

ADDENDUM NO. 2

October 6, 2022

Damien Center Headquarters Building

East Washington Street/North Oriental Avenue
Indianapolis, IN 46201

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications and the Drawings dated September 12, 2022, by Axis Architectural & Interiors. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1 through ADD 2-3, Pre-Award Schedule, and attached Axis Architectural & Interiors Addendum No. 2, dated October 6, 2022, consisting of 16 pages, Specification Sections: 00 00 02 – Table Of Contents, 22 13 19 – Sanitary Waste Piping Specialties 23 09 23 – Direct Digital Control (DDC) System For HVAC, 23 09 24 – Sequences of Operation, 23 31 13 - Metal Ducts, 23 71 00 – Variable Refrigerant Flow System, 28 13 00 – Electronic Access Control, 28 23 00 – Ip Video Surveillance System, 32 31 11 – Gate Operators and Addendum Drawings: CG101 – Grading Plan, S101A – Foundation Plan – West, S101b – Foundation Plan – East, S102b – Second Floor Framing Plan – East, S103b – Third Floor Framing Plan – East, S104a – Main Roof Framing Plan – West, S504 – Typical Sections And Details, S505 – Typical Sections And Details, S506 – Typical Sections And Details, S511 – Typical Sections And Details, S512 – Typical Sections And Details, S601 – Column Schedule And Details, A102d – Second Floor Interior Construction Plan – East, A103c – Third Floor Interior Construction Plan – West, A103d – Third Floor Interior Construction Plan – East, A105 – Roof Plan, A110 – Restroom Plans And Elevations, A110a – Restroom Plans And Elevations, A110b – Restroom Plans And Elevations, A110c - Restroom Plans And Elevations, A111 – Pharmacy – Enlarged Plan And Enlarged Reflected Ceiling Plan, A112 – Community Impact – Enlarged Plan And Enlarged Reflected Ceiling Plan, A113 – Dental – Enlarged Plan And Enlarged Reflected Ceiling Plan, A116 – Enlarged Plans, A120d – Elevator + Stair Core 1 – Ramp Plans And Details, A126 – Enlarged Plans And Details, A363 – Section Details, A364 – Section Details, A401a – First Floor Reflected Ceiling Plan – West, A401b – First Floor Reflected Ceiling Plan – East, A402a – Second Floor Reflected Ceiling Plan – West,

A403a – Third Floor Reflected Ceiling Plan -West, A403b – Third Floor Reflected Ceiling Plan – East, A501 – Door Schedule, A502 – Door Details, A506 – Interior Storefront Elevations, A601a – Mainstreet – Interior Elevations, A601d – Mainstreet – Interior Elevations – Alternate, A605 – Interior Elevations, A607 – Interior Elevations, A608 – Interior Elevations, A620 – Millwork Section, A700 – Finish Schedules And Specifications, A701b – First Floor Interior Finish Plan – East, A702a – Second Floor Interior Finish Plan – West, A702b – Second Floor Interior Finish Plan – East, A703a – Third Floor Interior Finish Plan – West, A703b – Third Floor Interior Finish Plan – East, Mh101a – First Floor Mechanical Plan – West, Mh101b – First Floor Mechanical Plan -East, Mh104b – Roof Level Mechanical Plan – East, Mp104b – Roof Level Mechanical Piping Plan – East, M502 – Mechanical Diagrams, M503 – Mechanical Diagrams, M601 – Mechanical Schedules, M901 – Control Schematics, P100a – Foundation Plumbing Plan – West, P100b – Foundation Plumbing Plan – East, P101a – First Floor Plumbing Plan – West, P101b – First Floor Plumbing Plan – East, P103b – Third Floor Plumbing Plan – East, P104b – Roof Level Plumbing Plan – East, P601 – Plumbing Schedules, El102a – Second Floor Lighting Plan – West, El102b – Second Floor Lighting Plan – East, El103a – Third Floor Lighting Plan – West, El103b – Third Floor Lighting Plan – East, Ep101b – First Floor Electrical Plan East, Ep102a – Second Floor Electrical Plan – West, Ep104b – Roof Level Electrical Plan – East, E602 – Electrical Schedules, E603 – Electrical Schedules, E901 – Electrical Diagrams, Additional Architects Addendum Documents: Interface Carpet Layout – Finish Plan, Item 8 – Interface Carpet Layout – Render Plan, 07 42 13.13 – Formed Metal Wall Panels, 10 71 13 – Exterior Sun Control Devices, 28 13 00 – Electronic Access Control, 28 23 00 – IP Video Surveillance System.

GENERAL INFORMATION

1. Pre-Award Meeting Schedule is attached herein. Pre-Award Meetings will be conducted virtually via Microsoft Teams. Invites will be sent to the apparent low bidders.

A. SPECIFICATION SECTION 01 12 00 MULTIPLE CONTRACT SUMMARY

3.03 Bid Categories:

B. Bid Category No. 2 – General Trades

Add the following Specification Sections:

Section	07 92 00	Joint Sealants
Section	32 31 11	Gate Operators

Add the following Clarification:

22. Provide all bollards per specification section 12 93 00.
23. Provide all joint sealants. Bid Category No. 6, No. 7 (EIFS only) and Bid Category No. 10 to provide joint sealants for their scope of work.
24. Provide Window Treatment 2 per the Window Treatment Schedule (drapery in Social Hub 307).

F. Bid Category No. 6 – Aluminum Entrances & Storefronts

Add the following Clarification:

4. Provide glass canopy/awning systems as shown on building elevations and canopy details.
Include all materials for a complete canopy/awning system.

M. Bid Category No. 12 – Plumbing & HVAC

Add the following Specification Sections:

Section	23 09 23	Direct Digital Control (DDC) System for HVAC
Section	23 09 24	Sequences of Operation

PRE-AWARD MEETING SCHEDULE



- Bid Category No. 1 – October 17 @ 9:00AM
- Bid Category No. 2 – October 17 @ 10:00AM
- Bid Category No. 3 – October 17 @ 11:00AM
- Bid Category No. 4 – October 17 @ 1:00PM
- Bid Category No. 5 – October 17 @ 2:00PM
- Bid Category No. 6 – October 17 @ 3:00PM
- Bid Category No. 7 – October 18 @ 9:00AM
- Bid Category No. 8 – October 18 @ 10:00AM
- Bid Category No. 9 – October 18 @ 11:00AM
- Bid Category No. 10 – October 18 @ 1:00PM
- Bid Category No. 11 – October 18 @ 1:30PM
- Bid Category No. 12 – October 18 @ 2:00PM
- Bid Category No. 13 – October 18 @ 3:00PM

ADDENDUM No. 02
FOR
NEW DAMIEN HEADQUARTERS

October 06, 2022

ADDENDUM No. 2
FOR
NEW DAMIEN HEADQUARTERS



Date of Issue: October 06, 2022

This Addendum is issued before bid date to inform the Bidders of revisions and/or clarifications to the Project Bid Documents and includes all Bid Packages.

All requirements contained in the Bidding Documents shall apply to this Addendum. The general character of the work called for in this Addendum shall be the same as originally set forth in the applicable portions of the Bidding Documents for similar work, unless otherwise specified under this Addendum. All incidental work necessitated by this Addendum, as required to complete the work, shall be included in the bid even though not specifically mentioned in this Addendum.

The Addendum forms a part of, modifies the Bidding Documents and Contract Requirements, the Specifications and the Drawings dated September 12, 2022 as well as any previous Addendums. This Addendum is hereby made a part of the Bidding Documents and will be included in the Contract.

To: ALL BIDDERS

QUESTIONS FROM BIDDERS

ITEM-1

- A. QUESTION: Not seeing a length for any of the anchor rods on S601 with the rest of the column details.
- B. ANSWER: That information was omitted in the column base plate schedule – please see attached S601 with added information.

ITEM-2

- A. QUESTION: Detail 8/S509 on S103 states the HSS is 6x4x1/4. However, on drawing S103, note where the detail is cut, it states that it is 6x4x1/2.

- B. ANSWER: Please refer to Item 10 in Addendum #01 that addressed this question. The correct size is 6x6x1/4. Updated the sizes shown on sheets S103 and S104, see attached in Addendum #01.

ITEM-3

- A. QUESTION: Both the VRF and the DOAS spec mentions tying into the buildings BAS system. There is not currently a BAS spec. Can this be provided?
B. ANSWER: Addressed on drawing MH101B and with spec section 230923.

ITEM-4

- A. QUESTION: Who is acceptable for the BAS System?
B. ANSWER: Refer to spec section 230923.

ITEM-5

- A. QUESTION: Only Mitsubishi is listed in the specifications, but LG is listed on the schedule. Please clarify.
B. ANSWER: LG added in VRF spec section 237100.

ITEM-6

- A. QUESTION: Duct lining is alluded to in the spec but not clearly listed. Are any of the duct systems allowed to be lined in lieu of external insulation?
B. ANSWER: This project does not currently include any internally lined ductwork.

ITEM-7

- A. QUESTION: Internal Duct Cleaning is specified for all new ducts. Is end sealing all ductwork acceptable in lieu of paying a 3rd party to internally clean the duct systems?
B. ANSWER: Yes, this is acceptable.

ITEM-8

- A. QUESTION: On sheets A702A and A702B, there is a carpet island specified using CPT8-15. Is there a drawing that shows how this pattern is supposed to be laid out? Is that pattern just supposed to be alternating carpet tiles? I see the installation pattern will be installed at a quarter turn but wasn't sure how the 8 carpets are supposed to be used.
B. ANSWER: See attached documents under the "Item 8 - Interface Carpet Layout - Finish Plan" and "Item 8 - Interface Carpet Layout - Render Plan" under the Additional Attachments section.

ITEM-9

- A. QUESTION: Sections (06 41 16,1.7) and (12 36 24,1.4) require the manufacturer to participate in the AWI QCP program. Can this requirement be waived?
B. Yes, that requirement can be waived.

ITEM-10

- A. QUESTION: 02/A120B indicates a mosaic tile surround graphic around the EL1-2 walls and refers to the finish plans - there is no indication of a wall finish other than paint on the finish plans. Please specify the finish material and clarify on the finish plans.
B. ANSWER: The mosaic tile surround will be a future art installation. No change to the finish plans.

ITEM-11

- A. QUESTION: Please confirm the intent is to paint the stainless-steel railings per 03/A120D and similar.
B. The intent is if the railing is interior, it can be steel and painted. See attached sheet A120D-Elevator + Stair Core 1 - Ramp Plans and Details for revised note on 03/A120D

ITEM-12

- A. QUESTION: Referring to ES101 keynote #14, has anyone reached out to AES to investigate if they perform this work anymore for area lighting mounted to their poles?
- B. ANSWER: This has not been fully coordinated with AES. However, KBSO did speak to them about it during the overhead relocation discussions and they indicated that it could be coordinated with a different division with AES.

ITEM-13

- A. QUESTION: Drawing EP102A sheet keynote #2 references an additional 4 duplex receptacles to each exam room. Please confirm that is for all 13 exam rooms on this print and not just the one exam room the note is shown in. If it is for each exam room, please confirm if additional circuitry is required.
- B. ANSWER: This note will be deleted in Addendum #02

ITEM-14

- A. QUESTION: Drawing EP102B sheet keynote #1 refers to dental shop drawings for the rough in of the CT Exposure button. Can these shop drawings be provided?
- B. ANSWER: Per the arrangement with the owner shop drawings will be provided by the Dental consultant during construction.

ITEM-15

- A. QUESTION: Drawings ET101A through ET103B general note A references 2 smoke detectors and 2 horn strobes for locations determined by others. Please confirm that it is not required per sheet and only 2 additional of each are required for the project as a whole.
- B. ANSWER: Yes, this is per project not per sheet.

ITEM-16

- A. QUESTION: Drawing E901 references to provide alternate pricing for a standby power system but this is not referenced in spec section 01 23 00 alternates. Please confirm if this is supposed to be an alternate, and if not, which generator / ats size should be provided as part of the base bid.
- B. ANSWER: Generator/ats and all other distribution equipment associated are base bid. Refer to revised E901 sheet. See attached.

ITEM-17

- A. QUESTION: Relating to the one-line riser on E901
 1. Panel LS1 - 12 CKT per one-line vs 18 CKT per panelboard schedule, please clarify
 2. Panel OS1 - 24 CKT per one-line vs 12 CKT per panelboard schedule, please clarify
 3. Panel OS2 -12CKT per one-line vs 30 CKT per panelboard schedule, please clarify
 4. There is no kAIC rating on various panels (mostly LS/ OS panels), please clarify
 5. There are no feeder designations for the LS/OS panels, please clarify
- B. ANSWER: Refer to revised E901 sheet. See attached.

ITEM-18

- A. QUESTION: 03/A364 indicates neoprene pads between the steel and the glass canopy and reference Section 05 12 00. Neoprene pads are not mentioned in Section 05 12 00. Please provide information for these pads.
- B. ANSWER: Refer to revised 03/A364 sheet calling out Fabreeka-TIM Structural Thermal Break or approved equal. See attached.

ITEM-19

- A. QUESTION: Please provide a specification for the automatic swing gates at the parking level at unit-east. Detail 06/A356 mentions "Spec # 05 50 00 - Custom Fabricated Swing Gate" but I do not see it in the 05 50 00.
- B. ANSWER: See attached specification 32 31 11 - Gate Operators

ITEM-20

- A. QUESTIONS: Spec section 07 62 00-2.9 - Several areas indicate "Aluminum: 24 gauge" however aluminum material is typically not measured in gauge, that is usually measurement reserved for steel. Is the intention to specify aluminum, and if so, what would be the desired thickness? A typical thickness for aluminum would be: .032, .040, .050, or .063
- B. ANSWER: The world does utilize both gauge and inches for measuring aluminum the equivalents are 24 or .050".

ITEM-21

- A. QUESTION: Spec section 07 54 23-2.4C - Can an option for solvent-based bonding adhesive be added in an addendum?
- B. ANSWER: A high strength solvent-based contact adhesive is acceptable.

ITEM-22

- A. QUESTION: Note 26/A202 and 03/A364 please provide a specification for the glass and steel canopies
- B. ANSWER: Note 26/A202 delete "BASIS OF DESIGN: KAWNEER" from the note. Detail 03/A364 note to read: "PREFINISHED GLASS AWNING SYSTEM BOLTED TO STEEL PLATE. BASIS-OF-DESIGN: CRL UNIVERSAL WALL MOUNTED GLASS AWNING BRACKET GAB36, BRUSHED FINISH, OR ARCHITECT APPROVED EQUAL."

ITEM-23

- A. QUESTION: 84 11 32.2A says the basis of design is Kawneer Permafluor. That is not a system. It is a finish. Details are 451T-VG. What is finish? It says Permafluor there, but under 2.10 it says clear anodized. A505-A506 calls for dark bronze anodized.
- B. ANSWER: The system will be Kawneer 451T-VG as the questioner noted. The finish would not be "clear anodized" as noted in Section 2.10. The finish would be Dark Bronze Anodized as noted on A505-A506.

ITEM-24

- A. QUESTION: Regarding both the elevator specs:
 - 1. 1.10A has 1 year guarantee, but 1.11A has 3 months service. These should coincide with each other and be 1 year.
 - 2. Car sizes and clear inside dimensions don't match.
 - 3. 2.01A door operator is calling out a specific third party. Are manufacturers standard pre-engineered units wanted for this elevator, or are they looking for a hodge podge or third-party equipment?
 - 4. In various places stainless steel is listed as type 304, the industry standard is 441, please confirm that this is acceptable.
 - 5. 2.07A "galvanneal" is an unusual choice, please confirm that powdercoat is acceptable. 2.07 door finish is listed two ways, which is correct? 2.07 based is listed two ways, which is correct? 2.07 reveals and frieze both say "NONE" but then list 2 different ones, what do they want? 2.07 please confirm that they want a stainless-steel downlight type ceiling with LED lights. 2.07 which handrail is correct?
 - 6. 2.07 B 7 is confused, please advise. B8 is also, and Nickel silver is very expensive.
- B. ANSWER: Regarding the elevator specifications:
 - 1. 1.10A and 1.11A are to both be 1 year.

2. Car sizes and clear inside dimensions are to be discerned during shop drawing phase of the construction project.
3. 2.01 A Manufacturer's standard pre-engineered units for elevators are acceptable.
4. The industry standard stainless steel type 441 is acceptable.
5. 2.07 A Powder coat is acceptable. Door finish and Base: #4 brushed stain stainless steel. Reveals: Applied non-removable #4 stainless steel. Frieze: Applied non-removable #4 stainless steel. Ceiling: Lexan in suspended aluminum frame island with LED down lights in #4 stainless steel tiles. Handrail(s): 1.5" diameter tube with returns, #4 brushed satin stainless steel finish.
6. 2.07 B 7. Entrance finished with #4 brushed satin stainless steel. B 8. Entrance sills: Extruded Aluminum.

ITEM-25

- A. QUESTION: In looking at the retaining wall schedule it appears that they list the top of the brick ledge at elevations that are above the top of wall elevation. Can you confirm if the Top of wall elevations have been reversed with the top of ledge elevations?
- B. ANSWER: Yes, those two text boxes should be switched. Please refer to attached revised retaining wall schedule.

ITEM-26

- A. Substitution Request 28 13 00 and 28 23 00 are both approved by KBSO. Substitution Request 07 42 13.13 is approved for metal panel type MT4, Formed Metal Wall Panels. The Substitution Request for 10 71 13 is approved for the Kawneer Versoliel Outrigger System only. The Versoliel system is not approved for the single blade option. (Substitution Requests are attached)

CHANGES TO PROJECT MANUAL:

ITEM-27 00 00 02 – TABLE OF CONTENTS

- A. Replace specification section in its entirety with attached.

ITEM-28 22 13 19 – SANITARY WASTE PIPING SPECIALTIES

- A. Added Dura Trench to paragraph 2.2.
- B. Replace specification section in its entirety with attached.

ITEM-29 23 09 23 - DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

- A. New specification section.

ITEM-30 23 09 24 - SEQUENCES OF OPERATION

- A. New specification section.

ITEM-31 23 31 13 - METAL DUCTS

- A. Updated section in its entirety.
- B. Replace specification section in its entirety with attached.

ITEM-32 23 71 00 - VARIABLE REFRIGERANT FLOW SYSTEM

- A. Added LG as approved manufacturer.
- B. Replace specification section in its entirety with attached.

ITEM-33 28 13 00 – ELECTRONIC ACCESS CONTROL

- A. Added Genetec to paragraph 2.1.
- B. Replace specification section in its entirety with attached.

ITEM-34 28 23 00 – IP VIDEO SURVEILLANCE SYSTEM

- A. Added Genetec to paragraph 2.8.
- B. Replace specification section in its entirety with attached.

ITEM-35 32 31 11 – GATE OPERATORS

- A. Replace specification section in its entirety with attached.

ITEM-36 04 22 00 – CONCRETE UNIT MASONRY

- A. Change subsection 2.2.A.B.1 to read "Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3250 psi"

CHANGES TO CIVIL DRAWINGS:

ITEM-37 CG101 – GRADING PLAN

- A. Updated grading around the north entrance to the garage space.
- B. Replace sheet in its entirety with attached.

CHANGES TO STRUCTURAL DRAWINGS:

ITEM-38 S101A – FOUNDATION PLAN - WEST

- A. Replace sheet in its entirety with attached.

ITEM-39 S101B – FOUNDATION PLAN – EAST

- A. Replace sheet in its entirety with attached.

ITEM-40 S102B – SECOND FLOOR FRAMING PLAN – EAST

- A. Replace sheet in its entirety with attached.

ITEM-41 S103B – THRID FLOOR FRAMING PLAN – EAST

- A. Replace sheet in its entirety with attached.

ITEM-42 S104A – MAIN ROOF FRAMING PLAN – WEST

- A. Replace sheet in its entirety with attached.

ITEM-43 S504 – TYPICAL SECTIONS AND DETAILS

- A. Replace sheet in its entirety with attached.

ITEM-44 S505 – TYPICAL SECTIONS AND DETAILS

- A. Replace sheet in its entirety with attached.

ITEM-45 S506 – TYPICAL SECTIONS AND DETAILS

- A. Replace sheet in its entirety with attached.

ITEM-46 S511 – TYPICAL SECTIONS AND DETAILS

- A. Replace sheet in its entirety with attached.

ITEM-47 S512 – TYPICAL SECTIONS AND DETAILS

- A. Replace sheet in its entirety with attached.

ITEM-48 S601 – COLUMN SCHEDULE AND DETAILS

- A. Replace sheet in its entirety with attached.

CHANGES TO ARCHITECTURAL DRAWINGS:

ITEM-49 A102D – SECOND FLOOR INTERIOR CONSTRUCTION PLAN – EAST

- A. Replace sheet in its entirety with attached.

ITEM-50 A103C – THIRD FLOOR INTERIOR CONSTRUCTION PLAN – WEST

- A. Replace sheet in its entirety with attached.

ITEM-51 A103D – THIRD FLOOR INTERIOR CONSTRUCTION PLAN – EAST

- A. Replace sheet in its entirety with attached.

ITEM-52 A105 – ROOF PLAN

- A. Screen wall enlarged
- B. Replace sheet in its entirety with attached.

ITEM-53 A110 – RESTROOM PLANS AND ELEVATIONS

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-54 A110A – RESTROOM PLANS AND ELEVATIONS

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-55 A110B – RESTROOM PLANS AND ELEVATIONS

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-56 A110C – RESTROOM PLANS AND ELEVATIONS

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-57 A111 – PHARMACY – ENLARGED PLAN AND ENLARGED REFLECTED CEILING PLAN

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-58 A112 – COMMUNITY IMPACT – ENLARGED PLAN AND ENLARGED REFLECTED CEILING PLAN

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-59 A113 – DENTAL – ENLARGED PLAN AND ENLARGED REFLECTED CEILING PLAN

- A. Updated interior elevations referenced on this sheet.
- B. Updated placement of diffusers in reflected ceiling plan
- C. Updated light fixture to match electrical drawing in reflected ceiling plan
- D. Replace sheet in its entirety with attached.

ITEM-60 A116 – ENLARGED PLANS

- A. Clarify ceiling height in interior renovation.
- B. Replace sheet in its entirety with attached.

ITEM-61 A120D – ELEVATOR + STAIR CORE 1 – RAMP PLANS AND DETAILS

- A. Clarify railing finish.
- B. Replace sheet in its entirety with attached.

ITEM-62 A126 – ENLARGED PLANS AND DETAILS

- A. Screen wall enlarged
- B. Replace sheet in its entirety with attached.

ITEM-63 A363 – SECTION DETAILS

- A. Updated mechanical louver detail
- B. Replace sheet in its entirety with attached.

ITEM-64 A364 – SECTION DETAILS

- A. Revised detail note.
- B. Replace sheet in its entirety with attached.
- C. Thermal Insulation Material:
 - 1. Fiberglass-Reinforced Laminate Composite, Fabreeka-TIM® as manufactured by Fabreeka International, Inc.
 - 2. Material shall maintain structural integrity of connections. Refer to Structural Drawings for specific Load requirements.
 - 3. Ultimate Material Properties:
 - a. Tensile Strength ASTM D638 11,000 psi
 - b. Flexural Strength ASTM D790 25,000 psi
 - c. Compressive Strength ASTM D695 38,900 psi
 - d. Compressive Modulus ASTM D695 ½" thick 291,194 psi
 - e. Compressive Modulus ASTM D695 1" thick 519,531 psi
 - f. Shear Strength ASTM D732 15,000 psi
 - g. Thickness as indicated in the drawings
 - h. Oxygen Index ASTM D2863 21.8%
 - i. Coefficient of Thermal Expansion ASTM D696 2.2
 - j. Thermal Conductivity ASTM C177 1.8 BTU/Hr/ ft²/in/°F
 - k. Density 107.83 lb/ ft³

ITEM-65 A401A – FIRST FLOOR REFLECTED CEILING PLAN – WEST

- A. Updates to mechanical diffusers and lighting layouts in ceilings.
- B. Replace sheet in its entirety with attached.

ITEM-66 A401B – FIRST FLOOR REFLECTED CEILING PLAN – EAST

- A. Updates to mechanical diffuser location.
- B. Replace sheet in its entirety with attached.

ITEM-67 A402A – SECOND FLOOR REFLECTED CEILING PLAN – WEST

- A. Updates to mechanical diffusers and lighting layouts in ceilings.
- B. Replace sheet in its entirety with attached.

ITEM-68 A403A – THIRD FLOOR REFLECTED CEILING PLAN – WEST

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-69 A403B – THIRD FLOOR REFLECTED CEILING PLAN – EAST

- A. Updated placement of diffusers in reflected ceiling plan.
- B. Replace sheet in its entirety with attached.

ITEM-70 A501 – DOOR SCHEDULE

- A. Added basis-of-design finish for wood doors to the General Door Notes legend.
- B. Replace sheet in its entirety with attached.

ITEM-71 A502 – DOOR DETAILS

- A. Added basis-of-design finish for wood doors to the General Door Notes legend.
- B. Replace sheet in its entirety with attached.

ITEM-72 A506 – INTERIOR STOREFRONT ELEVATIONS

- A. IS-9 window elevation type removed from project.
- B. Replace sheet in its entirety with attached.

ITEM-73 A601A – MAINSTREET – INTERIOR ELEVATIONS

- A. Replace sheet in its entirety with attached.

ITEM-74 A601D – MAINSTREET – INTERIOR ELEVATIONS

- A. Replace sheet in its entirety with attached.

ITEM-75 A605 – INTERIOR ELEVATIONS

- A. Miscellaneous updates to multiple elevations on the sheet – consisting of material changes, removal of a storefront window, etc.
- B. Replace sheet in its entirety with attached.

ITEM-76 A607 – INTERIOR ELEVATIONS

- A. Backsplash revision to Resource 314C interior elevation
- B. Replace sheet in its entirety with attached.

ITEM-77 A608 – INTERIOR ELEVATIONS

- A. IS-9 window elevation type removed from elevation and paint color change on Conference Room 215 Beverage Bar Elevation.
- B. Replace sheet in its entirety with attached.

ITEM-78 A620 – MILLWORK SECTION

- A. Material update to millwork detail.
- B. Replace sheet in its entirety with attached.

ITEM-79 A700 – FINISH SCHEDULES AND SPECIFICATIONS

- A. Revisions to the finish legend
- B. Replace sheet in its entirety with attached.

ITEM-80 A701B – FIRST FLOOR INTERIOR FINISH PLAN – EAST

- A. Flooring revisions in a few locations.
- B. Replace sheet in its entirety with attached.

ITEM-81 A702A – SECOND FLOOR INTERIOR FINISH PLAN – WEST

- A. Flooring revisions in a few locations.
- B. Replace sheet in its entirety with attached.

ITEM-82 A702B – SECOND FLOOR INTERIOR FINISH PLAN – EAST

- A. Flooring and paint revisions in a few locations.
- B. Replace sheet in its entirety with attached.

ITEM-83 A703A- THIRD FLOOR INTERIOR FINISH PLAN – WEST

- A. Replace sheet in its entirety with attached.

ITEM-84 A703B – THIRD FLOOR INTERIOR FINISH PLAN – EAST

- A. Replace sheet in its entirety with attached.

CHANGES TO MECHANICAL DRAWINGS:

ITEM-85 MH101A – FIRST FLOOR MECHANICAL PLAN - WEST

- A. Updated diffuser locations in the large meeting room.
- B. Adjusted ductwork in the hallway to coordinate with lighting.
- C. Replace sheet in its entirety with attached.

ITEM-86 MH101B – FIRST FLOOR MECHANICAL PLAN – EAST

- A. Added temperature control panel in the storage room.
- B. Added keynote #6.
- C. Adjusted return ductwork in Office 107.
- D. Replace sheet in its entirety with attached.

ITEM-87 MH104B – ROOF LEVEL MECHANICAL PLAN – EAST

- A. Updated equipment layout.
- B. Replace sheet in its entirety with attached.

ITEM-88 MP104B – ROOF LEVEL MECHANICAL PIPING PLAN – EAST

- A. Updated equipment and piping layout.
- B. Added keynotes #1-#6.
- C. Replace sheet in its entirety with attached.

ITEM-89 M502 – MECHANICAL DIAGRAMS

- A. Added this sheet.

ITEM-90 M503 – MECHANICAL DIAGRAMS

- A. Added this sheet.

ITEM-91 M601 – MECHANICAL SCHEDULES

- A. Updated DOAS-1.
- B. Updated HRU-3.
- C. Updated HRU-5.
- D. Replace sheet in its entirety with attached.

ITEM-92 M901 – CONTROL SCHEMATICS

- A. Added this sheet

CHANGES TO PLUMBING DRAWINGS:

ITEM-93 P100A – FOUNDATION PLUMBING PLAN - WEST

- A. Relocated 4"W drops for area drains.
- B. Replace sheet in its entirety with attached.

ITEM-94 P100B – FOUNDATION PLUMBING PLAN – EAST

- A. Relocated 4"W drops for trench drains at garage entrance.
- B. Replace sheet in its entirety with attached.

ITEM-95 FIRST FLOOR PLUMBING PLAN – WEST

- A. Changed trench drains to area drains, revised layout at north wall.
- B. Replace sheet in its entirety with attached.

ITEM-96 P101B – FIRST FLOOR PLUMBING PLAN – EAST

- A. Revised size of trench drains at garage entrance from 12' to 10'.
- B. Added keynote 8 to callout dental suite CW and air piping.
- C. Added gas meter callout.
- D. Replace sheet in its entirety with attached.

ITEM-97 P103B – THIRD FLOOR PLUMBING PLAN – EAST

- A. Re-routed gas piping to roof.
- B. Replace sheet in its entirety with attached.

ITEM-98 P104B – ROOF LEVEL PLUMBING PLAN – EAST

- A. Re-routed gas piping for DOAS-1
- B. Replace sheet in its entirety with attached.

ITEM-99 P601 – PLUMBING SCHEDULES

- A. Added information for WH-2.
- B. Added AD-2 to Plumbing Drainage Fitting Schedule.
- C. Replace sheet in its entirety with attached.

CHANGES TO ELECTRICAL DRAWINGS:

ITEM-100EL102A – SECOND FLOOR LIGHTING PLAN – WEST

- A. Edit keynotes.
- B. Add programmable time clock for control of exterior lights.
- C. Replace sheet in its entirety with attached.

ITEM-101EL102B – SECOND FLOOR LIGHTING PLAN – EAST

- A. Remove (1) type L1-B fixture from Warming Kitchen.
- B. Add emergency lighting circuit for Warming Kitchen, Food Panty, and Community Impact.
- C. Replace sheet in its entirety with attached.

ITEM-102EL103A – THIRD FLOOR LIGHTING PLAN – WEST

- A. Modify lighting layout on Terrace.
- B. Add light switch for control of Terrace lighting
- C. Replace sheet in its entirety with attached.

ITEM-103EL103B – THIRD FLOOR LIGHTING PLAN – EAST

- A. Modify lighting layout on Terrace.
- B. Add (2) 3-way light switches for control of Terrace lighting.
- C. Replace sheet in its entirety with attached.

ITEM-104EP101B – FIRST FLOOR ELECTRICAL PLAN – EAST

- A. Add 120V power connection to temperature control panel.
- B. Replace sheet in its entirety with attached.

ITEM-105EP102A – SECOND FLOOR ELECTRICAL PLAN – WEST

- A. Remove errant keynote calling for (4) additional receptacles in all exam rooms.
- B. Replace sheet in its entirety with attached.

ITEM-106EP104B – ROOF LEVEL ELECTRICAL PLAN – EAST

- A. Remove disconnect from HRU-3.
- B. Replace sheet in its entirety with attached.

ITEM-107E602 – ELECTRICAL SCHEDULES

- A. Modified panel information for panels OS1 and LS1.
- B. Replace sheet in its entirety with attached.

ITEM-108E603 – ELECTRICAL SCHEDULES

- A. Modified panel information for panels LS3 and OS3.
- B. Replace sheet in its entirety with attached.

ITEM-109E901- ELECTRICAL DIAGRAMS

- A. Changed panel OS1 from 100A to 125A.
- B. Changed transfer switch ATS-OS from 100A to 125A
- 1. Add feeder information.
- C. Change panel LS1 from 12 ckts to 18ckts
- 1. Add feeder information.
- D. Change panel OS2 from 60A to 100A and 12 ckts to 30 ckts
- 1. Add feeder information
- E. Change HRU-3 from double frame to single frame.
- 1. Remove feeder for 40A frame.
- F. Change HRU-5 frame from 70A to 40A
- 1. Update feeder information.
- G. Replace sheet in its entirety with attached.

ATTACHMENTS:

- A. Specification Sections as follows:
 - a. 00 00 02 – TABLE OF CONTENTS
 - b. 22 13 19 – SANITARY WASTE PIPING SPECIALTIES
 - c. 23 09 23 – DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC
 - d. 23 09 24 – SEQUENCES OF OPERATION
 - e. 23 31 13 - METAL DUCTS
 - f. 23 71 00 – VARIABLE REFRIGERANT FLOW SYSTEM
 - g. 28 13 00 – ELECTRONIC ACCESS CONTROL
 - h. 28 23 00 – IP VIDEO SURVEILLANCE SYSTEM
 - i. 32 31 11 – GATE OPERATORS
- B. Drawings as follows:
 - a. CG101 – GRADING PLAN
 - b. S101A – FOUNDATION PLAN – WEST
 - c. S101B – FOUNDATION PLAN - EAST
 - d. S102B – SECOND FLOOR FRAMING PLAN – EAST
 - e. S103B – THIRD FLOOR FRAMING PLAN – EAST
 - f. S104A – MAIN ROOF FRAMING PLAN – WEST
 - g. S504 – TYPICAL SECTIONS AND DETAILS

- h. S505 - TYPICAL SECTIONS AND DETAILS
- i. S506 - TYPICAL SECTIONS AND DETAILS
- j. S511 - TYPICAL SECTIONS AND DETAILS
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- w. A113 - DENTAL - ENLARGED PLAN AND ENLARGED REFLECTED CEILING PLAN
- x. A116 - ENLARGED PLANS
- y. A120D - ELEVATOR + STAIR CORE 1 - RAMP PLANS AND DETAILS
- z. A126 - ENLARGED PLANS AND DETAILS
- aa. A363 - SECTION DETAILS
- bb. A364 - SECTION DETAILS
- cc. A401A - FIRST FLOOR REFLECTED CEILING PLAN - WEST
- dd. A401B - FIRST FLOOR REFLECTED CEILING PLAN - EAST
- ee. A402A - SECOND FLOOR REFLECTED CEILING PLAN - WEST
- ff. A403A - THIRD FLOOR REFLECTED CEILING PLAN - WEST
- gg. A403B - THIRD FLOOR REFLECTED CEILING PLAN - EAST
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- ii. A502 - DOOR DETAILS
- jj. A506 - INTERIOR STOREFRONT ELEVATIONS
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- ll. A601D - MAINSTREET - INTERIOR ELEVATIONS - ALTERNATE
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END OF SECTION 000002

SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following sanitary drainage piping specialties:
 - 1. Cleanouts.
 - 2. Floor drains.
 - 3. Trap seal devices.
 - 4. Roof flashing assemblies.
 - 5. Miscellaneous sanitary drainage piping specialties.
 - 6. Grease interceptors.

1.2 SUBMITTALS

- A. Product Data: Clearly indicate the products, materials, sizes, etc. for each specialty item.
- A. Include rated capacities, operating characteristics, and accessories for grease interceptors.

1.3 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 CLEANOUTS

- A. Exposed Cleanouts:
 - 1. Standard: ASME A112.36.2M for cast iron for cleanout test tee.
 - 2. Size: Same as connected drainage piping
 - 3. Body Material: Hubless, cast-iron soil pipe or Schedule 40 PVC DWV test tee as required to match connected piping.
 - 4. Closure: Raised-head, brass or plastic plug.
 - 5. Closure Plug Size: Same as or not more than one size smaller than cleanout size.
- B. Cast-Iron Floor Cleanouts (FCO):
 - 1. Manufacturers:

- a. Sioux Chief
 - b. Jay R. Smith
 - c. Mifab
 - d. Wade
 - e. Watts
 2. Standard: ASME A112.36.2M for heavy-duty, adjustable housing, threaded, adjustable housing cleanout.
 3. Size: Same as connected branch.
 4. Type: Heavy-duty, adjustable housing.
 5. Body: Cast iron.
 6. Clamping Device: Required.
 7. Outlet Connection: No Hub.
 8. Closure: Brass plug with straight threads and gasket.
 9. Adjustable Housing Material: Cast iron with threads or set-screws or other device.
 10. Frame and Cover Material and Finish: Nickel-bronze.
 11. Frame and Cover Shape: Round or Square – Refer to Schedule on Drawings.
 12. Top Loading Classification: Refer to Schedule on Drawings.
- C. Wall Cleanouts (WCO):
1. Manufacturers:
 - a. Sioux Chief
 - b. Jay R. Smith
 - c. Mifab
 - d. Wade
 - e. Watts
 2. Standard: ASME A112.36.2M. Include wall access.
 3. Size: Same as connected drainage piping.
 4. Body: Hubless, cast-iron soil pipe or Schedule 40 PVC DWV test tee as required to match connected piping.
 5. Closure: Countersunk or raised-head, drilled-and-threaded brass or plastic plug.
 6. Closure Plug Size: Same as or not more than one size smaller than cleanout size.
 7. Wall Access: Refer to Schedule on Drawings.

2.2 FLOOR DRAINS

- A. Cast-Iron Floor Drains (FD):
1. Manufacturers:
 - a. Sioux Chief
 - b. Jay R. Smith
 - c. Mifab
 - d. Wade
 - e. Watts

f. Dura Trench

2. Standard: ASME A112.6.3.
3. Pattern: Area, Floor, Funnel floor, Sanitary (Refer to Schedule on Drawings) drain.
4. Body Material: Cast iron.
5. Seepage Flange: Refer to Schedule on Drawings.
6. Anchor Flange: Refer to Schedule on Drawings.
7. Clamping Device: Refer to Schedule on Drawings.
8. Outlet: Bottom or Side (Refer to Schedule on Drawings).
9. Coating on Interior and Exposed Exterior Surfaces: Refer to Schedule on Drawings.
10. Sediment Bucket: Refer to Schedule on Drawings.
11. Top or Strainer Material: Refer to Schedule on Drawings.
12. Top of Body and Strainer Finish: Refer to Schedule on Drawings.
13. Top Shape: Refer to Schedule on Drawings.
14. Top Loading Classification: Refer to Schedule on Drawings.
15. Funnel: Refer to Schedule on Drawings.
16. Inlet Fitting: No Hub.
17. Trap Material: Cast Iron
18. Trap Pattern: Deep Seal.

2.3 TRAP SEAL DEVICES

- A. Description: Elastomeric trap seal device with fitting for internal tailpiece or pipe installation. Tested in accordance with ASSE 1072 test standard for ANSI/ASME A112.6.3 drains and by Warnock Hersey for the CSA B79 General Purpose Drains.
- B. Manufacturers:
1. Sioux Chief
 2. Wade
 3. Jay R. Smith
 4. Mifab
 5. Watts
 6. Sure Seal

2.4 ROOF FLASHING ASSEMBLIES

- A. Description: Manufactured assembly made of 4.0-lb/sq. ft., 0.0625-inch- thick, lead flashing collar and skirt extending at least 6 inches from pipe, with galvanized-steel boot reinforcement and counterflashing fitting.
1. Open-Top Vent Cap: Without cap.
 2. Low-Silhouette Vent Cap: With vandal-proof vent cap.
 3. Extended Vent Cap: With field-installed, vandal-proof vent cap.

2.5 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

A. Open Site Drains – PVC (OSD):

1. Description: Shop or field fabricated from Schedule 40 PVC DWV fittings. Include P-trap, Schedule 40 PVC riser section; and where required, increaser fitting.
2. Size: Same as connected waste piping with increaser fitting twice the size of the connected pipe.

B. Deep-Seal Traps:

1. Description: Cast-iron or Schedule 40 PVC, with inlet and outlet matching connected piping and cleanout trap-seal primer valve connection.
2. Size: Same as connected waste piping.
 - a. NPS 2: 4-inch- minimum water seal.
 - b. NPS 2-1/2 and Larger: 5-inch- minimum water seal.

C. Air-Gap Fittings:

1. Standard: ASME A112.1.2, for fitting designed to ensure fixed, positive air gap between installed inlet and outlet piping.
2. Body: Bronze or cast iron.
3. Inlet: Opening in top of body.
4. Outlet: Larger than inlet.
5. Size: Same as connected waste piping and with inlet large enough for associated indirect waste piping.

D. Sleeve Flashing Device:

1. Description: Manufactured, cast-iron fitting, with clamping device, that forms sleeve for pipe floor penetrations of floor membrane. Include galvanized-steel pipe extension in top of fitting that will extend 2 inches above finished floor and galvanized-steel pipe extension in bottom of fitting that will extend through floor slab.
2. Size: As required for close fit to riser or stack piping.

E. Stack Flashing Fittings:

1. Description: Counterflashing-type, cast-iron fitting, with bottom recess for terminating roof membrane, and with threaded or hub top for extending vent pipe.
2. Size: Same as connected stack vent or vent stack.

2.6 GREASE INTERCEPTORS

A. Grease Traps (GT):

1. Manufacturers:

- a. Schier Great Basin
 - b. Engineer approved equal
2. Model: See Drainage Products Schedule on the Drawings.
3. Description: hydromechanical grease trap shall be lifetime guaranteed and made in the USA of seamless, rotationally-molded polyethylene with a minimum 3/8" uniform wall thickness. Grease Trap shall be furnished for above or below grade installation. Grease Trap shall be built in accordance with ASME A112.14.3 (type C) and CSA B481.1, with field cut riser system, built-in flow control, built-in test/sealing caps and three outlet options. Cover shall provide water/gas tight seal and be rated for vehicle traffic.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Refer to Division 22 Section "Common Work Results for Plumbing" for piping joining materials, joint construction, and basic installation requirements.
- B. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:
 1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
 2. Locate at each change in direction of piping greater than 45 degrees.
 3. Locate at minimum intervals of 100 feet for piping NPS 4 and smaller and 100 feet for larger piping.
 4. Locate at base of each vertical soil and waste stack.
- C. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- D. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- E. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.
 1. Position floor drains for easy access and maintenance.
 2. Set floor drains below elevation of surrounding finished floor to allow floor drainage. Set with grates depressed according to the following drainage area radii:
 - a. Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.
 - b. Radius, 30 to 60 Inches: Equivalent to 1 percent slope.
 - c. Radius, 60 Inches or Larger: Equivalent to 1 percent slope, but not greater than 1-inch total depression.

3. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
 4. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
- F. Install roof flashing assemblies on sanitary stack vents and vent stacks that extend through roof.
- G. Install flashing fittings on sanitary stack vents and vent stacks that extend through roof.
- H. Assemble open drain fittings and install with top of hub 2 inches above floor.
- I. Install deep-seal traps on floor drains and other waste outlets, if indicated.
- J. Install floor-drain, trap-seal primer fittings on inlet to floor drains that require trap-seal primer connection.
1. Exception: Fitting may be omitted if trap has trap-seal primer connection.
 2. Size: Same as floor drain inlet.
- K. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.
- L. Install sleeve flashing device with each riser and stack passing through floors with waterproof membrane.
- M. Install vent caps on each vent pipe passing through roof.
- N. Install grease interceptors, including trapping, venting, and flow-control fitting, according to authorities having jurisdiction and with clear space for servicing.
1. Install cleanout immediately downstream from interceptors not having integral cleanout on outlet.
- O. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.
- P. Install escutcheons at wall, floor, and ceiling penetrations in exposed finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding pipe fittings.
- Q. Install trap seal devices to maintain trap seals in all new floor drains located within toilet rooms, and where indicated on the drawings.

3.2 CONNECTIONS

- A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

- B. Install piping adjacent to equipment to allow service and maintenance.

3.3 LABELING AND IDENTIFYING

- A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplate or sign on or near each grease interceptor.
- B. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit. Nameplates and signs are specified in Division 22 Section "Identification for Plumbing Piping and Equipment."

3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221319

SECTION 230923 - DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

A. Scope:

1. The Temperature Control Contractor (TCC) shall install, furnish, program, and turn over to client a complete operating DDC system for monitoring and controlling of MEP systems as shown in the Contract Documents.

B. Section Includes:

1. DDC system for monitoring and controlling of MEP systems.
2. Delivery of selected control devices to equipment and systems manufacturers for factory installation and to HVAC systems installers for field installation.

C. Scope not included in 230923:

1. Electrical Contractor (EC) to provide all wiring to all motor starters, variable frequency drives, and motor control centers.
2. EC to provide 120 V/60 Hz power to all direct digital controllers (DDC) that require 120 V power.
3. Sheet Metal Contractor shall install all motorized dampers, duct mounted airflow measuring stations, thermowells (for temperature & pressure sensors), flow meters, control valves, and other accessories that are furnished by the TCC.
4. Mechanical Contractor shall install all temperature and pressure sensing wells and control valves furnished by the Temperature Control Contractor.

1.2 DEFINITIONS

- A. Algorithm: A logical procedure for solving a recurrent mathematical problem. A prescribed set of well-defined rules or processes for solving a problem in a finite number of steps.

- B. Analog: A continuously varying signal value, such as current, flow, pressure, or temperature.

C. BACnet Specific Definitions:

1. BACnet: Building Automation Control Network Protocol, ASHRAE 135. A communications protocol allowing devices to communicate data over and services over a network.
2. BACnet Interoperability Building Blocks (BIBBs): BIBB defines a small portion of BACnet functionality that is needed to perform a particular task. BIBBs are combined to build the BACnet functional requirements for a device.

3. BACnet/IP: Defines and allows using a reserved UDP socket to transmit BACnet messages over IP networks. A BACnet/IP network is a collection of one or more IP subnetworks that share the same BACnet network number.
 4. BACnet Testing Laboratories (BTL): Organization responsible for testing products for compliance with ASHRAE 135, operated under direction of BACnet International.
 5. PICS (Protocol Implementation Conformance Statement): Written document that identifies the particular options specified by BACnet that are implemented in a device.
- D. Binary: Two-state signal where a high signal level represents ON" or "OPEN" condition and a low signal level represents "OFF" or "CLOSED" condition. "Digital" is sometimes used interchangeably with "Binary" to indicate a two-state signal.
- E. Controller: Generic term for any standalone, microprocessor-based, digital controller residing on a network, used for local or global control. Three types of controllers are indicated: Network Controller, Programmable Application Controller, and Application-Specific Controller.
- F. Control System Integrator: An entity that assists in expansion of existing enterprise system and support of additional operator interfaces to I/O being added to existing enterprise system.
- G. COV: Changes of value.
- H. DDC System Provider: Authorized representative of, and trained by, DDC system manufacturer and responsible for execution of DDC system Work indicated.
- I. Distributed Control: Processing of system data is decentralized and control decisions are made at subsystem level. System operational programs and information are provided to remote subsystems and status is reported back. On loss of communication, subsystems shall be capable of operating in a standalone mode using the last best available data.
- J. DOCSIS: Data-Over Cable Service Interface Specifications.
- K. Gateway: Bidirectional protocol translator that connects control systems that use different communication protocols.
- L. HLC: Heavy load conditions.
- M. I/O: System through which information is received and transmitted. I/O refers to analog input (AI), binary input (BI), analog output (AO) and binary output (BO). Analog signals are continuous and represent control influences such as flow, level, moisture, pressure, and temperature. Binary signals convert electronic signals to digital pulses (values) and generally represent two-position operating and alarm status. "Digital," (DI and (DO), is sometimes used interchangeably with "Binary," (BI and (BO), respectively.
- N. LAN: Local area network.
- O. LNS: LonWorks Network Services.
- P. LON Specific Definitions:

1. FTT-10: Echelon Transmitter-Free Topology Transceiver.
 2. LonMark: Association comprising suppliers and installers of LonTalk products. Association provides guidelines for implementing LonTalk protocol to ensure interoperability through a standard or consistent implementation.
 3. LonTalk: An open standard protocol developed by the Echelon Corporation that uses a "Neuron Chip" for communication. LonTalk is a register trademark of Echelon.
 4. LonWorks: Network technology developed by Echelon.
 5. Node: Device that communicates using CEA-709.1-C protocol and that is connected to a CEA-709.1-C network.
 6. Node Address: The logical address of a node on the network, consisting of a Domain number, Subnet number, and Node number. "Node number" portion of an address is a number assigned to device during installation, is unique within a subnet, and is not a factory-set unique Node ID.
 7. Node ID: A unique 48-bit identifier assigned at factory to each CEA-709.1-C device. Sometimes called a "Neuron ID."
 8. Program ID: An identifier (number) stored in a device (usually EEPROM) that identifies node manufacturer, functionality of device (application and sequence), transceiver used, and intended device usage.
 9. Standard Configuration Property Type (SCPT): Pronounced "skip-it." A standard format type maintained by LonMark International for configuration properties.
 10. Standard Network Variable Type (SNVT): Pronounced "snivet." A standard format type maintained by LonMark used to define data information transmitted and received by individual nodes. "SNVT" is used in two ways. It is an acronym for "Standard Network Variable Type" and is often used to indicate a network variable itself (i.e., it can mean "a network variable of a standard network variable type").
 11. Subnet: Consists of a logical grouping of up to 127 nodes, where logical grouping is defined by node addressing. Each subnet is assigned a number, which is unique within a Domain. See "Node Address."
 12. TP/FT-10: Free Topology Twisted Pair network defined by CEA-709.3 and is most common media type for a CEA-709.1-C control network.
 13. TP/XF-1250: High-speed, 1.25-Mbps, twisted-pair, doubly terminated bus network defined by "LonMark Interoperability Guidelines" typically used only to connect multiple TP/FT-10 networks.
 14. User-Defined Configuration Property Type (UCPT): Pronounced "U-Keep-It." A Configuration Property format type that is defined by device manufacturer.
 15. User-Defined Network Variable Type (UNVT): Network variable format defined by device manufacturer. UNVTs create non-standard communications that other vendors' devices may not correctly interpret and may negatively impact system operation. UNVTs are not allowed.
- Q. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.
- R. Modbus TCP/IP: An open protocol for exchange of process data.
- S. MS/TP: Master-slave/token-passing, IEE 8802-3. Datalink protocol LAN option that uses twisted-pair wire for low-speed communication.

- T. Network Controller: Digital controller, which supports a family of programmable application controllers and application-specific controllers, that communicates on peer-to-peer network for transmission of global data.
- U. Network Repeater: Device that receives data packet from one network and rebroadcasts it to another network. No routing information is added to protocol.
- V. PDA: Personal digital assistant.
- W. Peer to Peer: Networking architecture that treats all network stations as equal partners.
- X. RAM: Random access memory.
- Y. RF: Radio frequency.
- Z. Router: Device connecting two or more networks at network layer.
- AA. TCP/IP: Transport control protocol/Internet protocol incorporated into Microsoft Windows.
- BB. UPS: Uninterruptible power supply.
- CC. USB: Universal Serial Bus.
- DD. User Datagram Protocol (UDP): This protocol assumes that the IP is used as the underlying protocol.
- EE. VAV: Variable air volume.
- FF. WLED: White light emitting diode.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product include the following:
 - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 2. Operating characteristics, electrical characteristics, and furnished accessories indicating process operating range, accuracy over range, control signal over range, default control signal with loss of power, calibration data specific to each unique application, electrical power requirements, and limitations of ambient operating environment, including temperature and humidity.
 - 3. Product description with complete technical data, performance curves, and product specification sheets.
 - 4. Installation, operation and maintenance instructions including factors effecting performance.
 - 5. Bill of materials of indicating quantity, manufacturer, and extended model number for each unique product.

6. When manufacturer's product datasheets apply to a product series rather than a specific product model, clearly indicate and highlight only applicable information.
7. Each submitted piece of product literature shall clearly cross reference specification and drawings that submittal is to cover.

B. Shop Drawings:

1. Include plans, elevations, sections, and mounting details where applicable.
2. Include details of product assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Detail means of vibration isolation and show attachments to rotating equipment.
4. Plan Drawings indicating the following:
 - a. Screened backgrounds of walls, structural grid lines, HVAC equipment, ductwork and piping.
 - b. Room names and numbers with coordinated placement to avoid interference with control products indicated.
 - c. Each desktop operator workstation, server, gateway, router, DDC controller, control panel instrument connecting to DDC controller, and damper and valve connecting to DDC controller, if included in Project.
 - d. Exact placement of products in rooms, ducts, and piping to reflect proposed installed condition.
 - e. Network communication cable and raceway routing.
 - f. Proposed routing of wiring, cabling, conduit, and tubing, coordinated with building services for review before installation.
5. Schematic drawings for each controlled HVAC system indicating the following:
 - a. I/O points labeled with point names shown. Indicate instrument range, normal operating set points, and alarm set points. Indicate fail position of each damper and valve, if included in Project.
 - b. I/O listed in table format showing point name, type of device, manufacturer, model number, and cross-reference to product data sheet number.
 - c. A graphic showing location of control I/O in proper relationship to HVAC system.
 - d. Wiring diagram with each I/O point having a unique identification and indicating labels for all wiring terminals.
 - e. Unique identification of each I/O that shall be consistently used between different drawings showing same point.
 - f. Elementary wiring diagrams of controls for HVAC equipment motor circuits including interlocks, switches, relays and interface to DDC controllers.
 - g. Narrative sequence of operation.
 - h. Graphic sequence of operation, showing all inputs and output logical blocks.
6. Control panel drawings indicating the following:
 - a. Panel dimensions, materials, size, and location of field cable, raceways, and tubing connections.

- b. Interior subpanel layout, drawn to scale and showing all internal components, cabling and wiring raceways, nameplates and allocated spare space.
 - c. Front, rear, and side elevations and nameplate legend.
 - d. Unique drawing for each panel.
- 7. DDC system network riser diagram indicating the following:
 - a. Each device connected to network with unique identification for each.
 - b. Interconnection of each different network in DDC system.
 - c. For each network, indicate communication protocol, speed and physical means of interconnecting network devices, such as copper cable type, or fiber-optic cable type. Indicate raceway type and size for each.
 - d. Each network port for connection of an operator workstation or other type of operator interface with unique identification for each.
- 8. DDC system electrical power riser diagram indicating the following:
 - a. Each point of connection to field power with requirements (volts/phase//hertz/amperes/connection type) listed for each.
 - b. Each control power supply including, as applicable, transformers, power-line conditioners, transient voltage suppression and high filter noise units, DC power supplies, and UPS units with unique identification for each.
 - c. Each product requiring power with requirements (volts/phase//hertz/amperes/connection type) listed for each.
 - d. Power wiring type and size, race type, and size for each.
- 9. Monitoring and control signal diagrams indicating the following:
 - a. Control signal cable and wiring between controllers and I/O.
 - b. Point-to-point schematic wiring diagrams for each product.
 - c. Control signal tubing to sensors, switches and transmitters.
 - d. Process signal tubing to sensors, switches and transmitters.
- C. System Description:
 - 1. Full description of DDC system architecture, network configuration, operator interfaces and peripherals, servers, controller types and applications, gateways, routers and other network devices, and power supplies.
 - 2. Complete listing and description of each report, log and trend for format and timing and events which initiate generation.
 - 3. System and product operation under each potential failure condition including, but not limited to, the following:
 - a. Loss of power.
 - b. Loss of network communication signal.
 - c. Loss of controller signals to inputs and outpoints.
 - d. Operator workstation failure.
 - e. Gateway failure.

- f. Network failure
 - g. Controller failure.
 - h. Instrument failure.
 - i. Control damper and valve actuator failure.
 - 4. Complete bibliography of documentation and media to be delivered to Owner.
 - 5. Description of testing plans and procedures.
 - 6. Description of Owner training.
- D. Samples:
- 1. For each exposed product, installed in finished space for approval of selection of aesthetic characteristics.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plan drawings, reflected ceiling plan(s), and other details, drawn to scale and coordinated with each other, using input from installers of the items involved.
- B. Qualification Data:
 - 1. Systems Provider Qualification Data:
 - a. Resume of project manager assigned to Project.
 - b. Resumes of application engineering staff assigned to Project.
 - c. Resumes of installation and programming technicians assigned to Project.
 - d. Resumes of service technicians assigned to Project.
 - e. Brief description of past project including physical address, floor area, number of floors, building system cooling and heating capacity and building's primary function.
 - f. Description of past project DDC system, noting similarities to Project scope and complexity indicated.
 - g. Names of staff assigned to past project that will also be assigned to execute work of this Project.
 - h. Owner contact information for past project including name, phone number, and e-mail address.
 - i. Contractor contact information for past project including name, phone number, and e-mail address.
 - j. Architect and Engineer contact information for past project including name, phone number, and e-mail address.
 - 2. Manufacturer's qualification data.
 - 3. Testing agency's qualifications data.
- C. Welding certificates.
- D. Product Certificates:

1. Data Communications Protocol Certificates: Certifying that each proposed DDC system component complies with ASHRAE 135.
- E. Product Test Reports: For each product that requires testing to be performed by manufacturer.
- F. Preconstruction Test Reports: For each separate test performed.
- G. Source quality-control reports.
- H. Field quality-control reports.
- I. Sample Warranty: For manufacturer's warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For DDC system to include in emergency, operation and maintenance manuals.
 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - a. Project Record Drawings of as-built versions of submittal Shop Drawings provided in electronic PDF format.
 - b. Testing and commissioning reports and checklists of completed final versions of reports, checklists, and trend logs.
 - c. As-built versions of submittal Product Data.
 - d. Names, addresses, e-mail addresses and 24-hour telephone numbers of Installer and service representatives for DDC system and products.
 - e. Operator's manual with procedures for operating control systems including logging on and off, handling alarms, producing point reports, trending data, overriding computer control and changing set points and variables.
 - f. Programming manuals with description of programming language and syntax, of statements for algorithms and calculations used, of point database creation and modification, of program creation and modification, and of editor use.
 - g. Engineering, installation, and maintenance manuals that explain how to:
 - 1) Design and install new points, panels, and other hardware.
 - 2) Perform preventive maintenance and calibration.
 - 3) Debug hardware problems.
 - 4) Repair or replace hardware.
 - h. Documentation of all programs created using custom programming language including set points, tuning parameters, and object database.
 - i. Backup copy of graphic files, programs, and database on electronic media such as DVDs.
 - j. List of recommended spare parts with part numbers and suppliers.

- k. Complete original-issue documentation, installation, and maintenance information for furnished third-party hardware including computer equipment and sensors.
- l. Complete original-issue copies of furnished software, including operating systems, custom programming language, operator workstation software, and graphics software.
- m. Licenses, guarantees, and warranty documents.
- n. Recommended preventive maintenance procedures for system components, including schedule of tasks such as inspection, cleaning, and calibration; time between tasks; and task descriptions.
- o. Owner training materials.

1.6 QUALITY ASSURANCE

A. DDC System Manufacturer Qualifications:

- 1. Nationally recognized manufacturer of DDC systems and products.
- 2. DDC systems with similar requirements to those indicated for a continuous period of 5 years within time of bid.
- 3. DDC systems and products that have been successfully tested and in use on at least 3 past projects.
- 4. Having complete published catalog literature, installation, operation and maintenance manuals for all products intended for use.
- 5. Having full-time in-house employees for the following:
 - a. Product research and development.
 - b. Product and application engineering.
 - c. Product manufacturing, testing and quality control.
 - d. Technical support for DDC system installation training, commissioning and troubleshooting of installations.
 - e. Owner operator training.

B. DDC System Provider Qualifications:

- 1. Authorized representative of, and trained by, DDC system manufacturer.
- 2. In-place facility located within 150 miles of Project and be capable of to respond on-site within 4 hours of notice.
- 3. Staffing resources of competent and experienced full-time employees that are assigned to execute work according to schedule.
- 4. Service and maintenance staff assigned to support Project during warranty period.
- 5. Product parts inventory to support on-going DDC system operation for a period of not less than 5 years after Substantial Completion.
- 6. DDC system manufacturer's backing to take over execution of Work if necessary to comply with requirements indicated. Include Project-specific written letter, signed by manufacturer's corporate officer, if requested.

C. Testing Agency Qualifications: Member company of NETA or an NRTL.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.
- D. Welding Qualifications: Qualify procedures and personnel according to the following:
 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
 3. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
 4. AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."
- E. Pipe and Pressure-Vessel Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace products that fail in materials or workmanship within specified warranty period at no cost to client.
 1. Failures shall be adjusted, repaired, or replaced at no additional cost or reduction in service to Owner.
 2. Include updates or upgrades to software and firmware if necessary to resolve deficiencies.
 - a. Install updates only after receiving Owner's written authorization.
 3. Warranty service shall occur during normal business hours and commence within 24 hours of Owner's warranty service request.
 4. Warranty Period: 2 years from date of Substantial Completion. Warranty shall cover labor, material, replacement, and repairs for work performed during warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Alerton by Open Control System.

2.2 DDC SYSTEM DESCRIPTION

- A. Microprocessor-based monitoring and control including analog/digital conversion and program logic. A control loop or subsystem in which digital and analog information is received and processed by a microprocessor, and digital control signals are generated based on control algorithms and transmitted to field devices to achieve a set of predefined conditions.
 1. DDC system shall consist of a high-speed, peer-to-peer network of distributed DDC controllers, other network devices, operator interfaces, and software.

- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional to design DDC system to satisfy requirements indicated.
 - 1. System Performance Objectives:
 - a. DDC system shall manage HVAC systems.
 - b. DDC system control shall operate HVAC systems to achieve optimum operating costs while using least possible energy and maintaining specified performance.
 - c. DDC system shall respond to power failures, HVAC equipment failures, and adverse and emergency conditions encountered through connected I/O points.
 - d. DDC system shall operate while unattended by an operator and through operator interaction.
 - e. DDC system shall record & store trends and transaction of events and produce report information such as performance, energy, occupancies, and equipment operation.
- B. Surface-Burning Characteristics: Products installed in ducts, equipment, and return-air paths shall comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.
- C. DDC System Data Storage:
 - 1. Include server(s) with disk drive data storage to archive not less than 24 consecutive months of historical data for all I/O points connected to system, including alarms, event histories, transaction logs, trends and other information indicated.
 - 2. When logged onto a server, operator shall be able to also interact with any DDC controller connected to DDC system as required for functional operation of DDC system.
 - 3. Server(s) shall be used for application configuration; for archiving, reporting and trending of data; for operator transaction archiving and reporting; for network information management; for alarm annunciation; and for operator interface tasks and controls application management.
 - 4. Server(s) shall use IT industry-standard database platforms such as Microsoft SQL Server and Microsoft Data Engine (MSDE).
- D. Future Expandability:
 - 1. DDC system size shall be expandable to an ultimate capacity of at least 125% times total I/O points indicated.

2. Additional DDC controllers, I/O and associated wiring shall be all that is needed to achieve ultimate capacity. Initial network infrastructure shall be designed and installed to support ultimate capacity.
3. Operator interfaces installed initially shall not require hardware and software additions and revisions for ultimate capacity.

E. Environmental Conditions for Controllers, Gateways, and Routers:

1. Products shall operate without performance degradation under ambient environmental temperature, pressure and humidity conditions encountered for installed location.
 - a. If product alone cannot comply with requirement, install product in a protective enclosure that is isolated and protected from conditions impacting performance. Enclosure shall be internally insulated, electrically heated, cooled and ventilated as required by product and application.
2. Products shall be protected with enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. Products not available with integral enclosures complying with requirements indicated shall be housed in protective secondary enclosures. Installed location shall dictate the following NEMA 250 enclosure requirements:
 - a. Outdoors, Protected: Type 4.
 - b. Outdoors, Unprotected: Type 4.
 - c. Indoors, Heated with Filtered Ventilation: Type 2.
 - d. Indoors, Heated with Non-Filtered Ventilation: Type 2.
 - e. Indoors, Heated and Air Conditioned: Type 2.
 - f. Mechanical Equipment Rooms:
 - 1) Chiller and Boiler Rooms: Type 4.
 - 2) Air-Moving Equipment Rooms: Type 4.
 - g. Localized Areas Exposed to Washdown: Type 4.
 - h. Within Duct Systems and Air-Moving Equipment Not Exposed to Possible Condensation: Type 3.
 - i. Within Duct Systems and Air-Moving Equipment Exposed to Possible Condensation: Type 4.
 - j. Hazardous Locations: Explosion-proof rating for condition.

F. Environmental Conditions for Instruments and Actuators:

1. Instruments and actuators shall operate without performance degradation under the ambient environmental temperature, pressure, humidity, and vibration conditions specified and encountered for installed location.
 - a. If instruments and actuators alone cannot comply with requirement, install instruments and actuators in protective enclosures that are isolated and protected from conditions impacting performance. Enclosure shall be internally

insulated, electrically heated and ventilated as required by instrument and application.

2. Instruments, actuators and accessories shall be protected with enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. Instruments and actuators not available with integral enclosures complying with requirements indicated shall be housed in protective secondary enclosures. Installed location shall dictate the following NEMA 250 enclosure requirements:
 - a. Outdoors, Protected: Type 4.
 - b. Outdoors, Unprotected: Type 4.
 - c. Indoors, Heated with Filtered Ventilation: Type 2.
 - d. Indoors, Heated with Non-Filtered Ventilation: Type 2.
 - e. Indoors, Heated and Air Conditioned: Type 2.
 - f. Mechanical Equipment Rooms:
 - 1) Chiller and Boiler Rooms: Type 4.
 - 2) Air-Moving Equipment Rooms: Type 4.
 - g. Localized Areas Exposed to Washdown: Type 4.
 - h. Within Duct Systems and Air-Moving Equipment Not Exposed to Possible Condensation: Type 3.
 - i. Within Duct Systems and Air-Moving Equipment Exposed to Possible Condensation: Type 4.
 - j. Hazardous Locations: Explosion-proof rating for condition.

G. Electric Power Quality:

1. Power-Line Surges:
 - a. Protect DDC system products connected to ac power circuits from power-line surges to comply with requirements of IEEE C62.41.
 - b. Do not use fuses for surge protection.
 - c. Test protection in the normal mode and in the common mode, using the following two waveforms:
 - 1) 10-by-1000-mic.sec. waveform with a peak voltage of 1500 V and a peak current of 60 A.
 - 2) 8-by-20-mic.sec. waveform with a peak voltage of 1000 V and a peak current of 500 A.
2. Power Conditioning:
 - a. Protect DDC system products connected to ac power circuits from irregularities and noise rejection. Characteristics of power-line conditioner shall be as follows:
 - 1) At 85 percent load, output voltage shall not deviate by more than plus or minus 1 percent of nominal when input voltage fluctuates between minus 20 percent to plus 10 percent of nominal.

- 2) During load changes from zero to full load, output voltage shall not deviate by more than plus or minus 3 percent of nominal.
 - 3) Accomplish full correction of load switching disturbances within five cycles, and 95 percent correction within two cycles of onset of disturbance.
 - 4) Total harmonic distortion shall not exceed 3-1/2 percent at full load.
 3. Ground Fault: Protect products from ground fault by providing suitable grounding. Products shall not fail due to ground fault condition.
- H. Backup Power Source:
1. HVAC systems and equipment served by a backup power source shall have associated DDC system products that control such systems and equipment also served from a backup power source.
- I. UPS:
1. DDC system products powered by UPS units shall include the following:
 - a. Desktop operator workstations.
 - b. Printers.
 - c. Servers.
 - d. Gateways.
 - e. DDC controllers.
 2. DDC system instruments and actuators powered by UPS units shall be defined in the documents.
- J. Continuity of Operation after Electric Power Interruption:
1. Equipment and associated factory-installed controls, field-installed controls, electrical equipment, and power supply connected to building normal and backup power systems shall automatically return equipment and associated controls to operating state occurring immediately before loss of normal power, without need for manual intervention by operator when power is restored either through backup power source or through normal power if restored before backup power is brought online.

2.4 SYSTEM ARCHITECTURE

- A. System architecture shall consist of no more than 3 levels of LANs.
1. Level one LAN shall connect network controllers and operator workstations.
 2. Level two LAN shall connect programmable application controllers to other programmable application controllers, and to network controllers.
 3. Level three LAN shall connect application-specific controllers to programmable application controllers and network controllers.
 4. Level three LAN shall connect application-specific controllers to application-specific controllers.

- B. DDC system shall consist of dedicated and/or separated LANs that are not shared with other building systems and tenant data and communication networks.
- C. System architecture shall be modular and have inherent ability to expand to not less than 3 times system size indicated with no impact to performance indicated.
- D. System architecture shall perform modifications without having to remove and replace existing network equipment.
- E. Number of LANs and associated communication shall be transparent to operator. All I/O points residing on any LAN shall be capable of global sharing between all system LANs.
- F. System design shall eliminate dependence on any single device for system alarm reporting and control execution. Each controller shall operate independently by performing its' own control, alarm management and historical data collection.
- G. Special Network Architecture Requirements:
 - 1. Air-Handling Systems: For control applications of an air-handling system that consists of air-handling unit(s) and VAV terminal units, include a dedicated LAN of application-specific controllers serving VAV terminal units connected directly to controller that is controlling air-handling system air-handling unit(s). Basically, create a DDC system LAN that aligns with air-handling system being controlled.

2.5 DDC SYSTEM OPERATOR INTERFACES

- A. Operator Means of System Access: Operator shall be able to access entire DDC system through any of multiple means, including, but not limited to, the following:
 - 1. Desktop and portable operator workstation with hardwired connection through LAN port.
 - 2. Portable operator terminal with hardwired connection through LAN port.
 - 3. Portable operator workstation with wireless connection through LAN router.
 - 4. Remote connection using outside of system personal computer or through Web access.
 - 5. Remote connection using portable operator workstation and internet connection.
 - 6. Mobile device.
- B. Access to system, regardless of operator means used, shall be transparent to operator.
- C. Desktop Workstations:
 - 1. Connect to DDC system Level one LAN through a communications port directly on LAN or through a communications port on a DDC controller.
 - 2. Able to communicate with any device located on any DDC system LAN.
 - 3. Able to communicate, with modems, remotely with any device connected to any DDC system LAN.
 - 4. Communication via a modem shall not interfere with LAN activity and LAN activity shall not prevent workstation from handling incoming calls.

D. Critical Alarm Reporting:

1. Operator-selected critical alarms shall be sent by DDC system to notify operator of critical alarms that require immediate attention.
2. DDC system shall send alarm notification to multiple recipients that are assigned for each alarm.
3. DDC system shall notify recipients by any or all means, including e-mail, text message, and prerecorded phone message to mobile and landline phone numbers.

E. Simultaneous Operator Use: Capable of accommodating up to 10 simultaneous operators that are accessing DDC system through any one of operator interfaces indicated.

2.6 NETWORK COMMUNICATION PROTOCOL

A. Network communication protocol(s) used throughout entire DDC system shall be open to public and available to other companies for use in making future modifications to DDC system.

B. ASHRAE 135 Protocol:

1. ASHRAE 135 communication protocol shall be sole and native protocol used throughout entire DDC system.
2. DDC system shall not require use of gateways except to integrate HVAC equipment and other building systems and equipment, not required to use ASHRAE 135 communication protocol.
3. If used, gateways shall connect to DDC system using ASHRAE 135 communication protocol and Project object properties and read/write services indicated by interoperability schedule.
4. Operator workstations, controllers and other network devices shall be tested and listed by BACnet Testing Laboratories.

2.7 DESKTOP OPERATOR WORKSTATIONS

A. Performance Requirements:

1. Performance requirements may dictate equipment exceeding minimum requirements indicated.
2. Energy Star compliant.

B. Computer Workstation:

1. Shall include computer, monitor(s), mouse, and keyboard.
 - a. Computer shall support all building automation operations, email, include all Microsoft Office suit programs, and pdf viewer and edit program.
 - 1) Shall be a minimum i5 processor with 16 GB RAM and 3.6 GHz processor.
 - 2) 64-bit.
 - 3) Capable of expanding ram to 32 GB.
 - 4) 1 TB hard drive.

- 5) 4 USB ports, no optical drive required.
- 6) Graphics card suitable for BAS requirements.
- 7) Sound card.
- 8) Network card and built in wireless.
- 9) Windows 10 or newer.

2.8 ASHRAE 135 GATEWAYS

- A. Include BACnet communication ports, whenever available as an equipment OEM standard option, for integration via a single communication cable. BACnet-controlled plant equipment includes, but is not limited to, boilers, chillers, and variable-speed drives.
- B. Include gateways to connect BACnet to legacy systems, existing non-BACnet devices, and existing non-BACnet DDC-controlled equipment, only when specifically requested and approved by Owner.
- C. Include with each gateway an interoperability schedule showing each point or event on legacy side that BACnet "client" will read, and each parameter that BACnet network will write to. Describe this interoperability of BACnet services, or BIBBs, defined in ASHRAE 135, Annex K.
- D. Gateway Minimum Requirements:
 1. Read and view all readable object properties on non-BACnet network to BACnet network and vice versa where applicable.
 2. Write to all writeable object properties on non-BACnet network from BACnet network and vice versa where applicable.
 3. Include single-pass (only one protocol to BACnet without intermediary protocols) translation from non-BACnet protocol to BACnet and vice versa.
 4. Comply with requirements of Data Sharing Read Property, Data Sharing Write Property, Device Management Dynamic Device Binding-B, and Device Management Communication Control BIBBs according to ASHRAE 135.
 5. Hardware, software, software licenses, and configuration tools for operator-to-gateway communications.
 6. Backup programming and parameters on CD media and the ability to modify, download, backup, and restore gateway configuration.

2.9 DDC CONTROLLERS

- A. DDC system shall consist of a combination of network controllers, programmable application controllers and application-specific controllers to satisfy performance requirements indicated.
- B. DDC controllers shall perform monitoring, control, energy optimization and other requirements indicated.
- C. DDC controllers shall use a multitasking, multiuser, real-time digital control microprocessor with a distributed network database and intelligence.

- D. Each DDC controller shall be capable of full and complete operation as a completely independent unit and as a part of a DDC system wide distributed network.
- E. Environment Requirements:
 - 1. Controller hardware shall be suitable for the anticipated ambient conditions.
 - 2. Controllers located in conditioned space shall be rated for operation at 32 to 120 deg F.
 - 3. Controllers located outdoors shall be rated for operation at 40 to 150 deg F.
- F. Power and Noise Immunity:
 - 1. Controller shall operate at 90 to 110 percent of nominal voltage rating and shall perform an orderly shutdown below 80 percent of nominal voltage.
 - 2. Operation shall be protected against electrical noise of 5 to 120 Hz and from keyed radios with up to 5 W of power located within 36 inches of enclosure.
- G. DDC Controller Spare Processing Capacity:
 - 1. Include spare processing memory for each controller. RAM, PROM, or EEPROM will implement requirements indicated with the following spare memory:
 - a. Network Controllers: 50 percent.
 - b. Programmable Application Controllers: Not less than 60 percent.
 - c. Application-Specific Controllers: Not less than 70 percent.
 - 2. Memory shall support DDC controller's operating system and database and shall include the following:
 - a. Monitoring and control.
 - b. Energy management, operation and optimization applications.
 - c. Alarm management.
 - d. Historical trend data of all connected I/O points.
 - e. Maintenance applications.
 - f. Operator interfaces.
 - g. Monitoring of manual overrides.
- H. Maintenance and Support: Include the following features to facilitate maintenance and support:
 - 1. Mount microprocessor components on circuit cards for ease of removal and replacement.
 - 2. Means to quickly and easily disconnect controller from network.
 - 3. Means to quickly and easily access connect to field test equipment.
 - 4. Visual indication that controller electric power is on, of communication fault or trouble, and that controller is receiving and sending signals to network.
- I. Input and Output Point Interface:

1. Hardwired input and output points shall connect to network, programmable application and application-specific controllers.
2. Input and output points shall be protected so shorting of point to itself, to another point, or to ground will not damage controller.
3. Input and output points shall be protected from voltage up to 24 V of any duration so that contact will not damage controller.
4. AIs:
 - a. AIs shall include monitoring of low-voltage (zero- to 10-V dc), current (4 to 20 mA) and resistance signals from thermistor and RTD sensors.
 - b. AIs shall be compatible with, and field configurable to, sensor and transmitters installed.
 - c. Controller AIs shall perform analog-to-digital (A-to-D) conversion with a minimum resolution of 12 bits or better to comply with accuracy requirements indicated.
 - d. Signal conditioning including transient rejection shall be provided for each AI.
 - e. Capable of being individually calibrated for zero and span.
 - f. Incorporate common-mode noise rejection of at least 50 dB from zero to 100 Hz for differential inputs, and normal-mode noise rejection of at least 20 dB at 60 Hz from a source impedance of 10000 ohms.
5. AOs:
 - a. Controller AOs shall perform analog-to-digital (A-to-D) conversion with a minimum resolution of 12 bits or better to comply with accuracy requirements indicated.
 - b. Output signals shall have a range of 4 to 20 mA dc or zero- to 10-V dc as required to include proper control of output device.
 - c. Capable of being individually calibrated for zero and span.
 - d. AOs shall not exhibit a drift of greater than 0.4 percent of range per year.
6. BIs:
 - a. Controller BIs shall accept contact closures and shall ignore transients of less than 5-ms duration.
 - b. Isolation and protection against an applied steady-state voltage of up to 180-V ac peak.
 - c. BIs shall include a wetting current of at least 12 mA to be compatible with commonly available control devices and shall be protected against effects of contact bounce and noise.
 - d. BIs shall sense "dry contact" closure without external power (other than that provided by the controller) being applied.
 - e. Pulse accumulation input points shall comply with all requirements of BIs and accept up to 10 pulses per second for pulse accumulation. Buffer shall be provided to totalize pulses. Pulse accumulator shall accept rates of at least 20 pulses per second. The totalized value shall be reset to zero on operator's command.
7. BOs:

- a. Controller BOs shall include relay contact closures or triac outputs for momentary and maintained operation of output devices.
 - 1) Relay contact closures shall have a minimum duration of 0.1 second. Relays shall include at least 180 V of isolation. Electromagnetic interference suppression shall be provided on all output lines to limit transients to non-damaging levels. Minimum contact rating shall be 1 A at 24-V ac.
 - 2) Triac outputs shall include at least 180 V of isolation. Minimum contact rating shall be 1 A at 24-V ac.
- b. BOs shall include for two-state operation or a pulsed low-voltage signal for pulse-width modulation control.
- c. BOs shall be selectable for either normally open or normally closed operation.
- d. Include tristate outputs (two coordinated BOs) for control of three-point floating-type electronic actuators without feedback.
- e. Limit use of three-point floating devices to VAV terminal unit control applications, and other applications indicated on Drawings, Control algorithms shall operate actuator to one end of its stroke once every 24 hours for verification of operator tracking.

2.10 NETWORK CONTROLLERS

A. General Network Controller Requirements:

- 1. Include adequate number of controllers to achieve performance indicated.
- 2. System shall consist of one or more independent, standalone, microprocessor-based network controllers to manage global strategies indicated.
- 3. Controller shall have enough memory to support its operating system, database, and programming requirements.
- 4. Data shall be shared between networked controllers and other network devices.
- 5. Operating system of controller shall manage input and output communication signals to allow distributed controllers to share real and virtual object information and allow for central monitoring and alarms.
- 6. Controllers that perform scheduling shall have a real-time clock.
- 7. Controller shall continually check status of its processor and memory circuits. If an abnormal operation is detected, controller shall assume a predetermined failure mode and generate an alarm notification.
- 8. Controllers shall be fully programmable.

B. Communication:

- 1. Network controllers shall communicate with other devices on DDC system network.
- 2. Network controller also shall perform routing if connected to a network of programmable application and application-specific controllers.

C. Operator Interface:

1. Controller shall be equipped with a service communications port for connection to a portable operator's workstation.
 2. Local Keypad and Display:
 - a. Equip controller with local keypad and digital display for interrogating and editing data.
 - b. Use of keypad and display shall require security password.
- D. Serviceability:
1. Controller shall be equipped with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
 2. Wiring and cable connections shall be made to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
 3. Controller shall maintain BIOS and programming information in event of a power loss for at least 72 hours.

2.11 PROGRAMMABLE APPLICATION CONTROLLERS

- A. General Programmable Application Controller Requirements:
1. Include adequate number of controllers to achieve performance indicated.
 2. Controller shall have enough memory to support its operating system, database, and programming requirements.
 3. Data shall be shared between networked controllers and other network devices.
 4. Operating system of controller shall manage input and output communication signals to allow distributed controllers to share real and virtual object information and allow for central monitoring and alarms.
 5. Controllers that perform scheduling shall have a real-time clock.
 6. Controller shall continually check status of its processor and memory circuits. If an abnormal operation is detected, controller shall assume a predetermined failure mode and generate an alarm notification.
 7. Controllers shall be fully programmable.
- B. Communication:
1. Programmable application controllers shall communicate with other devices on network.
- C. Operator Interface:
1. Controller shall be equipped with a service communications port for connection to a portable operator's workstation.
 2. Local Keypad and Display:
 - a. Equip controller with local keypad and digital display for interrogating and editing data.
 - b. Use of keypad and display shall require security password.

D. Serviceability:

1. Controller shall be equipped with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
2. Wiring and cable connections shall be made to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
3. Controller shall maintain BIOS and programming information in event of a power loss for at least 72 hours.

2.12 APPLICATION-SPECIFIC CONTROLLERS

A. Description: Microprocessor-based controllers, which through hardware or firmware design are dedicated to control a specific piece of equipment. Controllers are not fully user-programmable but are configurable and customizable for operation of equipment they are designed to control.

1. Capable of standalone operation and shall continue to include control functions without being connected to network.
2. Data shall be shared between networked controllers and other network devices.

B. Communication: Application-specific controllers shall communicate with other application-specific controller and devices on network, and to programmable application and network controllers.

C. Operator Interface: Controller shall be equipped with a service communications port for connection to a portable operator's workstation. Connection shall extend to port on space temperature sensor that is connected to controller.

D. Serviceability:

1. Controller shall be equipped with diagnostic LEDs or other form of local visual indication of power, communication, and processor.
2. Wiring and cable connections shall be made to field-removable, modular terminal strips or to a termination card connected by a ribbon cable.
3. Controller shall use nonvolatile memory and maintain all BIOS and programming information in event of power loss.

2.13 CONTROLLER SOFTWARE

A. General Controller Software Requirements:

1. Software applications shall reside and operate in controllers. Editing of applications shall occur at operator workstations.
2. I/O points shall be identified by a character point name. Same names shall be used at operator workstations.
3. Control functions shall be executed within controllers using DDC algorithms.

4. Controllers shall be configured to use stored default values to ensure fail-safe operation. Default values shall be used when there is a failure of a connected input instrument or loss of communication of a global point value.
- B. Security:
1. Operator access shall be secured using individual security passwords and user names.
 2. Passwords shall restrict operator to points, applications, and system functions as assigned by system manager.
 3. Operator log-on and log-off attempts shall be recorded.
 4. System shall protect itself from unauthorized use by automatically logging off after last keystroke. The delay time shall be operator-definable.
- C. Scheduling: Include capability to schedule each point or group of points in system. Each schedule shall consist of the following:
1. Weekly Schedule:
 - a. Include separate schedules for each day of week.
 - b. Each schedule should include the capability for start, stop, optimal start, optimal stop, and night economizer.
 - c. Each schedule may consist of up to 10 events.
 - d. When a group of objects are scheduled together, include capability to adjust start and stop times for each member.
 2. Exception Schedules:
 - a. Include ability for operator to designate any day of the year as an exception schedule.
 - b. Exception schedules may be defined up to a year in advance. Once an exception schedule is executed, it will be discarded and replaced by regular schedule for that day of week.
 3. Holiday Schedules:
 - a. Include capability for operator to define up to 99 special or holiday schedules.
 - b. Schedules may be placed on scheduling calendar and will be repeated each year.
 - c. Operator shall be able to define length of each holiday period.
- D. System Coordination:
1. Include standard application for proper coordination of equipment.
 2. Application shall include operator with a method of grouping together equipment based on function and location.
 3. Group may then be used for scheduling and other applications.
- E. Binary Alarms:
1. Each binary point shall be set to alarm based on operator-specified state.

2. Include capability to automatically and manually disable alarming.
- F. Analog Alarms:
1. Each analog object shall have both high and low alarm limits.
 2. Alarming shall be able to be automatically and manually disabled.
- G. Alarm Reporting:
1. Operator shall be able to determine action to be taken in event of an alarm.
 2. Alarms shall be routed to appropriate operator workstations based on time and other conditions.
 3. Alarm shall be able to start programs, print, be logged in event log, generate custom messages, and display graphics.
- H. Remote Communication:
1. System shall have ability to dial out in the event of an alarm.
- I. Electric Power Demand Limiting:
1. Demand-limiting program shall monitor building or other operator-defined electric power consumption from signals connected to electric power meter or from a watt transducer or current transformer.
 2. Demand-limiting program shall predict probable power demand such that action can be taken to prevent exceeding demand limit. When demand prediction exceeds demand limit, action will be taken to reduce loads in a predetermined manner. When demand prediction indicates demand limit will not be exceeded, action will be taken to restore loads in a predetermined manner.
 3. Demand reduction shall be accomplished by the following means:
 - a. Reset air-handling unit supply temperature set points.
 - b. Reset space temperature set points.
 - c. De-energize equipment based on priority.
 4. Demand-limiting parameters, frequency of calculations, time intervals, and other relevant variables shall be based on the means by which electric power service provider computes demand charges.
 5. Include demand-limiting prediction and control for any individual meter monitored by system or for total of any combination of meters.
 6. Include means operator to make the following changes online:
 - a. Addition and deletion of loads controlled.
 - b. Changes in demand intervals.
 - c. Changes in demand limit for meter(s).
 - d. Maximum shutoff time for equipment.
 - e. Minimum shutoff time for equipment.
 - f. Select rotational or sequential shedding and restoring.
 - g. Shed and restore priority.

7. Include the following information and reports, to be available on an hourly, daily, weekly, monthly and annual basis:
 - a. Total electric consumption.
 - b. Peak demand.
 - c. Date and time of peak demand.
 - d. Daily peak demand.
- J. Maintenance Management: System shall monitor equipment status and generate maintenance messages based on operator-designated run-time, starts, and calendar date limits.
- K. Sequencing: Include application software based on sequences of operation indicated to properly sequence chillers, boilers, and other applicable HVAC equipment.
- L. Control Loops:
 1. Support any of the following control loops, as applicable to control required:
 - a. Two-position (on/off, open/close, slow/fast) control.
 - b. Proportional control.
 - c. Proportional plus integral (PI) control.
 - d. Proportional plus integral plus derivative (PID) control.
 - 1) Include PID algorithms with direct or reverse action and anti-windup.
 - 2) Algorithm shall calculate a time-varying analog value used to position an output or stage a series of outputs.
 - 3) Controlled variable, set point, and PID gains shall be operator-selectable.
 - e. Adaptive (automatic tuning).
- M. Staggered Start: Application shall prevent all controlled equipment from simultaneously restarting after a power outage. Order which equipment (or groups of equipment) is started, along with the time delay between starts, shall be operator-selectable.
- N. Energy Calculations:
 1. Include software to allow instantaneous power or flow rates to be accumulated and converted to energy usage data.
 2. Include an algorithm that calculates a sliding-window average (rolling average). Algorithm shall be flexible to allow window intervals to be operator specified (such as 15, 30, or 60 minutes).
 3. Include an algorithm that calculates a fixed-window average. A digital input signal shall define start of window period (such as signal from utility meter) to synchronize fixed-window average with that used by utility.
- O. Anti-Short Cycling:
 1. BO points shall be protected from short cycling.

2. Feature shall allow minimum on-time and off-time to be selected.

P. On and Off Control with Differential:

1. Include an algorithm that allows a BO to be cycled based on a controlled variable and set point.
2. Algorithm shall be direct- or reverse-acting and incorporate an adjustable differential.

Q. Run-Time Totalization:

1. Include software to totalize run-times for all BI and BO points.
2. A high run-time alarm shall be assigned, if required, by operator.

2.14 ENCLOSURES

A. General Enclosure Requirements:

1. House each controller and associated control accessories in a enclosure. Enclosure shall serve as central tie-in point for control devices such as switches, transmitters, transducers, power supplies and transformers.
2. Do not house more than one controller in a single enclosure.
3. Include enclosure door with key locking mechanism. Key locks alike for all enclosures and include one pair of keys per enclosure.
4. Equip doors of enclosures housing controllers and components with analog or digital displays with windows to allow visual observation of displays without opening enclosure door.
5. Individual wall-mounted single-door enclosures shall not exceed 36 inches wide and 48 inches high.
6. Individual wall-mounted double-door enclosures shall not exceed 60 inches wide and 36 inches high.
7. Include wall-mounted enclosures with brackets suitable for mounting enclosures to wall or freestanding support stand as indicated.
8. Supply each enclosure with a complete set of as-built schematics, tubing, and wiring diagrams and product literature located in a pocket on inside of door.

B. Internal Arrangement:

1. Internal layout of enclosure shall group and protect pneumatic, electric, and electronic components associated with a controller, but not an integral part of controller.
2. Arrange layout to group similar products together.
3. Include a barrier between line-voltage and low-voltage electrical and electronic products.
4. Factory or shop install products, tubing, cabling and wiring complying with requirements and standards indicated.
5. Terminate field cable and wire using heavy-duty terminal blocks.
6. Include spare terminals, equal to not less than 25 percent of used terminals.
7. Include spade lugs for stranded cable and wire.
8. Install a maximum of two wires on each side of a terminal.

9. Include enclosure field power supply with a toggle-type switch located at entrance inside enclosure to disconnect power.
10. Include enclosure with a line-voltage nominal 20-A GFCI duplex receptacle for service and testing tools. Wire receptacle on hot side of enclosure disconnect switch and include with a 5-A circuit breaker.
11. Mount products within enclosure on removable internal panel(s).
12. Include products mounted in enclosures with engraved, laminated phenolic nameplates (black letters on a white background). The nameplates shall have at least 1/4-inch-high lettering.
13. Route tubing cable and wire located inside enclosure within a raceway with a continuous removable cover.
14. Label each end of cable, wire and tubing in enclosure following an approved identification system that extends from field I/O connection and all intermediate connections throughout length to controller connection.
15. Size enclosure internal panel to include at least 25 percent spare area on face of panel.

C. Environmental Requirements:

1. Evaluate temperature and humidity requirements of each product to be installed within each enclosure.
2. Calculate enclosure internal operating temperature considering heat dissipation of all products installed within enclosure and ambient effects (solar, conduction and wind) on enclosure.
3. Where required by application, include temperature-controlled electrical heat to maintain inside of enclosure above minimum operating temperature of product with most stringent requirement.
4. Where required by application, include temperature-controlled ventilation fans with filtered louver(s) to maintain inside of enclosure below maximum operating temperature of product with most stringent requirement.

D. Wall-Mounted, NEMA 250, Type 1:

1. Enclosure shall be NRTL listed according to UL 50 or UL 50E.
2. Construct enclosure of steel.
3. Finish enclosure inside and out with polyester powder coating that is electrostatically applied and then baked to bond to substrate.
 - a. Exterior color shall be NSF/ANSI 61 gray or manufacturer's standard.
 - b. Interior color shall be NSF/ANSI 61 gray or manufacturer's standard.
4. Hinged door full size of front face of enclosure and supported using:
 - a. Enclosures sizes less than 36 in. tall: Multiple butt hinges.
 - b. Enclosures sizes 36 in. tall and larger: Continuous piano hinges.
5. Removable internal panel with a white polyester powder coating that is electrostatically applied and then baked to bond to substrate.
6. Internal panel mounting hardware, grounding hardware and sealing washers.
7. Grounding stud on enclosure body.
8. Thermoplastic pocket on inside of door for record Drawings and Product Data.

E. Wall Mounted NEMA 250, Types 4 and 12:

1. Enclosure shall be NRTL listed according to UL 508A.

2. Seam and joints are continuously welded and ground smooth.
3. Where recessed enclosures are indicated, include enclosures with face flange for flush mounting.
4. Externally formed body flange around perimeter of enclosure face for continuous perimeter seamless gasket door seal.
5. Single-door enclosure sizes up to 60 inches tall by 36 inches wide.
6. Double-door enclosure sizes up to 36 inches tall by 60 inches wide.
7. Construct enclosure of steel.
8. Finish enclosure with polyester powder coating that is electrostatically applied and then baked to bond to substrate.
 - a. Exterior color shall be NSF/ANSI 61 gray or manufacturer's standard.
 - b. Interior color shall be NSF/ANSI 61 gray or manufacturer's standard.
9. Corner-formed door, full size of enclosure face, supported using multiple concealed hinges with easily removable hinge pins.
 - a. Sizes through 24 Inches Tall: Two hinges.
 - b. Sizes between 24 Inches through 48 Inches Tall: Three hinges.
 - c. Sizes Larger 48 Inches Tall: Four hinges.
10. Double-door enclosures with overlapping door design to include unobstructed full-width access.
 - a. Single-door enclosures 48 inches and taller, and all double-door enclosures, with three-point (top, middle and bottom) latch system.
11. Removable internal panel with a white polyester powder coating that is electrostatically applied and then baked to bond to substrate.
12. Internal panel mounting studs with hardware, grounding hardware, and sealing washers.
13. Grounding stud on enclosure body.
14. Thermoplastic pocket on inside of door for record Drawings and Product Data.

F. Accessories:

1. Electric Heater:
 - a. Aluminum housing with brushed finish.
 - b. Thermostatic control with adjustable set point from zero to 100 deg F.
 - c. Capacity: 100, 200, 400, and 800 W as required by application.
 - d. Fan draws cool air from bottom of enclosure and passes air across thermostat and heating elements before being released into enclosure cavity. Heated air is discharged through the top of heater.
2. Ventilation Fans, Filtered Intake and Exhaust Grilles:
 - a. Number and size of fans, filters and grilles as required by application.
 - b. Compact cooling fans engineered for 50,000 hours of continuous operation without lubrication or service.
 - c. Fans capable of being installed on any surface and in any position within enclosure for spot cooling or air circulation.
 - d. Thermostatic control with adjustable set point from 32 to 140 deg F.
 - e. Airflow Capacity at Zero Pressure:

- 1) 4-Inch Fan: 100 cfm.
 - 2) 6-Inch Fan: 240 cfm.
 - 3) 10-Inch Fan: 560 cfm.
-
- f. Maximum operating temperature of 158 deg F.
 - g. 4-inch fan thermally protected and provided with permanently lubricated ball-bearings.
 - h. 6- and 10-inch fans with ball-bearing construction and split capacitor motors thermally protected to avoid premature failure.
 - i. Dynamically balanced impellers molded from polycarbonate material.
 - j. Fan furnished with power cord and polarized plug for power connection.
 - k. Fan brackets, finger guards and mounting hardware provided with fans to complete installation.
 - l. Removable Intake and Exhaust Grilles: Stainless steel of size to match fan size and suitable for NEMA 250, Types 1 and 12 enclosures.
 - m. Filters for NEMA 250, Type 1 Enclosures: Washable aluminum, of a size to match intake grille.
 - n. Filters for NEMA 250, Type 12 Enclosures: Disposable, of a size to match intake grille.
-
3. Bar handle with keyed cylinder lock set.

2.15 RELAYS

- A. General-Purpose Relays:
 1. Relays shall be heavy duty and rated for at least 10 A at 250-V ac and 60 Hz.
 2. Relays shall be either double pole double throw (DPDT) or three-pole double throw, depending on the control application.
 3. Use a plug-in-style relay with an eight-pin octal plug for DPDT relays and an 11-pin octal plug for three-pole double-throw relays.
 4. Construct the contacts of either silver cadmium oxide or gold.
 5. Enclose the relay in a clear transparent polycarbonate dust-tight cover.
 6. Relays shall have LED indication and a manual reset and push-to-test button.
 7. Equip relays with coil transient suppression to limit transients to non-damaging levels.
 8. Plug each relay into an industry-standard, 35-mm DIN rail socket. Plug all relays located in control panels into sockets that are mounted on a DIN rail.
 9. Relay socket shall have screw terminals. Mold into the socket the coincident screw terminal numbers and associated octal pin numbers.
- B. Multifunction Time-Delay Relays:
 1. Relays shall be continuous duty and rated for at least 10 A at 240-V ac and 60 Hz.
 2. Relays shall be DPDT relay with up to eight programmable functions to provide on/off delay, interval and recycle timing functions.
 3. Use a plug-in-style relay with either an 8- or 11-pin octal plug.
 4. Construct the contacts of either silver cadmium oxide or gold.
 5. Enclose the relay in a dust-tight cover.
 6. Include knob and dial scale for setting delay time.

7. Equip relays with coil transient suppression to limit transients to non-damaging levels.
 8. Plug each relay into an industry-standard, 35-mm DIN rail socket. Plug all relays located in control panels into sockets that are mounted on a DIN rail.
 9. Relay socket shall have screw terminals. Mold into the socket the coincident screw terminal numbers and associated octal pin numbers.
- C. Latching Relays:
1. Relays shall be continuous duty and rated for at least 10 A at 250-V ac and 60 Hz.
 2. Relays shall be either DPDT or three-pole double throw, depending on the control application.
 3. Use a plug-in-style relay with a multibladed plug.
 4. Construct the contacts of either silver cadmium oxide or gold.
 5. Enclose the relay in a clear transparent polycarbonate dust-tight cover.
 6. Equip relays with coil transient suppression to limit transients to non-damaging levels.
 7. Plug each relay into an industry-standard, 35-mm DIN rail socket. Plug all relays located in control panels into sockets that are mounted on a DIN rail.
 8. Relay socket shall have screw terminals. Mold into the socket the coincident screw terminal numbers and associated octal pin numbers.
- D. Current Sensing Relay:
1. Monitors ac current.
 2. Independent adjustable controls for pickup and dropout current.
 3. Energized when supply voltage is present and current is above pickup setting.
 4. De-energizes when monitored current is below dropout current.
 5. Dropout current is adjustable from 50 to 95 percent of pickup current.
 6. Include a current transformer, if required for application.
 7. House current sensing relay and current transformer in its own enclosure. Use NEMA 250, Type 12 enclosure for indoors and NEMA 250, Type 4 for outdoors.
- E. Combination On-Off Status Sensor and On-Off Relay:
1. Description:
 - a. On-off control and status indication in a single device.
 - b. LED status indication of activated relay and current trigger.
 - c. Closed-Open-Auto override switch located on the load side of the relay.
 2. Performance:
 - a. Ambient Temperature: Minus 30 to 140 deg F.
 - b. Voltage Rating: Single-phase loads rated for 300-V ac. Three-phase loads rated for 600-V ac.
 3. Status Indication:
 - a. Current Sensor: Integral sensing for single-phase loads up to 20 A and external solid or split sensing ring for three-phase loads up to 150 A.
 - b. Current Sensor Range: As required by application.
 - c. Current Set Point: Fixed or adjustable as required by application.

d. Current Sensor Output:

- 1) Solid-state, single-pole double-throw contact rated for 30-V ac and dc and for 0.4 A.
 - 2) Solid-state, single-pole double-throw contact rated for 120-V ac and 1.0 A.
 - 3) Analog, zero- to 5- or 10-V dc.
 - 4) Analog, 4 to 20 mA, loop powered.
4. Relay: Single-pole double-throw, continuous-duty coil; rated for 10-million mechanical cycles.
 5. Enclosure: NEMA 250, Type 1 enclosure.

2.16 ELECTRICAL POWER DEVICES

A. Transformers:

1. Transformer shall be sized for the total connected load, plus an additional 25 percent of connected load.
2. Transformer shall be at least 100 VA.
3. Transformer shall have both primary and secondary fuses.

B. DC Power Supply:

1. Plug-in style suitable for mating with a standard eight-pin octal socket. Include the power supply with a mating mounting socket.
2. Enclose circuitry in a housing.
3. Include both line and load regulation to ensure a stable output. To protect both the power supply and the load, power supply shall have an automatic current limiting circuit.
4. Performance:
 - a. Output voltage nominally 25-V dc within 5 percent.
 - b. Output current up to 100 mA.
 - c. Input voltage nominally 120-V ac, 60 Hz.
 - d. Load regulation within 0.5 percent from zero- to 100-mA load.
 - e. Line regulation within 0.5 percent at a 100-mA load for a 10 percent line change.
 - f. Stability within 0.1 percent of rated volts for 24 hours after a 20-minute warmup.

2.17 UNINTERRUPTABLE POWER SUPPLY (UPS) UNITS

A. 250 through 1000 VA:

1. UPS units shall provide continuous, regulated output power without using their batteries during brown-out, surge, and spike conditions.
2. Load served shall not exceed 75 percent of UPS rated capacity, including power factor of connected loads.
 - a. Larger-capacity units shall be provided for systems with larger connected loads.
 - b. UPS shall provide 5 minutes of battery power.

3. Performance:
 - a. Input Voltage: Single phase, 120- or 230-V ac, compatible with field power source.
 - b. Load Power Factor Range (Crest Factor): 0.65 to 1.0.
 - c. Output Voltage: 101- to 132-V ac, while input voltage varies between 89 and 152-V ac.
 - d. On Battery Output Voltage: Sine wave.
 - e. Inverter overload capacity shall be minimum 150 percent for 30 seconds.
 - f. Recharge time shall be a maximum of six hours to 90 percent capacity after full discharge to cutoff.
 - g. Transfer Time: 6 ms.
 - h. Surge Voltage Withstand Capacity: IEEE C62.41, Categories A and B; 6 kV/200 and 500 A; 100-kHz ringwave.
 4. UPS shall be automatic during fault or overload conditions.
 5. Unit with integral line-interactive, power condition topology to eliminate all power contaminants.
 6. Include front panel with power switch and visual indication of power, battery, fault and temperature.
 7. Unit shall include an audible alarm of faults and front panel silence feature.
 8. Unit with four NEMA WD 1, NEMA WD 6 Configuration 5-15R receptacles.
 9. UPS shall include dry contacts (digital output points) for low battery condition and battery-on (primary utility power failure) and connect the points to the DDC system.
 10. Batteries shall be sealed lead-acid type and be maintenance free. Battery replacement shall be front accessible by user without dropping load.
 11. Include tower models installed in ventilated cabinets to the particular installation location.
- B. 1000 through 3000 VA:
1. UPS units shall provide continuous, regulated output power without using their batteries during brown-out, surge, and spike conditions.
 2. Load served shall not exceed 75 percent of UPS rated capacity, including power factor of connected loads.
 - a. Larger-capacity units, or multiple units, shall be provided for systems with larger connected loads.
 - b. UPS shall provide 5 minutes of battery power.
 3. Performance:
 - a. Input Voltage: Single phase, 120-V ac, plus 20 to minus 30 percent.
 - b. Power Factor: Minimum 0.97 at full load.
 - c. Output Voltage: Single phase, 120-V ac, within 3 percent, steady state with rated output current of 10.0 A, 30.0-A peak.
 - d. Inverter overload capacity shall be minimum 150 percent for 30 seconds.
 - e. Recharge time shall be a maximum of eight hours to 90 percent capacity.
 4. UPS bypass shall be automatic during fault or overload conditions.

5. UPS shall include dry contacts (digital output points) for low battery condition and battery-on (primary utility power failure) and connect the points to the DDC system.
6. Batteries shall be sealed lead-acid type and be maintenance free.
7. Include tower models installed in ventilated cabinets or rack models installed on matching racks, as applicable to the particular installation location and space availability/configuration.

2.18 PIPING AND TUBING

A. Pneumatic, and Pressure Instrument Signal Air, Tubing and Piping:

1. Products in this paragraph are intended for use with the following:
 - a. Main air and signal air to pneumatically controlled instruments, actuators and other control devices and accessories.
 - b. Signal air between pressure instruments, such as sensors, switches, transmitters, controllers, and accessories.
2. Polyethylene Tubing:
 - a. Fire-resistant black virgin polyethylene according to ASTM D 1248, Type 1, Class C and Grade 5.
 - b. Tubing shall comply with stress crack test according to ASTM D 1693.
 - c. Diameter, as required by application, of not less than nominal 0.25 inch.
3. Polyethylene Tubing Connectors and Fittings:
 - a. Brass, barbed fittings and compression type.

2.19 CONTROL WIRE AND CABLE

A. Wire: Single conductor control wiring above 24 V.

1. Wire size shall be at least No. 14 AWG or sized per length of run.
2. Conductor shall be 7/24 soft annealed copper strand with 2- to 2.5-inch lay.
3. Conductor insulation shall be 600 V, Type THWN or Type THHN, and 90 deg C according to UL 83.
4. Conductor colors shall be black (hot), white (neutral), and green (ground).
5. Furnish wire on spools.

B. Single Twisted Shielded Instrumentation Cable above 24 V:

1. Wire size shall be a minimum No. 18 AWG or sized per length of run.
2. Conductors shall be a twisted, 7/24 soft annealed copper strand with a 2- to 2.5-inch lay.
3. Conductor insulation shall have a Type THHN/THWN or Type TFN rating.

4. Shielding shall be 100 percent type, 0.35/0.5-mil aluminum/Mylar tape, helically applied with 25 percent overlap, and aluminum side in with tinned copper drain wire.
 5. Outer jacket insulation shall have a 600-V, 90-deg C rating and shall be Type TC cable.
 6. For twisted pair, conductor colors shall be black and white. For twisted triad, conductor colors shall be black, red and white.
 7. Furnish wire on spools.
- C. Single Twisted Shielded Instrumentation Cable 24 V and Less:
1. Wire size shall be a minimum No. 18 AWG or sized per length of run.
 2. Conductors shall be a twisted, 7/24 soft annealed copper stranding with a 2- to 2.5-inch lay.
 3. Conductor insulation shall have a nominal 15-mil thickness, constructed from flame-retardant PVC.
 4. Shielding shall be 100 percent type, 1.35-mil aluminum/polymer tape, helically applied with 25 percent overlap, and aluminum side in with tinned copper drain wire.
 5. Outer jacket insulation shall have a 300-V, 105-deg C rating and shall be Type PLTC cable.
 6. For twisted pair, conductor colors shall be black and white. For twisted triad, conductor colors shall be black, red and white.
 7. Furnish wire on spools.
- D. LAN and Communication Cable: Comply with DDC system manufacturer requirements for network being installed.
1. Cable shall be plenum rated.
 2. Cable shall comply with NFPA 70.
 3. Cable shall have a unique color that is different from other cables used on Project.
 4. Copper Cable for Ethernet Network:
 - a. 100BASE-TX, 1000BASE-T, or 1000BASE-TX.
 - b. TIA/EIA 586, Category 6
 - c. Minimum No. 22 AWG solid or sized per length of run.
 - d. Shielded Twisted Pair (STP).
 - e. Thermoplastic insulated conductors, enclosed in a thermoplastic outer jacket, Class CMP as plenum rated.

2.20 RACEWAYS FOR CONTROL WIRING, CABLING, AND TUBING

- A. Metal Conduits, Tubing, and Fittings:
1. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 2. EMT: Comply with NEMA ANSI C80.3 and UL 797.

3. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.21 CONTROL POWER WIRING AND RACEWAYS

- A. Installation minimum requirements:
 1. Mechanical spaces, services spaces, and areas without ceiling: All wiring including cables in EMT.
 2. Space sensors and alarms: All wiring cables in EMT within wall construction.
 3. Ducted ceiling return: Approved non-plenum cable.
 4. Non-ducted return ceiling plenum: Approved plenum rated cable.
 5. Non-accessible ceilings: EMT or code compliant equal solid conduit.
 6. Inside air handling units: All wiring including cables in EMT or code compliant solid conduit.
 7. Note the use of cable is limited to low voltage service with less than 24 volt only.
 8. Do not lay cables on ceiling grids.
 9. Conduit junctions and terminations shall utilize compression fittings.
- B. All control wiring that is stated to be routed in EMT shall be separate from any power wiring.

2.22 ACCESSORIES

- A. Damper Blade Limit Switches:
 1. Sense positive open and/or closed position of the damper blades.
 2. NEMA 250, Type 13, oil-tight construction.
 3. Arrange for the mounting application.
 4. Additional waterproof enclosure when required by its environment.
 5. Arrange to prevent "over-center" operation.

2.23 IDENTIFICATION

- A. Instrument Air Pipe and Tubing:
 1. Engraved tag shall bear the following information:
 - a. Service (Example): "Instrument Air."
 - b. Pressure Range (Example): 0 to 30 psig.
 2. Letter size shall be a minimum of 0.25 inch high.
 3. Tag shall consist of white lettering on blue background.
 4. Tag shall be engraved phenolic consisting of three layers of rigid laminate. Top and bottom layers are color-coded blue with contrasting white center exposed by engraving through outer layer.
 5. Include tag with a brass grommet, chain and S-hook.

B. Control Equipment, Instruments, and Control Devices:

1. Engraved tag bearing unique identification.
 - a. Include instruments with unique identification identified by equipment being controlled or monitored, followed by point identification.
2. Letter size shall be as follows:
 - a. Operator Workstations: Minimum of 0.5 inch high.
 - b. Printers: Minimum of 0.5 inch high.
 - c. DDC Controllers: Minimum of 0.5 inch high.
 - d. Gateways: Minimum of 0.5 inch high.
 - e. Repeaters: Minimum of 0.5 inch high.
 - f. Enclosures: Minimum of 0.5 inch high.
 - g. Electrical Power Devices: Minimum of 0.25 inch high.
 - h. UPS units: Minimum of 0.5 inch high.
 - i. Accessories: Minimum of 0.25 inch high.
 - j. Instruments: Minimum of 0.25 inch high.
 - k. Control Damper and Valve Actuators: Minimum of 0.25 inch high.
3. Tag shall consist of white lettering on black background.
4. Tag shall be engraved phenolic consisting of three layers of rigid laminate. Top and bottom layers are color-coded black with contrasting white center exposed by engraving through outer layer.
5. Tag shall be fastened with drive pins.
6. Instruments, control devices and actuators with Project-specific identification tags having unique identification numbers following requirements indicated and provided by original manufacturer do not require an additional tag.

C. Valve Tags:

1. Brass tags and brass chains attached to valve.
2. Tags shall be at least 1.5 inches in diameter.
3. Include tag with unique valve identification indicating control influence such as flow, level, pressure, or temperature; followed by location of valve, and followed by three-digit sequential number. For example: TV-1.001.
4. Valves with Project-specific identification tags having unique identification numbers following requirements indicated and provided by original manufacturer do not require an additional tag.

D. Raceway and Boxes:

1. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
2. Paint cover plates on junction boxes and conduit same color as the tape banding for conduits. After painting, label cover plate "HVAC Controls," using an engraved phenolic tag.

3. For raceways housing pneumatic tubing, add a phenolic tag labeled "HVAC Instrument Air Tubing."
 4. For raceways housing air signal tubing, add a phenolic tag labeled "HVAC Air Signal Tubing."
- E. Equipment Warning Labels:
1. Acrylic label with pressure-sensitive adhesive back and peel-off protective jacket.
 2. Lettering size shall be at least 14-point type with white lettering on red background.
 3. Warning label shall read "CAUTION-Equipment operated under remote automatic control and may start or stop at any time without warning. Switch electric power disconnecting means to OFF position before servicing."
 4. Lettering shall be enclosed in a white line border. Edge of label shall extend at least 0.25 inch beyond white border.

2.24 SOURCE QUALITY CONTROL

- A. Product(s) and material(s) will be considered defective if they do not pass tests and inspections.
- B. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. Verify compatibility with and suitability of substrates.
- B. Examine roughing-in for products to verify actual locations of connections before installation.
 1. Examine roughing-in for instruments installed in piping to verify actual locations of connections before installation.
 2. Examine roughing-in for instruments installed in duct systems to verify actual locations of connections before installation.
- C. Examine walls, floors, roofs, and ceilings for suitable conditions where product will be installed.
- D. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CONTROL DEVICES FOR INSTALLATION BY INSTALLERS

- A. Deliver selected control devices, specified in indicated HVAC instrumentation and control device Sections, to identified equipment and systems manufacturers for factory installation and to identified installers for field installation.
- B. Deliver the following to duct fabricator and Installer for installation in ductwork. Include installation instructions to Installer and supervise installation for compliance with requirements.
 - 1. DDC control dampers, which are specified in Section 230923.12 "DDC Control Dampers."
 - 2. Airflow sensors and switches, which are specified in Section 230923.14 "Flow Instruments."
 - 3. Pressure sensors, which are specified in Section 230923.23 "Pressure Instruments."
- C. Deliver the following to plumbing and HVAC piping installers for installation in piping. Include installation instructions to Installer and supervise installation for compliance with requirements.
 - 1. DDC control valves, which are specified in Section 230923.11 "Control Valves."
 - 2. Pipe-mounted flow meters, which are specified in Section 230923.14 "Flow Instruments."
 - 3. Pipe-mounted sensors, switches and transmitters. Flow meters are specified in Section 230923.14 "Flow Instruments." Liquid temperature sensors, switches, and transmitters are specified in Section 230923.27 "Temperature Instruments."
 - 4. Tank-mounted sensors, switches and transmitters. Pressure sensors, switches, and transmitters are specified in Section 230923.23 "Pressure Instruments." Liquid temperature sensors, switches, and transmitters are specified in Section 230923.27 "Temperature Instruments."
 - 5. Pipe- and tank-mounted thermowells. Liquid thermowells are specified in Section 230923.27 "Temperature Instruments."

3.3 CONTROL DEVICES FOR EQUIPMENT MANUFACTURER FACTORY INSTALLATION

- A. Deliver the following to air-handling unit manufacturer for factory installation. Include installation instructions to air-handling unit manufacturer and supervise installation for compliance with requirements.
 - 1. Programmable application or application-specific controller.
 - 2. Unit-mounted DDC control dampers and actuators, which are specified in Section 230923.12 "Control Dampers."
 - 3. Unit-mounted airflow sensors, switches and transmitters, which are specified in Section 230923.14 "Flow Instruments."
 - 4. Unit-mounted gas sensors and transmitters, which are specified in Section 230923.16 "Gas Instruments."

5. Unit-mounted leak-detection switches, which are specified in Section 230923.18 "Leak-Detection Instruments."
 6. Unit-mounted speed sensors, switches and transmitters, which are specified in Section 230923.24 "DDC Speed Instruments."
 7. Unit-mounted pressure sensors, switches and transmitters, which are specified in Section 230923.23 "Pressure Instruments."
 8. Unit-mounted temperature sensors, switches and transmitters. Air-temperature sensors, switches, and transmitters are specified in Section 230923.27 "Temperature Instruments."
 9. Relays.
- B. Deliver the following to terminal unit manufacturer for factory installation. Include installation instructions to terminal unit manufacturer.
1. Programmable application or application-specific controller.
 2. Electric damper actuator. Dampers actuators are specified in Section 230923.12 "Control Dampers."
 3. Unit-mounted flow and pressure sensors, transmitters and transducers. Flow sensors, transmitters, and transducers are specified in Section 230923.14 "Flow Instruments." Pressure sensors, switches, and transmitters are specified in Section 230923.23 "Pressure Instruments."
 4. Unit-mounted temperature sensors. Air-temperature sensors, switches, and transmitters are specified in Section 230923.27 "Temperature Instruments."
 5. Relays.
- C. Deliver the following to fan-coil unit manufacturer for factory installation. Include installation instructions to fan-coil unit manufacturer.
1. Programmable application or application-specific controller.
 2. Unit-mounted temperature sensors. Air-temperature sensors, switches, and transmitters are specified in Section 230923.27 "Temperature Instruments."
 3. Flow and pressure switches. Air and liquid flow sensors, transmitters, and transducers are specified in Section 230923.14 "Flow Instruments." Pressure sensors, switches, and transmitters are specified in Section 230923.23 "Pressure Instruments."
 4. Leak-detection switches, which are specified in Section 230923.18 "Leak-Detection Instruments."
 5. Relays.

3.4 GENERAL INSTALLATION REQUIREMENTS

- A. Install products to satisfy more stringent of all requirements indicated.
- B. Install products level, plumb, parallel, and perpendicular with building construction.
- C. Support products, tubing, piping wiring and raceways. Brace products to prevent lateral movement and sway or a break in attachment when subjected to a <Insert value> force.

