADJACENT FINISHES.



HERITAGE HIGH SCHOOL NEW CLASSROOM BLDG
 ORDINARY HAZARD, GROUP II
 DESIGN AREA: 1500 SQ FT
 DENSITY: 0.2 GPM/SQ FT
 FLOW AT BASE OF RISER: 434.8 GPM
 RESIDUAL PRESSURE AT BASE OF RISER: 50.4 PSI
 FLOW AT SOURCE: 684.8 GPM
 RESIDUAL PRESSURE AT SOURCE: 54.1 PSI
 7 OUTSIDE HOUSE FLOW: 250 GPM
 REMOTE NODE: 101
 FLOW: 26 GPM @ 21.6 PSI
 *INCLUDES OUTSIDE HOUSE FLOW
 SEE TYP-6.2 FOR HYDRAULIC DATA PLATE TEMPLATE

1 PIPING PLAN - FIRE PROTECTION
 FP-A2.1 SCALE: 1/8" = 1'-0"

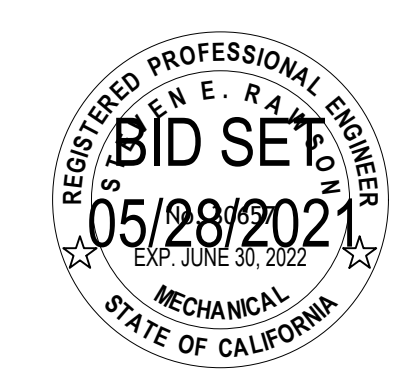
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REVISIONS		
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268
 ARCH PROJECT NO: 1870.00
 DRAWN BY:
 DRAWING SCALE: 1/8" = 1' - 0"
 PTN: 61721-77 FILE NO: 7-H4
BID SET
MAY 28, 2021
 SHEET TITLE

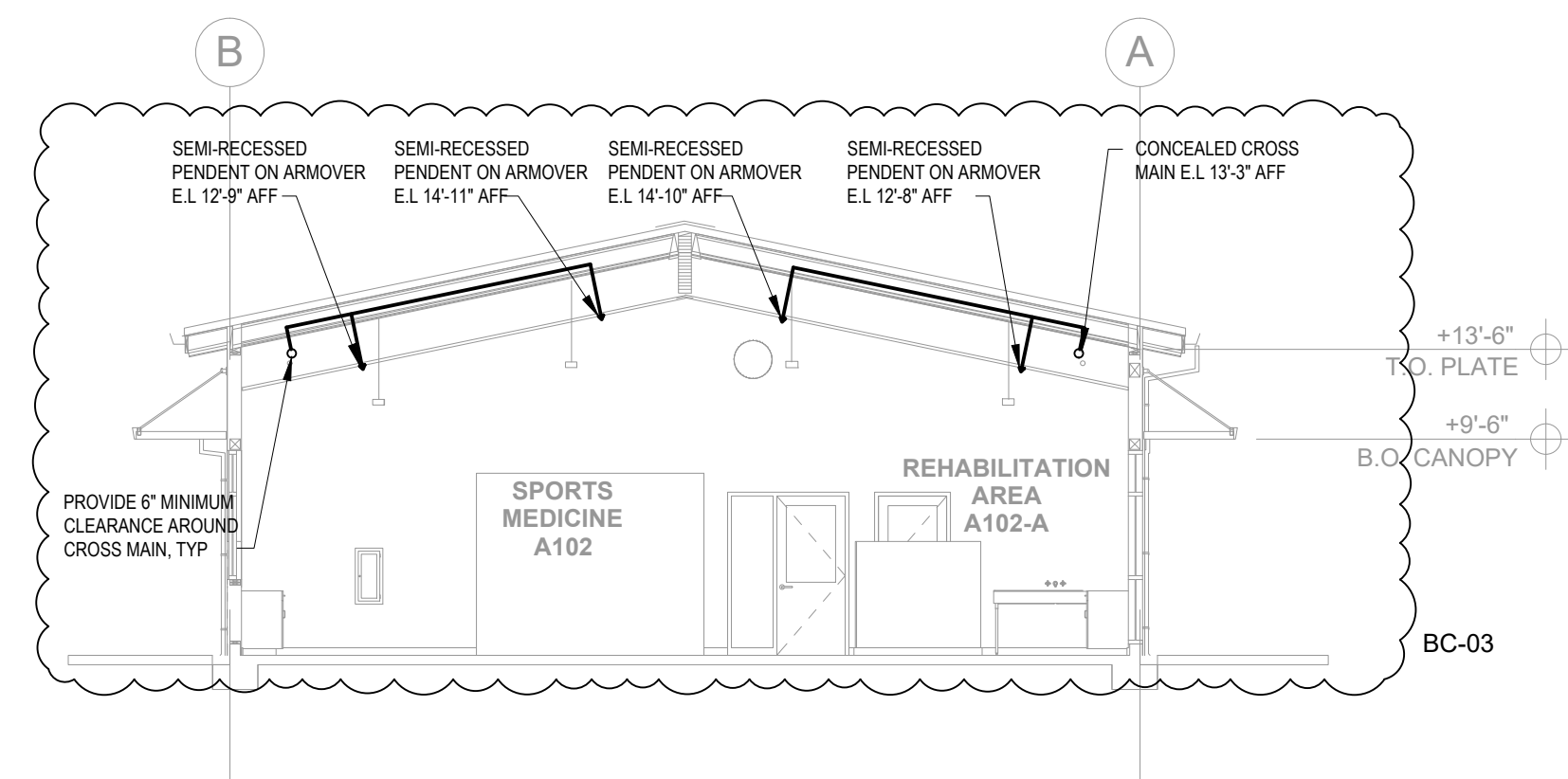
PIPING PLAN - FIRE PROTECTION
 SHEET NUMBER
FP-A2.1



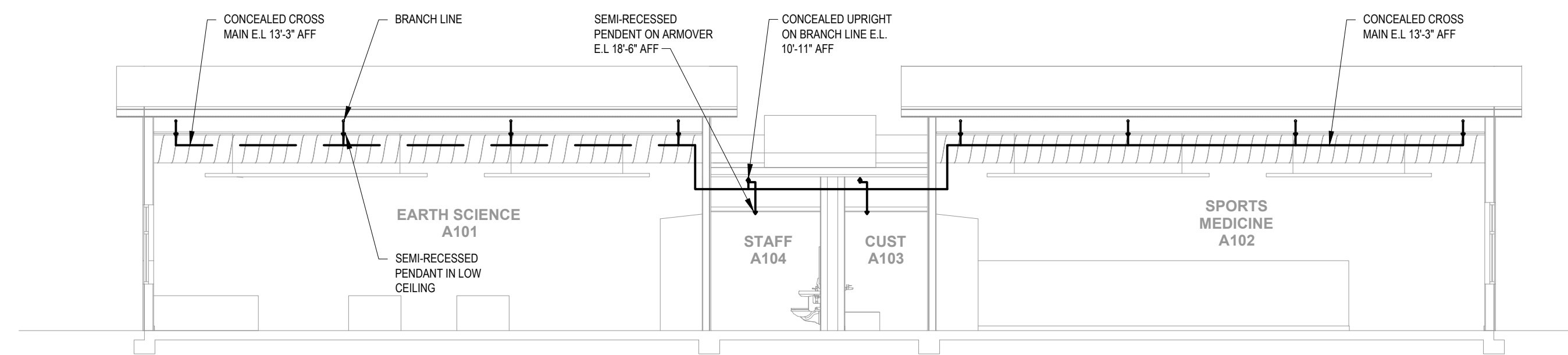
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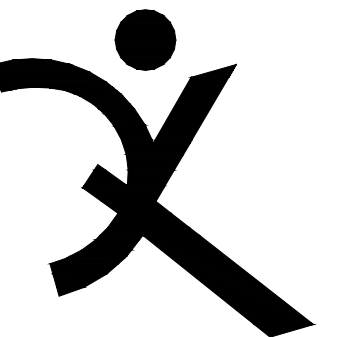
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1 CLASSROOM SECTION - FIRE PROTECTION
 FP-A4.1 SCALE: 1/8" = 1'-0"



2 CLASSROOM LONGITUDINAL SECTION - FIRE PROTECTION
 FP-A4.1 SCALE: 1/8" = 1'-0"



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DSA APP NO. 01-119268

ARCH PROJECT NO: 1870.00

DRAWN BY:

DRAWING SCALE: 1/8" = 1' - 0"

PTN: 61721-77 FILE NO: 7-H4

BID SET

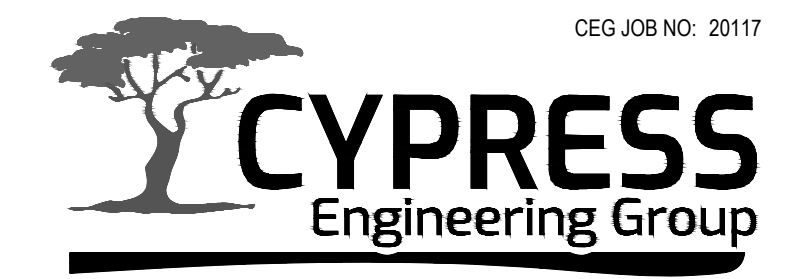
MAY 28, 2021

SHEET TITLE

SECTIONS - FIRE PROTECTION

SHEET NUMBER

FP-A4.1



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 8 Harris Court, Suite A8
 Monterey, CA 93940
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CEG JOB NO: 20117

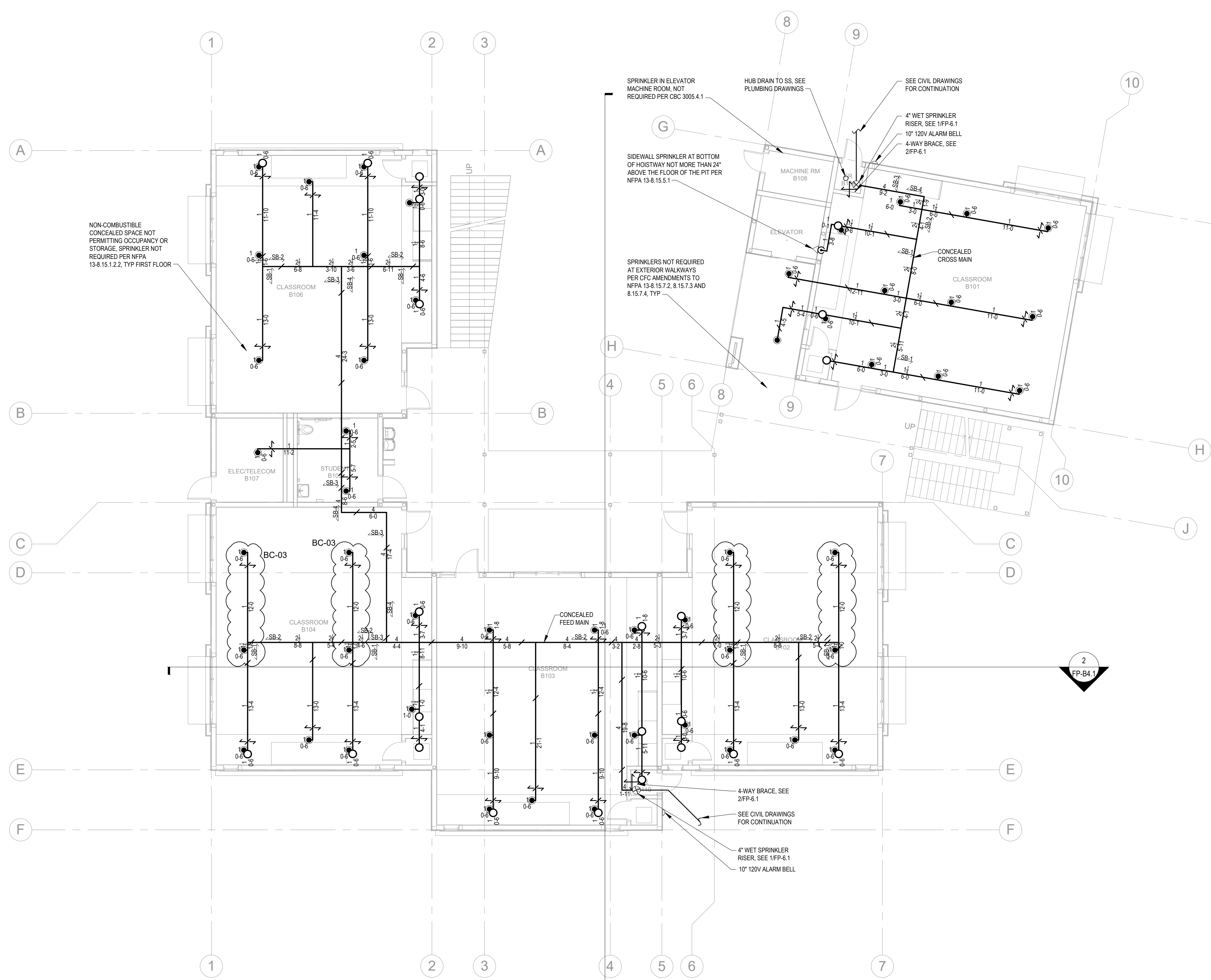
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SPRINKLER									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP RATING	QTY	NOTES
●	PENDENT ON 401 EXTENSION	TYCO	TY-FRB	3231	SSP	5.6	155 °F	X	1, 2, 3, 4
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	155 °F	X	1, 2, 3, 4
○	UPRIGHT ON BRANCH LINE	TYCO	TY-FRB	3131	SSU	5.6	155 °F	X	
○	CONCEALED UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	155 °F	X	
⊗	FLAT SPRAY UPRIGHT	TYCO	CC3	3199	FSU	5.6	155 °F	X	
TOTAL SPRINKLER (THIS SHEET)								X	
TOTAL SPRINKLERS JOB								X	

- FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- PROVIDE ON 401 EXTENSION
- PROVIDE STYLE 10 RECESSED ESCUTCHEON. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZED HOLE WITH VIKING 1260 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

- ### GENERAL NOTES
- ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
 - ALL PIPE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH CAST IRON THREADED FITTINGS IN ACCORDANCE WITH ANSI B16.4.
 - ALL PIPE 2" AND GREATER SHALL BE SCHEDULE 10 BLACK STEEL WITH GROOVED COUPLINGS AND WELDED OUTLETS.
 - ALL PIPE 1-1/2" AND SMALLER SHALL HAVE SUPPORT SPACING LESS THAN 12 FEET.
 - ALL PIPE 2" AND GREATER SHALL HAVE SUPPORT SPACING LESS THAN 15 FEET.
 - BRANCH LINES SHALL BE RESTRAINED AT THE END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 26 FT PER NFPA-13 TABLE 9.3.6.4(a).
 - PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.
 - PAINT ALL EXPOSED PIPING TO MATCH ADJACENT FINISHES.



1 FIRST FLOOR PIPING PLAN - FIRE PROTECTION
 FP-B2.1 SCALE: 1/8" = 1'-0" NORTH



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HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE,
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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS		
NO.	DATE	DESCRIPTION
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00

DRAWN BY:

DRAWING SCALE: 1/8" = 1'-0"

PTN: 61721-77 FILE NO: 7-H4

BID SET

MAY 28, 2021

SHEET TITLE

FIRST FLOOR PIPING PLAN - FIRE PROTECTION

SHEET NUMBER

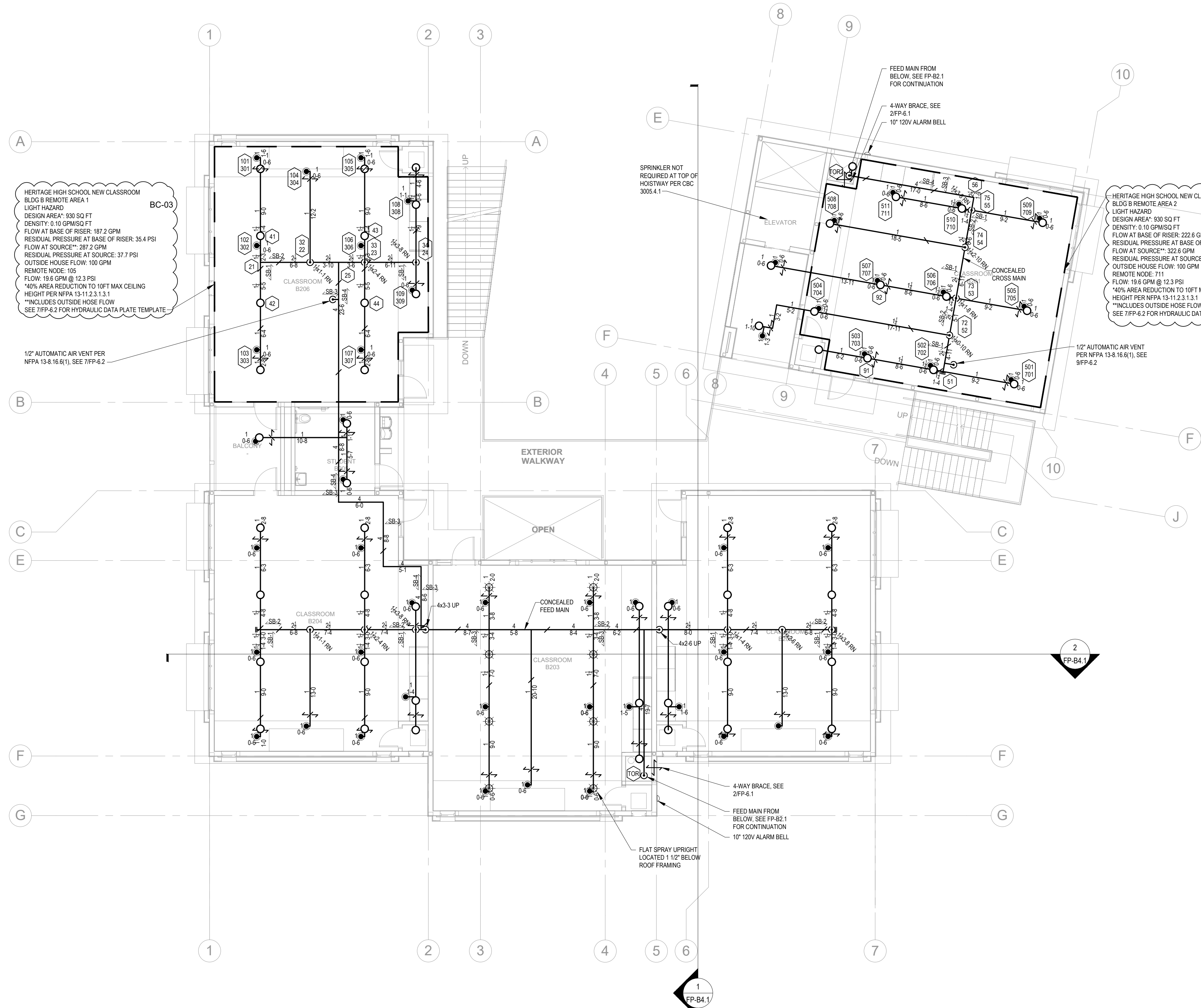
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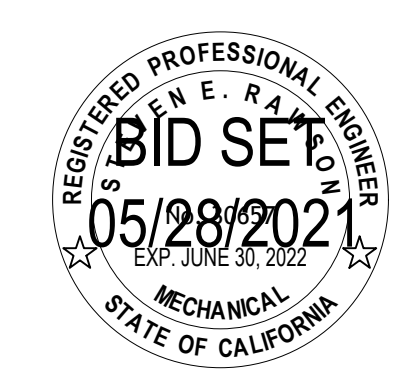
SPRINKLER									
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP RATING	QTY	NOTES
●	PENDENT ON 401 EXTENSION	TYCO	TY-FRB	3231	SSP	5.6	155 °F	X	1, 2, 3, 4
●	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	155 °F	X	1, 2, 3, 4
○	UPRIGHT ON BRANCH LINE	TYCO	TY-FRB	3131	SSU	5.6	155 °F	X	
○	CONCEALED UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	155 °F	X	
⊕	FLAT SPRAY UPRIGHT	TYCO	CC3	3199	FSU	5.6	155 °F	X	
TOTAL SPRINKLER (THIS SHEET)								X	
TOTAL SPRINKLERS JOB								X	

- FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- PROVIDE ON 401 EXTENSION
- PROVIDE STYLE 10 RECESSED ESCUTCHEON. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT
- FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZED HOLE WITH VIKING 1260 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

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 - BRANCH LINES SHALL BE RESTRAINED AT THE END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 26 FT PER NFPA-13 TABLE 9.3.6.4(a).
 - PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.
 - PAINT ALL EXPOSED PIPING TO MATCH ADJACENT FINISHES.



1 SECOND FLOOR PIPING PLAN - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"
 NORTH



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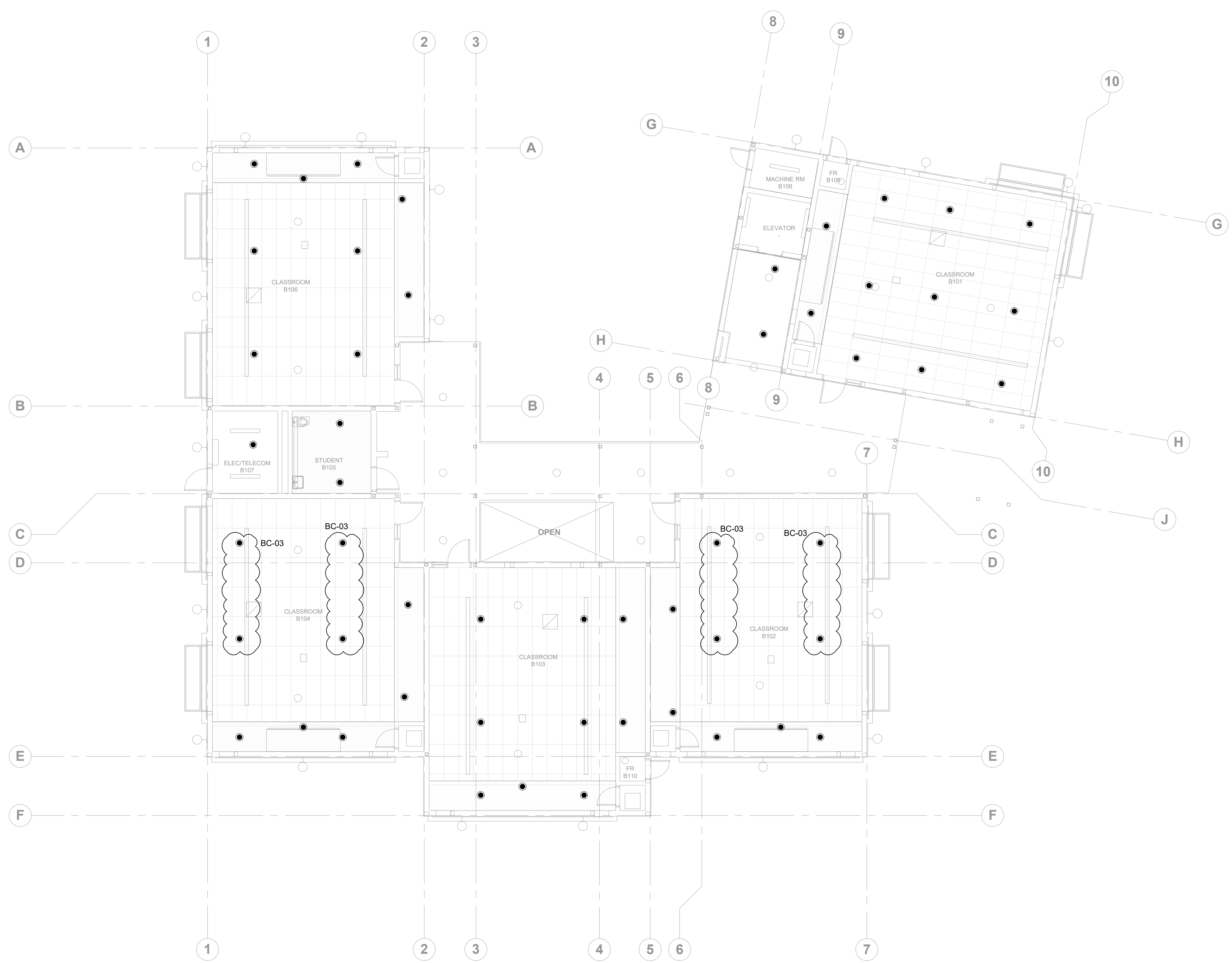
LIBERTY UNION HIGH SCHOOL DISTRICT

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NO.	DATE	DESCRIPTION
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268
 ARCH PROJECT NO. 1870.00
 DRAWN BY:
 DRAWING SCALE: 1/8" = 1'-0"
 PTN: 61721-77 FILE NO: 7-H4
BID SET
MAY 28, 2021
 SHEET TITLE

SECOND FLOOR PIPING PLAN - FIRE PROTECTION
 SHEET NUMBER
FP-B2.2

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1 FIRST FLOOR CEILING PLAN - FIRE PROTECTION
 FP-B3.1 SCALE: 1/8" = 1'-0" NORTH

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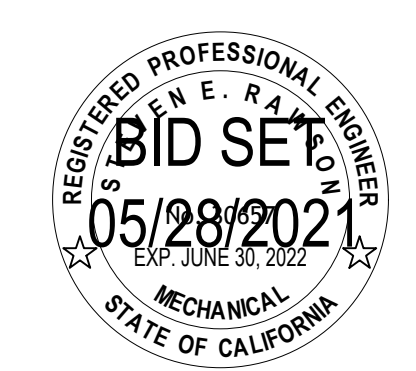
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NO.	DATE	DESCRIPTION
BC-03	5/28/21	BID CLARIFICATION 3

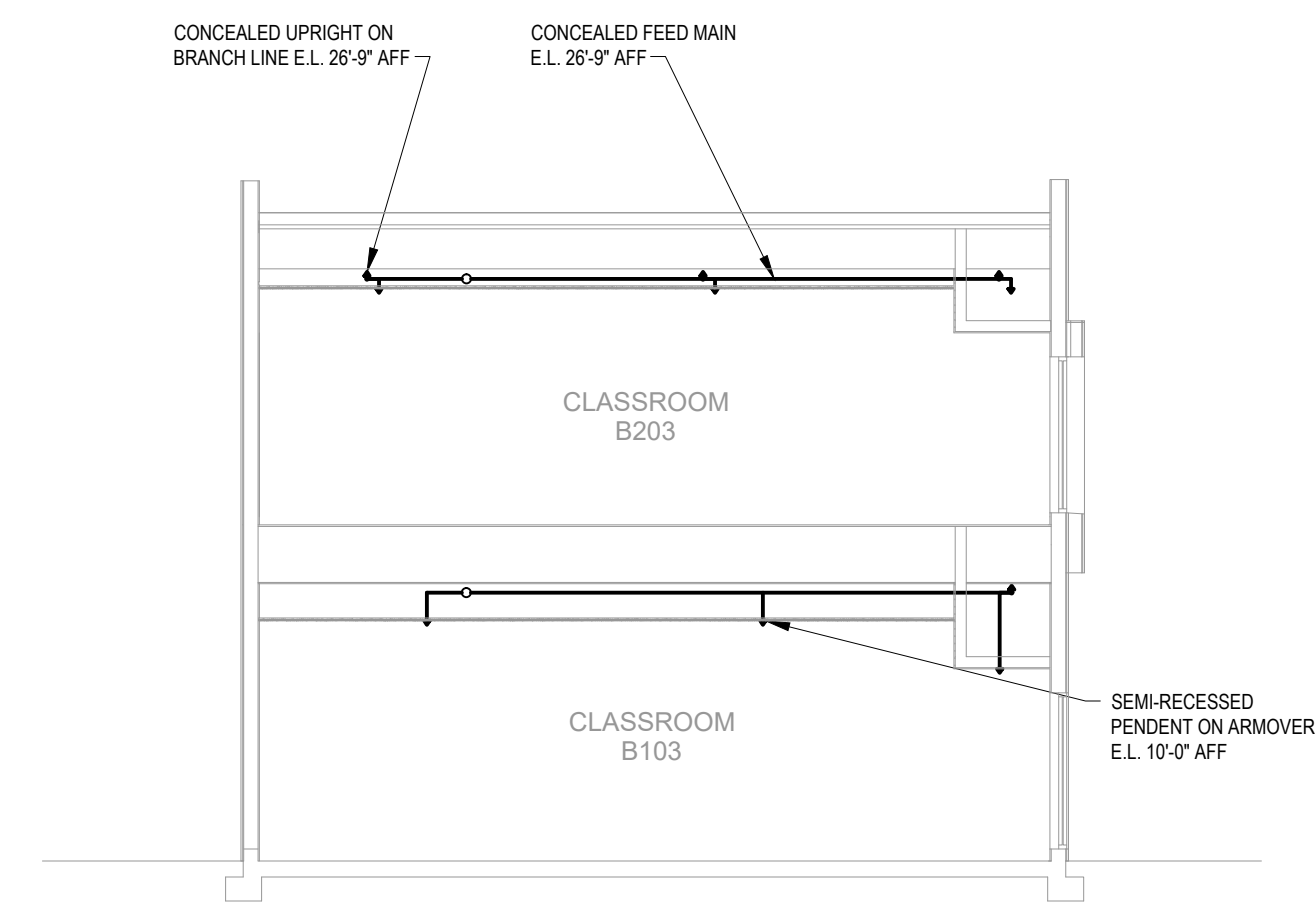
DSA APP NO. 01-119268
 ARCH PROJECT NO. 1870.00
 DRAWN BY:
 DRAWING SCALE: 1/8" = 1' - 0"
 PTN: 61721-77 FILE NO: 7-H4
BID SET
 MAY 28, 2021
 SHEET TITLE

FIRST FLOOR CEILING PLAN - FIRE PROTECTION
 SHEET NUMBER
FP-B3.1

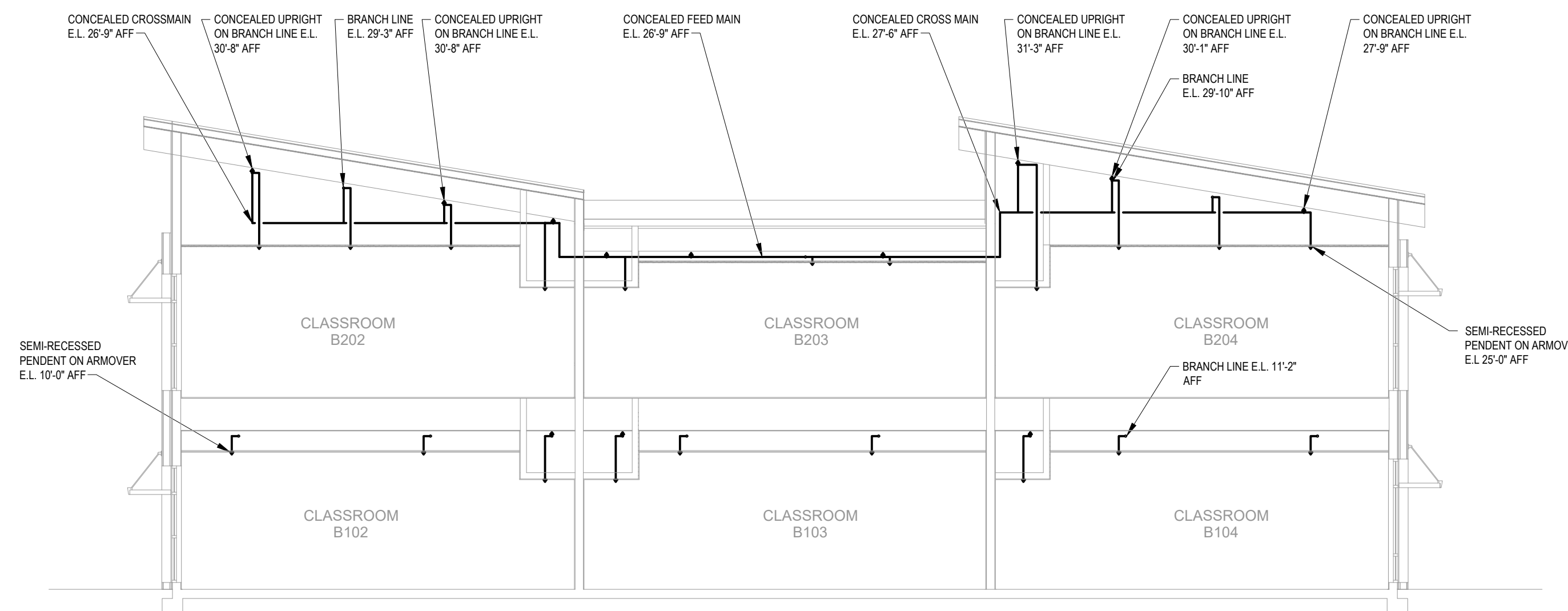


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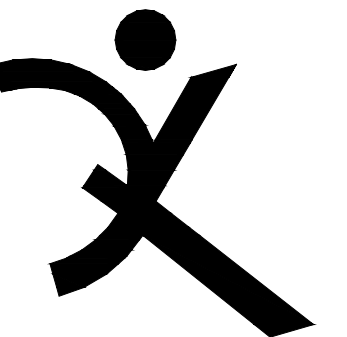
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1
FP-B4.1 CLASSROOM SECTION - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"



2
FP-B4.1 CLASSROOM BUILDING SECTION - FIRE PROTECTION
 SCALE: 1/8" = 1'-0"



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DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00

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DRAWING SCALE: 1/8" = 1'-0"

PTN: 61721-77 FILE NO: 7-H4

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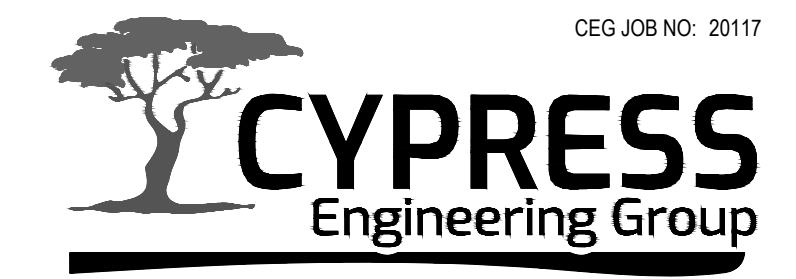
MAY 28, 2021

