

Project: River Road Elementary School – Building and Site Construction
Title: Addendum No. 1
Contract No: CIP 410 307 001
Date: March 1, 2016
From: John Stapleton, PIVOT Architecture
To: Interested Bidders

This Addendum is available at <http://www.4j.lane.edu/bids/> and modifies the Project Manual, Specifications, and Drawings in accordance with the Invitation to Bid and the Instructions to Bidders as follows:

1-1-0 General Information

1-1-1 Primary contacts for PIVOT Architecture during the remaining bidding period will be Karen Williams and John Stapleton. Contact information below.

Karen Williams - kwilliams@pivotarchitecture.com – Phone No: 541.762.1634

John Stapleton – jstapleton@pivotarchitecture.com – Phone No: 541.762.1614

1-1-2 Attached is the Non-mandatory, Pre-bid Meeting Sign-In List of attending bidders from the pre-bid meeting 02/24/2014 at 2:30 PM.

1-1-3 Last day for substitution requests is 3/7/16.

1-1-4 Last for Bidder questions is 3/9/16.

1-2-0 Changes to the Project Manual

1-2-1 Section 00 4113 Allowances. DELETE Allowance No. 1, Over Excavation.

1-2-2 Section 00 52 13 Form of Agreement cover sheet. DELETE last sentence “The document, as edited by Owner, is available for review at <http://www.4j.lane.edu/bids/>.” AIA Form A101 is included in the Project Manual Section 00 52 13, amended by Section 00 73 00 Supplemental Conditions. No revised specification section issued for this change.

1-2-3 Section 00 73 00, Section 1.2A, Section 11.4.6, Section 007300C – CHANGE Owner’s Representative to Dexter Rummel Phone Number 541-228-1726. No revised specification section issued for this change.

1-2-3 Section 01 2100 Allowances. DELETE Allowance No. 1: Over Excavation. No revised specification section issued for this change.

1-2-3 Section 11 8227 Trash Compactors. Section 2.02A 2 – CHANGE Container size to 4 yard. No specification section issued for this change.

1-2-4 Section 22 1415 Rainwater Reclamation System

1. Revise Article 1.02 A. to read the following: This Section includes a skid-mounted, reclaimed rainwater treatment and delivery package including, but not limited to the following: sensors and controls for treatment, chemical recirculation and injection pumps, chemical drum, chemical containment pallet, rainwater day tank and fittings, sensors and controls for day tank level management, sensors and controls for cistern water transfer, remote cistern transfer pump (CTP), sensors and controls for delivery/source pump(s), delivery/source pump(s), hydro-pneumatic tank, city water makeup valve, water meters, bag filters, flexible connectors, valves, fittings, and gauges as indicated on the Drawings.
2. Revise Article 2.01 C.2. to read the following: Interconnecting piping shall be Schedule 80 PVC; city water makeup piping may be minimum Type L or M copper.
3. Revise Article 2.02 A.3. to read the following: 3. Description: The submersible cistern transfer pump (CTP) sends water from the cistern to the day tank for treatment. The ETL Listed treatment system then periodically circulates water in the day tank through a chemical injection node using a recirculation pump in order to maintain adequate oxidation reduction potential (ORP) conditions. The delivery/source pump(s) in the system deliver pressurized treated rainwater, or well water for supply to the building load for non-potable use as required.
4. Revise Article 2.02 E.3. to read the following: City Water Makeup: A condition that exists such that city water bypasses the treatment equipment in order to satisfy demand. This condition shall be announced by a “City Water ON” light at the Cistern Transfer Pump Panel (CTPP). Any of the following conditions shall initiate a city water makeup condition:
5. Revise Article 2.02 E.4. to read the following: WCP General Alarm: Light on the WCP that illuminates in the event of a treatment fault. This light can be accompanied by an audible chirp. The WCP shall shutdown treatment equipment, and initiate city water makeup for any of the following conditions:
6. Revise Article 2.02 L. to read the following: City Water Makeup Valve:
7. Revise Article 2.02 M. to read the following: Cistern Transfer Pump Panel (CTPP) Description: UL 508A Listed panel shall have a NEMA 1 enclosure, single point power connection for all skid components, and all necessary equipment and controls to allow for automatic operation and monitoring of the CTP, polishing filter differential pressure, cistern low level alarm, and well water makeup solenoid valve.
8. Revise Article 2.02 M. 1. to read the following: Rainwater Cistern Level, Cistern Transfer Pump (CTP), Filter, Well Water Makeup Solenoid Valve, and City Water Makeup Valve Monitoring and Control:
9. Revise Article 2.02 M. 1.a. to read the following: Cistern Low Level and CTP Failure Alarms: Alarm light shall illuminate at the CTPP upon a low-level condition in the cistern or CTP failure and lockout the CTP; normal treatment and delivery operations may continue. In this state, the CTP will not energize if called upon by the CTPP to replenish the day tank. When level in the day tank reaches the CTP ON set point, the treatment equipment shall disable and the city makeup valve shall open. Normal treatment of the day tank and CTP operation shall resume when the CTP failure and/or low cistern level alarms clear.
10. Revise Article 2.02 M. 1.c. to read the following: City Water Makeup Valve: CTPP shall monitor the city water makeup valve’s position and illuminate a light when the valve is OPEN. The “Manual ON” position of the valve’s control switch will override any control signals and open the valve; otherwise, normal operations as previously described will ensue with the valve’s control switch in the AUTO position.
11. Add Article 2.02 M. 1.d to read the following: Cistern Low Level and Well Water Makeup: Upon detection of low-level condition, solenoid valve shall be opened to enable well water to enter cistern. Close valve when water reaches normal level. Light on panel shall signal operation of solenoid valve.
12. Revise Article 2.02 M. 2.a. to read the following: CTP ON Level: This tank level is what the CTPP uses to enable the CTP to replenish the day tank.
13. Revise Article 2.02 M. 2.b. to read the following: CTP OFF Level: This tank level is what the CTPP uses to disable the CTP to prevent an overflow condition.
14. Revise Article 2.02 M. 3.b. to read the following: City Water Makeup Valve “AUTO-Manual ON” Switch
15. Revise Article 2.02 M. 4.e. to read the following: City Water Makeup Valve – Open
16. Add Article 2.02 M. 4.f. to read the following: Well Water Makeup Valve – Open
17. Revise Article 2.02 M. 6. to read the following: Building Management System Interface: BMS to monitor CTP status (ON/OFF/Failure), Well Water Makeup Valve Position (Open/Closed), City Water Makeup Valve Position (Open/Closed) and polishing filter differential pressure status (High) with dry contact outputs from CTPP.

18. Revise Article 3.01 E. to read the following: Install wall water makeup solenoid valve in irrigation well vault.

1-2-5 Section 22 4000 Plumbing

1. Revise Article 2.03 H. 2. to read the following: Chicago 1100 series faucet with polished chrome plated solid brass body construction, single lever mixing valve, 8-inch cast brass spout, high temperature limit stop, 2.2 gpm pressure compensating laminar flow outlet, vandal resistant complete.
2. Revise Article 2.03 I. 2. to read the following: Chicago 1100 series faucet with polished chrome plated solid brass body construction, single lever mixing valve, 8-inch cast brass spout, high temperature limit stop, 2.2 gpm pressure compensating laminar flow outlet, vandal resistant complete.

1-3-0 Changes to the Drawings

- 1-3-1 Sheet G011. Revised deferred submittal list.
- 1-3-2 Sheet G031. ADD Mockup detail sheet.
- 1-3-3 Sheet A112. Revised plan at elevator, revised keynote.
- 1-3-4 Sheet A122. Revised plan at elevator.
- 1-3-5 Sheet A135. Revised wall assemblies F and A
- 1-3-6 Sheet A138. Revised top of wall details.
- 1-3-7 Sheet A152. This sheet was omitted from the initial ORPIN web posting. Add to Construction Documents.
- 1-3-8 Sheet A215. This sheet was omitted from the initial ORPIN web posting. Add to Construction Documents.
- 1-3-9 Sheet A365. Revised elevator sections and details.
- 1-3-10 Sheet A451. Window Type BBB is mislabeled. Window Type should be W17. No drawings issued for this change.
- 1-3-11 Sheet A527. This sheet was omitted from the initial ORPIN web posting. Add to Construction Documents.
- 1-3-12 Sheet FP101. Add note 7, describing alternate 3, delete canopy and sprinklers.
- 1-3-13 Sheet P002. Revise RHWP-101 flowrate and head. Revise rainwater skid schedule.
- 1-3-14 Sheet P105. Relocate location of waste line up to FD-4 in utility yard.
- 1-3-15 Sheet P115. Relocate FD-4 in utility yard to make room for condensing unit.
- 1-3-16 Sheet P401. Note location of EPO switches and gas solenoid valves. Add note 4, referring to other sheets. Revise point of connection to rainwater skid.
- 1-3-17 Sheet P502. Detail 3: Revise Rainwater skid piping connection locations. Detail 1: Revise and indicate all piping connections. Add general note B regarding alternate 7. Detail 2: Correct pump tag. Add to note 1 clarification regarding location of solenoid valve.
- 1-3-18 Sheet P601. Revise note 1 to 1 gpm per balance valve.
- 1-3-19 Sheet M115. Revise CUH-HALLC to provide some supply air to restroom, relocate exhaust grille. Relocate ACCU-ELECT. Add Note 26, regarding alternate 6, chiller deletion.

- 1-3-20 Sheet M415. Revise CUH-101 to provide some supply air to restroom, relocate exhaust grille. Relocate ACCU-ELECT. Revise EF-ELECT exhaust plenum to 26x18.
- 1-3-21 Sheet E011. Revise tag to note Alternate 2.
- 1-3-22 Sheet E111. Revised receptacle layout at tablet charging, removed tv receptacles.
- 1-3-23 Sheet E121. Revised receptacle layout at tablet charging, removed tv receptacles.
- 1-3-23 Sheet E131. Revised fire alarm general note.
- 1-3-24 Sheet E133. Revised fire alarm general note.
- 1-3-25 Sheet E141. Revised fire alarm general note.
- 1-3-26 Sheet E151. Revised exit sign.
- 1-3-27 Sheet E153. Revised exit sign.
- 1-3-28 Sheet E155. Revised exit sign.
- 1-3-29 Sheet E161. Relocated classroom L1A/L1B luminaires to match reflected ceiling plan. Revised exit signs.
- 1-3-30 Sheet E163. Revised exit sign.
- 1-3-31 Sheet E601. Revised feeder schedule. Revised feeder tag from generator. Added note 14.
- 1-3-32 Sheet E701. Added notes 8 and 9 to M/E coordination schedule.

1-4-0 Substitution Requests

Substitution requests listed below have been approved or approved as noted. All other requests not listed below have either been not approved or are pending review. NOTE: All approved substitute materials and service providers are responsible for supplying materials/services that are equal or better than specified items. Any design changes or project alterations needed to integrate substituted products are the sole responsibility of the Contractor and supplier.

- 1-4-1 Section 23 0593 Testing Adjusting and Balancing. Precision Test and Balance, 300 S. Redwood St. Ste. 130, Canby, OR 97013 is APPROVED as an acceptable TAB firm.
- 1-4-2 Section 08 4413 Glazed Aluminum Curtain Walls, 2.03 Components, D Sunscreens and Light Shelves. Hendrick Architectural + Kawneer Sun Screens and Light Shelves provided by ASCA, Inc. is APPROVED as a substitute. NOTE: Any alterations or design changes needed to adapt this system to the project are the responsibility of the supplier/Contractor.

End of Addendum # 1

Sign up sheet:

Non-Mandatory Pre-Bid meeting for River Road Elementary Replacement School

At River Road Elementary

Wednesday, February 24, 2016 2:30 PM

	PRINTED Name	Company	Phone Number	Email
1	Doug Johnson	Salem Fire Alarm	503-931-1006	Doug@SalemFireAlarm.com
2	Rich Lybarger	Brothers Plumbing	541-517-4357	rich@brothers-plumbing.com
3	Joe Churchman	Groat Bros Inc	360 225 8868	gbprojectmanager@gmail.com
4	BRENT SHJERVE	CHAMBERS CONST	541-687-9445	bshjerve@chambers-qs.com
5	BOB McDONALD	WILDISH BUILDING	541-683-7759	bobmewildish.com
6	RON KEEFUYER	JOHN HYLAND CONST	541-726-8081	RONK@JHCONST.COM
7	JEFF EMMETT	JOHN HYLAND	541 726 8081	jeffemmett@jhconst.com
8	JEFF GUCKENBERGER	JKG ELECTRIC	541-746-4656	Jg@JKgelec.com
9	Ray Aliperti	Earth Engineers	541.525.6759	ray@earth-engineers.com
10	Greg Tubbeaux	Earth Engineers	541.844.8361	greg@earth-engineers.com
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SECTION 00 4113
BID FORM

BID FOR: **River Road Elementary School, Building and Site Improvements** CIP Number 410.307.001

Submitted to: Facilities Management
Eugene School District 4J
715 West Fourth Avenue
Eugene, Oregon 97402

Bid Deadline: 2:00 pm
Tuesday, March 15, 2016

Submitted by: _____
(Company Name)

BASE BID

The undersigned proposes to furnish all material, equipment, and labor required for the complete project, and to perform all work in strict accordance with the Contract Documents for the lump sum prices indicated below with completion occurring on or prior to the dates indicated:

TOTAL BASE BID INCLUDING ALLOWANCES: Replacement Elementary School and Site Improvements including Base Bid and Allowances as specified in Section 01 2100.

Base Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE BIDS:

The undersigned agrees, if awarded the Contract, to DEDUCT FROM the Base Bid indicated above the items of work relating to the following Alternates as described in the Project Manual, Section 01 2300.

ALTERNATE NO. 1: Delete East Ball Fields

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 2: Delete Covered Play Structure

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 3: Delete South Canopy

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 4: Delete All Skylights

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 5: Change Metal Roofing to TPO

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 6: Eliminate Chiller

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 7: Delete Pump “Skid” portion of Rainwater Harvesting System

Bid: _____ \$ _____
(Words) (Figures)

ALTERNATE NO. 8: Delete Information Graphics (IG) Work

Bid: _____ \$ _____
(Words) (Figures)

The undersigned agrees, if awarded the Contract, to substantially complete all work on or before the dates specified in Section 01 1100.

ALLOWANCES

The Undersigned proposes to include in the Base Bid indicated above the items of work relating to the following Allowances as described in the Project Manual, Section 01 2100. The Allowances may be authorized by the Owner for additional excavation and structural fills and shall be computed by multiplying the Contactor’s price per cubic yard as entered below by the quantity noted below.

Additional work includes the scope of Allowances will be subject to Owner approval. Unused portions of each Allowance will be deducted from the contract by changed order at the completion of the project. In the event that additional work is required in excess of the Allowances, the contract may be modified by considering these Allowances as the basis of unit costs.

ALLOWANCE NO. 1:
NOT USED **ADD 1**

ALLOWANCE NO. 2:
Placement of Select Fill as defined in Section 01 21 00 - Allowances

\$ _____ per Cubic Yard times the quantity of 1000 Cubic Yards equals \$ _____

ALLOWANCE NO. 3:
Placement of Granular Fill as defined in Section 01 21 00 - Allowances

\$ _____ per Cubic Yard times the quantity of 1000 Cubic Yards equals \$ _____

BID SECURITY

Accompanying herewith is Bid Security, which is not less than ten percent (10%) of the total amount of the Base Bid plus additive alternates.

STIPULATIONS

The undersigned acknowledges the liquidated damages provision included in the Supplementary Conditions.

The undersigned agrees, if awarded the contract, to comply with the provisions of Oregon Revised Statutes 279C.800 through 279C.870 pertaining to the payment of prevailing rates of wage.

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) working days after receiving contract forms, a signed Agreement and a satisfactory Performance Bond and Payment Bond each in an amount equal to 100 percent (100%) of the Contract Sum.

For every Agreement of \$100,000 or greater in value, all Contractors and Subcontractors shall have a public works bond in the amount of \$30,000, filed with the Construction Contractors’ Board (CCB), in compliance with ORS 279C.836, before starting work on the project unless exempt. Contractor agrees to provide a copy of the Contractor’s BOLI Public Works bond with the signed Agreement as Specified in the Supplementary Conditions.

The undersigned agrees that the Bid Security accompanying this proposal is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above named agreement and bonds;

and that if the undersigned defaults in executing that agreement within ten (10) days after forms are provided or providing the bonds, then the Bid Security shall become the property of the Owner; but if this proposal is not accepted within sixty (60) days of the time set for the opening of bids, or if the undersigned executes and delivers said agreement and bonds, the Bid Security shall be returned.

By submitting this Bid, the Bidder certifies that the Bidder:

- a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities;
- b) has a satisfactory record of past performance;
- c) has a satisfactory record of integrity, and is not disqualified under ORS 279C.440;
- d) is qualified legally to contract with the Owner; and
- e) will promptly supply all necessary information in connection with any inquiry the Owner may make concerning the responsibility of the Bidder.

Prior to award of a Contract, the Bidder shall submit appropriate documentation to allow the Owner to determine whether or not the Bidder is "responsible" according to the above criteria.

The contractor agrees with the provisions of Oregon Revised Statutes 279C.505, which requires that the contractor shall demonstrate it has established a drug-testing program for employees and will require each subcontractor providing labor for the Project to do the same.

The undersigned has received addenda numbers _____ to _____ inclusive and has included their provisions in the above Bid amounts.

The undersigned has visited the site to become familiar with conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

The undersigned certifies that the Bidder is a _____ Bidder under ORS. ("Resident" or "Non-resident", to be filled in by Bidder)

Names of Firm: _____

Street Address: _____
(City) (State) (Zip)

Telephone Number: _____ FAX Number: _____

Email Address: _____

Signed By: _____ Printed Name: _____
(Signature of Authorized Official. If bid is from a partnership, one of the partners must sign bid).

Date Signed: _____

Official Capacity: _____

If corporation, attest: _____ Date: _____
(Secretary of Corporation)

SEAL (If Corporate) _____ Corporation
_____ Partnership
_____ Individual

Enclosed: Bid Security

NON-DISCRIMINATION REQUIREMENT

Contractor certifies that the Contractor has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The Contractor agrees not to discriminate against any client, employee, or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age, unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

FIRM NAME: _____

ADDRESS: _____

TELEPHONE: _____

BY: _____
(Company or Firm Officer)

BY: _____
(Type or Print Name)

NON-COLLUSION AFFIDAVIT

STATE OF _____)

County of _____)

I state that I am _____ of _____
(Title) (Name of Firm)

and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

(1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder, except as disclosed on the attached appendix.

(2) That neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.

(4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or noncompetitive bid.

(5) _____, its affiliates, subsidiaries, officers, directors and
(Name of my Firm)

employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as described on the attached appendix.

I state that _____ understands and acknowledges that the above representations
(Name of my Firm)

are material and important, and will be relied on by School District 4J in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from School District 4J of the true facts relating to the submission of bids for this contract.

(Authorized Signature)

Sworn to and subscribed before me this _____ day of _____, 2016

(Notary Public for Oregon)

My Commission Expires: _____

END OF BID FORM

SECTION 09 6466
WOOD ATHLETIC FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood athletic floor assembly WAF-1.
 - 1. Work of the Section includes all tools and services to install a complete wood floor system from the concrete surface upward through the sanding and finishing, game lines, and installation of perimeter moldings and thresholds.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Floor flatness requirements.
- B. Section 08 71 00 - Door Hardware: Thresholds to be installed as Work of this Section.
- C. Section 08 71 01 - Hardware Schedule: Schedule of thresholds to be installed as Work of this Section.
- D. Section 11 66 23 - Gymnasium Equipment: Athletic equipment installed through flooring assembly.

1.03 REFERENCE STANDARDS

- A. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- B. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- C. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- D. MFMA (SPEC) - Guide Specifications for Maple Flooring Systems; Maple Flooring Manufacturers Association.

1.04 SUBMITTALS

- A. See Section 01 3300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for wood athletic floor assemblies.
 - 1. Submit MFMA Recommendations for correct preparation, finishing and testing of concrete subfloor surfaces to receive wood flooring.
 - 2. Submit manufacturer's recommendations and requirements for flooring preparation, testing and slab conditions to meet warranty requirements.
 - 3. Confirm depth of recessed concrete slab to receive wood athletic floor system.
- C. Shop Drawings: Show installation details including location and layout of each type of floor assembly and accessory. Include the following:
 - 1. Expansion provisions and trim details.
 - 2. Layout, colors, widths, and dimensions of game lines and markers.
 - 3. Locations of floor inserts for athletic equipment installed through flooring assembly.
- D. Selection Samples: Manufacturer's color charts showing colors and glosses available for the following:
 - 1. Floor finish.
 - 2. Game-line and marker paint.
 - 3. Vented base.
- E. Samples for Verification: For each type of athletic floor assembly and accessory required; approximately 12 inches and of same thickness and material indicated for the Work.
 - 1. Include sample sets showing the full range of normal color and texture variations expected in wood flooring.
 - 2. Include sample sets showing finishes and game-line paint and marker paint colors applied to wood flooring.

- F. Qualification Data: For Installer.
- G. Maintenance Data: For wood athletic floor assemblies and finish systems to include in maintenance manuals.
 - 1. Include recommendations for types of tape that can be used by Owner for temporary line marking without damaging floor finish.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed wood athletic floor assembly installations similar in material, design, and extent to that indicated for this Project, whose work has resulted in installations with a record of successful in-service performance and who is approved by the wood flooring manufacturer.
 - 1. Installers shall be MFMA Mill Accredited Installation Company with MFMA Accredited Installers on-site for the duration of the wood floor installation.
 - 2. Installer responsibilities include installation and field finishing of athletic floor assembly components and accessories, and application of game lines and markers.
- B. Maple Flooring: Comply with MFMA grading rules for species, grade, and cut.
 - 1. Provide flooring that carries MFMA mark on each bundle or piece.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver assembly materials in unopened cartons or bundles.
- B. Protect wood from exposure to moisture. Do not deliver wood components until after concrete, masonry and similar wet work is complete and dry.
- C. Store wood components in a dry, warm, well-ventilated, weathertight location and in a horizontal position.

1.07 PROJECT CONDITIONS

- A. Conditioning period begins not less than seven days before athletic floor assembly installation, is continuous through installation, and continues not less than seven days after athletic floor installation.
 - 1. Environmental Conditioning: Maintain an ambient temperature between 65 and 75 deg F and relative humidity planned for building occupants, but not less than 35 percent or more than 50 percent, in spaces to receive athletic floor assemblies during the conditioning period.
 - 2. Wood Conditioning: Move wood components into spaces where they will be installed, no later than beginning of the conditioning period.
 - a. Do not install athletic floor assemblies until wood components adjust to relative humidity of, and are at same temperature as, spaces where they are to be installed.
 - b. Open sealed packages to allow wood components to acclimatize immediately on moving wood components into spaces in which they will be installed.
- B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.
- C. Install athletic floor assemblies after other finishing operations, including painting, and all overhead work such as mechanical have been completed.

1.08 WARRANTY

- A. Manufacturer's standard warranty that material is free from manufacturing defects.
 - 1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Products WAF-1:
 - 1. Action Floor Systems LLC; Action Thrust I; www.actionfloors.com.
 - 2. Connor Sports Flooring, Inc.; Product Neoshok; www.connorfloor.com.
 - 3. Robbins, Inc.; Product Bio-Cushion Classic; www.robbsfloor.com.

4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 WOOD FLOORING

- A. Strip Flooring: Northern hard maple (*Acer saccharum*), kiln dried, random length, tongue and groove, and end matched.
1. Grade: MFMA-RL Second and Better.
 2. Thickness: 25/32 inch.
 3. Face Width: 2-1/4 inches.
 4. Provide continuous incremental expansion - factory milled.
 5. Preservative Treatment: Clear, penetrating, water-repellent wood preservative that protects against mold, mildew, staining, and decay fungi; complying with MFMA's written recommendations and applied by immersion.

2.03 SUBFLOOR SYSTEM

- A. Subfloor: Minimum 15/32-inch thick, CD face, Exposure I, APA rated plywood sheathing or as recommended by flooring manufacturer.
- B. Resilient Pads: Manufacturer's recommended rubber, EPDM or polyurethane pads installed at manufacturer's standard spacing for product designation indicated above. PVC pads are not acceptable.
1. Material: Manufacturer's standard.
 2. Thickness: As recommended by manufacturer.

2.04 ACCESSORIES

- A. Vapor Retarder: ASTM D4397, polyethylene sheet not less than 6 mils thick.
- B. Resilient Wall Base, Type B-3: Molded, vented, rubber or vinyl cove base; 4 by 3; with premolded outside corners.
1. Color: As selected from manufacturer's full range of available colors.
- C. Thresholds: As specified in Section 08 71 00 - Door Hardware and scheduled in Section 08 71 01 - Hardware Schedule.
- D. Fasteners: Type and size recommended by manufacturer, but not less than those recommended by MFMA for application indicated.
- E. Trowelable Leveling and Patching Compound: Portland-cement-based formulation approved by athletic floor manufacturer.
- F. Floor-Finish System: System of compatible components recommended in writing by flooring manufacturer and MFMA approved.
1. Finish Type A: Moisture Cured Urethane: "Moisture Cure Urethane" by Harco Chemical Coatings, Inc.; "Polopaz Moisture Cure Urethane" by National Coatings, or approved. Apply two coats.
 2. Finish Type B: Waterborne Urethane: "Bona Traffic" by BonaKemi USA, "Jon-Wood" by Johnson Wax, "Curator with Crosslinks" by Preferred Products, "Tradition 6200" by Harco Chemical Coatings, Inc, or approved. Apply two coats.
 3. Finish Type C: Oil Modified Polyurethane Oil: "Woodline" by BonaKemi USA, "Gym Coat 9000" by Harco Chemical Coatings, Inc, or approved. Apply two coats
 4. Game-Line and Marker Paint: Finish Type A & C: "U35 two part epoxy" by Forrest Paints; Finish Type B: Oil based enamel by Benjamin Moore.
 5. VOC Content: Provide products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Floor Sealers and Finish Coats: VOC content of not more than 350 g/L.
 - b. Game-Line and Marker Paint: VOC content of not more than 150 g/L.
 6. Available Floor Finish Products:
 - a. As noted in Finish Types above.
 - b. Substitutions: Section 01 60 00 - Product Requirements.

ADD 1

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of athletic floor assemblies.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Concrete Slabs: Verify that concrete slabs comply with requirements specified in Section 03 30 00 - Cast-in-Place Concrete.
 - 1. Moisture Testing: Perform tests in accordance with ASTM F1869, unless otherwise recommended by manufacturer. Proceed with installation only after substrates pass testing.
 - 2. Relative Humidity Testing (In-Situ Probe Test): Perform tests in accordance with ASTM F2170. Use a prepackaged relative humidity testing kit (ASTM F2170) and follow the manufacturer's instructions.
 - a. Relative humidity level shall be 80 percent or lower before installation, unless manufacturer has more stringent requirements.

3.02 PREPARATION

- A. Grind high spots and fill low spots on concrete substrates to produce a maximum 1/8-inch deviation in any direction when checked with a 10-foot straight edge.
 - 1. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- B. Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 INSTALLATION

- A. General: Comply with athletic floor assembly manufacturer's written instructions, but not less than written recommendations of MFMA applicable to flooring type indicated.
- B. Pattern: Lay flooring parallel with long dimension of space to be floored, unless otherwise indicated.
- C. Expansion Spaces: Provide 1-1/2- to 2-inch expansion void as required by manufacturer's written instructions and MFMA's written recommendations at walls and other obstructions, and at interruptions and terminations of flooring.
 - 1. Cover expansion spaces with vented base.
- D. Vapor Retarder: Install vapor retarder over entire area to be covered by wood athletic flooring, with joints lapped a minimum of 6 inches and sealed.
- E. Assembly:
 - 1. Attach resilient pads to underside of the first layer of plywood and 12 inches on center, unless otherwise recommended by flooring manufacturer.
 - 2. Place the first layer of plywood diagonal or perpendicular to the intended direction of the finish flooring, allowing 1/4 inch spacing at all edges.
 - 3. Lay the second layer of plywood without pads at the opposite 45 degree angle or at right angles to the first layer. Do not allow joints in the second layer to coincide with a joint in the first layer. Fasten layers together using manufacturer's recommended fasteners and spacing. Allow 1/4 inch between panel edges.
 - 4. Provide 1-1/2 to 2 inch expansion space, as required by manufacturer's written instructions and MFMA's written recommendations at walls and other obstructions, and at interruptions and terminations of flooring.
 - 5. Install strip flooring onto second layer of plywood parallel to the long dimension of the room. Provide adequate expansion at regular intervals across the floor during installation as dictated by the average humidity condition of the area according to the recommendations of the flooring manufacturer and installer.

- F. Installation Tolerances: 1/8 inch in 10 feet of variance from level.
- G. Vented Cove Base: Install manufacturer's recommended vented cove base, using premolded outside corners and mitered inside corners.
- H. Thresholds: Install thresholds furnished as Work of Section 08 71 00 - Door Hardware at all transitions of wood athletic flooring to other flooring to span expansion voids and to provide an even, accessible transition.
 - 1. Attach thresholds to adjacent floor surfaces to allow for movement of wood flooring system. Do not attach to wood athletic flooring.

3.04 SANDING AND FINISHING

- A. Follow applicable recommendations in MFMA's "Industry Recommendations for Sanding, Sealing, Court Lining, Finishing, and Resurfacing of Maple Gym Floors."
- B. Allow installed flooring to acclimate to ambient conditions for at least 10 days before sanding.
- C. Machine sand with coarse, medium, and fine grades of sandpaper to achieve a level, smooth, uniform surface without drum stop marks, ridges, cups, gouges, streaks or shines. Remove sanding dust by tack or vacuum.
- D. Finish: Apply seal and finish coats of finish system according to finish manufacturer's written instructions. Provide not less than six coats total and not less than two finish coats. Minimum 2 mils per coat. Buff and vacuum or tack between each coat after it dries.
 - 1. Water-Based Finishes: Use finishing methods recommended by finish manufacturer to reduce grain raise and side bonding effect.
 - 2. Game Lines and Markers: Apply game-line and marker paint between final seal coat and first finish coat according to paint manufacturer's written instructions. Lightly buff paint after drying to assure proper finish adhesion.
 - a. Mask flooring at game lines and markers, and apply paint to produce lines and markers with sharp edges.
 - b. Where game lines cross, break minor game line at intersection; do not overlap lines.
 - c. Apply game lines and markers in widths and colors according to requirements of Oregon School Activities Association (OSAA) and National Federation of State High School Association.
 - d. Apply finish coats after game-line and marker paint is fully cured.

3.05 PROTECTION

- A. Protect athletic floors during remainder of construction period to allow finish to cure and to ensure that flooring and finish are without damage or deterioration at time of Substantial Completion.
 - 1. Do not cover athletic floors after finishing until finish reaches full cure, and not before seven days after applying last finish coat.
 - 2. Do not move heavy and sharp objects directly over athletic floors. Protect fully cured floor finishes and surfaces with plywood or hardboard panels to prevent damage from storing or moving objects over athletic floors.

END OF SECTION

SECTION 22 1415
RAINWATER RECLAMATION SYSTEM

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The provisions of Section 22 0500, Common Work Results for Plumbing, apply to work specified in this Section.

1.02 SUMMARY

- A. This Section includes a skid-mounted, reclaimed rainwater treatment and delivery package including, but not limited to the following: sensors and controls for treatment, chemical recirculation and injection pumps, chemical drum, chemical containment pallet, rainwater day tank and fittings, sensors and controls for day tank level management, sensors and controls for cistern water transfer, remote cistern transfer pump (CTP), sensors and controls for delivery/source pump(s), delivery/source pump(s), hydro-pneumatic tank, city water makeup valve, water meters, bag filters, flexible connectors, valves, fittings, and gauges as indicated on the Drawings. —ADD 1
- B. The submersible CTP and cistern ultrasonic level sensor shall be provided by package manufacturer and shipped loose for contractor installation and wiring back to the skid-mounted package.
- C. Treatment equipment in this Section requires the reclaimed rainwater supply to have a gross filtration method prior to transfer from the rainwater cistern. The cistern; cistern connections, and vents shall be supplied and coordinated per civil engineer's instructions. Refer to Execution Part of this Section for additional installation and coordination requirements.
- D. This Section includes performance based work. The intent of Division 22 Specifications and the accompanying Drawings is to provide a complete and workable system as shown and specified. Include all work specified in this Section and shown on the accompanying Drawings, including appurtenances, connections, etc., in the finished job.
- E. Related Sections Include:
 - 1. Section 22 0523, General Duty Valves and Specialties for Plumbing
 - 2. Section 22 0529, Hangers, Supports and Anchors for Plumbing
 - 3. Section 22 0553, Identification for Plumbing Piping and Equipment
 - 4. Section 22 0590, Pressure Testing for Plumbing Systems
 - 5. Section 22 0700, Insulation for Plumbing
 - 6. Section 22 2113, Pipe and Pipe Fittings Plumbing

1.03 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. State of Oregon, Building Codes Division, Alternate Method Ruling OPSC 08-03 or latest edition.
 - 2. Inspection Certifications & Approvals: Skid-mounted package shall be UL Listed under Packaged Pumping Systems.
 - 3. Output Water Quality: Meets basic Urban Reuse reclaimed water quality levels as defined in 2012 USEPA document, "Guidelines for Water Reuse," Table 4-4.
- B. All equipment or components of this Section shall meet or exceed the requirements and quality of the items herein specified, or as denoted on the Drawings.
- C. Ensure package's pressure and temperature ratings are at least equal to system's maximum operating pressure and temperature at point where installed, but not less than specified.

- D. Pumps shall operate at specified system fluid temperatures and pressures without vapor binding or cavitation, and with non-overloading motors.
- E. Ensure pump materials and mechanical seals are appropriate for use with reclaimed rainwater and treatment chemicals.
- F. The dimensions of the rainwater packaged skid shall not exceed those indicated on the Drawings.

1.04 SUBMITTALS

- A. Submit The Following:
 - 1. Product data for each item specified, including rated operating characteristics, furnished specialties and accessories.
 - 2. Shop Drawings: Include plans, sections, details (i.e. dimensions and connection sizes) and attachments to other work. For wiring diagrams include power and internal control wiring.
 - 3. Three dimensional drawings of entire skid package.
 - 4. Operation and maintenance data.
 - 5. Limited Warranty specified in this Section.

1.05 PRODUCT HANDLING

- A. Use all means to protect equipment before, during and after installation. Store materials in a clean, dry place and protect from weather and construction traffic.
- B. Skid-mounted package shall be provided with lifting chairs/lugs for lifting and securing to the housekeeping pad at the jobsite by the installing contractor.
- C. Items described as "shipped loose" are to be protected from probable damage during shipment, or to accommodate remote field installation locations as shown on the Drawings.
- D. Ideal system operating temperatures shall be 50 degrees F- 75 degrees F. Minimum operating temperature shall be 35 degrees F. Maximum operating temperature shall be 100 degrees F. System shall not be subjected to freezing temperatures.

1.06 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace equipment that fails in original materials or workmanship within specified warranty period with new equipment.
 - 1. Limited Warranty Period: 12 months from the date of installation, or 18 months from shipment, whichever occurs first. Consult operations manual for full details.

PART 2 PRODUCTS

2.01 RECLAIMED RAINWATER TREATMENT & DELIVERY PACKAGE

- A. Acceptable Manufacturers:
 - 1. The entire skid package shall be provided by one package system manufacturer, CHC FlowTherm Systems, as a UL Listed, pre-assembled, pre-piped and pre-wired pumping system.
 - 2. The package system manufacturer shall have at least three years experience with rainwater treatment, and at least 10 years experience with pressure boosting pumping systems.
 - 3. Other Manufacturers: Submit Substitution Request.
- B. The specifying engineer reserves the right to specify a primary manufacturer for the bid documents. The contractor may choose to supply equivalent equipment, as submitted by alternatively specified manufacturers with an approved substitution request. This alternatively specified equipment shall be supplied on a deduct-alternate basis and based on the approval of the supplied alternate manufacturer's submittals. This protects the specifying engineer's design concept, but allows for a check-and-balanced system to protect the post-commissioning owner.

- C. Skid Package Description: Furnish and install a skid-mounted, commercial reclaimed rainwater treatment and delivery package with plumbing and electrical system points of connection shown on the Drawings. This system sends either treated & pressurized rainwater or well water to the facility for non-potable usage.
1. Refer to scheduled equipment on Drawings for capacities and specific ratings of pumps and motors, as well as any other listed components. **ADD 1**
 2. Interconnecting piping shall be Schedule 80 PVC; city water makeup piping may be minimum Type L or M copper.
 3. Unions or flanges shall be installed wherever necessary for ease of access, or wherever shown on the Drawings.
 4. All skid components shall be shipped mounted on a heavy duty, welded structural steel base plate, covered with at least 3/16" steel decking. The frame shall be built in accordance with AWS D1.1 standards. The WCC treatment equipment shall have an aluminum, powder coated frame secured to the skid's steel decking.

2.02 RAINWATER TREATMENT & DELIVERY SYSTEM

A. Treatment & Delivery System:

1. Acceptable Manufacturers:
 - a. Water Control Corporation (WCC).
2. Other Manufacturers: Submit Substitution Request.
3. Description: The submersible cistern transfer pump (CTP) sends water from the cistern to the day tank for treatment. The ETL Listed treatment system then periodically circulates water in the day tank through a chemical injection node using a recirculation pump in order to maintain adequate oxidation reduction potential (ORP) conditions. The delivery/source pump(s) in the system deliver pressurized treated rainwater, or well water for supply to the building load for non-potable use as required. **ADD 1**

B. Recirculation Pump:

1. Acceptable Manufacturers:
 - a. Xylem, Grundfos, STA-RITE.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Non self-priming, horizontal, end-suction centrifugal pump, AISI 304/316L stainless steel liquid handling components, easily accessible vent/prime/drain connections, internal mechanical seal with carbon versus silicon-carbide faces and viton elastomers, and NEMA open drip-proof or totally enclosed fan cooled motor.

C. Chemical Injection Pumps and Chemical Drum Suction Lance:

1. Acceptable Manufacturers:
 - a. EMEC.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Self-venting, constant metering pump attached to the aluminum treatment equipment frame that injects adjustable amounts of 12.5 percent Sodium Hypochlorite (NaOCl) solution at the chemical mixing point downstream of the recirculation pump based on a local timer set point and ORP level.
4. Chemical Injection Pump Controller: Detached from WCP, but includes ON/OFF button and display for programmable injection (stroke) rate controls. Controller display shall illuminate during injection pump operation.
5. Chemical Drum Suction Lance: 35-inch PVC lance contains integral suction filter screen, mechanical float, adjustable depth adaptor, air vent, suction connection, level sensor cable and connector cable to the WCP.

6. Standby Equipment: A standby pump, controller, tubing and suction lance shall be provided should the primary equipment fail, or if the owner prefers a different chemical treatment agent that requires an activator, such as 5 percent chlorine dioxide with 35 percent phosphoric acid activator.

D. Polishing and WCC Bag Filters:

1. Acceptable Manufacturers:
 - a. PEP, FSI, Rosedale.
2. Other Manufacturers: Submit Substitution Request.
3. Description: The two WCC bag filters are located in series on the aluminum treatment equipment frame and the polishing filter is located at the discharge of the source pump(s). The polishing filter shall have a 25 micron rating; the first-stage WCC bag filter shall have a 25 micron rating and second-stage WCC bag filter shall have a 10 micron rating. Filters shall have 304 stainless steel, permanently piped housing compatible with the filter bag basket, and BUNA-N o-ring cover seals. Housing shall be rated for 125 psi and have a quick opening cover. Polishing filter shall be supported with adjustable-height legs and bolt tightening assembly. WCC filters shall be secured with wall mounting brackets attached to the aluminum treatment equipment frame.
4. The WCC filter bank and polishing filter shall be provided with differential pressure indicators and a switch for digital monitoring of the filter bank status by the Water Control Panel (WCP) and Cistern Transfer Pump Panel (CTPP). Indicator shall have a color display to show when the filter is clean and dirty.

E. Water Control Panel (WCP):

1. Description: The WCP coordinates all treatment intervals, chemical concentrations and alarms with ON/OFF control of the recirculation pump and chemical injection pumps. Control panel shall be in a NEMA 3R enclosure with hinged lockable cover, and house the recirculation pump motor starter and overload protection.
2. Normal Operations: The recirculation pump will be activated by an adjustable timer to sample the ORP from once every minute up to once every 60 hours, or the recirculation pump can run continuously; this period is referred to as sampling. If at any time during a sample, the ORP is below a pre-set level, the chemical injection pumps will activate and both the recirculation and chemical injection pumps will run until the adjustable High ORP set point is satisfied.
3. City Water Makeup: A condition that exists such that city water bypasses the treatment equipment in order to satisfy demand. This condition shall be announced by a "City Water ON" light at the Cistern Transfer Pump Panel (CTPP). Any of the following conditions shall initiate a city water makeup condition:
 - a. ~~WCP General Alarm~~
4. WCP General Alarm: Light on the WCP that illuminates in the event of a treatment fault. This light can be accompanied by an audible chirp. The WCP shall shutdown treatment equipment, and initiate city water makeup for any of the following conditions:
 - a. High WCC Filter Bank Differential Pressure (adjustable)
 - b. Low Day Tank Water Level (adjustable): Set point should allow for adequate suction conditions at recirculation and delivery/source pump(s) to prevent cavitation and/or vortexing.
 - c. Low ORP (adjustable):
 - 1) Exception: If the ORP level falls below an adjustable Low ORP set point, the recirculation and chemical injection pumps shall start and/or remain online until the High ORP set point is satisfied.
 - d. Low Level In Chemical Drum A

ADD 1

ADD 1

- e. Recirculation Pump Over-Temperature: Alarms when recirculation pump temperature exceeds a pre-determined temperature (170 degrees F). If this condition occurs, the pump and chemical injection pumps will not turn on. When the pump temperature cools to 150 degrees F, normal system operation will resume.
 - f. Leak Detected Alarm
5. Local Control:
- a. ORP Calibration and Set point Adjustment
 - b. Treatment Length and Interval Adjustment
 - c. Recirculation Pump Test-Off-Auto Switch
 - d. Injector Pumps A Only-A&B-Off Switch
 - e. Recirculation Pump Power Disconnect Switch
6. Local Status Indicators: All alarm status lights, except the WCP General Alarm, shall flash repeatedly when activated and start a delay timer. Once the delay timer expires, the WCP General Alarm light shall illuminate.
- a. WCP General Alarm
 - b. Specific Alarm Status Lights:
 - 1) Day Tank Level – Low (adjustable)
 - 2) Chemical Drum A Level – Low
 - 3) WCC Filter Bank Differential Pressure – High (adjustable)
 - 4) ORP – Low (adjustable)
 - 5) Recirculation Pump – Over-Temperature
 - 6) Leak Detected Alarm
 - c. Injection Pump Power – ON
 - d. Recirculation Pump – ON
 - e. Timer – ON
 - f. System Elapsed Runtime Meter (hours)
 - g. Filter Bank Differential Pressure Indicator
 - h. Treatment Equipment Input and Output Pressure Gauges
 - i. ORP Control Section:
 - 1) ORP Concentration Status – Low (adjustable)
 - 2) ORP Concentration Status – Normal (adjustable)
 - 3) ORP Concentration Status – High (adjustable)
 - 4) ORP Readout (mV)
7. Building Management System (BMS) Interface: Dry contacts shall be provided for remote monitoring of the following:
- a. WCP General Alarm
 - b. High WCC Filter Bank Differential Pressure
 - c. Recirculation Pump Status (ON/OFF)
 - d. Leak Detected Alarm
- F. Vertical Storage Day Tank:
- 1. Acceptable Manufacturers:
 - a. Snyder, Norwesco, PolyProcessing.
 - 2. Other Manufacturers: Submit Substitution Request.

3. Description: Tank shall be constructed of high-density polyethylene (HDLPE) or cross-linked polyethylene (XLPE) with natural color, rated for indoor installation, specific gravity rating of 1.9, and certified for storage of up to 15 percent Sodium Hypochlorite. Tanks shall include top threaded manway with minimum 15 inch access, seismic restraint clips, as well as adequate fittings for connections shown on the Drawings. Bulkhead fitting material shall be PVC, with EPDM or viton gaskets.
4. Provide internal PVC drop-pipe/dip-tubes at tank inlets for adequate water recirculation and noise dampening inside the tank. Dip-tubes shall terminate no less than 6" from the bottom of the tank with an upturned elbow or bulkhead tee fitting. The manway shall provide the entry point for the well water makeup with air gap for backflow prevention.

G. Flexible Connectors:

1. Acceptable Manufacturers:
 - a. Metraflex, PolyProcessing, Flexmaster.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Flexible expansion joints allow for lateral and vertical expansion and contraction on the lower third of the day tank's sidewall. Flexible connectors shall be constructed of PTFE resin or Viton tube and cover materials, and shall be rated for no less than the following: axial compression 0.67-inch, axial extension 0.67-inch, lateral deflection 0.51-inch, and angular deflection 14 degrees. Connectors shall be rated for system temperature, pressure and chemical concentration.

H. Ultrasonic Level Transmitter (cistern sensor shipped loose):

1. Acceptable Manufacturers:
 - a. Catec, FlowLine.
2. Other Manufacturers: Submit Substitution Request.
3. Description: System shall include ultrasonic tank level sensors to monitor day tank and cistern water levels. Sensors shall include at least one 4-20ma signal output for continuous tank level monitoring and four programmable SPST relays. Sensor shall be rated at depths equal to or greater than the full height of the tank with +/- 0.2 percent accuracy. The sensor shall use a PVDF transducer and Type 6P polycarbonate enclosure for corrosive liquids. The cistern sensor shall be shipped loose with skid package for field installation and wiring by contractor.
4. Building Management System Interface: BMS to monitor day tank and cistern water levels via 4-20mA output from ultrasonic transmitters, and alarm at graphical user interface at adjustable high and low set points.

I. Cistern Transfer Pump (shipped loose):

1. Acceptable Manufacturers:
 - a. Xylem, Grundfos, Weil.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Submersible, floor-mounted style pump and air or oil-filled motor, internal mechanical seal with carbon versus ceramic faces and BUNA-N elastomers, cast iron volute and impeller, stainless steel shaft, vertical discharge, and capable of passing at least 1/2-inch solids. Pump is shipped loose with skid package for field installation and wiring by contractor.
4. Pump Stand: Pump assembly shall be mounted on a 6-inches to 18-inches tall, lightweight, corrosion resistant stand that rests on flat section at the bottom of the cistern. This feature is considered an equivalent to a floating suction inlet, which is intended to prevent settled debris on the bottom of the cistern from reaching the pump's suction inlet. Installing contractor shall attach the CTP to the stand with corrosion-resistant all-thread-rod in the field.

5. Controls: The CTP operates when the cistern low level and day tank operating levels allow for operation. This pump shall be controlled from the CTPP. This operation ensures proper day tank level management and suitable building water supply for non-potable applications.

J. Water Meters:

1. Acceptable Manufacturers:
 - a. Mueller Systems, Hersey Meters.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Provide magnetic drive vertical turbine meters equipped with translator registers and frequency transmitter. The main-case and bottom cover shall be constructed of bronze, the rotor assembly thermoplastic, the strainer stainless steel, and casing bolts stainless steel ANSI B18.
4. Meter shall interface with a totalizing transmitter that converts the pulse signals into a dry contact switch closure or voltage increase of a specific duration for remote water usage trending and monitoring by the BMS.

K. Hydro-Pneumatic Tank:

1. Acceptable Manufacturers:
 - a. Wessels, Bell & Gossett, Flexcon Industries.
2. Other Manufacturers: Submit Substitution Request.
3. Description: 125 ASME construction, pre-charged, replaceable heavy-duty butyl bladder tank with steel shell, NPT system connections and .302-inch – 32 charging valve (standard fire valve) to facilitate on-site charging of the tank to meet system requirements. Tank to come skid mounted and piped.

L. City Water Makeup Valve:

1. Acceptable Manufacturers:
 - a. Georg Fischer, Belimo.
2. Other Manufacturers: Submit Substitution Request.
3. Description: Two-way, electrically actuated, PVC ball valve with PTFE seat, EPDM seals, integrated emergency manual override, integrated optical position indicator, and end switch for position feedback.

M. Cistern Transfer Pump Panel (CTPP) Description: UL 508A Listed panel shall have a NEMA 1 enclosure, single point power connection for all skid components, and all necessary equipment and controls to allow for automatic operation and monitoring of the CTP, polishing filter differential pressure, cistern low level alarm, and well water makeup solenoid valve.

1. Rainwater Cistern Level, Cistern Transfer Pump (CTP), Filter, Well Water Makeup Solenoid Valve, and City Water Makeup Valve Monitoring and Control:
 - a. Cistern Low Level and CTP Failure Alarms: Alarm light shall illuminate at the CTPP upon a low-level condition in the cistern or CTP failure and lockout the CTP; normal treatment and delivery operations may continue. In this state, the CTP will not energize if called upon by the CTPP to replenish the day tank. When level in the day tank reaches the CTP ON set point, the treatment equipment shall disable and the city makeup valve shall open. Normal treatment of the day tank and CTP operation shall resume when the CTP failure and/or low cistern level alarms clear.
 - b. High Polishing Filter Differential Pressure: CTPP shall monitor the polishing filter's differential pressure and alarm when the high set point is reached. Normal transfer, treatment and delivery/boosting operations may continue during this condition.

- c. City Water Makeup Valve: CTPP shall monitor the city water makeup valve's position and illuminate a light when the valve is OPEN. The "Manual ON" position of the valve's control switch will override any control signals and open the valve; otherwise, normal operations as previously described will ensue with the valve's control switch in the AUTO position.
- d. Cistern Low Level and Well Water Makeup: Upon detection of low-level condition, solenoid valve shall be opened to enable well water to enter cistern. Close valve when water reaches normal level. Light on panel shall signal operation of solenoid valve. —ADD 1
2. ~~Rainwater Day Tank Level Monitoring & Control:~~
 - a. CTP ON Level: This tank level is what the CTPP uses to enable the CTP to replenish the day tank. —ADD 1
 - b. CTP OFF Level: This tank level is what the CTPP uses to disable the CTP to prevent an overflow condition. —ADD 1
3. ~~Local Control:~~
 - a. CTP "HAND-OFF-AUTO" Switch —ADD 1
 - b. City Water Makeup Valve "AUTO-Manual ON" Switch —ADD 1
 - c. Main Power Lockable Panel Disconnect Switch
4. Local Display:
 - a. CTP Failure
 - b. CTP Run Pilot
 - c. Cistern Tank Level – Low (adjustable)
 - d. Polishing Filter Differential Pressure – High (adjustable)
 - e. City Water Makeup Valve – Open
 - f. Well Water Makeup Valve – Open —ADD 1
5. Materials and Components.
 - a. CTP Motor Starter with Overload and Short Circuit Protection
 - b. Control Circuit Transformer with Protected Primary and Secondary
 - c. Lockable Pump Disconnect
6. Building Management System Interface: BMS to monitor CTP status (ON/OFF/Failure), Well Water Makeup Valve Position (Open/Closed), City Water Makeup Valve Position (Open/Closed) and polishing filter differential pressure status (High) with dry contact outputs from CTPP. —ADD 1
- N. Delivery/Boosting System and Controls.
 1. Acceptable Manufacturers:
 - a. CHC FlowTherm Systems.
 2. Other Manufacturers: Submit Substitution Request.
 3. Package Description: Booster pump package shall be UL Listed and have all components frame mounted, piped, painted, wired and factory tested. Package shall include duplex pumps, manifolds, and control panel. Pressure transducers shall be supplied on the suction and discharge manifold headers and factory wired to the unit's control panel.
 4. Delivery/Source Pump(s):
 - a. Acceptable Manufacturers: Xylem, Grundfos, STA-RITE.
 - b. Others Manufacturers: Submit Substitution Request.

- c. Description: Non self-priming, vertical, inline, multi-stage centrifugal pump, AISI 304/316L stainless steel liquid handling components, easily accessible vent/prime/drain connections, internal mechanical seal with carbon versus silicon-carbide faces and viton elastomers.
 - d. Pump motor(s) shall be VFD-rated and shall meet the requirements of NEMA MG1, Section IV 31.4.4.2 for premium efficiency motors. Motor(s) shall have an open drip-proof or totally enclosed fan-cooled enclosure.
 - e. Pump(s) to have a threaded, in-line, unleaded brass check valve, as well as ball or butterfly isolation valves at the inlet and outlet.
 - f. Pump manifold header piping shall be Schedule 10 welded, 304 stainless steel with header pipe size designed to not exceed 10 fps velocity. All pipe welds shall be performed by ASME Section IX certified welders and piping shall be welded to ASME/ANSI B31-9 specifications.
 - g. Each pump shall be fitted with a thermally activated purge valve to allow water to be purged to a remote drain in the event of a system overheating.
5. Delivery/Boosting System Control Panel:
 - a. Description: UL 508A Listed, NEMA 1 enclosure with single point power connection and all the necessary components to allow for automatic operation of the variable speed pump(s). The panel shall include the following components:
 6. Variable Frequency Drive for each motor
 7. Main power disconnect
 8. Through the door circuit breaker disconnect for each VFD
 9. HAND-OFF-AUTO selector switch for each pump
 10. Control circuit transformer with protected secondary
 11. Digital programmable logic controller (PLC) with door mounted color graphic touch screen display.
 12. Audio General Alarm – with push to silence button
 13. Pump operation and status lights
 - a. Door Mounted Status Lights shall include as a minimum:
 - 1) Pump Run
 - 2) Pump Out Of Service
 - 3) General Alarm
 14. The PLC shall provide a data log including a date and time stamp of past 20 system and VFD faults. These faults shall be displayed in English text on the door mounted supervisory controller (HMI).
 15. The micro-processor based supervisory controller (HMI) shall be a panel door mounted unit with color graphic touch screen display. The controller shall include PID control, floating point math with square root function and control the VFD's through a network interface. In addition to sending the run command and speed reference signal to the VFD's through the network interface, the HMI shall display line voltage, output frequency, output current and fault conditions for each VFD. The HMI shall provide an easy to use operator interface to all system parameters and display those parameters in plain English and engineering units. Monitoring functions shall be available to all users, but access to parameters shall be restricted by two levels of password protection.
 16. The controller shall provide data logging including a date and time stamp of the past 20 system fault conditions.

17. Standard Variable Frequency Drive features shall include over current, earth fault, electronic motor overload protection, over temperature, over voltage, under voltage, phase failure, PID close-loop controller, and automatic energy saving mode, motor synchronization, and user macro storage, auto restart after power failure, electronic motor potentiometer, 16 mixed frequencies and min/max frequency limitation.
18. Control logic shall include an energy saving proof of No Demand Shutdown (NDS), which tests the system demand and then shuts off the lead pump if no demand is proven. The lag pumps shall shut off when it operates at its minimum speed for an adjustable elapsed time. The control logic shall also include the energy saving feature of dynamic set point adjustment (DSA), which automatically lowers or increases the system discharge operating pressure set point as the system demand changes. Alternative designs that do not utilize a built in software algorithm to compensate for the variable friction losses shall not be allowed to have their pressure transducer mounted on the discharge header; instead their transducer shall be provided loose and installed at the furthest remote location of the system to account for the variable friction losses within the piping system. The controls shall automatically stage the pumps and adjust the pump speed based on discharge pressure control. The lead and lag pumps shall be rotated after each system shutdown. The controls shall start a lag pump on lead pump failure. A high temperature safety shut down system shall be provided which uses a temperature sensor which measures the discharge water temperature and is directly connected to the PLC. If a high temperature occurs the system shall shut down and go into alarm. The pump water temperature monitoring must be used as a safety feature and cannot be used as an operating control. The controls shall include pump minimum run time and pump maximum run time adjustable set points.
19. The PLC shall be capable of connection to a Building Management System (BMS) using BACnet. Delivery/boosting system shall transmit a general fault for any of the following conditions:
 - a. Pump Fault
 - b. VFD Fault
 - c. PLC Fault
 - d. Transducer Failure
 - e. High System Pressure
 - f. Low Suction Pressure
 - g. Overload and Network Failure

PART 3 EXECUTION

3.01 RAINWATER TREATMENT AND DELIVERY PACKAGE INSTALLATION

- A. Install skid package in accordance with Drawings and the manufacturer's printed installation instructions. The installer shall be responsible for providing a functional system, installed in accordance with applicable national and local requirements.
- B. Install pipe and fittings in accordance with reference standards, manufacturers' recommendations and recognized industry practices.
- C. Reference Drawings for field piping connections and electrical connections performed by installing contractor and Division 26, respectively.
- D. Install and secure pump(s), ultrasonic sensor and stand per manufacturers' instructions. Consult cistern manufacturer to determine optimal inlet/outlet connection locations. Tank overflow(s) shall run to storm sewer/grade per civil engineer instructions.
- E. Install wall water makeup solenoid valve in irrigation well vault. —ADD 1
- F. Install skid system on level concrete housekeeping pad in mechanical room or other location providing protection from freezing, UV radiation and other harmful elements.

- G. Manufacturer's authorized representative shall perform site visit after packaged system equipment delivery. Site inspection shall include validation of all included components received, equipment installation location, and clearances, and review all pre-installation questions from installing contractors.

3.02 PACKAGE TESTING

- A. The manufacturer shall hydro-pressure test pre-fabricated equipment prior to shipment with no decrease in pressure allowed. Test reports shall be included in the owner's manual. Defective work or material shall be replaced or repaired as necessary, and applicable inspections and tests repeated. Repairs shall be made with new materials.

3.03 EXTRA MATERIALS

- A. The Package Manufacturer shall provide the following extra materials for future replacement:
1. One Oxidation Reduction Potential sensor.
 2. Four 25 micron bag filters and two extra 10 micron bag filters.
 3. One set of mechanical seals for each centrifugal style pump provided with the skid package.
- B. The owner shall be responsible for replacement parts not covered under Warranty, including depleted treatment chemicals from the initial supply, which may be replenished by the owner through a preferred chemical vendor.

3.04 START-UP REQUIREMENTS

- A. The manufacturer shall ensure one initial 15 gallon chemical drum of 12.5 percent Sodium Hypochlorite treatment chemical solution and one polyethylene chemical containment pallet are at the jobsite prior to the scheduled start-up. The chemical drum and containment pallet shall be placed on the packaged skid's footprint. Pallet shall be capable of retaining all leakage from at least one 15 gallon chemical drum.
- B. Contractor to flush and clean piping, cistern and day tank prior to final startup at the jobsite. No abnormal materials shall be present in the day tank or cistern prior to startup.
- C. Contractor to coordinate with manufacturer's representative and ensure adequate cistern water level is achieved prior to scheduled system startup.
- D. Contractor to facilitate necessary communication and coordination of all involved trades for onsite system activation, calibration and start-up at the pre-scheduled start-up date/time.
- E. Contractor to provide a minimum 15 day prior notice for scheduling of packaged system start-up services. Contact manufacturer's representative for scheduling; only manufacturer's authorized representative may perform startup.
- F. The manufacturer's authorized representative shall perform a final inspection of installation and verification of system readiness prior to start-up.

3.05 OWNER TRAINING

- A. Manufacturer's authorized representative shall provide on-site training to owner's selected maintenance staff to review operation and maintenance documents in their entirety. Training shall be pre-scheduled after start-up date, no later than 75 days after start-up.

END OF SECTION

**SECTION 22 4000
PLUMBING FIXTURES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The provisions of Section 22 0500, Common Work Results for Plumbing HVAC apply to work specified in this Section.

1.02 SUMMARY

- A. This Section includes:
 - 1. Plumbing Fixtures
 - 2. Fixture Trim
 - 3. Drainage Products
 - 4. Miscellaneous Plumbing Items

1.03 QUALITY ASSURANCE

- A. Water closets shall have Maximum Performance (MaP) score of no less than 800.
- B. Faucets certified NSF/ANSI 61.

1.04 SUBMITTALS

- A. Submit the following:
 - 1. Product data for each item specified.
 - 2. Operating and Maintenance Data:
 - a. Sensor operated flush valves.
 - 3. Mounting heights for all fixtures.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturers are stated for each fixture specified. The following manufacturers are also acceptable, except when indicated only.
- B. Drainage Products and Carrier Products: J.R. Smith, Josam, Sioux Chief, Zurn, Wade, Watts Drainage, Woodford, Mifab.
- C. Fixtures: American Standard, Kohler, Sloan, Toto.
- D. Seats: Olsonite, Church, Beneke, Bemis.
- E. Mixing Valves: Powers, Leonard, Symmons, Chicago, Acorn Controls.
- F. Stainless Steel Products: Elkay, Just, Franke.
- G. Mop Sinks: Fiat, Williams, Mustee, Acorn.
- H. Faucets: Chicago, Delta Commercial, Kohler, Moen Commercial.
- I. Shower Controls: Delta Commercial, Acorn.
- J. Shower Enclosure: Aquatic Bath, Fiber-Fab, Maax.
- K. Shock Arrestors: PPP, J.R. Smith.
- L. Trap Primer Stations: PPP.
- M. Exposed Waste and Supply Piping Insulation Kits: Truebro, McGuire.
- N. Other Manufacturers: Submit Substitution Request.

2.02 FIXTURE TRIM

- A. Supply Stops: Chicago cast brass rigid riser supplies with loose key angle stops, wall flanges, NPT female inlet, all chrome plate finish; equivalent NPT McGuire (LK series), Brasscraft (SCR series) or NPT stops by fixture supplier.
- B. Traps:
 - 1. For floor drains, provide coated cast iron P-trap; recessed, screw jointed or bell and spigot.
 - 2. For other fixtures, provide 17 gauge, chrome plated cast brass P-Traps with solder bushings, and clean-out.
- C. Support Rims: Hudee stainless steel rims, if sink not furnished with integral rim.
- D. Vacuum Breakers: Chicago Faucet, A.W. Cash or Febco chrome plated.

2.03 PLUMBING FIXTURES

- A. WC-1 Water Closet (Child ADA):
 - 1. Kohler "Kingston", vitreous china, wall hung, elongated bowl, siphon jet action, 1-1/2-inch top spud, white color finish. Complete with Sloan Royal 113-1.28 manual flushometer.
 - 2. Bemis 1600 series white open-front seat, less cover with external check hinge including 300 series stainless steel post and pintles to stop seat at 11 degrees beyond vertical.
 - 3. J.R. Smith Series 200 chair carrier.
- B. WC-2 Water Closet (Adult ADA):
 - 1. Kohler "Kingston", vitreous china, wall hung, elongated bowl, siphon jet action, 1-1/2-inch top spud, white color finish. Complete with Sloan Royal 113-1.28 manual flushometer.
 - 2. Bemis 1600 series white open-front seat, less cover with external check hinge including 300 series stainless steel post and pintles to stop seat at 11 degrees beyond vertical.
 - 3. J.R. Smith Series 200 chair carrier.
- C. U-1 Urinal:
 - 1. Kohler Bardon, vitreous china, wall mounted wash down urinal with 3/4-inch top spud, white color finish. Complete with Sloan Sloan Royal 186-0.5 manual flushometer.(0.5 GPF)
 - 2. J. R. Smith Series 600 floor mounted urinal support.
- D. L-1 Lavatory :
 - 1. Kohler Kingston 21-1/4-inch by 18-1/8-inch, vitreous china, self-draining deck, backsplash, 4-inch centers, wall hung, concealed arm support, grid drain, white color finish.
 - 2. Chicago 802 series faucet with polished chrome plated solid brass body construction, 4-inch spout, vandal proof metering push handle, 1/2 gpm pressure compensating aerator, adjustable cycle time closure cartridge, vandal resistant complete.
- E. WS-1 Wash Station (ADA):
 - 1. Bradley, Model MG series, 2 station, wall-hung, equipped with Chicago MVP 3500 faucet, 0.5 gpm, manual push button metering faucet with single supply for tempered water service, and Chicago ECAST thermostatic mixing valve.
- F. WS-2 Wash Station (ADA):
 - 1. Bradley, Model MG series,3 station, wall-hung, equipped with Chicago MVP 3500 faucet, 0.5 gpm, manual push button metering faucet with single supply for tempered water service, and Chicago ECAST thermostatic mixing valve.
- G. S-1 Sink:
 - 1. Elkay CDKAD-251765, 25-inch by 17-inch by 6-1/2-inch, single compartment, 18 gauge, Type 302, 1-hole center, self-rimming, stainless steel sink; LK-18 grid strainer. Additional hole provided for bubbler valve on opposite end.

2. Chicago 748 series deck mounted, single hole drinking fountain chrome plated solid brass body construction, vandal proof metering push handle, anti-microbial flexible mouth guard.
3. Chicago 50 series deck mounted, single hole mixing sink faucet, 5-1/4-inch rigid gooseneck spout, 4-inch wristblade handle, 1.5 gpm pressure compensating laminar flow outlet, vandal resistant complete.

H. S-2 Sink:

1. Elkay LR series, 15-inch by 17-inch by 7-1/2-inch single compartment 18 gauge, Type 302, 3-hole, self-rimming stainless steel sink, nickel plated brass grid strainer.
2. Chicago 1100 series faucet with polished chrome plated solid brass body construction, single lever mixing valve, 8-inch cast brass spout, high temperature limit stop, 2.2 gpm pressure compensating laminar flow outlet, vandal resistant complete.

—ADD 1

I. S-3 Sink:

1. Elkay LR series, 17-inch by 20-inch by 7-1/2-inch single compartment 18 gauge, Type 302, 3-hole, self-rimming stainless steel sink, nickel plated brass grid strainer.
2. Chicago 1100 series faucet with polished chrome plated solid brass body construction, single lever mixing valve, 8-inch cast brass spout, high temperature limit stop, , 2.2 gpm pressure compensating laminar flow outlet, vandal resistant complete.

—ADD 1

J. MS-1 Mop Sink:

1. Fiat TSB series, 28-inch by 28-inch by 12-inch molded stone mop basin, wall bracket, 5-foot hose, bumper guards and wall guards (two sides).
2. Chicago 540 series wall mounted service faucet with polished chrome plated solid brass body construction, lever handles, pail hook, wall brace, vacuum breaker, check stops and hose thread outlet.

K. SH-1 Shower (ADA):

1. Delta TEK series shower valve assembly with polished chrome finish, pressure balance mixing valve, high temperature limit stop, lever handle, 1.5 gpm hand held shower with two integral check valves and 70-inch hose, 24-inch ADA wall/grab bar and R10000 series rough in kit. Shower Enclosure: Fiberglass shower stall for the handicapped with 3-inch grid strainer outlet, grab bars, fold-up seat and curtain rod. FiberFab 60 H1 with curtain rod.
2. J.R. Smith 200 series floor drain with nickel bronze grate.

L. Master Mixing Valve Assembly: Leonard Type TM New Generation High Low, exposed, factory tested and assembled mixing valve assembly consisting of but not limited to: large and small rough bronze finish thermostatic mixing valves, high temperature limit stops, angle check stops, outlet ball valve shutoffs, built-in spring check valve with pressure gauges, thermometer, inlet piping manifolds with unions. Unit to control discharge temperature to ± 1 percent. Unit shall be mounted in locking stainless steel cabinet. See schedule on drawings for capacities.

M. DF-1 Drinking Fountain (ADA): Elkay EZWS dual height wall hung drinking fountain with integral bottle filler.

1. Surface mounted fountain.
2. Contoured basins.
3. Push pad operated bubblers.
4. Vandal resistant bubbler guards.
5. Surface mounting plate.
6. 1.5 gpm Bottle Filler.

N. Exposed Waste and Supply Piping Insulation Kits: McGuire Prowrap insulation kit for exposed supplies and waste piping below ADA lavatories and ADA sinks.

- O. SB-1 Supply Box: Sioux Chief Series 696 washing machine supply box with bottom valve supplies, integral shock arrestors and 2-inch drain outlet.
- P. SB-2 Supply Box: Sioux Chief 696 ice maker supply box with bottom valve supply and shock arrestor.