- D. If codes and referenced standards are more stringent than requirements indicated, comply with requirements in codes and referenced standards.
- E. Fabricate openings and install sleeves in ceilings, floors, roof, and walls required by installation of products. Before proceeding with drilling, punching, and cutting, check for concealed work to avoid damage. Patch, flash, grout, seal, and refinish openings to match adjacent condition.
- F. Firestop penetrations made in fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."
- G. Seal penetrations made in acoustically rated assemblies. Comply with requirements in Section 079200 "Joint Sealants."
- H. Welding Requirements:
 - 1. Restrict welding and burning to supports and bracing.
 - 2. No equipment shall be cut or welded without approval. Welding or cutting will not be approved if there is risk of damage to adjacent Work.
 - 3. Welding, where approved, shall be by inert-gas electric arc process and shall be performed by qualified welders according to applicable welding codes.
 - 4. If requested on-site, show satisfactory evidence of welder certificates indicating ability to perform welding work intended.
- I. Fastening Hardware:
 - 1. Stillson wrenches, pliers, and other tools that damage surfaces of rods, nuts, and other parts are prohibited for work of assembling and tightening fasteners.
 - 2. Tighten bolts and nuts firmly and uniformly. Do not overstress threads by excessive force or by oversized wrenches.
 - 3. Lubricate threads of bolts, nuts and screws with graphite and oil before assembly.
- J. If product locations are not indicated, install products in locations that are accessible and that will permit service and maintenance from floor, equipment platforms, or catwalks without removal of permanently installed furniture and equipment.
- K. Corrosive Environments:
 - 1. Avoid or limit use of materials in corrosive airstreams and environments, including, but not limited to, the following:
 - a. Laboratory exhaust-air streams.
 - b. Process exhaust-air streams.
 - 2. When conduit is in contact with a corrosive airstream and environment, use Type 316 stainless-steel conduit and fittings or conduit and fittings that are coated with a corrosive-resistant coating that is suitable for environment. Comply with requirements for installation of raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."

3. Where instruments are located in a corrosive airstream and are not corrosive resistant from manufacturer, field install products in NEMA 250, Type 4X enclosure constructed of Type 316L stainless steel.

3.5 OPERATOR WORKSTATION INSTALLATION

A. Desktop Operator Workstations Installation:

1. Install operator workstation(s) at location(s) directed by Owner.
2. Install multiple-receptacle power strip with cord for use in connecting multiple workstation components to a single duplex electrical power receptacle.
3. Install software on workstation(s) and verify software functions properly.
4. Develop Project-specific graphics, trends, reports, logs and historical database.
5. Power workstation through a UPS unit. Locate UPS adjacent to workstation.

B. Portable Operator Workstations Installation:

1. Turn over portable operator workstations to Owner at Substantial Completion.
2. Install software on workstation(s) and verify software functions properly.

C. Color Graphics Application:

1. Use system schematics indicated as starting point to create graphics.
2. Develop Project-specific library of symbols for representing system equipment and products.
3. Incorporate digital images of Project-completed installation into graphics where beneficial to enhance effect.
4. Submit sketch of graphic layout with description of all text for each graphic for Owner's and Architect's review before creating graphic using graphics software.
5. Seek Owner input in graphics development once using graphics software.
6. Final editing shall be done on-site with Owner's and Architect's review and feedback.
7. Refine graphics as necessary for Owner acceptance.
8. On receiving Owner acceptance, print a hard copy for inclusion in operation and maintenance manual. Prepare a scanned copy PDF file of each graphic and include with softcopy of DDC system operation and maintenance manual.

3.6 CONTROLLER INSTALLATION

- A. Install controllers in enclosures to comply with indicated requirements.
- B. Connect controllers to field power supply.
- C. Install controller with latest version of applicable software and configure to execute requirements indicated.
- D. Test and adjust controllers to verify operation of connected I/O to achieve performance indicated requirements while executing sequences of operation.

- E. Installation of Network Controllers:
 - 1. Quantity and location of network controllers shall be determined by DDC system manufacturer to satisfy requirements indicated.
 - 2. Install controllers in a protected location that is easily accessible by operators.
 - 3. Top of controller shall be within 72 inches of finished floor.
- F. Installation of Programmable Application Controllers:
 - 1. Quantity and location of programmable application controllers shall be determined by DDC system manufacturer to satisfy requirements indicated.
 - 2. Install controllers in a protected location that is easily accessible by operators.
 - 3. Top of controller shall be within 72 inches of finished floor.
- G. Application-Specific Controllers:
 - 1. Quantity and location of application-specific controllers shall be determined by DDC system manufacturer to satisfy requirements indicated.
 - 2. For controllers not mounted directly on equipment being controlled, install controllers in a protected location that is easily accessible by operators.

3.7 ENCLOSURES INSTALLATION

- A. Install the following items in enclosures, to comply with indicated requirements:
 - 1. Gateways.
 - 2. Routers.
 - 3. Controllers.
 - 4. Electrical power devices.
 - 5. UPS units.
 - 6. Relays.
 - 7. Accessories.
 - 8. Instruments.
 - 9. Actuators
- B. Attach wall-mounted enclosures to wall using the following types of steel struts:
 - 1. For NEMA 250, Type 1 Enclosures: Use galvanized-steel strut and hardware.
 - 2. Install plastic caps on exposed cut edges of strut.
- C. Align top of adjacent enclosures of like size.
- D. Install floor-mounted enclosures located in mechanical equipment rooms on concrete housekeeping pads. Attach enclosure legs using galvanized steel anchors.
- E. Install continuous and fully accessible wireways to connect conduit, wire, and cable to multiple adjacent enclosures. Wireway used for application shall have protection equal to NEMA 250 rating of connected enclosures.

3.8 ELECTRIC POWER CONNECTIONS

- A. Connect electrical power to DDC system products requiring electrical power connections.
- B. Design of electrical power to products not indicated with electric power is delegated to DDC system provider and installing trade. Work shall comply with NFPA 70 and other requirements indicated.
- C. Comply with requirements in Section 262816 "Enclosed Switches and Circuit Breakers" for electrical power circuit breakers.
- D. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for electrical power conductors and cables.
- E. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems" for electrical power raceways and boxes.

3.9 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements in Section 260553 "Identification for Electrical Systems" for identification products and installation.
- B. Install engraved phenolic nameplate with unique identification on face for each of the following:
 - 1. Operator workstation.
 - 2. Printer.
 - 3. Gateway.
 - 4. Router.
 - 5. DDC controller.
 - 6. Enclosure.
 - 7. Electrical power device.
 - 8. UPS unit.
 - 9. Accessory.
- C. Install engraved phenolic nameplate with unique instrument identification on face of each instrument connected to a DDC controller.
- D. Install engraved phenolic nameplate with identification on face of each control damper actuator connected to a DDC controller.
- E. Where product is installed above accessible tile ceiling, also install matching engraved phenolic nameplate with identification on face of ceiling grid located directly below.
- F. Where product is installed above an inaccessible ceiling, also install engraved phenolic nameplate with identification on face of access door directly below.

G. Warning Labels:

1. Shall be permanently attached to equipment that can be automatically started by DDC control system.
2. Shall be located in highly visible location near power service entry points.

3.10 NETWORK INSTALLATION

A. Install copper cable when connecting between the following network devices located in same building:

1. Operator workstations.
2. Operator workstations and network controllers.
3. Network controllers.

B. Install copper cable when connecting between the following:

1. Gateways.
2. Gateways and network controllers or programmable application controllers.
3. Routers.
4. Routers and network controllers or programmable application controllers.
5. Network controllers and programmable application controllers.
6. Programmable application controllers.
7. Programmable application controllers and application-specific controllers.
8. Application-specific controllers.

C. Install network cable in continuous raceway.

1. Where indicated on Drawings, cable trays may be used for copper cable in lieu of conduit.

3.11 NETWORK NAMING AND NUMBERING

A. Coordinate with Owner and provide unique naming and addressing for networks and devices.

B. ASHRAE 135 Networks:

1. MAC Address:
 - a. Every network device shall have an assigned and documented MAC address unique to its network.
 - b. Ethernet Networks: Document MAC address assigned at its creation.
 - c. ARCNET or MS/TP networks: Assign from 00 to 64.
2. Network Numbering:
 - a. Assign unique numbers to each new network.

- b. Provide ability for changing network number through device switches or operator interface.
 - c. DDC system, with all possible connected LANs, can contain up to 65,534 unique networks.
- 3. Device Object Identifier Property Number:
 - a. Assign unique device object identifier property numbers or device instances for each device network.
 - b. Provide for future modification of device instance number by device switches or operator interface.
 - c. LAN shall support up to 4,194,302 unique devices.
- 4. Device Object Name Property Text:
 - a. Device object name property field shall support 32 minimum printable characters.
 - b. Assign unique device "Object Name" property names with plain-English descriptive names for each device.
 - 1) Example 1: Device object name for device controlling boiler plant at Building 1000 would be "HW System B1000."
 - 2) Example 2: Device object name for a VAV terminal unit controller could be "VAV unit 102".
- 5. Object Name Property Text for Other Than Device Objects:
 - a. Object name property field shall support 32 minimum printable characters.
 - b. Assign object name properties with plain-English names descriptive of application.
 - 1) Example 1: "Zone 1 Temperature."
 - 2) Example 2 "Fan Start and Stop."
- 6. Object Identifier Property Number for Other Than Device Objects:
 - a. Assign object identifier property numbers according to **[Drawings]** **[or]** **[tables]** indicated.
 - b. If not indicated, object identifier property numbers may be assigned at Installer's discretion but must be approved by Owner in advance, be documented and be unique for like object types within device.

3.12 CONTROL WIRE, CABLE AND RACEWAYS INSTALLATION

- A. Comply with NECA 1.
- B. Comply with TIA 568-C.1.

- C. Wiring Method: Install cables in raceways and cable trays[**except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used**]. Conceal raceway and cables except in unfinished spaces.
 - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
 - 2. Comply with requirements for cable trays specified in Section 260536 "Cable Trays for Electrical Systems."
 - 3. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- D. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- E. Field Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- F. Conduit Installation:
 - 1. Install conduit expansion joints where conduit runs exceed 200 feet, and conduit crosses building expansion joints.
 - 2. Coordinate conduit routing with other trades to avoid conflicts with ducts, pipes and equipment and service clearance.
 - 3. Maintain at least 3-inch separation where conduits run axially above or below ducts and pipes.
 - 4. Limit above-grade conduit runs to 100 feet without pull or junction box.
 - 5. Do not install raceways or electrical items on any "explosion-relief" walls, or rotating equipment.
 - 6. Do not fasten conduits onto the bottom side of a metal deck roof.
 - 7. Flexible conduit is permitted only where flexibility and vibration control is required.
 - 8. Limit flexible conduit to 3 feet long.
 - 9. Conduit shall be continuous from outlet to outlet, from outlet to enclosures, pull and junction boxes, and shall be secured to boxes in such manner that each system shall be electrically continuous throughout.
 - 10. Direct bury conduits underground or install in concrete-encased duct bank where indicated.
 - a. Use rigid, nonmetallic, Schedule 80 PVC.
 - b. Provide a burial depth according to NFPA 70, but not less than 24 inches.
 - 11. Secure threaded conduit entering an instrument enclosure, cabinet, box, and trough, with a locknut on outside and inside, such that conduit system is electrically continuous throughout. Provide a metal bushing on inside with insulated throats. Locknuts shall be the type designed to bite into the metal or, on inside of enclosure, shall have a grounding wedge lug under locknut.
 - 12. Conduit box-type connectors for conduit entering enclosures shall have an insulated throat.

13. Connect conduit entering enclosures in wet locations with box-type connectors or with watertight sealing locknuts or other fittings.
14. Offset conduits where entering surface-mounted equipment.
15. Seal conduit runs used by sealing fittings to prevent the circulation of air for the following:
 - a. Conduit extending from interior to exterior of building.
 - b. Conduit extending into pressurized duct and equipment.
 - c. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.

G. Wire and Cable Installation:

1. Cables serving a common system may be grouped in a common raceway. Install control wiring and cable in separate raceway from power wiring. Do not group conductors from different systems or different voltages.
2. Install cables with protective sheathing that is waterproof and capable of withstanding continuous temperatures of 90 deg C with no measurable effect on physical and electrical properties of cable.
 - a. Provide shielding to prevent interference and distortion from adjacent cables and equipment.
3. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
5. UTP Cable Installation:
 - a. Comply with TIA 568-C.2.
 - b. Do not untwist UTP cables more than 1/2 inch from the point of termination, to maintain cable geometry.
6. Installation of Cable Routed Exposed under Raised Floors:
 - a. Install plenum-rated cable only.
 - b. Install cabling after the flooring system has been installed in raised floor areas.
 - c. Coil cable 6 feet long not less than 12 inches in diameter below each feed point.
7. Identify each wire on each end and at each terminal with a number-coded identification tag. Each wire shall have a unique tag.
8. Provide strain relief.
9. Terminate wiring in a junction box.
 - a. Clamp cable over jacket in junction box.
 - b. Individual conductors in the stripped section of the cable shall be slack between the clamping point and terminal block.

10. Terminate field wiring and cable not directly connected to instruments and control devices having integral wiring terminals using terminal blocks.
11. Install signal transmission components according to IEEE C2, REA Form 511a, NFPA 70, and as indicated.
12. Keep runs short. Allow extra length for connecting to terminal boards. Do not bend flexible coaxial cables in a radius less than 10 times the cable OD. Use sleeves or grommets to protect cables from vibration at points where they pass around sharp corners and through penetrations.
13. Ground wire shall be copper and grounding methods shall comply with IEEE C2. Demonstrate ground resistance.
14. Wire and cable shall be continuous from terminal to terminal without splices.
15. Use insulated spade lugs for wire and cable connection to screw terminals.
16. Use shielded cable to transmitters.
17. Use shielded cable to temperature sensors.
18. Perform continuity and meager testing on wire and cable after installation.
19. Do not install bruised, kinked, scored, deformed, or abraded wire and cable. Remove and discard wire and cable if damaged during installation, and replace it with new cable.
20. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
21. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
22. Protection from Electro-Magnetic Interference (EMI): Provide installation free of (EMI). As a minimum, comply with the following requirements:
 - a. Comply with BICSI TDMM and TIA 569-C for separating unshielded cable from potential EMI sources, including electrical power lines and equipment.
 - b. Separation between open cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - 1) Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
 - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
 - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.
 - c. Separation between cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
 - 1) Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
 - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
 - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
 - d. Separation between cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
 - 1) Electrical Equipment Rating Less Than 2 kVA: No requirement.
 - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
 - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.

- e. Separation between Cables and Electrical Motors and Transformers, 5 kVA or 5 HP and Larger: A minimum of 48 inches.
- f. Separation between Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.13 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and installations, including connections.
- C. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3. Testing of Pneumatic and Air-Signal Tubing:
 - a. Test for leaks and obstructions.
 - b. Disconnect each pipe and tubing line before a test is performed, and blowout dust, dirt, trash, condensate and other foreign materials with compressed air. Use commercially pure compressed air or nitrogen as distributed in gas cylinders. Air from an oil-free compressor with an air dryer is an acceptable alternative for the test.
 - c. After foreign matter is expelled and line is free from obstructions, plug far end of tubing run.
 - d. Connect a pressure source to near end of run with a needle valve between air supply and tubing run.
 - e. Connect a pressure gage accurate to within 0.5 percent of test between the shutoff needle valve and tubing run under test.
 - f. For system pressures above 30 psig, apply a pressure of 1.5 times operating pressure. Record pressure in tubing run every 10 minutes for one hour. Allowable drop in pressure in one-hour period shall not exceed 1 psig.
 - g. For system pressures 30 psig and below, apply a pressure of 2.0 times operating pressure to piping and tubing run. Record pressure in tubing run every 5 minutes for one hour. Allowable drop in pressure in one-hour period shall not exceed 0.5 psig.
- D. Testing:
 - 1. Perform preinstallation, in-progress, and final tests, supplemented by additional tests, as necessary.
 - 2. Preinstallation Cable Verification: Verify integrity and serviceability for new cable lengths before installation. This assurance may be provided by using vendor verification

documents, testing, or other methods. As a minimum, furnish evidence of verification for cable attenuation and bandwidth parameters.

3. In-Progress Testing: Perform standard tests for correct pair identification and termination during installation to ensure proper installation and cable placement. Perform tests in addition to those specified if there is any reason to question condition of material furnished and installed. Testing accomplished is to be documented by agency conducting tests. Submit test results for Project record.
4. Final Testing: Perform final test of installed system to demonstrate acceptability as installed. Testing shall be performed according to a test plan supplied by DDC system manufacturer. Defective Work or material shall be corrected and retested. As a minimum, final testing for cable system, including spare cable, shall verify conformance of attenuation, length, and bandwidth parameters with performance indicated.
5. Test Equipment: Use a fiber-optic time domain reflectometer for testing of length and optical connectivity.
6. Test Results: Record test results and submit copy of test results for Project record.

3.14 DDC SYSTEM I/O CHECKOUT PROCEDURES

- A. Check installed products before continuity tests, leak tests and calibration.
- B. Check instruments for proper location and accessibility.
- C. Check instruments for proper installation on direction of flow, elevation, orientation, insertion depth, or other applicable considerations that will impact performance.
- D. Check instrument tubing for proper isolation, fittings, slope, dirt legs, drains, material and support.
- E. For pneumatic products, verify that air supply for each product is properly installed.
- F. Control Damper Checkout:
 1. Verify that control dampers are installed correctly for flow direction.
 2. Verify that proper blade alignment, either parallel or opposed, has been provided.
 3. Verify that damper frame attachment is properly secured and sealed.
 4. Verify that damper actuator and linkage attachment is secure.
 5. Verify that actuator wiring is complete, enclosed and connected to correct power source.
 6. Verify that damper blade travel is unobstructed.
- G. Control Valve Checkout:
 1. For pneumatic valves, verify that pressure gages are provided in each air line to valve actuator and positioner.
 2. Verify that control valves are installed correctly for flow direction.
 3. Verify that valve body attachment is properly secured and sealed.
 4. Verify that valve actuator and linkage attachment is secure.

5. Verify that actuator wiring is complete, enclosed and connected to correct power source.
6. Verify that valve ball, disc or plug travel is unobstructed.
7. After piping systems have been tested and put into service, but before insulating and balancing, inspect each valve for leaks. Adjust or replace packing to stop leaks. Replace the valve if leaks persist.

H. Instrument Checkout:

1. Verify that instrument is correctly installed for location, orientation, direction and operating clearances.
2. Verify that attachment is properly secured and sealed.
3. Verify that conduit connections are properly secured and sealed.
4. Verify that wiring is properly labeled with unique identification, correct type and size and is securely attached to proper terminals.
5. Inspect instrument tag against approved submittal.
6. For instruments with tubing connections, verify that tubing attachment is secure and isolation valves have been provided.
7. For flow instruments, verify that recommended upstream and downstream distances have been maintained.
8. For temperature instruments:
 - a. Verify sensing element type and proper material.
 - b. Verify length and insertion.

3.15 DDC SYSTEM I/O ADJUSTMENT, CALIBRATION AND TESTING:

- A. Calibrate each instrument installed that is not factory calibrated and provided with calibration documentation.
- B. Provide a written description of proposed field procedures and equipment for calibrating each type of instrument. Submit procedures before calibration and adjustment.
- C. For each analog instrument, make a three-point test of calibration for both linearity and accuracy.
- D. Equipment and procedures used for calibration shall comply with instrument manufacturer's written instructions.
- E. Provide diagnostic and test equipment for calibration and adjustment.
- F. Field instruments and equipment used to test and calibrate installed instruments shall have accuracy at least twice the instrument accuracy being calibrated. An installed instrument with an accuracy of 1 percent shall be checked by an instrument with an accuracy of 0.5 percent.
- G. Calibrate each instrument according to instrument instruction manual supplied by manufacturer.

- H. If after calibration indicated performance cannot be achieved, replace out-of-tolerance instruments.
- I. Comply with field testing requirements and procedures indicated by ASHRAE's Guideline 11, "Field Testing of HVAC Control Components," in the absence of specific requirements, and to supplement requirements indicated.
- J. Analog Signals:
 - 1. Check analog voltage signals using a precision voltage meter at zero, 50, and 100 percent.
 - 2. Check analog current signals using a precision current meter at zero, 50, and 100 percent.
 - 3. Check resistance signals for temperature sensors at zero, 50, and 100 percent of operating span using a precision-resistant source.
- K. Digital Signals:
 - 1. Check digital signals using a jumper wire.
 - 2. Check digital signals using an ohmmeter to test for contact making or breaking.
- L. Control Dampers:
 - 1. Stroke and adjust control dampers following manufacturer's recommended procedure, from 100 percent open to 100 percent closed and back to 100 percent open.
 - 2. Stroke control dampers with pilot positioners. Adjust damper and positioner following manufacturer's recommended procedure, so damper is 100 percent closed, 50 percent closed and 100 percent open at proper air pressure.
 - 3. Check and document open and close cycle times for applications with a cycle time less than 30 seconds.
 - 4. For control dampers equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.
- M. Control Valves:
 - 1. Stroke and adjust control valves following manufacturer's recommended procedure, from 100 percent open to 100 percent closed and back to 100 percent open.
 - 2. Stroke control valves with pilot positioners. Adjust valve and positioner following manufacturer's recommended procedure, so valve is 100 percent closed, 50 percent closed and 100 percent open at proper air pressures.
 - 3. Check and document open and close cycle times for applications with a cycle time less than 30 seconds.
 - 4. For control valves equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.
- N. Meters: Check sensors at zero, 50, and 100 percent of Project design values.
- O. Sensors: Check sensors at zero, 50, and 100 percent of Project design values.

- P. Switches: Calibrate switches to make or break contact at set points indicated.
- Q. Transmitters:
 - 1. Check and calibrate transmitters at zero, 50, and 100 percent of Project design values.
 - 2. Calibrate resistance temperature transmitters at zero, 50, and 100 percent of span using a precision-resistant source.

3.16 DDC SYSTEM CONTROLLER CHECKOUT

- A. Verify power supply.
 - 1. Verify voltage, phase and hertz.
 - 2. Verify that protection from power surges is installed and functioning.
 - 3. Verify that ground fault protection is installed.
 - 4. If applicable, verify if connected to UPS unit.
 - 5. If applicable, verify if connected to a backup power source.
 - 6. If applicable, verify that power conditioning units, transient voltage suppression and high-frequency noise filter units are installed.
- B. Verify that wire and cabling is properly secured to terminals and labeled with unique identification.
- C. Verify that spare I/O capacity is provided.

3.17 DDC CONTROLLER I/O CONTROL LOOP TESTS

- A. Testing:
 - 1. Test every I/O point connected to DDC controller to verify that safety and operating control set points are as indicated and as required to operate controlled system safely and at optimum performance.
 - 2. Test every I/O point throughout its full operating range.
 - 3. Test every control loop to verify operation is stable and accurate.
 - 4. Adjust control loop proportional, integral and derivative settings to achieve optimum performance while complying with performance requirements indicated. Document testing of each control loop's precision and stability via trend logs.
 - 5. Test and adjust every control loop for proper operation according to sequence of operation.
 - 6. Test software and hardware interlocks for proper operation. Correct deficiencies.
 - 7. Operate each analog point at the following:
 - a. Upper quarter of range.
 - b. Lower quarter of range.
 - c. At midpoint of range.
 - 8. Exercise each binary point.

9. For every I/O point in DDC system, read and record each value at operator workstation, at DDC controller and at field instrument simultaneously. Value displayed at operator workstation, at DDC controller and at field instrument shall match.
10. Prepare and submit a report documenting results for each I/O point in DDC system and include in each I/O point a description of corrective measures and adjustments made to achieve desired results.

3.18 DDC SYSTEM VALIDATION TESTS

- A. Perform validation tests before requesting final review of system. Before beginning testing, first submit Pretest Checklist and Test Plan.
- B. After approval of Test Plan, execute all tests and procedures indicated in plan.
- C. After testing is complete, submit completed test checklist.
- D. Pretest Checklist: Submit the following list with items checked off once verified:
 1. Detailed explanation for any items that are not completed or verified.
 2. Required mechanical installation work is successfully completed and HVAC equipment is working correctly.
 3. HVAC equipment motors operate below full-load amperage ratings.
 4. Required DDC system components, wiring, and accessories are installed.
 5. Installed DDC system architecture matches approved Drawings.
 6. Control electric power circuits operate at proper voltage and are free from faults.
 7. Required surge protection is installed.
 8. DDC system network communications function properly, including uploading and downloading programming changes.
 9. Using BACnet protocol analyzer, verify that communications are error free.
 10. Each controller's programming is backed up.
 11. Equipment, products, tubing, wiring cable and conduits are properly labeled.
 12. All I/O points are programmed into controllers.
 13. Testing, adjusting and balancing work affecting controls is complete.
 14. Dampers and actuators zero and span adjustments are set properly.
 15. Each control damper and actuator goes to failed position on loss of power.
 16. Valves and actuators zero and span adjustments are set properly.
 17. Each control valve and actuator goes to failed position on loss of power.
 18. Meter, sensor and transmitter readings are accurate and calibrated.
 19. Control loops are tuned for smooth and stable operation.
 20. View trend data where applicable.
 21. Each controller works properly in standalone mode.
 22. Safety controls and devices function properly.
 23. Interfaces with fire-alarm system function properly.
 24. Electrical interlocks function properly.
 25. Operator workstations and other interfaces are delivered, all system and database software is installed, and graphics are created.
 26. Record Drawings are completed.

E. Test Plan:

1. Prepare and submit a validation test plan including test procedures for performance validation tests.
2. Test plan shall address all specified functions of DDC system and sequences of operation.
3. Explain detailed actions and expected results to demonstrate compliance with requirements indicated.
4. Explain method for simulating necessary conditions of operation used to demonstrate performance.
5. Include a test checklist to be used to check and initial that each test has been successfully completed.
6. Submit test plan documentation 10 business days before start of tests.

F. Validation Test:

1. Verify operating performance of each I/O point in DDC system.
 - a. Verify analog I/O points at operating value.
 - b. Make adjustments to out-of-tolerance I/O points.
 - 1) Identify I/O points for future reference.
 - 2) Simulate abnormal conditions to demonstrate proper function of safety devices.
 - 3) Replace instruments and controllers that cannot maintain performance indicated after adjustments.
2. Simulate conditions to demonstrate proper sequence of control.
3. Readjust settings to design values and observe ability of DDC system to establish desired conditions.
4. After 24 Hours following Initial Validation Test:
 - a. Re-check I/O points that required corrections during initial test.
 - b. Identify I/O points that still require additional correction and make corrections necessary to achieve desired results.
5. After 24 Hours of Second Validation Test:
 - a. Re-check I/O points that required corrections during second test.
 - b. Continue validation testing until I/O point is normal on two consecutive tests.
6. Completely check out, calibrate, and test all connected hardware and software to ensure that DDC system performs according to requirements indicated.
7. After validation testing is complete, prepare and submit a report indicating all I/O points that required correction and how many validation re-tests it took to pass. Identify adjustments made for each test and indicate instruments that were replaced.

G. DDC System Response Time Test:

1. Simulate HLC.
 - a. Heavy load shall be an occurrence of 50 percent of total connected binary COV, one-half of which represent an "alarm" condition, and 50 percent of total connected analog COV, one-half of which represent an "alarm" condition, that are initiated simultaneously on a one-time basis.
 2. Initiate 10 successive occurrences of HLC and measure response time to typical alarms and status changes.
 3. Measure with a timer having at least 0.1-second resolution and 0.01 percent accuracy.
 4. Purpose of test is to demonstrate DDC system, as follows:
 - a. Reaction to COV and alarm conditions during HLC.
 - b. Ability to update DDC system database during HLC.
 5. Passing test is contingent on the following:
 - a. Alarm reporting at printer beginning no more than two seconds after the initiation (time zero) of HLC.
 - b. All alarms, both binary and analog, are reported and printed; none are lost.
 - c. Compliance with response times specified.
 6. Prepare and submit a report documenting HLC tested and results of test including time stamp and print out of all alarms.
- H. DDC System Network Bandwidth Test:
1. Test network bandwidth usage on all DDC system networks to demonstrate bandwidth usage under DDC system normal operating conditions and under simulated HLC.
 2. To pass, none of DDC system networks shall use more than 70 percent of available bandwidth under normal and HLC operation.

3.19 FINAL REVIEW

- A. Submit written request to Architect Construction Manager when DDC system is ready for final review. Written request shall state the following:
1. DDC system has been thoroughly inspected for compliance with contract documents and found to be in full compliance.
 2. DDC system has been calibrated, adjusted and tested and found to comply with requirements of operational stability, accuracy, speed and other performance requirements indicated.
 3. DDC system monitoring and control of HVAC systems results in operation according to sequences of operation indicated.
 4. DDC system is complete and ready for final review.
- B. Review by Architect and Construction Manager shall be made after receipt of written request. A field report shall be issued to document observations and deficiencies.

- C. Take prompt action to remedy deficiencies indicated in field report and submit a second written request when all deficiencies have been corrected. Repeat process until no deficiencies are reported.
- D. Should more than two reviews be required, DDC system manufacturer and Installer shall compensate entity performing review for total costs, labor and expenses, associated with third and subsequent reviews. Estimated cost of each review shall be submitted and approved by DDC system manufacturer and Installer before making the review.
- E. Prepare and submit closeout submittals when no deficiencies are reported.
- F. A part of DDC system final review shall include a demonstration to parties participating in final review.
 - 1. Provide staff familiar with DDC system installed to demonstrate operation of DDC system during final review.
 - 2. Provide testing equipment to demonstrate accuracy and other performance requirements of DDC system that is requested by reviewers during final review.
 - 3. Demonstration shall include, but not be limited to, the following:
 - a. Accuracy and calibration of 10 I/O points randomly selected by reviewers. If review finds that some I/O points are not properly calibrated and not satisfying performance requirements indicated, additional I/O points may be selected by reviewers until total I/O points being reviewed that satisfy requirements equals quantity indicated.
 - b. HVAC equipment and system hardwired and software safeties and life-safety functions are operating according to sequence of operation. Up to 10 I/O points shall be randomly selected by reviewers. Additional I/O points may be selected by reviewers to discover problems with operation.
 - c. Correct sequence of operation after electrical power interruption and resumption after electrical power is restored for randomly selected HVAC systems.
 - d. Operation of randomly selected dampers and valves in normal-on, normal-off and failed positions.
 - e. Reporting of alarm conditions for randomly selected alarms, including different classes of alarms, to ensure that alarms are properly received by operators and operator workstations.
 - f. Trends, summaries, logs and reports set-up for Project.
 - g. For up to three HVAC systems randomly selected by reviewers, use graph trends to show that sequence of operation is executed in correct manner and that HVAC systems operate properly through complete sequence of operation including different modes of operations indicated. Show that control loops are stable and operating at set points and respond to changes in set point of 20 percent or more.
 - h. Software's ability to communicate with controllers, operator workstations, uploading and downloading of control programs.
 - i. Software's ability to edit control programs off-line.
 - j. Data entry to show Project-specific customizing capability including parameter changes.

- k. Step through penetration tree, display all graphics, demonstrate dynamic update, and direct access to graphics.
- l. Execution of digital and analog commands in graphic mode.
- m. Spreadsheet and curve plot software and its integration with database.
- n. Online user guide and help functions.
- o. Multitasking by showing different operations occurring simultaneously on four quadrants of split screen.
- p. System speed of response compared to requirements indicated.
- q. For Each Network and Programmable Application Controller:
 - 1) Memory: Programmed data, parameters, trend and alarm history collected during normal operation is not lost during power failure.
 - 2) Operator Interface: Ability to connect directly to each type of digital controller with a portable operator workstation and PDA. Show that maintenance personnel interface tools perform as indicated in manufacturer's technical literature.
 - 3) Standalone Ability: Demonstrate that controllers provide stable and reliable standalone operation using default values or other method for values normally read over network.
 - 4) Electric Power: Ability to disconnect any controller safely from its power source.
 - 5) Wiring Labels: Match control drawings.
 - 6) Network Communication: Ability to locate a controller's location on network and communication architecture matches Shop Drawings.
 - 7) Nameplates and Tags: Accurate and permanently attached to control panel doors, instrument, actuators and devices.
- r. For Each Operator Workstation:
 - 1) I/O points lists agree with naming conventions.
 - 2) Graphics are complete.
 - 3) UPS unit, if applicable, operates.
- s. Communications and Interoperability: Demonstrate proper interoperability of data sharing, alarm and event management, trending, scheduling, and device and network management. Use ASHRAE 135 protocol analyzer to help identify devices, view network traffic, and verify interoperability. Requirements must be met even if only one manufacturer's equipment is installed.
 - 1) Data Presentation: On each operator workstation, demonstrate graphic display capabilities.
 - 2) Reading of Any Property: Demonstrate ability to read and display any used readable object property of any device on network.
 - 3) Set Point and Parameter Modifications: Show ability to modify set points and tuning parameters indicated. Modifications are made with messages and write services initiated by an operator using workstation graphics, or by completing a field in a menu with instructional text.

- 4) Peer-to-Peer Data Exchange: Network devices are installed and configured to perform without need for operator intervention to implement Project sequence of operation and to share global data.
- 5) Alarm and Event Management: Alarms and events are installed and prioritized according to Owner. Demonstrate that time delays and other logic are set up to avoid nuisance tripping. Show that operators with sufficient privileges are permitted.
- 6) Schedule Lists: Schedules are configured for start and stop, mode change, occupant overrides, and night setback as defined in sequence of operations.
- 7) Schedule Display and Modification: Ability to display any schedule with start and stop times for calendar year. Show that all calendar entries and schedules are modifiable from any connected operator workstation by an operator with sufficient privilege.
- 8) Archival Storage of Data: Data archiving is handled by operator workstation and server and local trend archiving and display is accomplished.
- 9) Modification of Trend Log Object Parameters: Operator with sufficient privilege can change logged data points, sampling rate, and trend duration.
- 10) Device and Network Management:
 - a) Display of network device status.
 - b) Display of BACnet Object Information.
 - c) Silencing devices transmitting erroneous data.
 - d) Time synchronization.
 - e) Remote device re-initialization.
 - f) Backup and restore network device programming and master database(s).
 - g) Configuration management of routers.

3.20 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.21 MAINTENANCE SERVICE

- A. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by DDC system manufacturer's authorized service representative. Include annual preventive maintenance, repair or replacement of worn or defective components, cleaning, calibration and adjusting as required for proper operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

3.22 SOFTWARE SERVICE AGREEMENT

- A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for two year(s).
- B. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two year(s) from date of Substantial Completion. Upgrading software shall include operating system and new or revised licenses for using software.
 - 1. Upgrade Notice: At least 30 days to allow Owner to schedule and access system and to upgrade computer equipment if necessary.

3.23 DEMONSTRATION

- A. Engage a factory-authorized service representative with complete knowledge of Project-specific system installed to train Owner's maintenance personnel to adjust, operate, and maintain DDC system.
- B. Extent of Training:
 - 1. Base extent of training on scope and complexity of DDC system indicated and training requirements indicated. Provide extent of training required to satisfy requirements indicated even if more than minimum training requirements are indicated.
 - 2. Inform Owner of anticipated training requirements if more than minimum training requirements are indicated.
 - 3. Minimum Training Requirements:
 - a. Provide not less than 10 days of training total.
 - b. Stagger training over multiple training classes to accommodate Owner's requirements. All training shall occur before end of warranty period.
 - c. Total days of training shall be broken into not more than two separate training classes.
 - d. Each training class shall be not less than one consecutive day(s).
- C. Training Schedule:
 - 1. Schedule training with Owner 20 business days before expected Substantial Completion.
 - 2. Schedule training to provide Owner with at least 10 business days of notice in advance of training.
 - 3. Training shall occur within normal business hours at a mutually agreed on time. Unless otherwise agreed to, training shall occur Monday through Friday, except on U.S. Federal holidays, with two morning sessions and two afternoon sessions. Each morning session and afternoon session shall be split in half with 30 minute break between sessions. Morning and afternoon sessions shall be separated by 60 minute lunch period. Training, including breaks and excluding lunch period, shall not exceed eight hours per day.
 - 4. Provide staggered training schedule as requested by Owner.

D. Training Attendee List and Sign-in Sheet:

1. Request from Owner in advance of training a proposed attendee list with name, phone number and e-mail address.
2. Provide a preprinted sign-in sheet for each training session with proposed attendees listed and no fewer than six blank spaces to add additional attendees.
3. Preprinted sign-in sheet shall include training session number, date and time, instructor name, phone number and e-mail address, and brief description of content to be covered during session. List attendees with columns for name, phone number, e-mail address and a column for attendee signature or initials.
4. Circulate sign-in sheet at beginning of each session and solicit attendees to sign or initial in applicable location.
5. At end of each training day, send Owner an e-mail with an attachment of scanned copy (PDF) of circulated sign-in sheet for each session.

E. Training Attendee Headcount:

1. Plan in advance of training for two attendees.
2. Make allowance for Owner to add up to two attendee(s) at time of training.
3. Headcount may vary depending on training content covered in session. Attendee access may be restricted to some training content for purposes of maintaining system security.

F. Attendee Training Manuals:

1. Provide each attendee with a color hard copy of all training materials and visual presentations.
2. Hard-copy materials shall be organized in a three-ring binder with table of contents and individual divider tabs marked for each logical grouping of subject matter. Organize material to provide space for attendees to take handwritten notes within training manuals.
3. In addition to hard-copy materials included in training manual, provide each binder with a sleeve or pocket that includes a DVD or flash drive with PDF copy of all hard-copy materials.

G. Instructor Requirements:

1. One or multiple qualified instructors, as required, to provide training.
2. Instructors shall have not less than five years of providing instructional training on not less than five past projects with similar DDC system scope and complexity to DDC system installed.

H. Organization of Training Sessions:

1. Organize training sessions into logical groupings of technical content and to reflect different levels of operators having access to system. Plan training sessions to accommodate the following three levels of operators:
 - a. Daily operators.
 - b. Advanced operators.

- c. System managers and administrators.
- 2. Plan and organize training sessions to group training content to protect DDC system security. Some attendees may be restricted to some training sessions that cover restricted content for purposes of maintaining DDC system security.
- I. Training Outline:
 - 1. Submit training outline for Owner review at least 10 business day before scheduling training.
 - 2. Outline shall include a detailed agenda for each training day that is broken down into each of four training sessions that day, training objectives for each training session and synopses for each lesson planned.
- J. On-Site Training:
 - 1. Owner will provide conditioned classroom or workspace with ample desks or tables, chairs, power and data connectivity for instructor and each attendee.
 - 2. Instructor shall provide training materials, projector and other audiovisual equipment used in training.
 - 3. Provide as much of training located on-site as deemed feasible and practical by Owner.
 - 4. On-site training shall include regular walk-through tours, as required, to observe each unique product type installed with hands-on review of operation, calibration and service requirements.
 - 5. Operator workstation provided with DDC system shall be used in training. If operator workstation is not indicated, provide a temporary workstation to convey training content.
- K. Off-Site Training:
 - 1. Provide conditioned training rooms and workspace with ample tables desks or tables, chairs, power and data connectivity for each attendee.
 - 2. Provide capability to remotely access to Project DDC system for use in training.
 - 3. Provide a workstation for use by each attendee.
- L. Training Content for Daily Operators:
 - 1. Basic operation of system.
 - 2. Understanding DDC system architecture and configuration.
 - 3. Understanding each unique product type installed including performance and service requirements for each.
 - 4. Understanding operation of each system and equipment controlled by DDC system including sequences of operation, each unique control algorithm and each unique optimization routine.
 - 5. Operating operator workstations, printers and other peripherals.
 - 6. Logging on and off system.
 - 7. Accessing graphics, reports and alarms.
 - 8. Adjusting and changing set points and time schedules.

9. Recognizing DDC system malfunctions.
10. Understanding content of operation and maintenance manuals including control drawings.
11. Understanding physical location and placement of DDC controllers and I/O hardware.
12. Accessing data from DDC controllers.
13. Operating portable operator workstations.
14. Review of DDC testing results to establish basic understanding of DDC system operating performance and HVAC system limitations as of Substantial Completion.
15. Running each specified report and log.
16. Displaying and demonstrating each data entry to show Project-specific customizing capability. Demonstrating parameter changes.
17. Stepping through graphics penetration tree, displaying all graphics, demonstrating dynamic updating, and direct access to graphics.
18. Executing digital and analog commands in graphic mode.
19. Demonstrating control loop precision and stability via trend logs of I/O for not less than 10 percent of I/O installed.
20. Demonstrating DDC system performance through trend logs and command tracing.
21. Demonstrating scan, update, and alarm responsiveness.
22. Demonstrating spreadsheet and curve plot software, and its integration with database.
23. Demonstrating on-line user guide, and help function and mail facility.
24. Demonstrating multitasking by showing dynamic curve plot, and graphic construction operating simultaneously via split screen.
25. Demonstrating the following for HVAC systems and equipment controlled by DDC system:
 - a. Operation of HVAC equipment in normal-off, -on and failed conditions while observing individual equipment, dampers and valves for correct position under each condition.
 - b. For HVAC equipment with factory-installed software, show that integration into DDC system is able to communicate with DDC controllers or gateways, as applicable.
 - c. Using graphed trends, show that sequence of operation is executed in correct manner, and HVAC systems operate properly through complete sequence of operation including seasonal change, occupied and unoccupied modes, warm-up and cool-down cycles and other modes of operation indicated.
 - d. Hardware interlocks and safeties function properly and DDC system performs correct sequence of operation after electrical power interruption and resumption after power is restored.
 - e. Reporting of alarm conditions for each alarm, and confirm that alarms are received at assigned locations, including operator workstations.
 - f. Each control loop responds to set point adjustment and stabilizes within time period indicated.
 - g. Sharing of previously graphed trends of all control loops to demonstrate that each control loop is stable and set points are being maintained.

M. Training Content for Advanced Operators:

1. Making and changing workstation graphics.

2. Creating, deleting and modifying alarms including annunciation and routing.
3. Creating, deleting and modifying point trend logs including graphing and printing on an ad-hoc basis and operator-defined time intervals.
4. Creating, deleting and modifying reports.
5. Creating, deleting and modifying points.
6. Creating, deleting and modifying programming including ability to edit control programs off-line.
7. Creating, deleting and modifying system graphics and other types of displays.
8. Adding DDC controllers and other network communication devices such as gateways and routers.
9. Adding operator workstations.
10. Performing DDC system checkout and diagnostic procedures.
11. Performing DDC controllers operation and maintenance procedures.
12. Performing operator workstation operation and maintenance procedures.
13. Configuring DDC system hardware including controllers, workstations, communication devices and I/O points.
14. Maintaining, calibrating, troubleshooting, diagnosing and repairing hardware.
15. Adjusting, calibrating and replacing DDC system components.

N. Training Content for System Managers and Administrators:

1. DDC system software maintenance and backups.
2. Uploading, downloading and off-line archiving of all DDC system software and databases.
3. Interface with Project-specific, third-party operator software.
4. Understanding password and security procedures.
5. Adding new operators and making modifications to existing operators.
6. Operator password assignments and modification.
7. Operator authority assignment and modification.
8. Workstation data segregation and modification.

O. Video of Training Sessions:

1. Provide a digital video and audio recording of each training session. Create a separate recording file for each session.
2. Stamp each recording file with training session number, session name and date.
3. Provide Owner with two copies of digital files on DVDs or flash drives for later reference and for use in future training.
4. Owner retains right to make additional copies for intended training purposes without having to pay royalties.

END OF SECTION 230923

SECTION 230924 – SEQUENCES OF OPERATION

DOAS-1

Run Conditions - Scheduled:

The unit shall run based upon an operator adjustable schedule.

Smoke Detection:

The unit shall shut down and generate an alarm upon receiving a smoke detector status.

Outside Air Damper:

The outside air damper shall open anytime the unit runs and shall close anytime the unit stops.

The supply fan shall start only after the damper status has proven the damper is open. The outside air damper shall close 5sec (adj.) after the supply fan stops.

Alarms shall be provided as follows:

- Outside Air Damper Failure: Commanded open, but the status is closed.
- Outside Air Damper in Hand: Commanded closed, but the status is open.

Heat Recovery Wheel - Variable Speed:

The controller shall modulate the heat wheel for energy recovery as follows.

Cooling Recovery Mode:

The controller shall measure the heat wheel discharge air temperature and modulate the heat wheel speed to maintain a setpoint 2°F (adj.) less than the unit supply air temperature setpoint. The heat wheel shall run for cool recovery whenever:

- Unit return air temperature is 5°F (adj.) or more below the outside air temperature.
- AND the unit is in a cooling mode.
- AND the supply fan is on.

Heating Recovery Mode:

The controller shall measure the heat wheel discharge air temperature and modulate the heat wheel speed to maintain a setpoint 2°F (adj.) greater than the unit supply air temperature setpoint. The heat wheel shall run for heat recovery whenever:

- Unit return air temperature is 5°F (adj.) or more above the outside air temperature.
- AND the unit is in a heating mode.
- AND the supply fan is on.

Periodic Self-Cleaning:

The heat wheel shall run at 5% speed (adj.) for 10sec (adj.) every 4hrs (adj.) the unit runs.

Frost Protection:

The heat wheel shall run at 5% speed (adj.) whenever:

- Outside air temperature drops below 15°F (adj.)
- OR whenever exhaust air temperature drops below 20°F (adj.).

The bypass dampers will open whenever the heat wheel is disabled.

Alarms shall be provided as follows:

- Heat Wheel Rotation Failure: Commanded on, but the status is off.
- Heat Wheel in Hand: Commanded off, but the status is on.
- Heat Wheel Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).
- Heat Wheel VFD in Fault

Supply Fan:

The supply fan shall run anytime the unit is commanded to run. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime, unless shutdown on safeties.

Alarms shall be provided as follows:

- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Exhaust Fan:

The exhaust fan shall run whenever the supply fan runs, unless shutdown on safeties.

Alarms shall be provided as follows:

- Exhaust Fan Failure: Commanded on, but the status is off.
- Exhaust Fan in Hand: Commanded off, but the status is on.
- Exhaust Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Supply Air Temperature Setpoint - Fixed:

The controller shall monitor the supply air temperature and shall maintain a fixed supply air temperature setpoint of 55°F (adj.).

Cooling Stages:

The controller shall measure the supply air temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:

- Outside air temperature is greater than 60°F (adj.).
- AND the supply air temperature is above cooling setpoint.
- AND the fan status is on.

Gas Heating Stages:

The controller shall measure the supply air temperature and stage the heating to maintain its heating setpoint. To prevent short cycling, there shall be a user definable (adj.) delay between stages, and each stage shall have a user definable (adj.) minimum runtime.

The heating shall be enabled whenever:

- Outside air temperature is less than 65°F (adj.).
- AND the supply air temperature is below heating setpoint.
- AND the fan status is on.

Supply Air Temperature:

The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:

- High Supply Air Temp: If the supply air temperature is greater than 100°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

Fan Coil Units (Typical)

Run Conditions - Scheduled:

The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
 - A 75°F (adj.) cooling setpoint
 - A 70°F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit shall maintain
 - A 85°F (adj.) cooling setpoint.
 - A 60°F (adj.) heating setpoint.

Alarms shall be provided as follows:

- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Zone Setpoint Adjust:

The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor.

Fan:

The fan shall run anytime the unit is commanded to run, unless shutdown on safeties.

Cooling Stage:

The controller shall measure the zone temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime.

The cooling shall be enabled whenever:

- Outside air temperature is greater than 60°F (adj.).
- AND the zone temperature is above cooling setpoint.
- AND the fan is on.

Electric Heating Stage:

The controller shall measure the zone temperature and stage the heating to maintain its heating set-point. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime.

The heating shall be enabled whenever:

- Outside air temperature is less than 65°F (adj.).
- AND the zone temperature is below heating setpoint.
- AND the fan is on.

Discharge Air Temperature:

The controller shall monitor the discharge air temperature.

Alarms shall be provided as follows:

- High Discharge Air Temp: If the discharge air temperature is greater than 100°F (adj.).
- Low Discharge Air Temp: If the discharge air temperature is less than 40°F (adj.).

Fan Status:

The controller shall monitor the fan status.

Alarms shall be provided as follows:

- Fan Failure: Commanded on, but the status is off.
- Fan in Hand: Commanded off, but the status is on.
- Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.).

END OF SECTION 230924

SECTION 233113 - METAL DUCTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rectangular ducts and fittings.
 - 2. Round ducts and fittings.
 - 3. Sheet metal materials.
 - 4. Sealants and gaskets.
 - 5. Hangers and supports.
- B. Related Sections:
 - 1. Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing requirements for metal ducts.
 - 2. Section 233300 "Air Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Duct Design: Duct construction, including sheet metal thicknesses, seam and joint construction, reinforcements, and hangers and supports, shall comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and performance requirements and design criteria indicated in "Duct Schedule" Article.
- B. Structural Performance: Duct hangers and supports shall withstand the effects of gravity loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".
- C. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ANSI/ASHRAE 62.1.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:

1. Fabrication, assembly, and installation, including plans, elevations, sections, components, and attachments to other work.
 2. Factory- and shop-fabricated ducts and fittings.
 3. Duct layout indicating sizes, configuration, and static-pressure classes.
 4. Elevation of top of ducts.
 5. Dimensions of main duct runs from building grid lines.
 6. Fittings.
 7. Reinforcement and spacing.
 8. Seam and joint construction.
 9. Penetrations through fire-rated and other partitions.
 10. Equipment installation based on equipment being used on Project.
 11. Locations for duct accessories, including dampers, turning vanes, and access doors and panels.
 12. Hangers and supports, including methods for duct and building attachment and vibration isolation.
- C. Delegated-Design Submittal:
1. Sheet metal thicknesses.
 2. Joint and seam construction and sealing.
 3. Reinforcement details and spacing.
 4. Materials, fabrication, assembly, and spacing of hangers and supports.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Duct installation in congested spaces, indicating coordination with general construction, building components, and other building services. Indicate proposed changes to duct layout.
 2. Suspended ceiling components.
 3. Structural members to which duct will be attached.

4. Size and location of initial access modules for acoustical tile.
 5. Penetrations of smoke barriers and fire-rated construction.
 6. Items penetrating finished ceiling including the following:
 - a. Luminaires.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.
 - f. Perimeter moldings.
- B. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum," for aluminum supports. AWS D9.1M/D9.1, "Sheet Metal Welding Code," for duct joint and seam welding.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.
 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum," for aluminum supports.
 3. AWS D9.1M/D9.1, "Sheet Metal Welding Code," for duct joint and seam welding.
- C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."
- D. ASHRAE/IES Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."

PART 2 - PRODUCTS

2.1 RECTANGULAR DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

2.2 ROUND DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on indicated static-pressure class unless otherwise indicated.
- B. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Lindab Inc.
 - 2. McGill Airflow, LLC
 - 3. SEMCO Incorporated.
 - 4. Sheet Metal Connectors, Inc.
 - 5. Sprial Manufacturing Co., Inc.
- C. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-1, "Round Duct Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support

intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

1. Transverse Joints in Ducts Larger Than 60 Inches in Diameter: Flanged.
- D. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-2, "Round Duct Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
1. Fabricate round ducts larger Than 90 inches in diameter with butt-welded longitudinal seams.
- E. Tees and Laterals: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

2.3 SHEET METAL MATERIALS

- A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
1. Galvanized Coating Designation: G60.
 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
- C. Carbon-Steel Sheets: Comply with ASTM A 1008/A 1008M, with oiled, matte finish for exposed ducts.
- D. Stainless-Steel Sheets: Comply with ASTM A 480/A 480M, Type 304 or 316, as indicated in the "Duct Schedule" Article; cold rolled, annealed, sheet. Exposed surface finish shall be No. 2B, No. 2D, No. 3, or No. 4 as indicated in the "Duct Schedule" Article.
- E. Aluminum Sheets: Comply with ASTM B 209 Alloy 3003, H14 temper; with mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.
- F. Reinforcement Shapes and Plates: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

1. Where black- and galvanized-steel shapes and plates are used to reinforce aluminum ducts, isolate the different metals with butyl rubber, neoprene, or EPDM gasket materials.
- G. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches.

2.4 SEALANT AND GASKETS

- A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets shall be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested according to UL 723; certified by an NRTL.
- B. Two-Part Tape Sealing System:
 1. Tape: Woven cotton fiber impregnated with mineral gypsum and modified acrylic/silicone activator to react exothermically with tape to form hard, durable, airtight seal.
 2. Tape Width: 6 inches.
 3. Sealant: Modified styrene acrylic.
 4. Water resistant.
 5. Mold and mildew resistant.
 6. Maximum Static-Pressure Class: 10-inch wg, positive and negative.
 7. Service: Indoor and outdoor.
 8. Service Temperature: Minus 40 to plus 200 deg F.
 9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum.
 10. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 11. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Water-Based Joint and Seam Sealant:
 1. Application Method: Brush on.
 2. Solids Content: Minimum 65 percent.

3. Shore A Hardness: Minimum 20.
 4. Water resistant.
 5. Mold and mildew resistant.
 6. VOC: Maximum 75 g/L (less water).
 7. Maximum Static-Pressure Class: 10-inch wg, positive and negative.
 8. Service: Indoor or outdoor.
 9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
- D. Flanged Joint Sealant: Comply with ASTM C 920.
1. General: Single-component, acid-curing, silicone, elastomeric.
 2. Type: S.
 3. Grade: NS.
 4. Class: 25.
 5. Use: O.
 6. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 7. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- E. Flange Gaskets: Butyl rubber, neoprene, or EPDM polymer with polyisobutylene plasticizer.
- F. Round Duct Joint O-Ring Seals:
1. Seal shall provide maximum leakage class of 3 cfm/100 sq. ft. at 1-inch wg and shall be rated for 10-inch wg static-pressure class, positive or negative.
 2. EPDM O-ring to seal in concave bead in coupling or fitting spigot.
 3. Double-lipped, EPDM O-ring seal, mechanically fastened to factory-fabricated couplings and fitting spigots.

2.5 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.

- B. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
- C. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct."
- D. Steel Cables for Galvanized-Steel Ducts: Galvanized steel complying with ASTM A 603.
- E. Steel Cables for Stainless-Steel Ducts: Stainless steel complying with ASTM A 492.
- F. Steel Cable End Connections: Cadmium-plated steel assemblies with brackets, swivel, and bolts designed for duct hanger service; with an automatic-locking and clamping device.
- G. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.
- H. Trapeze and Riser Supports:
 - 1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
 - 2. Supports for Stainless-Steel Ducts: Stainless-steel shapes and plates.
 - 3. Supports for Aluminum Ducts: Aluminum or galvanized steel coated with zinc chromate.

PART 3 - EXECUTION

3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
- B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Install ducts in maximum practical lengths.
- D. Install ducts with fewest possible joints.
- E. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.
- F. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.

- G. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
- H. Install ducts with a clearance of 1 inch, plus allowance for insulation thickness.
- I. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.
- J. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches.
- K. Where ducts pass through fire-rated interior partitions and exterior walls, install fire dampers. Comply with requirements in Section 233300 "Air Duct Accessories" for fire and smoke dampers.
- L. Protect duct interiors from moisture, construction debris and dust, and other foreign materials.

3.2 INSTALLATION OF EXPOSED DUCTWORK

- A. Protect ducts exposed in finished spaces from being dented, scratched, or damaged. Ductwork jacketing to be sloped properly to allow water to run off ductwork.
- B. Trim duct sealants flush with metal. Create a smooth and uniform exposed bead. Do not use two-part tape sealing system.
- C. Grind welds to provide smooth surface free of burrs, sharp edges, and weld splatter. When welding stainless steel with a No. 3 or 4 finish, grind the welds flush, polish the exposed welds, and treat the welds to remove discoloration caused by welding.
- D. Maintain consistency, symmetry, and uniformity in the arrangement and fabrication of fittings, hangers and supports, duct accessories, and air outlets.
- E. Repair or replace damaged sections and finished work that does not comply with these requirements.

3.3 DUCT SEALING

- A. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- B. Seal ducts at a minimum to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":

1. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
2. Outdoor, Supply-Air Ducts: Seal Class A.
3. Outdoor, Exhaust Ducts: Seal Class C.
4. Outdoor, Return-Air Ducts: Seal Class C.
5. Unconditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class B.
6. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class A.
7. Unconditioned Space, Exhaust Ducts: Seal Class C.
8. Unconditioned Space, Return-Air Ducts: Seal Class B.
9. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg and Lower: Seal Class C.
10. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg: Seal Class B.
11. Conditioned Space, Exhaust Ducts: Seal Class B.
12. Conditioned Space, Return-Air Ducts: Seal Class C.

3.4 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 5, "Hangers and Supports."
- B. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
 1. Where practical, install concrete inserts before placing concrete.
 2. Install powder-actuated concrete fasteners after concrete is placed and completely cured.
 3. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches thick.
 4. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches thick.
 5. Do not use powder-actuated concrete fasteners for seismic restraints.

- C. Hanger Spacing: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct," for maximum hanger spacing; install hangers and supports within 24 inches of each elbow and within 48 inches of each branch intersection.
- D. Hangers Exposed to View: Threaded rod and angle or channel supports.
- E. Support vertical ducts with steel angles or channel secured to the sides of the duct with welds, bolts, sheet metal screws, or blind rivets; support at each floor and at a maximum intervals of 16 feet.
- F. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

3.5 CONNECTIONS

- A. Make connections to equipment with flexible connectors complying with Section 233300 "Air Duct Accessories."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

3.6 DUCT CLEANING

- A. Clean new and existing duct system(s) before testing, adjusting, and balancing.
- B. Use service openings for entry and inspection.
 - 1. Create new openings and install access panels appropriate for duct static-pressure class if required for cleaning access. Provide insulated panels for insulated duct. Patch insulation and liner as recommended by duct liner manufacturer. Comply with Section 233300 "Air Duct Accessories" for access panels and doors.
 - 2. Disconnect and reconnect flexible ducts as needed for cleaning and inspection.
 - 3. Remove and reinstall ceiling to gain access during the cleaning process.
- C. Particulate Collection and Odor Control:
 - 1. When venting vacuuming system inside the building, use HEPA filtration with 99.97 percent collection efficiency for 0.3-micron-size (or larger) particles.
 - 2. When venting vacuuming system to outdoors, use filter to collect debris removed from HVAC system, and locate exhaust downwind and away from air intakes and other points of entry into building.

- D. Clean the following components by removing surface contaminants and deposits:
1. Air outlets and inlets (registers, grilles, and diffusers).
 2. Supply, return, and exhaust fans including fan housings, plenums (except ceiling supply and return plenums), scrolls, blades or vanes, shafts, baffles, dampers, and drive assemblies.
 3. Air-handling unit internal surfaces and components including mixing box, coil section, air wash systems, spray eliminators, condensate drain pans, humidifiers and dehumidifiers, filters and filter sections, and condensate collectors and drains.
 4. Coils and related components.
 5. Return-air ducts, dampers, actuators, and turning vanes except in ceiling plenums and mechanical equipment rooms.
 6. Supply-air ducts, dampers, actuators, and turning vanes.
 7. Dedicated exhaust and ventilation components and makeup air systems.
- E. Mechanical Cleaning Methodology:
1. Clean metal duct systems using mechanical cleaning methods that extract contaminants from within duct systems and remove contaminants from building.
 2. Use vacuum-collection devices that are operated continuously during cleaning. Connect vacuum device to downstream end of duct sections so areas being cleaned are under negative pressure.
 3. Use mechanical agitation to dislodge debris adhered to interior duct surfaces without damaging integrity of metal ducts or duct accessories.

Clean coils and coil drain pans according to NADCA 1992. Keep drain pan operational. Rinse coils with clean water to remove latent residues and cleaning materials; comb and straighten fins.
 4. Provide drainage and cleanup for wash-down procedures.
 5. Antimicrobial Agents and Coatings: Apply EPA-registered antimicrobial agents if fungus is present. Apply antimicrobial agents according to manufacturer's written instructions after removal of surface deposits and debris.

3.7 START UP

- A. Air Balance: Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."

3.8 DUCT SCHEDULE

A. Supply Ducts:

1. Ducts Connected to Fan Coil Units and Terminal Units:
 - a. Pressure Class: Positive 2-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
2. Ducts Connected to Constant-Volume Air-Handling Units:
 - a. Pressure Class: Positive 4-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
3. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive 4-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.

B. Return Ducts:

1. Ducts Connected to Fan Coil Units and Terminal Units:
 - a. Pressure Class: Positive or negative 4-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 24.
 - d. SMACNA Leakage Class for Round and Flat Oval: 12.
2. Ducts Connected to Air-Handling Units:
 - a. Pressure Class: Positive or negative 4-inch wg.

- b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
 - 3. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive or negative 4-inch wg
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
- C. Exhaust Ducts:
 - 1. Ducts Connected to Fans Exhausting (ASHRAE 62.1, Class 1 and 2) Air:
 - a. Pressure Class: Negative 4-inch wg.
 - b. Minimum SMACNA Seal Class: A if negative pressure, and A if positive pressure.
 - c. SMACNA Leakage Class for Rectangular: 24.
 - d. SMACNA Leakage Class for Round and Flat Oval: 12.
 - 2. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive or negative 4-inch wg.
 - b. Minimum SMACNA Seal Class: A if negative pressure, and A if positive pressure.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
- D. Outdoor-Air (Not Filtered, Heated, or Cooled) Ducts:
 - 1. Ducts Connected to Air-Handling Units:
 - a. Pressure Class: Positive or negative 4-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.

2. Ducts Connected to Equipment Not Listed Above:
 - a. Pressure Class: Positive or negative 4-inch wg.
 - b. Minimum SMACNA Seal Class: A.
 - c. SMACNA Leakage Class for Rectangular: 12.
 - d. SMACNA Leakage Class for Round and Flat Oval: 6.
- E. Intermediate Reinforcement:
 1. Galvanized-Steel Ducts: Galvanized steel
 2. Stainless-Steel Ducts:
 - a. Exposed to Airstream: Match duct material.
 - b. Not Exposed to Airstream: Match duct material.
- F. Elbow Configuration:
 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
 - a. Velocity 1000 fpm or Lower:
 - 1) Radius Type RE 1 with minimum 0.5 radius-to-diameter ratio.
 - 2) Mitered Type RE 4 without vanes.
 - b. Velocity 1000 to 1500 fpm:
 - 1) Radius Type RE 1 with minimum 1.0 radius-to-diameter ratio.
 - 2) Radius Type RE 3 with minimum 0.5 radius-to-diameter ratio and two vanes.
 - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
 - c. Velocity 1500 fpm or Higher:
 - 1) Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
 - 2) Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.

- 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
 2. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
 - a. Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
 - b. Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
 - c. Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
 3. Round Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-4, "Round Duct Elbows."
 - a. Minimum Radius-to-Diameter Ratio and Elbow Segments: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 3-1, "Mitered Elbows." Elbows with less than 90-degree change of direction have proportionately fewer segments.
 - 1) Velocity 1000 fpm or Lower: 0.5 radius-to-diameter ratio and three segments for 90-degree elbow.
 - 2) Velocity 1000 to 1500 fpm: 1.0 radius-to-diameter ratio and four segments for 90-degree elbow.
 - 3) Velocity 1500 fpm or Higher: 1.5 radius-to-diameter ratio and five segments for 90-degree elbow.
 - 4) Radius-to Diameter Ratio: 1.5.
 - b. Round Elbows, 12 Inches and Smaller in Diameter: Stamped or pleated.
 - c. Round Elbows, 14 Inches and Larger in Diameter: Standing seam.
- G. Branch Configuration:
 1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-6, "Branch Connection."
 - a. Rectangular Main to Rectangular Branch: 45-degree entry.
 - b. Rectangular Main to Round Branch: Spin in.

2. Round: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees." Saddle taps are permitted in existing duct.
 - a. Velocity 1000 fpm or Lower: 90-degree tap.
 - b. Velocity 1000 to 1500 fpm: Conical tap.
 - c. Velocity 1500 fpm or Higher: 45-degree lateral.

END OF SECTION 233113

SECTION 237100 – VARIABLE REFRIGERANT FLOW SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes Variable Refrigerant Flow (VRF) system components including: refrigerant compressor and condenser units, piping system, selector, and fan coil units.

1.3 ACTION SUBMITTALS

- A. Delegated-Design Submittal: Manufacturer shall submit a full design including piping diagram, piping sizing, component sizing, quantities, layout drawing including lengths, routing instructions, installation instructions, wiring, controls devices and wiring diagrams. All deviations from basis of design to be identified and included in submittal.
- B. Product Data: For each compressor and condenser unit. Include rated capacities, operating characteristics, and furnished specialties and accessories. Include equipment dimensions, weights and structural loads, required clearances, method of field assembly, components, and location and size of each field connection.
- C. Shop Drawings: For compressor and condenser units, selector boxes, and terminal units. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Wiring Diagrams: For power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
 - 1. Structural members to which compressor and condenser units will be attached.
 - 2. Liquid and vapor pipe sizes.
 - 3. Refrigerant specialties
 - 4. Piping including connections, oil traps, and double risers.
 - 5. Compressors.
 - 6. Evaporators.
 - 7. Selector boxes
 - 8. Terminal fan coil units
 - 9. Controls devices

- B. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Inspection reports from manufacturer including field review of piping, wiring, installation and operation of system.
- B. Operation and Maintenance Data: For all system components to include in operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Manufacturer authorized representative to pre-qualify installing contractor and provide training and oversight as necessary for a complete a successful installation.
- B. Manufacturer to provide trained personnel to field review installation including piping, wiring and controls. Provide inspection reports in final O&M report.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Fabricate and label refrigeration system according to ASHRAE 15, "Safety Standard for Refrigeration Systems."
- E. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6, "Heating, Ventilating, and Air-Conditioning."

1.7 COORDINATION

- A. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment"
- B. Coordinate installation of hangers and supports with structural layout. These items are specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment"
- C. Coordinate location of piping and electrical rough-ins.

1.8 QUALIFICATIONS:

- A. The unit manufacturer shall provide to the installing contractor FACTORY installation training.
- B. Installing contractor shall have installed 10 VRF projects and can provide a reference list upon request.

1.9 WARRANTY

- A.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of compressor and condenser units that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period:
 - a. For Compressor and Labor: 5 years from date of Substantial Completion.
 - b. For Parts and Labor: 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURES: Subject to all terms and requirements of specifications and drawings provide a system by one of the manufacturers listed below:

- A. LG
- B. Mitsubishi Electric

2.2 PRODUCT DESCRIPTION:

- A. Variable Refrigerant Flow (VRF) HVAC system shall be a variable capacity, direct expansion (DX) heat recovery engineered system. The outdoor unit shall consist of one or more cabinet(s) connected through common refrigerant piping. Each system shall have single or multiple, inverter compressor(s). Each system shall be connected to multiple indoor units (ducted, non-ducted or combination thereof) through a common refrigerant piping and integrated system controls. Each indoor unit shall be controlled individually. Additionally, heat recovery system shall be capable of simultaneous heating and cooling for individual zone(s).
- B. Simultaneous Cooling and Heating VRF System
 - 1. VRF heat recovery system shall be an water cooled, system consisting of one to three outdoor unit(s) connected to Heat Recovery (HRU) unit(s) and indoor unit(s). Multi-port heat recovery units shall allow simultaneous heating and cooling of individual zone(s).
 - 2. The heat recovery system shall be capable of operating with 460V 60Hz, 3 phase power.
 - 3. Outdoor Unit shall be capable at the following operating ambient air conditions.
 - a. Heat Recovery System
 - 1) Cooling: 14°F DB to 122°F DB
 - 2) Heating: -13°F WB to 61°F WB
 - 3) Cooling based synchronous: 14°F DB to 81°F DB
 - 4) Heating-based synchronous: 14°F WB to 61°F WB
 - 4. The air-conditioning system shall use R410A refrigerant.
 - 5. Dual frame configurations shall be field piped together using manufacturer's designed and supplied Y-branch kit and field provided interconnecting pipe to form a common refrigerant circuit.
 - 6. Refrigerant circuit configuration for Heat Recovery System

- a. The refrigerant circuit shall be constructed using field provided copper piped together with manufacturer supplied Heat Recovery unit(s) and Y- branches or Header fittings connected to multiple (ducted, non-ducted or combination thereof) indoor units to effectively and efficiently control the simultaneous heating and cooling operation of the VRF system.
 - b. Each refrigerant pipe, y-branch, header kit, elbows and valves shall be individually insulated with no air gaps. All joints shall be glued and sealed.
7. Factory installed microprocessor controls in the outdoor unit(s), HR unit(s), and indoor unit(s) shall perform functions to efficiently operate the VRF system and communicate in a daisy chain configuration between outdoor unit and HR unit(s) and indoor unit(s).
8. The system shall be designed to accept connection up to 64 indoor units.
9. The system shall be capable of performing continuous operation when an individual indoor unit is being serviced or power to indoor unit is disconnected.
10. The maximum allowable system combination ratio shall be less than 110%. Systems designed with combination ratio above 110% are not acceptable.
11. The total nominal capacity of all indoor units shall be no less than 50% and no more than 110% of outdoor unit's nominal capacity to ensure the VRF system will have sufficient capacity to meet the building's cooling and heating load at design day weather conditions.
 - a. The outdoor unit shall have a fusible plug.
 - b. The fusible plug shall have a threaded connector.
 - c. The unit shall be shipped from the factory fully assembled including internal refrigerant piping, compressor, contacts, relay(s), power and communications wiring necessary.
 - d. Each outdoor unit refrigeration circuit shall have the following components:
 - 1) Refrigerant strainer(s)
 - 2) Check valve(s)
 - 3) Oil separator
 - 4) Accumulator
 - 5) 4-way reversing valve
 - 6) Vapor injection valve
 - 7) Variable path valve
 - 8) Oil balancing valve for Hi-POR (Available for 12 & 14 ton only)
 - 9) Oil Level sensor
 - 10) Electronic expansion valve(s)
 - 11) Sub-cooler
 - 12) High and low side Schrader valve service ports with caps.
 - 13) Service valves
12. System
 - a. System shall have a variable flow path heat exchanger function to vary the refrigerant flow path based on system operating mode and operating conditions.
 - b. System shall have a medium pressure suction gas vapor injection function.
 - c. System shall have an active refrigerant control function to vary the system refrigerant quantity based on operating mode and operating conditions.
 - d. Oil Management

- 1) The system shall have Hi-POR (High Pressure Oil Return) to ensure a consistent film of oil on all moving compressor parts at low speed. Oil is returned to compressor through a separate oil injection pipe.
 - 2) Oil return system shall maintain high side pressure return to the compressor
 - 3) The system shall be provided with a centrifugal oil separator designed to extract oil from the oil/refrigerant gas stream leaving the compressor and return the extracted oil to the compressor oil sump.
 - 4) The system shall have an oil level sensor in the compressor to provide direct oil level sensing.
 - 5) The system shall only initiate an oil return cycle if the oil level is too low.
 - 6) Timed oil return operations or non-oil level sensing systems shall not be permitted.
- e. Cabinet
- 1) Outdoor unit cabinet shall be made of 20 gauge galvanized steel with an enamel finish.
 - 2) Outdoor unit cabinet finish shall be tested in accordance with ASTM B-117 salt spray test procedure for a minimum of 1000 hours.
 - 3) The front panels of the outdoor units shall be removable type for access to internal components.
 - 4) A smaller service access panel, not larger than 6.25"x 6.67" and secured by a maximum of (2) screws shall be provided to access the following:
 - a) Service tool connection
 - b) DIP switches
 - c) Auto addressing
 - d) Error codes
 - 5) The cabinet shall have piping knockouts to allow refrigerant piping to be connected at the front or through the bottom of the unit.
- f. Fan Assembly
- 1) Each 8 to 14 ton cabinet shall be equipped with two direct drive variable speed propeller fan(s) with BLDC motor(s) with a vertical air discharge.
 - 2) The fan(s) blades shall be made of Acrylonitrile Butadiene Styrene (ABS) material.
 - 3) The fan(s) motor shall be equipped with permanently lubricated bearings.
 - 4) The fan motor shall be variable speed with a maximum operating speed of 1050 RPM.
 - 5) The fan shall have a raised guard to help prevent contact with moving parts.
 - 6) The cabinet shall have option to change the discharge air direction from vertical to horizontal using optional factory provided air guides.
 - 7) The cabinet shall have a DIP switch setting to raise external static pressure up to 0.32 in-wg.
- g. Outdoor Unit Coil
- 1) Shall be a variable path design.
 - 2) Shall be provided and built by the VRF outdoor unit provider.
 - 3) It shall be comprised of aluminum fins mechanically bonded on copper tubing.

- 4) The copper tubes shall have inner grooves.
 - 5) The aluminum fins shall have factory applied corrosion resistant GoldFin™ material.
 - 6) Hydrophilic Coil coating shall be tested in accordance with ASTM B-117 salt spray test procedure for a minimum of 1000 hours
 - 7) The outdoor unit coil shall be tested to a pressure of 551 psig.
 - 8) The coil for each cabinet shall have 14 Fins per Inch (FPI).
 - 9) All the outdoor units shall have a 3 rows heat exchanger.
 - 10) The cabinet shall have a coil guard.
 - h. Compressor(s)
 - 1) Unit shall be equipped with two hermetically sealed, inverter driven, HSS controlled scroll compressors.
 - 2) Each inverter driven, HSS scroll compressor shall be capable of operating in a frequency range from 15 Hz to 150 Hz with control in 0.5 Hz increments.
 - 3) The compressor(s) shall be equipped with a 60 Watt crankcase heater.
 - 4) The compressor shall use a factory charge of Polyvinyl Ether (PVE) oil.
 - 5) The compressor bearing(s) shall have Teflon™ coating.
 - i. The compressor(s) shall be protected with:
 - 1) High Pressure switch
 - 2) Over-current /under current protection
 - 3) Phase failure
 - 4) Phase reversal
 - j. Sensors
 - 1) Each single cabinet shall have
 - a) Suction temperature sensor
 - b) Discharge temperature sensor
 - c) High Pressure sensor
 - d) Low Pressure sensor
 - e) Outdoor temperature sensor
 - f) Outdoor unit heat exchanger temperature sensor
- C. HEAT RECOVERY UNIT (HEAT RECOVERY BOX)
1. General
 - a. HR unit shall be designed and manufactured by the same manufacturer of VRF indoor unit(s) and outdoor unit(s).
 - b. HR unit casing shall be made with galvanized steel.
 - c. HR Unit shall be an intermediate refrigerant control device between the air source outdoor unit and the indoor units to control the systems simultaneous cooling and heating operation.
 - d. HR unit shall be engineered to work with a three pipe VRF system comprising of
 - 1) High Pressure Vapor Pipe
 - 2) Low Pressure Vapor Pipe
 - 3) Liquid Pipe
 - e. HR unit shall be designed to be piped in series or parallel.
 - f. HR unit shall have 1, 2, 3, 4, or more ports.
 - g. Each port shall be capable of operating in cooling or heating independently regardless of the operating mode of any other port on the HR unit or in the system.

- h. HR unit shall be internally piped, wired, assembled and run tested at the factory.
 - i. HR unit shall be designed for installation in a conditioned environment.
 - j. HR unit shall have a liquid bypass valve.
 - k. HR unit shall have (2) two-position solenoid valves per port.
 - l. HR unit shall have a balancing valve to control the pressure between the high pressure and low pressure pipe during mode switching.
 - m. HR unit shall have an electronic expansion valve for subcooling.
 - n. HR unit shall not require a condensate drain.
 - o. HR unit shall be internally insulated.
 - p. All field refrigerant lines between outdoor unit and HR unit and from HR unit to indoor unit shall be field insulated.
 - 2. Controls
 - a. HR unit(s) shall have factory installed unit mounted control boards and integral microprocessor to communicate with other devices in the VRF system.
 - b. HR unit shall communicate with the air source unit via the air source/indoor unit 2-conductor shielded communications cable terminated using a daisy chain configuration.
 - c. The VRF manufacturer shall provide published documentation that specifically allows the installation of field provided isolation valves on all pipes connected to the Heat Recovery unit to allow the servicing of HR units refrigerant circuit or the replacement of HR unit without evacuating the balance of the piping system.
- D. INDOOR UNITS (HORIZONTAL CONCEALED UNITS)
 - 1. General:
 - a. Unit shall be factory assembled, wired, piped and run tested.
 - b. Unit shall be designed to be installed for indoor application.
 - c. Unit shall be designed to mount fully concealed above the finished ceiling.
 - d. Unit shall have opening to supply air from front horizontal and a dedicated rear horizontal return.
 - e. The supply air shall be flanged for field installed ductwork that shall not exceed the external static pressure limitation of the unit.
 - f. Unit shall be capable to be installed with heat pump or heat recovery or cooling VRF system.
 - 2. Casing/Panel
 - a. Unit case shall be manufactured using galvanized steel plate.
 - b. The cold surfaces of the unit shall be covered internally with a coated polystyrene insulating material.
 - c. The cold surfaces of the unit shall be covered externally with sheet insulation made of Ethylene Propylene Diene Monomer (M-Class) (EPDM)
 - d. The external insulation shall be plenum rated and conform to ASTM Standard D-1418.
 - e. Unit shall be provided with hanger brackets designed to support the unit weight on four corners.
 - f. Hanger brackets shall have pre-punched holes designed to accept field supplied, all thread rod hangers.
 - 3. Cabinet Assembly:
 - a. Unit shall have supply air discharge outlets horizontal and a return air inlet horizontal.

- b. Unit shall be equipped with factory installed temperature thermistors for:
 - 1) Return air
 - 2) Refrigerant entering coil
 - 3) Refrigerant leaving coil
 - c. Unit shall have a factory assembled, piped and wired electronic expansion valve (EEV) for refrigerant control.
 - d. Unit shall have a built-in control panel to communicate with other indoor units and to the outdoor unit.
- 4. Unit shall have the following functions as standard:
 - a. Self-diagnostic function
 - b. Auto addressing
 - c. Auto restart function
 - d. Auto changeover function (Heat Recovery system only)
 - e. Auto operation function
 - f. Child lock function
 - g. Forced operation
 - h. Dual thermistor control
 - i. Sleep mode
 - j. External static pressure (ESP) control
 - k. Dual setpoint control
 - l. Multiple aux heater applications
 - m. Filter life and power consumption display
- 5. Fan Assembly:
 - a. The unit shall have two direct drive Sirocco fans made of high strength ABS GP-2200 polymeric resin.
 - b. The fan impeller shall be statically and dynamically balanced.
 - c. The fans shall be mounted on a common shaft.
 - d. The fan motor is Brushless Digitally controlled (BLDC) with permanently lubricated and sealed ball bearings.
 - e. The fan motor shall include thermal, overcurrent and low RPM protection.
 - f. The fan/motor assembly shall be mounted on vibration attenuating rubber grommets.
 - g. The fan speed shall be controlled using microprocessor based direct digitally controlled algorithm.
 - h. In cooling mode, the indoor fan shall have the following settings: Low, Med, High, Power Cool, and Auto.
 - i. In heating mode, the indoor fan shall have the following settings: Low, Med, High, and Auto.
 - j. Each of the settings can be field adjusted from the factory setting (RPM/ESP).
 - k. Unit shall be designed for high speed air volume against an external static pressure of up to 0.98" water gauge.
- 6. Filter Return Box:
 - a. The return air inlet shall be a factory supplied return box.
 - b. The box to have 2" filter bank to have 2" disposable filter
- 7. Coil Assembly:
 - a. Unit shall have a factory built coil comprised of aluminum fins mechanically bonded on copper tubing.

- b. The copper tubing shall have inner grooves for high efficiency heat exchanger.
 - c. Unit shall have a minimum 2-3 row coil, 19-21 fins per inch.
 - d. Unit shall have a factory supplied condensate drain pan below the coil constructed of HIPS (high impact polystyrene resin).
 - e. Unit shall include an installed and wired condensate drain pump capable of providing minimum 27.5 inch lift from bottom surface of the unit.
 - f. The drain pump shall have a safety switch to shut off the unit if condensate rises too high in the drain pan.
 - g. Unit shall have provision of 45° flare refrigerant pipe connections.
 - h. The coil shall be factory pressure tested at a minimum of 551 psig.
 - i. refrigerant piping from outdoor unit to indoor unit shall be field insulated.
8. Microprocessor Control:
- a. The unit shall have a factory installed microprocessor controller capable of performing functions necessary to operate the system.
 - b. The unit shall be able to communicate with other indoor units and the outdoor unit using a field supplied minimum of 18 AWG, 2 core, stranded and shielded communication cable.
 - c. The unit controls shall operate the indoor unit using one of the five operating modes:
 - 1) Auto changeover (Heat Recovery System only)
 - 2) Heating
 - 3) Cooling
 - 4) Dry
 - 5) Fan only
 - d. Electrical:
 - 1) The unit electrical power shall be 208-230/1/60 (V/Ph/Hz)
 - 2) The unit shall be capable of operating within voltage limits of +/- 10% of the rated voltage.
 - e. Controls:
 - 1) Unit shall use controls provided by the manufacturer to perform all functions necessary to operate the system effectively and efficiently and communicate with the outdoor unit over a daisy chain.
- E. INTEGRATED CONTROLS SYSTEM:
- 1. System shall be provided with manufacturer's BACnet/IP gateway and unit controllers for integrating all system components into the Building Automation System.
 - a. General:
 - 1) All indoor units shall maintain settings for temperature set point, start/stop status, operating mode, fan speed, air flow direction in non-volatile memory each time they are changed. These setting shall not be lost upon a power loss event.
 - 2) Entire system shall automatically restart upon a power loss event.
 - b. Control Wiring:
 - 1) All control wiring shall be done per control wiring drawings provided by the manufacturer.
 - 2) Control will be via a 2-wire shielded communication bus connected in series from the outdoor unit(s) to each indoor fan coil unit.
 - c. The following unit controllers shall be:

- 1) Mitsubishi "Smart ME" type room controller. See drawings for locations.
- 2)
- d. BACnet Interface
 - 1) System shall be supplied with a BACnet IP interface. This interface shall allow BMS to monitor and change certain values of system.
 - 2) BACnet interface shall be a hardware-based device and shall mount in BMS control panel. BACnet interface which is software-based and shall run on an IBM-compatible computer is not acceptable.
 - 3) Interface shall be a BACnet Application Specific Controller (B-ASC) device profile compatible with BACnet (ANSI / ASHRAE-135)
 - 4) Interface shall have BACnet IP Data Link Layer (Annex J)
 - 5) Interface shall support COV - Change of Value, Property Array Index and Segmented Requests
 - 6) Interface shall have IPV6 and Foreign Device Registration capability
 - 7) Interface shall have BTL Certification (Operating System Version 6.2 and Later).
 - 8) Interface shall provide as at a minimum the following points:
 - a) Monitoring points: indoor unit Start/stop status, All indoor unit Alarms, All outdoor unit alarms, indoor unit Malfunction codes, outdoor unit malfunction codes, indoor unit mode of operation, return air or space temperature, indoor unit filter inspection required, Outdoor unit compressor status, indoor unit fan status
 - b) Writable points: indoor unit start/stop operation, indoor unit mode of operation, room temperature setting, indoor unit filter inspection reset, remote controller enable/disable, indoor unit fan speed setting, indoor unit air direction setting, forced system stop, forced thermostat disable

2.3 SOURCE QUALITY CONTROL

- A. Verification of Performance: Rate compressor and condenser units according to ARI 206/110.
- B. Energy Efficiency: Equal to or greater than prescribed by ASHRAE/IESNA 90.1, "Energy Efficient Design of New Buildings except Low-Rise Residential Buildings," Section 6, "Heating, Ventilating, and Air-Conditioning."
- C. Test and inspect shell and tube condensers according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
- D. Testing Requirements: Factory test sound-power-level ratings according to ARI 270.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of compressor and condenser units.
- B. Examine roughing-in for refrigerant piping systems to verify actual locations of piping connections before equipment installation.
- C. Examine walls, floors, and roofs for suitable conditions where compressor and condenser units will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Follow all manufacturer's recommendations for installation of system including piping and wiring diagrams, details, and specifications.
- B. Install units level and plumb, firmly anchored in locations indicated.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Loose Components: Install electrical components, devices, and accessories that are not factory mounted.
- E. Refrigerant Pipe System Design Parameters. Installation limitations shall be provided by the unit manufacturer.

3.3 CONNECTIONS

- A. Manufacturer to provide piping specialties and specific piping details.
- B. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.
- C. Connect refrigerant piping to air-cooled compressor and condenser units; maintain required access to unit. Install furnished field-mounted accessories. Refrigerant piping and specialties are specified in Section 232300 "Refrigerant Piping."

3.4 FIELD QUALITY CONTROL

- 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections, and to assist in testing.

- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test. Certify compliance with test parameters.
 - 2. Leak Test: After installation, charge system with refrigerant and oil and test for leaks. Repair leaks, replace lost refrigerant and oil, and retest until no leaks exist.
 - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor operation and unit operation, product capability, and compliance with requirements.
 - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 5. Verify proper airflow over coils.
- C. Verify that vibration isolation and flexible connections properly dampen vibration transmission to structure.
- D. Components will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

3.5 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions and perform the following:
 - a. Inspect for physical damage to unit casing.
 - b. Verify that access doors move freely and are weathertight.
 - c. Clean units and inspect for construction debris.
 - d. Verify that all bolts and screws are tight.
 - e. Adjust vibration isolation and flexible connections.
 - f. Verify that controls are connected and operational.
- B. Lubricate bearings on fan motors.
- C. Verify that fan wheel is rotating in the correct direction and is not vibrating or binding.
- D. Start unit according to manufacturer's written instructions and complete manufacturer's startup checklist.
- E. Measure and record airflow and air temperature rise over coils.
- F. Verify proper operation of condenser capacity control device.
- G. Verify that vibration isolation and flexible connections properly dampen vibration transmission to structure.
- H. After startup and performance test, lubricate bearings where appropriate.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain variable refrigerant flow system and components.

END OF SECTION 237100

SECTION 281300 – ELECTRONIC ACCESS CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes, but is not limited to:
 - 1. Access Control System Software
 - 2. Access Control System Headend Equipment
 - 3. Proximity Readers
 - 4. Credential Cards
 - 5. Door Controllers
 - 6. Video Door Intercom System
 - 7. Miscellaneous Accessories
- B. Related sections include the following:
 - 1. Division 8 – Openings, Windows and Doors
 - 2. Division 26 – Electrical
 - 3. Division 27 – Communications
 - 4. Division 28 – Electronic safety and security

1.2 DESCRIPTION OF WORK

- A. Contractor shall provide all labor, material, equipment, accessories, and licensing required for a complete installation of the Electronic Access Control system as indicated herein and on the drawings.
- B. The Electronic Access Control system shall function as an electronic physical access and situational control system and shall be capable of integrating with alarm monitoring, Video Management System (VMS), ID badging, and database management into a single executable application. The Electronic Access Control system shall function as the primary means of controlling all access and situational control needs. A scalable, open architecture and network ready solution shall allow for an assured access and alarm monitoring solution.

1.3 QUALITY ASSURANCE

- A. The Electronic Access Control components and equipment shall be listed by Underwriters Laboratories, Inc., and the components shall bear the UL label.
- B. The Electronic Access Control shall be installed in accordance with all requirements set by all applicable standards, codes, and regulations including but not limited to the standards referenced in Section 280500 – Common Work Results for Electronic Safety and Security.

- C. All installation practices shall comply with the manufacturer's recommendations.

1.4 SUBMITTALS

- A. Refer to Section 280500 – Common Work Results for Electronic Safety and Security for more information.
- B. The contractor must submit a labeling scheme to the Engineer for approval as part of the submittal documentation. The labeling scheme shall include the cable, faceplate, and patch panel identification. Labeling installed without the Engineers approval will be subject to removal.
- C. Submittals shall be submitted in electronic format (PDF).

1.5 CLOSEOUT DOCUMENTATION

- A. Refer to Section 280500 – Common Work Results for Electronic Safety and Security for more information.
- B. Closeout documentation shall be submitted in electronic format (PDF).

1.6 WARRANTY

- A. All components, parts, and assemblies of the Electronic Access Control supplied by the installer shall be guaranteed against defects in materials and workmanship for a period of 2 years by the manufacturer and installer.
- B. Warranties shall include all labor, material, travel expenses, test equipment, equipment rental and any other expense required to troubleshoot, remove, repair or replace equipment or components to bring the system up to the original performance criteria and operation.
- C. Warranty services shall be provided by an installer certified by the equipment manufacturer during normal business hours.
- D. Provide warranty certificate as part of the closeout documentation.

1.7 TRAINING

- A. Refer to Section 280500 – Common Work Results for Electronic Access Control for more information.
- B. Provide eight (8) training hours for the Electronic Access Control system.
- C. Training shall be video recorded, and recordings shall be submitted as part of the closeout documentation.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

- A. The following manufacturers are approved for the Electronic Access Control:
 - 1. LenelS2
 - 2. RS2 Technologies
 - 3. Open Options (DNA Fusion)
 - 4. Avigilon
 - 5. Genetec

2.2 ELECTRONIC ACCESS CONTROL SYSTEM REQUIREMENTS

- A. The Electronic Access Control system shall be a highly scalable, robust access control and security management system developed using the latest in development technology. The Electronic Access Control system shall provide a singular interface capable of controlling multiple, geographically independent sites and provide alarm monitoring, video management integration, ID badging, personnel and cardholder management, and situational control of all connected devices from a single application.
- B. The Electronic Access Control system must fully support the Authentic Mercury Security Corporation controllers and sub-controllers.
- C. The Electronic Access Control system must support credential readers that communicate via Wiegand, RS-485, or clock and data communications formats.
- D. A sufficient number of controllers and sub-controllers shall be provided to monitor all credential reader, monitor point, and relay point locations shown on plan.
- E. Capacities
 - 1. Maximum intelligent controllers per application server: 256
 - a. Up to 128 application servers
 - b. Intelligent controllers can be geographically independent
 - c. Must support IP and/or RS-485 communication methods
 - 2. Maximum sub-controllers per controller: 32
 - a. This number varies per model of controller
 - b. Some controller models may have a smaller number for maximum sub-controllers
 - 3. Maximum doors per intelligent controller: 64
 - a. This number varies per model of controller
 - b. Some controller models may have a smaller number for maximum doors
 - 4. Maximum pin digits: 15
 - 5. Maximum card formats: Unlimited
 - 6. Maximum Time Schedules per intelligent controller: 255
 - 7. Maximum holidays per intelligent controller: 255
 - 8. Maximum number of personnel records: Unlimited
 - 9. Maximum number of operators: Unlimited
 - 10. Maximum number of client connections: Unlimited

- F. The Electronic Access Control system shall be capable of the following features:
1. Integration with either of the following identity providers for both role-based authorization, and user provisioning:
 - a. Microsoft Active Directory
 - b. Microsoft Azure Active Directory
 2. Disabling of a user account in the backend identity provider will result in disabling physical access to all facilities.
 3. Visitor or temporary guest access credentialing.
 4. Auto unlock a set of doors upon specified authenticated employee/group/visitor arrival.
 5. Email notification for alarms
 6. Manage 2000+ doors, 1500+ user credentials, 40+ building alarm panels
 7. Support for responding to panic buttons, gunfire detection sensors, generic electrical relay
 8. Multi-User/Network Capabilities: The Electronic Access Control system shall support multiple operator workstations via local area network/wide area network (LAN/WAN). The communications between the workstations and the server computer shall utilize the TCP/IP standard over industry standard IEEE 802.3 (Ethernet). The communications between the server and workstations shall be supervised and shall provide the ability to generate alarm messages when the server is unable to communicate with a workstation.
 9. Operating Environment: The Electronic Access Control system shall be a 3-tier client/server, ODBC-compliant application based on Microsoft tools and standards. The Electronic Access Control system application shall operate in the following environments: Microsoft Windows® Server 2008 R2 SP1, Microsoft Windows® 7 Professional SP1 (64-bit), Windows Server 2012 R2, Windows 8.1 Enterprise/Professional, and Windows 10 Enterprise/Professional.
 10. Multi-level Password Protection: The Electronic Access Control system application shall provide multi-level password protection, with user-defined operator name/password combinations. Name/password log-on shall restrict operators to selected areas of the program. The application shall allow the assignment of operator levels to define the system components that each operator has access to view, operate, change, or delete.
 11. NT Authentication: The Electronic Access Control system application will support the implementation of NT authentication, thereby utilizing the credentials supplied by the network administrator to authenticate during the login process of the system.
 12. Strong Password Enforcement: The Electronic Access Control system application shall have an option to enforce strong passwords and by setting minimum character lengths and complexity requirements.
 13. Concurrent Licensing: The Electronic Access Control system shall support concurrent client workstation licensing. The Electronic Access Control system application shall be installed on any number of client workstations and shall provide the ability for any of the client workstations to connect to the application server as long as the maximum number of concurrent connections purchased has not been exceeded.
 14. Access Control Software Suite: The Electronic Access Control system shall be a scalable application such that there is no requirement for separate tiers or editions of software. The same code set used for smaller, more localized installations, shall be the same code set used for enterprise system deployments.

15. Relational Database Management System: The Electronic Access Control system shall support industry standard relational database management systems (RDMS). This shall include the following: Microsoft SQL Server 2012 Express/Enterprise Edition, Microsoft SQL Server 2008 R2 Express/Enterprise Edition, Microsoft SQL Server 2014 Express/Enterprise Edition, Microsoft SQL Server 2016 Express/Enterprise edition, and Microsoft SQL Server 2017 Express/Enterprise Edition.
16. System Partitioning/Filtering: The Electronic Access Control system shall provide the option to restrict access to personnel and hardware data based on login and profile.
17. Encryption: The Electronic Access Control system shall provide multiple levels of data encryption between all components:
 - a. Must support 128-bit or 256-bit AES data encryption between the host and intelligent controllers. The encryption shall ensure data integrity that is compliant with the requirements of FIPS-197 and SCIF environments. Master keys shall be downloaded to the intelligent controller, which shall then be authenticated through the Access Control and Security Management System based on a successful match.
 - b. Transparent database encryption, including log files and backups.
 - c. SQL secure connections via SSL.
18. Time Schedules and Holidays
 - a. Shall support up to 255 individual time schedules per time schedule set.
 - b. Shall support up to 255 individual time schedule sets that are then assignable to intelligent controllers.
 - c. Shall support up to 12 different start and stop intervals for each day, including holidays.
 - d. Shall support time schedule templates to quickly build common time schedules.
 - e. Shall support a copy feature to copy time schedules between time schedule sets.
 - f. Time schedules shall be assignable to any or all access levels or precision access levels.
 - g. Shall support the ability to manually control any or all time schedules programmed in the system by providing the following commands: Temporary Off, Temporary On, Override Off, Override On, and Resume Normal State.
 - h. Shall support the ability for any or all time schedules to be manually controlled by the changing of the Situation Level Manager.
 - i. Shall support up to 255 holiday sets that are then assignable to intelligent controllers.
 - j. Shall support creating a holiday to span up to 365 days.
 - k. Shall support up to eight different holiday types.
19. Access Levels:
 - a. Shall support an unlimited number of access levels.
 - b. Access levels shall be capable of being global or intelligent controller-based.
 - c. Shall support the option to assign activation and deactivation dates/times to access levels.
 - d. Shall support a default time schedule to be assigned to the access level or separate time schedules to individual doors within the access level.
 - e. Shall support eight different access level categories that can then be assigned to operator profiles granting rights to assign the category of access level or not.

- f. Shall support an Info-Ready report named Assigned To that provides a list of all credentials the access level is assigned to with the ability to remove the access level from cardholders directly from the result set window.
- 20. Hardware:
 - a. Shall support a browser-based, hierarchical tree structure that displays the programmed hardware with current states and provides command and control capabilities based on operator privileges.
 - b. The tree structure shall be developed in such a way that it is intuitive for the operator to navigate by providing common groupings of like devices and supports scrolling within the window by a scrollbar or mouse scroll wheel.
 - c. The tree structure shall provide, based on operator privileges, the ability to group edit and control similar devices.
 - d. The tree structure shall have an option to display a tooltip upon hovering over a specific device to obtain detailed status information. Tooltips will be configurable as to size, duration, and content presented when displayed.
- G. All transactions and audits shall be logged by date and time to the database.
- H. Provide Mobile Application:
 - 1. Must have mobile applications supported on Android and iOS devices.
 - 2. Mobile applications will be native applications and not remote/mobile browser solutions.
 - 3. Mobile applications will be available for download from the respective application markets and will not require side loading of any kind.
 - 4. Mobile application will support the following features:
 - a. Secure login using SSL
 - b. Alarm viewing/acknowledgement
 - c. Door status and control
 - d. Add personnel record and take photo using device camera
 - e. Personnel control, to include adding access levels and taking photos using the devices camera
 - f. Direct Command execution allowing for site or system lockdowns
 - g. Trace History reporting
 - h. Live camera viewing from supported/integrated Video Management Systems
- I. Provide API support:
 - 1. Provide API functions that allow for reporting data for external system and providing access for an external system to trigger events (e.g. unlock door, turn lights off)
- J. Provide Video Management System Support:
 - 1. The Electronic Access Control system shall integrate with the video management systems (VMS).
 - 2. Display Live Video: The Electronic Access Control system shall support an option to view live video from a camera connected to an integrated VMS. The cameras from the integrated VMS shall be able to be associated with any hardware device programmed in the Electronic Access Control system and opened automatically on any system event or operator-initiated command sequence.

- K. Provide integration with a video door intercom system:
 - 1. Shall provide a means to integrate intercom master and sub-stations into the application.
 - 2. The master and sub-stations shall be displayed in the Hardware tree in a hierarchical manner (i.e. Master station with associated sub-stations).
 - 3. Shall provide a means in which to control the connected devices by a right-click menu option to execute the following functions:
 - 4. Shall provide the ability to plot the intercom devices on a graphics map.
 - 5. Shall provide the ability for automatic camera call up on intercom device status changes (i.e. Incoming call from sub-station calls up a live camera view).
 - 6. Shall provide a means of triggering system or hardware control actions based on status changes of the connected intercom hardware.

- L. Access Control System Operational Requirements:
 - 1. System Operations:
 - a. Authentication Login: Access Control System shall use an integrated login method that accepts the User ID of the person logging on.
 - b. Graphical Landing Page: Upon login, Access Control System shall display a landing page that displays icons representing the specific functions available in the Access Control System. Users shall be able to click on an icon to automatically access a function page.
 - c. Password: Access Control System shall use an integrated authentication method.
 - d. Facility Access: Access Control System shall be capable of managing operator access to the facility. Operators must have proper authorization to enter the facility.
 - e. Graphical User Interface: Access Control System shall be fully compliant with Microsoft graphical user interface standards, with the look and feel of the software being that of a standard Windows application.
 - f. Status Displays: Web Server shall display status screens that update automatically for system alarms, system events, input status and output status. Web Server shall also display a single event screen that contains events from any or all panels.
 - g. Time Management: Access Control System shall define time zones (blocks of time) to control access. Access Control System shall also configure a default set of holidays and recurring holidays for specific locales.
 - h. Reporting: Access Control System shall generate reports of alarms and events upon request or in real time.

- M. Access Control Functional Requirements:
 - 1. Functions shall include configuring the system, time management, doors, access levels, cards, other I/O, interlocks and users. Functions shall also include monitoring alarms, events, inputs, outputs, and system status, and generating reports. The following features shall be programmable and shall be capable of being modified by a user with the proper authorization:
 - 2. Configuring the System: Access Control System shall monitor common data (time zones, cards, card formats, site codes, holidays, access information and system configuration) and panel-specific data (access level assignments, door/reader configuration, and firmware, network and communications aspects of system configuration).

2.3 ACCESS CONTROL SYSTEM SOFTWARE

- A. Access Control and Security Management System Requirements:
 - 1. The Electronic Access Control software shall run on a single computer, virtual or physical, or on multiple computers allowing scalability in the configured architecture.
 - a. User Interface
 - 1) Windows 7 Enterprise SP1 or higher
 - 2) Windows 10 Enterprise or higher
 - 3) Windows Server 2008 R2 or higher recommended
 - 4) Processor (Intel Core i7 or equivalent) or greater
 - 5) 4 GB RAM or greater
 - 6) 100 GB HDD or greater
 - 7) 10/100 NIC or greater
 - 8) Windows 7 Enterprise, Windows 8/8.1 Enterprise, Windows 10 Enterprise, Windows Server 2008 R2, Windows Server 2012 (*Operating systems must be Professional/Enterprise versions and not Home/Personal editions.)
 - b. Mobile and web interfaces
 - 1) HTML5 Web browser
 - 2) Mobile software for iOS & Android
 - 2. Access Control Software Interfaces
 - a. Open DX – Personnel data exchange tool used for provisioning personnel/cardholder information and access level assignment Electronic Access Control system there by creating a logical link to the authoritative data source. The authoritative data source shall be one or more ActiveX Data Objects (ADO) compliant connections. Some examples of ADO compliant connections are Microsoft Active Directory, PeopleSoft, SQL Server database, CSV file, etc.
 - b. API – A robust Application Programmer's Interface to be used for the integration of 3rd party systems in order to expand the overall Electronic Access Control system. These systems can include, but are not limited to, visitor management systems, video managements systems, identity management systems, intrusion detection systems, and physical security integration modules (PSIM).
- B. The access control software shall be accessible through a web server which supports browser-based configuration using Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari from a PC or Mac.

2.4 ACCESS CONTROL SYSTEM HARDWARE

- A. The access control hardware will be a distributed intelligence, open architecture platform capable of scalability.
- B. The access control hardware shall be offered in two form factors: as board-only product or as enclosed product.
 - 1. The enclosed product shall be offered as a factory, pre-wired unit and must be a UL recognized assembly.
 - 2. The enclosed products must be offered as a 1U rack mountable intelligent controller or as a plenum-rated poly carbonate enclosure.

3. For board-only products, provide enclosure to house the hardware.
- C. The access control hardware shall work in a hierarchical structure, by which an intelligent controller is deployed and control downstream Reader Interface Modules (RIM) or Input/Output Modules (I/OM).
- D. The access control hardware shall support the following communication protocols:
 1. TCP/IP
 2. RS-485
- E. The Electronic Access Control System shall include the access control hardware manufacturers listed in paragraph 2.1 for controllers, reader interface modules, input/output modules, and multiplexers.

2.5 PROXIMITY READERS AND PROXIMITY CARDS

- A. The proximity readers shall provide authorized door entry based on an authorized proximity card presented in close range of the proximity reader.
- B. Proximity Reader:
 1. Shall be contactless proximity reader
 2. Provide reader at entry/exit doors as shown on the drawings.
 3. Shall mount on a standard single gang junction box with mud ring.
 4. Shall be suitable for outdoor applications.
 5. Shall support mobile device access
 6. Shall meet the following:
 - a. Proximity iClass SE
 - b. UL294 certified
 - c. Compatible with both 13.56 MHz and 125 kHz proximity cards
 7. Approved Manufacturer:
 - a. HID iCLASS SE series or approved equal
- C. Proximity Card:
 1. Compatible with proximity readers
 2. Provide a quantity of 200.
 3. Approved Manufacturer:
 - a. HID iCLASS SE series or approved equal

2.6 ELECTRONIC ACCESS CONTROL POWER SUPPLIES

- A. Contractor shall provide manufacturer recommended power supplies to support the Electronic Access Control system hardware.
 1. Contractor shall be responsible for coordinating the location of Electronic Access Control power supplies with the electrical contractor and routing of the cabling required to power Electronic Access Control system hardware.

- B. Power over Ethernet (PoE) shall be acceptable source for powering Electronic Access Control system hardware. Contractor shall coordinate PoE requirements with owner provided switches as part of the submittal documentation.

2.7 VIDEO DOOR INTERCOM SYSTEM

- A. Provide a fully functional video door intercom system as indicated on the drawings and specified herein. The video door intercom system shall be composed of the following:
 - 1. Master Door Intercom Station
 - a. 7-inch touchscreen monitor for clear visitor identification and operational control.
 - b. Provide icon driven One Touch Hands Free operation. Touch the screen to communicate with visitors using the built-in microphone and speaker or use the handset at any time during conversation for privacy.
 - c. Operation: From Master Station. Provide the following:
 - 1) Room Call: Touch screen icon to call a single sub master station or all sub master stations simultaneously.
 - 2) Play: Touch screen icon to play recorded images from door stations.
 - 3) Settings: Touch screen icon to program settings and adjustments.
 - 4) Security: Touch screen icon to activate the security mode or to change security settings.
 - 5) Monitor: Touch screen icon to monitor a door station or sub master station.
 - 6) Option: Touch screen icon to activate the connected external device(s).
 - d. Available Functions During Monitoring: Provide the following.
 - 1) Pan-Tilt-Zoom/Wide camera control.
 - 2) When monitoring is started, an image shall be shown in wide mode. Pan & Tilt and adjusting images shall be possible from the Master Station.
 - 3) Door release shall be possible from the Master Station.
 - 4) Volume control shall be possible from the Master Station.
 - 5) Manual recording shall be possible from the Master Station.
 - e. Physical Characteristics:
 - 1) Power supply: DC 24V (from power supply).
 - 2) Communication: Handset - Simultaneous communication.
 - 3) Communication: Hands-free - Auto-voice actuation.
 - 4) Monitor: 7 inches (180 mm) color LCD monitor.
 - 5) Mounting: Surface Mounted
 - 6) Color: White.
 - 2. Sub-Master Door Intercom Station
 - a. 7-inch touchscreen monitor for clear visitor identification and operational control.
 - b. Provide icon driven One Touch Hands Free operation. Touch the screen to communicate with visitors using the built-in microphone and speaker or use the handset at any time during conversation for privacy.
 - c. Available Functions During Monitoring: Provide the following.
 - 1) Door release shall be possible from the Sub-Master Station.
 - d. Physical Characteristics:
 - 1) Power supply: DC 24V (from power supply).
 - 2) Communication: Handset - Simultaneous communication.

- 3) Communication: Hands-free - Auto-voice actuation.
 - 4) Monitor: 7 inches (180 mm) color LCD monitor.
 - 5) Mounting: Surface Mounted
 - 6) Color: White.
3. Video Door Station
 - a. Surface mount aluminum die-cast color video door station that connects to the master door intercom station.
 - b. Available Functions During Monitoring: Provide the following.
 - 1) 2-way hands-free voice communication with master/sub-master stations.
 - 2) Call button to initiate call.
 - 3) PanTilt Zoom camera lens.
 - 4) White LED illuminator for low light conditions.
 - 5) When the call button on the door is pushed, the inside master station or sub-master station shall ring and video monitor comes on with the image from the door station's camera.
 - c. Physical Characteristics:
 - 1) Camera angle: 170 degrees wide
 - 2) Mounting: Provide mount required for location indicated on drawings.
 - 3) Power: Supplied from master door intercom station.
4. Accessories
 - a. Provide all manufacturer's recommended cabling between the devices for a complete and fully functional system.
 - b. Provide door release adaptor
5. Connection to and integration into the IP video surveillance system and electronic access control system shall be required.
6. Approved Manufacturer:
 - a. Aiphone JP series or approved equal by:
 - 1) Avigilon
 - 2) Commend

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide all components for the Electronic Access Control system as specified herein and as shown on the drawings.
- B. The Electronic Access Control system shall be installed in accordance with TIA standards-based recommendations, the manufacturer's recommendations/installation guides, and industry best practices.
- C. Before programming, meet with the project owner to determine system programming parameters other system settings required to meet owner's needs.

- D. Coordinate installation of the Electronic Access Control system and licensing with the Owner's IT staff prior to installation. Contractor shall be responsible for all equipment, licensing, and programming for a complete and operational system.
- E. Coordinate with Owner regarding network configuration and estimated bandwidth utilization for all Electronic Access Control system equipment operating on the network prior to performing network connections.
- F. Contractor shall be required to coordinate the Electronic Access Control system with all contractors, sub-contractors, and material suppliers involved with the Electronic Access Control system. This shall include, but not be limited to, door hardware supplier(s), elevator, automatic doors, communications cabling, and electrical.
- G. Doors with ADA operators and managed by the Electronic Access Control system shall be cabled, configured, and programmed to require valid credential before ADA push-button can actuate the respective door opener. ADA operator shall not attempt to operate against a locked door in any condition.
- H. All egress doors shall allow individuals to freely exit the door without valid credential unless noted otherwise.

3.2 ACCESS CONTROL SYSTEM PROGRAMMING

- A. Program the Electronic Access Control system to include all interfaces, time-of-day schedules, door groups, access groups, maps, etc.
- B. Install and configure Electronic Access Control System software on existing workstations per the owner's request.
- C. Contractor shall be responsible for the web-based configuration and programming of the Electronic Access Control system.
- D. Contractor shall coordinate an initial meeting with the owner to review programming requirements. Upon completion of the first meeting, the contractor shall develop an initial list of programming requirements. Upon completion of the first meeting the contractor shall program the Electronic Access Control system with the reviewed functions. The contractor shall schedule a second meeting to review the web-based configuration and programming. Once the Electronic Access Control system is fully operational and the owner has operated the system the contractor shall conduct a final meeting with the owner to make any additional programming changes requested.

3.3 LABELING

- A. Identify system components, wiring, and cabling complying with ANSI/TIA-606-C and coordinate with the Engineer and Owner.
- B. All labels shall be typed and printed. Handwritten labels will not be accepted.

- C. Refer to specification section 270553 – Identification for Communications Systems for more information.

3.4 GRAPHICAL MAP

- A. Provide, with no additional licensing fees required, an integrated and robust graphical map module of floor plans and other .JPG or .BMP files for use in plotting hardware and other connected devices programmed in the system onto the graphic layouts.

3.5 VIDEO DOOR INTERCOM SYSTEM INSTALLATION

- A. Mount equipment plumb, level, square, and secure.
- B. For video entrance stations and video door stations, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.

3.6 FIRESTOPPING

- A. Comply with TIA-569-D, Annex A, "Firestopping."
- B. Comply with "Firestopping Systems" Article in BISC's TDMM.

3.7 TESTING

- A. Perform tests and inspections for all the installed Electronic Access Control system per the manufacturer's testing instructions and industry best practices.
- B. Manufacturer's Field Service: A factory-authorized service representative should inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Tests and Inspections:
 - 1. Test of each individual door to assure proper function and proper reporting to the Electronic Access Control System.
 - 2. Visually inspect all components, cable placement, cable termination, and labeling of all components.
- D. Test Schedule: Schedule tests after pretesting has been successfully completed and system has been in normal functional operation for at least thirty (30) days. Provide a minimum of seven (7) days' notice of test schedule.
- E. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation. Test equipment for proper operation in all functional modes.

- F. Electronic Access Control System will be considered defective if it does not pass tests and inspections. Warranty will only begin after official system acceptance.
- G. Provide final test results in PDF format. No special software shall be required to review the test results.

END OF SECTION 281300

SECTION 282300 – IP VIDEO SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes, but is not limited to:
 - 1. Indoor IP video surveillance camera
 - 2. Outdoor IP video surveillance camera
 - 3. Multisensor IP video surveillance camera
 - 4. Video management software (VMS)
 - 5. Video management server
 - 6. Miscellaneous components
 - 7. Installation and termination of all cameras and equipment
- B. Related sections include the following:
 - 1. Division 26 – Electrical
 - 2. Division 27 – Communications
 - 3. Division 28 – Electronic safety and security

1.2 DESCRIPTION OF WORK

- A. The Contractor shall provide a complete IP video surveillance system that includes but is not limited to IP video surveillance cameras with licenses, video management server, and video management software as indicated on the drawings and specified herein. The IP video surveillance system shall provide simultaneous recording with remote viewing and search.
- B. Contractor shall have total “turn-key” responsibility (except where noted) for ensuring the system is installed complete and functional, consistent with the manufacturer's specifications and that all applicable fire, electrical, and building codes and standards are met. Where required by the various codes, the vendor is responsible to obtain the necessary approval(s) of the Authority Having Jurisdiction (AHJ).

1.3 QUALITY ASSURANCE

- A. The IP Video Surveillance System components and equipment shall be listed by Underwriters Laboratories, Inc., and the components shall bear the UL label.
- B. The IP Video Surveillance System shall be installed in accordance with all requirements set by all applicable standards, codes, and regulations including but not limited to the standards referenced in Section 280500 – Common Work Results for Electronic Safety and Security.
 - 1. Video Standards: H.265 / H.264 / MJPEG / HDSM SmartCodec technology.
 - 2. Image Standards: MPEG-4 - ISO/IEC 14496-10 AVC (H.264).

- 3. Networking Standards:
 - a. IEEE 802.3af (Power over Ethernet).
 - b. IEEE 802.1X (Authentication).
 - c. IPv4 (RFC 791).
- C. All installation practices shall comply with the manufacturer's recommendations.
- D. Coordinate with Owner or Owner's representative regarding camera network configuration and estimated bandwidth utilization prior to performing network connections.

1.4 SUBMITTALS

- A. Refer to Section 280500 – Common Work Results for Electronic Safety and Security for more information.
- B. Submittals shall be submitted in electronic format (PDF).

1.5 CLOSEOUT DOCUMENTATION

- A. Refer to Section 280500 – Common Work Results for Electronic Safety and Security for more information.
- B. Closeout documentation shall be submitted in electronic format (PDF).

1.6 WARRANTY

- A. A manufacturer warranty on electronic video devices such as cameras, recorders, servers, storage, encoders, media-convertors and other critical manufacturer equipment, shall provide a limited five (5) year warranty with a one (1) year advanced replacement for the video products to be free of defects in material and workmanship, at no additional cost to the owner.
- B. Warranties shall include all labor, material, travel expenses, test equipment, equipment rental and any other expense required to troubleshoot, remove, repair or replace equipment or components to bring the system up to the original performance criteria and operation.
- C. Warranty services shall be provided by an installer certified by the equipment manufacturer during normal business hours.
- D. Provide warranty certificate as part of the closeout documentation.

1.7 TRAINING

- A. Refer to Section 280500 – Common Work Results for Electronic Safety and Security for more information.

- B. Provide eight (8) training hours for the IP Video Surveillance System.
- C. Training shall be video recorded, and recordings shall be submitted as part of the closeout documentation.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. Multi-sensor camera devices shall have only one CAT5/6 network drop and one camera license on the VMS platform.
- D. All VMS system software shall be of the latest version and have the selected camera(s) driver installed.
- E. Surge Protection: On exterior mounted equipment, protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads. Include surge protection for external wiring of each conductor's entry connection to components.

2.2 CAMERA DEVICE MANAGER

- A. Provide and install the selected camera system manufacturer Device Manager to manage the video surveillance devices in network including IP cameras, encoders, decoders, NVRs and DVRs by enabling users to remotely configure multiple devices simultaneously.
- B. The software shall support backing up and restoring configuration data from multiple cameras. Backup file name shall include model number, IP address, and MAC address, and shall be user editable. Backup and restore shall be performed in parallel or sequential mode, and at a user desired relative or absolute time. The software shall support restoring a single configuration to multiple devices.
- C. The software shall support setting camera image menu adjustments including SDR, white balance, backlight compensation, exposure, day/night, special, & OSD. Image adjustments shall be performed and displayed on a selected camera immediately, and to other selected cameras per model upon selection.

2.3 CAMERA INTELLIGENCE AND ANALYTICS

- A. Cameras shall have a suite of integral intelligent operations and analytic functions at no additional cost to the end-user using the integrated edge-analytics built into each camera models as outlined in product specifications noted.
- B. Contractor shall provide necessary software updates to the VMS and any necessary software plugins for the selected manufacturers cameras and/or VMS.
- C. Camera analytic configuration shall be based on the owner and project requirements outlined in Section 3.