SHEET TITLE

SECTIONS - FIRE
PROTECTION

SHEET NUMBER

FP-B4.1

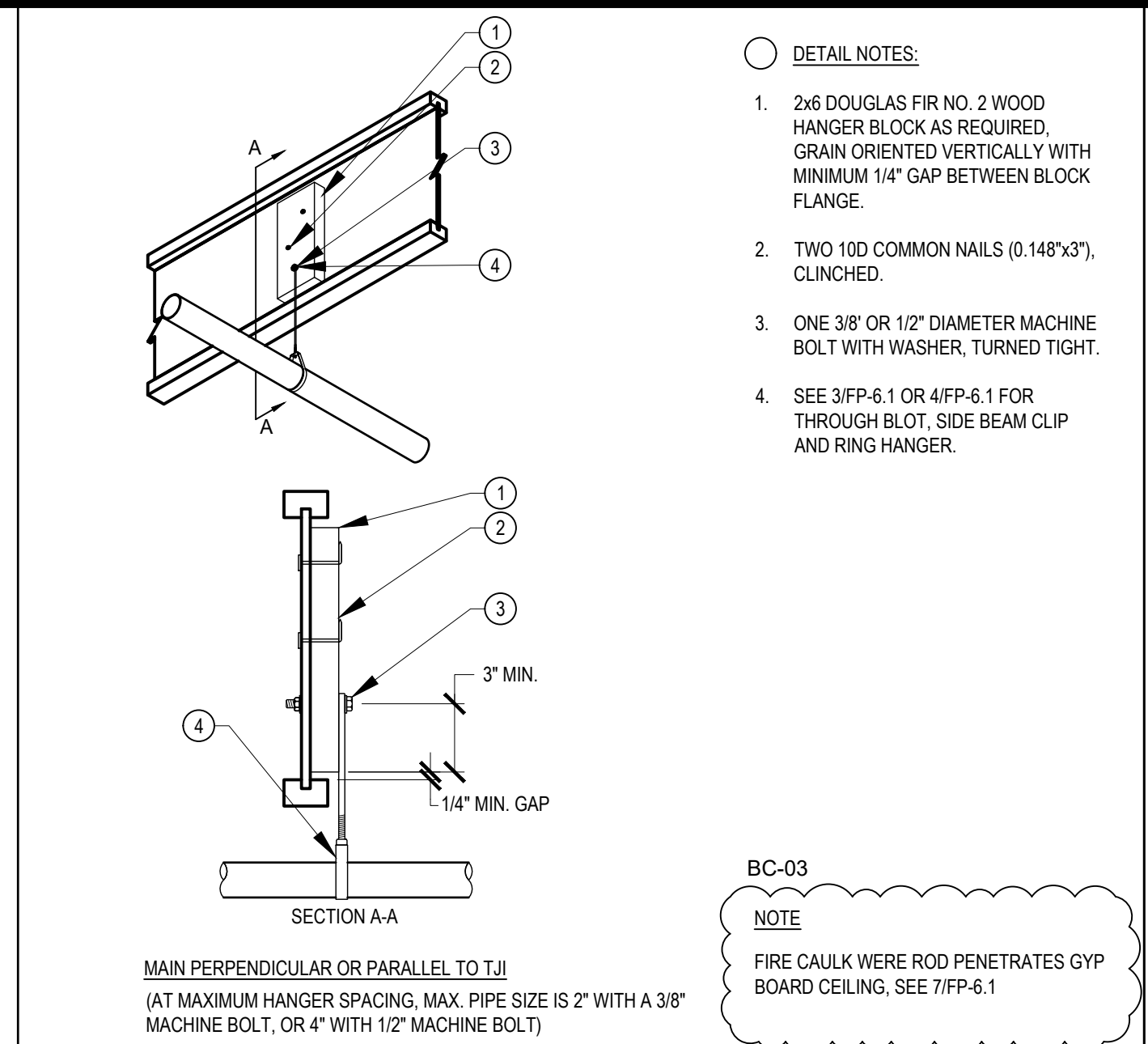


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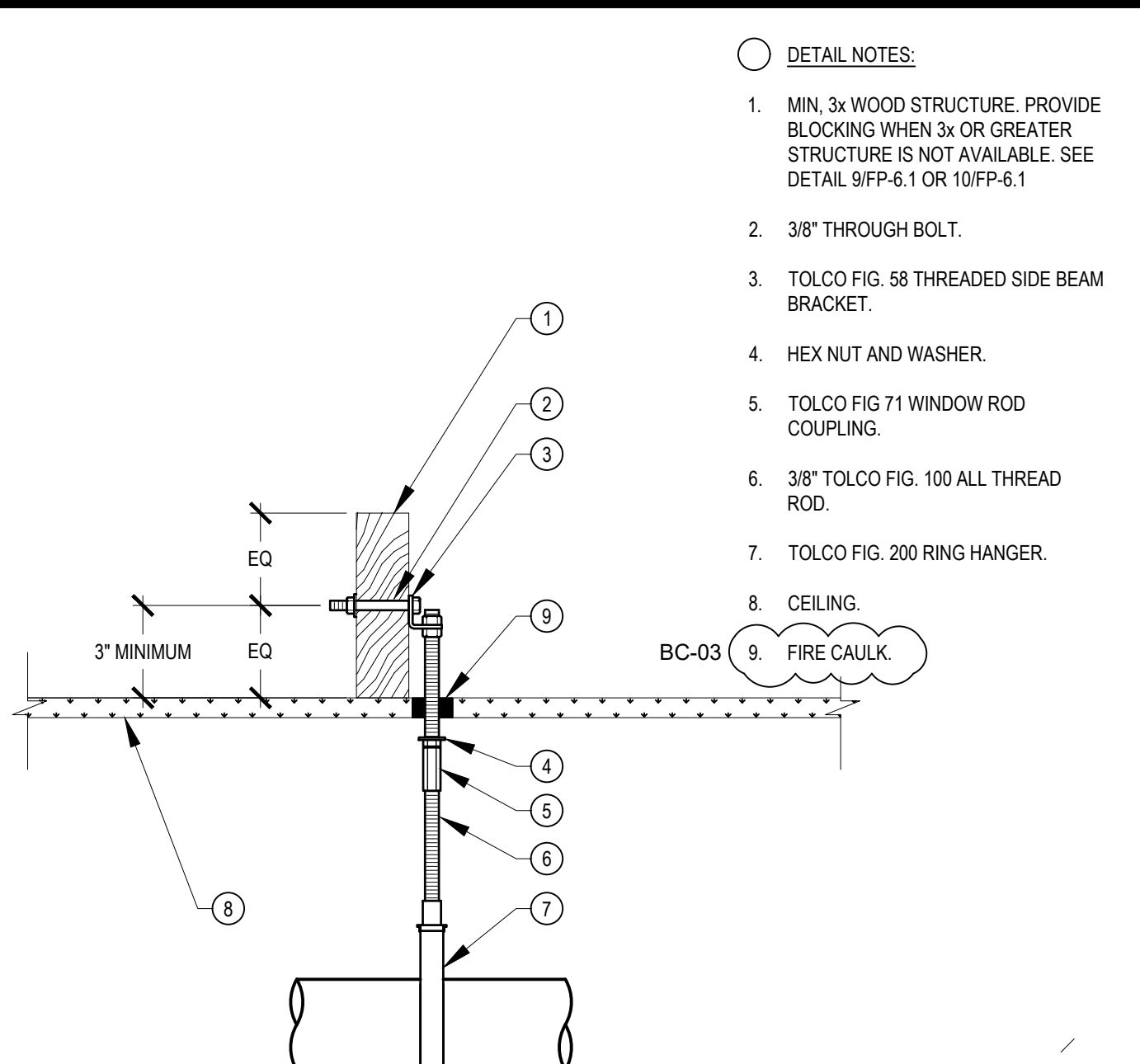
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- DETAIL NOTES:**
- 2x6 DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED. GRAIN ORIENTED VERTICALLY WITH MINIMUM 1/4" GAP BETWEEN BLOCK FLANGE.
 - TWO 10D COMMON NAILS (0.148"x3"), CLINCHED.
 - ONE 3/8" OR 1/2" DIAMETER MACHINE BOLT WITH WASHER, TURNED TIGHT.
 - SEE 3/FP-6.1 OR 4/FP-6.1 FOR THROUGH BLOT, SIDE BEAM CLIP AND RING HANGER.

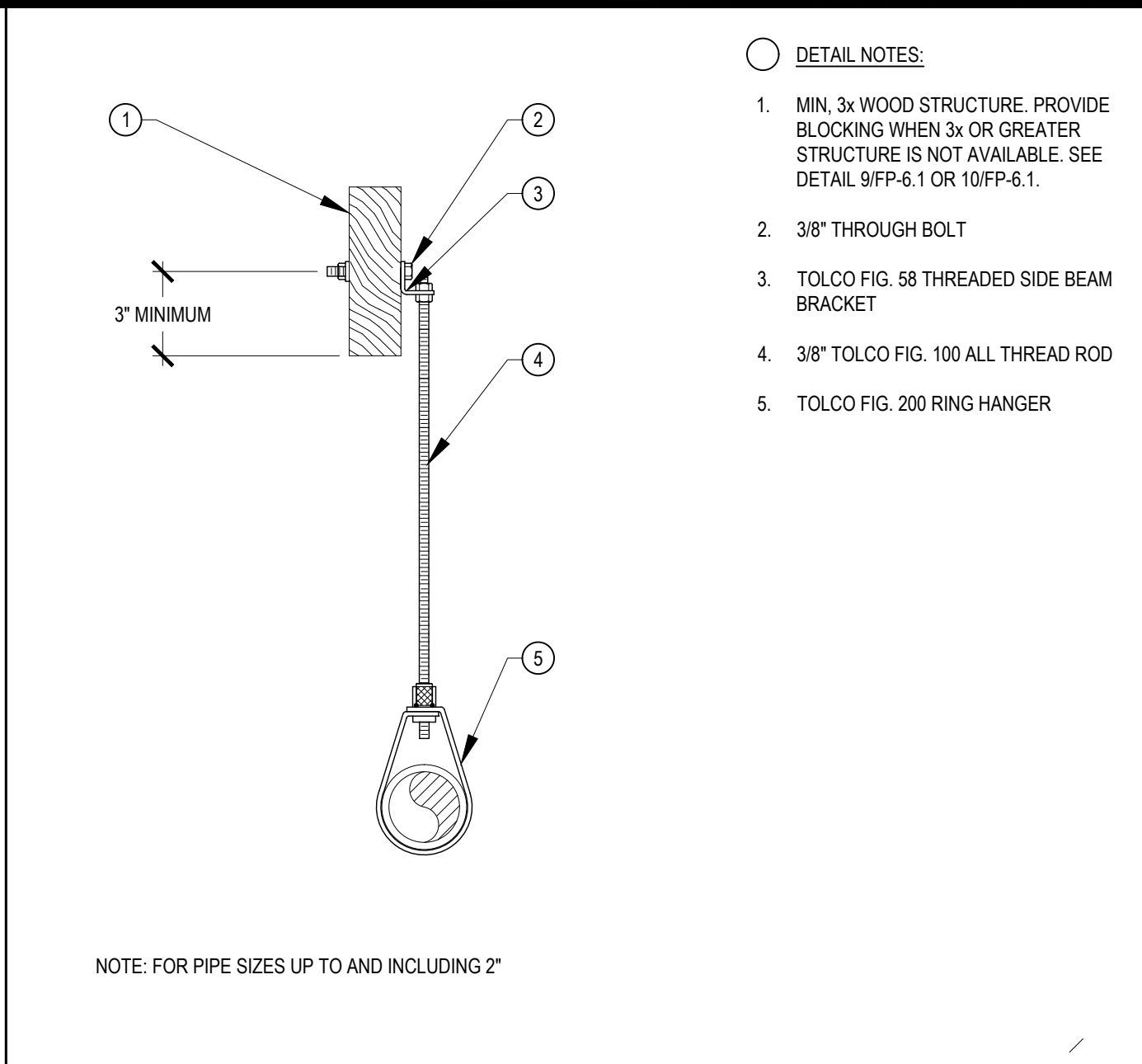
BC-03
NOTE
FIRE CAULK WERE ROD PENETRATES GYP BOARD CEILING, SEE 7/FP-6.1

9 STRUCTURE ATTACHMENT N.T.S.



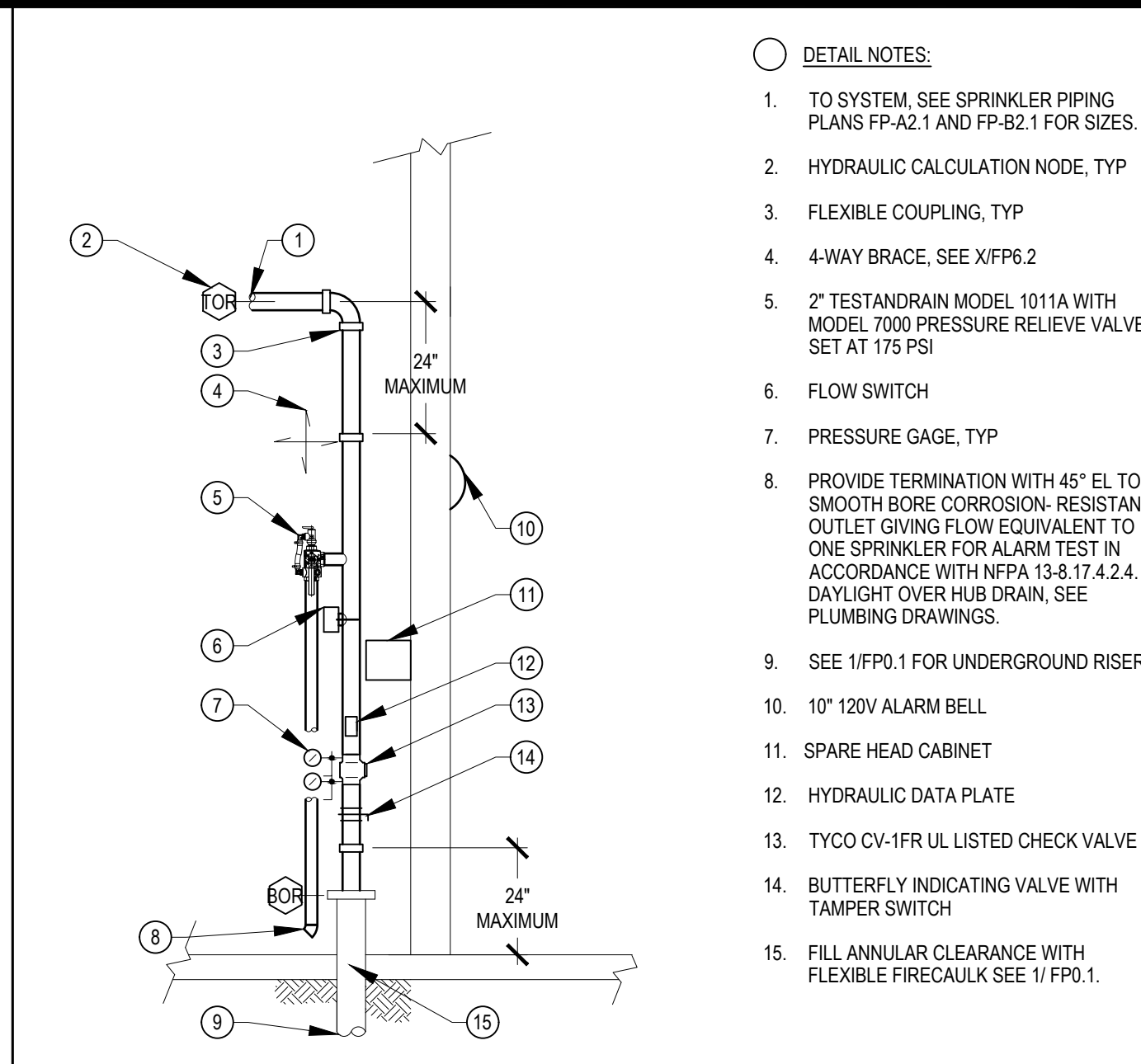
- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1 OR 10/FP-6.1
 - 3/8" THROUGH BOLT.
 - TOLCO FIG. 58 THREADED SIDE BEAM BRACKET.
 - HEX NUT AND WASHER.
 - TOLCO FIG. 71 WINDOW ROD COUPLING.
 - 3/8" TOLCO FIG. 100 ALL THREAD ROD.
 - TOLCO FIG. 200 RING HANGER.
 - CEILING.
 - FIRE CAULK.