2.04 DRAINAGE PRODUCTS

- A. HB-1 Hose Bibb: Chicago 952, chrome-plated, removable key, 3/4-inch hose thread, integral vacuum breaker.
- B. WH-1 Wall Hydrant: J.R. Smith 5609QT, bronze finish, loose key, 3/4-inch hose thread, integral vacuum breaker, freeze proof.
- C. WH-2 Hot and Cold Water Hose Bibb: J.R. Smith 5500, bronze finish, hot and cold water control box, 3/4-inch hose thread, integral vacuum breaker, removable key handle, freeze proof.
- D. WSCB-1 Water Supply Control Box (for Garbage Can Wash): J.R. Smith 3380 series, recessed water supply control box in Type 304 stainless steel with a No. 4 satin finish, cylinder type key lock, cold and hot water screwdriver stops, flow control valve, and atmospheric vacuum breaker.
- E. RD-1 Roof Drain (Small Area): J.R. Smith 1330, 8-1/2-inch low profile diameter dome, cast iron body with combined flashing clamp and gravel stop, no-hub outlet and under deck clamp.
- F. OD-1 Overflow Roof Drain (Small Area Overflow): J.R. Smith 1330, 8-1/2-inch low profile diameter dome, 2-inch high solid water dam, cast iron body with combined flashing clamp and gravel stop, no-hub outlet and under deck clamp.
- G. FD-1 Floor Drain: J.R. Smith 2005, round nickel bronze vandal resistant grate, cast iron body with flashing collar and adjustable strainer head and no-hub outlet.
- H. FD-2 Floor Drain (Unfinished Areas): J.R. Smith 2110, round cast iron grate, cast iron body, no-hub outlet, sediment bucket.
- I. FD-3 Floor Drain (Finished Areas - Kitchens): J.R. Smith 2010, vandal-proof, square nickel bronze hinged grate, sediment bucket, cast iron body with flashing collar, adjustable strainer head and no-hub outlet
- J. FD-4 Floor Drain (Garbage Can Wash Drain): J.R. Smith 3370, acid resisting coated interior, nickel bronze grate, free standing sediment bucket lined with 1/4-inch stainless steel mesh screen, no-hub outlet and bronze adjustable nozzle assembly
- K. FS-1 Floor Sink (Finished Areas - Kitchens): J.R. Smith 3101-12, acid resistant coated floor sink, vandal-proof 8-1/2-inch by 8-1/2-inch nickel bronze 1/2 grate and sediment bucket, no-hub outlet and flashing collar.
- L. FS-2 Floor Sink (Finished Areas - Kitchens): J.R. Smith 3101-12, acid resistant coated floor sink, vandal-proof 8-1/2-inch by 8-1/2-inch nickel bronze 3/4 grate and sediment bucket, no-hub outlet and flashing collar.
- M. FS-3 Floor Sink (Finished Areas - Kitchens): J.R. Smith 3101-12, acid resistant coated floor sink, vandal-proof 8-1/2-inch by 8-1/2-inch nickel bronze and sediment bucket, no-hub outlet and flashing collar.
- N. FS-4 Floor Sink (mechanical room indirect waste): J.R. Smith 3041 floor sink with 8-inch deep receptor, basket strainer, 1/2 cast iron grate, no-hub outlet and flashing collar.
- O. FS-5 Floor Sink (Finished Areas - Kitchens):): J.R. Smith 3101-12, acid resistant coated floor sink, vandal-proof 8-1/2-inch by 8-1/2-inch nickel bronze full grate with center hole and sediment bucket, no-hub outlet and flashing collar.
- P. WCO Wall Cleanout: J.R. Smith 4530, round stainless steel vandal resistant cover and screw.
- Q. FCO Floor Cleanout: J.R. Smith 4020, round vandal resistant, nickel bronze top.
- R. CTG Cleanout to Grade: J.R. Smith 4220, round, extra heavy duty cast iron top set in 12-inch by 12-inch by 4-inch deep concrete pad, vandal resistant.
- S. DSB-1 Downspout Boot: J.R. Smith 1787, 4-inch round downspout connection.

- T. DSB-2 Downspout Boot: J.R. Smith 1785, 4-inch by 3-inch rectangular downspout connection.
- U. Trap Priming Valves: Precision Plumbing Products Prime-time electronic trap priming manifold including but not limited to: atmospheric vacuum breaker, pre-set 24 hour clock, manual over ride, 120V solenoid valve, calibrated manifold for equal water distribution, 3/4-inch water hammer arrestor. Components pre-installed in recessed steel cabinet with SS access door.
- V. Water Hammer Arrestor: Precision Plumbing Products Model SC (Maintenance-Free).
- W. DSN-1 Downspout Nozzle: J.R. Smith 1770 series in nickel bronze.

PART 3 EXECUTION

3.01 FIXTURE TRIM

- A. Provide plumbing fixture trim where applicable on fixtures, including but not limited to supply stops, traps, support rims, flush valve, and vacuum breakers.
- B. Provide rough-in and final piping connection to fixtures. Carefully review all construction documents to assure that all fixtures are provided with necessary services for a complete operating system.
- C. Rigidly secure rough-in piping, carriers and supports, and other service piping to structure.

3.02 PLUMBING FIXTURES

- A. Americans with Disabilities Act:
 - 1. Comply with and be installed in accordance with Americans with Disabilities Act Guidelines (ADAAG). Where applicable building code requirements are more stringent than ADAAG guidelines, building code requirements shall be followed.
 - 2. Water Closets:
 - a. Mounting height of ADA water closet shall be 17 to 19-inches from floor to top of the toilet seat.
 - b. Mount flush valve for ADA water closets on wide side of enclosure.
 - 3. Lavatories:
 - a. Mounting height of ADA lavatories shall be at a maximum height of 34-inches from floor to rim.
 - b. Provide insulation kits on exposed hot water and waste piping beneath ADA lavatories.
 - 4. Sinks: Provide insulation kits on exposed hot water and waste piping beneath ADA sinks.
 - 5. Urinals:
 - a. Mounting height of ADA water closet shall be at a maximum height of 17-inches from floor to rim.
- B. Fixture Mounting Heights: All fixtures standard rough-in catalogued heights unless shown otherwise on the Architectural Drawings.
- C. Showers:
 - 1. Piping from shower mixing valve to shower head shall be rigid pipe. PEX piping not allowed.
 - 2. Shower Head Mounting Heights: Mount so that face of head is at 6-feet-6-inches above finished floor and shall not conflict with shower enclosure.
- D. Water Supplies: When both hot and cold water to a fixture is required, connect the hot on the left and the cold on the right.
- E. Lavatories:
 - 1. Public toilet room lavatories shall have grid strainers.
 - 2. Those lavatories indicated as ADA are ADA compatible. Coordinate with Architect to verify if all wall hung lavatories are to be installed at ADA height.

- F. Floor Drain and Floor Sinks:
1. Set top flush with finished floor.
 2. Provide flashing clamp for all drain bodies installed in floors provided with waterproof membranes.
- G. Cleanout:
1. Where shown or required.
 2. Cover set flush with finished surface.
- H. Roof and Area Drains: Provide sump receivers for all drains except poured in place installations. Provide extension section as required to compensate for the specified insulation thickness above the roof slab or deck.
- I. Water Hammer Arresters: Provide where shown and where recommended by Plumbing Drainage Institute (PDI).
- J. Water Coolers and Drinking Fountains:
1. All water-bearing materials shall comply with the Safe Drinking Water Act of 1986 and the Lead Contamination Control Act of 1988. The waterway system of the unit shall be manufactured of copper components and other completely lead-free materials.
 2. All water cooler refrigerants will be non-CFC.
 3. Provide fixture manufacturer's wall mounting plate or floor mounted support for all wall-hung water coolers or drinking fountains.
- K. Mixing Valves: Provide piping connections per manufacturer's installation instructions.
- L. Wall hung lavatories with pop-up waste assemblies: Contractor shall verify there is no vertical pull rod assembly conflict with lavatory backsplash prior to submitting product data.

3.03 PRIMING VALVES

- A. All floor drains, floor sinks, and similar traps shall be primed. Use minimum 3/8-inch type K annealed copper tubing. Primer line to be continuous and without joints.
- B. Where priming valves are installed in finished rooms, conceal in wall and provide access panel.
- C. Coordinate locations of electronic trap primer stations with electrical contractor for 120V service.

3.04 KITCHEN EQUIPMENT

- A. General: Kitchen equipment is supplied and set in place by Kitchen Supplier, installed in construction contract. Obtain drawings before any rough-in is started. Complete installation and furnish all equipment required or scheduled below to give complete working installation. Symbol numbers are indicated by oval symbol with number inside. See "PLUMBING FIXTURES" for supply types and traps.

END OF SECTION

DEFERRED SUBMITTALS

1. STEEL JOISTS, SECTION 05 2100 - STEEL JOIST FRAMING.*
2. METAL STAIRS, SECTION 05 5100 - METAL STAIRS.
3. ALUMINUM STOREFRONT, SECTION 08 4313 - ALUMINUM-FRAMED STOREFRONTS.*
4. GLAZED ALUMINUM CURTAIN WALLS, SECTION - 08 4413.*
5. METAL FRAMED SKYLIGHTS, SECTION 08 6300 - METAL-FRAMED SKYLIGHTS.*
6. SEISMIC ANCHORAGE FOR SUSPENDED ACOUSTICAL CEILINGS, SECTION 09 5100 - ACOUSTICAL CEILINGS*
7. SEISMIC ANCHORAGE FOODSERVICE EQUIPMENT, SECTION 11 4000 - FOODSERVICE EQUIPMENT.*
8. CANOPY HOOD/FIRE PROTECTION, SECTION 11 4000 - FOODSERVICE EQUIPMENT.
9. WALK-IN COLD STORAGE ROOMS, SECTION 11 4000 - FOODSERVICE EQUIPMENT.
10. SEISMIC ANCHORAGE DIVISIONS 21, 23, 26, 27 AND 28 EQUIPMENT, HOODS, PANELS AND OTHER COMPONENTS OF MECHANICAL, PLUMBING, GAS AND ELECTRICAL SYSTEMS.*
11. FIRE SUPPRESSION, DIVISION 21.
12. FIRE ALARM SYSTEM, DIVISION 28.
13. ADDITIONAL REQUIREMENTS FROM SPECIFIC SECTIONS.
14. FIRE LINE AND HYDRANT PLAN (UNDERGROUND WORK)
15. EMERGENCY PLAN
17. SALAD BAR ACCESSIBILITY DOCUMENTATION
20. CALCS AND DETAILS FOR SUNSHADE ATTACHMENT TO WINDOW SYSTEMS*
21. SEISMIC SUPPORT OF DUCTWORK DETAILS AND CALCS*

* ITEMS TO BE DESIGNED AND STAMPED BY AN OREGON PROFESSIONAL ENGINEER

NOTE: THE ABOVE LIST OF DEFERRED SUBMITTALS IDENTIFIES ITEMS REQUIRING CITY REVIEW. FOR A FULL LIST OF DELEGATED DESIGN ITEMS SEE SPECIFICATION

ASSOCIATED PERMITS

RIVER ROAD ELEMENTARY SCHOOL SITE EARTHWORK AND PARTIAL DEMOLITION PACKAGE
120 WEST HILLIARD AVENUE
EUGENE, OR 97404
15-02376-01

ADD 01

SITE DATA SUMMARY

TOTAL SITE AREA: 364,090 SF
EXISTING IMPERVIOUS SURFACE AREA:
ROOF: 49,982 SF
PAVING: 76,732 SF
TOTAL: 126,964 SF
PROPOSED IMPERVIOUS SURFACE AREA:
ROOF, BUILDING: 50,228 SF
ROOF, COVERED PLAY AREA: 2138 SF
PAVING: 112,774 SF
TOTAL: 165,138 SF

LAND USE CODE INFORMATION

ADDRESS:
120 WEST HILLIARD AVENUE
EUGENE, OR 97404
MAP & TAX LOT #: 17 04 24 23 - 004-00
ZONE: PL PUBLIC LAND
SETBACKS:
MINIMUM FRONT & INTERIOR YARD: 10'
MAXIMUM FRONT YARD: NA
HEIGHT RESTRICTION: 30' WITHIN 50' OF RESIDENTIAL PROPERTY LINES
LANDSCAPING:
MINIMUM LANDSCAPE AREA: NONE

BIKE PARKING CALCULATIONS:

1 PER 8 STUDENTS
SCHOOL CAPACITY = 450 STUDENTS
450/8 = 57 REQUIRED SPACES
25% LONG TERM, 75% SHORT TERM
25% OF SHORT TERM SPACES MUST BE COVERED
TOTAL SHORT TERM SPACES REQUIRED = 43, 32 OPEN AND 11 COVERED
TOTAL LONG TERM SPACES REQUIRED = 14
TOTAL SHORT TERM SPACES PROVIDED = 56, 40 OPEN AND 16 COVERED
TOTAL LONG TERM SPACES PROVIDED = 14
TOTAL SPACES PROVIDED = 70

VEHICULAR PARKING SPACE CALCULATIONS

1 PER 8 STUDENTS
SCHOOL CAPACITY = 450 STUDENTS
450/8 = 57 REQUIRED SPACES
MAXIMUM SPACES = REQUIRED NUMBER X 125% = 72

ORS 447.233 ADA SPACES REQUIRED FOR LOT 51-75 SPACES -
3 REQUIRED ADA SPACES, 1 REQUIRED VAN ACCESSIBLE SPACE
5% VANPOOL (EUGENE CODE 9.6420) N/A

TOTAL STANDARD PARKING SPACES PROVIDED: 67 PARKING SPACES

SDC INFORMATION:

PLUMBING FIXTURES TO BE REMOVED: 25 WC, 44 LAV, 1 KITCHEN SINKS, 9 FLOOR DRAINS, 1 RESIDENTIAL DISHWASHER, 1 COMMERCIAL DISHWASHER, 1 WASHING MACHINE

PLUMBING FIXTURES TO BE PROVIDED: SEE PLUMBING DRAWINGS

ROOF & PAVING AREA: SEE SITE DATA ABOVE

STORMWATER MANAGEMENT:

SOLID WASTE STORAGE AREAS:
COVERED, PAVED, HYDRAULICALLY ISOLATED, WASTEWATER DRAIN

OUTDOOR STORAGE OF BULK MATERIALS:
RECYCLING MATERIALS, INCLUDED WITH SOLID WASTE AREA ABOVE

BUILDING CODE INFORMATION

APPLICABLE CODES:
2014 OREGON STRUCTURAL SPECIALTY CODE
2014 OREGON ELECTRICAL SPECIALTY CODE
2014 OREGON ENERGY EFFICIENCY CODE
2014 OREGON MECHANICAL SPECIALTY CODE
2014 OREGON PLUMBING SPECIALTY CODE
2011 OREGON ELEVATOR SPECIALTY CODE
2014 OREGON FIRE CODE
2014 NFPA 1, 10, 13

SEISMIC DESIGN:
SEISMIC OCCUPANCY CATEGORY (1604.5): III
SEISMIC DESIGN CATEGORY (1613): D
SEE STRUCTURAL FOR ADDITIONAL DESIGN CRITERIA

CONSTRUCTION TYPE:

II-B

AUTOMATIC SPRINKLER SYSTEM:

PROVIDED, IN ACCORDANCE WITH NFPA 13 AND SECTION 903.1.

BUILDING AREA SUMMARY:

ENCLOSED	CANOPY
1ST FLOOR: 42,635 SF	2,882 SF
2ND FLOOR: 19,563 SF	
TOTAL: 62,198 SF	2,882 SF

OCCUPANCY:

E - EDUCATIONAL

OCCUPANCY SEPARATIONS:

NA

MIXED OCCUPANCIES (609):

NA

ALLOWABLE AREA PER STORY:

E OCCUPANCY:
Aa = Ai + [Aj x Ij] + [Ak x Is]
Aa = 14,500 + [14,500 x .75] + [14,500 x 2]
Aa = 54,375 SF=42,635, OK (PROPOSED 1ST FLOOR AREA = 42,635)

FRONTAGE INCREASE:

Ih=[FP - 0.25]W/50
If = [11 - .25] x 30/30
Ij = [1 - .25] x 30/30
Ik = .75 x 1 = .75

BUILDING HEIGHT:

ALLOWABLE:
E - 2 STORY, 55'

PROPOSED: 51'

EXIT ACCESS TRAVEL DISTANCE:

250' IN E OCCUPANCY WITH SPRINKLER SYSTEM

DESIGN OCCUPANT LOAD:

1ST FLOOR: 1,895
2ND FLOOR: 654

CORRIDORS, 1018:

NO RATING IN SPRINKLERED BUILDING.

PLUMBING FIXTURE CALCULATIONS:

E OCCUPANCY

1 FIXTURE/ 50 OCCUPANTS FOR E OCCUPANCIES, OR BY USE (LAVATORIES AND W/Cs)

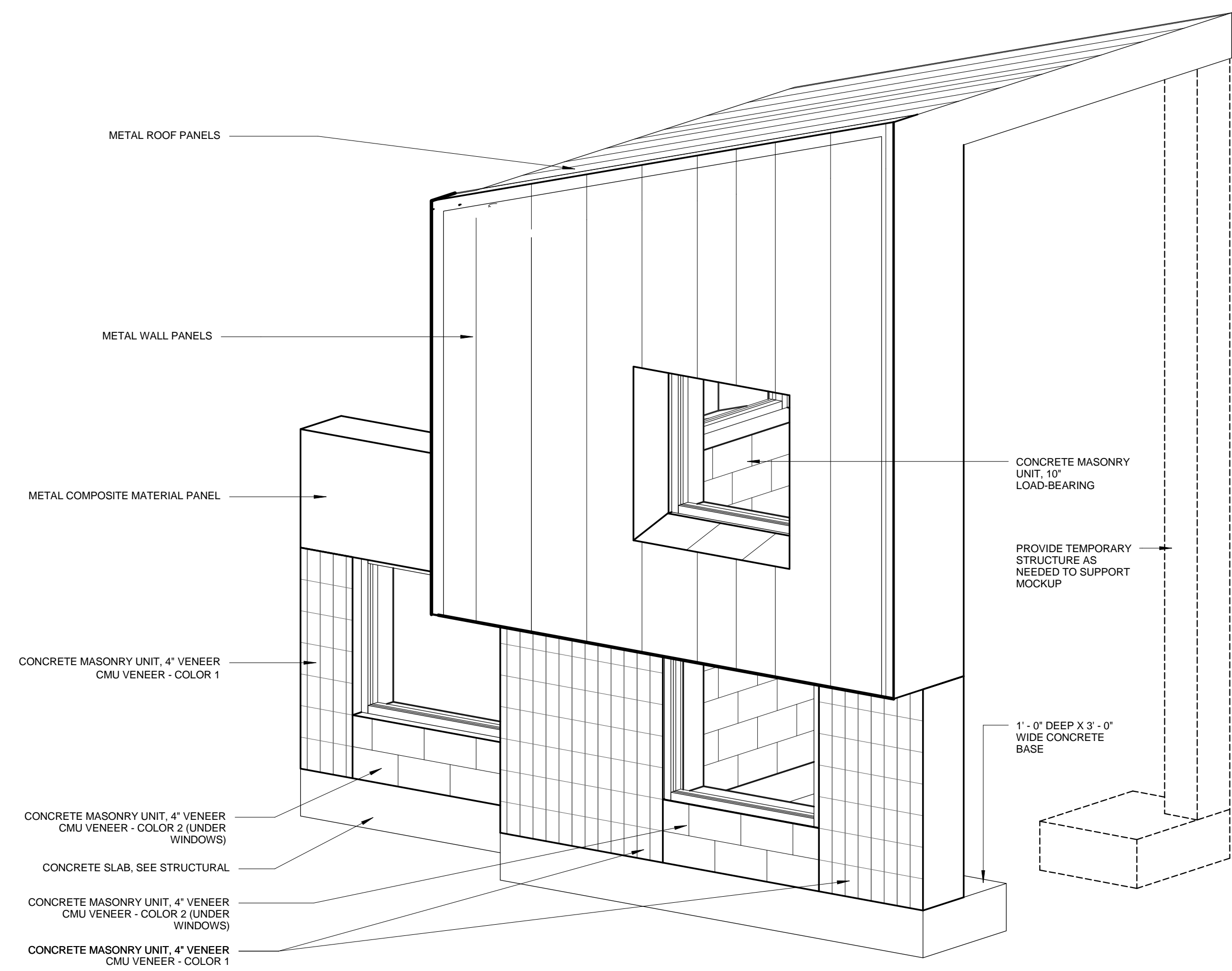
ALTHOUGH E OCCUPANCIES, GYMNASIUM AND CAFETERIA HAVE SAME USE OF SPACE AS A-3, WHICH ALLOCATES FIXTURES AT 1:125 FOR MALES AND 1:65 FOR FEMALES AND 1:200 FOR LAVATORIES.

1 URINAL = 2/3 TOILET

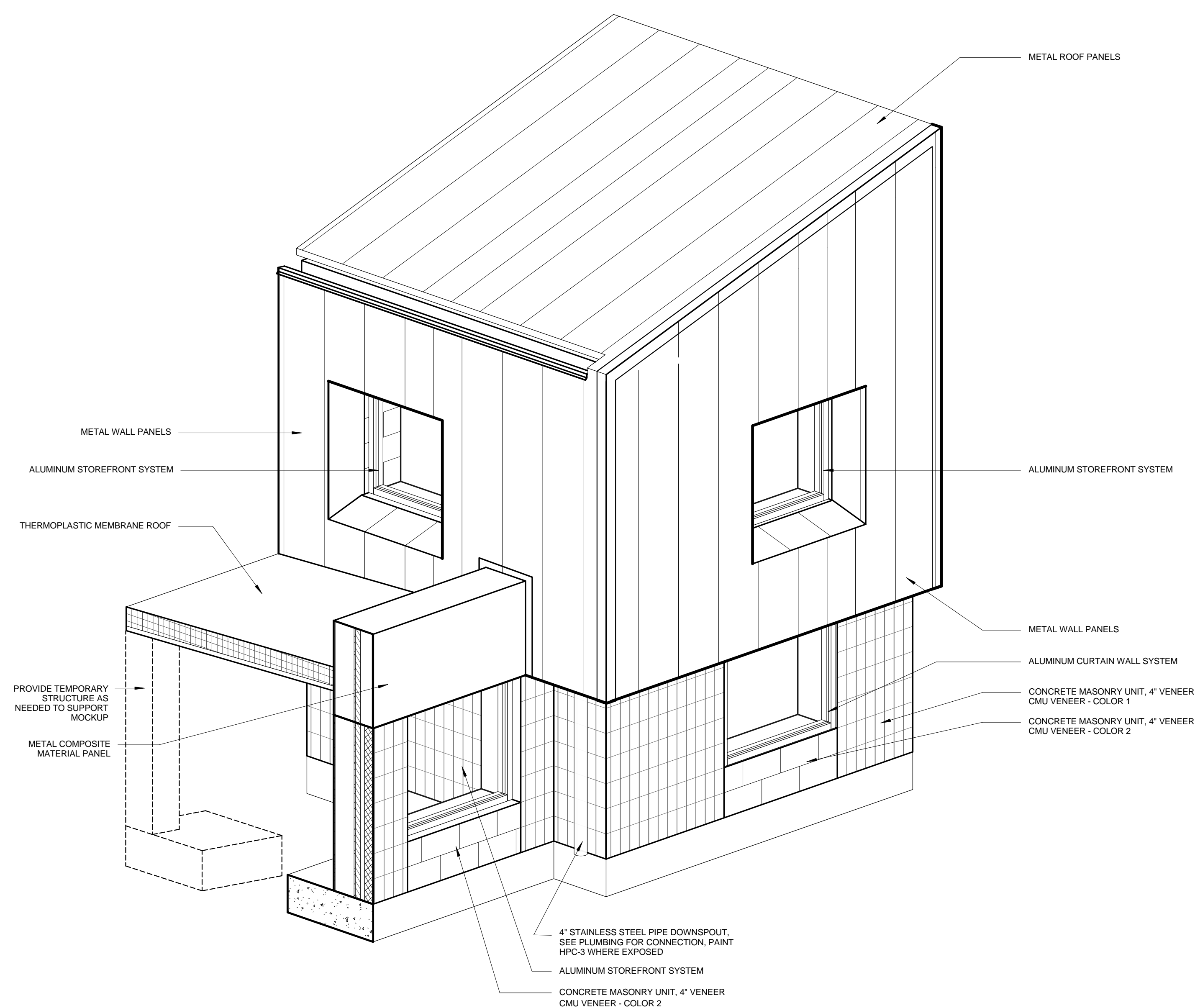
SPACE	REQD. WATER CLOSETS		REQD. LAVATORIES	
	OCCUPANTS	MALE/FEMALE	MALE/FEMALE	MALE/FEMALE
FIXTURES ALLOCATED PER A-3 RATIOS (GYMNASIUM & CAFETERIA)	1,290	6/10		4/4
FIXTURES ALLOCATED PER E RATIOS	1,230	13/13		13/13
TOTAL	2,520	19/23		17/17
TOTAL		REQUIRED	PROVIDED	
		MALE / FEMALE 19 WC / 17 LAV	MALE / FEMALE 23WC / 17LAV	MALE / FEMALE 20 WC / 29 LAV 24 WC / 28 LAV

DRINKING FOUNTAINS:

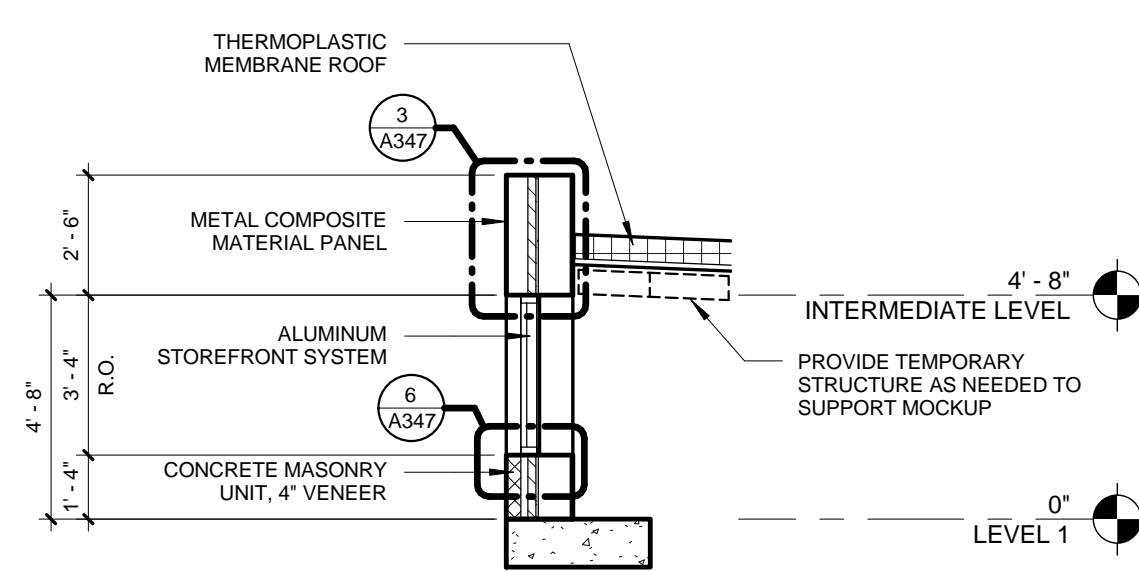
AT LEAST ONE ON EACH FLOOR 4 PROVIDED FOR FIRST FLOOR, 2 ON SECOND FLOOR



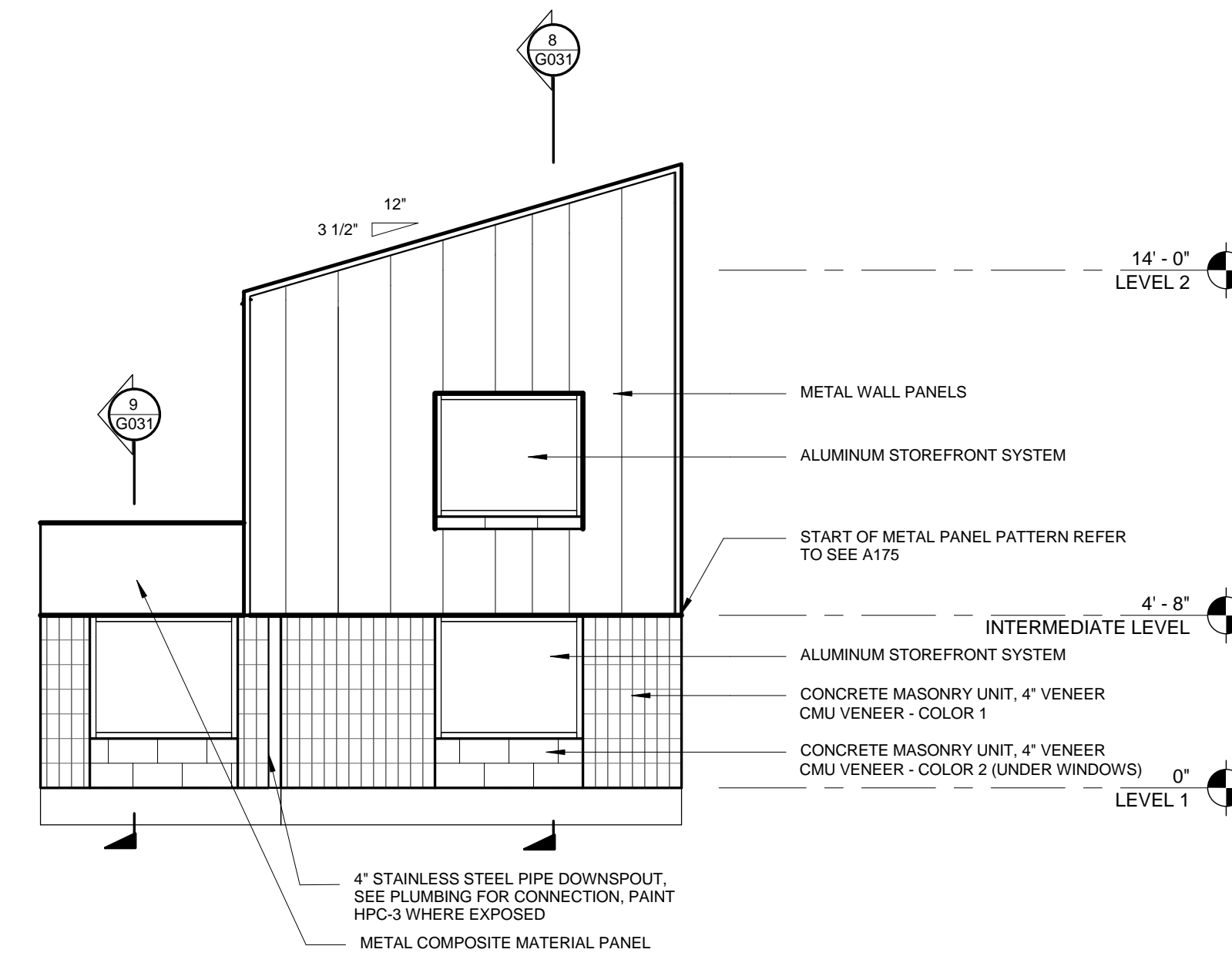
13 AXON 02



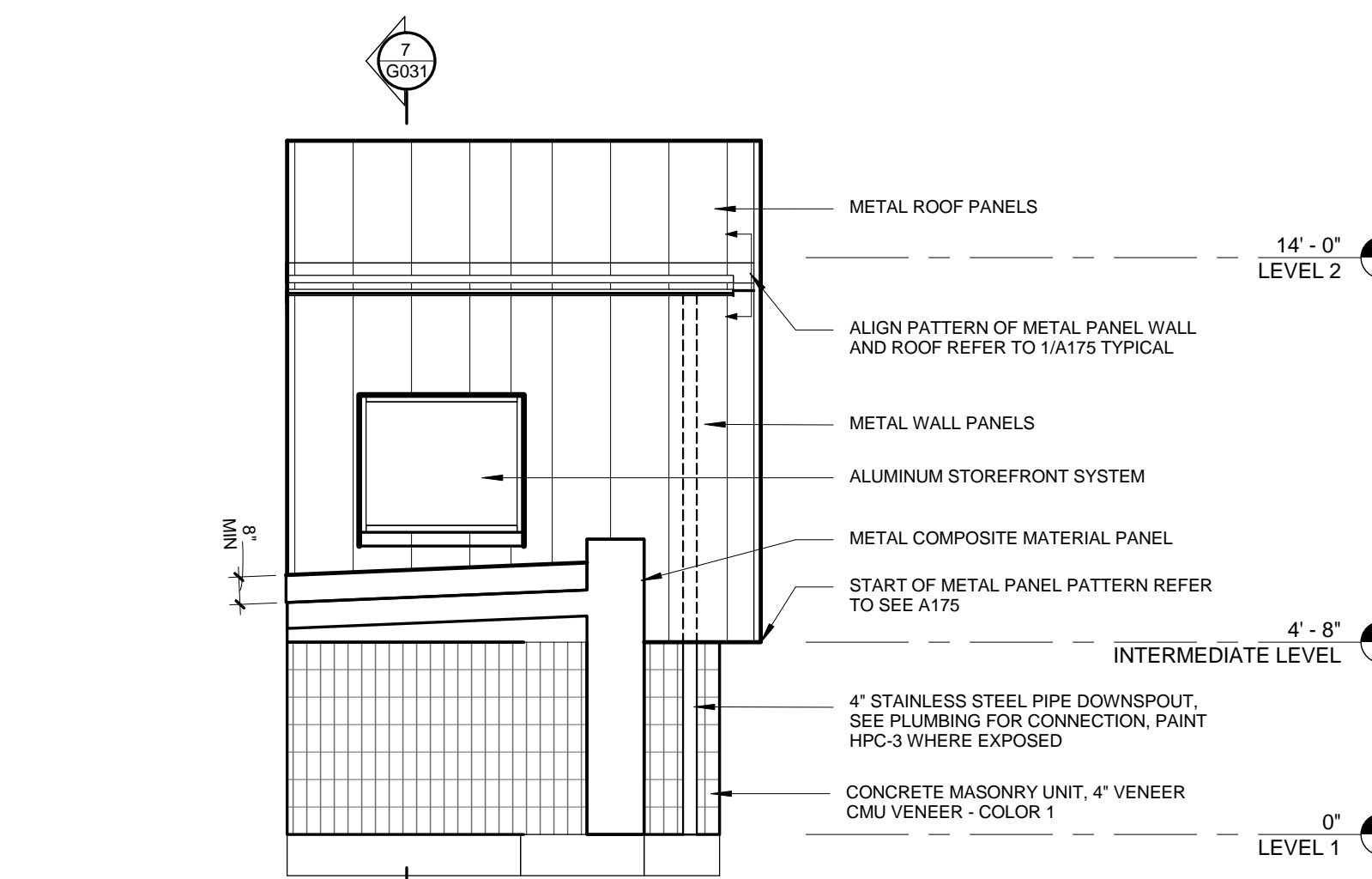
12 AXON 01



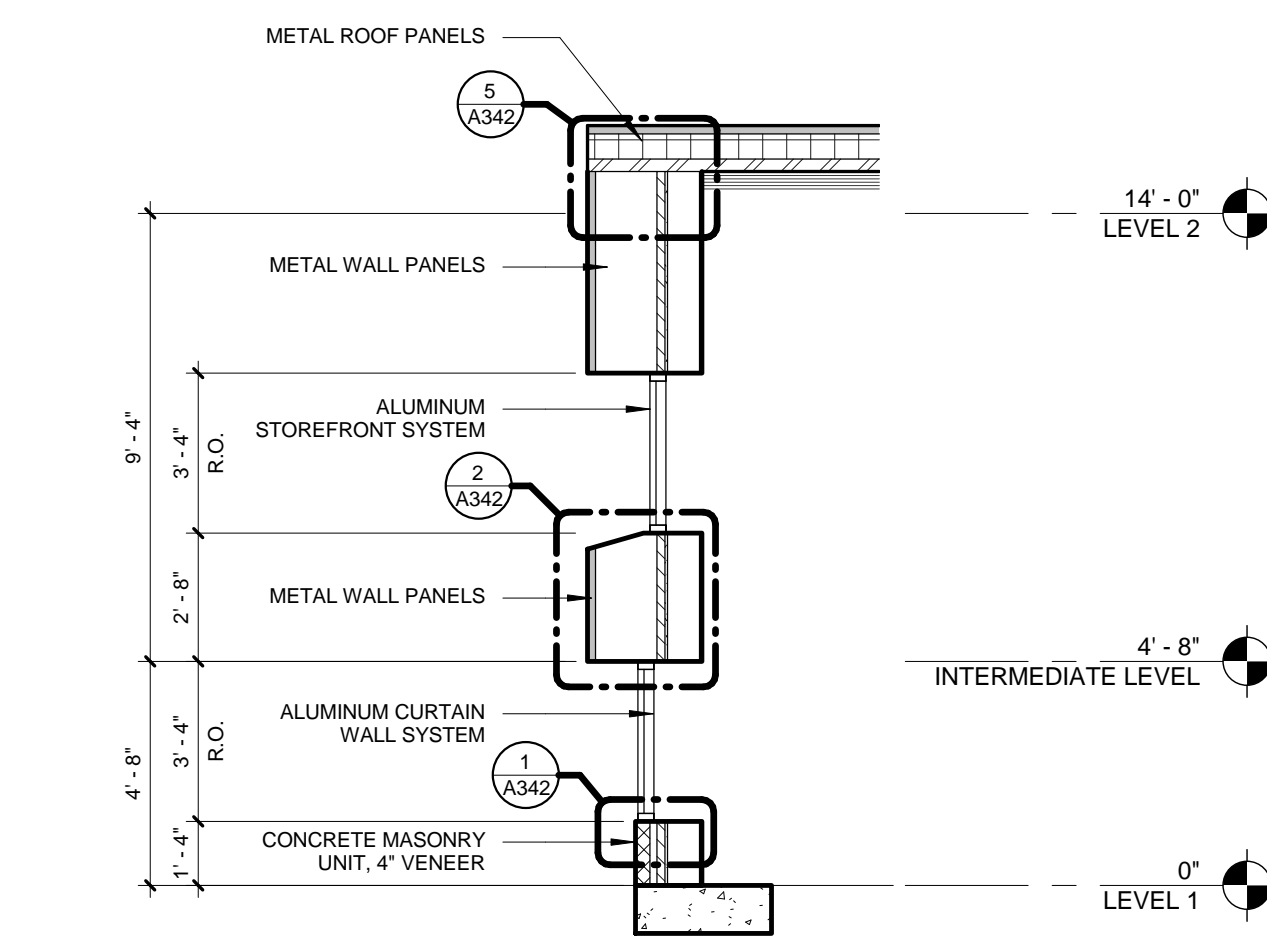
9 SECTION 03
1/4" = 1'-0"



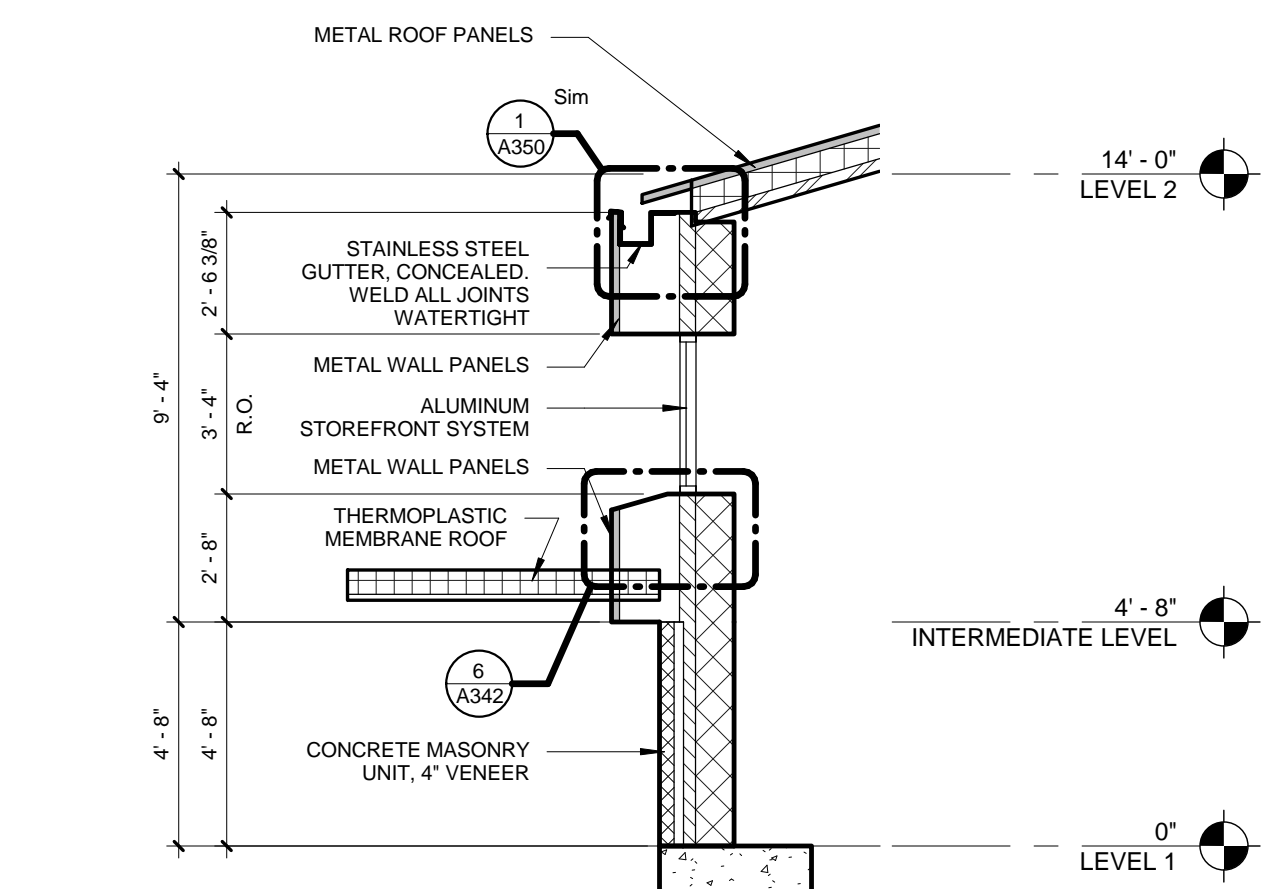
6 ELEVATION 02
1/4" = 1'-0"



5 ELEVATION 01
1/4" = 1'-0"



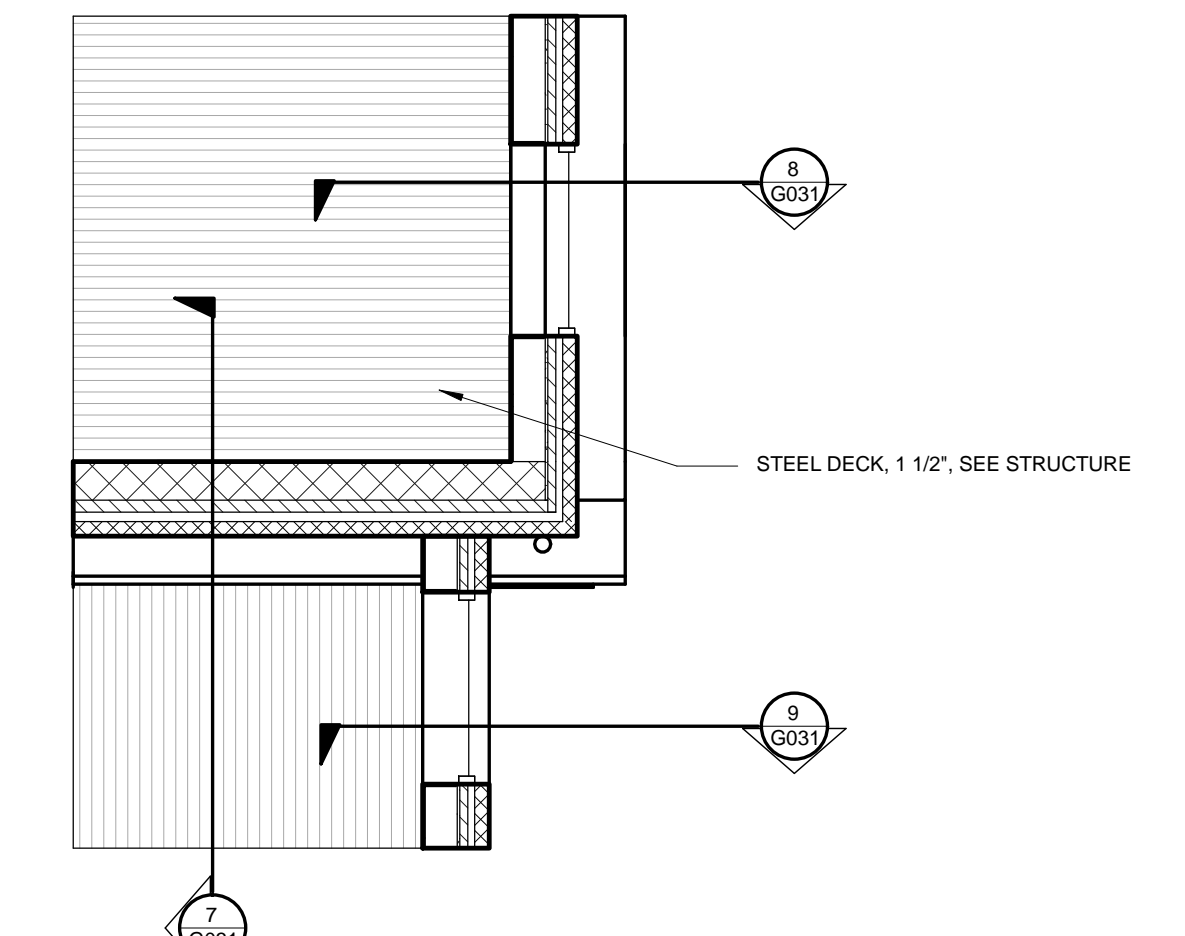
8 SECTION 02
1/4" = 1'-0"



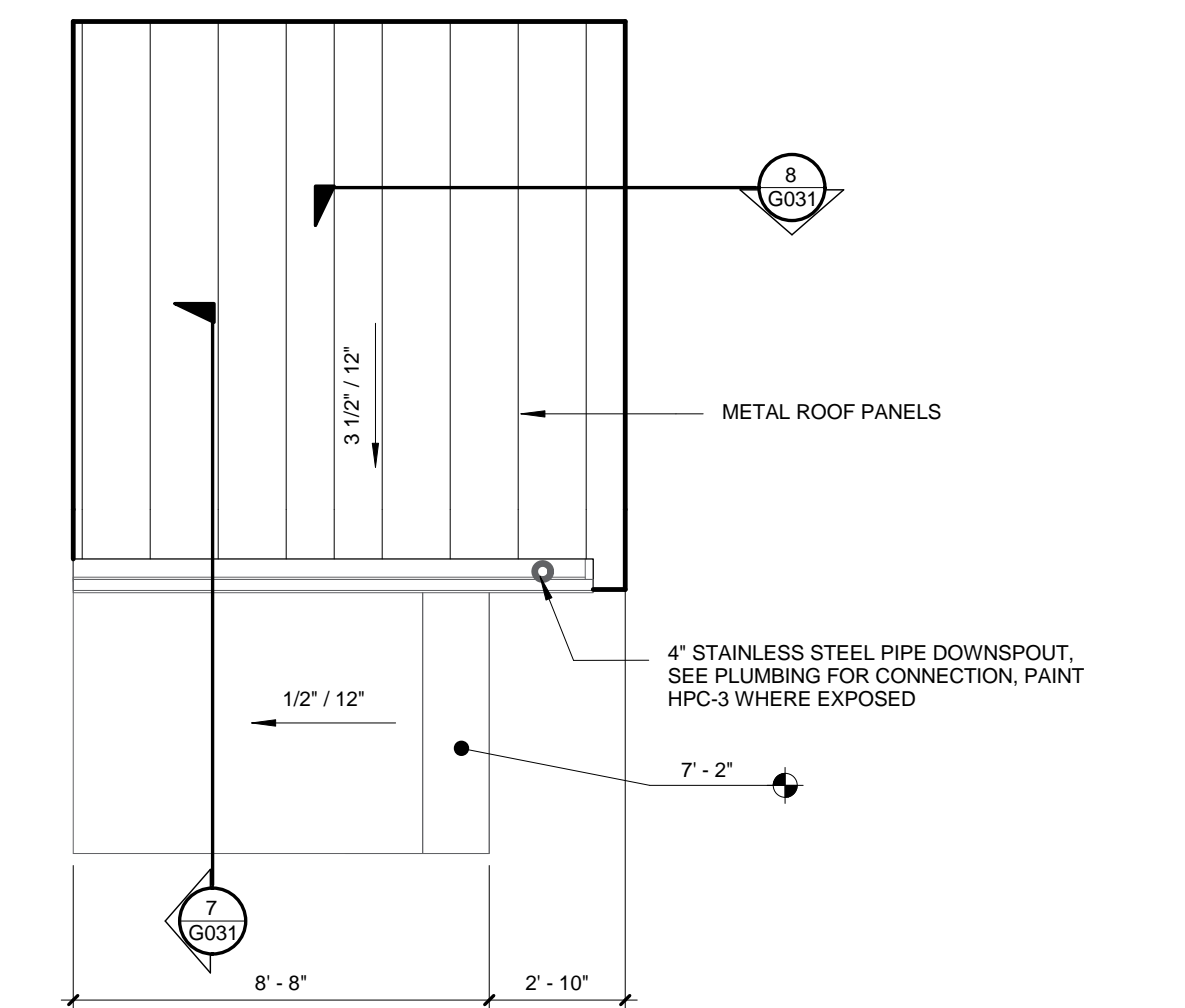
7 SECTION 01
1/4" = 1'-0"

GENERAL NOTES

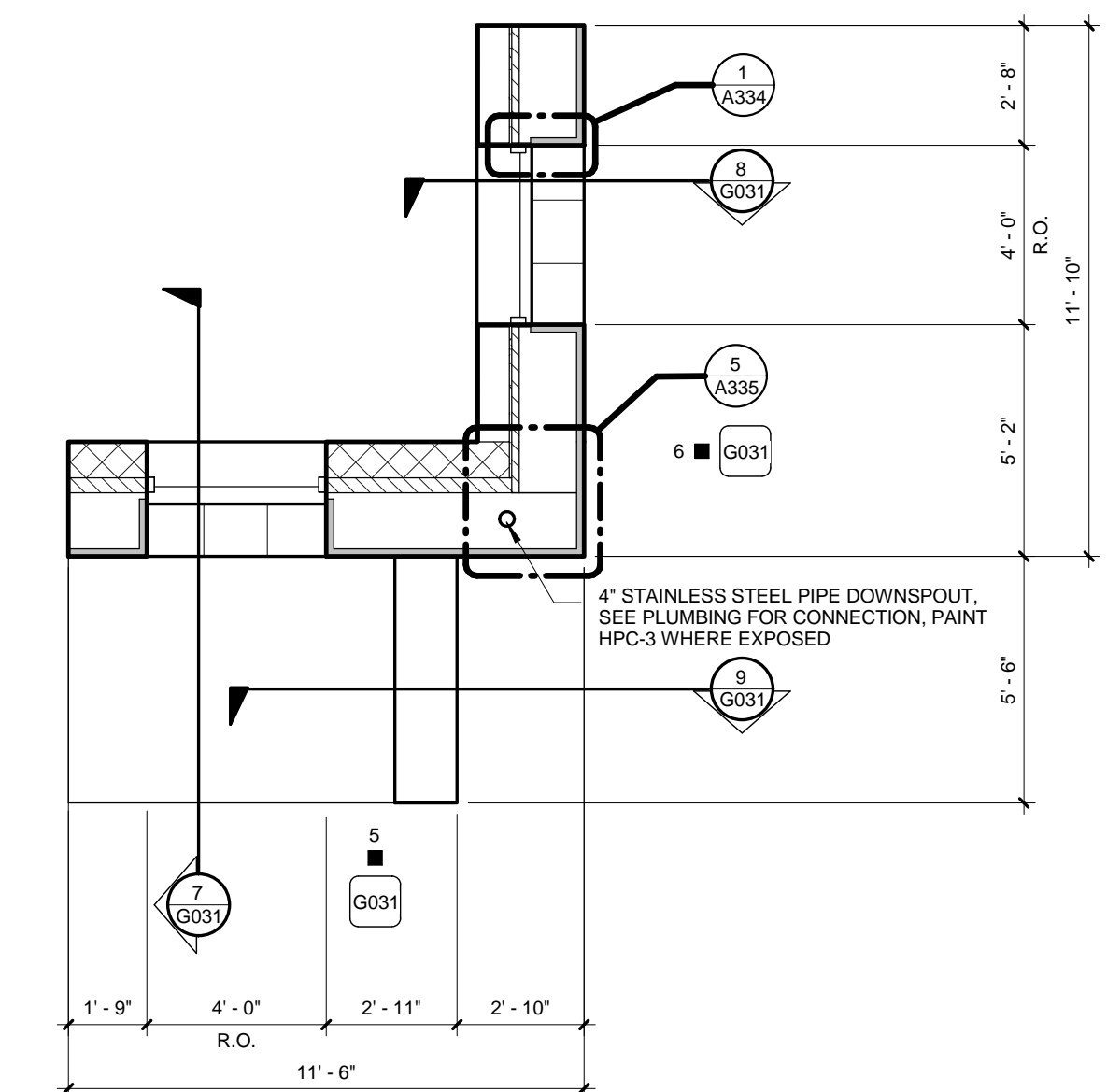
1. MOCK UP PLAN IS A REPRESENTATION OF SEVERAL BUILDING CONDITIONS
2. REFER TO INDIVIDUAL SPEC SECTIONS FOR THE WORK REQUIRED FOR EACH TRADE.
3. LOCATE THE MOCK UP PER THE DIRECTION OF THE ARCHITECT
4. REFER TO ELEVATION SHEETS FOR SYMBOLS AND GLASS TYPES.



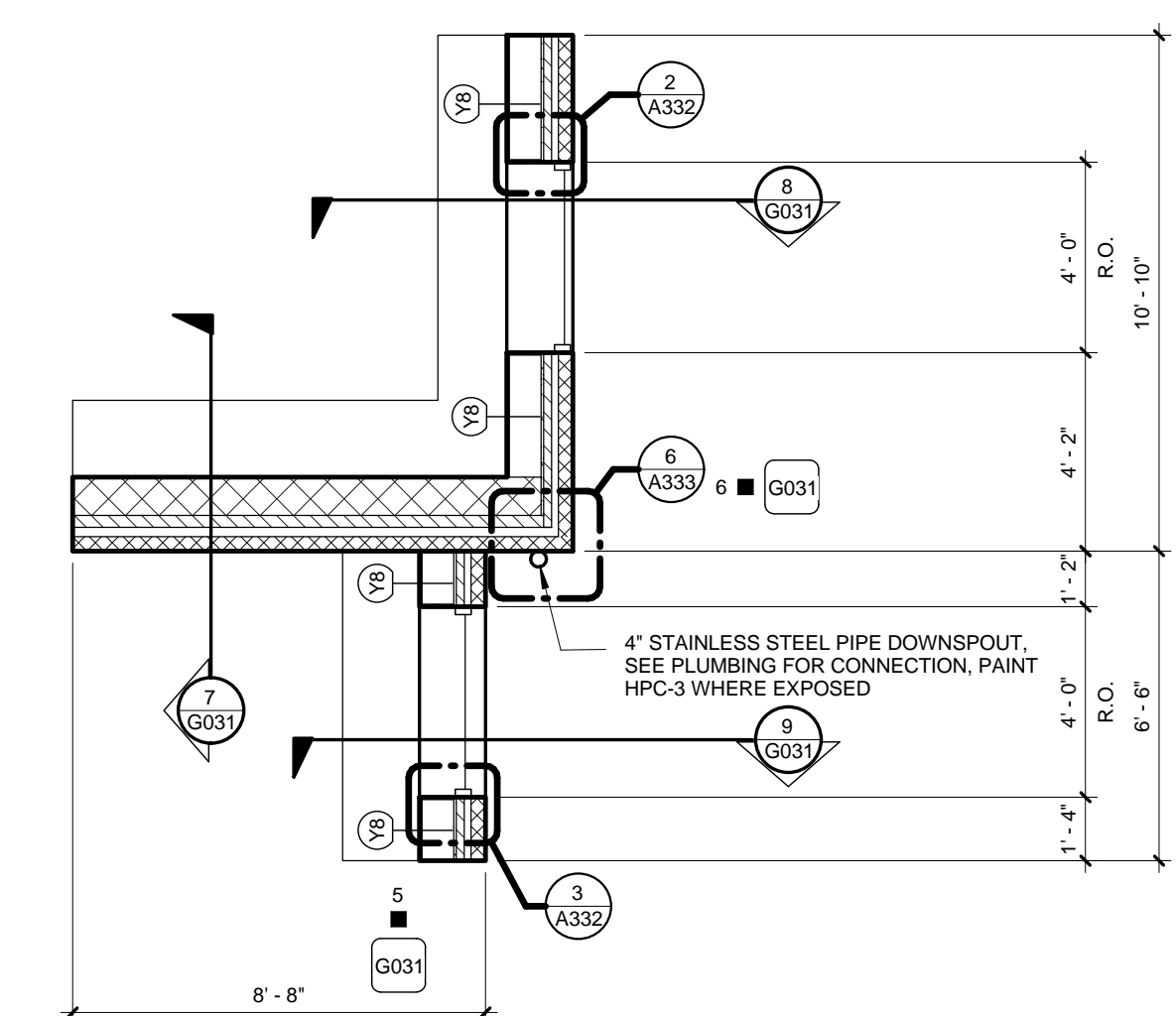
4 SOFFIT PLAN
1/4" = 1'-0"



3 ROOF PLAN
1/4" = 1'-0"



2 INTERMEDIATE LEVEL
1/4" = 1'-0"



1 GROUND FLOOR
1/4" = 1'-0"

GENERAL NOTES - FLOOR PLANS

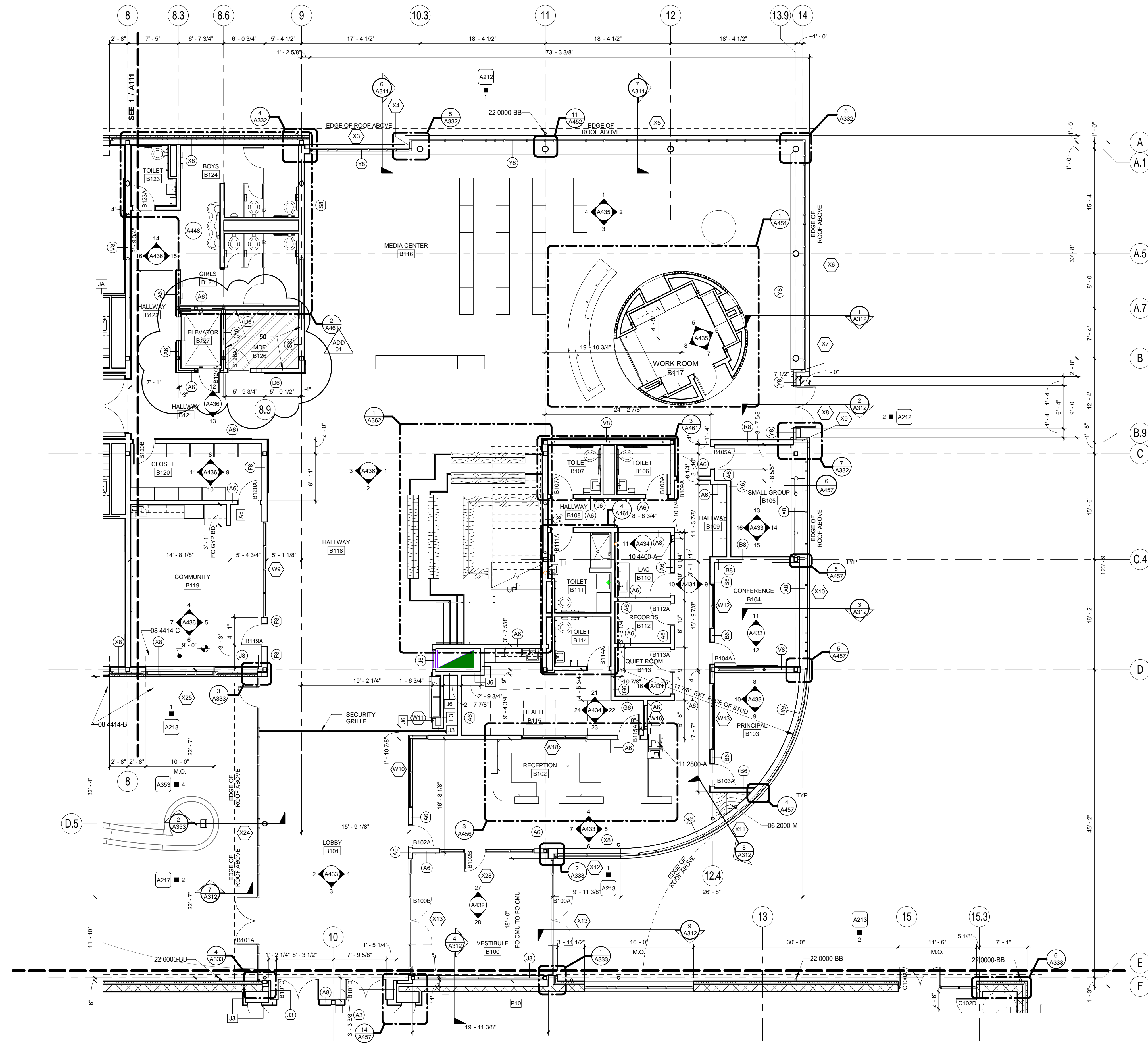
- A. DIMENSIONS ARE TO THE FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED.
- B. MASONRY DIMENSIONS ARE ACTUAL UNLESS OTHERWISE NOTED.
- C. REFER TO SHEET A100 SERIES FOR ENLARGED PLAN INFORMATION.
- D. REFER TO A200 SERIES FOR EXTERIOR ELEVATIONS.
- E. REFER TO SHEET A135 - A138 FOR WALL ASSEMBLY INFORMATION.
- F. REFER TO A300 SERIES FOR DOOR SCHEDULE AND WINDOW INFORMATION.
- G. REFER TO A400 SERIES FOR CASEWORK, MILLWORK AND INTERIOR ELEVATIONS.

KEYNOTE LEGEND - SPECIFICATIONS

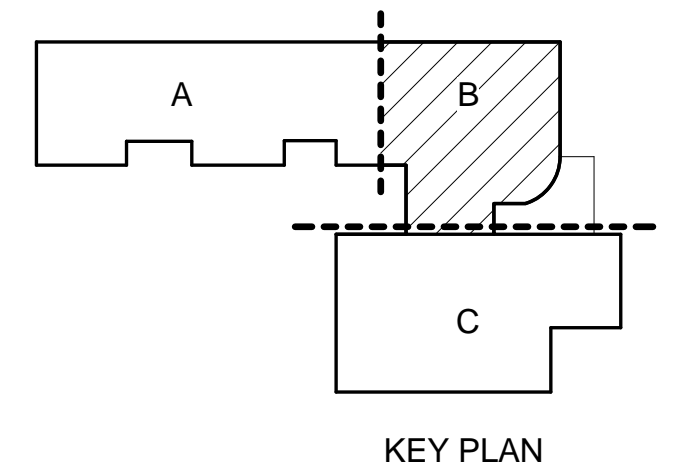
- 06 2000-M BENCH, SEE INTERIOR DETAIL SHEET
- 08 4414-B ALUMINUM EXTERIOR SUNSHADES
- 08 4414-C ALUMINUM INTERIOR LIGHT SHELVES
- 10 4400-A FIRE EXTINGUISHER CABINET, SEMI-RECESSED
- 11 2800-A COPPER, OF01
- 22 0000-BB 4" STAINLESS STEEL PIPE DOWNSPOUT, SEE PLUMBING FOR CONNECTION, PAINT HPC-3 WHERE EXPOSED

KEYNOTE LEGEND

- 47 SEE SHEET A423 FOR GYM STRIPING, VOLLEY BALL AND FOUR SQUARE COURTS NOT SHOWN
- 50 APPLY 1/2" PLYWOOD LIEU OF GYP BD ON NORTH, EAST AND SOUTH WALLS IN ROOM. APPLY 1/2" PLYWOOD OVER GYP ON WEST (ELEVATOR) WALL



1 SECTOR B PLAN - FIRST FLOOR
1/8" = 1'-0"



BID SET
 EUGENE SCHOOL DISTRICT 4J
 120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
 RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

SECTOR B PLAN - FIRST FLOOR

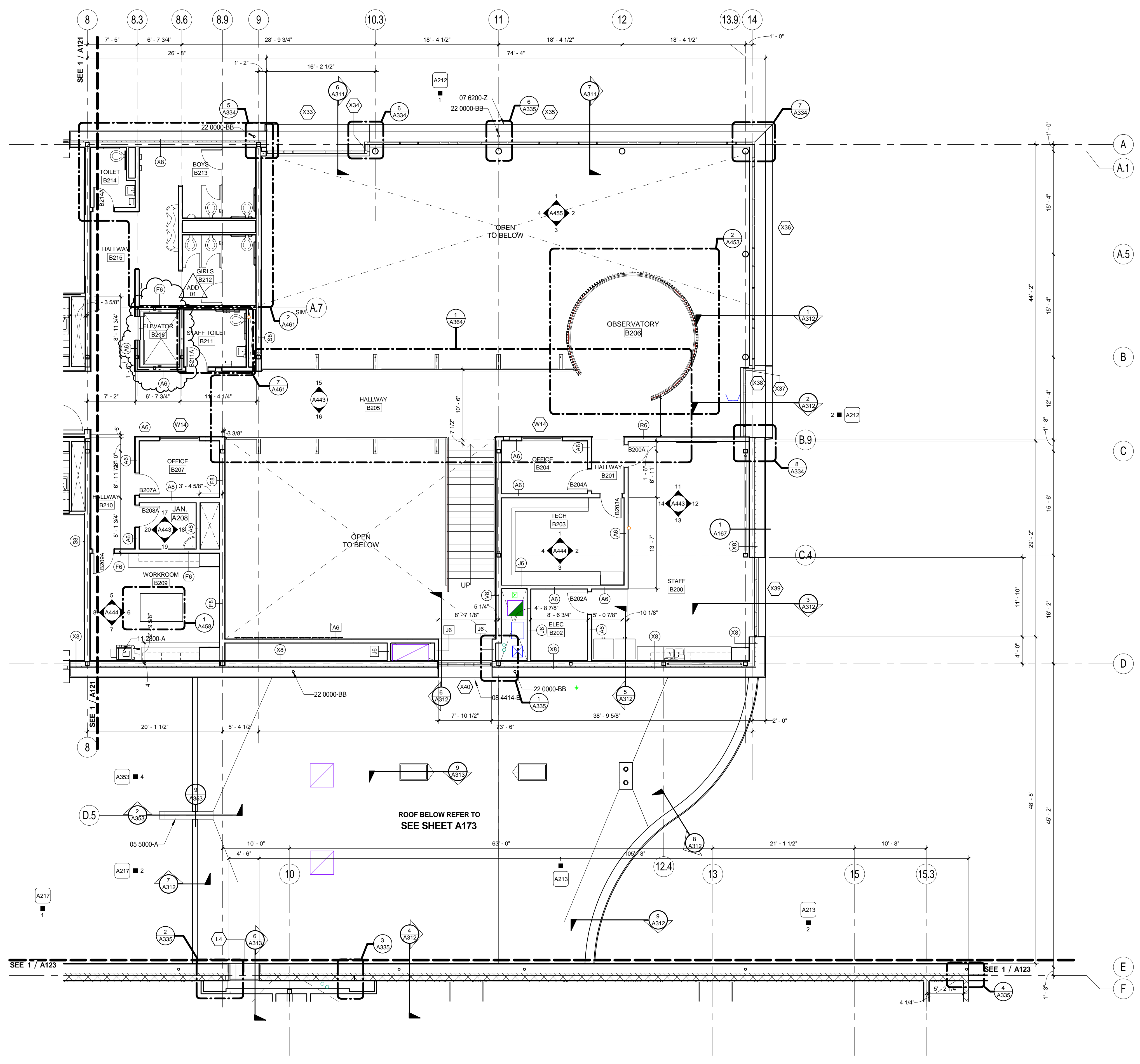
PROJECT #	1337.00	REVISIONS	
ISSUE DATE	03/12/2016		
		ADD 01 -	03.01.2016
			A112

GENERAL NOTES - FLOOR PLANS

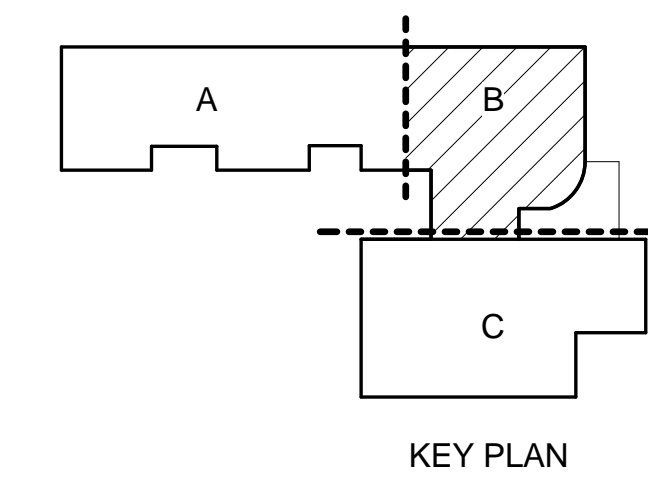
- A. DIMENSIONS ARE TO THE FACE OF STUD OR MASONRY UNLESS OTHERWISE NOTED.
- B. MASONRY DIMENSIONS ARE ACTUAL UNLESS OTHERWISE NOTED.
- C. REFER TO SHEET A100 SERIES FOR ENLARGED PLAN INFORMATION.
- D. REFER TO A200 SERIES FOR EXTERIOR ELEVATIONS.
- E. REFER TO SHEET A135 - A138 FOR WALL ASSEMBLY INFORMATION.
- F. REFER TO A500 SERIES FOR DOOR SCHEDULE AND WINDOW INFORMATION.
- G. REFER TO A400 SERIES FOR CASEWORK, MILLWORK AND INTERIOR ELEVATIONS.