2.4 CAMERA SOFTWARE

- A. The camera shall have a built in web server which supports browser-based configuration using Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari from a PC or Mac.
- B. The web viewer shall provide a monitoring screen which displays live camera video and simultaneously provides same-screen access to the following functions:
 - 1. Live view window size
 - 2. Resolution setting
 - 3. Image (snapshot) capture
 - 4. Manual recording to SD or NAS
 - 5. Audio/microphone control
 - 6. Access recorded data playback and camera configuration menus
 - 7. Digital PTZ
- C. The web viewer shall provide a playback screen which provides access to the following functions:
 - 1. Recorded data search using date and time range
 - 2. Recorded data search using event type
 - 3. Play a recorded video by event triggering
 - 4. Set resolution
 - 5. Play audio if present
 - 6. Generate a backup copy of saved video data
- D. The web viewer shall provide a setup screen which provides access to the following configuration settings and functions in the camera:
 - 1. Digital video profile to include compression type, maximum or target bit rate, frame rate, multicast parameters, crop encoding area
 - 2. User profile to include password, access level, authentication
 - 3. Date and time
 - 4. Network settings and IP version
 - 1) DDNS
 - 2) SSL/TLS, including certificate management
 - 3) 802.1x authentication
 - 4) Quality of Service settings

- 5) SNMP to include version selection and settings
 - 6) Auto configuration
 5. Video setup
 - 1) Flip / mirror mode
 - 2) Video output type
 - 3) Privacy zone
 6. Audio setup to include source, audio codec type, gain, and bit rate
 7. Camera settings to include image preset, sensor frame capture, dynamic range, white balance, back light, exposure, day/night operation, on-screen display, IR illumination, sharpness, contrast, color level, lens distortion correction.
 8. Event detection setup to include notification parameters, recording rules, time schedule, tamper protection, motion detection, event triggers
 9. System function to include reboot, upgrade, check system and event logs, application (SDK) management
 10. View profile information
- E. Client requirements
1. Recommend Browser: Chrome
 2. Acceptable Browser: Chrome, Safari, Firefox, MS Edge (chromium based)
 3. Acceptable Operating Systems: Windows, MAC, Android, iOS, Chrome
 4. Verified Environment:
 - 1) Windows 10 : Google chrome version 80 above, Firefox version 72 above, MS Edge version 83 above
 - 2) Mac 10.13/14: Safari version 11.0.1 above
- F. Decoding performance in web viewer depends on CPU/GPU performance of user.

2.5 INDOOR IP VIDEO SURVEILLANCE CAMERA

- A. Provide indoor IP video surveillance camera as indicated on the drawings and specified herein.
- B. The indoor IP video surveillance camera shall meet or exceed the following:
1. Resolution: Refer to camera schedule on drawings
 2. Vandal resistant rated housing
 3. Lens: Refer to camera schedule on drawings
 4. Interoperability: ONVIF compliant
 5. Micro SD/SDHC/SDXC memory slot
 6. Uni-directional audio
 7. Network: RJ-45 10/100Base-T
 8. Power: PoE up to IEEE 802.3af Class 3 PoE compliant
 9. H.265, H.264, MJPEG multi-stream
 10. Imaging Rate: 15 fps
 11. True wide dynamic range
 12. Minimum Illumination:
 - a. Color: 0.095 lux (F1.6 1/30sec).
 - b. Monochrome: 0 lux

- C. Installation and Maintenance Requirements: Provide video cameras with the following installation and maintenance requirements:
 - 1. Allow firmware updates via network.
 - 2. Store customer-specific settings in a non-volatile memory which cannot be lost during power cuts or soft reset.
- D. Provide camera mount to match items supported and mounting conditions.
- E. Approved manufacturer:
 - 1. Hanwha or approved equal by:
 - a. Avigilon
 - b. Vicon
 - c. Axis
 - 2. Refer to camera schedule on drawings for the basis of design model number. Approved equals must meet or exceed the specifications of the basis of design camera indicated on the camera schedules.

2.6 OUTDOOR IP VIDEO SURVEILLANCE CAMERA

- A. Provide outdoor rated IP video surveillance camera as indicated on the drawings and specified herein.
- B. The outdoor rated IP video surveillance camera shall meet or exceed the following:
 - 1. Resolution: Refer to camera schedule on drawings
 - 2. Vandal resistant rated housing
 - 3. Lens: Refer to camera schedule on drawings
 - 4. Interoperability: ONVIF compliant
 - 5. Micro SD/SDHC/SDXC memory slot
 - 6. Network: RJ-45 10/100Base-T
 - 7. Power: PoE up to IEEE 802.3af Class 3 PoE compliant
 - 8. H.265, H.264, MJPEG multi-stream
 - 9. Imaging Rate: 15 fps
 - 10. True wide dynamic range
 - 11. Minimum Illumination:
 - a. Color: 0.15 lux (F1.6 1/30sec).
 - b. Monochrome: 0 lux
- C. Installation and Maintenance Requirements: Provide video cameras with the following installation and maintenance requirements:
 - 1. Allow firmware updates via network.
 - 2. Store customer-specific settings in a non-volatile memory which cannot be lost during power cuts or soft reset.
- D. Provide camera mount to match items supported and mounting conditions. Camera mount shown meet the following requirements:
 - 1. Camera viewing window:
 - 2. Enclosure Rating: IP66

3. Finish: Factory finished using manufacturer's standard finishing process suitable for the environment.
 4. Built in thermostat activated heater and blower units.
 5. Provide protective housing for all exterior cameras.
 6. All exterior cameras shall utilize pendant arm mounts.
- E. Approved manufacturer:
1. Hanwha or approved equal by:
 - a. Avigilon
 - b. Vicon
 - c. Axis
 2. Refer to camera schedule on drawings for the basis of design model number. Approved equals must meet or exceed the specifications of the basis of design camera indicated on the camera schedules.

2.7 MULTISENSOR IP VIDEO SURVEILLANCE CAMERA

- A. Provide multisensor IP video surveillance camera as indicated on the drawings and specified herein.
- B. The multisensor IP video surveillance camera shall meet or exceed the following:
1. Resolution: Refer to camera schedule on drawings
 2. Vandal resistant rated housing
 3. Lens: Refer to camera schedule on drawings
 4. Interoperability: ONVIF compliant
 5. Micro SD/SDHC/SDXC memory slot
 6. Network: RJ-45 10/100Base-T
 7. Power: PoE up to IEEE 802.3af Class 3 PoE compliant
 8. H.265, H.264, MJPEG multi-stream
 9. Imaging Rate: 15 fps
 10. True wide dynamic range
 11. Minimum Illumination:
 - a. Color: 0.04 lux (F2.2 1/30sec).
 - b. Monochrome: 0.004 lux (F2.2 1/30sec).
- C. Installation and Maintenance Requirements: Provide video cameras with the following installation and maintenance requirements:
1. Allow firmware updates via network.
 2. Store customer-specific settings in a non-volatile memory which cannot be lost during power cuts or soft reset.
- D. Provide camera mount to match items supported and mounting conditions. Camera mount shown meet the following requirements:
1. Camera viewing window:
 2. Enclosure Rating: IP66
 3. Finish: Factory finished using manufacturer's standard finishing process suitable for the environment.

4. Built in thermostat activated heater and blower units.
 5. Provide protective housing for all exterior cameras.
 6. All exterior cameras shall utilize pendant arm mounts.
- E. Approved manufacturer:
1. Hanwha or approved equal by:
 - a. Avigilon
 - b. Vicon
 - c. Axis
 2. Refer to camera schedule on drawings for the basis of design model number. Approved equals must meet or exceed the specifications of the basis of design camera indicated on the camera schedules.

2.8 VIDEO MANAGEMENT SOFTWARE

- A. The video management software shall have features for viewing live and recorded video from IP cameras connected to a local and wide area network.
- B. The video management software shall have a Client-Server based architecture that can be configured as a standalone video management software with the Client software running on the server hardware and/or the Client running on any network connected TCP/IP PC workstation.
- C. The video management software shall allow for multiple client workstations to be capable of simultaneously viewing live and/or recorded video from a single or multiple servers.
- D. The video management software shall allow for view multiple servers simultaneously to provide live and/or recorded video to a single or multiple workstation(s). Included in the cost of the software are an unlimited number of client software applications.
- E. The specified software shall be a one-time license cost per channel and include, free of charge, any and all software updates, API or SDKs necessary to integrate 3rd party devices and systems.
- F. Lifetime software upgrades shall be provided by the Manufacturer without cost and without the need for an annual maintenance agreement or ongoing licensing costs.
- G. The video management software shall be comprised of four (4) applications which work together seamlessly.
 1. Cloud - a cloud application that enables simple remote connectivity, viewing, and management of an unlimited number of systems and users.
 - a. The VMS Cloud application will allow users to log in from any modern web browser (Google Chrome, Mozilla Firefox, Microsoft Edge, Opera, etc.) from any type of device (mobile, pc, etc.)
 2. Server - a media server responsible for discovering, connecting to, and managing system users, devices, and associated data.
 - a. The VMS Server application will be capable of operating on any hardware able to run a compatible operating system.

- b. The VMS Server will be capable of recording 128 dual-streaming IP cameras (256 streams) on a single core of an Intel Core i3 processor.
 - c. Supported operating systems:
 - 1) Microsoft Windows:
 - a) Windows 7
 - b) Windows 8
 - c) Windows 8.1
 - d) Windows 10
 - e) Windows Server 2012
 - f) Windows Server 2012 R2
 - g) Windows Server 2016 (Long-Term Servicing Channel) 1607
 - h) Windows 10 Enterprise
 - 2) Ubuntu Linus
 - a) Ubuntu 16.04 LTS: "Xenial Xerus"
 - b) Ubuntu 18.04 LTS
 - 3) NVIDIA Jetson Support
 - a) NVIDIA Tx1 and Tx2
3. Desktop - a desktop application capable of acting as a stand-alone media player or as a client application for connecting to and managing systems.
- a. The VMS Desktop application will be capable of operating on any hardware able to run a compatible operating system with a CPU that supports OpenGL 2.1 and Intel HD Graphics 3000 (or higher).
 - b. The VMS Desktop application shall not require any dedicated graphics drive to work at full capacity (64 streams on a 64 bit OS) and shall use the CPU for all video decoding and rendering.
 - c. Supported operating systems:
 - 1) Microsoft Windows:
 - a) Windows 7
 - b) Windows 8
 - c) Windows 8.1
 - d) Windows 10
 - e) Windows Server 2012
 - f) Windows Server 2012 R2
 - g) Windows Server 2016 (Long-Term Servicing Channel) 1607
 - h) Windows 10 Enterprise
 - 2) Ubuntu Linus
 - a) Ubuntu 14.04 LTS
 - b) Ubuntu 16.04 LTS: "Xenial Xerus"
 - c) Ubuntu 18.04 LTS
 - 3) Apple/Mac
 - a) OSX 10.11: "El Capitan"
 - b) OSX 10.12: "Sierra"
 - c) OSX 10.13: "High Sierra"
4. Mobile - a mobile application for iOS and Android devices that allows users to connect to, view, search, and control IP cameras over Wifi or Data networks.
- a. The VMS Mobile application will be available as a free download from Google Play or Apple iTunes stores.

- b. Supported operating systems:
 - 1) Google Android:
 - a) Android 8.0, 8.1: "Oreo"
 - b) Android 9.0
 - c) Most current version
 - 2) Apple iOS:
 - a) iOS 11.4
 - b) iOS 12.1
 - c) iOS 12.2
 - d) iOS 12.3
 - e) Most current version
- H. Approved manufacturer:
 - 1. Wisenet WAVE or approved equal by:
 - a. Exacq Technologies
 - b. Avigilon
 - c. Vicon
 - d. Axis
 - e. Genetec

2.9 VIDEO MANAGEMENT SERVER

- A. Provide a rack mounted video management server for recording and storing video signals from the IP Video surveillance cameras.
- B. The video management server shall meet or exceed the following:
 - 1. Video compression: H.265, H.264, MPEG-4, MJPEG
 - 2. 2U rack-mountable.
 - 3. Professional licenses for all camera channels.
 - 4. RAID 6 pre-configured.
 - 5. 470 Mbps recording B/W, 14 HDD Bay (3.5").
 - 6. Intel Xeon Silver 4210, 16GB RAM.
 - 7. Dual 240GB SSD OS drives (RAID 1).
 - 8. Windows 10 Pro.
 - 9. Support RAID 0/1/5/6 + 8GB NV cache.
 - 10. VGA output, Quad GbE NICs.
 - 11. IPMI, Redundant 750W power supplies.
 - 12. Keyboard and mouse included.
 - 13. Rail kit included.
- C. Provide rack-mounted keyboard video, and mouse (KVM).
 - 1. KVM shall be a rack mounted monitor, keyboard, and mouse for direct access and management of the VMS server. The KVM shall meet or exceed the following:
 - a. 15" diagonal LCD monitor
 - b. Approved manufacturers:
 - 1) Dell
 - 2) APC

3) Middle Atlantic

- D. The video management server shall come with the video management software pre-installed on the server.
- E. The video management server shall be sized to meet the following storage requirements:
 - 1. Configured RAID 6.
 - 2. Thirty (30) days immediately accessible on-board recording to review recorded events.
 - 3. Storage shall be configured at minimally 40% motion, recorded at the cameras highest resolution at a minimum of fifteen (15) frames per second.
 - 4. Recording resolution at H.265 with smart codec compression enabled.
 - 5. Calculations shall take into consideration multi-sensor camera channels.
- F. Provide all required camera licenses with the video management server.
- G. Approved manufacturer:
 - 1. Same manufacturer as the video management software or approved equal by:
 - a. Dell
 - b. HP

2.10 NETWORK SWITCHING

- A. All network switching for the IP video surveillance system will be provided by the owner.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide all components for the IP video surveillance system as specified herein and as shown on the drawings.
- B. The IP video surveillance system shall be installed in accordance with TIA standards-based recommendations, the manufacturer's recommendations/installation guides, and industry best practices.
- C. Before programming, meet with the project owner to determine system programming parameters, camera mounting location, desired field of view, analytics configuration and other system settings required to meet owner's needs.
- D. Coordinate installation of IP video surveillance cameras, video management server, and licensing with the Owner's IT staff prior to installation. Contractor shall be responsible for all equipment, licensing, and programming for a complete and operational system.
- E. Coordinate with Owner regarding network configuration and estimated bandwidth utilization for all IP video surveillance equipment operating on the network prior to performing network connections.

3.2 IP VIDEO SURVEILLANCE CAMERA INSTALLATION:

- A. Install cameras and other appurtenances level and plumb for a high quality, workman-like installation.
- B. Provide and install all necessary mounting accessories to include caps, mounts, brackets, pendants, etc. as necessary for the environment to accommodate field of views required by the owner.
- C. Aim cameras as directed by engineer and/or owner. Optimize system settings both day and night for exact field of view, WDR, Day/Night, analytics, etc.
- D. Coordinate final views of all IP video surveillance cameras with Owner prior to installation.
- E. Provide camera titles and placement in software with Owner prior to installation.

3.3 CYBERSECURITY PROTECTION

- A. All equipment requiring users to log on using a password to be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed. Contractor shall implement all camera manufacturer's cyber security recommendations and configurations, following industry best practices per the camera manufacturer Cyber Hardening Guide.
- B. Document that all cameras do not have a default password.
- C. Document that all cameras have the latest firmware installed.
- D. Back up all camera settings utilizing manufacturer camera Device Manager and provide file to owner.
- E. Document that all servers and work stations have current version of Operating System (OS).
- F. Document that latest VMS version that is installed on all servers and work stations.
- G. Set user permissions and rules in VMS.

3.4 VIDEO MANAGEMENT SOFTWARE PROGRAMMING

- A. Program camera system head end. Provide unique on-screen camera identification for all cameras with the following nomenclature:
 - 1. Camera title, date, and time
 - 2. Tours and Salvos (if required)
 - 3. On screen display feature tiles
 - 4. Individual user settings and rights.
- B. Program all system analytics system parameters as directed by the engineer and/or owner.

- C. Install and configure VMS software on existing workstations per the owner's request.
- D. Contractor shall be responsible for the web-based configuration and programming of the IP video surveillance system.
- E. Contractor shall coordinate an initial meeting with the owner to review programming requirements. Upon completion of the first meeting, the contractor shall develop an initial list of programming requirements. Upon completion of the first meeting the contractor shall program the IP video surveillance system with the reviewed functions. The contractor shall schedule a second meeting to review the web-based configuration and programming. Once the IP video surveillance system is fully operational and the owner has operated the system the contractor shall conduct a final meeting with the owner to make any additional programming changes requested.

3.5 LABELING

- A. Identify system components, wiring, and cabling complying with ANSI/TIA-606-C and coordinate with the Engineer and Owner.
- B. All labels shall be typed and printed. Handwritten labels will not be accepted.
- C. Refer to specification section 270553 – Identification for Communications Systems for more information.

3.6 FIRESTOPPING

- A. Comply with TIA-569-D, Annex A, "Firestopping."
- B. Comply with "Firestopping Systems" Article in BISC's TDMM.

3.7 TESTING

- A. Perform tests and inspections for all the installed IP video surveillance system.
- B. Manufacturer's Field Service: A factory-authorized service representative should inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Tests and Inspections:
 - 1. Inspection: Verify that units and controls are properly installed, connected, and labeled, and that interconnecting wires and terminals are identified.
 - 2. Pretesting: Align and adjust system and pretest components, wiring, and functions to verify that they comply with specified requirements. Conduct tests at varying lighting levels, including day and night scenes as applicable. Prepare video-surveillance equipment for acceptance and operational testing as follows:

- a. Verify proper fields of view, operation of auto-iris lenses, maximize WDR and day/night settings for the environment.
 - b. Set back-focus of fixed focal length lenses if necessary.
 - c. Set and name all preset positions; consult Owner's personnel.
 - d. Set sensitivity of motion detection and other analytics.
 - e. Set, test and correct as needed, all analytical parameters per the owner and/or engineer.
 - f. Connect and verify responses to alarms.
 - g. Verify operation of control-station equipment.
 - h. Validate all Cybersecurity requirements.
 - i. Third Party Integrations (if required): Test each individual alarm point and validate camera call-up, camera pre-position and other settings required for a fully integrated system.
- D. Test Schedule: Schedule tests after pretesting has been successfully completed and system has been in normal functional operation for at least thirty (30) days. Provide a minimum of seven (7) days' notice of test schedule.
1. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation. Test equipment for proper operation in all functional modes.
- E. IP Video Surveillance System will be considered defective if it does not pass tests and inspections. Warranty will only begin after official system acceptance.
- F. Provide final test results in PDF format. No special software shall be required to review the test results.

3.8 ADJUSTING

- A. Within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions and to optimize performance of the installed equipment. Tasks shall include, but are not limited to, the following:
1. Check cable connections.
 2. Check proper operation of cameras and lenses.
 3. Adjust all preset positions; consult Owner's personnel.
- B. Provide a written report of adjustments and recommendations.

END OF SECTION 282300

SECTION 32 31 11 – GATE OPERATORS

PART 1 GENERAL

1.1 SUBMITTALS

- A. Action Submittals:
 - 1. Shop Drawings: Illustrate products, installation, and relationship to adjacent construction.
 - 2. Product Data: Manufacturer's descriptive data and product attributes.
- B. Closeout Submittals:
 - 1. Operation and Maintenance Data.

1.2 QUALITY ASSURANCE

- A. Installer Qualifications: Firm specializing in work of this Section, with minimum 2 years' experience.

1.3 WARRANTY

- A. Manufacturer's five-year warranty against material and manufacturing defects.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on products by LiftMaster. www.LiftMaster.com
- B. Substitutions: Reference Division 01 for substitutions.

2.2 MANUFACTURED UNITS

- A. Swing Gate Operators:
 - 1. Model: CSW200UL.
 - 2. Operation: Gear driven.
 - 3. Meet UL 325, UL 991, ASTM F2200, and CAS C22.2 No. 247.
 - 4. Motor: 24 VDC, continuous duty type, sized to gate conditions.
 - 5. Monitoring and controls:
 - a. Internet connectivity: MyQ technology with 50 channel FHSS.
 - b. Radio receiver: Security+ 2.0 technology.
 - c. Monitored retro reflective photo eye.
 - 6. Accessories:
 - a. Monitored safety devices: Through-beam photo eyes.
 - b. Wired monitored safety edges: Small profile edge.
 - c. CAPXLV or CAPXM Smart video intercom.
 - d. Wireless commercial keypad.
 - e. Plug-in loop detector.
 - f. Heater kit.

PART 3 EXECUTION

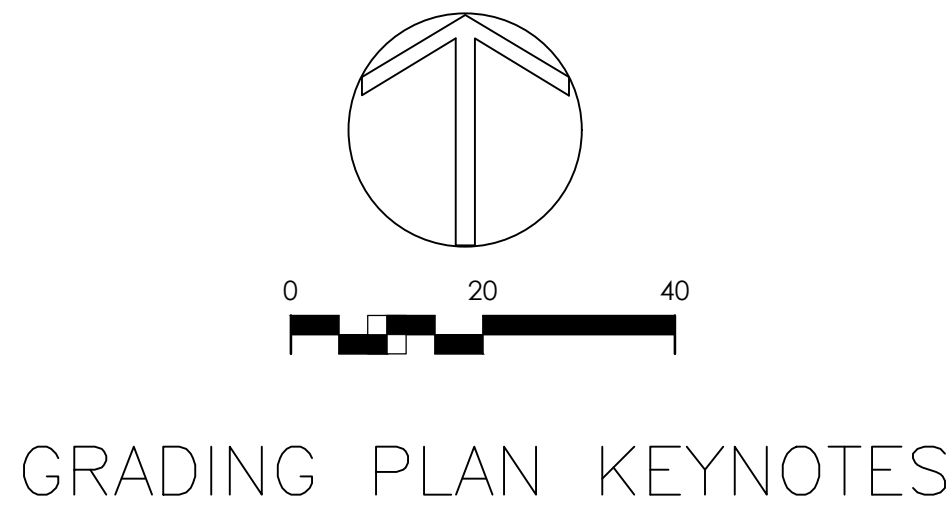
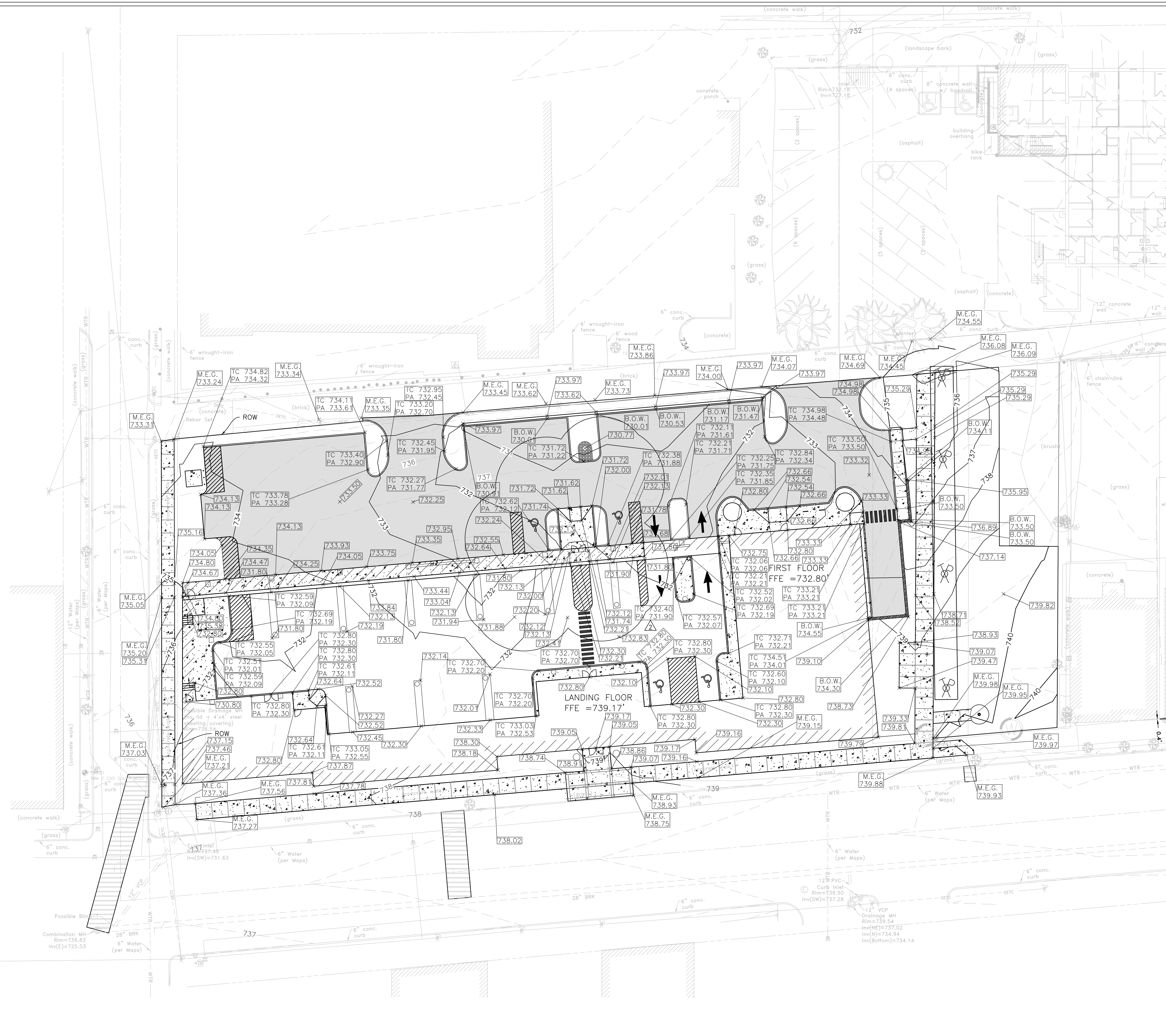
3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.2 CLOSEOUT ACTIVITIES

- A. Test and adjust operators for proper operation.
- B. Demonstration: Demonstrate operation and programming of operators to Owner.

END OF SECTION 32 31 11



EXISTING CONTOUR	700
SPOT ELEVATION	851.75
PROPOSED CONTOUR	700
MATCH EXISTING GRADE	M.E.G. 851.75
BOTTOM OF RETAINING WALL	B.O.W. 851.75
TOP OF CURB PAVEMENT	TC 851.75 PA 851.25



618 East Market Street
Indianapolis, Indiana 46202
phone 317.264.8162
axisarch.com

Scale Drawings:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the location of the building. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated or described, the basic construction and detail of items required for the proper execution and completion of work.

DESIGNED BY	SS
CHECKED BY	HF
DATE ISSUED	09/12/2022

REVISIONS:	DATE
2 ADDENDUM #2	10/6/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 662 0123

CIVIL ENGINEER
JACK
HANNAH FLECK, PE
8405 ALLEN FORNEY BLVD, Suite 425
Indianapolis, IN 46250
PH 317 661 1964

STRUCTURAL ENGINEER
JACK
DANIEL BURCH, PE
8405 ALLEN FORNEY BLVD, Suite 425
Indianapolis, IN 46250
PH 317 661 1964

MEP ENGINEER
KRSO CONSULTING
3501 LEXINGTON, PE, Managing Partner
1344 South Rangeline Road, Suite 202
Carmel, Indiana 46032
PH 317 344 8044

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, P.L.A., A.S.A.
105 N HANCOCK ST #200
Chicago, IL 60601
PH 800 363 0168

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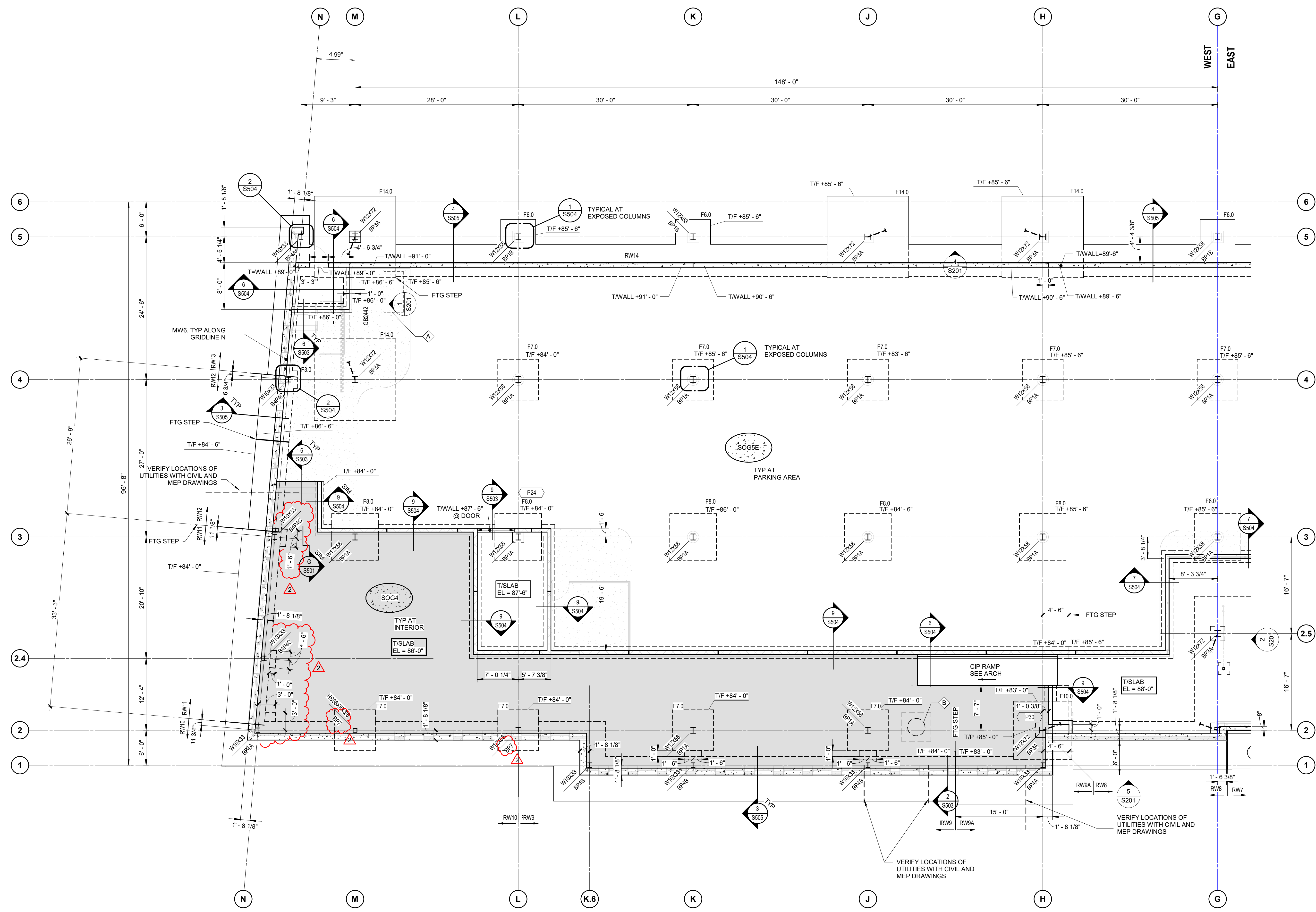
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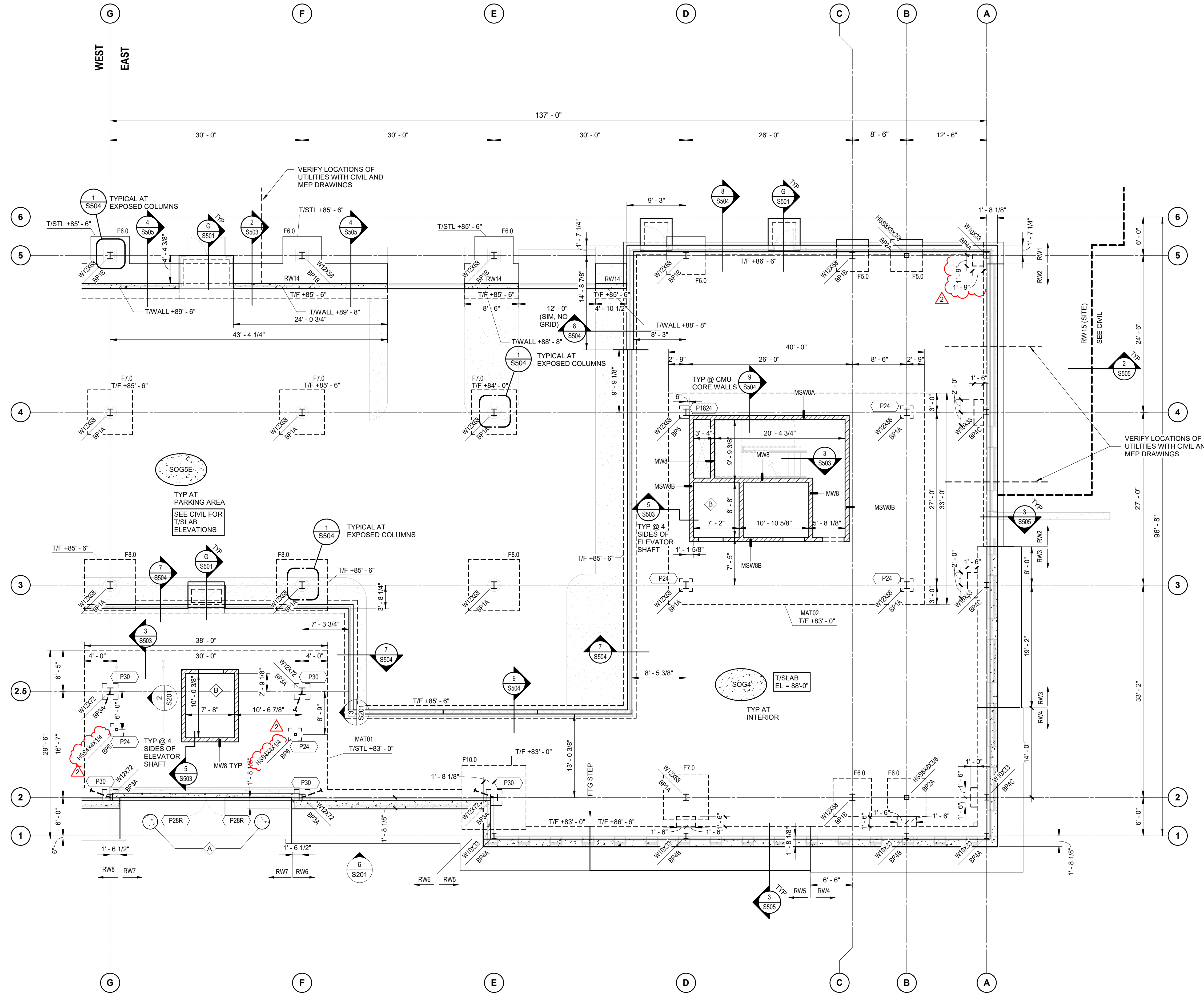
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GRADING PLAN

CG101

PROJECT NUMBER: 2021029





FOUNDATION PLAN - EAST

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



FOUNDATION PLAN NOTES:

- REFERENCE TOP OF SLAB (T/SLAB) = PER PLAN
- TOP OF FOOTING (T/F) 86'-6" UNO.
- TOP OF PIER (T/PIER) = 87'-0" UNO.
- SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
- GALVANIZE ALL STEEL MEMBERS OUTSIDE OF BUILDING ENVELOPE.

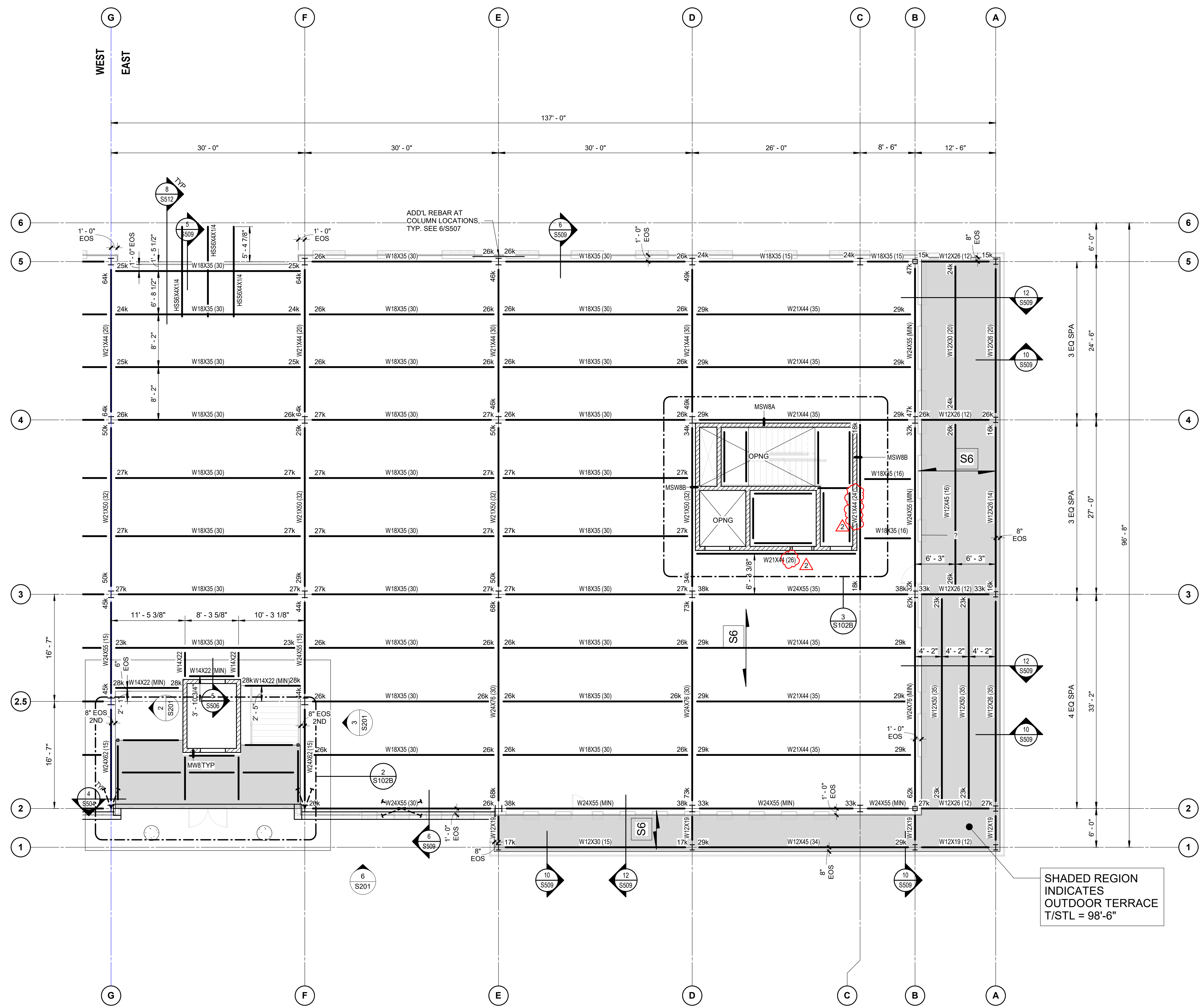
FOUNDATION KEY PLAN NOTES - EAST

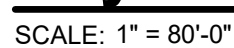
#	NOTE
A	PROVIDE PIERS FOR STEEL TRELLIS SUPPORT - T/PIER = 95'-8" - ALTERNATE #7.
B	PROVIDE ELEVATOR SUMP PIT PER TYPICAL ELEVATOR SUMP PIT DETAIL. COORDINATE SIZE AND LOCATION WITH ELEVATOR SUPPLIER.

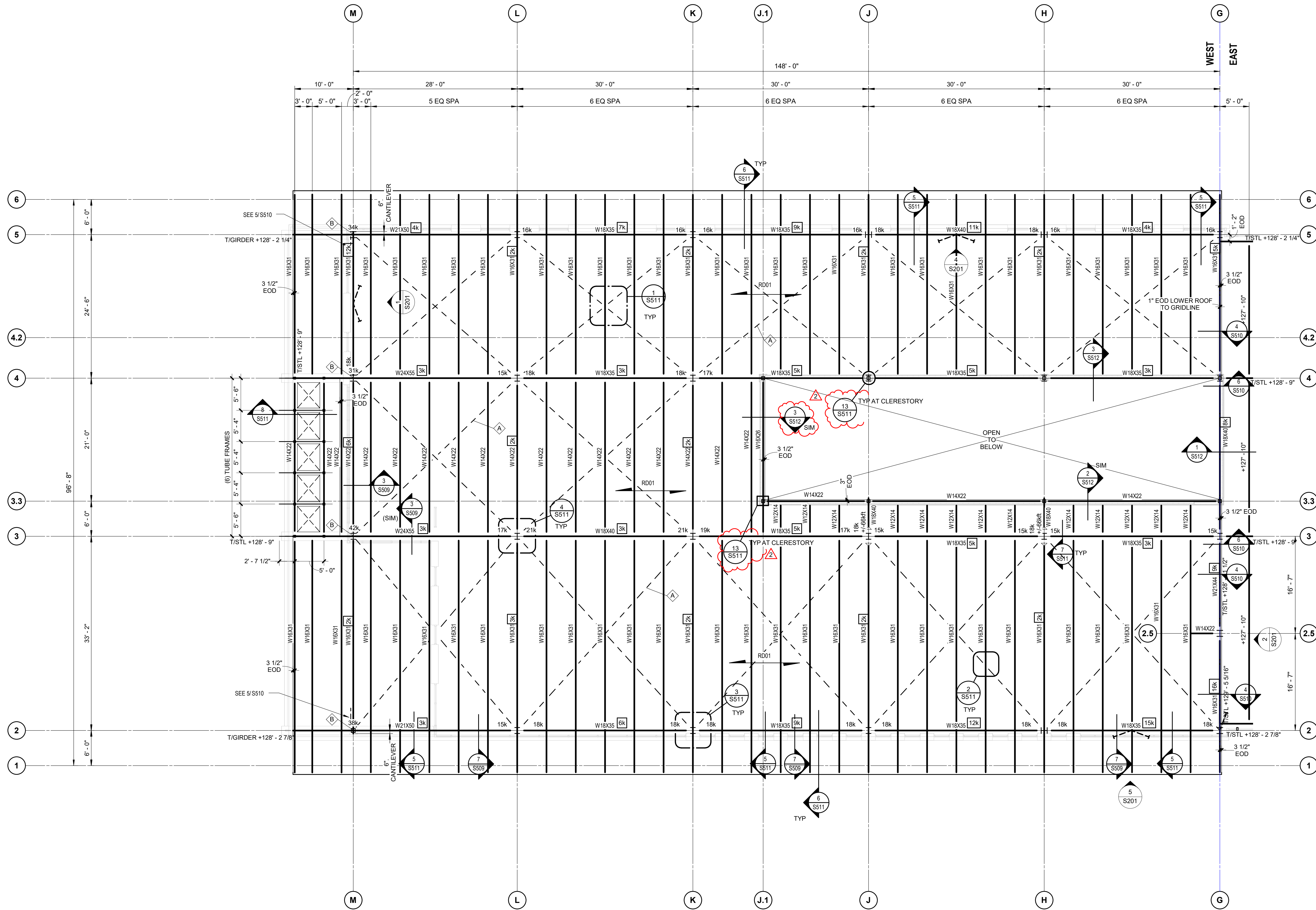
WEST EAST

Key Plan

SCALE: 1" = 80'-0"

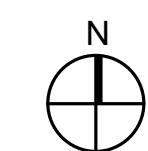






MAIN ROOF FRAMING PLAN - WEST

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

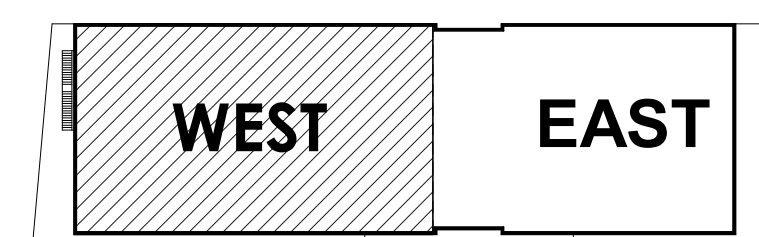


FRAMING PLAN NOTES:

1. TOP OF STEEL (T/STL) ELEVATION = VARIES. SEE PLAN.
2. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
3. COORDINATE DECK AND SLAB OPENINGS - EXACT SIZE AND LOCATION, WITH MECHANICAL AND PLUMBING CONTRACTOR DRAWINGS AND EQUIPMENT SUPPLIER.
4. VERIFY EQUIPMENT SIZE, WEIGHT, AND LOCATION WITH MECHANICAL CONTRACTOR.
5. GALVANIZE ALL STEEL MEMBERS OUTSIDE OF BUILDING ENVELOPE.

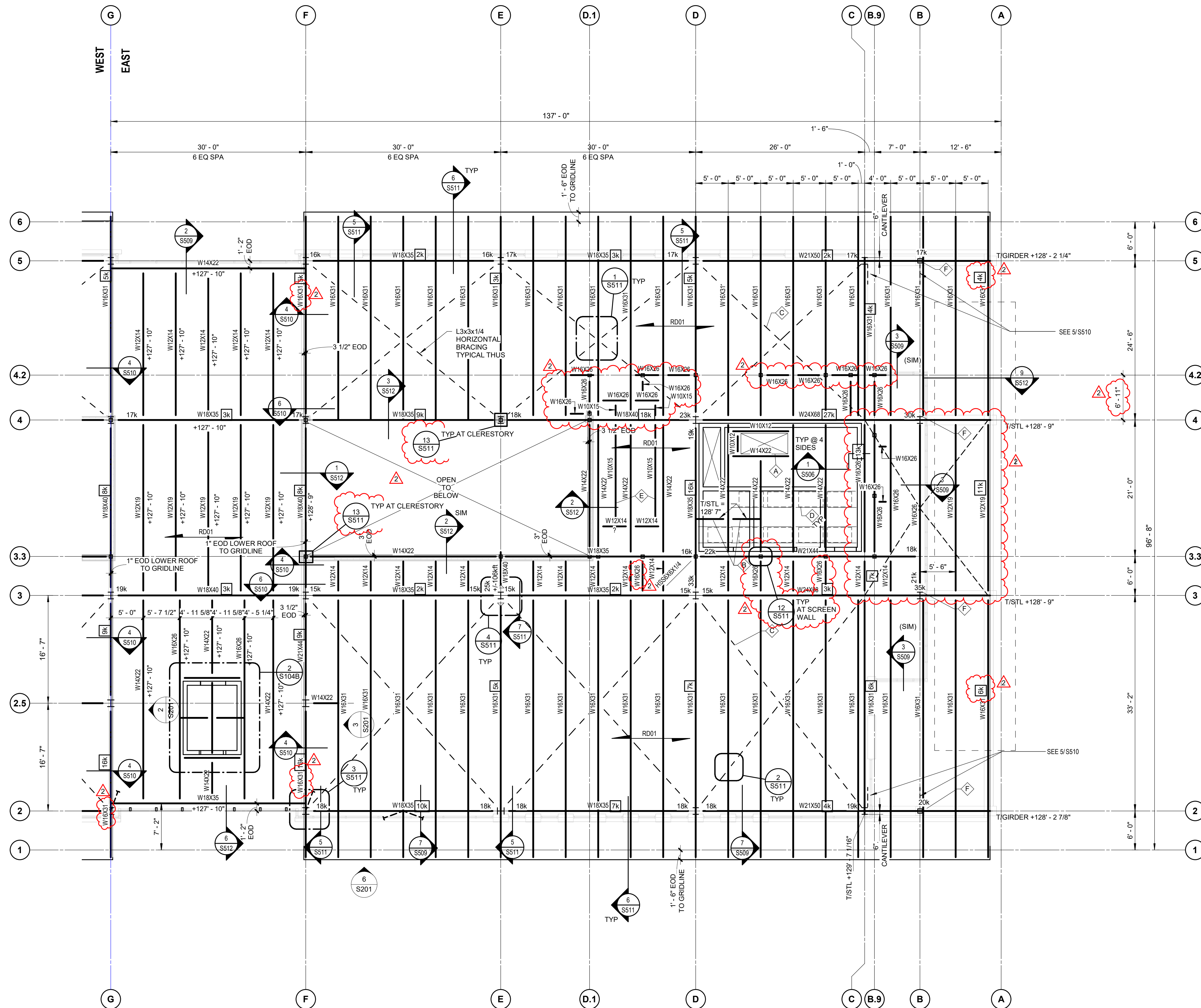
MAIN ROOF FRAMING PLAN KEY NOTES - WEST

#	NOTE
A	L3x3x1/4 HORIZONTAL BRACING, TYPICAL
B	BEAM CANTILEVERED OVER COLUMN. SEE 10/SS11 LOAD SHOWN IS COMBINED REACTION FROM BOTH SIDES OF COLUMN.



Key Plan

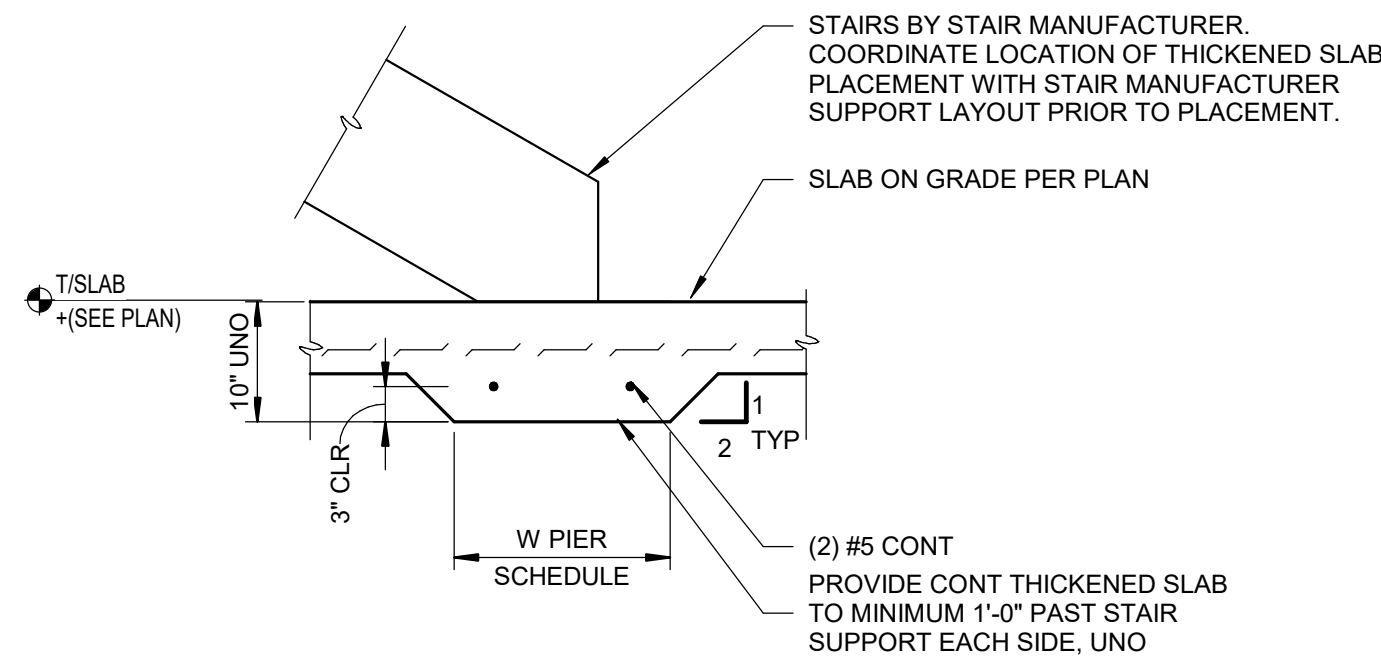
SCALE: 1" = 80'-0"



3
S503

TYP THICKENED SLAB AT STAIRS

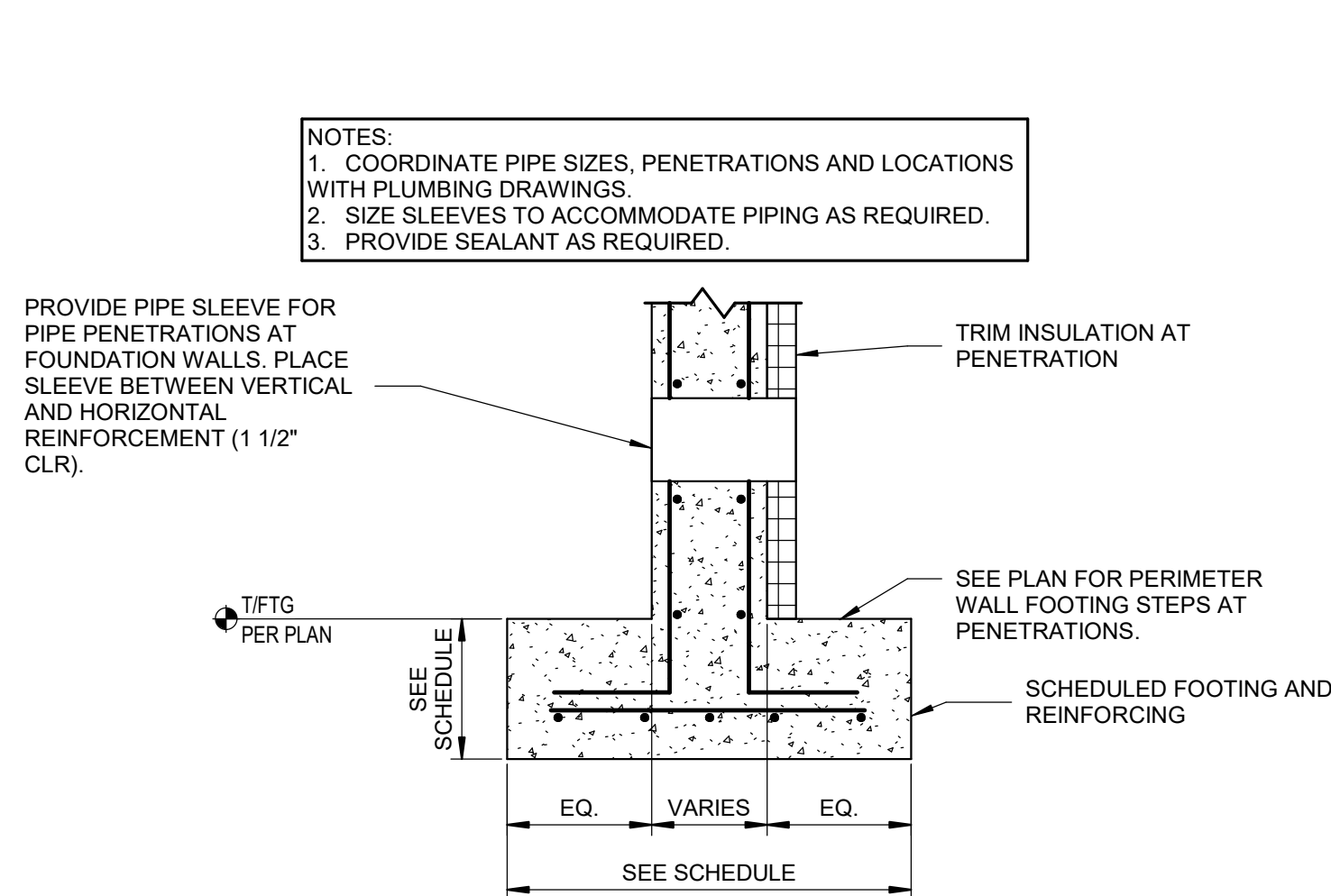
SCALE: 3/4" = 1'-0"



2
S503

PIPE PENETRATION THROUGH FOUNDATION WALL

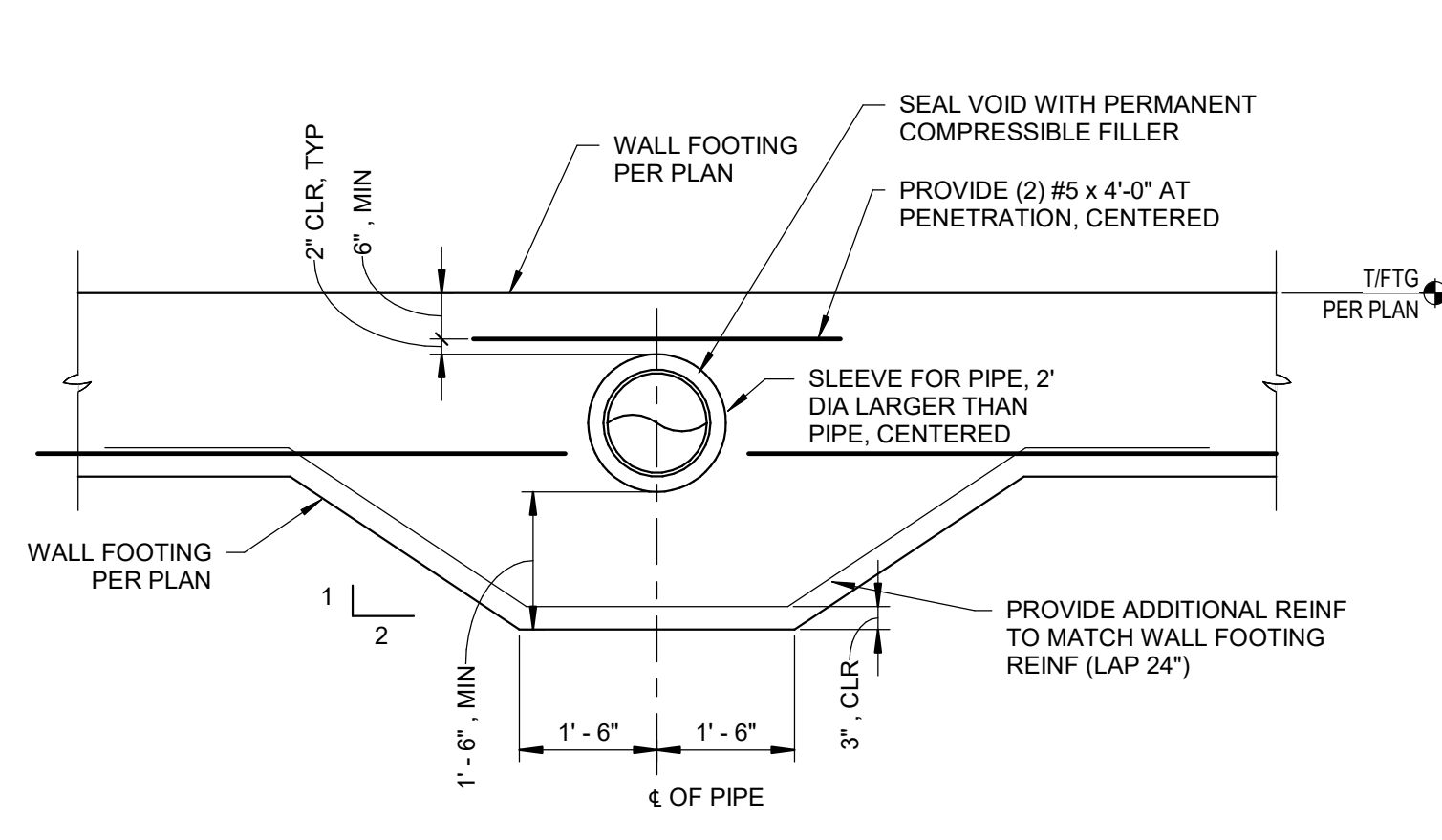
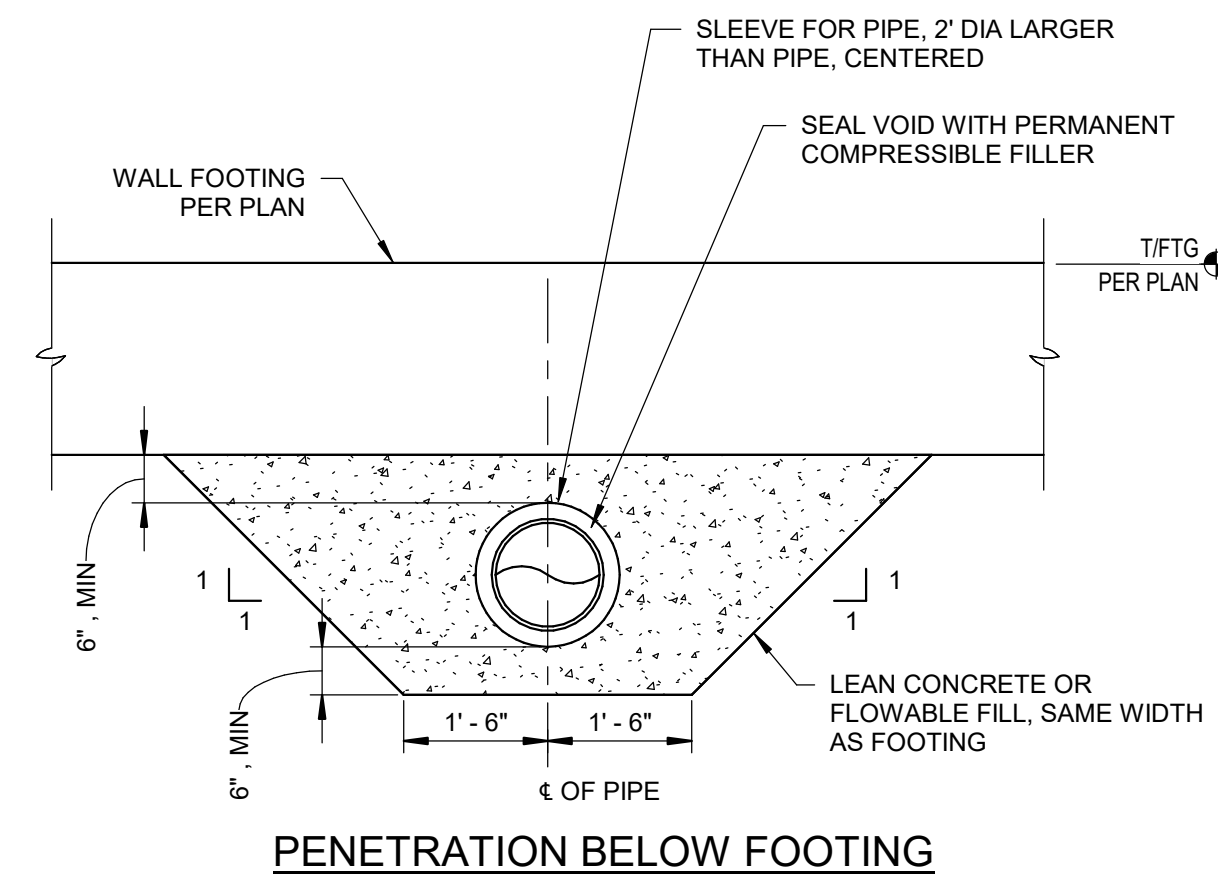
SCALE: 1" = 1'-0"



1
S503

TYPICAL WALL FOOTING DETAIL AT PIPE/CONDUIT PENETRATION

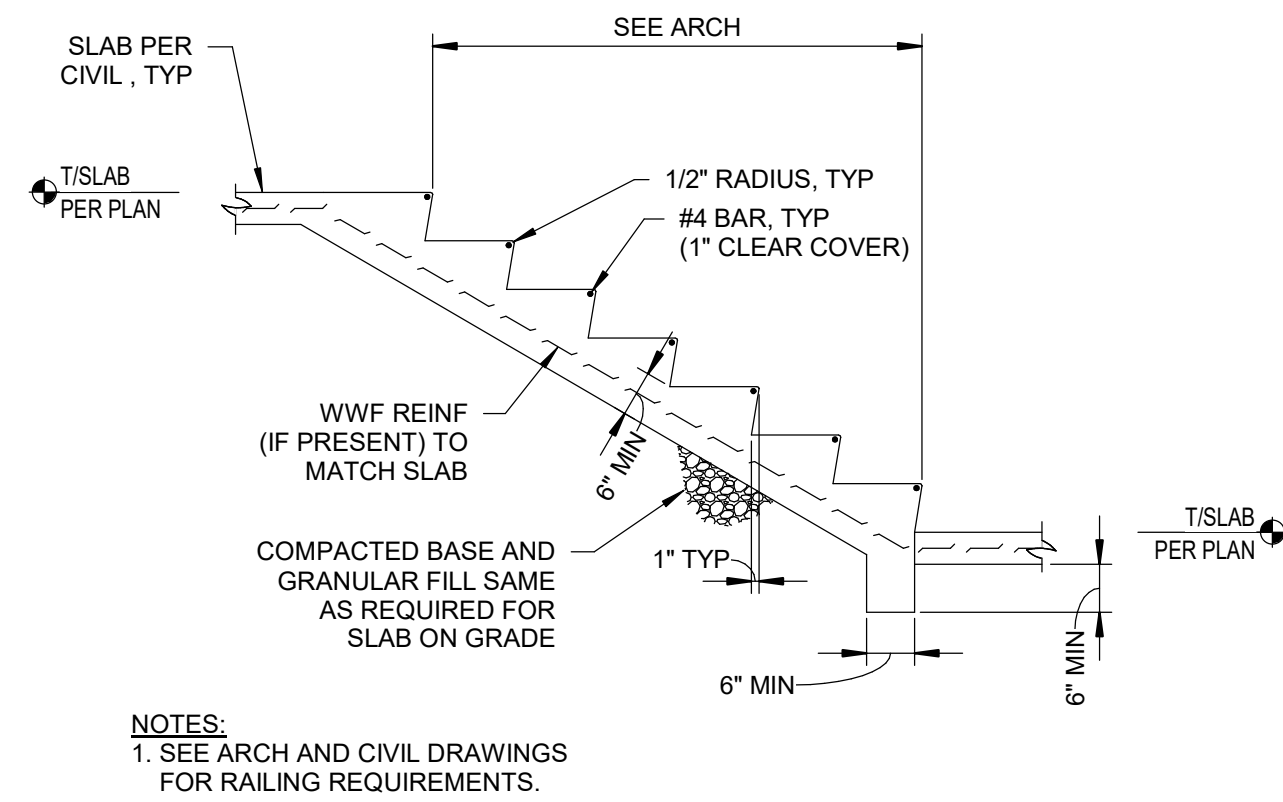
SCALE: 1/2" = 1'-0"



6
S503

TYPICAL INTERIOR CONCRETE STAIR

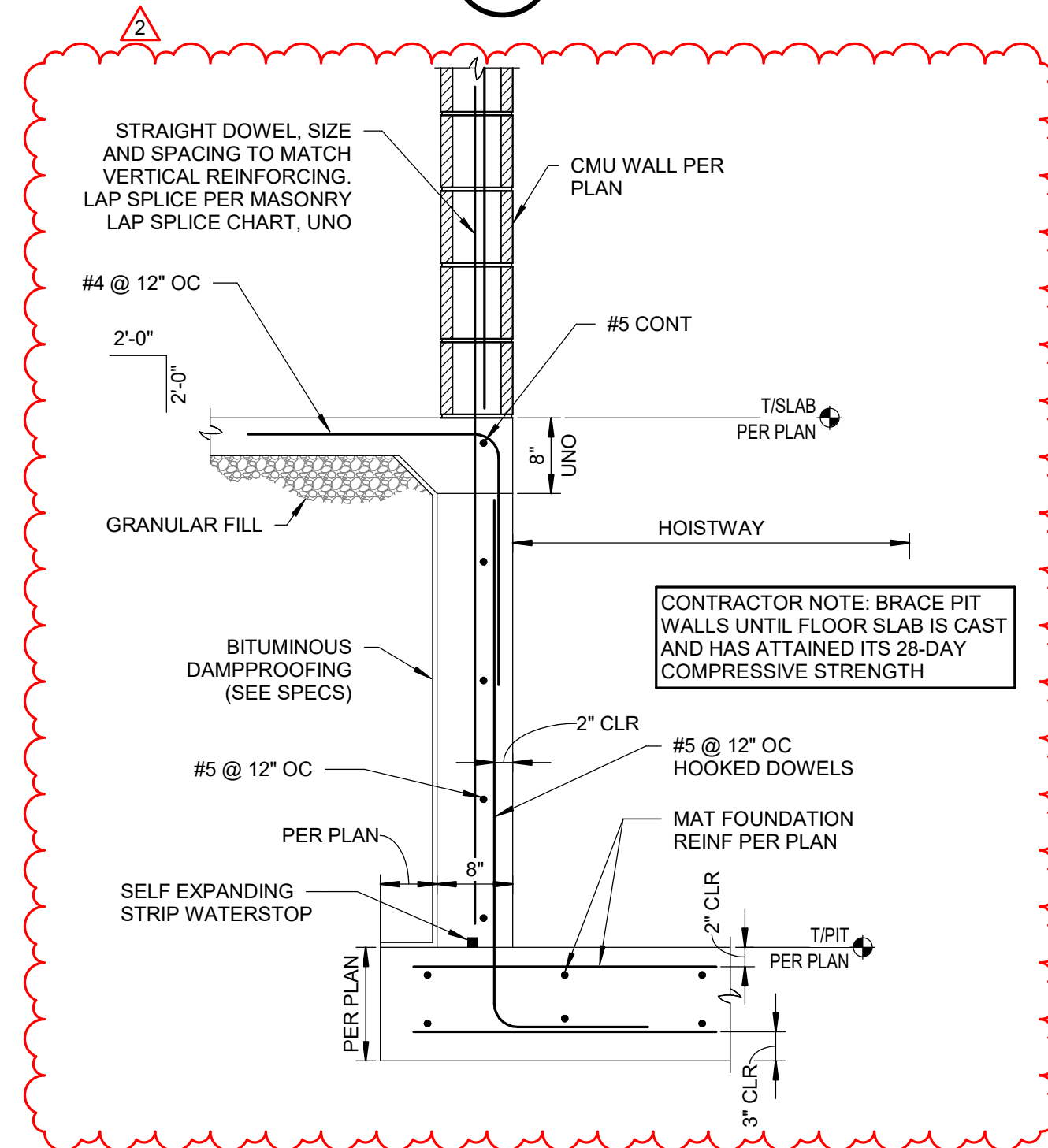
SCALE: 1/2" = 1'-0"



5
S503

TYPICAL CMU WALL AT ELEVATOR PIT

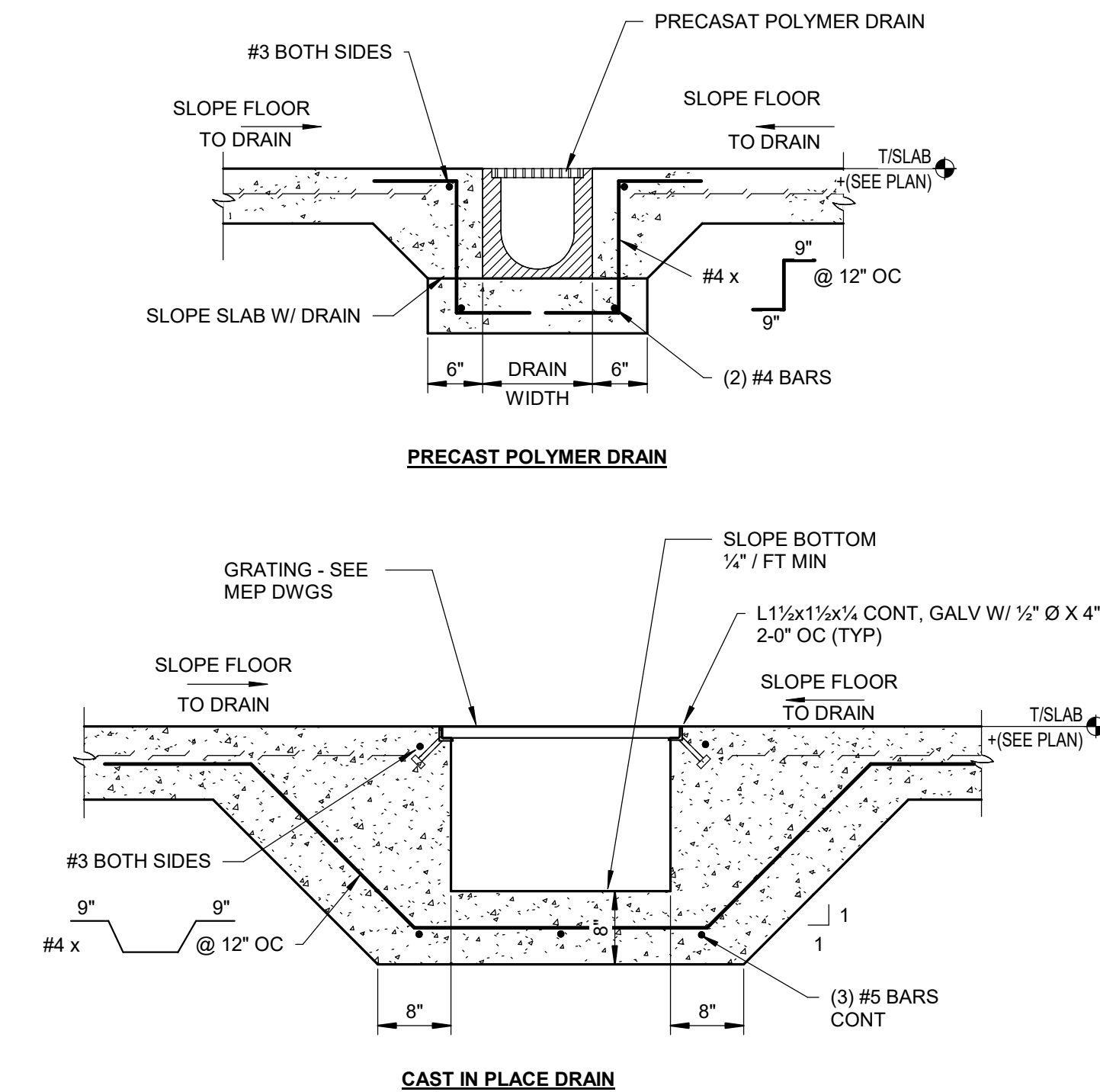
SCALE: 3/4" = 1'-0"



4
S503

SECTION THRU TRENCH DRAIN

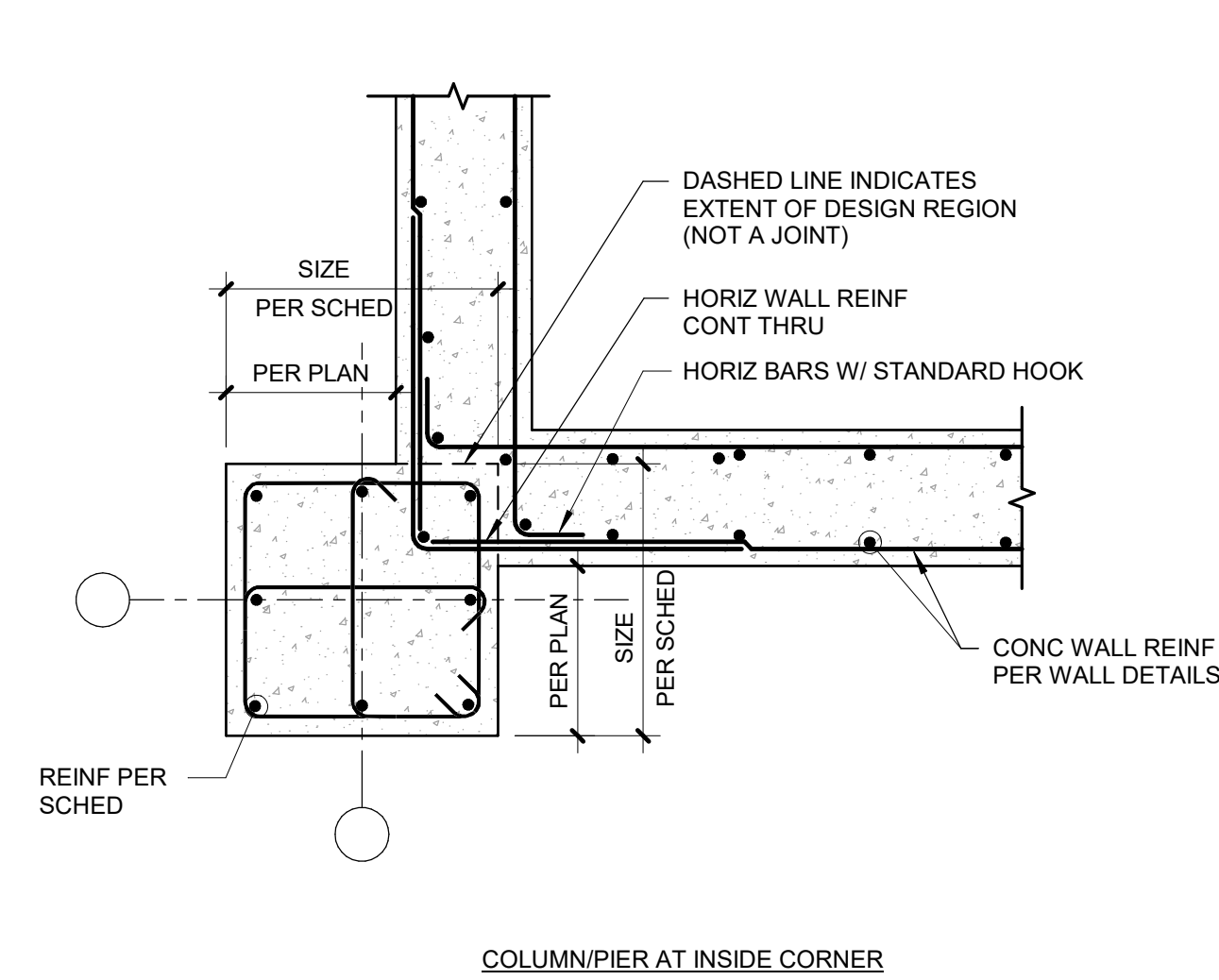
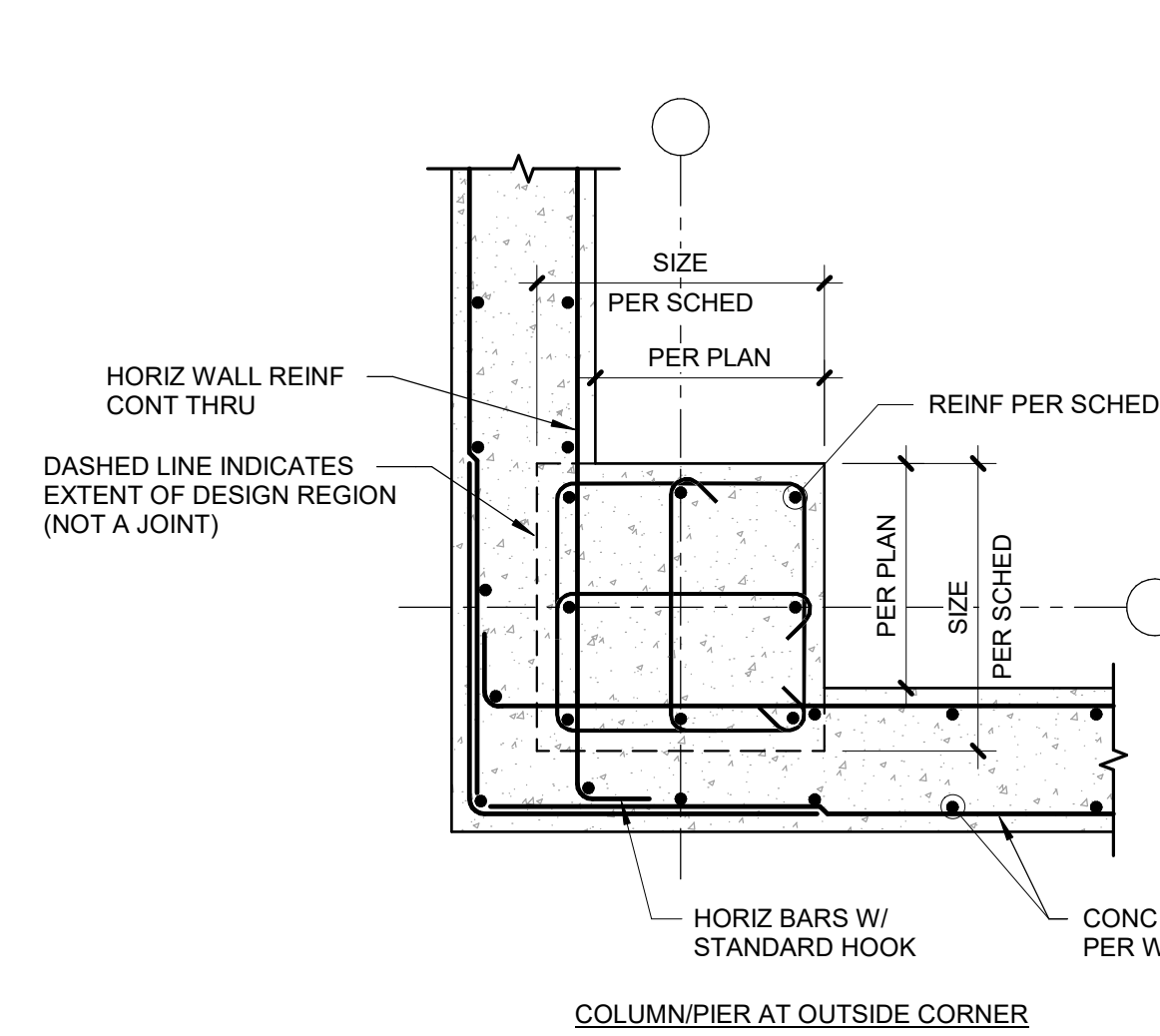
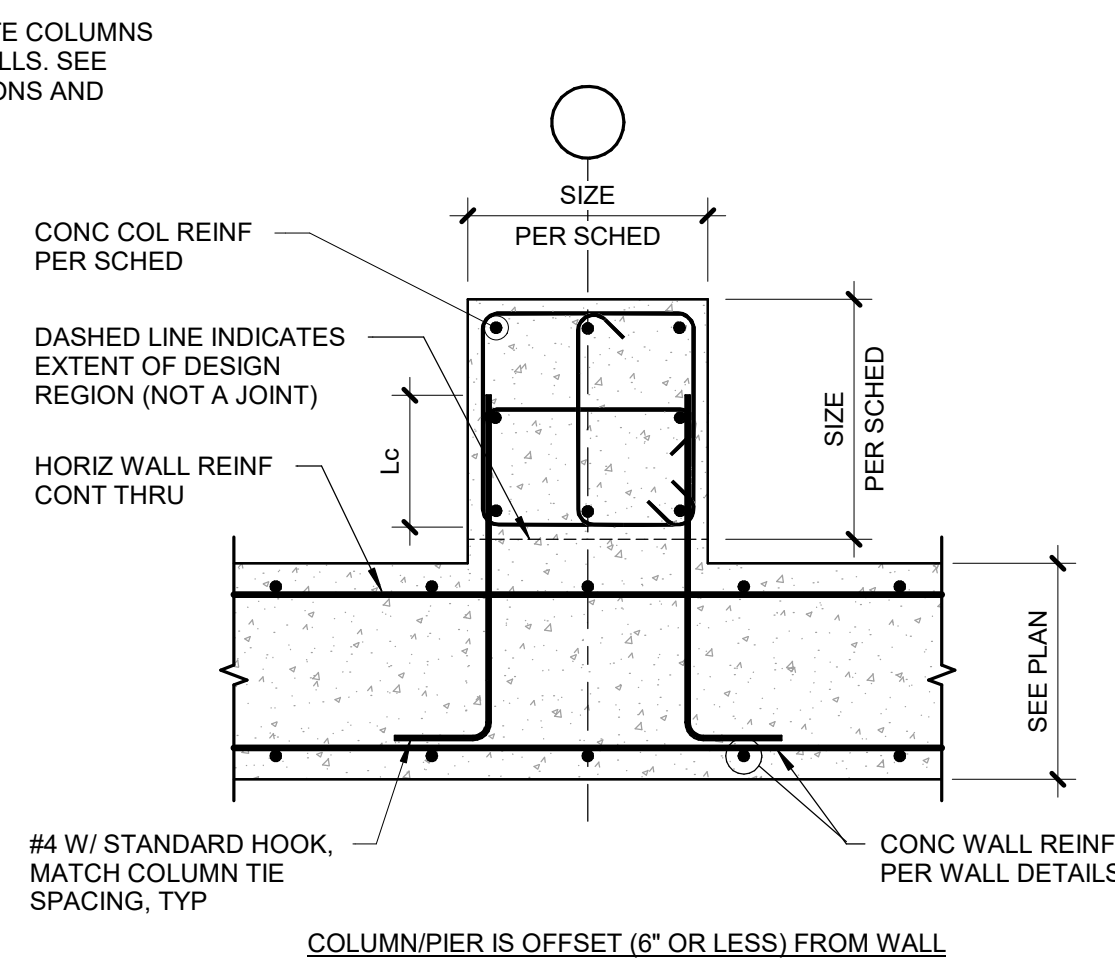
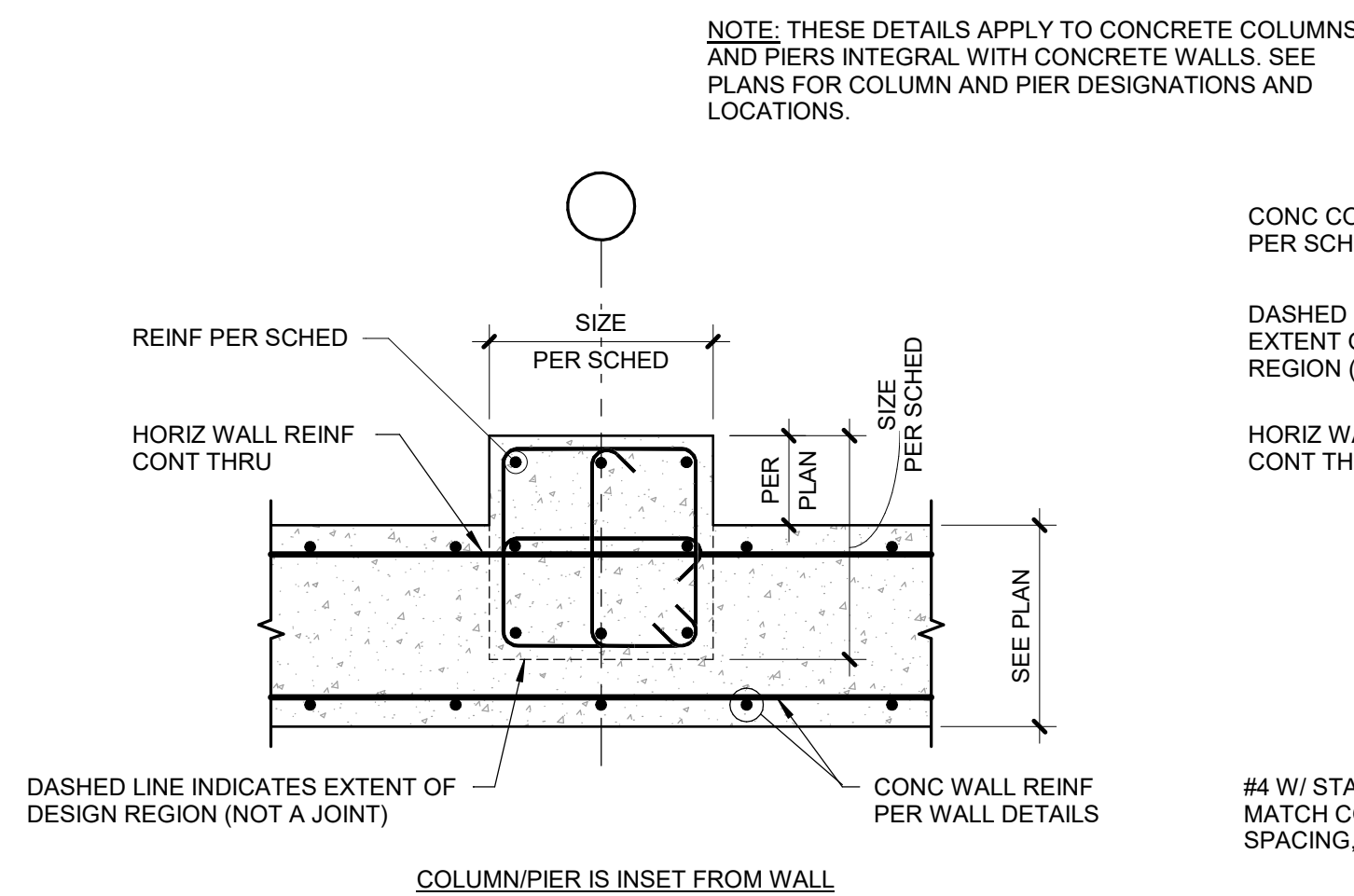
SCALE: 3/4" = 1'-0"



7
S503

TYPICAL CONCRETE COLUMN/PIER DETAILS AT CONCRETE WALLS

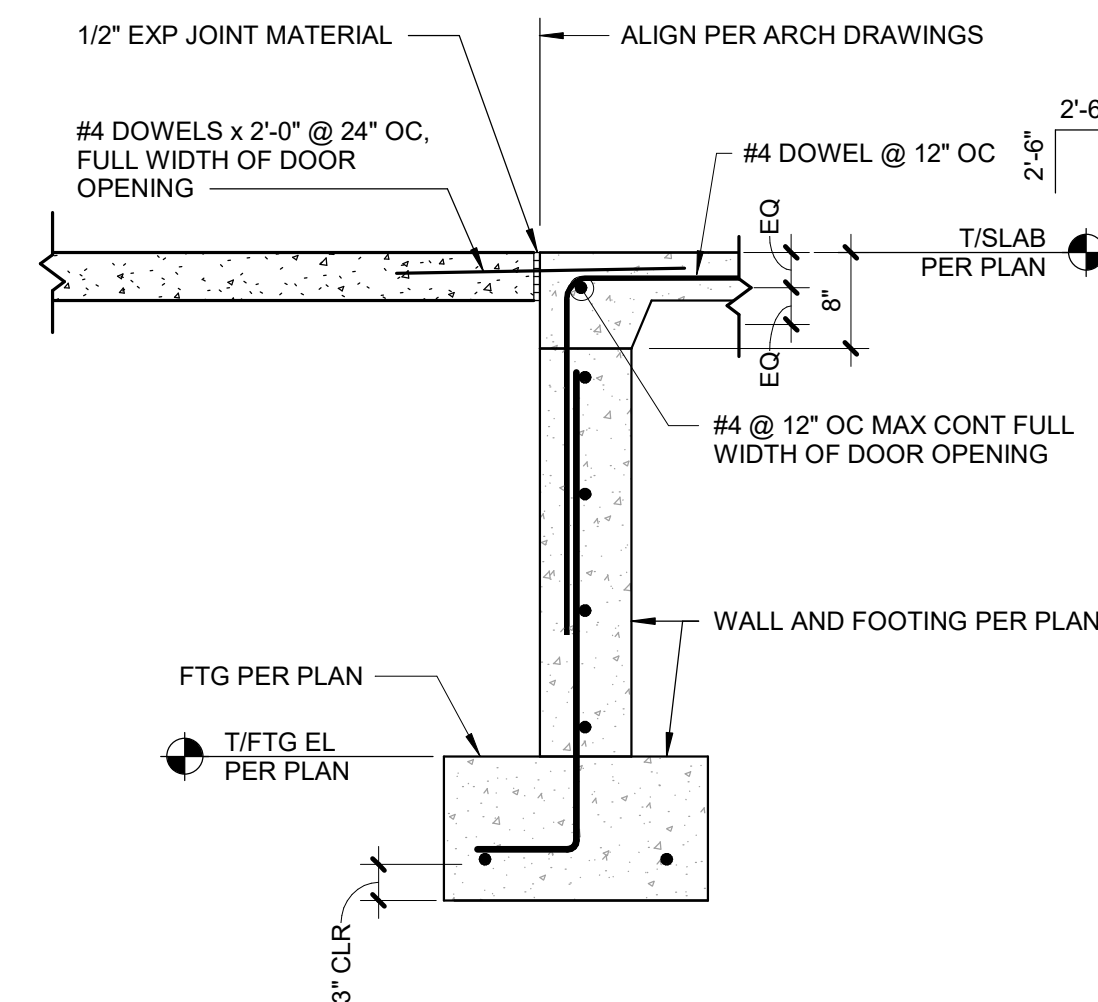
SCALE: 3/4" = 1'-0"



9
S503

SLAB TURN-DOWN AT MAN DOOR

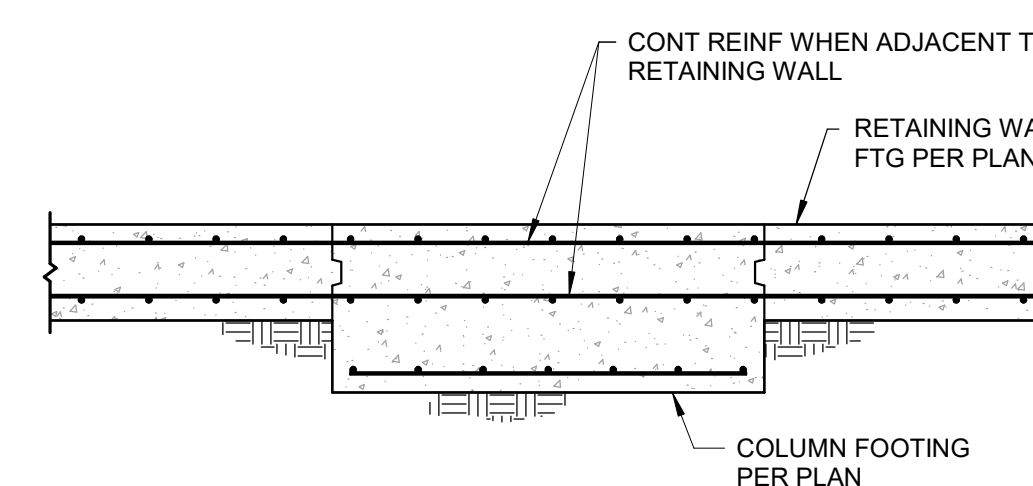
SCALE: 3/4" = 1'-0"



8
S503

TYPICAL FOUNDATION INTERSECTION DETAIL

SCALE: 3/8" = 1'-0"



618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

Drawn: JBC/CD/ECAN/KJAV
Checked: DAB
Date: 09/12/2022

REVISIONS:

#	DESCRIPTION	DATE
2	Addendum 2	10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Kendall Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JSC
NANNY FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

STRUCTURAL ENGINEER
JSC
DANIEL BURCH, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

MEP ENGINEER
KNO CONSTRUCTION
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Kingsbridge Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, PIA, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

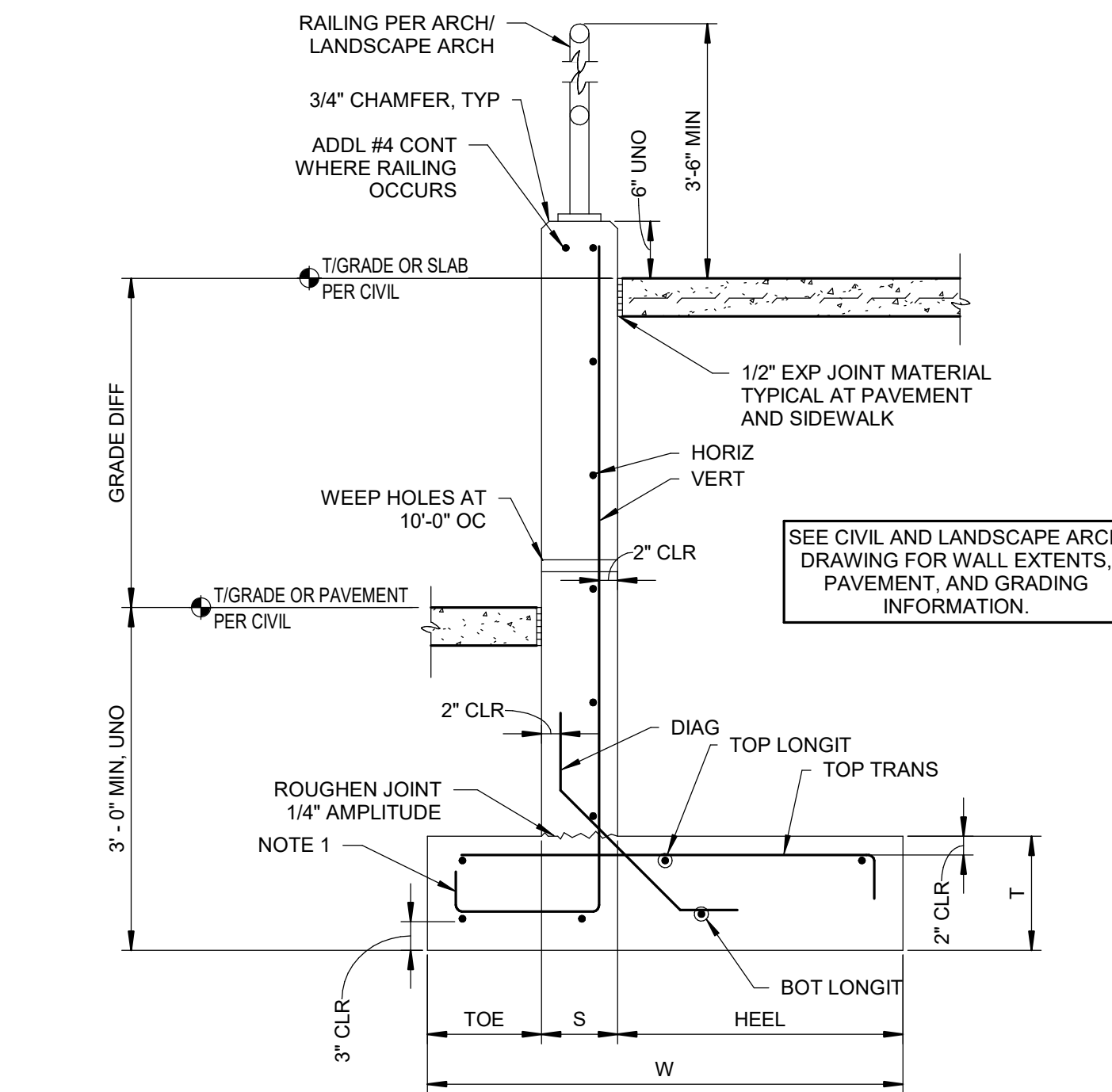
DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF WASHINGTON STREET
AND N ORIENTAL STREET

REGISTERED
NO. PE11400268
STATE OF INDIANA
PROFESSIONAL ENGINEER
DANIEL BURCH
09/12/2022

TYPICAL SECTIONS AND DETAILS

S503
PROJECT NUMBER: 2021029

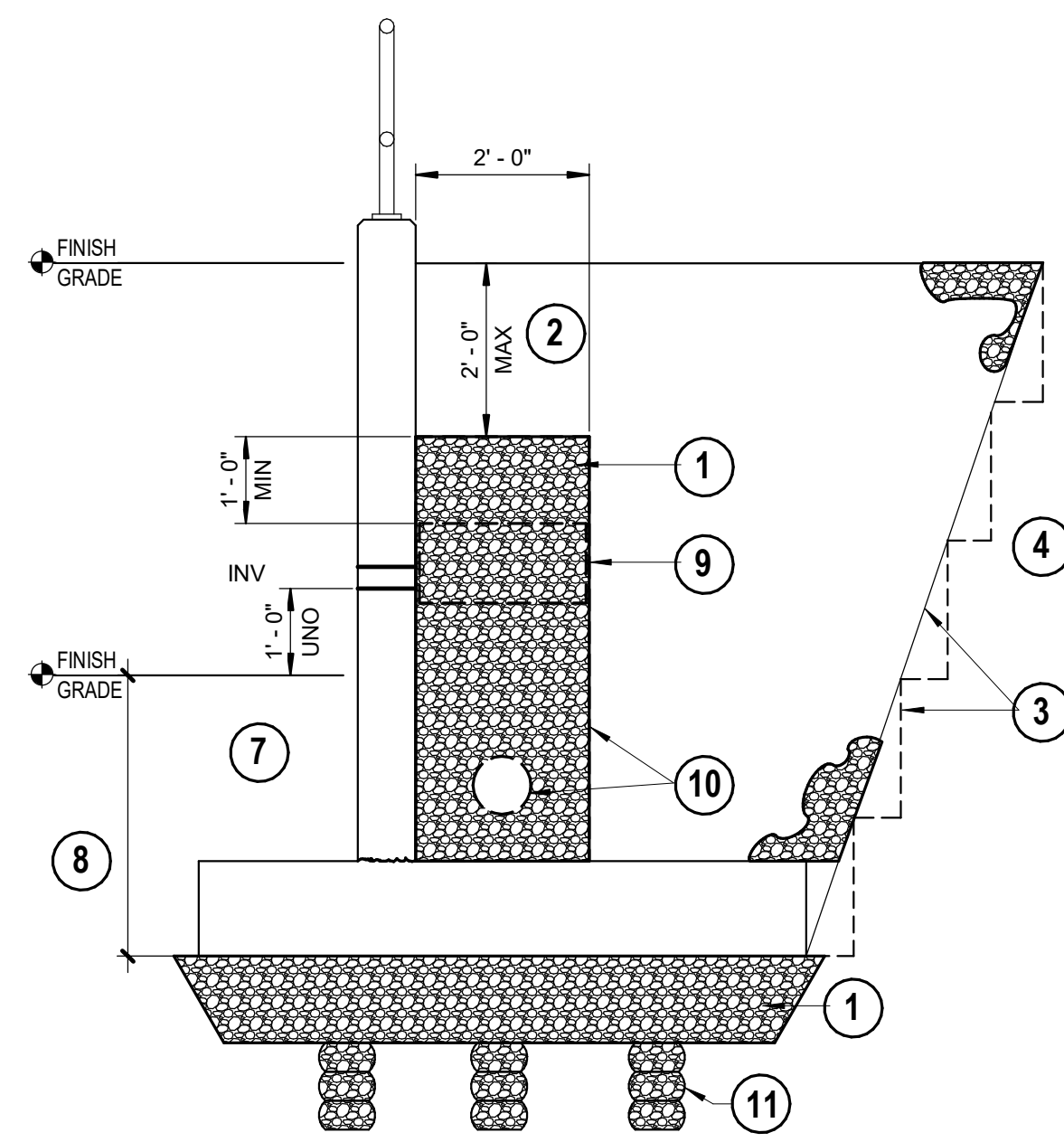




TYPICAL SITE RETAINING WALL DETAIL

SCALE: 3/4" = 1'-0"

RETAINING WALL SCHEDULE							
GEOMETRY							
MARK	GRADE DIFF (MAX)	W	HEEL	S	TOE	T	T/FTG
RW15 (Site)	5'-6"	6'-5"	3'-9"	0'-8"	2'-0"	1'-6"	84' 4"
REINFORCEMENT							
MARK	VERT	HORIZ	DIAG	TOP LONGIT	TRANS	BOT LONGIT	
RW15 (Site)	#4 @ 12"	#4 @ 12"		#4 @ 12"	#6 @ 12"	#4 @ 12"	
NOTES:							
1. PROVIDE STANDARD HOOKS AT END OF REINF AS SHOWN IN DETAIL.							



TYPICAL RETAINING WALL BACKFILL DETAIL

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

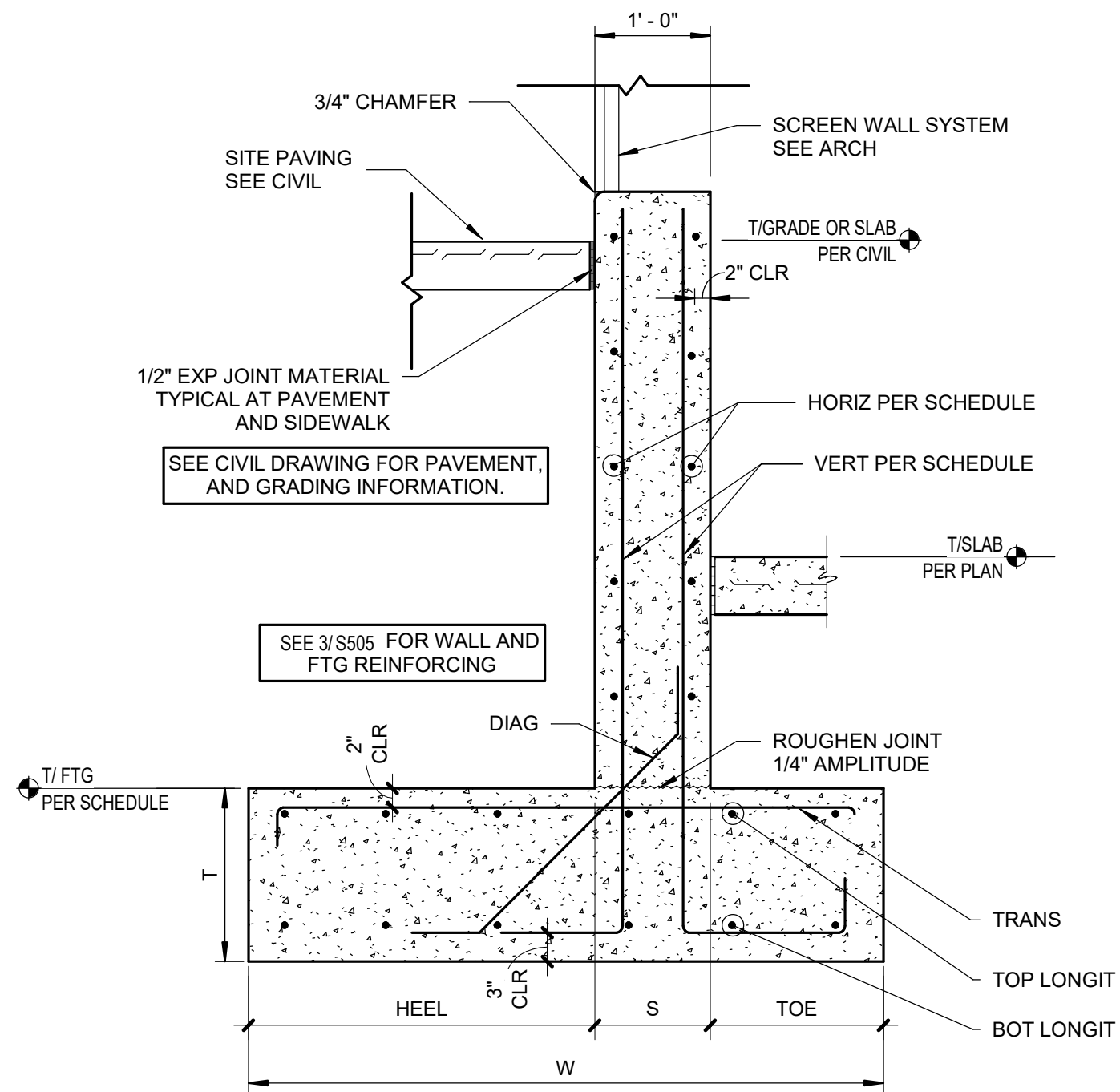
RETAINING WALL BACKFILL DETAIL

GENERAL NOTES:

- A. SEE RETAINING WALL STRUCTURAL DETAILS FOR REINFORCEMENT, DIMENSIONS, AND ADDITIONAL INFORMATION.
- B. SEE CIVIL DRAWINGS FOR SITE WALL LOCATIONS, LENGTHS, ELEVATIONS, GRADING AND ADDITIONAL INFORMATION.
- C. ALL SOILS AND BACKFILL OPERATIONS SHALL BE INSPECTED AND APPROVED BY THE PROJECT GEOTECHNICAL TESTING AGENCY.
- D. BACKFILL EQUALLY ON BOTH SIDES OF WALL UNTIL LOWER SIDE OF GRADE IS WITHIN 8 INCHES (MAX) OF FINAL GRADE BEFORE PLACING REMAINDER OF HIGH SIDE GRADE. USE HAND-OPERATED COMPACTION EQUIPMENT WITHIN 6 FEET OF WALL.
- E. PLACE BACKFILL IN LIFTS AND COMPACT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- F. COMPACTED GRANULAR FILL SHALL CONSIST OF NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D-2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2" INCH (37.5-MM) SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 (0.075-MM) SIEVE OR OTHER SUITABLE GRANULAR FILL APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
- G. COMPACTED FILL SHALL BE SUITABLE CLEAN COMPACTABLE SOIL MATERIAL APPROVED BY THE PROJECT GEOTECHNICAL TESTING AGENCY.
- H. FILTER FABRIC SHALL BE A LIGHTWEIGHT, NONWOVEN, 100% POLYPROPYLENE GEOTEXTILE WEIGHING NOT LESS THAN 3.5 OUNCES PER SQUARE YARD, MEETING ASTM D-4632 50% ELONGATION AT BREAK, WITH APPARENT OPENING SIZE EQUAL TO A #50 SIEVE AND FLOW RATE PER ASTM D-4491 OF NOT LESS THAN 150 GAL/MIN PER SFT.

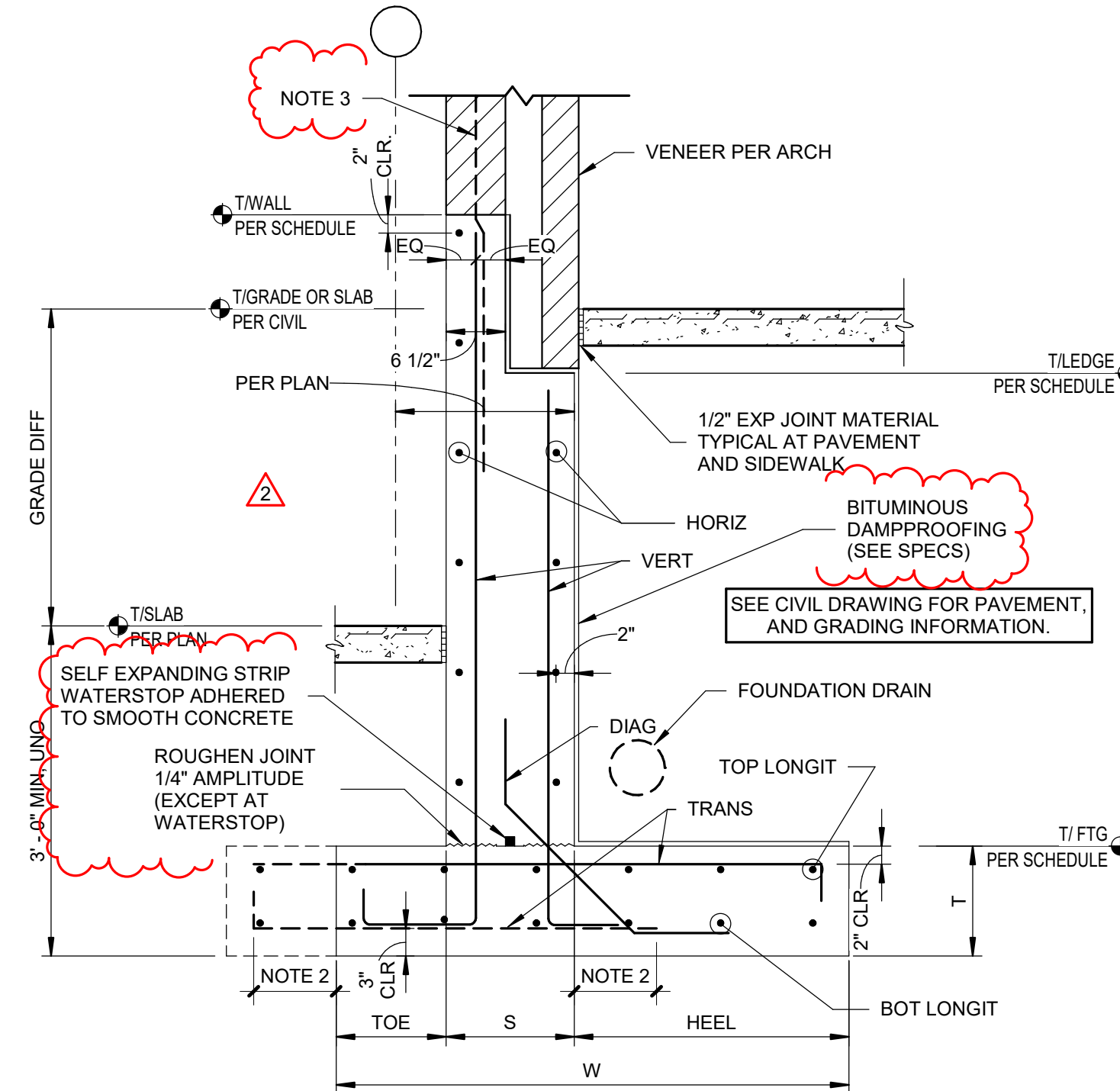
DETAIL NOTES:

1. ZONE OF COMPACTED GRANULAR FILL.
2. ZONE OF COMPACTED FILL AND FINISH GRADE MATERIALS. SEE CIVIL DRAWINGS.
3. LINE OF EXCAVATION AND/OR BENCHING AS DETERMINED BY THE CONTRACTOR FOR THE SITE SOIL CONDITIONS IN ACCORDANCE WITH RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT AND THE PROJECT GEOTECHNICAL TESTING AGENCY. CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING SAFETY DURING ALL EARTH WORKS OPERATIONS.
4. EXISTING SOIL OR COMPACTED FILL.
5. KEY (WHERE REQUIRED), INSTALL IN SUITABLE EXISTING FIRM UNDISTURBED SOIL OR COMPACTED FILL.
6. INSTALL FOOTINGS AT PERIMETER OF BUILDING ON AGGREGATE PIERS. SITE RETAINING WALL FOOTINGS MAY BE INSTALLED AND WITHIN SUITABLE FIRM UNDISTURBED SOIL OR COMPACTED FILL.
7. ZONE OF COMPACTED FILL AND FINISH GRADE MATERIALS PER CIVIL DRAWINGS.
8. INSTALL FOOTINGS TO ELEVATIONS INDICATED ON THE DRAWINGS. IN NO CASE SHALL BOTTOMS OF FOOTINGS BE LESS THAN THE GREATER OF LOCAL FROST DEPTH OR 3'-0" BELOW LOWER FINISH GRADE ELEVATION. IF A DIMENSIONAL DISCREPANCY OCCURS THAT WOULD IMPLY PLACEMENT WITH LESS THAN REQUIRED SOIL COVER, NOTIFY THE STRUCTURAL ENGINEER IMMEDIATELY AND DO NOT INSTALL THE FOOTING WITHOUT PRIOR REVIEW BY THE STRUCTURAL ENGINEER.
9. WHERE WEEP HOLES ARE INDICATED ON STRUCTURAL DETAILS, INSTALL 2'-0" X 2'-0" CONTINUOUS BED OF COMPACTED GRANULAR FILL WRAPPED IN FILTER FABRIC, TIGHT TO WALL, CENTERED ON WEEP HOLE CENTERLINE ELEVATION. WHERE WEEP HOLES ARE INDICATED BUT NOT OTHERWISE SIZED, USE 2-INCH DIAMETER PVC PIPE SPACED AT A MAXIMUM OF 10'-0" OC, UNO.
10. WHERE FOOTING DRAINS ARE INDICATED ON STRUCTURAL DETAILS, INSTALL 2'-0" WIDE BED OF COMPACTED GRANULAR FILL WRAPPED IN FILTER FABRIC, FULL-HEIGHT FROM TOP OF FOOTING TO TOP OF GRANULAR FILL LAYER. WHERE FOOTING DRAINS ARE INDICATED BUT NOT OTHERWISE SIZED, USE MINIMUM OF 6-INCH DIAMETER PERFORATED PVC PIPE, EXTENDED TO DRAINAGE OUTLET AS INDICATED ON THE CIVIL DRAWINGS. FULLY WRAP DRAINS WITH FILTER FABRIC PRIOR TO SETTING IN PLACE.
11. AGGREGATE PIERS.