6 RING HANGER N.T.S.



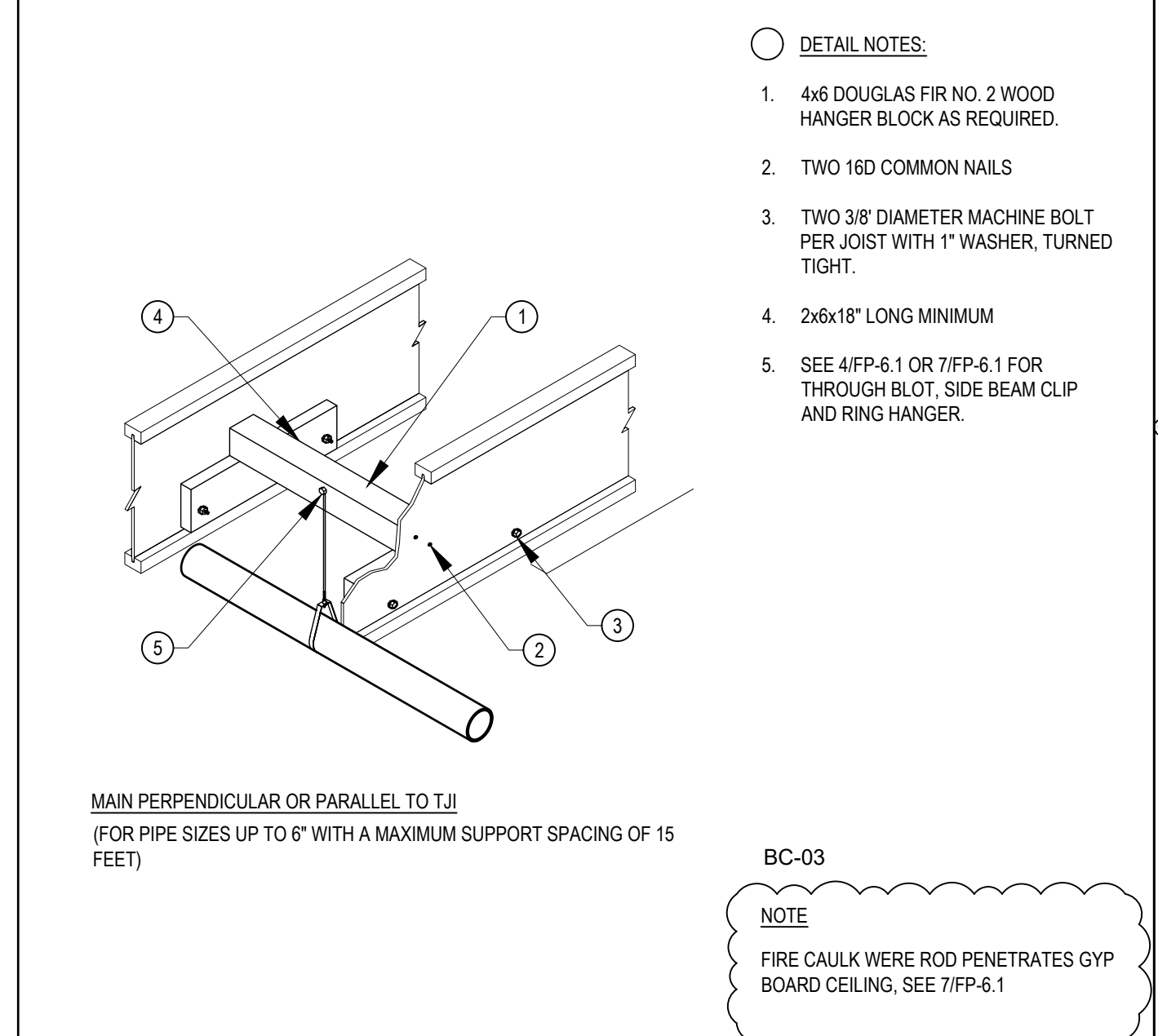
- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1 OR 10/FP-6.1.
 - 3/8" THROUGH BOLT
 - TOLCO FIG. 58 THREADED SIDE BEAM BRACKET
 - 3/8" TOLCO FIG. 100 ALL THREAD ROD
 - TOLCO FIG. 200 RING HANGER

3 RING HANGER N.T.S.



- DETAIL NOTES:**
- TO SYSTEM. SEE SPRINKLER PIPING PLANS FP-A2.1 AND FP-B2.1 FOR SIZES.
 - HYDRAULIC CALCULATION NODE, TYP
 - FLEXIBLE COUPLING, TYP
 - 4-WAY BRACE, SEE X/FP-6.2
 - 2" TEST DRAIN MODEL 1011A WITH MODEL 7000 PRESSURE RELIEVE VALVE SET AT 175 PSI
 - FLOW SWITCH
 - PRESSURE GAGE, TYP
 - PROVIDE TERMINATION WITH 45° EL TO SMOOTH BORE CORROSION-RESISTANT OUTLET GIVING FLOW EQUIVALENT TO ONE SPRINKLER FOR ALARM TEST IN ACCORDANCE WITH NFPA 13-8.17.4.2.4. DAYLIGHT OVER HUB DRAIN. SEE PLUMBING DRAWINGS.
 - SEE 1/FP.1 FOR UNDERGROUND RISER
 - 10" 120V ALARM BELL
 - SPARE HEAD CABINET
 - HYDRAULIC DATA PLATE
 - TYCO CV-1FR UL LISTED CHECK VALVE
 - BUTTERFLY INDICATING VALVE WITH TAMPER SWITCH
 - FILL ANNULAR CLEARANCE WITH FLEXIBLE FIRECAULK SEE 1/FP.1.

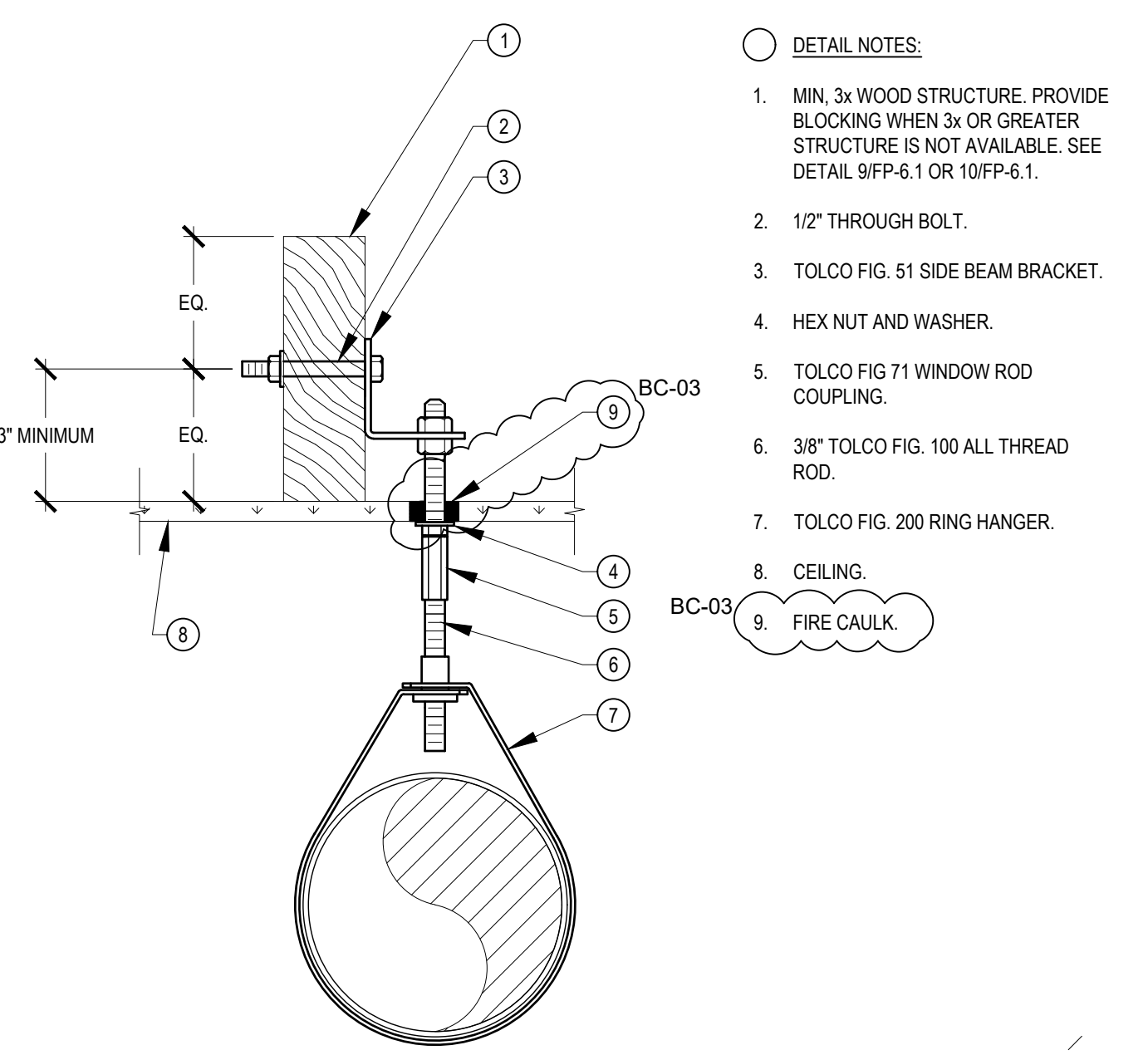
1 WET RISER N.T.S.



- DETAIL NOTES:**
- 4x6 DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED.
 - TWO 16D COMMON NAILS
 - TWO 3/8" DIAMETER MACHINE BOLT PER JOIST WITH 1" WASHER, TURNED TIGHT.
 - 2x6x18" LONG MINIMUM
 - SEE 4/FP-6.1 OR 7/FP-6.1 FOR THROUGH BLOT, SIDE BEAM CLIP AND RING HANGER.

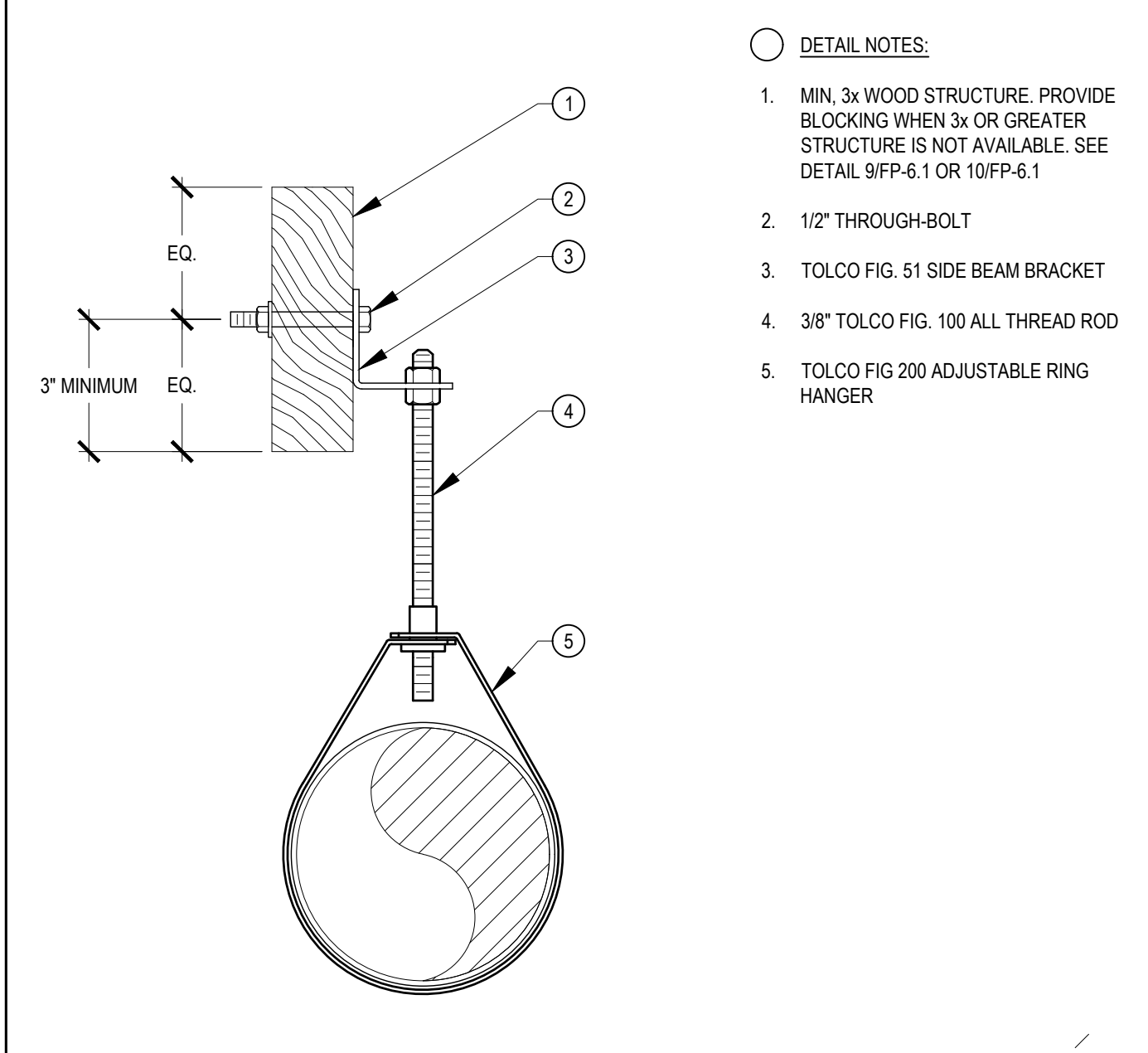
BC-03
NOTE
FIRE CAULK WERE ROD PENETRATES GYP BOARD CEILING, SEE 7/FP-6.1

10 STRUCTURE ATTACHMENT N.T.S.



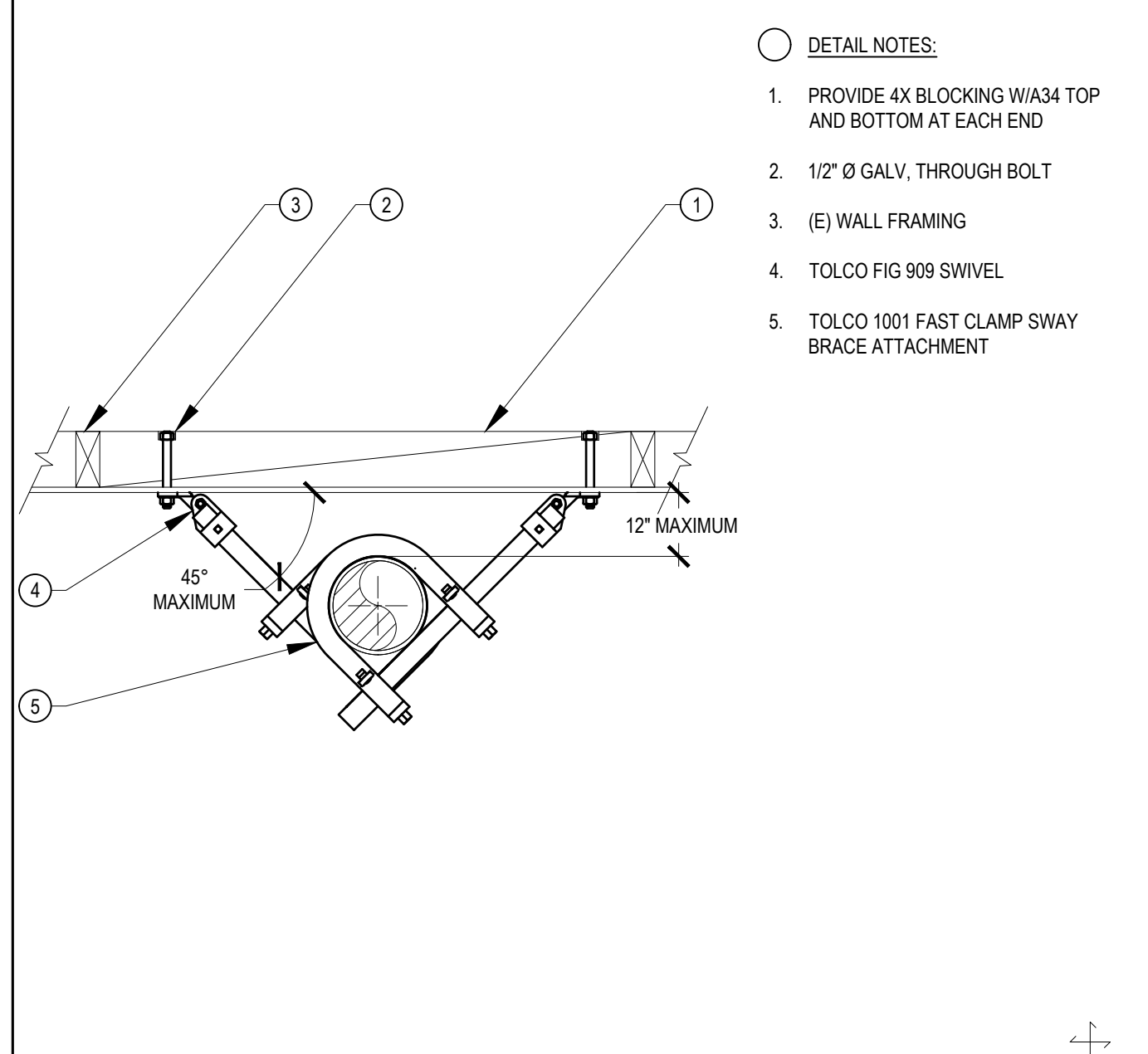
- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1 OR 10/FP-6.1.
 - 1/2" THROUGH BOLT.
 - TOLCO FIG. 51 SIDE BEAM BRACKET.
 - HEX NUT AND WASHER.
 - TOLCO FIG. 71 WINDOW ROD COUPLING.
 - 3/8" TOLCO FIG. 100 ALL THREAD ROD.
 - TOLCO FIG. 200 RING HANGER.
 - CEILING.
 - FIRE CAULK.