KEYNOTE LEGEND - SPECIFICATIONS

- 05 5000-A STEEL RAIN WATER RUNNEL, HPC
- 07 6200-Z 1" GA WINDOW SURROUND HPC ALL SIDES
- 08 4414-B ALUMINUM EXTERIOR SUNSHADES
- 11 2800-A COPIER, OF01
- 22 0000-BB 4" STAINLESS STEEL PIPE DOWNSPOUT, SEE PLUMBING FOR CONNECTION, PAINT HPC-3 WHERE EXPOSED



1 SECTOR B PLAN - SECOND FLOOR
 1/8" = 1'-0"

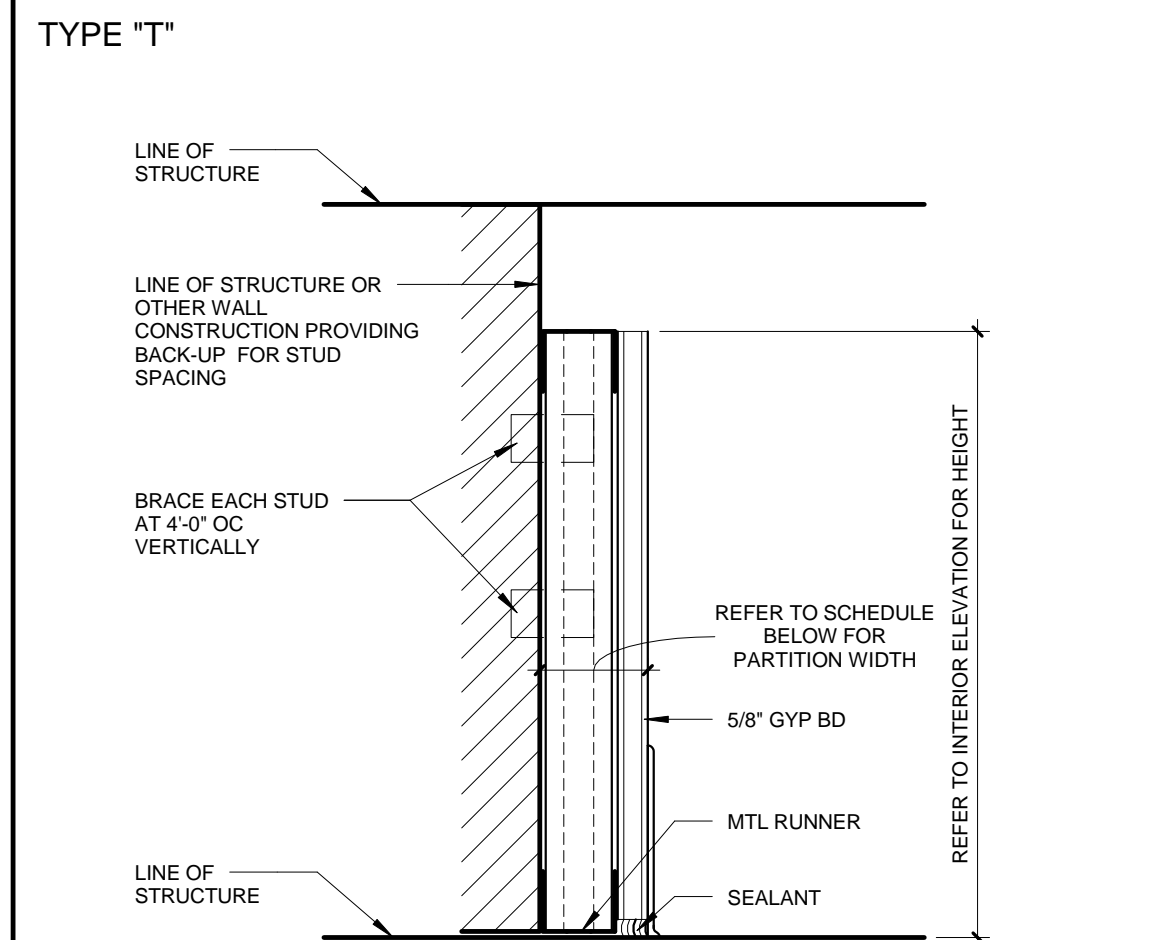


BID SET
 EUGENE SCHOOL DISTRICT 4J
 120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
 RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

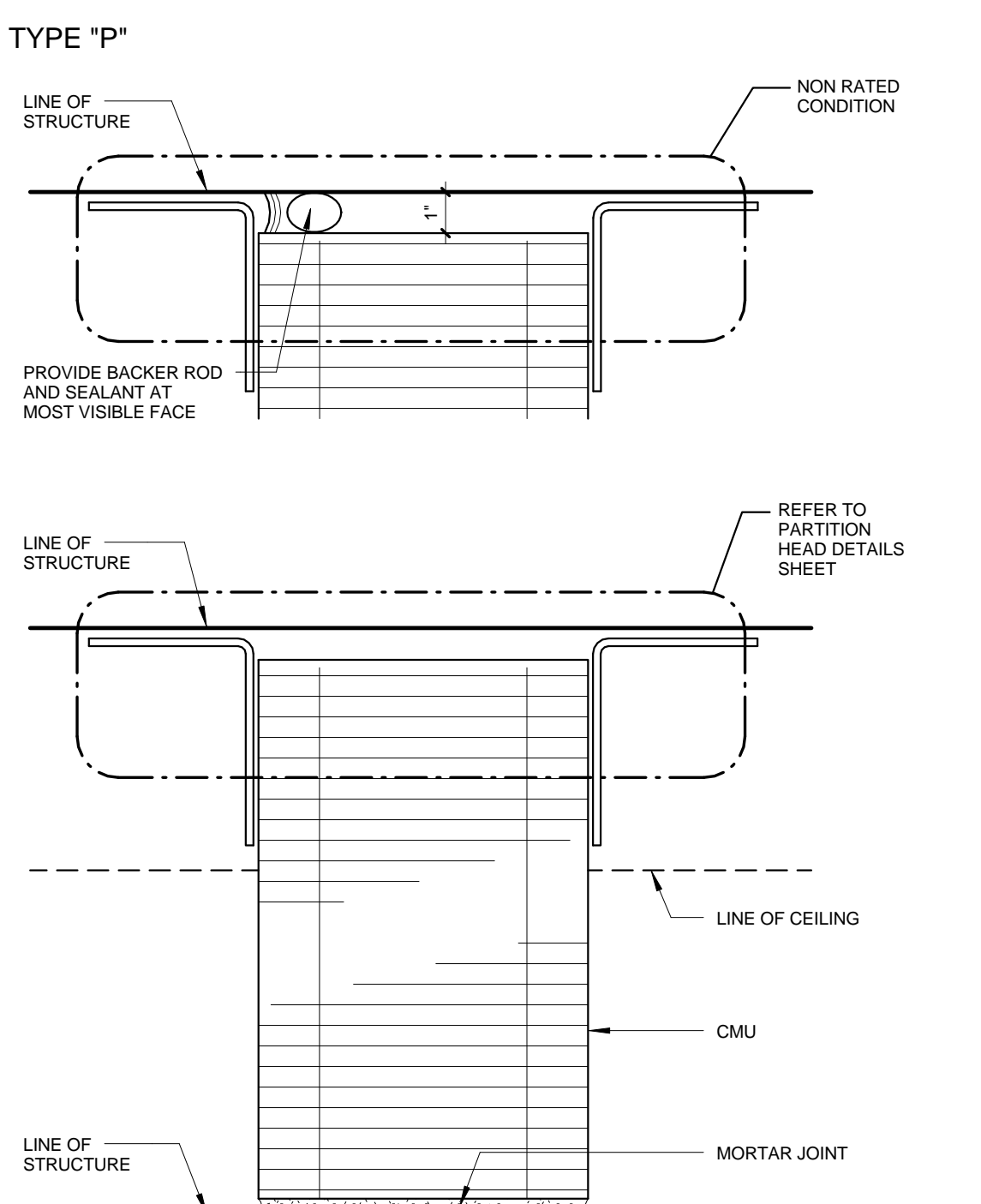
SECTOR B PLAN - SECOND FLOOR

PROJECT # 1337.00 REVISIONS
 ISSUE DATE 03/12/2016
 ADD 01 - 03.01.2016

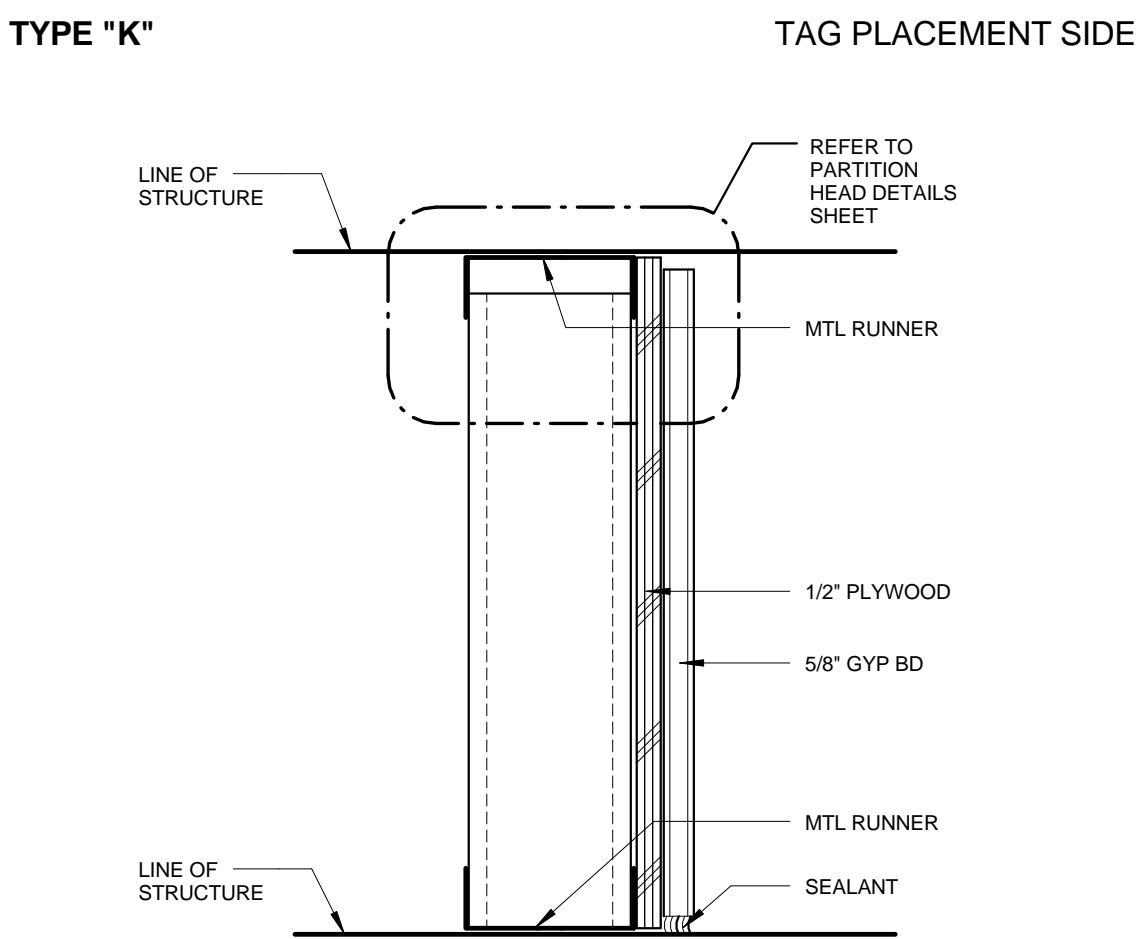
© 2016 PIVOT ARCHITECTURE FROM FILE: C:\pivot\Architecture\Revit\2015\1337_RRBS_Arch_Bldg_15.dwg/PIVOT.dwg PRINTED ON: 3/12/2016 3:54:56 PM



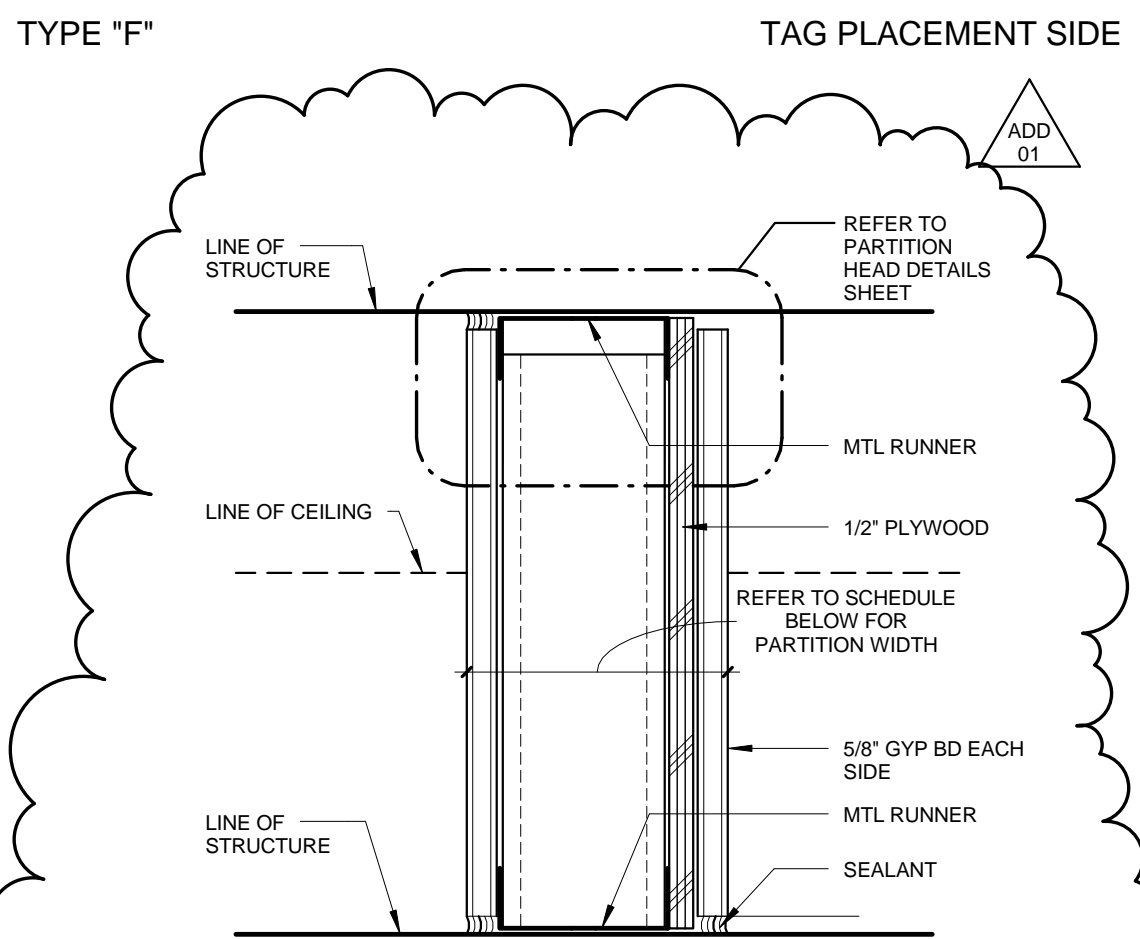
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[T1]	[T2]	N/A	3.5"	4.34"	NON-RATED	N/A	N/A



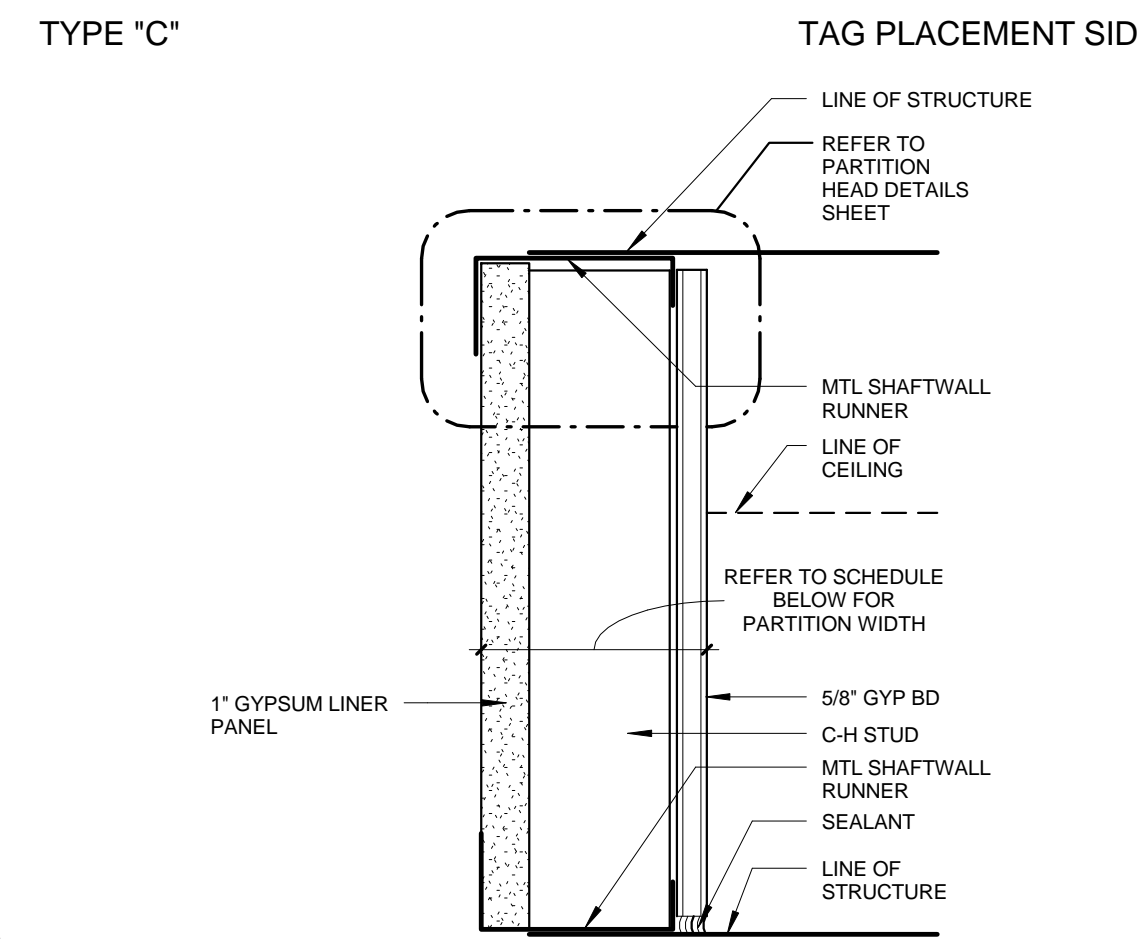
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	CMU WIDTH	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[P8]	[P9]	N/A	7.5"	7.5"	NON-RATED	N/A	SEE INTERIOR ELEVATION FOR BLOCK FINISH
[P10]	[P11]	N/A	9.5"	9.5"	NON-RATED	N/A	SEE INTERIOR ELEVATION FOR BLOCK FINISH



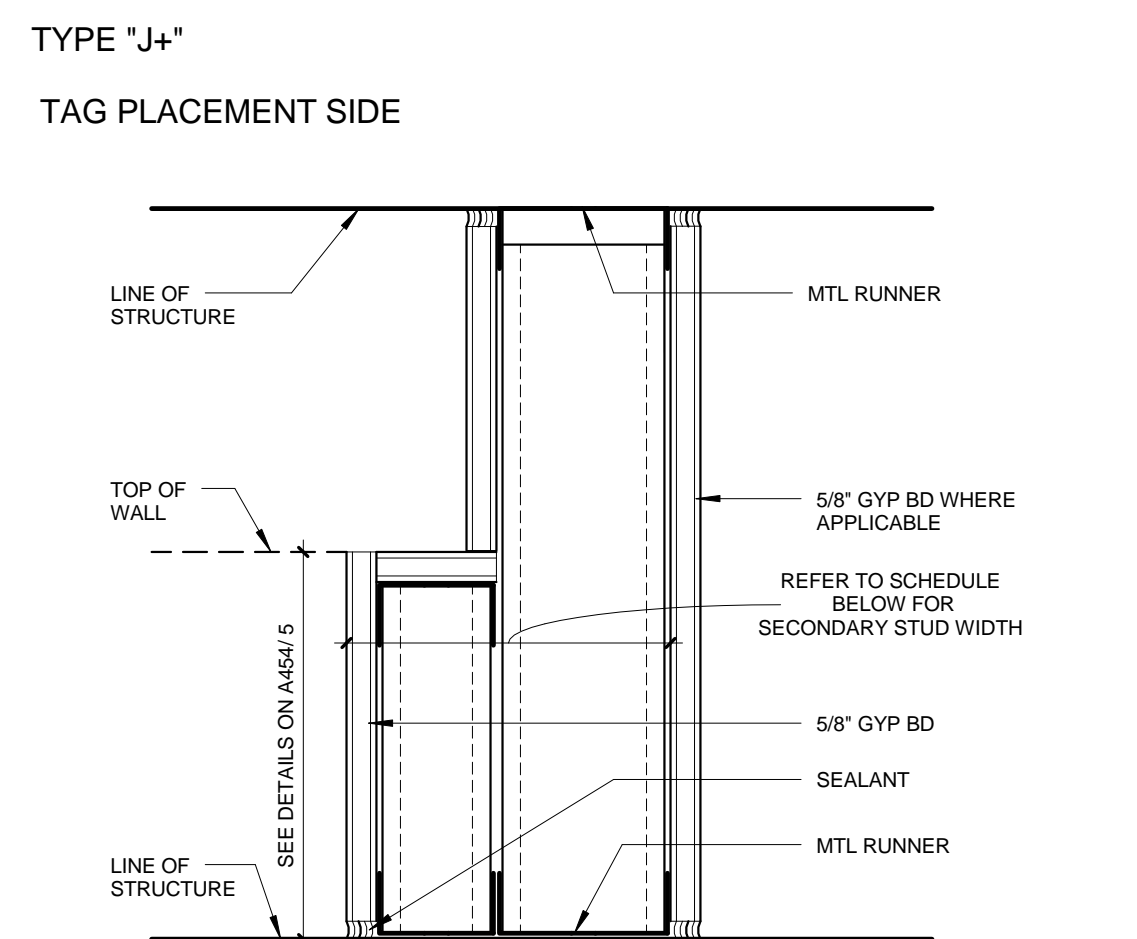
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[K1]	[K2]	N/A	8"	9.18"	NON-RATED	N/A	N/A
[K3]	[K4]	N/A	8"	9.34"	NON-RATED	N/A	N/A
[K5]	[K6]	N/A	6"	7.34"	ONE HOUR	U423	40 WITH 5\"/>



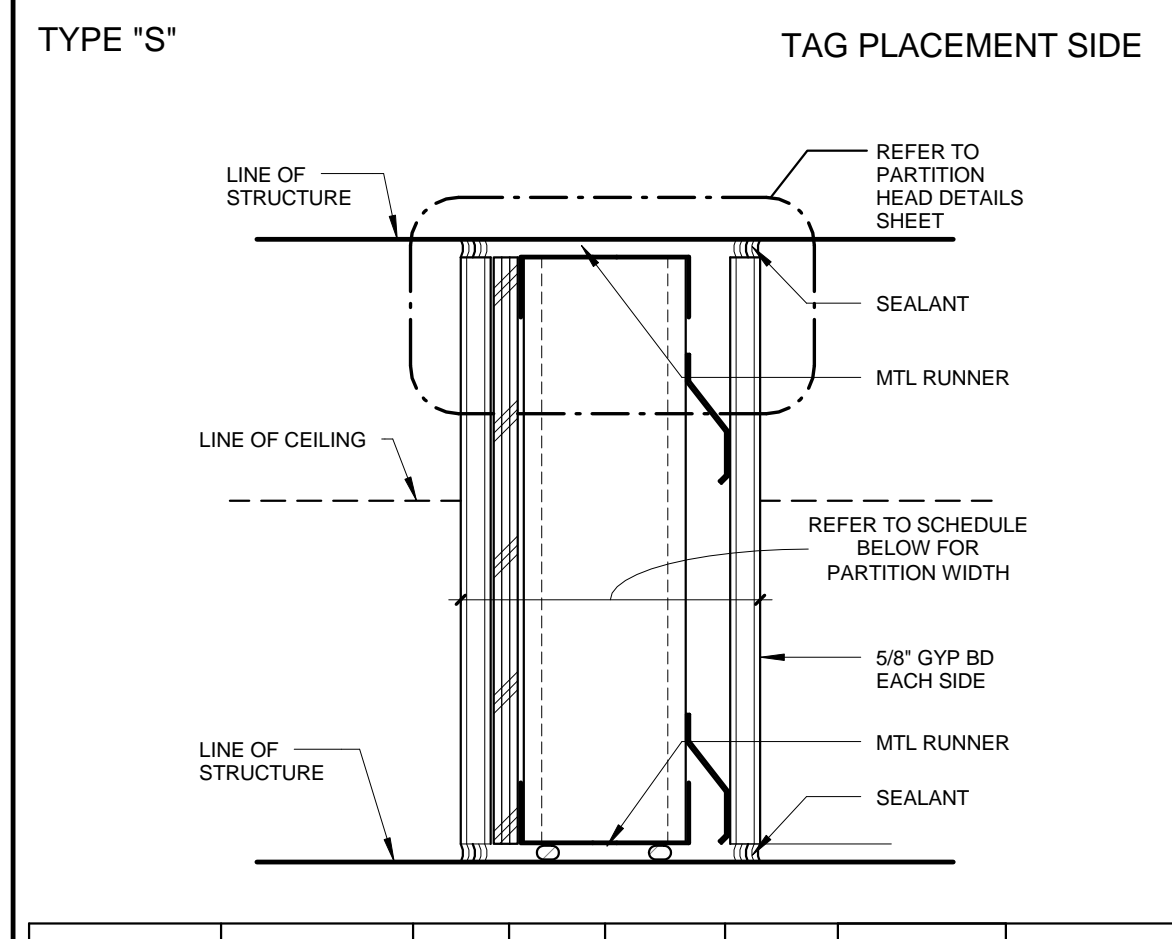
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[F1]	[F2]	6"	7.34"	NON-RATED	N/A	40 WITH 5\"/>	



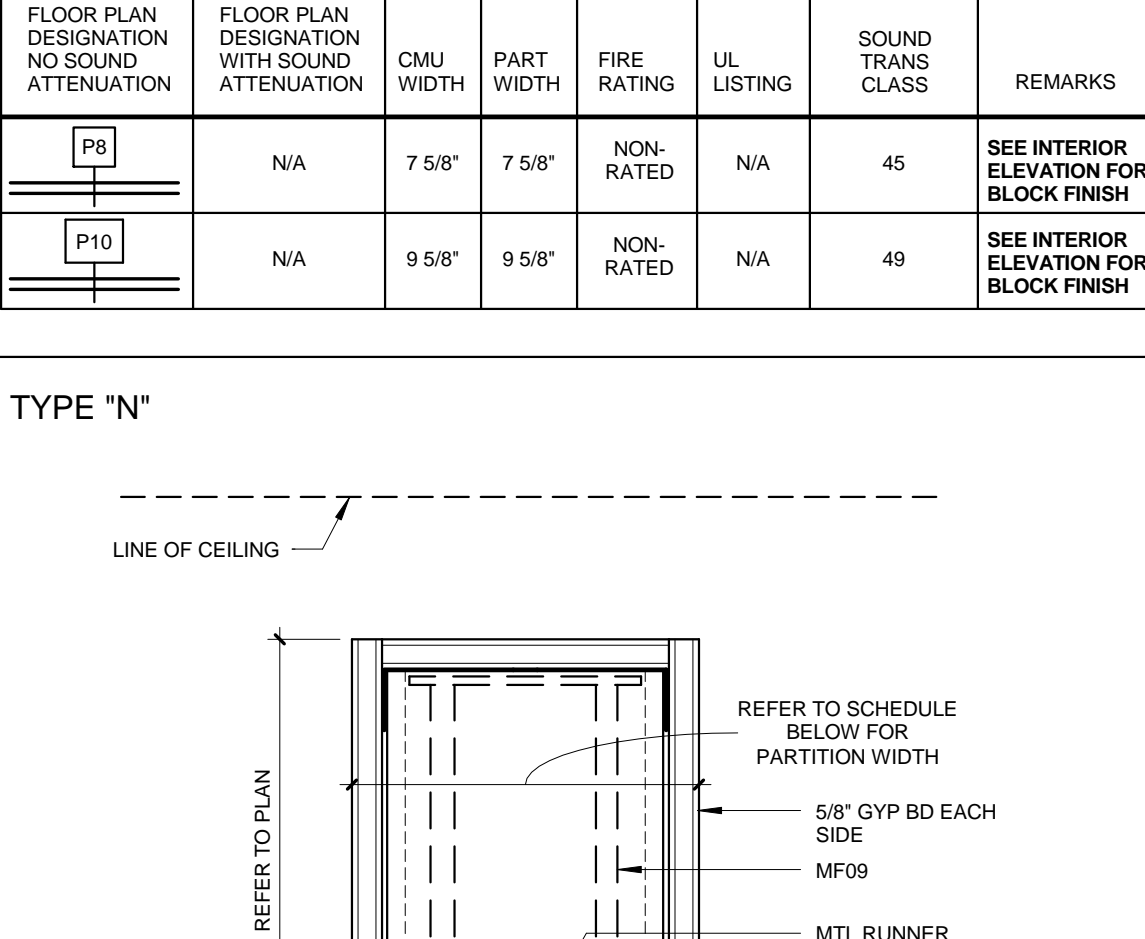
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[C1]	[C2]	6"	6.58"	ONE HOUR	U469	36 WITH 5\"/>	



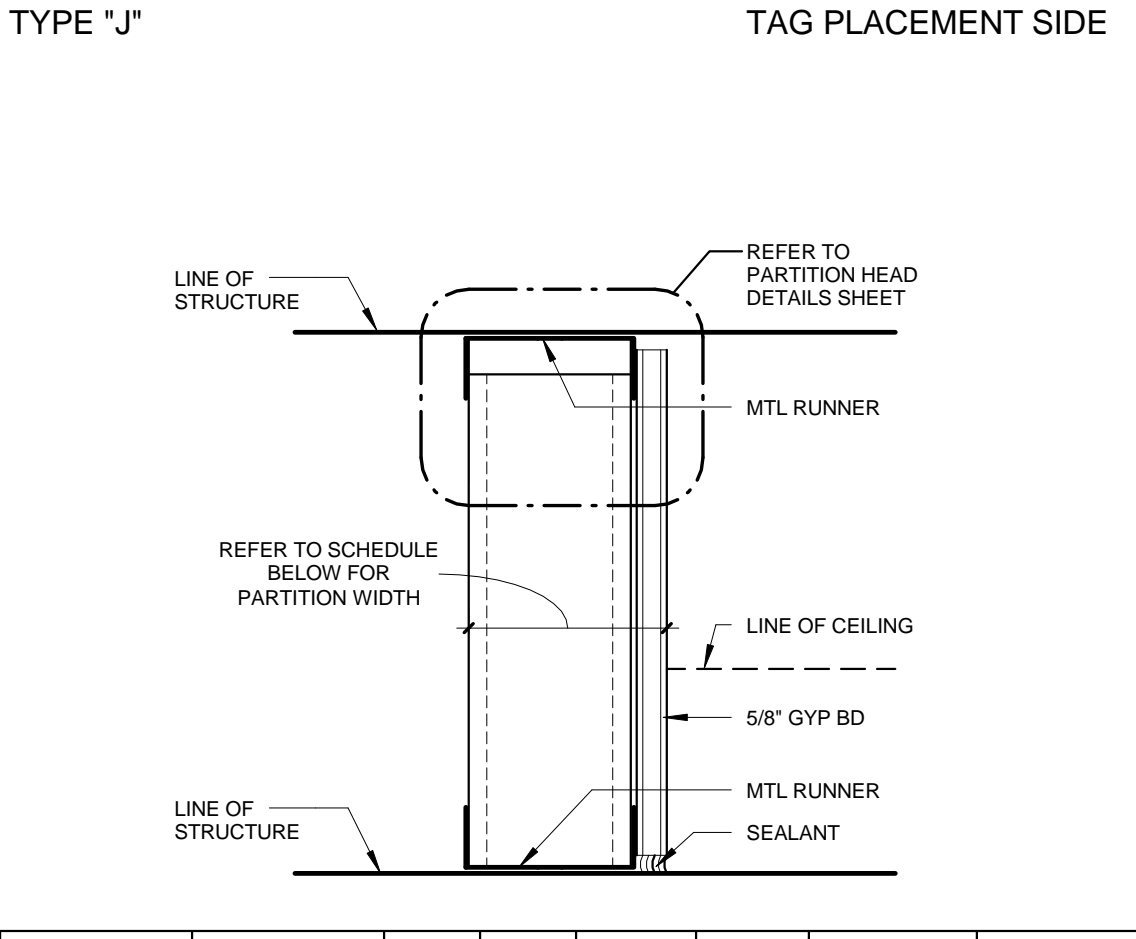
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[J1]	[J2]	6.34"	3.58"	2.12"	NON-RATED	N/A	N/A	N/A
[J3]	[J4]	N/A	6"	2.12"	NON-RATED	N/A	N/A	N/A



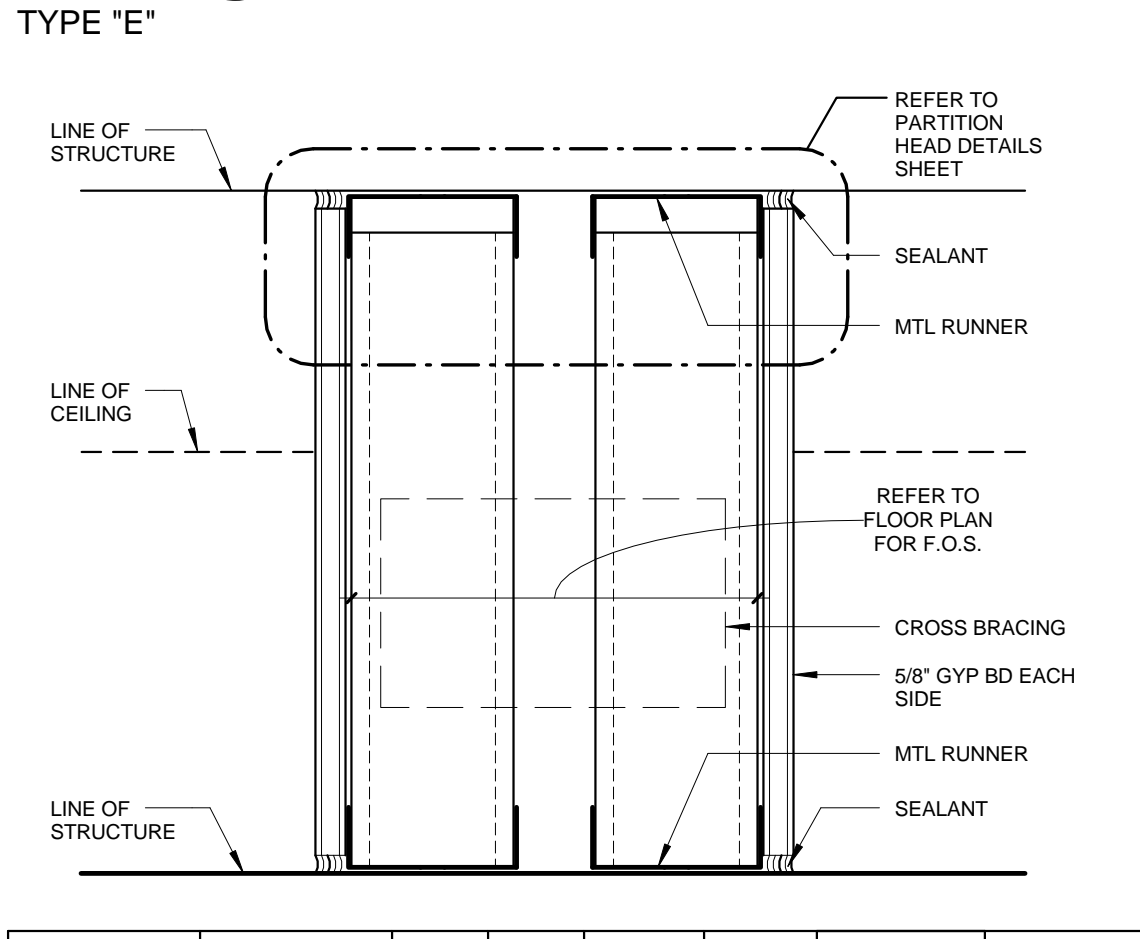
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[S1]	[S2]	8"	10.44"	NON-RATED	N/A	40 WITH 3\"/>	



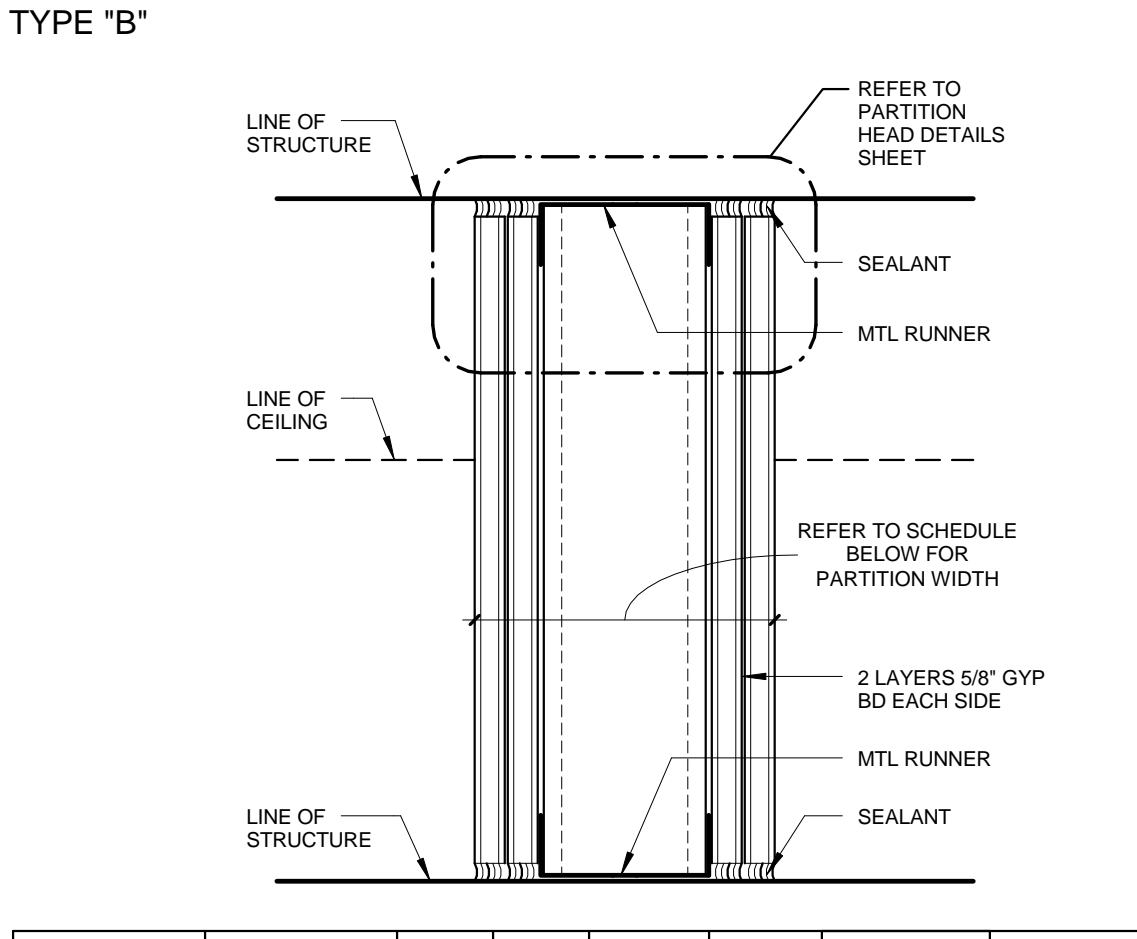
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[N1]	[N2]	8"	9.14"	NON-RATED	N/A	N/A	N/A
[N3]	[N4]	N/A	6"	6.58"	NON-RATED	N/A	N/A
[N5]	[N6]	N/A	8"	8.58"	NON-RATED	N/A	N/A



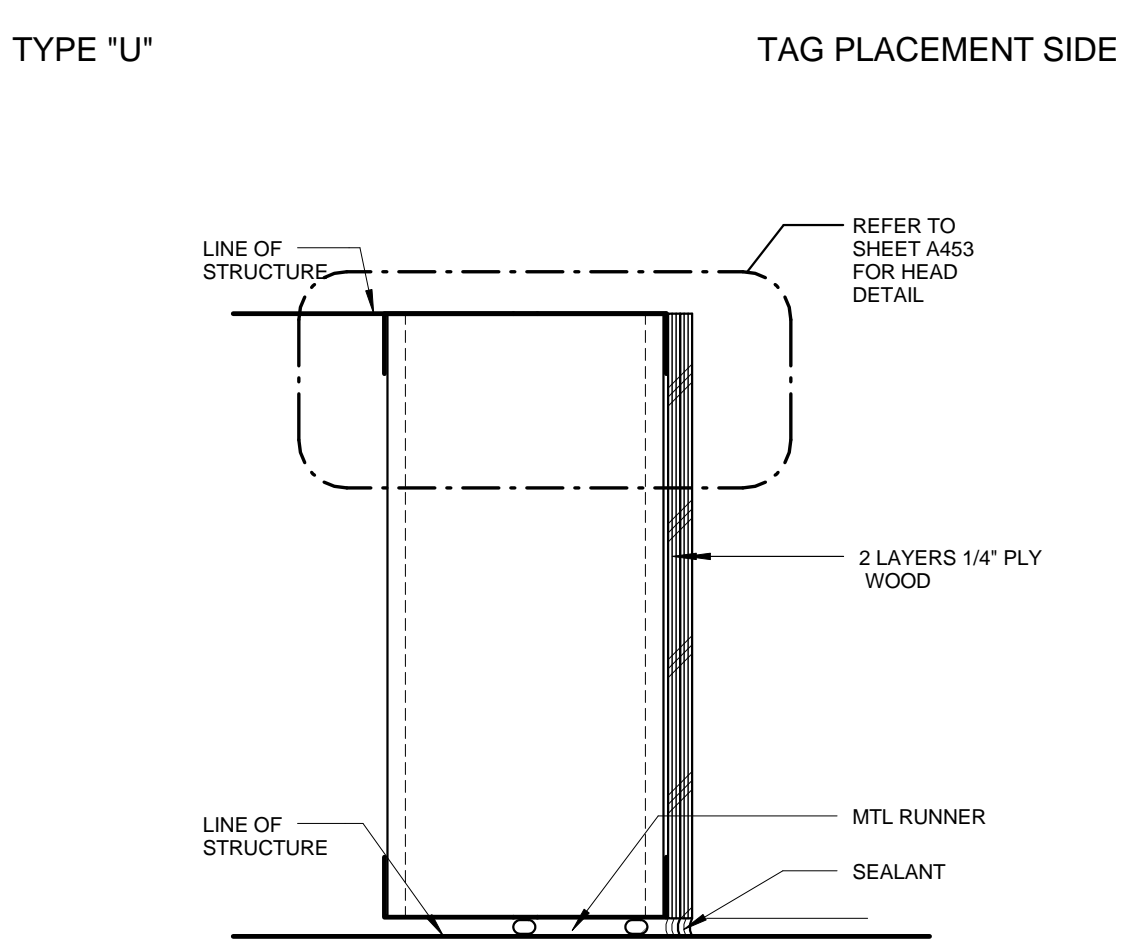
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[J7]	[J8]	2.12"	3.18"	NON-RATED	N/A	N/A	SEE INTERIOR ELEVATION FOR BLOCK FINISH
[J9]	[J10]	3.58"	4.14"	NON-RATED	N/A	N/A	N/A



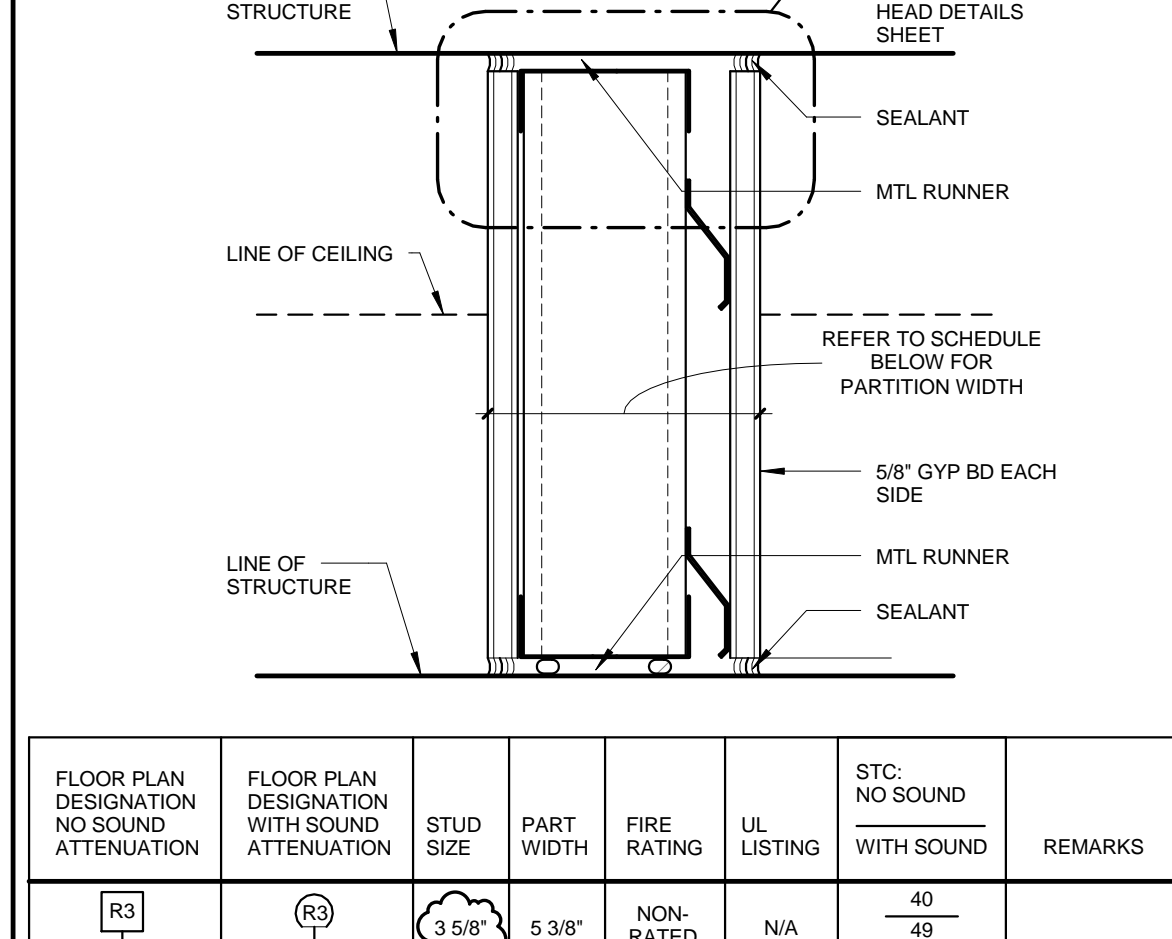
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[E1]	[E2]	3.58"	REF FLOOR PLAN	NON-RATED	N/A	40 WITH 1/2\"/>	



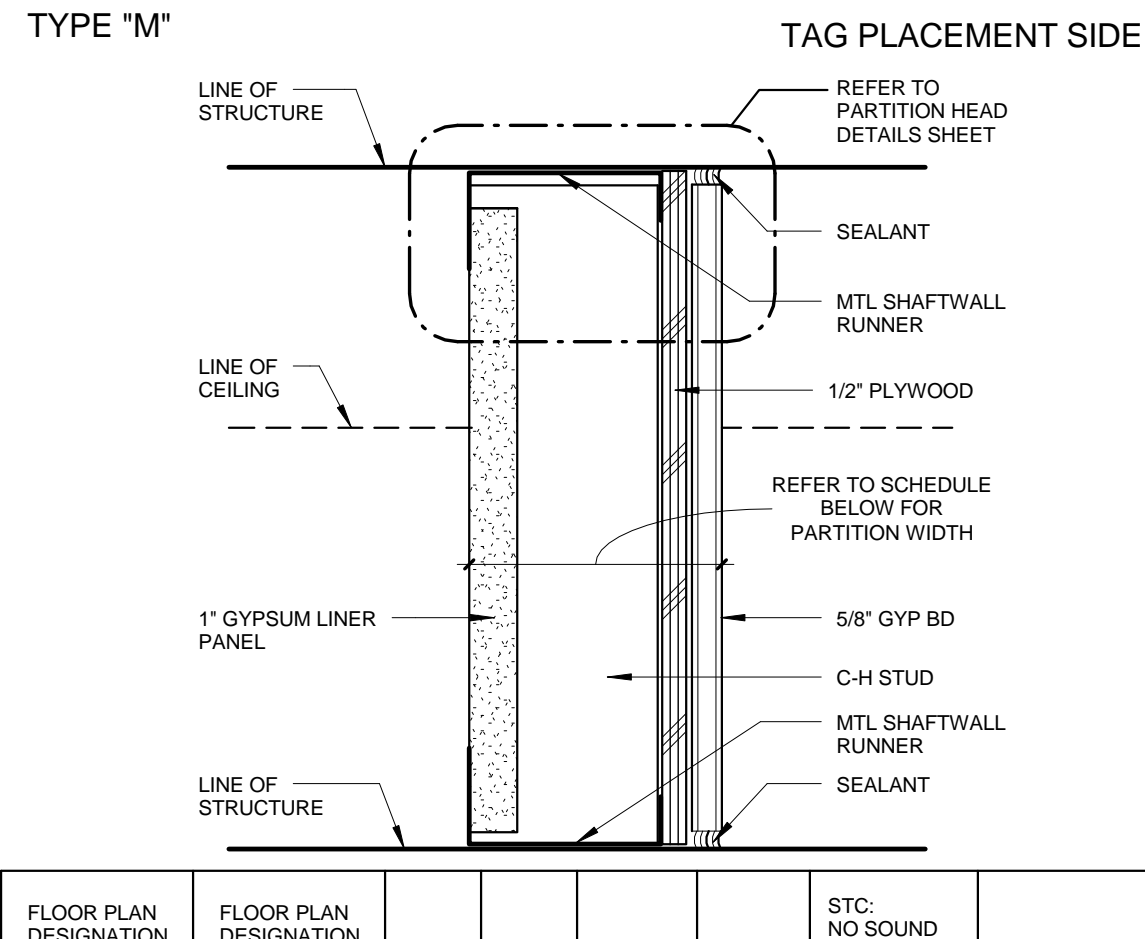
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[B1]	[B2]	6"	8.12"	NON-RATED	N/A	40 WITH 5\"/>	
[B3]	[B4]	8"	10.12"	NON-RATED	N/A	48 WITH 5\"/>	



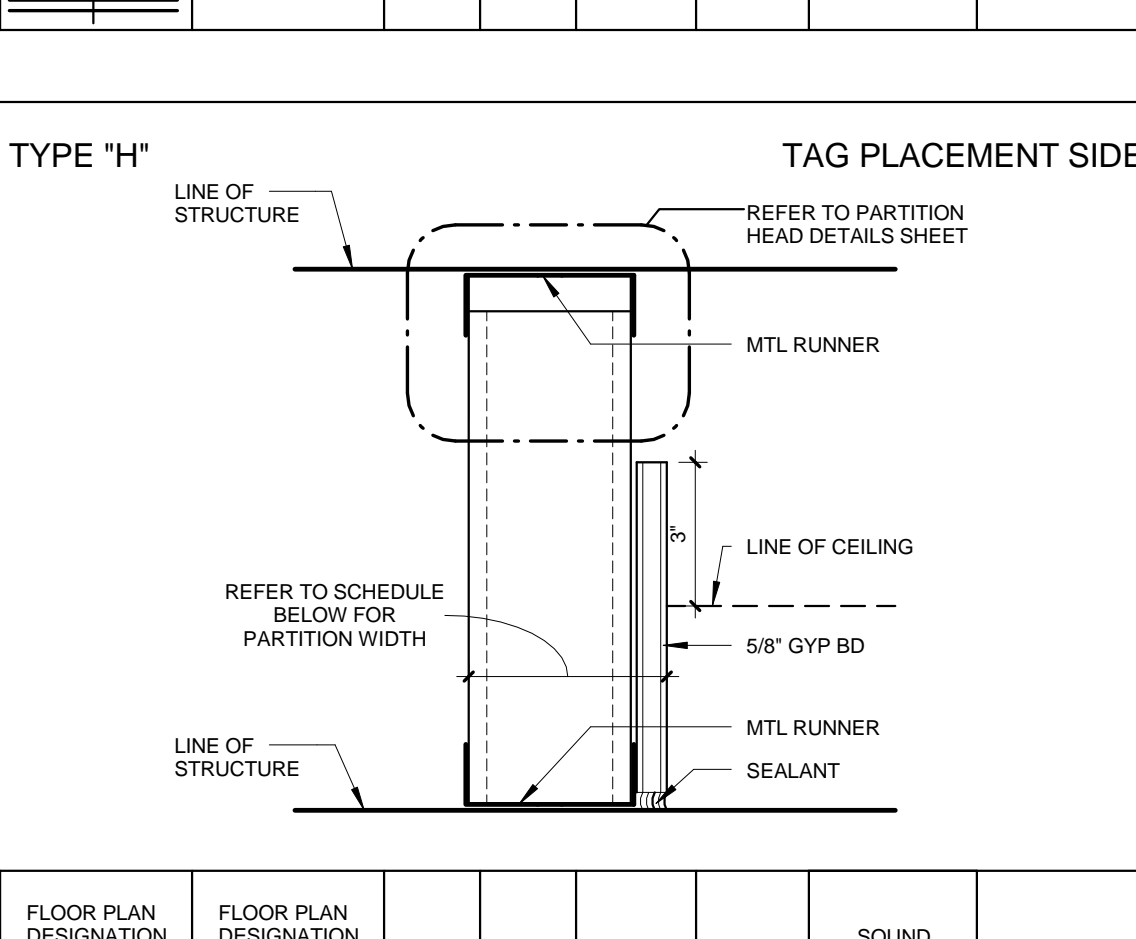
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[U1]	[U2]	N/A	6"	6.12"	N/A	N/A	N/A	N/A



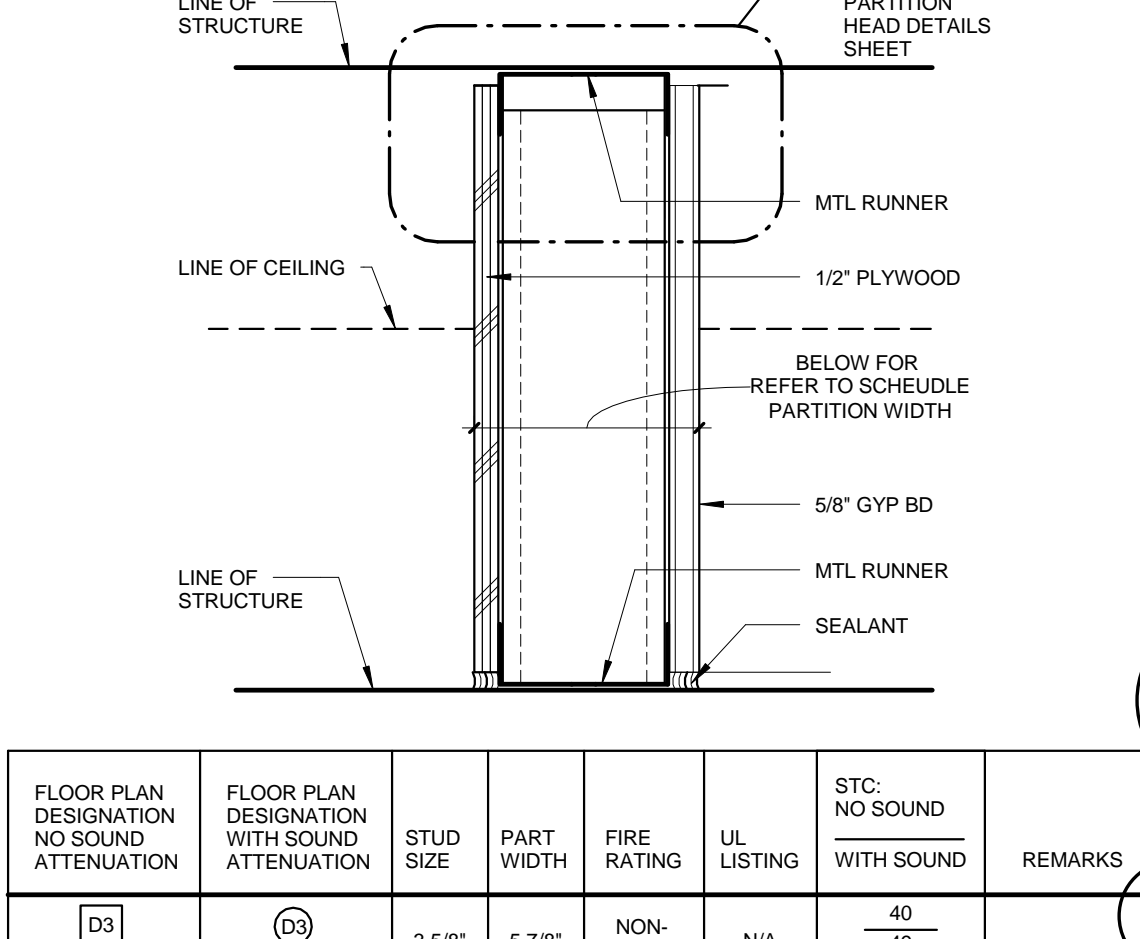
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS						
[R1]	[R2]	3.58"	5.38"	NON-RATED	N/A	40 WITH 3\"/>							
[R3]	[R4]	6"	7.34"	NON-RATED	N/A	40 WITH 5\"/> <tr> <td>[R5]</td> <td>[R6]</td> <td>N/A</td> <td>9.34"</td> <td>NON-RATED</td> <td>N/A</td> <td>40 WITH 5\"/> </td></tr>	[R5]	[R6]	N/A	9.34"	NON-RATED	N/A	40 WITH 5\"/>
[R5]	[R6]	N/A	9.34"	NON-RATED	N/A	40 WITH 5\"/>							



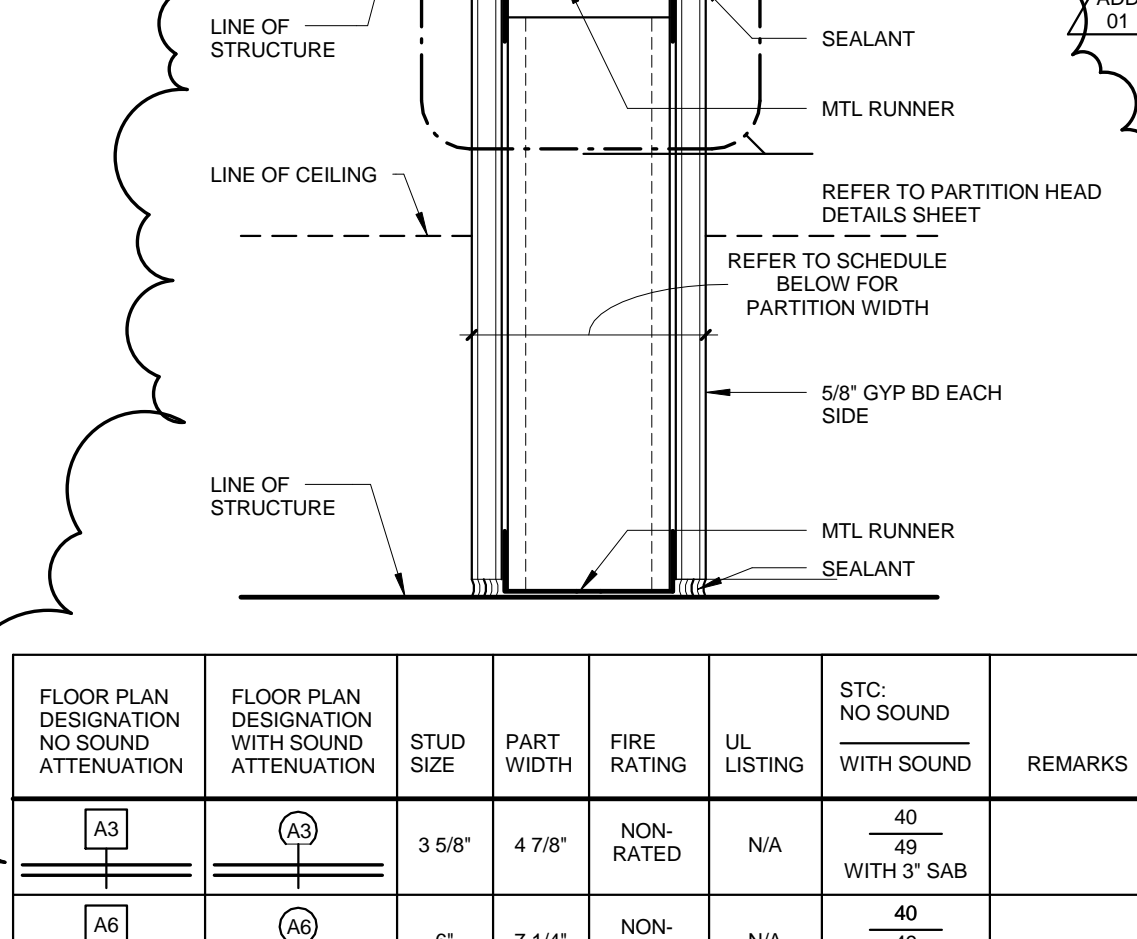
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[M1]	[M2]	6"	7.18"	ONE HOUR	U469	36 WITH 5\"/>	



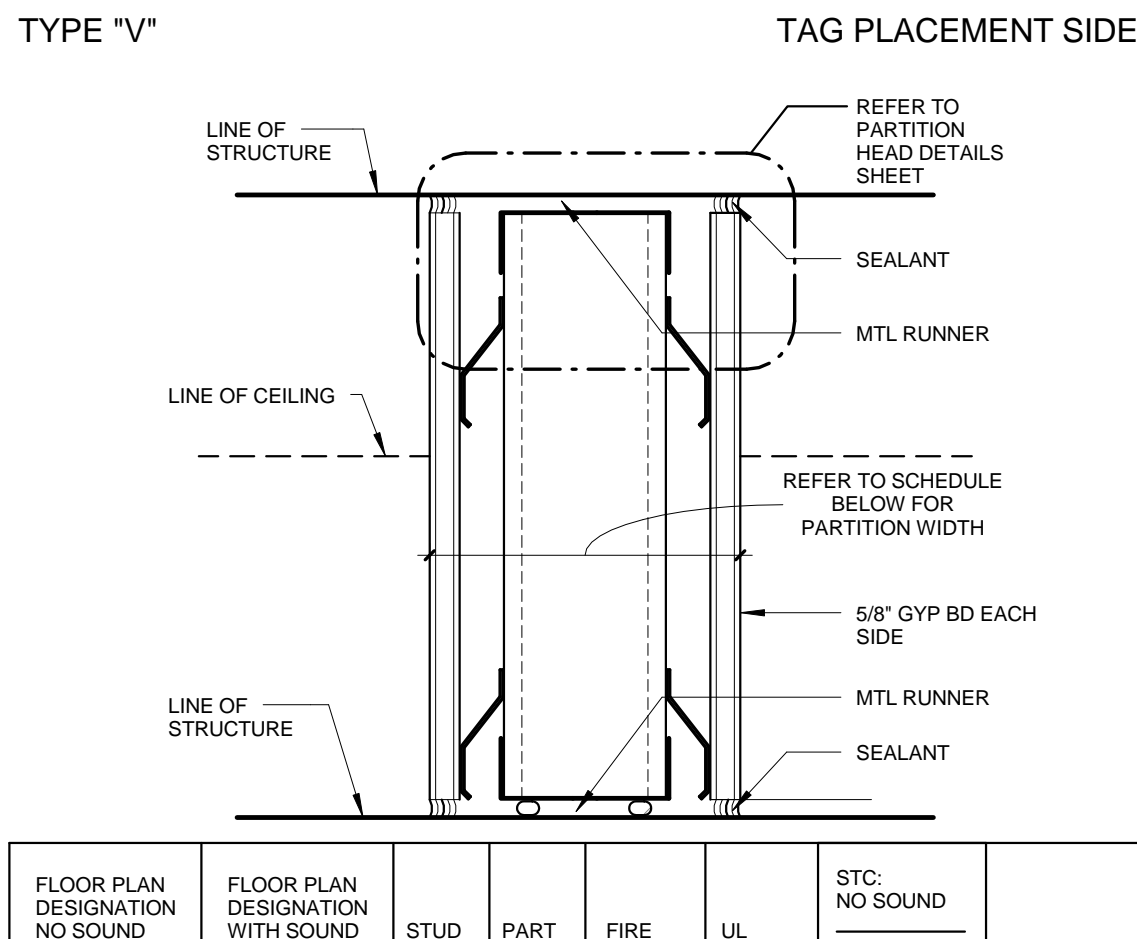
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[H1]	[H2]	N/A	3.58"	4.14"	NON-RATED	N/A	N/A
[H3]	[H4]	N/A	6"	6.58"	NON-RATED	N/A	N/A
[H5]	[H6]	N/A	6"	6.58"	NON-RATED	N/A	N/A



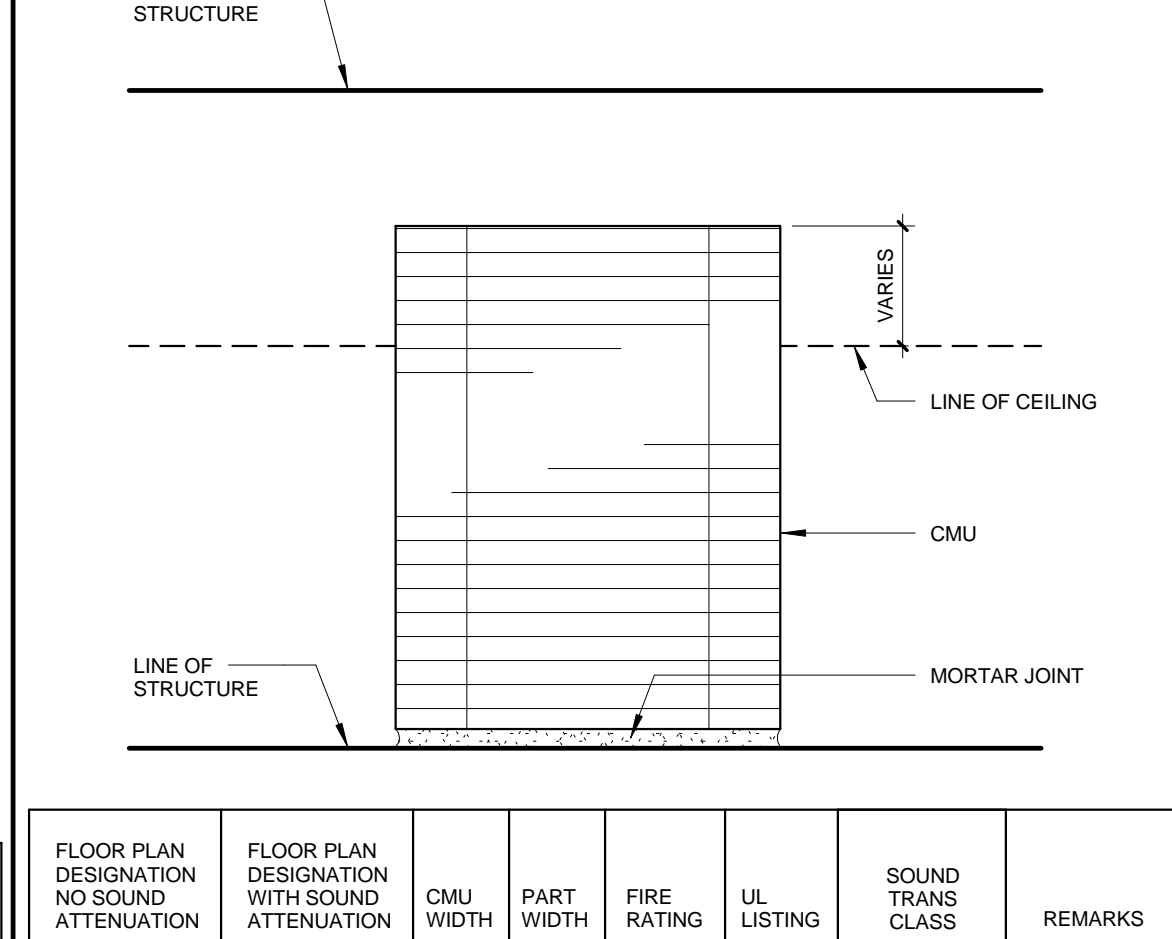
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[D1]	[D2]	3.58"	5.78"	NON-RATED	N/A	40 WITH 3\"/>							
[D3]	[D4]	6"	8.14"	NON-RATED	N/A	40 WITH 5\"/> <tr> <td>[D5]</td> <td>[D6]</td> <td>8"</td> <td>10.14"</td> <td>NON-RATED</td> <td>N/A</td> <td>40 WITH 5\"/> </td></tr>	[D5]	[D6]	8"	10.14"	NON-RATED	N/A	40 WITH 5\"/>
[D5]	[D6]	8"	10.14"	NON-RATED	N/A	40 WITH 5\"/>							