TYPICAL SCREEN WALL FOUNDATION

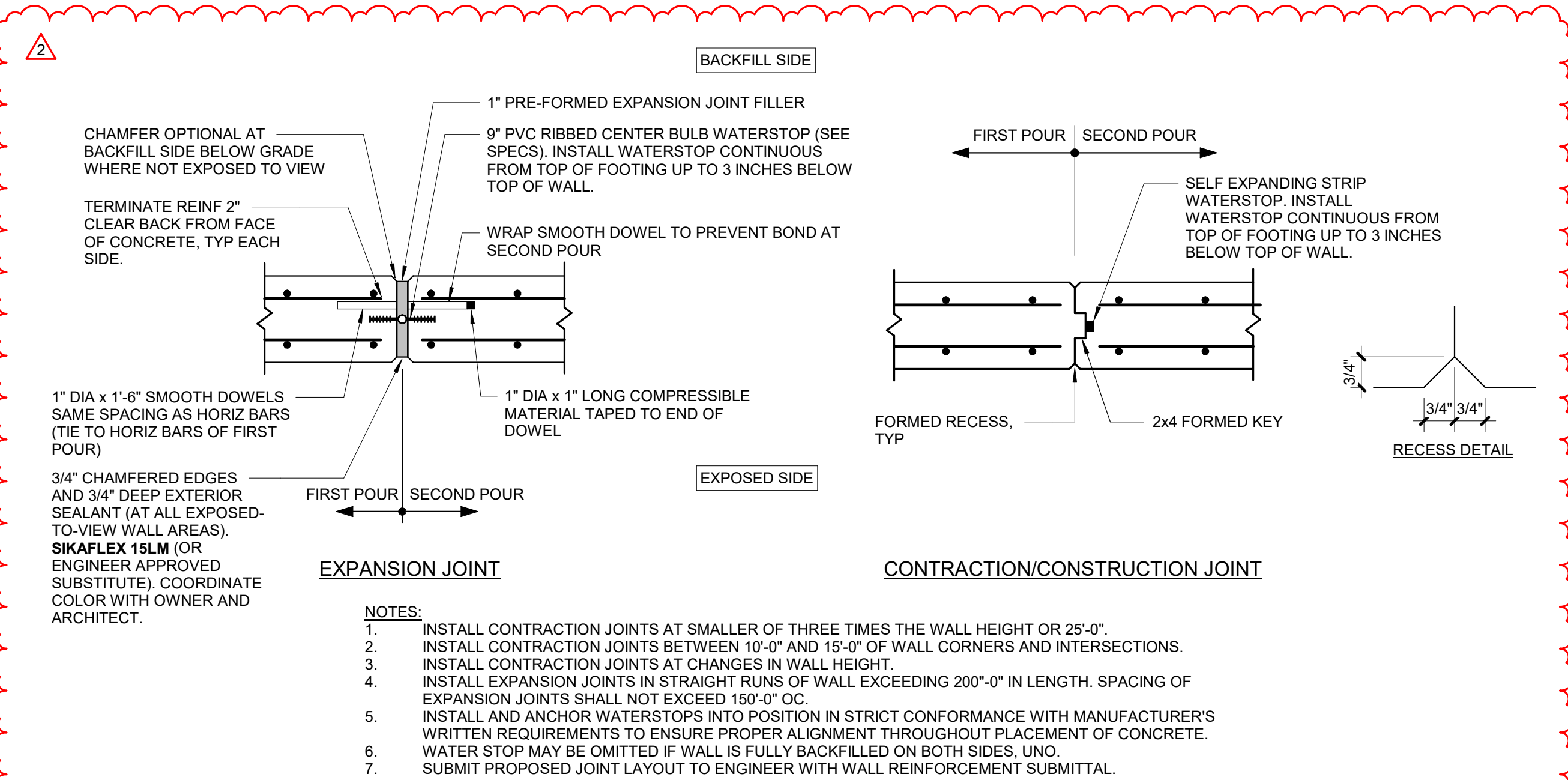
SCALE: 3/4" = 1'-0"



TYPICAL RETAINING WALL DETAIL

SCALE: 3/4" = 1'-0"

RETAINING WALL SCHEDULE											
GEOMETRY											
MARK	GRADE DIFF	W	HEEL	S	TOE	T	T/EDGE	T/WALL	T/FTG		
RW1	0'-5"	3'-2"	1'-0"	1'-2"	1'-0"	1'-6"	88' 0"	89' 4"	86' 6"		
RW2	0'-5"	3'-2"	1'-0"	1'-2"	1'-0"	1'-6"	88' 0"	90' 0"	86' 6"		
RW3	6'-6"	6'-11"	3'-9"	1'-2"	2'-0"	1'-6"	92' 8"	94' 8"	86' 6"		
RW4	7'-0"	7'-2"	4'-0"	1'-2"	2'-0"	1'-6"	93' 4"	95' 4"	86' 6"		
RW5	6'-6"	6'-11"	3'-9"	1'-2"	2'-0"	1'-6"	93' 4"	95' 4"	PER PLAN		
RW6	6'-6"	8'-5"	5'-6"	1'-2"	3'-0"	1'-6"	92' 8"	94' 8"	83' 0"		
RW7	6'-6"	5'-2"	2'-0"	0'-8"	2'-0"	1'-6"	93' 10 1/2"	N/A	83' 0"		
RW8	6'-6"	6'-2"	5'-0"	1'-2"	2'-0"	1'-6"	92' 8"	94' 8"	83' 0"		
RW9A	7'-6"	8'-2"	5'-0"	1'-2"	2'-0"	1'-6"	92' 8"	94' 0"	83' 0"		
RW9	7'-6"	7'-8"	4'-6"	1'-2"	2'-0"	1'-6"	92' 8"	94' 0"	84' 0"		
RW10	7'-0"	7'-8"	4'-6"	1'-2"	2'-0"	1'-6"	92' 0"	93' 4"	84' 0"		
RW11	6'-0"	6'-8"	4'-0"	1'-2"	1'-6"	1'-6"	91' 4"	93' 4"	84' 0"		
RW12	5'-0"	6'-8"	3'-0"	1'-2"	1'-6"	1'-6"	90' 8"	N/A	86' 6"		
RW13	2'-6"	4'-2"	2'-0"	1'-0"	1'-0"	1'-6"	90' 0"	N/A	86' 6"		
RW14	4'-2"	5'-6"	3'-0"	1'-0"	1'-6"	1'-6"	PER PLAN	N/A	84' 4"		
REINFORCEMENT											
MARK	VERT	HORIZ	DIAG	TOP LONGIT	TRANS	BOT LONGIT					
RW1	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW2	#6 @ 12"	#7 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW3	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW4	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW5	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW6	#7 @ 12"	#7 @ 12"	#5 @ 12"	#7 @ 12"	#7 @ 12"	#7 @ 12"					
RW7	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW8	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW9A	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW9	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW10	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW11	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW12	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW13	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
RW14	#6 @ 12"	#6 @ 12"	#5 @ 12"	#5 @ 12"	#7 @ 12"	#5 @ 12"					
NOTES:											
1. PROVIDE STANDARD HOOKS AT END OF REINF AS SHOWN IN DETAIL.											
2. FOOTING EXTENSION AT COLUMN LOCATIONS INDICATED ON PLAN. EXTEND REINFORCING AS SHOWN. EXTEND BOTTOM REINFORCING AN EQUAL DISTANCE BEYOND BACK FACE OF RETAINING WALL.											
3. AT RW12 & 13 PROVIDE DOWELS MATCHING SIZE AND SPACING OF REINFORCING IN SUPPORTED CMU WALL.											



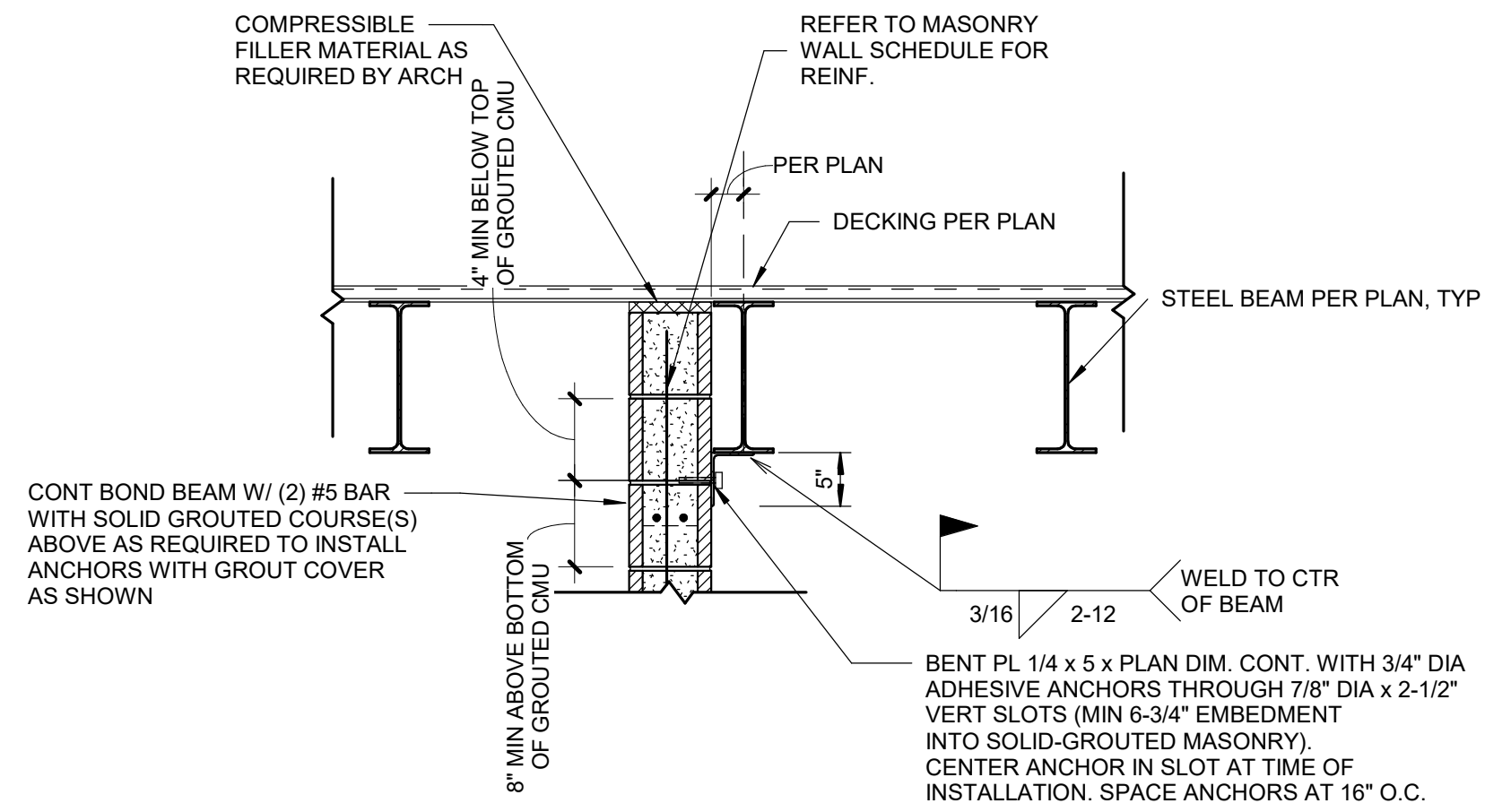
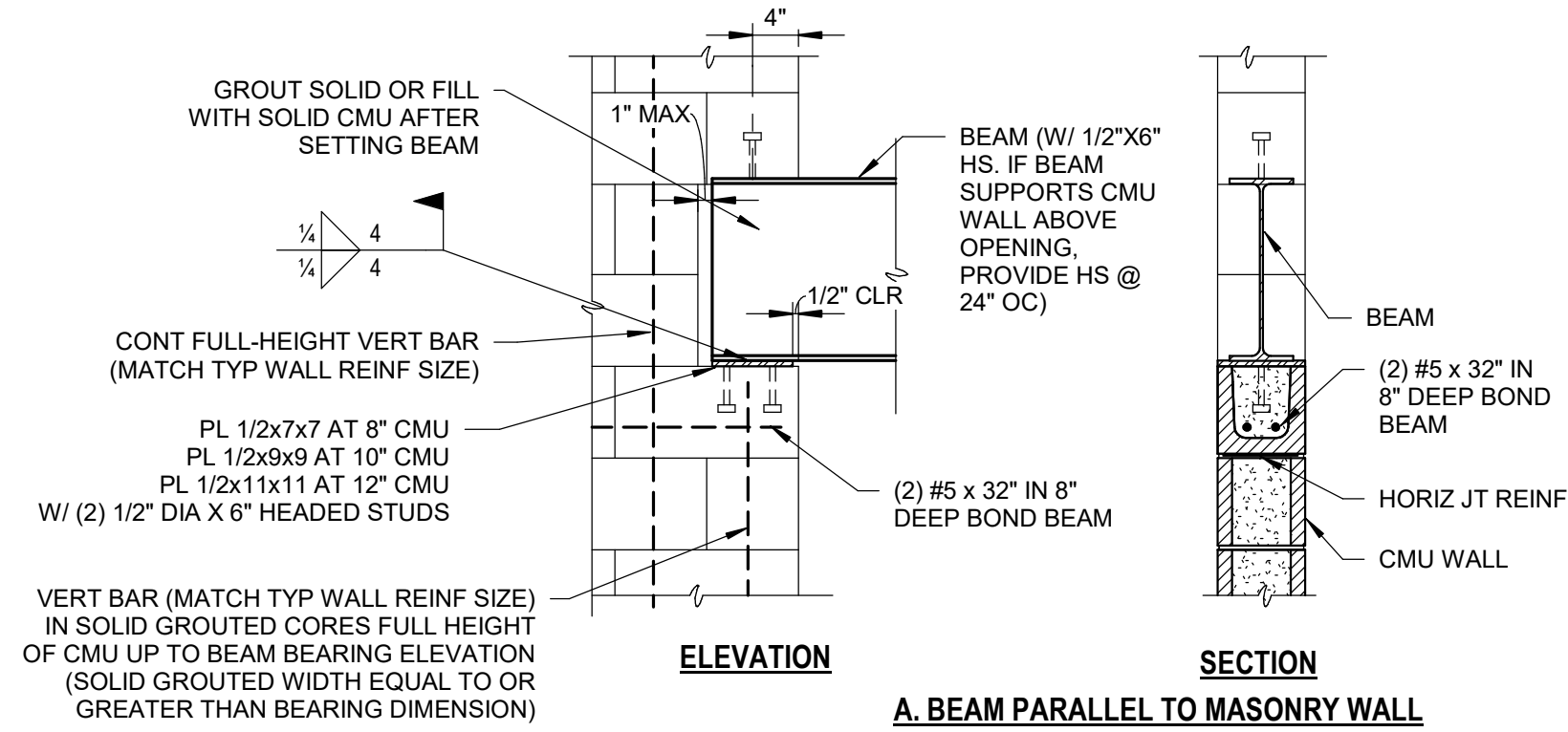
CONCRETE WALL JOINTS

SCALE: 3/4" = 1'-0"

MASONRY WALL SCHEDULE									
Mark	Thickness	Vertical Wall Reinforcing			Horiz Reinf		Top of Wall Bond Beam Reinforcing		
		Size	Spa	Location	Size	Spa	No. of	Size	Remarks
MSWB8	7 5/8"	#7	8"	Center	#6	2'-0"	2	#5	Provide boundary reinforcing at the three cells of each end of wall. (1) #6 each cell, (3) total each end
MSWB8	7 5/8"	#8	1'-4"	Center	#6	4'-0"	2	#5	
MW6	5 5/8"	#6	2'-0"	Center	Ladder	8"	1	#5	
MW8	7 5/8"	#6	2'-0"	Center	#6	4'-0"	2	#5	

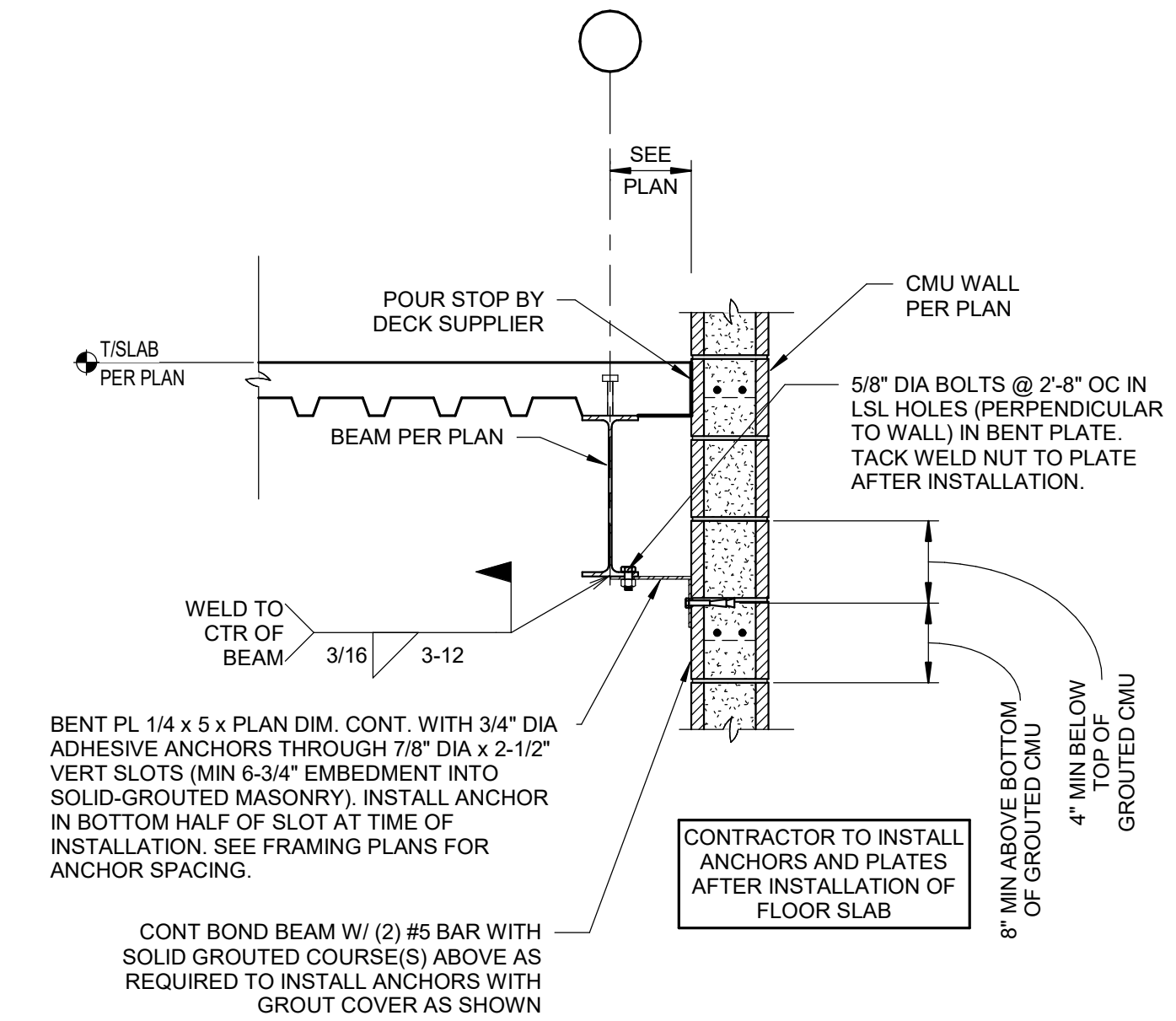
- Masonry Wall Schedule Notes
- Provide 2" cover from outside face for bars in each face.
 - Grout all cores with rebar solid, unless solid grouted wall is shown.
 - Provide ladder type horizontal reinforcement at 16" o.c. above grade and 8" o.c. below grade and at parapets, unless noted otherwise. Side and cross rods shall be #5 wire, galvanized, see specifications. Cut joint reinforcement at control joints.
 - Provide bond beam with (2) #5 cont. at top of wall, unless noted otherwise. See schedule for additional bond beams.
 - CMU partition walls not explicitly labeled shall be reinforced with #5@48" o.c. for 6" and 8" CMU, #6@48" o.c. for 10" CMU and #7@48" o.c. for 12" CMU.
 - Use rebar positioners to maintain proper rebar alignment.

MASONRY REINFORCING STEEL LAP SPICE CHART		
BAR SPICE LENGTHS		
BAR		
#3		12"
#4		12"
#5		17"
#6		33"
#7		46"
#8		NOTE 1
NOTES:		
1. FOR #8 BARS, SPICE WITH MECHANICAL CONNECTORS.		
2. SPICES BASED ON fy = 60,000 PSI AND Fm ≥ 2500 PSI.		



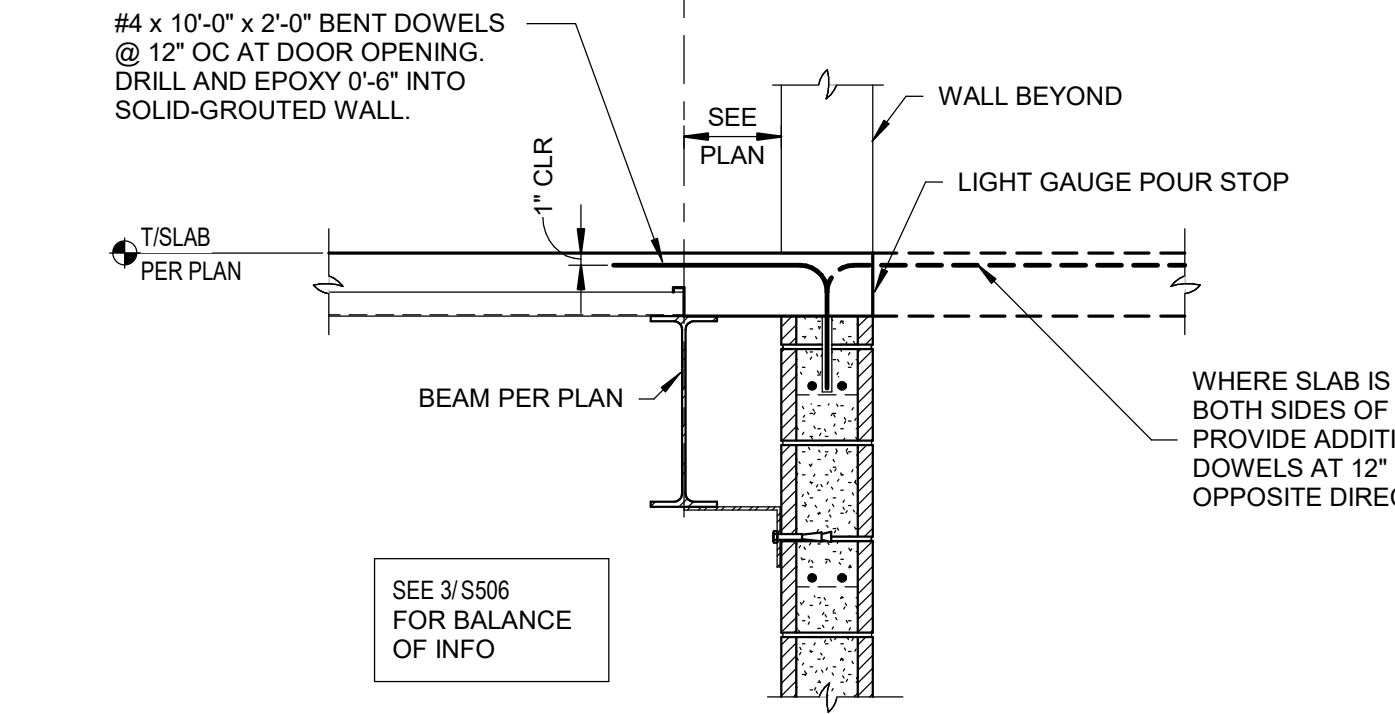
ROOF CONNECTION SECTION AT BYPASS CMU WALL

SCALE: 3/4" = 1'-0"



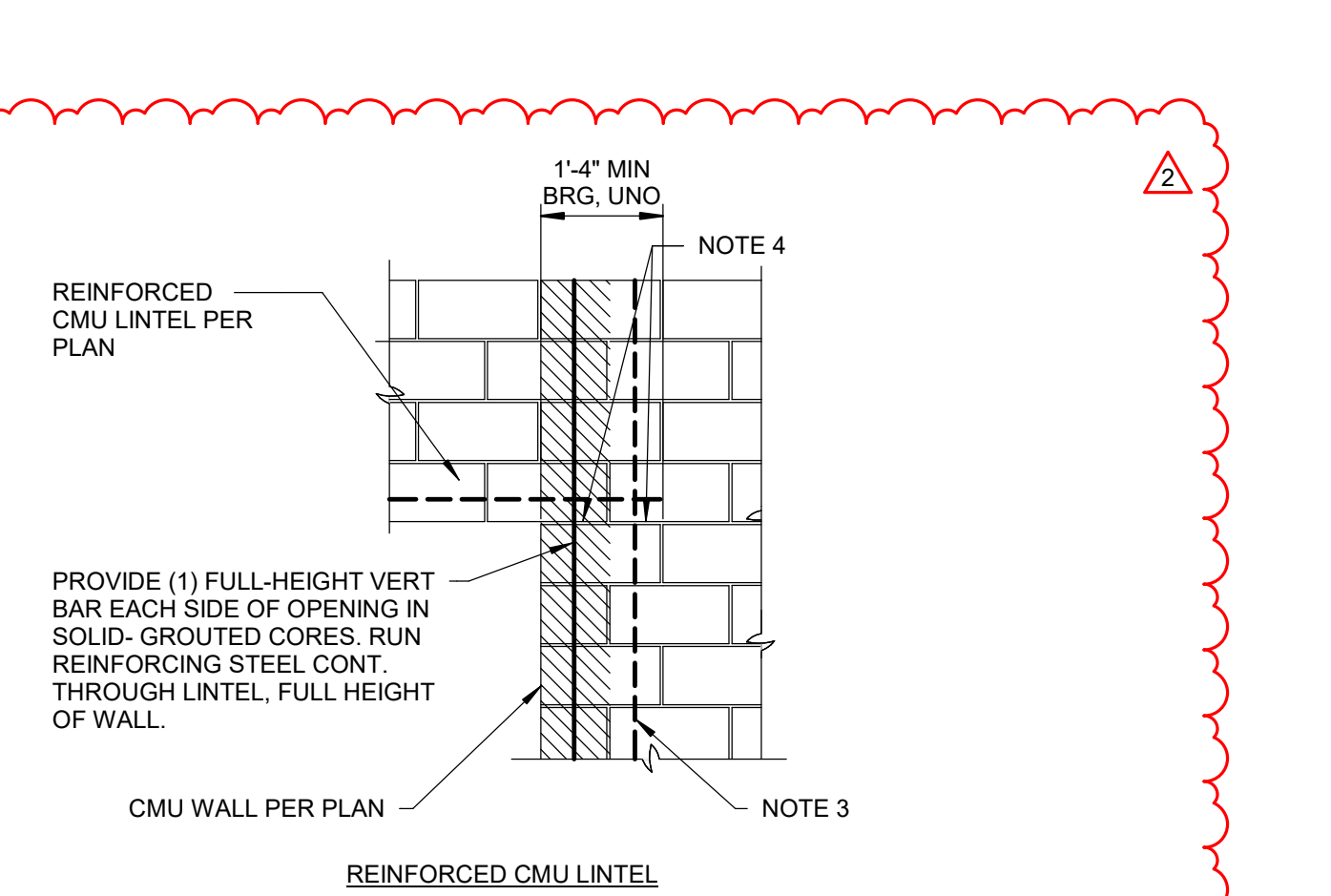
FLOOR SLAB SECTION AT BYPASS CMU WALL

SCALE: 3/4" = 1'-0"



FLOOR SLAB SECTION AT DOOR OPENING IN BYPASS CMU WALL

SCALE: 3/4" = 1'-0"

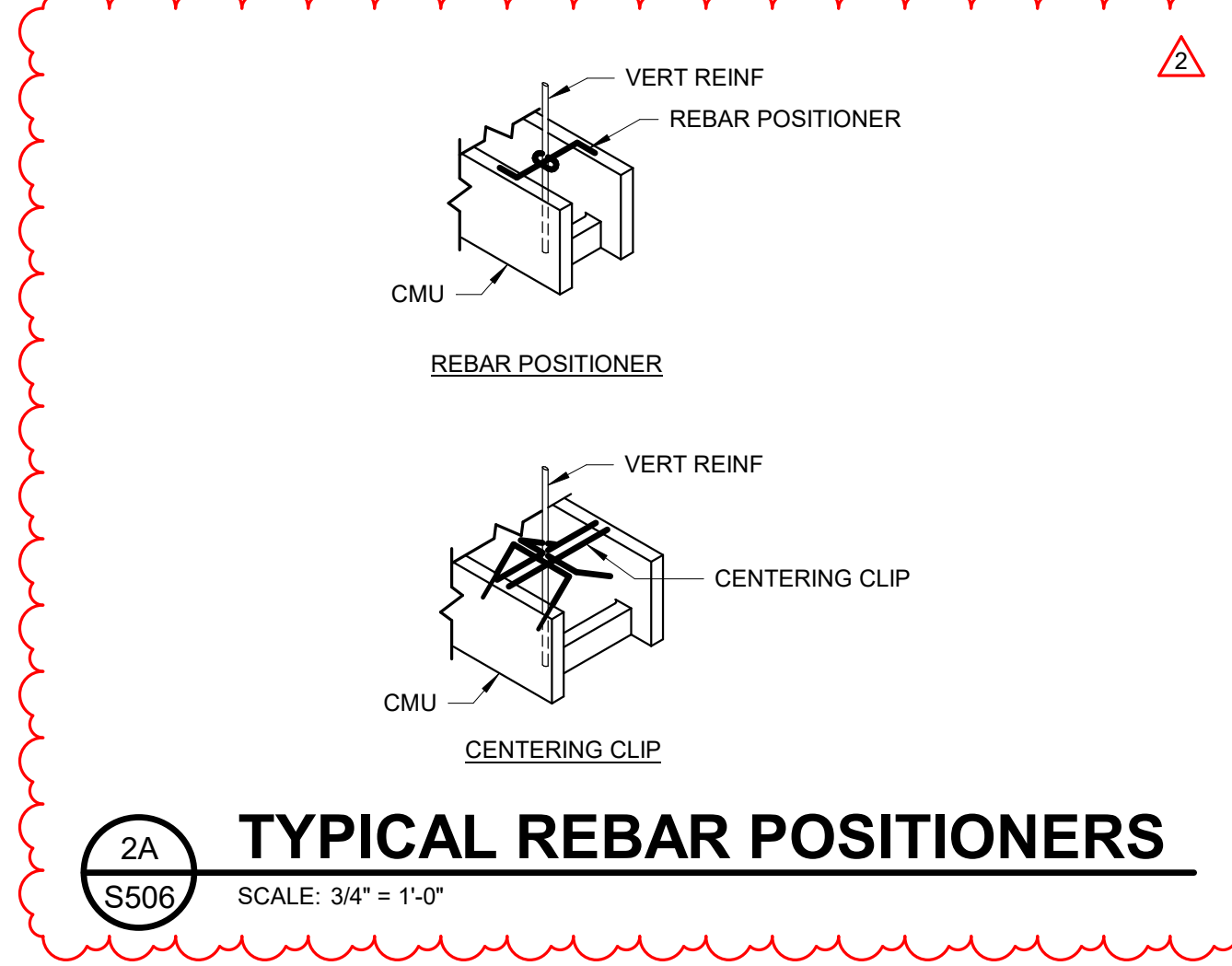


- NOTES:
- INSTALL LINTELS TO PROVIDE EQUAL BEARING LENGTH EACH SIDE OF OPENING, UNO.
 - VERTICAL BARS SHALL BE THE SAME SIZE AS TYPICAL VERTICAL WALL REINFORCEMENT, UNO.
 - FOR OPENINGS THAT INTERRUPT 2 OR MORE REGULARLY SPACED VERTICAL BARS, PROVIDE ONE ADDITIONAL FULL-HEIGHT BAR @ 8" OC ADJACENT TO EACH JAMB FOR EVERY 2 BARS INTERRUPTED BY THE OPENING.
 - AT CMU LINTEL BEARING, CUT OPENING THROUGH BOTTOM OF U-SHAPE LINTEL BLOCK AS REQUIRED TO ALLOW REINFORCEMENT AND GROUT PLACEMENT AT LINTEL BEARING.

TYPICAL LINTEL BEARING DETAIL

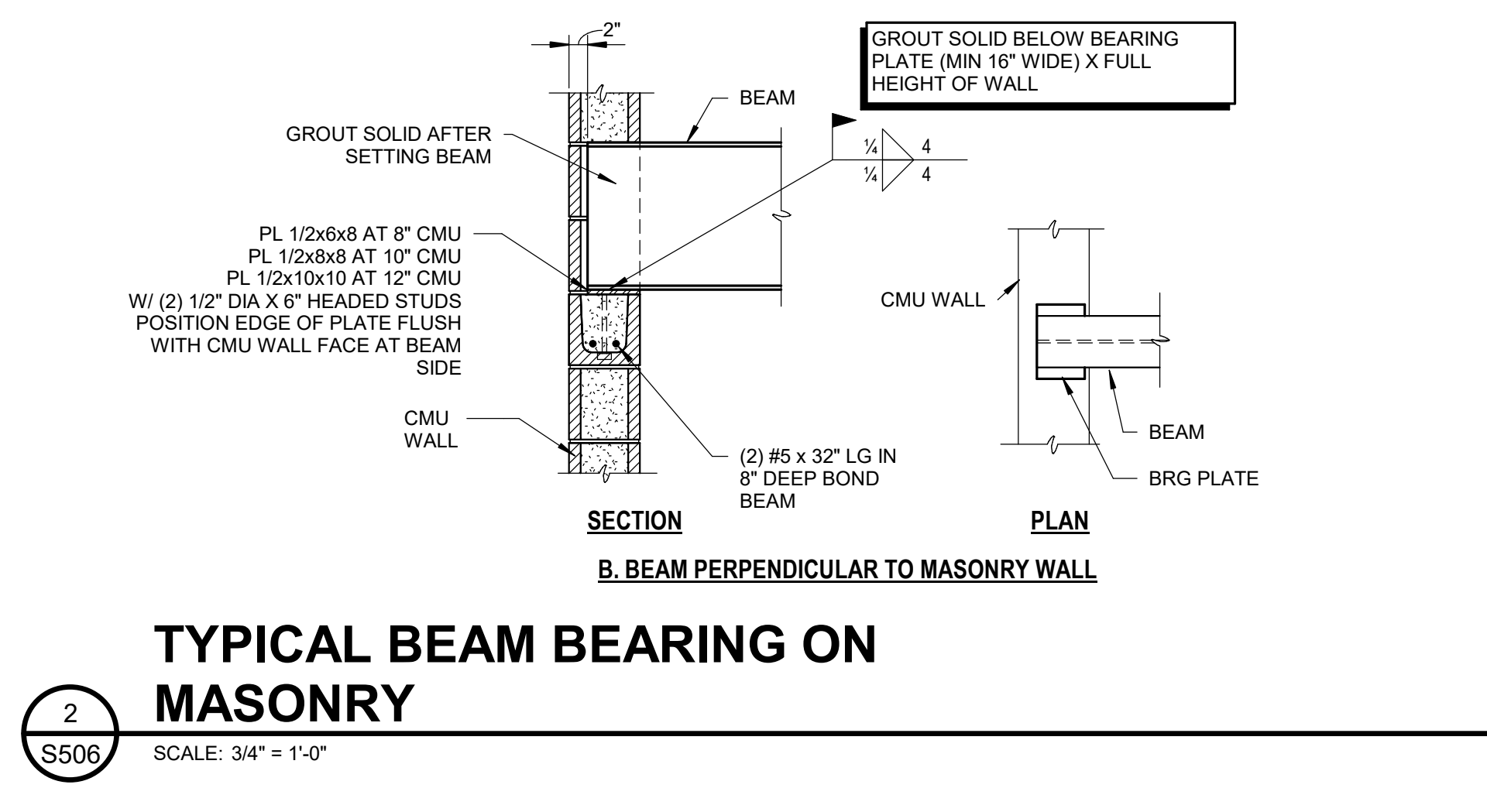
SCALE: 3/4" = 1'-0"

PRESCRIPTIVE LINTEL SCHEDULE			
GENERAL NOTE: PROVIDE LINTELS IN THIS SCHEDULE FOR MASONRY OPENINGS WHERE SPECIFIC LINTELS (L#) ARE NOT OTHERWISE INDICATED. WHERE A SPECIFIC LINTEL (L#) IS INDICATED FOR A PARTICULAR OPENING, PROVIDE THE SPECIFIC LINTEL (L#). FOR OPENINGS BEYOND THE LIMITS AND/OR MATERIALS IDENTIFIED IN THIS SCHEDULE WHERE SPECIFIC LINTELS (L#) ARE NOT OTHERWISE INDICATED, CONTACT THE STRUCTURAL ENGINEER FOR REQUIRED LINTEL SIZE AND TYPE.			
SECTION	CLEAR OPENING	TYPE	NOTES
W x 8 H (NOMINAL) CMU	UP TO 3'-4"	PLB	6", 8", 10", 12" CMU
W x 16 H (NOMINAL) CMU	>3'-4" UP TO 6'-4"	PLB	6", 8", 10", 12" CMU
W x 24 H (NOMINAL) CMU	>6'-4" UP TO 10'-4"	PLB	6", 8", 10", 12" CMU
L3 1/2 x 3 1/2 x 5/16	UP TO 4'-0"	PLC	4" MASONRY VENEER
L5 x 3 1/2 x 5/16 (LLV)	>4'-0" UP TO 6'-0"	PLC	4" MASONRY VENEER
L6 x 3 1/2 x 3/8 (LLV)	>6'-0" UP TO 8'-0"	PLC	4" MASONRY VENEER
TYPES:			
PRESCRIPTIVE LINTEL SCHEDULE NOTES:			
<ol style="list-style-type: none"> CMU LINTELS SHALL BEAR 1'-4" ONTO SUPPORTING WALLS, UNO. STEEL LINTELS SHALL BEAR 0'-8" ONTO SUPPORTING WALLS, UNO. ALL STEEL LINTELS IN EXTERIOR WALLS SHALL BE GALVANIZED. 			



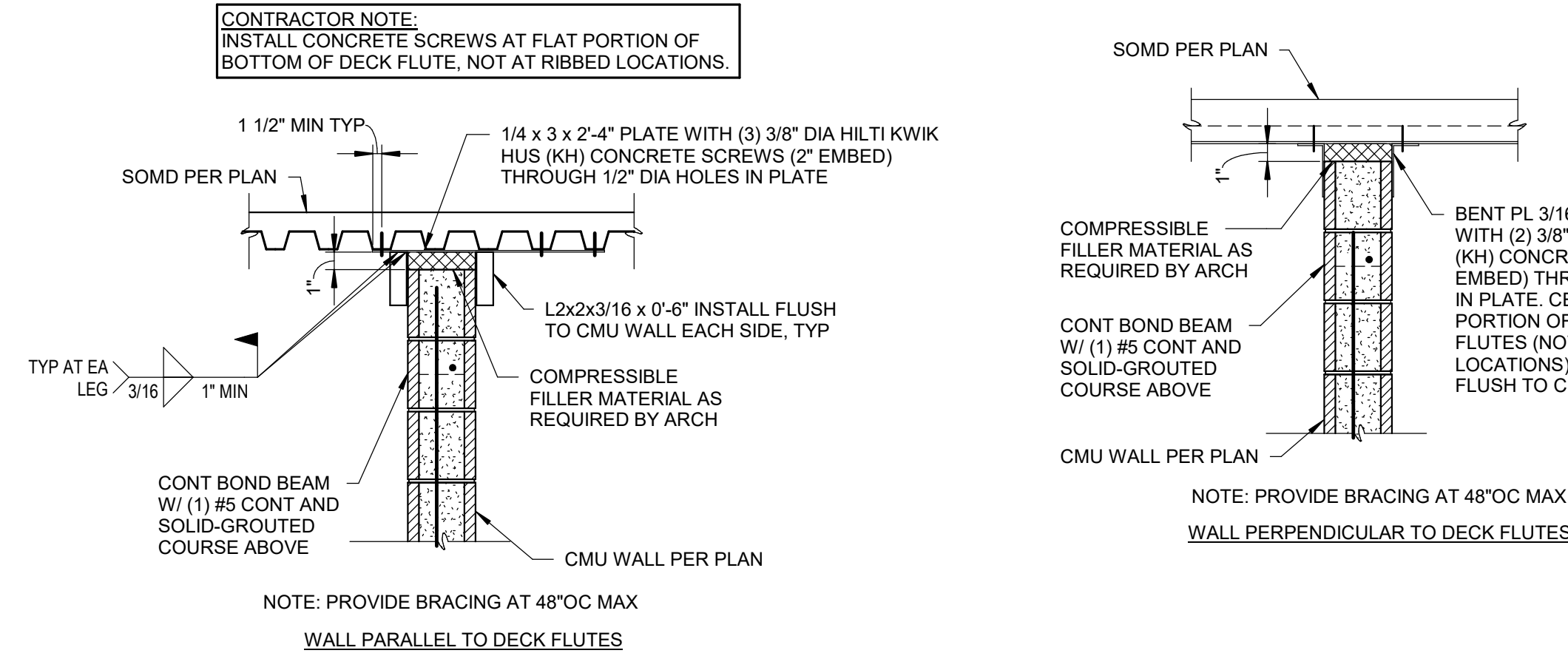
TYPICAL REBAR POSITIONERS

SCALE: 3/4" = 1'-0"



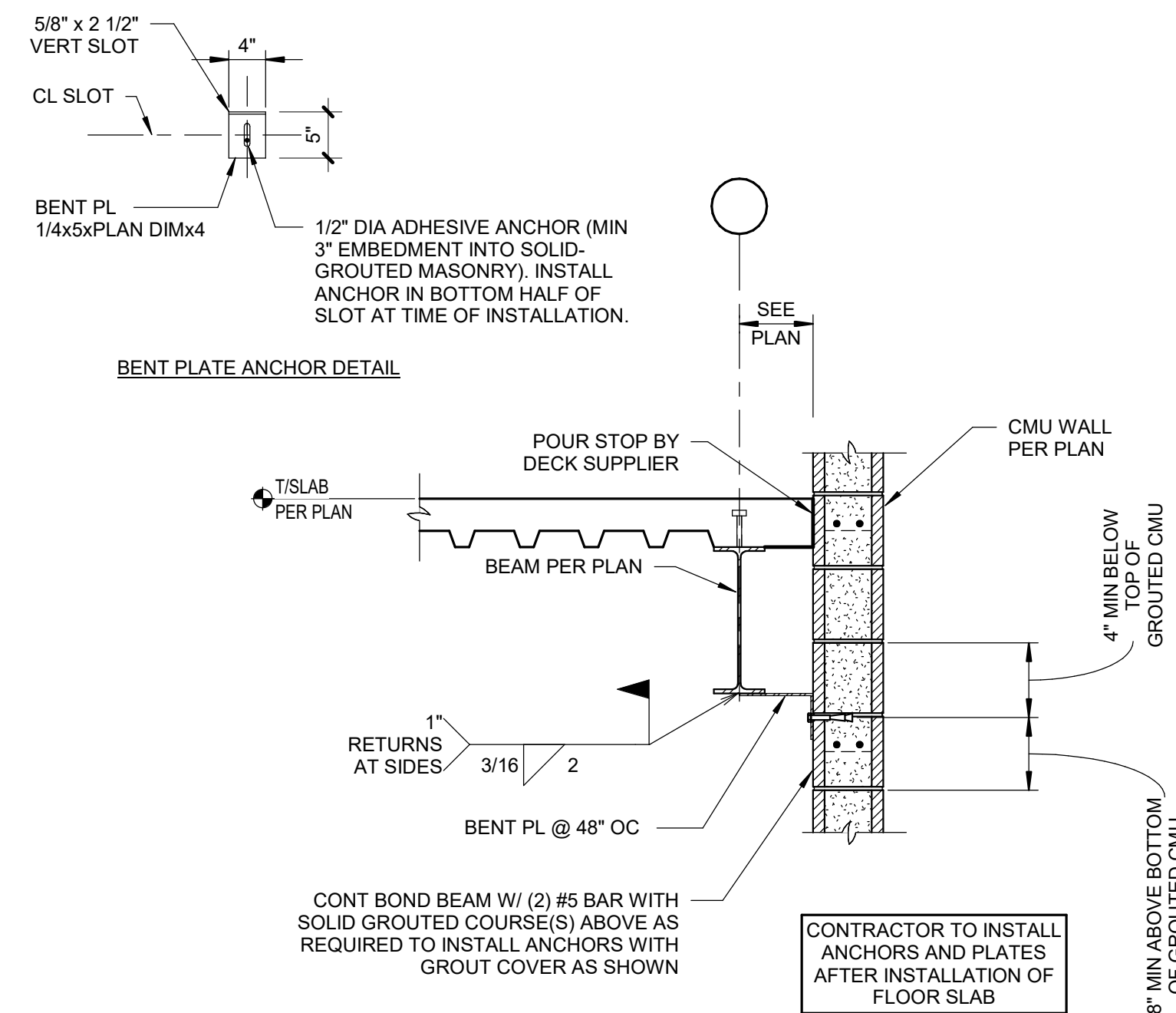
TYPICAL BEAM BEARING ON MASONRY

SCALE: 3/4" = 1'-0"



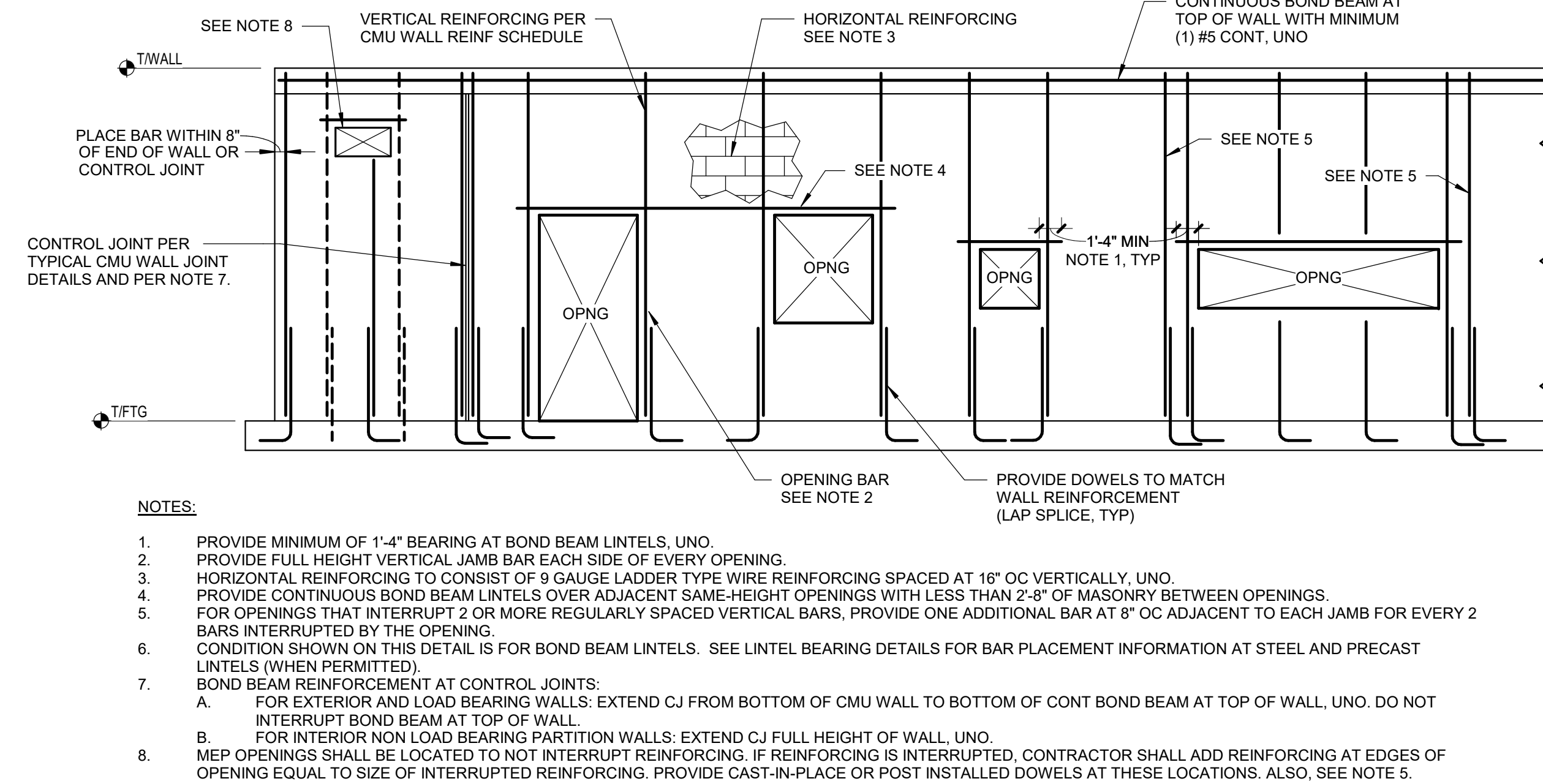
TYPICAL FULL-HEIGHT CMU PARTITION WALL BRACING AT SLAB ON METAL DECK

SCALE: 3/4" = 1'-0"



FLOOR SLAB CONNECTION AT EAST ELEVATOR/STAIR TOWER

SCALE: 3/4" = 1'-0"



TYPICAL REINFORCING AT CMU WALLS

SCALE: 3/4" = 1'-0"

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Indianapolis, Indiana 46202
phone 317/284.8162
a x i s | o r c h . c o m

Revised Drawing
This drawing indicates the general scope of the project in the project
architectural design concept, the dimensions of the building, the major
structural elements and the type of structural reinforcement and
mechanical systems. The drawings do not constitute a contract or
any other legal document. It is the responsibility of the engineer or
architect to provide all performance and construction of the system
as shown. On the part of the general contractor, the contractor
described, the trade contractor shall provide all items required for the
proper installation and completion of work.

DRAWN BY: JBC/DC/ECAN/ET/JAV
CHECKED BY: DAB
DATE: 09/12/2022

REVISIONS:

#	DESCRIPTION	DATE
1	Addendum 1	09/29/2022
2	Addendum 2	10/06/2022

CIVIL ENGINEER
JASON L. BROWN, P.E.
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

STRUCTURAL ENGINEER
JASON L. BROWN, P.E.
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

MEP ENGINEER
SEAN OGDONKOVAN, P.E., Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8444

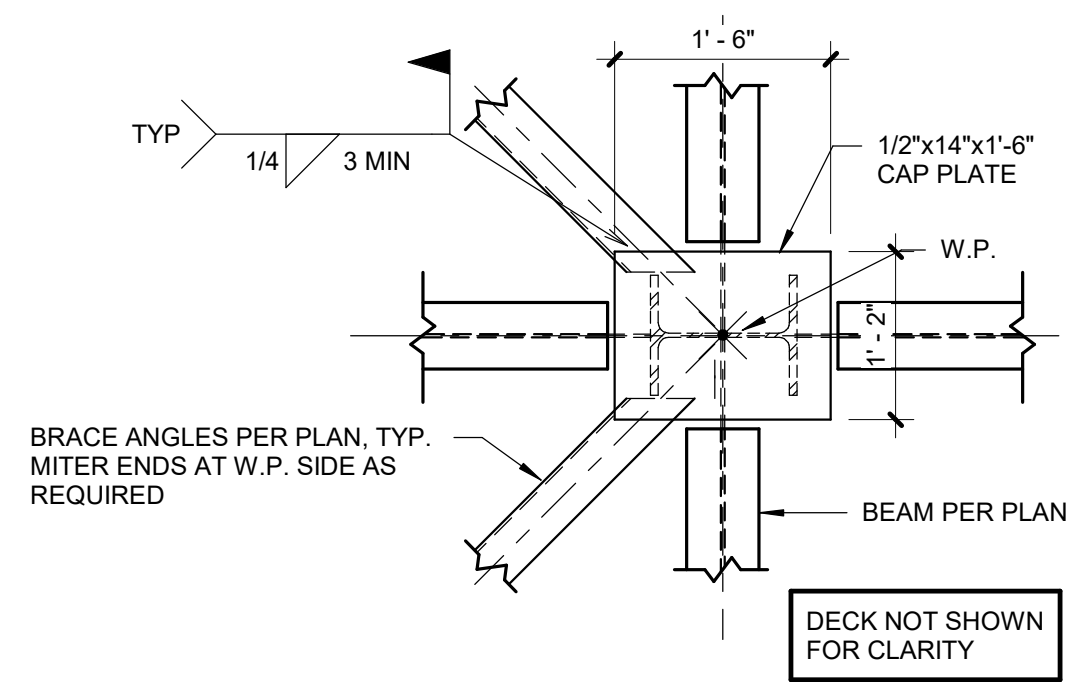
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JIAN CHEN, PIA, AIA
195 N HARBOUR DR # 3405
Chicago, IL 60601
PH 847 363-0168

DAMIAN CENTER
NEW DAMIAN HEADQUARTERS
INTERSECTION OF WASHINGTON STREET
AND N ORIENTAL STREET

PAUL A. BURCH
REGISTERED
NO. PE11400268
STATE OF INDIANA
PROFESSIONAL ENGINEER
Darl Burch
09/12/2022

TYPICAL SECTIONS AND DETAILS

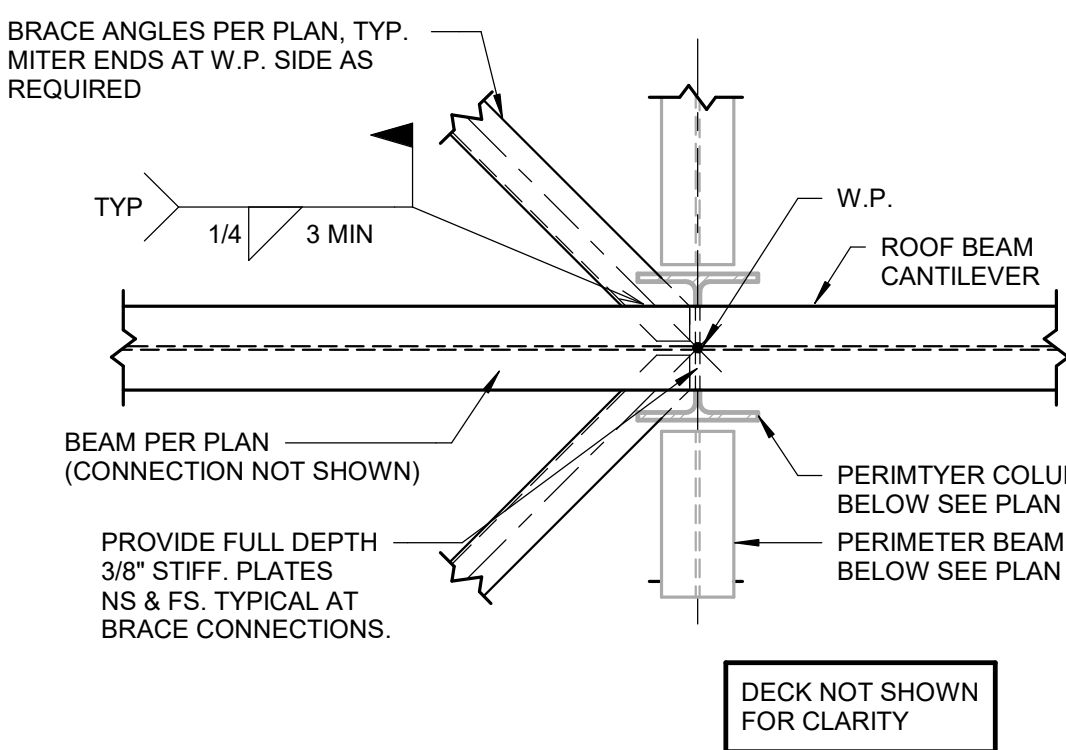
S506
PROJECT NUMBER: 2021029



HORIZONTAL ROOF BRACING CONNECTION AT INTERIOR COLUMN

4
S511

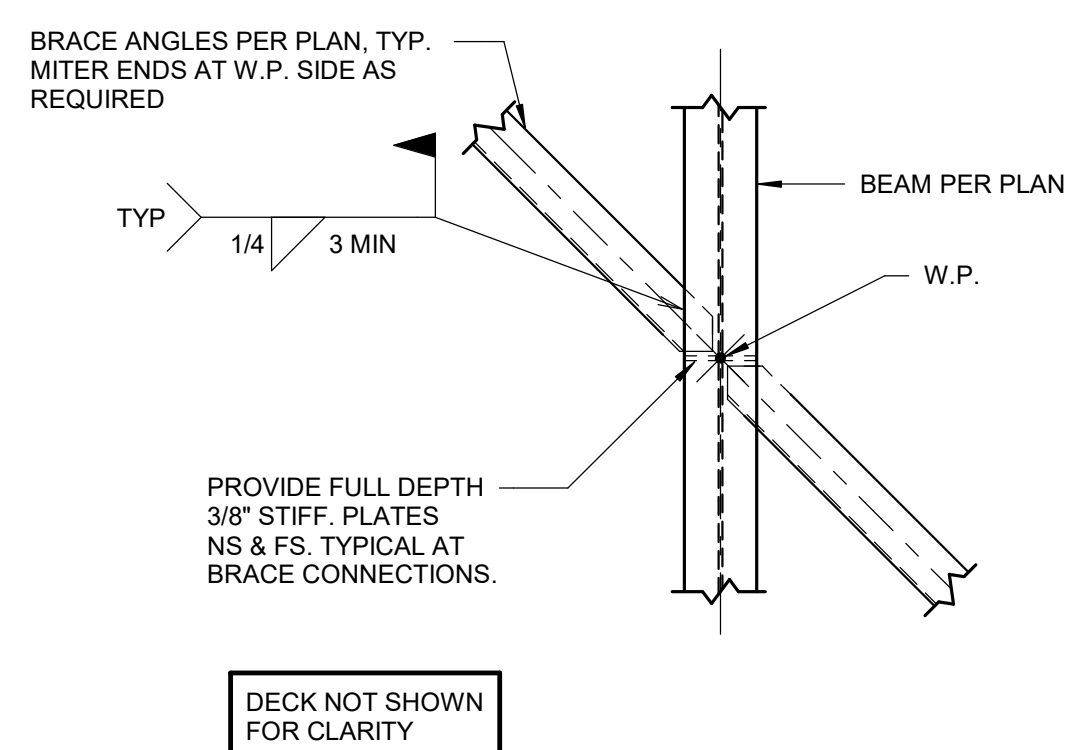
SCALE: 3/4" = 1'-0"



HORIZONTAL ROOF BRACING CONNECTION AT CANTILEVERED BEAM

3
S511

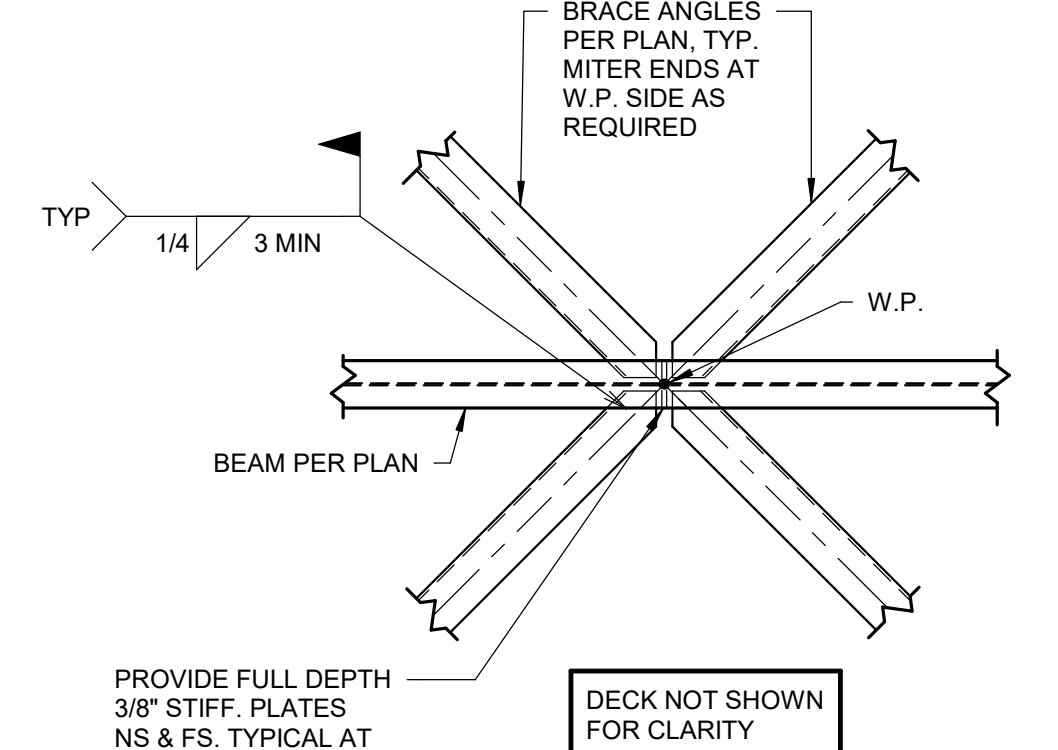
SCALE: 3/4" = 1'-0"



HORIZONTAL ROOF BRACING CONNECTION (2 BRACES)

2
S511

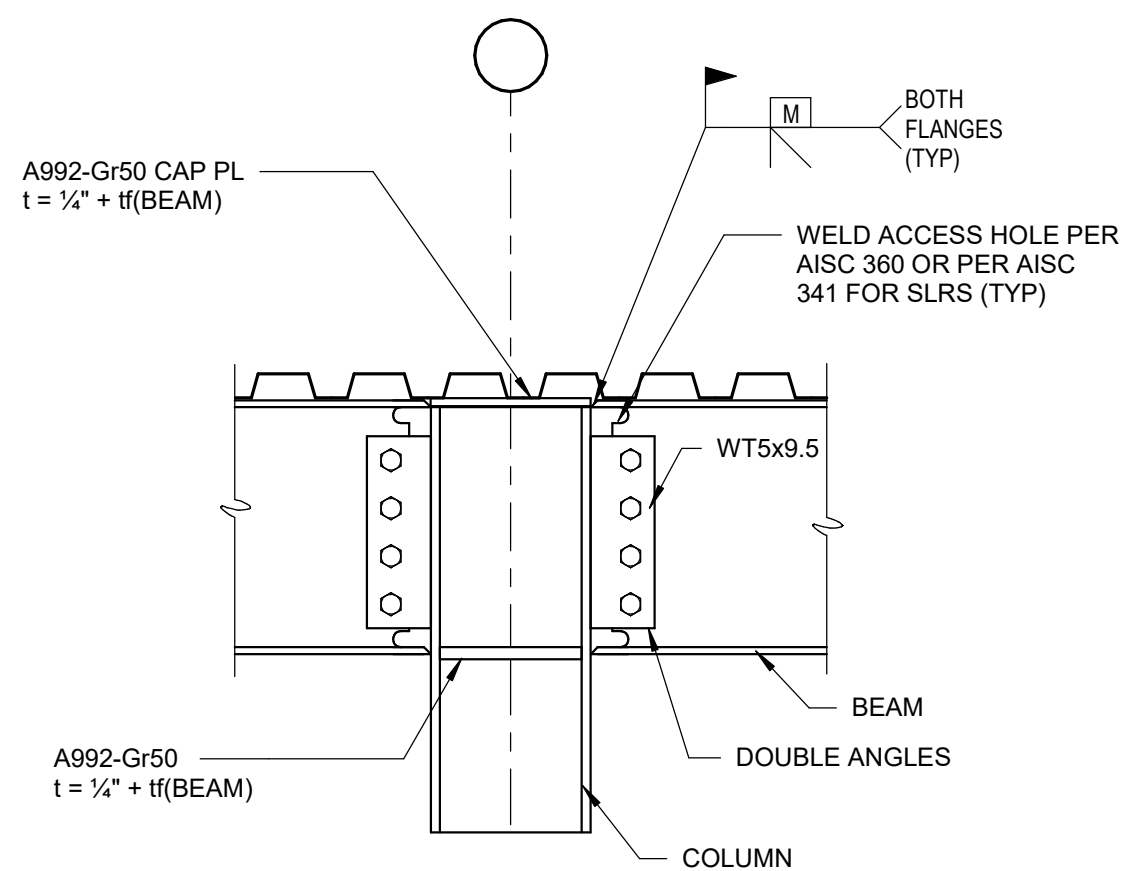
SCALE: 3/4" = 1'-0"



HORIZONTAL ROOF BRACING CONNECTION (4 BRACES)

1
S511

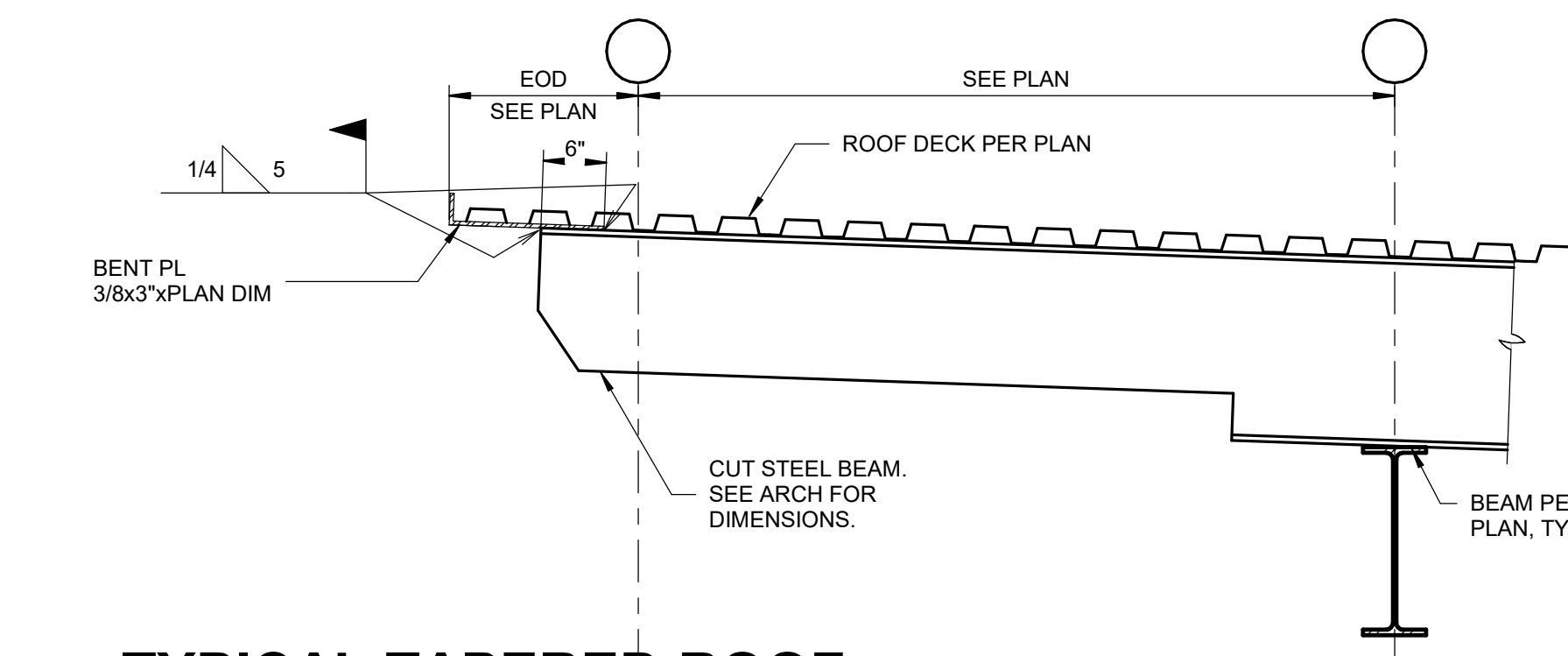
SCALE: 3/4" = 1'-0"



TYPICAL WIDE FLANGE COLUMN MOMENT CONNECTION

7
S511

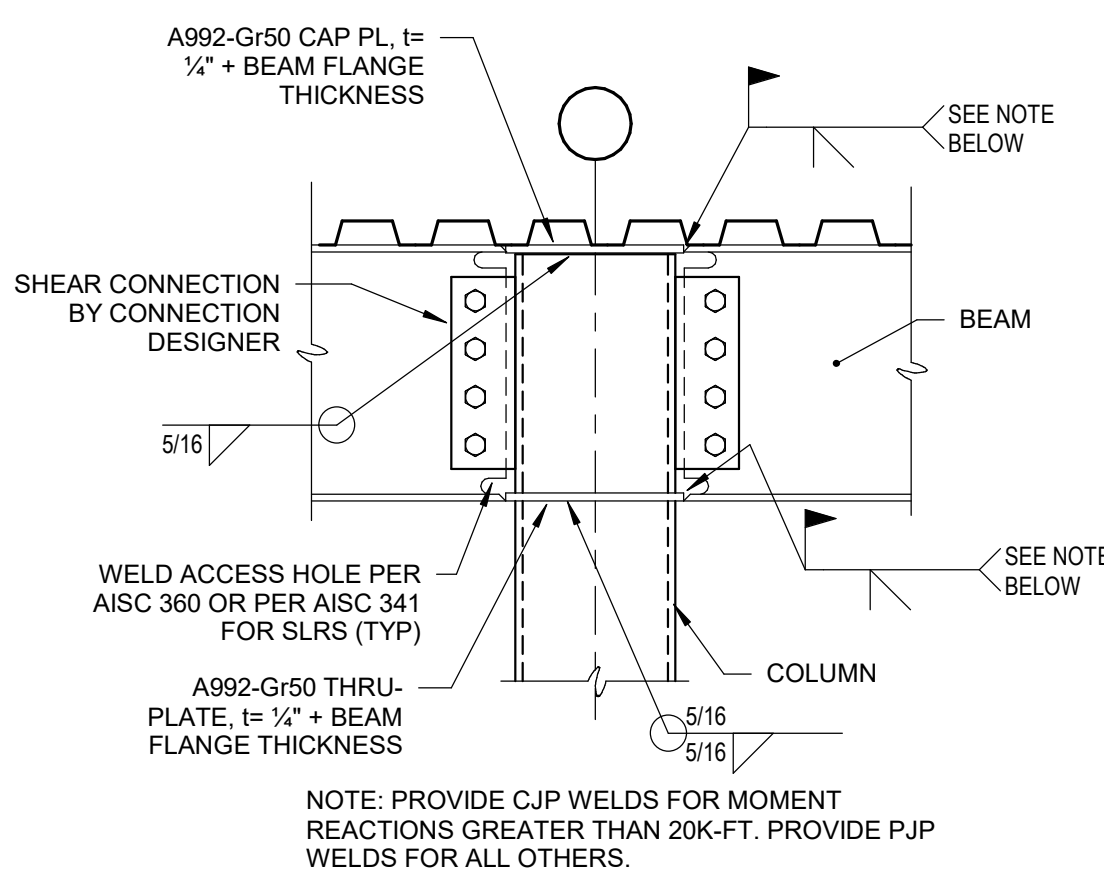
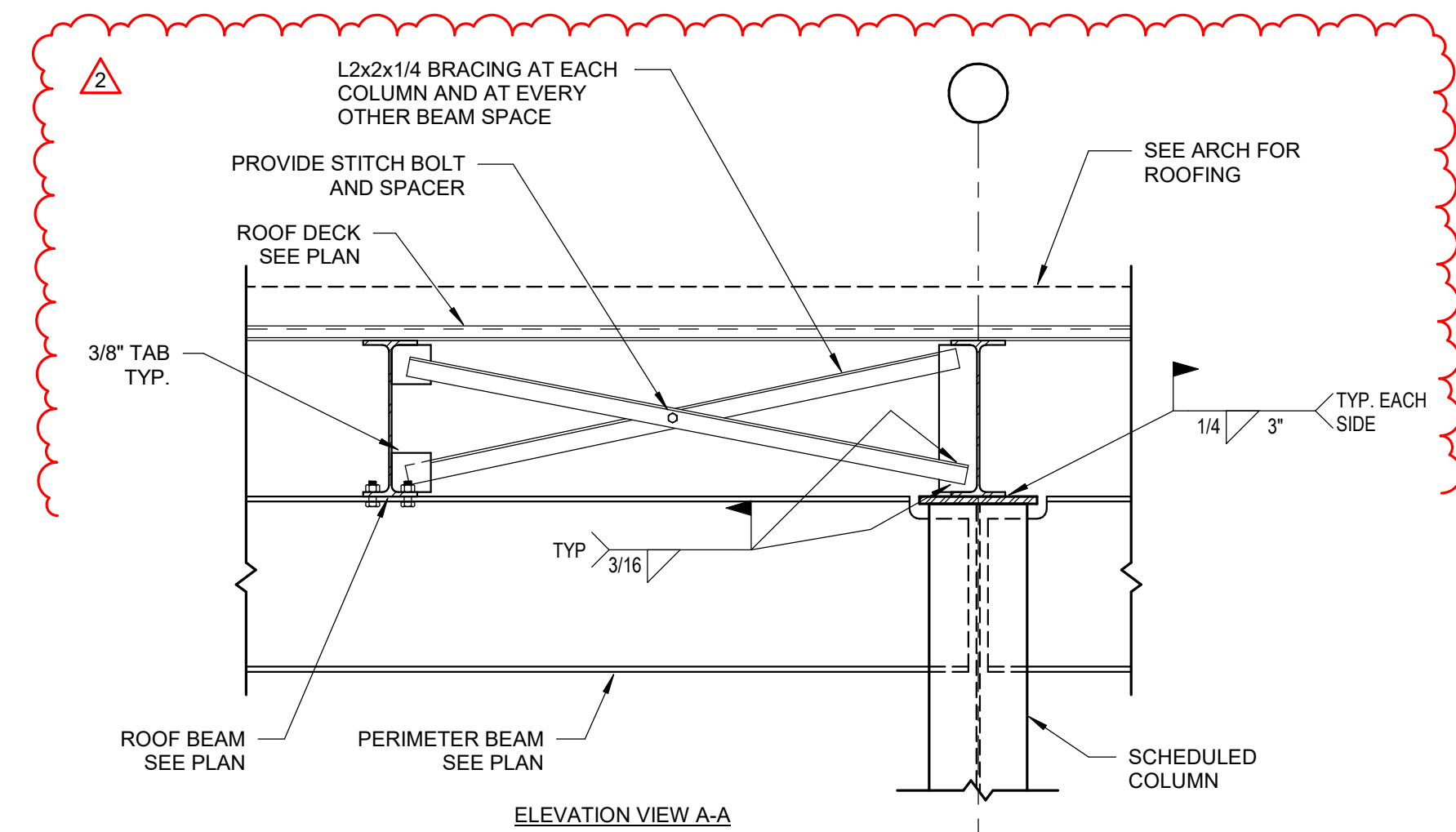
SCALE: 1" = 1'-0"



TYPICAL TAPERED ROOF OVERHANG BEAM

6
S511

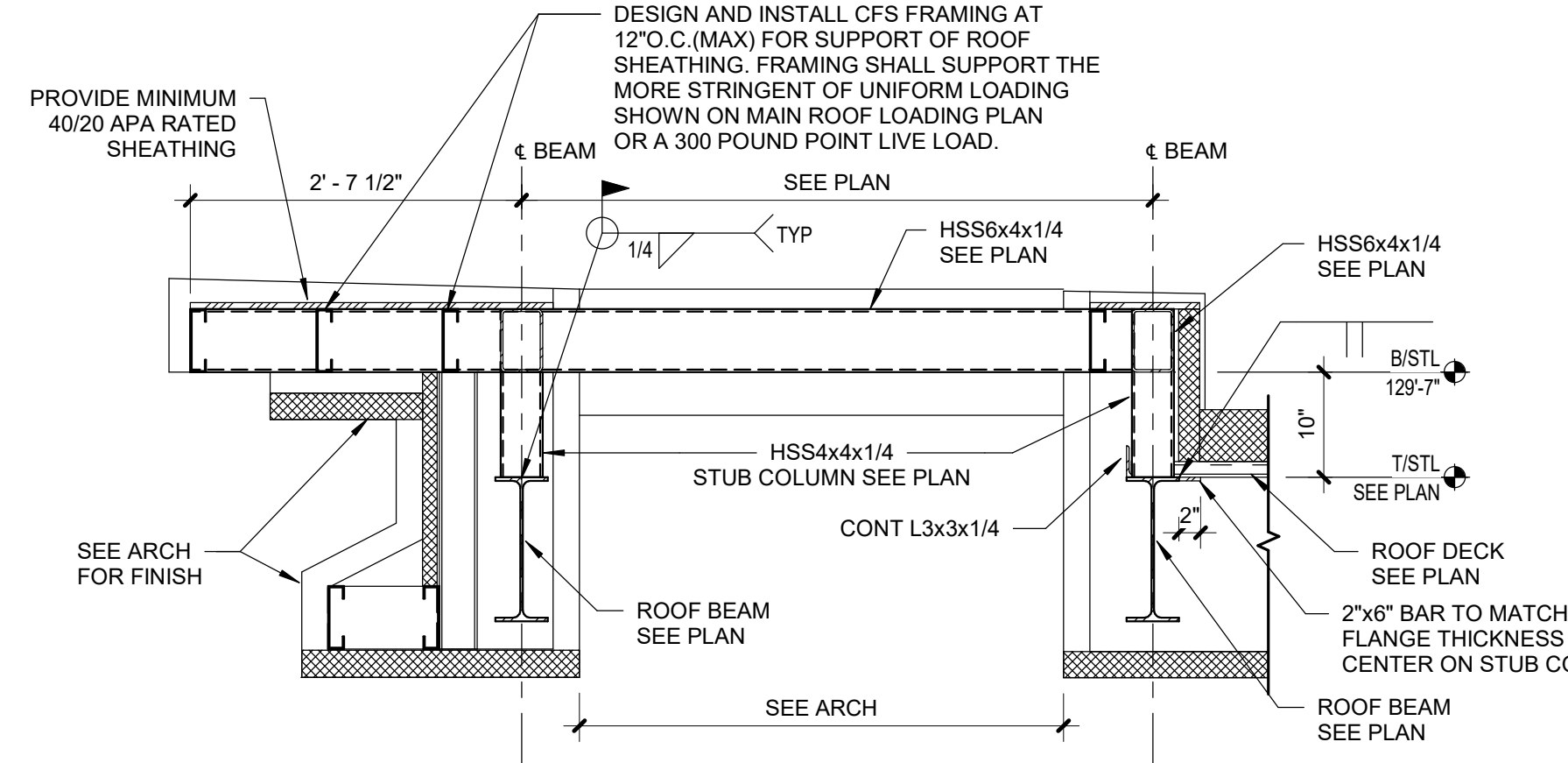
SCALE: 3/4" = 1'-0"



TYPICAL MOMENT CONNECTION DETAIL

9
S511

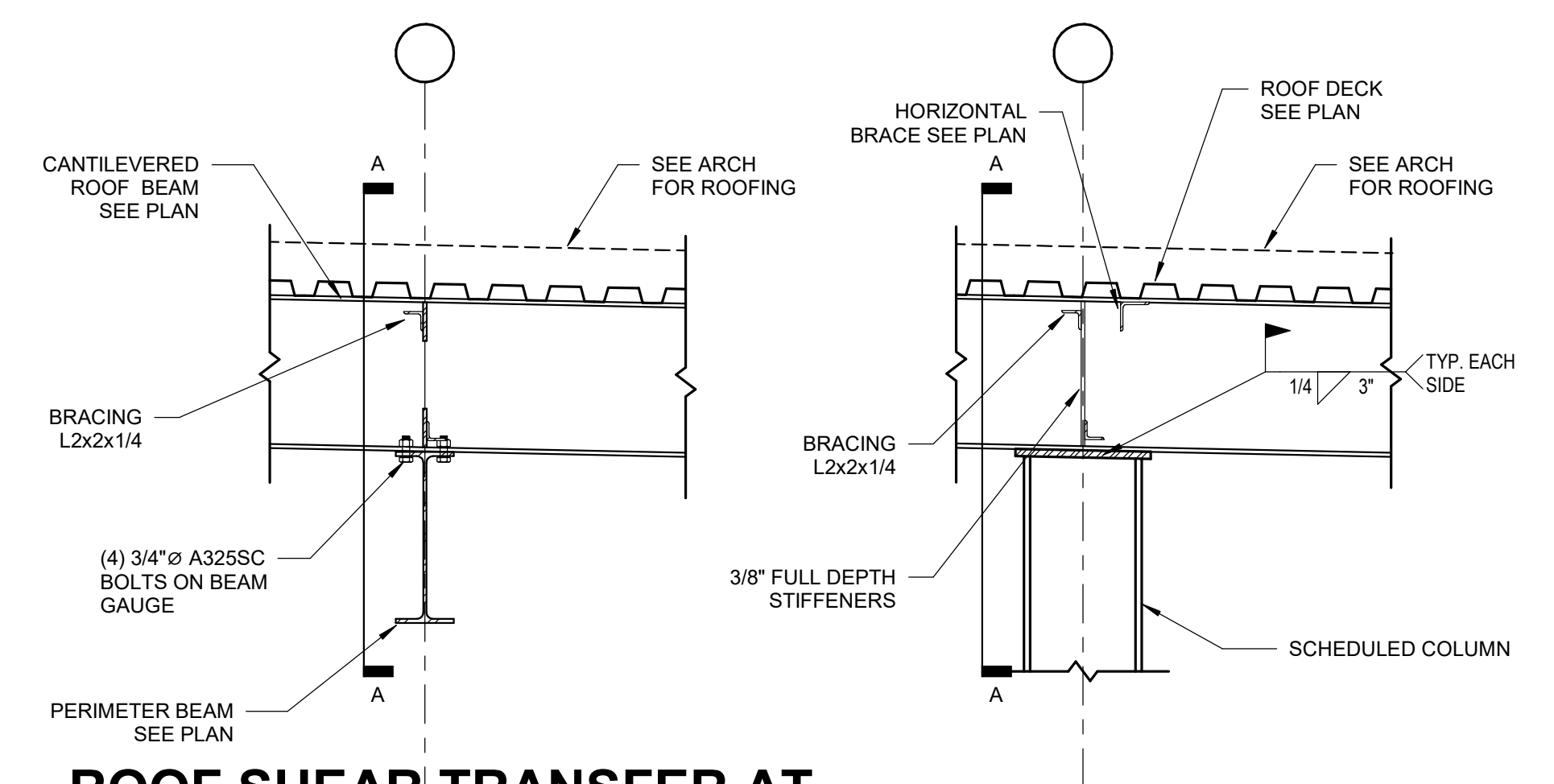
SCALE: 1" = 1'-0"



ROOF OPENING FRAMING AT WEST ROOF EDGE

8
S511

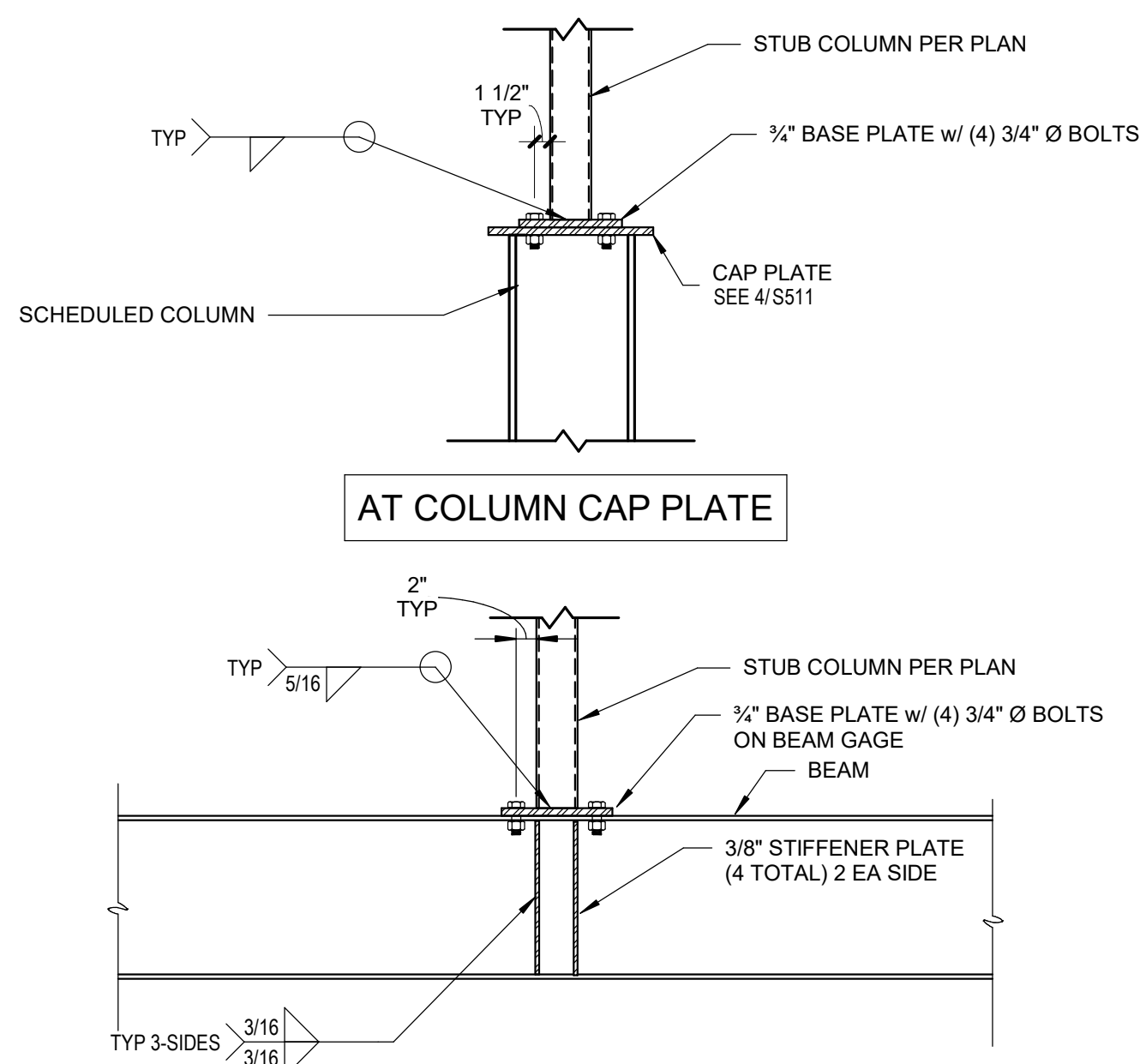
SCALE: 3/4" = 1'-0"



ROOF SHEAR TRANSFER AT CANTILEVERED BEAM

5
S511

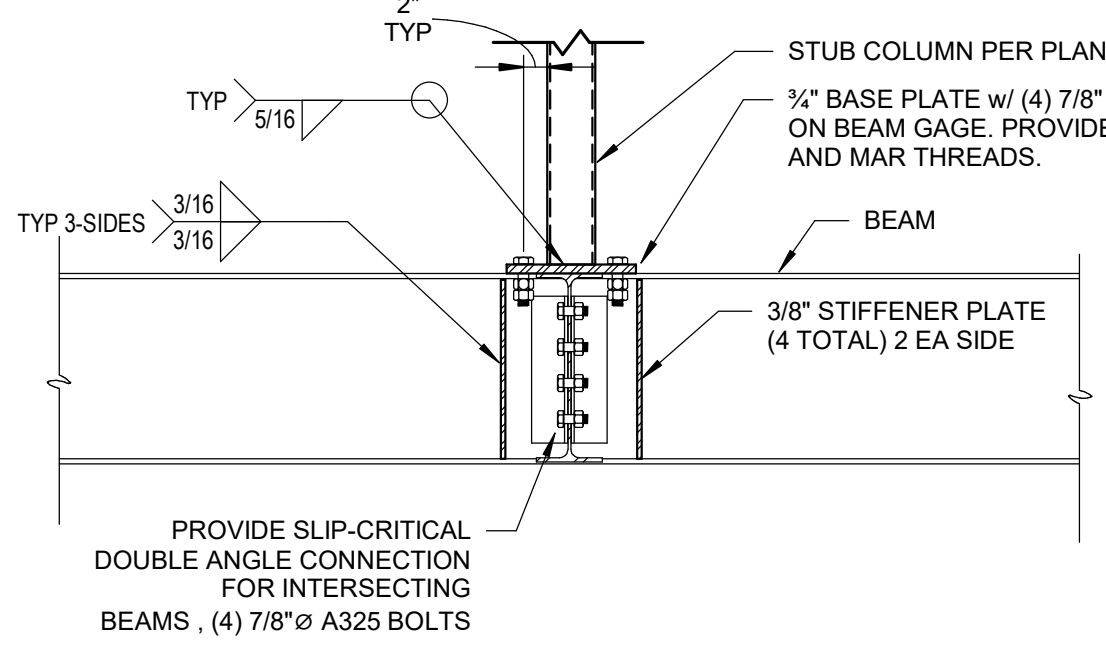
SCALE: 3/4" = 1'-0"



TYPICAL CLERESTORY STUB COLUMN DETAIL

13
S511

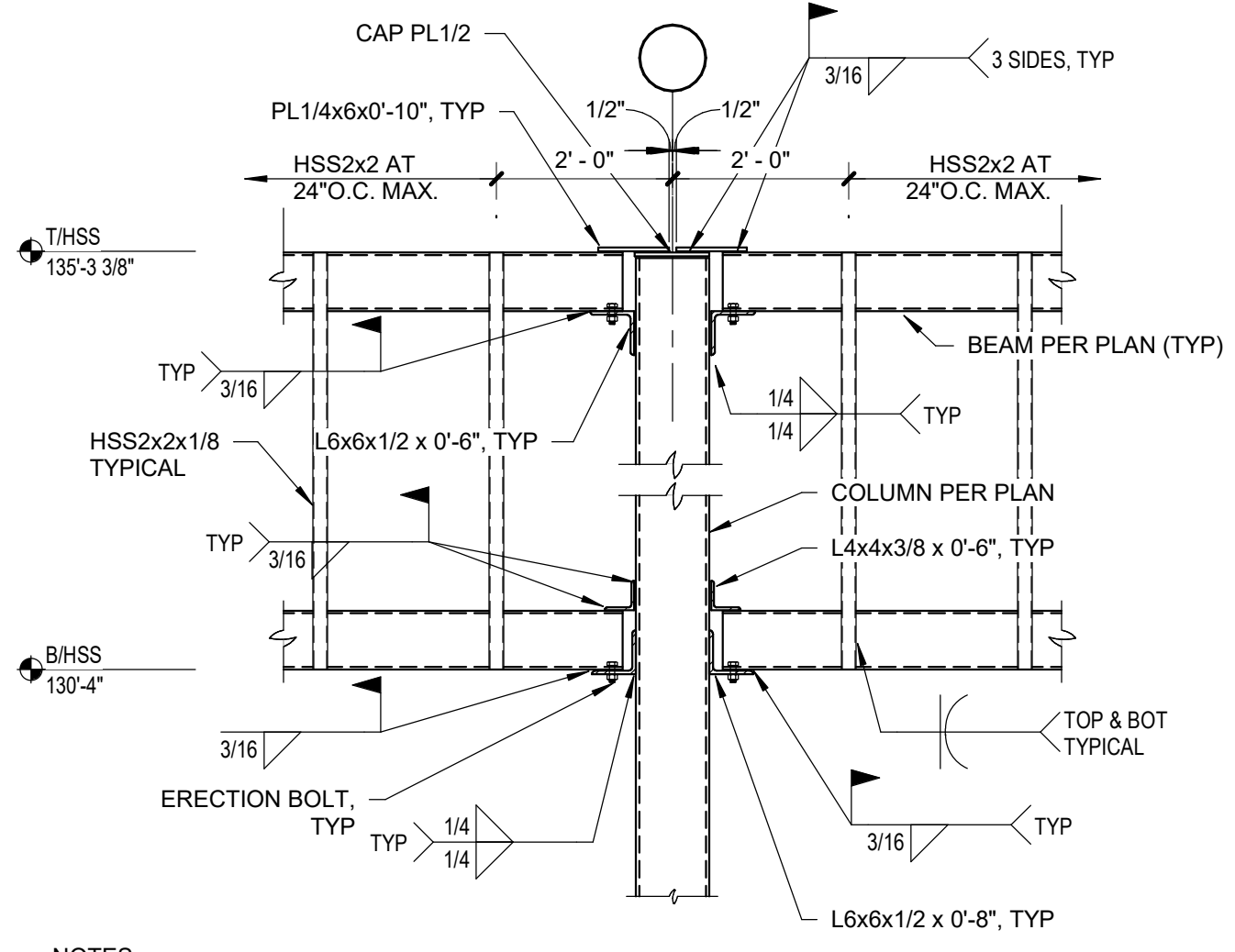
SCALE: 3/4" = 1'-0"



TYPICAL SCREEN WALL STUB COLUMN DETAIL

12
S511

SCALE: 3/4" = 1'-0"

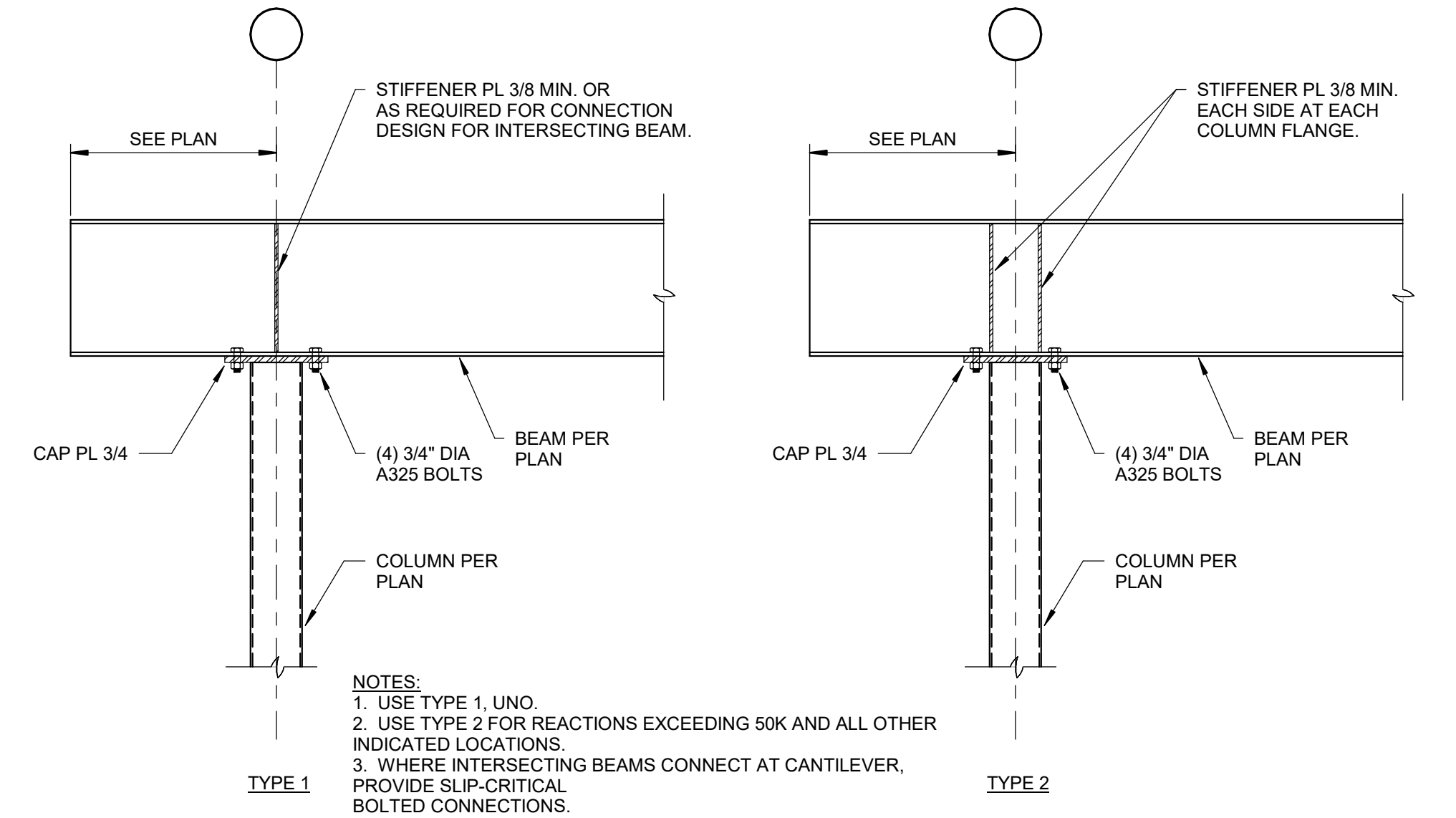


NOTES:
1. ALL STEEL ABOVE THE ROOF SHALL BE HOT-DIP GALVANIZED. AFTER STEEL INSTALLATION IS COMPLETE, REPAIR ALL DAMAGE TO GALVANIZED COATING, INCLUDING FIELD WELDS, WITH COLD GALVANIZING REPAIR COMPOUND.
2. PROVIDE MIN 1/4" THICK END CAPS AT ALL HORIZONTAL HSS. UNO.
3. PROVIDE ROUND VENT HOLES AS REQUIRED FOR GALVANIZING IN BOTTOM SURFACE OF INSTALLED HSS. SHOP-INSTALL PERMANENT WEATHERPROOF SEAL PLUGS AT ALL VENT HOLES IN HSS.

ROOF SCREEN DETAIL

11
S511

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



TYPICAL CANTILEVER BEAM BEARING

10
S511

SCALE: 3/4" = 1'-0"

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

Notes:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural members and mechanical systems. The drawings are not intended to be used for construction of work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated or described, the trade contractor shall furnish all items required for the proper execution and completion of work.

DRAWN BY: JBC/CD/CA/NT/JAV
CHECKED BY: DAB
DATE (ISSUED): 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 Addendum 2 10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Kentucky Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JSC
NANNAN FLECK, PE
8465 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317 661-1944

STRUCTURAL ENGINEER
JSC
DANIEL BURCH, PE
8465 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317 661-1944

MEP ENGINEER
BRO CONNOR
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Kingsbridge Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

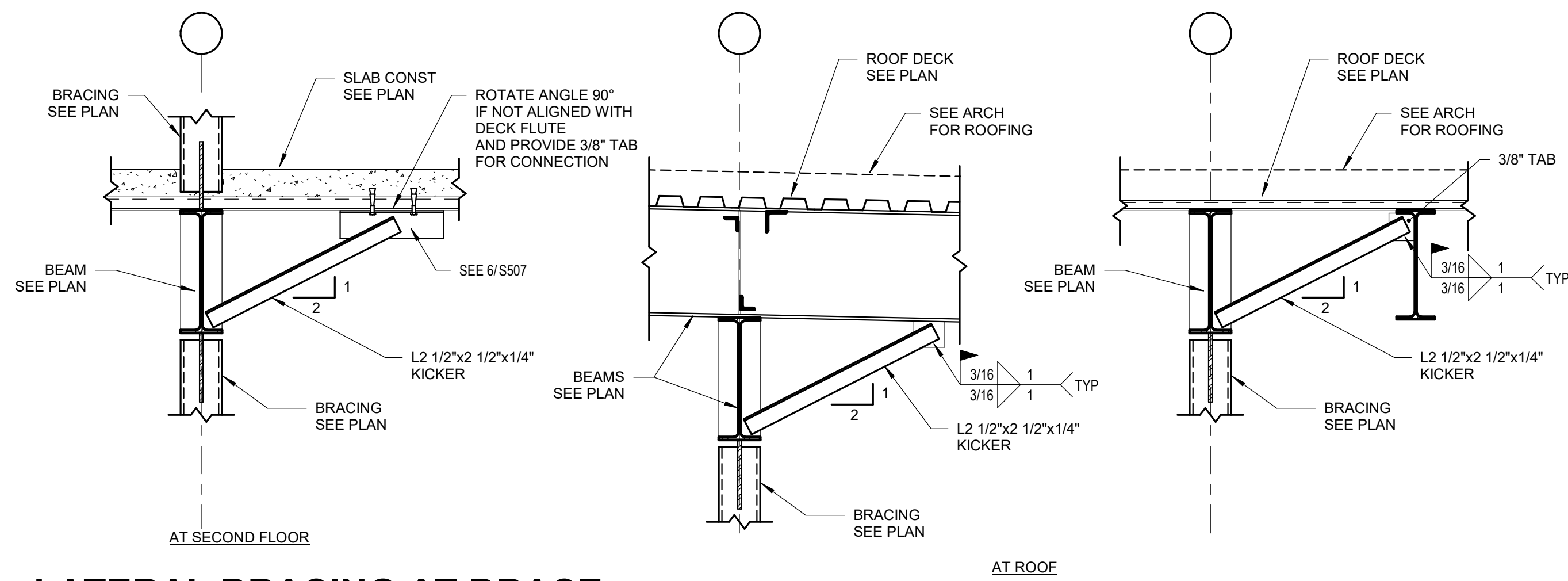
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIS CHEN, PLA, ASLA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF WASHINGTON STREET
AND N ORIENTAL STREET

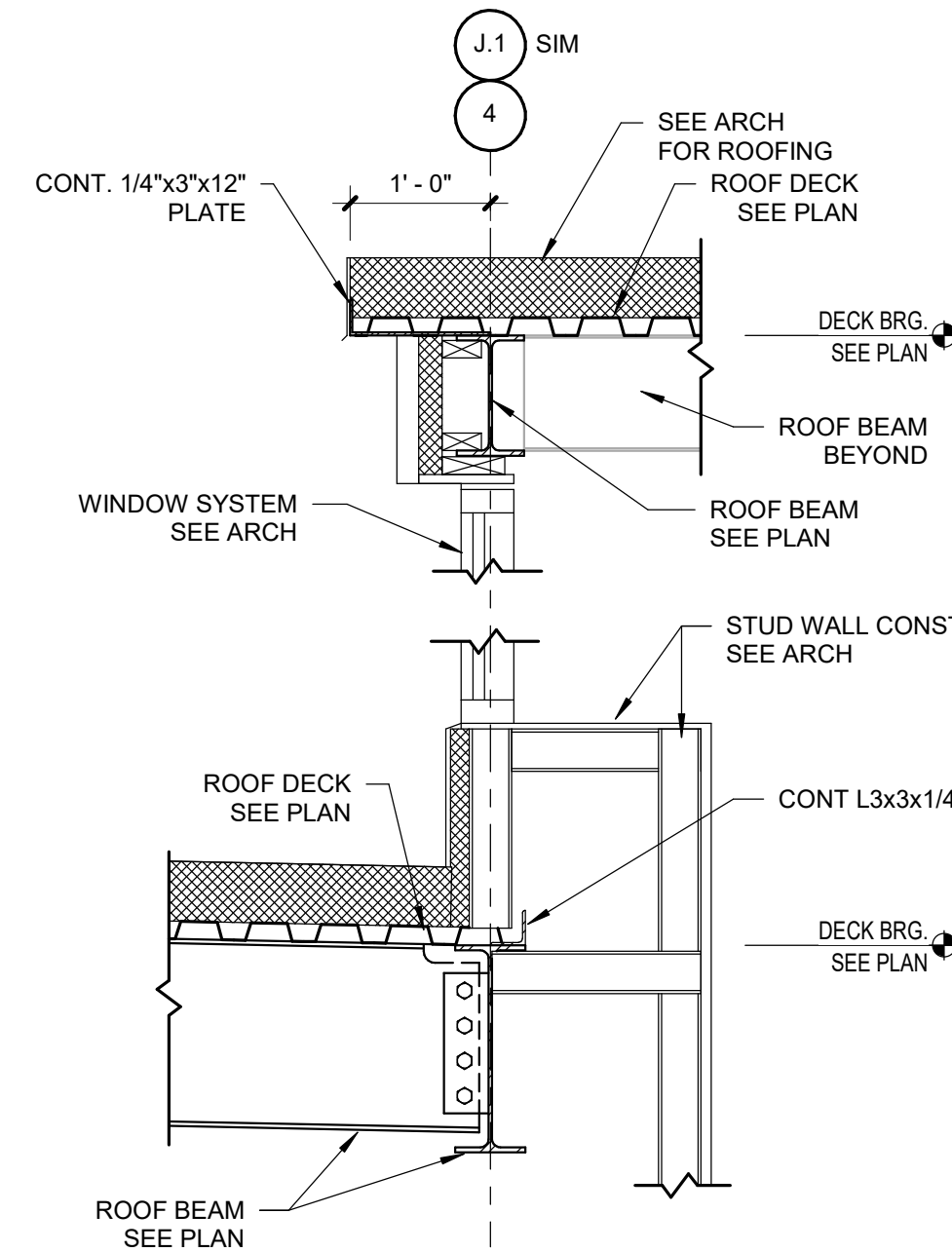
DANIEL A. BURCH
REGISTERED
NO. PE11400268
STATE OF INDIANA
PROFESSIONAL ENGINEER
Dad Burch
09/12/2022

TYPICAL SECTIONS AND
DETAILS

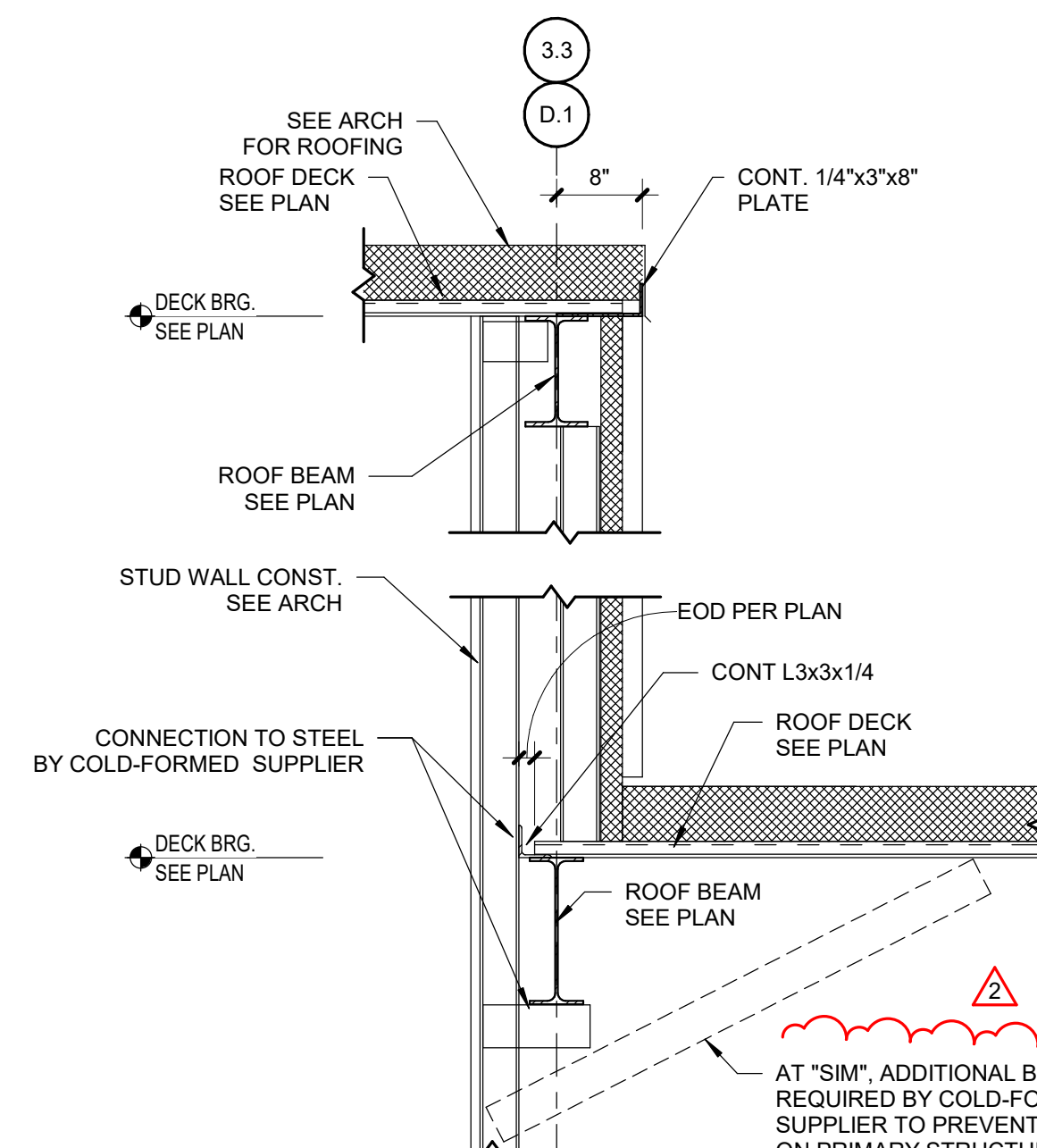
S511
PROJECT NUMBER: 2021029



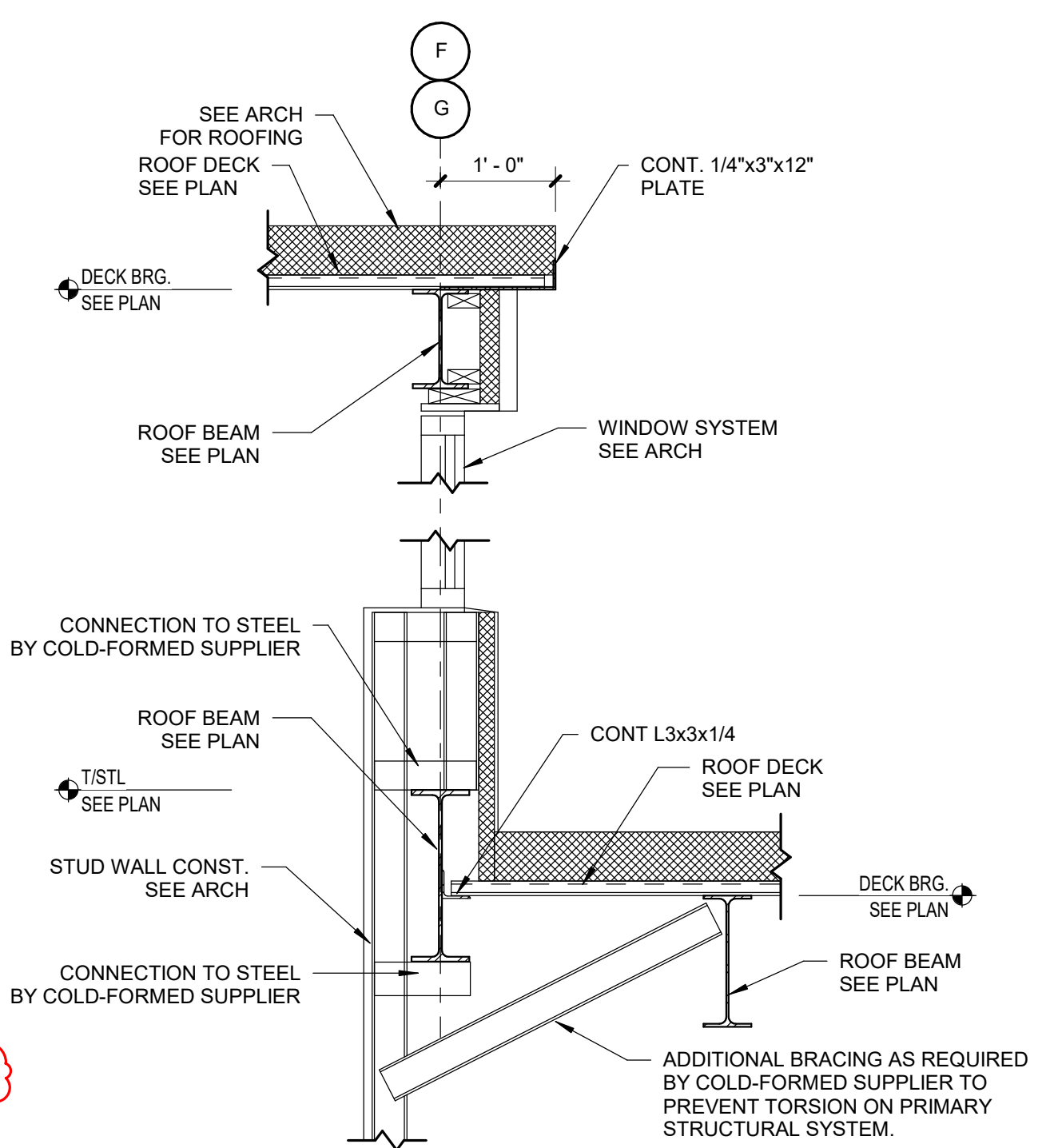
LATERAL BRACING AT BRACE CONNECTIONS



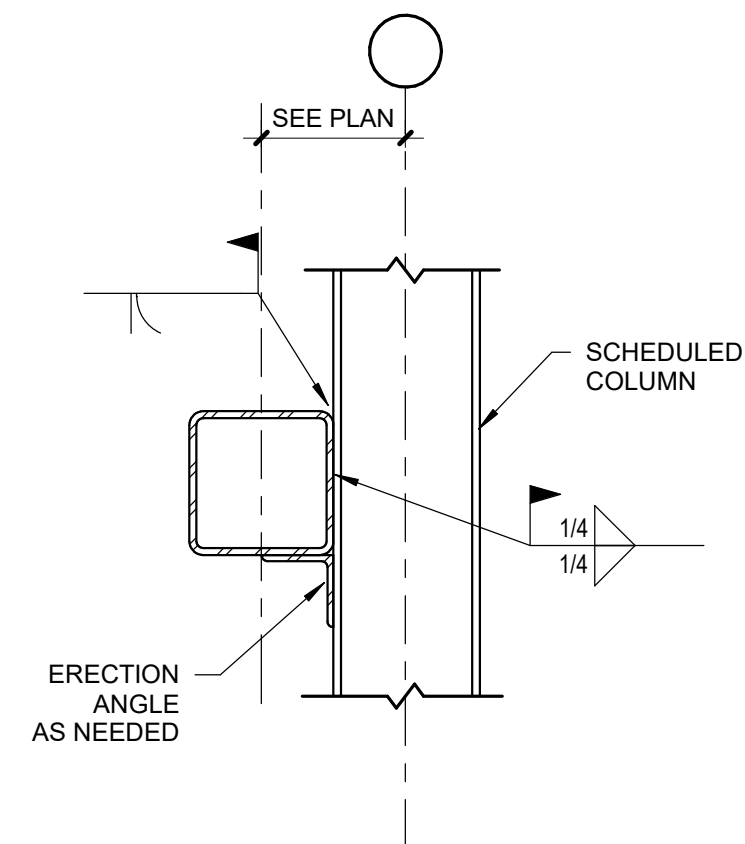
CLERESTORY DETAILS ALONG GRIDS 4 AND 3.3



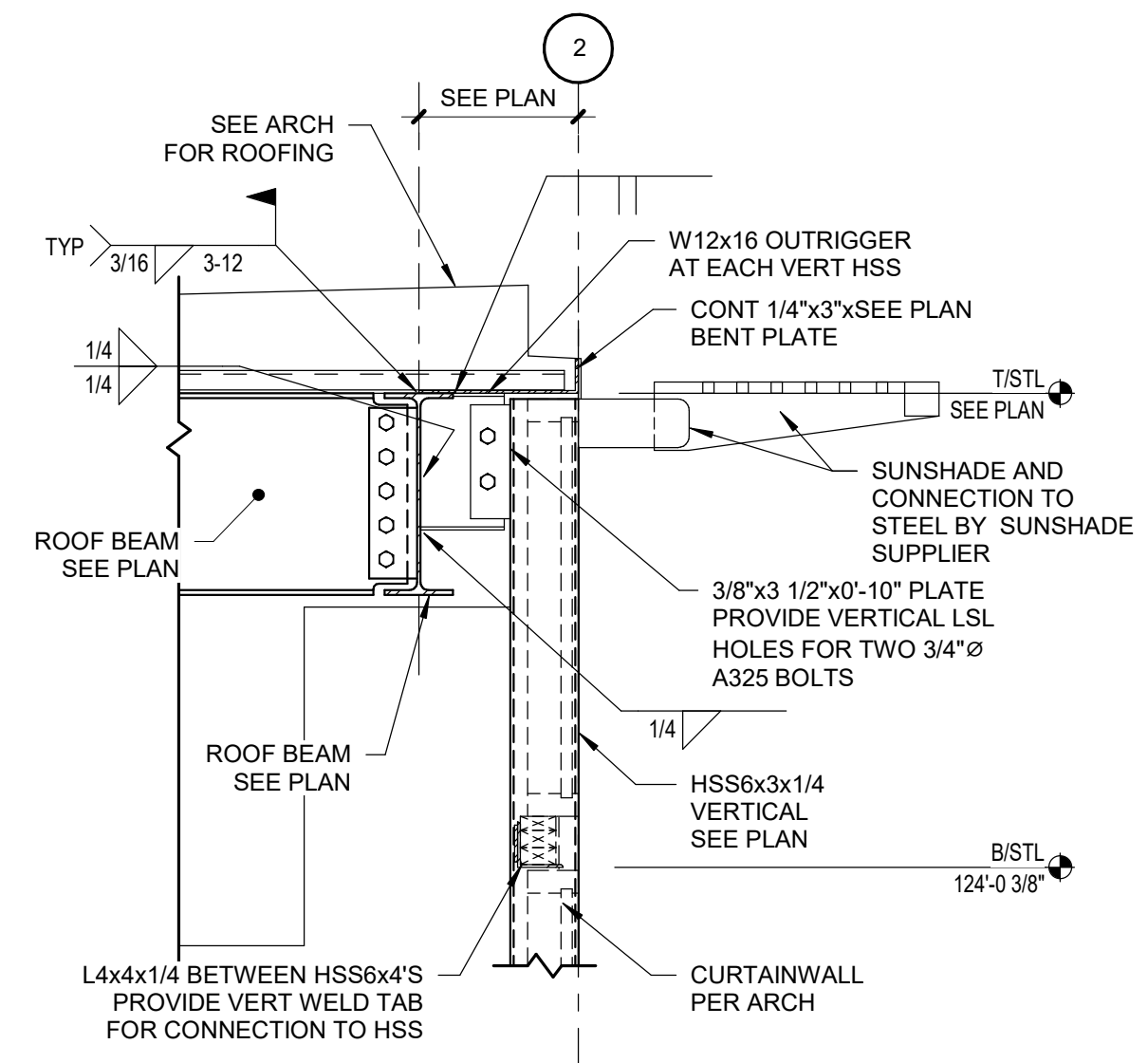
CLERESTORY ENDWALL FRAMING AT GRID D.1



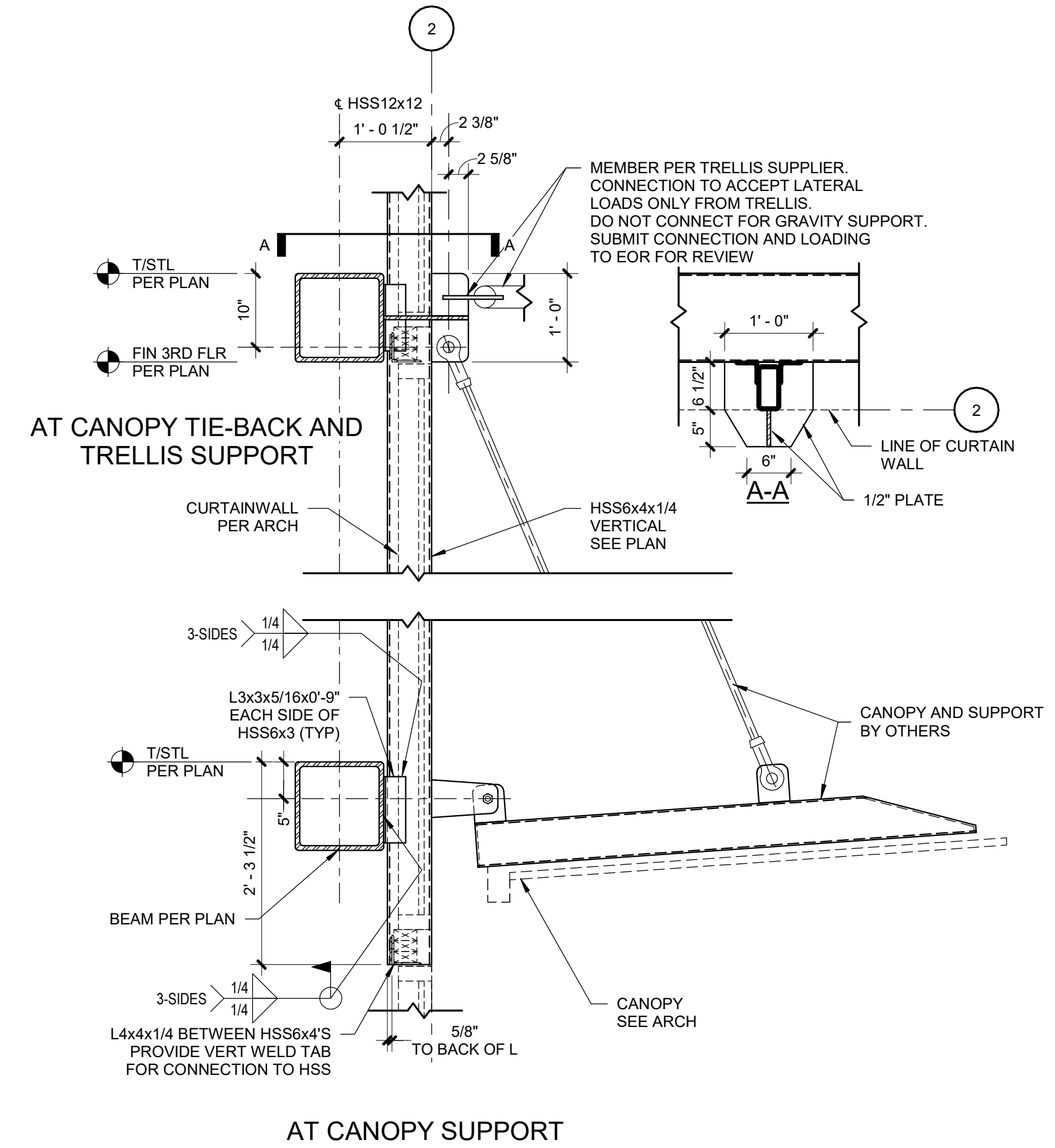
CLERESTORY ENDWALL FRAMING AT GRIDS F AND G



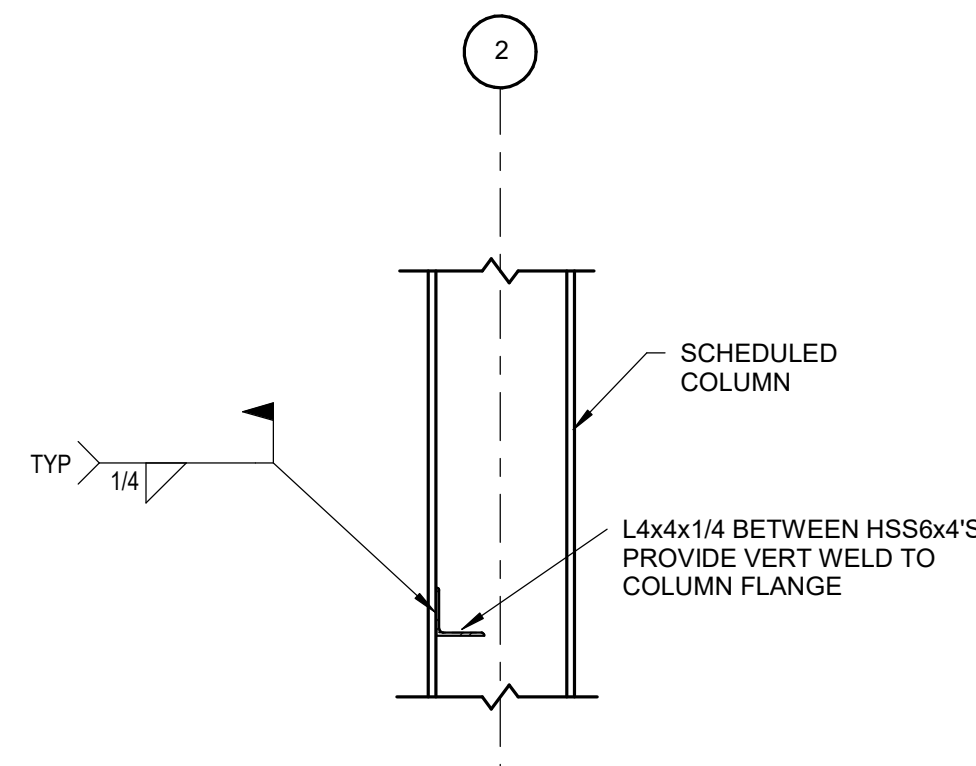
HSS12x12 CONNECTION TO COLUMN



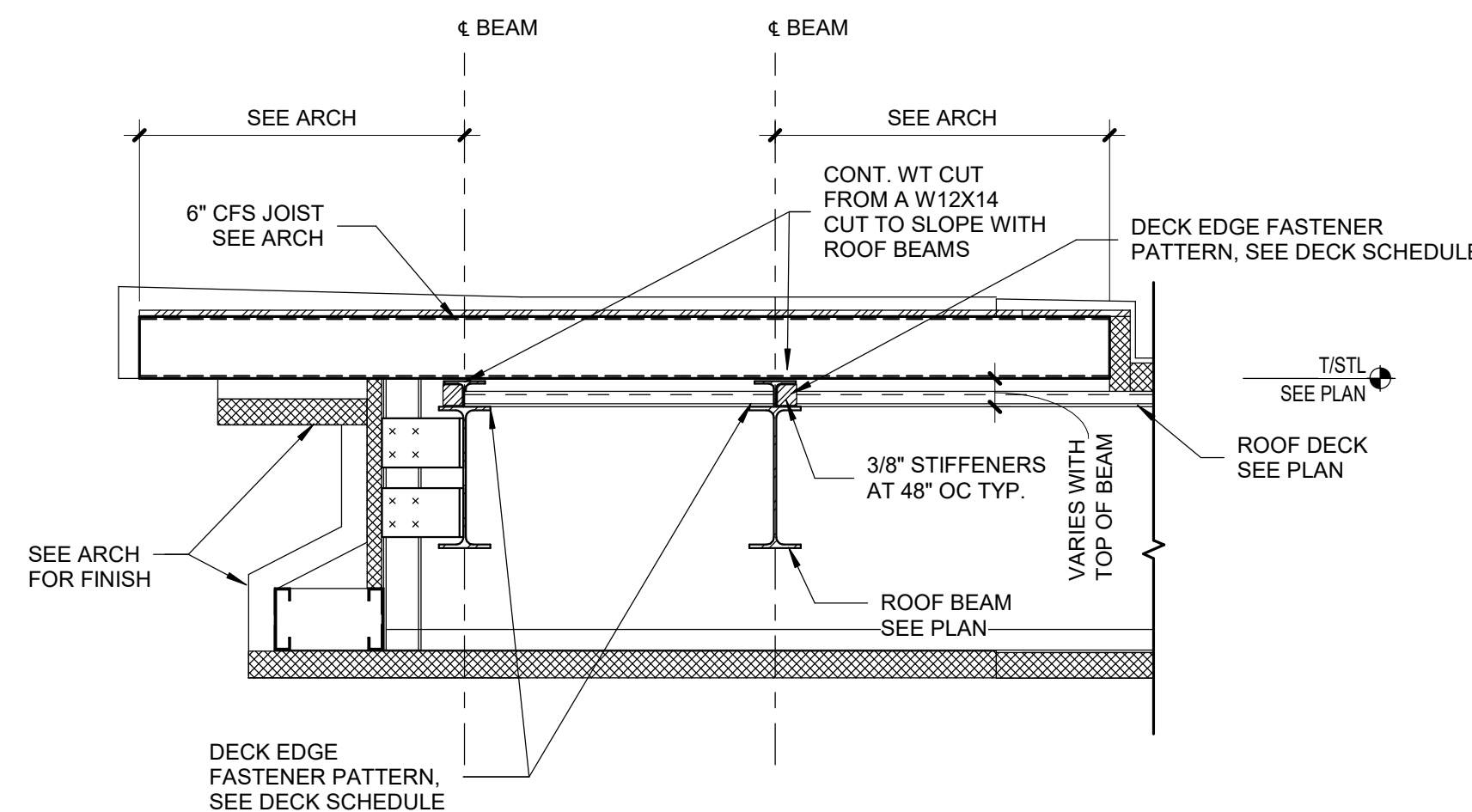
SUNSHADE SUPPORT ABOVE SOUTH ENTRY



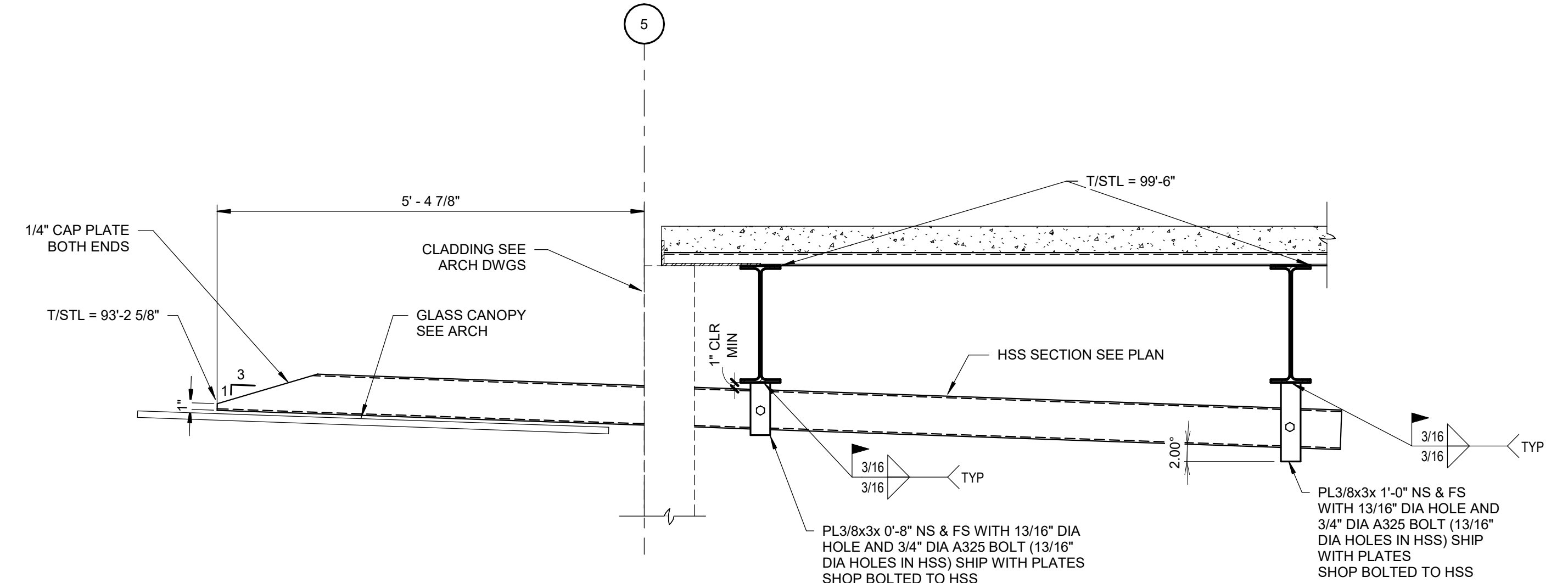
SOUTH ENTRY CANOPY AND TRELLIS SUPPORT



ANGLE CONNECTION TO COLUMN AT SOUTH ENTRY



ROOF EDGE FRAMING



TYPICAL SUPPORT TUBE AT SUNSHADE

AXIS

618 East Market Street
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phone 317.284.8162
axisarch.com

Notes:
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DRAWN BY: JKB/CD/ECAN/1JAV
CHECKED BY: DAB
DATE: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 Addendum 2 10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Kentucky Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER:
JSC
JANIS FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317.661.1944

STRUCTURAL ENGINEER:
JSC
DANIEL BURCH, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317.661.1944

MEP ENGINEER:
RMO CONSULTING
SEAN OGIKAWANA, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT:
CHEN SITE DESIGN STUDIO LLC
JANIS CHEN, PLA, ASLA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363.0168

DAMIEN CENTER
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INTERSECTION OF WASHINGTON STREET
AND N ORIENTAL STREET

PAUL A. BURCH
REGISTERED
NO. PE11400268
STATE OF INDIANA
PROFESSIONAL ENGINEER
Dad Burch
09/12/2022

TYPICAL SECTIONS AND DETAILS

S512
PROJECT NUMBER: 2021029

[illegible]

PLATE WASHER W/ STANDARD HOLES UNO AT TOP SIDE OF BASE PLATE (USE LARGER PLATE WHERE INDICATED ON COLUMN SCHEDULE OR ANCHOR ROD TABLE)

ANCHOR ROD PER SUPPLIER

BASE PLATE PE SCHEDULE

1/4

NOTES:
1. THIS DETAIL APPLIES AT ALL COLUMN ANCHOR RODS AT BRACED FRAMES AND MOMENT FRAMES UNO.