7 RING HANGER N.T.S.



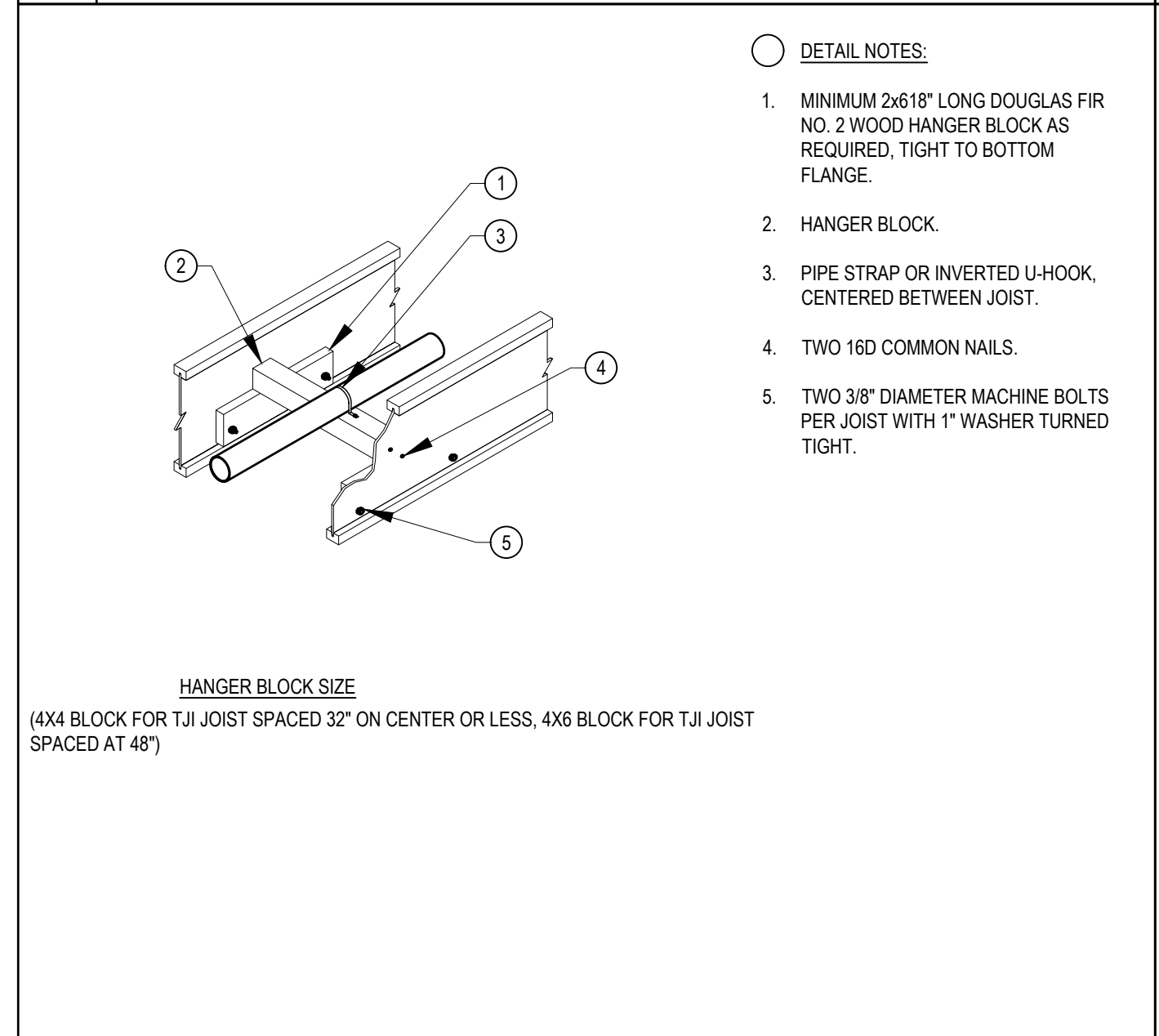
- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1 OR 10/FP-6.1
 - 1/2" THROUGH-BOLT
 - TOLCO FIG. 51 SIDE BEAM BRACKET
 - 3/8" TOLCO FIG. 100 ALL THREAD ROD
 - TOLCO FIG. 200 ADJUSTABLE RING HANGER

4 RING HANGER N.T.S.



- DETAIL NOTES:**
- PROVIDE 4X BLOCKING WA/34 TOP AND BOTTOM AT EACH END
 - 1/2" Ø GALV. THROUGH BOLT
 - (E) WALL FRAMING
 - TOLCO FIG. 909 SWIVEL
 - TOLCO 1001 FAST CLAMP SWAY BRACE ATTACHMENT

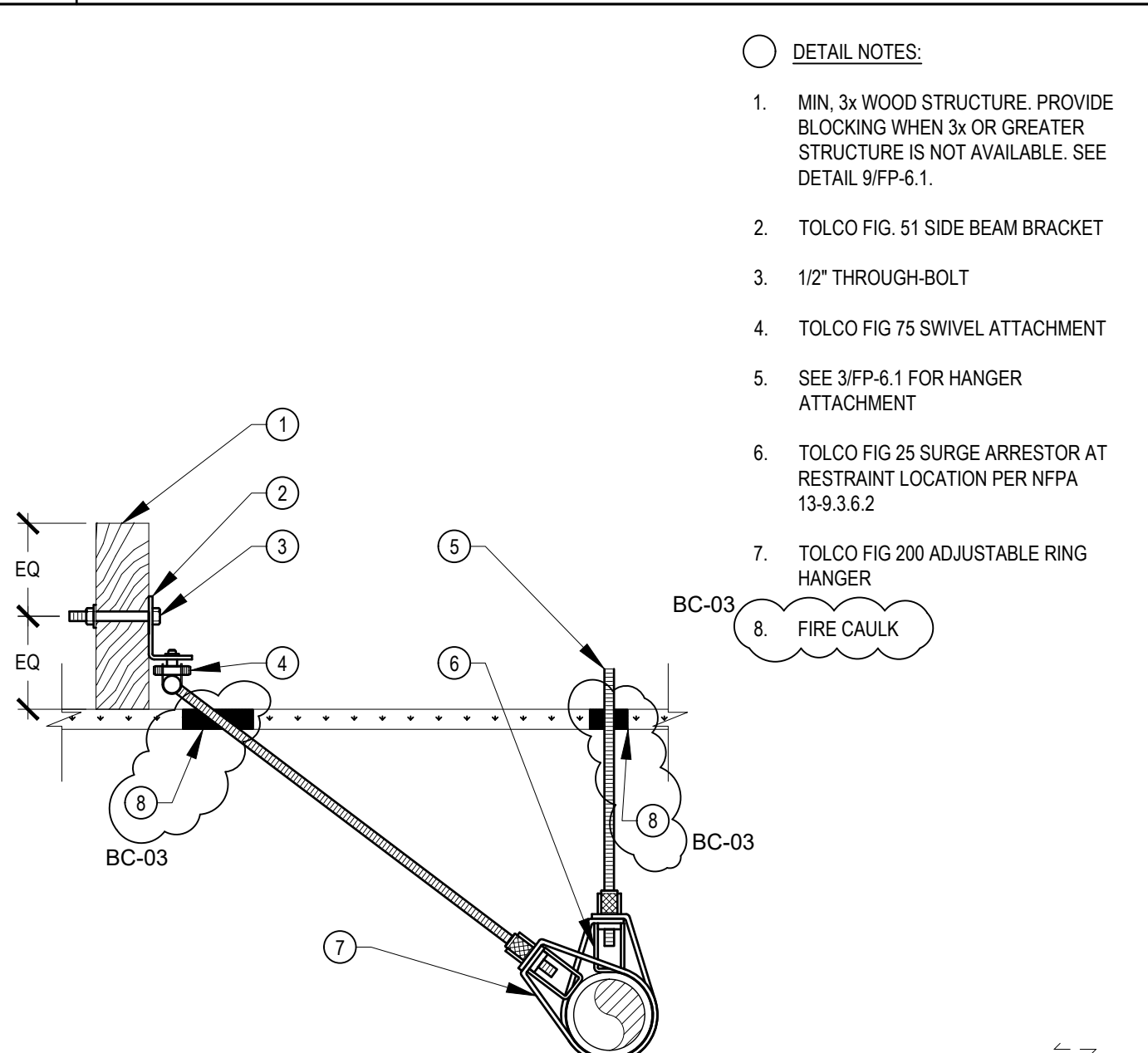
2 RISER BRACE N.T.S.



- DETAIL NOTES:**
- MINIMUM 2x6x18" LONG DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED. TIGHT TO BOTTOM FLANGE.
 - HANGER BLOCK.
 - PIPE STRAP OR INVERTED U-HOOK, CENTERED BETWEEN JOIST.
 - TWO 16D COMMON NAILS.
 - TWO 3/8" DIAMETER MACHINE BOLTS PER JOIST WITH 1" WASHER TURNED TIGHT.

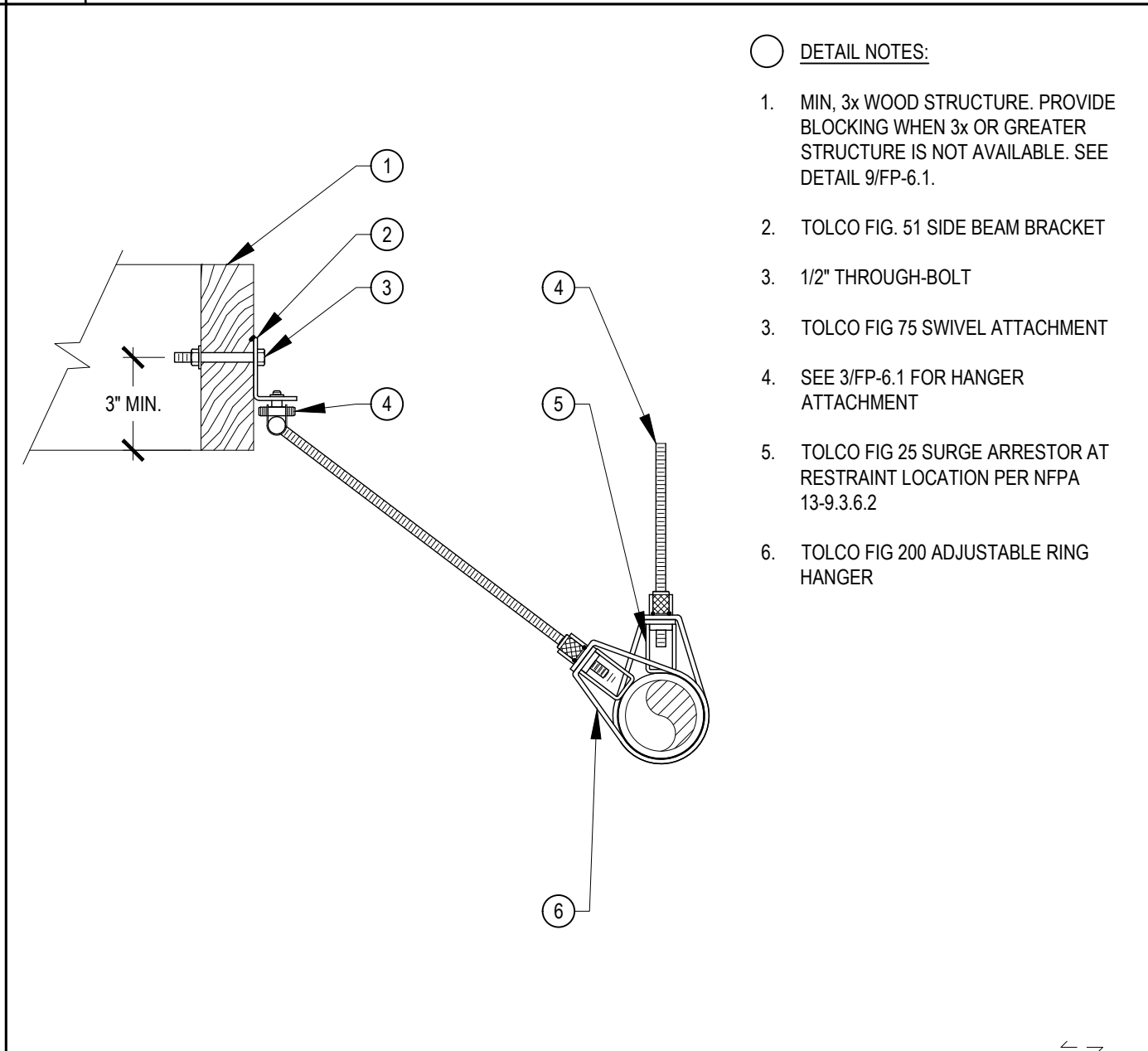
HANGER BLOCK SIZE
(4X4 BLOCK FOR T/JI JOIST SPACED 32" ON CENTER OR LESS. 4X6 BLOCK FOR T/JI JOIST SPACED AT 48")

11 STRUCTURE ATTACHMENT N.T.S.



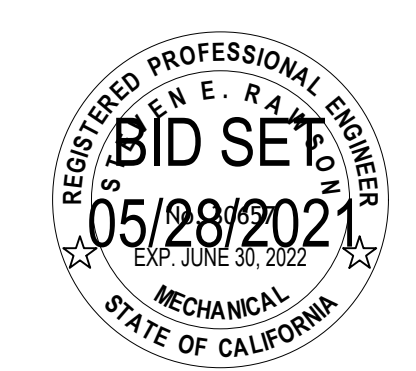
- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1.
 - TOLCO FIG. 51 SIDE BEAM BRACKET
 - 1/2" THROUGH-BOLT
 - TOLCO FIG. 75 SWIVEL ATTACHMENT
 - SEE 3/FP-6.1 FOR HANGER ATTACHMENT
 - TOLCO FIG. 25 SURGE ARRESTOR AT RESTRAINT LOCATION PER NFPA 13-9.3.6.2
 - TOLCO FIG. 200 ADJUSTABLE RING HANGER
 - FIRE CAULK

8 BRANCH LINE RESTRAINT N.T.S.



- DETAIL NOTES:**
- MIN. 3x WOOD STRUCTURE. PROVIDE BLOCKING WHEN 3x OR GREATER STRUCTURE IS NOT AVAILABLE. SEE DETAIL 9/FP-6.1.
 - TOLCO FIG. 51 SIDE BEAM BRACKET
 - 1/2" THROUGH-BOLT
 - TOLCO FIG. 75 SWIVEL ATTACHMENT
 - SEE 3/FP-6.1 FOR HANGER ATTACHMENT
 - TOLCO FIG. 25 SURGE ARRESTOR AT RESTRAINT LOCATION PER NFPA 13-9.3.6.2
 - TOLCO FIG. 200 ADJUSTABLE RING HANGER

5 BRANCH LINE RESTRAINT N.T.S.



CEG JOB NO. 20117

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DSA APP NO. 01-119268

ARCH PROJECT NO. 1870.00

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DRAWING SCALE: NONE

PTN: 61721-77 FILE NO: 7-H4

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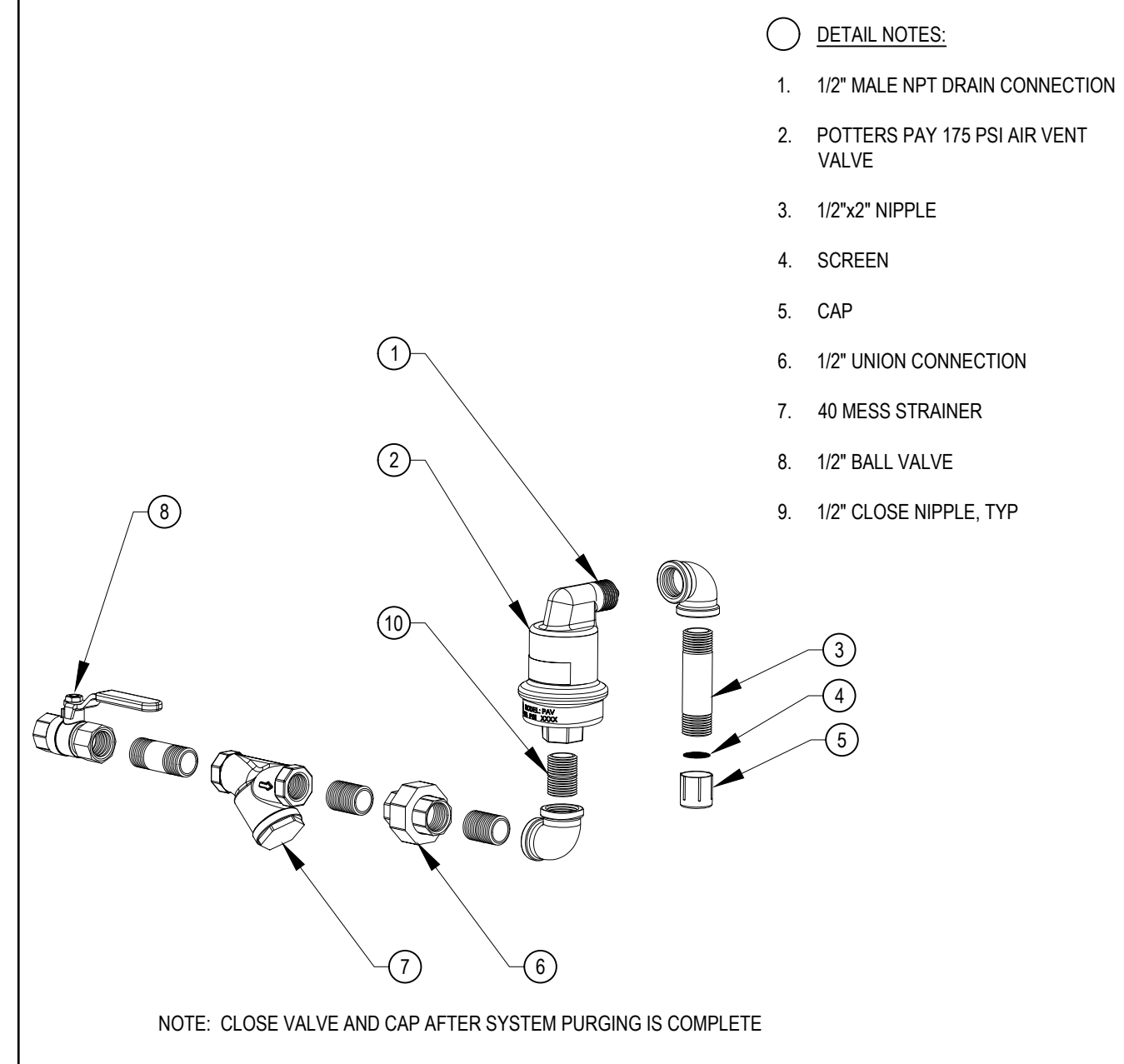
SHEET TITLE