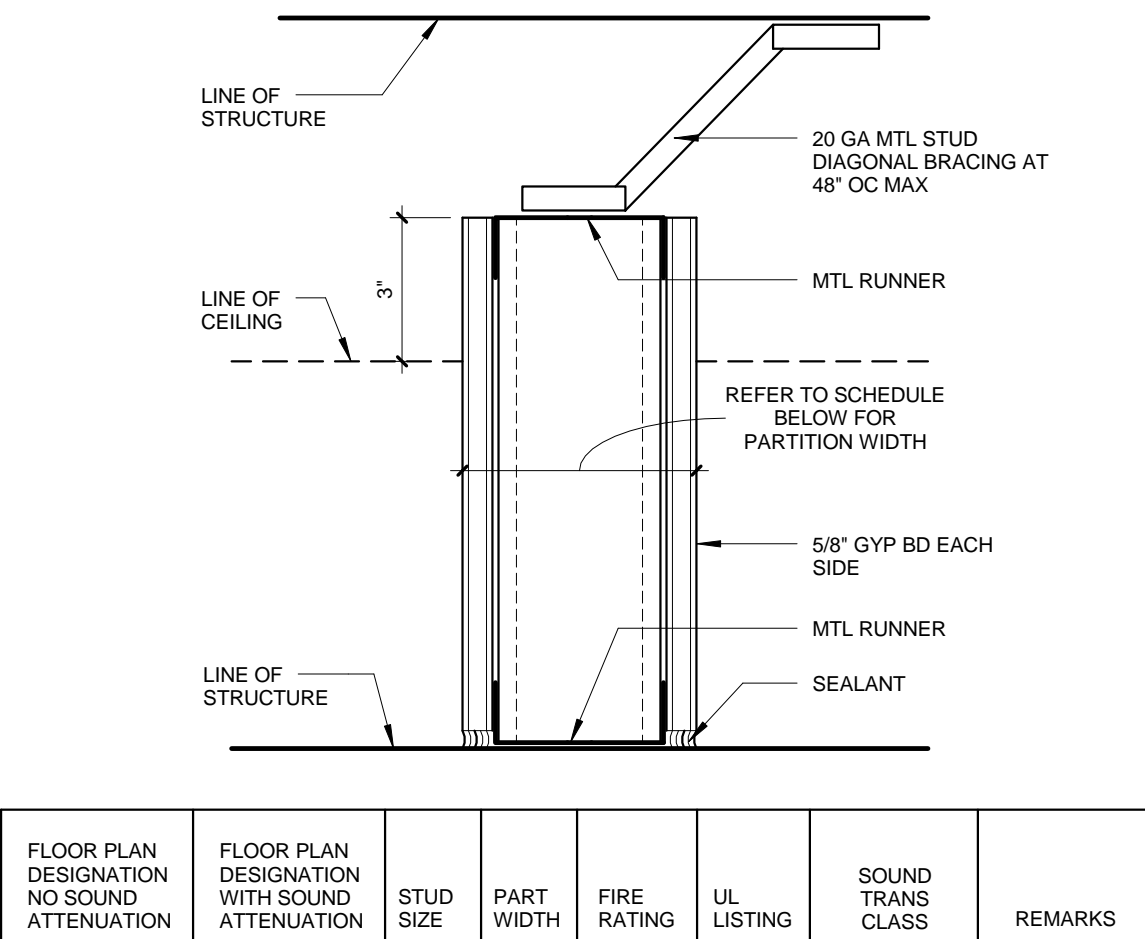
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS													
[A1]	[A2]	3.58"	4.78"	NON-RATED	N/A	40 WITH 3\"/>														
[A3]	[A4]	6"	7.14"	NON-RATED	N/A	40 WITH 5\"/> <tr> <td>[A5]</td> <td>[A6]</td> <td>6"</td> <td>9.14"</td> <td>NON-RATED</td> <td>N/A</td> <td>40 WITH 5\"/> <tr> <td>[A7]</td> <td>[A8]</td> <td>6"</td> <td>7.14"</td> <td>ONE HOUR</td> <td>U419</td> <td>40 WITH 5\"/> </td></tr></td></tr>	[A5]	[A6]	6"	9.14"	NON-RATED	N/A	40 WITH 5\"/> <tr> <td>[A7]</td> <td>[A8]</td> <td>6"</td> <td>7.14"</td> <td>ONE HOUR</td> <td>U419</td> <td>40 WITH 5\"/> </td></tr>	[A7]	[A8]	6"	7.14"	ONE HOUR	U419	40 WITH 5\"/>
[A5]	[A6]	6"	9.14"	NON-RATED	N/A	40 WITH 5\"/> <tr> <td>[A7]</td> <td>[A8]</td> <td>6"</td> <td>7.14"</td> <td>ONE HOUR</td> <td>U419</td> <td>40 WITH 5\"/> </td></tr>	[A7]	[A8]	6"	7.14"	ONE HOUR	U419	40 WITH 5\"/>							
[A7]	[A8]	6"	7.14"	ONE HOUR	U419	40 WITH 5\"/>														



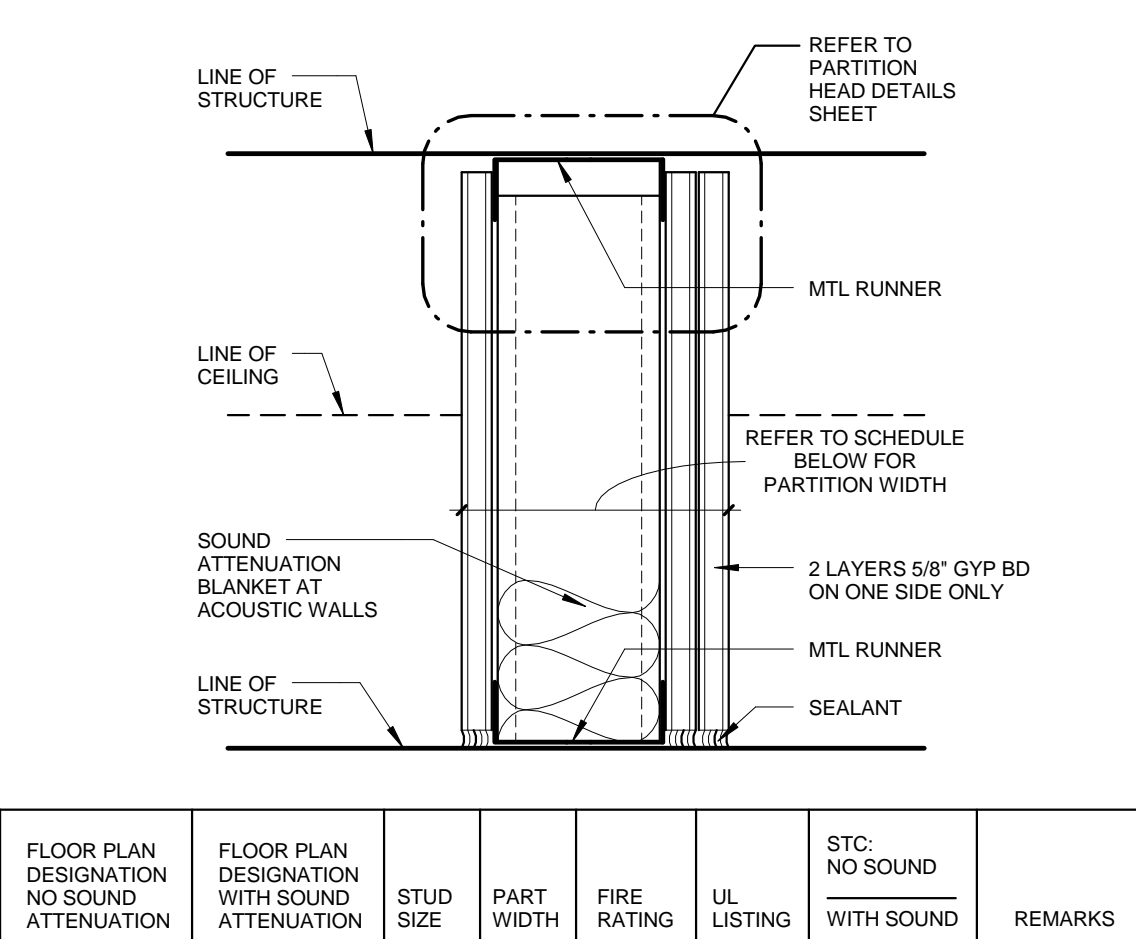
FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[V1]	[V2]	8"	9.34"	NON-RATED	N/A	40 WITH 5\"/>	



FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	CMU WIDTH	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[Q1]	[Q2]	N/A	7.58"	7.58"	NON-RATED	N/A	SEE INTERIOR ELEVATION FOR BLOCK FINISH
[Q3]	[Q4]	N/A	9.58"	9.58"	NON-RATED	N/A	SEE INTERIOR ELEVATION FOR BLOCK FINISH

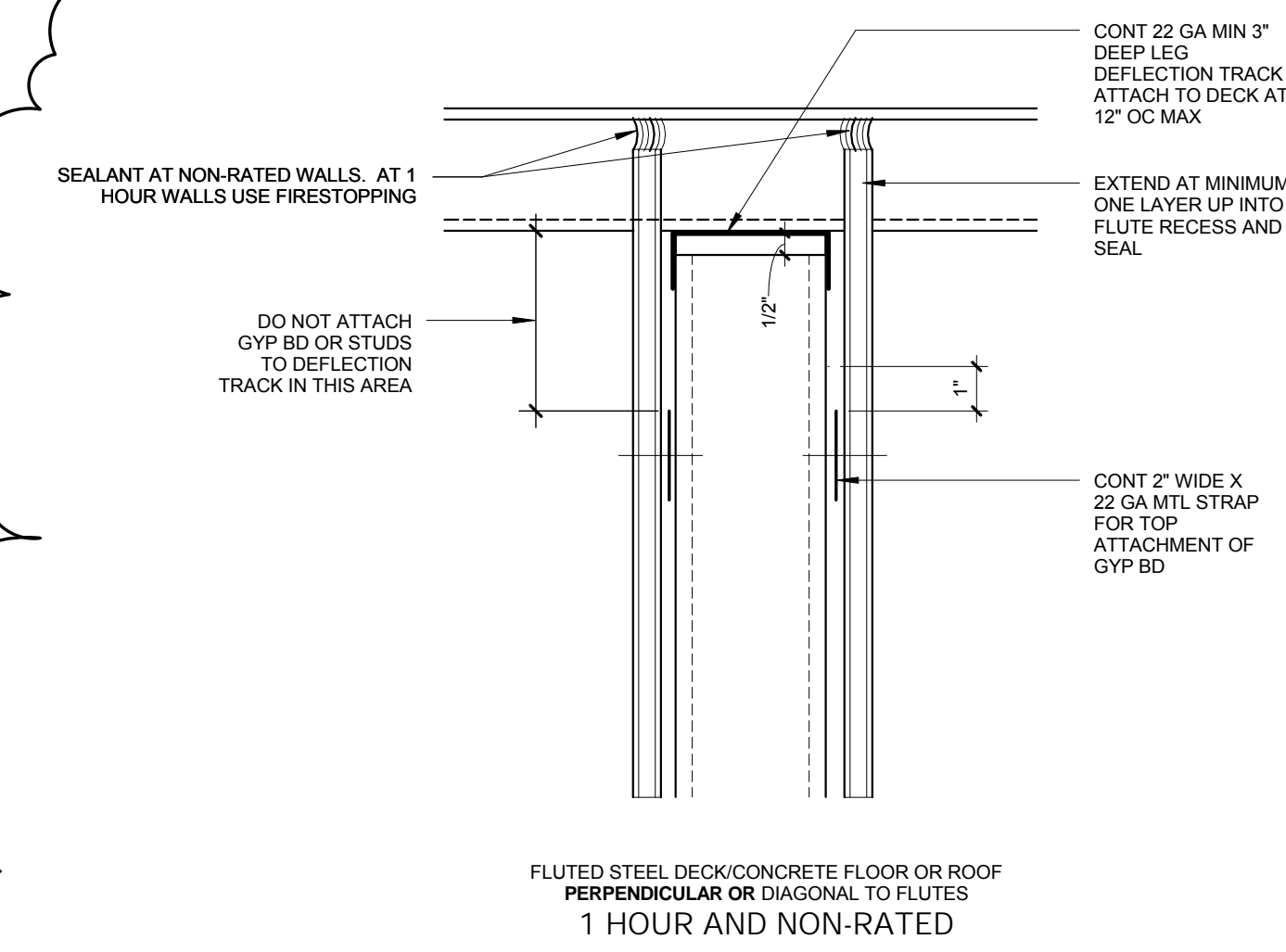


FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	SOUND TRANS CLASS	REMARKS
[L1]	[L2]	N/A	6"	7.14"	NON-RATED	N/A	N/A

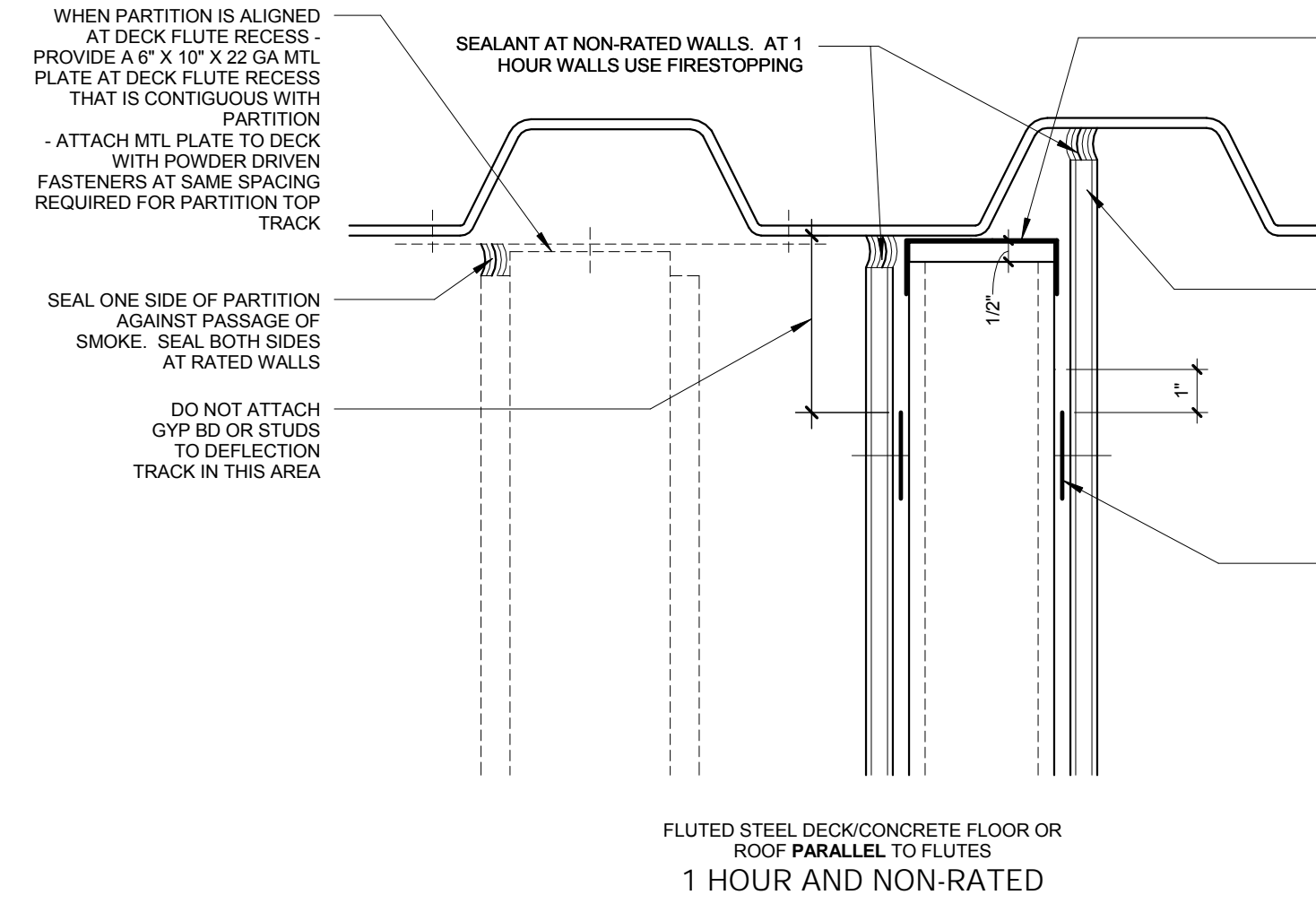


FLOOR PLAN DESIGNATION NO SOUND ATTENUATION	FLOOR PLAN DESIGNATION WITH SOUND ATTENUATION	STUD SIZE	PART WIDTH	FIRE RATING	UL LISTING	STC: NO SOUND WITH SOUND	REMARKS
[G1]	[G2]	6"	7.78"	NON-RATED	N/A	44 WITH 5\"/>	

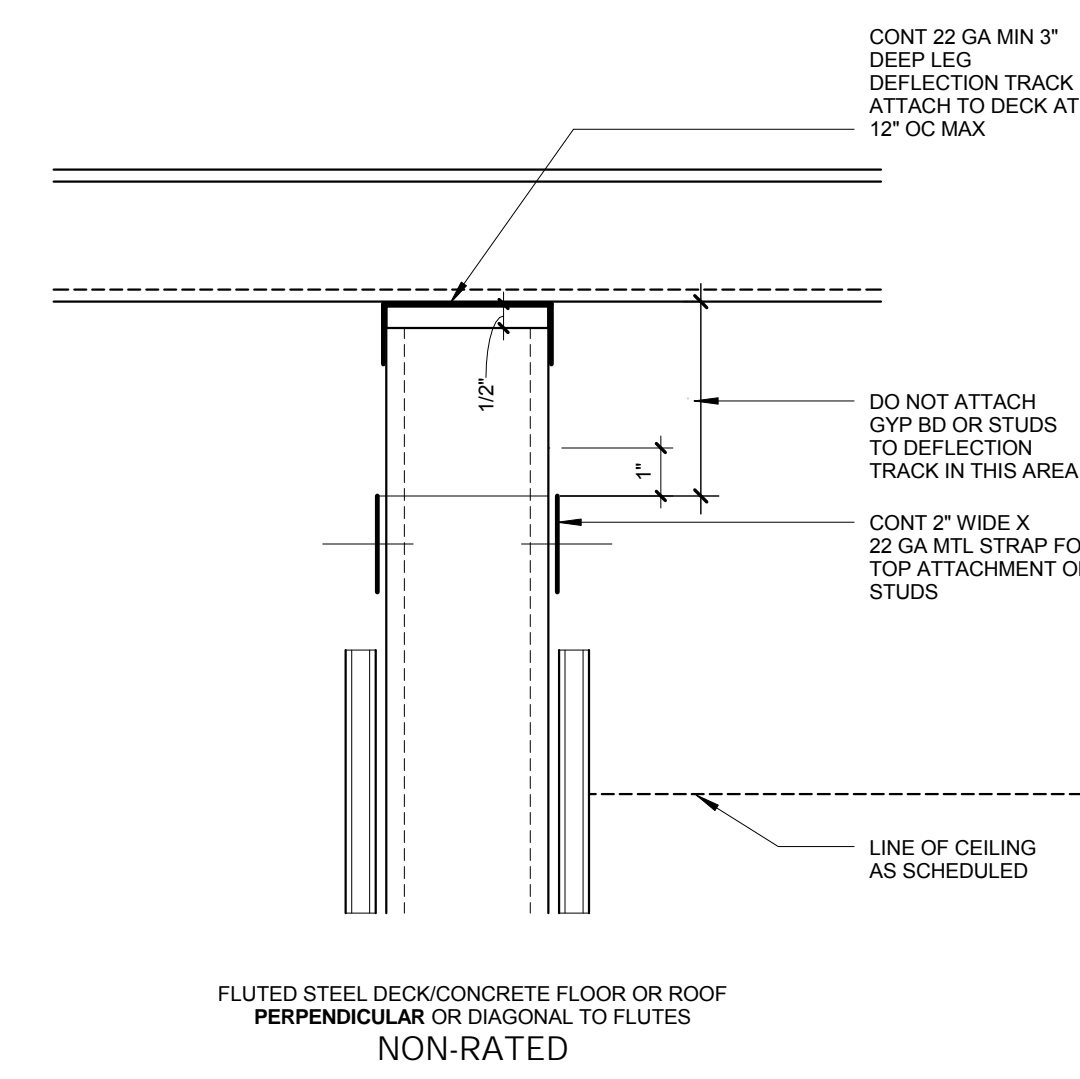
- NOTES**
- PARTITIONS ARE DISTINGUISHED ON FLOOR PLANS BY SYMBOL DESIGNATION, GRAPHIC DESIGNATION OR A COMBINATION OF BOTH DESIGNATIONS.
 - THERE ARE TWO TYPES OF SYMBOL DESIGNATIONS. ONE FOR PARTITIONS NOT REQUIRING SOUND ATTENUATION AND ANOTHER FOR PARTITIONS WHICH REQUIRE SOUND ATTENUATION. REFER TO PARTITION MATRICES FOR SOUND ATTENUATION BLANKET (SAB) MINIMUM THICKNESS FOR STC INDICATED.
 - THERE ARE TWO SYMBOL DESIGNATION SYSTEMS USED. THE FIRST SYSTEM CONSISTS OF TWO AND THREE CHARACTERS. THE FIRST CHARACTER IS A LETTER INDICATING THE PARTITION TYPE. THE SECOND CHARACTER IS NUMERIC INDICATING THE STUD OR CMU WIDTH. REFER TO LEGEND BELOW. THIS SYSTEM IS USED TO DEFINE WALL TYPES: A, B, C, D, E, F, H, K, M, N, P.
 - IF NO SYMBOL DESIGNATION IS PROVIDED, THE STUD SIZE WILL BE 3.58\".
 - 'LINE OF STRUCTURE' INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
 - ALL DIMENSIONS ON THIS SHEET ARE FROM FACE OF GYPSUM BOARD TO FACE OF GYPSUM BOARD. REFER TO PARTITION MATRICES FOR PARTITION WIDTH DIMENSIONS UNLESS INDICATED TO BE SHOWN ON PLAN.
 - SEALANT:
 - FIRE RESISTANCE RATED PARTITIONS SHALL USE RATED FIRE/SMOKE FIRE RESISTANT FILL MATERIAL IN CONJUNCTION WITH AN APPROPRIATE RATED FIRE/SMOKE FIRE STOPPING SYSTEM.
 - NON-RATED PARTITIONS AND NON-RATED SMOKE RESISTANT PARTITIONS SHALL USE ACCUSTICAL SEALANT.
 - INSULATION - HEAD CONDITIONS AT FLOOR OR DECK.
 - FIRE RESISTANCE RATED PARTITIONS SHALL USE MINIMUM 1\"/>
 - REFER TO SPECIFICATIONS FOR MINIMUM STUD THICKNESS, MAXIMUM SPACING AND ALLOWABLE LIMITING HEIGHTS DEFLECTION CRITERIA FOR GYPSUM BOARD ASSEMBLIES.
 - FOR PARTITIONS INDICATED TO RECEIVE SOUND ATTENUATION BLANKETS (SAB), EXTEND SAB TO FULL HEIGHT OF PARTITION UNLESS OTHERWISE INDICATED. FLOOR TRACK TO BE SET IN A CONTIG. RIDG. OF SEALANT.
- GRAPHIC DESIGNATION**
- [Symbol] 2 HR FIRE BARRIER/SHAFT WALL
 - [Symbol] 1 HR FIRE BARRIER
 - [Symbol] NON-RATED
15. MASONRY REINFORCEMENT. REFERENCE STRUCTURAL DRAWINGS.
16. REFER TO SHEET A138 TYPICAL PARTITION DETAILS.
17. REFER TO SHEET A321 - A325 FOR TYPICAL EXTERIOR WALL ASSEMBLY SYSTEM.



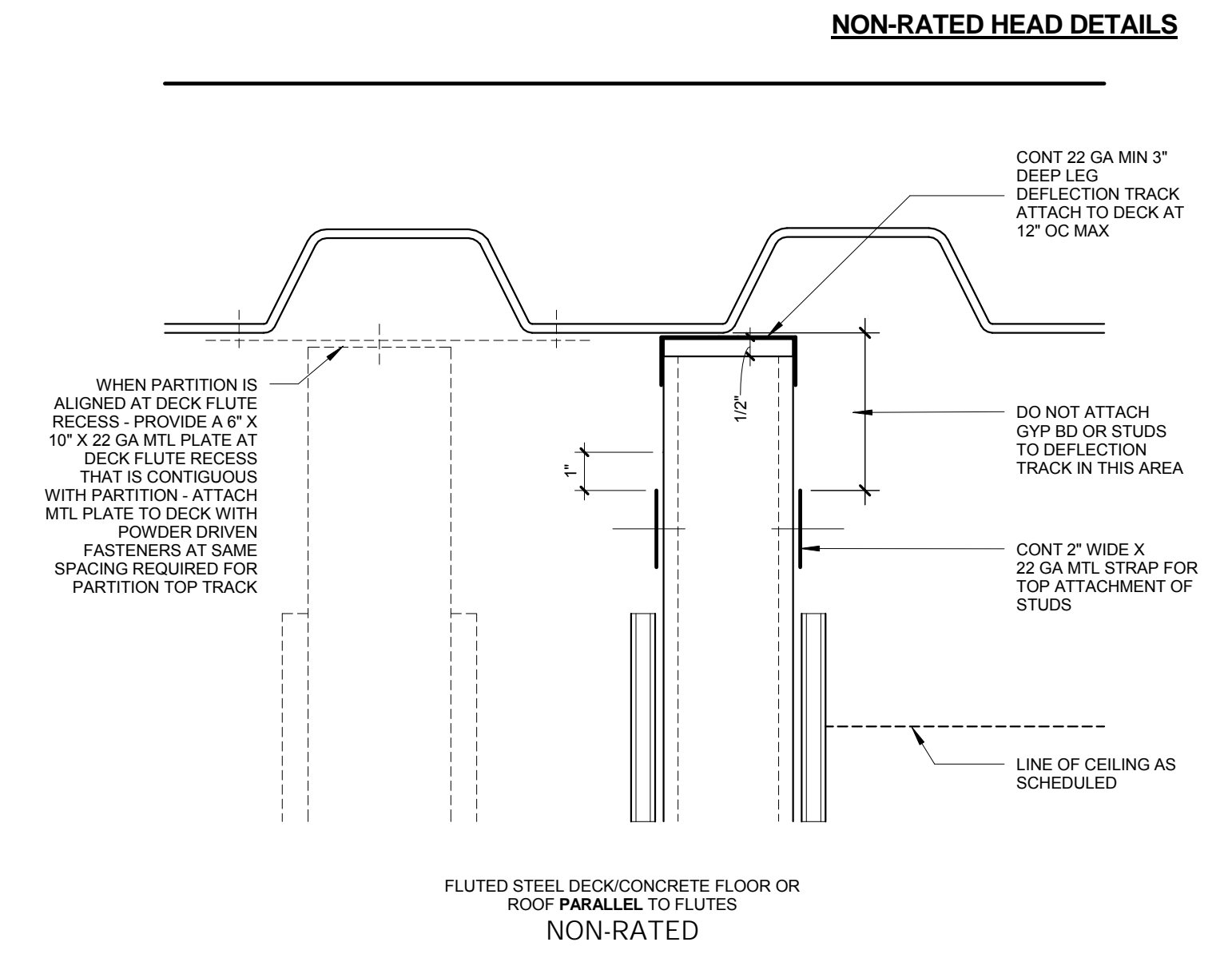
1 HOUR AND NON-RATED PARALLEL TO STRUCTURE FLUTES
3\"/>



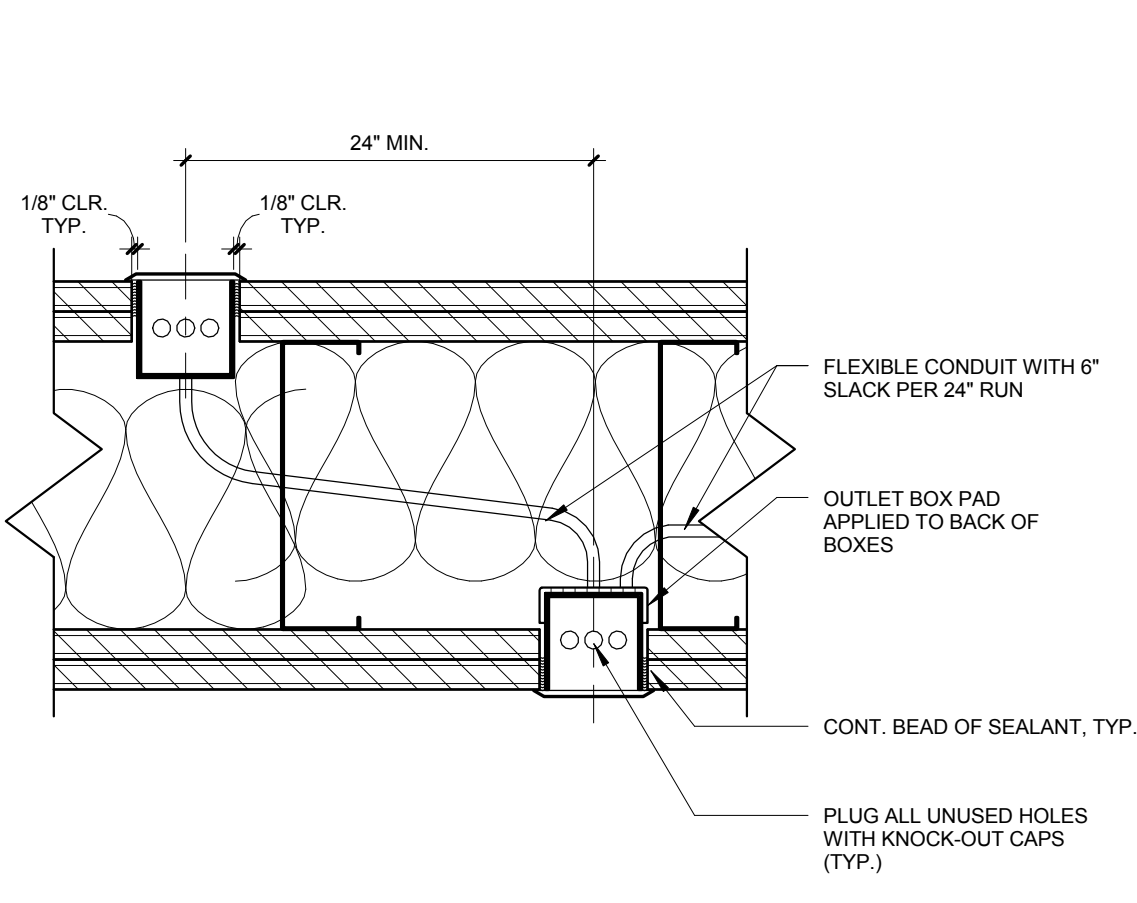
1 HOUR AND NON-RATED PERPENDICULAR TO STRUCTURE FLUTES
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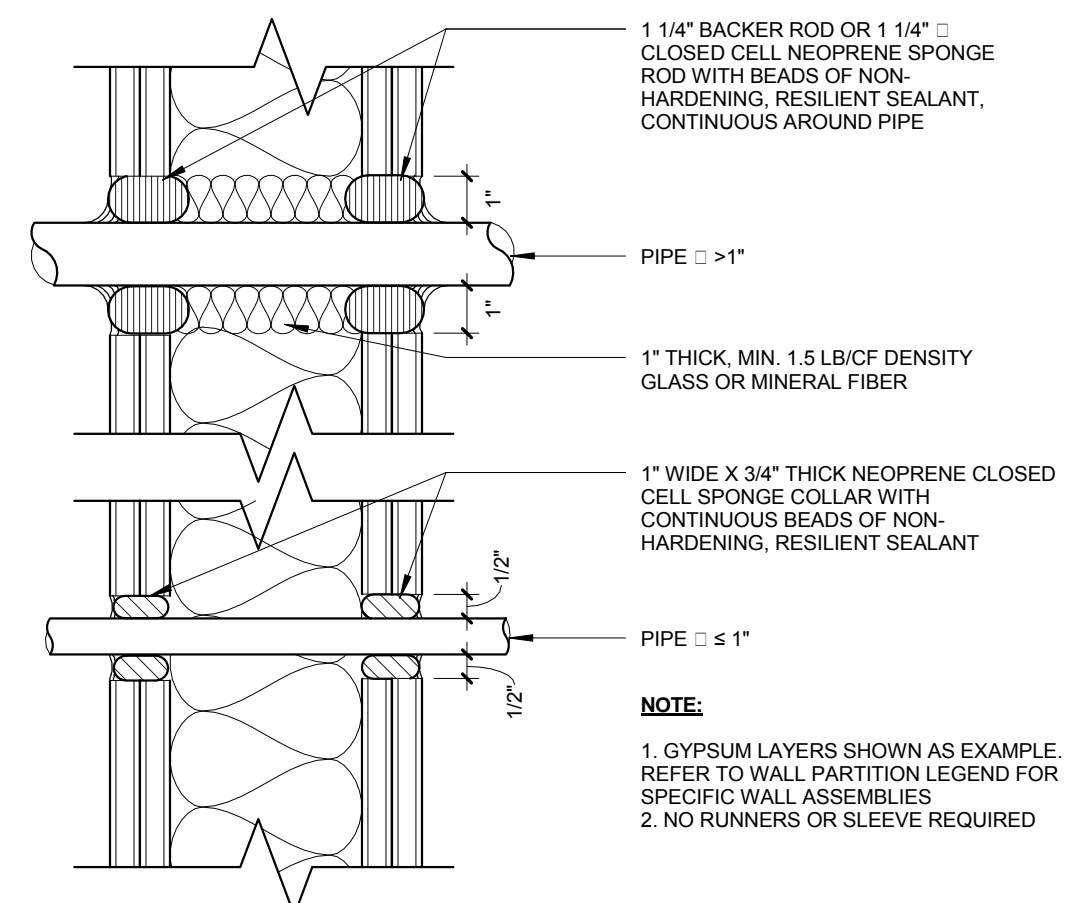
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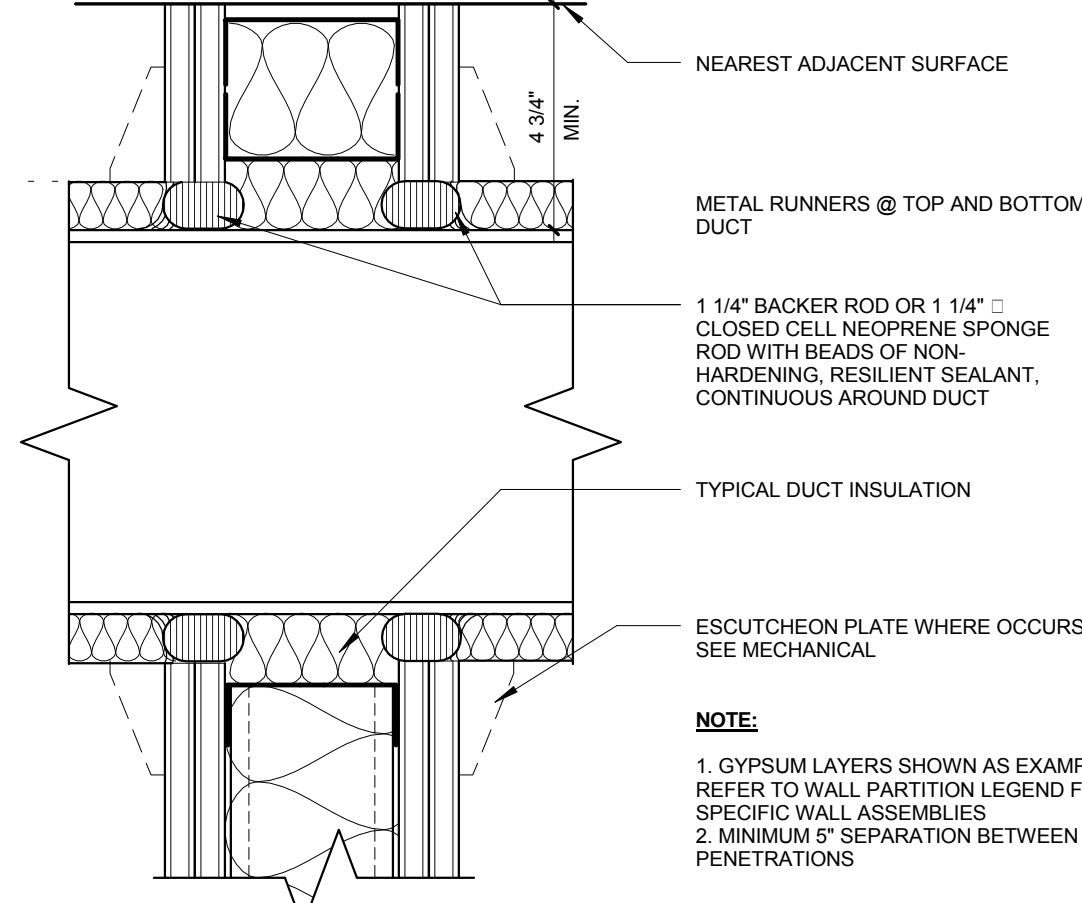
NON-RATED PARRALEL TO FLUTES
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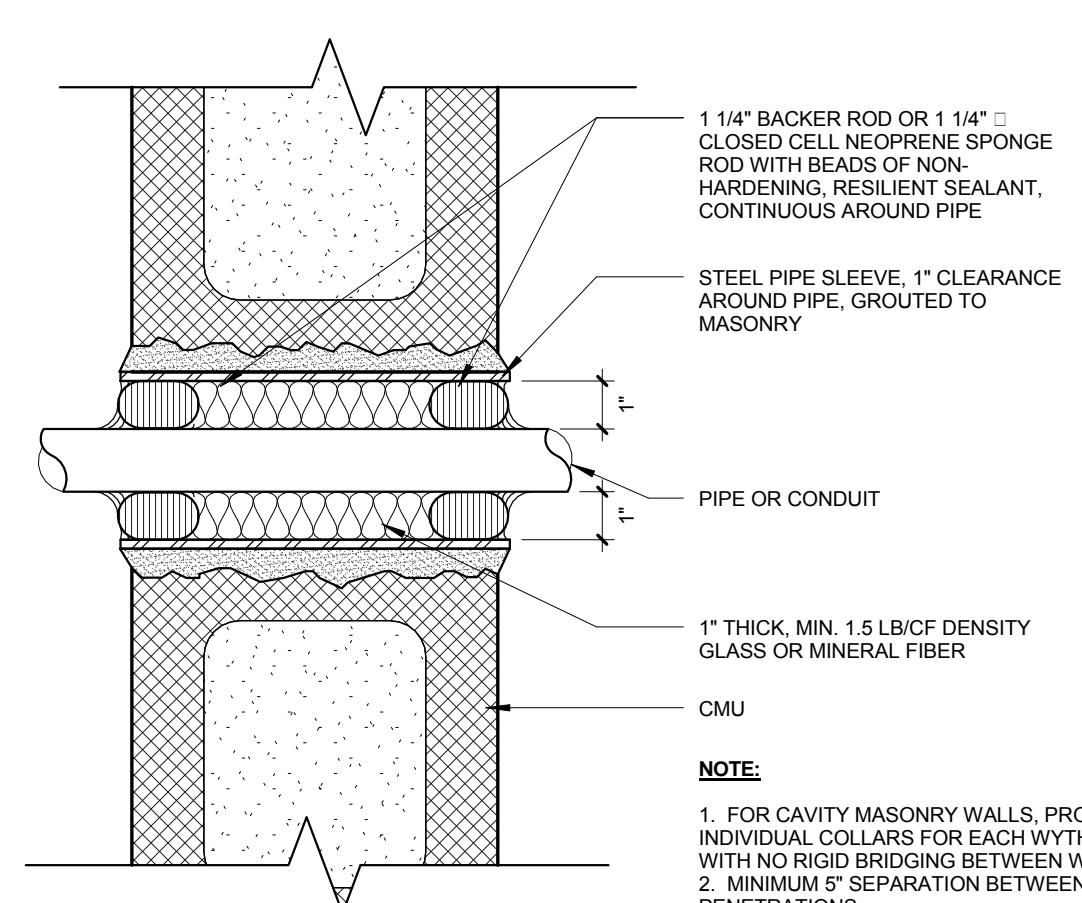
ELECTRICAL BOX PENETRATION PLAN
3\"/>



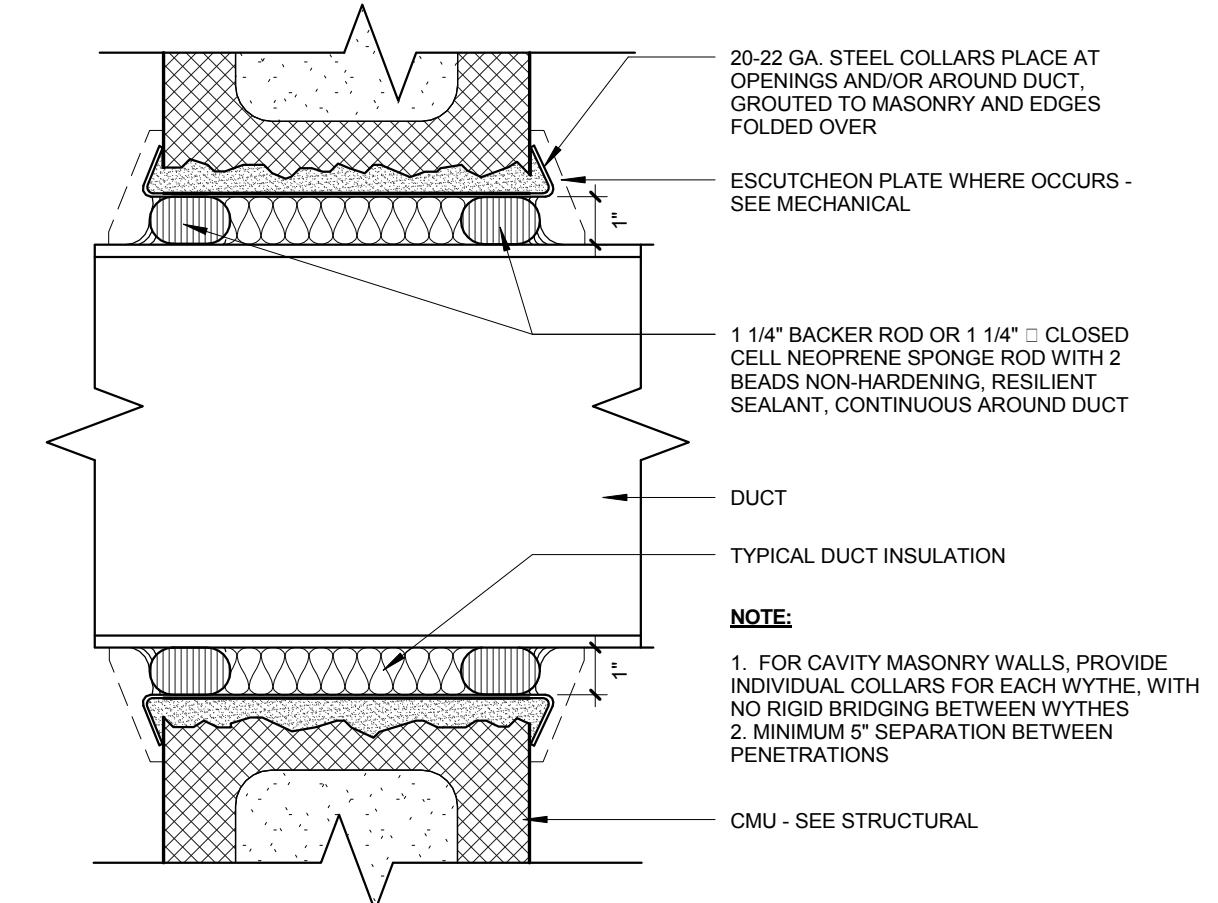
METAL STUD PIPE/ CONDUIT PENETRATION
3\"/>



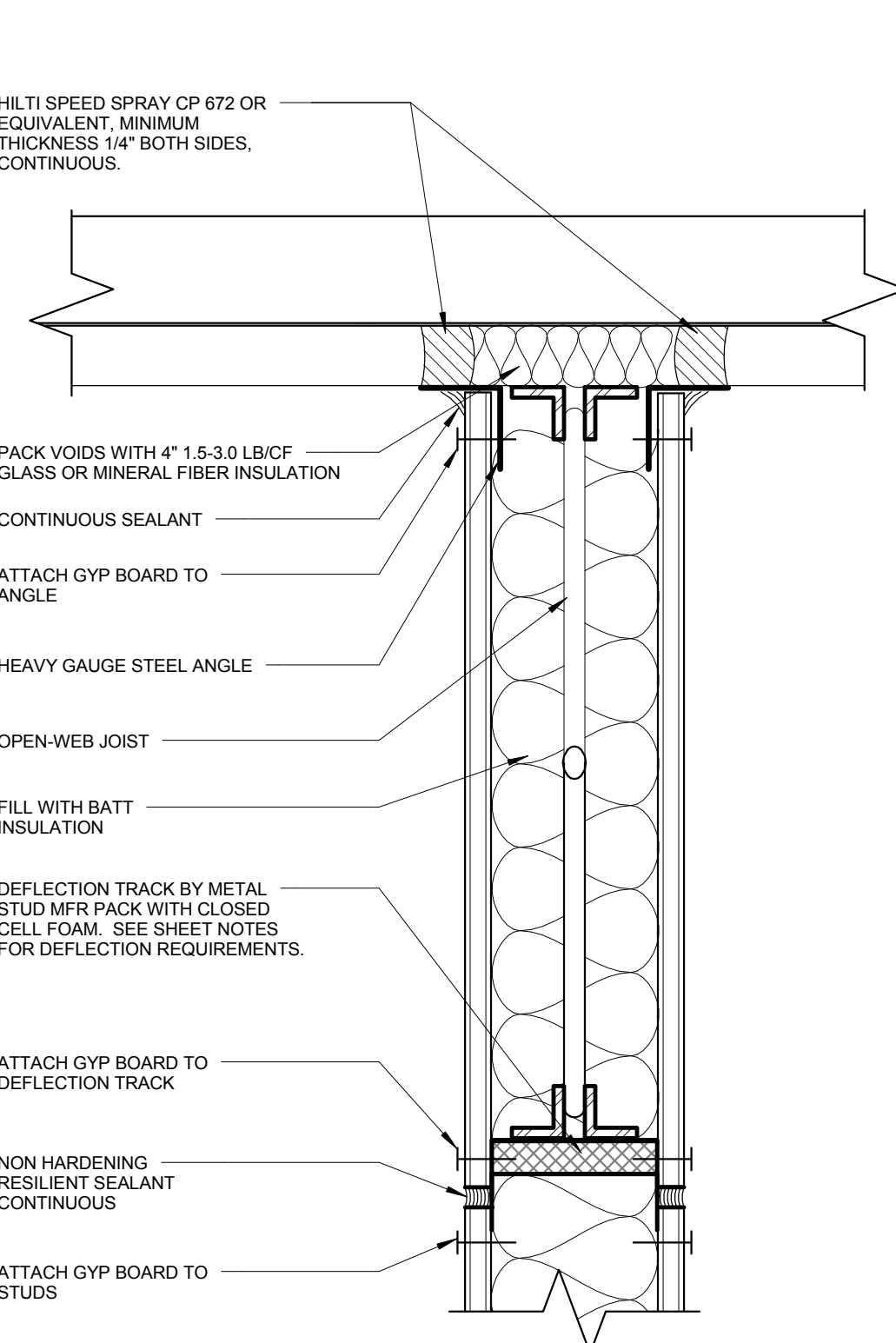
METAL STUD DUCT PENETRATION
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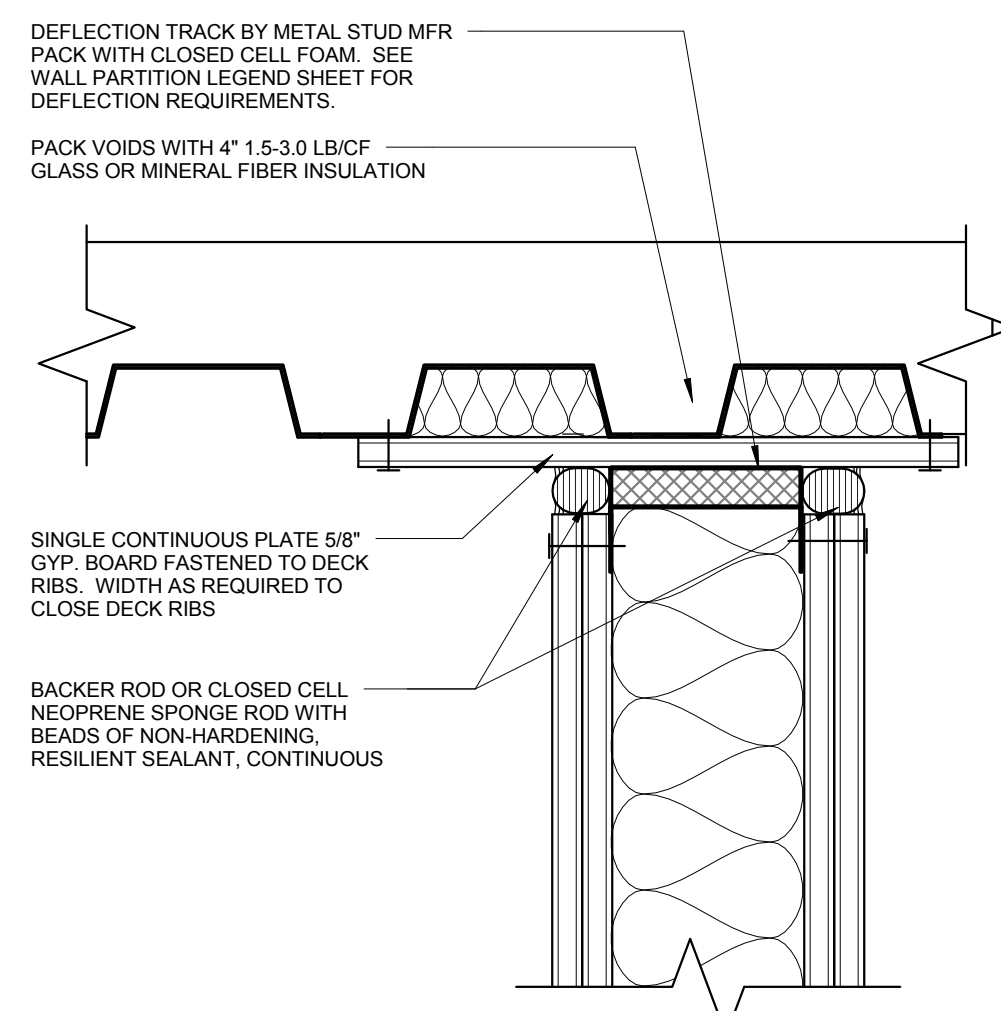
ACOUSTIC PIPE/ CONDUIT PENETRATION
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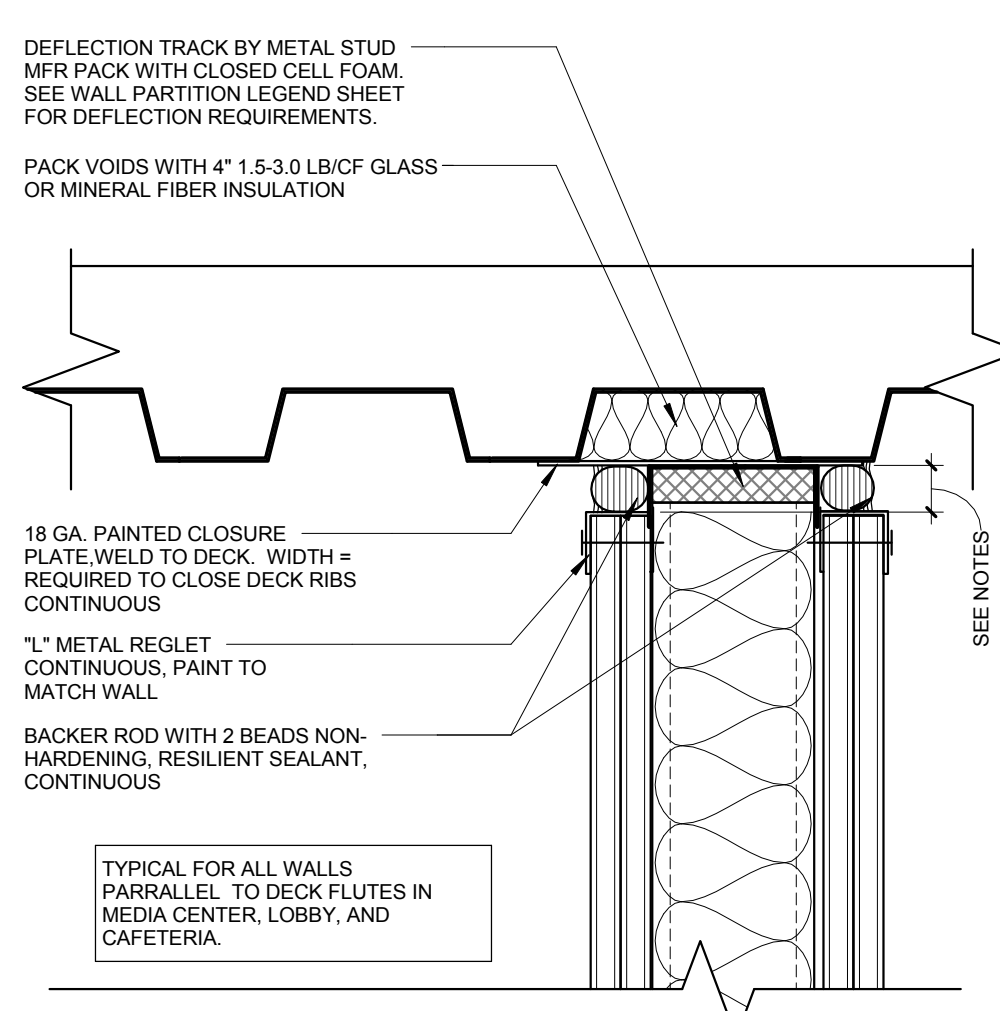
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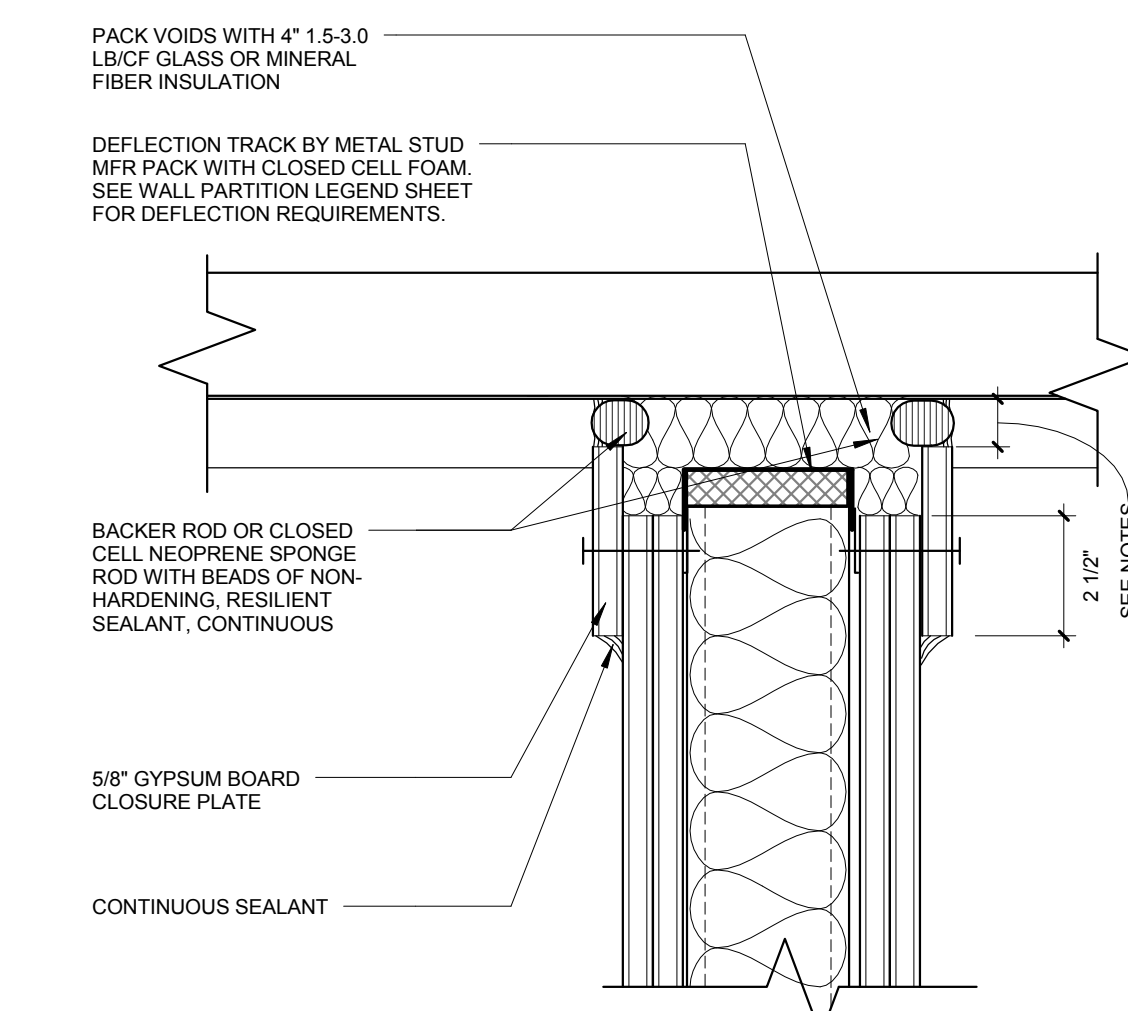
HIDDEN JOIST INTERSECTION
3\"/>



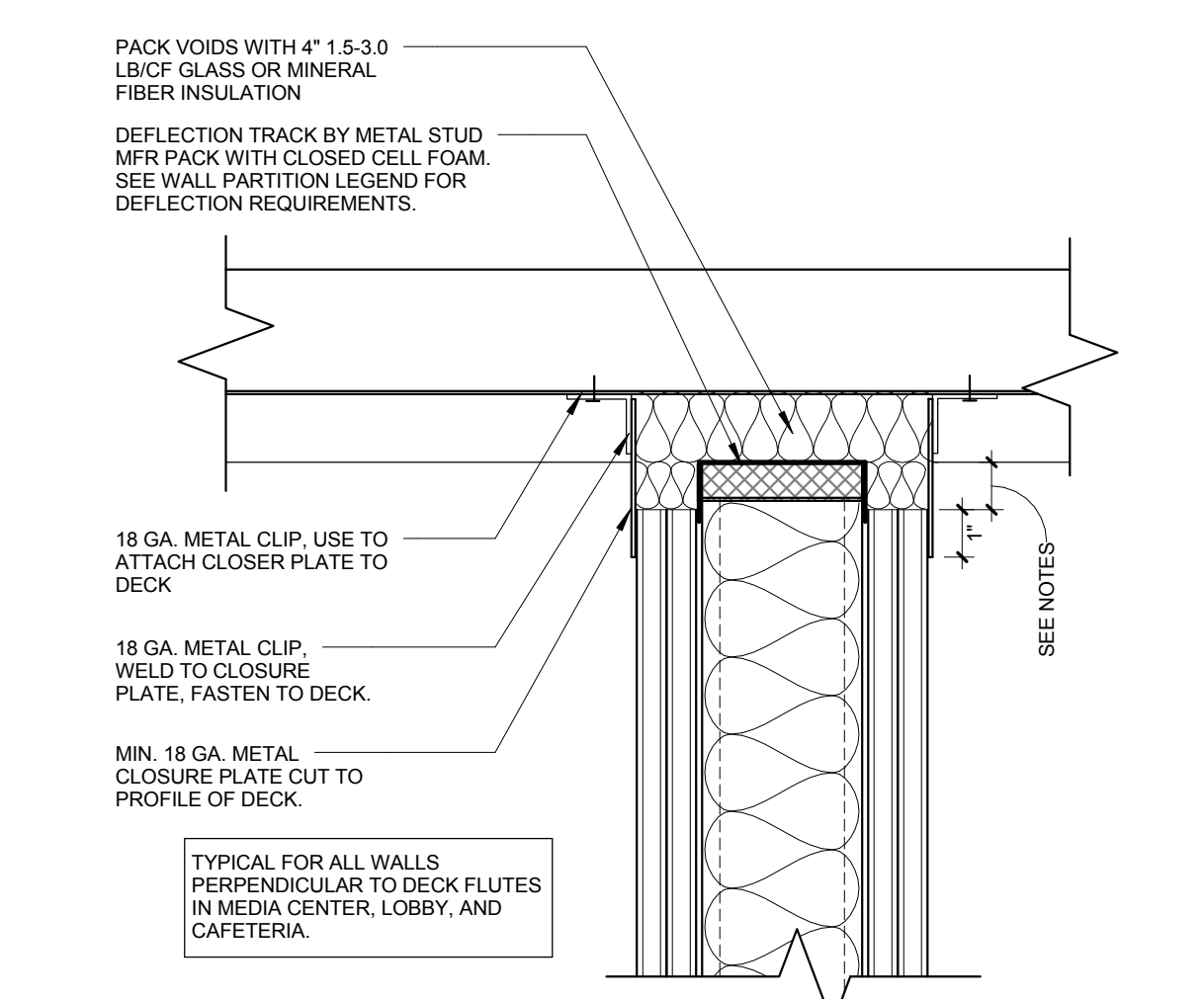
HIDDEN INTERSECTION PARALLEL
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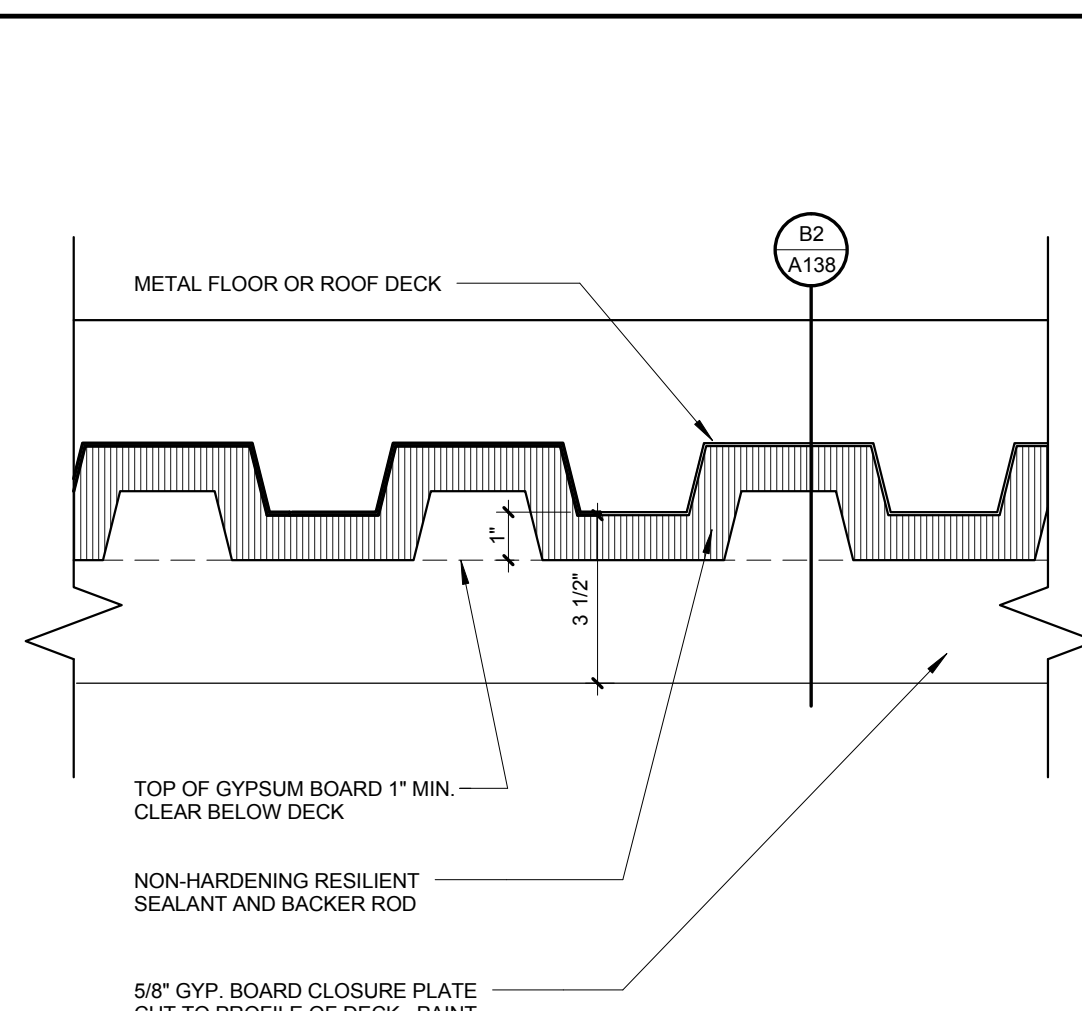
VISIBLE INTERSECTION PARALLEL
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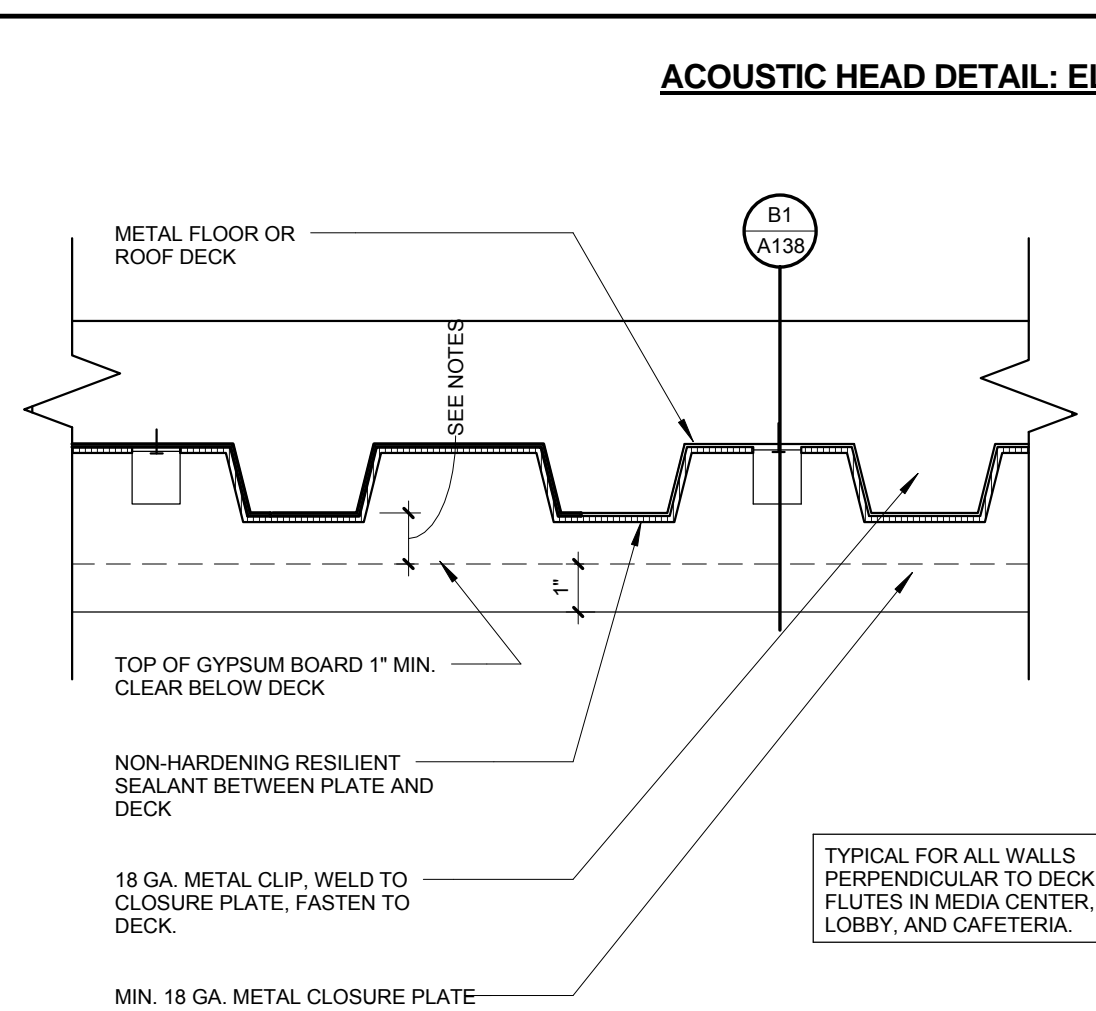
B2 HIDDEN INTERSECTION PERPENDICULAR
3\"/>



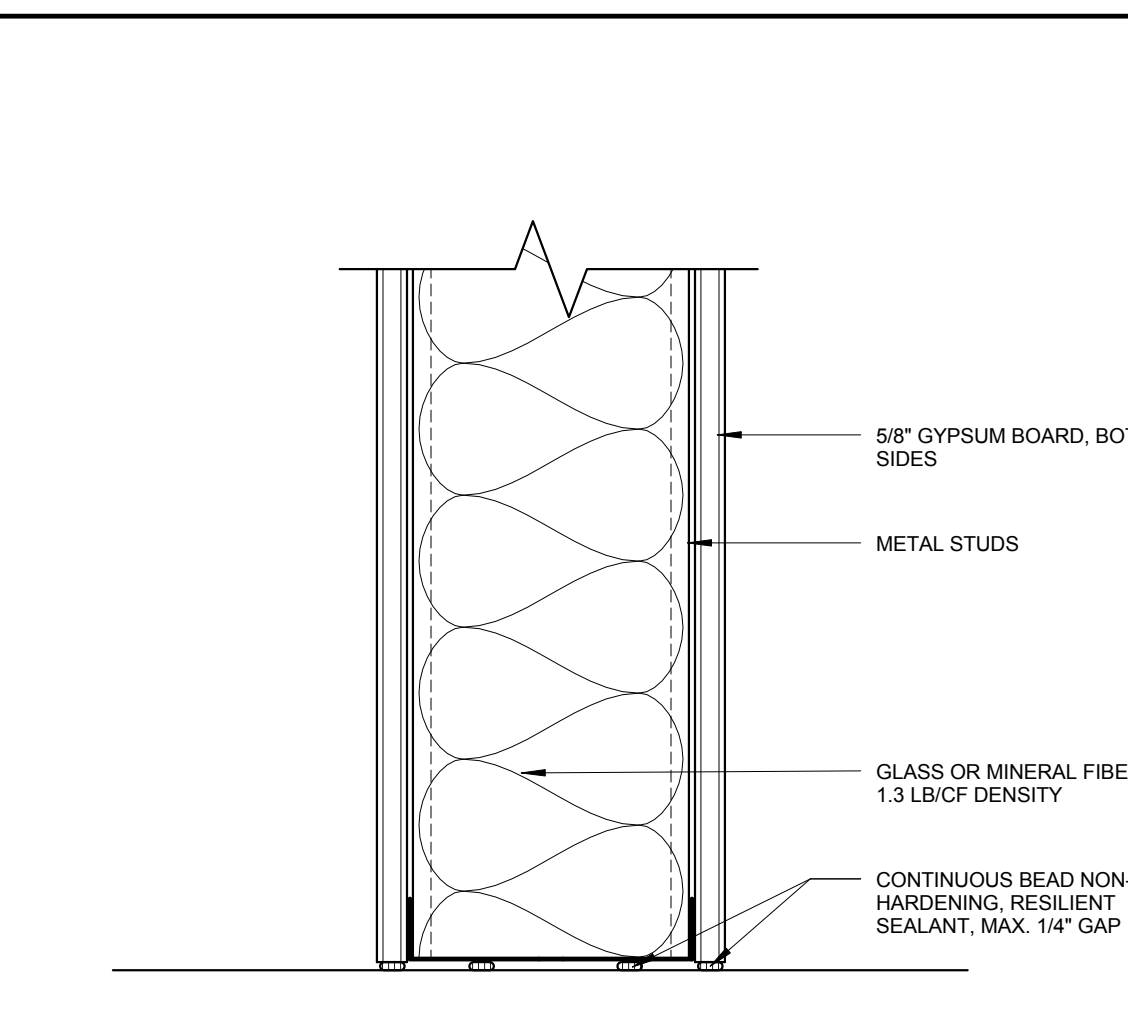
B1 VISIBLE INTERSECTION PERPENDICULAR
3\"/>



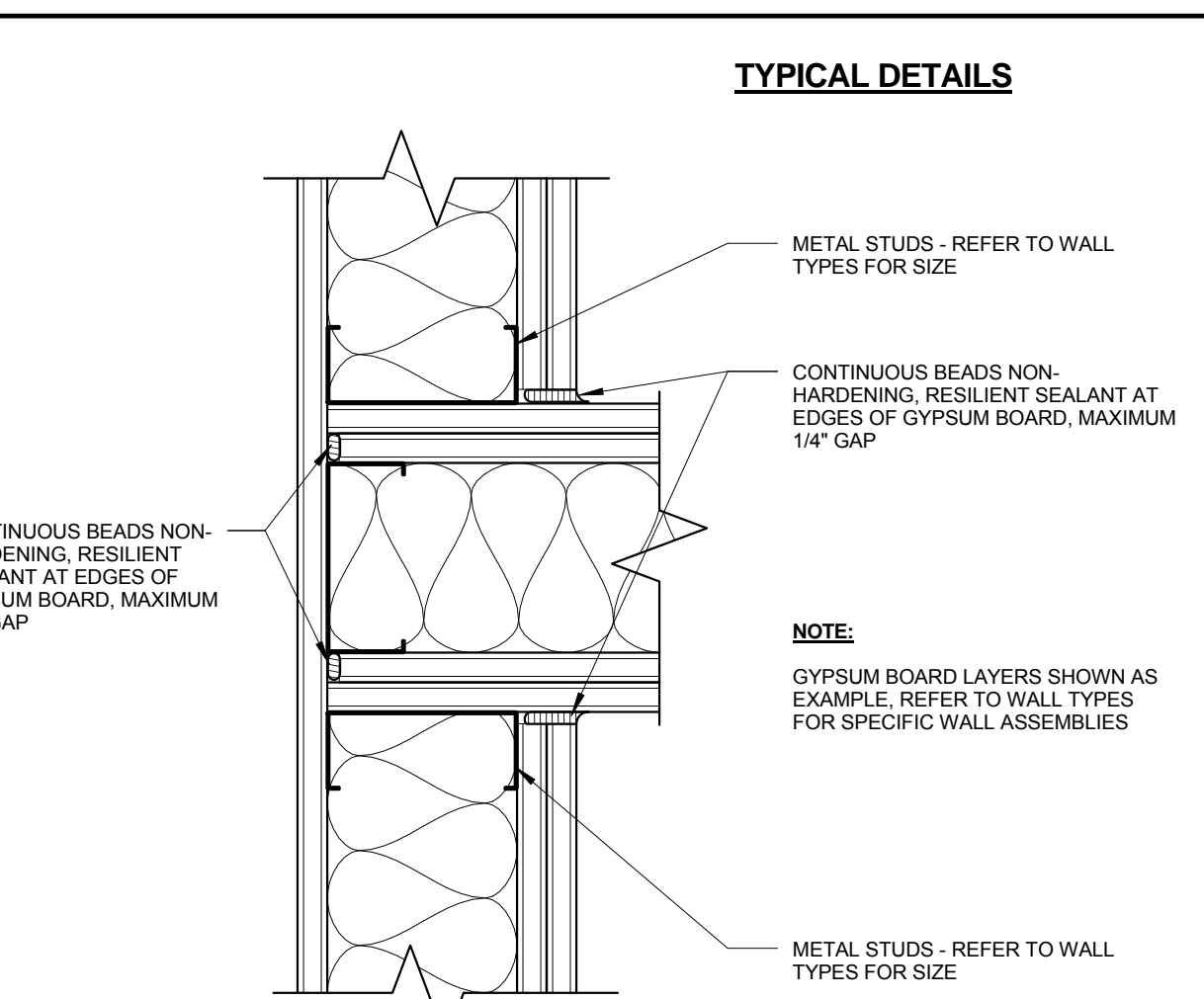
HIDDEN INTERSECTION
3\"/>



VISIBLE INTERSECTION
3\"/>



TYPICAL ACOUSTIC WALL SILL
3\"/>



ACOUSTIC WALL INTERSECTION
3\"/>

ACOUSTIC PENETRATION DETAILS

ACOUSTIC HEAD DETAILS

ACOUSTIC HEAD DETAIL: ELEVATION

TYPICAL DETAILS

GENERAL NOTES - RCP

- A. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- B. SLOPED SURFACES WILL APPEAR LESS THAN TRUE LENGTH. SEE SECTIONS AND DETAILS FOR ACTUAL DIMENSIONS
- C. ALL CEILING HEIGHTS ARE FORM FINISHED FLOOR UNLESS NOTED OTHERWISE
- D. ALL DIMENSIONS FROM FACE OF STUD OR MASONRY WALL UNLESS NOTED OTHERWISE
- E. ALL OPEN TO STRUCTURE CEILINGS TO BE PAINTED P-1, U.N.O.
- F. IN CASES OF OPEN TO STRUCTURE CEILINGS WITH SUSPENDED CEILING CLOUDS, PAINT TO EXTEND ABOVE ENTIRE AREAS OF CEILING CLOUDS.
- G. SOME ELEMENTS NOT SHOWN IN OVERALL PLANS. SEE ENLARGED PLANS FOR COORDINATION OF CEILING ELEMENTS.