ANCHOR ROD TABLE						
ANCHOR ROD DIA.	BASE PLATE HOLE DIA.	MINIMUM WASHER SIZE	MINIMUM WASHER THICKNESS	MINIMUM PROJ ABOVE T/C/CONC	NON-SHRINK GROUT BED THK	MIN EDGE DISTANCE, E
3/4"	1 5/16"	2"	1/4"	8"	2"	1 1/2"
1"	1 13/16"	3"	3/8"	8"	2"	2"

NOTES:

- ANCHOR RODS ARE ASTM F1554 GR. 36 UNO.
- PROVIDE WELDED PLATE WASHERS IN ACCORDANCE WITH TYPICAL DETAIL AT ALL STEEL BRACED FRAMES AND MOMENT FRAMES, UNO.

2

BP4B

S601

SCALE: 3/4" = 1'-0"

THICKNESS
PROVISION PER
SCHEDULE

TOP NUTS / WASHERS

SHIMS AND LEVELING
NUTS / WASHERS
ANCHOR RODS PER
COLUMN SCHEDULE

HEX NUT (NO WASHER)
TACK WELD NUT TO
ANCHOR ROD, TYP

SECTION

EMBED
LENGTH

NON-SHRINK GROUT
PER SCHEDULE

PLAN

COLUMN PER
PLAN

BASE PLATE
PER COLUMN
SCHEDULE

NO WELD AT
FILLETS AND
TOES

S16

NOTES:
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SUFFICIENT TEMPORARY
SUPPORT OF COLUMN BASE PLATES USING LEVELING PLATES, LEVELING NUTS /
WASHERS OR STEEL SHIMS (OR COMBINATION THEREOF) PRIOR TO PLACEMENT
AND CURING OF NON-SHRINK GROUT.

TYPICAL WELD COLUMN BASE DETAILS

3
S017

BP4A

SCALE: 3/4" = 1'-0"

PLAN

SECTION

Labels: TYPED AND PROJECTED PER SCHEDULE, TOP NUTS / WASHERS, SHIMS AND LEVELING NUTS / WASHERS, ANCHOR RODS PER COLUMN SCHEDULE, HEX NUT (NO WASHER), TACK WELD NUT TO ANCHOR ROD, TYP, EMBED LENGTH, NON-SHRINK GROUT PER SCHEDULE, NO WELD AT FILLETS AND TOES, 5/16"

NOTES:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SUFFICIENT TEMPORARY SUPPORT OF COLUMN BASE PLATES USING LEVELING PLATES, LEVELING NUTS / WASHERS OR STEEL SHIMS (OR COMBINATION THEREOF) PRIOR TO PLACEMENT AND CURING OF NON-SHRINK GROUT.

5 TYPICAL COLUMN BASE DETAIL
S601 SCALE: 3/4" = 1'-0"

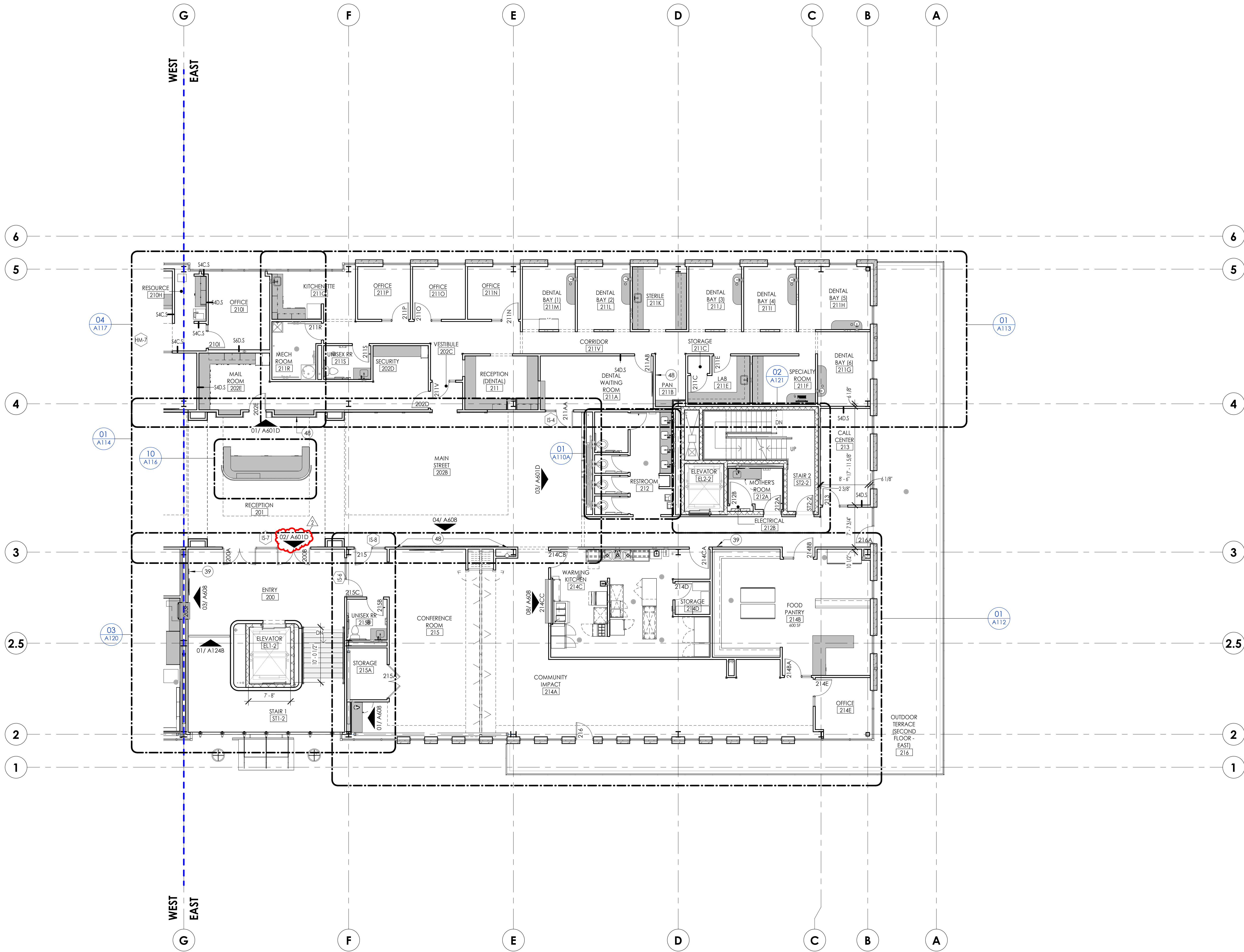
4 **BP3A**
 S601 SCALE: 1" = 1'-0"

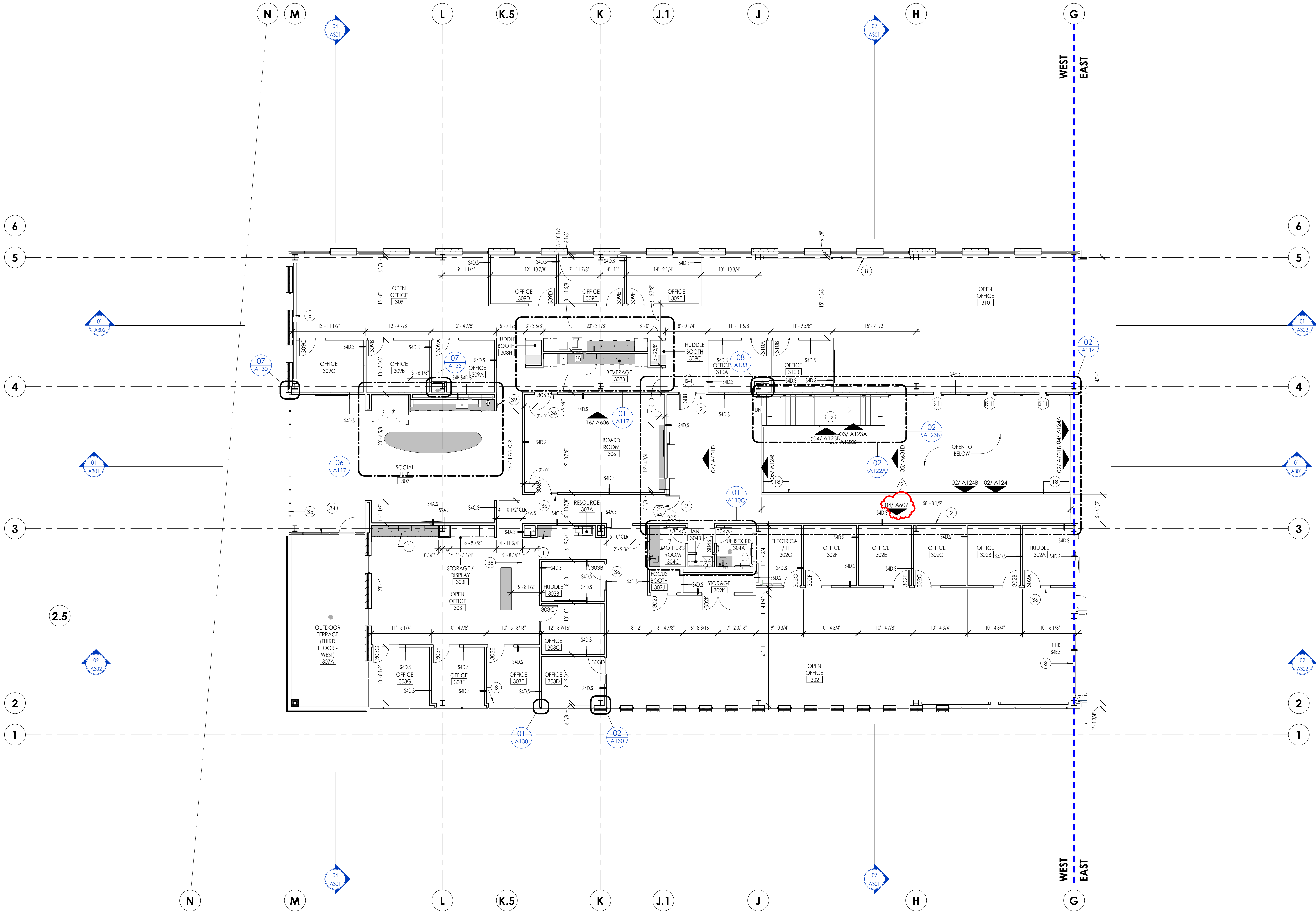
GENERAL PLAN NOTES

- REFER TO A201-A202 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
- MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

PLAN KEYNOTES

- MILLWORK SHOWN SHADED GRAY. REFER TO INTERIOR ELEVATIONS.
- MILLWORK STOREFRONT SYSTEM, ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS.
- WALL COVERING RBS. REFER TO DETAIL 04/A601/C FOR MORE INFORMATION.
- FEATURE WALL - REFER TO INTERIOR ELEVATIONS.
- DASHED LINE SHOWS BOUNDARY OF FLOOR OPENING ABOVE.
- 6" DIA. PAINTED STEEL BOLLARD. REFER TO STRUCTURAL DWGS.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO PLUMBING DRAWINGS.
- LATERAL BRACING - REFER TO STRUCTURAL DRAWINGS.
- MOP SINK WITH OPEN SHELVING.
- MILLWORK WITH SINK.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD FINISHES.
- METAL PAN STAIR WITH CONCRETE TREADS.
- ALUMINUM STOREFRONT SYSTEM, ANODIZED FINISH WITH WINDOW FILM. REFER TO EXTERIOR ELEVATIONS AND SPECIFICATIONS FOR WINDOW FILM.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: S31 COUNTERTOP & CAB1 BY MIDMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- GENERATOR. REFER TO ELECTRICAL DWGS.
- GUARDRAIL.
- MONUMENTAL STAIR - REFER TO ENLARGED PLANS.
- HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- OPERABLE PARTITION WALL. BASIS-OF-DESIGN: MODERNFOLD - ACUSTI-SEAL MODEL. ENCLOSURE: ACOUSTICS - STC-56. MANUAL - PANEL FINISH: TBD - TRM COLOR: TBD. SEE SPECIFICATIONS.
- INTERNAL RAMP WITH WALL MOUNTED HANDRAILS.
- PRINTER.
- EXTERIOR STAIR TO ROOF TERRACE.
- DAMIEN CENTER VENDING MACHINE - RELOCATED FROM EXISTING BUILDING.
- BIKE RACK. REFER TO LANDSCAPE PLAN.
- DASHED LINE REPRESENTS OVERHEAD COLING DOOR - REFER TO REFLECTED CEILING PLAN.
- SWIMMING PARKING GATE CLAD WITH PERF METAL PANELS.
- PERFORATED SCREEN WALL. REFER TO ELEVATIONS FOR EXTENTS. CONCRETE KNEE WALL BELOW WHERE INDICATED.
- EDGE OF OVERHANG ABOVE.
- TRANSPORT PARKING.
- DELIVERY ZONE.
- BASE BID: ALUMINUM STOREFRONT SYSTEM WITH SWING DOOR (AS SHOWN). ALTERNATE #10: FOLDING ALUMINUM FRAMED GLASS DOORS WITH INTEGRAL SWING DOOR FOR EGRESS. BASIS-OF-DESIGN: NAWA WALL SL45.
- PRE-FINISHED ALUMINUM PICKET GUARDRAIL. BASIS-OF-DESIGN: DURABAIL DOOR TO RECEIVE ROOM SCHEDULE EQUIPMENT BY OTHERS. PROVIDE NECESSARY POWER AND DATA.
- 2' x 2' PRECAST PAVES ON PEDESTAL. BASIS-OF-DESIGN MANUFACTURER: HANOVER.
- DASHED LINE OF CEILING / BULKHEAD ABOVE. REFER TO REFLECTED CEILING PLAN.
- SEA-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- PHARMACY COMPOUND SINK.
- MOTORIZED STEEL ROLL DOWN GATE AT CHECK-IN WINDOWS WITH MANUAL OVERRIDE. DOOR TO INCLUDE INTERIOR LOCK.
- DRYWALL CASED OPENING TRANSITION WINDOW AND SOLID SURFACE COUNTER.
- FOOD PANTRY EQUIPMENT AND SHELVING BY OWNER. SHOWN HERE FOR REFERENCE.
- HOLLOW METAL WINDOW SYSTEM. SILL HEIGHT: 2'-10". HEAD HEIGHT: 8'-0".
- ACCESS PANEL 6'-6" (H) X 4'-0" (W). PANEL RESTS ON FINISH FLOOR - REFER TO ELECTRICAL DRAWINGS.
- ALUMINUM STOREFRONT SYSTEM, ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS WITH WINDOW FILM.
- STEEL COLUMN WITH 2'-0" DIA. AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAINT EXPOSED STEEL WITH HIGH PERFORMANCE COATING ABOVE CONCRETE BASE.
- PROVIDE BLOCKING AS REQUIRED.
- ALTERNATE #07 - TRELLIS COLUMNS. REFER TO DETAILS AND STRUCTURAL DRAWINGS.
- ENTRY CANOPY BELOW. SEE ELEVATIONS AND DETAILS.
- 6" CHASE FOR A/V CONDUIT - REFER TO TECHNOLOGY DRAWINGS.
- REFRIGERATOR(S) FOR MEDICINE TO BE LOCATED IN THIS ROOM - TO BE COORDINATED WITH OWNER.
- PARTITION WALL WITH WINDOW FILM ABOVE.
- SWING OF DOOR TO BE 18" FROM INSIDE FACE OF FINISHED WALL.
- METAL WRAPPED STEEL COLUMN ABOVE 4" CONCRETE BASE. REFER TO EXTERIOR ELEVATIONS ON A201 FOR METAL TYPE.
- TRENCH DRAIN. REFER TO PLUMBING DRAWINGS.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- BUILT-IN WOOD FRAMES. REFERENCE ELEVATIONS AND DETAILS.
- PAINTED CONCRETE MARKINGS.
- GLASS GUARDRAIL: BASIS-OF-DESIGN: CRL GLASS RAIL STANDOFF BASE AND CAP - 1-3/4" PROJECTION SIDE MOUNTED FOR 3/4" LAMINATED TEmPERED GLASS.
- CHAINLINK FENCE AT BIKE STORAGE UP TO CEILING WITH LOCKABLE DOOR. SEE DOOR SCHEDULE.
- WALL MOUNTED LOUVERED PANELS - TO BE COORDINATED WITH OWNER - PROVIDE BLOCKING AS REQUIRED.
- CUBICLE CURTAIN AND TRACK - REFERENCE INTERIOR FINISH PLAN AND SPECIFICATION 10.21.23.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. WALL CHANNEL MOUNTING - REFER TO DETAIL 04/A132.
- PRE-FINISHED ALUMINUM LOUVER AND EXHAUST FAN. REFER TO MECH. DWGS FOR FAN INFO.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- UNDER CABINET LIGHTING - REFER TO ELECTRICAL DRAWINGS.
- OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- PAINTED STEEL CANE RAIL. REFER TO STAIR DRAWING ON A125.





GENERAL PLAN NOTES

- REFER TO A201-A202 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
- MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

PLAN KEYNOTES

- MILLWORK SHOWN SHADED GRAY. REFER TO INTERIOR ELEVATIONS.
- ALUMINUM STOREFRONT SYSTEM, ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS.
- WALL COVERING RBS. REFER TO DETAIL 04/A101C FOR MORE INFORMATION.
- FEATURE WALL - REFER TO INTERIOR ELEVATIONS.
- DASHED LINE SHOWS BOUNDARY OF FLOOR OPENING ABOVE.
- 6" DIA., PAINTED STEEL BOLLARD. REFER TO STRUCTURAL DWGS.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO PLUMBING DRAWINGS.
- LATERAL BRACING - REFER TO STRUCTURAL DRAWINGS.
- MOP SINK WITH OPEN SHELVING.
- MILLWORK WITH SINK.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD FINISHES.
- METAL PAN STAIR WITH CONCRETE TREADS.
- ALUMINUM STOREFRONT SYSTEM, ANODIZED FINISH WITH WINDOW FILM. REFER TO EXTERIOR ELEVATIONS AND SPECIFICATIONS FOR WINDOW FILM.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: S31 COUNTERTOP & CAB1 BY MIDMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- GENERATOR. REFER TO ELECTRICAL DWGS.
- GUARDRAIL.
- MONUMENTAL STAIR - REFER TO ENLARGED PLANS.
- HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- OPERABLE PARTITION WALL. BASIS-OF-DESIGN: MODERNFOLD - ACOUSTI-SEAL MODEL ENCORE. ACOUSTICS - STC: 56, MANUAL - PANEL FINISH TBD - TRM COLOR TBD. SEE SPECIFICATIONS.
- INTERNAL RAMP WITH WALL MOUNTED HANDRAILS.
- PRINTER.
- EXTERIOR STAIR TO ROOF TERRACE.
- DAMEN CENTER VENDING MACHINE - RELOCATED FROM EXISTING BUILDING.
- BIKE RACK. REFER TO LANDSCAPE PLAN.
- DASHED LINE REPRESENTS OVERHEAD CEILING DOOR - REFER TO REFLECTED CEILING PLAN.
- SWINGING PARKING GATE CLAD WITH PERF METAL PANELS.
- PERFORATED SCREEN WALL. REFER TO ELEVATIONS FOR EXTENTS. CONCRETE KNEE WALL BELOW WHERE INDICATED.
- EDGE OF OVERHANG ABOVE.
- TRANSPORT PARKING.
- DELIVERY ZONE.
- BASE BID: ALUMINUM STOREFRONT SYSTEM WITH SWING DOOR (AS SHOWN). ALTERNATE #10: FOLDING ALUMINUM FRAMED GLASS DOORS WITH INTEGRAL SWING DOOR FOR EGRESS. BASIS-OF-DESIGN: NAWAWALL S145.
- DASHED LINE OF CEILING / BULKHEAD ABOVE. REFER TO REFLECTED CEILING PLAN.
- SEALED RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- PHARMACY COMPOUND SINK.
- MOTORIZED STEEL ROLL DOWN GATE AT CHECK-IN WINDOWS WITH MANUAL OVERRIDE. DOOR TO INCLUDE INTERIOR LOCK.
- DRY WALL CASED OPENING TRANSACTION WINDOW AND SILD SURFACE COUNTER.
- FOOD PANTRY EQUIPMENT AND SHELVING BY OWNER. SHOWN HERE FOR REFERENCE.
- HOLLOW METAL WINDOW SYSTEM. SILL HEIGHT: 2'-10". HEAD HEIGHT: 8'-0".
- ACCESS PANEL 6'-6" (H) X 4'-0" (W). PANEL RESTS ON FINISH FLOOR - REFER TO ELECTRICAL DRAWINGS.
- ALUMINUM STOREFRONT SYSTEM, ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS WITH WINDOW FILM.
- STEEL COLUMN WITH 2'-0" DIA. AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAINT EXPOSED STEEL WITH HIGH PERFORMANCE COATING ABOVE CONCRETE BASE.
- PROVIDE BLOCKING AS REQUIRED.
- ALTERNATE #U7 - TRELLIS COLUMNS. REFER TO DETAILS AND STRUCTURAL DRAWINGS.
- ENTRY CANOPY BELOW. SEE ELEVATIONS AND DETAILS.
- 6" CHASE FOR A/V CONDUIT - REFER TO TECHNOLOGY DRAWINGS.
- REFRIGERATOR(S) FOR MEDICINE TO BE LOCATED IN THIS ROOM - TO BE COORDINATED WITH OWNER.
- PARTITION WALL WITH WINDOW FILM ABOVE.
- SWING OF DOOR TO BE 18" FROM INSIDE FACE OF FINISHED WALL.
- METAL WRAPPED STEEL COLUMN ABOVE 4' CONCRETE BASE. REFER TO EXTERIOR ELEVATIONS ON A201 FOR METAL TYPE.
- TRENCH DRAIN. REFER TO PLUMBING DRAWINGS.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- BUILT-IN WOOD FRAMES. REFERENCE ELEVATIONS AND DETAILS.
- PAINTED CONCRETE MARKINGS.
- GLASS GUARDRAIL: BASIS-OF-DESIGN: CRL GLASS RAIL STANDOFF BASE AND CAP - 1-3/4" PROJECTION SIDE MOUNTED FOR 3/4" LAMINATED TEMPERED GLASS.
- CHAINLINK FENCE AT BIKE STORAGE UP TO CEILING WITH LOCKABLE DOOR. SEE DOOR SCHEDULE.
- WALL MOUNTED LOUVERED PANELS - TO BE COORDINATED WITH OWNER - PROVIDE BLOCKING AS REQUIRED.
- CUBICLE CURTAIN AND TRACK - REFERENCE INTERIOR FINISH PLAN AND SPECIFICATION 10.21.23.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. WALL CHANNEL MOUNTING - REFER TO DETAIL 04/A132.
- PRE-FINISHED ALUMINUM LOUVER AND EXHAUST FAN. REFER TO MECH. DWGS FOR FAN INFO.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- UNDER CABINET LIGHTING - REFER TO ELECTRICAL DRAWINGS.
- OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- PAINTED STEEL CANE RAIL. REFER TO STAIR DRAWING ON A125.

WEST EAST

KEY PLAN
SCALE: NTS

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

Drawn By: KS
Checked By: DS
Date Issued: 09/12/2022

REVISIONS:
1. DESCRIPTION DATE
2. ADDENDUM #02 10/04/2022

CLIENT
DAMEN CENTER
ALAN WITCHEY, President and CEO
24 North Algonquin Avenue
Indianapolis, Indiana 46201
PH 317 661-1944

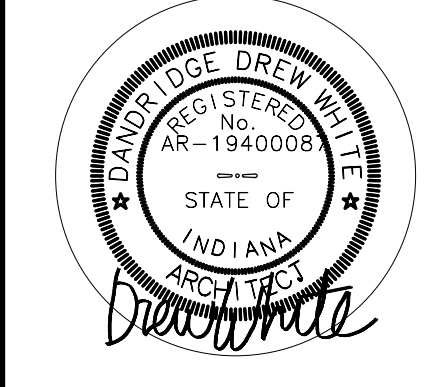
CIVIL ENGINEER
JSC
NANAWALL FLECK, PE
8445 Algonquin Blvd. Suite 425
Indianapolis, IN 46220
PH 317 661-1944

STRUCTURAL ENGINEER
JSC
DAMEL BURCH
8445 Algonquin Blvd. Suite 425
Indianapolis, IN 46220
PH 317 661-1944

MEP ENGINEER
BRO CONSTRUCTION
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Kingsley Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., A.S.A.
195 N HARBOUR DR #3405
Chicago, IL 60611
PH 847 363-0168

DAMEN CENTER
NEW DAMEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



THIRD FLOOR INTERIOR
CONSTRUCTION PLAN - WEST

A103C
PROJECT NUMBER: 2021029

- A. REFER TO A001-A002 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- B. REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACoustICAL REQUIREMENTS, AND LOCATIONS.
- C. MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- D. FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- E. PROVIDE MOISTURE AND WOOD RESISTANT GYPSUM WALLBOARD AT ALL WEI WALLS IN SOCIAL HUB, KITCHENS AND RESTROOMS. PROVIDE HIGH-MASK GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- F. PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A116 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

1 MILKWOOD SHOWN SHADED GRAY. REFER TO INTERIOR ELEVATIONS.

2 ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH. REFER TO INTERIOR ELEVATION AND SPECIFICATIONS.

3 WALL COVERING RBS. REFER TO DETAIL #A201 FOR MORE INFORMATION.

4 MATERIAL W/OUT W/ REFER TO INTERIOR ELEVATIONS.

5 DASHED LINE SHOWS BOUNDARY OF FLOOR OPERATING ABOVE.

6 6" DIA. PAINTED STEEL BOLLARD. REFER TO STRUCTURAL DWGS.

7 DRINKING FOUNTAIN WITH BOTTLE FILLER. REFER TO PLUMBING DRAWINGS.

8 LAMINATE BRACING. REFER TO STRUCTURAL DRAWINGS.

9 HSP CAN WITH OPEN SHELVING.

10 MILKWOOD WITH SINK.

11 OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL- OFF PARAVENT MODEL, WITH PERFORATED STEEL PANELS. REFER TO SPECIFICATIONS #211.1. PORTABLE PARTITIONS. FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD FINISHES.

12 METAL PAN STAIR WITH CONCRETE TREADS.

13 ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH WITH WINDOW FILM. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS FOR WINDOW FILM.

14 CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE S1: COUNTERTOP & CABINETS BY IMMOKAW. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER /DATA REQUIREMENTS WITH MEP DWGS.

15 GUARDRAIL. REFER TO ELECTRICAL DWGS.

16 MONUMENTAL STAIR. REFER TO ENLARGED PLANS

17 HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.

21 FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.

22 REAR ELEVATION PARTITIONING. BASIS-OF-DESIGN: MODERNEB - ACOUSTIC-SEAL MODEL. EXCISE: ACCESSORIES - STC-56. MANUAL - PANEL FINISH: TRM - 03M. COLOR: TBM. SEE SPECIFICATIONS.

23 INTERNAL RAMP. WALL WITH MOUNTED HANDRAILS.

24 PRINTER.

25 EXTERIOR STAIR TO ROOF TERRACE.

26 DAMIAN CENTER VENDING MACHINE. -RELOCATED FROM EXISTING BUILDING.

27 BIKE RACK. REFER TO LANDSCAPE PLAN.

28 DASHED LINE REPRESENTS OVERHEAD COILING DUCT. REFER TO REFLECTED FINISHING PLAN.

29 SWINGING PARKING GATE CLAD WITH PERFORATED METAL PANELS.

30 PERFORATED SCREEN WALL. REFER TO ELEVATIONS FOR EXTENTS. CONCRETE KNEE WALL BELOW WHERE INDICATED.

31 ROOF OF OVERHANG ABOVE.

32 TRANSPORT PARKING.

33 DELIVERY ZONE.

34 BASE ID: ALUMINUM STOREFRONT SYSTEM WITH SWING DOOR [AS SHOWN]. ALTERNATE ID: FOLDING ALUMINUM FRAMED GLASS DOORS WITH INTEGRAL SILENCERS FOR SILENCING. BASIS-OF-DESIGN: HANNAH SLAS.

35 PRE-FINISHED ALUMINUM PICKET GUARDRAIL. BASE-OF-DESIGN: DURARAIL.

36 DOOR TO RECEIVE ROOM SCHEDULE EQUIPMENT BY OTHERS. PROVIDE NECESSARY POWER AND DATA.

37 2" X 2" RECESSED PAVER ON PEDESTAL. BASIS-OF-DESIGN MANUFACTURER: HANOVER.

38 DASHED LINE OF CEILING / BULKHEAD ABOVE. REFER TO REFLECTED CEILING PLAN.

39 SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECIFICATIONS.

40 PHARMACY COMPOUND SINK.

41 MOTORIZED STEEL ROLL DOWN GATE FOR CLINIC WINDOWS WITH MANUAL RELEASE. REFER TO MECH. DRAWINGS.

42 DRYWALL CASED OPENING TRANSACTION WINDOW AND SOLID SURFACE COUNTER.

43 FOG PANTARY EQUIPMENT AND SHELVEING SHIP OR OWNER. SHOWN HERE FOR REFERENCE.

44 HOLLOM METAL WINDOW SYSTEM. SILL HEIGHT: 2'-10". HALL HEIGHT: 8'-0". ACCESS PANEL 6'-6" [H] X 4'-0" [W]. PANEL RESTS ON FINISH FLOOR.

45 ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH. REFER TO INTERIOR ELEVATION AND SPECIFICATIONS WITH WINDOW FILM.

46 STEEL COLUMN WITH 2'-0" DIA. AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAIN EXPOSED STEEL WITH HIGH PERFORMANCE POLYURETHANE CONCRETE BASE.

47 PROVIDE BLOCKING AS REQUIRED.

48 ALTERNATE #07 - TRELLIS COLUMN. REFER TO DETAILS AND STRUCTURAL DRAWINGS.

49 ENTRY CANOPY BELOW. SEE ELEVATIONS AND DETAILS.

50 REFRIGERATOR FOR ANY COUNTRY. REFER TO TECHNOLOGY DRAWINGS.

51 REFRIGERATOR(S) FOR MEDICINE TO BE LOCATED IN THIS ROOM. -TO BE COORDINATED WITH OWNER.

52 PARTITION WALL WITH WINDOW FROM ABOVE.

53 FINISHING OF DOOR TO BE IF FROM INSIDE FACE OF FINISHED WALL.

54 METAL WRAPPED STEEL COLUMN ABOVE 4" CONCRETE BASE. REFER TO EXTERIOR ELEVATIONS ON A201 FOR MATERIAL TYPE.

55 TRENCH DRAIN. REFER TO PLUMBING DRAWINGS.

56 AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.

57 BUILD IN WOOD FRAMES. REFERENCE ELEVATIONS AND DETAILS.

58 PAINTED CONCRETE MARKINGS.

59 GLASS GUARDRAIL: BASIS-OF-DESIGN: CR. GLASS RAIL STANDOFF BASE AND CAP 1-3/4" PROJECTION SIZE MOUNTED FOR 3/4" LAMINATED TEMPLATED GLASS.

60 CONCRETE AT BIKES STORAGE FOR 3/4" LAMINATED TEMPLATED GLASS. SEE DOOR SCHEDULE.

61 WALL MOUNTED LOUVERED PANELS - TO BE COORDINATED WITH OWNER - PROVIDE BLOCKING AS REQUIRED.

62 EXTERIOR BRICK AND TRUCK - REFERENCE INTERIOR FINISH PLAN AND SPECIFICATION 10.21.23

63 OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL- OFF PARAVENT MODEL, WITH PERFORATED STEEL PANELS. REFER TO SPECIFICATIONS #211.1. PORTABLE PARTITIONS. WALL CHANNEL MOUNTING. REFER TO DETAIL #A201.

64 PRE-FINISHED ALUMINUM LOUVER AND EXHAUST FAN. REFER TO MECH. DWGS FOR FAN SIZES.

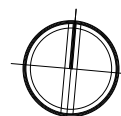
65 AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.

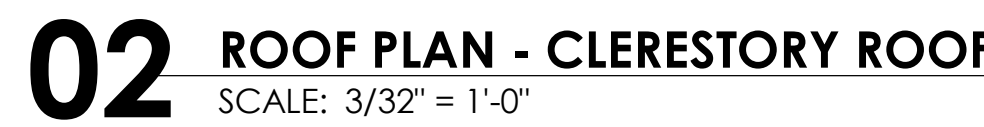
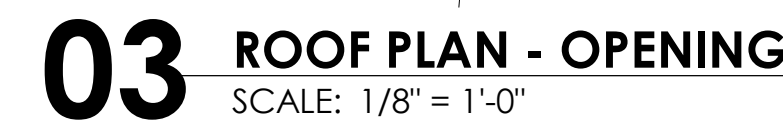
66 UNDER CABINET LIGHTING. REFER TO ELECTRICAL DRAWINGS.

67 OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER /DATA REQUIREMENTS WITH MEP DWGS.

68 PAINTED STEEL CANE RAIL. REFER TO STAIR DRAWING ON A125.

KEY PLAN - EAST
SCALE: NTS





- | | |
|---|------------|
| A X S | |
| 618 East Market Street
Indianapolis, Indiana 46202
phone 317/264.8142
axisarch.com | |
| Scope Overview
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the type of structure, mechanical and electrical systems. The drawings do not necessarily indicate or describe in detail equipment or performance or other components of the equipment or its connection. On the basis of the general scope indicated or described the final construction plans and/or items required for the proper execution and completion of work. | |
| DRAWN BY: | BIM |
| CHECKED BY: | DS |
| DATE ISSUED: | 09/12/2022 |
| REVISIONS:
DESCRIPTION DATE
1 ADDITION #02 10/06/2022 | |
| | |
| | |
| CLIENT
DAMIEN CENTER
ALAN WITCZAK, President and CEO
36 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317-632-0123 | |
| CIVIL ENGINEER
JCGL
HARSHANI RECK, PE
5440 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317-461-1944 | |
| STRUCTURAL ENGINEER
JCGL
DAVIDE BURCH
5440 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317-461-1944 | |
| MEP ENGINEER
K&O CONSULTING
SPAIN CONDECRUYA, P.E., Managing Partner
1344 South Rangefield Road, Suite 202
Cornell, Indiana 46032
PH 317-344-8044 | |
| LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JAHIE CHEN, R.L.A., A.S.I.A.
195 N WINDSOR CT #3005
Chicago, IL 60661
PH 647-363-0188
*
*
*
*
* | |
| DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET | |
| ROOF PLAN | |
| A105
PROJECT NUMBER: 2021029 | |

GENERAL RESTROOM CEILING PLAN NOTES

A. REFER TO SERIES A400 SHEETS FOR COMPLETE LIST OF GENERAL CEILING PLAN NOTES.

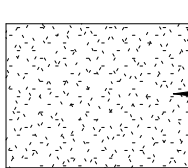
B. PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.

C. PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 30' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

D. COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL PLUMBING DRAWINGS, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION BEFORE REVIEW PRIOR TO CEILING INSTALLATION.

E. LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION

CEILING LEGEND



GYPSUM BOARD CEILING OR
GYPSUM BOARD BULKHEAD

CEILING TAG

X

CEILING TYPE

X

CEILING HEIGHT

RESTROOM CEILING TYPES

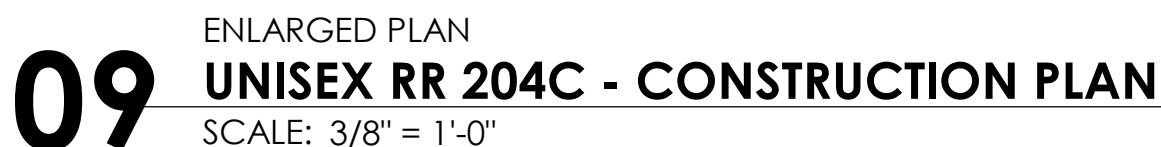
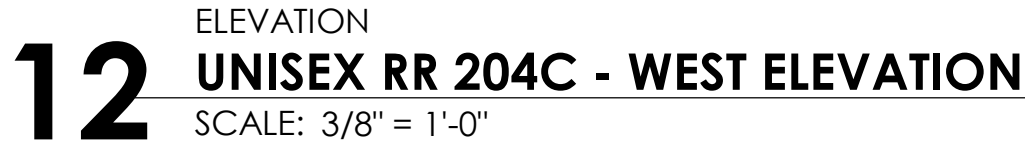
TYPE	DESCRIPTION
B	GYPSUM WALLBOARD CEILING FINISH: REFER TO FINISH PLANS FOR COLOR.

GENERAL PLAN NOTES

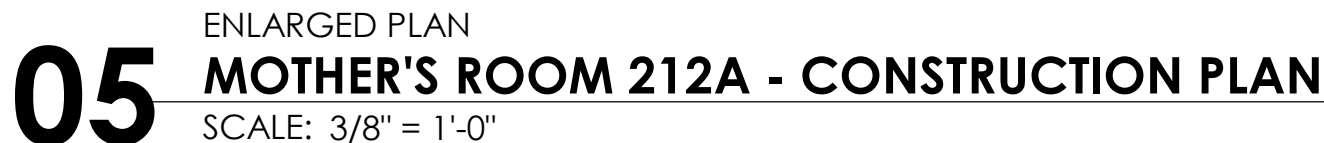
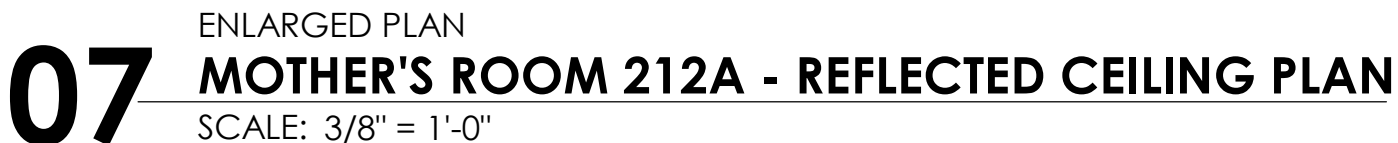
- A. REFER TO A001-A002 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONNECTION DETAILS.
- B. REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
- C. MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- D. FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- E. PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- F. PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A11.1-A11.5. RESTROOM KEYNOTES APPLY TO SHEETS A11.6-A11.24.

GENERAL INTERIOR ELEVATION NOTES

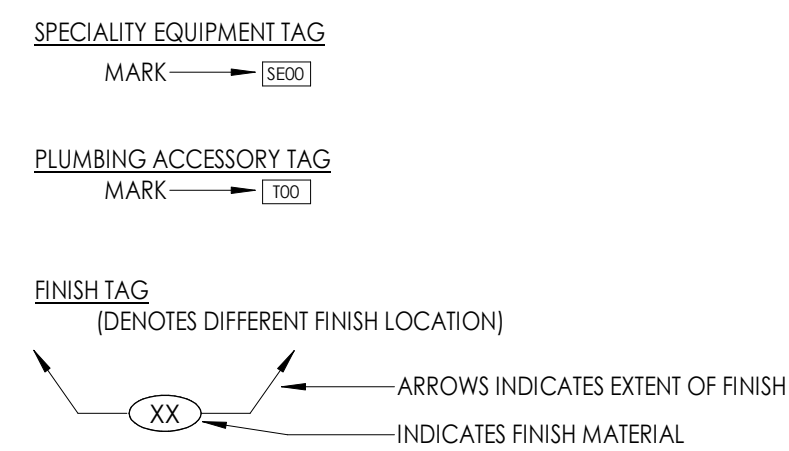
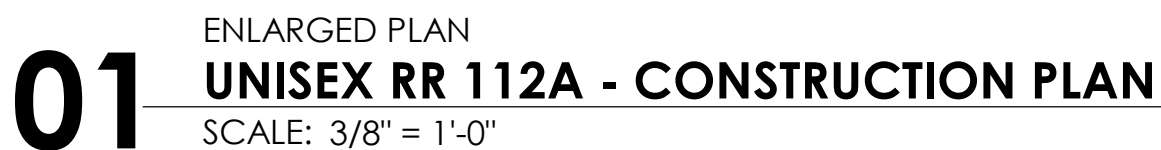
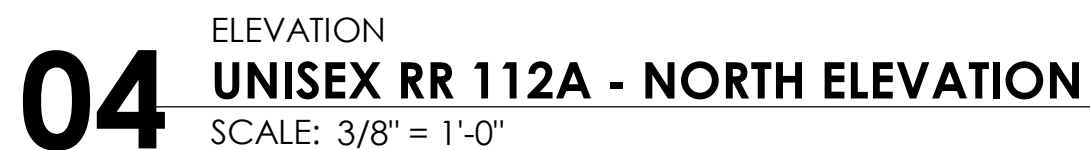
- A. ALL BASE TO BE 81 UNLESS NOTED OTHERWISE.
- B. COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
- C. PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MATCH MILLWORK ADJACENT.
- D. ALL WALLS TO BE PAINTED P1 UNLESS NOTED OTHERWISE.
- E. PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN KITCHENS, AND ALL WALLS AND CEILINGS IN BATHROOMS AND JANITOR CLOSETS.
- F. COORDINATE LENGTH OF UNDERCABINET LIGHTING WITH CONTRACTOR IN SHOP DRAWING REVIEW.

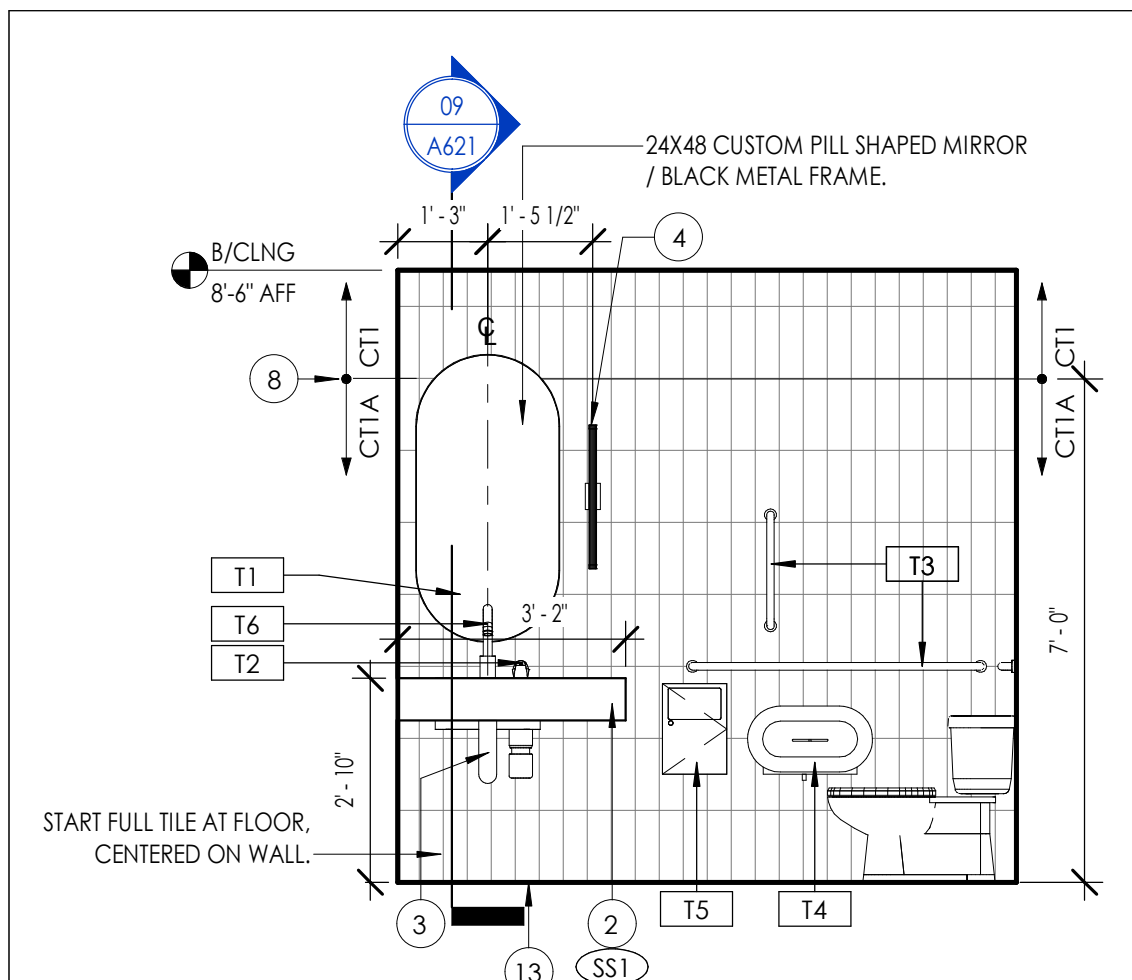


- ## RESTROOM KEYNOTES
- 1 TILE TO TRANSITION AT THE FLOOR. REFERENCE 0214/00 FOR TRANSITION DETAIL.
 - 2 SOLID SURFACE COUNTER WITH STAINLESS STEEL UNDERMOUNTED SINK. REFER TO A420 SERIES FOR TYPICAL DETAIL. COORDINATE WITH PLUMBER.
 - 3 ADA PROTECTIVE PPE COVER. BASIS OF DESIGN: PLUMBER. 2003/8 HANDY SHELVE HANG AHEAD SOFT COVER UNDER LAVATORY PROTECTION. 3/00/CI 246555. WHITE FINISH.
 - 4 SCONCE LIGHTING. BASIS OF DESIGN: INSTANT LIGHTING / SCOPE MIN. WHITE FINISH / 24/1. REFER TO ELECTRICAL DRAWINGS.
 - 5 LOCK & KEY CABINET.
 - 6 SCONCE LIGHTING. BASIS OF DESIGN: INSTANT LIGHTING / SCOPE MIN. WHITE FINISH / 36/1. REFER TO ELECTRICAL DRAWINGS.
 - 7 RESTROOM 212 X 12 1/2 FAUCET AND SOAP DISPENSER. BASIS OF DESIGN: FONTANA SERVO MOTOR OPERATED FAUCET AND AUTOMATIC SOAP DISPENSER / F51314 / DARK OIL RUBBED BRONZE FINISH.
 - 8 TILE TO TRANSITION AT THIS POINT.
 - 9 MOP SINK WITH OPEN DRAINING.
 - 10 MUSEVOIR SHOWN IN PLAN. REFER TO INTERIOR ELEVATIONS.
 - 11 EQUIPMENT PER SCHEDULE. SEE INTERIOR ELEVATIONS. COORDINATE WITH MEP DWGS.
 - 12 DRINKING FOUNTAIN WITH BOTTLE FILLER. REFER TO MEP DRAWINGS.
 - 13 TILE TO TRANSITION AT SEAT VINYL FLOOR. REFERENCE 015/A700 FOR TRANSITION DETAIL.
 - 14 RESTROOM DOORS PAINTED TO MATCH WALL. [P14]
 - 15 THE (C11 & C11A) TO EXTEND FROM TOP OF FINISH FLOOR TO UNDERSIDE OF CEILING. THE PATTERN TO MATCH ADJACENT WALL PATTERN. REFER TO PLUMBING WALL ELEVATION. EXPLODED EDGE DETAIL TO RECEIVE SCHLUSER SCHINE FROM ANODIZED ALUMINUM FINISH. REFER TO SEAT A700 FOR TILE TO FLOOR TRANSITION TYPES. WHERE TILE IS NOT USED PROVIDE WALL BASE (B3).
 - 16 THE (C11) TO EXTEND FROM TOP OF FINISH FLOOR TO UNDERSIDE OF CEILING. THE PATTERN TO MATCH ADJACENT WALL PATTERN. REFER TO PLUMBING WALL ELEVATION. EXPLODED EDGES OF TILE TO RECEIVE SCHLUSER SCHINE FROM ANODIZED ALUMINUM FINISH. REFER TO SEAT A700 FOR TILE TO FLOOR TRANSITION TYPES. WHERE TILE IS NOT USED PROVIDE WALL BASE (B3).
 - 17 AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.

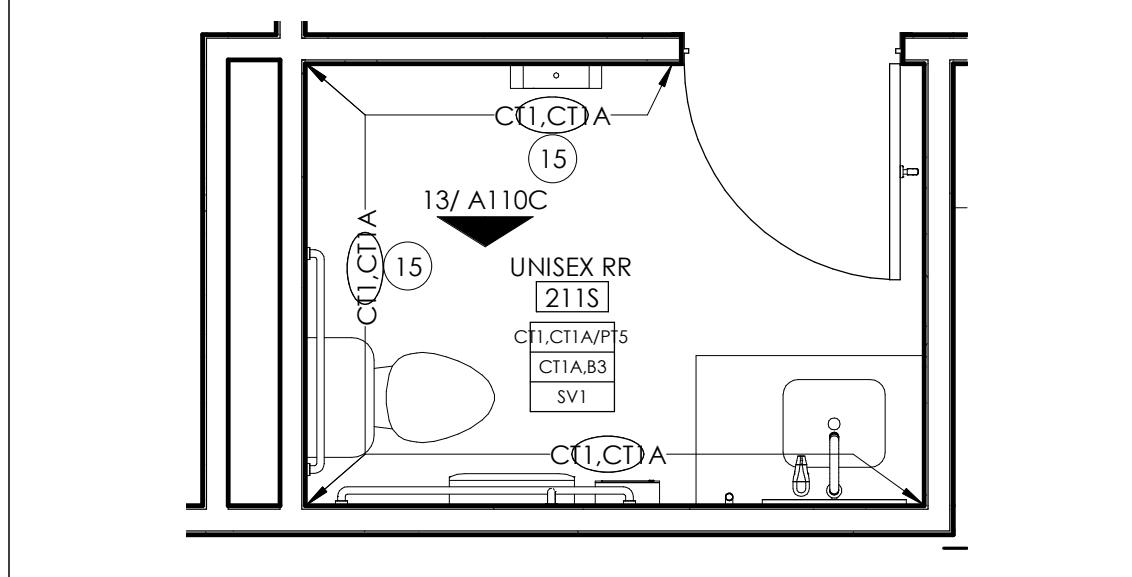


- # GENERAL INTERIOR ELEVATION NOTES
- GENERAL:**
- A. PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - B. WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COMBINE WITH AXIS ARCHITECTURE - INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - C. ANY VARIATION IN PATTERN, TEXTURE, COLOR OR OTHER EFFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE - INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - D. AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY ON AN ON-TIME INSTALLATION.
- PAINTING:**
- A. PAINT ALL FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION SYSTEM DESCRIPTION AND PRODUCTS.
 - B. PAINT ALL EXPOSED MDS, STEEL, LINTES, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.
- CEILINGS / WALLS:**
- A. ALL WALLS TO BE PAINTED **PT1**. UNLESS NOTED TO BE PAINTED.
 - B. ALL VERTICAL + HORIZONTAL SURFACES OF BUILDINGS TO BE PAINTED **BRIGHT WHITE** UNLESS NOTED OTHERWISE.
 - C. ALL CEILING GYPSUM TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - D. ALL DRYWALL TO BE LEVEL 4 FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - E. ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.
- BASE:**
- A. BASE TO BE **PT1** UNLESS NOTED OTHERWISE.
 - B. ALL CABINETS ARE TO RECEIVE **B1** AT LOC KITCHEN UNLESS NOTED OTHERWISE.

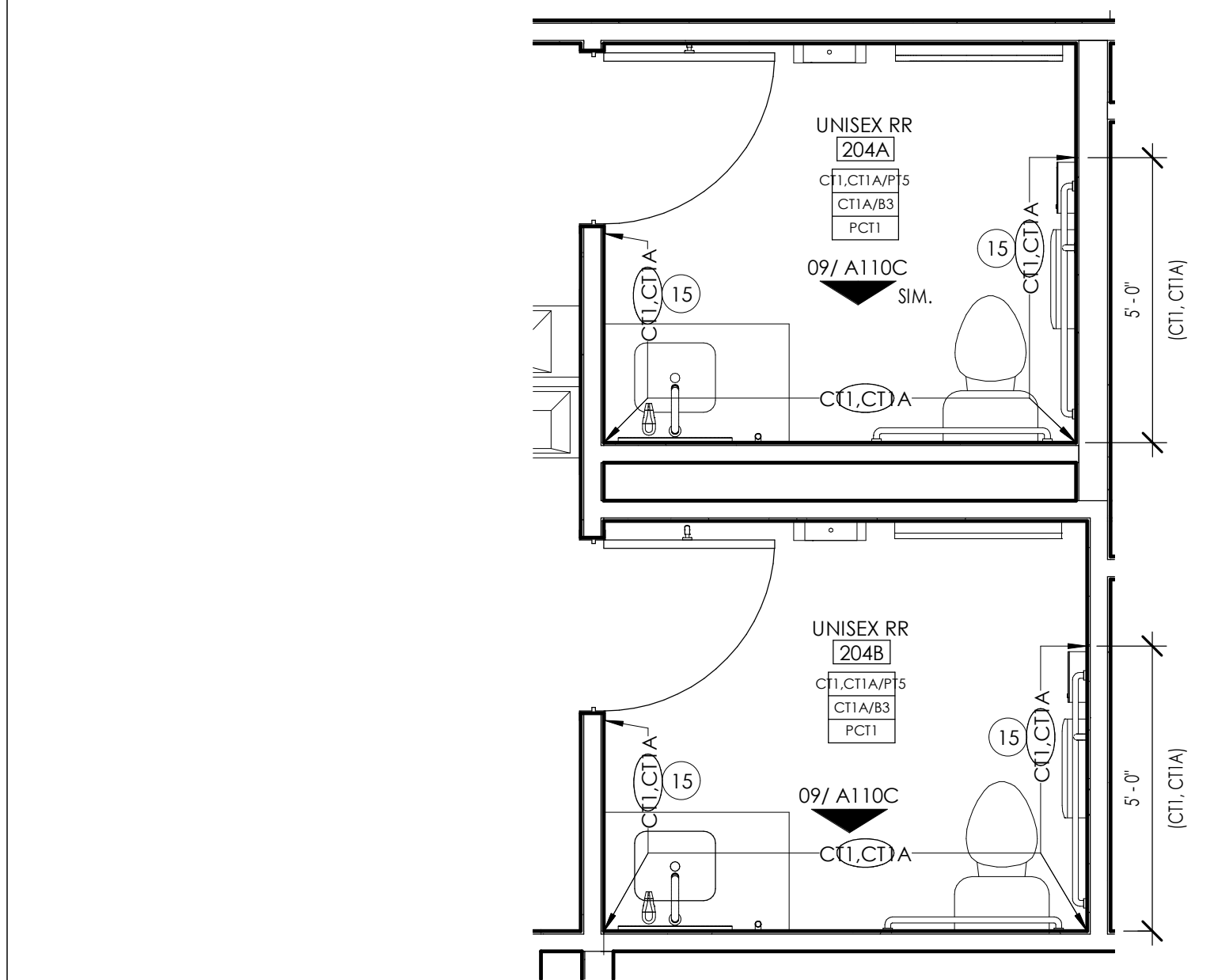




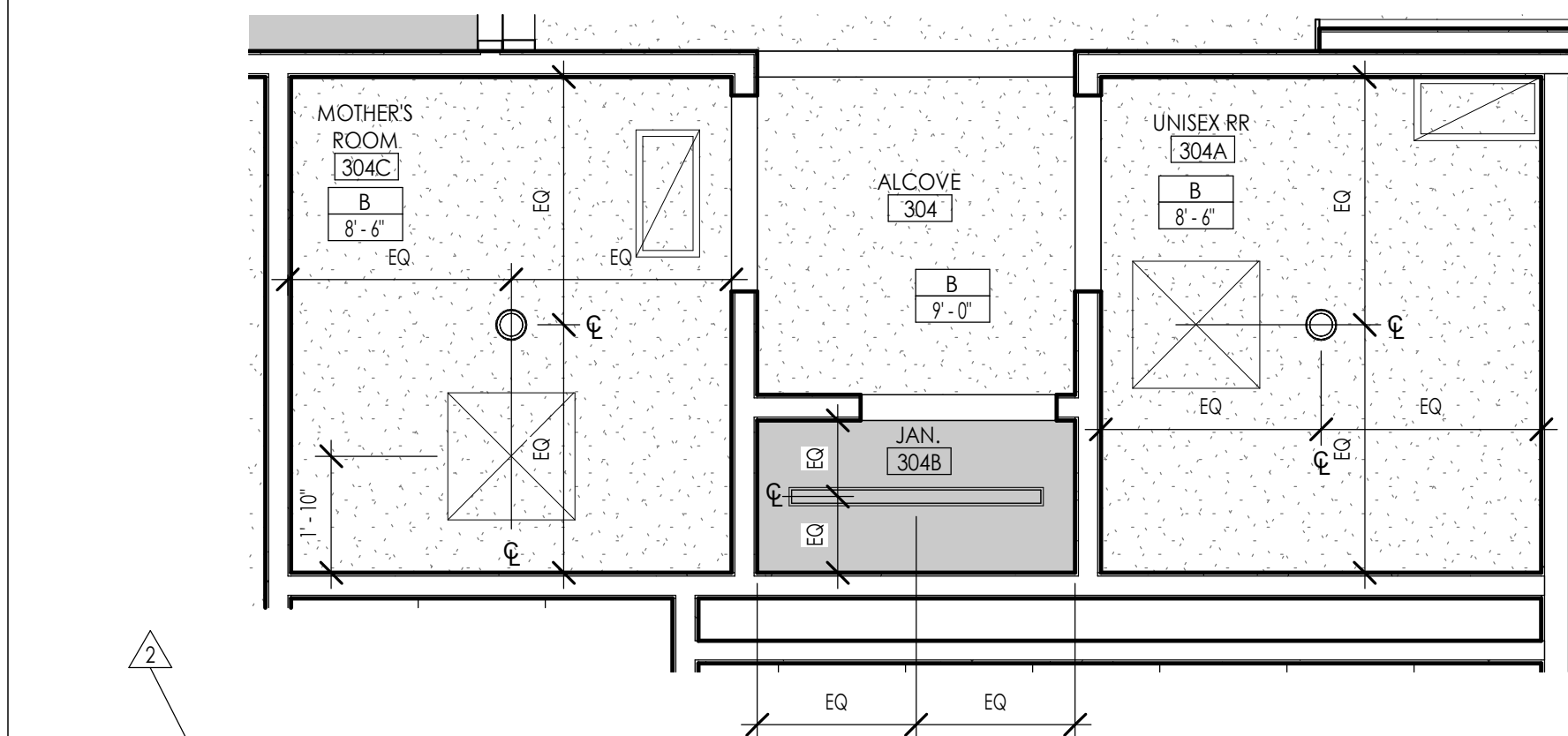
13 ELEVATION
UNISEX RR 211S - SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



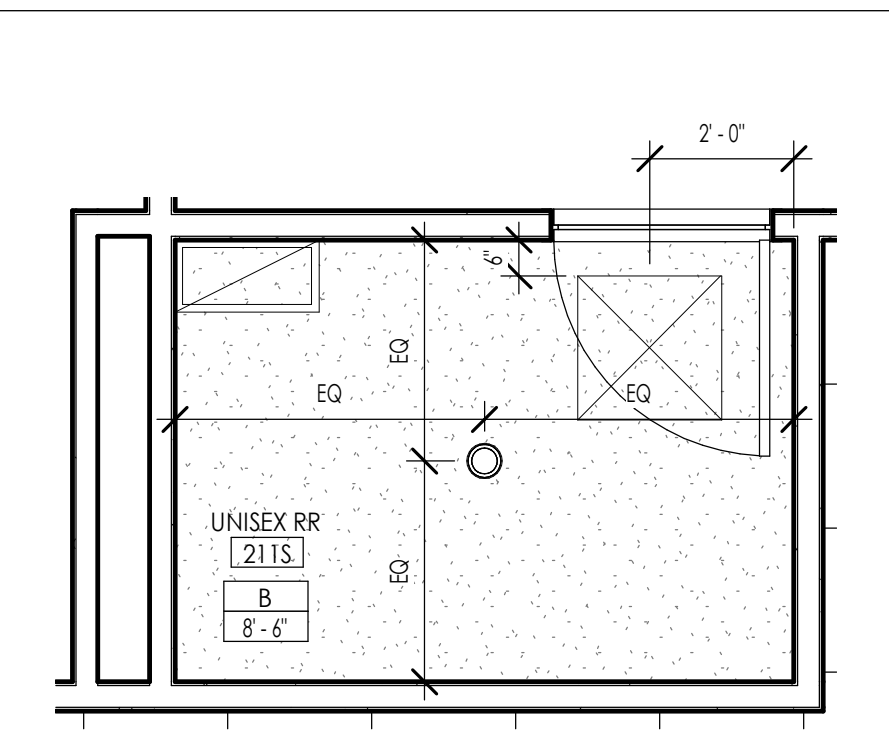
11 ENLARGED PLAN
UNISEX RR 211S - FINISH PLAN
SCALE: 3/8" = 1'-0"



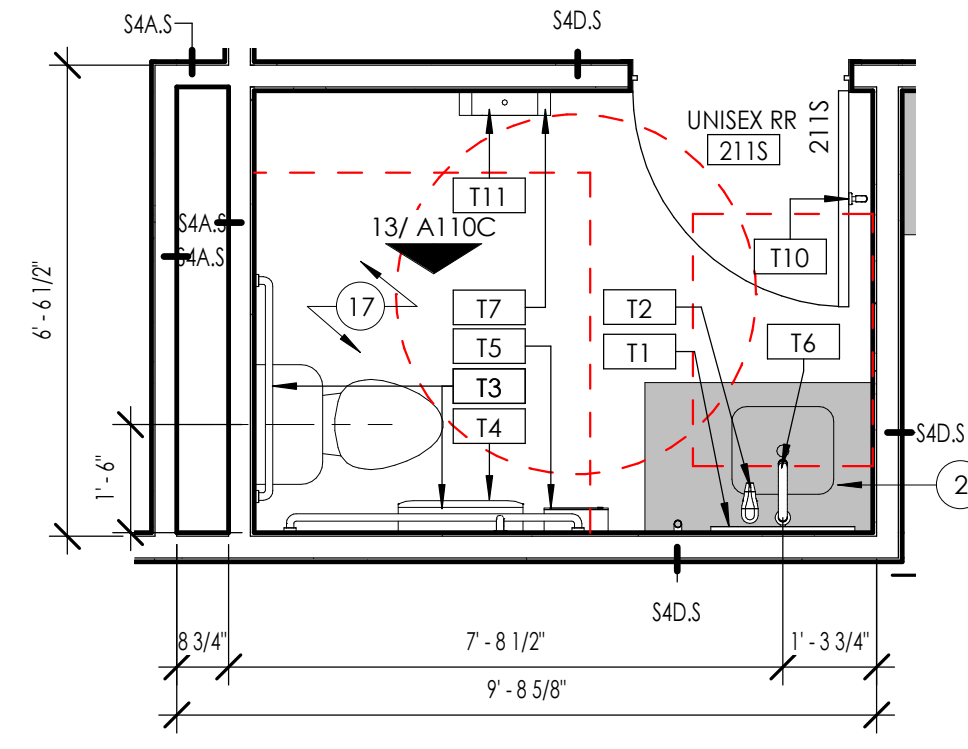
07 ENLARGED PLAN
UNISEX RR 204A & 204B - FINISH PLAN
SCALE: 3/8" = 1'-0"



03 ENLARGED PLAN
UNISEX RR 304A & 304C - REFLECTED CEILING PLAN
SCALE: 3/8" = 1'-0"



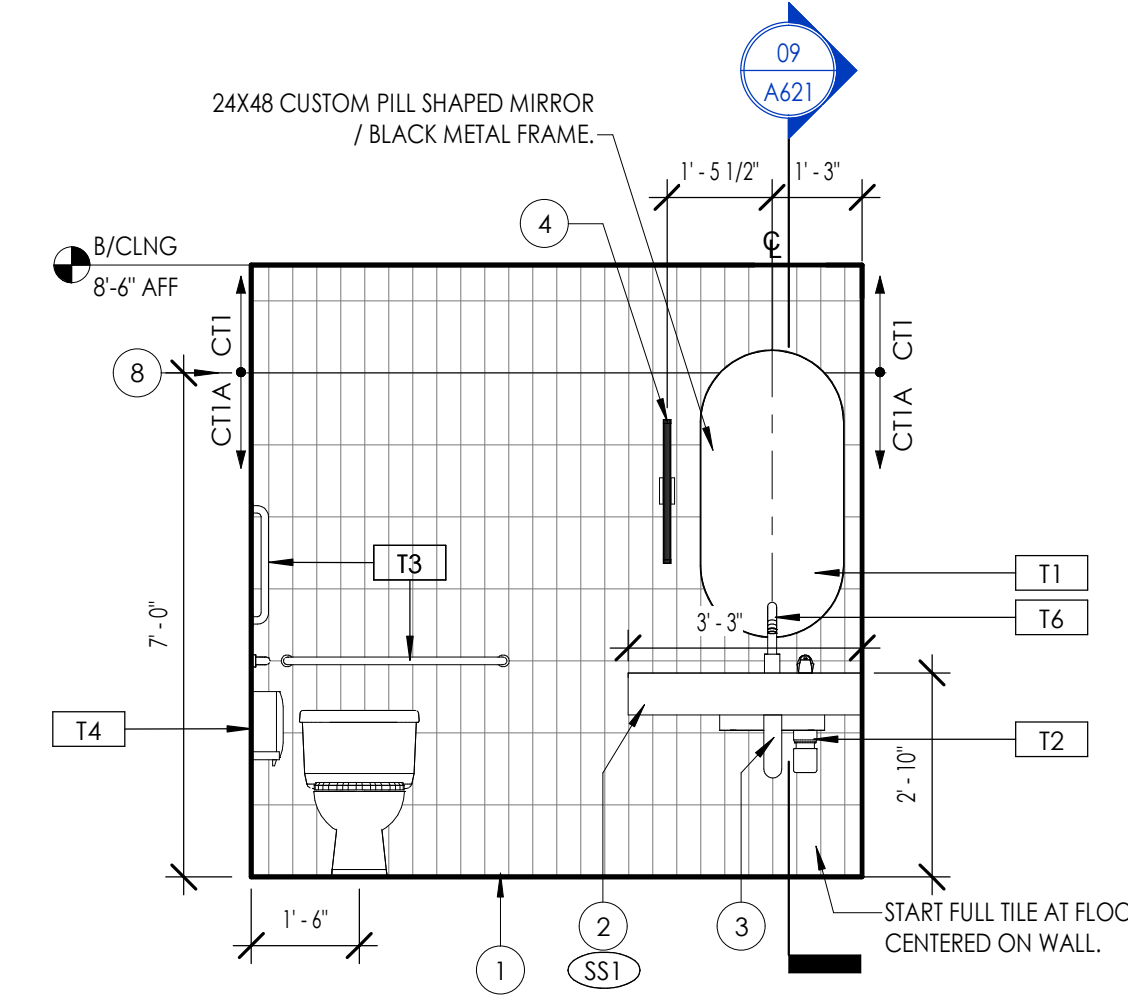
12 ENLARGED PLAN
UNISEX RR 211S - REFLECTED CEILING PLAN
SCALE: 3/8" = 1'-0"



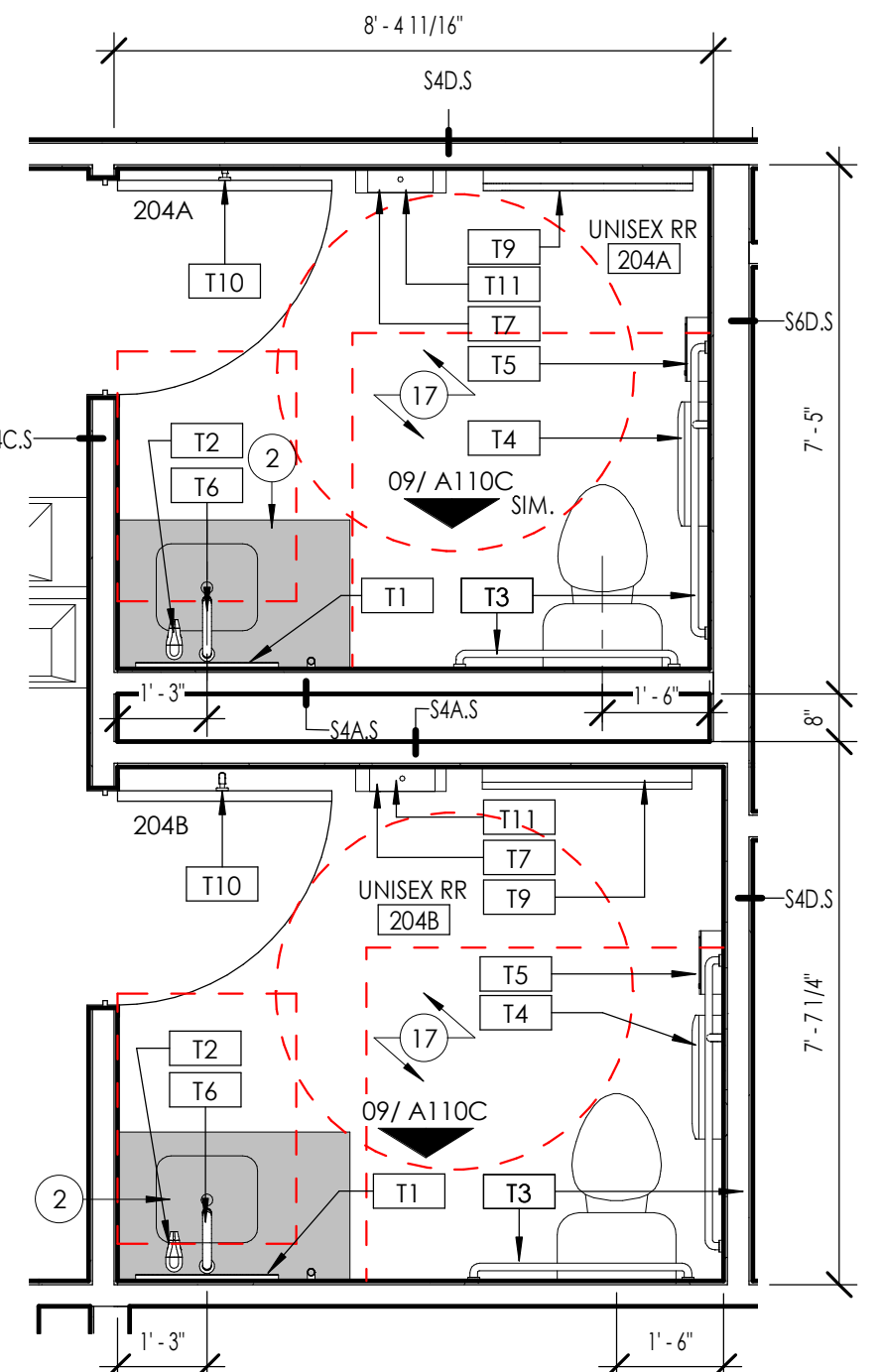
10 ENLARGED PLAN
UNISEX RR 211S - CONSTRUCTION PLAN
SCALE: 3/8" = 1'-0"

TOILET ACCESSORY SCHEDULE					
TYPE	ITEM	MFR / MODEL	REMARKS	PROVIDED BY	INSTALLED BY
T1	CUSTOM PILL SHAPED MIRROR	24 X 48	BLACK METAL FRAME	CONTRACTOR	CONTRACTOR
T2	SOAP DISPENSER	SCOTT 4036		OWNER	OWNER
T3	GRAB BARS (3 PIECE)	BOBRICK 8-4004 SERIES	36" 42" AND 18" VERTICAL	CONTRACTOR	CONTRACTOR
T4	TOILET PAPER DISPENSER - DOUBLE ROLL	SCOTT 0940A	19" MIN. A.F.F. TO C.L. - SURFACE MOUNTED	OWNER	OWNER
T5	SANITARY-NAPKIN DISPOSAL UNIT	BOBRICK 8-270	STAINLESS STEEL, NO. 4 FINISH (SATIN), SURFACE MOUNTED	OWNER	OWNER
T6	ELECTRONIC FAUCET		REFER TO MEP SHEET FOR SPECIFICATIONS.	CONTRACTOR	CONTRACTOR
T7	PAPER TOWEL DISPENSER	SCOTT 35609	TO ALIGN WITH RECESSED WASTE RECEPTACLE BELOW	OWNER	OWNER
T8	RECESSED SPECIMEN PASS-THROUGH CABINET	BOBRICK 8-505		CONTRACTOR	CONTRACTOR
T9	BABY CHANGING STATION	BOBRICK K8200-0135	SATIN STAINLESS FINISH	CONTRACTOR	CONTRACTOR
T10	SURFACE MOUNTED COAT HOOK	8-78727	SATIN STAINLESS FINISH	OWNER	OWNER
T11	RECESSED WASTE RECEPTACLE	BOBRICK 8-3644	SATIN STAINLESS FINISH - TO ALIGN WITH PAPER TOWEL DISPENSER ABOVE	OWNER	OWNER

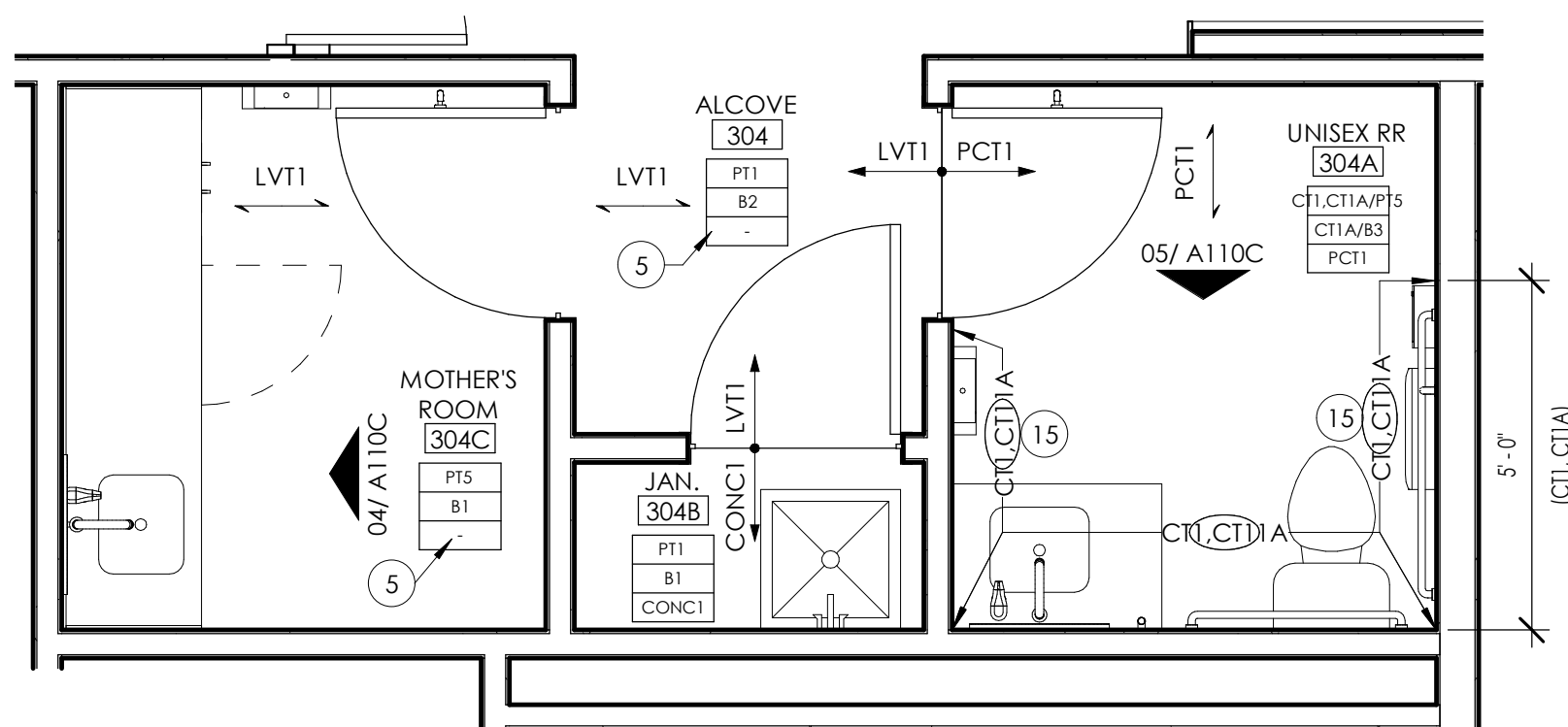
RESTROOM CEILING TYPES	
TYPE	DESCRIPTION
8	GYPSUM WALLBOARD CEILING FINISH: REFER TO FINISH PLANS FOR COLOR.



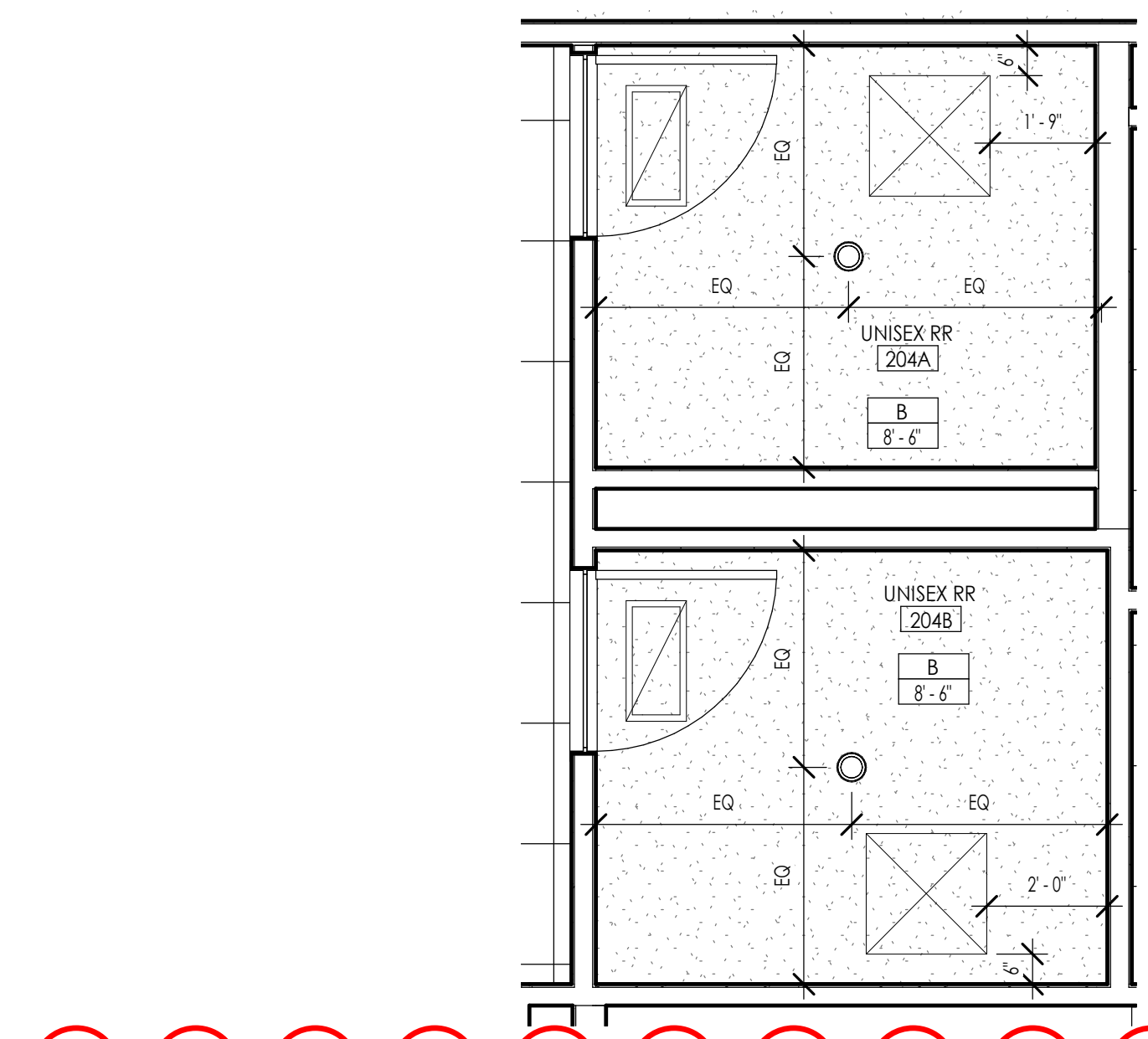
09 ELEVATION
UNISEX RR 204B - SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



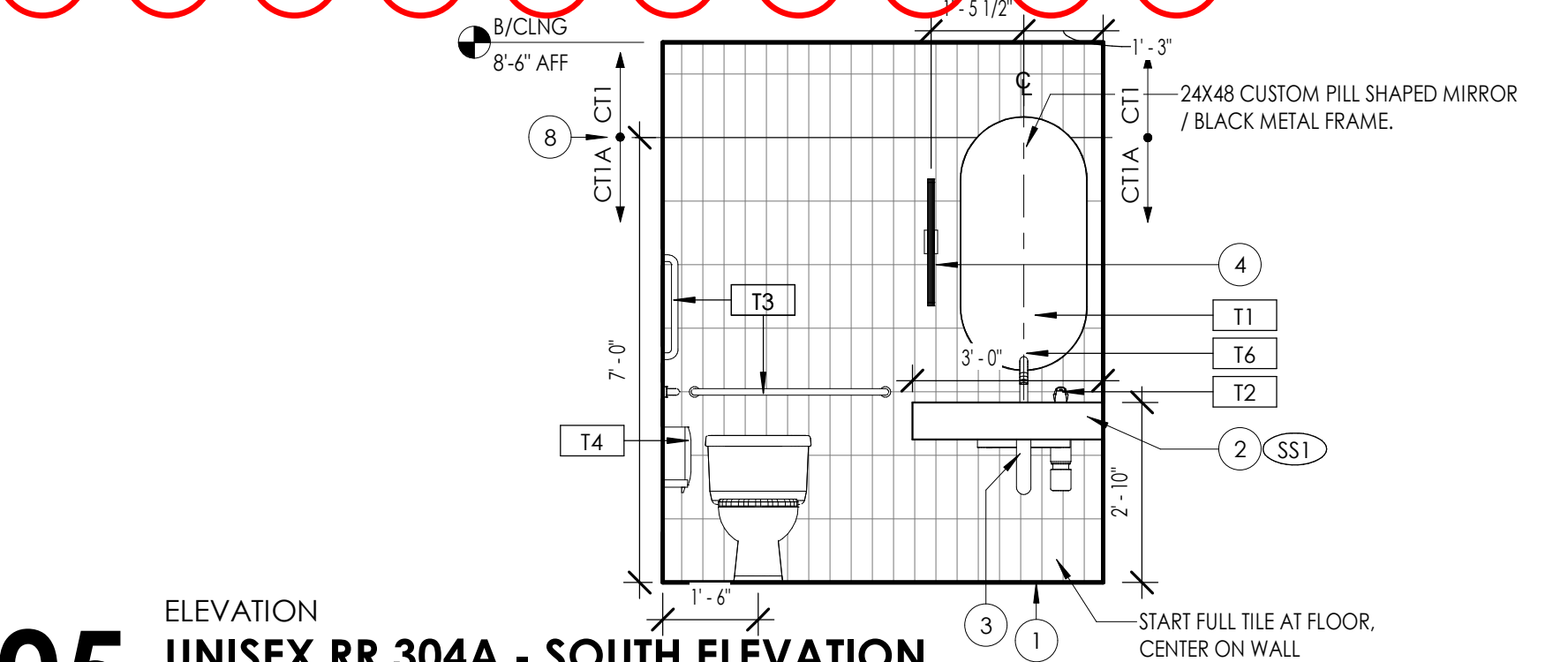
06 ENLARGED PLAN
UNISEX RR 204A & 204B - CONSTRUCTION PLAN
SCALE: 3/8" = 1'-0"



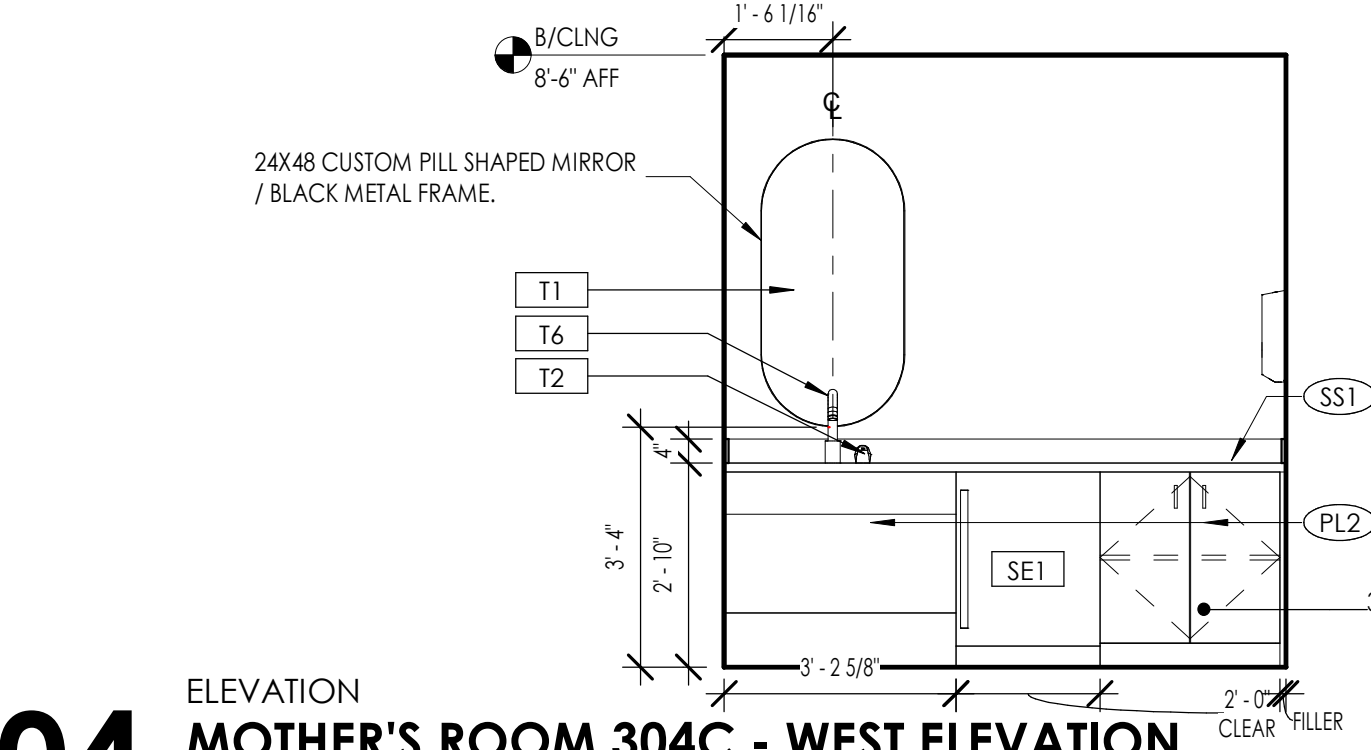
02 ENLARGED PLAN
UNISEX RR 304A & MOTHER'S ROOM 304C - FINISH PLAN
SCALE: 3/8" = 1'-0"



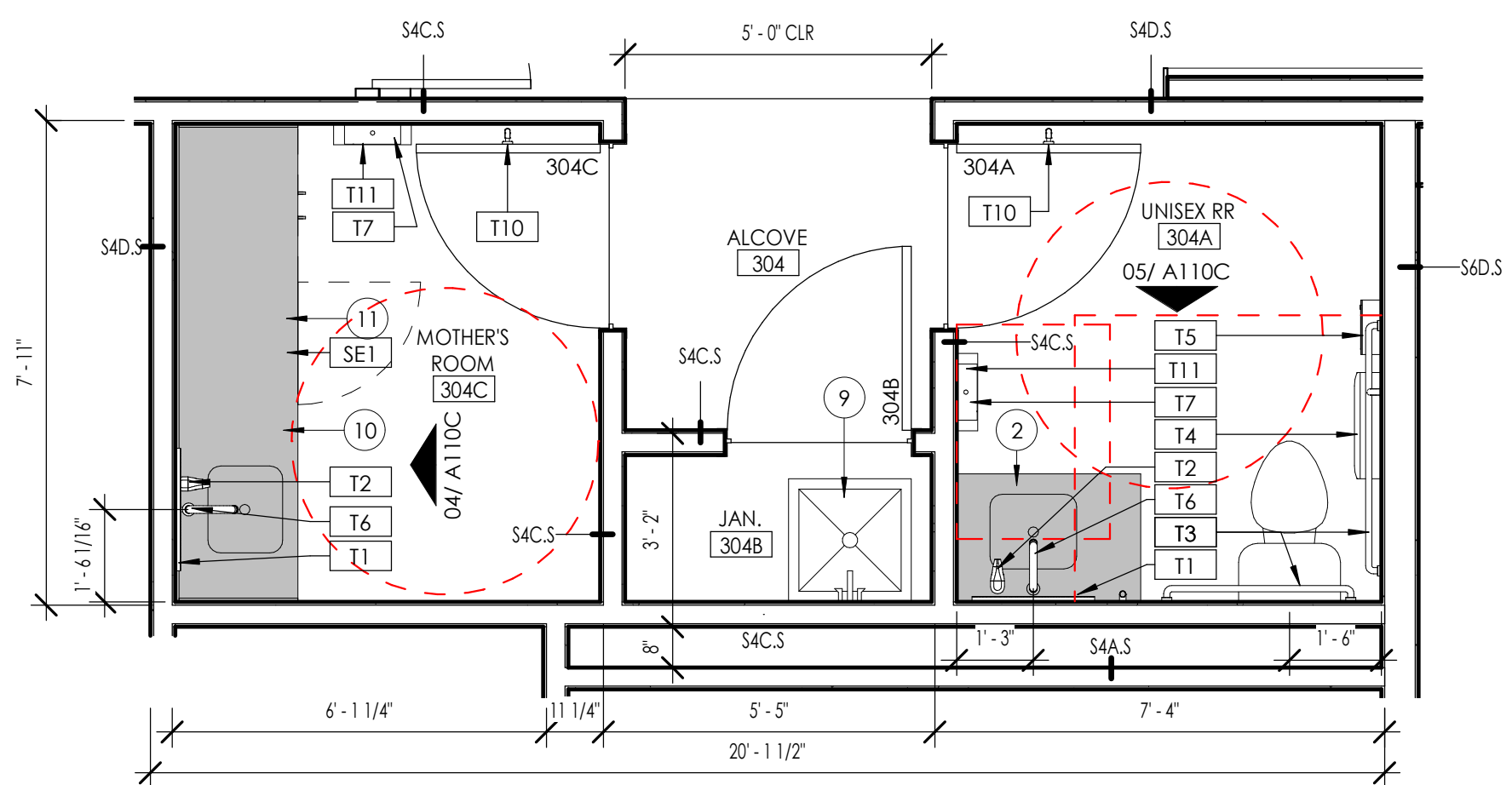
08 ENLARGED PLAN
UNISEX RR 204A & 204B - REFLECTED CEILING PLAN
SCALE: 3/8" = 1'-0"



05 ELEVATION
UNISEX RR 304A - SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



04 ELEVATION
MOTHER'S ROOM 304C - WEST ELEVATION
SCALE: 3/8" = 1'-0"



01 ENLARGED PLAN
UNISEX RR 304A & MOTHER'S ROOM 304C - CONSTRUCTION PLAN
SCALE: 3/8" = 1'-0"

- ### GENERAL RESTROOM CEILING PLAN NOTES
- REFER TO SERIES A400 SHEETS FOR COMPLETE LIST OF GENERAL CEILING PLAN NOTES.
 - PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
 - PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 30' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
 - COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
 - LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- ### CEILING LEGEND
- GYPSUM BOARD CEILING OR GYPSUM BOARD BULKHEAD
- CEILING TAG
- X — CEILING TYPE
- X — CEILING HEIGHT

- ### GENERAL PLAN NOTES
- REFER TO A001-A002 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
 - REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
 - MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
 - FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
 - PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
 - PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A116-A124. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.
- ### GENERAL INTERIOR ELEVATION NOTES
- ALL BASE TO BE B1 UNLESS NOTED OTHERWISE.
 - COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
 - PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MATCH MILLWORK ADJACENT.
 - ALL WALLS TO BE PAINTED P1 UNLESS NOTED OTHERWISE.
 - PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN KITCHENS, AND ALL WALLS AND CEILINGS IN BATHROOMS AND JANITOR CLOSETS.
 - COORDINATE LENGTH OF UNDERCABINET LIGHTING WITH CONTRACTOR IN SHOP DRAWING REVIEW.

- ### RESTROOM KEYNOTES
- TILE TO TRANSITION AT TILE FLOOR. REFERENCE 02/A700 FOR TRANSITION DETAIL.
 - SOLID SURFACE COUNTER WITH STAINLESS STEEL UNDERMOUNTED SINK. REFER TO A620 SERIES FOR TYPICAL DETAIL. COORDINATE WITH MEP DWGS.
 - ADA PROTECTIVE PIPE COVER. BASIS OF DESIGN: PLUMBERX - 2003B HONDY SHIELD MAXX ADA SOFT COVER UNDER LAVATORY PROTECTION. 3-PIECE KIT 2465855. WHITE FINISH.
 - SCIENCE LIGHT FIXTURE. BASIS OF DESIGN: INSTANT LIGHTING / SCOPE MINI SCIENCE / 24TH. REFER TO ELECTRICAL DRAWINGS.
 - LOCKABLE CABINET.
 - SCIENCE LIGHT FIXTURE. BASIS OF DESIGN: INSTANT LIGHTING / SCOPE MINI SCIENCE / 34TH. REFER TO ELECTRICAL DRAWINGS.
 - RESTROOM 212 & 312 FAUCET AND SOAP DISPENSER. BASIS OF DESIGN: FONTANA SETE MOTION SENSOR FAUCET AND AUTOMATIC SOAP DISPENSER / FS1514 / DARK OIL RUBBED BRONZE FINISH.
 - TILE TO TRANSITION AT THIS POINT.
 - MOP SINK WITH OPEN SHELVING.
 - MILLWORK SHOWN IN GRAY. REFER TO INTERIOR ELEVATIONS.
 - EQUIPMENT PER SCHEDULE. SEE INTERIOR ELEVATIONS. COORDINATE WITH MEP DWGS.
 - DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO MEP DRAWINGS.
 - TILE TO TRANSITION AT SHEET VINYL FLOOR. REFERENCE 03/A700 FOR TRANSITION DETAIL.
 - RESTROOM DOORS PAINTED TO MATCH WALL (P14).
 - TILE (CT1 & CT1A) TO EXTEND FROM TOP OF FINISH FLOOR TO UNDERSIDE OF CEILING. TILE PATTERN TO MATCH ADJACENT WALL PATTERN. REFER TO PLUMBING WALL ELEVATION. EXPOSED EDGES OF TILE TO RECEIVE SCHLUTER SCHIENE TRIM (ANODIZED ALUMINUM FINISH). REFER TO SHEET A700 FOR TILE TO FLOOR TRANSITION TYPES. WHERE TILE IS NOT USED PROVIDE WALL BASE (B3).
 - TILE (CT2) TO EXTEND FROM TOP OF FINISH FLOOR TO UNDERSIDE OF CEILING. TILE PATTERN TO MATCH ADJACENT WALL PATTERN. REFER TO PLUMBING WALL ELEVATION. EXPOSED EDGES OF TILE TO RECEIVE SCHLUTER SCHIENE TRIM (ANODIZED ALUMINUM FINISH). REFER TO SHEET A700 FOR TILE TO FLOOR TRANSITION TYPES. WHERE TILE IS NOT USED PROVIDE WALL BASE (B3).
 - AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.

- ### GENERAL INTERIOR ELEVATION NOTES
- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.
- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED WISC, STEEL UNITS, PLATES, ANGLES, ETC. P3 UNLESS NOTED OTHERWISE.
- CEILINGS / WALLS:**
- ALL WALLS TO BE PAINTED P11, UNLESS NOTED OTHERWISE.
 - ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED BRIGHT CEILING WHITE, UNLESS NOTED OTHERWISE.
 - ALL GYPSUM CEILINGS TO BE PAINTED BRIGHT CEILING WHITE UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL 4 FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED P11.
- BASE:**
- ALL BASE TO BE B1 UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE B1 AT TOE KICK UNLESS NOTED OTHERWISE.
- MILLWORK:**
- CALLOUT SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE.
 - NOTED WITH TYPE MARK "SE".
 - REFER TO A001 FOR PLUMBING ACCESSORY SCHEDULE.
 - NOTED WITH TYPE MARK "T".
- SPECIALITY EQUIPMENT TAG**
MARK — (S80)
- PLUMBING ACCESSORY TAG**
MARK — (S2)
- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
- XX — ARROWS INDICATES EXTENT OF FINISH
- INDICATES FINISH MATERIAL

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

Revised Drawings:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily represent an agreement as to work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated or described, the trade contractor shall furnish all items required for the proper execution and completion of all work.