DETAILS - FIRE
PROTECTION

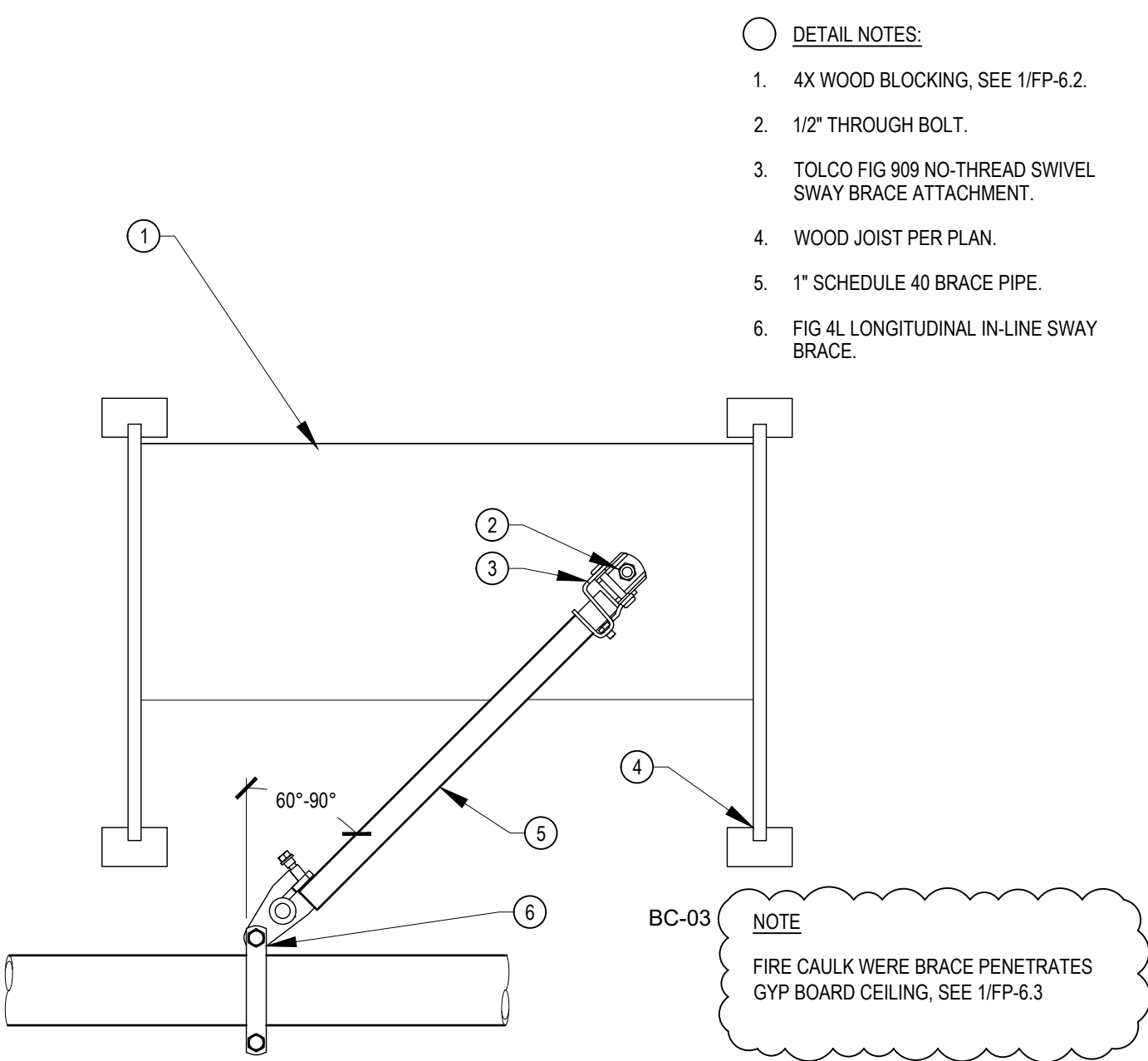
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FP-6.1

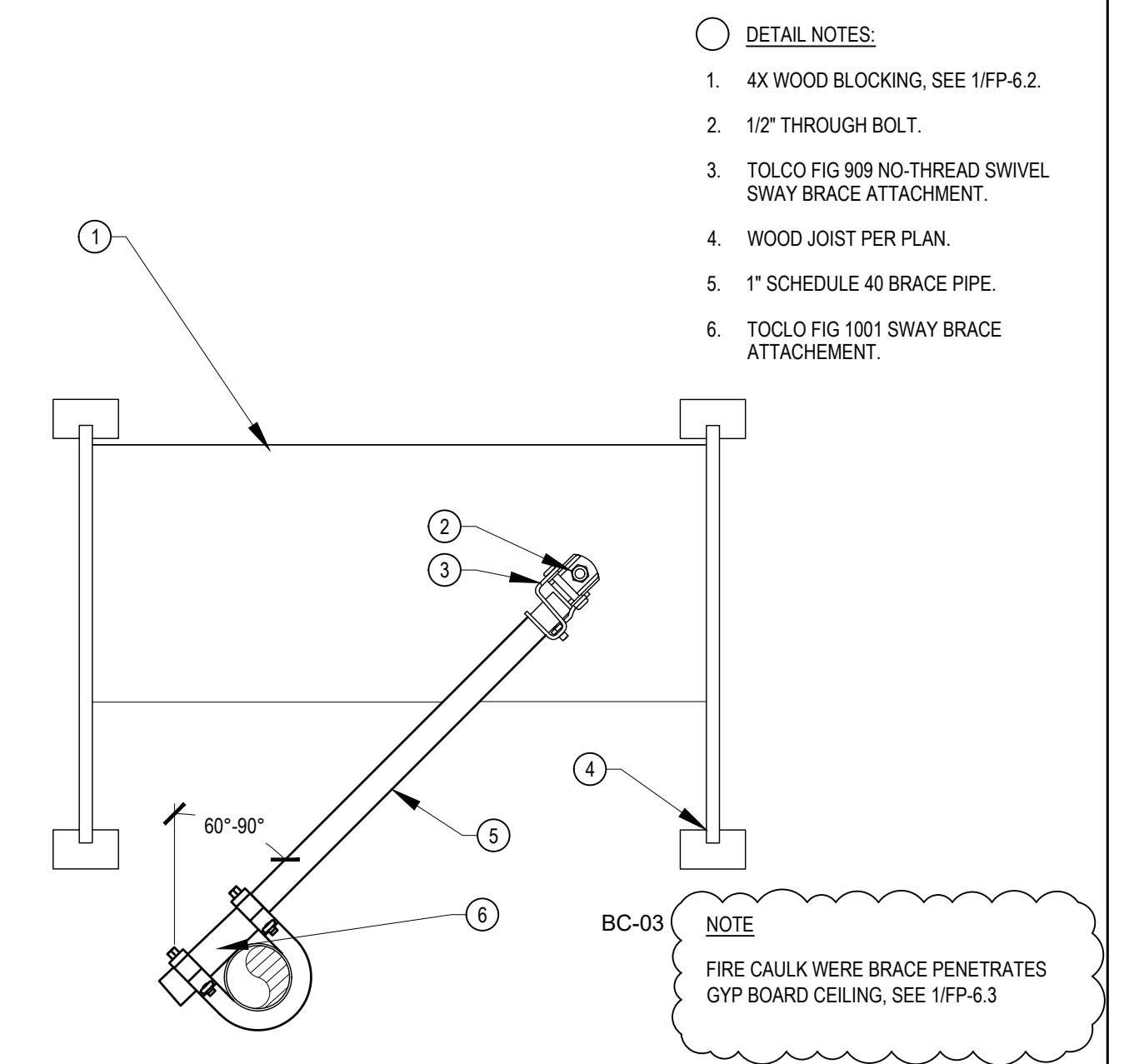
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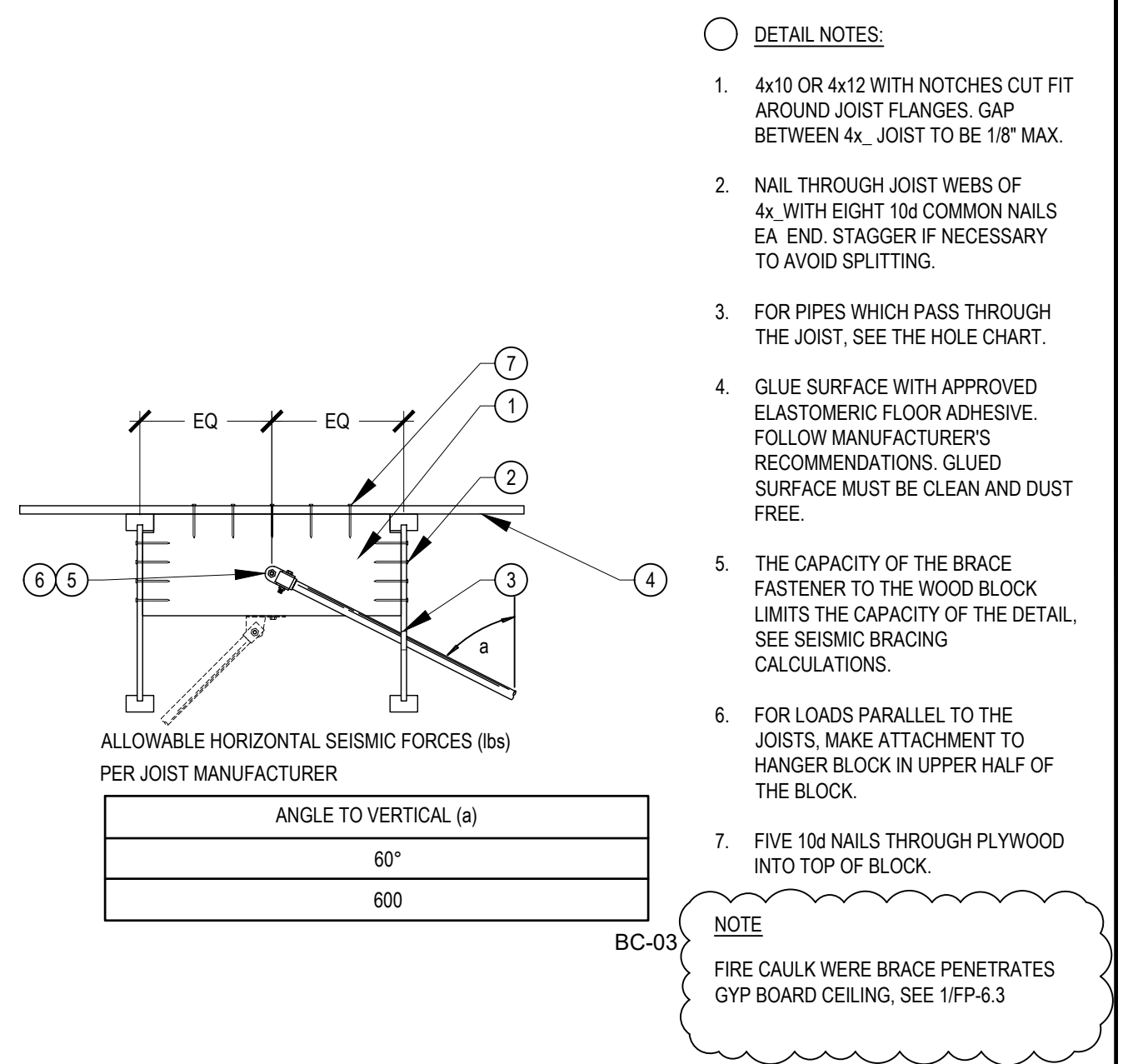
9 AIR VENT N.T.S.



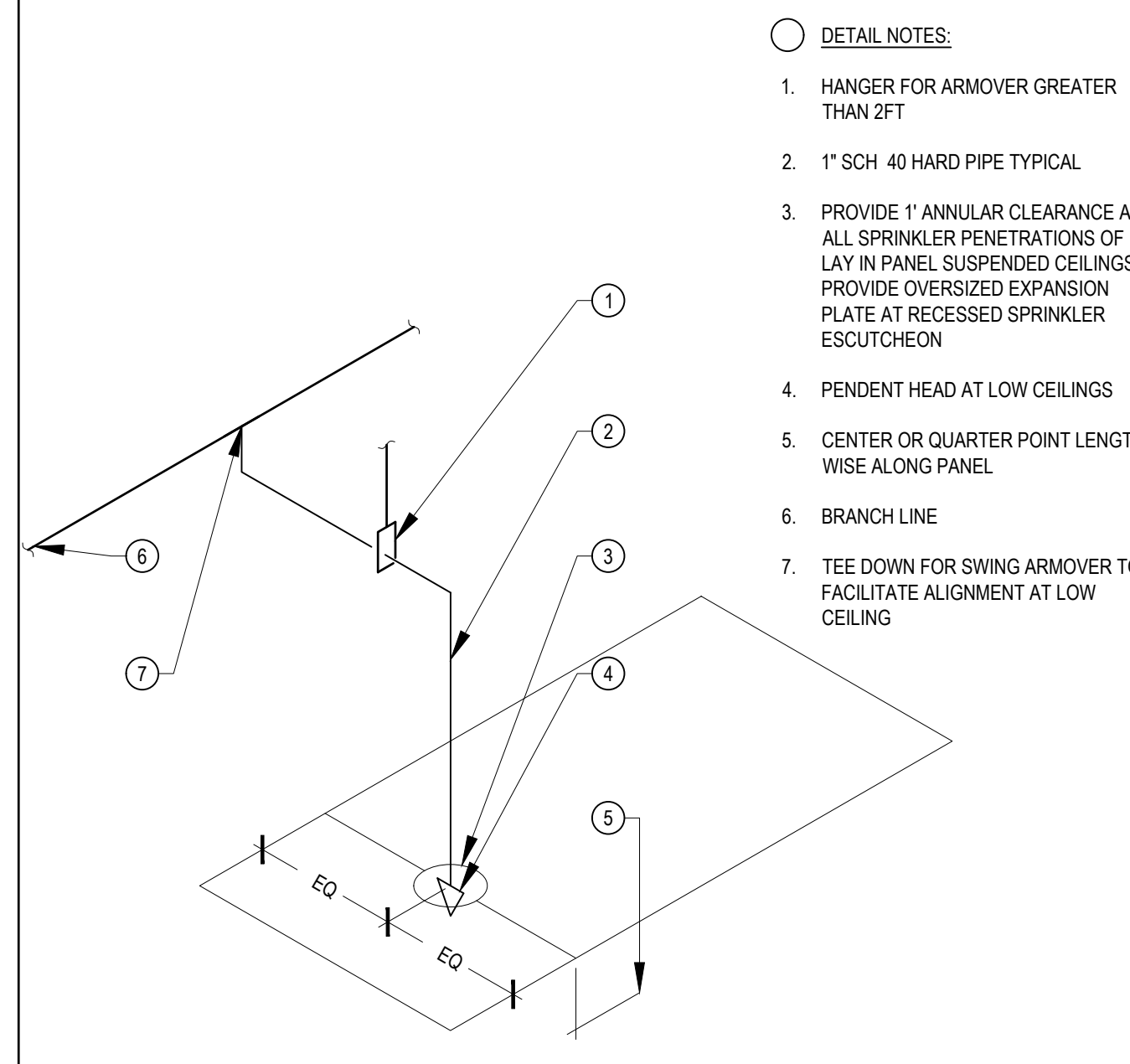
6 LONGITUDINAL SEISMIC BRACE SB-4 N.T.S.



3 LATERAL SEISMIC BRACE SB-1 N.T.S.



1 STRUCTURE ATTACHMENT N.T.S.



10 TYPICAL DROP TO CEILING N.T.S.

HYDRAULIC - SYSTEM

THIS BUILDING IS PROTECTED BY A HYDRAULIC DESIGN AUTOMATIC SPRINKLER SYSTEM

LOCATION: _____

SPRINKLER INFORMATION

NUMBER OF FLOWING SPRINKLERS: _____ PROTECTION AREA PER SPRINKLER: _____

MANUFACTURER: _____ MODEL: _____ TEMPERATURE: _____

TYPE: _____ K-FACTOR: _____

ORIFICE: _____

BASIS OF DESIGN

STANDARD: NFPA 13, 2016 EDITION HAZARD GROUP: _____

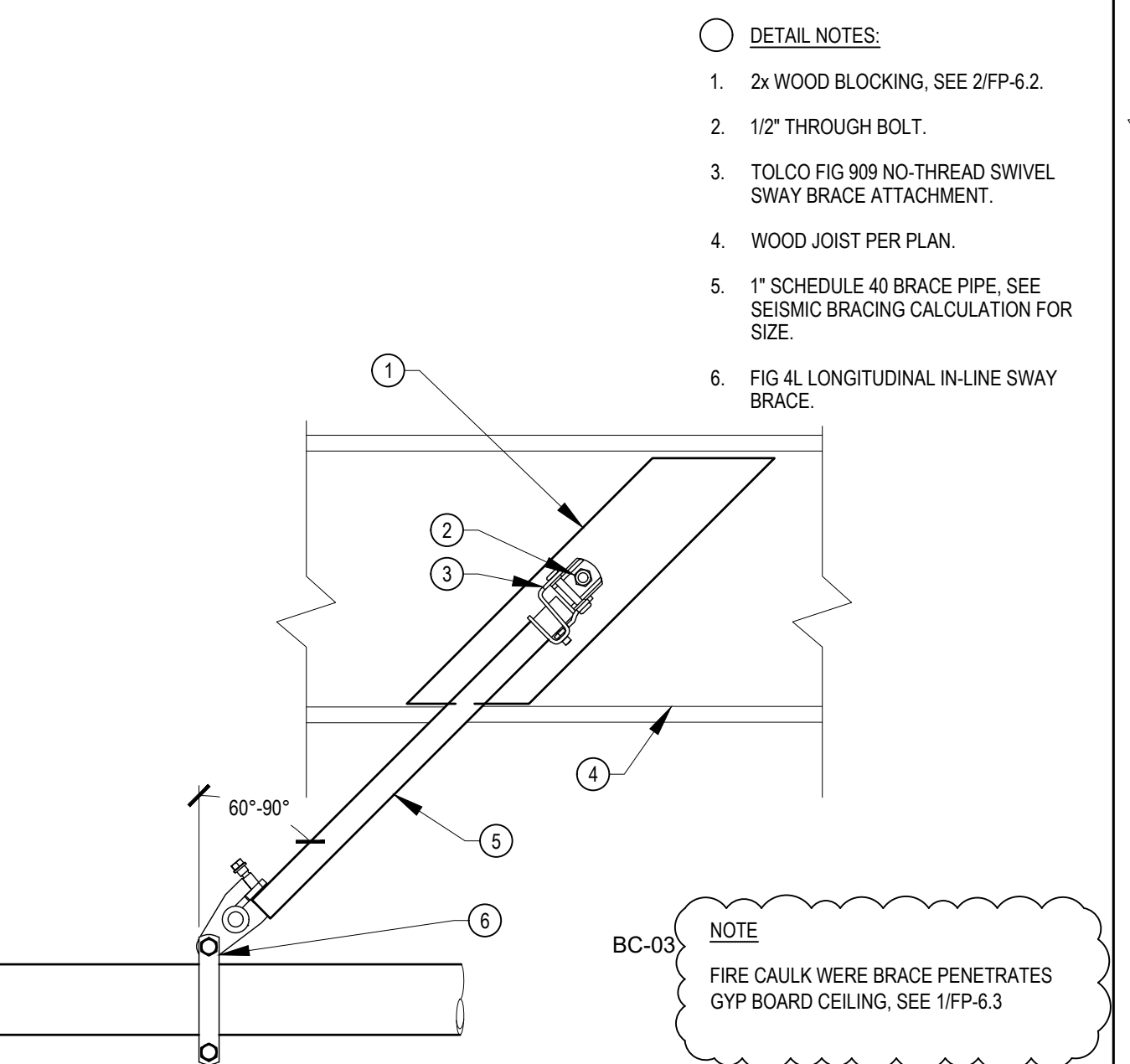
DENSITY: _____ DESIGN AREA OF DISCHARGE: _____