KEYNOTE LEGEND - SPECIFICATIONS

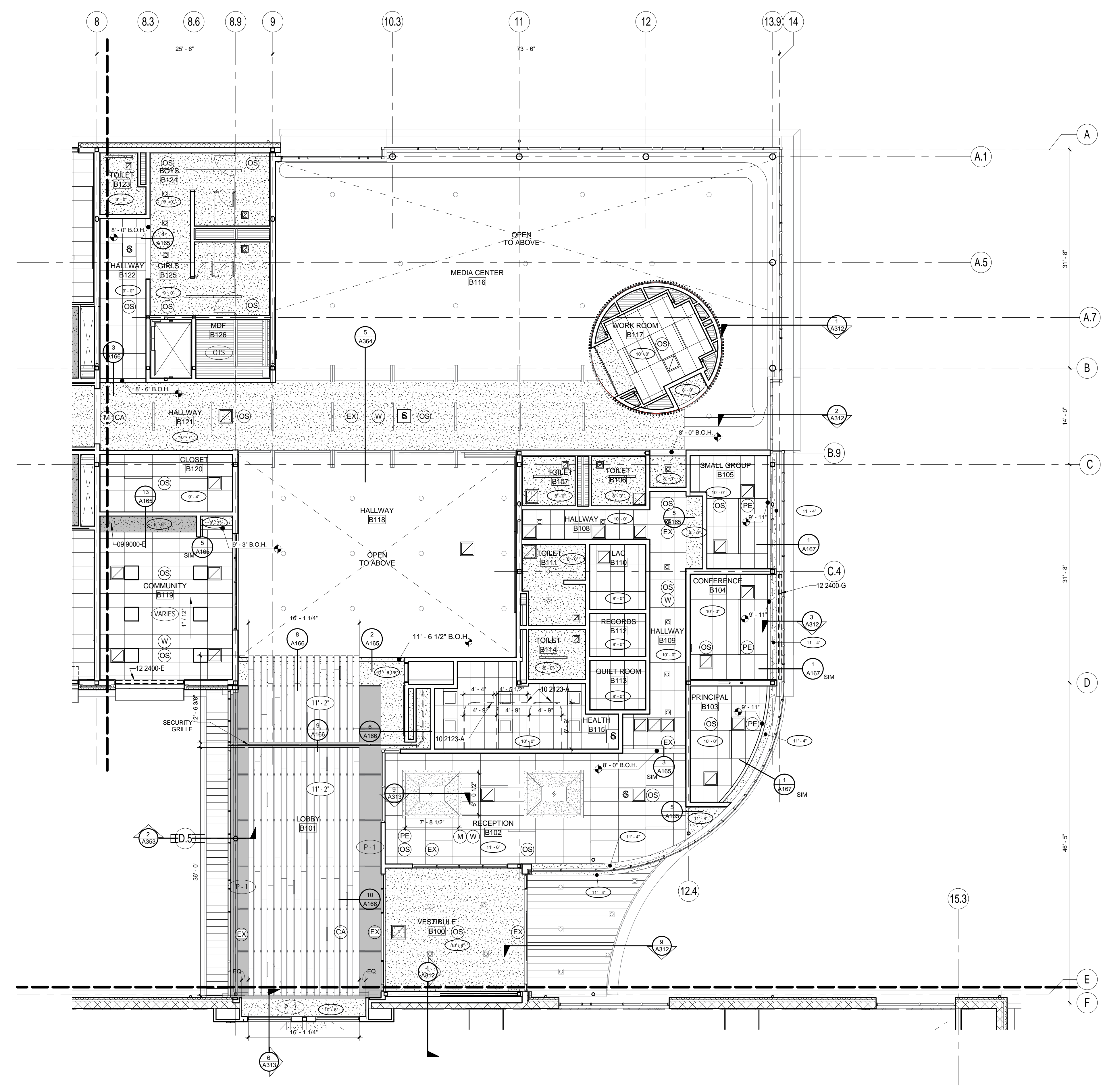
- 09 9000-E ACCENT PAINT COLOR, SEE FINISH PLANS FOR COLOR
- 10 2123-A CUBICLE TRACK
- 12 2400-E ROLLER SHADES TYPE E - LENGTH 10'-0"
- 12 2400-G ROLLER SHADES TYPE G - LENGTH 15'-4"

CEILING MATERIAL LEGEND

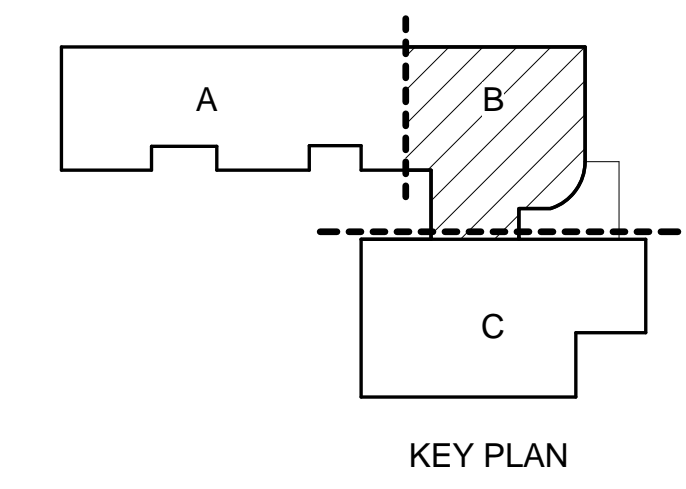
- ACT - 1: 2 x 4 LAY-IN ACOUSTIC TILE
- ACT - 2: 2 x 4 LAY-IN VINYL ACOUSTIC TILE
- GYPSUM BOARD CEILING, PAINT U.O.N.
- METAL SOFFIT PANELS (EXTERIOR)
- EXPOSED ACOUSTIC DECK WITH EXPOSED STEEL STRUCTURE PAINT, U.O.N.
- WOOD CEILING (LOBBY)
- ACOUSTIC CEILING PANEL
 A) 2' x 8' B) 4' x 8' C) 2' x 4' D) 4' x 4' E) 2' x 6'
- PAINT CEILING ACCENT COLOR
- WP-1, WOOD PANEL TYPE - 1

CEILING SYMBOLS

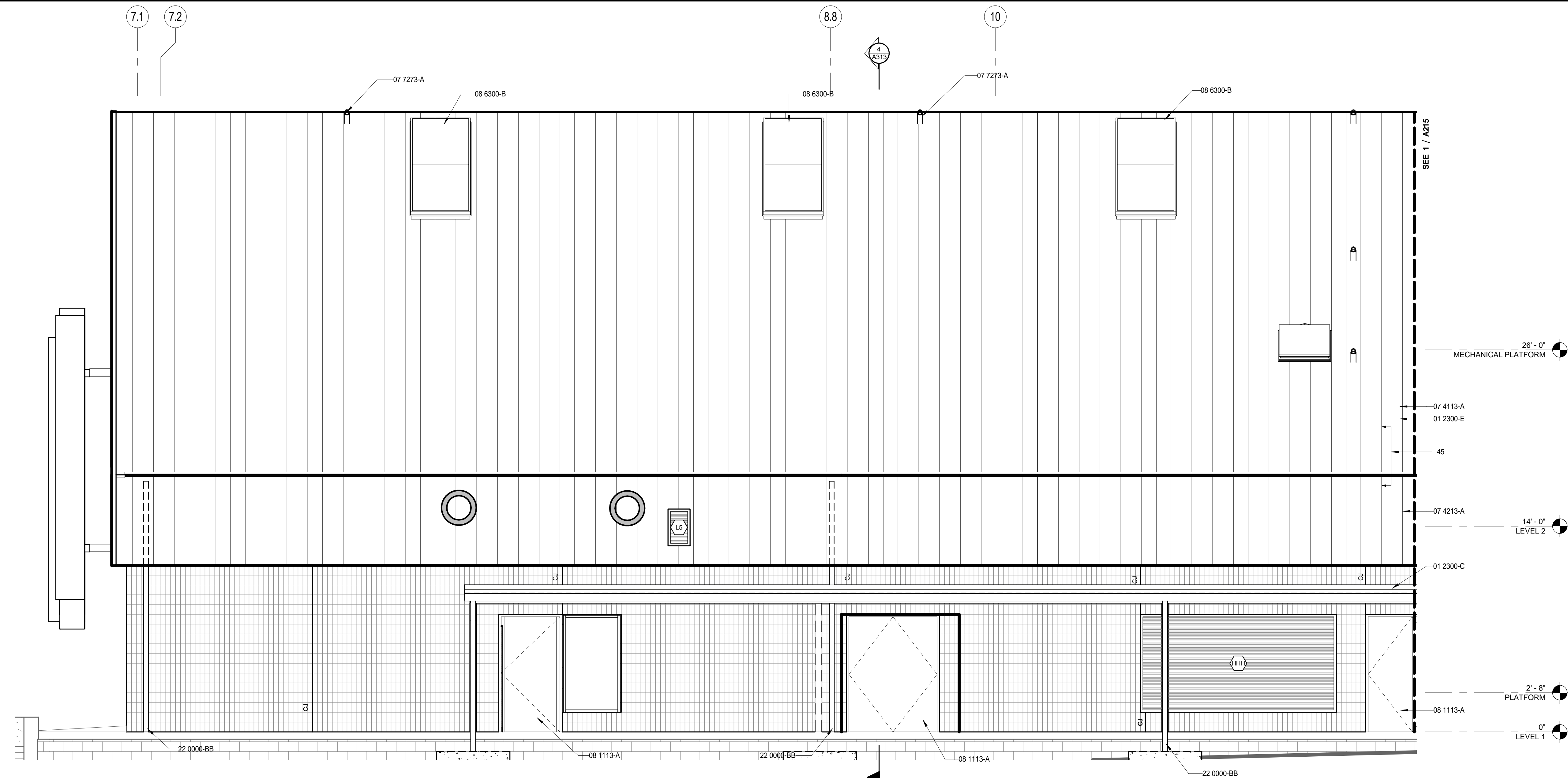
- SEE MECHANICAL
- CEILING ELEVATION
- OPEN TO STRUCTURE
- PAINT COLOR OF CEILING, SEE A401 ROOM FINISH LEGEND.
- WOOD PANELS TYPE - 1, SEE A401 ROOM FINISH LEGEND.
- SPEAKER, SEE LOW VOLTAGE AND AV DRAWINGS
- AV ENCLOSURE, SEE LOW VOLTAGE AND AV DRAWINGS
- WIRELESS POINT - SEE T DRAWINGS
- PHOTO CELL - SEE ELECTRICAL
- OCCUPANCY SENSOR - SEE ELECTRICAL
- CAMERA - SEE T DRAWINGS
- EXIT - SEE ELECTRICAL
- IR DOME - SEE T DRAWINGS
- MOTION DETECTOR - SEE T DRAWINGS
- LIGHT FIXTURES, SEE ELECTRICAL



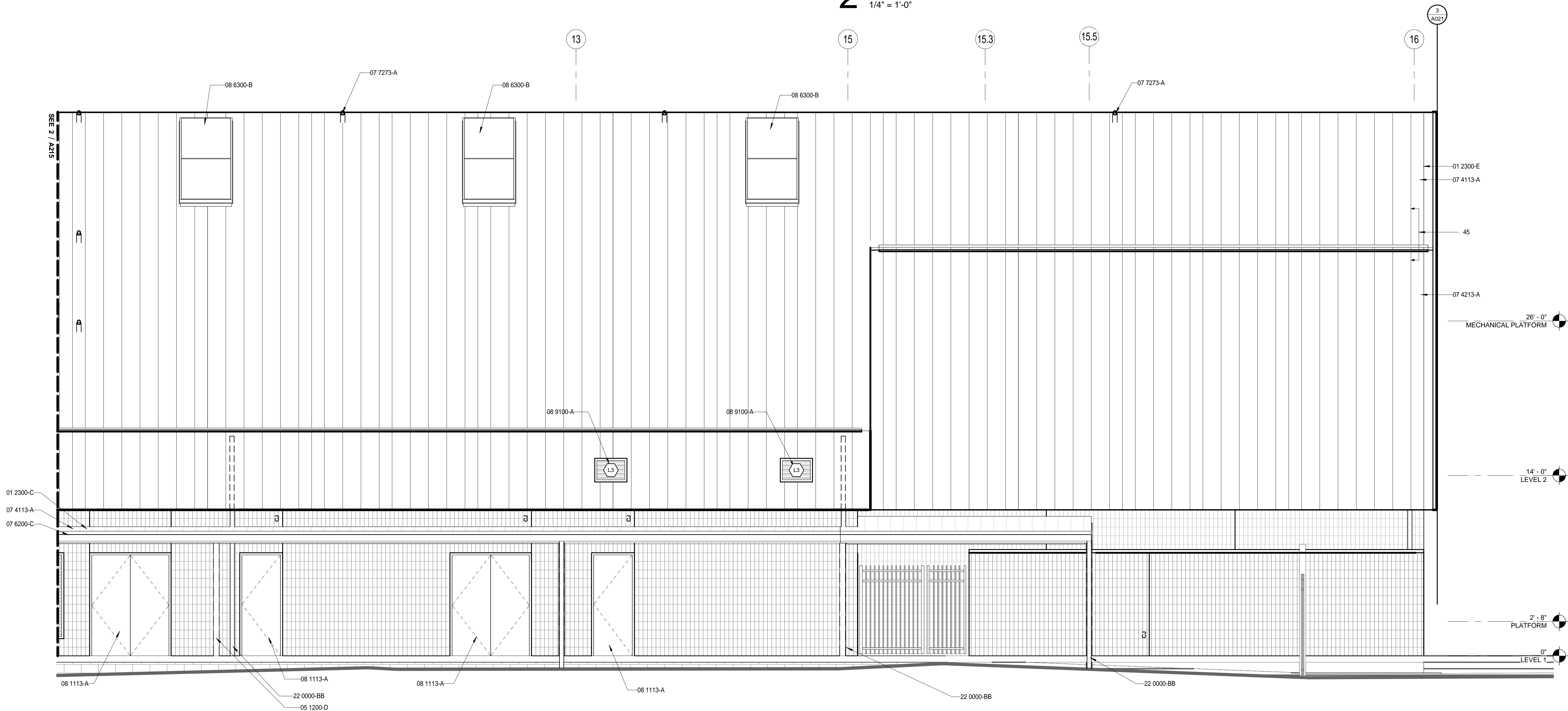
1 SECTOR B RCP - FIRST FLOOR
 1/8" = 1'-0"



KEY PLAN



2 SOUTH ELEVATION KITCHEN
 1/4" = 1'-0"



1 SOUTH ELEVATION GYMNASIUM
 1/4" = 1'-0"

GENERAL NOTES - EXTERIOR ELEV.

- A. REFER TO SHEET A200 FOR EXTERIOR FINISH LEGEND
- B. ALL EXTERIOR WINDOWS TO BE ALUMINUM UNLESS NOTED OTHERWISE.
- C. DASHED LINE AT WINDOWS DRAWN TO ILLUSTRATE X BRACINGS FOR COORDINATION
- D. REFER TO SHEET A550 FOR EXTERIOR LOUVER ELEVATIONS AND DETAILS.
- E. TYPICAL WALL SECTIONS AT THE CLASSROOM WINGS ARE INDICATED AT THE NORTH CLASSROOM WING OF SECTOR B. REFER TO EXTERIOR ELEVATION SHEETS A213 AND A214 REGARDING TYPICAL/SIMILAR DETAIL CONDITIONS LOCATED AT THE SOUTH CLASSROOM WING OF SECTOR B AND SECTOR C.
- F. SEE SPEC SECTION 08 FOR GLAZING TYPES

KEYNOTE LEGEND - SPECIFICATIONS

- 01 2300-C ALTERNATE 3: DELETE THE SOUTH ENTRY CANOPY. THIS WILL BE DOCUMENTED ON ARCHITECTURAL AND CIVIL. ALL ASSOCIATED WORK AS OUTLINED IN SECTION 01 2300
- 01 2300-E ALTERNATE 5: REPLACE METAL ROOF PANEL WITH TPO ROOF ENTIRE BUILDING. THIS WILL BE DOCUMENTED IN ARCHITECTURAL DRAWINGS. ALL ASSOCIATED WORK AS OUTLINED IN SECTION 01 2300
- 05 1200-D STEEL STRUCTURAL TUBING, SEE STRUCTURAL
- 07 4113-A METAL ROOF PANELS
- 07 4213-A METAL WALL PANELS
- 07 6200-C PRE-FINISHED GALVANIZED STEEL GUTTER, EXPOSED
- 07 7273-A FALL ARREST ANCHOR POST, TYP.
- 08 1113-A HOLLOW METAL STEEL FRAME
- 08 6300-B METAL-FRAMED SKYLIGHTS 4'-X-2'
- 08 9100-A STATIONARY LOUVERS
- 22 0000-BB 4" STAINLESS STEEL PIPE DOWNSPOUT. SEE PLUMBING FOR CONNECTION. PAINT HPC-3 WHERE EXPOSED

KEYNOTE LEGEND

- 45 ALIGN PATTERN OF METAL PANEL WALL AND ROOF REFER TO 1/4175 TYPICAL

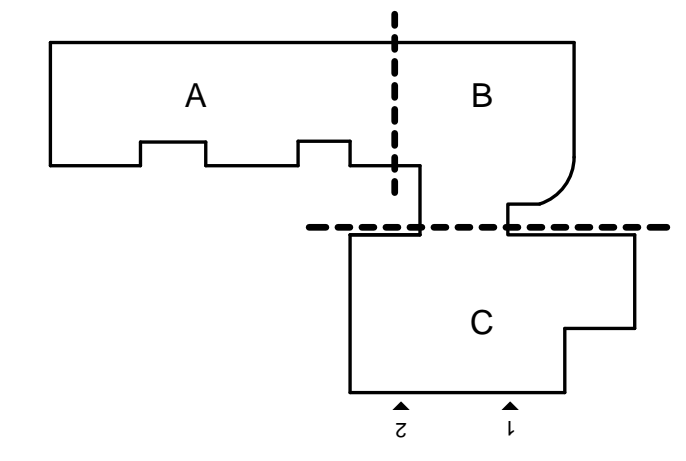
EXTERIOR MATERIAL LEGEND:

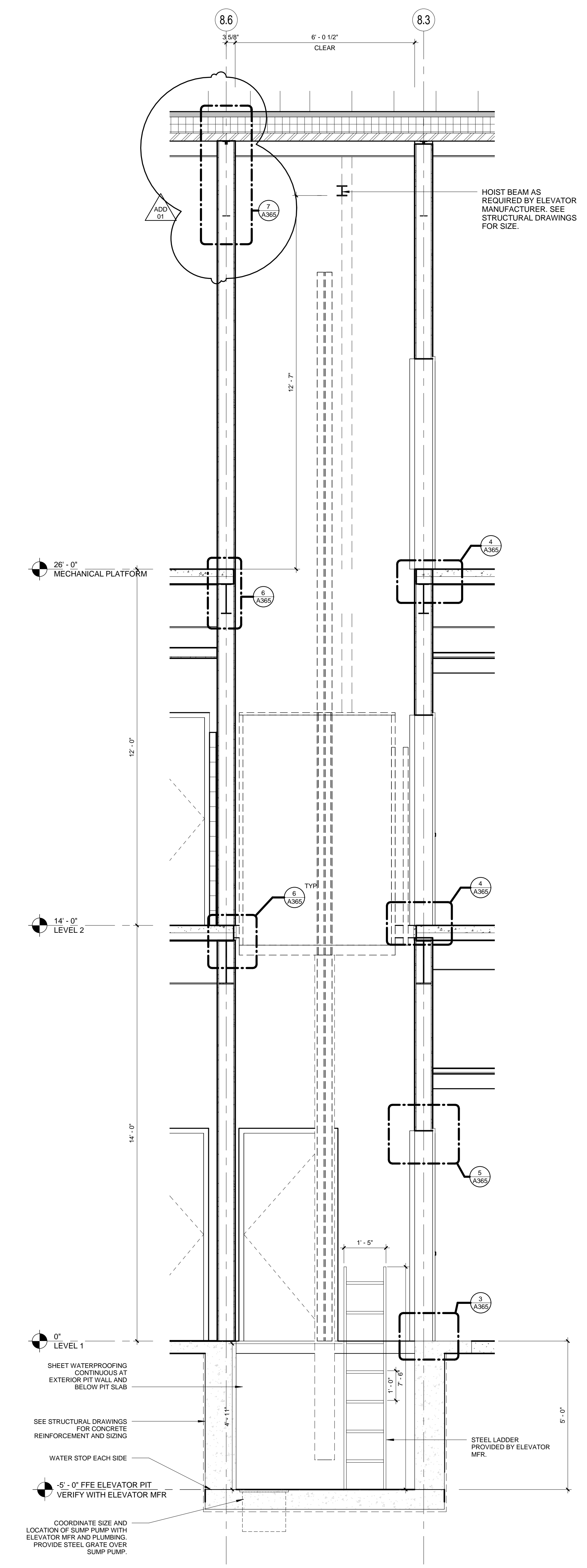
Glass	CERAMIC COATED VISION GLASS - COLOR 1 - WHITE
CERAMIC COATED VISION GLASS - COLOR 2 - PURPLE	CERAMIC COATED VISION GLASS - COLOR 3 - YELLOW
CERAMIC COATED VISION GLASS - COLOR 4 - BLUE	CERAMIC COATED VISION GLASS - COLOR 5 - GREEN
METAL WALL AND ROOF PANELS	CMU VENEER - COLOR 1
CMU VENEER - COLOR 2 (UNDER WINDOWS)	

ABBREVIATIONS:

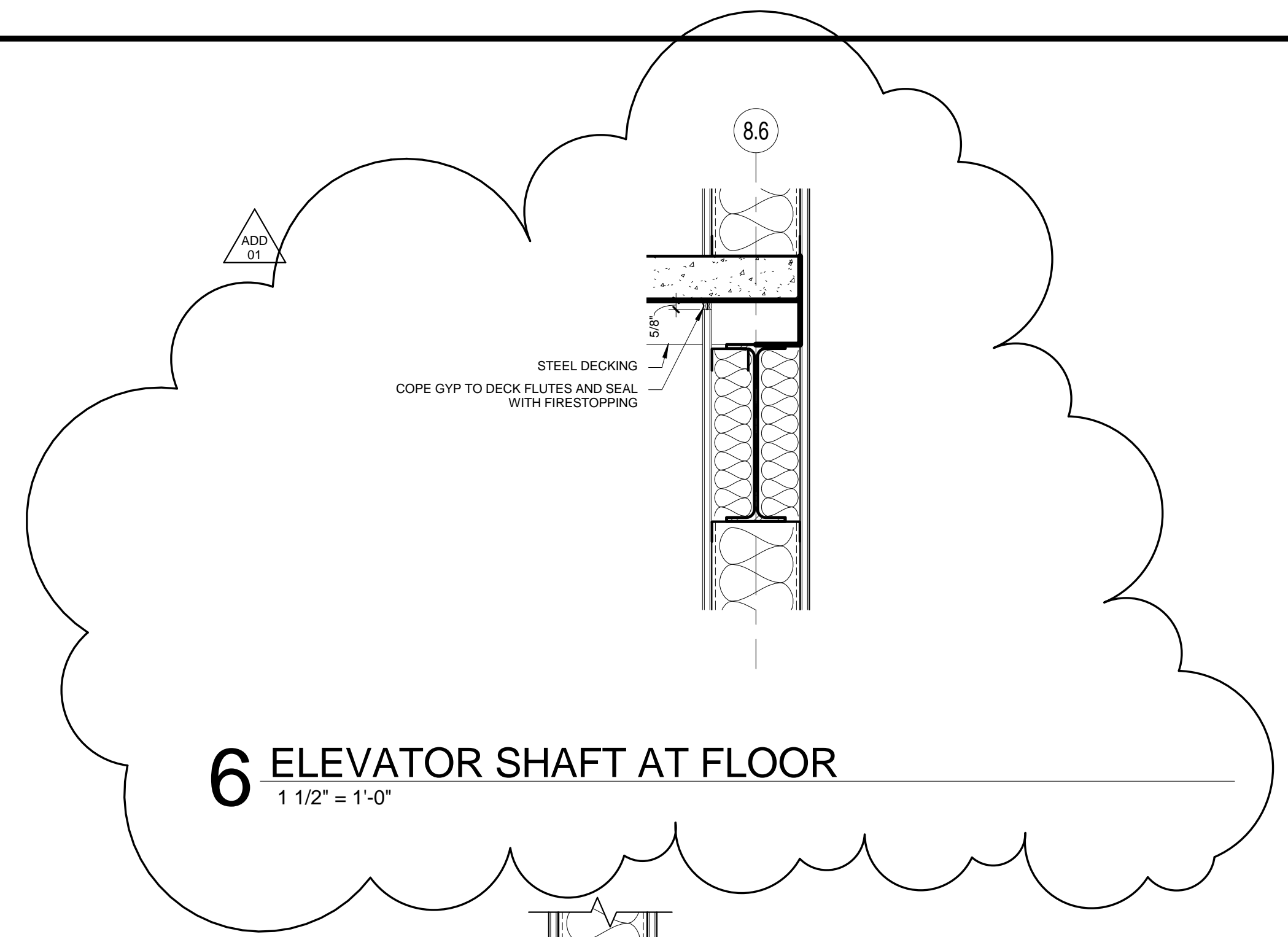
- CONTROL JOINT (CJ)
- PANEL JOINT (P.J)
- REVEAL (RVL)

ELEVATION KEYPLAN



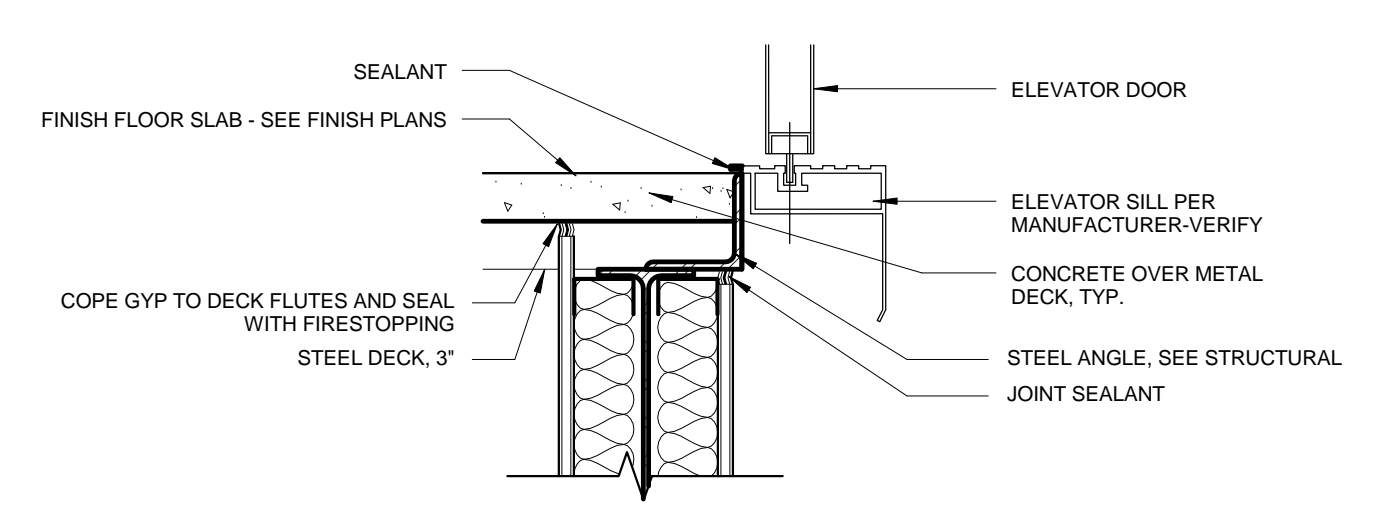


1 ELEVATOR SHAFT SECTION B127
1/2" = 1'-0"

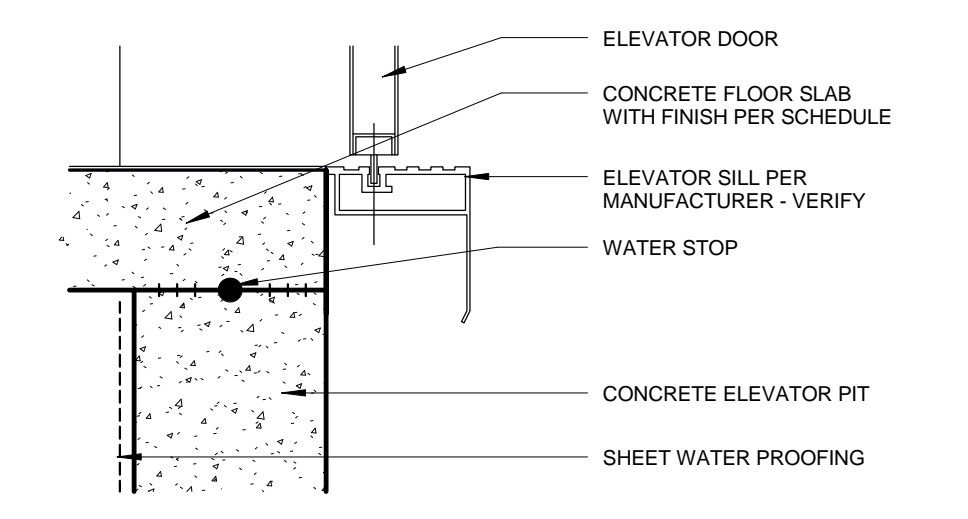


6 ELEVATOR SHAFT AT FLOOR
1 1/2" = 1'-0"

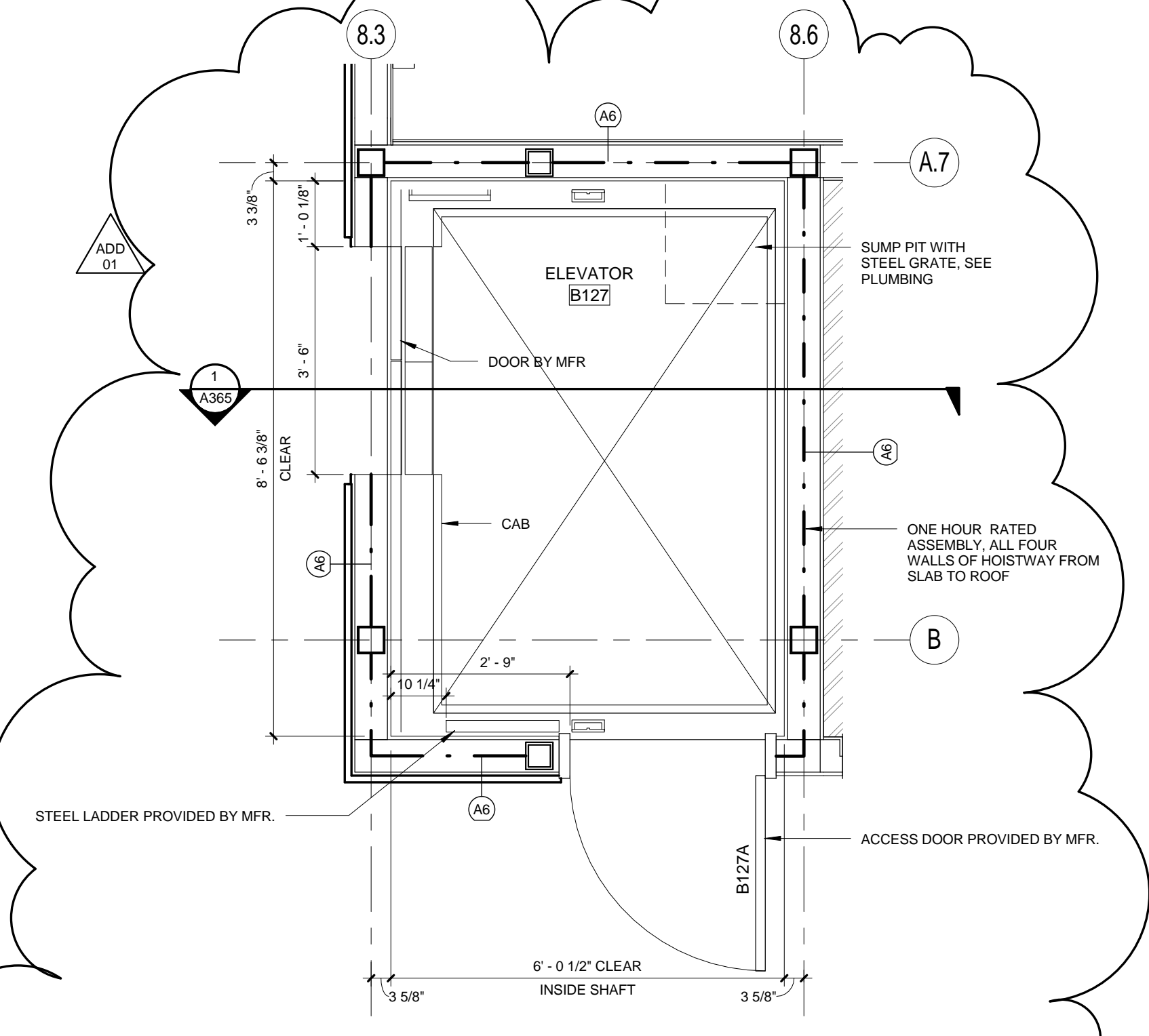
5 ELEVATOR HEAD
1 1/2" = 1'-0"



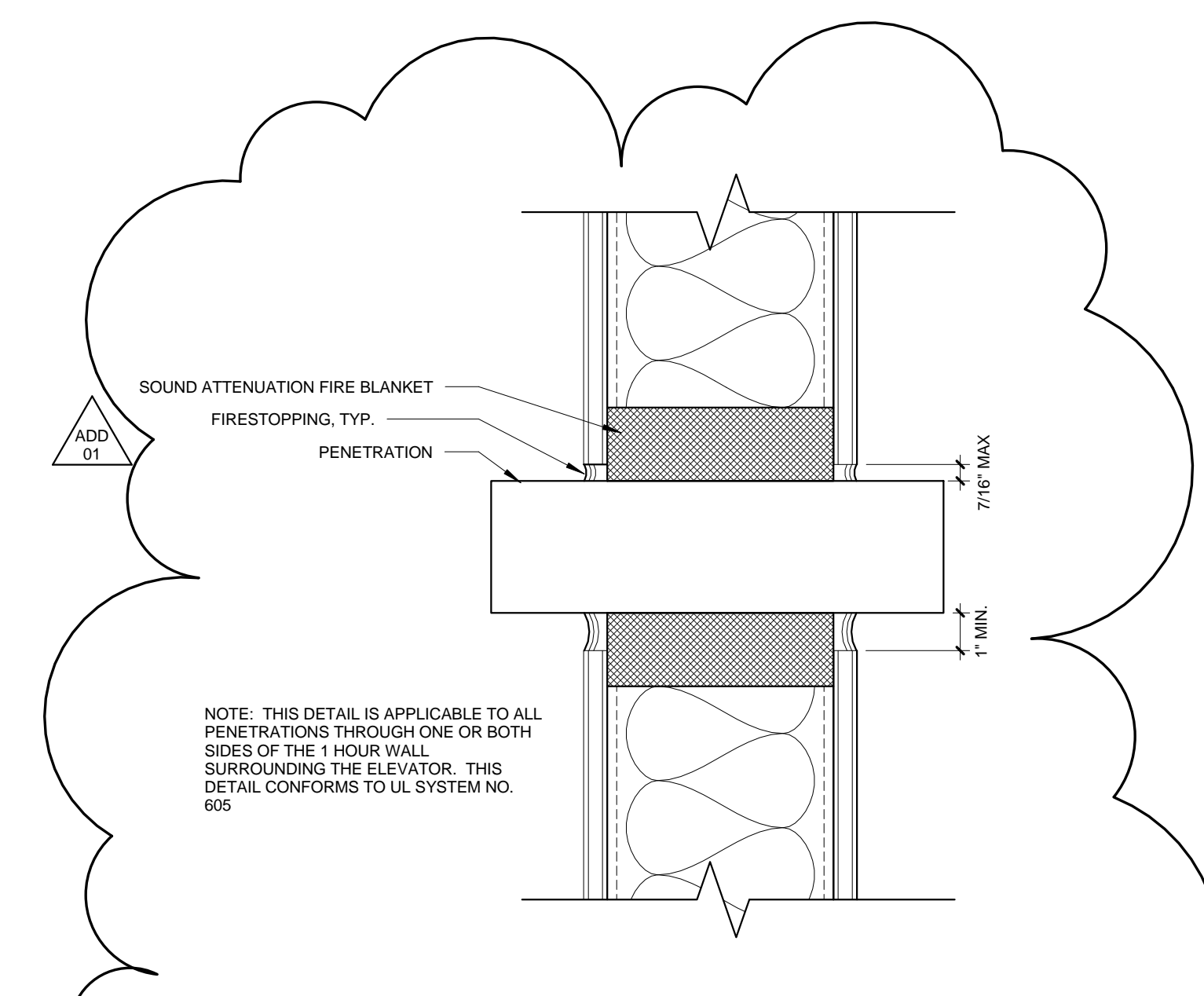
4 ELEVATOR SILL - SECOND FLOOR
1 1/2" = 1'-0"



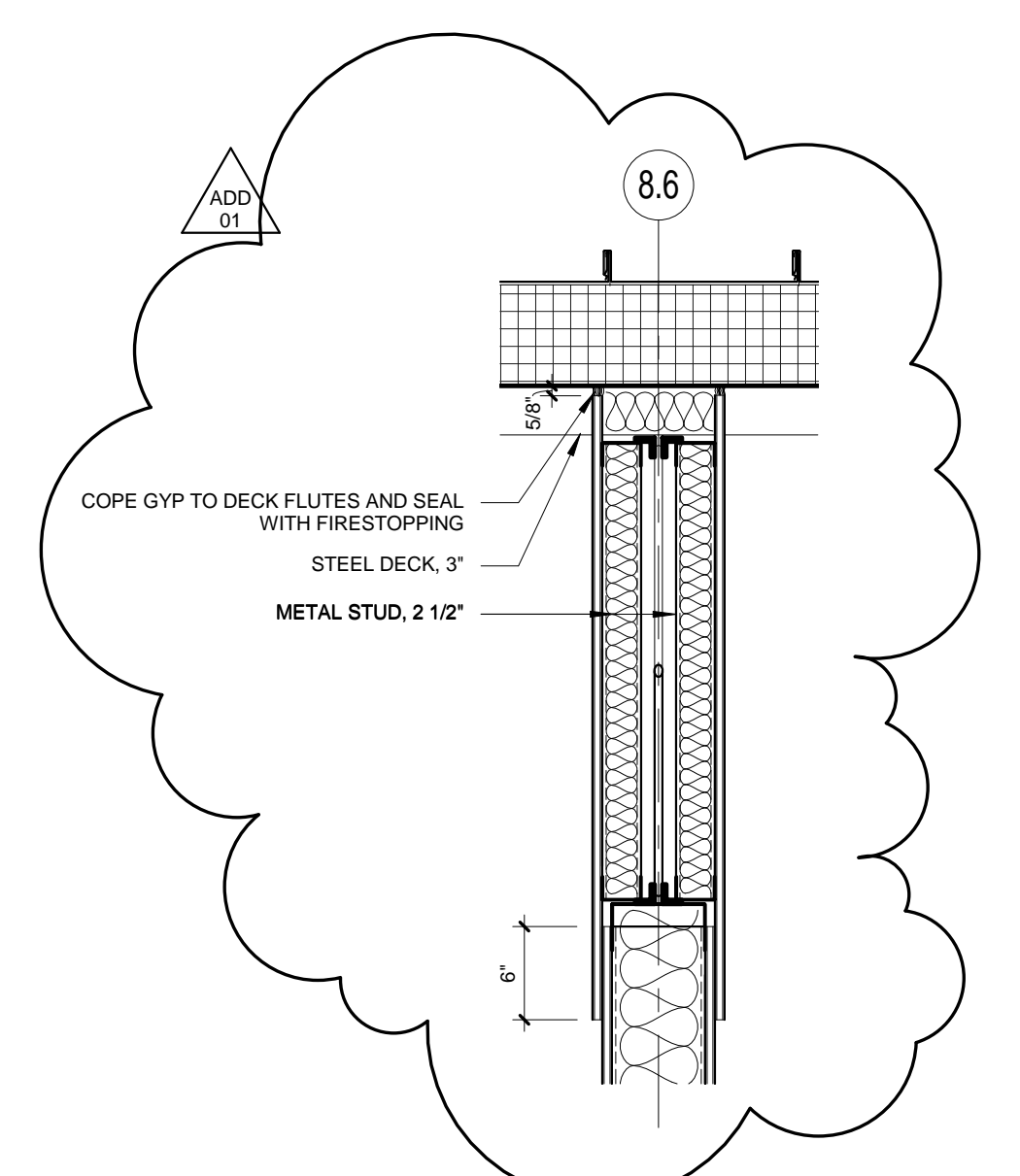
3 ELEVATOR SILL - FIRST FLOOR
1 1/2" = 1'-0"



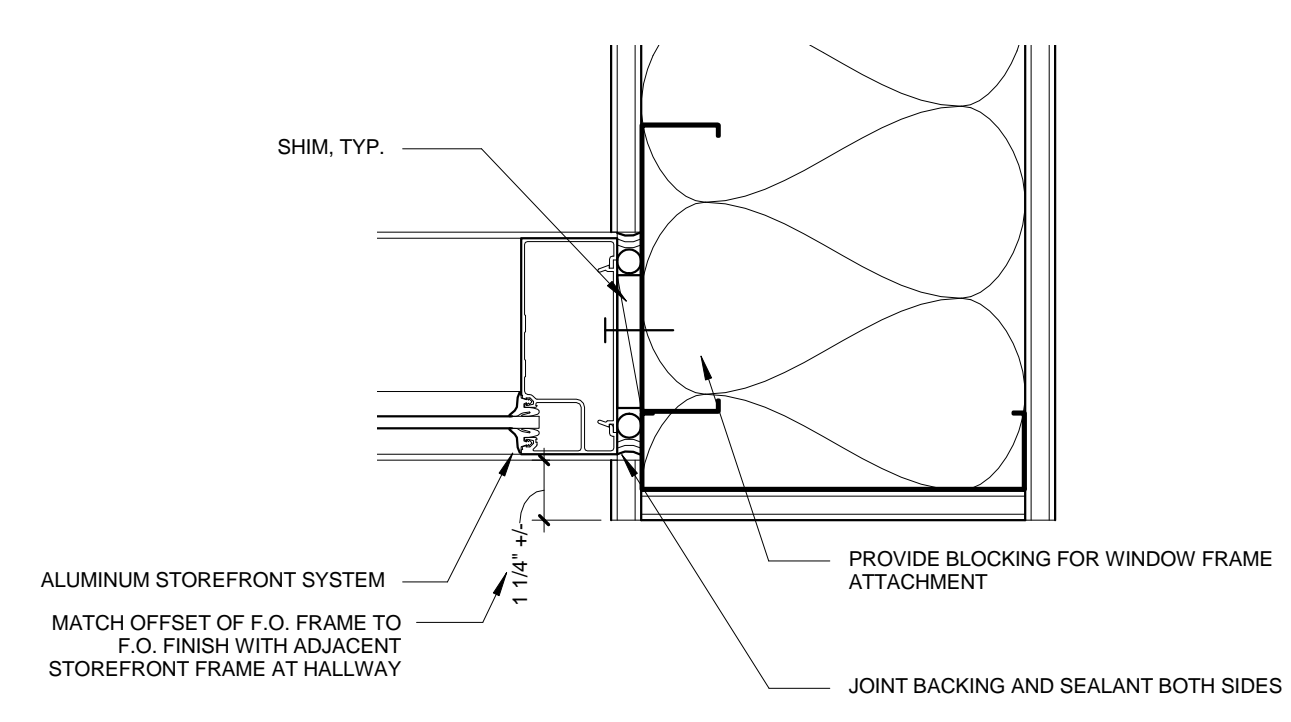
2 ENLARGED ELEVATOR PLAN
1/2" = 1'-0"



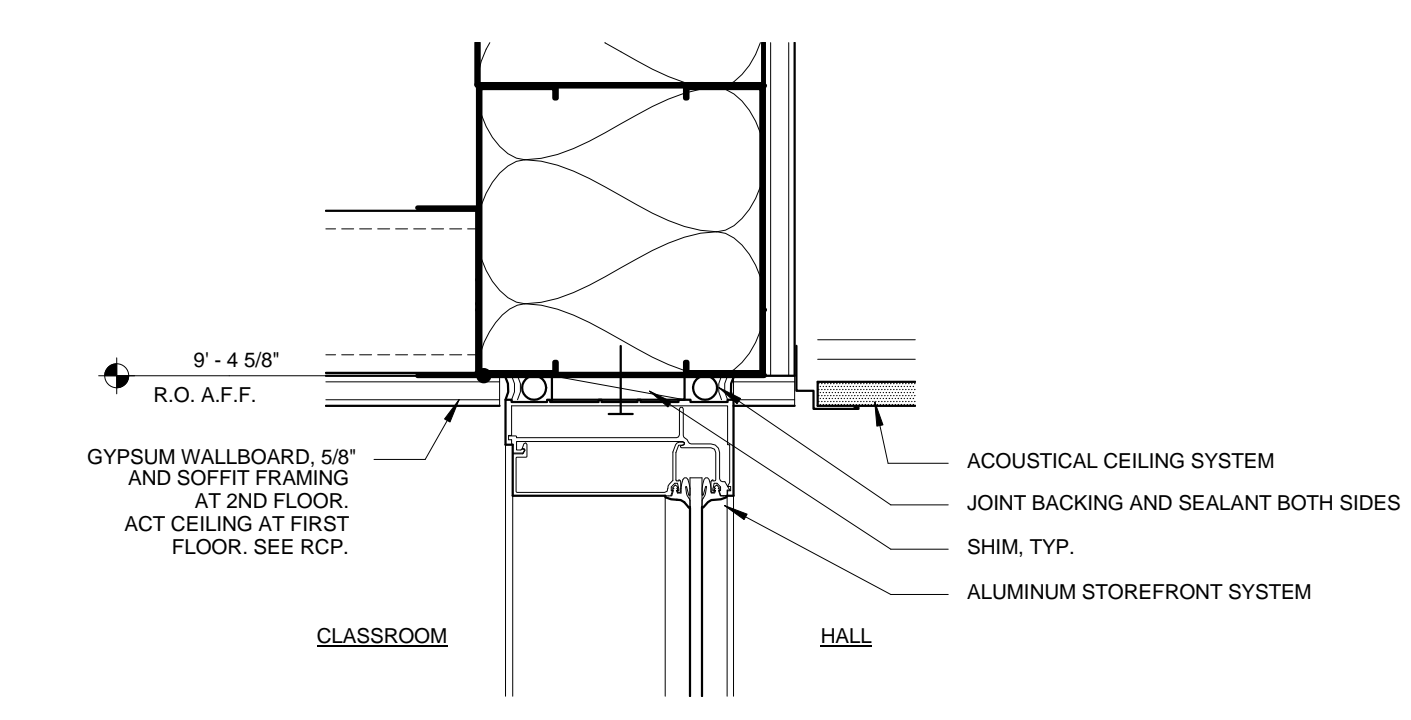
8 RATED WALL PENETRATION
3" = 1'-0"



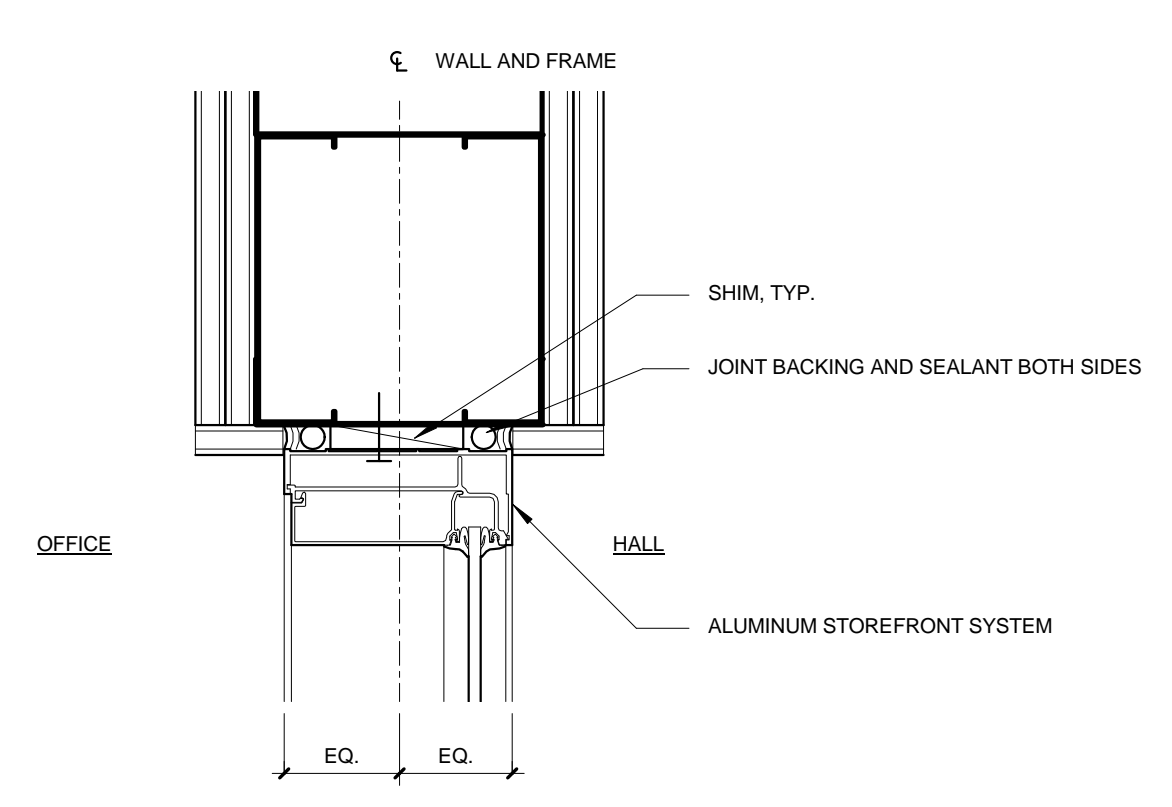
7 ELEVATOR SHAFT WALL AT ROOF
1" = 1'-0"



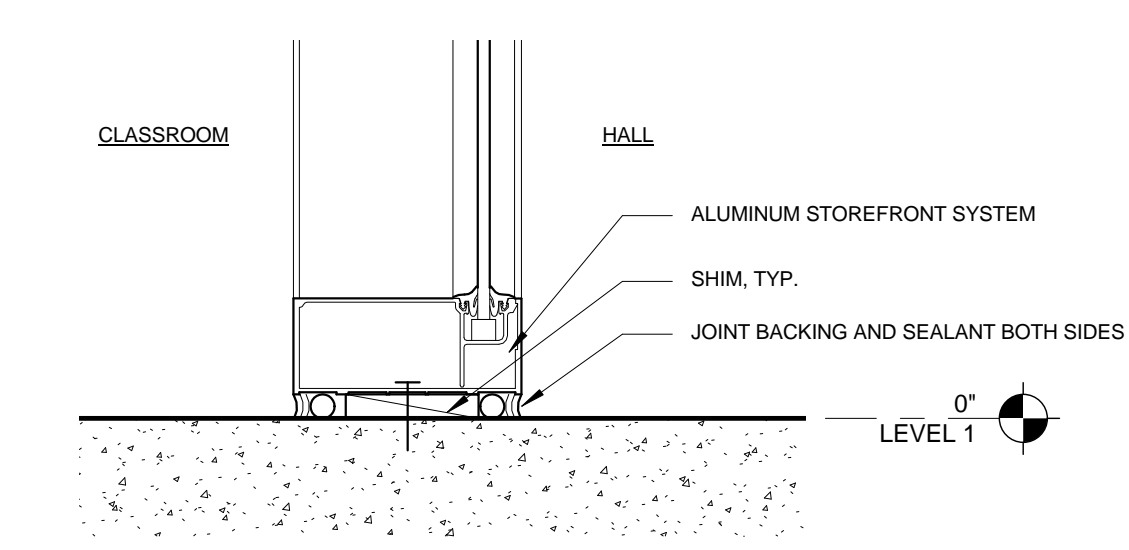
8 INTERIOR STOREFRONT JAMB @ COMMONS
3" = 1'-0"



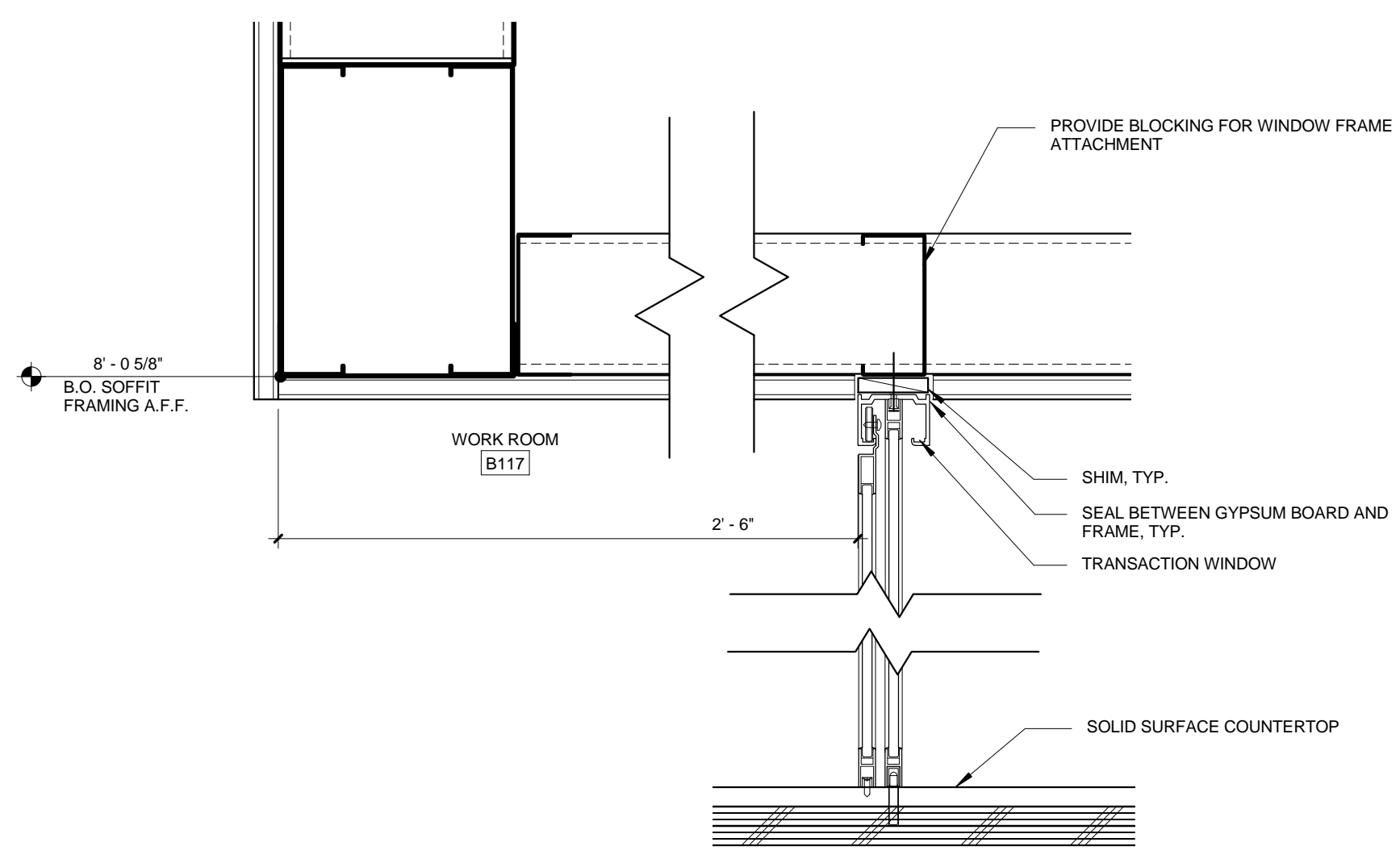
4 INTERIOR STOREFRONT HEAD @ CLASSROOM
3" = 1'-0"



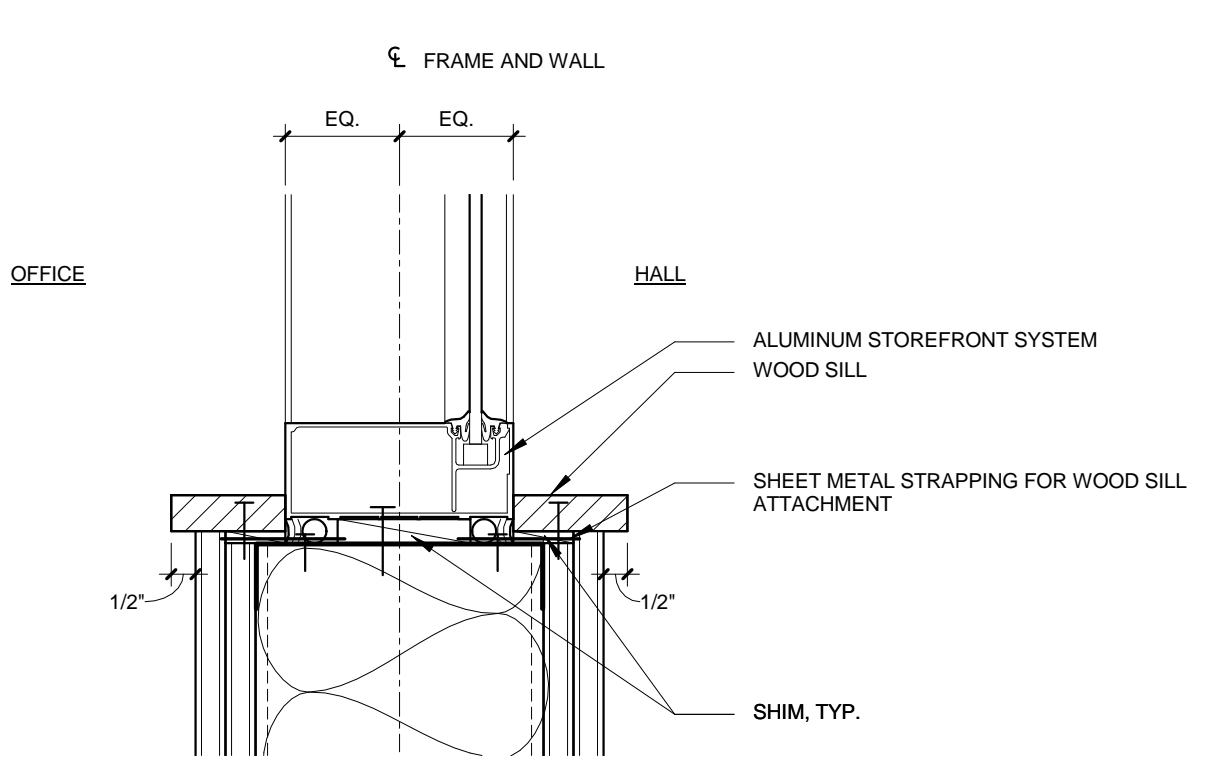
7 INTERIOR STOREFRONT HEAD @ PRINCIPAL'S OFFICE
3" = 1'-0"



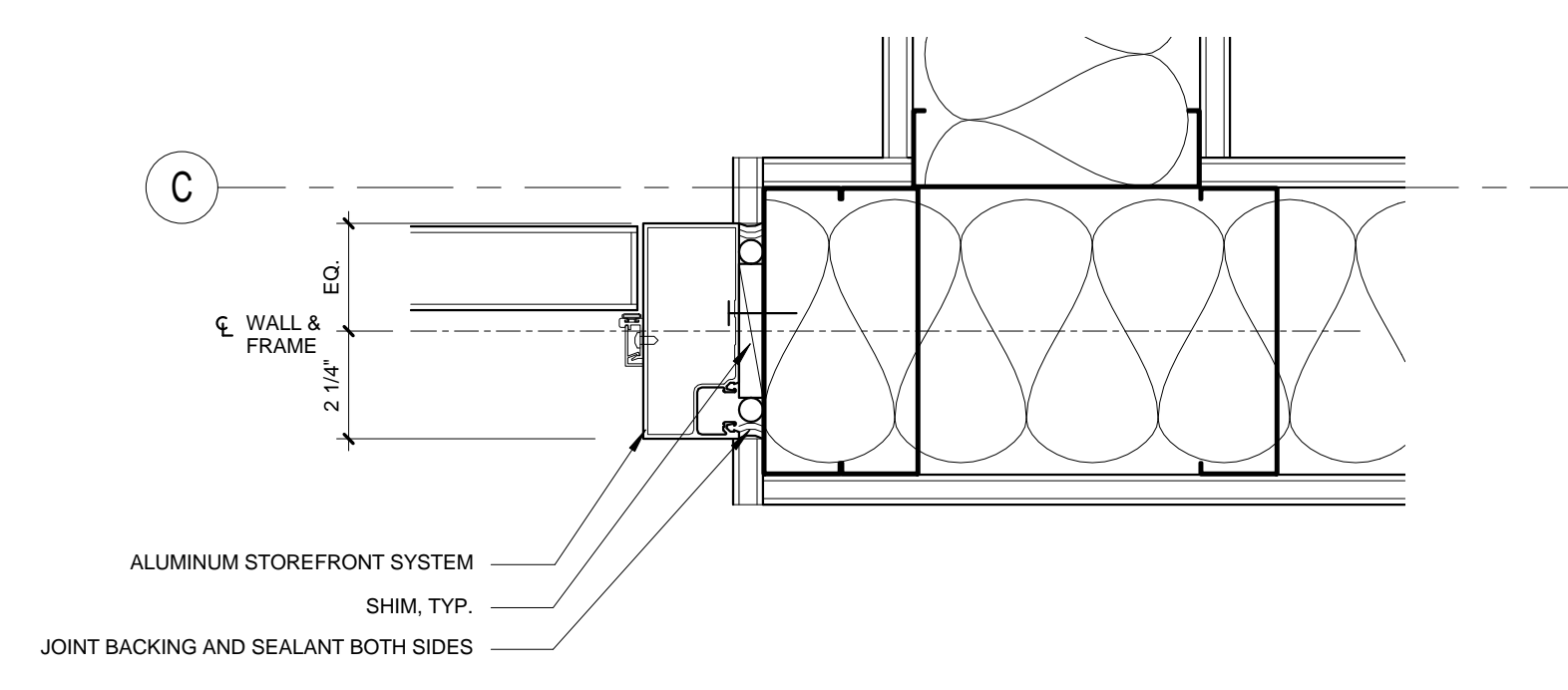
3 INTERIOR STOREFRONT SILL @ CLASSROOM
3" = 1'-0"