DRAWN BY: JS / LJ
CHECKED BY: DS
DATE ISSUED: 09/12/2022

REVISIONS:

#	DESCRIPTION	DATE
1 <td>ADDITIONAL #02</td> <td>10/04/2022</td>	ADDITIONAL #02	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Alexander Avenue
Indianapolis, Indiana 46201
PH 317.433.0723

CIVIL ENGINEER
JSC
JANIS REED, P.E.
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

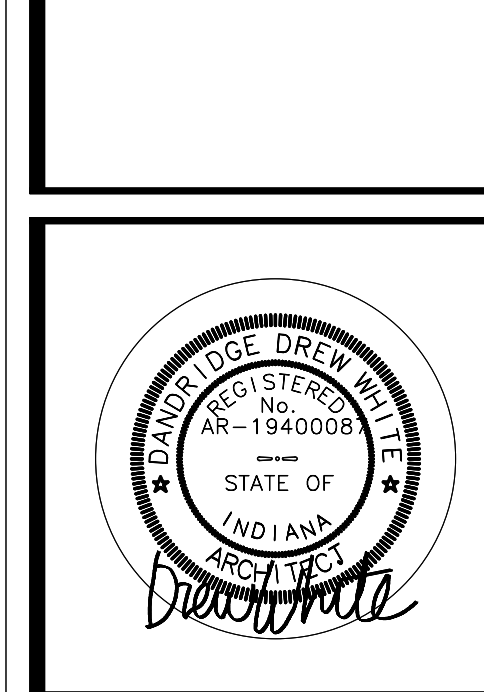
STRUCTURAL ENGINEER
JSC
JANIS REED, P.E.
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

MEP ENGINEER
SKS CONSULTING
SEAN OROSKOMANYA, P.E., Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.L.A., A.S.A.
195 N HARBOR DR #3405
Chicago, IL 60601
PH 647.363.0168

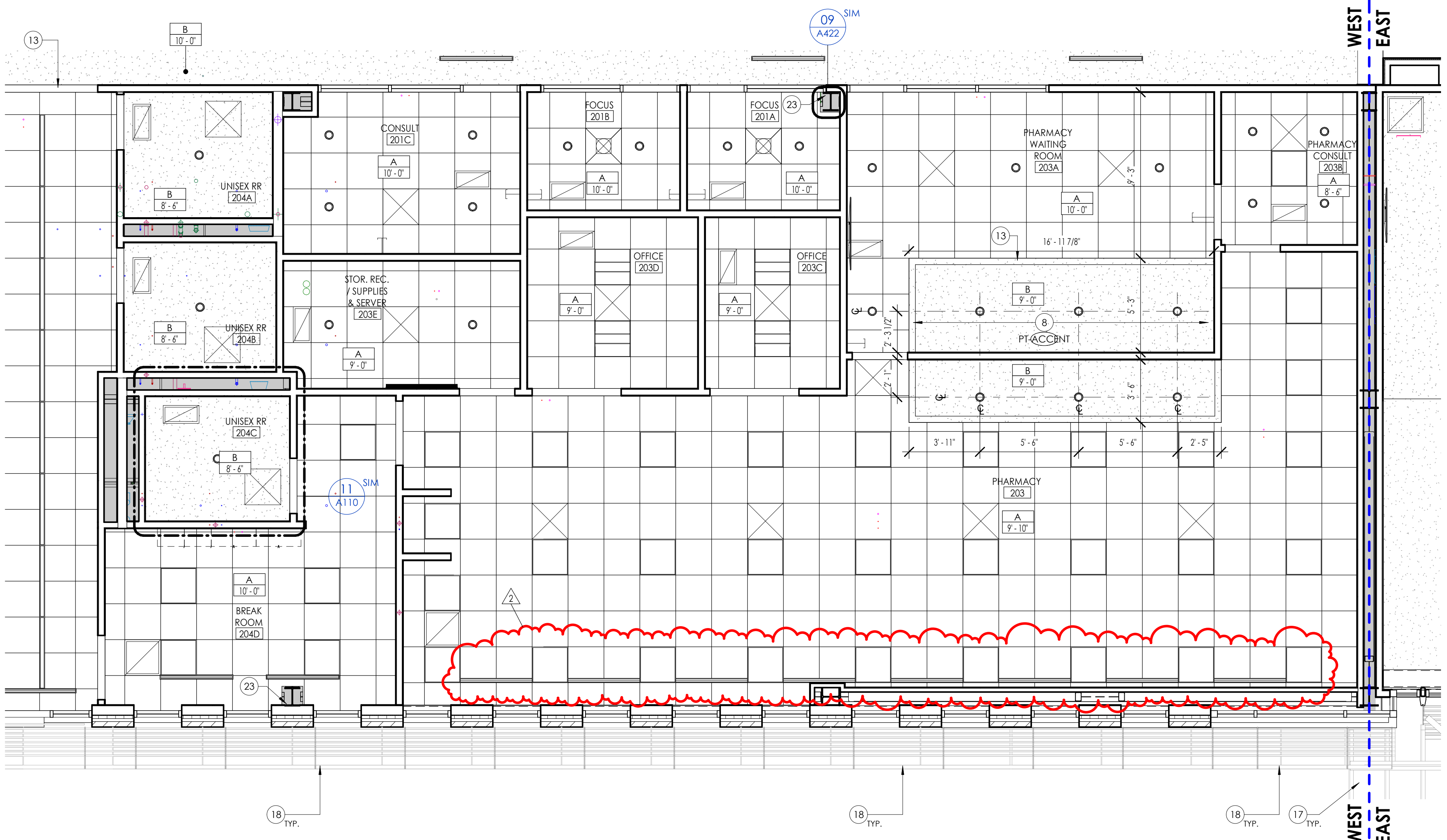
...

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

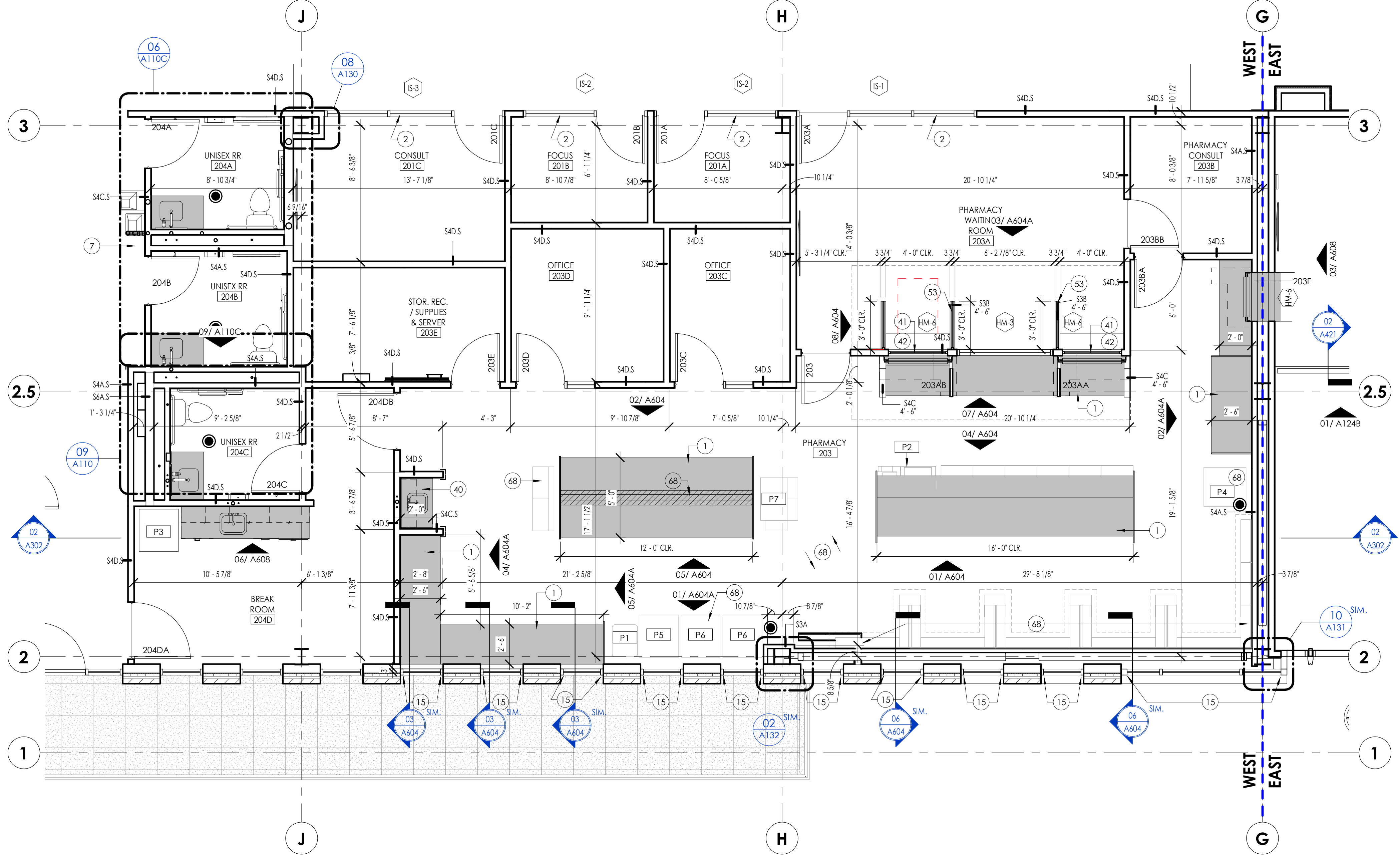


RESTROOM PLANS AND ELEVATIONS

A110C
PROJECT NUMBER: 2021029



02 PHARMACY - REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



01 PHARMACY CONSTRUCTION PLAN
SCALE: 1/4" = 1'-0"

REFLECTED CEILING KEYNOTES

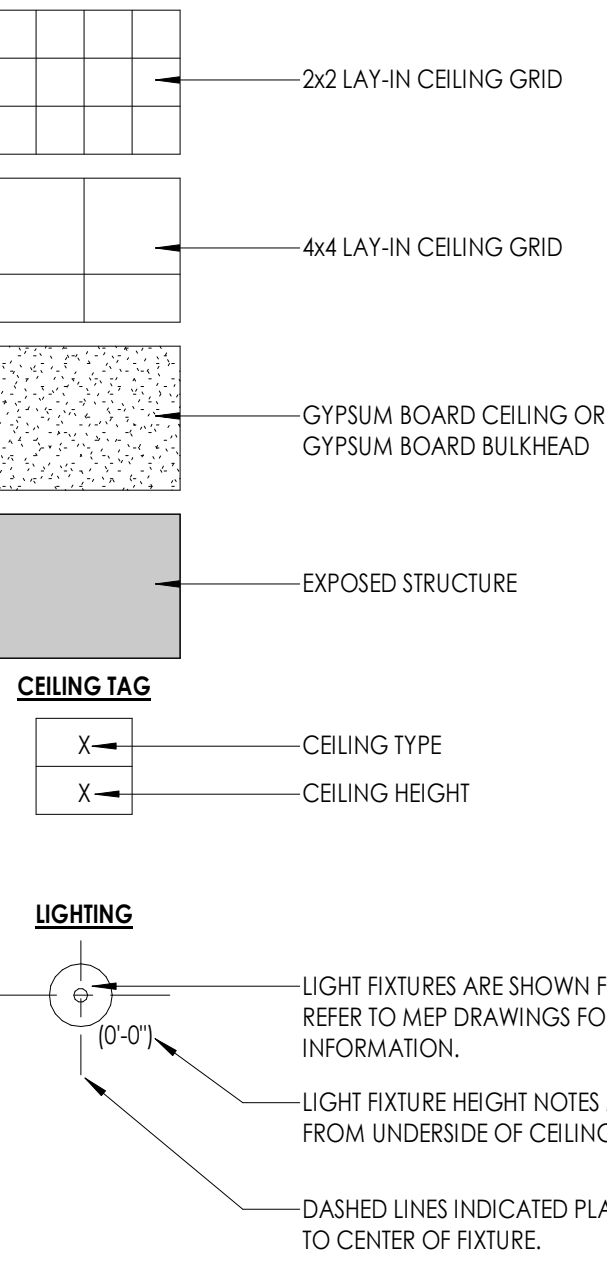
- PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- AUGN FINISH FACE OF CEILING/BULKHEAD WITH WALL.
- AUGN.
- 1/4" #093 ZINC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/BULKHEAD/CEILING CLOUD OR CENTERLINE OF MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
- CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
- PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACOUSTIC PANEL, CEILING AND GYPSUM BOARD CEILING. BASIS-OF-DESIGN: ARMSTRONG #P701 9/16" SHADOW REVEAL TRANSITION MOLDING.
- AUGN CEILING GRID WITH EDGE OF BULKHEAD.
- HORIZONTAL AND VERTICAL SURFACES OF GYP CEILING TO RECEIVE ACCENT PAINT (PT). REFER TO CEILING PLAN FOR PAINT TAG (PT). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
- ROOF LEADER. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TIE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TIE-IN BELOW SLAB.
- EXPOSED STRUCTURAL STEEL BRACING THIS BAY. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACOUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
- MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT. REFER TO STRUCTURAL DRAWINGS.
- PROVIDE 3/8" METAL STUD FRAMING AT 16" O.C. AND 3/8" TYPE 'Y' GYPSUM BOARD BULKHEAD. EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING. EXTEND TO DECK WHERE NO CEILING IS PRESENT.
- PROVIDE 6" ARMSTRONG ONE-PIECE DRYWALL EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- EPS CONTROL JOINT IN SOFFIT. DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
- BRACING ABOVE. REFER TO CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO.
- CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ALTERNATE #06 - ALUMINUM SUNSHADE FASTENED TO STEEL PLATE. SUNSHADE BASIS-OF-DESIGN: CRL AX51 POWDER-COATED SQUARE TUBE SUNSHADE. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ARCHITECTURAL MILLWORK FEATURE. REFER TO INTERIOR ELEVATIONS AND SECTION DETAILS.
- STRUCTURAL STEEL FLANGE. CUT TO PROFILE. PAINT WITH HIGH PERFORMANCE COATING. REFER TO WALL SECTIONS AND DETAILS.
- CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. REFER TO DETAIL 09/A422.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. CONTINUE METAL STUD FRAMING AND FINISH WALL ASSEMBLY TO DECK WHERE NO CEILING IS PRESENT.
- ALTERNATE #07 - WASHINGTON STREET ENTRANCE TRELLIS - REFER TO SHEET A330 FOR DETAILS.
- COVE FOR DRAPERY TRACK. REFER TO DETAILS AND EQUIPMENT PLANS.
- WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
- PRE-MANUFACTURED STEEL AND GLASS CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- 24" X 24" ACCESS PANEL. PANEL (S) TO BE PAINTED TO MATCH CEILING FINISH. REFER TO SPEC 08.31.13 FOR DETAILS.
- EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

CEILING TYPES	
TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUNE. EDGE: ANGLED REGULAR 9/16". COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING. FINISH: REFER TO FINISH PLANS FOR COLOR.
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL. REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2).
D	24" X 48" LAY-IN CEILING TILE. ARMSTRONG CIRrus SECOND LOOK #1 PANEL. 9/16" BEVELED REGULAR. FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE. DUCTWORK, PIPING, CONDUITS, ETC. EXTEND PAINTED FINISH 48" PAST EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE. REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40. 4" THICKNESS. R-VALUE 14.0.
G	24" X 24" ARMSTRONG CLEAN ROOM VL SQUARE TILES INSTALLED IN PRELUDE 15/16" XL GRID.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS. COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM FINISH: REFER TO FINISH PLANS FOR COLOR.

GENERAL CEILING PLAN NOTES

- REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
- LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH. UNLESS OTHERWISE INDICATED.
- CENTER PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS. SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC. UNLESS OTHERWISE INDICATED.
- PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
- ALL EXPOSED DUCTWORK, PIPING, CONDUITS ETC. SHALL BE PAINTED. COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
- PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES. IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
- CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED. PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS WHETHER OR NOT INDICATED ON THE DRAWINGS. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CEILING LEGEND



GENERAL PLAN NOTES - PHARMACY

- ROLLED DOWN STEEL SECURITY GATE
- FLOOR PADDING UNDER CARPET TILE
- SHIPPING COUNTER NEEDS BACKSPLASH WELDED PANEL BACK-TO-BACK FROM SHIPPING TO BREAK AREA.

GENERAL PLAN NOTES

- REFER TO A201-A202 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
- MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

PLAN KEYNOTES

- MILLWORK SHOWN SHADED GRAY. REFER TO INTERIOR ELEVATIONS.
- ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS.
- WALL COVERING RBS. REFER TO DETAIL 04/A040/C FOR MORE INFORMATION.
- FEATURE WALL - REFER TO INTERIOR ELEVATIONS.
- DASHED LINE SHOWS BOUNDARY OF FLOOR OPENING ABOVE.
- 6" DIA. PAINTED STEEL BOLLARD. REFER TO STRUCTURAL DWGS.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO PLUMBING DRAWINGS.
- LATERAL BRACING - REFER TO STRUCTURAL DRAWINGS.
- MOOP SINK WITH OPER. SHELVEING.
- MILLWORK WITH SINK.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD FINISHES.
- METAL PAN STAIR WITH CONCRETE TREADS.
- ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH WITH WINDOW FILM. REFER TO EXTERIOR ELEVATIONS AND SPECIFICATIONS FOR WINDOW FILM.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE S31 COUNTERTOP & C81 BY MIDMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- GRABBAR. REFER TO ELECTRICAL DWGS.
- GUARDRAIL.
- MONUMENTAL STAIR - REFER TO ENLARGED PLANS.
- HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- OPERABLE PARTITION WALL. BASIS-OF-DESIGN: MODERNFOLD - ACOUSTI-SEAL MODEL ENCORE. ACOUSTICS - STC-56. MANUAL - PANEL FINISH: TBD - TRIM COLOR: TBD. SEE SPECIFICATIONS.
- INTERNAL RAMP WITH WALL MOUNTED HANDRAILS.
- PRINTER.
- EXTERIOR STAIR TO ROOF TERRACE.
- DAMEN CENTER VENDING MACHINE - RELOCATED FROM EXISTING BUILDING.
- BIKE RACK. REFER TO LANDSCAPE PLAN.
- DASHED LINE REPRESENTS OVERHEAD COILING DOOR - REFER TO REFLECTED CEILING PLAN.
- SWINGING PARKING GATE CLAD WITH PERFORATED METAL PANELS.
- PERFORATED SCREEN WALL REFER TO ELEVATIONS FOR EXTENTS. CONCRETE KNEE WALL BELOW WHERE INDICATED.
- EDGE OF OVERHANG ABOVE.
- TRANSPORT PARKING.
- DELIVERY ZONE.
- BASE BID: ALUMINUM STOREFRONT SYSTEM WITH SWING DOOR (AS SHOWN). ALTERNATE #10: FOLDING ALUMINUM FRAMED GLASS DOORS WITH GROUND SWING DOOR FOR GRESS. BASIS-OF-DESIGN: NAWAWALL S45.
- PRE-FINISHED ALUMINUM PICKET GUARDRAIL. BASIS-OF-DESIGN: DURABAIL DOOR TO RECEIVE ROOM SCHEDULE EQUIPMENT BY OTHERS. PROVIDE NECESSARY POWER AND DATA.
- 2' x 2' PRECAST PAVES ON PEDESTAL. BASIS-OF-DESIGN MANUFACTURER: HANOVER.
- DASHED LINE OF CEILING / BULKHEAD ABOVE. REFER TO REFLECTED CEILING PLAN.
- SEARCHED REEF EXTINGUISHING CABINET. REFER TO SPECS.
- PHARMACY COMPOUND SINK.
- MOTORIZED STEEL ROLL DOWN GATE AT CHECK-IN WINDOWS WITH MANUAL OVERRIDE. DOOR TO INCLUDE INTERIOR LOCK.
- DRYWALL CASED OPENING TRANSACTION WINDOW AND SOLID SURFACE COUNTER.
- FOOD PANTRY EQUIPMENT AND SHELVING BY OWNER. SHOWN HERE FOR REFERENCE.
- HOLLOW METAL WINDOW SYSTEM. SILL HEIGHT: 2'-10". HEAD HEIGHT: 8'-0".
- ACCESS PANEL 6'-6" (H) X 4'-0" (W). PANEL RESTS ON FINISH FLOOR - REFER TO ELECTRICAL DRAWINGS.
- ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS WITH WINDOW FILM.
- STEEL COLUMN WITH 2'-0" DIA. AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAINT EXPOSED STEEL WITH HIGH PERFORMANCE COATING ABOVE CONCRETE BASE.
- PROVIDE BLOCKING AS REQUIRED.
- ALTERNATE #07 - TRELLIS COLUMNS. REFER TO DETAILS AND STRUCTURAL DRAWINGS.
- ENTRY CANOPY BELOW. SEE ELEVATIONS AND DETAILS.
- 6" CHASE FOR A/V CONDUIT - REFER TO TECHNOLOGY DRAWINGS.
- REFRIGERATOR(S) FOR MEDICINE TO BE LOCATED IN THIS ROOM - TO BE COORDINATED WITH OWNER.
- PARTITION WALL WITH WINDOW FILM ABOVE.
- SWING OF DOOR TO BE 18" FROM INSIDE FACE OF FINISHED WALL.
- METAL WRAPPED STEEL COLUMN ABOVE 4" CONCRETE BASE. REFER TO EXTERIOR ELEVATIONS ON A201 FOR METAL TYPE.
- TRENCH DRAIN. REFER TO PLUMBING DRAWINGS.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- BUILT-IN WOOD FRAMES. REFERENCE ELEVATIONS AND DETAILS.
- PAINTED CONCRETE MARKINGS.
- GLASS GUARDRAIL: BASIS-OF-DESIGN: CRL GLASS RAIL STANDOFF BASE AND CAP - 1-3/4" PROJECTION SIDE MOUNTED FOR 3/4" LAMINATED TEMPERED GLASS.
- CHAINLINK FENCE AT BIKE STORAGE UP TO CEILING WITH LOCKABLE DOOR. SEE DOOR SCHEDULE.
- WALL MOUNTED LOUVERED PANELS - TO BE COORDINATED WITH OWNER - PROVIDE BLOCKING AS REQUIRED.
- CUBICLE CURTAIN AND TRACK - REFERENCE INTERIOR FINISH PLAN AND SPECIFICATION 10.21.23.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. WALL CHANNEL MOUNTING - REFER TO DETAIL 04/A132.
- PRE-FINISHED ALUMINUM LOUVER AND EXHAUST FAN. REFER TO MECH. DWGS FOR FAN INFO.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- UNDER CABINET LIGHTING - REFER TO ELECTRICAL DRAWINGS.
- OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- PAINTED STEEL CANE RAIL. REFER TO STAIR DRAWING ON A125.

PHARMACY NOTE:
OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DRAWINGS.

EQUIPMENT SCHEDULE - PHARMACY

MARK	ITEM	DESCRIPTION	PROVIDED BY	INSTALLED BY	COMMENTS
P1	SHREDDER	PHARMACY SHREDDER	OWNER	OWNER	
P2	PRINTER		OWNER	OWNER	
P3	SIDE-BY-SIDE REFRIGERATOR FREEZER	33W x 33D x 70H	OWNER	OWNER	GC TO PROVIDE POWER AND WATER LINES REQUIRED
P4	WILL CALL FRIDGE		OWNER	OWNER	
P5	ICE PACK FREEZER		OWNER	OWNER	GC TO PROVIDE POWER AND WATER LINES REQUIRED
P6	DRUG FRIDGE		OWNER	OWNER	
P7	STANDING LOCK N' ROLL	20' X 32'	OWNER	OWNER	

618 East Market Street
Indianapolis, Indiana 46202
phone 317.264.8162
axisrchr.com

Revised Drawings
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated, the architect reserves the right to make changes to the drawings and specifications at any time.

DRAWN BY: KS / JAL
CHECKED BY: CS
DATE ISSUED: 09/12/2022

REVISIONS:	DESCRIPTION	DATE
1	DESCRIPTION	
2	ADDENDUM #02	10/04/2022

CLIENT
DAMEN CENTER
ALAN WITCHEY, President and CEO
26 North Westport Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JSO
JANIS FLECK, PE
8445 Allison Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

STRUCTURAL ENGINEER
JSO
JANIS FLECK, PE
8445 Allison Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

MEP ENGINEER
SEAN GOSKOWSKI, PE
1344 South Westport Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

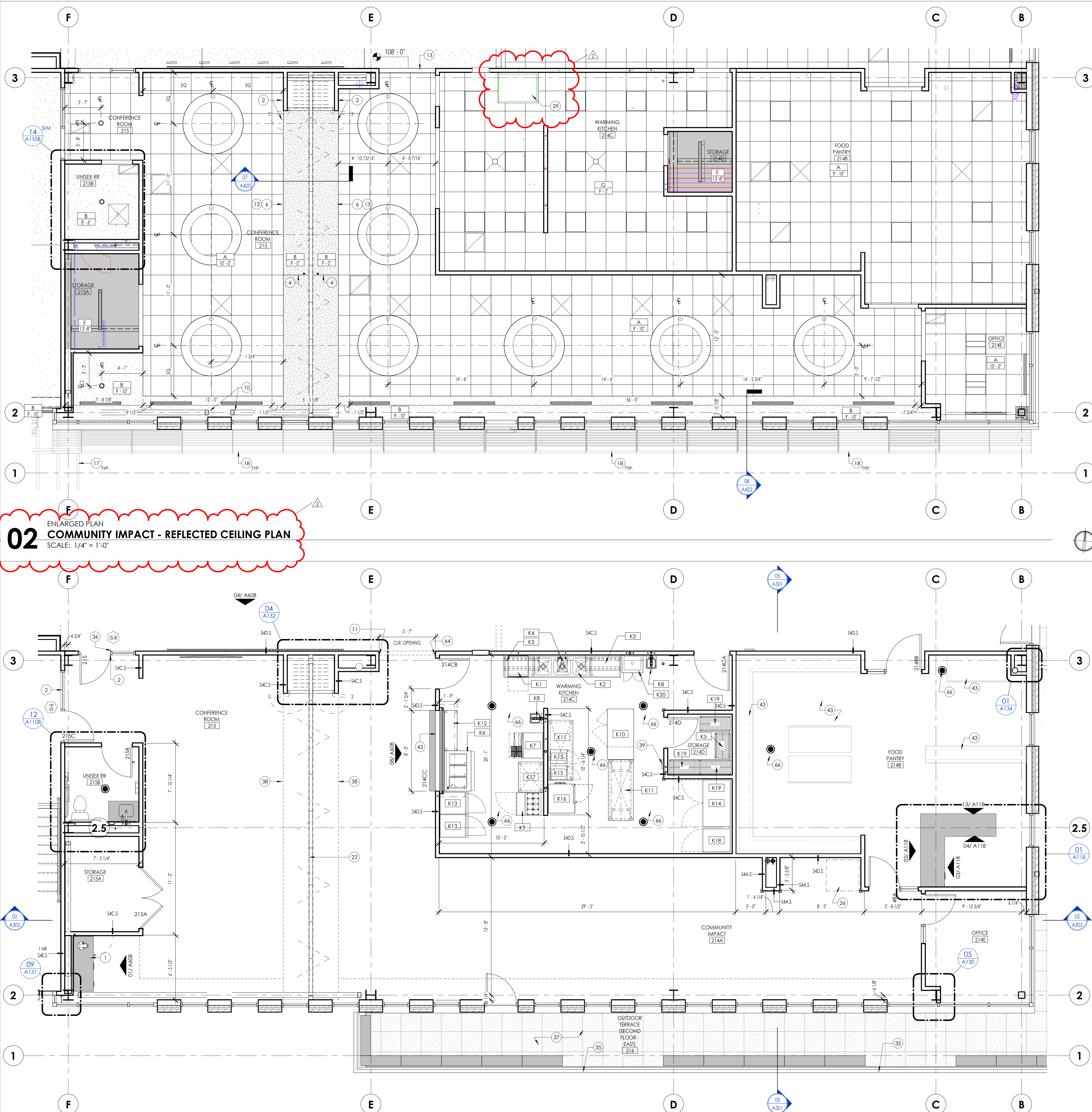
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIS CHEN, P.A., A.S.A.
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363.6108

PHARMACY - ENLARGED PLAN AND ENLARGED REFLECTED CEILING PLAN

DAMEN CENTER
NEW DAMEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

REGISTERED PROFESSIONAL ARCHITECT
No. 194008
STATE OF INDIANA
Drew Harte

A111
PROJECT NUMBER: 2021029



01 ENLARGED PLAN
COMMUNITY IMPACT - CONSTRUCTION PLAN
SCALE: 1/4" = 1'-0"

02 ENLARGED PLAN
COMMUNITY IMPACT - REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

EQUIPMENT SCHEDULE - WARMING KITCHEN					
MARK	ITEM	DESCRIPTION	PROVIDED BY	INSTALLED BY	COMMENTS
K1	UNDERCOUNTER DISHWASHER		OWNER	CONTRACTOR	
K2	3-COMPARTMENT SINK		OWNER	CONTRACTOR	
K3	SORTING SHELF		OWNER	CONTRACTOR	
K4	PERMISE SPRAYER		OWNER	CONTRACTOR	
K5	DRY STORAGE SHELVING	2'-6" X 1'-6"	OWNER	CONTRACTOR	
K6	HOT FOOD TABLE		OWNER	CONTRACTOR	
K7	ICE MACHINE		OWNER	CONTRACTOR	
K8	HAND SINK		OWNER	CONTRACTOR	
K9	REFRIGERATED PREP TABLE		OWNER	CONTRACTOR	
K10	REFRIGERATED WORK TOP		OWNER	CONTRACTOR	
K11	WORK TABLE		OWNER	CONTRACTOR	
K12	DISH CABINET		OWNER	CONTRACTOR	
K13	COOK-IT-HOLD UNIT		OWNER	CONTRACTOR	
K14	REACH-IN REFRIGERATOR		OWNER	CONTRACTOR	
K15	MICROWAVE OVEN		OWNER	CONTRACTOR	
K16	DOUBLE DECK COMBI OVEN		OWNER	CONTRACTOR	
K17	WORK TABLE	2'-6" X 3'-0"	OWNER	CONTRACTOR	
K18	REACH-IN FREEZER		OWNER	CONTRACTOR	
K19	DRY STORAGE SHELVING	3'-0" X 1'-6"	OWNER	CONTRACTOR	
K20	MOP SINK CABINET		OWNER	CONTRACTOR	

GENERAL CEILING PLAN NOTES

- REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
- LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH, UNLESS OTHERWISE INDICATED.
- CENTER PENETRATIONS IN ACUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS, SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC., UNLESS OTHERWISE INDICATED.
- PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
- ALL EXPOSED DUCTWORK, PIPING, CONDUITS ETC. SHALL BE PAINTED, COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
- PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE ACUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES. IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
- CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED. PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS WHETHER OR NOT INDICATED ON THE DRAWINGS. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CEILING TYPES

TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUNE. EDGE: ANGLED REGULAR 9/16" COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING. FINISH: REFER TO FINISH PLANS FOR COLOR.
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL. REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2)
D	24" X 48" LAY-IN CEILING TILE ARMSTRONG CIRRIUS SECOND LOOK II PANEL. 9/16" BEVELED REGULAR. FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE. DUCTWORK, PIPING, CONDUITS, ETC. EXTEND PAINTED FINISH 48" PAST EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE. REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40. 4" THICKNESS. R-VALUE 14.0
G	24" X 24" ARMSTRONG CLEAN ROOM VLS SQUARE TILES INSTALLED IN PRELUDE 15/16" XL GRID.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS. COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM. FINISH: REFER TO FINISH PLANS FOR COLOR.

REFLECTED CEILING KEYNOTES

- PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- ALIGN FINISH FACE OF CEILING/BULKHEAD WITH WALL.
- ALIGN.
- 1/4" #109.3 2NC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD. DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/BULKHEAD/CEILING CLOUD OR CENTERLINE OF MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
- CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
- PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACUSTICAL PANEL CEILING AND GYPSUM BOARD CEILING. BASIS-OF-DESIGN: ARMSTRONG #7901 9/16" SHADOW REVEAL TRANSITION MOLDING. CENTER ON GRIDLINE WHERE SHOWN. TYP.
- ALIGN CEILING GRID WITH EDGE OF BULKHEAD.
- HORIZONTAL AND VERTICAL SURFACES OF GYP CEILING TO RECEIVE ACCENT PAINT (PT). REFER TO CEILING PLAN FOR PAINT TAG (PT). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
- ROOF LEADER. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TIE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TIE-IN BELOW SLAB.
- EXPOSED STRUCTURAL STEEL BRACING THIS BAY. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
- MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT (HP2). REFER TO STRUCTURAL DRAWINGS.
- PROVIDE 3-5/8" METAL STUD FRAMING AT 16" O.C. AND 5/8" TYPE 'X' GYPSUM BOARD BULKHEAD. EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING. EXTEND TO DECK WHERE NO CEILING IS PRESENT.
- PROVIDE 4" ARMSTRONG ONE-PIECE DRYWALL EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- EPS CONTROL JOINT IN SOFFIT. DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
- RAILING ABOVE. REFER TO CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO. CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ALTERNATE #06 - ALUMINUM SUNSHADE FASTENED TO STEEL PLATE. SUNSHADE BASIS-OF-DESIGN: CRL #351 POWDER-COATED SQUARE TUBE SUNSHADE. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ARCHITECTURAL MILLWORK FEATURE. REFER TO INTERIOR ELEVATIONS AND SECTION DETAILS.
- STRUCTURAL STEEL FLANGE. CUT TO PROFILE. PAINT WITH HIGH PERFORMANCE COATING. REFER TO WALL SECTIONS AND DETAILS.
- CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. REFER TO DETAIL 01/A422.
- EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. CONTINUE METAL STUD FRAMING AND FINISH WALL ASSEMBLY TO DECK WHERE NO CEILING IS PRESENT.
- ALTERNATE #07 - WASHINGTON STREET ENTRANCE TRELLIS - REFER TO SHEET A330 FOR DETAILS.
- COVE FOR DRAPERY TRACK. REFER TO DETAILS AND EQUIPMENT PLANS.
- WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
- PRE-MANUFACTURED STEEL AND GLASS CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- 24X24" ACCESS PANEL. PANEL IS TO BE PAINTED TO MATCH CEILING FINISH. REFER TO SPEC 08.31.13 FOR ADDITIONAL INFORMATION.
- EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

GENERAL PLAN NOTES

- REFER TO A301-A302 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACUSTICAL REQUIREMENTS, AND LOCATIONS.
- MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A116-A124.

PLAN KEYNOTES

- MILLWORK SHOWN SHADED GRAY. REFER TO INTERIOR ELEVATIONS.
- ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH. REFER TO INTERIOR ELEVATIONS AND SPECIFICATIONS.
- WALL COVERING RIBS. REFER TO DETAIL 04/A601/C FOR MORE INFORMATION.
- FEATURE WALL - REFER TO INTERIOR ELEVATIONS.
- DASHED LINE SHOWS BOUNDARY OF FLOOR OPENING ABOVE.
- 6" DIA. PAINTED STEEL BOLLARD - REFER TO STRUCTURAL DWGS.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO PLUMBING DRAWINGS.
- LATERAL BRACING - REFER TO STRUCTURAL DRAWINGS.
- MOP SINK WITH OPEN SHELVING.
- MILLWORK WITH SINK.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD FINISHES.
- METAL PAN STAIR WITH CONCRETE TREADS.
- ALUMINUM STOREFRONT SYSTEM. ANODIZED FINISH WITH WINDOW FILM. REFER TO EXTERIOR ELEVATIONS AND SPECIFICATIONS FOR WINDOW FILM.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE S31 COUNTERTOP & CABI BY MIDMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNERS VENDOR. COORDINATE POWER/DATA REQUIREMENTS WITH MEP DWGS.
- GENERATOR. REFER TO ELECTRICAL DWGS.
- GUARDRAIL.
- MONUMENTAL STAIR - REFER TO ENLARGED PLANS.
- HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- OPERABLE PARTITION WALL. BASIS-OF-DESIGN: MODERNFOLD - ACUSTIC-SEAL MODEL ENCORE. ACUSTICS - STC 35. MANUAL - PANEL FINISH: T8D - TRIM COLOR: T8D. SEE SPECIFICATIONS.
- INTERNAL RAMP WITH WALL MOUNTED HANDRAILS.
- PRINTER.
- EXTERIOR STAIR TO ROOF TERRACE.
- DAMEN CENTER VENDING MACHINE - RELOCATED FROM EXISTING BUILDING.
- BIKE RACK. REFER TO LANDSCAPE PLAN.
- DASHED LINE REPRESENTS OVERHEAD COILING DOOR - REFER TO REFLECTED CEILING PLAN.
- SWINGING PARKING GATE CLAD WITH PERM METAL PANELS.
- PERFORATED SCREEN WALL. REFER TO ELEVATIONS FOR EXTENTS. CONCRETE KNEE WALL BELOW WHERE INDICATED.
- EDGE OF OVERHANG ABOVE.
- TRANSPORT PARKING.
- DELIVERY ZONE.
- BASE BD - ALUMINUM STOREFRONT SYSTEM WITH SWING DOOR (AS SHOWN). ALTERNATE #10 - FOLDING ALUMINUM FRAMED GLASS DOORS WITH INTEGRAL SWING DOOR FOR EGRESS. BASIS-OF-DESIGN: NANAWALL S145.
- PRE-FINISHED ALUMINUM PICKET GUARDRAIL. BASIS-OF-DESIGN: DURARAIL.
- DOOR TO RECEIVE ROOM SCHEDULE EQUIPMENT BY OTHERS. PROVIDE NECESSARY POWER AND DATA.
- 2' X 2' PRECAST PAVEN ON PEDESTAL. BASIS-OF-DESIGN MANUFACTURER: HANOVER.
- SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- PHARMACY COMPUND DOWN GATE AT CHECK-IN WINDOWS WITH MANUAL OVERRIDE. DOOR TO INCLUDE INTERIOR LOCK.
- DRYWALL CASED OPENING TRANSACTION WINDOW AND SOLID SURFACE COUNTER.
- FOOD PANTRY EQUIPMENT AND SHELVING BY OWNER. SHOWN HERE FOR REFERENCE.
- HOLLOW METAL WINDOW SYSTEM. SILL HEIGHT: 2'-10". HEAD HEIGHT: 8'-0".
- ACCESS PANEL 6'-6" (H) X 4'-0" (W). PANEL RESTS ON FINISH FLOOR - REFER TO ELECTRICAL DRAWINGS.
- STEEL COLUMN WITH 2'-0" DIA. AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAINT EXPOSED STEEL WITH HIGH PERFORMANCE COATING ABOVE CONCRETE BASE.
- PROVIDE BLOCKING AS REQUIRED.
- ALTERNATE #07 - TRELLIS COLUMNS. REFER TO DETAILS AND STRUCTURAL DRAWINGS.
- ENTRY CANOPY BELOW. SEE ELEVATIONS AND DETAILS.
- 6" CHASE FOR AVV CONDUIT - REFER TO TECHNOLOGY DRAWINGS.
- REFRIGERATOR(S) FOR MEDICINE TO BE LOCATED IN THIS ROOM - TO BE COORDINATED WITH OWNER.
- PARTITION WALL WITH WINDOW FILM ABOVE.
- SWING OF DOOR TO BE 18" FROM INSIDE FACE OF FINISHED WALL.
- METAL WRAPPED STEEL COLUMN ABOVE 4" CONCRETE BASE. REFER TO INTERIOR ELEVATIONS ON A201 FOR METAL TYPE.
- TRENCH DRAIN. REFER TO PLUMBING DRAWINGS.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- BUILT-IN WOOD FRAMES. REFERENCE ELEVATIONS AND DETAILS.
- PAINTED CONCRETE MARKINGS.
- GLASS GUARDRAIL. BASIS-OF-DESIGN: CRL GLASS RAIL STANDOFF BASE AND CAP - 1-3/4" PROJECTION SIDE MOUNTED FOR 3/4" LAMINATED TEMPERED GLASS.
- CHAINLINK FENCE AT BIKE STORAGE UP TO CEILING WITH LOCKABLE DOOR. SEE DOOR SCHEDULE.
- WALL MOUNTED LOUVERED PANELS - TO BE COORDINATED WITH OWNER - PROVIDE BLOCKING AS REQUIRED.
- CURBIE CURTAIN AND TRACK - REFERENCE INTERIOR FINISH PLAN AND SPECIFICATION 10.21.23.
- OPERABLE GATE AT COMMUNITY IMPACT ENTRANCE. BASIS-OF-DESIGN: DYNAMIC CLOSURES ROLL AND FOLD PARAVENT MODEL WITH PERFORATED STEEL PANELS. REFERENCE SPECIFICATION 10.22.23 - PORTABLE PARTITIONS. WALL CHANNEL MOUNTING - REFER TO DETAIL 04/A132.
- PRE-FINISHED ALUMINUM LOUVER AND EXHAUST FAN. REFER TO MECH. DWGS FOR FAN INFO.
- AREA FLOOR DRAIN. REFER TO PLUMBING DRAWINGS.
- UNDER CABINET LIGHTING - REFER TO ELECTRICAL DRAWINGS.
- OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. INSTALLED BY CONTRACTOR. COORDINATE POWER/DATA REQUIREMENTS WITH MEP DWGS.
- PAINTED STEEL CANE RAIL. REFER TO STAIR DRAWING ON A125.

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
a x i s | s o r c h . c o m

Drawn By: KS
Checked By: DS
Date Issued: 09/12/2022

REVISIONS:
1 DESCRIPTION DATE
2 ADDENDUM A02 10/06/2022

CLIENT
DAMEN CENTER
ALAN WITCHEY, President and CEO
26 North Washington Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JSC
NANAWALL FLECK, PE
8445 Albion Pointe Blvd. Suite 425
Indianapolis, IN 46220
PH 317 461-1944

STRUCTURAL ENGINEER
JSC
DANIEL BURCH
8445 Albion Pointe Blvd. Suite 425
Indianapolis, IN 46220
PH 317 461-1944

MEP ENGINEER
JSC
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

LANDSCAPE ARCHITECT
CHEN STE DESIGN STUDIO LLC
JANIE CHEN, PH, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMEN CENTER
NEW DAMEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

REGISTERED PROFESSIONAL
ARCHITECT
STATE OF INDIANA
JSC

COMMUNITY IMPACT -
ENLARGED PLAN AND
ENLARGED REFLECTED
CEILING PLAN

A112
PROJECT NUMBER: 2021029

CEILING TYPES	
TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUNE. EDGE: ANGLED TEGULAR 9/16. COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING FINISH. REFER TO FINISH PLANS FOR COLOR.
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL. REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2)
D	24" X 48" LAY-IN CEILING TILE ARMSTRONG CURRIS SECOND LOOK III PANEL. 9/16" BEVELED TEGULAR. FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE, DUCTWORK, PIPING, CONDUITS, ETC. EXTEND PAINTED FINISH 4" PAST EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE. REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40. 4" THICKNESS. R-VALUE 14.0
G	24" X 24" ARMSTRONG CLEAR ROOM VL SQUARE TILES INSTALLED IN PRELUDE 15/16" XL GRID.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS. COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM FINISH. REFER TO FINISH PLANS FOR COLOR.

CEILING LEGEND	
	2x2 LAY-IN CEILING GRID
	4x4 LAY-IN CEILING GRID
	GYPSUM BOARD CEILING OR GYPSUM BOARD BULKHEAD
	EXPOSED STRUCTURE
	CEILING TYPE
	CEILING HEIGHT

GENERAL CEILING PLAN NOTES	
A.	REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
B.	ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
C.	LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH, UNLESS OTHERWISE INDICATED.
D.	CENTER PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS, SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC., UNLESS OTHERWISE INDICATED.
E.	PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
F.	ALL EXPOSED DUCTWORK, PIPING, CONDUITS ETC. SHALL BE PAINTED. COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
G.	PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
H.	COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
I.	LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
J.	PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES. IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
K.	CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED. PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS WHETHER OR NOT INDICATED ON THE DRAWINGS. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

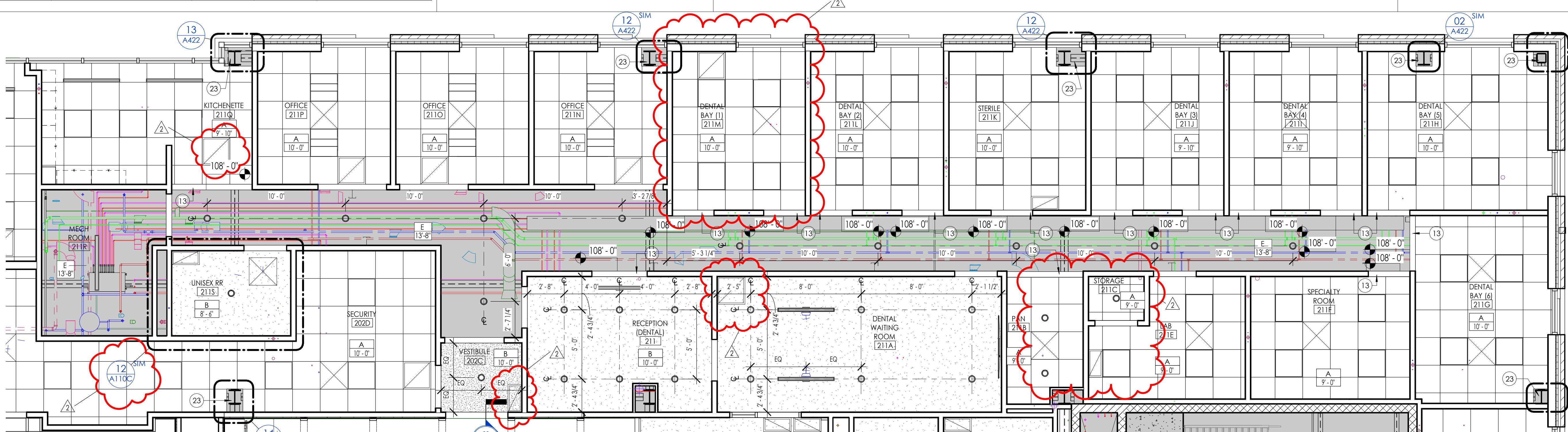
REFLECTED CEILING KEYNOTES...	
1	PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
2	ALIGN FINISH FACE OF CEILING/ BULKHEAD WITH WALL.
3	ALIGN.
4	1 1/4" #993 ZINC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD. DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/ BULKHEAD CEILING CLOUD OR CENTERLINE OF MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
5	CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
6	PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACOUSTIC PANEL CEILING AND GYPSUM BOARD CEILING. BASIS-OF-DESIGN: ARMSTRONG #7901 9/16" SHADOW REVEAL TRANSITION MOLDING.
7	ALIGN CEILING GRID WITH EDGE OF BULKHEAD
8	HORIZONTAL AND VERTICAL SURFACES OF CHIP CEILING TO RECEIVE ACCENT PAINT (PT). REFER TO CEILING PLAN FOR PAINT TAG (PT). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
9	ROOF LEADER. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TE-IN BELOW SLAB.
10	EXPOSED STRUCTURAL STEEL BRACING THIS BAY. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACOUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
11	MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
12	EXPOSED STRUCTURAL STEEL COLUMN. PAINT (HP2). REFER TO STRUCTURAL DRAWINGS.

REFLECTED CEILING KEYNOTES...	
13	PROVIDE 3/8" METAL STUD FRAMING AT 16" O.C. AND 5/8" TYPE 'Y' GYPSUM BOARD BULKHEAD. EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING CLOUD.
14	PROVIDE 6" ARMSTRONG ONE-PIECE DRYWALL EDGE TRIM AT PERIMETER OF CEILING CLOUD.
15	EPS CONTROL JOINT IN SOFFIT. DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/ MULLION. CENTER ON GRIDLINE WHERE SHOWN. TYP.
16	RAILING ABOVE. REFER CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO. CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
17	ALTERNATE #06 - ALUMINUM SUNSHADE FASTENED TO STEEL PLATE. SUNSHADE BASIS-OF-DESIGN: CRL AX11 POWDER-COATED. SQUARE TUBE SUNSHADE. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
18	ARCHITECTURAL MILLWORK FEATURE. REFER TO INTERIOR ELEVATIONS AND SECTION DETAILS.
19	STRUCTURAL STEEL FLANGE. CUT TO PROFILE. PAINT WITH HIGH PERFORMANCE COATING. REFER TO CEILING PLAN FOR MORE INFO.
20	CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
21	EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. REFER TO DETAIL 09/A422
22	EXPOSED STRUCTURAL STEEL COLUMN. PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. CONTINUE METAL STUD FRAMING AND FINISH WALL ASSEMBLY TO DECK WHERE NO CEILING IS PRESENT.
23	ALTERNATE #07 - WASHINGTON STREET ENTRANCE TRELLIS - REFER TO SHEET A330 FOR DETAILS.
24	COVE FOR DRAPERY TRACK. REFER TO DETAILS AND EQUIPMENT PLANS.
25	WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
26	PRE-MANUFACTURED STEEL AND GLASS CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
27	24X24" ACCESS PANEL. PANEL 6 IS TO BE PAINTED TO MATCH CEILING FINISH. REFER TO SPEC 08.31.13 FOR ADDITIONAL INFORMATION.
28	EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

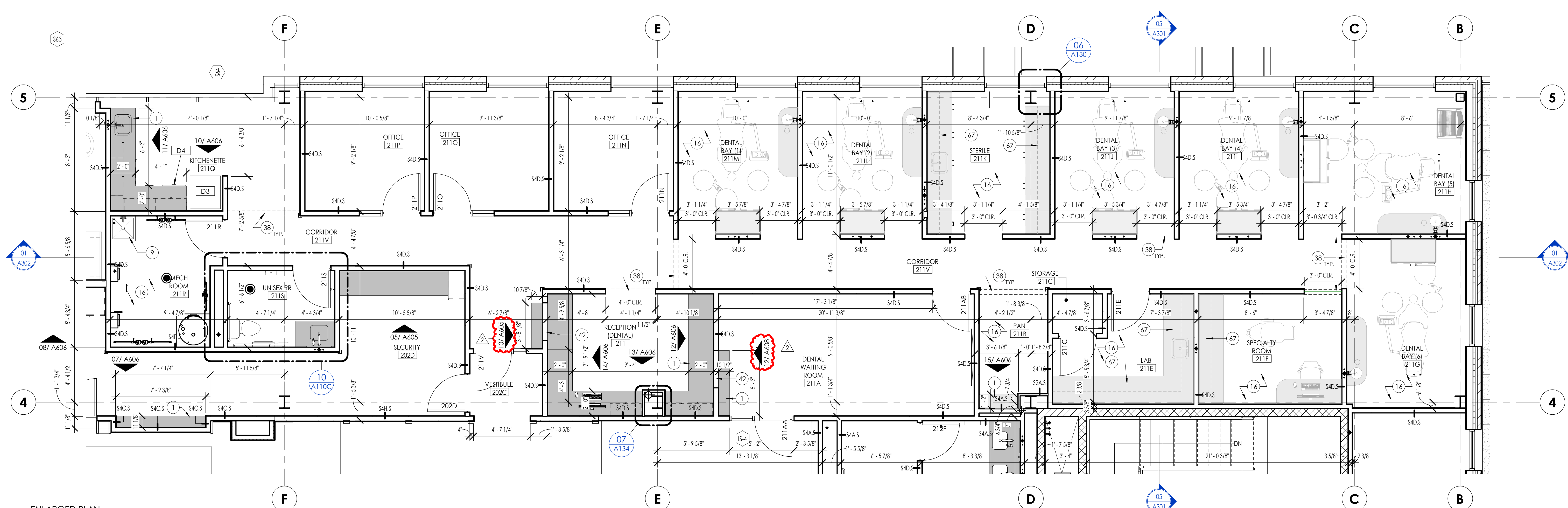
GENERAL PLAN NOTES - DENTAL	
A.	OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. SEE LIST OF ROOMS BELOW:
-	DENTAL BAYS: BENCO WILL PROVIDE THE CASEWORK (REAR AND SIDE CABINETS SINKS INCLUDED), DENTAL CHAIRS, DELIVERY UNITS, DENTAL LIGHTS, OPERATOR STOOLS
-	PAN ROOM: BENCO WILL PROVIDE THE PANO MACHINE
-	STERILIZATION: BENCO WILL PROVIDE ALL CASEWORK (SINKS INCLUDED)
-	LAB: BENCO WILL PROVIDE ALL CASEWORK (SINKS INCLUDED)
-	MECHANICAL ROOM / STORAGE: BENCO WILL PROVIDE THE COMPRESSOR, VACUUM PUMP, AMALGAM SEPARATOR, REMOTE WATER BYPASS, MASTER CONTROL PANEL

GENERAL PLAN NOTES	
A.	REFER TO A201-A202 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
B.	REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
C.	MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
D.	FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
E.	PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
F.	PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

EQUIPMENT SCHEDULE - DENTAL				
MARK	ITEM	DESCRIPTION	PROVIDED BY	INSTALLED BY
D3	SIDE-BY-SIDE REFRIGERATOR FREEZER	33W x 33D x 70H	OWNER	OWNER
D4	MICROWAVE OVEN		OWNER	GC



ENLARGED PLAN
02 DENTAL - REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



ENLARGED PLAN
01 DENTAL - SECOND FLOOR
SCALE: 1/4" = 1'-0"

618 East Market Street
Indianapolis, Indiana 46202
phone 317/264.8162
axisarch.com

Drawn By	KS
Checked By	DS
Date Issued	09/12/2022

REVISIONS:	
DESCRIPTION	DATE
2. ADDENDUM A02	10/04/2022

CLIENT	DAMIAN CENTER ALAN WITCHEY, President and CEO 28 North Kendall Avenue Indianapolis, Indiana 46201 PH 317.632.0123
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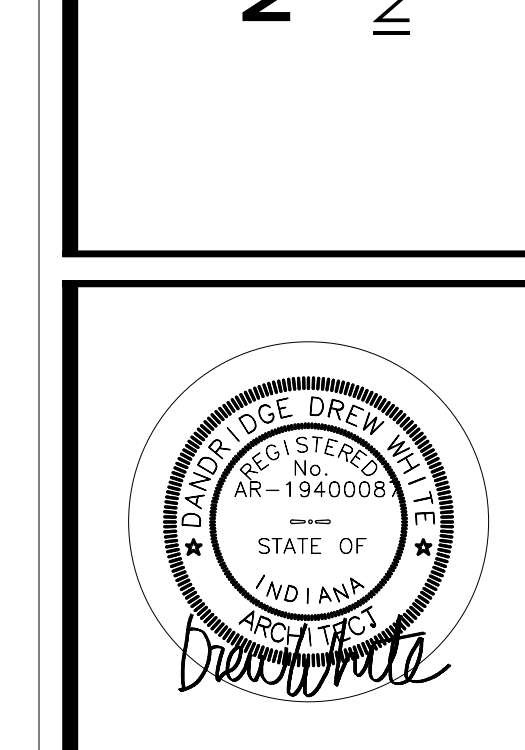
CIVIL ENGINEER	JSO NATHAN FLECK, PE 8445 Albion Pointe Blvd, Suite 425 Indianapolis, IN 46220 PH 317.661.1944
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STRUCTURAL ENGINEER	JSO DANIEL BURCH 8445 Albion Pointe Blvd, Suite 425 Indianapolis, IN 46220 PH 317.661.1944
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MEP ENGINEER	SEAN GURUKOMANA, PE, Managing Partner 384 South Kensington Road, Suite 202 Carmel, Indiana 46032 PH 317.344.8544
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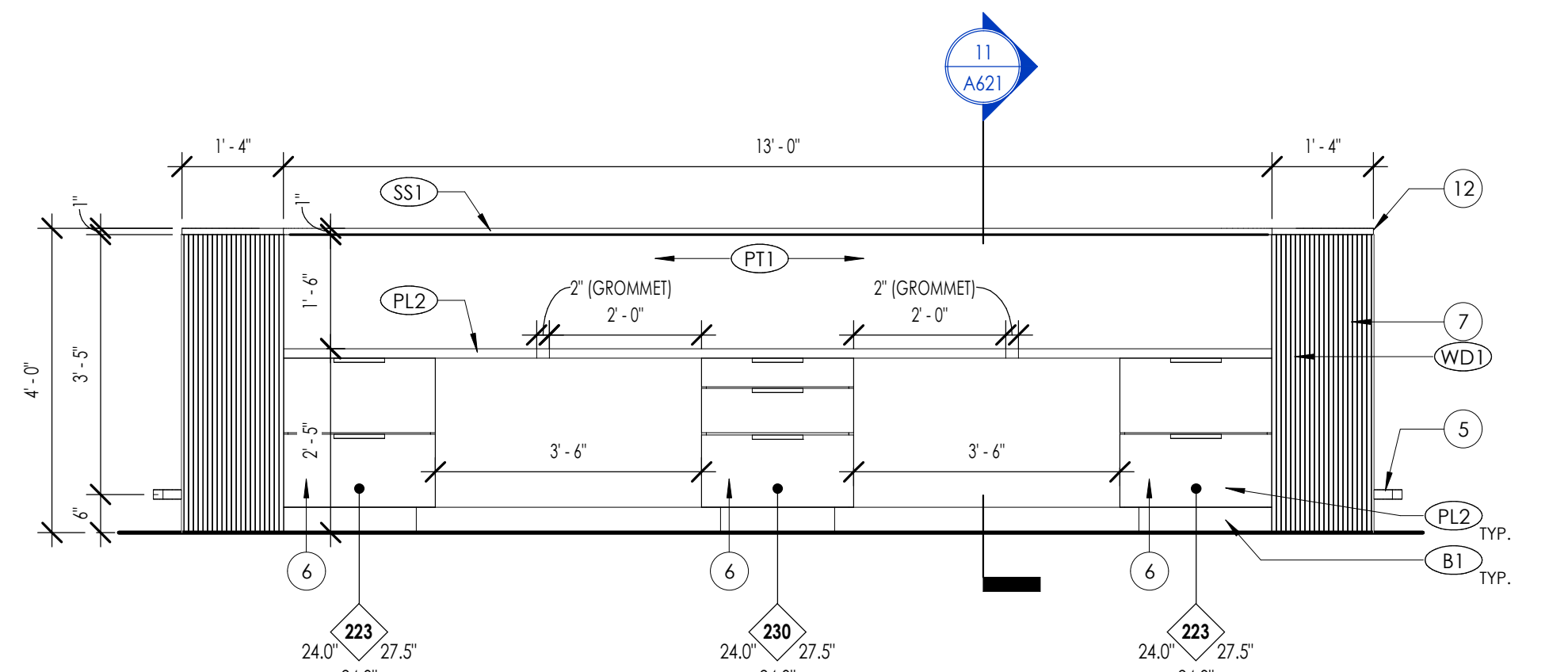
LANDSCAPE ARCHITECT	CHEN STE DESIGN STUDIO LLC JANIE CHEN, PLS, AIA 195 N HARBOUR DR #3605 Chicago, IL 60611 PH 847.363.0168
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DAMIAN CENTER
NEW DAMIAN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

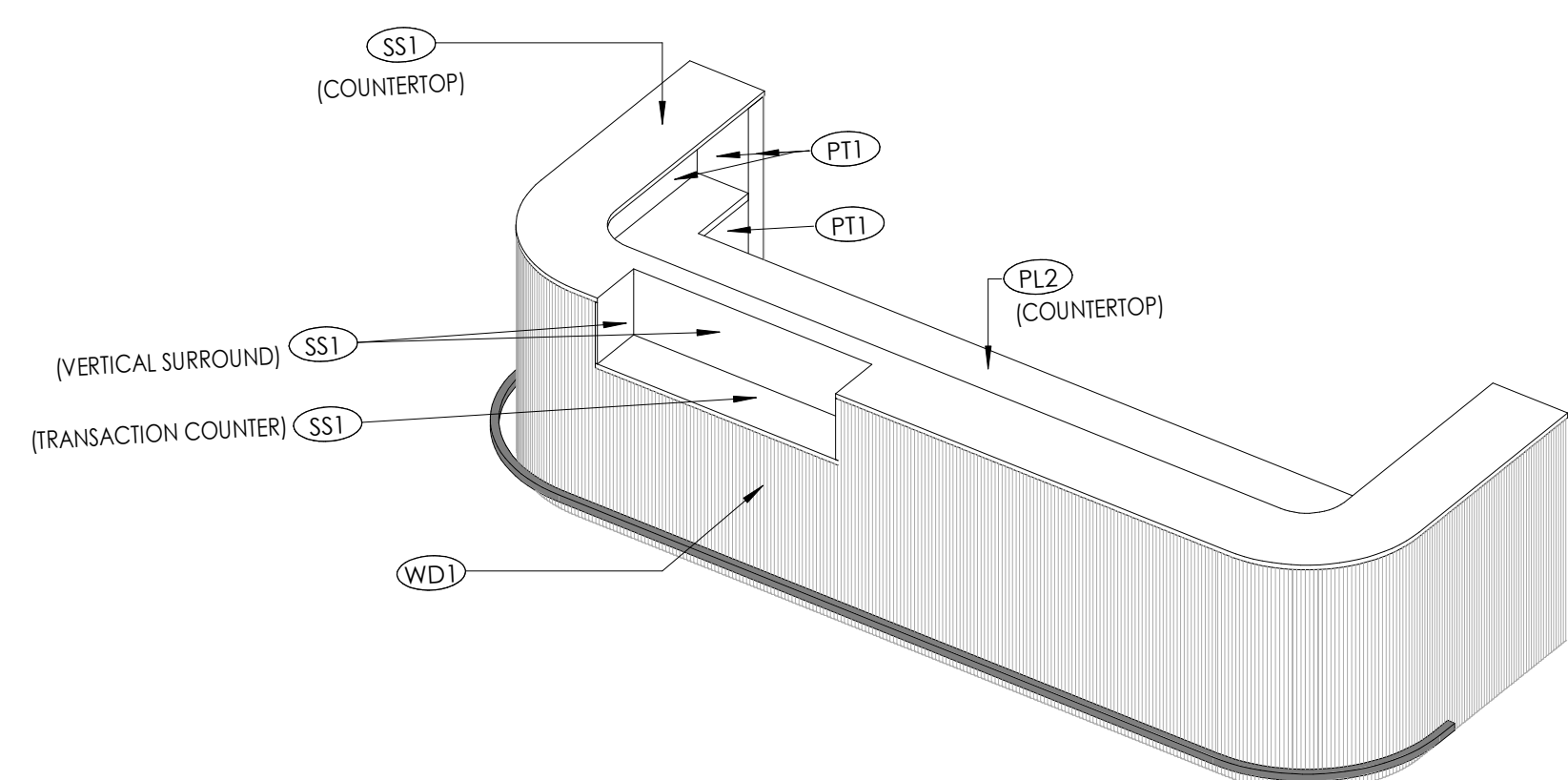


DENTAL - ENLARGED PLAN
AND ENLARGED
REFLECTED CEILING PLAN

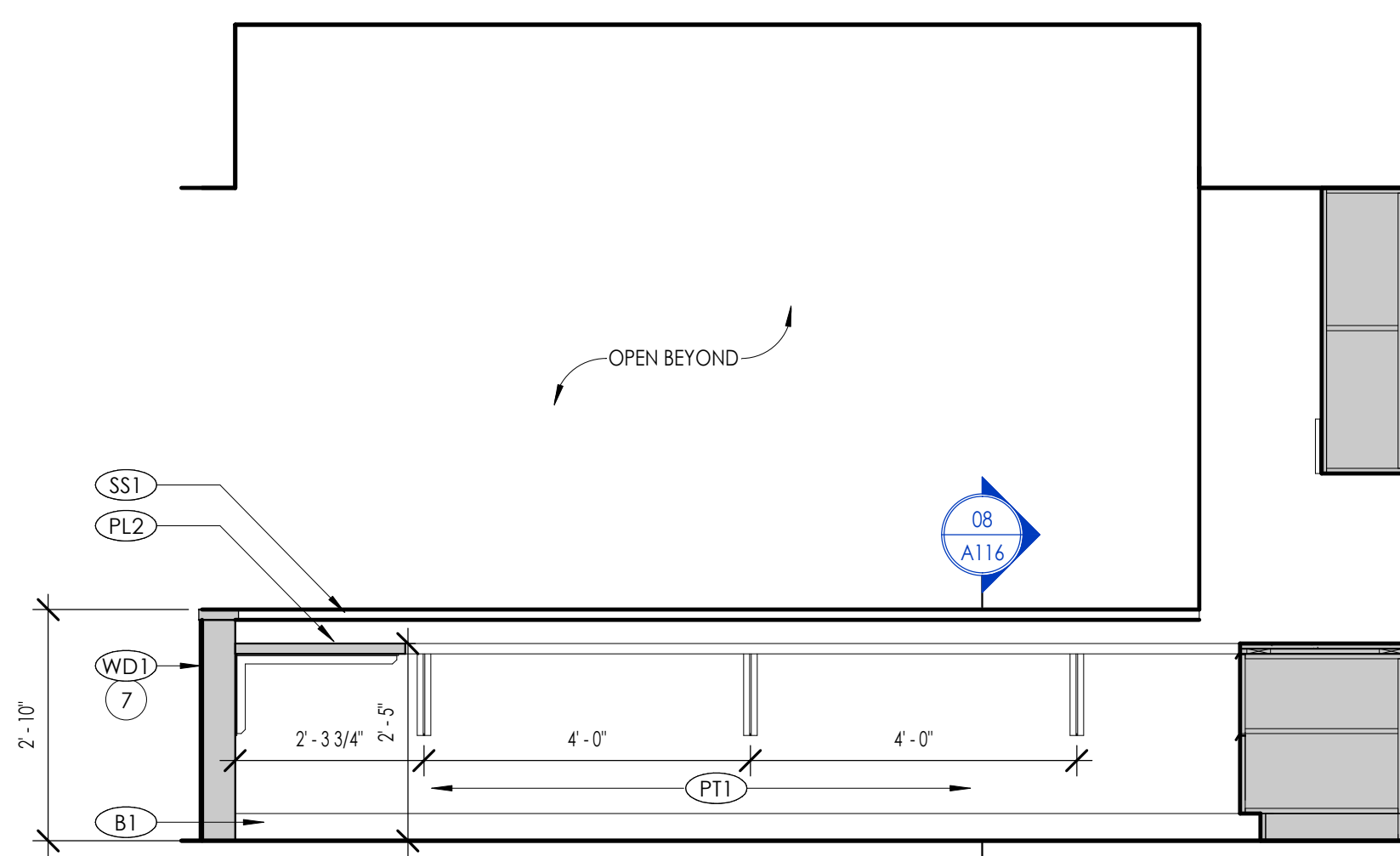
A113
PROJECT NUMBER: 2021029



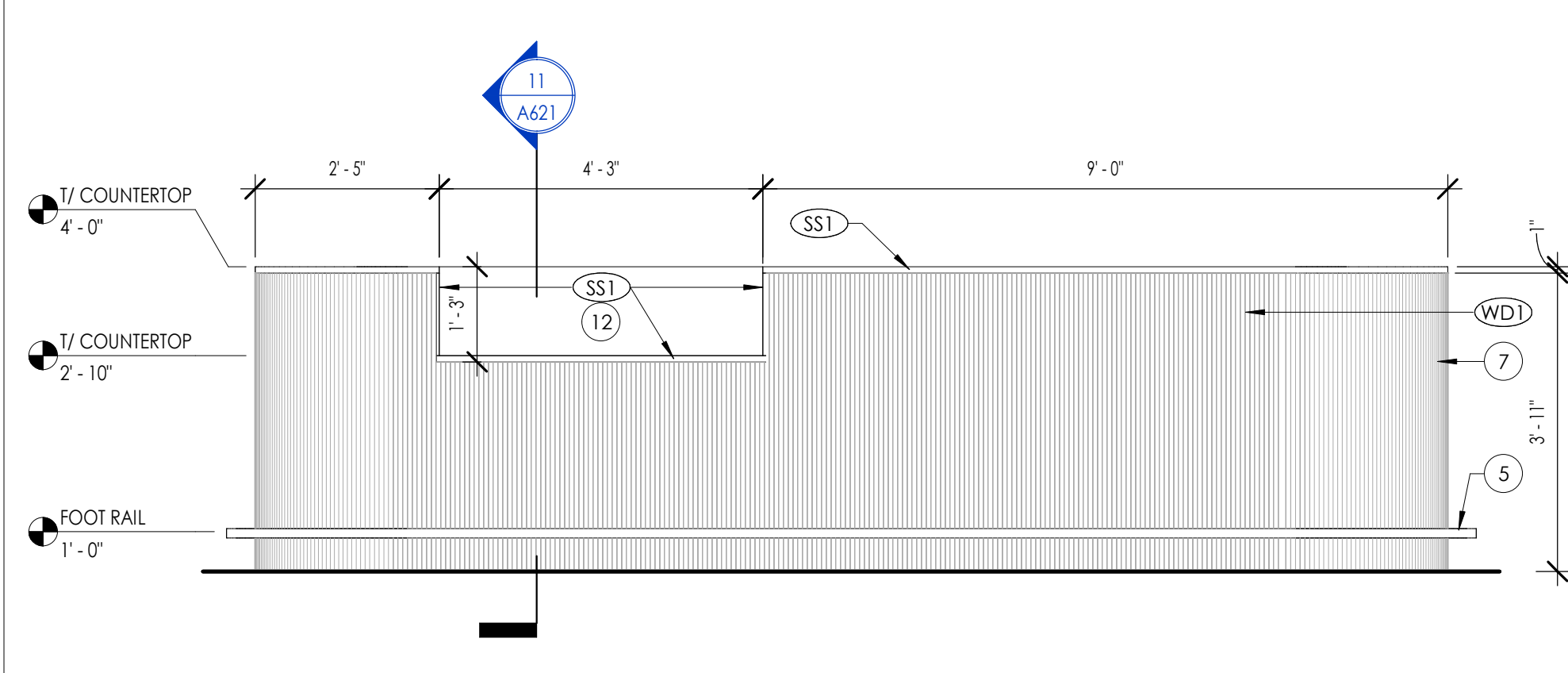
13 ELEVATION
MAINSTREET - RECEPTION DESK 02
SCALE: 1/2" = 1'-0"



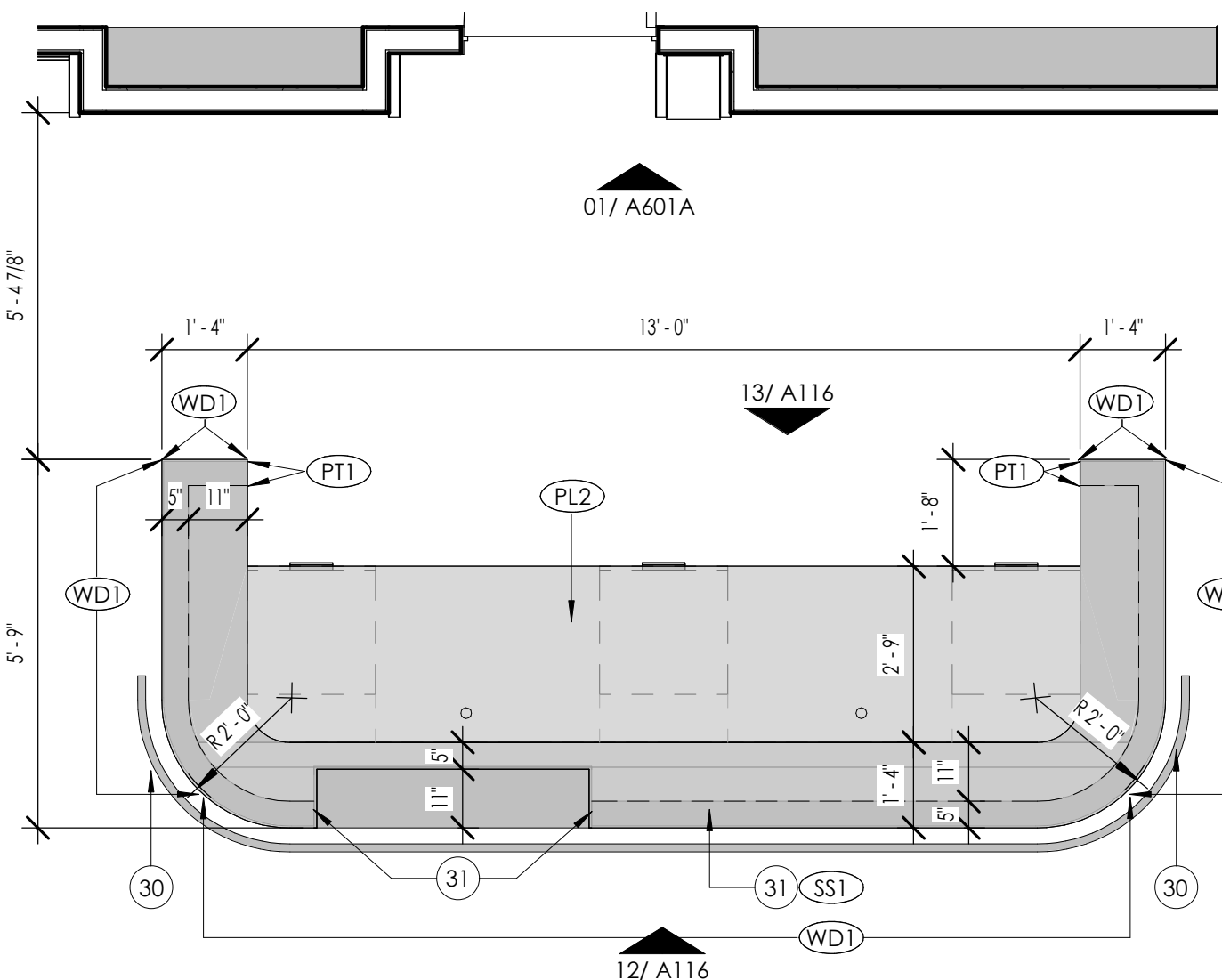
11 ISO - MAINSTREET - RECEPTION DESK
SCALE:



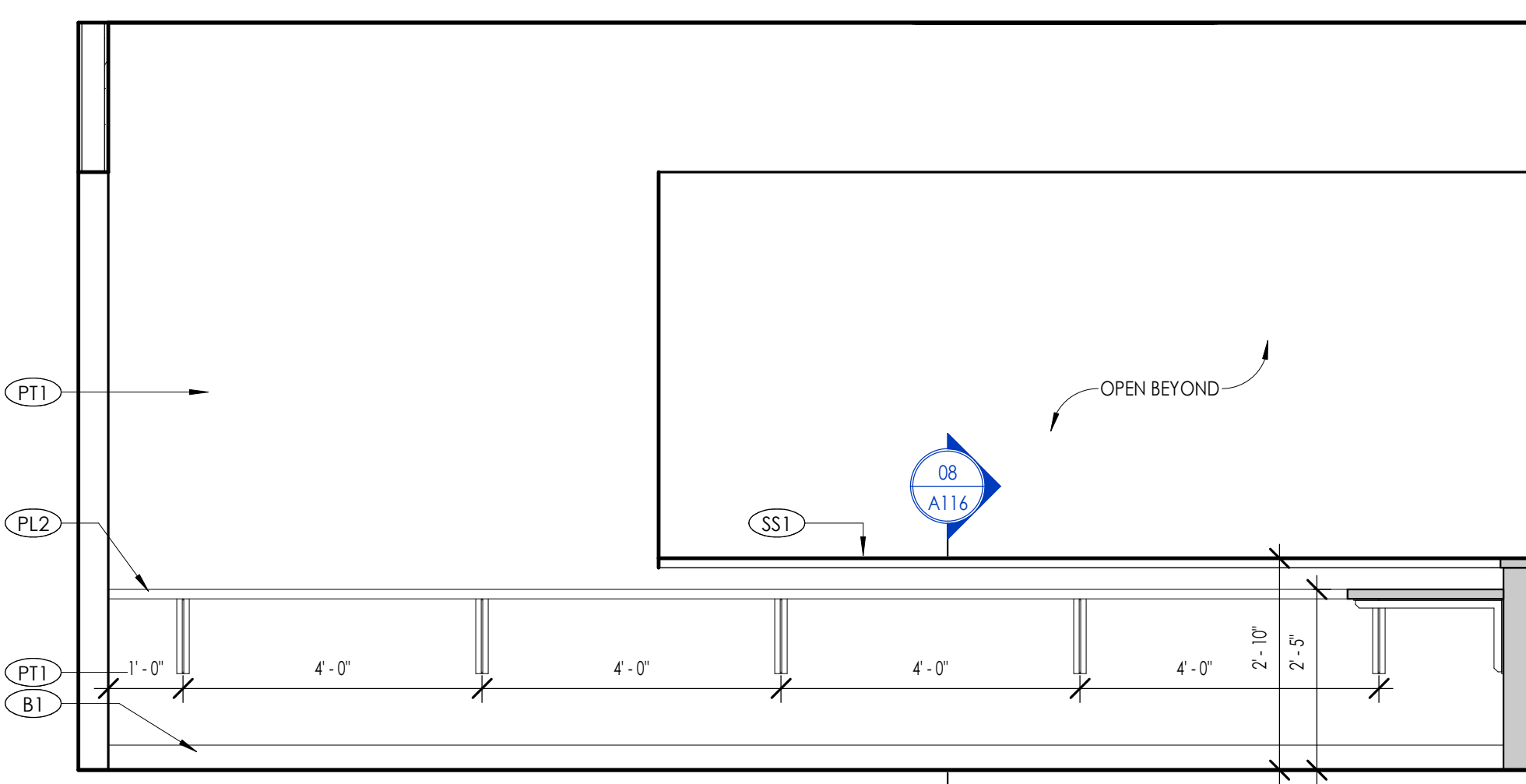
07 ELEVATION
RECEPTION - CLINIC
SCALE: 1/2" = 1'-0"



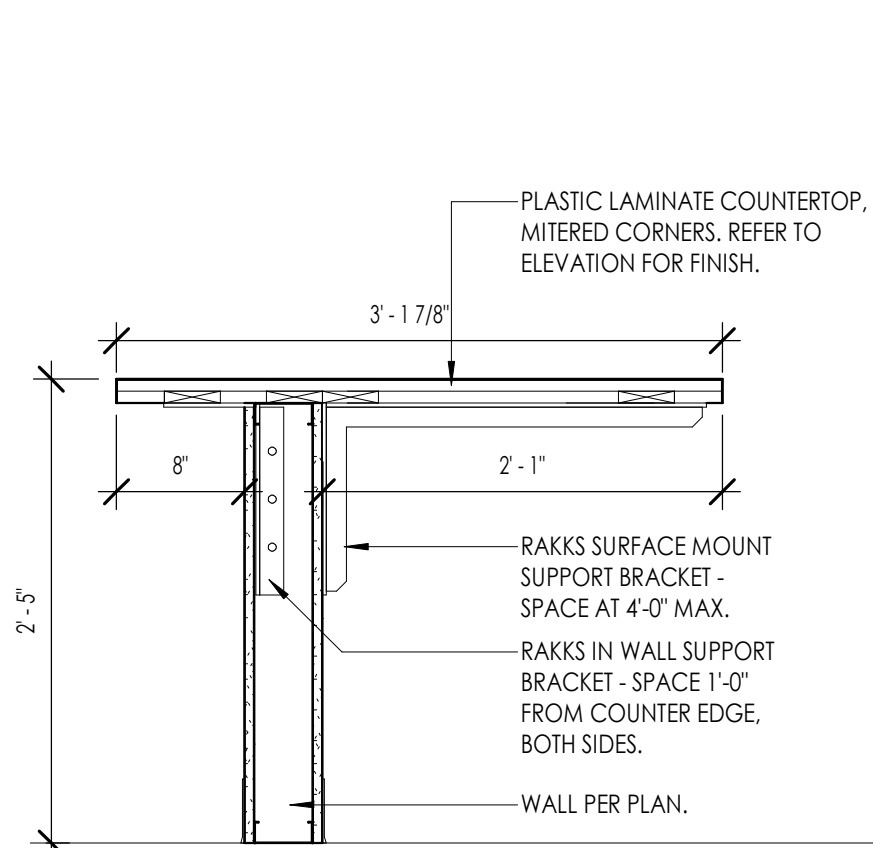
12 ELEVATION
MAINSTREET - RECEPTION DESK 01
SCALE: 1/2" = 1'-0"



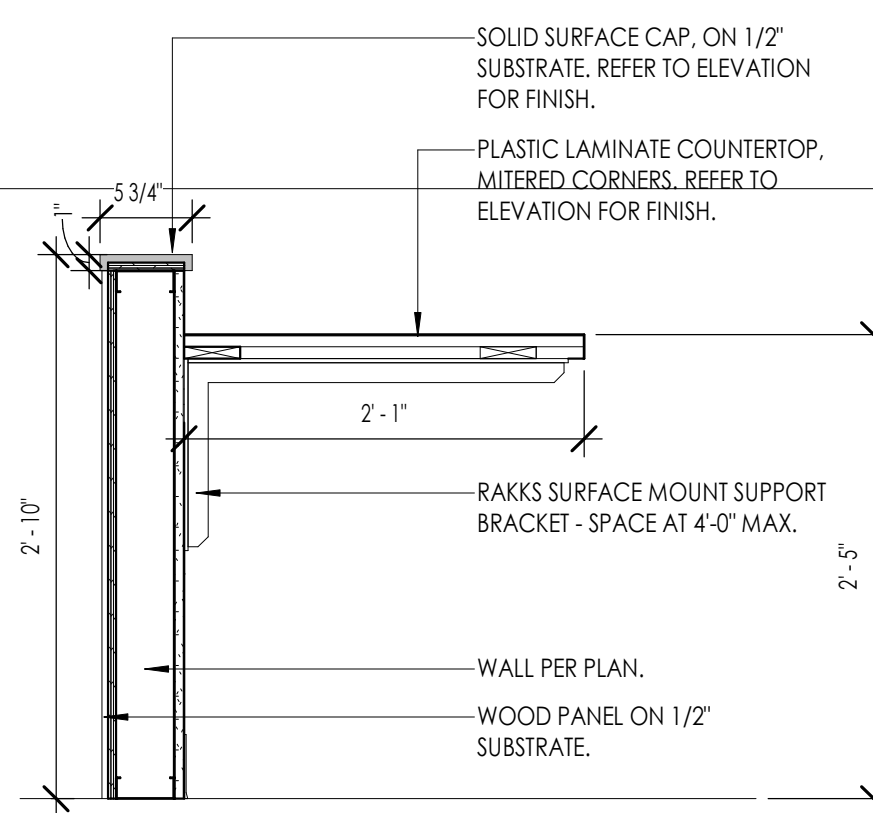
10 ENLARGED PLAN
MAINSTREET - RECEPTION DESK
SCALE: 3/8" = 1'-0"



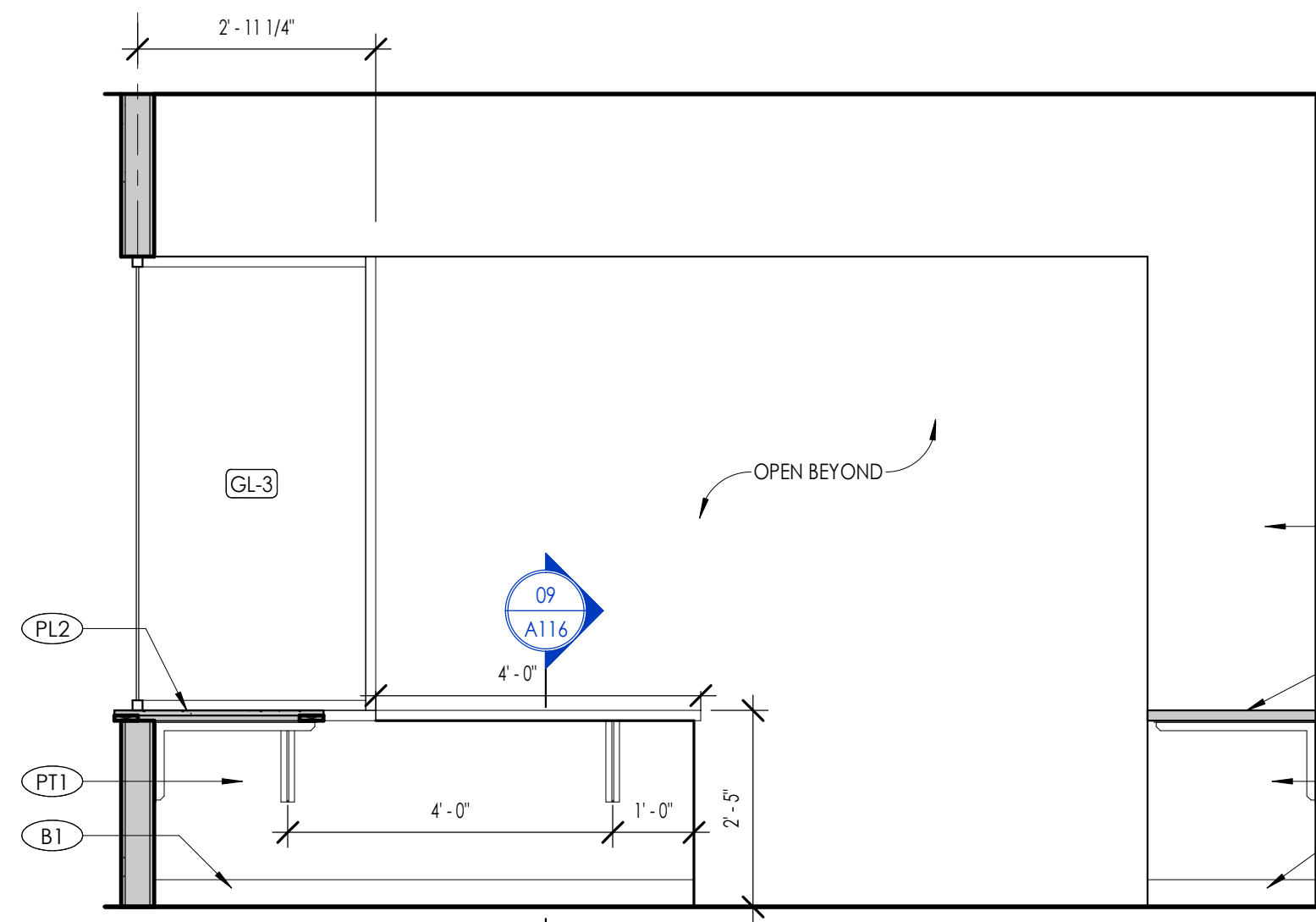
06 ELEVATION
CHECK IN - CLINIC
SCALE: 1/2" = 1'-0"



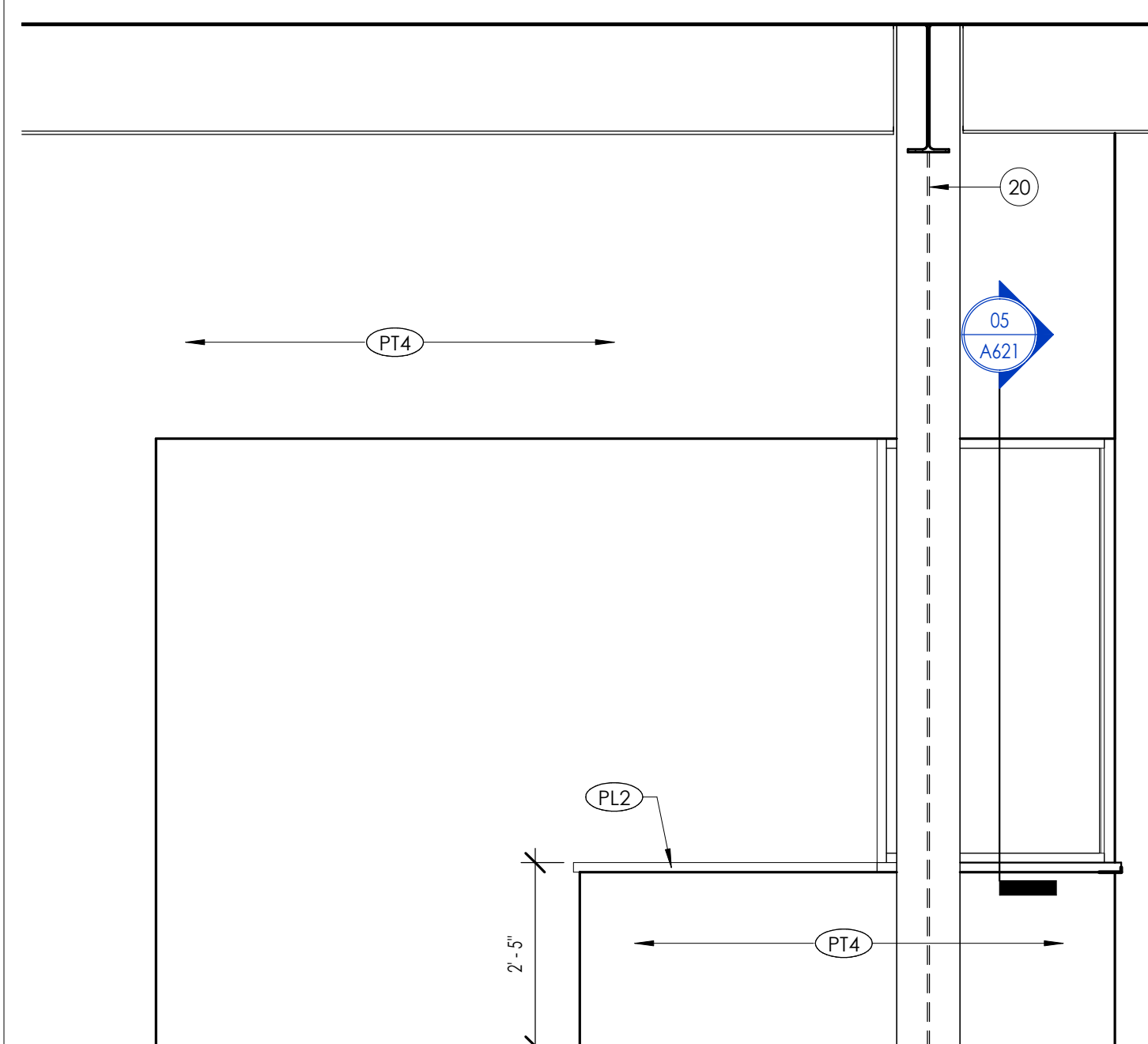
09 CLINIC RECEPTION 1
SCALE: 1" = 1'-0"



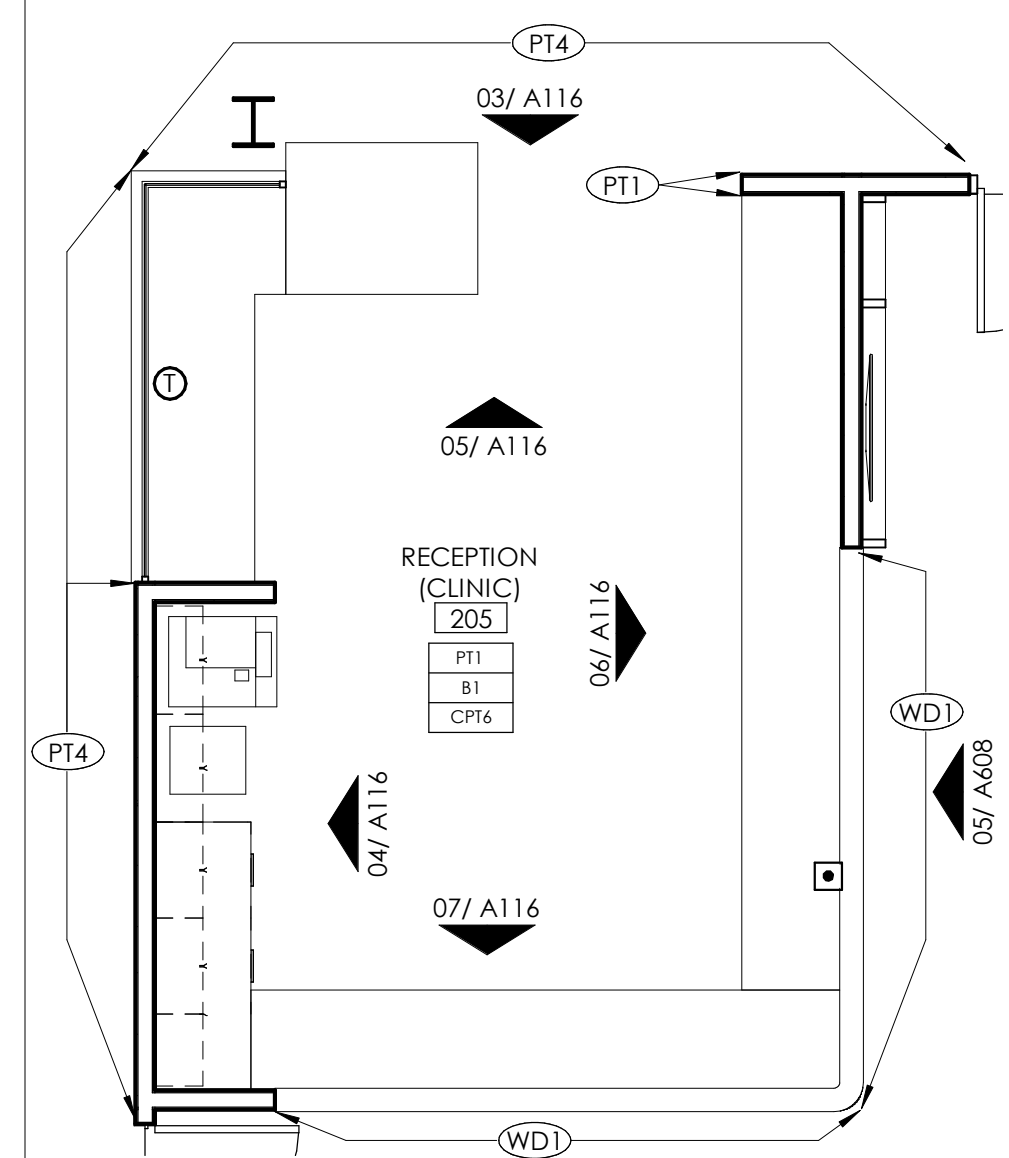
08 CLINIC RECEPTION 2
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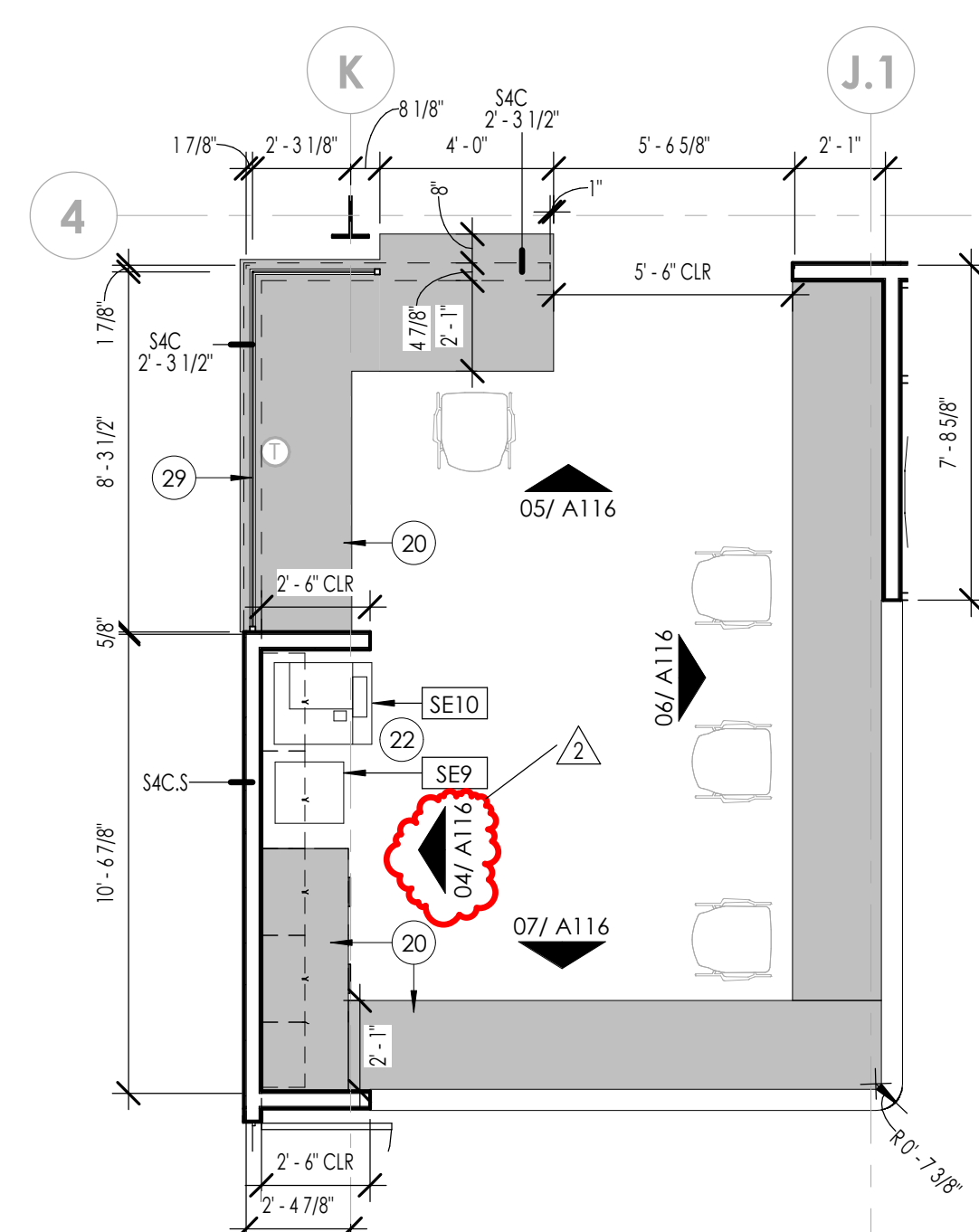
05 ELEVATION
CHECK OUT STAFF SIDE - CLINIC
SCALE: 1/2" = 1'-0"



03 CHECK OUT CLIENT SIDE - CLINIC



02 ENLARGED PLAN
RECEPTION FINISH PLAN - CLINIC
SCALE: 1/4" = 1'-0"



01 ENLARGED PLAN
CLINIC - RECEPTION
SCALE: 1/4" = 1'-0"

○ INTERIOR ELEVATION KEYNOTES

1. PULL OUT TRASH/RECYCLING DRAWER. BASIS OF DESIGN: REVA-SHELF / S25C-215GCM24P-30" SQUARE DOWDIE TRASH/PULL-OUT WASTE CONTAINER. PROVIDE REINFORCED DOWDIE FRAMEWORK TO MATCH ADJACENT MILLWORK.
2. LEVEL DRYWALL FINISH ACROSS ALL RISERS.
3. LEVEL 5 DRYWALL FINISH.
4. COUNTERTOP GEMET. BASIS OF DESIGN: MCKCKETT / EDP3 - 2 1/2" THUP-10" GEMET SET. CONTRACTOR TO SUPPLY FINISHES FOR COUNTERTOP REVIEW.
5. BRASS BAR FOOT. MINIMUM RAIL DIAMETER TO BE 1/2" WITH WALL MOUNTED RISERS SPACED MAX 16" ON CENTER AND NO MORE THAN 6" FROM WALLS.
6. LOCKABLE CABINET.
7. USE ENLARGED PLAN FOR EXTENT OF FINISH (W01).
8. CURVED DRYWALL CEILING ON COLD FORMED METAL FRAMING. PROVIDE DRYWALL THICKNESS AND BULGES AS REQUIRED TO ACHIEVE INDICATED RADIUS.
9. 3/4" WHITE OAK VENEERED PLYWOOD OVER 3/4" PARTICLE BOARD SUBSTRATE. ACUSTICAL BARRIER WRAPPED PANEL. BASIS OF DESIGN: ORB RB OR WOOD PANEL.
10. DROP LIFT COUNTER. BASIS OF DESIGN: KNAPTE AND VOGT 1/6" ADJUSTABLE FOLDING L-SHELF BRACKET. BRACKETS MUST BE FASTENED TO 2X4 WOOD STUD ON 16 CENTERS.
11. SOLID SURFACE(S) AT TOP AND LOWER COUNTER AND RECESSED BACK PANEL. SEE MILLWORK SECTION FOR DETAIL.
12. DRINKING FOUNTAIN WITH BOTTLE REEFER. REFER TO MEP DRAWINGS.
13. SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
14. SPEC. PROVIDE ADDITIONAL BLOCKING. BASIS OF DESIGN, METAL LETTING IN DARK STAINLESS STEEL ON 1/2" SCHED 40S. 3" TEXT STYLE TO BE DETERMINED. COORDINATE WITH OWNER AND ARCHITECT.
15. PROVIDE BLOCKING AS REQUIRED.
16. WALL COVERING RISBS. REFER TO DETAIL 04A010C AND CONSTRUCTION PLAN FOR RISER DETAIL.
17. WALL COVERING RISBS. REFER TO DETAIL 04A010C AND CONSTRUCTION PLAN FOR RISER DETAIL.
18. WALL COVERING RISBS. REFER TO DETAIL 04A010C AND CONSTRUCTION PLAN FOR RISER DETAIL.
19. CEILING TO RECEIVE ACCENT PANEL.
20. STEEL COLUMN PAINTED (PT1). REFER TO STRUCTURAL DRAWINGS.
21. LIGHTING WITH 18" X 24" HOLLOW MILLION BEAM. TYPICAL DIMENSIONS LENGTH OF COUNTER. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
22. UNDER DESK POWER DUCK. ALIGN WITH DETAIL. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
23. DRYWALL REVEAL. BASIS OF DESIGN: VINTY REGLET / DRYWALL REVEAL MOLDING / 1/2" X 1/2" X 1/2" (2X1-52) FINISH: POWDER COAT WHITE.
24. REVEAL BETWEEN ACUSTIC PANELS. VINTY. DRYWALL BEING TO BE PAINTED TO MATCH PANEL. REFER TO DETAIL 11A060.
25. REVEAL TO TRANSITION AT VINTY FLOOR. REFERENCE 03A0700 FOR TRANSITION DETAIL.
26. REVEAL TO TRANSITION AT VINTY FLOOR. REFERENCE 03A0700 FOR TRANSITION DETAIL.
27. PROVIDE PHYSICAL SAMPLES FOR ARCHITECT TO APPROVE FINISH.
28. REFER TO SHEET A124A FOR INTERIOR GLASS GUARDRAIL DETAILS.
29. REFER TO SHEET A124A FOR INTERIOR PICKET RAILING DETAILS.
30. REFER TO SHEET A124B FOR INTERIOR PICKET RAILINGS ALTERNATE 80° DETAILS.
31. BASIS OF DESIGN: INTERIOR PICKET RAILING. SPACES AT 6" ON CENTER.
32. (SS) BACKSLASH TO WRAP SIDE WALL AND ALIGN WITH ADJACENT BACKSLASH.
33. DRYWALL CASE/SHED OFF TRANSITION WINDOW.

GENERAL PLAN NOTES

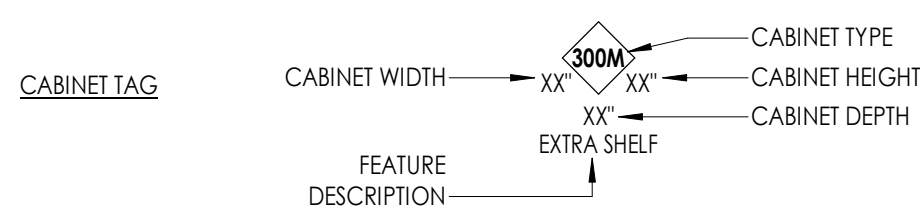
- | |
|--|
| <p>A. REFER TO A001-A002 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.</p> <p>B. REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACoustICAL REQUIREMENTS, AND LOCATIONS.</p> <p>C. MEP DRAWINGS PROVIDED BY OTHERS, COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.</p> <p>D. FURNITURE SHOWING FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.</p> <p>E. PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.</p> <p>F. PLAIN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAIN KEYNOTES APPLY TO SHEETS A16-A124.</p> |
| <p>GENERAL INTERIOR ELEVATION NOTES</p> <p>A. ALL BASE TO BE B1 UNLESS NOTED OTHERWISE.</p> <p>B. COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.</p> <p>C. PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MATCH MILLWORK ADJACENT.</p> <p>D. ALL WALLS TO BE PAINTED P1 UNLESS NOTED OTHERWISE.</p> <p>E. PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN KITCHENS, AND ALL WALLS AND CEILINGS IN BATHROOMS AND JANITOR CLOSETS.</p> <p>F. COORDINATE LENGTH OF UNDERCABINET LIGHTING WITH CONTRACTOR IN SHOP DRAWING REVIEW.</p> |

ENLARGED PLAN KEYNOTES

- 1 STEEL FRAMED METAL PAN STARCASE WITH CONCRETE TREADS WITH ABRASIVE NOUGING. REFER TO FINISH PLANS FOR FLOOR FINISH.
- 2 1-1/2" DIA. STEEL GUARDRAIL WITH SUPPORT BRACKET. PAINTED.
- 3 STEEL GUARDRAIL WITH 2" DIA. RIBS. 1/4" THICK. 16" ON CENTER. ROUND PIPES AT 4" O.C. MAX. AND HANDRAIL, PAINTED. REFER TO DETAILS.
- 4 6" CHASE FOR A/V CONDUIT. REFER TO TECHNOLOGY DRAWINGS.
- 5 STEEL FRAMED METAL PAN STARCASE WITH PRECAST, SANDBLASTED CONCRETE TREADS. COLOR TO MATCH EXISTING STAIRCASE FLOOR FINISH.
- 6 SHIP STAR ACCESS (SHOWN SHADED) TO ROOF HATCH. REFER TO STAR SECTIONS.
- 7 POWDER COATED ALUMINUM PICK GUARDRAIL WITH CONTINUOUS TOP RAILS. BASES OF DESIGN - MFR. DURALUM. FINISH: DARK BRONZE TO MATCH STAIRFLOOR FINISH. REFER TO EXTERIOR ELEVATIONS.
- 8 1-1/2" DIA. STEEL GUARDRAIL ON POSTS. PAINTED TO BE HIGH PERFORMANCE COATING. COLOR TO MATCH EXISTING STAIRFLOOR FINE COLOR.
- 9 CAST-IN PLACE CONCRETE STAR
- 10 CAST-IN PLACE METAL PAN STARCASE WITH CONCRETE BASE TREAD. STAIR TREAD AND NOUGING BASES OF DESIGN: TARKETT ARGENT STAR TREAD WITH INTEGRATED RISER. TEXTURE TO BE CLUS. COLOR: RSTL. REFER TO SHEET A701.
- 11 1-1/2" DIA. STAINLESS STEEL HANDRAIL ON POSTS TO BE ATTACHED TO STRINGER. FINISH: POLY. PAINT TO BE MATCH EXISTING. REFER TO SHEET A701.
- 12 FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- 13 ALTERNATE #20. ELEVATOR EQUIPMENT FOR ELEVATOR #12(1) HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- 14 INTERIOR ELEVATOR SHAFT TO MATCH CORROSION FLOORING. REFER TO FINISH PLANS FOR FLOORING TYPE AND TRANSITIONS.
- 15 BASE BID RAILING SHOWN. REFER TO SHEET A123C FOR ALD ALTERNATE #09.
- 16 ALTERNATE #09: STEEL PICK GUARDRAIL. GUARDRAIL TO BE A DELEGATED DESIGN. FINISH: POLY. PAINT TO BE MATCH EXISTING. REFER TO SHEET A701.
- 17 FINISH: POWDER COATED DARK BRONZE TO MATCH STAIRFLOOR FINISH. REFER TO SHEET A123A FOR BASE DESIGN. MFR. BASE BID A123C FOR ALTERNATE #09.
- 18 WOOD PLANTAR BOXES OF DESIGN - MFR. - FESAMU LUMBER. FINISH TO BE APPROVED BY ARCHITECT FROM FULL RANGE OF MANUFACTURERS STANDARDS.
- 19 STEEL FRAMED METAL PAN STARCASE WITH CONCRETE BASE TREAD. ENGINEERED CAST IN PLACE. REFER TO EXTERIOR ELEVATIONS.
- 20 MIRROR SHOWN IN ARCHITECT FROM FULL RANGE OF MANUFACTURERS STANDARDS.
- 21 MILLWORK SHOWN IN GRAY. REFER TO EXTERIOR ELEVATIONS.
- 22 SEMI-RECESSED FINE EXHIBITION CABINET. REFER TO SPECS.
- 23 EQUIPMENT PER SCHEDULE. SEE EXTERIOR ELEVATIONS. COORDINATE WITH MEP DWGS.
- 24 FLOORING TRANSITION. SEE FINISH PLANS.
- 25 OWNER COORDINATED EQUIPMENT BY OWNERS VENDOR. COORDINATE POWER/ RIBS WITH MEP DWGS.
- 26 DRINK SINK WITH OPEN SHELVE.
- 27 MONITORING FOUNTAIN WITH BOTTLE FILLER. REFER TO MEP DRAWINGS.
- 28 DASHED LINES INDICATE ABOVE BELOW PLANTAR. REFER TO ELEVATIONS AND DETAILS.
- 29 PLANTER #1 MOUNTED IN CHASSIS SYSTEM WITH 3/8" FULL TEMPERED CLEAR FLOAT GLASS 48" DIMENSIONS AND CENTERED ON WALL BELOW. SEE 040121 FOR DETAIL.
- 30 BRASS BAR FOOTPLAT. MINIMUM RAIL DIAMETER TO BE 1-1/2" WITH WALL MOUNTED BRASS BAR FOOTPLAT MAX 4" O.C. AND NO MORE THAN 6" FROM THE ELEVATOR.
- 31 SOOT FLOOR AT TOP OF TOWER. LOWER COUNTERTOP AND BENCH SURROUND.
- 32 PLASTIC LAMINATE FLOOR TO SURROUND SOCIAL HUB MILLWORK. REFER TO EXTERIOR ELEVATIONS.
- 33 1-1/2" DIA. STEEL BASE BID. SUPPORT 2 HOUR SHAF WALL AT OPENING. THIS IS TO BE REMOVED AT ALD ALTERNATE #02 IS ACCEPTED.
- 34 30" W x 4" H ALTERNATE ACCESS PANEL TO BE COORDINATED WITH ELEVATOR MFR. ACCESS PANEL IS ONLY AT ELEVATOR #2 (2)(1) ALD ALTERNATE #02 IS ACCEPTED.
- 35 CAST IN PLACE CONCRETE STARCASE WITH 1-1/2" DIA. HIGH CONCRETE BASE. REFER TO STAR SECTIONS. COLOR TO MATCH STAIRFLOOR FINISH.
- 36 CROSS-BRACING - REFER TO STRUCTURAL DRAWINGS. PAINTED.
- 37 COLUMN - REFER TO STRUCTURAL DRAWINGS. PAINTED.
- 38 WALL COVERING RIBS. REFER TO DETAIL 040102 AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 39 WALL COVERING RIBS. REFER TO DETAIL 030A01C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 40 WALL COVERING RIBS. REFER TO DETAIL 030A01C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 41 WALL COVERING RIBS. REFER TO DETAIL 030A01C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 42 WALL COVERING RIBS. REFER TO DETAIL 030A01C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 43 ELEVATOR SUMP PIP. 2X24". REFER TO SPECIFICATIONS.
- 44 ELEVATOR SUMP PIP. REFER TO SPECIFICATIONS.

MILLWORK LEGEND

- A. REFER TO SHEET A620. FOR TYPICAL PLASTIC LAMINATE AWI CABINET DETAIL.
- B. COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
- C. PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MATCH MILLWORK ADJACENT.
- D. MILLWORK IS BASED ON AWI ARCHITECTURAL WOODWORK STANDARDS 2009 EDITION.
- E. DESIGN DRAWINGS ARE BASED ON CDS (CABINET DESIGN SERIES) NUMBERS. REFER TO CABINET TAG BELOW FOR DESCRIPTION.
- F. REFER TO TYPICAL CASEWORK DETAILS ON THIS SHEET FOR PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS. THESE MAY BE DEVIATIONS FROM AWI STANDARD.
- G. REFER TO PROJECT MANUAL SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PLASTIC LAMINATE AND STAINLESS STEEL CABINETS.
- H. IF DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT, PROVIDE MORE STRICT OR MORE EXPENSIVE OPTION.
- I. FILLERS TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER.
- J. ALL COUNTERTOPS TO BE 2" DEEP. UNLESS TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER. UNLESS NOTED OTHERWISE.



A X | S

618 East Market Street
Indianapolis, Indiana 46202
phone 317/264.8162
a x i s a r c h . c o m

Scope Drawings

These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of work.