SYSTEM DEMAND

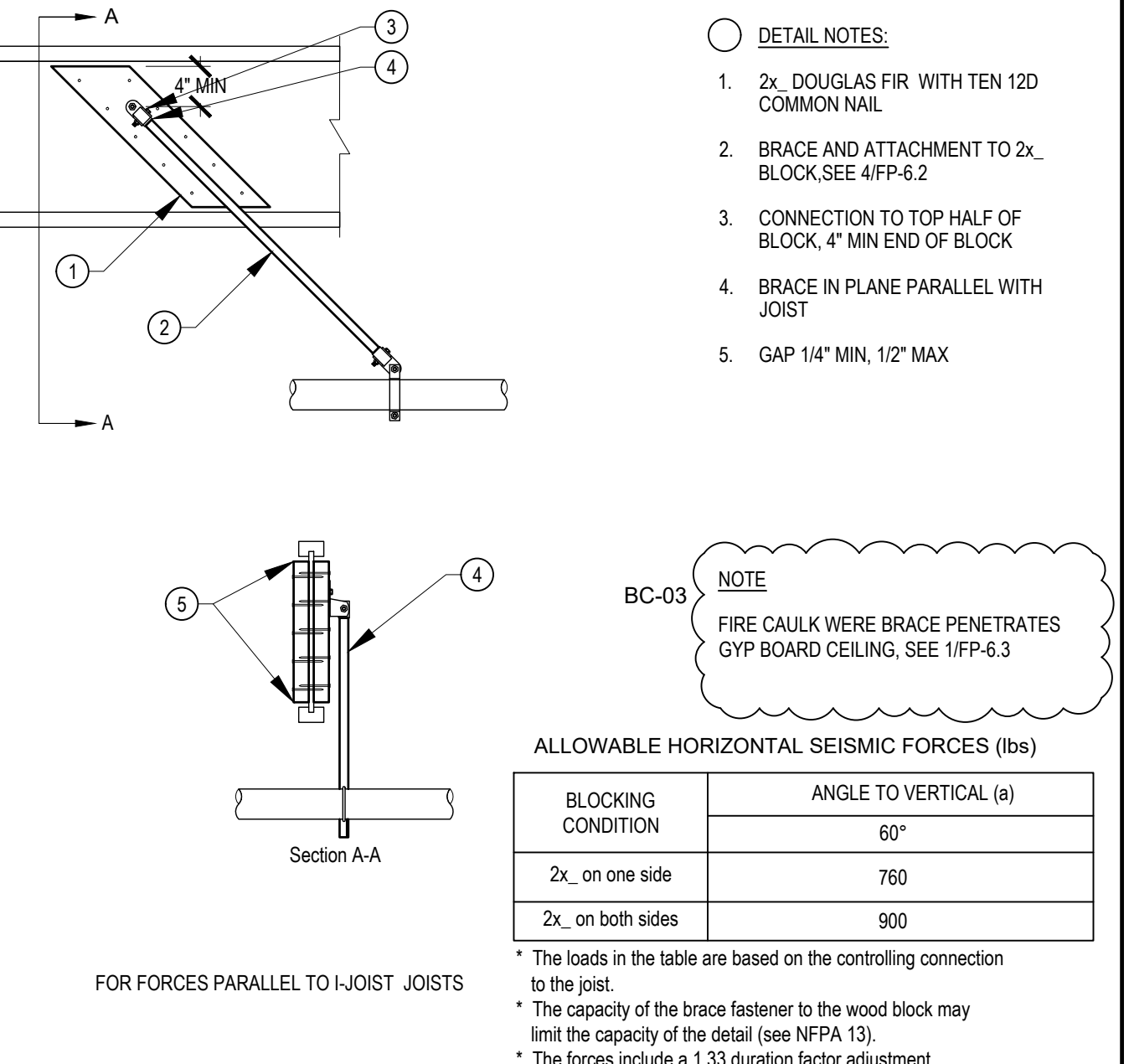
FLOW AT THE BASE OF THE RISER	HOSE STREAM ALLOWANCE
RESIDUAL PRESSURE AT THE BASE OF THE RISER	INSIDE: _____
REQUIRED FLOW AT THE SOURCE	OUTSIDE: _____
REQUIRED PRESSURE AT THE SOURCE	TOTAL: _____
	REMOTE SPRINKLER FLOW GPM: _____

NOTE: SEE FP-A2.1 AND FP-B2.1 FOR HYDRAULIC DATA PLATE INFORMATION

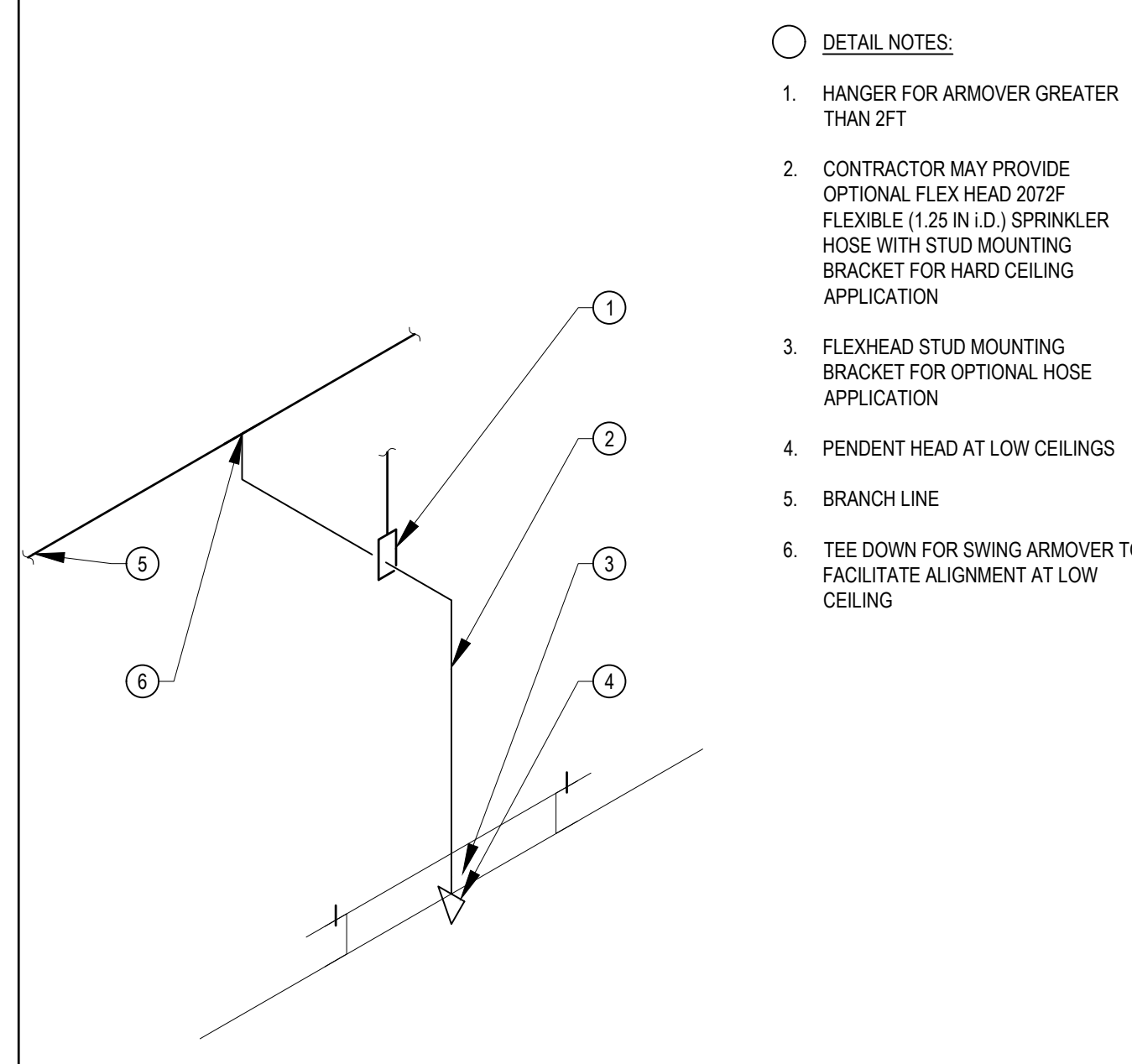
7 HYDRAULIC DATA PLATE TEMPLATE N.T.S.



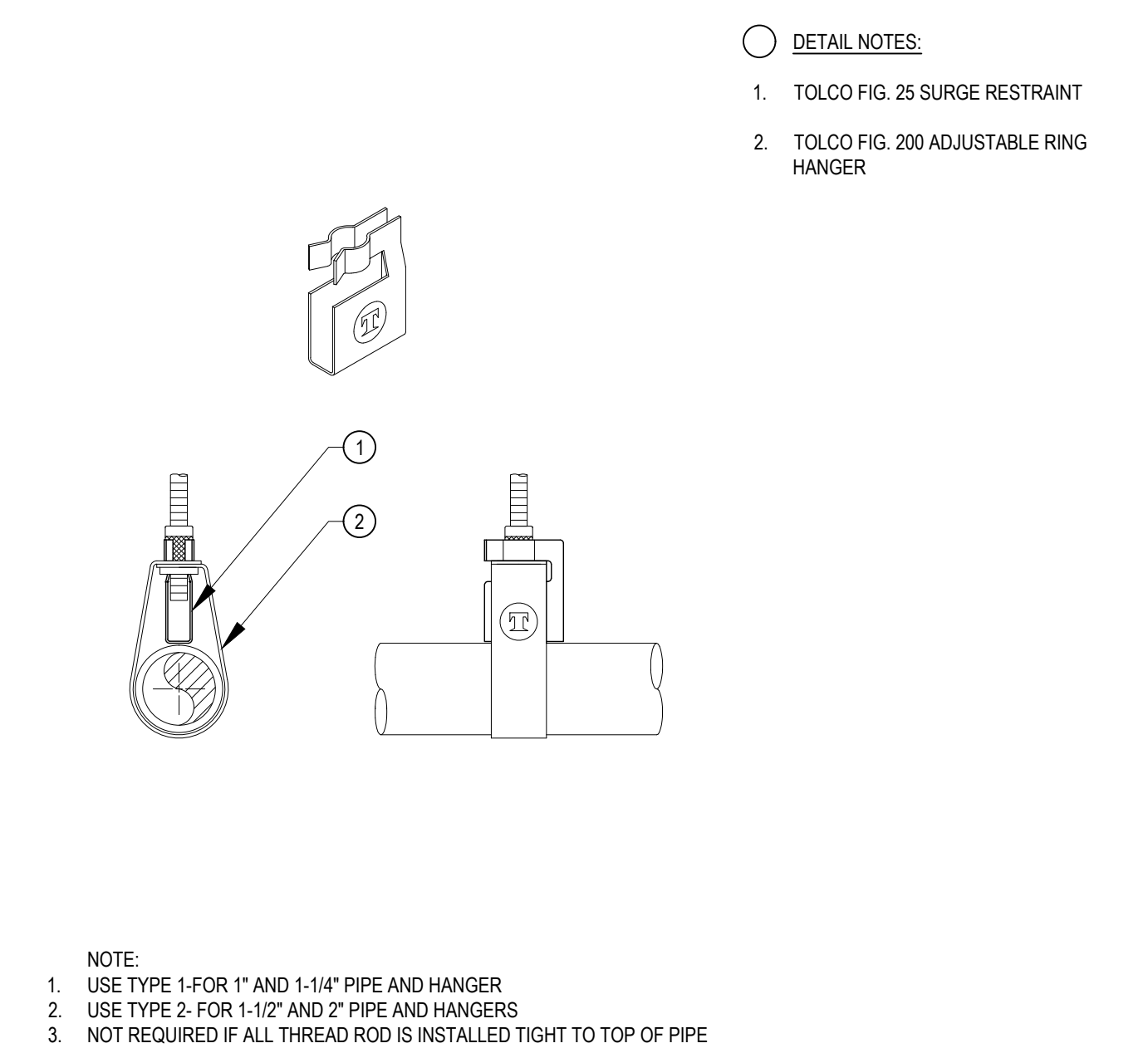
4 LONGITUDINAL SEISMIC BRACE SB-2 N.T.S.



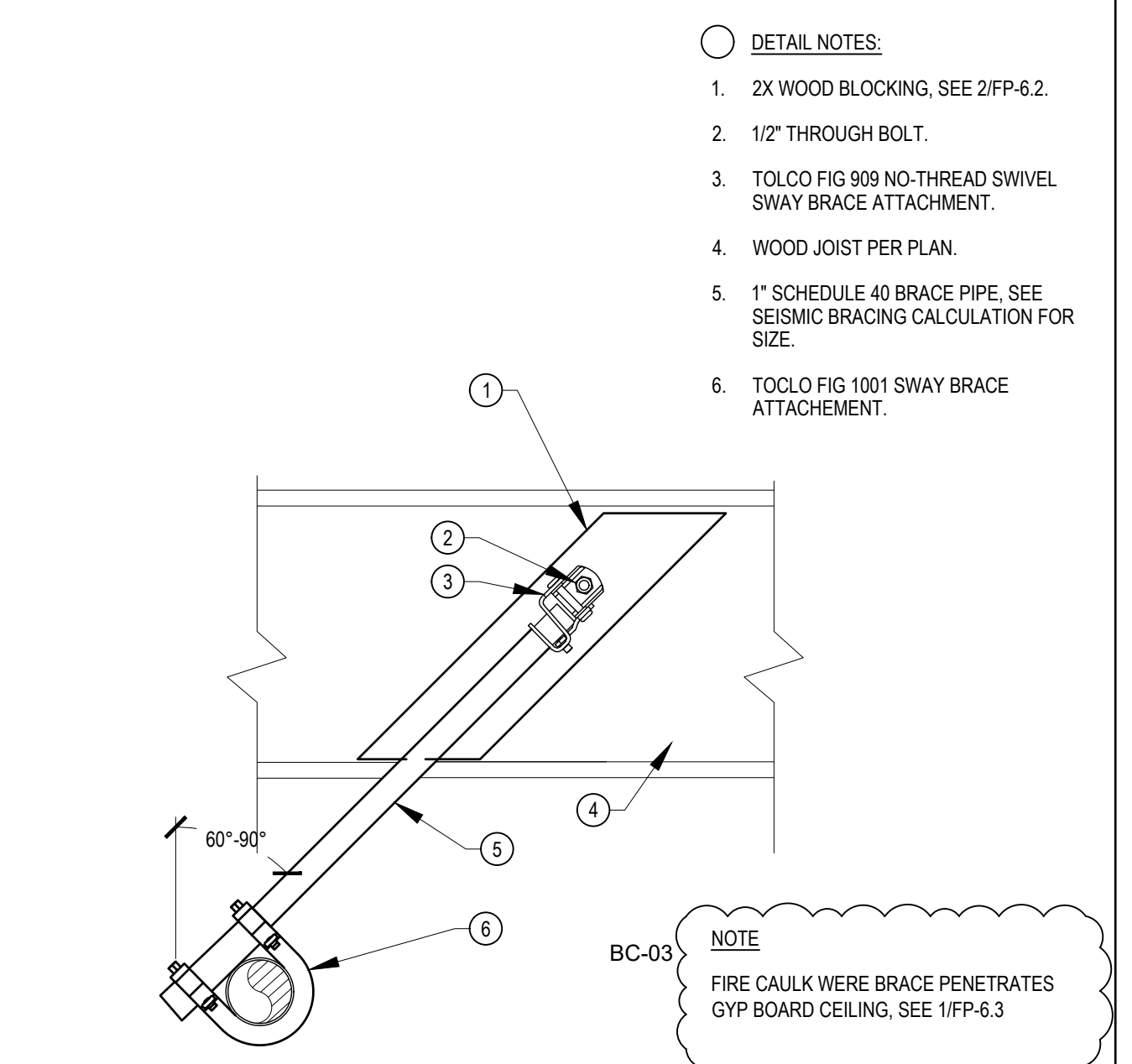
2 STRUCTURE ATTACHMENT N.T.S.



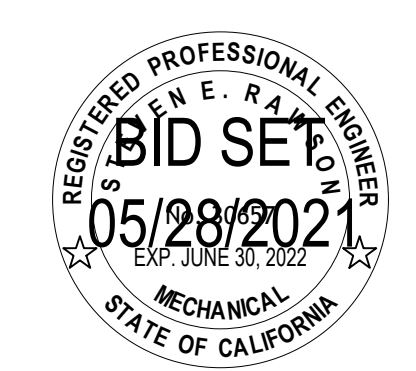
11 DROP HARD CEILING N.T.S.