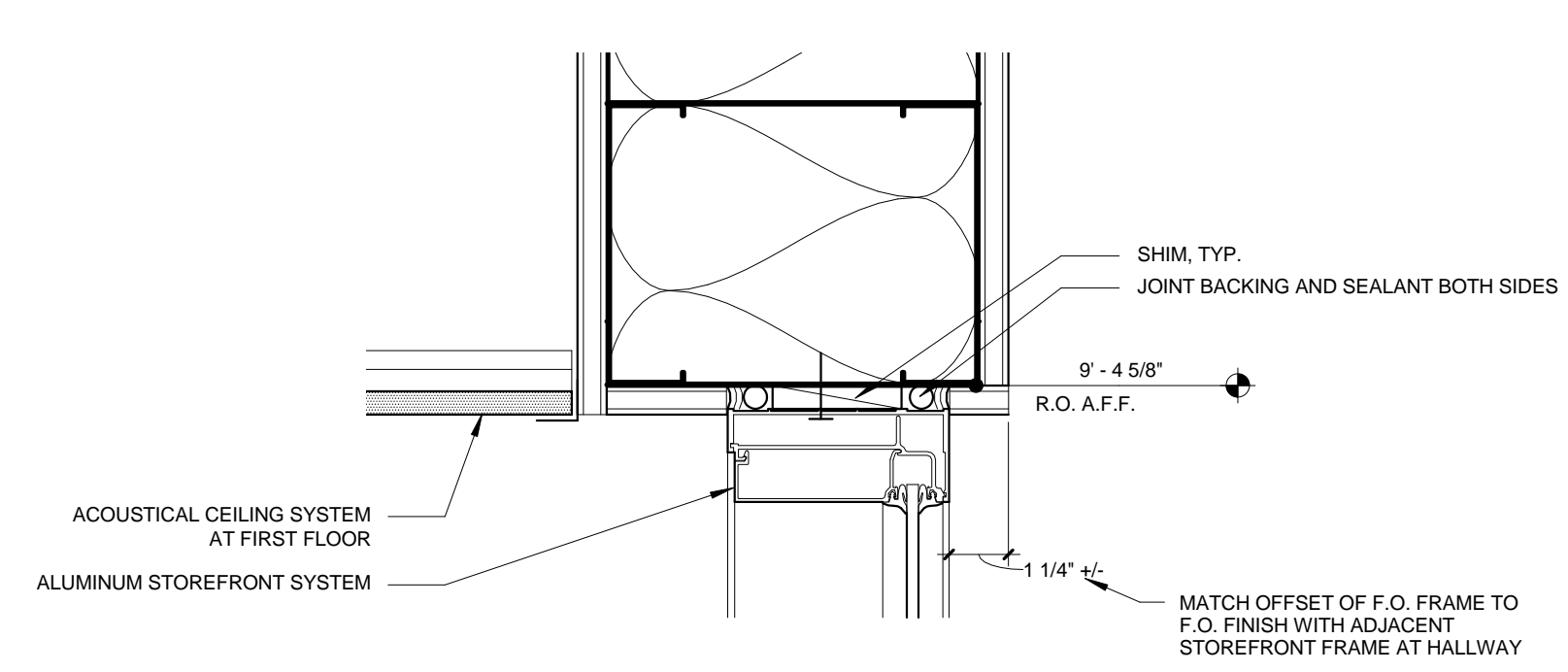
10 INTERIOR TRANSACTION WINDOW SILL AND HEAD
3" = 1'-0"



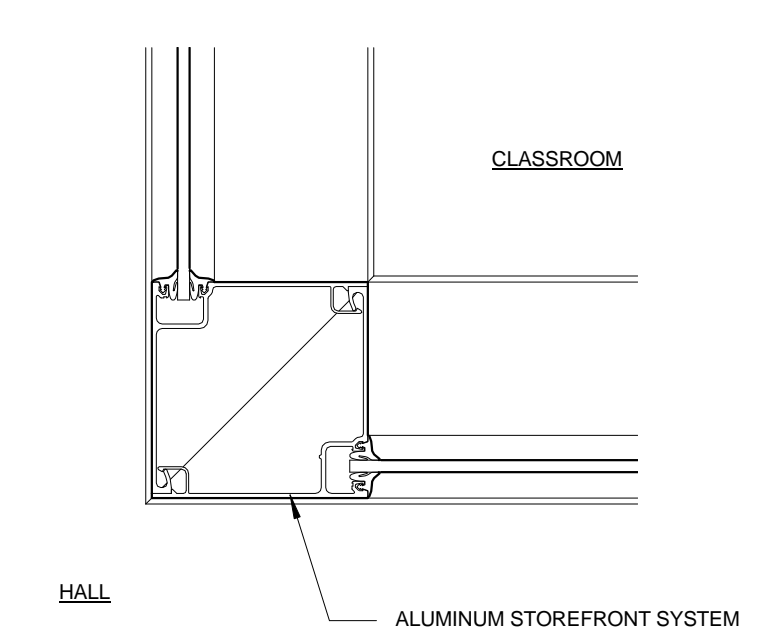
6 INTERIOR STOREFRONT SILL @ PRINCIPAL'S OFFICE
3" = 1'-0"



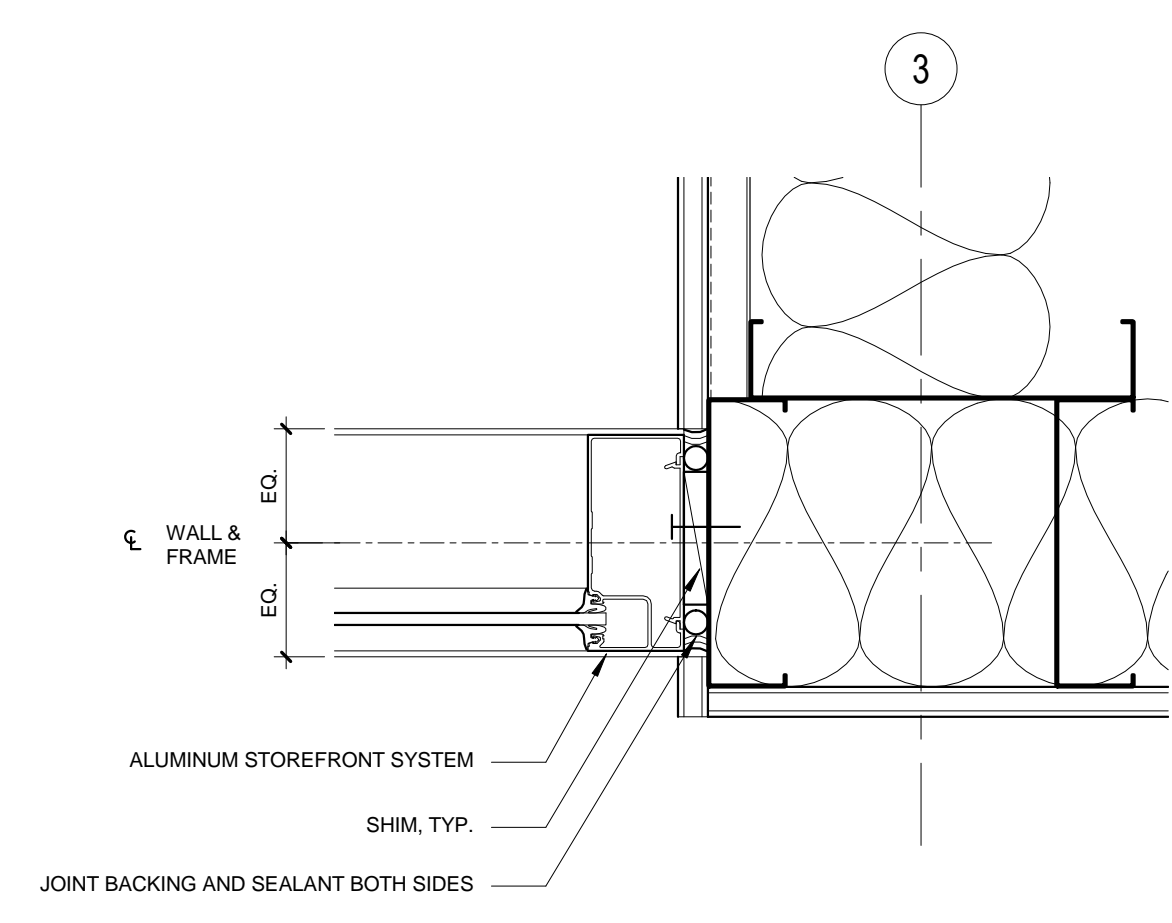
2 INTERIOR STOREFRONT DOOR JAMB @ CLASSROOM
3" = 1'-0"



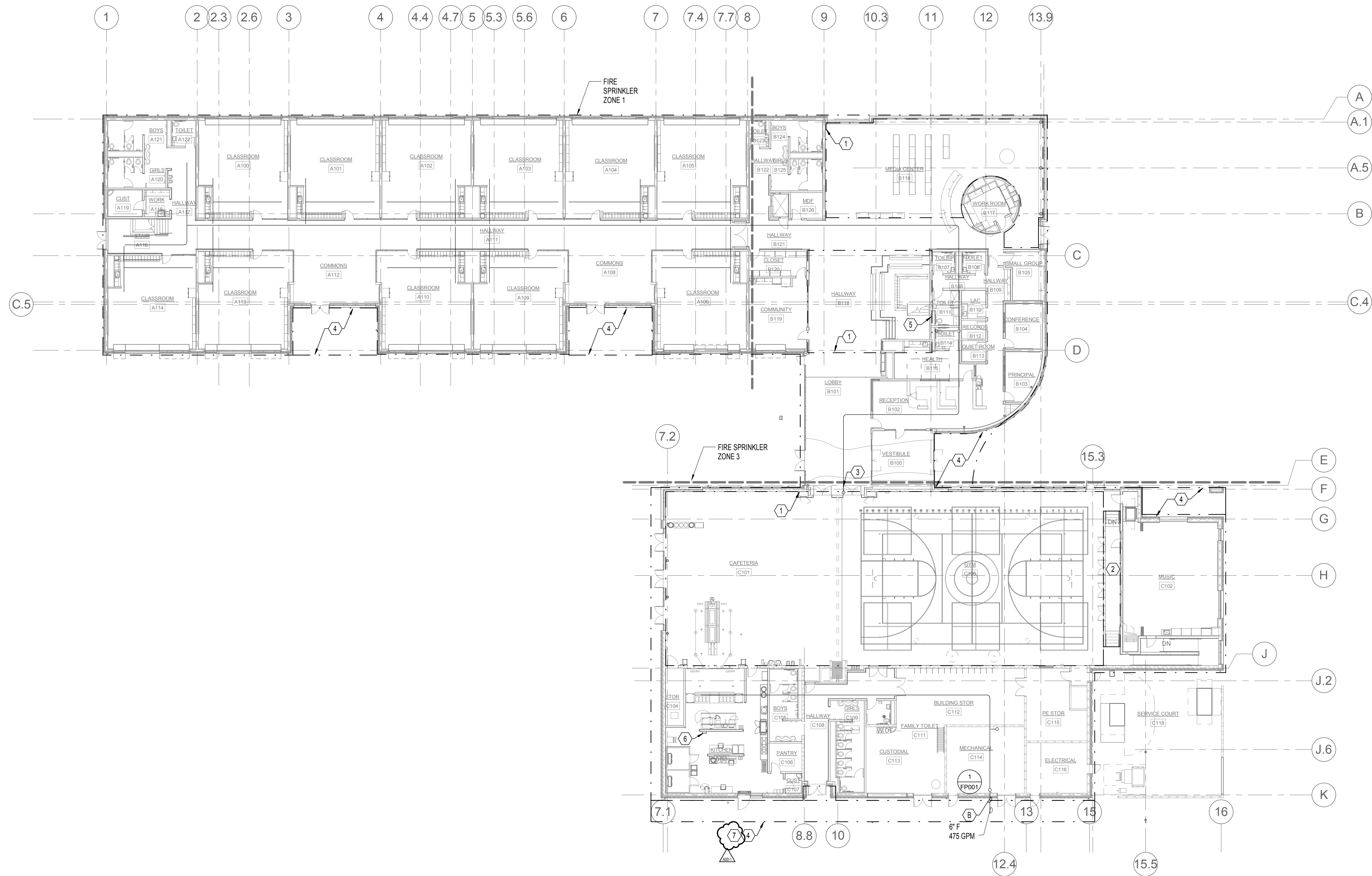
9 INTERIOR STOREFRONT HEAD @ COMMONS
3" = 1'-0"



5 INTERIOR STOREFRONT CORNER JAMB
3" = 1'-0"



1 INTERIOR STOREFRONT JAMB @ CLASSROOM
3" = 1'-0"



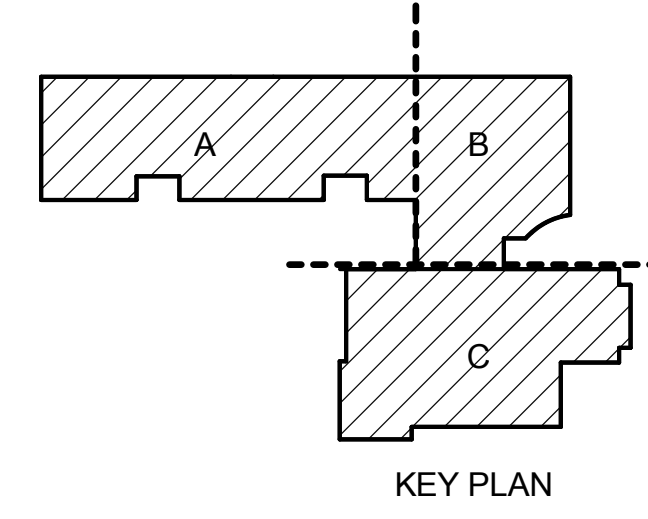
1 FIRST FLOOR - FIRE PROTECTION
 1/16" = 1'-0"

GENERAL NOTES:

- A. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, FIRE SPRINKLER, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
- B. IT IS THE INTENTION THAT THE ENTIRE BUILDING WILL BE FULLY SPRINKLERED IN ACCORDANCE WITH NFPA 13 AND LOCAL FIRE CODE.
- C. ALL ZONES WITHIN THIS SCOPE ARE CONSIDERED LIGHT HAZARD AREAS. PROVIDE FULL COVERAGE AS REQUIRED.

NOTES:

- 1. ASSOCIATED FIRE SPRINKLERS 1. AREA PROTECTED FROM ABOVE
- 2. PROVIDE FIRE SPRINKLERS UNDER PLATFORM, IN COMPLIANCE WITH NFPA.
- 3. EXPANSION JOINT/SEISMIC CONNECTORS SHALL BE COORDINATED WITH STRUCTURAL ENGINEER AT ALL PIPING CROSSING EXPANSION JOINTS.
- 4. PROTECT AREA WITH DRY BULB SIDEWALL HEADS
- 5. COORDINATE SPINKLER HEAD LOCATIONS WITH OWNER PRIOR TO SUBMITTAL OF SHOP DRAWINGS. HEAD LOCATIONS SHALL NOT BE WITHIN 12" A.F.F. BELOW STAIRS AND RAISED SEATING.
- 6. PROVIDE 1" FP LINE TO ANSUL SYSTEM. COORDINATE WITH FOOD SERVICE CONTRACTOR.
- 7. ALTERNATE 3: DELETE CANOPY AND ASSOCIATED FIRE SPRINKLERS.



PROJECT#	153720	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC

WASTE PIPING SIZING SCHEDULE

SIZE	MAXIMUM DFU COUNT	
	HORIZONTAL	VERTICAL
1-1/4"	UP TO 1 DFU	UP TO 1 DFU
1-1/2"	UP TO 2 DFU	UP TO 2 DFU
2"	UP TO 8 DFU	UP TO 16 DFU
2-1/2"	UP TO 14 DFU	UP TO 32 DFU
3"	UP TO 48 DFU	UP TO 48 DFU
4"	UP TO 216 DFU	UP TO 256 DFU
6"	UP TO 720 DFU	UP TO 1,380 DFU

NOTES:
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, CHAPTER 7 "SANITARY DRAINAGE". ALL WASTE PIPING SIZED AT ...1/4" FT UNLESS OTHERWISE NOTED.

DOMESTIC PIPING SIZING SCHEDULE

SIZE	MAXIMUM DFU COUNT	
	FLUSH TANK	FLUSH VALVE
1/2"	UP TO 1 FU	--
3/4"	UP TO 4 FU	--
1"	UP TO 12 FU	--
1-1/4"	UP TO 26 FU	--
1-1/2"	UP TO 42 FU	--
2"	UP TO 151 FU	--
2-1/2"	UP TO 205 FU	--
3"	UP TO 275 FU	--

NOTES:
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, APPENDIX A "RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM". PIPING SIZED ON 4 PSI/100 FT. DROP, INCOMING WATER PRESSURE OF 88 PSI AND VELOCITIES NOT TO EXCEED 8 FT/SEC. (COLD WATER) AND NOT TO EXCEED 5 FT/SEC. (HOT WATER).

NON-POTABLE PIPING SIZING SCHEDULE

SIZE	MAXIMUM DFU COUNT	
	NON-FLUSH VALVE	FLUSH VALVE
1/2"	--	--
3/4"	--	--
1"	--	--
1-1/4"	--	UP TO 1 FU
1-1/2"	--	UP TO 13 FU
2"	--	UP TO 95 FU
2-1/2"	--	UP TO 365 FU
3"	--	UP TO 559 FU

NOTES:
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, APPENDIX A "RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM". PIPING SIZED ON 6 PSI/100 FT. DROP, VELOCITIES NOT TO EXCEED 8 FT/SEC. (NON-POTABLE WATER)

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	ROUGH-IN SIZE (INCHES)				NOTES	
		W	V	NPM	CW		HW
WC-1	WATER CLOSET	4	2	1-1/4	-	-	WALL HUNG, SUPPLIED BY RAIN WATER 1.28 GPF, CHILDREN ADA
WC-2	WATER CLOSET	4	2	1-1/4	-	-	WALL HUNG, SUPPLIED BY RAIN WATER 1.28 GPF, ADULT ADA
U-1	URINAL	2	1-1/2	1	-	-	WALL HUNG, SUPPLIED BY RAIN WATER 0.5 GPM, ADA
L-1	LAVATORY	2	1-1/2	-	1/2	1/2	TEMPERATURE SELECTION/METERING WALL HUNG, 20"x19", ADA
WS-1	WASH STATION	2	1-1/2	-	1/2	1/2	WALL HUNG, SINGLE BOWL WITH 2 LAV 0.5 GPM, ADA
WS-2	WASH STATION	2	1-1/2	-	1/2	1/2	WALL HUNG, SINGLE BOWL WITH 3 LAV 0.5 GPM, ADA
S-1	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL COUNTER MOUNT, BUBBLER.
S-2	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL COUNTER MOUNT
S-3	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL, DOUBLE BOWL, COUNTER MOUNT
DF-1	DRINKING FOUNTAIN	2	1-1/2	-	1/2	-	DAUL HEIGHT, STAINLESS STEEL WALL MOUNTED
SH-1	SHOWER	2	1-1/2	-	3/4	3/4	FIBERGLASS ENCLOSURE, PRESSURE BALANCE MIXING VALVE, 1.5GPM SHOWER HEAD
MS-1	MOP SINK	3	2	-	3/4	3/4	FLOOR/CORNER MOUNTED, WALL MOUNTED FAUCET W/VACUUM BREAKER & HOSE THREAD OUTLET
WH-1	WALL HYDRANT	-	-	-	3/4	-	REMOVABLE HANDLE, FREEZE PROOF, W/VACUUM BREAKER
WH-2	WALL HYDRANT	-	-	-	1/2	1/2	DUAL TEMPERATURE, FREEZE PROOF, W/VACUUM BREAKER
SB-1	SUPPLY BOX	2	1-1/2	-	1/2	1/2	RECESSED, BOTTOM SUPPLIES, INTEGRAL SHOCK ARRESTOR
SB-2	SUPPLY BOX	2	1-1/2	-	1/2	-	RECESSED, BOTTOM SUPPLIES, INTEGRAL SHOCK ARRESTOR
WSCB-1	WATER SUPPLY CONTROL BOX	-	-	-	1/2	1/2	RECESSED, BOTTOM SUPPLIES, INTEGRAL SHOCK ARRESTOR

KITCHEN EQUIPMENT CONNECTION SCHEDULE

ITEM	DESCRIPTION	ROUGH-IN SIZE (INCHES)				NOTES
		W	CW	HW	G	
19	CUBE ICE MACHINE	-	1/2	-	-	③
20	HAND WASHING SINK	1-1/2	1/2	1/2	-	②
22	PREP SINK	1-1/2	1/2	1/2	-	①
30	KETTLE PANTRY FAUCET	-	1/2	1/2	-	①
31	CONVECTION STEAMER	-	-	-	-	① ③
33	DOUBLE STACK COMBI-OVEN STEAMERS	2	4(3/4)	-	-	
44	TRIPLE COMPARTMENT SINK	(3) 2	1/2	1/2	-	
46	WAREWASHER WITH BOOSTER HEATER	2	-	1/2	-	
47	HOSE REEL WITH RECESSED CONTROL	-	1/2	1/2	-	
48	WASTE COLLECTOR	2	3/4	3/4	-	①

NOTES:
① PROVIDE INDIRECT WASTE TO FLOOR SINK.
② ALL KITCHEN FIXTURES PROVIDED WITH 140°F HOT WATER. PROVIDE SYMMONS 410-B MIXING VALVE AT CW & HW SUPPLIES TO TEMPER OUTLET WATER TO 100 F AT HAND WASH LOCATIONS. SEE KITCHEN PLUMBING PLAN FOR LOCATIONS.
③ PROVIDE BACKFLOW PROTECTION AS REQUIRED BY CODE. ROUTE INDIRECT WASTE TO NEAREST FLOOR SINK.

PLUMBING EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	ELECTRICAL
GWH-101 (DOMESTIC SYSTEM)	GAS WATER HEATER 199 CFH INPUT, 90 GALLON STORAGE 233 GPH RECOVERY @ 100°F RISE BASED ON: LOCHINVAR SHIELD	120 V, 1 PH
DET-101 (DOMESTIC SYSTEM)	DOMESTIC WATER EXPANSION TANK 11 GALLONS ACCEPTANCE VOLUME 18 GALLONS TANK VOLUME BASED ON: ITT WITA SERIES	
MMV-101 (DOMESTIC SYSTEM)	MASTER MIXING VALVE 23 GPM FLOW RATE, WITH 5 PSI LOSS 140 F INLET TEMPERATURE 120 F OUTLET TEMPERATURE BASED ON: LEONARD NEW GENERATION MIXING VALVE	
RHWP-101 (DOMESTIC SYSTEM)	RECIRCULATING HOT WATER PUMP IN-LINE CENTRIFUGAL PUMP 4 GPM @ 35 FT HEAD BASED ON: BELL & GOSSETT PL SERIES	2/5 HP 120 V, 1 PH
RHTWP-101 (KITCHEN SYSTEM)	RECIRCULATING HOT WATER PUMP IN-LINE CENTRIFUGAL PUMP 1.1 GPM @ 20 FT HEAD BASED ON: BELL & GOSSETT PL SERIES	1/12 HP 120 V, 1 PH
TP-101 THRU TP-301	ELECTRONIC TRAP PRIMER 1-20 OPENING MANIFOLD CALIBRATED FOR EQUAL WATER DISTRIBUTION, 1/2" OUTLET CONNECTION, TIME CLOCK, SOLENOID VALVE AND VACUUM BREAKER, RECESSED STAINLESS STEEL ENCLOSURE WITH DOOR BASED ON: PRECISION PLUMBING PRODUCTS PRIMETIME ELECTRONIC TRAP PRIMER, PTS SERIES	120 V, 1 PH
RPBA-1 HVAC MAKE UP)	REDUCED PRESSURE BACKFLOW ASSEMBLY 10 GPM @ 14 PSIG LOSS BASED ON: FEBCO 860 (1")	
RPBA-2 (RWS SYSTEM)	REDUCED PRESSURE BACKFLOW ASSEMBLY 160 GPM @ 12 PSIG LOSS BASED ON: FEBCO 860 (1-1/2")	
RWTS-101 (RAINWATER SYSTEM SKID)	RAINWATER PUMP/FILTER SKID SYSTEM: PREPACKAGED SKID BASED ON FLOW THERM MODEL FTSS-RW-CL SINGLE POINT ELECTRICAL CONNECTION	480 V, 3 PH
SP-401	RAIN WATER RECLAMATION DAY TANK (INCLUDED ON RWTS-101 SKID) 540 GALLON CAPACITY 48" DIAMETER x 86-1/2" TALL, 17" DIAMETER ACCESS WAY BASED ON: POLYPROCESSING	
SP-402	RAIN WATER HYPO TREATMENT (INCLUDED ON RWTS-101 SKID) DUPLIX CHEMICAL FEED PUMPS SIMPLEX MAGNETIC DRIVE RECIRCULATION PUMP WITH NEMA 4 PANEL. ORP CONTROLLER BASIS OF DESIGN: WATER CONTROL CORP. DISINFECTIONS SYSTEM	(2) 5 HP 480 V, 3 PH
SP-403	SHOWER PUMP 50 GPM @ 12 FT HEAD BASED ON: GRUNDFOS	1/2 HP 120 V, 1 PH
RWCTP-101	RAIN WATER CISTERN TRANSFER PUMP 50 GPM @ 18 FT HEAD BASED ON: WEIL	1/2 HP 120 V, 1 PH

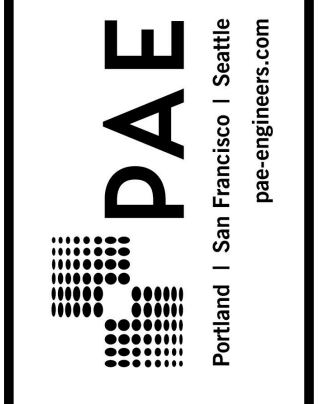
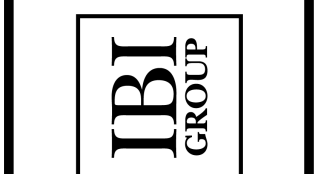
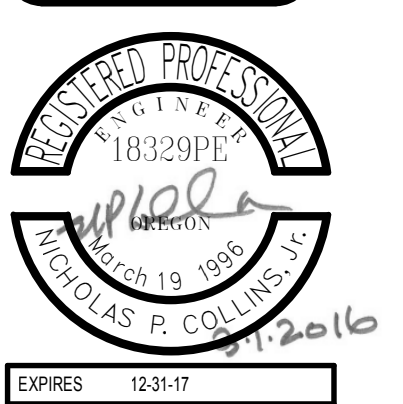
PLUMBING DESIGN CRITERIA

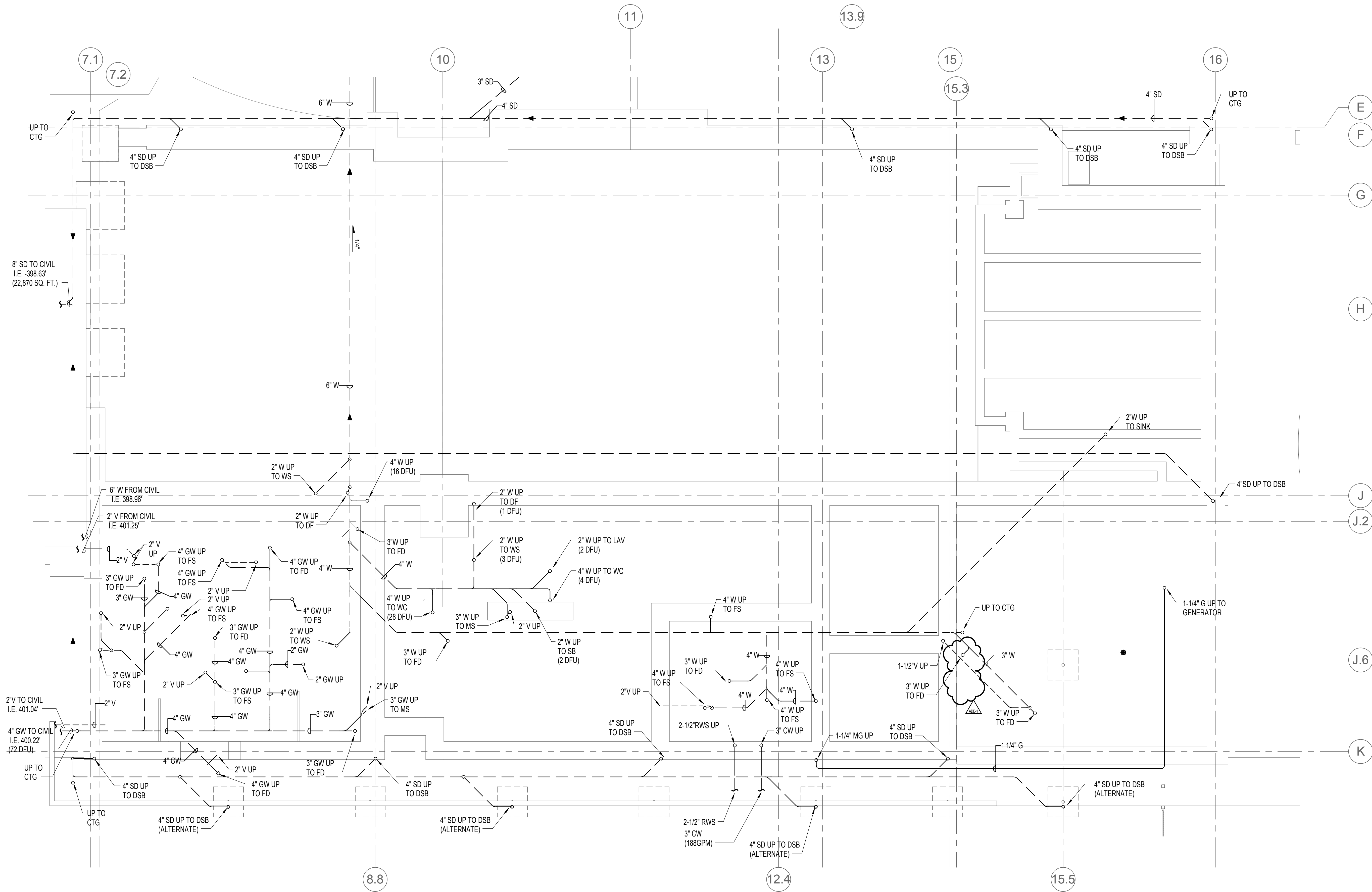
DOMESTIC WATER PIPING SYSTEM
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, APPENDIX A "RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM". PIPING SIZED ON 3 PSI/100 FT. DROP, VELOCITIES NOT TO EXCEED 8 FT/SEC. (COLD WATER) AND NOT TO EXCEED 5 FT/SEC. (HOT WATER).

WASTE AND VENT PIPING SYSTEM
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, CHAPTER 7 "SANITARY DRAINAGE". ALL WASTE PIPING SIZED AT %1/31314" FT UNLESS OTHERWISE NOTED.

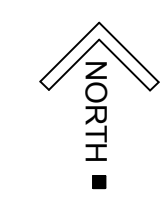
ROOF DRAIN/STORM DRAIN PIPING SYSTEMS
BASIS OF DESIGN: 2014 OREGON PLUMBING SPECIALTY CODE, CHAPTER 11 "STORM DRAINAGE". STORM DRAIN PIPING SIZED AT 1/8" PER FT SLOPE UNLESS OTHERWISE NOTED AND A RAINFALL RATE OF 1.3" / HR.

NATURAL GAS SYSTEM
BASIS OF DESIGN: 2014 OREGON MECHANICAL SPECIALTY CODE, APPENDIX C, "FUEL GAS". SECTION C402 "PIPE SIZING". EQUIVALENT LENGTH OF PIPE: 400 FT (MPG), 50 FT (G).



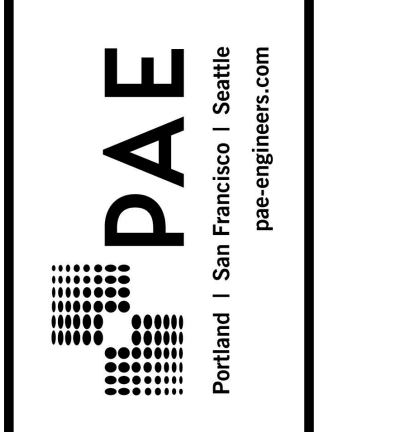
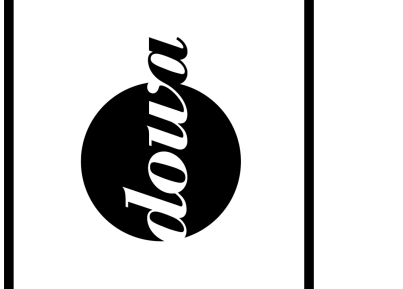
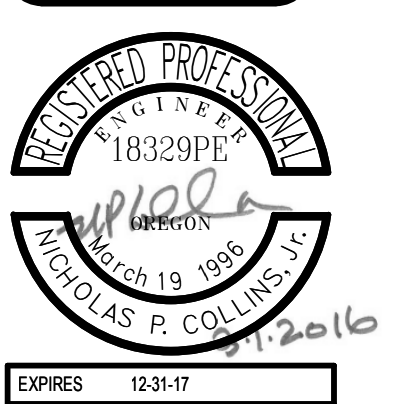
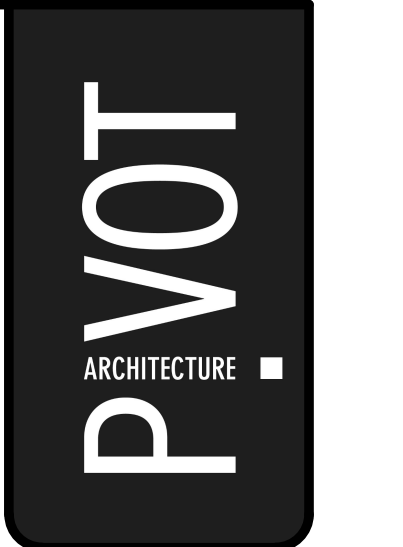
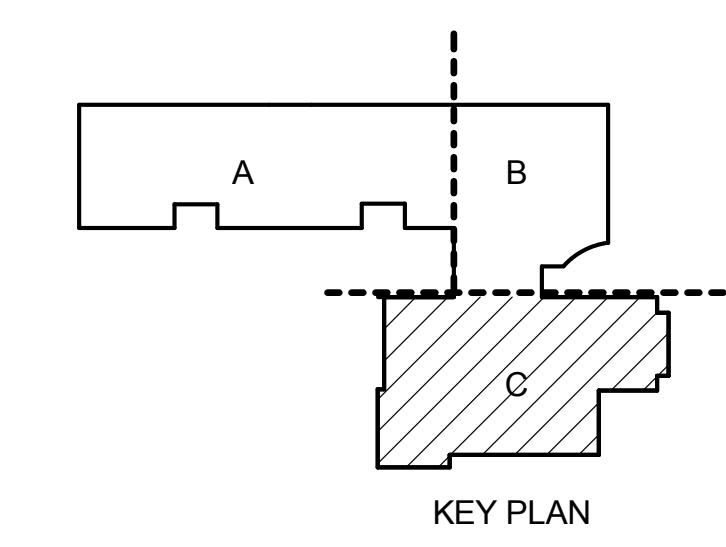


1 UNDERGROUND PLAN - SECTOR C - PLUMBING
 1/8" = 1'-0"



GENERAL NOTES:

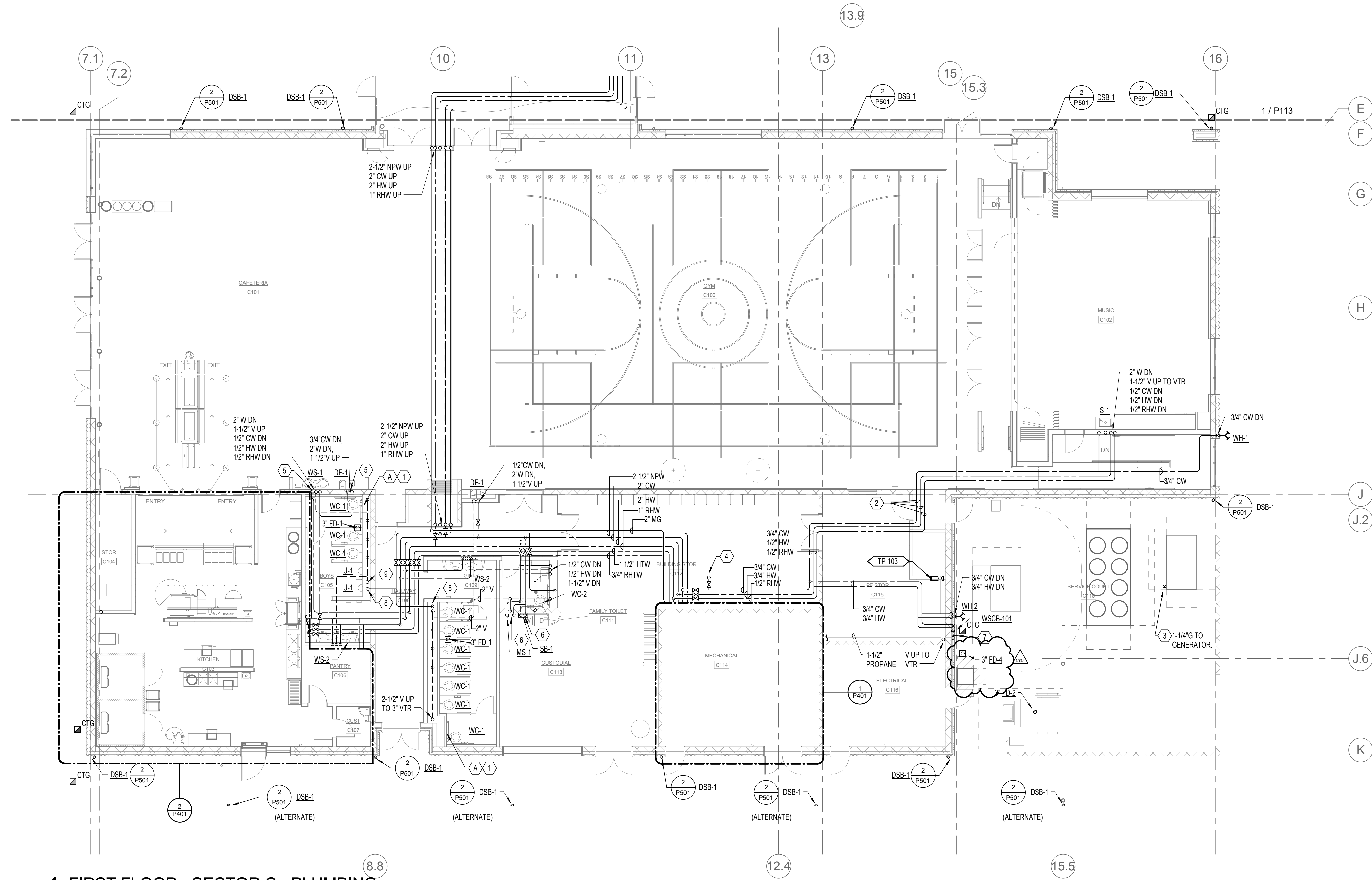
- A. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPE.
- B. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES.
- C. INSTALL FLOOR DRAINS, FLOOR SINKS, AND FLOOR CLEANOUTS FLUSH WITH FINISHED FLOOR.
- D. ALL FLUSH FIXTURES TO BE SERVED WITH NON-POTABLE WATER.
- E. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- F. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT.
- G. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, SPRINKLER, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
- H. REFER TO RISER DIAGRAM FOR COMPLETE SIZES, SHUT-OFF VALVE AND WATER HAMMER ARRESTER LOCATIONS.
- I. PROVIDE TRAP PRIMER LINES TO FIXTURES AS REQUIRED.



BID SET
 EUGENE SCHOOL DISTRICT 4J
 120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
4J RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

SECTOR C PLUMBING PLAN - UNDERGROUND

PROJECT #	1537-05	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC



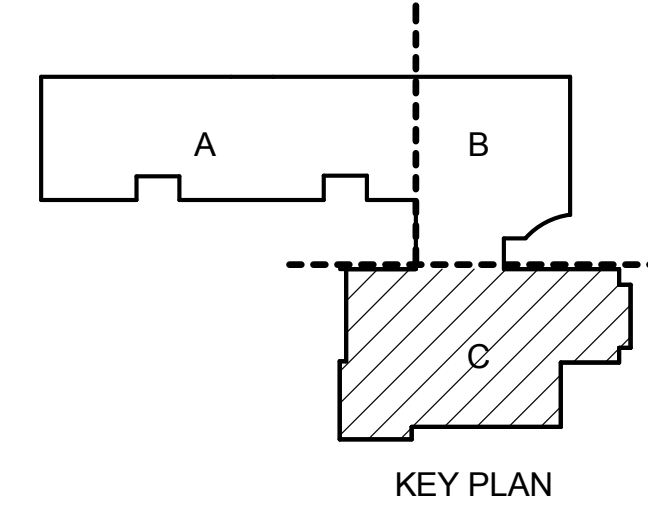
1 FIRST FLOOR - SECTOR C - PLUMBING
1/8" = 1'-0"

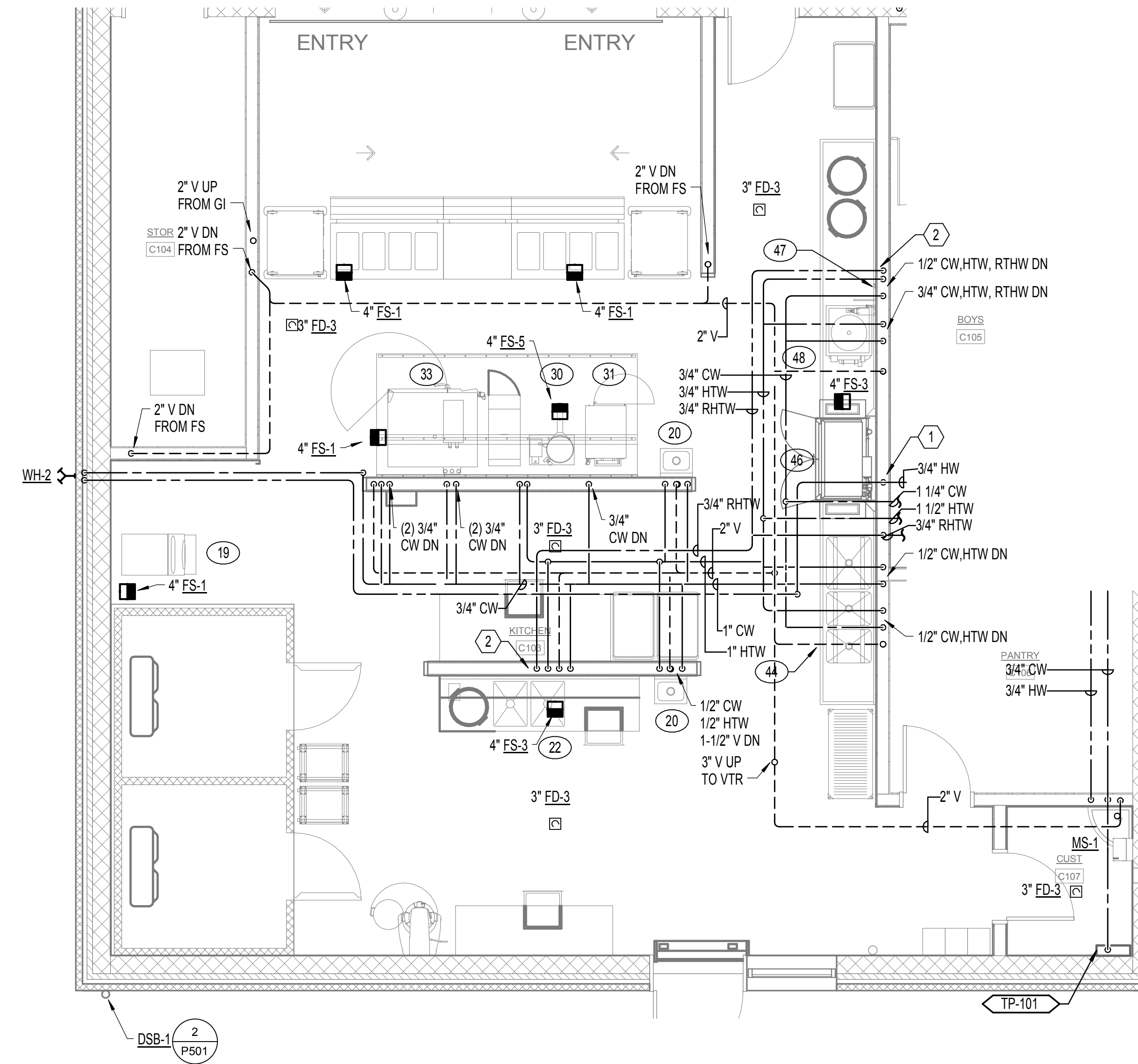
GENERAL NOTES:

- A. VERIFY EXACT SIZES, LOCATIONS, AND FLOOR CLEANOUTS FLUSH WITH FINISHED FLOOR.
- B. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES.
- C. INSTALL FLOOR DRAINS, FLOOR SINKS, AND FLOOR CLEANOUTS FLUSH WITH FINISHED FLOOR.
- D. ALL FLUSH FIXTURES TO BE SERVED WITH NON-POTABLE WATER.
- E. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- F. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT.
- G. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, SPRINKLER, HVAC, STRUCTURAL AND GENERAL ARCHITECTURE.
- H. REFER TO RISER DIAGRAM FOR COMPLETE SIZES, SHUT-OFF VALVE AND WATER HAMMER ARRESTER LOCATIONS.
- I. PROVIDE TRAP PRIMER LINES TO FIXTURES AS REQUIRED.

NOTES:

- 1. PROVIDE WATER HAMMER ARRESTER LOCATED BEHIND ACCESS PANEL. COORDINATE ACCESS PANEL LOCATION AND FINISH WITH ARCHITECT.
- 2. ROUTE PIPING IN JOIST SPACE, TIGHT TO STRUCTURE.
- 3. PROVIDE ANODELESS RISER WHERE TRANSITIONS FROM STEEL TO POLY PIPE OCCUR.
- 4. 3/4" CW UP TO HOSE BIB IN MECHANICAL PLATFORM. COORDINATE LOCATION WITH ALL TRADES.
- 5. ROUTE PIPING IN FURRED WALL. COORDINATE WITH ARCHITECT.
- 6. PIPING TO BE SURFACE MOUNTED ON CMU WALL.
- 7. PROPANE TANK CONNECTION. COORDINATE LOCATIONS WITH ALL TRADES.
- 8. 2" NPW DN
- 9. 2-1/2" V UP TO 3" VTR.

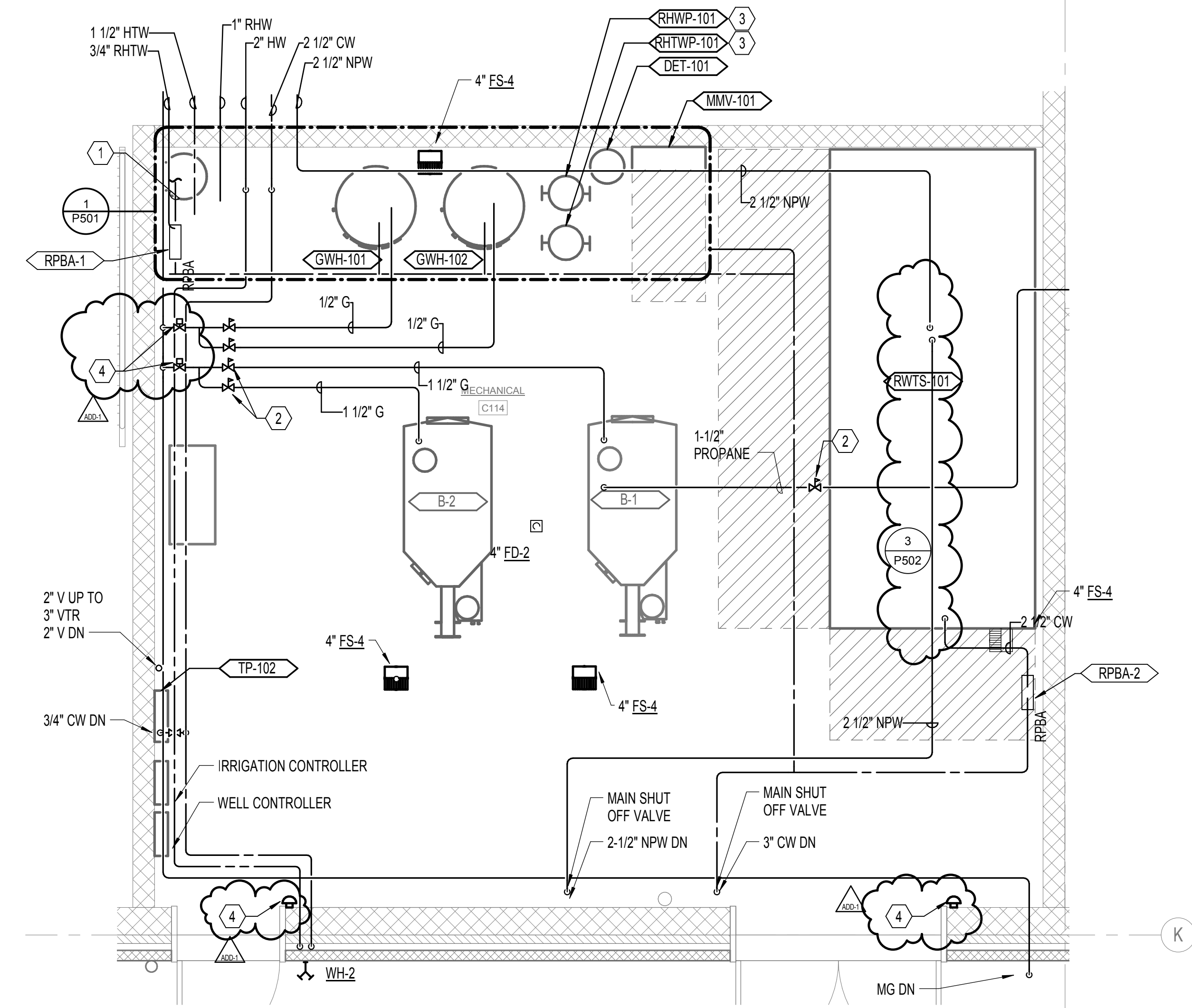
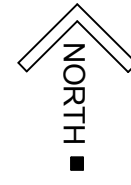




GENERAL NOTES:
A. REFER TO FOOD SERVICE PLANS FOR MORE INFORMATION.

- NOTES:**
1. PROVIDE WATER PRESSURE REDUCING VALVE ON DOMESTIC HOT WATER LINES SERVING DISHWASHER. ROUTE OVERFLOW TO NEAREST FLOOR SINK.
 2. PROVIDE BALANCING VALVE ON RHTW LINE. SET TO 0.5GPM.

2 ENLARGED KITCHEN PLAN - PLUMBING
1/4" = 1'-0"



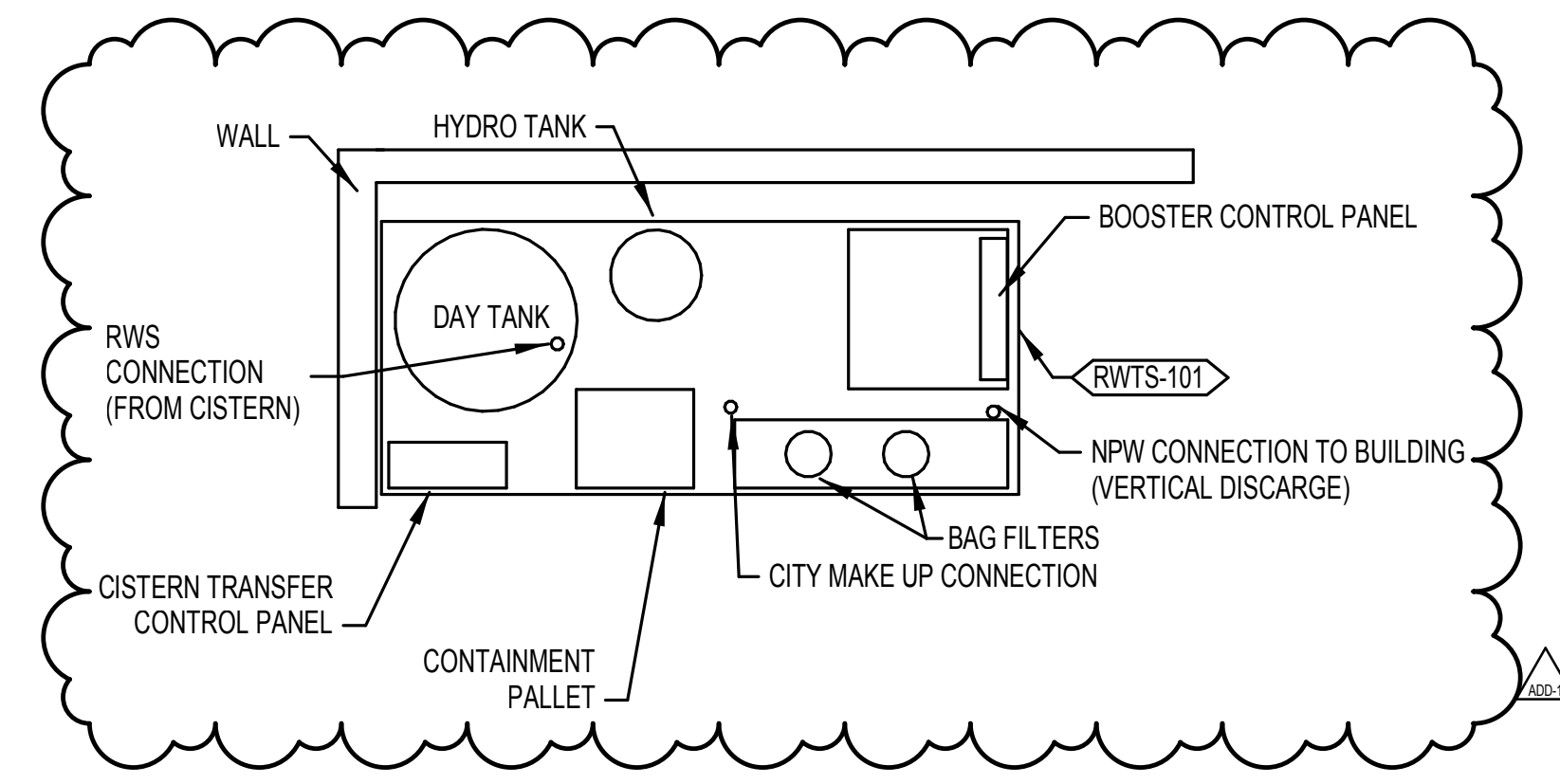
GENERAL NOTES:
A. MECHANICAL EQUIPMENT SHOWN FOR REFERENCE ONLY.
B. REFER TO 1/P501 FOR ADDITIONAL WORK RELATED TO DHW SYSTEM.

- NOTES:**
1. TO HVAC MAKE UP.
 2. LOCATE GAS REGULATOR A MINIMUM OF 10 FEET FROM BOILERS.
 3. WALL MOUNTED EPO SWITCH FOR SAFETY.
 4. EPO (EMERGENCY POWER OFF) SWITCH TO BE PROVIDED BY DIV. 26 FOR SHUT DOWN OF POWER TO EMERGENCY GAS SHUTDOWN SOLENOID VALVES. SEE NOTE 2 ON E701 AND 2/P603

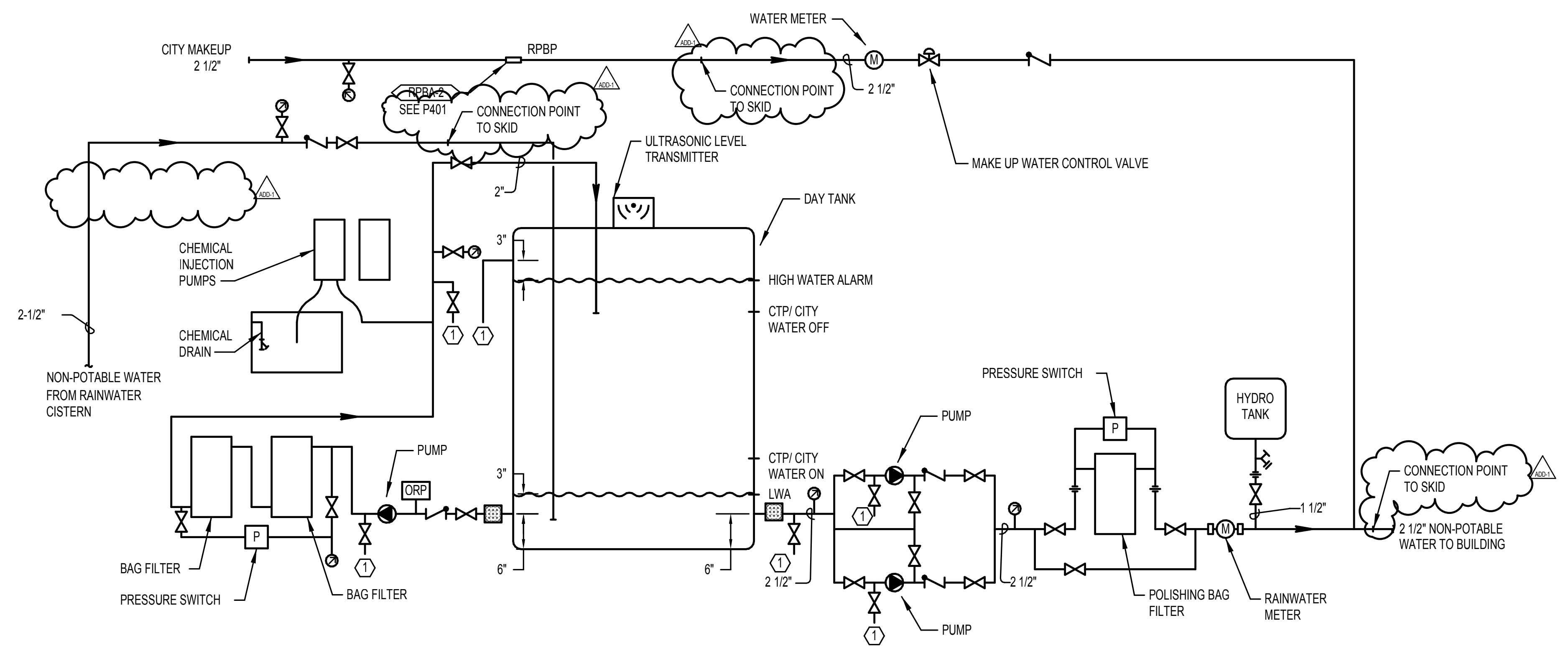
1 ENLARGED FLOOR PLAN - MECHANICAL ROOM
3/8" = 1'-0"



PROJECT #	153720	REVISION	
ISSUE DATE	2/12/16	DATE	
DRAWN	SC	ADD-1 -	03/02/2016
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3 RAINWATER SKID DETAIL
N.T.S.



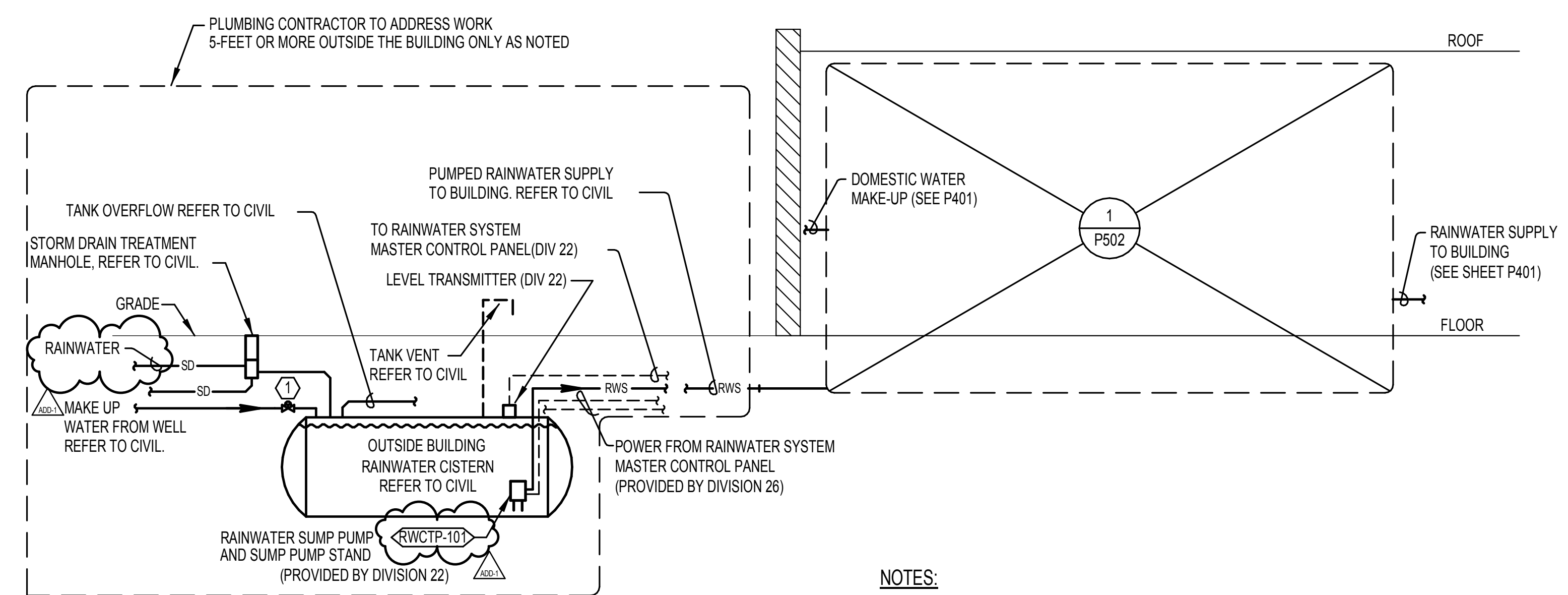
GENERAL NOTE:

- A. LEAVE RAINWATER TREATMENT SKID ON TOP OF HOUSEKEEPING PAD.
- B. ALTERNATE 7: DELETE ONLY RAINWATER HARVESTING EQUIPMENT SHOWN ABOVE THAT IS FURNISHED WITH EQUIPMENT SKID. FIELD PIPING CONNECTED TO SKID SHALL BE CAPPED OVERHEAD. DO NOT DELETE WELL WATER SOLENOID VALVE. DO NOT DELETE CISTERN PUMP AND OTHER EQUIPMENT ASSOCIATED WITH THE CISTERN. RAINWATER HARVESTING SYSTEM SHALL BE FULLY OPERABLE UPON LATER INSTALLATION OF RAINWATER EQUIPMENT SKID.

NOTE:

- 1. ROUTE TO FLOOR SINK. DRAIN INDIRECTLY.

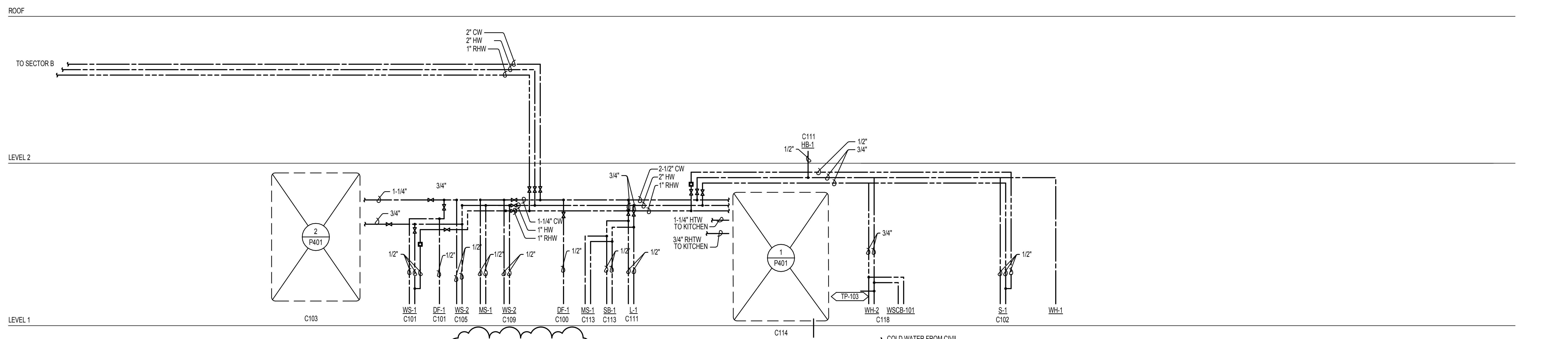
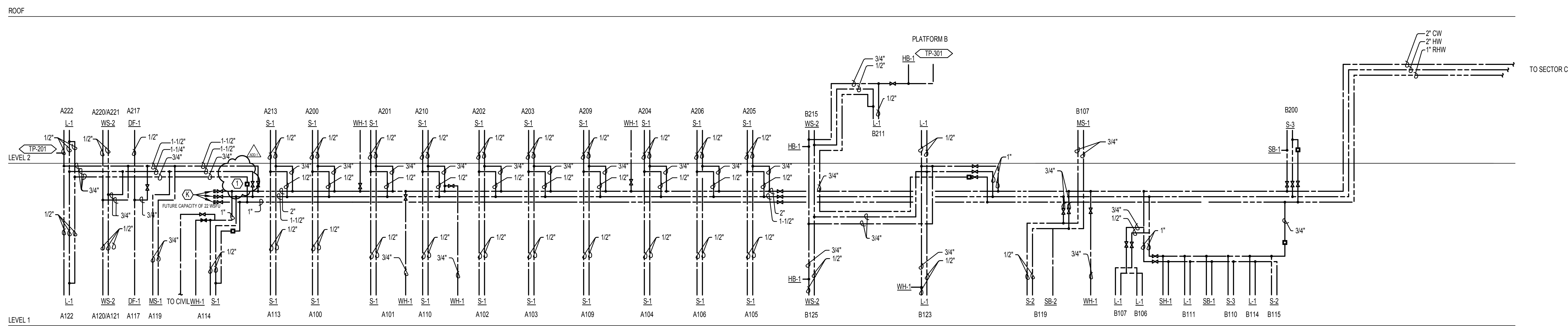
1 RAINWATER HARVESTING TREATMENT & DISTRIBUTION SYSTEM
N.T.S.



NOTES:

- 1. SOLENOID VALVE BY DIVISION 22. CONTROL WIRING AND PONDING ROUTED BACK TO RAINWATER SYSTEM MASTER CONTROL PANEL. LOCATE VALVE IN IRRIGATION WELL VAULT. SEE CIVIL DRAWINGS.

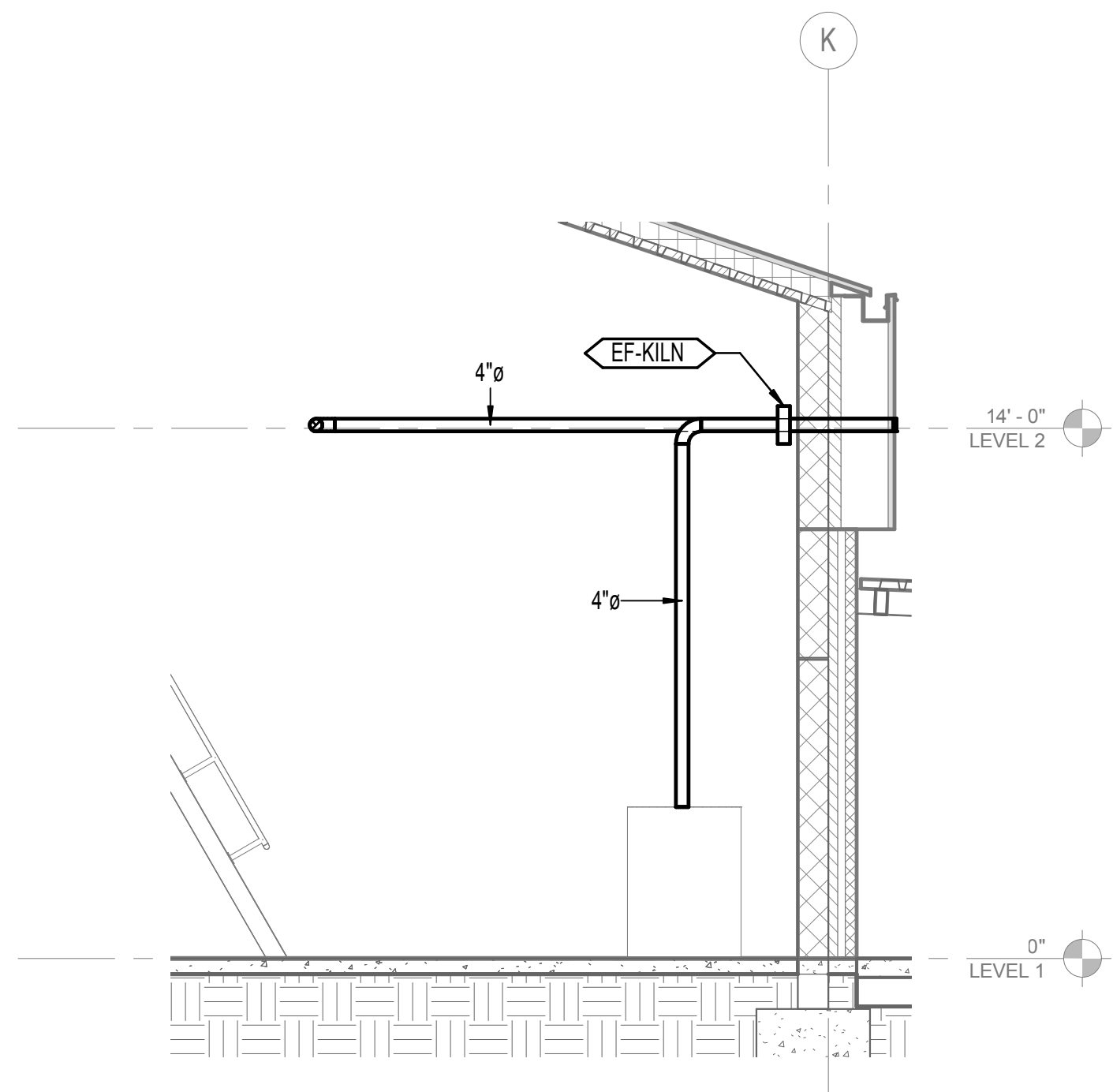
2 RAINWATER SYSTEM DIAGRAM
N.T.S.