DRAWN BY	LJ
CHECKED BY	DS
DATE ISSUED	09/12/2022

REVISIONS:		
#	DESCRIPTION	DATE
2	ADDENDUM #02	10/06/2022

CLIENT
DAMIAN CENTER
ALAN WITCHEY, President and CEO
26 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 632-0123

CIVIL ENGINEER
JGO
HANNAH FLECK, PE
8440 Allison Pointe Blvd. Suite 425
Indianapolis, IN 46250
PH 317 661-1964

STRUCTURAL ENGINEER
JQOL
DANIEL BURCH
8440 Allison Pointe Blvd. Suite 425
Indianapolis, IN 46250
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING
SEAN ODUKOMANY, PE, Managing Partner
1344 South Rangeline Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8044

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLA, ASLA
195 N HARBOR DR #3605
Chicago, IL 60601
PH 847 363-0168

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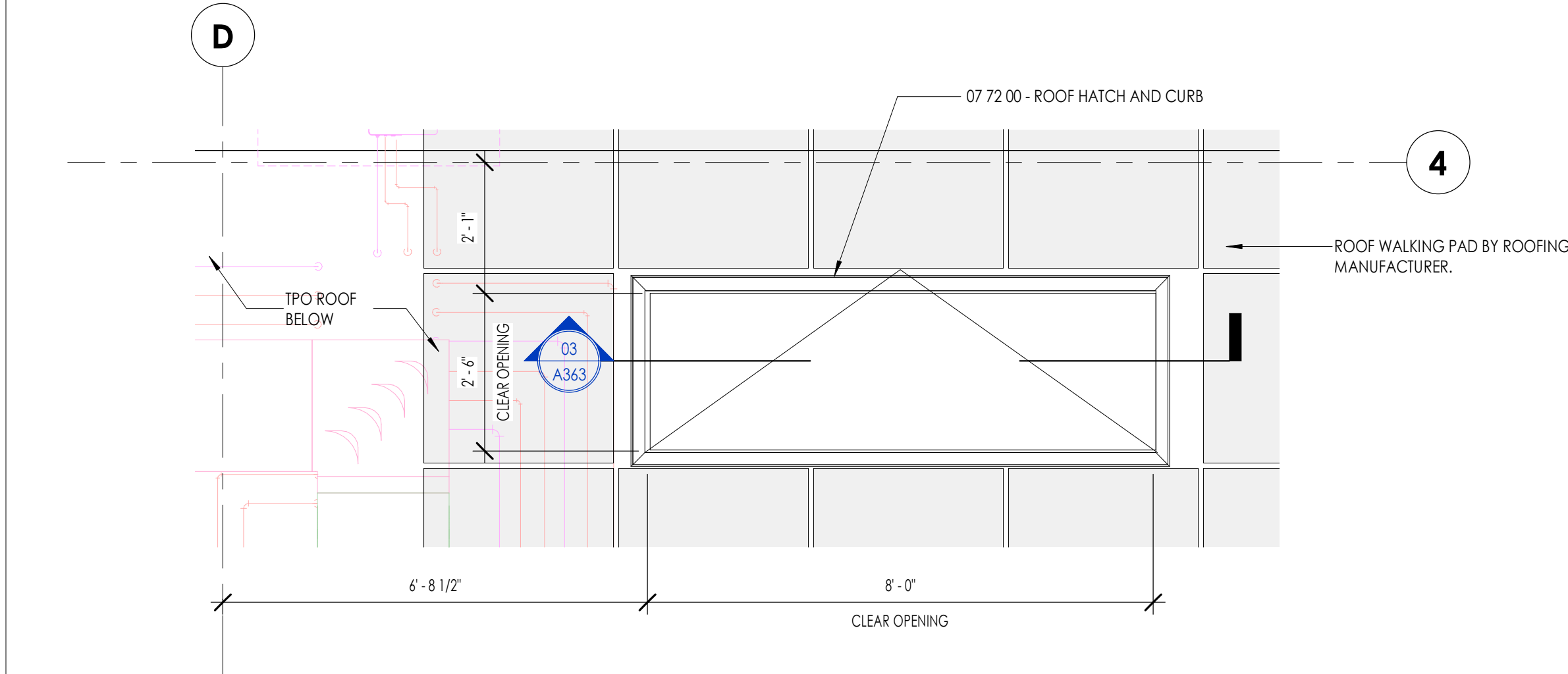
DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

ENLARGED PLANS

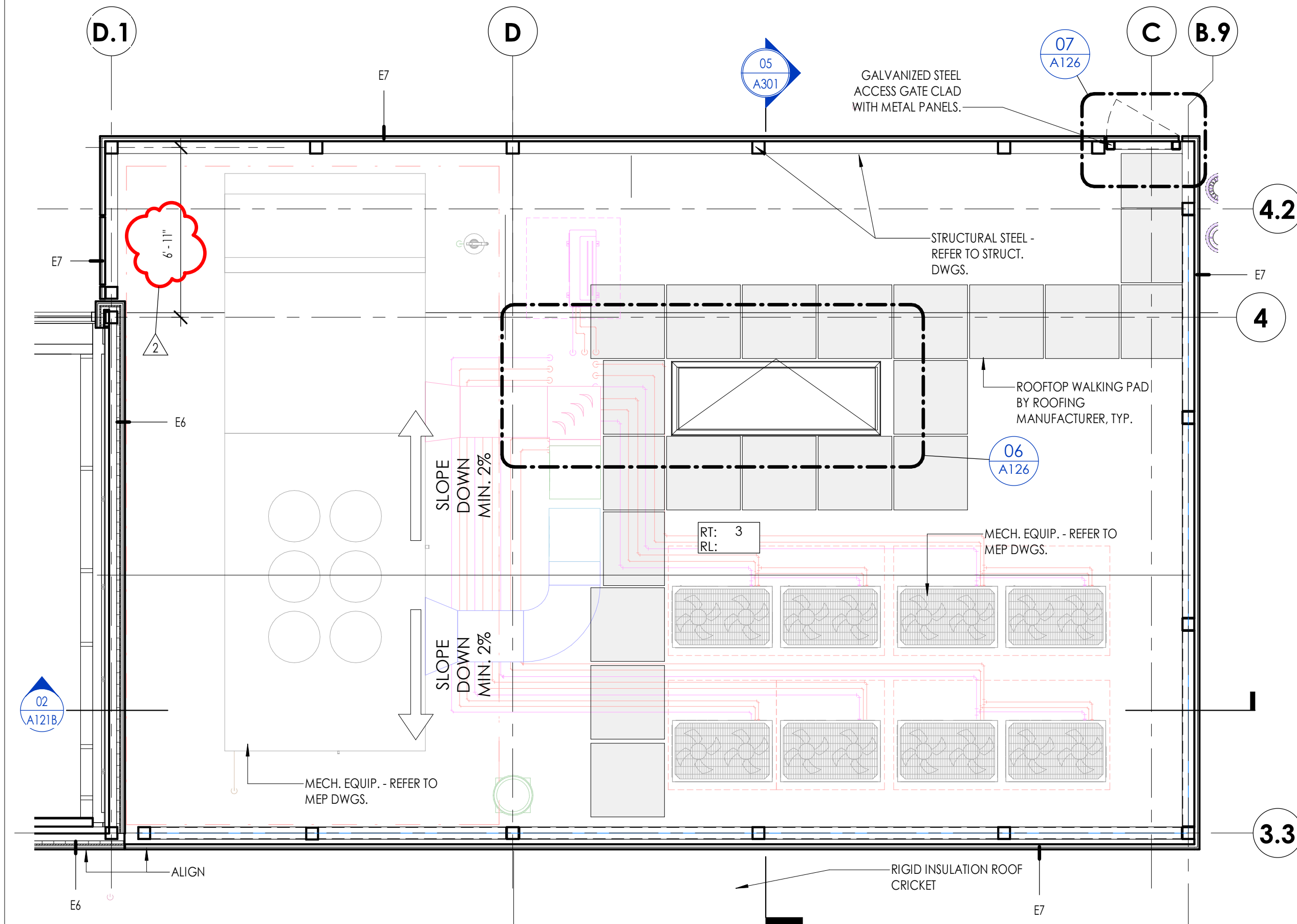
A116
PROJECT NUMBER: 2021029



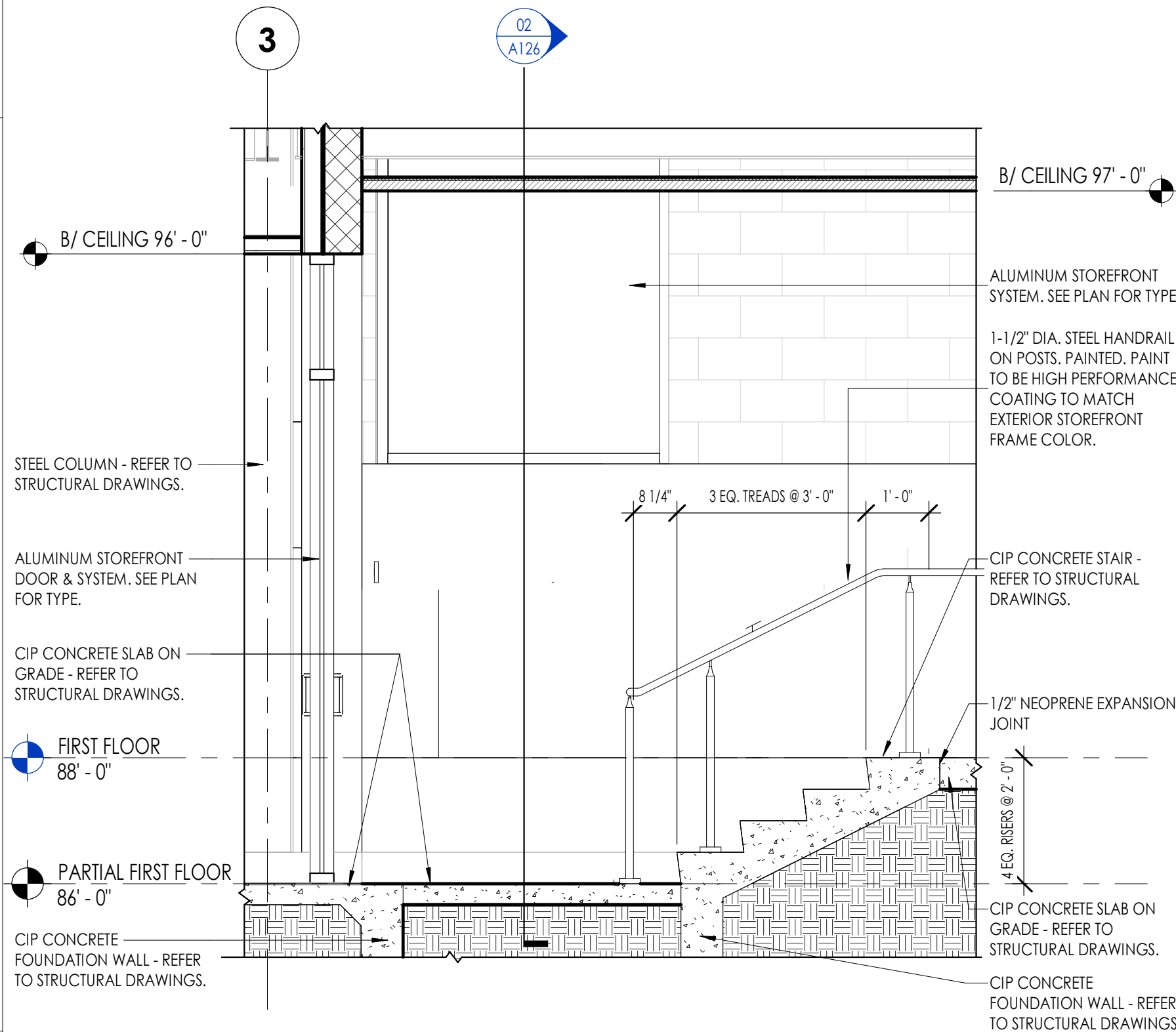
07 ROOF SCREEN DOOR
SCALE: 1 1/2" = 1'-0"



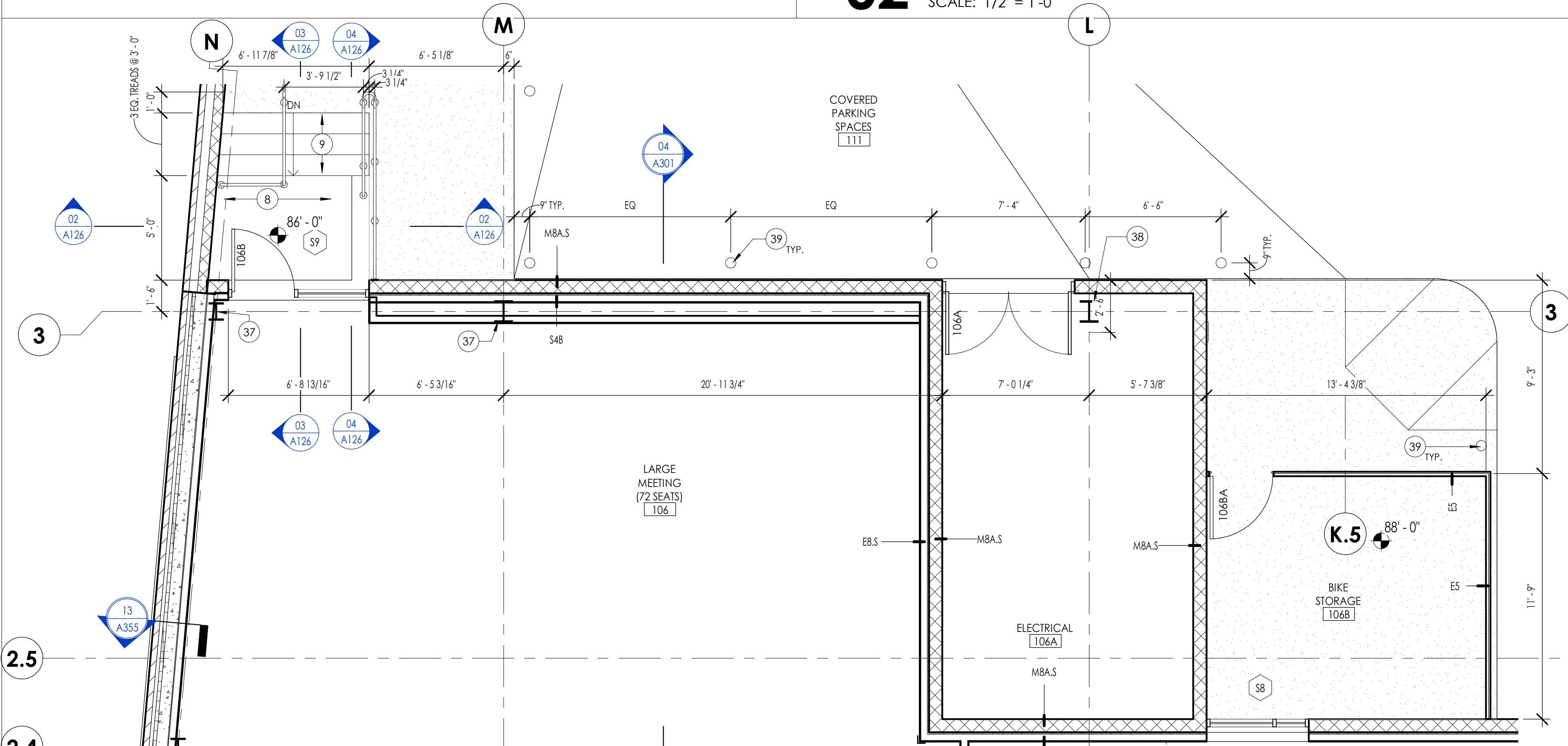
06 ROOF HATCH - PLAN DETAIL
SCALE: 1/2" = 1'-0"



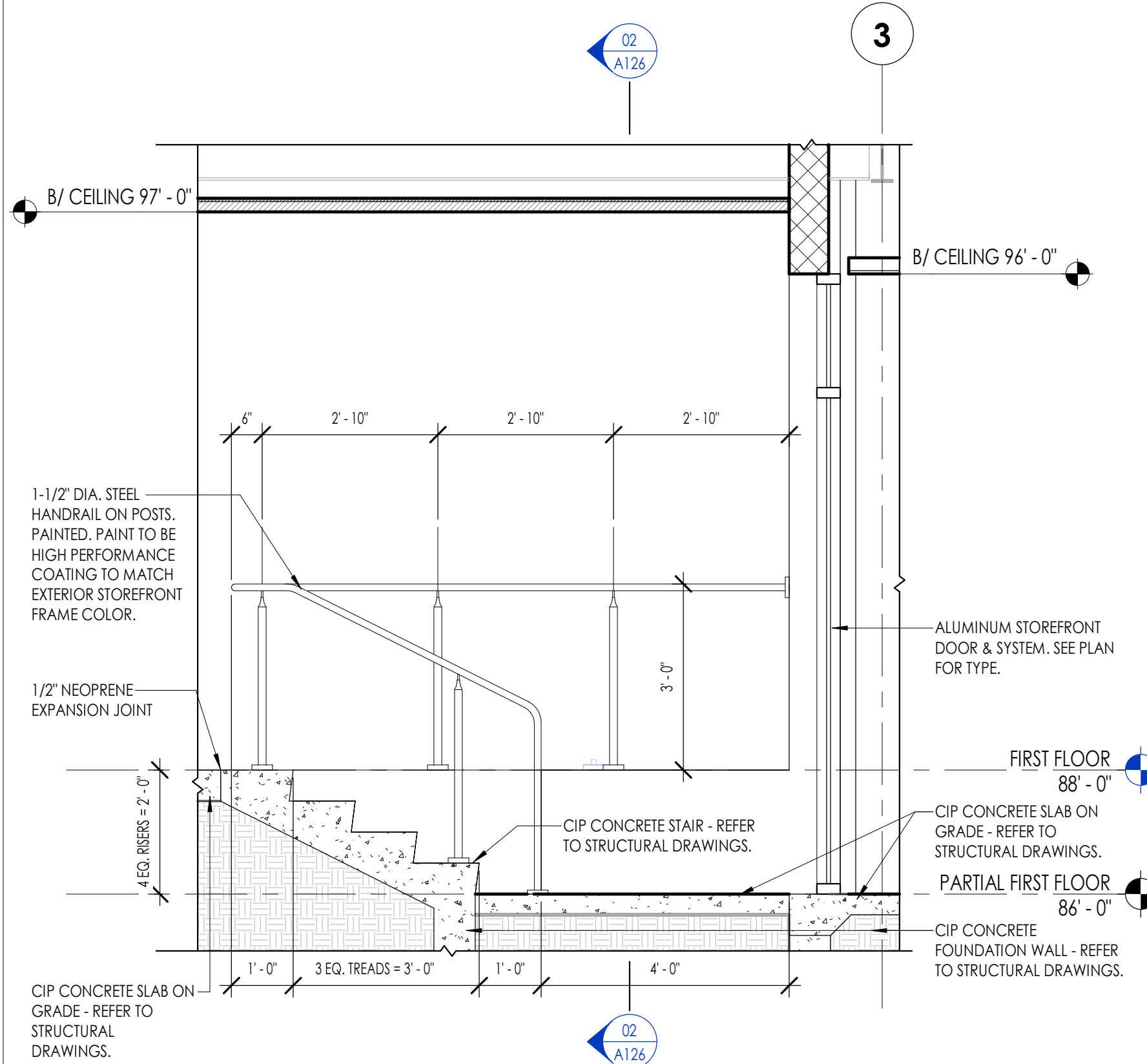
05 ENLARGED MECHANICAL ROOF SCREENWALL
SCALE: 1/4" = 1'-0"



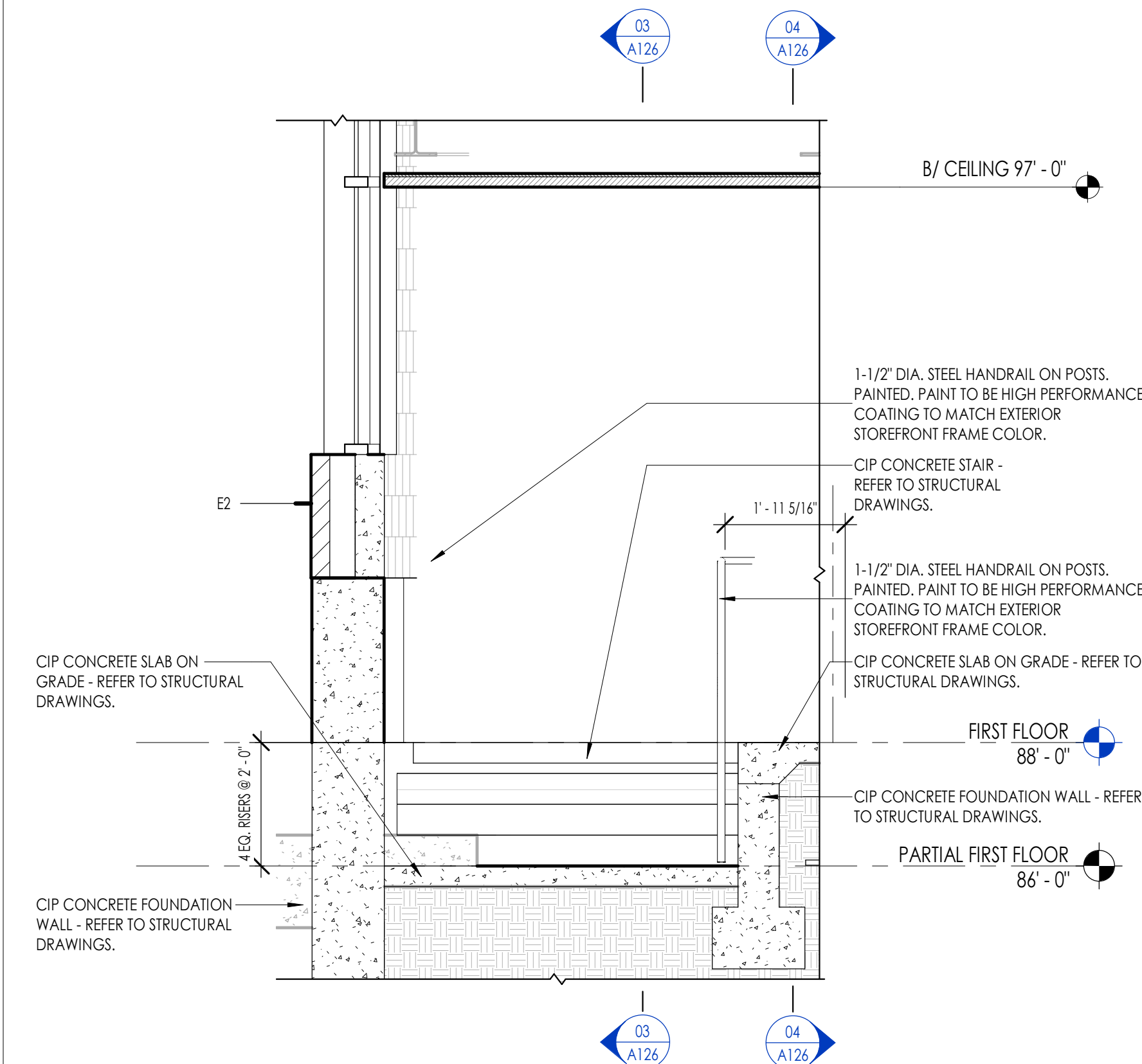
03 PARKING GARAGE STAIR - NORTH-SOUTH SECTION 2
SCALE: 1/2" = 1'-0"



01 PARKING GARAGE STAIR
SCALE: 1/4" = 1'-0"



04 PARKING GARAGE STAIR - NORTH-SOUTH SECTION 1
SCALE: 1/2" = 1'-0"



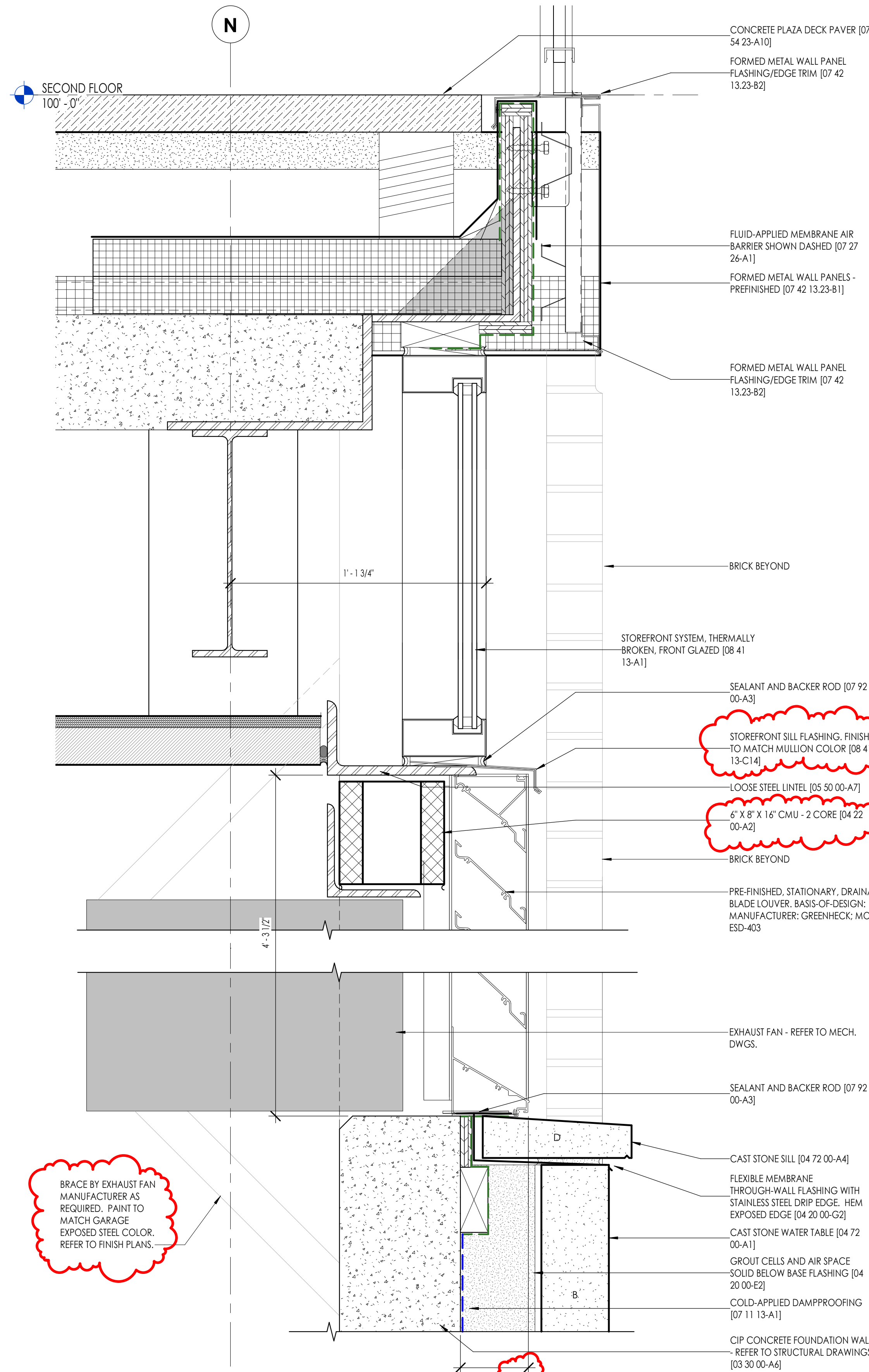
02 PARKING GARAGE STAIR - EAST-WEST SECTION
SCALE: 1/2" = 1'-0"

GENERAL PLAN NOTES

- REFER TO A001-A002 FOR GENERAL NOTES, WALL TYPES, SYMBOLS AND TYPICAL CONSTRUCTION DETAILS.
- REFER TO WALL TYPE TAGS, INTERIOR ELEVATIONS, AND SECTION DETAILS FOR WALL HEIGHTS, ACOUSTICAL REQUIREMENTS, AND LOCATIONS.
- MEP DRAWINGS PROVIDED BY OTHERS. COORDINATE WITH ARCHITECTURAL, STRUCTURAL, LIGHTING AND FURNITURE DRAWINGS.
- FURNITURE SHOWN FOR REFERENCE ONLY - COORDINATE WITH OWNER VENDOR.
- PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM WALLBOARD AT ALL WET WALLS IN SOCIAL HUBS, KITCHENS AND RESTROOMS. PROVIDE HIGH-IMPACT GYPSUM WALLBOARD AT ALL CORRIDORS, STAIRCASES AND LOBBIES.
- PLAN KEYNOTES APPLY TO SHEETS A101-A103 SERIES AND A111-A115. RESTROOM KEYNOTES APPLY TO SHEETS A110 SERIES. ENLARGED PLAN KEYNOTES APPLY TO SHEETS A116-A124.

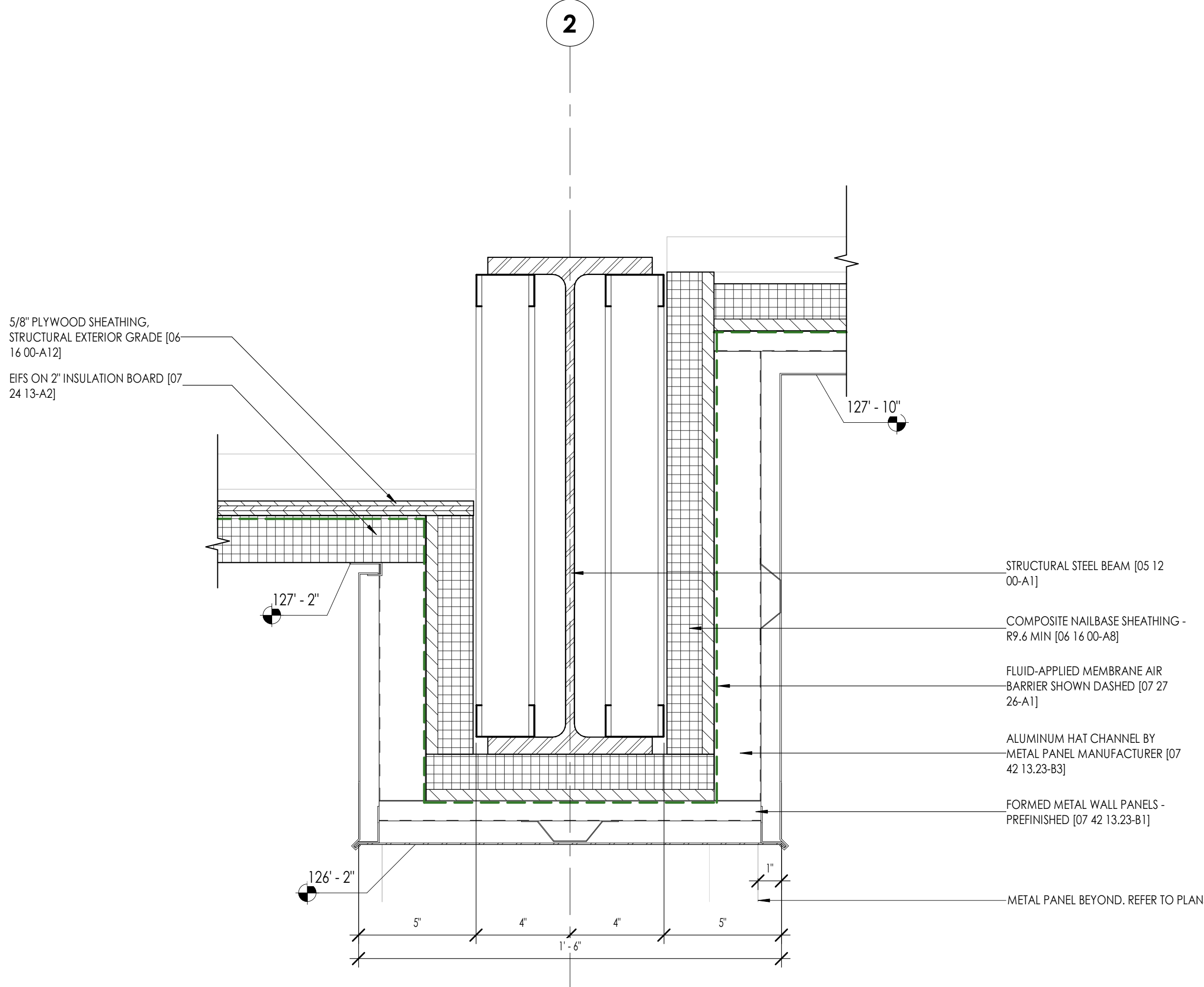
ENLARGED PLAN KEYNOTES

- STEEL-FRAMED METAL PAN STAIRCASE WITH CONCRETE TREADS WITH ABRASIVE NOSING. REFER TO FINISH PLANS FOR FLOOR FINISH.
- 1-1/2" DIA. STEEL HANDRAIL WITH SUPPORT BRACKET. PAINTED.
- STEEL TUBE STAR GUARDRAIL WITH 1-1/2" DIA. POSTS AND MAIN TUBES. ROUND PICKETS AT 4" O.C. MAX. AND HANDRAIL. PAINTED. REFER TO DETAILS.
- 6" CHASE FOR A/V CONDUIT - REFER TO TECHNOLOGY DRAWINGS.
- STEEL-FRAMED METAL PAN STAIRCASE WITH PRECAST, SANDBLASTED CONCRETE TREADS. CONCRETE COLOR AND FINISH TBD.
- SHP STAIR ACCESS (SHOWN SHADED) TO ROOF HATCH. REFER TO STAIR SECTIONS.
- POWDER-COATED ALUMINUM PICKET GUARDRAIL WITH CONTINUOUS TOP RAIL. BASIS OF DESIGN - MFR: DURARAIL. FINISH: DARK BRONZE TO MATCH STOREFRONT FRAMES. REFER TO EXTERIOR STAIR RAILING DETAILS AND ELEVATIONS.
- 1-1/2" DIA. STEEL HANDRAIL ON POSTS. PAINTED. PAINT TO BE HIGH PERFORMANCE COATING. COLOR TO MATCH EXTERIOR STOREFRONT FRAME COLOR.
- CAST-IN-PLACE CONCRETE STAIR
- STEEL-FRAMED METAL PAN STAIRCASE WITH CONCRETE BASE TREAD. STAIR TREAD AND NOSING BASIS-OF-DESIGN: TARGET ANGLE-FIT STAIR TREAD WITH INTEGRATED RISER. TEXTURE TO BE CUBIC. COLOR: RST1. REFER TO SHEET A700.
- 1-1/2" DIA. STAINLESS STEEL HANDRAIL ON POSTS TO BE ATTACHED TO STRINGER. PAINTED PTA. PAINT TO BE HIGH PERFORMANCE COATING. REFER TO SHEET A700.
- FRONT AND REAR OPENING HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- ALTERNATE #02: ELEVATOR EQUIPMENT FOR ELEVATOR (E2) HYDRAULIC ELEVATOR. REFER TO SPECIFICATIONS.
- INTERNAL CONCRETE RAMP TO MATCH CORRIDOR FLOORING. REFER TO FINISH PLANS FOR FLOORING TYPE AND TRANSITIONS.
- BASE BID RAILING SHOWN. REFER TO SHEET A123C FOR ADD ALTERNATE #09.
- ALTERNATE #09: STEEL PICKET GUARDRAIL. GUARDRAIL TO BE A DELEGATED DESIGN BY STEEL FABRICATOR. BASIS-OF-DESIGN: STEEL FABRICATOR: BOMAR INDUSTRIES, INC. FINISH: POWDER-COATED DARK BRONZE TO MATCH STOREFRONT FRAMES. REFER TO SHEET A123A FOR BASE BID AND SHEET A123C FOR ALTERNATE #09 RAILING ELEVATIONS AND DETAILS.
- WOOD PLATFORM. BASIS-OF-DESIGN: MFR - RESAWN LUMBER. FINISH TO BE APPROVED BY ARCHITECT FROM FULL RANGE OF MANUFACTURER'S STANDARDS.
- STEEL-FRAMED METAL PAN STAIRCASE WITH CONCRETE BASE TREAD. ENGINEERED WOOD TREAD AND RISER BASIS-OF-DESIGN: MFR - RESAWN LUMBER. FINISH TO BE APPROVED BY ARCHITECT FROM FULL RANGE OF MANUFACTURER'S STANDARDS.
- MILLWORK SHOWN IN GRAY. REFER TO INTERIOR ELEVATIONS.
- SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- EQUIPMENT PER SCHEDULE. SEE INTERIOR ELEVATIONS. COORDINATE WITH MEP DWGS.
- FLOORING TRANSITION. SEE FINISH PLANS.
- OWNER COORDINATED EQUIPMENT BY OWNER'S VENDOR. COORDINATE POWER/ DATA WITH MEP DWGS.
- MOP SINK WITH OPEN SHELVING.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO MEP DRAWINGS.
- DASHED LINES INDICATE ALCOVE BELOW PLATFORM - REFER TO ELEVATIONS AND DETAILS.
- SURFACE MOUNTED U CHANNEL SYSTEM WITH 3/8" FULLY TEMPERED CLEAR FLOAT GLASS AS DIMENSIONED AND CENTERED ON WALL BELOW. SEE 04/A621 FOR DETAIL.
- BRASS BAR FOOT RAIL. MINIMUM RAIL DIAMETER TO BE 1-1/2" WITH WALL MOUNTED BRACKETS SPACED MAX 4'-0" O.C. AND NO MORE THAN 6' FROM THE ENDS.
- SOLID SURFACE AT TOP COUNTER. LOWER COUNTER AND RECESS SURROUND.
- PLASTIC LAMINATE FRAME TO SURROUND SOCIAL HUB MILLWORK. REFER TO INTERIOR ELEVATIONS.
- ELEVATOR DOOR. BASE BID: CONSTRUCT 2-HOUR SHAFT WALL AT OPENING. THIS IS TO BE REMOVED IF ADD ALTERNATE #02 IS ACCEPTED.
- 30" x 40" ELEVATOR ACCESS PANEL TO BE COORDINATED WITH ELEVATOR MFR. ACCESS PANEL IS ONLY AT ELEVATOR 7 (E2) IF ADD ALTERNATE #02 IS ACCEPTED.
- CANE RAIL BELOW STAIR WHERE HEAD HEIGHT IS LOWER THAN 6'-8". REFER TO STAIR SECTIONS. COLOR TO MATCH STOREFRONT FRAMES.
- CROSS-BRACING - REFER TO STRUCTURAL DRAWINGS. PAINTED.
- COLUMN - REFER TO STRUCTURAL DRAWINGS. PAINTED.
- TEEL COLUMN WITH 2'-0" DIA AND 4'-0" HIGH CONCRETE BASE. REFER TO STRUCTURAL DRAWINGS. PAINT EXPOSED STEEL WITH HIGH PERFORMANCE COATING ABOVE CONCRETE BASE.
- 6" DIA. PAINTED STEEL BOLLARD. REFER TO STRUCTURAL DWGS.
- WALL COVERING RISBS. REFER TO DETAIL 04/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- WALL COVERING RISBS. REFER TO DETAIL 04/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- PROVIDE SELF CLOSING OPERABLE GATE WITH LOCKABLE LATCH. WELD TO RAILING.
- ELEVATOR SUMP PIT. 24"x24". REFER TO SPECIFICATIONS.
- ELEVATOR SUMP PIT. REFER TO SPECIFICATIONS.

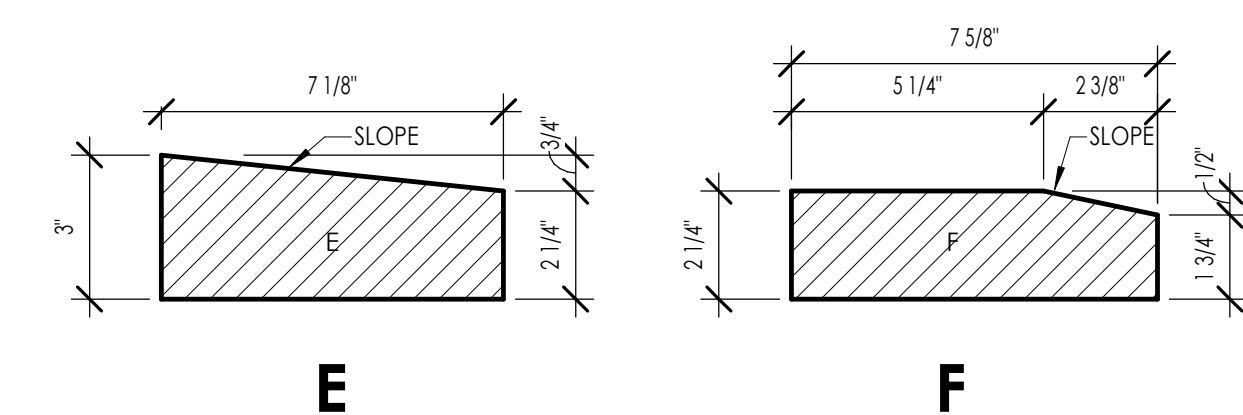


07 LOUVER DETAIL
SCALE: 3" = 1'-0"

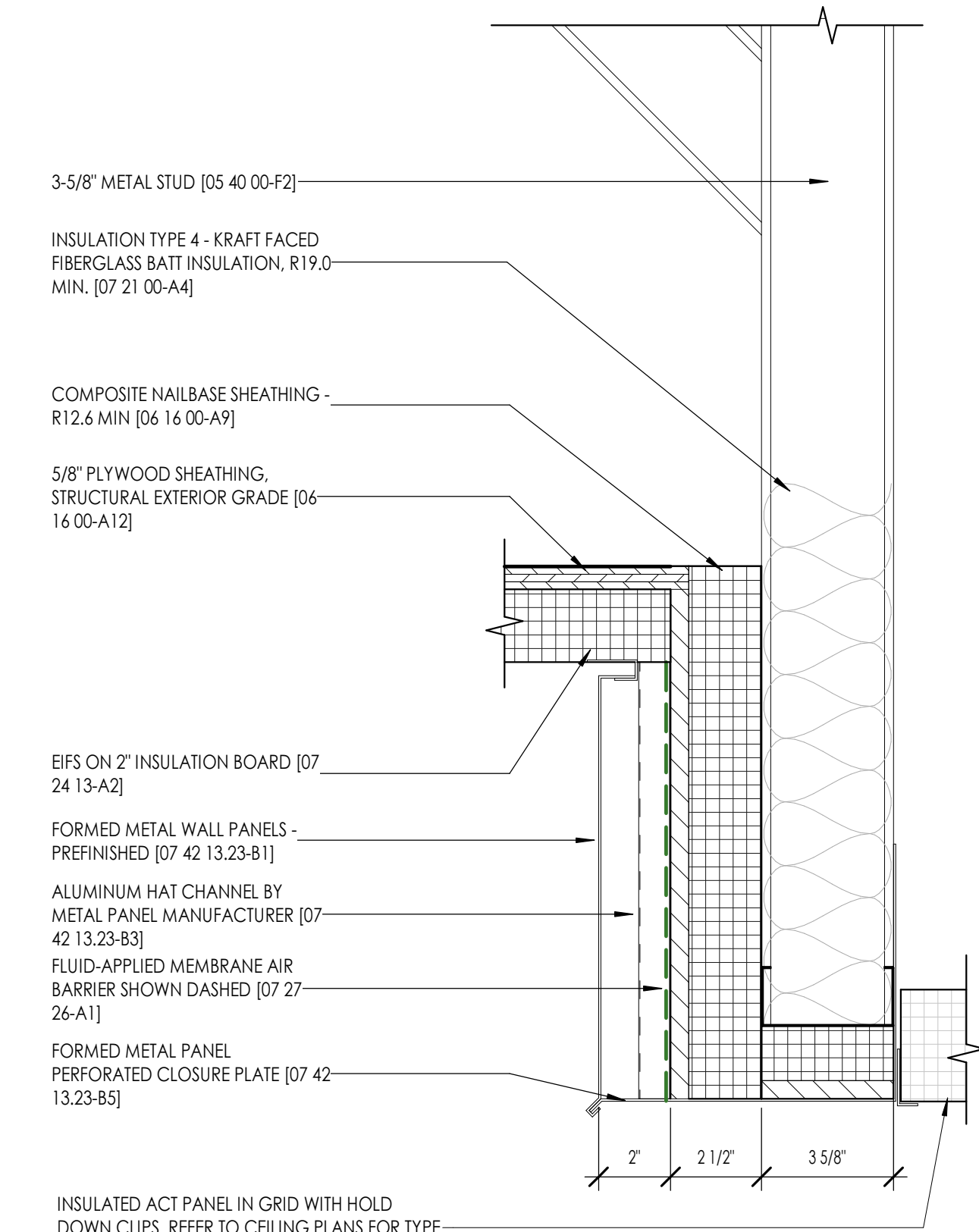
09 CAST STONE SHAPES
SCALE: 3" = 1'-0"



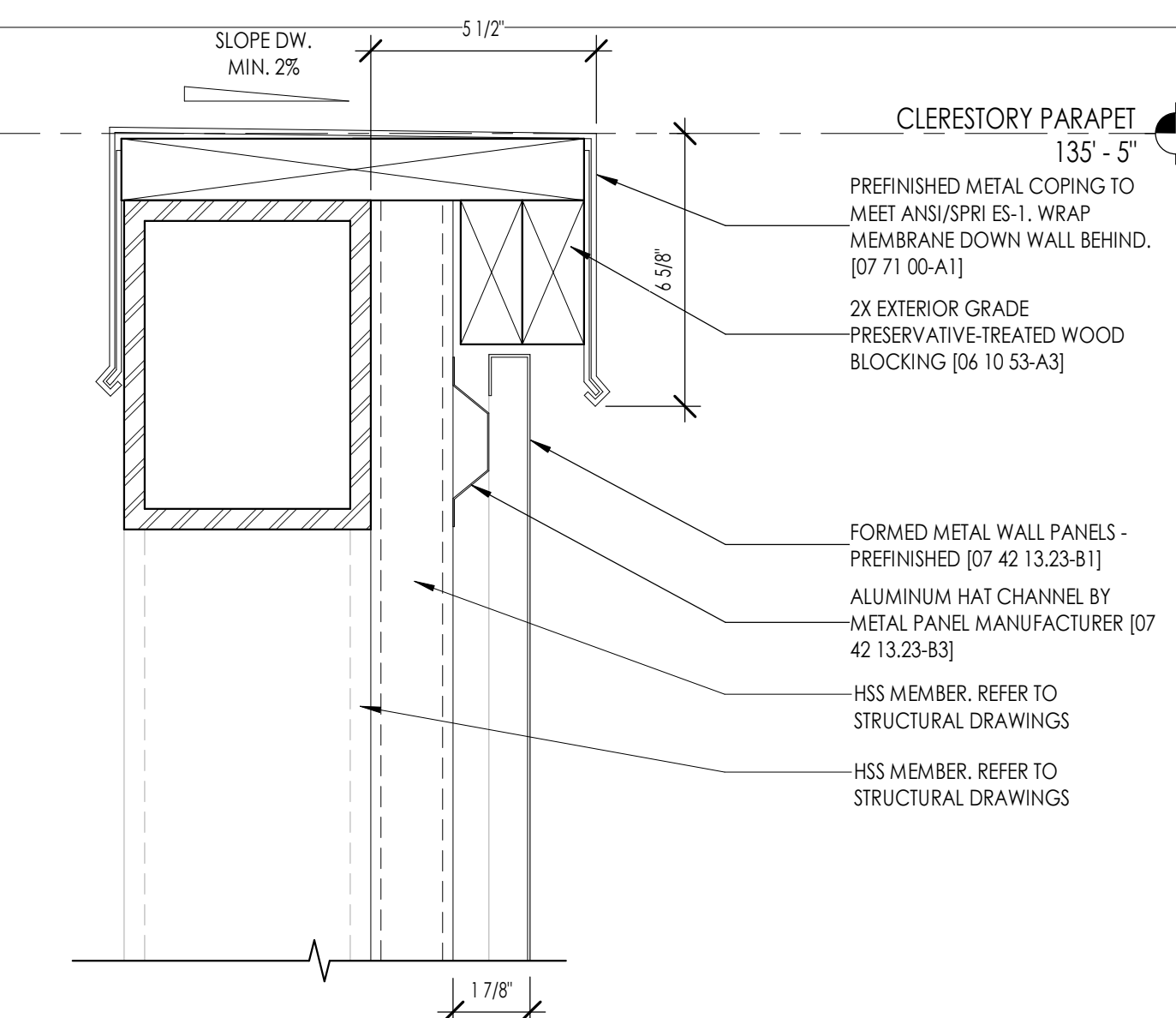
06 SECTION DETAIL
SCALE: 3" = 1'-0"



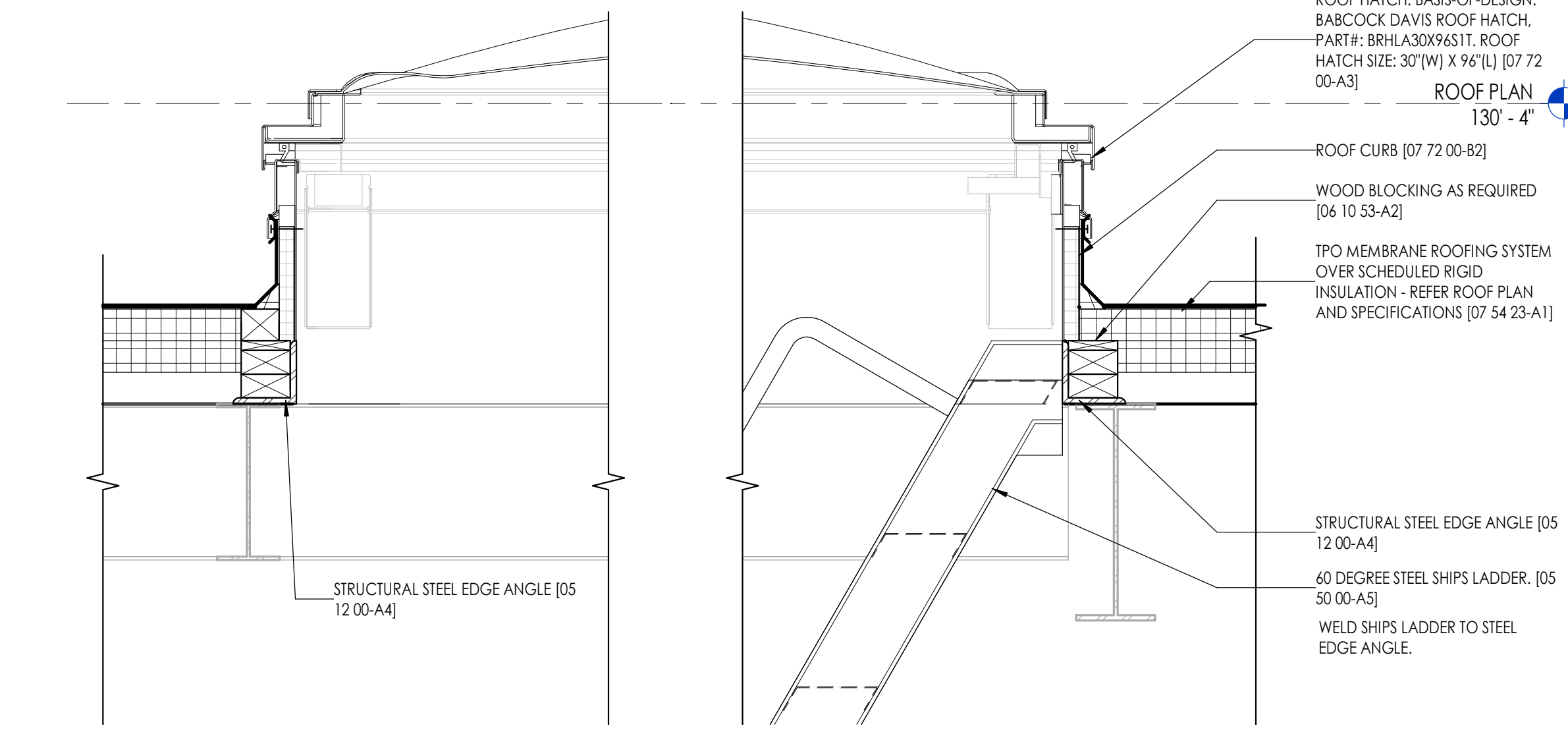
08 CUSTOM BRICK SHAPES
SCALE: 3" = 1'-0"



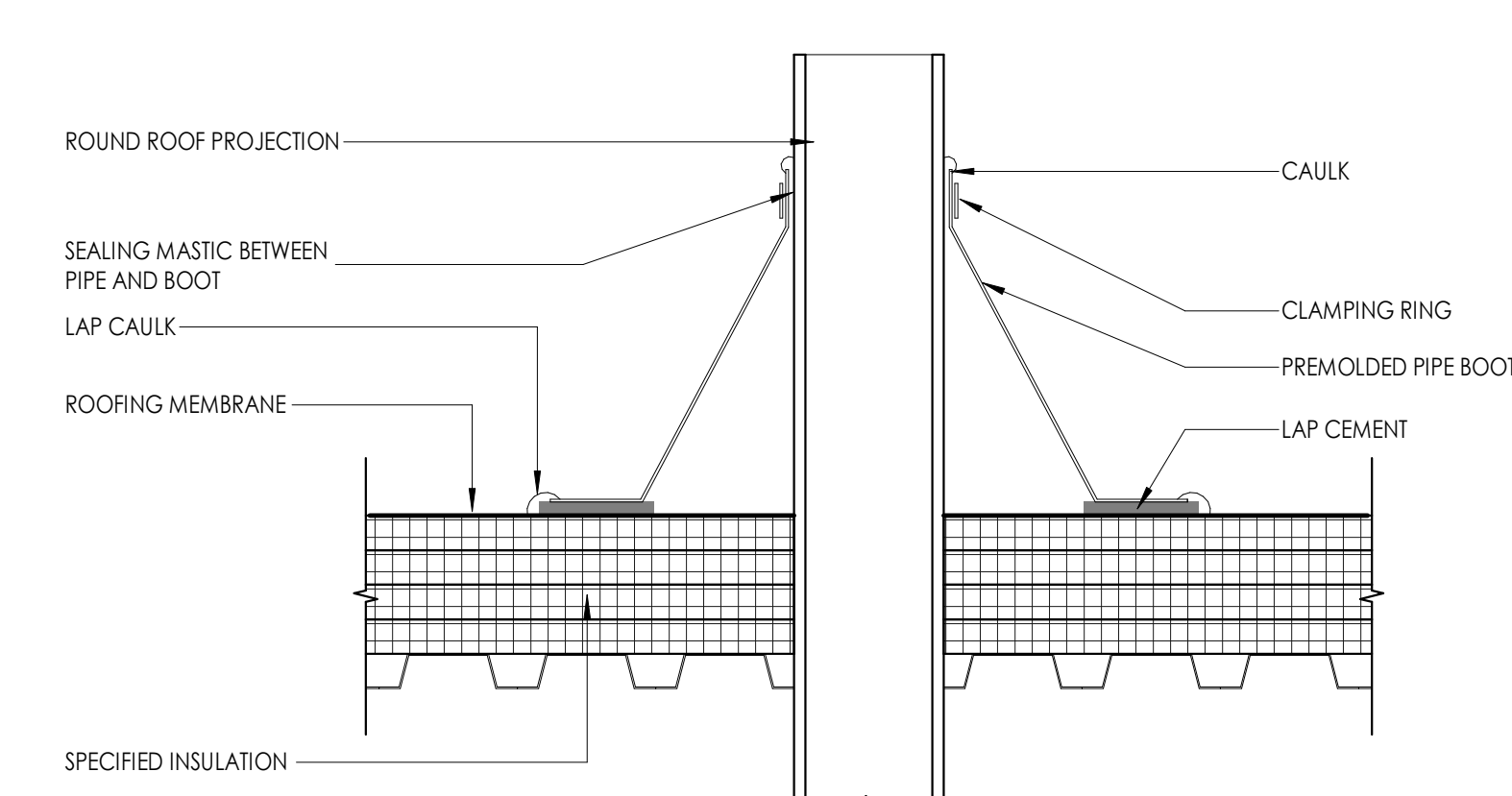
05 SECTION DETAIL - TYPICAL GARAGE BULKHEAD
SCALE: 3" = 1'-0"



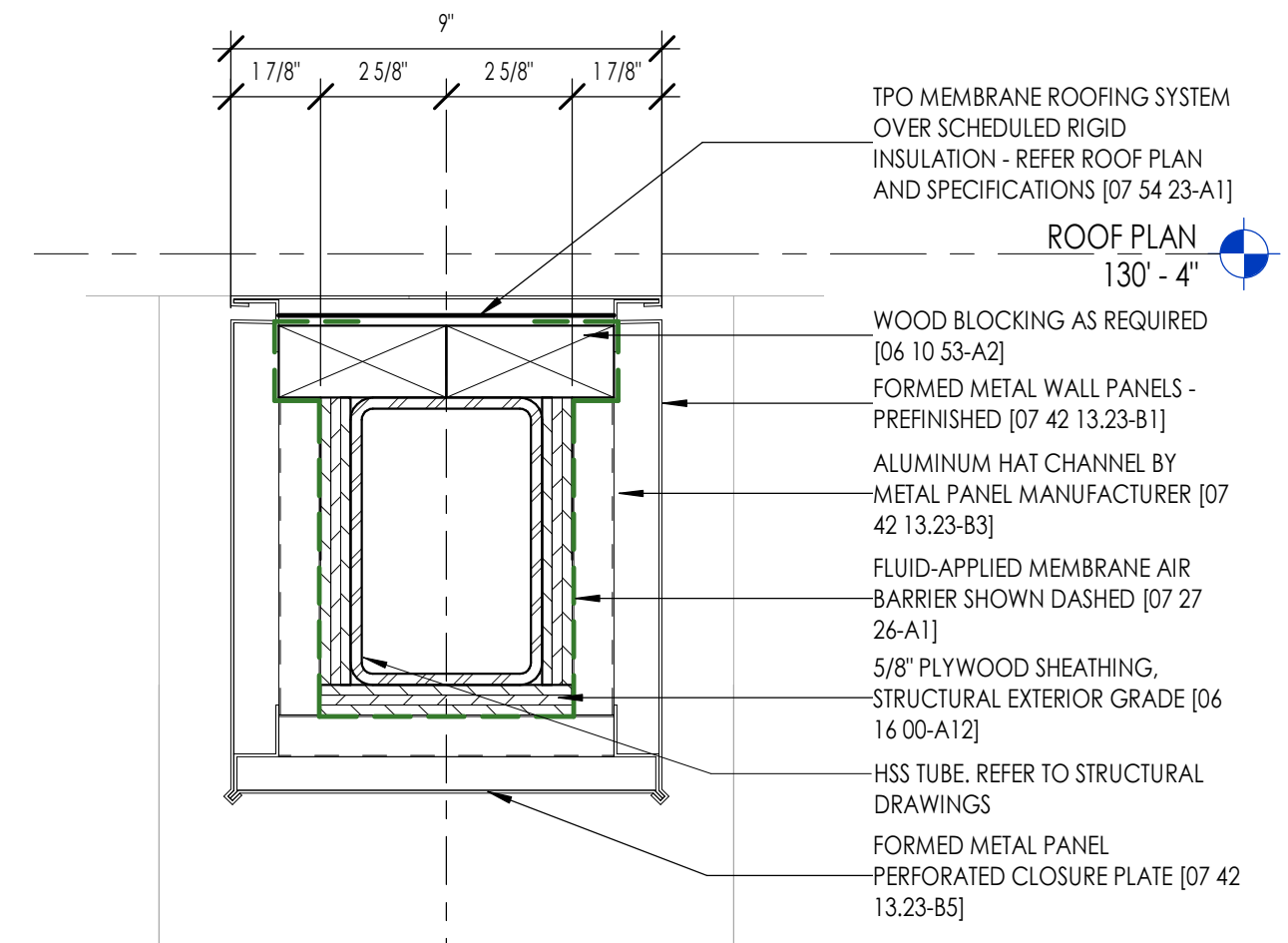
04 SCREEN WALL PARAPET
SCALE: 3" = 1'-0"



03 ROOF HATCH - SECTION DETAIL
SCALE: 1 1/2" = 1'-0"



02 ROOF PENETRATION DETAIL
SCALE: 1 1/2" = 1'-0"



01 BEAM WRAP WEST SIDE
SCALE: 3" = 1'-0"

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

Notes:

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DRAWN BY: MG
CHECKED BY: DS
DATE ISSUED: 09/12/2022

REVISIONS:

#	DESCRIPTION	DATE
2	ADDENDUM #02	10/04/2022

CLIENT:

DAMIAN CENTER
ALAN WITCHEY, President and CEO
26 North Kentucky Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER:

JSO
JAMES BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317 461-1944

STRUCTURAL ENGINEER:

JSO
JAMES BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317 461-1944

MEP ENGINEER:

EMO CONSULTING
SEAN GOSWAMI, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

LANDSCAPE ARCHITECT:

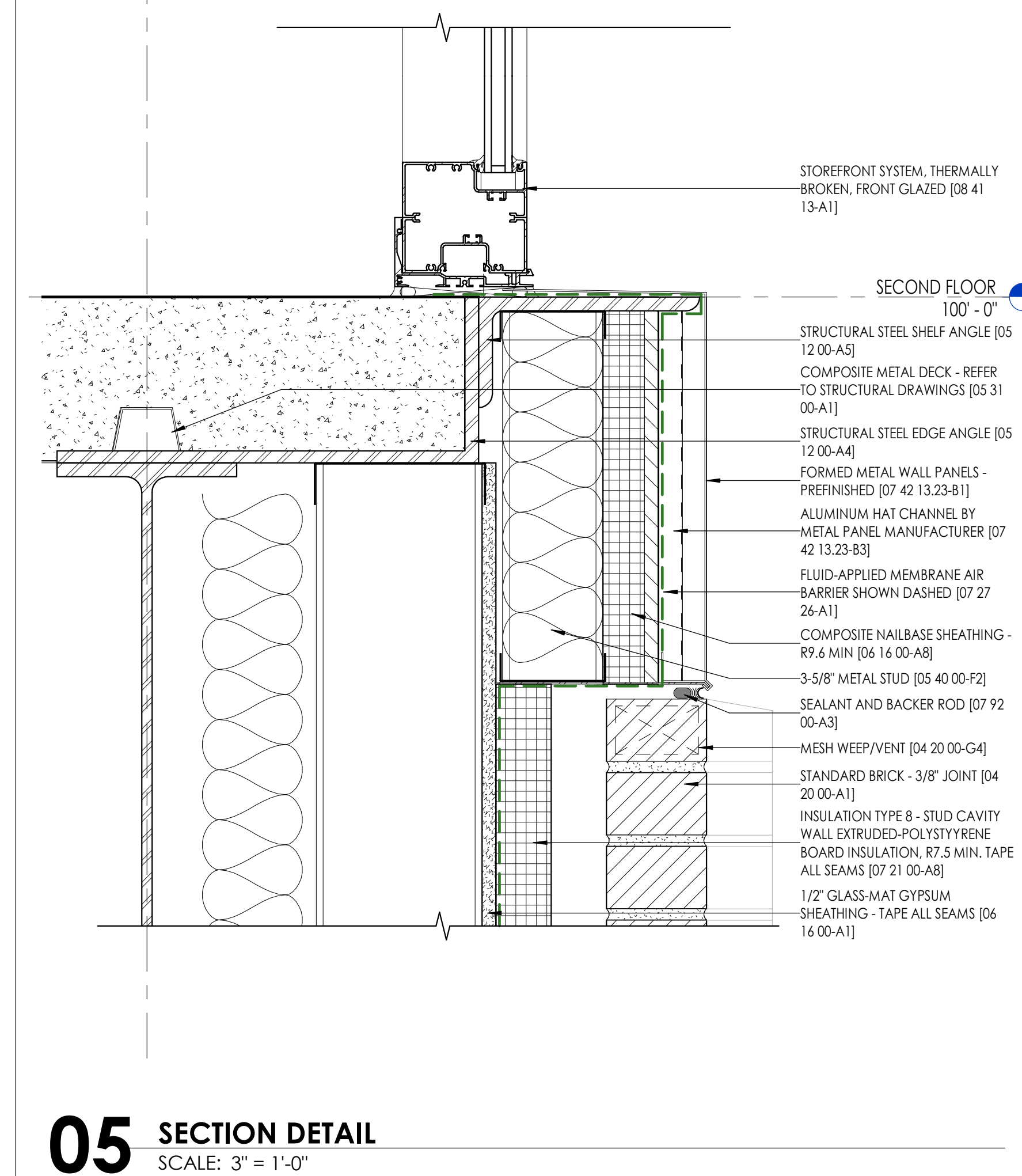
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIAN CENTER
NEW DAMIAN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

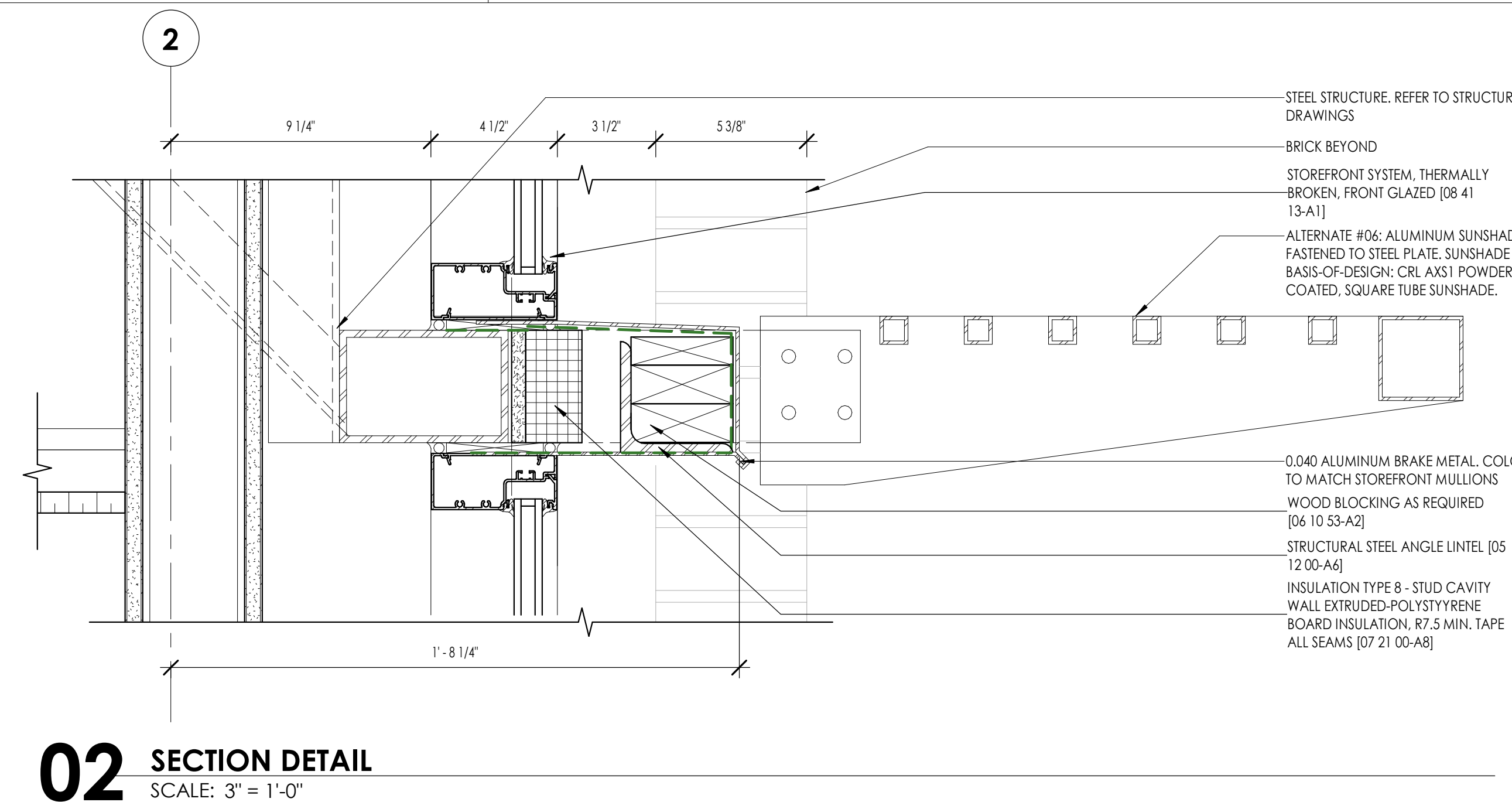
REGISTERED PROFESSIONAL ARCHITECT
No. 194008
STATE OF INDIANA
Drew H. Harte

SECTION DETAILS

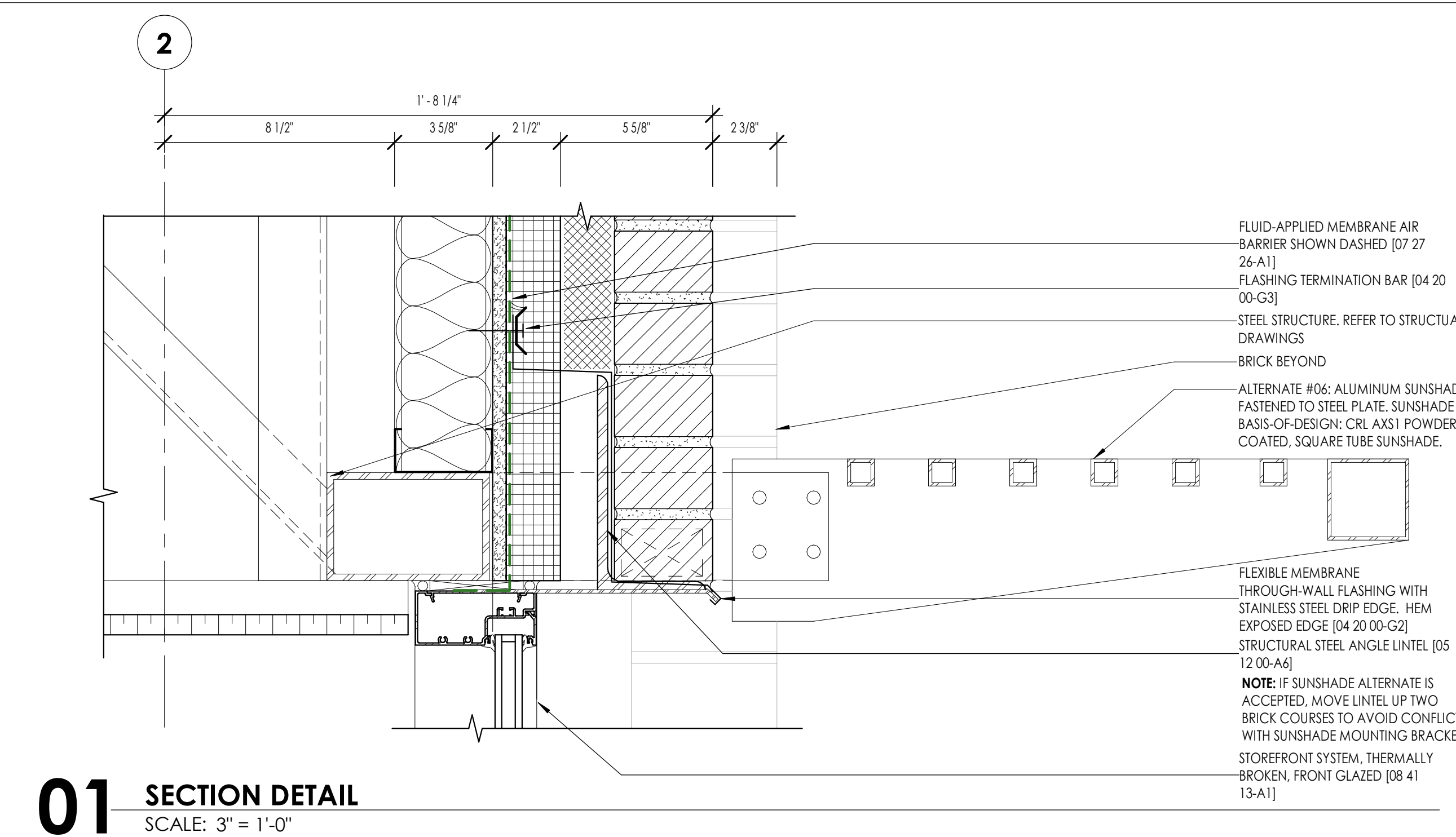
A363
PROJECT NUMBER: 2021029



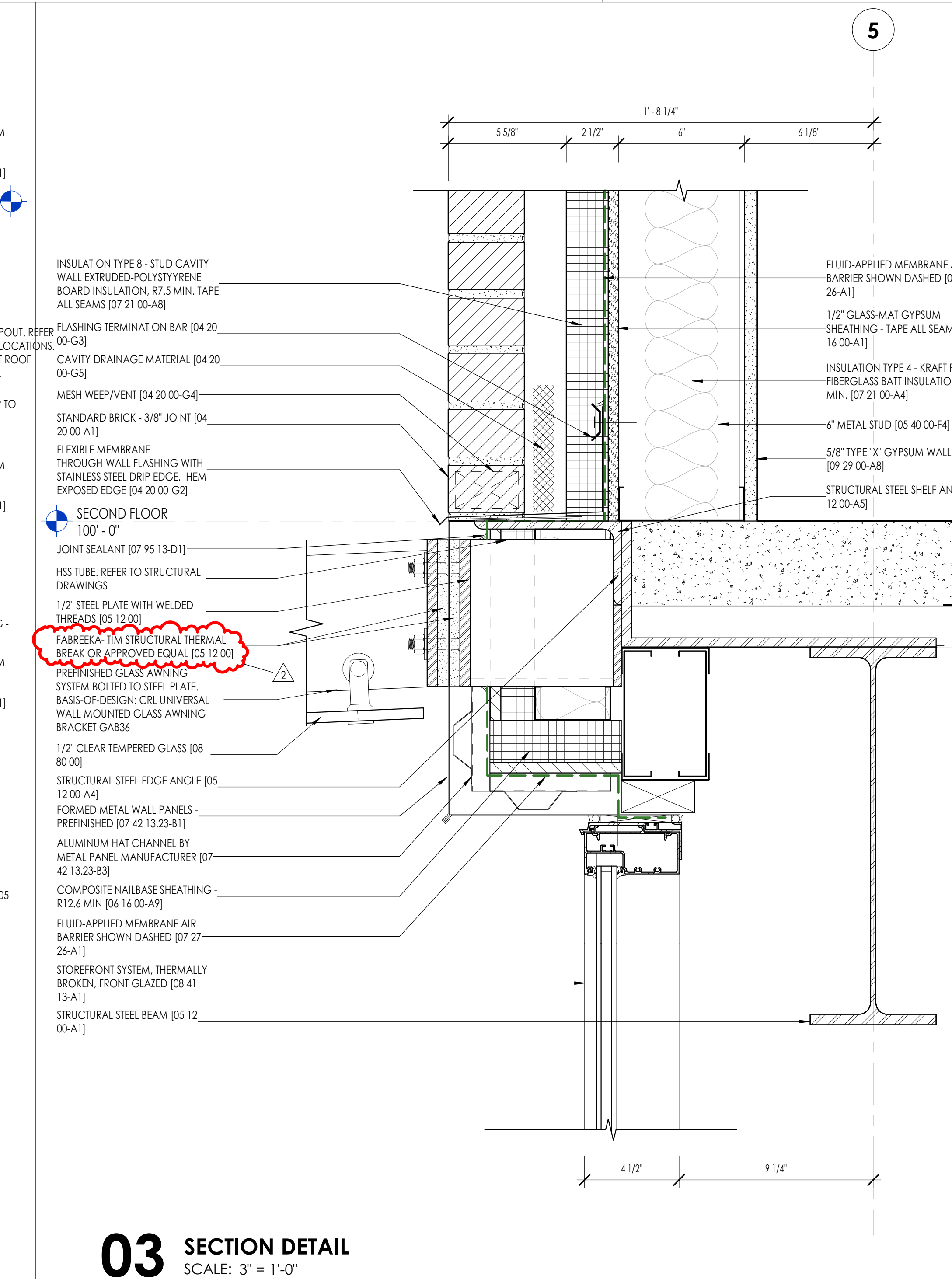
05 SECTION DETAIL
SCALE: 3" = 1'-0"



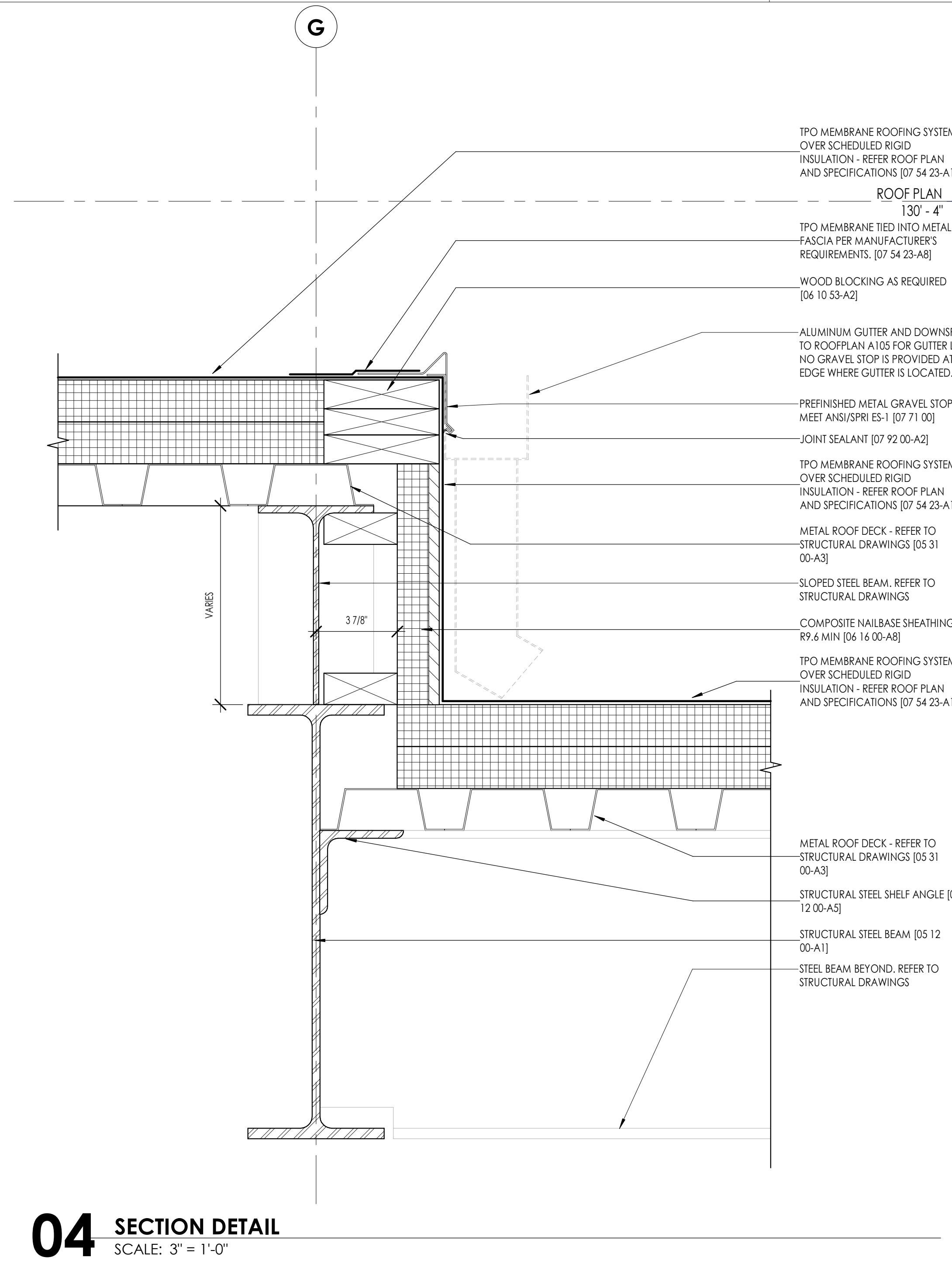
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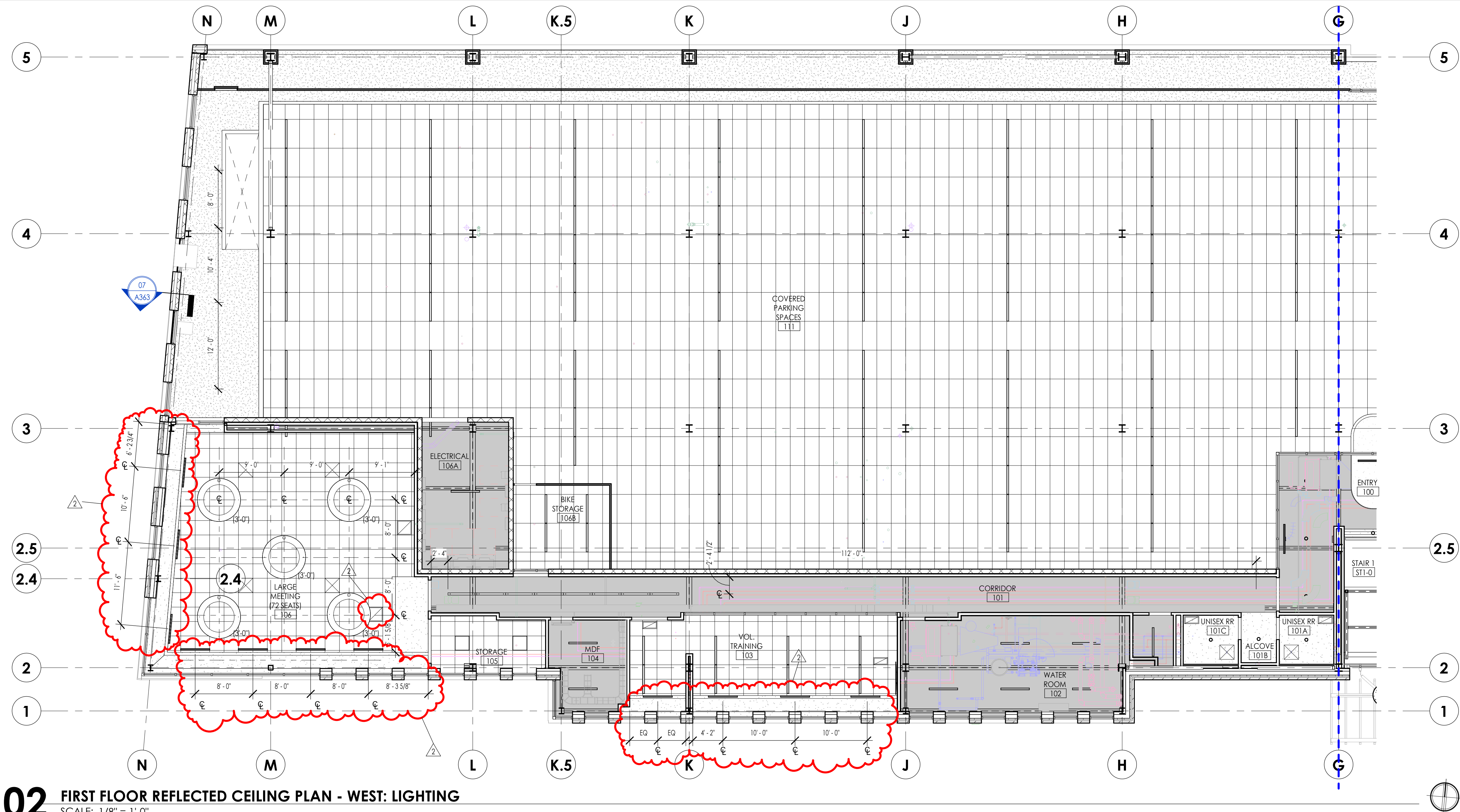
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SCALE: 3" = 1'-0"



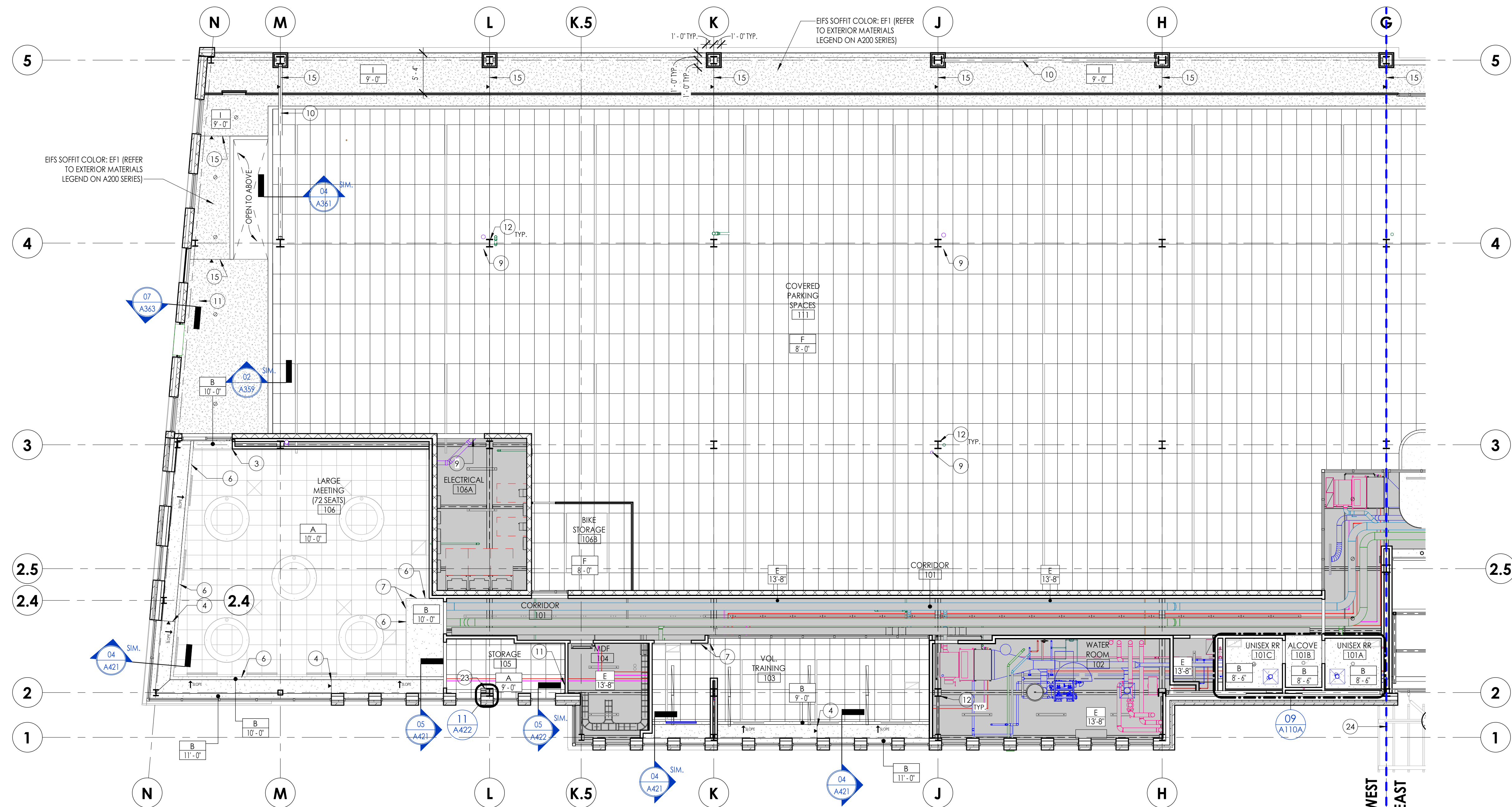
03 SECTION DETAIL
SCALE: 3" = 1'-0"



04 SECTION DETAIL
SCALE: 3" = 1'-0"



02 FIRST FLOOR REFLECTED CEILING PLAN - WEST: LIGHTING
SCALE: 1/8" = 1'-0"



01 FIRST FLOOR REFLECTED CEILING PLAN - WEST
SCALE: 1/8" = 1'-0"

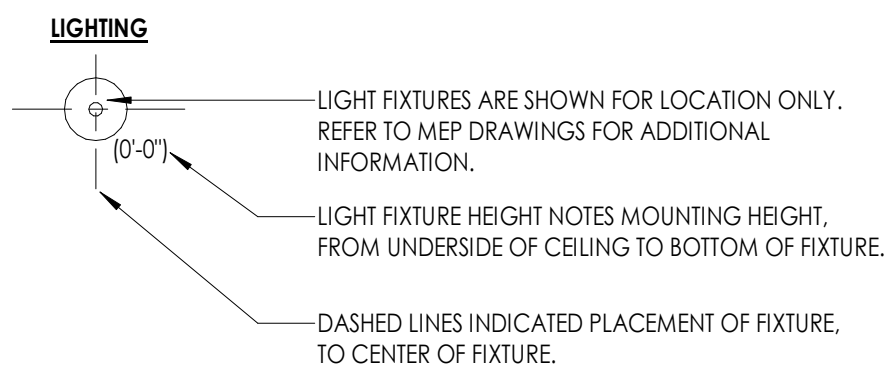
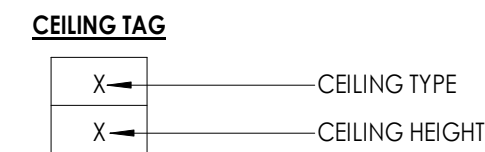
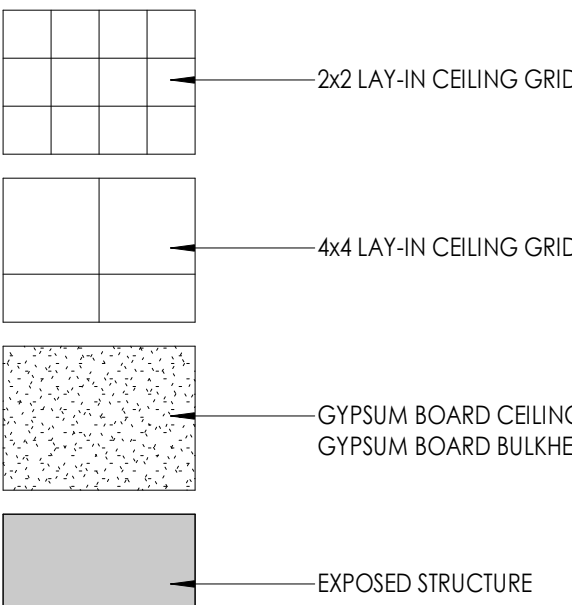
REFLECTED CEILING KEYNOTES

- PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- ALIGN FINISH FACE OF CEILING/ BULKHEAD WITH WALL.
- ALIGN.
- 1/4" #9X3 ZINC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/ BULKHEAD/ CEILING CLOUD OR CENTERLINE OF MULLION, CENTER ON GRIDLINE WHERE SHOWN, TYP.
- CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
- PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACOUSTIC PANEL CEILING AND GYPSUM BOARD CEILING. BASIS-OF-DESIGN: ARMSTRONG #7901 9/16" SHADOW REVEAL TRANSITION MOLDING.
- ALIGN CEILING GRID WITH EDGE OF BULKHEAD.
- HORIZONTAL AND VERTICAL SURFACES OF GYP CEILING TO RECEIVE ACCENT PAINT (PI). REFER TO CEILING PLAN FOR PAINT TAG (PI). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
- ROOF LEADER, PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TIE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TIE-IN BELOW SLAB.
- EXPOSED STRUCTURAL STEEL BRACING THIS BAY, PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACOUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
- MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS.
- EXPOSED STRUCTURAL STEEL COLUMN, PAINT (HP2). REFER TO STRUCTURAL DRAWINGS.
- PROVIDE 3-5/8" METAL STUD FRAMING AT 16" O.C. AND 5/8" TYPE 'X' GYPSUM BOARD BULKHEAD. EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING. EXTEND TO DECK WHERE NO CEILING IS PRESENT.
- PROVIDE 6" ARMSTRONG ONE-PIECE DRYWALL EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- EPS CONTROL JOINT IN SOFFIT, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/ MULLION, CENTER ON GRIDLINE WHERE SHOWN, TYP.
- RAILING ABOVE, REFER CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO.
- CANOPY, REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ALTERNATE #06 - ALUMINUM SUNSHADE FASTENED TO STEEL PLATE. SUNSHADE BASIS-OF-DESIGN: CRL AX31 POWDER-COATED, SQUARE TUBE SUNSHADE. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- ARCHITECTURAL MILLWORK FEATURE, REFER TO INTERIOR ELEVATIONS AND SECTION DETAILS.
- STRUCTURAL STEEL FLANGE, CUT TO PROFILE. PAINT WITH HIGH PERFORMANCE COATING. REFER TO WALL SECTIONS AND DETAILS.
- CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
- EXPOSED STRUCTURAL STEEL COLUMN, PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. REFER TO DETAIL 09/A422.
- EXPOSED STRUCTURAL STEEL COLUMN, PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION. CONTINUE METAL STUD FRAMING AND FINISH WALL ASSEMBLY TO DECK WHERE NO CEILING IS PRESENT.
- ALTERNATE #07 - WASHINGTON STREET ENTRANCE TRELLIS - REFER TO SHEET A350 FOR DETAILS.
- COVE FOR DRAPERY TRACK, REFER TO DETAILS AND EQUIPMENT PLANS.
- WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
- PRE-MANUFACTURED STEEL AND GLASS CANOPY, REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- 24"x24" ACCESS PANEL, PANEL IS TO BE PAINTED TO MATCH CEILING FINISH. REFER TO SPEC 05 31 13 FOR ADDITIONAL INFORMATION.
- EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

GENERAL CEILING PLAN NOTES

- REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
- LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH, UNLESS OTHERWISE INDICATED.
- CENTER PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS, SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC., UNLESS OTHERWISE INDICATED.
- PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
- ALL EXPOSED DUCTWORK, PIPING, CONDUITS ETC. SHALL BE PAINTED, COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
- PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM, VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES, IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
- CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED. PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS WHETHER OR NOT INDICATED ON THE DRAWINGS. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CEILING LEGEND



CEILING TYPES

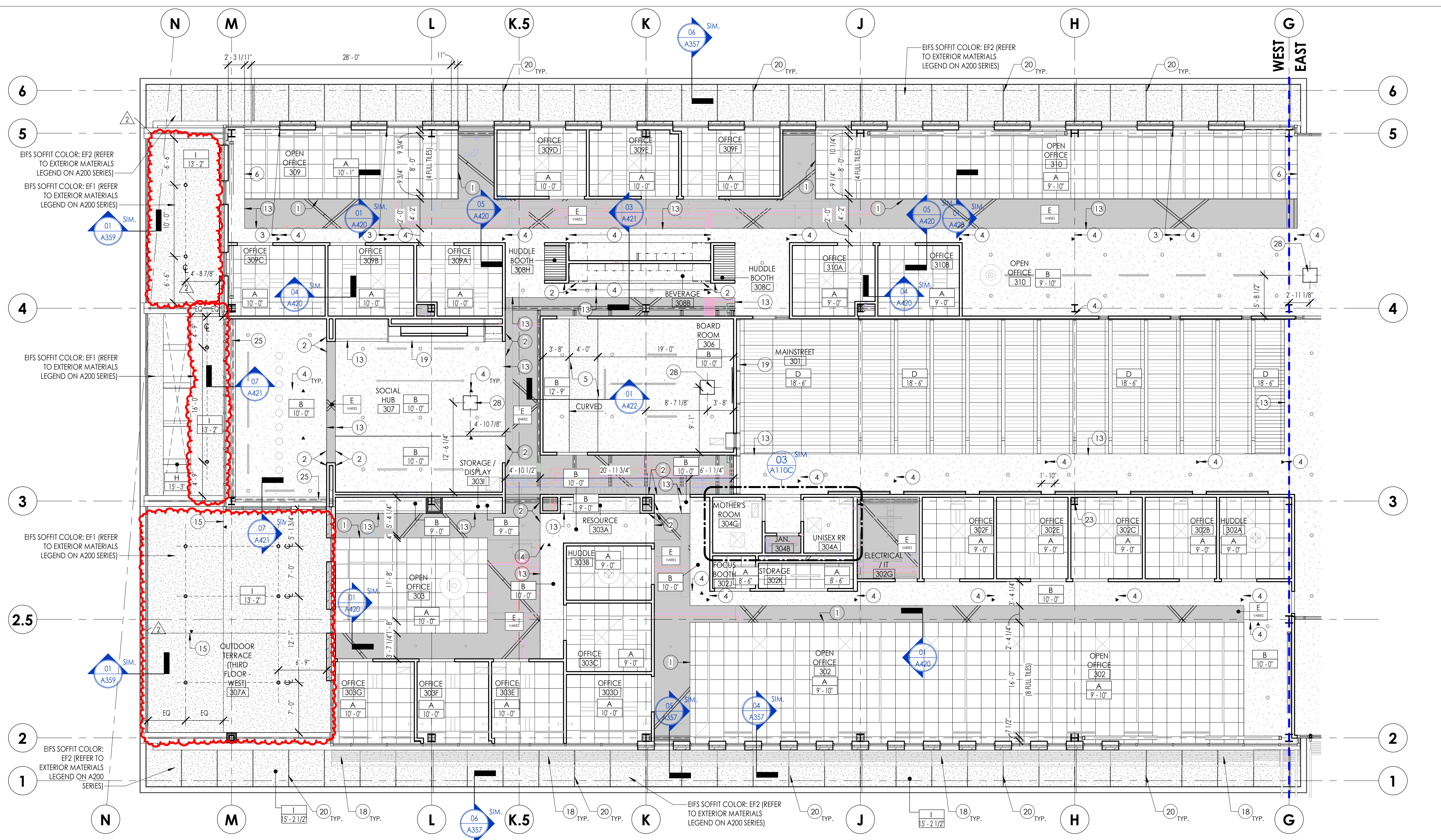
TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUKE, EDGE: ANGLED REGULAR 9/16, COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING. FINISH: REFER TO FINISH PLANS FOR COLOR.
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL. REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2).
D	24" X 48" LAY-IN CEILING TILE. ARMSTRONG CIRRIUS SECOND LOOK II PANEL 9/16" BEVELED REGULAR. FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE, DUCTWORK, PIPING, CONDUITS, ETC. EXTEND PAINTED FINISH 48" FAST EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE. REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40, 4" THICKNESS, R-VALUE 14.0.
G	24" X 24" ARMSTRONG CLEAN ROOM VL SQUARE TILES INSTALLED IN PRELUDE 15/16" XL GRID.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS. COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM. FINISH: REFER TO FINISH PLANS FOR COLOR.



KEY PLAN
SCALE: 1" = 80'-0"



02 THIRD FLOOR REFLECTED CEILING PLAN - WEST - LIGHTING
SCALE: 1/8" = 1'-0"



01 THIRD FLOOR REFLECTED CEILING PLAN - WEST
SCALE: 1/8" = 1'-0"

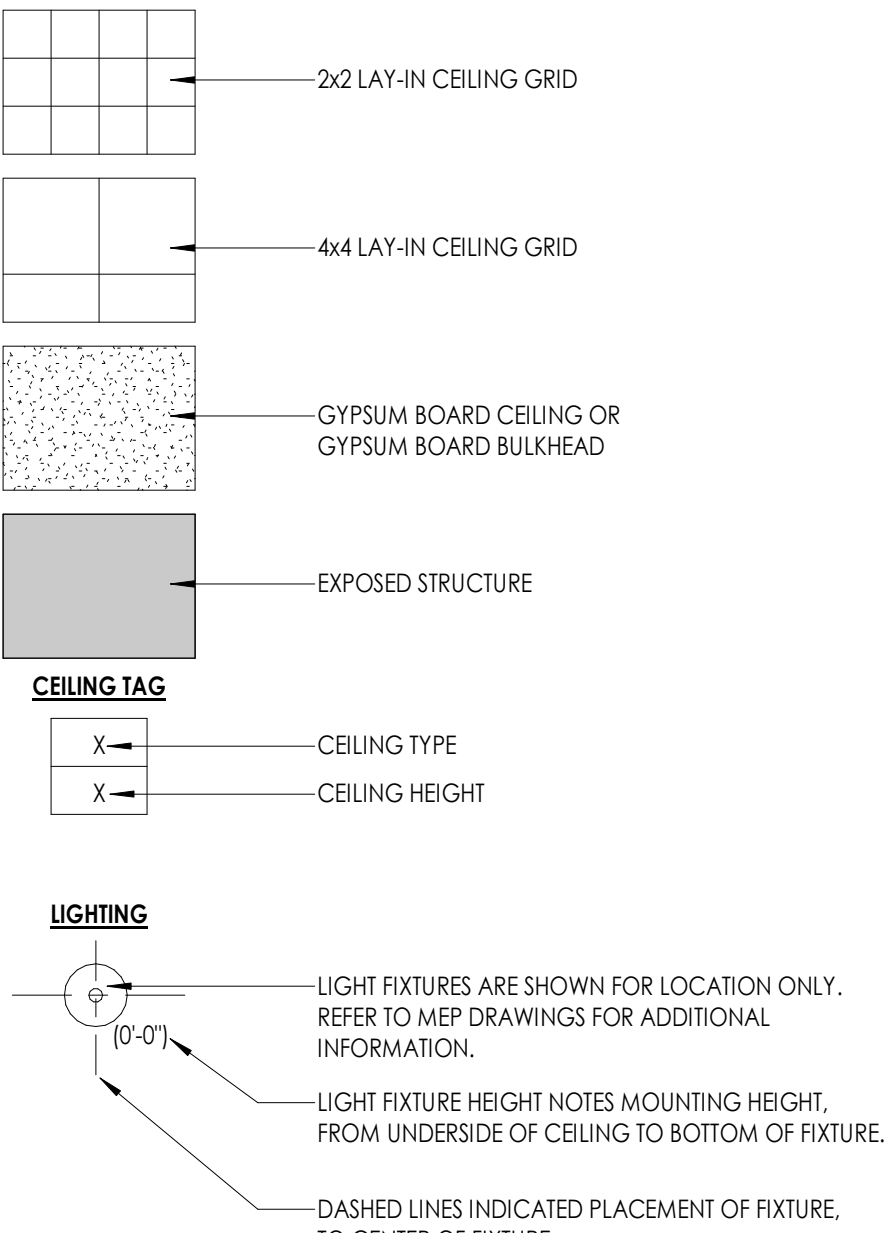
REFLECTED CEILING KEYNOTES

1. PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
2. ALIGN FINISH FACE OF CEILING/ BULKHEAD WITH WALL.
3. ALIGN.
4. 1/4" #993 ZINC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/ BULKHEAD/ CEILING CLOUD OR CENTERLINE OF MILLION, CENTER ON GRIDLINE WHERE SHOWN, TYP.
5. CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
6. PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACOUSTIC PANEL CEILING AND GYPSUM BOARD CEILING, BASE-OF-DESIGN: ARMSTRONG #1701 9/16" SHADOW REVEAL TRANSITION MOLDING.
7. ALIGN CEILING GRID WITH EDGE OF BULKHEAD.
8. HORIZONTAL AND VERTICAL SURFACES OF GYP CEILING TO RECEIVE ACCENT PAINT (PT). REFER TO CEILING PLAN FOR PAINT TAG (PT). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
9. ROOF LEADER, PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TIE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TIE-IN BELOW SLAB.
10. EXPOSED STRUCTURAL STEEL BRACING THIS BAY, PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACOUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
11. MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS.
12. EXPOSED STRUCTURAL STEEL COLUMN, PAINT (HP2). REFER TO STRUCTURAL DRAWINGS.
13. PROVIDE 3-5/8" METAL STUD FRAMING AT 16" O.C. AND 5/8" TYPE 'X' GYPSUM BOARD BULKHEAD, EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING, EXTEND TO DECK WHERE NO CEILING IS PRESENT.
14. PROVIDE 6" ARMSTRONG ONE-PIECE DRYWALL EDGE TRIM AT PERIMETER OF CEILING CLOUD.
15. EPS CONTROL JOINT IN SOFFIT, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/ MILLION, CENTER ON GRIDLINE WHERE SHOWN, TYP.
16. RAILING ABOVE, REFER CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO.
17. CANOPY, REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
18. ALTERNATE #06 - ALUMINUM SUNSHADE FASTENED TO STEEL PLATE, SUNSHADE BASE-OF-DESIGN: CRL AX31 POWDER-COATED, SQUARE TUBE SUNSHADE, REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
19. ARCHITECTURAL MILLWORK FEATURE, REFER TO INTERIOR ELEVATIONS AND SECTION DETAILS.
20. STRUCTURAL STEEL FLANGE, CUT TO PROFILE. PAINT WITH HIGH PERFORMANCE COATING, REFER TO WALL SECTIONS AND DETAILS.
21. CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
22. EXPOSED STRUCTURAL STEEL COLUMN, PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION, REFER TO DETAIL 09/A422.
23. EXPOSED STRUCTURAL STEEL COLUMN, PAINT. PROVIDE 2" AXIOM FRAME AROUND STEEL PENETRATION, CONTINUE METAL STUD FRAMING AND FINISH WALL ASSEMBLY TO DECK WHERE NO CEILING IS PRESENT.
24. ALTERNATE #07 - WASHINGTON STREET ENTRANCE TRELLIS - REFER TO SHEET A350 FOR DETAILS.
25. COVE FOR DRAPEY TRACK, REFER TO DETAILS AND EQUIPMENT PLANS.
26. WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
27. PRE-MANUFACTURED STEEL AND GLASS CANOPY, REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
28. 24"x24" ACCESS PANEL, PANEL IS TO BE PAINTED TO MATCH CEILING FINISH, REFER TO SPEC 06 31 13 FOR ADDITIONAL INFORMATION.
29. EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

GENERAL CEILING PLAN NOTES

- A. REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- B. ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
- C. LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH, UNLESS OTHERWISE INDICATED.
- D. CENTER PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS, SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC., UNLESS OTHERWISE INDICATED.
- E. PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
- F. ALL EXPOSED DUCTWORK, PIPING, CONDUITS ETC. SHALL BE PAINTED, COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
- G. PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM, VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- H. COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- I. LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- J. PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES, IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
- K. CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED, PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS, WHETHER OR NOT INDICATED ON THE DRAWINGS, VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CEILING LEGEND



CEILING TYPES

TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUKE, EDGE: ANGLED REGULAR 9/16, COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING, FINISH: WALL COVERING (WC2).
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL, REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2).
D	24" X 48" LAY-IN CEILING TILE, ARMSTRONG CIRRIUS SECOND LOOK II PANEL 9/16" BEVELED REGULAR, FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE, DUCTWORK, PIPING, CONDUITS, ETC. EXTEND PAINTED FINISH 48" EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE, REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40, 4" THICKNESS, R-VALUE 14.0.
G	24" X 24" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40, 4" THICKNESS, R-VALUE 14.0.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS, COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM, FINISH: REFER TO FINISH PLANS FOR COLOR.

WEST EAST

KEY PLAN
SCALE: 1" = 80'-0"

618 East Market Street
Indianapolis, Indiana 46202
phone 317.264.8162
a x i s o r c h . c o m

Revised Drawings
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the layout of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the project and are not intended to be used for construction or for any other purpose without the approval of the architect. The drawings are the property of the architect and shall not be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written consent of the architect.

DRAWN BY: KS
CHECKED BY: CS
DATE: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #02 10/06/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Westgate Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JSC
JAMES BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

STRUCTURAL ENGINEER
JSC
JAMES BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

MEP ENGINEER
SEAN GURUKOMANA, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, PLS, AIA
195 N HARBOUR DR # 3405
Chicago, IL 60601
PH 647.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

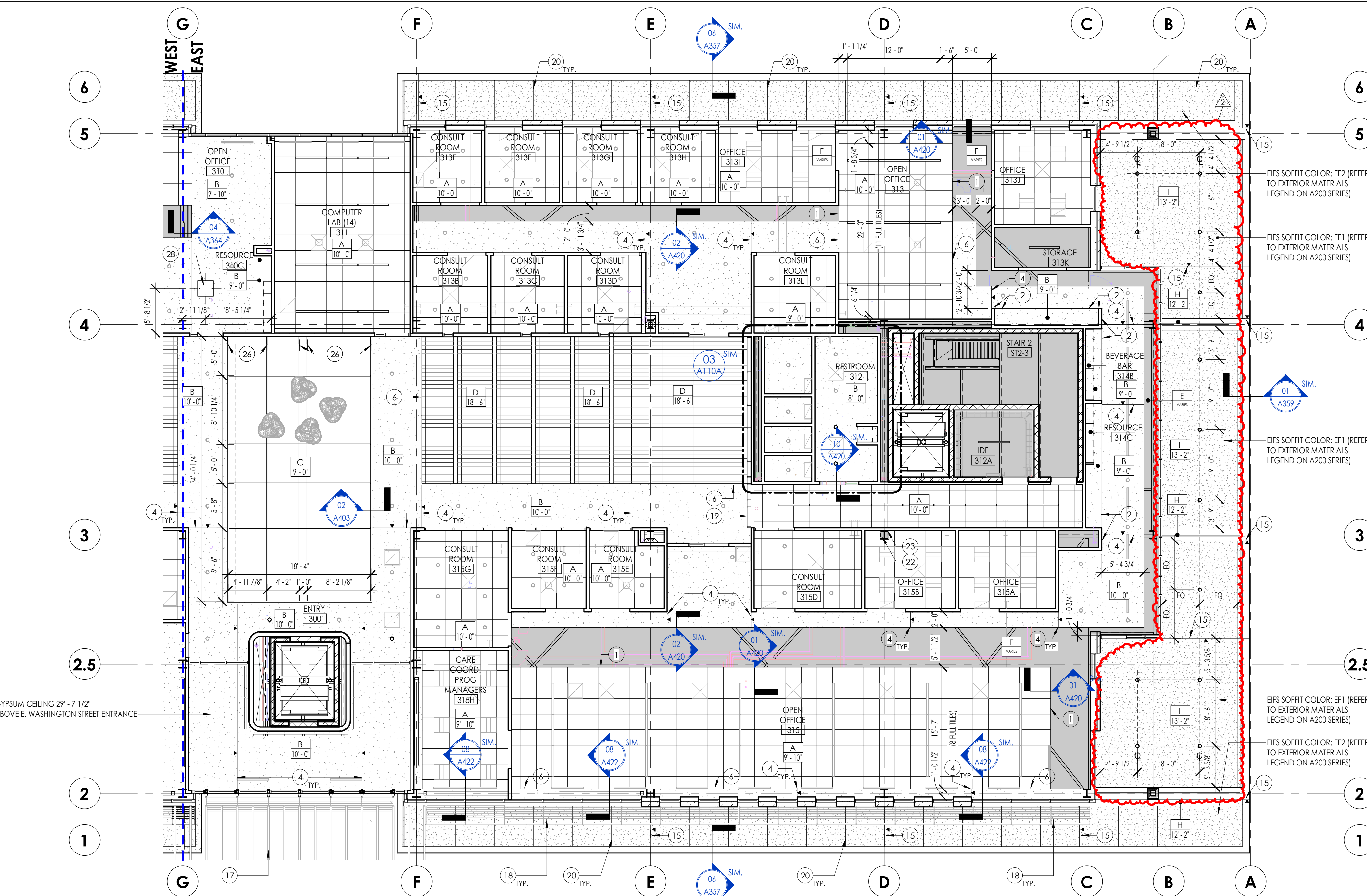


THIRD FLOOR REFLECTED
CEILING PLAN - WEST

A403A
PROJECT NUMBER: 2021029

02 THIRD FLOOR REFLECTED CEILING PLAN - EAST - LIGHTING

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



01 THIRD FLOOR REFLECTED CEILING PLAN - EAST

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

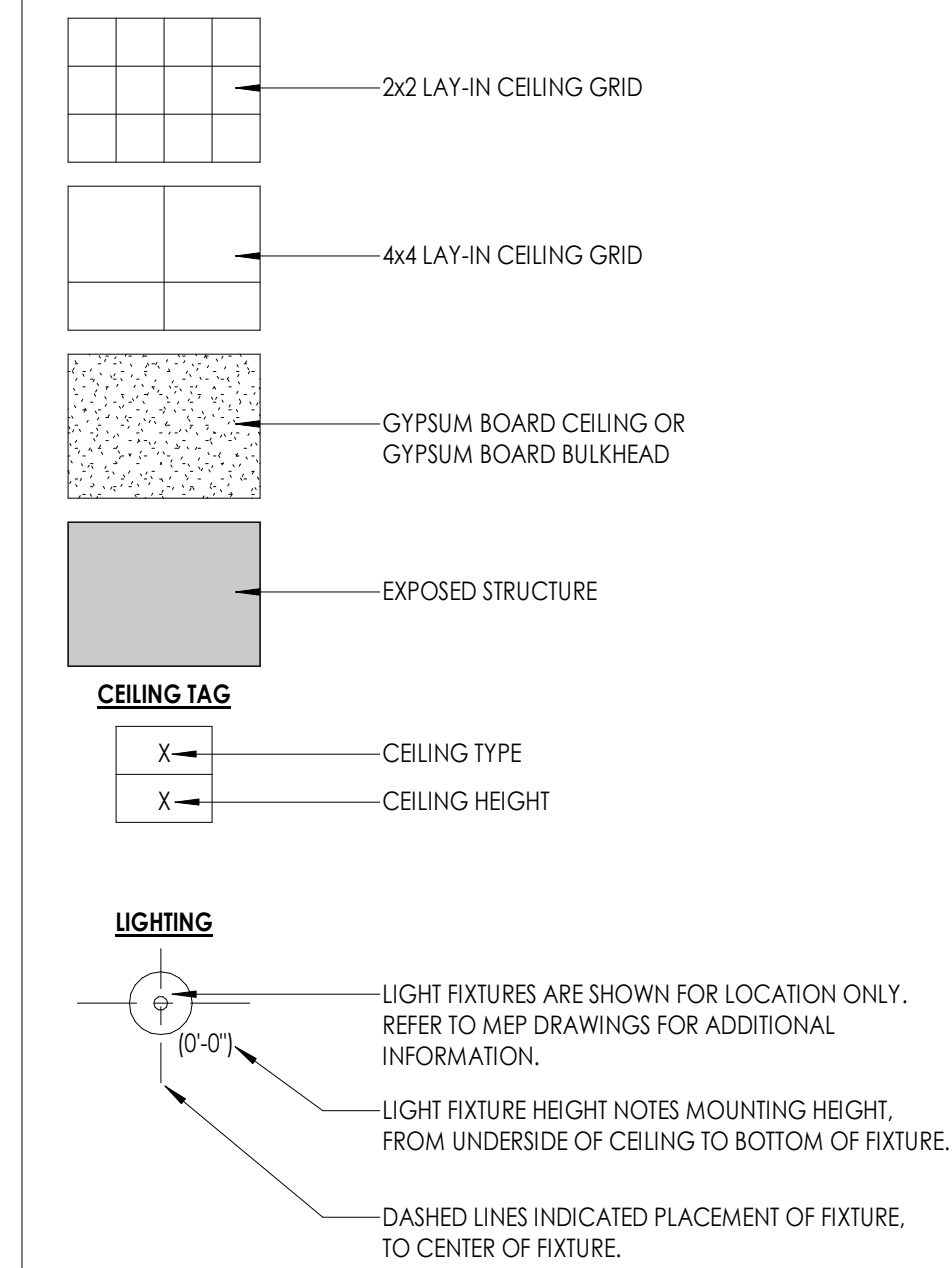
REFLECTED CEILING KEYNOTES

- PROVIDE 4" ARMSTRONG CLASSIC EDGE TRIM AT PERIMETER OF CEILING CLOUD.
- ALIGN FINISH FACE OF CEILING/ BULKHEAD WITH WALL.
- ALIGN.
- 1/4" #993 ZINC CONTROL JOINT IN HORIZONTAL AND VERTICAL FACES OF CEILING AND BULKHEAD, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH DRYWALL CEILING COLOR. ALIGN WITH FACE OF WALL/ BULKHEAD/ CEILING CLOUD OR CENTERLINE OF MULLION, CENTER ON GRIDLINE WHERE SHOWN, TYP.
- CEILING FORM CURVED FROM LOW TO HIGH HEIGHT - REFER TO CEILING DETAIL.
- PROVIDE CEILING TRANSITION MOLDING AT JUNCTION OF ACOUSTIC PANEL CEILING AND GYPSUM BOARD CEILING. BASIC DESIGN: ARMSTRONG #1701 9/16" SHADOW REVEAL TRANSITION MOLDING.
- ALIGN CEILING GRID WITH EDGE OF BULKHEAD.
- HORIZONTAL AND VERTICAL SURFACES OF GYP CEILING TO RECEIVE ACCENT PAINT (PT). REFER TO CEILING PLAN FOR PAINT TAG (PT). REFER TO FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.
- ROOF LEADER, PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH CEILING. REFER TO PLUMBING DRAWINGS FOR TIE-IN ABOVE CEILING AND CIVIL DRAWINGS FOR TIE-IN BELOW SLAB.
- EXPOSED STRUCTURAL STEEL BRACING THIS BAY. PAINT. PROVIDE CEILING GRID PERIMETER TRIM AROUND STEEL PENETRATION THROUGH ACOUSTIC TILE CEILING. REFER TO STRUCTURAL DRAWINGS.
- MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.
- EXPOSED STRUCTURAL STEEL COLUMN, PAINT (HP2). REFER TO STRUCTURAL DRAWINGS.
- PROVIDE 3-5/8" METAL STUD FRAMING AT 1' O.C. AND 5/8" TYPE 'X' GYPSUM BOARD BULKHEAD. EXTEND GYPSUM BOARD 6" ABOVE HIGHEST ADJACENT CEILING. EXTEND TO DECK WHERE NO CEILING IS PRESENT.
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- EPS CONTROL JOINT IN SOFFIT, DESIGNATED WITH TRIANGLE SYMBOL. FINISH TO BE PAINTED TO MATCH SOFFIT COLOR. ALIGN WITH FACE OF WALL/ MULLION. CENTER ON GRIDLINE WHERE SHOWN, TYP.
- RAILING ABOVE. REFER CONSTRUCTION PLAN AND ELEVATIONS FOR MORE INFO.
- CEILING AND VERTICAL SURFACES TO RECEIVE ACCENT PAINT.
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- COVE FOR DRAPERY TRACK. REFER TO DETAILS AND EQUIPMENT PLANS.
- WOOD FRAMEWORK TO ALIGN WITH VERTICAL MILLWORK ON WALL.
- PRE-MANUFACTURED STEEL AND GLASS CANOPY. REFER TO EXTERIOR ELEVATIONS AND SECTION DETAILS.
- 24"x24" ACCESS PANEL. IS TO BE PAINTED TO MATCH CEILING FINISH. REFER TO SPEC 06.01.13 FOR ADDITIONAL INFORMATION.
- EXHAUST HOOD - REFER TO MECHANICAL DRAWINGS.

GENERAL CEILING PLAN NOTES

- REFER TO CEILING PLAN FOR ALL CEILING HEIGHTS.
- ALL GRIDS ARE CENTERED IN ROOMS EACH DIRECTION UNLESS NOTED OTHERWISE.
- LOCATE CEILING GRIDS WITHIN ROOMS SUCH THAT BORDERS CONTAIN NOT LESS THAN 1/2 TILE WIDTH, UNLESS OTHERWISE INDICATED.
- CENTER PENETRATIONS IN ACOUSTICAL CEILING SYSTEMS WITHIN INDIVIDUAL CEILING PANELS, SUCH AS SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ETC., UNLESS OTHERWISE INDICATED.
- PAINT ALL EXPOSED GYPSUM WALLBOARD SURFACES UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN FOR COLORS.
- ALL EXPOSED DUCTWORK, PIPING, CONDUCITS ETC. SHALL BE PAINTED, COLOR TO MATCH CEILING OR EXPOSED STRUCTURE UNLESS OTHERWISE NOTED.
- PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CEILINGS AT 20' MAXIMUM. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- COORDINATE REFLECTED CEILING PLAN WITH MECHANICAL, PLUMBING, ELECTRICAL, AND LIFE SAFETY PLANS. PROVIDE COORDINATION DRAWINGS FOR REVIEW PRIOR TO CEILING INSTALLATION.
- LIGHT FIXTURES, SPRINKLER HEADS, HVAC SUPPLY AND RETURN GRILLES ARE SHOWN FOR LOCATION ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE ACOUSTICAL CEILING HOLD-DOWN CLIPS IN VESTIBULES. IN ROOMS WITH EXTERIOR ENTRANCE DOORS PROVIDE HOLD-DOWN CLIPS FOR 10' IN ALL DIRECTION OF DOORWAY.
- CEILING ACCESS PANELS INDICATED ARE NOT INTENDED TO LIMIT NUMBER OF PANELS REQUIRED. PANEL QUANTITY SHALL BE SUFFICIENT TO PROVIDE REQUIRED ACCESS WHETHER OR NOT INDICATED ON THE DRAWINGS. VERIFY LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CEILING LEGEND



CEILING TYPES

TYPE	DESCRIPTION
A	24" X 24" LAY-IN CEILING TILE ARMSTRONG DUKE, EDGE: ANGLED REGULAR 9/16, COLOR: WHITE.
B	GYPSUM WALLBOARD CEILING. FINISH: REFER TO FINISH PLANS FOR COLOR.
C	GYPSUM WALLBOARD CEILING WITH WOOD DETAIL. REFER TO DETAIL 02/A403 FINISH: WALL COVERING (WC2).
D	24" X 48" LAY-IN CEILING TILE ARMSTRONG CIRRIUS SECOND LOOK II PANEL 9/16" BEVELED REGULAR. FINISH: EFFECTS SUBTLE FLAX.
E	NO CEILING IN THIS ROOM - PAINT EXPOSED STRUCTURE, DUCTWORK, PIPING, CONDUCITS, ETC. EXTEND PAINTED FINISH 48" PAST EDGE OF ADJACENT CEILING EDGE TRIM WHERE APPLICABLE. REFER TO FINISH PLANS AND SPECIFICATIONS FOR FINISH REQUIREMENTS.
F	24" X 48" LAY-IN CEILING TILE ROCKWOOL ROCKBOARD 40, 4" THICKNESS. R-VALUE 14.0.
G	24" X 24" REFLECTED CLEAN ROOM VL SQUARE TILES INSTALLED IN PRELUDE 15/16" XL GRID.
H	METAL TECH FORMED METAL WALL PANEL SOFFIT WITH REVEALS. COLOR: TAN.
I	2" EPS SOFFIT ON EXTERIOR SHEATHING ON SUSPENSION GRID.
J	GYPSUM WALLBOARD CEILING ON DRYWALL GRID SUSPENSION SYSTEM. FINISH: REFER TO FINISH PLANS FOR COLOR.