8 SURGE RESTRAINT N.T.S.



5 LATERAL SEISMIC BRACE SB-3 N.T.S.



CEG JOB NO: 20117

CYPRESS
Engineering Group

831 218 1802
8 Harris Court, Suite A8
Monterey, CA 93940
cypresseg.com

HVAC, Plumbing, Fire Protection
Building Commissioning
Industrial Refrigeration
Environmental Compliance
Training & Technical Support

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Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

HERITAGE HIGH SCHOOL

NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2

101 AMERICAN AVE,
BRENTWOOD, CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

NO.	DATE	DESCRIPTION
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268

ARCH PROJECT NO: 1870.00

DRAWN BY: _____

DRAWING SCALE: NONE

PTN: 61721-77 FILE NO: 7-H4

BID SET

MAY 28, 2021

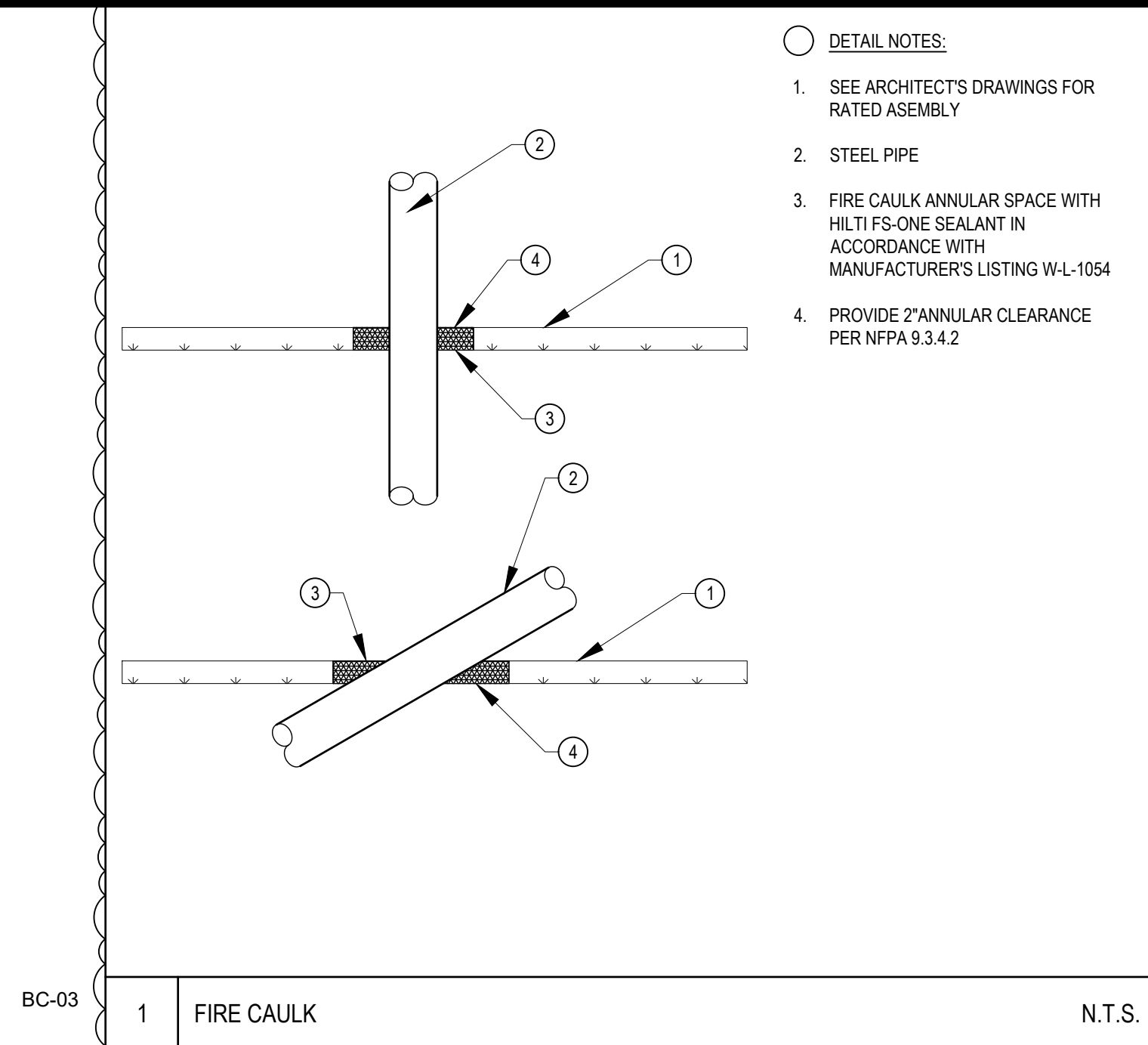
SHEET TITLE

DETAILS - FIRE PROTECTION

SHEET NUMBER

FP-6.2

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reuse, reproduction, or publication by any method, in whole or in part, is prohibited. Title to the plans and specifications remains in the engineer without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.



Seismic Bracing Calculations		Sheet X of X			
Project: HERITAGE HIGH SCHOOL NEW CLASSROOM BUILDINGS Address: 101 AMERICAN AVE, BRENTWOOD, CA 94513		Cypress Engineering Group 8 Harris Ct, Suite A8 Monterey, CA 93940 (831) 218-1802			
Brace Information	Seismic Brace Attachments	Seismic Brace Assembly Detail			
Maximum Spacing: 30'-0" Maximum Brace Length: 7'-0" Bracing Material: 1" Sch. 40 Angle from Vertical: 60° MINIMUM Least radius of gyration: 0.421" L/R value: 200 Maximum Horizontal load: 1604 lbs NFPA 13: Table 9.3.5.11.8(b)	Structure attachment or tension-only bracing system: Make: TOLCO Model: FIG 909 NO THREAD SWIVEL Listed load rating: 2015 Adjusted load rating: 1745 Sway brace (pipe attachment) fitting: Make: TOLCO Model: FIG 1001 IN-LINE SWAY BRACE Listed load rating: 2015 Adjusted load rating: 1745	SEE DETAIL 5FP-6.2 SEE DETERMINATION OF SEISMIC COEFFICIENT Cp ON FP-0.1 NFPA 13: Figure 9.3.5.12.1			
Fastener Information		Orientation of connecting surface: NFPA Type I Type: THROUGH BOLT Diameter: 1/2 in Length: 3.12 in Maximum load: 485 lbs NFPA 13: Figure 9.3.5.12.1			
Seismic Coefficient Cp = 0.75 (See Attached NFPA13: Table 9.3.5.9.3)		Brace identification no. (to be used on plans) SB-3 <input checked="" type="checkbox"/> Lateral brace <input type="checkbox"/> Longitudinal brace			
Diameter	Type	Length	Total (ft)	Weight per ft	Total Weight
4 in	Sch. 10 Steel	30	11.78	lb/ft	353.4 lb
Total Weight of Water Filled Piping 353.4 lb					
Wp (Total Weight of Water Filled Piping x 1.15 to account for valves and fittings) 406.4 lb					
Horizontal Force (NFPA13.9.3.5.9.3) Fpw = Cp x Wp = 304.8 lb					
*Excludes tension-only bracing systems					

Seismic Bracing Calculations		Sheet X of X			
Project: HERITAGE HIGH SCHOOL NEW CLASSROOM BUILDINGS Address: 101 AMERICAN AVE, BRENTWOOD, CA 94513		Cypress Engineering Group 8 Harris Ct, Suite A8 Monterey, CA 93940 (831) 218-1802			
Brace Information	Seismic Brace Attachments	Seismic Brace Assembly Detail			
Maximum Spacing: 20'-0" Maximum Brace Length: 7'-0" Bracing Material: 1" Sch. 40 Angle from Vertical: 60° MINIMUM Least radius of gyration: 0.421" L/R value: 200 Maximum Horizontal load: 1604 lbs NFPA 13: Table 9.3.5.11.8(b)	Structure attachment or tension-only bracing system: Make: TOLCO Model: FIG 909 NO THREAD SWIVEL Listed load rating: 2015 Adjusted load rating: 1745 Sway brace (pipe attachment) fitting: Make: TOLCO Model: FIG 1001 IN-LINE SWAY BRACE Listed load rating: 2015 Adjusted load rating: 1745	SEE DETAIL 3FP-6.2 SEE DETERMINATION OF SEISMIC COEFFICIENT Cp ON FP-0.1 NFPA 13: Figure 9.3.5.12.1			
Fastener Information		Orientation of connecting surface: NFPA Type I Type: THROUGH BOLT Diameter: 1/2 in Length: 3.12 in Maximum load: 485 lbs NFPA 13: Figure 9.3.5.12.1			
Seismic Coefficient Cp = 0.75 (See Attached NFPA13: Table 9.3.5.9.3)		Brace identification no. (to be used on plans) SB-3 <input checked="" type="checkbox"/> Lateral brace <input type="checkbox"/> Longitudinal brace			
Diameter	Type	Length	Total (ft)	Weight per ft	Total Weight
2.5 in	Sch. 10 Steel	20	5.89	lb/ft	117.8 lb
1.25 in	Sch. 40 Steel	18	2.93	lb/ft	52.8 lb
1 in	Sch. 40 Steel	44	2.05	lb/ft	90.2 lb
Total Weight of Water Filled Piping 260.8 lb					
Wp (Total Weight of Water Filled Piping x 1.15 to account for valves and fittings) 299.9 lb					
Horizontal Force (NFPA13.9.3.5.9.3) Fpw = Cp x Wp = 224.9 lb					
*Excludes tension-only bracing systems					

Seismic Bracing Calculations		Sheet X of X			
Project: HERITAGE HIGH SCHOOL NEW CLASSROOM BUILDINGS Address: 101 AMERICAN AVE, BRENTWOOD, CA 94513		Cypress Engineering Group 8 Harris Ct, Suite A8 Monterey, CA 93940 (831) 218-1802			
Brace Information	Seismic Brace Attachments	Seismic Brace Assembly Detail			
Maximum Spacing: 30'-0" Maximum Brace Length: 7'-0" Bracing Material: 1" Sch. 40 Angle from Vertical: 60° MINIMUM Least radius of gyration: 0.421" L/R value: 200 Maximum Horizontal load: 1604 lbs NFPA 13: Table 9.3.5.11.8(b)	Structure attachment or tension-only bracing system: Make: TOLCO Model: FIG 909 NO THREAD SWIVEL Listed load rating: 2015 Adjusted load rating: 1745 Sway brace (pipe attachment) fitting: Make: TOLCO Model: FIG 4L IN-LINE SWAY BRACE Listed load rating: 2015 Adjusted load rating: 1745	SEE DETAIL 6FP-6.2 SEE DETERMINATION OF SEISMIC COEFFICIENT Cp ON FP-0.1 NFPA 13: Figure 9.3.5.12.1			
Fastener Information		Orientation of connecting surface: NFPA Type I Type: THROUGH BOLT Diameter: 1/2 in Length: 3.12 in Maximum load: 485 lbs NFPA 13: Figure 9.3.5.12.1			
Seismic Coefficient Cp = 0.75 (See Attached NFPA13: Table 9.3.5.9.3)		Brace identification no. (to be used on plans) SB-4 <input type="checkbox"/> Lateral brace <input checked="" type="checkbox"/> Longitudinal brace			
Diameter	Type	Length	Total (ft)	Weight per ft	Total Weight
4 in	Sch. 10 Steel	30	11.78	lb/ft	353.4 lb
Total Weight of Water Filled Piping 353.4 lb					
Wp (Total Weight of Water Filled Piping x 1.15 to account for valves and fittings) 406.4 lb					
Horizontal Force (NFPA13.9.3.5.9.3) Fpw = Cp x Wp = 264.2 lb					
*Excludes tension-only bracing systems					

Seismic Bracing Calculations		Sheet X of X			
Project: HERITAGE HIGH SCHOOL NEW CLASSROOM BUILDINGS Address: 101 AMERICAN AVE, BRENTWOOD, CA 94513		Cypress Engineering Group 8 Harris Ct, Suite A8 Monterey, CA 93940 (831) 218-1802			
Brace Information	Seismic Brace Attachments	Seismic Brace Assembly Detail			
Maximum Spacing: 30'-0" Maximum Brace Length: 7'-0" Bracing Material: 1" Sch. 40 Angle from Vertical: 60° MINIMUM Least radius of gyration: 0.421" L/R value: 200 Maximum Horizontal load: 1604 lbs NFPA 13: Table 9.3.5.11.8(b)	Structure attachment or tension-only bracing system: Make: TOLCO Model: FIG 909 NO THREAD SWIVEL Listed load rating: 2015 Adjusted load rating: 1745 Sway brace (pipe attachment) fitting: Make: TOLCO Model: FIG 4L IN-LINE SWAY BRACE Listed load rating: 2015 Adjusted load rating: 1745	SEE DETAIL 4FP-6.2 SEE DETERMINATION OF SEISMIC COEFFICIENT Cp ON FP-0.1 NFPA 13: Figure 9.3.5.12.1			
Fastener Information		Orientation of connecting surface: NFPA Type I Type: THROUGH BOLT Diameter: 1/2 in Length: 3.12 in Maximum load: 485 lbs NFPA 13: Figure 9.3.5.12.1			
Seismic Coefficient Cp = 0.75 (See Attached NFPA13: Table 9.3.5.9.3)		Brace identification no. (to be used on plans) SB-2 <input type="checkbox"/> Lateral brace <input checked="" type="checkbox"/> Longitudinal brace			
Diameter	Type	Length	Total (ft)	Weight per ft	Total Weight
4 in	Sch. 10 Steel	30	11.78	lb/ft	353.4 lb
Total Weight of Water Filled Piping 353.4 lb					
Wp (Total Weight of Water Filled Piping x 1.15 to account for valves and fittings) 406.4 lb					
Horizontal Force (NFPA13.9.3.5.9.3) Fpw = Cp x Wp = 264.2 lb					
*Excludes tension-only bracing systems					



HERITAGE HIGH SCHOOL
NEW CLASSROOM BUILDINGS INCREMENT 2 OF 2
 101 AMERICAN AVE, BRENTWOOD, CA 94513

LIBERTY UNION HIGH SCHOOL DISTRICT

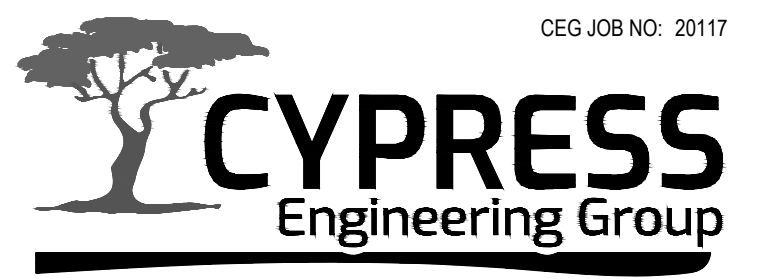
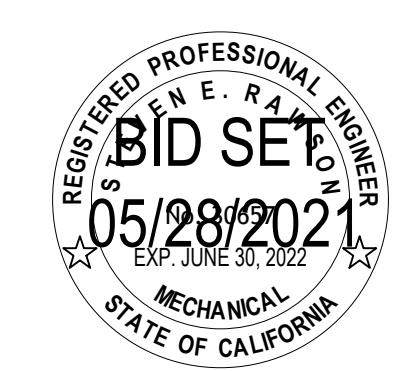
REVISIONS		
BC-03	5/28/21	BID CLARIFICATION 3

DSA APP NO. 01-119268
 ARCH PROJECT NO: 1870.00
 DRAWN BY:
 DRAWING SCALE: NONE
 PTN: 61721-77 FILE NO: 7-H4

BID SET
MAY 28, 2021

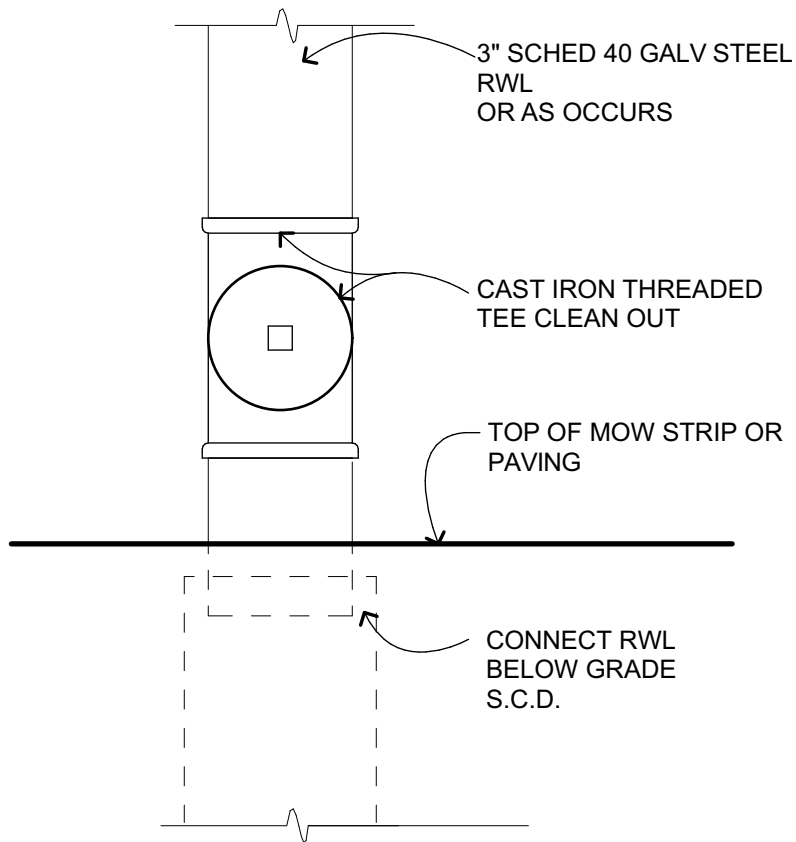
SHEET TITLE
SEISMIC BRACING CALCULATIONS - FIRE PROTECTION
 SHEET NUMBER

FP-6.3



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 Monterey, CA 93940
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 Building Commissioning
 Industrial Refrigeration
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CEG JOB NO: 20117



TYP RWL AT GRADE

3" = 1'-0"

B304209

8



**HERITAGE HIGH SCHOOL
NEW CLASSROOM BUILDINGS**

SCALE: 3" = 1'-0"
DATE: 5/28/21
REFERENCE DRAWING: 8 / A-9.2

QKA JOB #:1870.00
DSA APP. #:01-119268
DSA FILE #:7-H4

BC 03.1