1 DOMESTIC RISER DIAGRAM
NONE

GENERAL NOTES:
1. SET ALL BALANCE VALVES TO 0.5 GPM UNLESS NOTED.

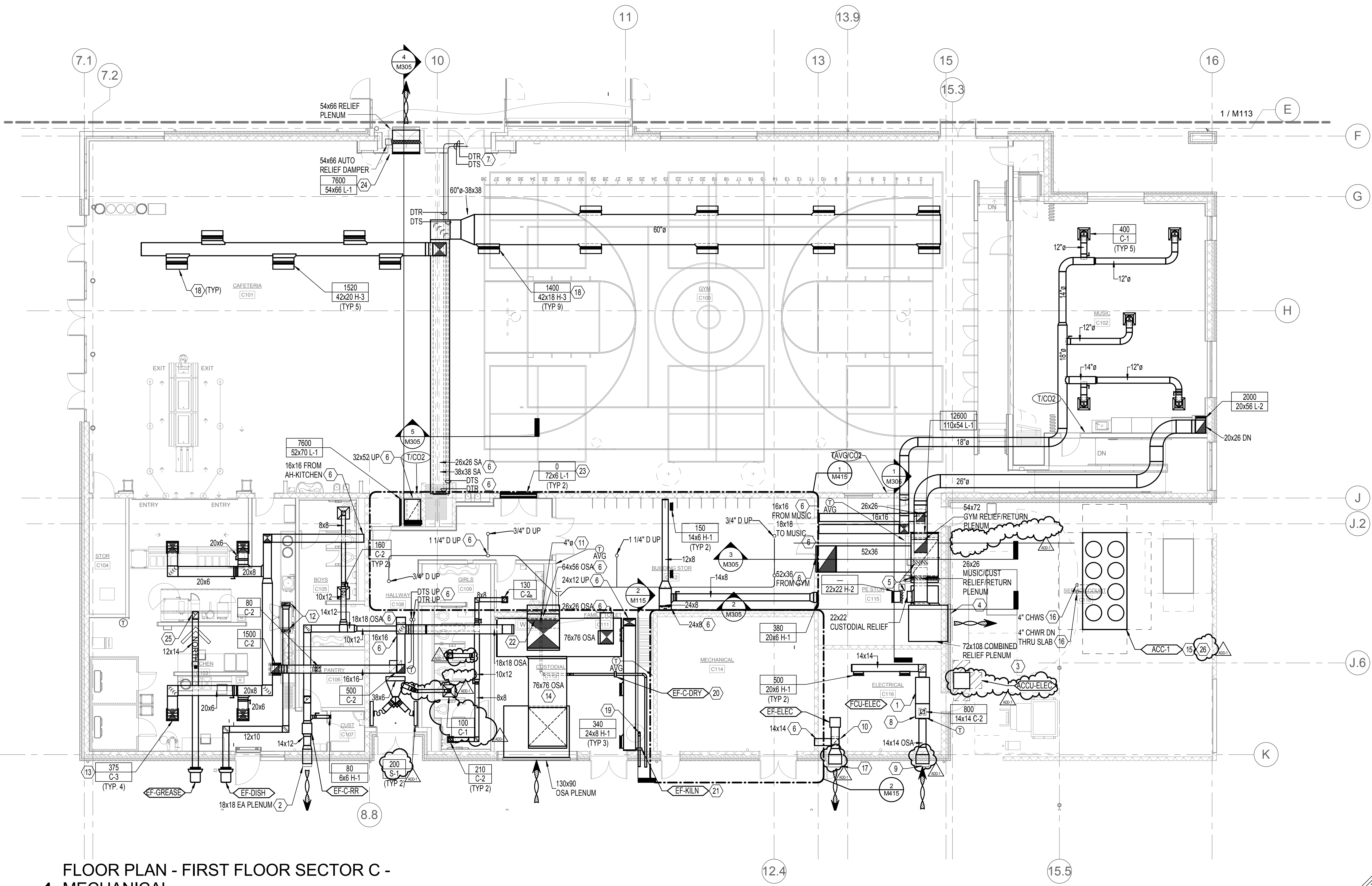
NOTES:
(1) SET BALANCE VALVES TO 1.0 GPM.



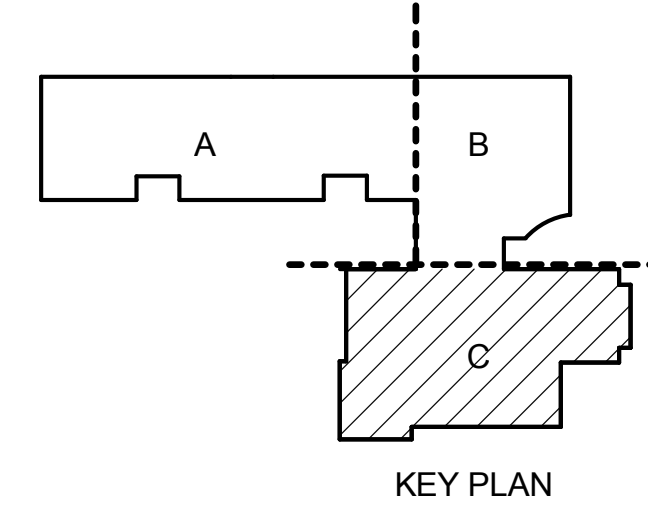
2 Section EF-C-DRYER SECTION DETAIL
1/4" = 1'-0"

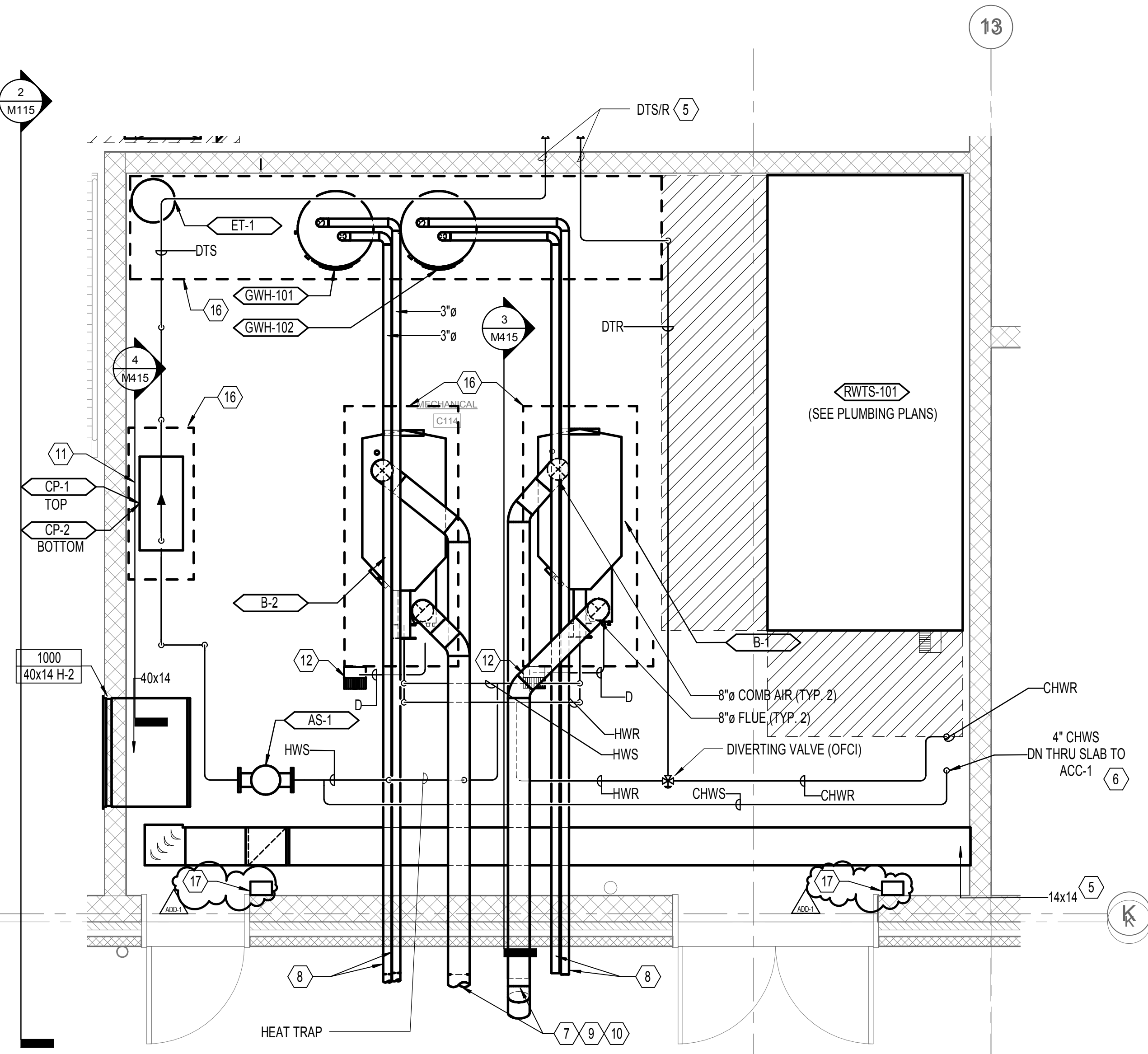
- GENERAL NOTES:**
- A. BRANCH RUNOUT PIPING TO TU HEATING COILS AND CABINET UNIT HEATERS TO BE 3/4-INCH UNLESS OTHERWISE NOTED.
 - B. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.
 - C. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.
 - D. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
 - E. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
 - F. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
 - G. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OR NOT.
 - H. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

- NOTES:**
1. ROUTE RS AND RL PIPING INDOORS, ALONG EAST WALL OF PE STORAGE.
 2. LOCATE ABOVE CANOPY.
 3. PROVIDE HORIZONTAL SHEET METAL SEPARATION, LOCATED 82 INCHES FROM BOTTOM OF PLENUM. GYM RELIEF CONNECTED TO LOWER -82 INCHES OF PLENUM. MUSIC ROOM AND CUSTODIAL RELIEF CONNECTED TO UPPER 26 INCHES OF PLENUM.
 4. RELIEF LOUVER TO BE DIVIDED HORIZONTALLY BY SHEET METAL SEPARATION LOCATED -82 INCHES FROM BOTTOM OF LOUVER AS DESCRIBED BY NOTE 3.
 5. PROVIDE AUTOMATIC CONTROL DAMPER AND BACK DRAFT DAMPER.
 6. CONTINUED ON 1/M415.
 7. CONTINUED ON M413.
 8. MIXING BOX 14x14 WITH RETURN AND OSA AUTO DAMPER. RETURN GRILLE ON BOTTOM, AT DAMPER.
 9. 26x18 OSA PLENUM AT LOUVER. 18" PLENUM DEPTH.
 10. MIXING BOX WITH 14x14 RELIEF AND SUPPLY DAMPER.
 11. 4" DRYER EXHAUST UP.
 12. 4x16 EXHAUST DUCT CONNECTION TO DISHWASHER HOOD (TYP. 2), 200 CFM AT ENTRY SIDE, 400 CFM AT EXIT SIDE. PROVIDE VOLUME DAMPER AT EACH DUCT.
 13. DIFFUSER SIZED TO LIMIT AIR VELOCITY TO 150 FPM AT DISCHARGE. PROVIDE LINED PLENUM. SEE DETAIL 6/M501.
 14. ROUTE ABOVE BETWEEN TRUSSES.
 15. ACC-1 COMPRESSOR SECTION TO BE ORIENTED FACING SOUTH.
 16. PROVIDE HEAT TAPE ON EXPOSED CHWR/S FROM FROSTLINE TO POINT OF CHILLER CONNECTION.
 17. 26x18 RELIEF PLENUM, 18" PLENUM DEPTH.
 18. INSTALL DRUM LOUVER AT 30 DEGREE ANGLE DOWN.
 19. 4" EXHAUST DUCT DN TO KILN.
 20. TERMINATE AT DOWNTURNED ELBOW. PROVIDE BACKDRAFT DAMPER W/O SCREEN.
 21. TERMINATE AT DOWNTURNED ELBOW W/ SCREEN.
 22. MOUNT GRILLE ABOVE DOORS.
 23. MOUNT W/ BOTTOM OF GRILLE AT 10 FT AFF. PROVIDE HINGED FRAME FOR GRILLE TO ENABLE ACCESS TO RELIEF DAMPER AND ACTUATOR LOCATED BEHIND GRILLE.
 24. 12x14 GREASE EXHAUST CONNECTION AT HOOD. SLOPE DUCT FROM FAN TO HOOD. PROVIDE DUCT CLEANOUTS AS REQUIRED BY CODE.
 25. ALTERNATE 6: DELETE CHILLER. PROVIDE ALL PIPING AND CONTROLS TO 2 FT ABOVE GRADE. CAP FOR FUTURE CHILLER CONNECTIONS.

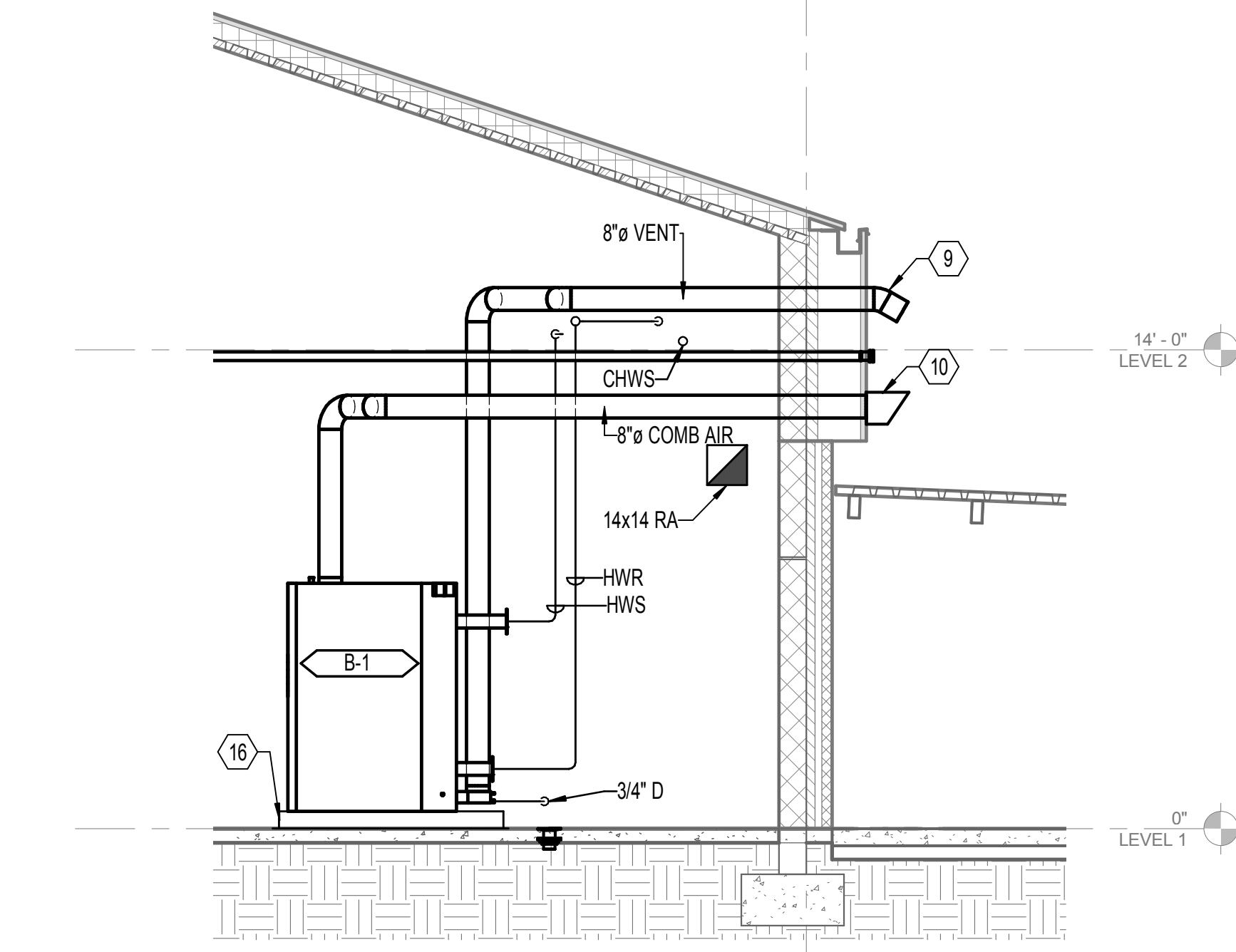


1 FLOOR PLAN - FIRST FLOOR SECTOR C - MECHANICAL
1/8" = 1'-0"

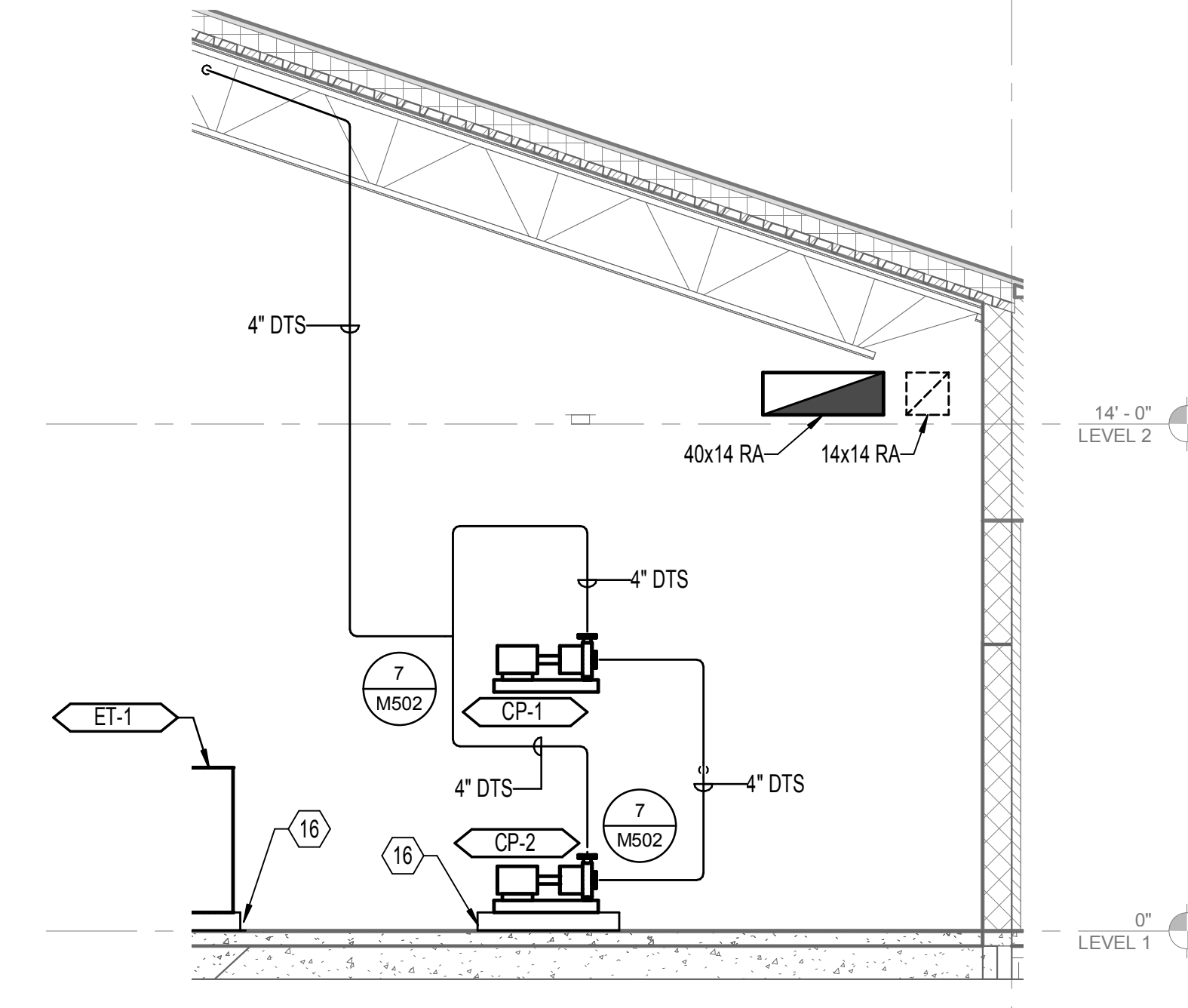




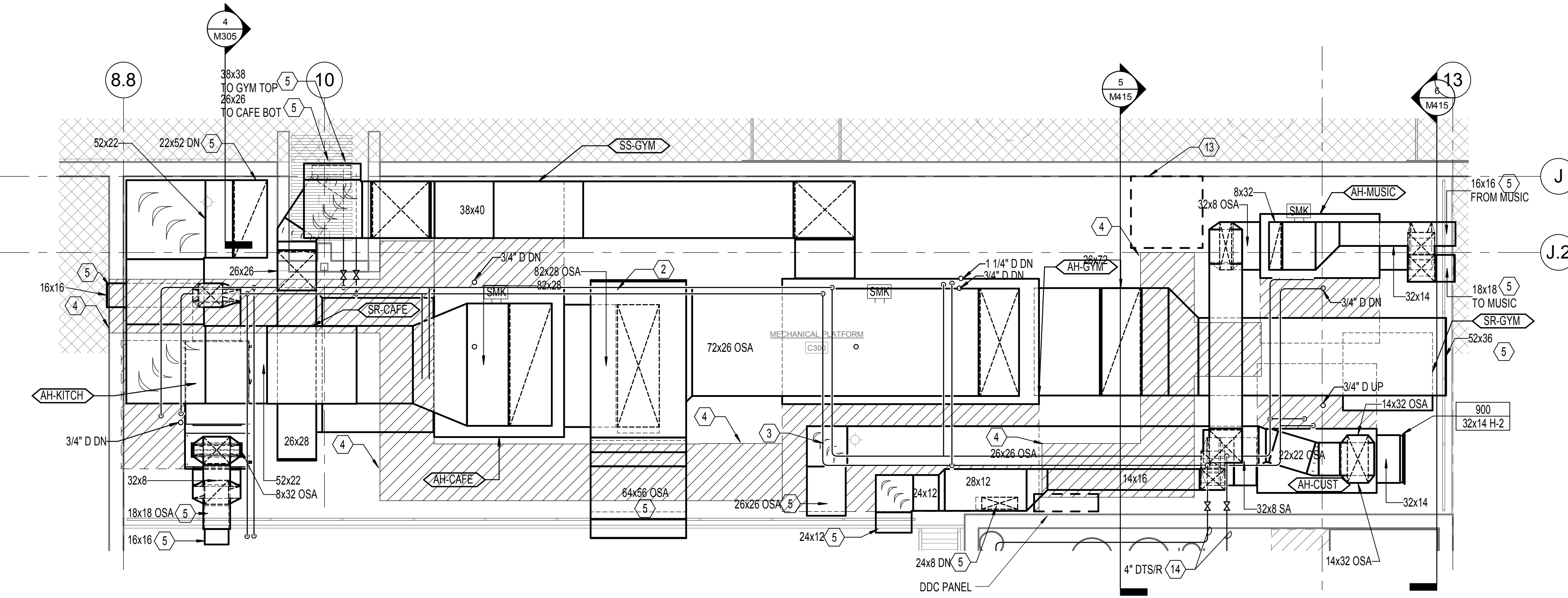
2 ENLARGED PLAN - SECTOR C BOILER ROOM
3/8" = 1'-0"



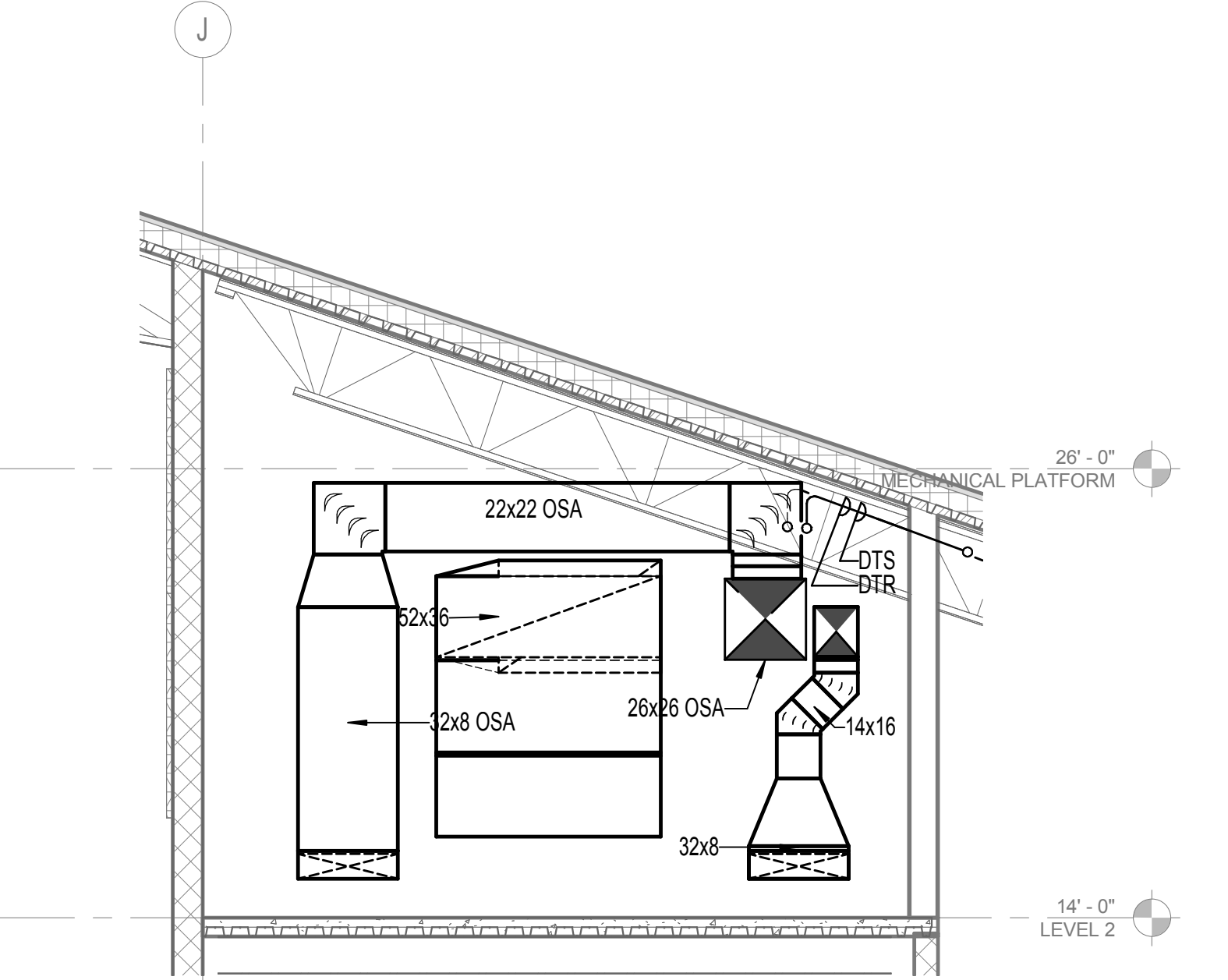
3 BOILER ROOM B-1 FACING EAST
1/4" = 1'-0"



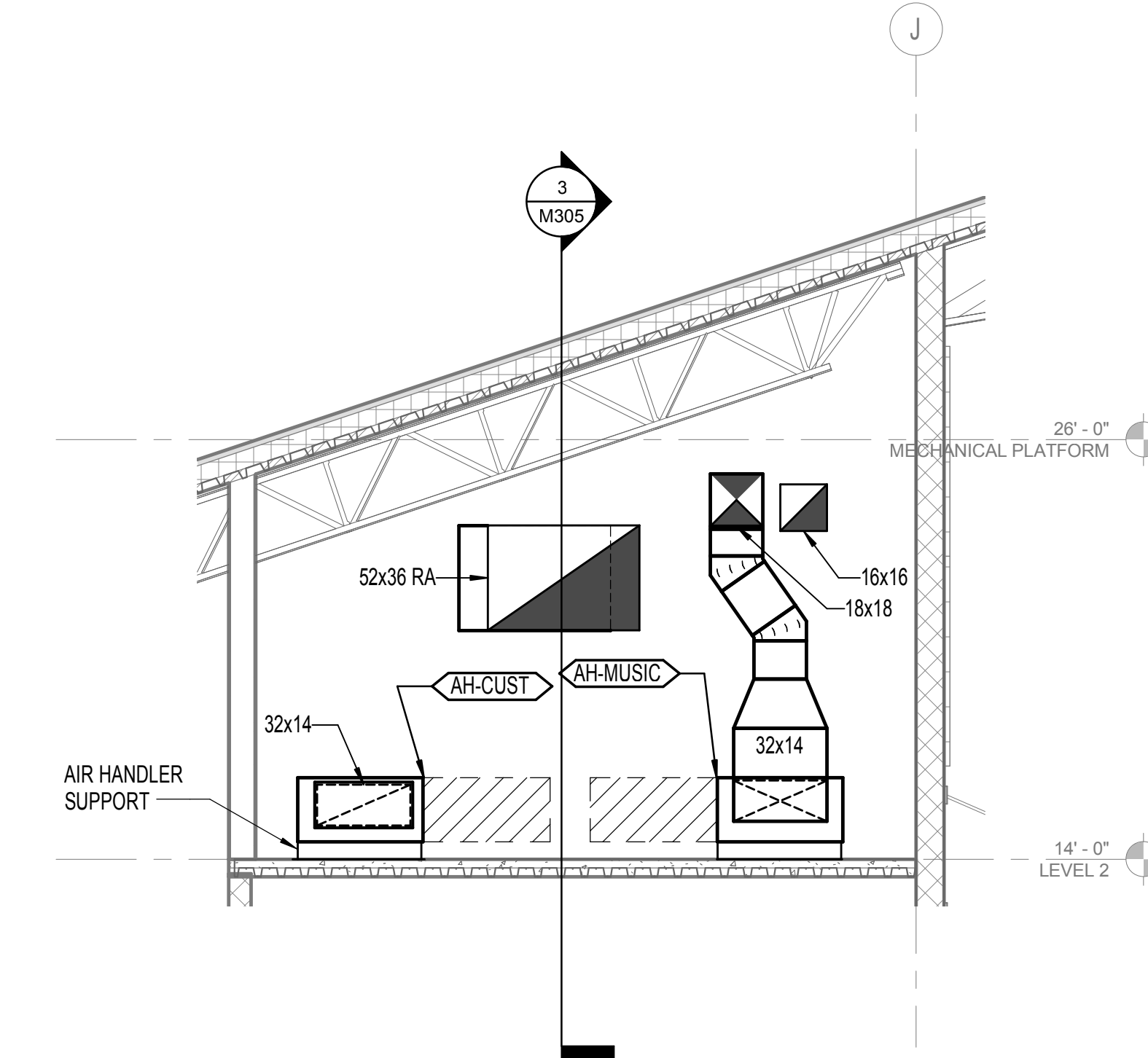
4 BOILER ROOM PUMPS FACING WEST
1/4" = 1'-0"



1 ENLARGED PLAN - SECTOR C MECHANICAL PLATFORM
1/4" = 1'-0"



5 SECTOR C PLATFORM EAST SECTION LOOKING EAST
1/4" = 1'-0"



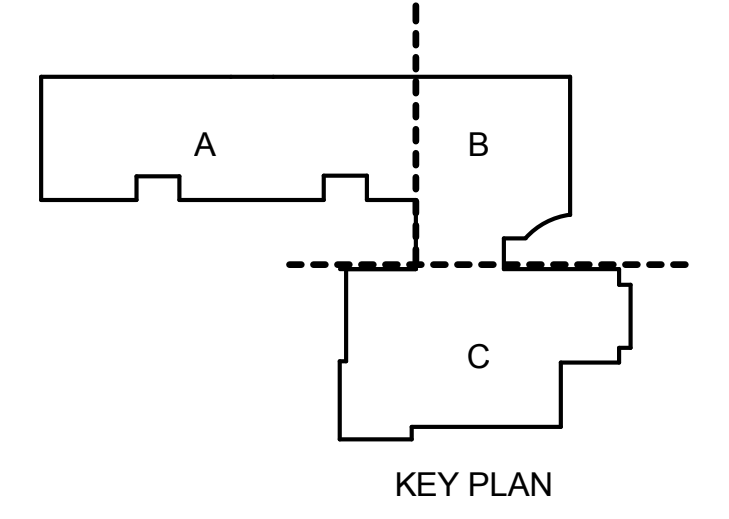
6 SECTOR C PLATFORM EAST SECTION LOOKING WEST
1/4" = 1'-0"

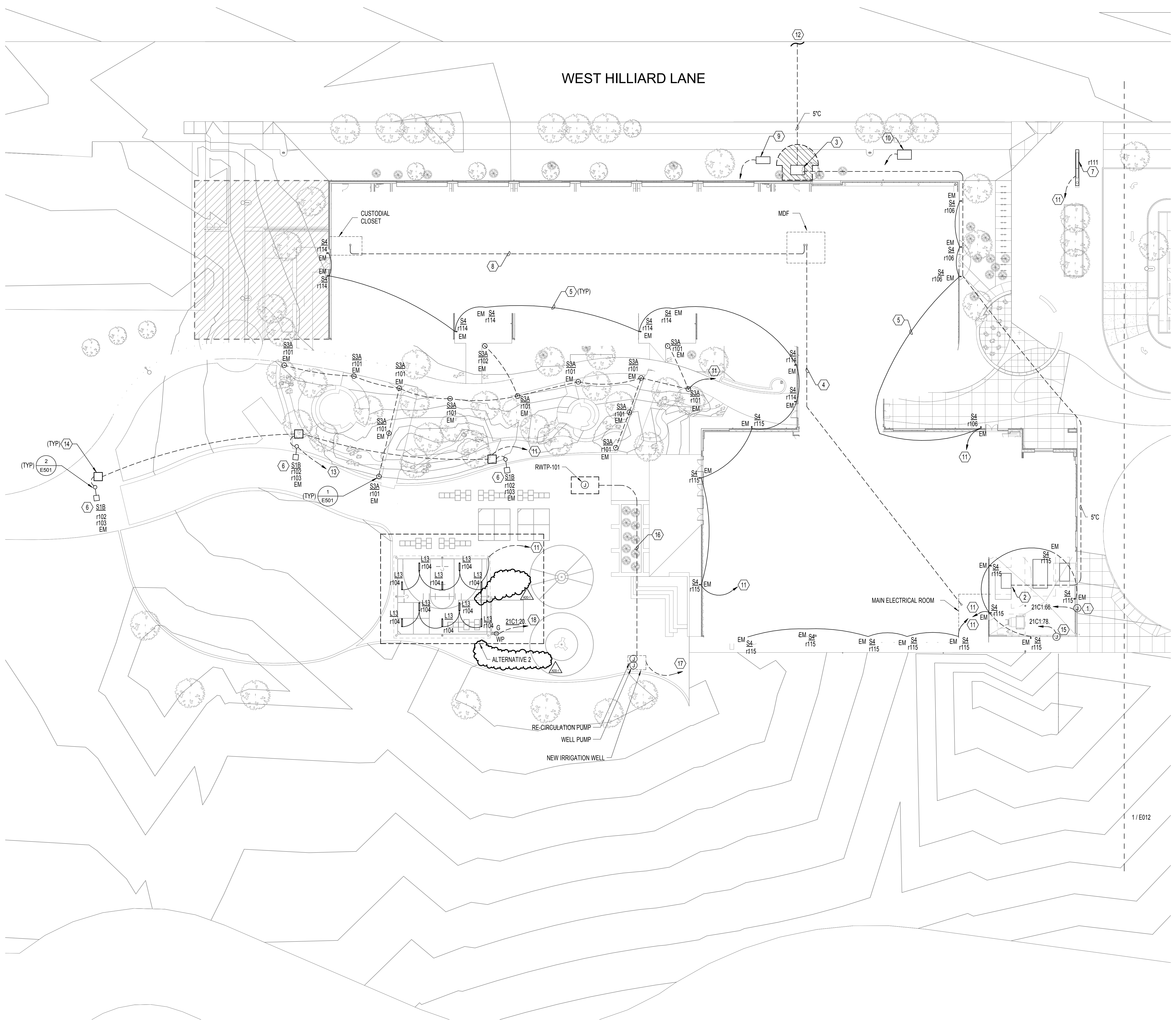
GENERAL NOTES:

A. CONTRACTOR RESPONSIBLE FOR COORDINATING W/ OTHER TRADES. INCLUDE NECESSARY OFFSETS AND ROUTE CHANGES REQUIRED FOR COORDINATION.

NOTES:

1. TERMINATE AT EXTERIOR WALL, ABOVE CANOPY.
2. ROUTE ABOVE, THROUGH TRUSS OPENINGS.
3. ROUTE ABOVE, BETWEEN TRUSSES.
4. PROVIDE MINIMUM OF 3' x 6' 8" AFF MAINTENANCE CLEARANCE.
5. CONTINUED ON M115.
6. CONTINUED ON M105.
7. BOILER VENT (ABOVE) AND COMBUSTION AIR (BELOW) (TYP. 2).
8. WATER HEATER SIDEWALL TERMINATION KIT WITH SIDE BY SIDE VENTS AND COMBUSTION AIR CONNECTIONS. MAINTAIN MIN. 12" DISTANCE FROM BOILER VENT TERMINATION. MOUNT AT 14" AFF.
9. BOILER VENT TERMINATION TO HAVE A 30 DEGREE ELBOW DOWN WITH BIRD SCREEN. PROVIDE MIN 12" HORIZONTAL SEPARATION BETWEEN ADJACENT VENTS. MAINTAIN MAX POSSIBLE HORIZONTAL DISTANCE FROM DOORS. SLOPE BACK TO BOILER AT MIN 1/4" PER FOOT.
10. BOILER COMBUSTION AIR OPENING WITH WEATHER HOOD AND SCREEN. INSTALL 36" DIRECTLY BENEATH CORRESPONDING BOILER VENT TERMINATION.
11. PROVIDE STEEL SUPPORT RACK FOR UPPER PUMP.
12. TERMINATE CONDENSATE DRAIN AT FLOOR SINK. SEE PLUMBING PLANS.
13. TECH PANEL AND CONDUIT AT THIS LOCATION. COORDINATE W/ TECHNOLOGY CONTRACTOR TO PROVIDE CLEARANCE.
14. CONTINUED ON 1/M415.
15. CONTINUED ON 2/M415.
16. SEE ARCH DWGS FOR CONCRETE HOUSEKEEPING PAD. COORDINATE DIMENSIONS W/ FINAL EQUIPMENT REQUIREMENTS.
17. LOCATION OF EPO (EMERGENCY POWER OFF) SWITCH TO BE PROVIDED BY DIV. 26 FOR SHUT DOWN OF POWER TO BOILERS. SEE NOTE 1 ON E701. COORDINATE METHOD OF SHUTDOWN WITH BOILER MANUFACTURER AND DIV 26.





- GENERAL NOTES:**
- A. ELECTRICAL WORK SHOWN IS DIAGRAMMATIC AND IS MEANT TO REPRESENT GENERAL ROUTING AND EQUIPMENT LOCATIONS. NOT EVERY BEND, OFFSET, PULLBOX, ETC., IS SHOWN. CONTRACTOR SHALL PROVIDE ALL WORK REQUIRED FOR A COMPLETE INSTALLATION.
 - B. COORDINATE ALL UNDERGROUND SITE WORK WITH EXISTING AND NEW UTILITIES.
 - C. ALL BRANCH CIRCUITING AT BUILDING EXTERIOR AND SITE SHALL BE #10AWG MINIMUM, UNLESS OTHERWISE NOTED.
 - D. PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.
 - E. REFER TO LIGHTING RELAY SCHEDULE ON SHEET E702 FOR ADDITIONAL INFORMATION.
 - F. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS (INCLUDING NEUTRAL) PER HOMERUN.
 - G. COORDINATE INSTALLATION OF NEW ELECTRICAL SERVICE WITH EWEB.
 - H. REFER TO '4' LIGHTING CONTROL INTERFACE' DETAIL ON SHEET E501 FOR SIGHTING CONTROL INFORMATION.
 - I. REFER TO TELECOMMUNICATION AND ARCHITECTURAL DRAWINGS FOR SITE CARD READER LOCATIONS AND REQUIREMENTS.
 - J. ALL UNDERGROUND AND EXPOSED CONDUIT SHALL BE MINIMUM 3/4" C.
 - K. REFER TO AV DRAWINGS FOR LOW VOLTAGE CONDUIT RUNS AND ADDITIONAL REQUIREMENTS.

- NOTES:**
1. PROVIDE CONNECTION TO MOTORIZED GATE. COORDINATE CONTROL AND ADDITIONAL REQUIREMENTS WITH VENDOR.
 2. TRANSFORMER VAULT. UTILITY VAULT CO MODEL "ECS-22302" REFERENCE EWEB DESIGN STANDARD MANUAL FOR ADDITIONAL INFORMATION.
 3. PROVIDE EWEB VAULT SE-3 FLUSH WITH GRADE. WITH CABINET LID MOUNTED ABOVE GRADE. SE-3 SHALL HAVE 10' FRONT AND 3' SIDE CLEARANCE AS SHOWN.
 4. PROVIDE (1) 2" CONDUIT WITH PULL STRING FOR FUTURE EXPANSION (ELECTRICAL POWER) FROM ELECTRICAL ROOM C116 TO MDF B126. CAP CONDUIT AND PROVIDE LABEL STATING "FOR FUTURE EXPANSION ONLY".
 5. NOTE NOT USED.
 6. PROVIDE (2) RELAYS PER POLE FOR LIGHT CONTROL BASED ON TIME CLOCK INPUT.
 7. PROVIDE CONNECTION TO MONUMENT SIGN. PROVIDE IN ADDITION AN UNSWITCHED CIRCUIT AS REQUIRED FOR SCREENBOARD READER VIA PANEL 21C1-42 IN SAME HOMERUN AS MONUMENT SIGN WITH (2) #10 CU & (1) #10 CU GRD. PROVIDE (1) 1" FOR AV WIRING. VERIFY WITH AV DRAWINGS FOR ADDITIONAL CONTROL REQUIREMENTS.
 8. PROVIDE 2" CONDUIT WITH PULL STRING FOR FUTURE EXPANSION (ELECTRICAL POWER) FROM MDF B126 TO CUSTODIAN A119. CAP CONDUIT AND PROVIDE LABEL STATING "FOR FUTURE EXPANSION ONLY".
 9. PROVIDE ELECTRICAL CONNECTION (2 #4 AWG CU, AND 1 #4 AWG CU GRD IN 1" CONDUIT) TO EACH OF THE (2) 1500 WATT HEATER IN RFP VAULT. CIRCUIT TO PANEL 21B1-43,45. IN ADDITIONAL PROVIDE (1) 3/4" FOR CONTROL WIRINGS.
 10. PROVIDE ELECTRICAL CONNECTION (2 #4 AWG CU, AND 1 #4 AWG CU GRD IN 1" CONDUIT) TO 12 HP PUMP IN DOD BFP VAULT. CIRCUIT TO PANEL 21B1-47. IN ADDITIONAL PROVIDE (1) 3/4" FOR CONTROL WIRINGS FROM VAULT TO MECHANICAL ROOM C119.
 11. CIRCUIT TO CP-1C LOCATED IN MAIN ELECTRICAL ROOM C116. REFER TO RELAY SCHEDULE ON SHEET E702 FOR CIRCUITING INFORMATION.
 12. PROVIDE (1) 5" C ACROSS WEST HILLIARD LANE FROM EWEB NEW VAULT SE-3 TO EWEB SERVICE POLE #572 (APPROXIMATELY 75' AWAY). PROVIDE (1) 5" RISER, 10 FEET UP EWEB POLE WITH MOUNTING BRACKETS PER EWEB STANDARDS. VERIFY WITH EWEB AND EWEB DESIGN DRAWINGS PRIOR TO INSTALLATION.
 13. PROVIDE 2 #10 AWG CU, AND 1 #10 AWG CU GRD IN 3/4" CONDUIT TO IDF ROOM. OWNER TO FURNISH NETWORK SWITCH. CIRCUIT FROM PANEL IDF-17. REFER TO TECHNOLOGY DRAWING FOR ADDITIONAL INFORMATION ON SIGNAL PROVISION.
 14. PROVIDE OLDCASTLE CHRISTY N09 PULLBOX LOCKABLE, WITH BARRIER (OR APPROVED EQUAL) NEAR EACH POLE LIGHT BASE.
 15. PROVIDE CONNECTION TO DOOR ACCESS EQUIPMENT. COORDINATE EXACT LOCATION AND ADDITIONAL CONTROL REQUIREMENT WITH AV CONSULTANT PRIOR TO INSTALLATION.
 16. PROVIDE (2) RACEWAYS (1) 1" FOR CONTROL AND (1) 3/4" FOR POWER FEEDER. REFER TO MIE COORDINATION SCHEDULE FOR FEEDER INFORMATION.
 17. REFER TO MIE COORDINATION SCHEDULE ON SHEET E701 FOR EQUIPMENT FEEDER AND ADDITIONAL REQUIREMENTS. HOMERUNS BACK TO MECHANICAL ROOM C114.
 18. PROVIDE #10 CU, 1 #10 CU GRD IN 1/2" CONDUIT BACK TO ELECTRICAL ROOM C116.

1 ENLARGED SITE PLAN WEST - ELECTRICAL
1" = 20'-0"

PIVOT
ARCHITECTURE

REGISTERED PROFESSIONAL ARCHITECT
STATE OF OREGON
15-1533-01
3-1-16

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ENLARGED SITE PLAN WEST - ELECTRICAL

PROJECT #	1537-05	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC

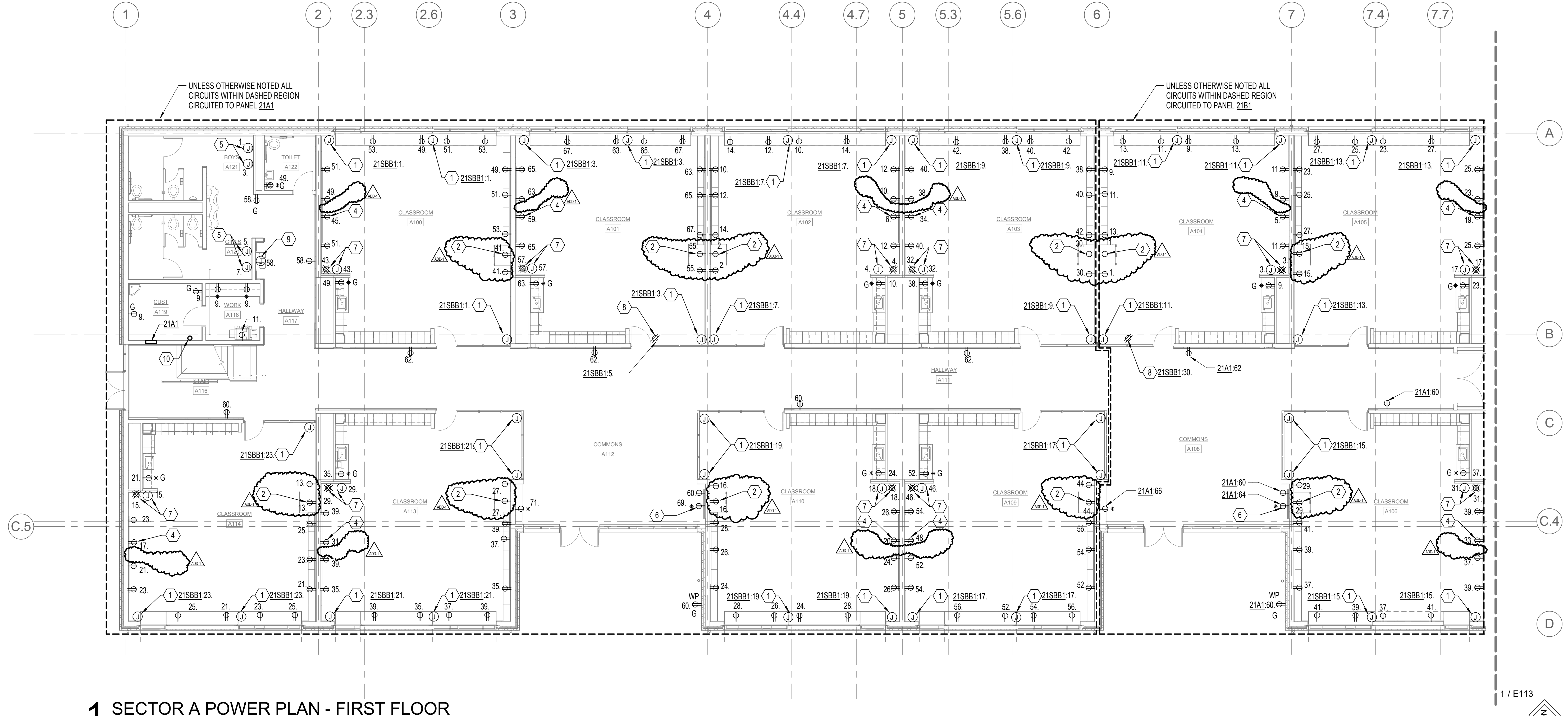
E011

GENERAL NOTES:

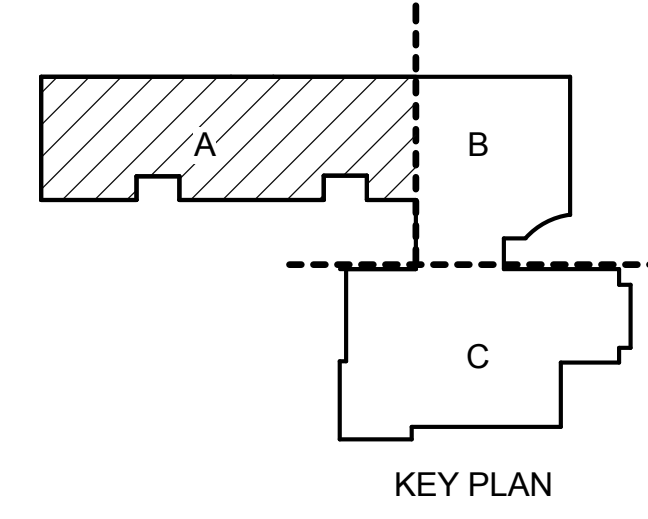
- A. AREA ABOVE ALL ELECTRICAL PANELS AND SWITCH BOARDS SHALL BE KEPT CLEAR OF ALL EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION INCLUDING PIPING, DUCTWORK, SUPPORTS, ETC. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
- B. ALL PENETRATIONS AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- C. PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT. SHARED NEUTRALS ARE NOT PERMITTED.
- D. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- E. ALL BRANCH CIRCUITING SHALL BE #10 AWG, UNLESS OTHERWISE NOTED.
- F. DEVICE AND EQUIPMENT CONNECTION LOCATIONS ARE SHOWN SCHEMATIC AND APPROXIMATE. REFER TO ARCHITECTURAL CEILING PLANS, FLOOR PLANS, ELEVATIONS AND SECTIONS FOR ADDITIONAL INFORMATION IMPACTING DEVICE ROUGH-IN. TYPICAL DIMENSIONED DEVICE LOCATIONS SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGH-IN. WHERE CONFLICT OCCURS, DECISION OF THE ARCHITECT SHALL GOVERN.
- G. PROVIDE WALL ROUGH-IN AT WALL CAVITY WHERE T-STATS ARE INDICATED. SINGLE GANG BOX WITH MUD RING, 1/2" CONDUIT TO ACCESSIBLE CEILING SPACE. COORDINATE WITH ALL OTHER TRADES TO AVOID CONFLICTS. MUST BE 18" AWAY FROM DOOR JAMBS.

NOTES:

- 1. PROVIDE CONNECTION TO MOTORIZED ROLLER SHADES. COORDINATE WITH MANUFACTURERS FOR ADDITIONAL REQUIREMENTS.
- 2. RECEPTACLE FOR TABLE CHARGING. COORDINATE EXACT LOCATION WITH ARCHITECT.
- 3. NOTE NOT USED.
- 4. RECEPTACLE FOR SHORT THROW PROJECTOR. COORDINATE EXACT HEIGHT WITH ARCHITECTURAL DRAWINGS AND AV DRAWINGS.
- 5. PROVIDE CONNECTION TO HAND DRYERS. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS.
- 6. PROVIDE CONNECTION FOR 32" DISPLAY SCREEN. RECEPTACLE SHALL BE MOUNTED BEHIND CENTER OF DISPLAY. COORDINATE EXACT LOCATION WITH AV DRAWINGS.
- 7. PROVIDE CONNECTION TO AV EQUIPMENT LOCATED IN CEILING MOUNTED ENCLOSURE (PROVIDED BY AV CONTRACTOR). COORDINATE EXACT LOCATION WITH AV DRAWINGS.
- 8. PROVIDE CONNECTION TO SHADE MOTOR TRANSFORMER. COORDINATE WITH MANUFACTURER FOR ADDITIONAL REQUIREMENTS.
- 9. PROVIDE CONNECTION TO BOTTLE FILLER.
- 10. 1-1/2" CONDUIT STUB-UP INTO WALL MOUNTED NEMA 1 6"x6"x8" ENCLOSURE. REFER TO SHEET 6011 FOR PATHWAY OF FUTURE EXPANSION RACEWAY.



1 SECTOR A POWER PLAN - FIRST FLOOR
1/8" = 1'-0"



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SECTOR A POWER PLAN - FIRST FLOOR

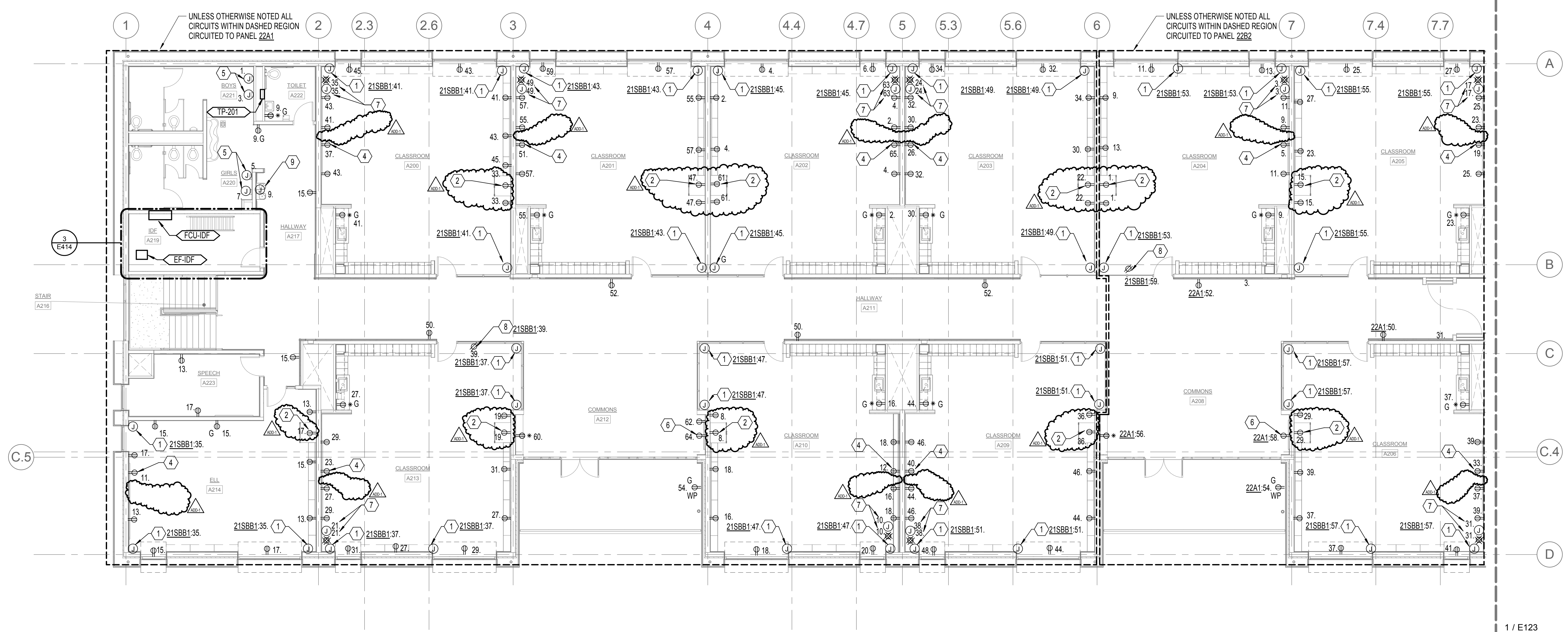
PROJECT#	153720	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PHC
E111			

GENERAL NOTES:

- A. AREA ABOVE ALL ELECTRICAL PANELS AND SWITCH BOARDS SHALL BE KEPT CLEAR OF ALL EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION INCLUDING PIPING, DUCTWORK, SUPPORTS, ETC. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
- B. ALL PENETRATIONS AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- C. PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT. SHARED NEUTRALS ARE NOT PERMITTED.
- D. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- E. ALL BRANCH CIRCUITING SHALL BE #10AWG., UNLESS OTHERWISE NOTED.
- F. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE ON SHEET E701 FOR ADDITIONAL INFORMATION.
- G. DEVICE AND EQUIPMENT CONNECTION LOCATIONS ARE SHOWN SCHEMATIC AND APPROXIMATE. REFER TO ARCHITECTURAL CEILING PLANS, FLOOR PLANS, ELEVATIONS AND SECTIONS FOR ADDITIONAL INFORMATION IMPACTING DEVICE ROUGH-IN. TYPICAL DIMENSIONED DEVICE LOCATIONS SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGH-IN. WHERE CONFLICT OCCURS, DECISION OF THE ARCHITECT SHALL GOVERN.
- H. PROVIDE WALL ROUGH-IN AT WALL CAVITY WHERE 1-STATS ARE INDICATED. SINGLE GANG BOX WITH MUD RING, 1/2" CONDUIT TO ACCESSIBLE CEILING SPACE. COORDINATE WITH ALL OTHER TRADES TO AVOID CONFLICTS. MUST BE 18" AWAY FROM DOOR JAMBS.

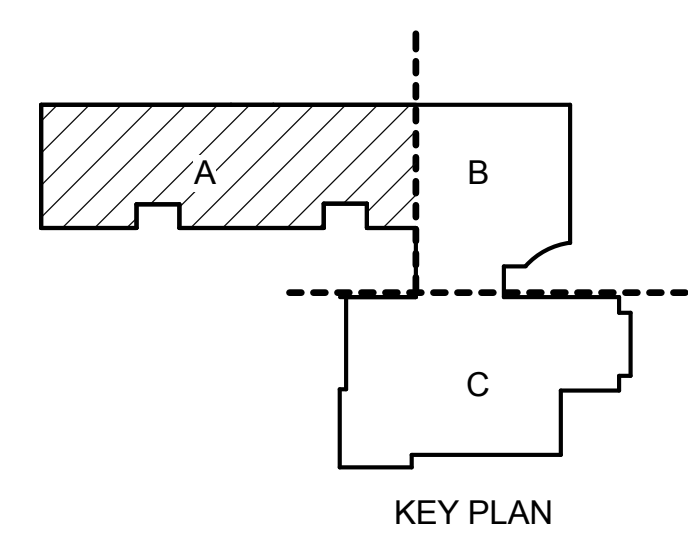
NOTES:

- 1. PROVIDE CONNECTION TO MOTORIZED ROLLER SHADES. COORDINATE EXACT LOCATION WITH MANUFACTURER FOR ADDITIONAL REQUIREMENTS.
- 2. RECEPTACLE FOR TABLET CHARGING. COORDINATE EXACT LOCATION WITH ARCHITECT.
- 3. NOTE NOT USED.
- 4. RECEPTACLE FOR SHORT THROW PROJECTOR. COORDINATE EXACT HEIGHT WITH ARCHITECTURAL DRAWINGS.
- 5. PROVIDE CONNECTIONS FOR HAND DRYERS. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS.
- 6. PROVIDE CONNECTION FOR 32" DISPLAY SCREEN. RECEPTACLE SHALL BE MOUNTED BEHIND CENTER OF DISPLAY. COORDINATE EXACT LOCATION WITH A/V DRAWINGS.
- 7. PROVIDE CONNECTION TO A/V EQUIPMENT LOCATED IN CEILING MOUNTED ENCLOSURE (PROVIDED BY A/V CONTRACTOR). COORDINATE EXACT LOCATION WITH A/V DRAWINGS.
- 8. PROVIDE CONNECTION TO SHADE MOTOR TRANSFORMER. COORDINATE WITH MANUFACTURER FOR ADDITIONAL REQUIREMENTS.
- 9. PROVIDE CONNECTION TO BOTTLE FILLER.



1 SECTOR A POWER PLAN - SECOND FLOOR
1/8" = 1'-0"

1 / E123



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PROJECT #	1537-05	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC
E121			

GENERAL NOTES:

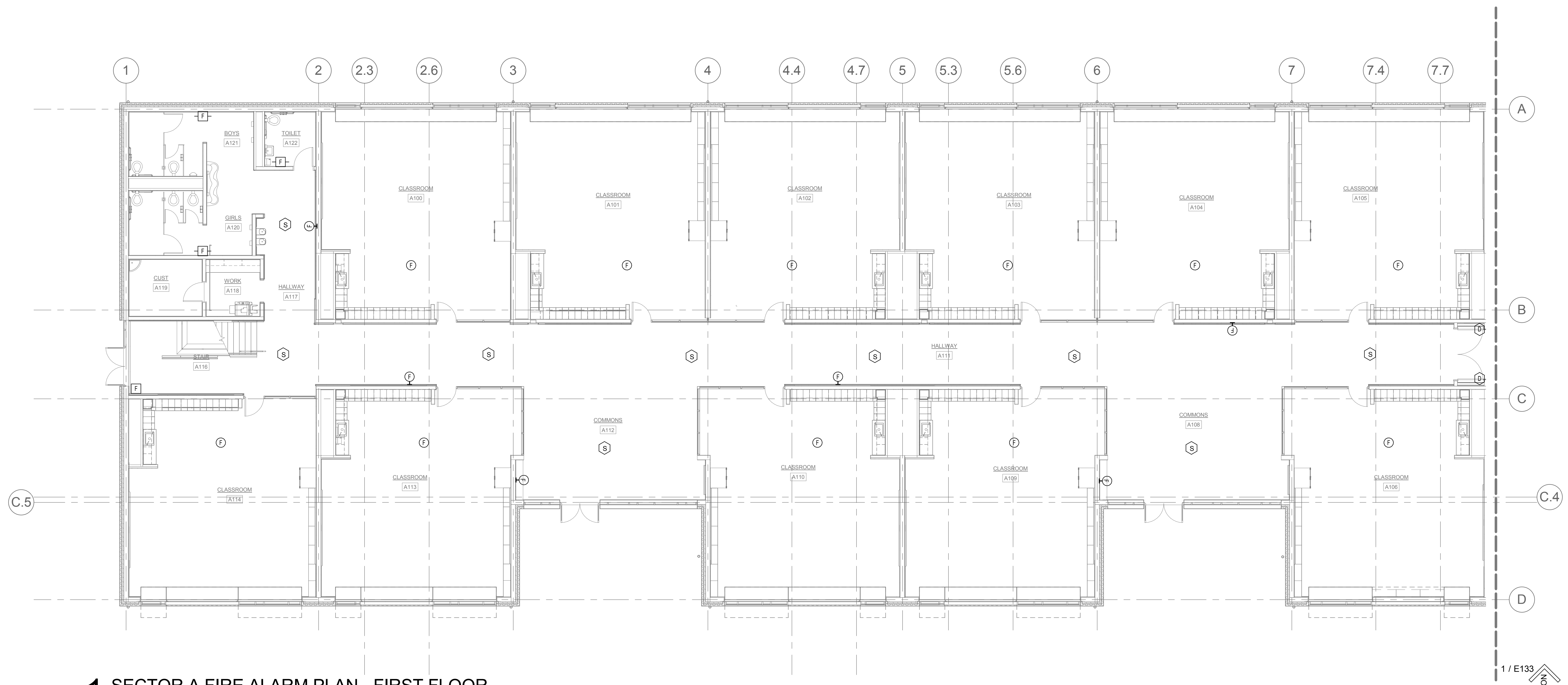
A. THE FIRE ALARM IS A CONTRACTOR DESIGN-BUILD SYSTEM. ADDITIONAL DEVICES MAY BE REQUIRED TO COMPLY WITH CODE. CONTRACTOR SHALL PROVIDE ADDITIONAL FIRE ALARM DEVICES, ACCESSORIES AND ANY ADDITIONAL ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL CODE COMPLIANT SYSTEM. REFERENCE SPECIFICATION DIVISION 28 30 00 FOR ADDITIONAL INFORMATION.

B. IN ADDITION TO CODE MINIMUM FIRE ALARM COVERAGE THE CONTRACTOR SHALL PROVIDE SMOKE DETECTION SPOT COVERAGE IN CORRIDORS AND COMMON AREAS, AND MANUAL PULL STATIONS AT EXITS PER THE OWNERS DIRECTION.

C. THE FIRE ALARM SYSTEM SHALL BE DESIGNED TO OFC 907 AND NFPA 72 STANDARDS. SHOP DRAWING WITH EQUIPMENT CUTSHEETS, BATTERY CALCS AND VOLTAGE DROP CALCS SHALL BE SUBMITTED TO LOCAL JURISDICTIONS FOR APPROVAL PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM.

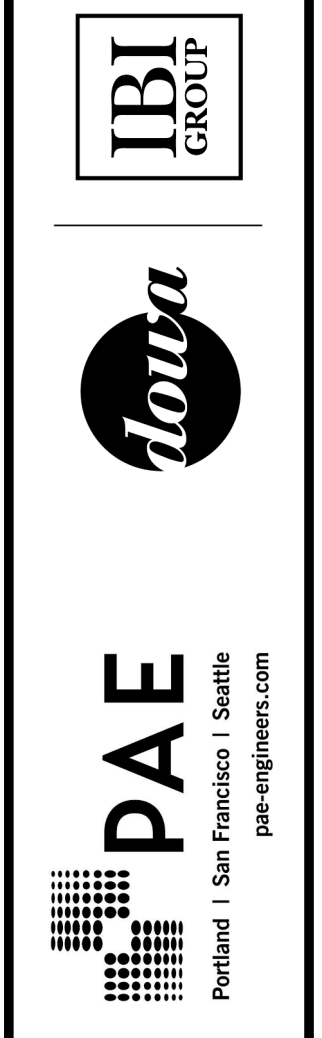
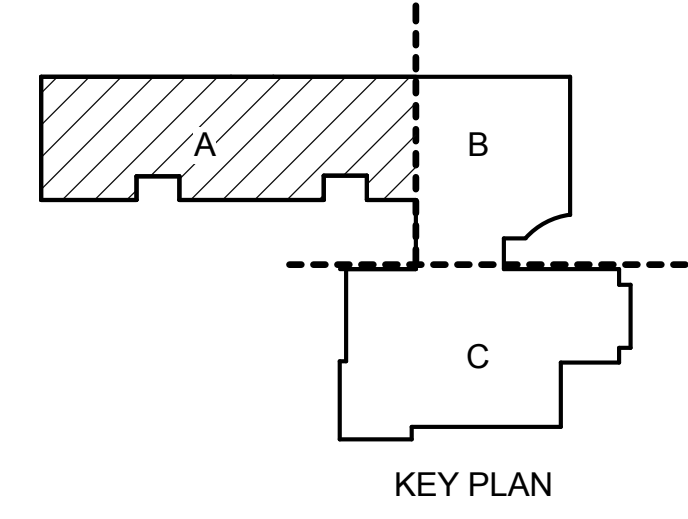


EXPOS 15-01-17



1 SECTOR A FIRE ALARM PLAN - FIRST FLOOR
1/8" = 1'-0"

1 / E133
NORTH

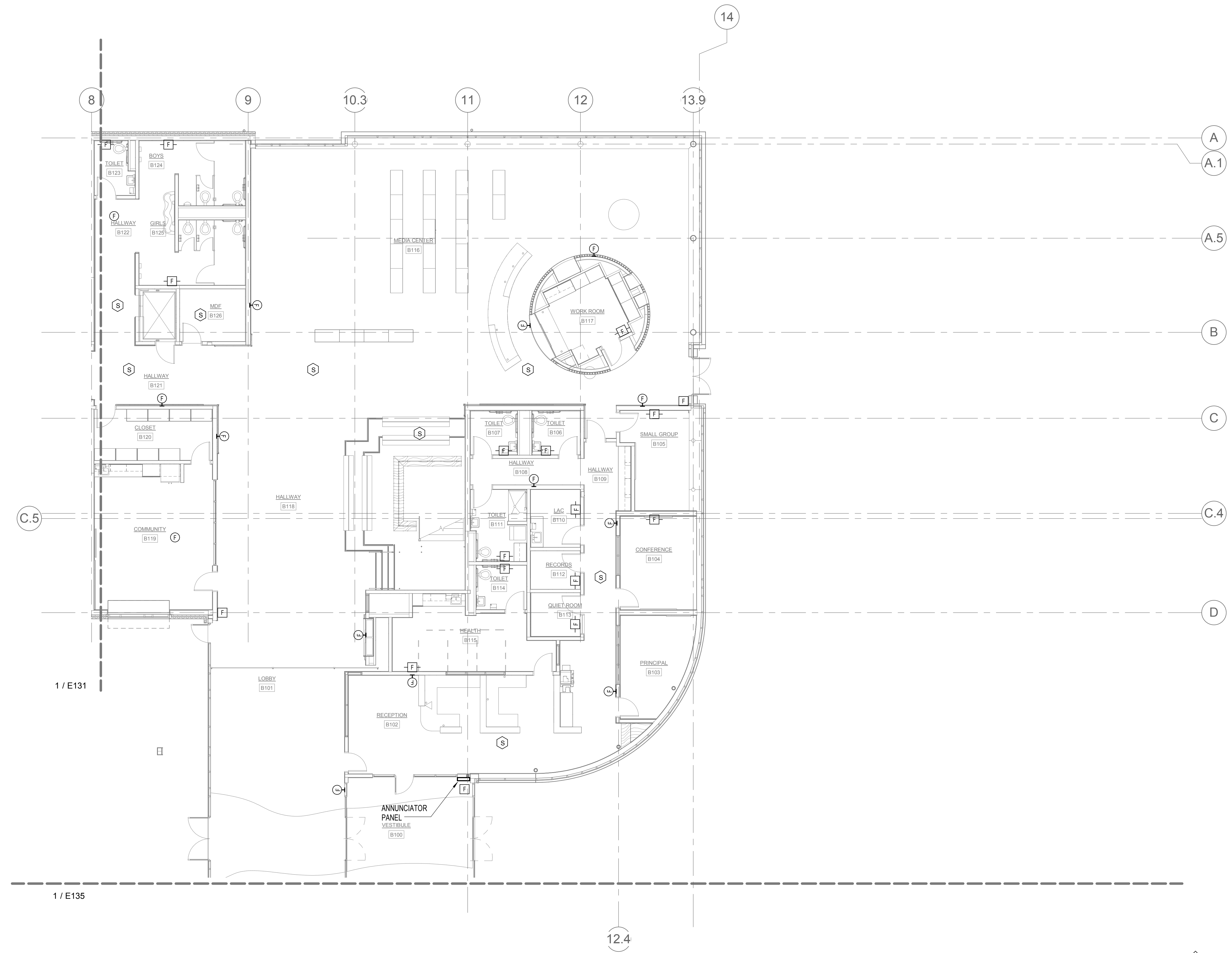


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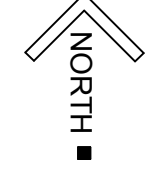
SECTOR A FIRE ALARM PLAN -
FIRST FLOOR

PROJECT #	153720	REVISION	
ISSUE DATE	2/12/16	DATE	
DESIGN	SC	ADD-1 -	03/02/2016
CHECKED	PKC		

E131



1 SECTOR B FIRE ALARM PLAN - FIRST FLOOR
1/8" = 1'-0"

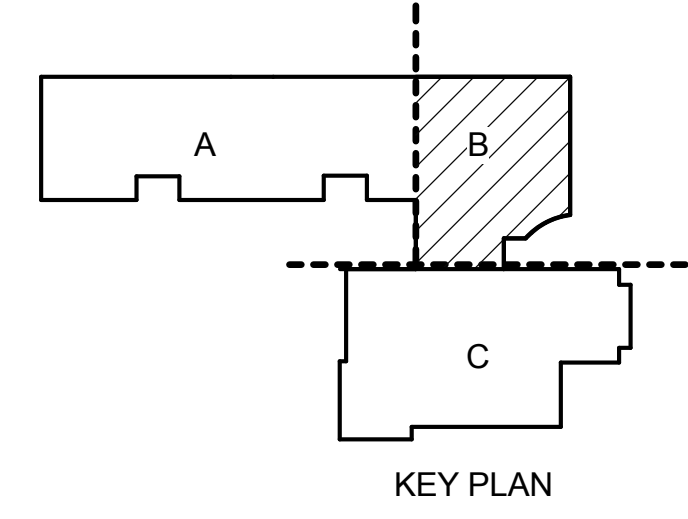


GENERAL NOTES:

A. THE FIRE ALARM IS A CONTRACTOR DESIGN-BUILD SYSTEM. ADDITIONAL DEVICES MAY BE REQUIRED TO COMPLY WITH CODE. CONTRACTOR SHALL PROVIDE ADDITIONAL FIRE ALARM DEVICES, ACCESSORIES AND ANY ADDITIONAL ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL CODE COMPLIANT SYSTEM. REFERENCE SPECIFICATION DIVISION 28 30 00 FOR ADDITIONAL INFORMATION.

B. IN ADDITION TO CODE MINIMUM FIRE ALARM COVERAGE THE CONTRACTOR SHALL PROVIDE SMOKE DETECTION SPOT COVERAGE IN CORRIDORS AND COMMON AREAS, AND MANUAL PULL STATIONS AT EXITS PER THE OWNERS DIRECTION.

C. THE FIRE ALARM SYSTEM SHALL BE DESIGNED TO OFC 907 AND NFPA 72 STANDARDS. SHOP DRAWING WITH EQUIPMENT CUTSHEETS, BATTERY CALCS AND VOLTAGE DROP CALCS SHALL BE SUBMITTED TO LOCAL JURISDICTIONS FOR APPROVAL PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM.



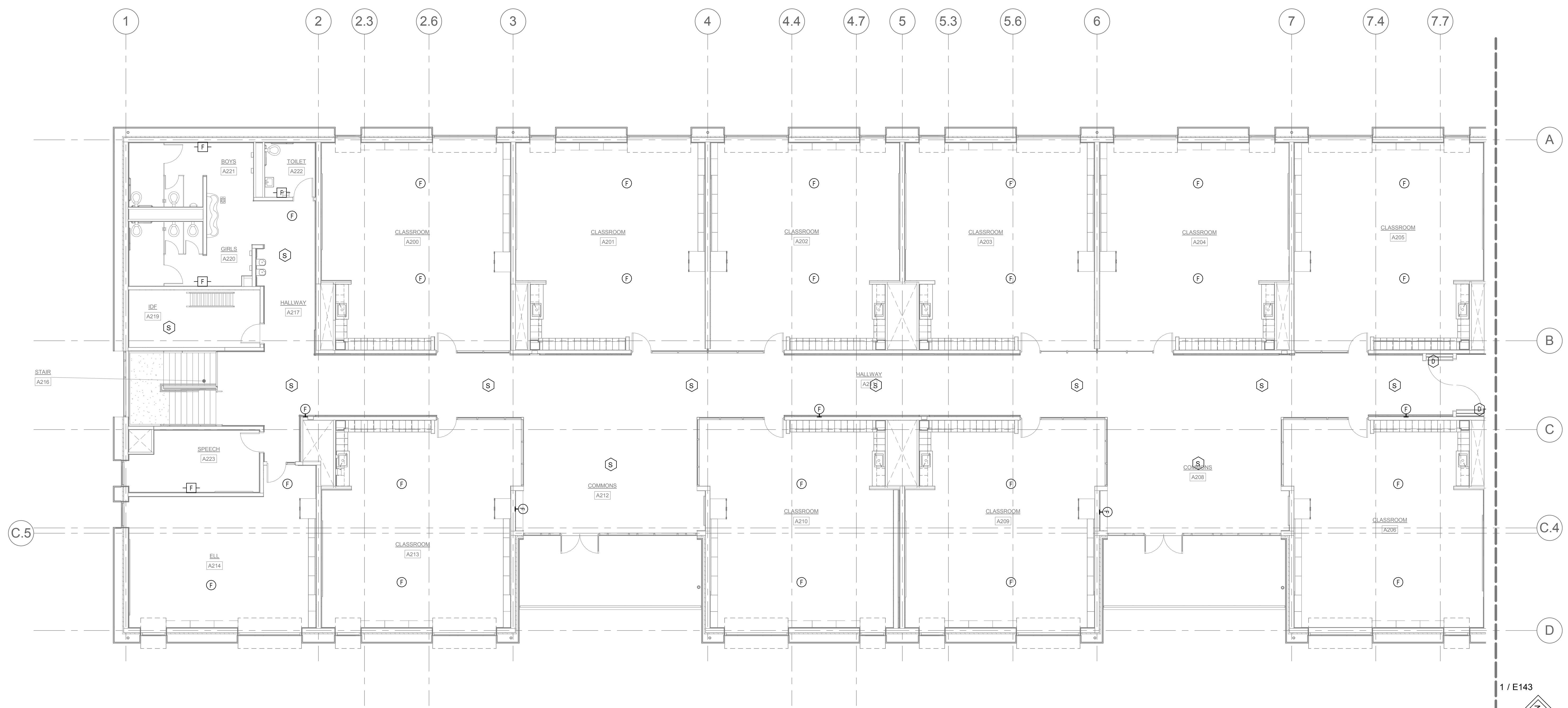
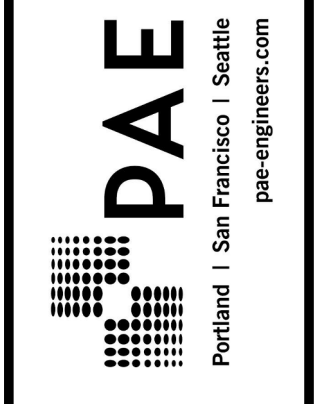
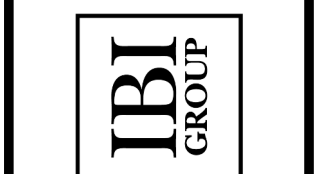
PROJECT #	1537 05	REVISION	
ISSUE DATE	2/12/16		
DRAWN	SC	ADD-1 -	03/02/2016
CHECKED	PEC		
E133			

GENERAL NOTES:

A. THE FIRE ALARM IS A CONTRACTOR DESIGN-BUILD SYSTEM. ADDITIONAL DEVICES MAY BE REQUIRED TO COMPLY WITH CODE. CONTRACTOR SHALL PROVIDE ADDITIONAL FIRE ALARM DEVICES, ACCESSORIES AND ANY ADDITIONAL ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL CODE COMPLIANT SYSTEM. REFERENCE SPECIFICATION DIVISION 28 30 00 FOR ADDITIONAL INFORMATION.

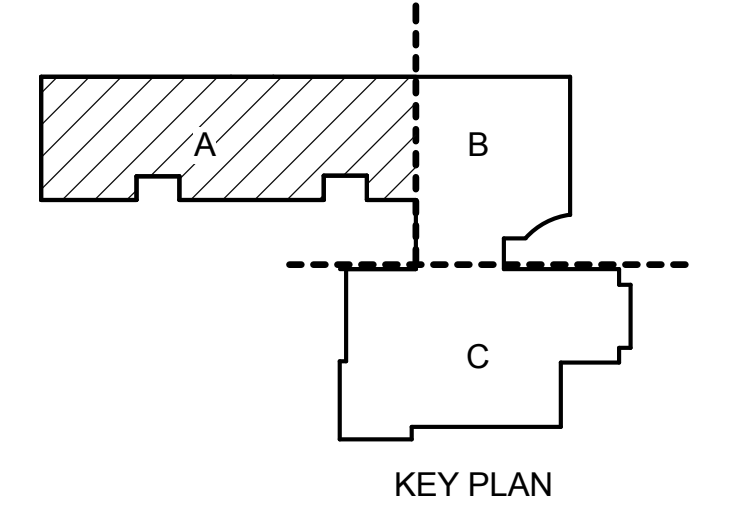
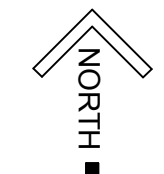
B. IN ADDITION TO CODE MINIMUM FIRE ALARM COVERAGE THE CONTRACTOR SHALL PROVIDE SMOKE DETECTION SPOT COVERAGE IN CORRIDORS AND COMMON AREAS, AND MANUAL PULL STATIONS AT EXITS PER THE OWNERS DIRECTION.

C. THE FIRE ALARM SYSTEM SHALL BE DESIGNED TO OFC 907 AND NFPA 72 STANDARDS. SHOP DRAWING WITH EQUIPMENT CUTSHEETS, BATTERY CALCS AND VOLTAGE DROP CALCS SHALL BE SUBMITTED TO LOCAL JURISDICTIONS FOR APPROVAL PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM.



1 SECTOR A FIRE ALARM PLAN - SECOND FLOOR
1/8" = 1'-0"

1 / E143

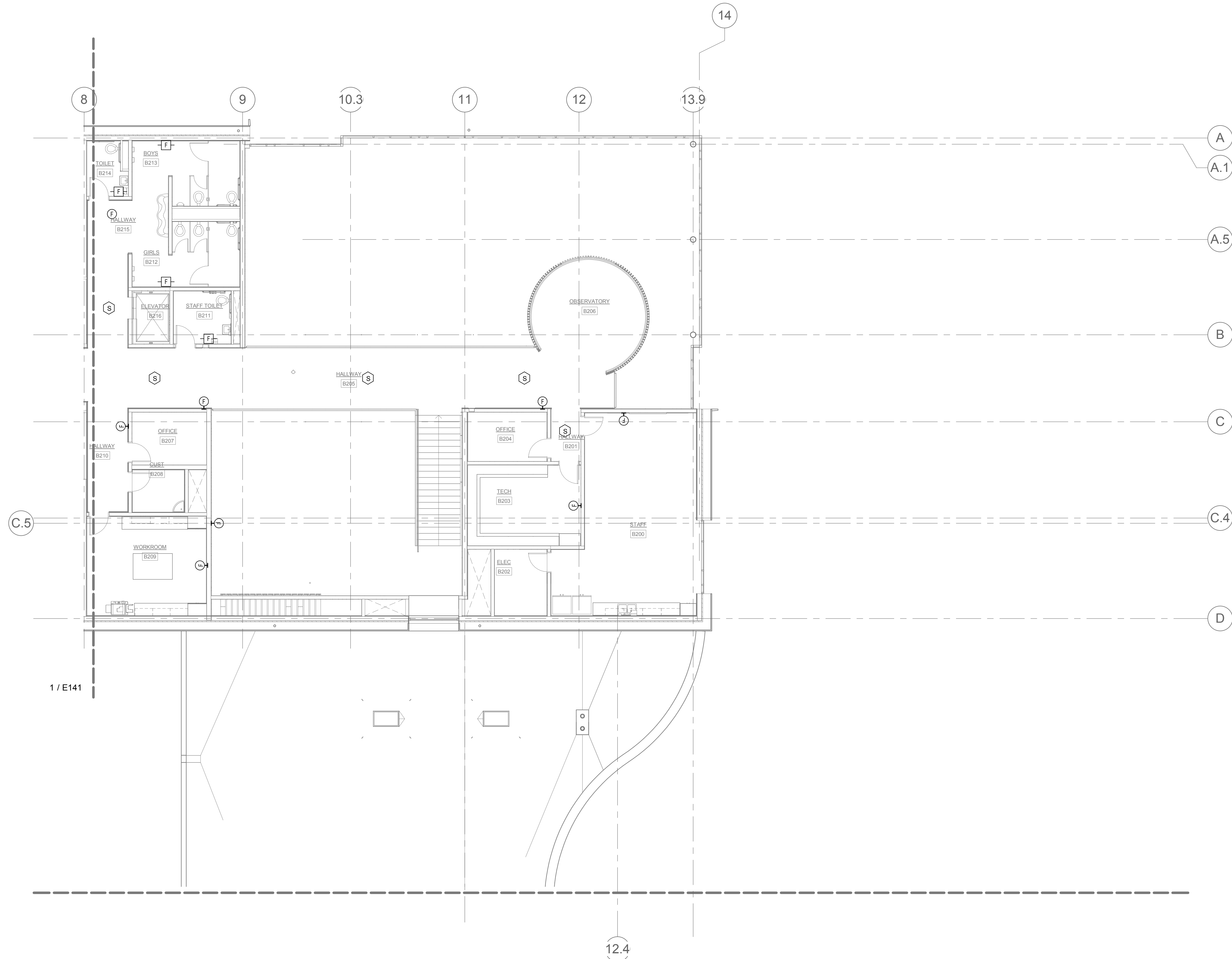


PROJECT#	1537-05	REVISION
ISSUE DATE	2/12/16	
DESIGN	SC	ADD-1 - 03/02/2016
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E141

BID SET
EUGENE SCHOOL DISTRICT 4J
120 WEST HILLVIEW AVENUE, EUGENE, OREGON 97404
4J RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

SECTOR A FIRE ALARM PLAN -
SECOND FLOOR



1 SECTOR B FIRE ALARM PLAN - SECOND FLOOR
 1/8" = 1'-0"

GENERAL NOTES:

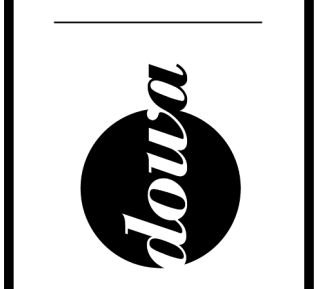
A. THE FIRE ALARM IS A CONTRACTOR DESIGN-BUILD SYSTEM. ADDITIONAL DEVICES MAY BE REQUIRED TO COMPLY WITH CODE. CONTRACTOR SHALL PROVIDE ADDITIONAL FIRE ALARM DEVICES, ACCESSORIES AND ANY ADDITIONAL ITEMS REQUIRED FOR A COMPLETE AND OPERATIONAL CODE COMPLIANT SYSTEM. REFERENCE SPECIFICATION DIVISION 28 30 00 FOR ADDITIONAL INFORMATION.

B. IN ADDITION TO CODE MINIMUM FIRE ALARM COVERAGE THE CONTRACTOR SHALL PROVIDE SMOKE DETECTION SPOT COVERAGE IN CORRIDORS AND COMMON AREAS, AND MANUAL PULL STATIONS AT EXITS PER THE OWNERS DIRECTION.

C. THE FIRE ALARM SYSTEM SHALL BE DESIGNED TO OFC 907 AND NFPA 72 STANDARDS. SHOP DRAWING WITH EQUIPMENT CUTSHEETS, BATTERY CALCS AND VOLTAGE DROP CALCS SHALL BE SUBMITTED TO LOCAL JURISDICTIONS FOR APPROVAL PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM.



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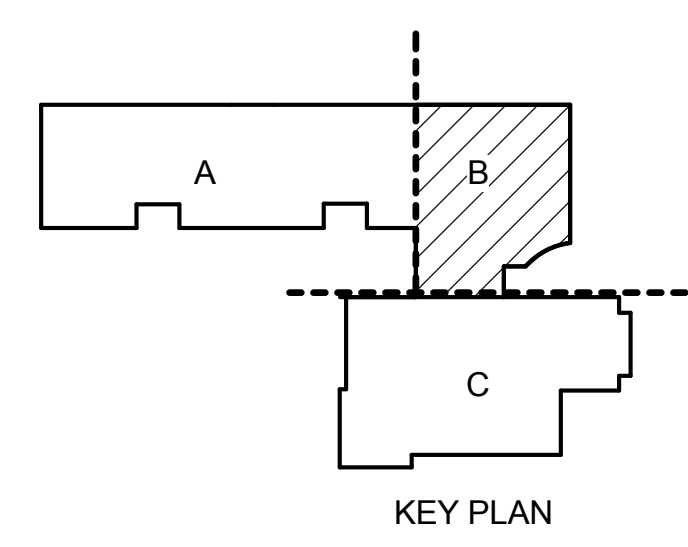


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SECTOR B FIRE ALARM PLAN -
 SECOND FLOOR

PROJECT #	1537-05	REVISION	
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DRAWN	SC	CHECKED	PKC
PROJECT	E143		

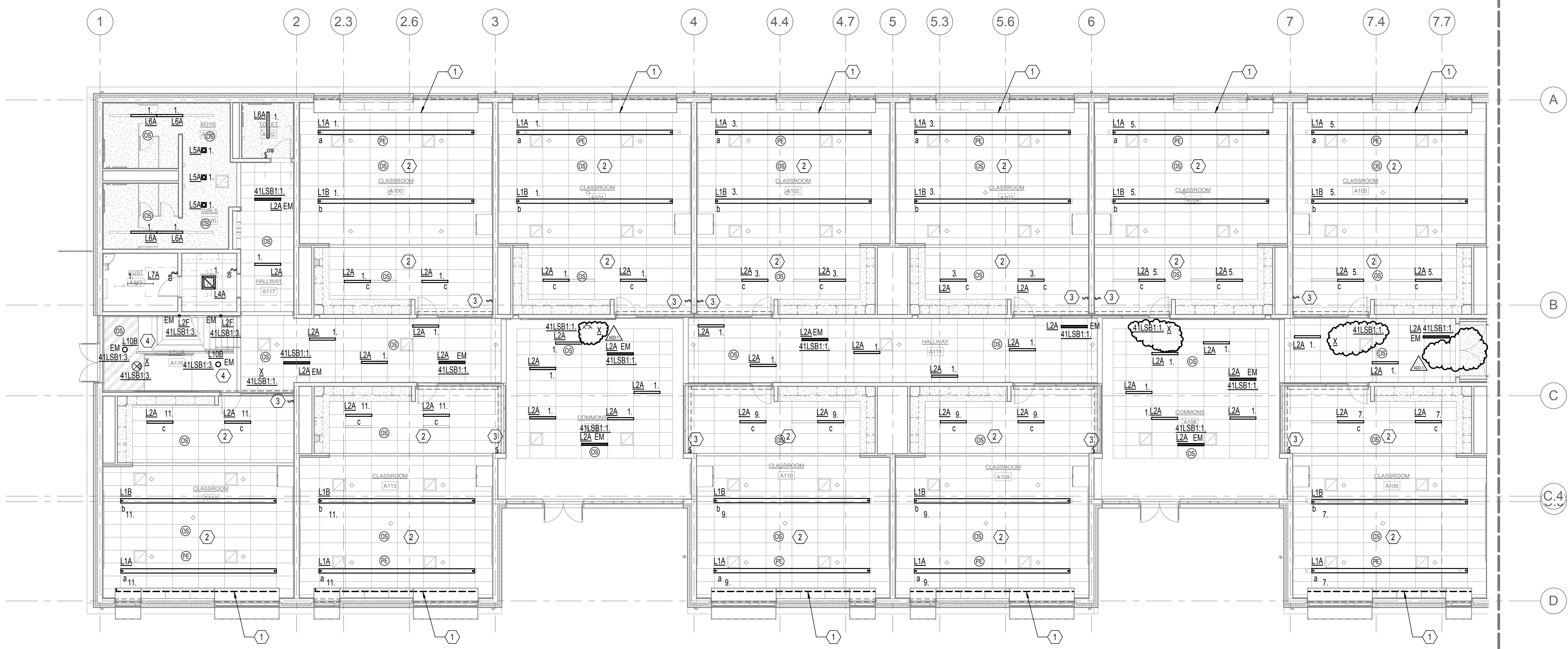


GENERAL NOTES:

- A. ALL PENETRATION AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- B. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- C. CIRCUIT NUMBER SHOWN NEXT TO NORMAL LUMINAIRES SHALL BE CIRCUITED TO PANEL '41B1' UNLESS OTHERWISE NOTED.
- D. PROVIDE CONNECTIONS TO EXIT SIGNS FROM THE NEAREST EMERGENCY CIRCUIT WITH AN UNSWITCHED LEG.
- E. REFER TO TYPICAL LIGHTING CONTROLS AT COMMON SPACES AND CORRIDORS' DETAIL ON SHEET E501 FOR CORRIDOR CONTROL INFORMATION.

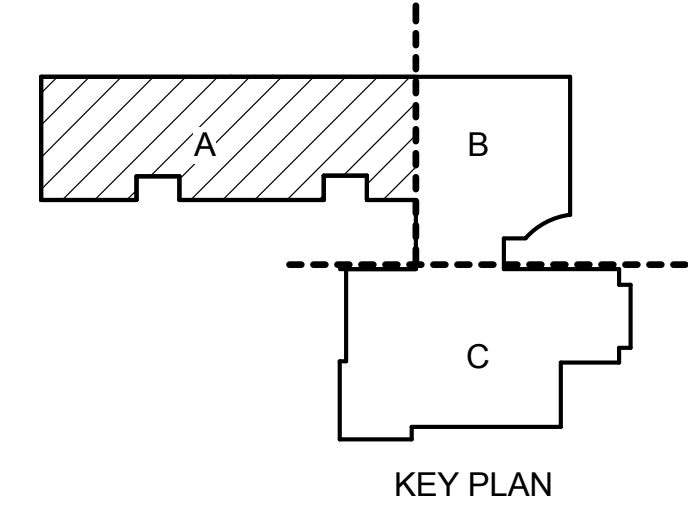
NOTES:

- 1. DAYLIGHT HARVEST ZONE, AUTOMATIC DIMMING CONTROLLED BY PHOTO CELL IN ROOM. PROVIDE SWITCH CONTROL AS INDICATED.
- 2. DUAL-TECH OCCUPANCY SENSOR WITH AUXILIARY CONTACT FOR USE WITH HVAC.
- 3. PROVIDE SENTRY SWITCH(S) TO CONTROL ALL ZONES WITHIN ROOM AS INDICATED. (1) SWITCH PER ZONE.
- 4. DOWNLIGHT SHALL BE SUSPENDED TO MATCH (ACT) CEILING HEIGHT IN HALLWAY.



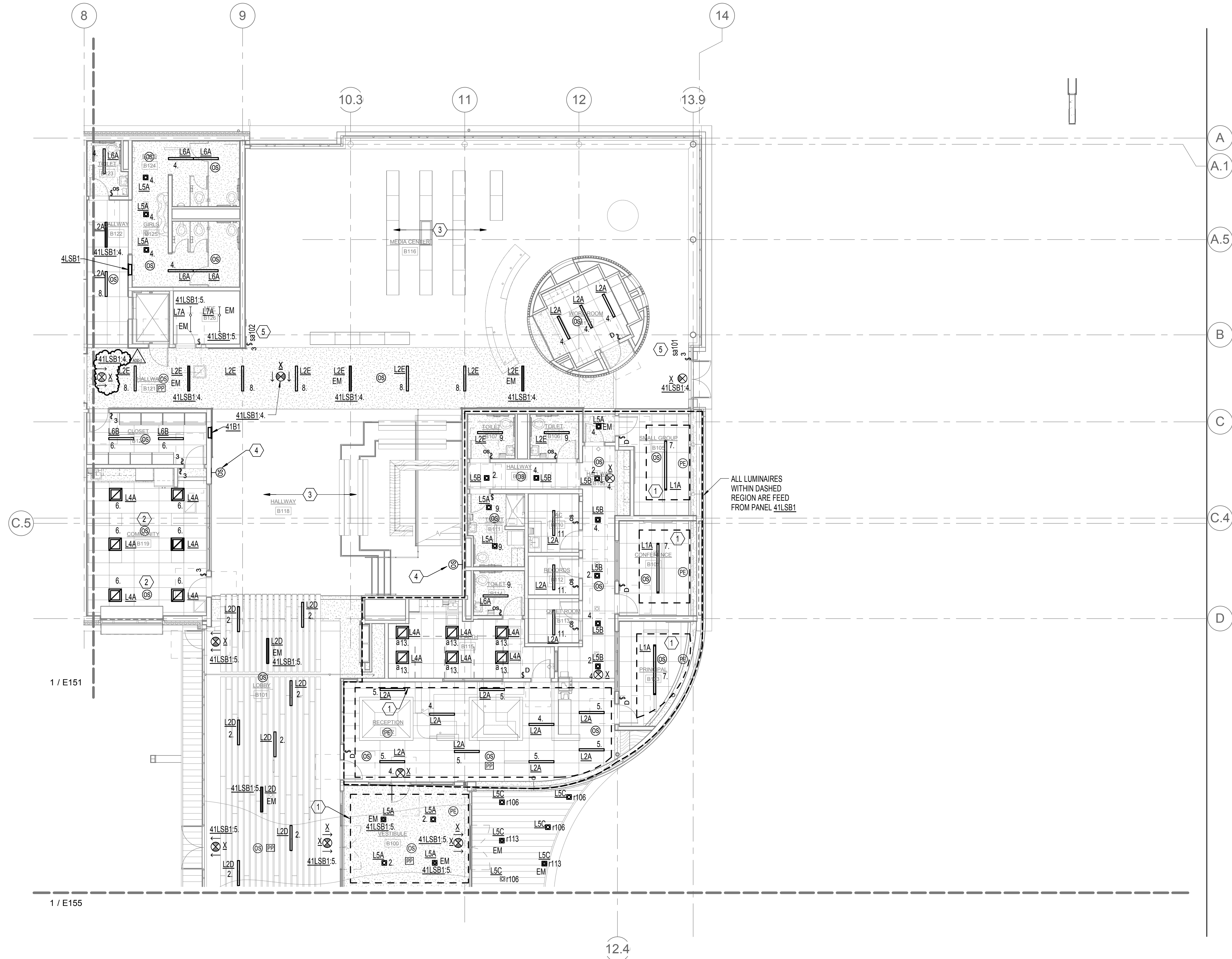
1 SECTOR A LIGHTING PLAN - FIRST FLOOR
1/8" = 1'-0"

1 / E153
NORTH



BID SET
 SECTOR A LIGHTING PLAN - FIRST FLOOR
 EUGENE SCHOOL DISTRICT 4J
 120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
 RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

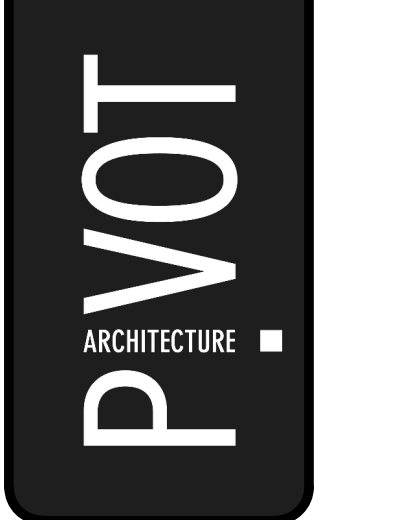
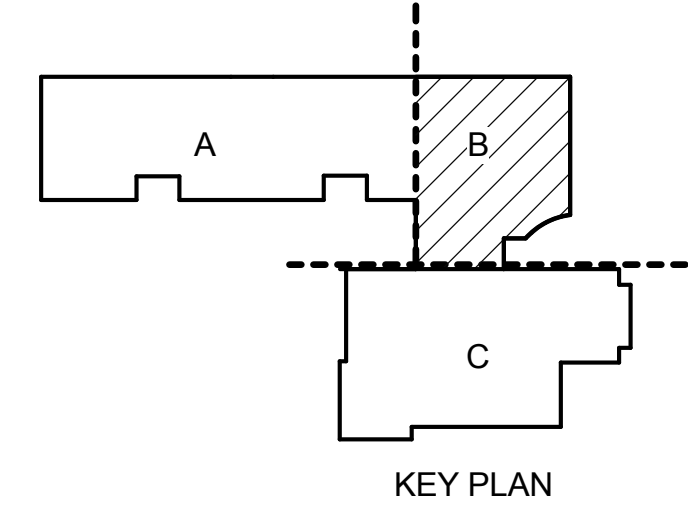
PROJECT #	133720	REVISION	
ISSUE DATE	2/12/16	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC
E151			



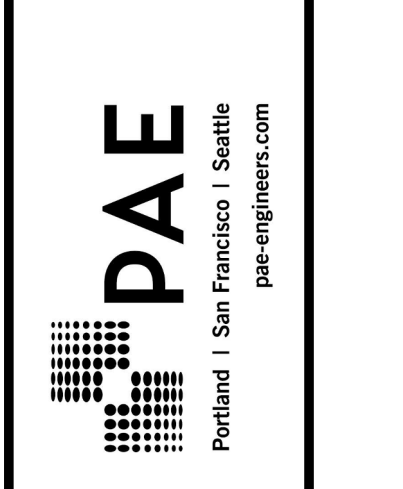
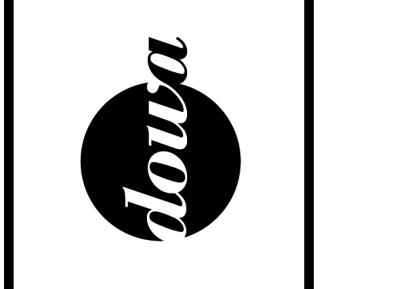
1 SECTOR B LIGHTING PLAN - FIRST FLOOR
 1/8" = 1'-0"

- GENERAL NOTES:**
- A. ALL PENETRATION AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
 - B. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
 - C. CIRCUIT NUMBER SHOWN NEXT TO NORMAL LUMINAIRES SHALL BE CIRCUITED TO PANEL '41B1', UNLESS OTHERWISE NOTED.
 - D. LUMINAIRES WITHIN 'STANDBY POWER' REGION WILL BE CIRCUITED TO PANEL '41LSB1', UNLESS OTHERWISE NOTED.
 - E. PROVIDE CONNECTIONS TO EXIT SIGNS FROM THE NEAREST EMERGENCY CIRCUIT WITH AN UNSWITCHED LEG.
 - F. REFER TO TYPICAL LIGHTING CONTROLS AT COMMON SPACES AND CORRIDORS' DETAIL ON SHEET E501 FOR CORRIDOR CONTROL INFORMATION.
 - G. REFER TO LIGHTING RELAY SCHEDULE ON SHEET E702 FOR ADDITIONAL INFORMATION.

- NOTES:**
- 1. DAY-LIGHT HARVEST ZONE, ALL FIXTURE WITHIN DASHED REGION TO BE CONTROLLED BY PHOTOELECTRIC SENSOR AS SHOWN.
 - 2. DUAL-TECH OCCUPANCY SENSOR WITH AUXILIARY CONTACT FOR USE WITH HVAC.
 - 3. LIGHTING IN THIS AREA IS SHOWN ON ABOVE CEILING PLAN.
 - 4. OCCUPANCY SENSOR CONTROLLING LUMINAIRES IN HALLWAY B118 SHOWN ON SHEET E163.
 - 5. OVERRIDE LV SWITCH FOR MEDIA CENTER.



EXPRES 15-01-17
3-1-16

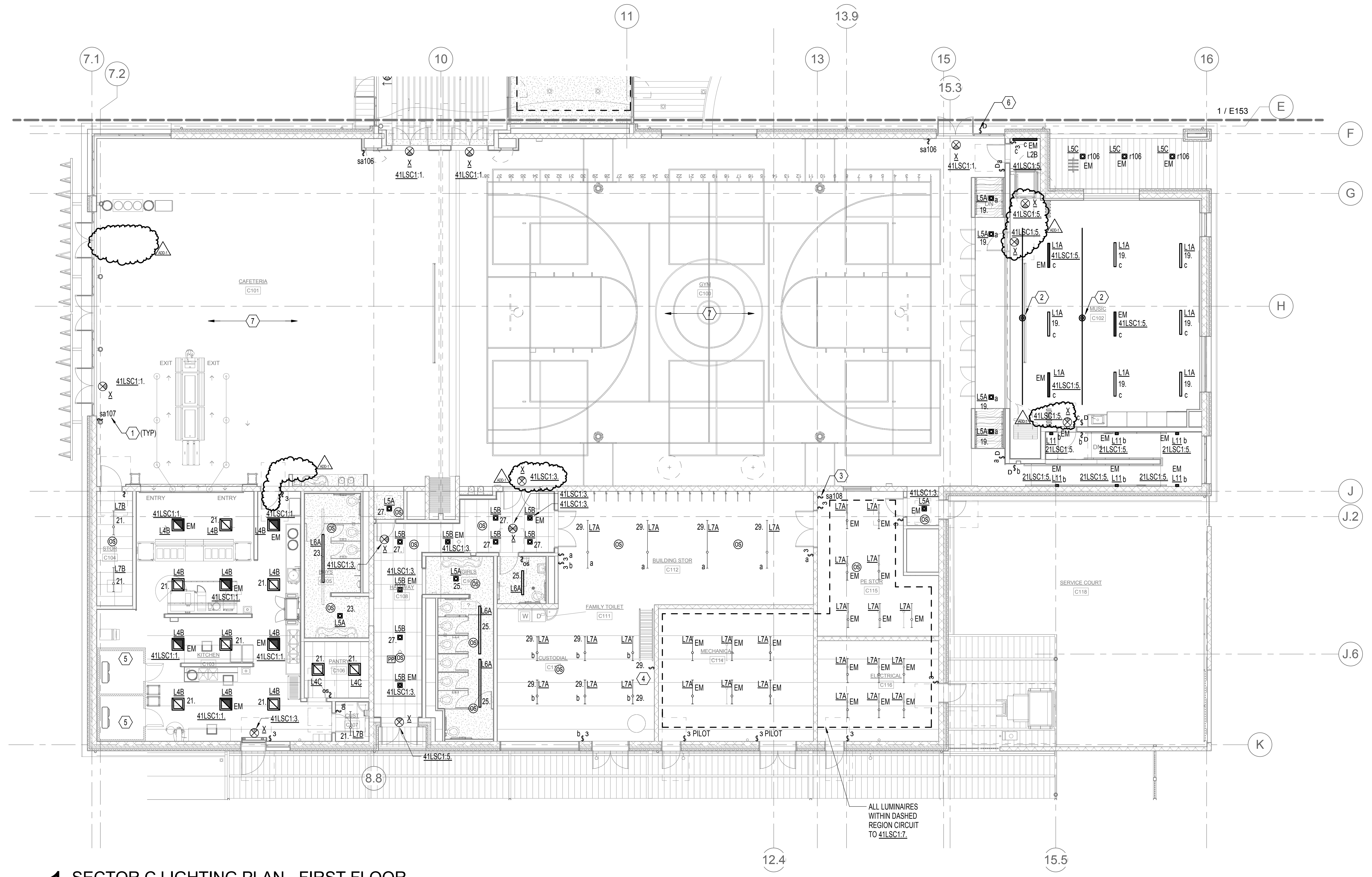


BID SET
 EUGENE SCHOOL DISTRICT 4J
 120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
 RIVER ROAD / EL CAMINO DEL RIO ELEMENTARY SCHOOL

SECTOR B LIGHTING PLAN - FIRST FLOOR

PROJECT #	1537-05	REVISION	
ISSUE DATE	2/12/16	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC

E153



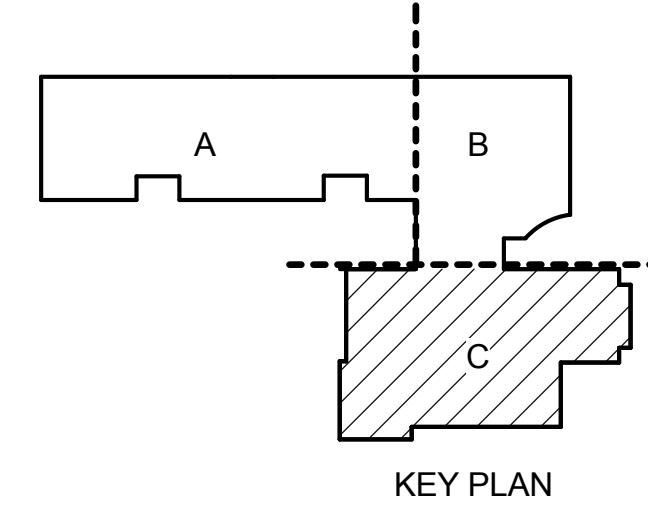
1 SECTOR C LIGHTING PLAN - FIRST FLOOR
1/8" = 1'-0"

GENERAL NOTES:

- ALL PENETRATION AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- CIRCUIT NUMBER SHOWN NEXT TO NORMAL LUMINAIRES SHALL BE CIRCUITED TO PANEL 41C1, UNLESS OTHERWISE NOTED.
- PROVIDE CONNECTIONS TO EXIT SIGNS FROM THE NEAREST EMERGENCY CIRCUIT WITH AN UNSWITCHED LEG.
- CONCEAL CONDUIT AND RECESS DEVICES IN CMU WALLS IN GYM, CAFETERIA, RAMP, MUSIC, KITCHEN, RESTROOMS AND PUBLIC SPACES. CONDUIT AND DEVICES MAY BE SURFACE MOUNTED ON CMU WALLS IN OTHER SPACES.
- REFER TO 4J LIGHTING CONTROL INTERFACE DETAIL ON SHEET E502 FOR SITE MUSIC ROOM, AND CONTROL INFORMATION.

NOTES:

- NIGHT CONTROL SWITCH TAG, REFER TO SHEET E702 FOR ADDITIONAL INFORMATION.
- THEATRICAL PIPE RACK, REFER TO POWER PLAN FOR RECEPTACLE REQUIREMENTS. PROVIDE UNISTRUT TO SUPPORT RACK.
- TIMER OVERRIDE SWITCH FOR OUTSIDE PLAY AREA.
- SWITCH TO CONTROL MECHANICAL PLATFORM LIGHTING AT TOP OF STAIRS.
- LIGHTING INTEGRAL TO COOLER/FREEZER.
- PROVIDE LOCKABLE BOX FOR DIMMER SWITCH.
- LIGHTING IN THIS AREA IS SHOWN ON 2ND LEVEL CEILING PLAN.



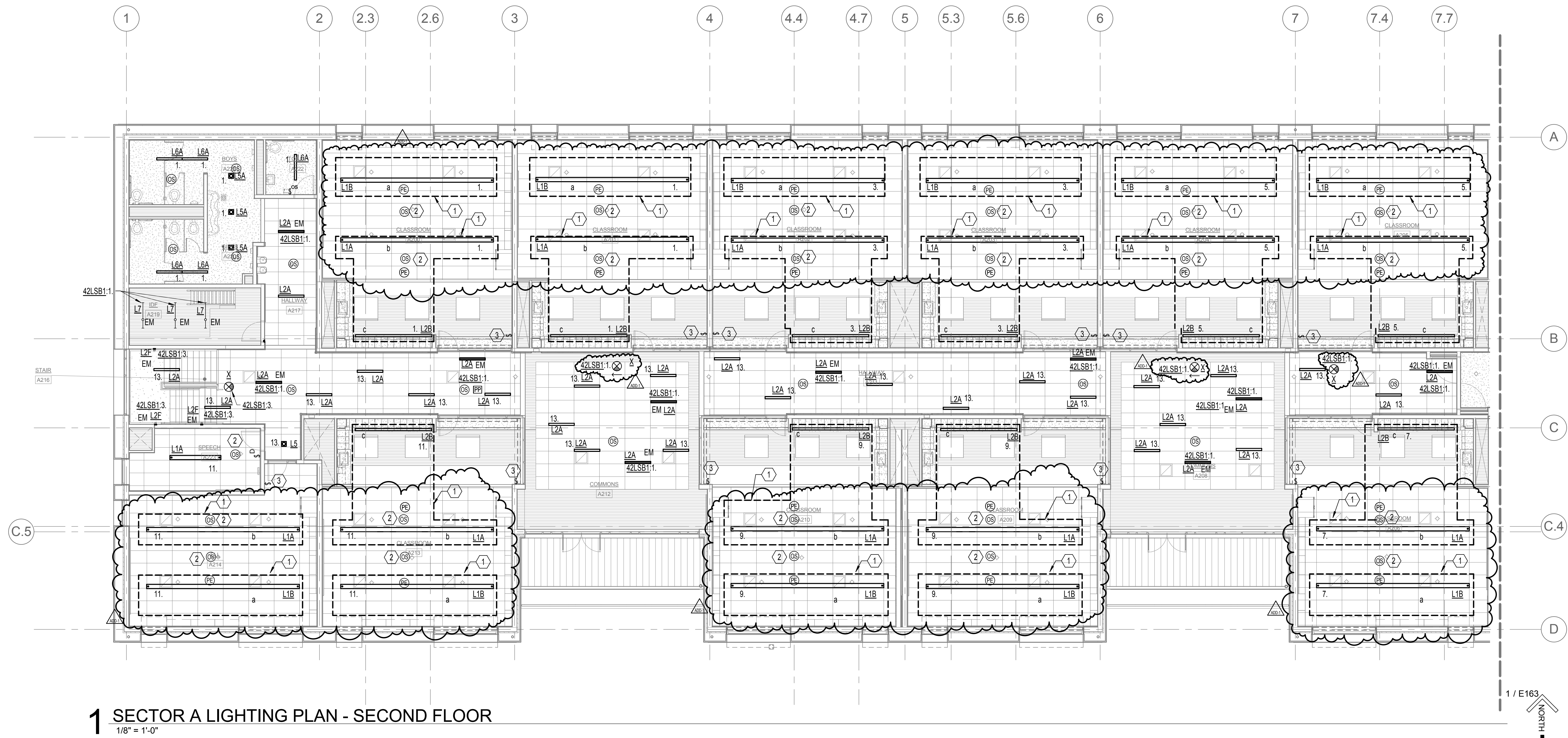
PROJECT #	153720	REVISION	
ISSUE DATE	2/12/16	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PMC

GENERAL NOTES:

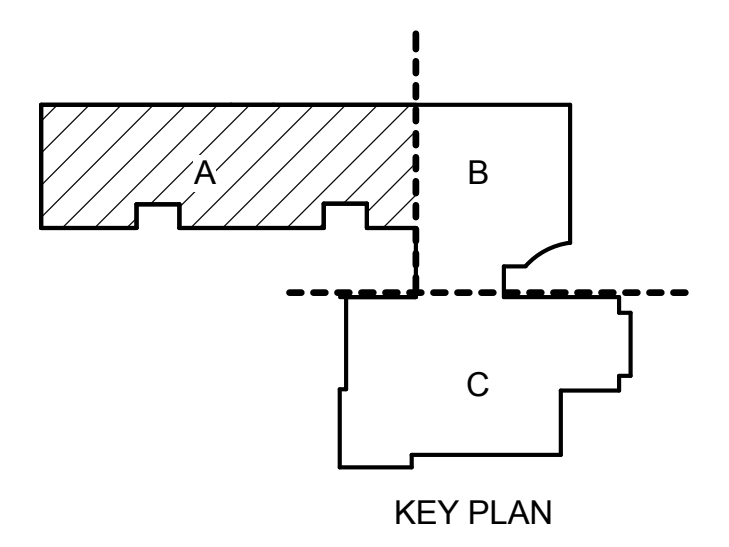
- A. ALL PENETRATION AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- B. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- C. CIRCUIT NUMBER SHOWN NEXT TO NORMAL LUMINAIRES SHALL BE CIRCUITED TO PANEL '42B1', UNLESS OTHERWISE NOTED.
- D. PROVIDE CONNECTIONS TO EXIT SIGNS FROM THE NEAREST EMERGENCY CIRCUIT WITH AN UNSWITCHED LEG.
- E. REFER TO TYPICAL LIGHTING CONTROLS AT COMMON SPACES AND CORRIDORS' DETAIL ON SHEET E501 FOR CORRIDOR CONTROL INFORMATION.

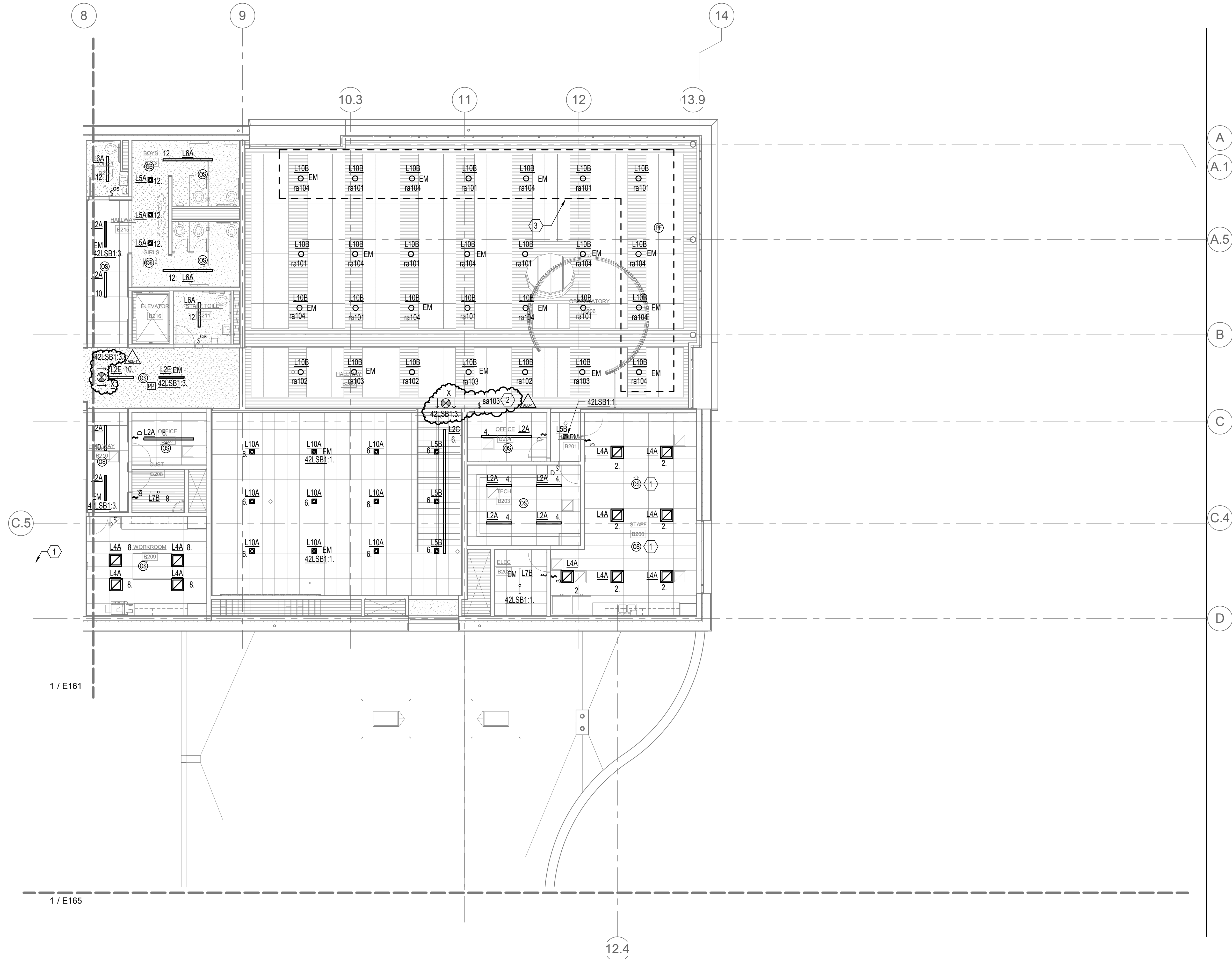
NOTES:

- 1. DAYLIGHT HARVEST ZONE, AUTOMATIC DIMMING CONTROLLED BY PHOTO CELL IN ROOM. PROVIDE SWITCH CONTROL AS INDICATED.
- 2. DUAL-TECH OCCUPANCY SENSOR WITH AUXILIARY CONTACT FOR USE WITH HVAC.
- 3. PROVIDE SENTRY SWITCH(S) TO CONTROL ALL ZONES WITHIN ROOM AS INDICATED, (1) SWITCH PER ZONE.



1 SECTOR A LIGHTING PLAN - SECOND FLOOR
1/8" = 1'-0"





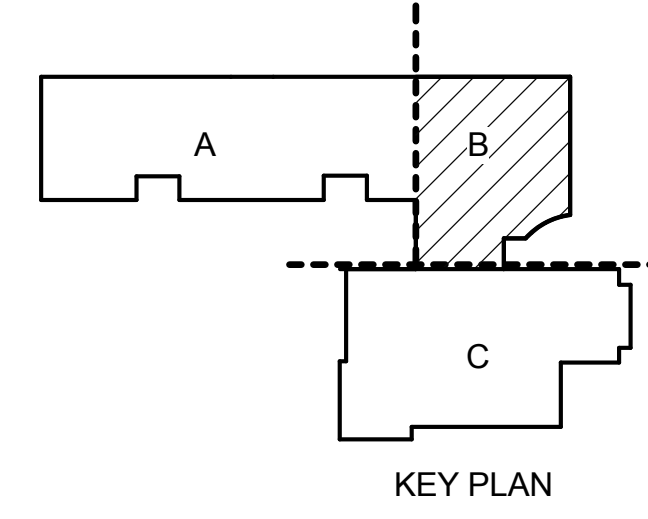
1 SECTOR B LIGHTING PLAN - SECOND FLOOR
1/8" = 1'-0"

GENERAL NOTES:

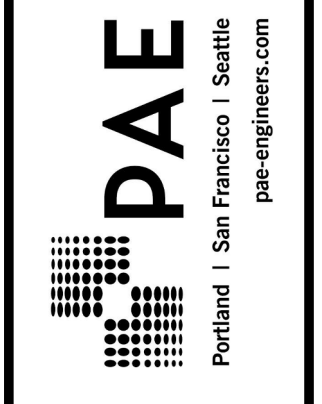
- A. ALL PENETRATION AND ROUTING PATHS OF EXPOSED CONDUIT SHALL BE COORDINATED AND REVIEWED BY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- B. PROVIDE NO MORE THAN (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
- C. CIRCUIT NUMBER SHOWN NEXT TO NORMAL LUMINAIRES SHALL BE CIRCUITED TO PANEL 42B1, UNLESS OTHERWISE NOTED.
- D. PROVIDE CONNECTIONS TO EXIT SIGNS FROM THE NEAREST EMERGENCY CIRCUIT WITH AN UNSWITCHED LEG.
- E. REFER TO "LIGHTING RELAY SCHEDULE" ON SHEET E702 FOR ADDITIONAL INFORMATION.

NOTES:

- 1. DUAL-TECH OCCUPANCY SENSOR WITH AUXILIARY CONTACT FOR USE WITH HVAC.
- 2. OVERRIDE LV SWITCH FOR MEDIA CENTER.
- 3. DAYLIGHT HARVEST ZONE.



EXPRES 12-31-17



BID SET
EUGENE SCHOOL DISTRICT 4J
120 WEST HILLIARD AVENUE, EUGENE, OREGON 97404
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SECTOR B LIGHTING PLAN -
SECOND FLOOR

PROJECT #	1537-05	REVISION	
ISSUE DATE	2/12/2016	DATE	ADD-1 - 03/02/2016
DRAWN	SC	CHECKED	PKC

E163

NOMINAL AMPACITY	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS	GROUND CONDUCTOR	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS	GROUND CONDUCTOR
20	203	1/2"	(3) #12	#12	204	1/2"	(4) #12	#12
25	253	1/2"	(3) #10	#10	254	3/4"	(4) #10	#10
30	303	1/2"	(3) #10	#10	304	3/4"	(4) #10	#10
40	403	3/4"	(3) #8	#10	404	3/4"	(4) #8	#10
50	503	3/4"	(3) #6	#10	504	1"	(4) #6	#10
60	603	1"	(3) #4	#10	604	1 1/4"	(4) #4	#8
70	703	1"	(3) #4	#8	704	1 1/4"	(4) #4	#8
80	803	1 1/4"	(3) #3	#8	804	1 1/4"	(4) #3	#8
90	903	1 1/4"	(3) #2	#8	904	1 1/4"	(4) #2	#8
100	1003	1 1/4"	(3) #2	#8	1004	1 1/2"	(4) #2	#8
110	1103	1 1/4"	(3) #1	#6	1104	1 1/2"	(4) #1	#6
125	1253	1 1/4"	(3) #1	#6	1254	2"	(4) #1/0	#4
150	1503	1 1/2"	(3) #1/0	#6	1504	2"	(4) #2/0	#4
175	1753	1 1/2"	(3) #2/0	#6	1754	2"	(4) #3/0	#4
200	2003	2"	(3) #3/0	#6	2004	2 1/2"	(4) #4/0	#4
225	2253	2"	(3) #4/0	#4	2254	2 1/2"	(4) 250KCM	#3
250	2503	2 1/2"	(3) 250KCM	#4	2504	3"	(4) 350KCM	#2
300	3003	2 1/2"	(3) 350KCM	#4	3004	3 1/2"	(4) 500KCM	#2
350	3503	3"	(3) 500KCM	#3	3504	(2) 2"	(8) #3/0	(2) #3
400	4003	(2) 2"	(6) #3/0	(2) #3	4004	(2) 2 1/2"	(8) #4/0	(2) #2
450	4503	(2) 2"	(6) #4/0	(2) #2	4504	(2) 3"	(8) 250KCM	(2) #1
500	5003	(2) 2 1/2"	(6) 250KCM	(2) #2	5004	(3) 2 1/2"	(12) #3/0	(3) #1
600	6003	(2) 3"	(6) 350KCM	(2) #1	6004	(2) 3 1/2"	(8) 500KCM	(2) #2/0
800	8003	(3) 3"	(9) 350KCM	(3) #1/0	8004	(3) 3"	(12) 350KCM	(3) #2/0
1000	10003	(3) 3"	(9) 500KCM	(3) #2/0	10004	(4) 3"	(16) 350KCM	(4) #2/0
1200	12003	(4) 3"	(12) 350KCM	(4) #3/0	12004	(4) 3 1/2"	(16) 500KCM	(4) #3/0
1600	16003	(5) 3"	(15) 500KCM	(5) #4/0	16004	(6) 3"	(24) 350KCM	(6) 250KCM
2000	20003	(6) 3"	(18) 500KCM	(6) 250KCM	20004	(6) 3 1/2"	(24) 500KCM	(6) 250KCM

NOTES (3WIRE & GROUND SCHEDULE ONLY):
 1. REFER TO SPECIFICATIONS FOR INSULATION TYPE PER WIRE SIZE.
 2. MINIMUM CONDUIT SIZES IDENTIFIED MEET MAXIMUM 40% FILL FOR EMT, RMC AND PVC SCHEDULE 40.
 3. FOR FEEDER RATINGS 100AMPS OR LESS, ACTUAL AMPACITY IS CALCULATED BY THOSE GIVEN IN NEC 310.15(B)(16), 60DEG C.
 4. FOR FEEDER RATINGS GREATER THAN 100AMPS, ACTUAL AMPACITY IS CALCULATED BY THOSE GIVEN IN NEC 310.15(B)(16), 75DEG C.

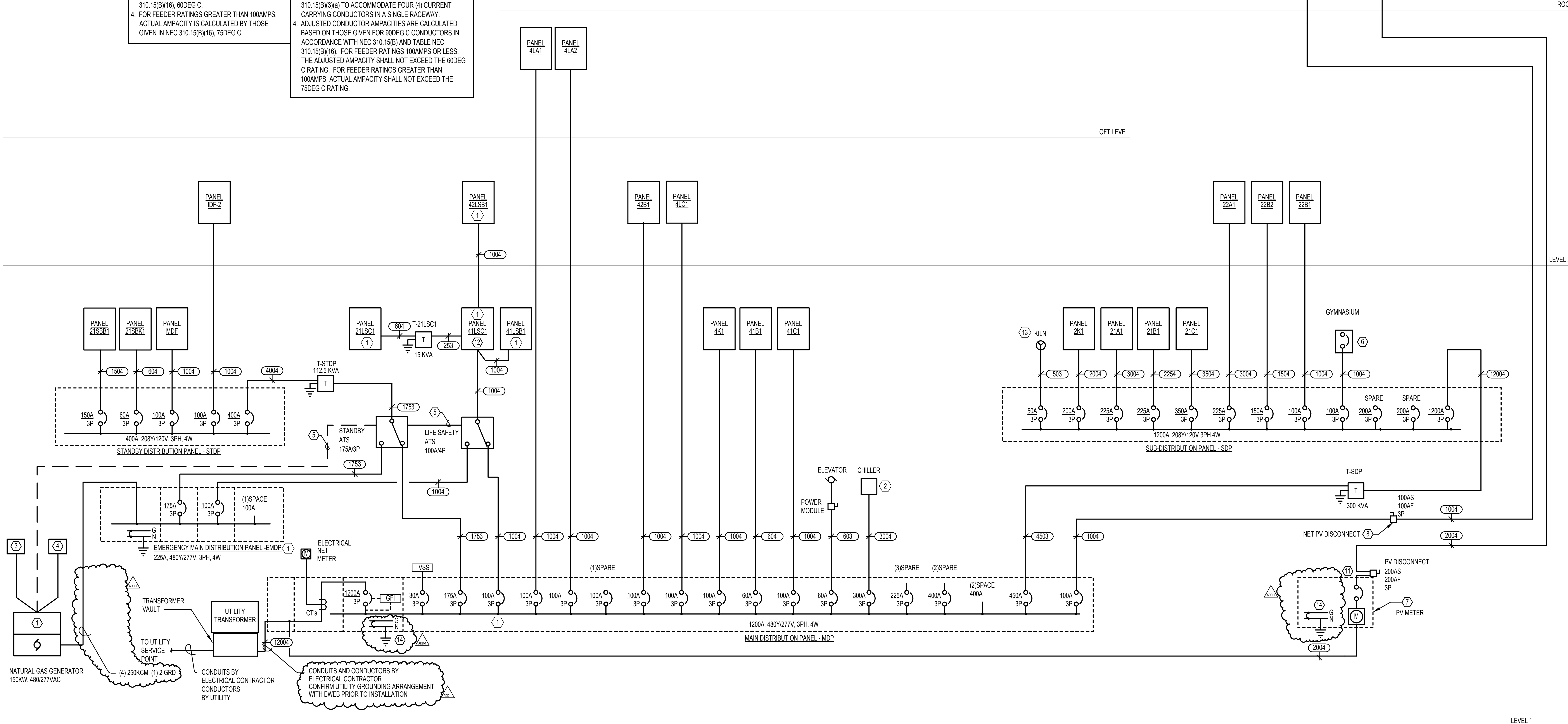
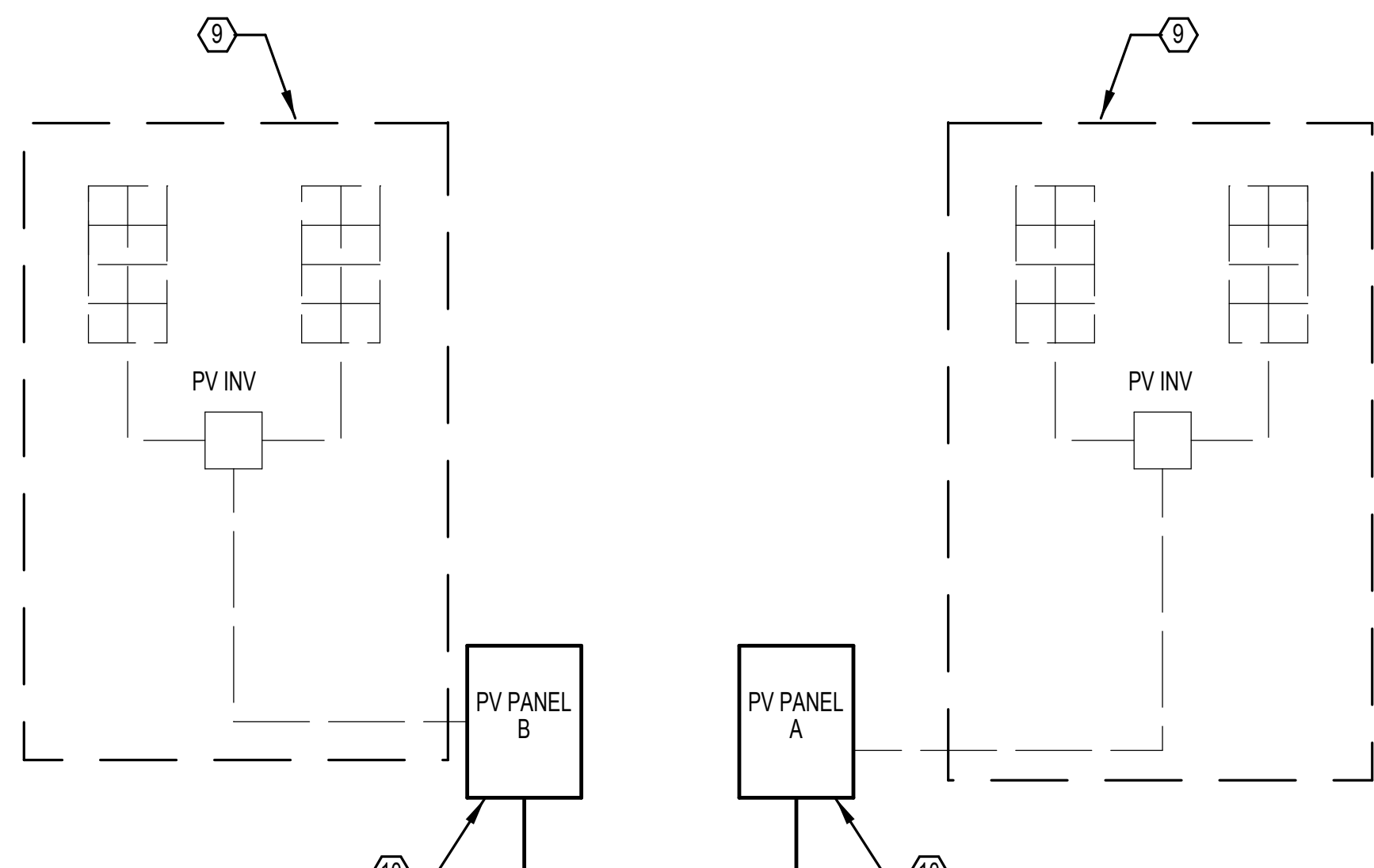
NOTES (4WIRE & GROUND SCHEDULE ONLY):
 1. REFER TO SPECIFICATIONS FOR INSULATION TYPE PER WIRE SIZE.
 2. MINIMUM CONDUIT SIZES IDENTIFIED MEET MAXIMUM 40% FILL FOR EMT, RMC AND PVC SCHEDULE 40.
 3. ALL NEUTRAL CONDUCTORS ARE CONSIDERED CURRENT CARRYING, THEREFORE AMPACITY ADJUSTMENTS HAVE BEEN INCLUDED IN ACCORDANCE WITH NEC TABLE 310.15(B)(3)(a) TO ACCOMMODATE FOUR (4) CURRENT CARRYING CONDUCTORS IN A SINGLE RACEWAY.
 4. ADJUSTED CONDUCTOR AMPACITIES ARE CALCULATED BASED ON THOSE GIVEN FOR 90DEG C CONDUCTORS IN ACCORDANCE WITH NEC 310.15(B) AND TABLE NEC 310.15(B)(16). FOR FEEDER RATINGS 100AMPS OR LESS, THE ADJUSTED AMPACITY SHALL NOT EXCEED THE 60DEG C RATING. FOR FEEDER RATINGS GREATER THAN 100AMPS, ACTUAL AMPACITY SHALL NOT EXCEED THE 75DEG C RATING.

GENERAL NOTES:

A. ALL PANELS MOUNTED RECESSED IN WALLS SHALL HAVE SPARE CONDUITS INSTALLED AS INDICATED IN SPECIFICATIONS.
 B. THE EMERGENCY POWER SYSTEM SHALL BE DESIGNED TO NFPA 37 AND I10 STANDARDS. SHOP DRAWINGS AND EQUIPMENT LISTING SHEETS MUST BE SUBMITTED TO LOCAL JURISDICTIONS FOR APPROVED BEFORE INSTALLATION OF THE GENERATOR.

NOTES:

- PROVIDE DEVICES FOR SELECTIVE COORDINATION OF SYSTEM PER NEC 700.28. PROVIDE NECESSARY CONDUITS AND WIRINGS FROM GENERATOR TO PANEL 21LSC1 PER MANUFACTURER REQUIREMENTS FOR BATTERY CHARGER, BLOCK HEATER, ETC. PROVIDE CIRCUIT BREAKERS IN PANEL 21LSC1 AS REQUIRED FOR A COMPLETE SYSTEM PER NEC AND MANUFACTURER.
- INSTALLATION OF CHILLER IS AN ALTERNATE. INSTALLATION OF CIRCUIT BREAKER AND CONDUITS IS PART OF BASE BID.
- REMOTE ANNUNCIATOR #1 LOCATED IN CUSTODIAL C113.
- REMOTE ANNUNCIATOR #2 (IN WEATHERPROOF ENCLOSURE) LOCATED ON WALL ADJACENT TO EMERGENCY GENERATOR. ANNUNCIATOR SHALL NOT BE INSTALLED ON THE GENERATOR.
- PROVIDE 1" CONDUIT AND CONTROL WIRING AS REQUIRED.
- PROVIDE 100A/3P CIRCUIT BREAKER IN NEMA 1 ENCLOSURE.
- METERED MAIN AND VIEWABLE FUSED SAFETY SERVICE RATED DISCONNECT SWITCH PER EWEB REQUIREMENTS. VERIFY EQUIPMENT REQUIREMENTS AND LOCATION WITH EWEB REPRESENTATIVE, ARCHITECT AND ENGINEER PRIOR TO SUBMITTALS AND INSTALLATION.
- VIEWABLE FUSED SAFETY SERVICE RATED DISCONNECT SWITCH PER EWEB REQUIREMENTS. VERIFY EQUIPMENTS AND LOCATION WITH EWEB REPRESENTATIVE, ARCHITECT AND ENGINEER PRIOR TO SUBMITTALS AND INSTALLATION.
- CONTRACTOR SHALL PROVIDE SOLAR PHOTOVOLTAIC SYSTEM DESIGN AND INSTALLATION. COORDINATE WITH SOLAR PV DESIGN BUILD DRAWINGS FOR EXACT EQUIPMENT REQUIREMENTS. COORDINATE LOCATION WITH OWNER AND ARCHITECT.
- LOCATE NEAR SOLAR PV SYSTEM INVERTER EQUIPMENT. VERIFY LOCATION WITH APPROVED PV SYSTEM PLANS. PROVIDE 225A MAIN CIRCUIT BREAKER, NEMA 1, 42CKTS, 14KAIC FOR PANEL A. PROVIDE 100A MAIN CIRCUIT BREAKER, NEMA 1, 42CKTS, 14KAIC FOR PANEL B. COORDINATE EXACT REQUIREMENTS (TYPE, NUMBER OF BREAKERS, ETC.) WITH PV SHOP DRAWINGS.
- UTILITY TERMINATION SECTION AND METERING PROVISIONS SHALL MEET EWEB REQUIREMENTS. VERIFY UTILITY COMPANY REQUIREMENTS ARE MET PRIOR TO INSTALLATION.
- PROVIDE DOUBLE LUGS AND FEED THROUGH.
- PROVIDE KILN DISCONNECT IF KILN DO NOT HAVE A BUILT-IN DISCONNECT.
- PROVIDE MAIN BONDING JUMPER BETWEEN ELECTRICAL SERVICES AS REQUIRED BY NATIONAL ELECTRICAL CODE.



1 ONE LINE DIAGRAM - ELECTRICAL

NONE