WEST EAST

KEY PLAN - EAST
SCALE: 1" = 80'-0"

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
a x i s | s t a r c h . c o m

Drawn By: KS
Checked By: DS
Date: 09/12/2022

REVISIONS:
1. DESCRIPTION
2. ADDENDUM #02

DATE: 10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Kentucky Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JOSOL
HARRISON FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

STRUCTURAL ENGINEER
JOSOL
DANIEL BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

MEP ENGINEER
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Kingsbridge Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, PIA, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 647.363.0168

ARCHITECT
AXIS STARCH

PROJECT NUMBER: 2021029

THIRD FLOOR REFLECTED CEILING PLAN - EAST

A403B

PROJECT NUMBER: 2021029

THIRD FLOOR REFLECTED CEILING PLAN - EAST

A403B

PROJECT NUMBER: 2021029

THIRD FLOOR REFLECTED CEILING PLAN - EAST

A403B

PROJECT NUMBER: 2021029

THIRD FLOOR REFLECTED CEILING PLAN - EAST

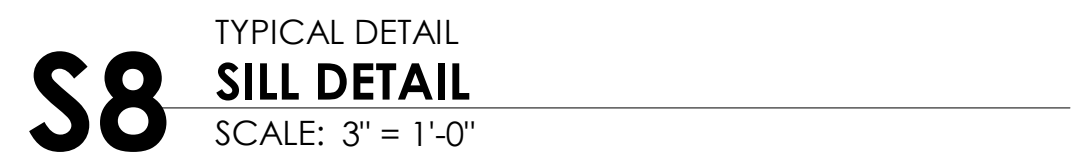
A403B

PROJECT NUMBER: 2021029

THIRD FLOOR REFLECTED CEILING PLAN - EAST

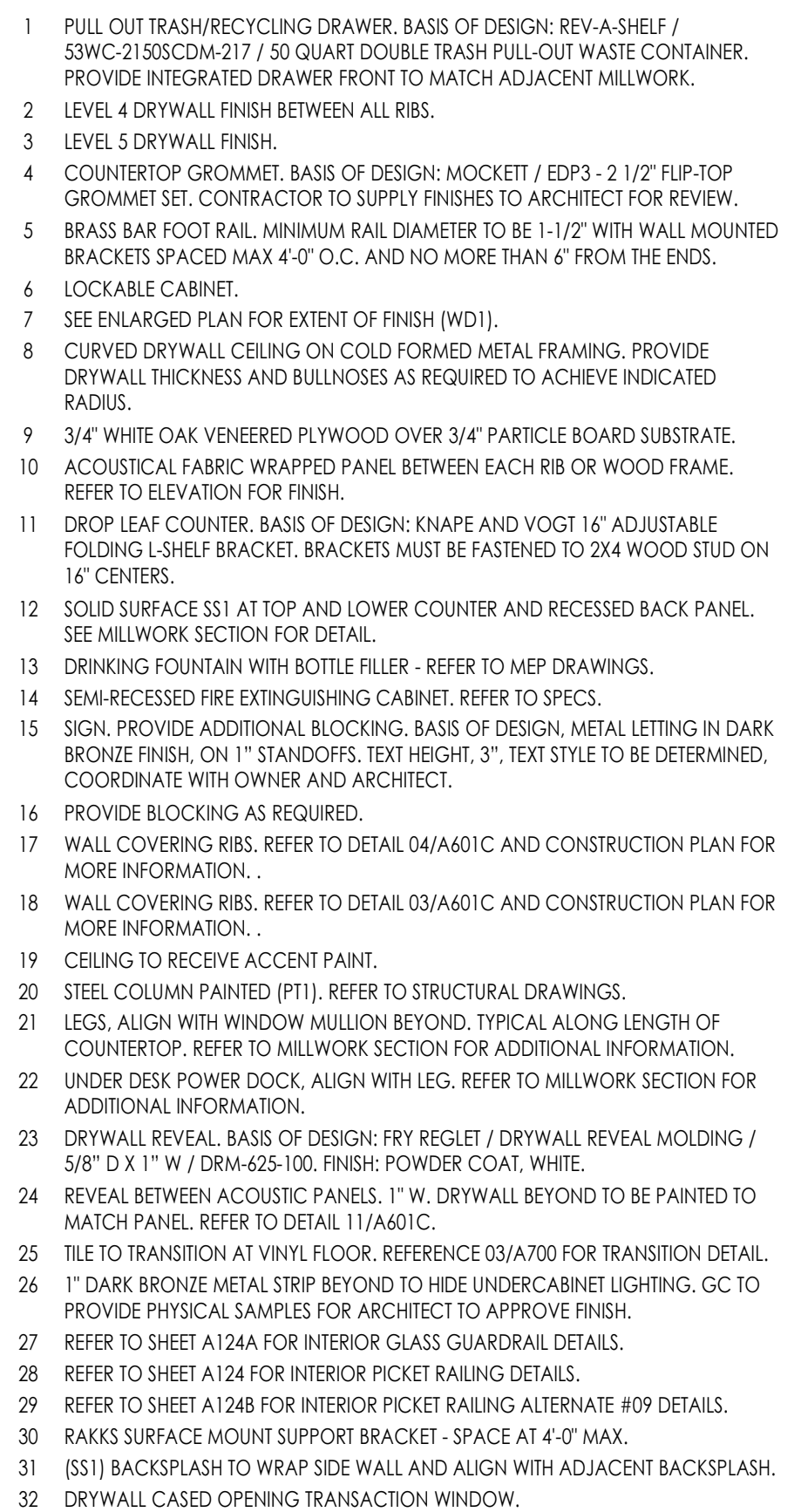
A403B

Opening #		Room Name	Door						Frame			Details			Label		Remarks		
			Width	Height	Thickness	Material	Elevation	Finish	Glazing	Material	Elevation	Finish	Glazing	Head	Jamb	Sill		Fire Rating	HDWR Set
FIRST FLOOR																			
100A	STORAGE		5'-0"	7'-10"	1 3/4"	HM	D4	PT	-	HM	F3	PT	-	H1	J1		90 MIN	33	
100B	ENTRY		5'-8"	7'-10"	1 3/4"	AL	D1	PPE	IGL-1	AL	S73	DBA	-	H2	J2		-	48	1, 4, 6
100C	ENTRY		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F5	PT	GL-1	H1	J1		-	38	4
100E	ENTRY		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F5	PT	GL-1	H1	J1		-	39	4
101A	UNSEX RR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	12	
101C	UNSEX RR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	61	6
101D	JANITOR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	28	
102	WATER ROOM		3'-0"	7'-10"	1 3/4"	HM	D2	PT	-	HM	F1	PT	-	H1	J1		90 MIN	29	
103	VOL TRAINING		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	04	7
104	MDF		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	22	4
105	STORAGE		6'-0"	7'-10"	1 3/4"	SCW	D4	PPE	-	HM	F3	PT	-	H1	J1		-	30	
106	LARGE MEETING (72 SEATS)		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	52	7
106A	ELECTRICAL		6'-0"	7'-0"	1 3/4"	HM	D4	PT	-	HM	F3	PT	-	H4	J4		45 MIN	32	
106B	COVERED PARKING SPACES		3'-0"	8'-0"	1 3/4"	AL	D1	PPE	IGL-1	AL	S9	DBA	IGL-1	H9	J9		-	53	1, 11
106BA	RKE STORAGE		3'-0"	6'-10"	1 3/4"	STL	D4/A135	PPE	-	STL	D4/A135	PT	-	-	-	05/A135	-	60	12
107	OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	56	
107A	CONSULT		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
107B	FOCUS BOOTH		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	
109A	EXIT PASSAGEWAY		3'-0"	7'-10"	1 3/4"	SCW	D3	PPE	GL-1	HM	F1	PT	-	H1	J1		60 MIN	44	11
109B	EXIT PASSAGEWAY		3'-6"	9'-0"	1 3/4"	AL	D1	PPE	IGL-1	AL	S10	DBA	IGL-1	H9	J9		-	40	1, 4
110	RECEPTION (TESTING AND PREVENTION)		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	22	4
110B	CONSULT		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
110C	CONSULT		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
110D	UNISEX RR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	12	
110E	LAB		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	18	4
110F	UNSEX RR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	12	
110G	FOCUS BOOTH		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	
110H	OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
110I	OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
110K	OPEN OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D1	PPE	GL-1	HM	F1	PT	-	H1	J1		-	22	4
110L	OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
110M	OFFICE		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
110NA	STORAGE		6'-0"	7'-10"	1 3/4"	SCW	D4	PPE	-	HM	F3	PT	-	H1	J1		-	31	
110NB	STORAGE		6'-0"	7'-10"	1 3/4"	SCW	D4	PPE	-	HM	F3	PT	-	H1	J1		-	31	
110QA	CORRIDOR		3'-0"	9'-0"	1 3/4"	AL	D1	PPE	IGL-1	AL	S10	DBA	IGL-1	H9	J9		-	40	1, 4
110QB	CORRIDOR		3'-0"	7'-10"	1 3/4"	SCW	D1	PPE	GL-1	HM	F1	PT	-	H1	J1		60 MIN	25	4
110QC	CORRIDOR		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	22	4
110R	TESTING		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	03	
110S	TESTING		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	03	
110T	TESTING		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	03	
110U	TESTING		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	03	
110VA	HARM REDUCTION ROOM		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F1	PT	-	H1	J1		-	22	4
110VB	HARM REDUCTION ROOM		3'-0"	7'-10"	1 3/4"	SCW	D2	PPE	GL-1	HM	F1	PT	-	H1	J1		-	18	4
111A	COVERED PARKING SPACES		6'-0"	9'-4"	1 3/4"	AL	D1	PPE	IGL-1	AL	S69	DBA	-	02/A360	J9		-	30	1, 4
111B	COVERED PARKING SPACES		3'-0"	6'-10"	1 3/4"	STL	D4/A135	PPE	-	STL	D4/A135	PT	-	-	-	05/A135	-	37	4, 12
112A	UNSEX RR		3'-0"	7'-8"	1 3/4"	HM	D2	PT	-	HM	F2	PT	-	H3	J3		60 MIN	12	
ST2-1	STAIR 2		3'-0"	7'-8"	1 3/4"	HM	D3	PT	GL-2	HM	F2	PT	-	H3	J3		60 MIN	42	
LANDING FLOOR																			
ST1-0	STAIR 1		6'-0"	9'-0"	1 3/4"	AL	D1	PPE	IGL-1	AL	S54	DBA	-	03/A360	J9		-	48	1, 4, 6
SECOND FLOOR																			
200A	RECEPTION		5'-11"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-7	DBA	GL-1	H2	J2		-	46	1, 4, 6
200B	RECEPTION		5'-11"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-7	DBA	GL-1	H2	J2		-	45	1, 6
201A	FOCUS		3'-0"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-2	DBA	GL-1	H2	J2		-	15	1, 5
201B	FOCUS		3'-0"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-2	DBA	GL-1	H2	J2		-	15	1, 5
201C	CONSULT		3'-0"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-3	DBA	GL-1	H2	J2		-	15	1, 5
202D	SECURITY		3'-0"	8'-0"	1 3/4"	SCW	D3	PPE	GL-1	HM	F1	PT	-	H1	J1		-	22	4
202E	MAL ROOM		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F8	PT	-	H6	J6		-	42	3, 4
203	PHARMACY		3'-0"	8'-0"	1 3/4"	STL	D5	PT	-	ST	F1	PT	-	H1	J1		-	20	4
203A	PHARMACY WAITING ROOM		3'-0"	8'-0"	1 3/4"	AL	D1	PPE	GL-1	AL	S-1	DBA	GL-1	H2	J2		-	07	1
203AA	PHARMACY		3'-8 1/4"	3'-7 1/4"	0"	HM	D6	PT	-	HM	-	PT	-	-	-	-	-	51	2
203AB	PHARMACY		3'-8 1/4"	4'-2"	0"	HM	D6	PT	-	HM	-	PT	-	-	-	-	-	51	2
203BA	PHARMACY		3'-0"	8'-0"	1 3/4"	STL	D5	PT	-	ST	F1	PT	-	H1	J1		-	23	4
203BB	PHARMACY CONSULT		3'-0"	8'-0"	1 3/4"	STL	D7	PPE	GL-1	ST	F1	PT	-	H1	J1		-	13	
203C	OFFICE		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
203D	OFFICE		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
203E	STOR. REC. / SUPPLIES & SERVER		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	28	
203F	PHARMACY		2'-6"	4'-2"	0"	HM	D6	PT	-	HM	-	PT	-	-	-	-	-	51	2
204A	UNSEX RR		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	61	6
204AB	CORRIDOR		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	18	4
204B	UNSEX RR		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	61	6
204C	UNSEX RR		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	12	
204DA	BREAK ROOM		3'-6"	8'-0"	1 3/4"	STL	D2	PT	-	ST	F1	PT	-	H1	J1		-	21	4
204DB	BREAK ROOM		3'-6"	8'-0"	1 3/4"	STL	D7	PT	GL-1	ST	F1	PT	-	H1	J1		-	24	4
205C	TELEHEALTH		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
205D	TELEHEALTH		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
205E	CONSULT		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	14	5
205F	EXAM 13-E		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	-	HM	F1	PT	-	H1	J1		-	54	
205G	MED. PROVIDER [9]		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	18	4
205H	OFFICE		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1	H1	J1		-	57	
205J	ASSESSMENT ROOM		3'-0"	8'-0"	1 3/4"	SCW	D2	PPE	GL-1	HM	F6	PT	GL-1						



H4 TYPICAL DETAIL
HEAD DETAIL
SCALE: 3" = 1'-0"





DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

MAINSTREET - INTERIOR ELEVATIONS

A601A
PROJECT NUMBER: 2021029

GENERAL INTERIOR ELEVATION NOTES

- GENERAL:**
- A. PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - B. WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - C. ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - D. AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.

- PAINTING:**
- A. ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - B. PAINT ALL EXPOSED MISC. STEEL LINTELS, PLATES, ANGLES, ETC. UNLESS NOTED OTHERWISE.

- CEILINGS / WALLS:**
- A. ALL WALLS TO BE PAINTED **PT1**. UNLESS NOTED OTHERWISE.
 - B. ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**. UNLESS NOTED OTHERWISE.
 - C. ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - D. ALL DRYWALL TO BE LEVEL **4** FINISH. UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - E. ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.

- BASE:**
- A. ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - B. ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.

- MILLWORK:**
- A. CALL K SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - B. ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - C. ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - D. ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER. UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- A. REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - B. REFER TO A001 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

SPECIALTY EQUIPMENT TAG
MARK — [500]

PLUMBING ACCESSORY TAG
MARK — [100]

FINISH TAG
(DENOTES DIFFERENT FINISH LOCATION)

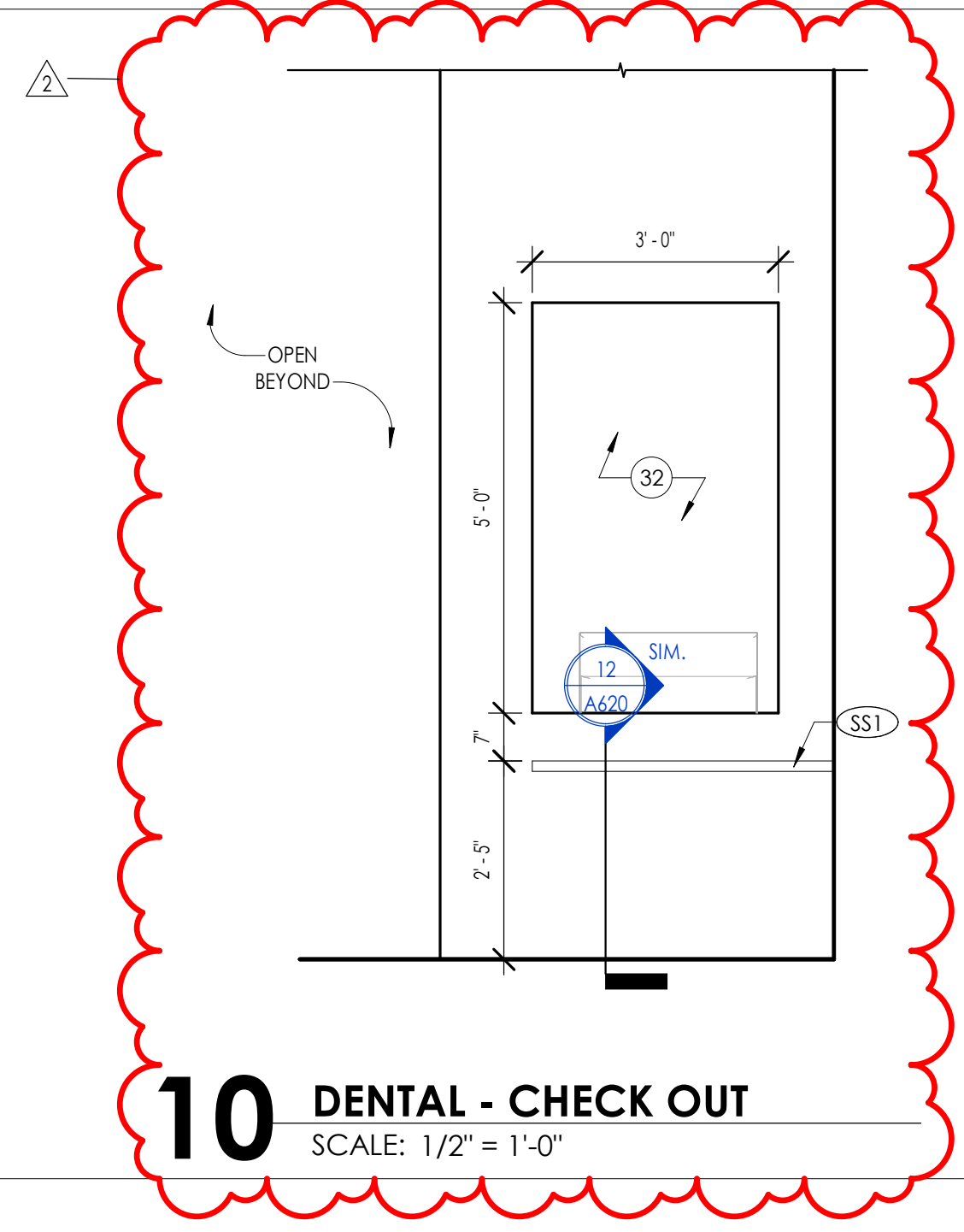
ARROWS INDICATES EXTENT OF FINISH
INDICATES FINISH MATERIAL

MILLWORK LEGEND

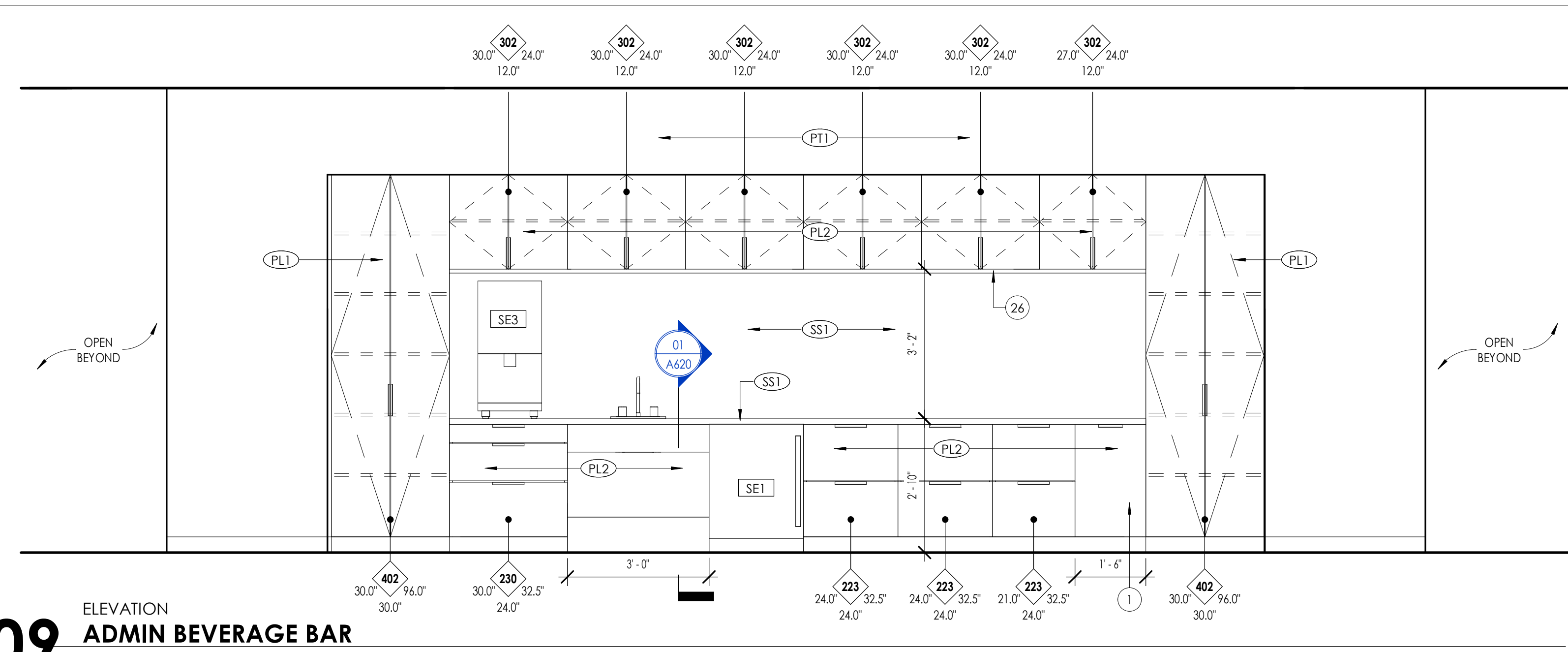
- A. REFER TO SHEET A620. FOR TYPICAL PLASTIC LAMINATE AWI CABINET DETAIL.
- B. COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
- C. PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MACH MILLWORK ADJACENT.
- D. MILLWORK IS BASED ON AWI ARCHITECTURAL WOODWORK STANDARDS 2009 EDITION.
- E. DESIGN DRAWINGS ARE BASED ON CDS (CABINET DESIGN SERIES) NUMBERS. REFER TO CABINET TAG BELOW FOR DESCRIPTION.
- F. REFER TO TYPICAL CASEWORK DETAILS ON THIS SHEET FOR PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS. THESE MAY BE DEVIATIONS FROM AWI STANDARD.
- G. REFER TO PROJECT MANUAL/SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PLASTIC LAMINATE AND STAINLESS STEEL CABINETS.
- H. IF DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT, PROVIDE MORE STRICT OR MORE EXPENSIVE OPTION.
- I. FILLERS TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER.
- J. ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER. UNLESS NOTED OTHERWISE.

INTERIOR ELEVATION KEYNOTES

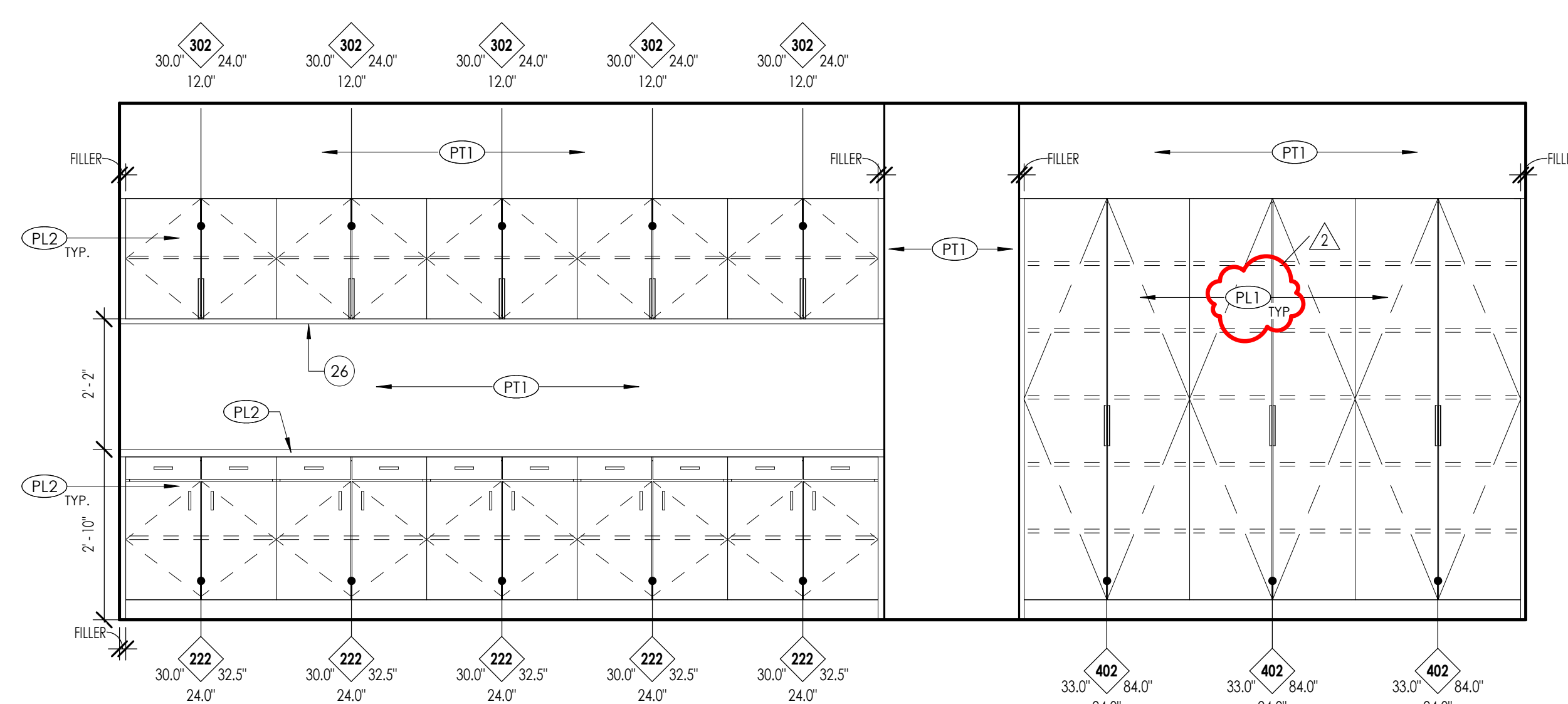
- 1. PULL OUT TRASH/RECYCLING DRAWER. BASIS OF DESIGN: REV-A-SHELF / SSWC-2150SCM-217 / 30 QUART DOUBLE TRASH PULL-OUT WASTE CONTAINER. PROVIDE INTEGRATED DRAWER FRONT TO MATCH ADJACENT MILLWORK.
- 2. LEVEL 4 DRYWALL FINISH BETWEEN ALL RIBS.
- 3. LEVEL 5 DRYWALL FINISH.
- 4. COUNTERTOP GROMMET. BASIS OF DESIGN: MCKEET / EDP3 - 2 1/2" FLIP-TOP GROMMET SET. CONTRACTOR TO SUPPLY FINISHES TO ARCHITECT FOR REVIEW.
- 5. BRASS BAR FOOT RAIL. MINIMUM RAIL DIAMETER TO BE 1-1/2" WITH WALL MOUNTED BRACKETS SPACED MAX 4'-0" O.C. AND NO MORE THAN 6" FROM THE ENDS.
- 6. LOCKABLE CABINET.
- 7. SEE ENLARGED PLAN FOR EXTENT OF FINISH (WD1).
- 8. CURVED DRYWALL CEILING ON COLD FORMED METAL FRAMING. PROVIDE DRYWALL THICKNESS AND BULLNOSES AS REQUIRED TO ACHIEVE INDICATED RADIUS.
- 9. 3/4" WHITE OAK VENEERED PLYWOOD OVER 3/4" PARTICLE BOARD SUBSTRATE.
- 10. ACOUSTICAL FABRIC WRAPPED PANEL BETWEEN EACH RIB OR WOOD FRAME. REFER TO ELEVATION FOR FINISH.
- 11. DROP LEAF COUNTER. BASIS OF DESIGN: KNAPE AND VOGT 16" ADJUSTABLE FOLDING L-SHELF BRACKET. BRACKETS MUST BE FASTENED TO 2X4 WOOD STUD ON 16" CENTERS.
- 12. SOLID SURFACE SS1 AT TOP AND LOWER COUNTER AND RECESSED BACK PANEL. SEE MILLWORK SECTION FOR DETAIL.
- 13. DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO MEP DRAWINGS.
- 14. SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- 15. SIGN. PROVIDE ADDITIONAL BLOCKING. BASIS OF DESIGN: METAL LETTING IN DARK BRONZE FINISH. ON 1" STANDOFFS, TEXT HEIGHT: 3". TEXT STYLE TO BE DETERMINED. COORDINATE WITH OWNER AND ARCHITECT.
- 16. PROVIDE BLOCKING AS REQUIRED.
- 17. WALL COVERING RIBS. REFER TO DETAIL 04/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 18. WALL COVERING RIBS. REFER TO DETAIL 03/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- 19. CEILING TO RECEIVE ACCENT PAINT.
- 20. STEEL COLUMN PAINTED (PT1). REFER TO STRUCTURAL DRAWINGS.
- 21. LEGS. ALIGN WITH WINDOW MULLION BEYOND. TYPICAL ALONG LENGTH OF COUNTERTOP. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- 22. UNDER DESK POWER DOCK. ALIGN WITH LEG. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- 23. DRYWALL REVEAL. BASIS OF DESIGN: FRY REGLET / DRYWALL REVEAL MOLDING / 5/8" D X 1" W / DRM-625-100. FINISH: POWDER COAT. WHITE.
- 24. REVEAL BETWEEN ACOUSTIC PANELS. 1" W. DRYWALL BEYOND TO BE PAINTED TO MATCH PANEL. REFER TO DETAIL 1/A601C.
- 25. TILE TO TRANSITION AT VINYL FLOOR. REFERENCE 03/A700 FOR TRANSITION DETAIL.
- 26. 1" DARK BRONZE METAL STRIP BEYOND TO HIDE UNDERCABINET LIGHTING. GC TO PROVIDE PHYSICAL SAMPLES FOR ARCHITECT TO APPROVE FINISH.
- 27. REFER TO SHEET A124 FOR INTERIOR GLASS GUARDRAIL DETAILS.
- 28. REFER TO SHEET A124 FOR INTERIOR PICKET RAILING DETAILS.
- 29. REFER TO SHEET A1248 FOR INTERIOR PICKET RAILING ALTERNATE #09 DETAILS.
- 30. RAKKS SURFACE MOUNT SUPPORT BRACKET - SPACE AT 4'-0" MAX.
- 31. BACKSPLASH TO WRAP SIDE WALL AND ALIGN WITH ADJACENT BACKSPLASH.
- 32. DRYWALL CASED OPENING TRANSACTION WINDOW.



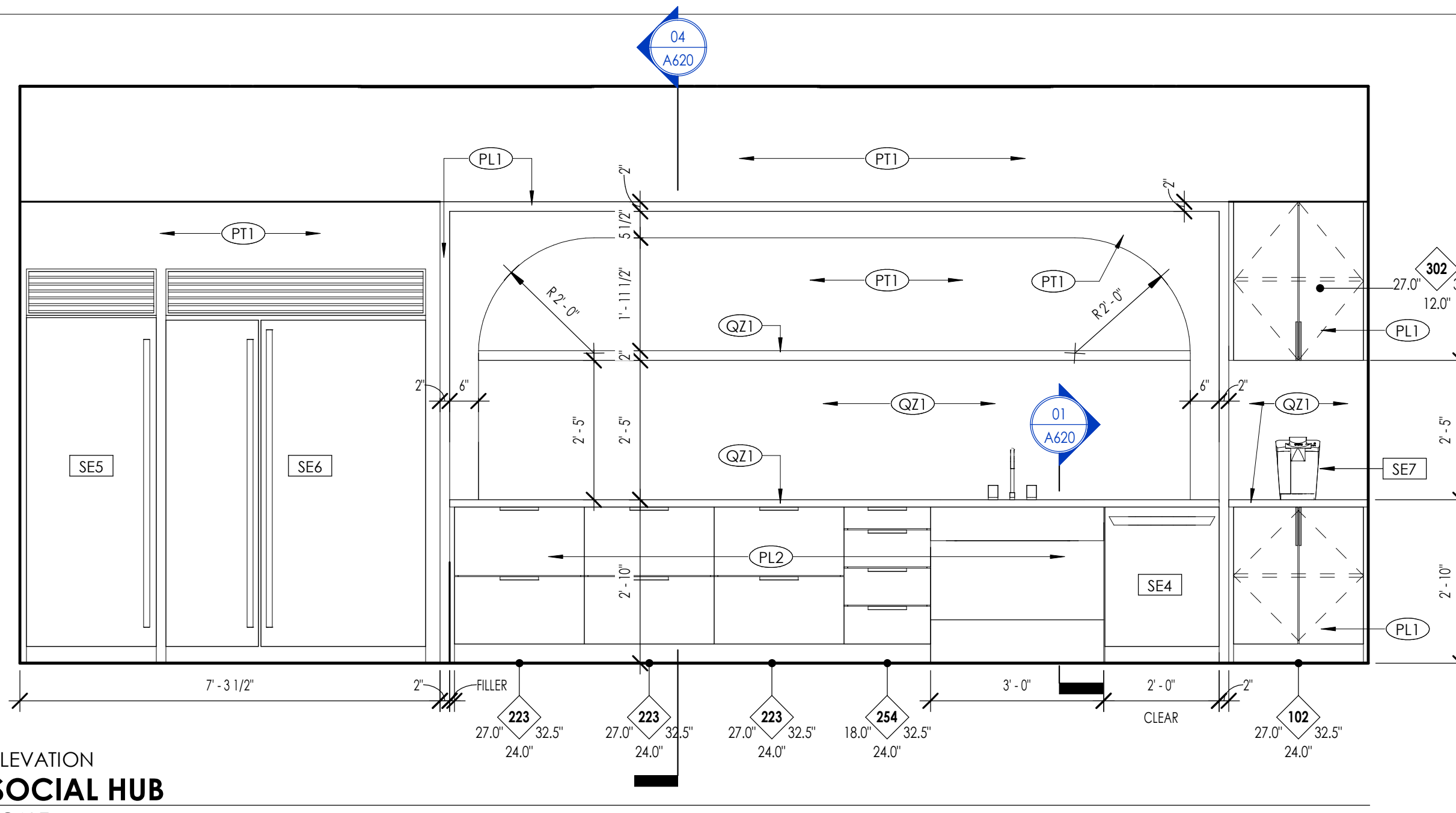
10 DENTAL - CHECK OUT
SCALE: 1/2" = 1'-0"



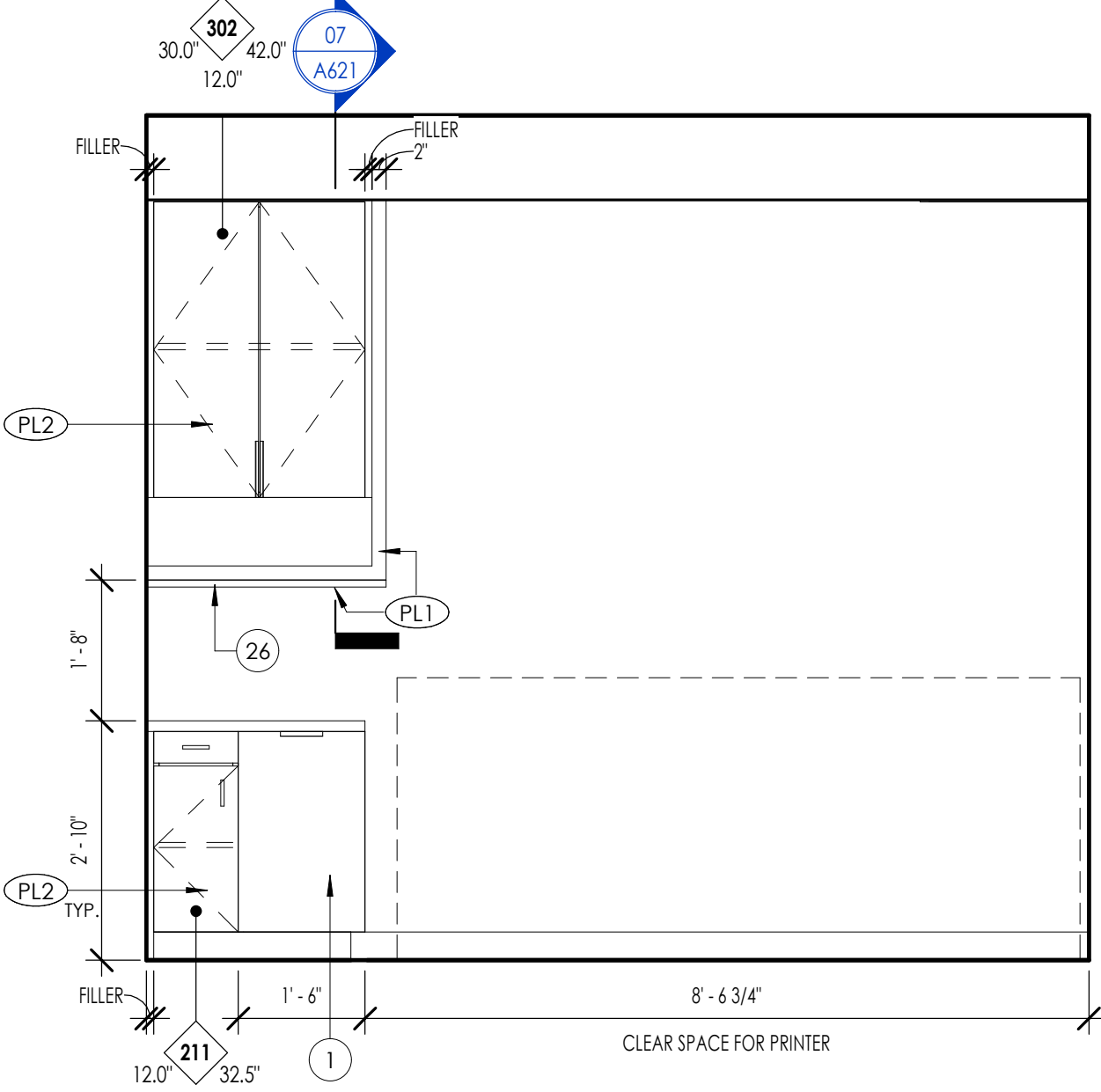
09 ADMIN BEVERAGE BAR
SCALE: 1/2" = 1'-0"



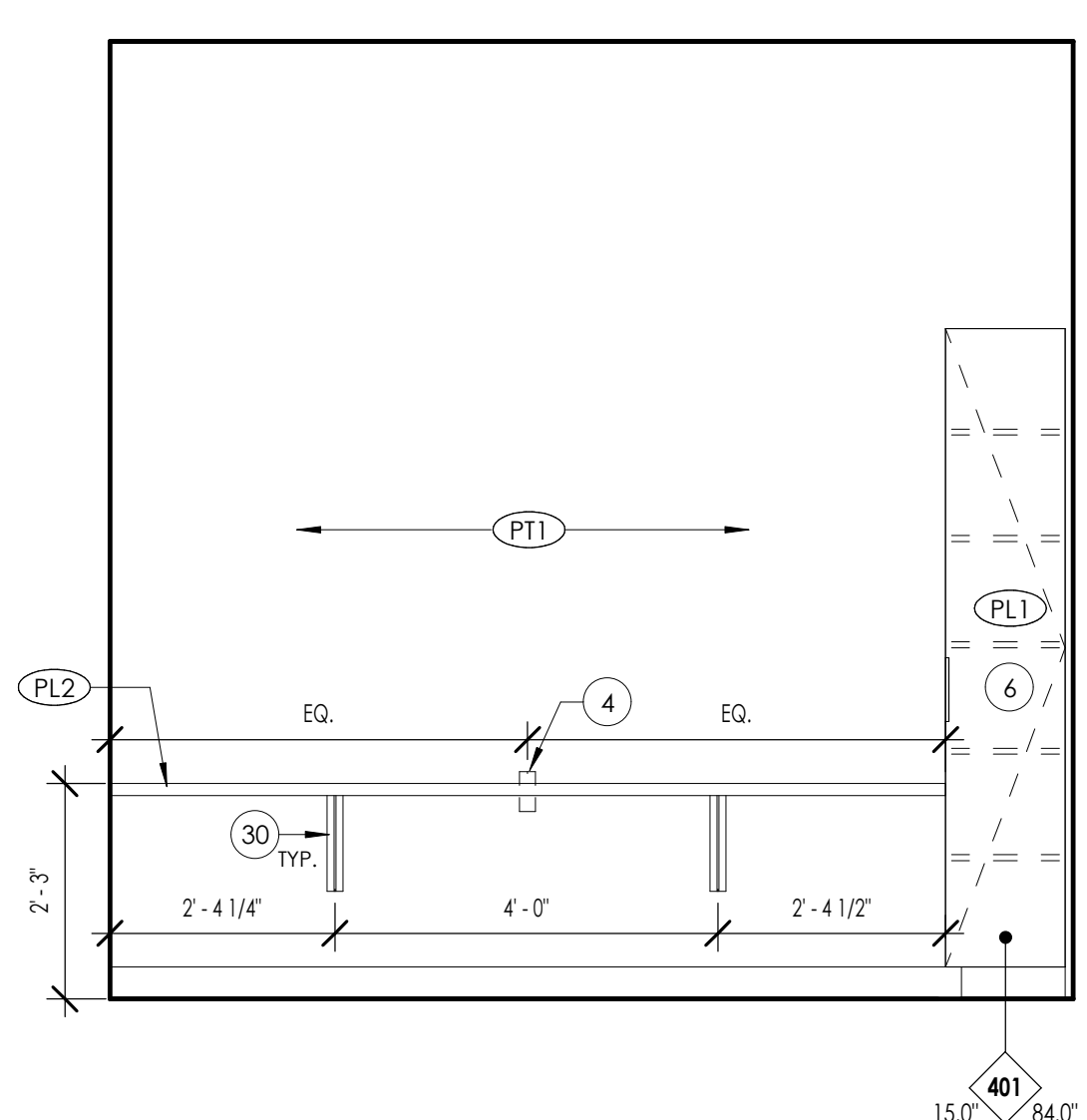
08 DONOR RELATIONS STORAGE
SCALE: 1/2" = 1'-0"



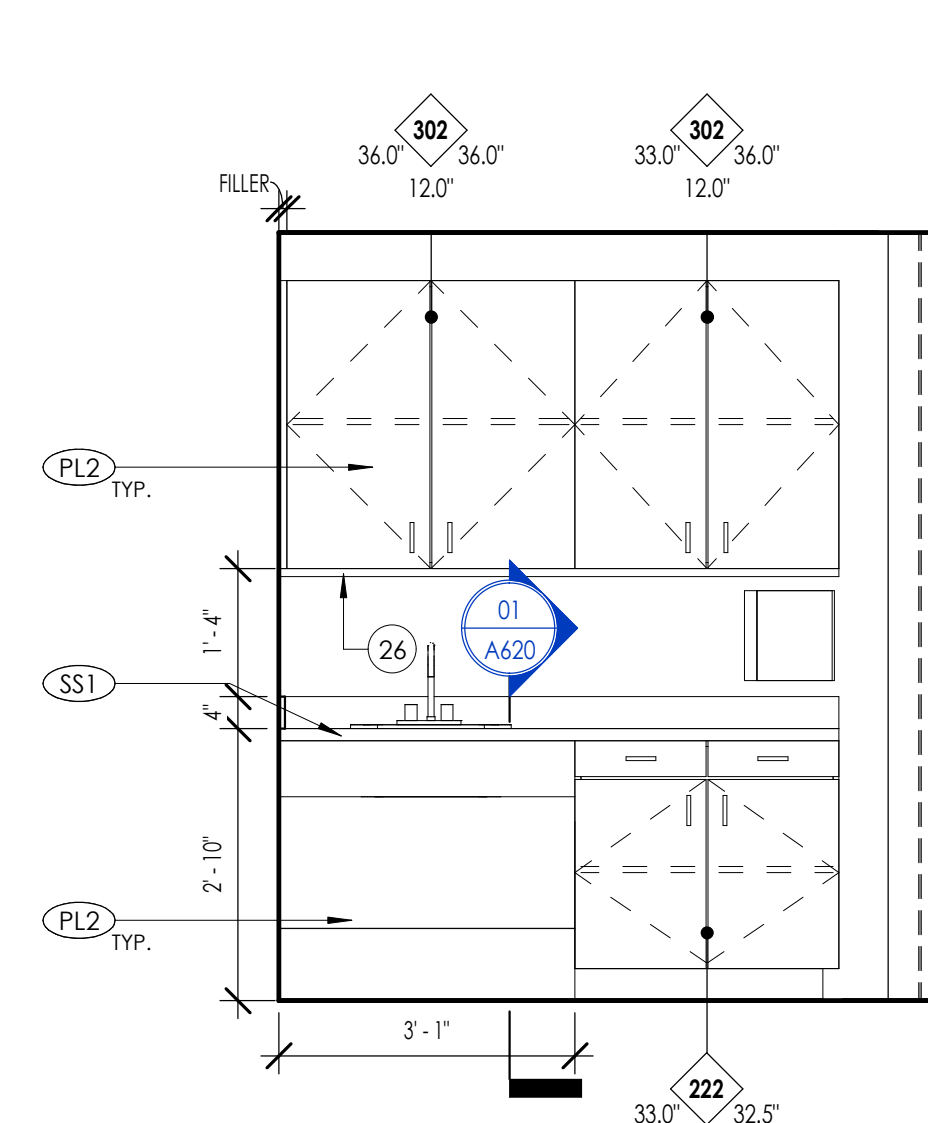
07 SOCIAL HUB
SCALE: 1/2" = 1'-0"



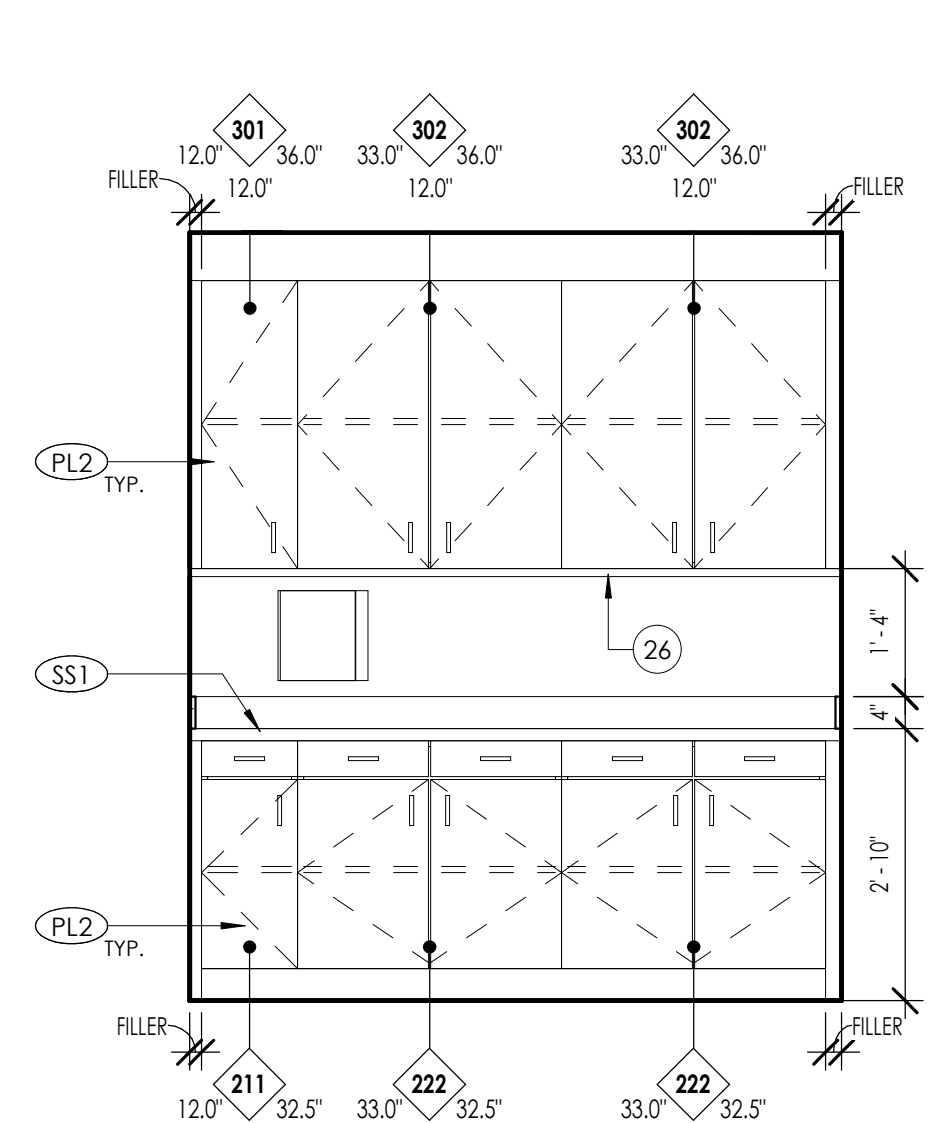
06 DONOR RELATIONS RESOURCE
SCALE: 1/2" = 1'-0"



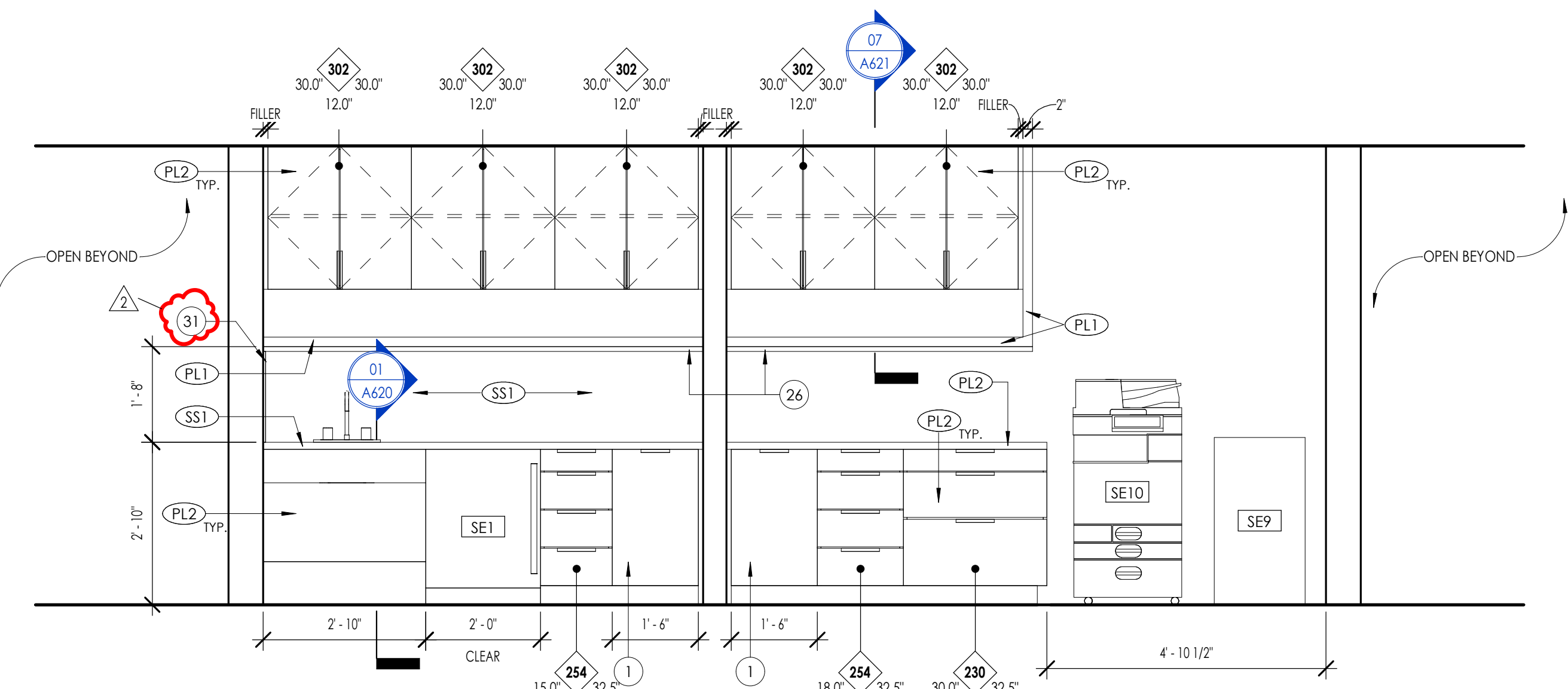
05 SECURITY - NORTH
SCALE: 1/2" = 1'-0"



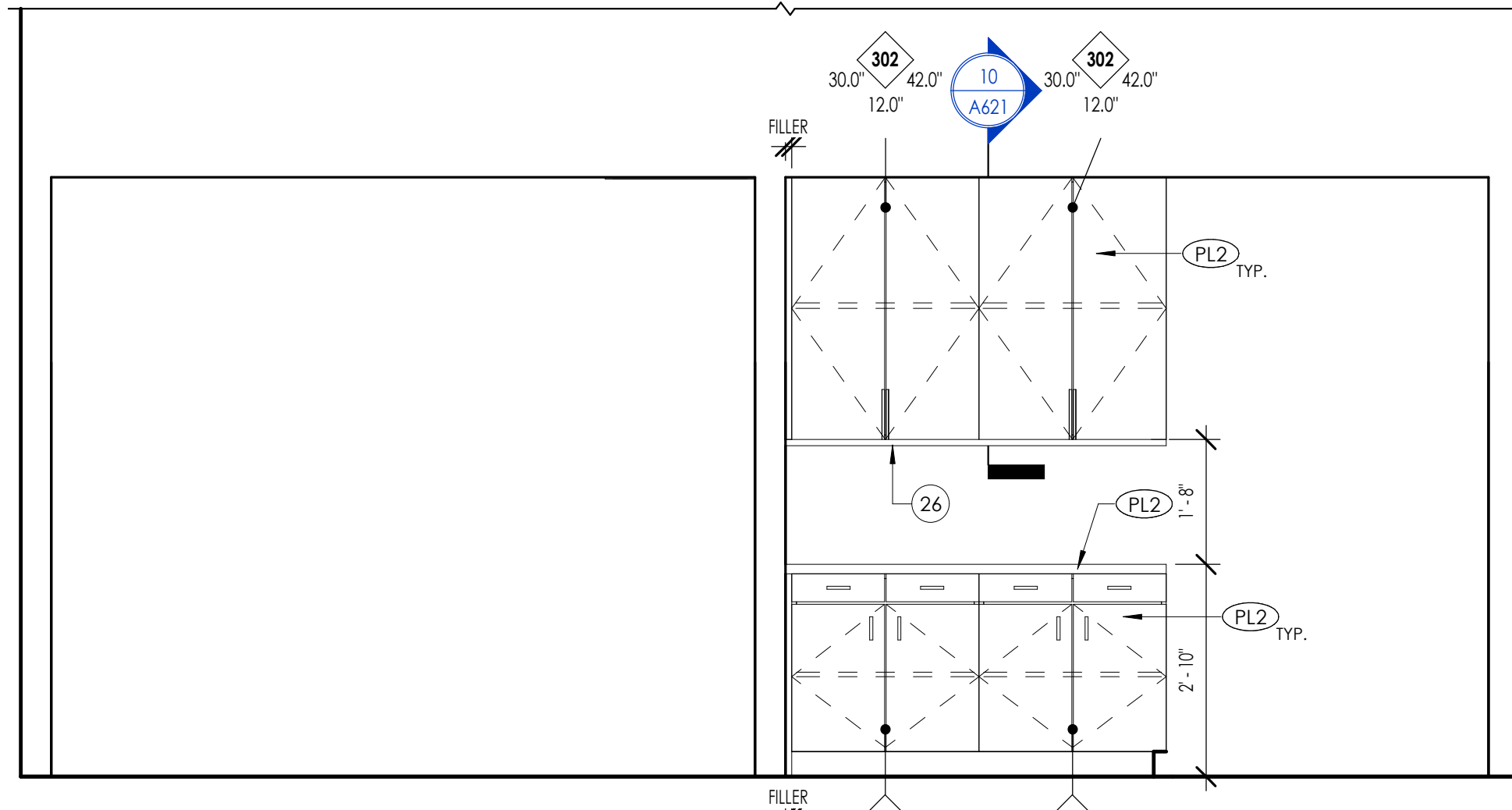
04 LAB 110E - NORTH ELEVATION
SCALE: 1/2" = 1'-0"



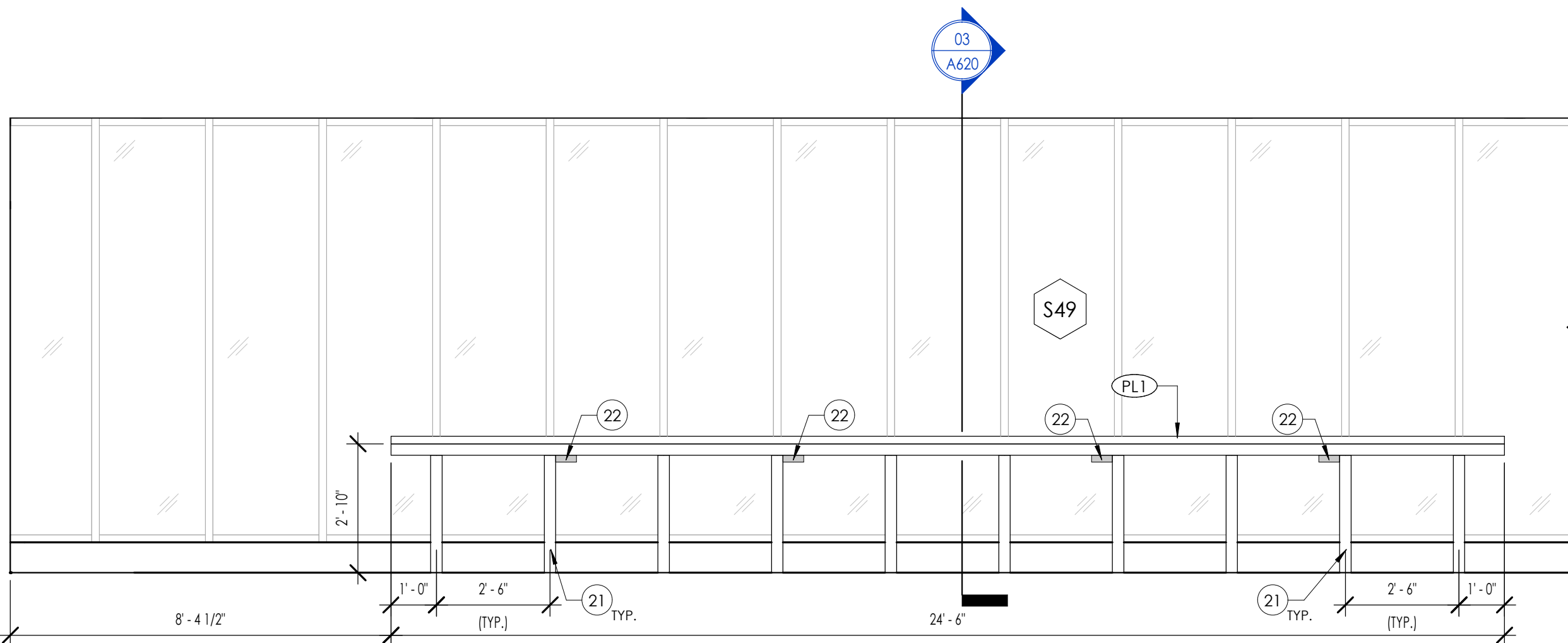
03 LAB 110E - SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



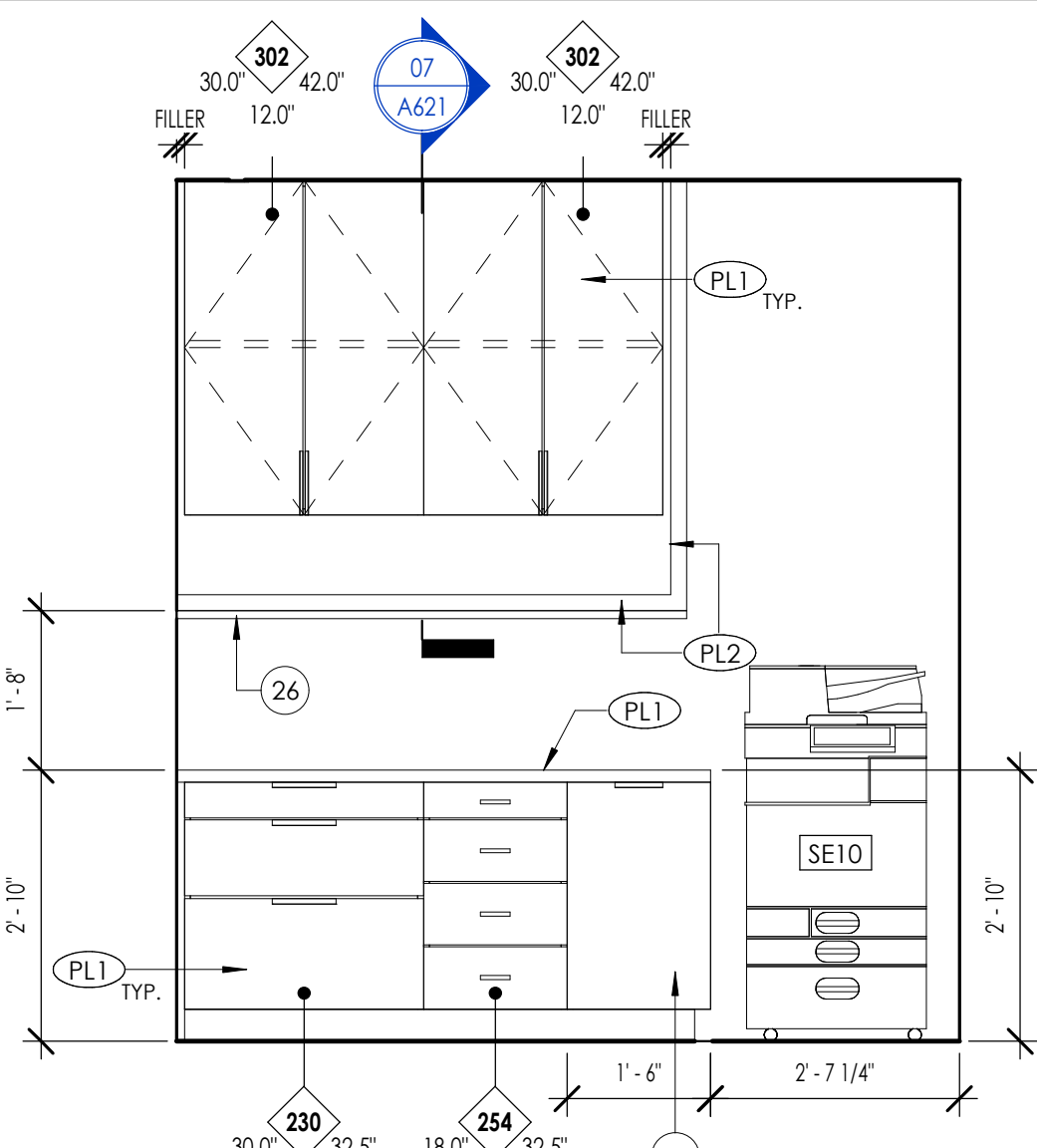
02 TESTING AND PREV. - RESOURCE
SCALE: 1/2" = 1'-0"



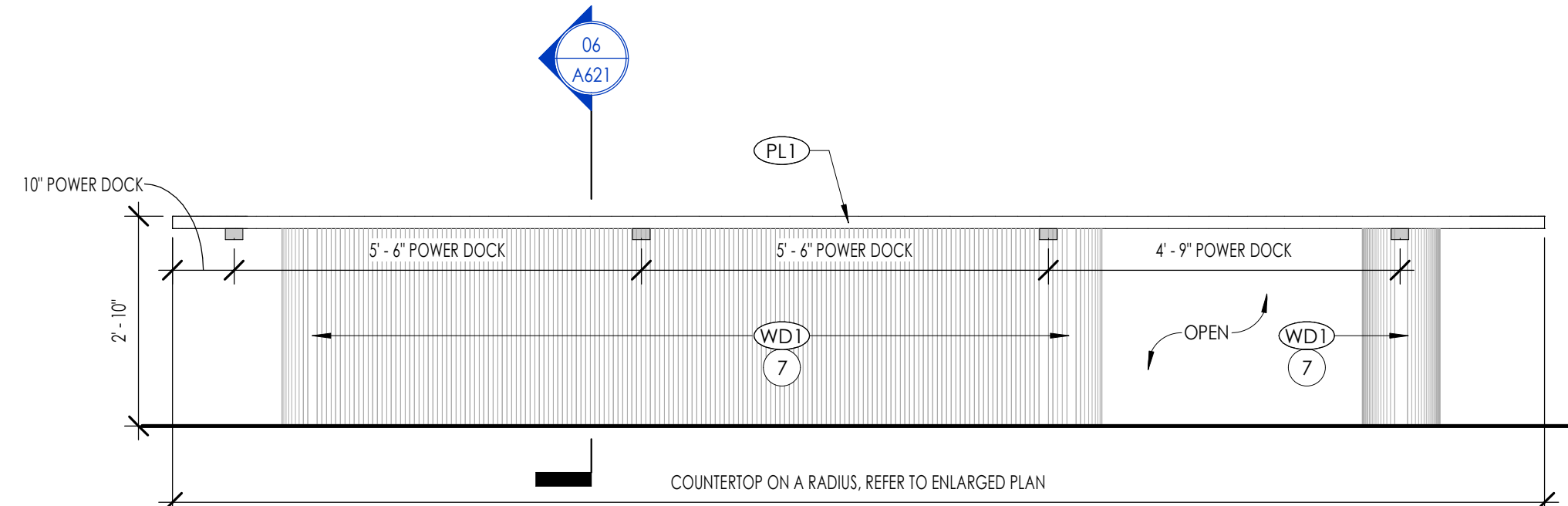
01 VITALS 206C
SCALE: 1/2" = 1'-0"



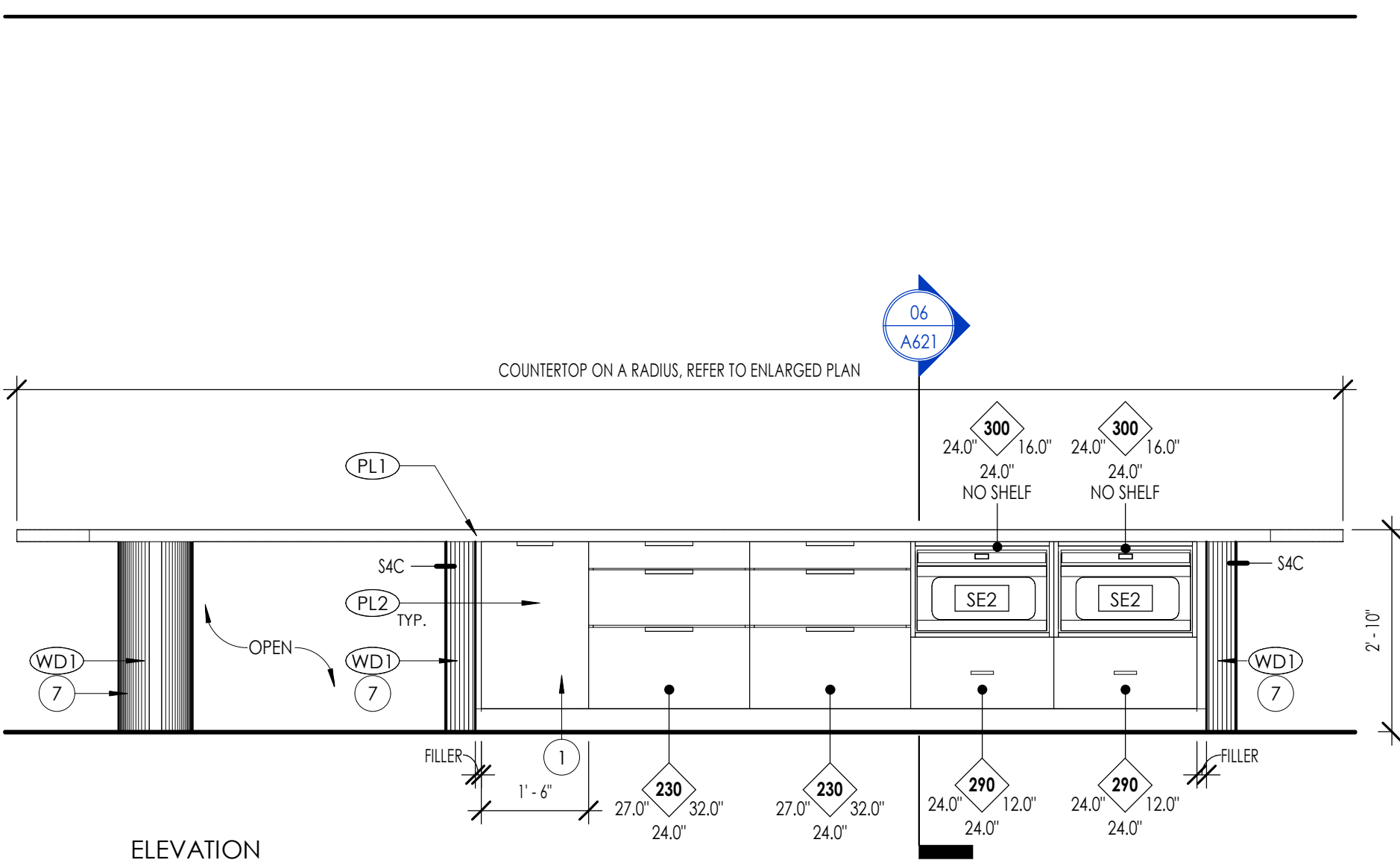
10 ELEVATION
WORK BAR 314C
SCALE: 3/8" = 1'-0"



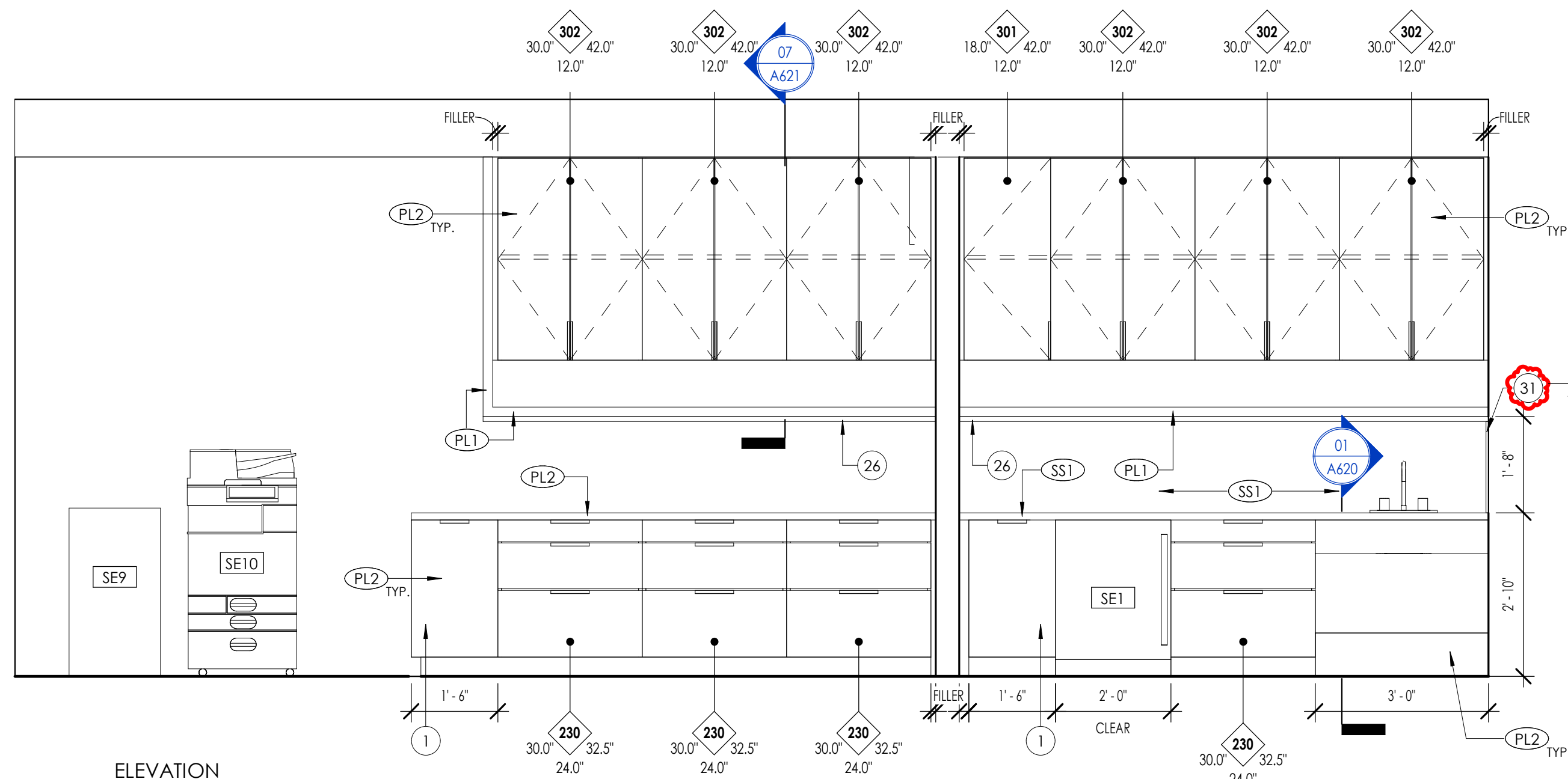
09 ELEVATION
RESOURCE 210H
SCALE: 1/2" = 1'-0"



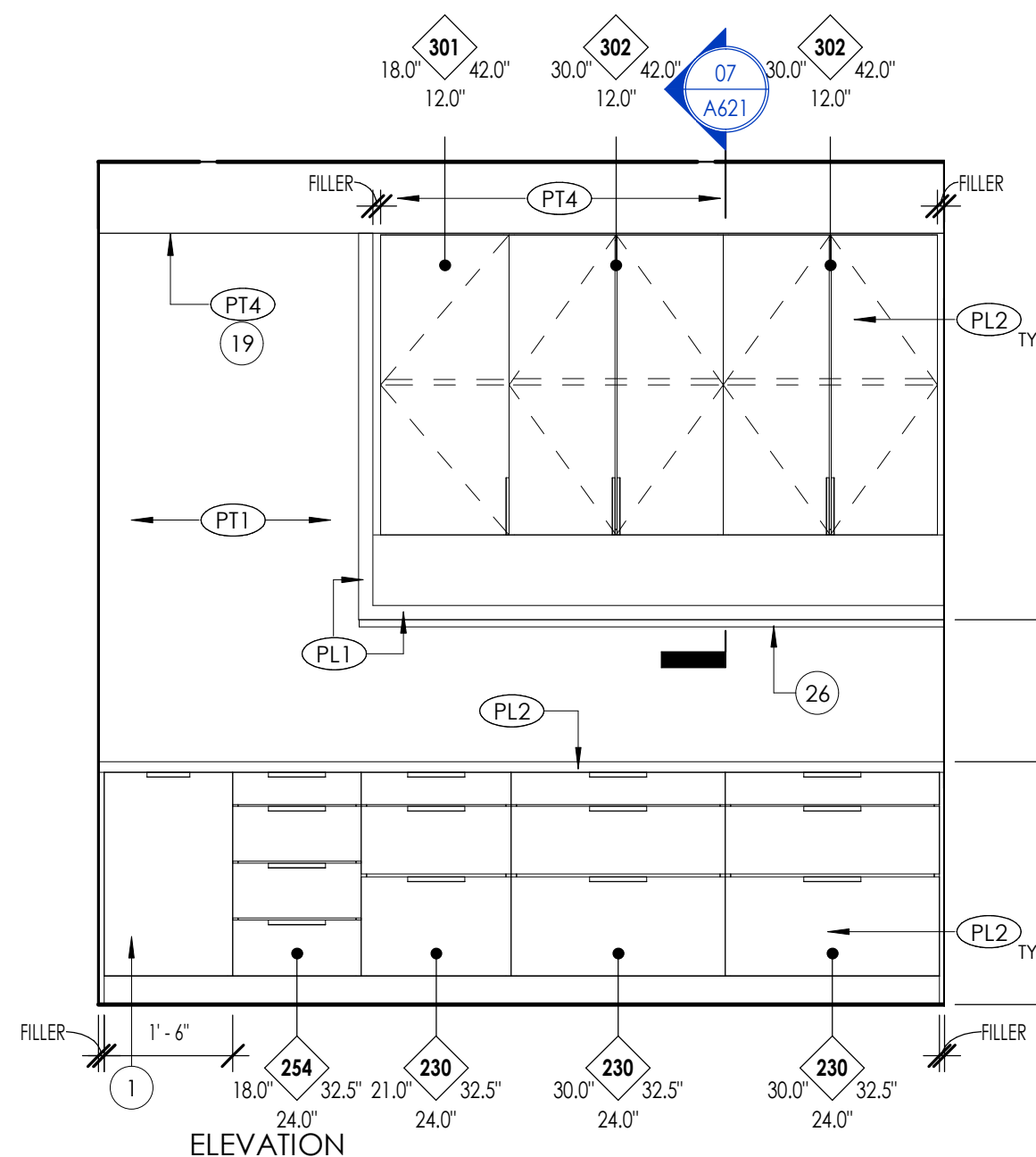
08 ELEVATION
SOCIAL HUB ISLAND 02
SCALE: 1/2" = 1'-0"



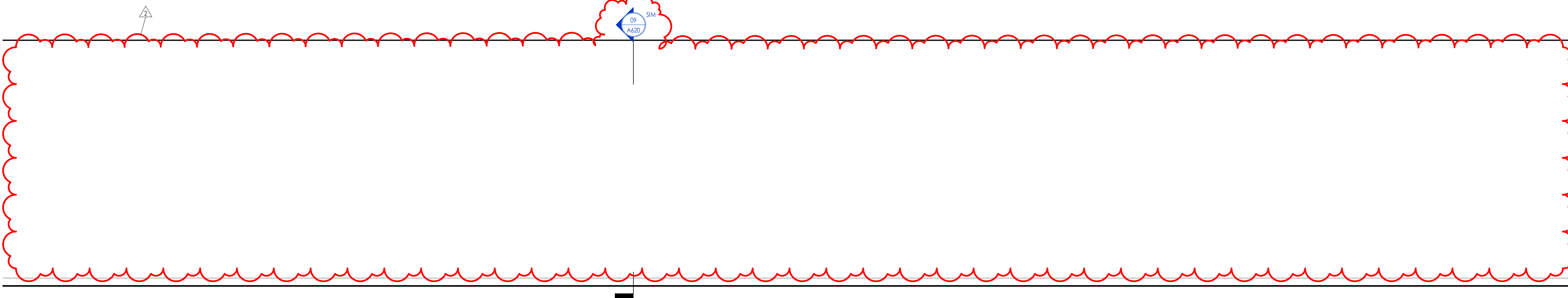
07 ELEVATION
SOCIAL HUB ISLAND 01
SCALE: 1/2" = 1'-0"



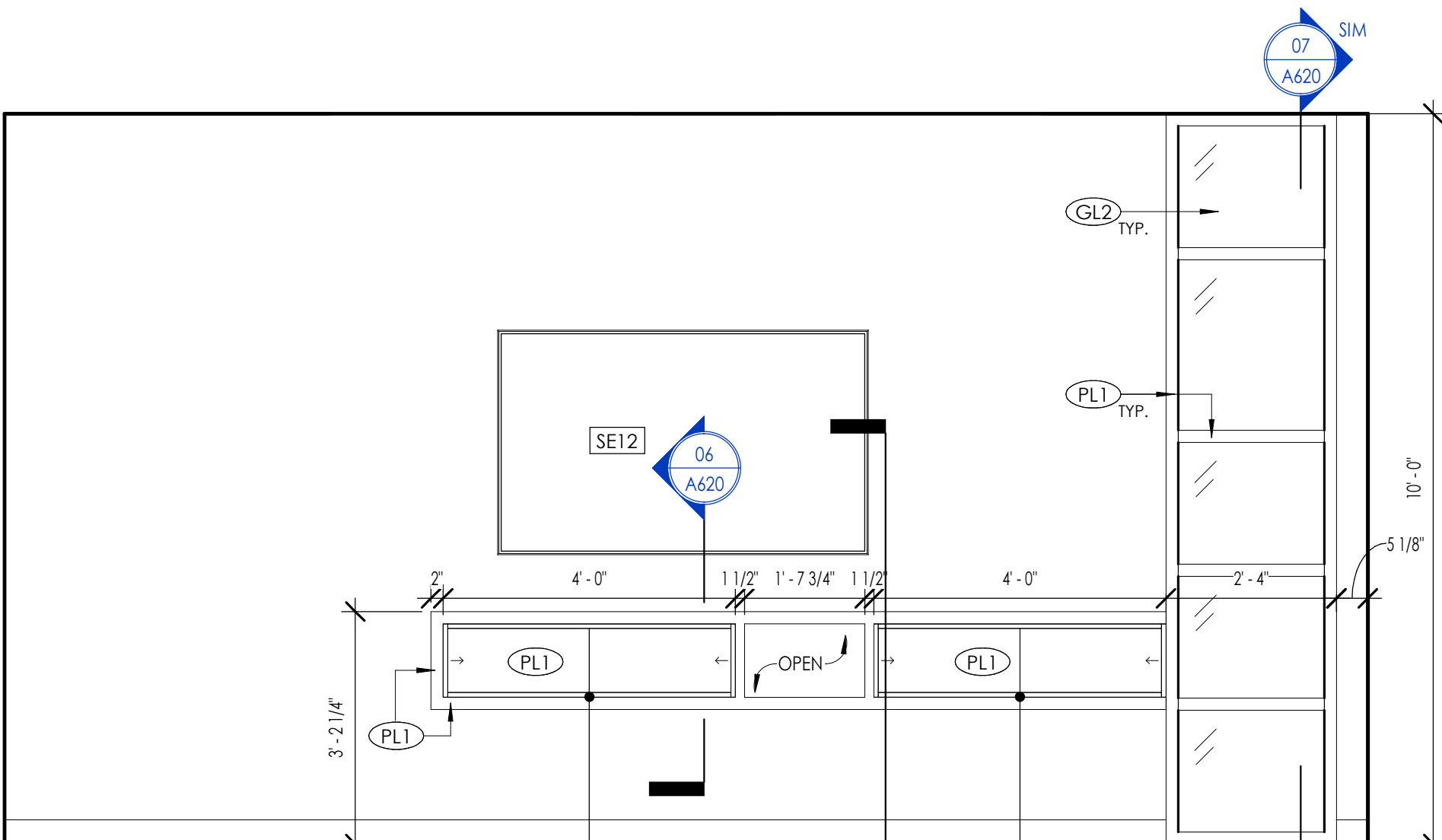
06 ELEVATION
RESOURCE 314C
SCALE: 1/2" = 1'-0"



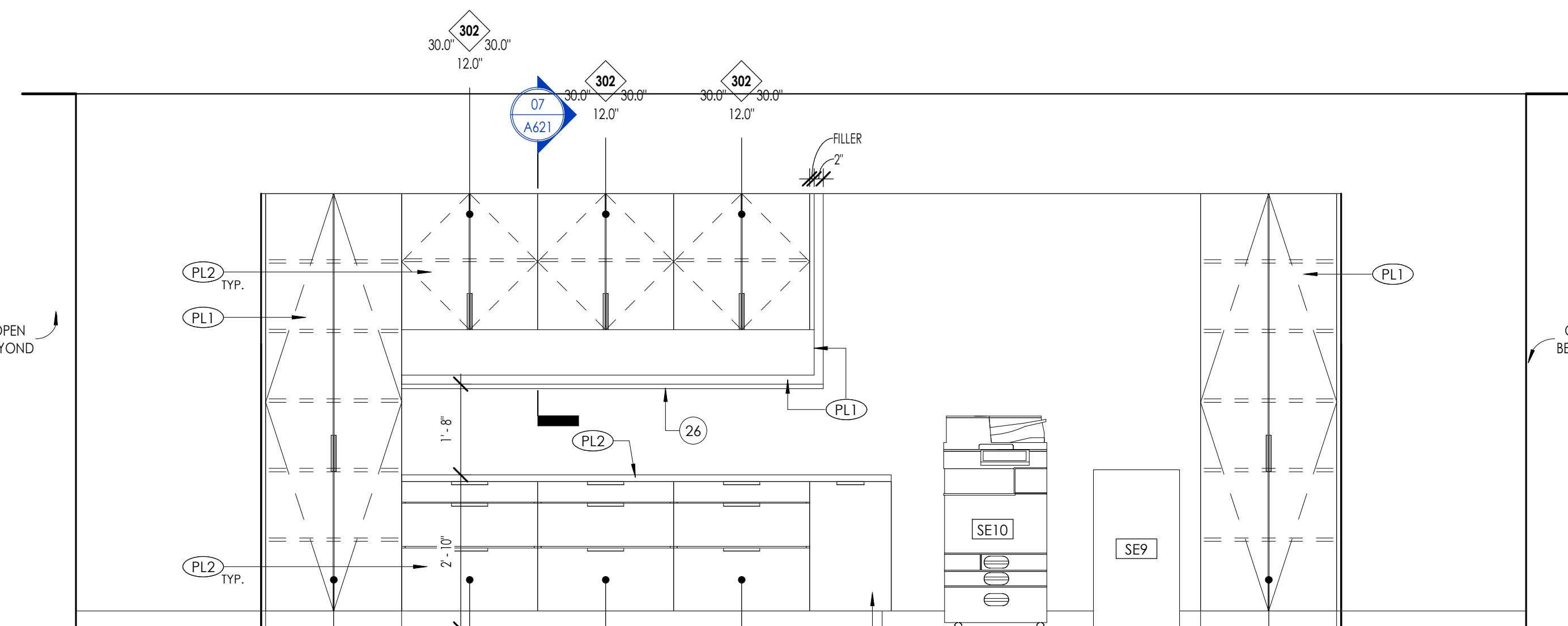
05 ELEVATION
RESOURCE 310C
SCALE: 1/2" = 1'-0"



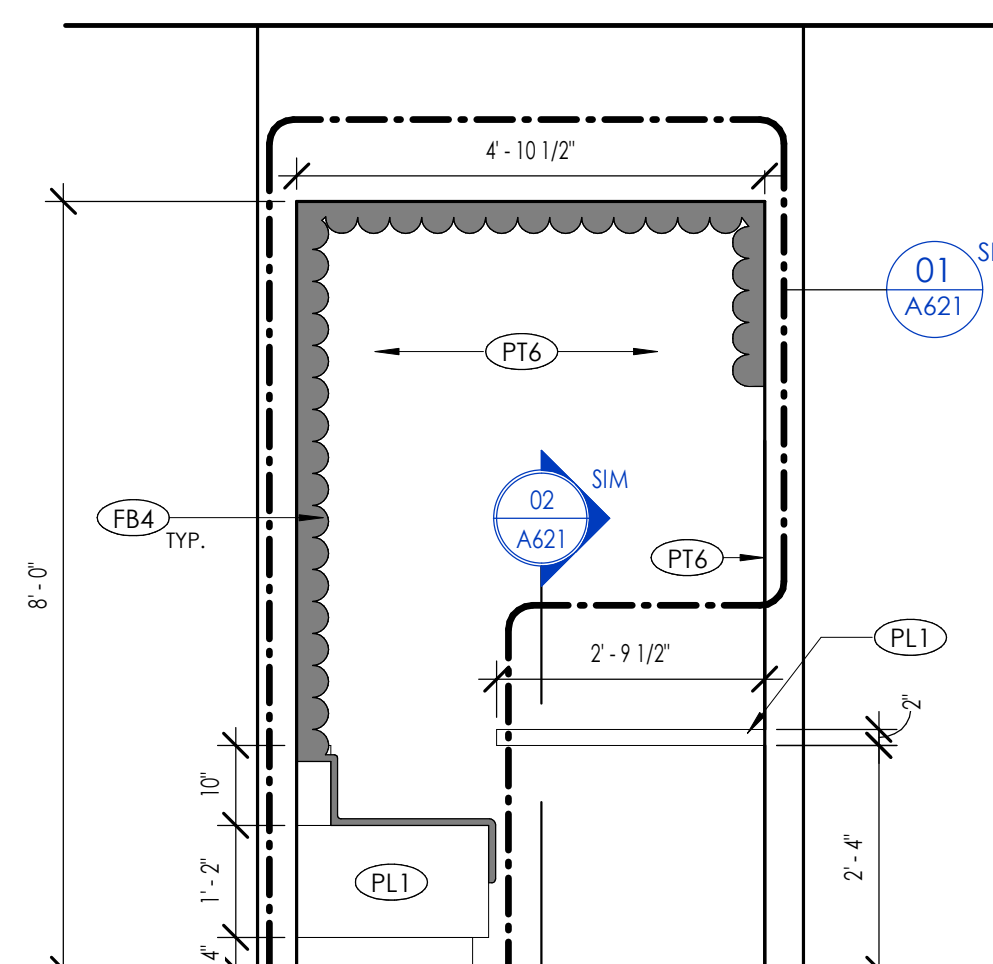
04 ELEVATION
MAIN STREET CORRIDOR THIRD FLOOR
SCALE: 1/2" = 1'-0"



03 ELEVATION
BOARD ROOM
SCALE: 1/2" = 1'-0"



02 ELEVATION
THIRD FLOOR CORRIDOR
SCALE: 1/2" = 1'-0"



01 ELEVATION
FOCUS BOOTH 308C
SCALE: 1/2" = 1'-0"

GENERAL INTERIOR ELEVATION NOTES

- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.

- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED MISC., STEEL LINTELS, PLATES, ANGLES, ETC. UNLESS NOTED OTHERWISE.

- CEILINGS / WALLS:**
- ALL WALLS TO BE PAINTED **PT1**, UNLESS NOTED OTHERWISE.
 - ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**, UNLESS NOTED OTHERWISE.
 - ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL **4** FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.

- BASE:**
- ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.

- MILLWORK:**
- CAULK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.

- FURNITURE / EQUIPMENT:**
- REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - REFER TO A001 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

SPECIALTY EQUIPMENT TAG
MARK → [S800]

PLUMBING ACCESSORY TAG
MARK → [T0]

FINISH TAG
(DENOTES DIFFERENT FINISH LOCATION)

ARROWS INDICATES EXTENT OF FINISH
INDICATES FINISH MATERIAL

MILLWORK LEGEND

- REFER TO SHEET A620, FOR TYPICAL PLASTIC LAMINATE AWI CABINET DETAIL.
- COORDINATE AND PROVIDE BACKINGS FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
- PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MACH MILLWORK ADJACENT.
- MILLWORK IS BASED ON AWI ARCHITECTURAL WOODWORK STANDARDS 2009 EDITION.
- DESIGN DRAWINGS ARE BASED ON CDS (CABINET DESIGN SERIES) NUMBERS. REFER TO CABINET TAG BELOW FOR DESCRIPTION.
- REFER TO TYPICAL CASEWORK DETAILS ON THIS SHEET FOR PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS. THESE MAY BE DEVIATIONS FROM AWI STANDARD.
- REFER TO PROJECT MANUAL/SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PLASTIC LAMINATE AND STAINLESS STEEL CABINETS.
- IF DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT, PROVIDE MORE STRICT OR MORE EXPENSIVE OPTION.
- FILLERS TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER.
- ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.

INTERIOR ELEVATION KEYNOTES

- PULL OUT TRASH/RECYCLING DRAWER. BASIS OF DESIGN: REV-A-SHELF / S3WC-2155DCM-217 / 50 QUART DOUBLE TRASH PULL-OUT WASTE CONTAINER. PROVIDE INTEGRATED DRAWER FRONT TO MATCH ADJACENT MILLWORK.
- LEVEL 4 DRYWALL FINISH BETWEEN ALL RIBS.
- LEVEL 5 DRYWALL FINISH.
- COUNTERTOP GROMMET. BASIS OF DESIGN: MCKEY / EPF3 - 2 1/2" FLIP-TOP GROMMET SET. CONTRACTOR TO SUPPLY FINISHES TO ARCHITECT FOR REVIEW.
- BRASS BAR FOOT RAIL. MINIMUM RAIL DIAMETER TO BE 1-1/2" WITH WALL MOUNTED BRACKETS SPACED MAX 4'-0" O.C. AND NO MORE THAN 6" FROM THE ENDS.
- LOCKABLE CABINET.
- SEE ENLARGED PLAN FOR EXTENT OF FINISH (WD1).
- CURVED DRYWALL CEILING ON COLD FORMED METAL FRAMING. PROVIDE DRYWALL THICKNESS AND BULLNOSES AS REQUIRED TO ACHIEVE INDICATED RADIUS.
- 3/4" WHITE OAK VENEERED PLYWOOD OVER 3/4" PARTICLE BOARD SUBSTRATE.
- ACOUSTICAL FABRIC WRAPPED PANEL BETWEEN EACH RIB OR WOOD FRAME. REFER TO ELEVATION FOR FINISH.
- DROP LEAF COUNTER. BASIS OF DESIGN: KNAPE AND VOGT 16" ADJUSTABLE FOLDING L-SHELF BRACKET. BRACKETS MUST BE FASTENED TO 2X4 WOOD STUD ON 16" CENTERS.
- SOLID SURFACE SS1 AT TOP AND LOWER COUNTER AND RECESSED BACK PANEL. SEE MILLWORK SECTION FOR DETAIL.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO MEP DRAWINGS.
- SEM-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- SIGN. PROVIDE ADDITIONAL BLOCKING. BASIS OF DESIGN: METAL LETTING IN DARK BRONZE FINISH. ON 1" STANDOFFS, TEXT HEIGHT: 3". TEXT STYLE TO BE DETERMINED. COORDINATE WITH OWNER AND ARCHITECT.
- PROVIDE BLOCKING AS REQUIRED.
- WALL COVERING RIBS. REFER TO DETAIL 03/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- WALL COVERING RIBS. REFER TO DETAIL 03/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- CEILING TO RECEIVE ACCENT PAINT.
- STEEL COLUMN PAINTED (PT1). REFER TO STRUCTURAL DRAWINGS.
- LEGS. ALIGN WITH WINDOW MULLION BEYOND. TYPICAL ALONG LENGTH OF COUNTERTOP. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- UNDER DESK POWER DOCK. ALIGN WITH LEG. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- DRYWALL REVEAL. BASIS OF DESIGN: FRY REGLET / DRYWALL REVEAL MOLDING / 5/8" DEEP X 1" W / DR-625-100. FINISH: POWDER COAT. WHITE.
- REVEAL BETWEEN ACOUSTIC PANELS. 1" W. DRYWALL BEHIND TO BE PAINTED TO MATCH PANEL. REFER TO DETAIL 1/A601C.
- TILE TO TRANSITION AT VINYL FLOOR. REFERENCE 03/A700 FOR TRANSITION DETAIL.
- 1" DARK BRONZE METAL STRIP BEYOND TO HIDE UNDERCABINET LIGHTING. GC TO PROVIDE PHYSICAL SAMPLES FOR ARCHITECT TO APPROVE FINISH.
- REFER TO SHEET A124 FOR INTERIOR GLASS GUARDRAIL DETAILS.
- REFER TO SHEET A124 FOR INTERIOR PICKET RAILING DETAILS.
- REFER TO SHEET A1248 FOR INTERIOR PICKET RAILING ALTERNATE #09 DETAILS.
- RACKS SURFACE MOUNT SUPPORT BRACKET - SPACE AT 4'-0" MAX.
- BACKSLASH TO WRAP SIDE WALL AND ALIGN WITH ADJACENT BACKSLASH.
- DRYWALL CASED OPENING TRANSACTION WINDOW.

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317/264.8162
axisarch.com

Project Drawings

These drawings include the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily include or describe all work required for full performance and completion of the requirements of the contract. On the basis of the general scope information so described, the trade contractor shall furnish all items required for the proper execution and completion of all work.

DRAWN BY: LJ
CHECKED BY: DS
DATE ISSUED: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #02 10/04/2022

CUSTOMER
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Alexander Avenue
Indianapolis, Indiana 46201
PH 317 344-0123

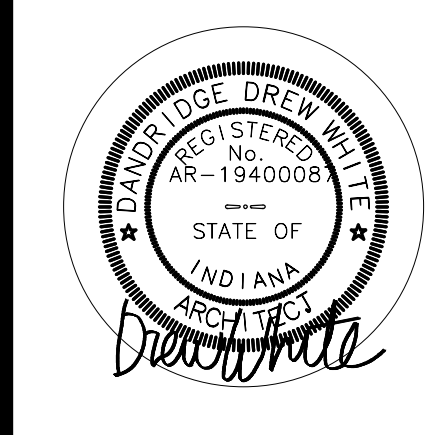
CIVIL ENGINEER
JSC
JANISCHKE FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

STRUCTURAL ENGINEER
JSC
JANISCHKE FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

MEP ENGINEER
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

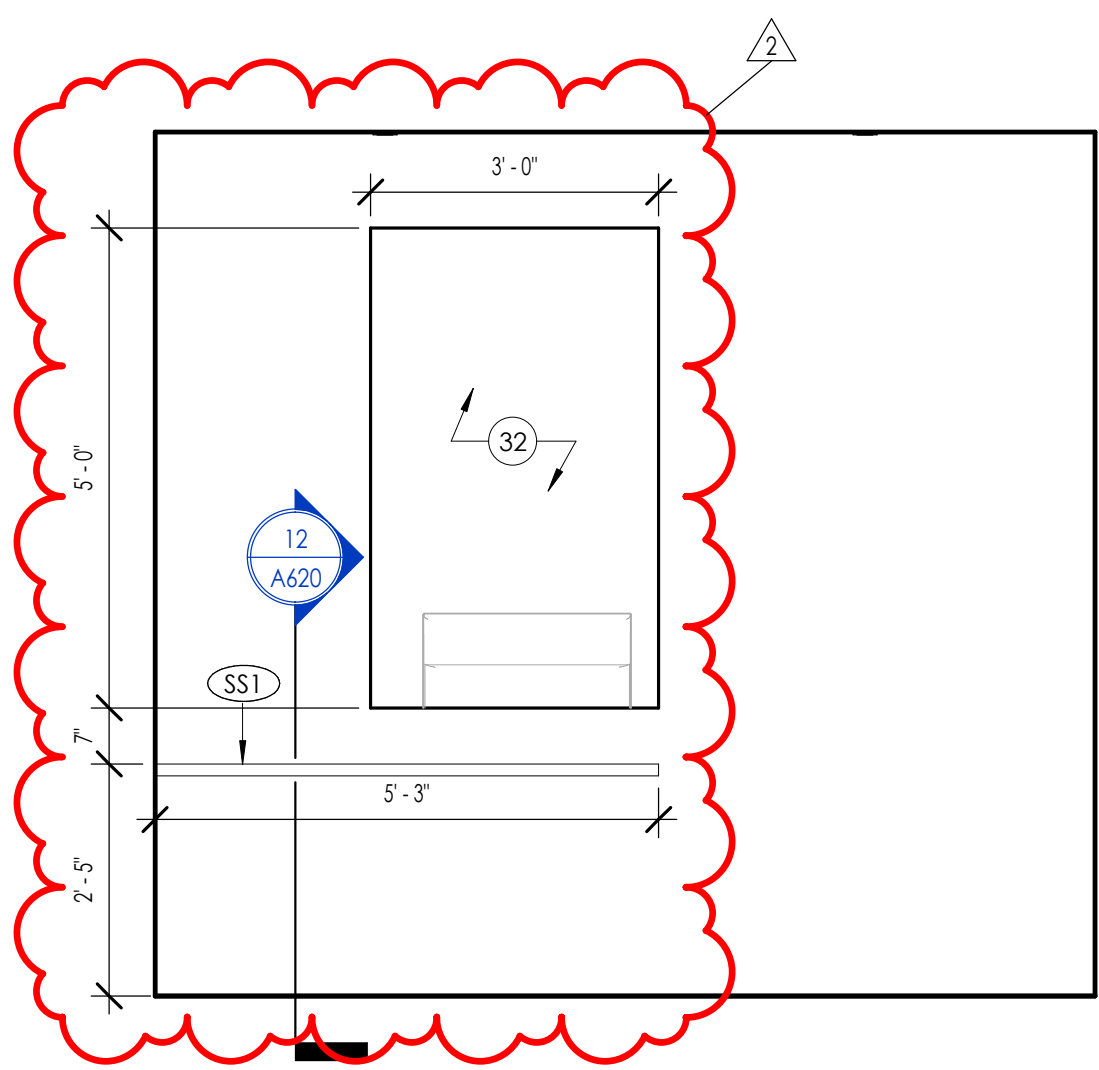
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIS CHEN, P.A., AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

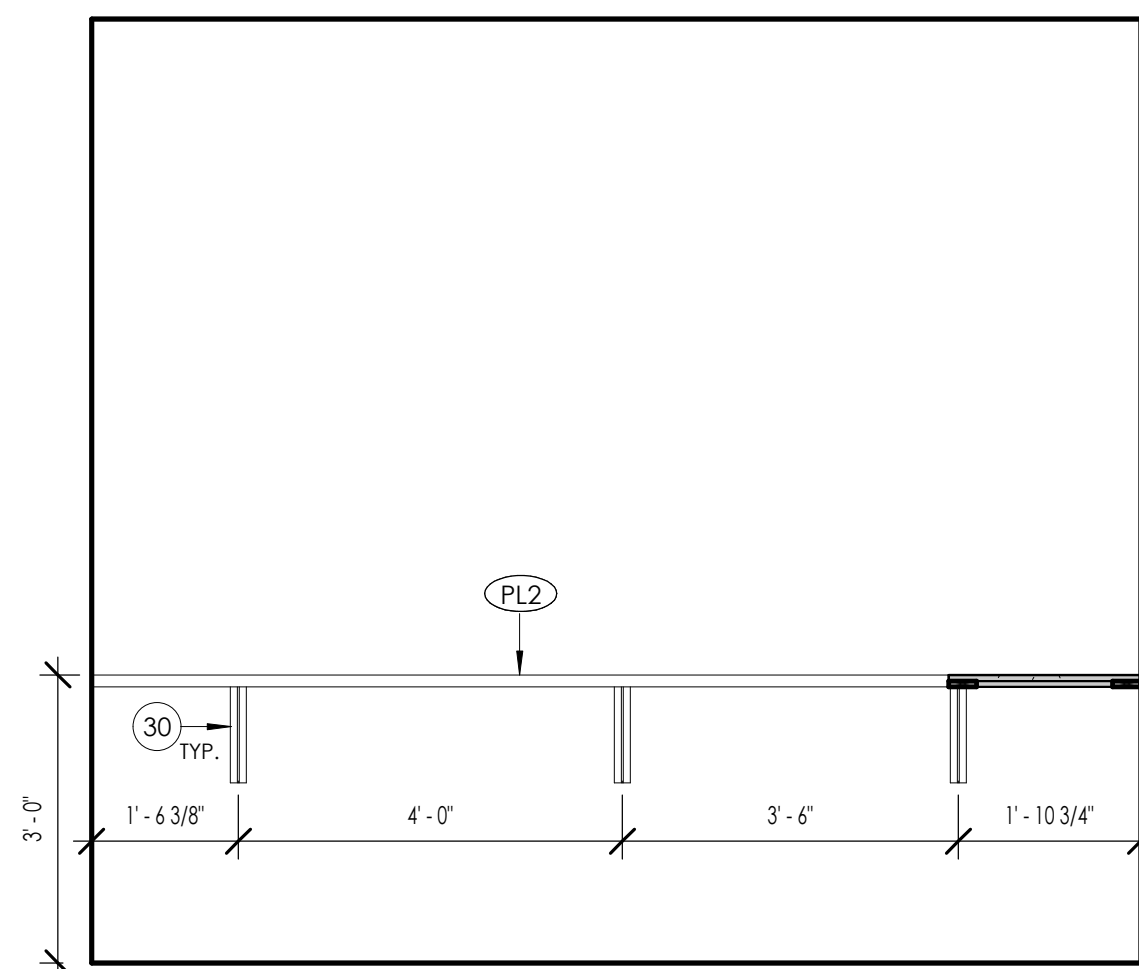


INTERIOR ELEVATIONS

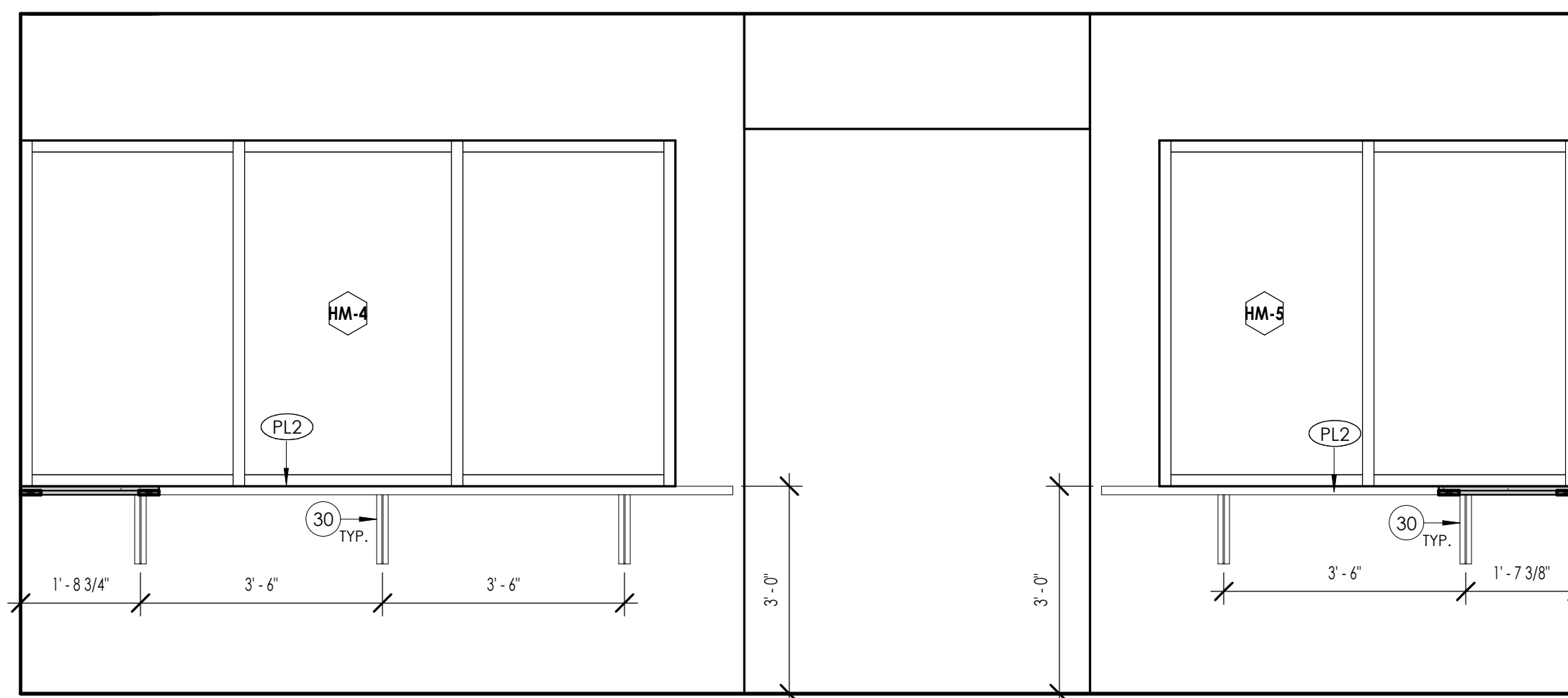
A607
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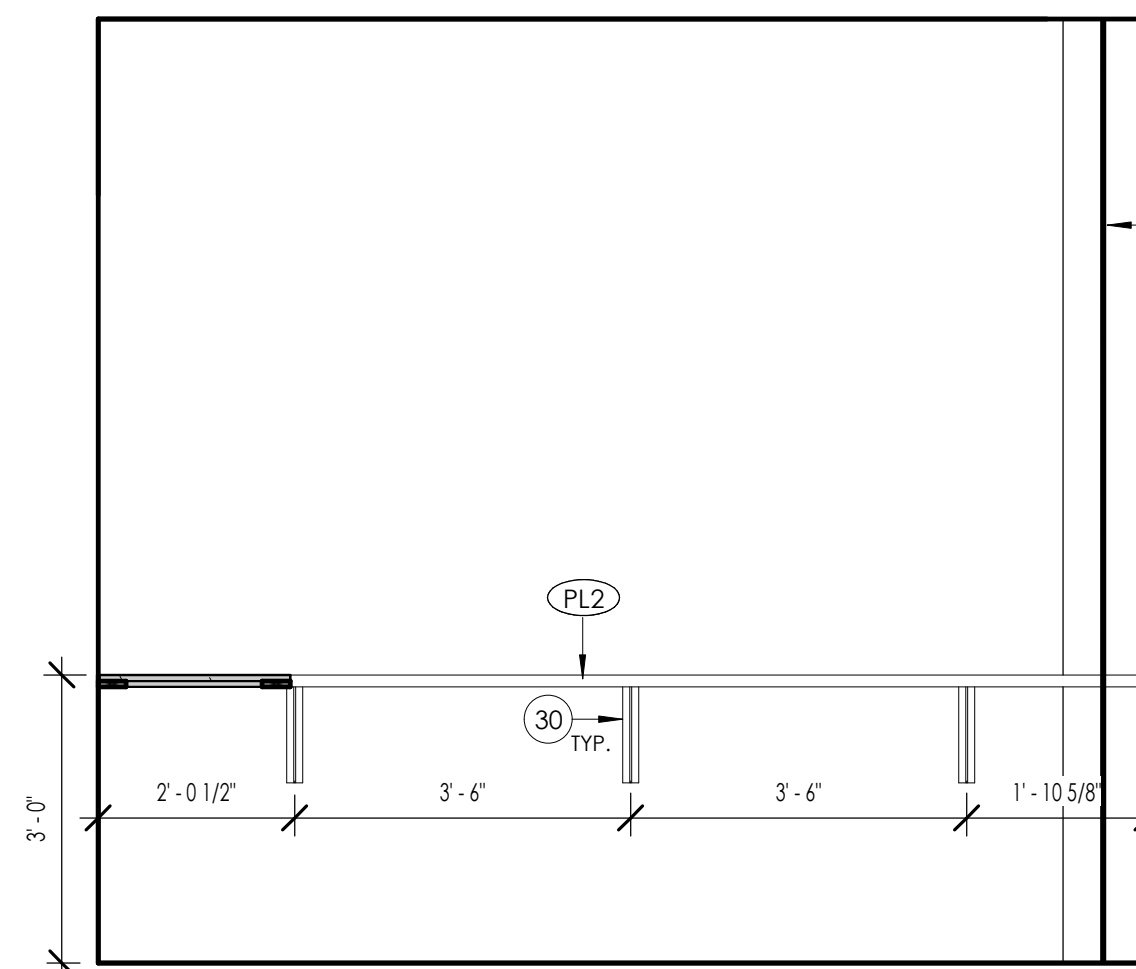
12 ELEVATION
211A - WEST
SCALE: 1/2" = 1'-0"



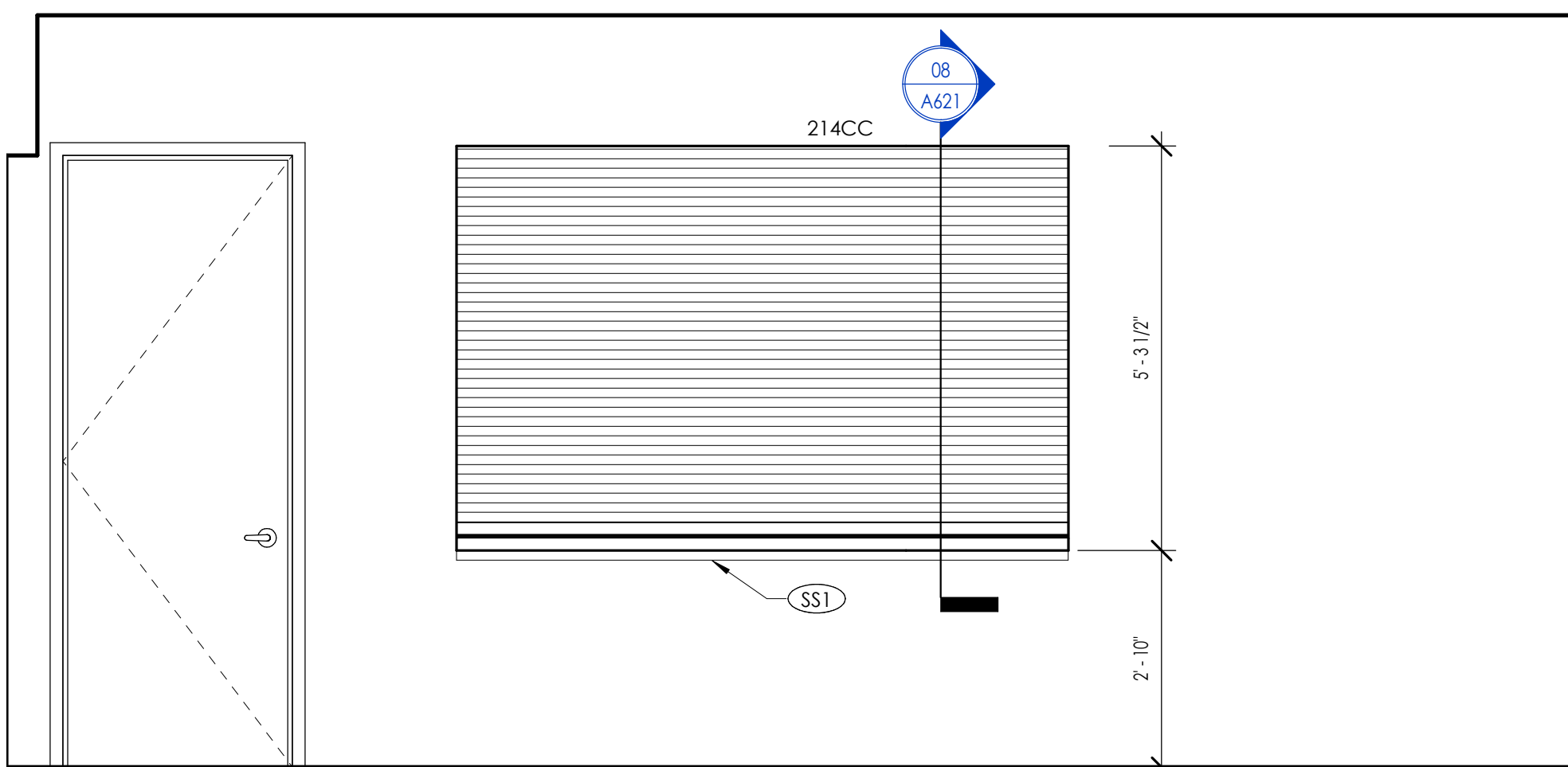
11 ELEVATION
MED. ASSISTANTS - NORTH
SCALE: 1/2" = 1'-0"



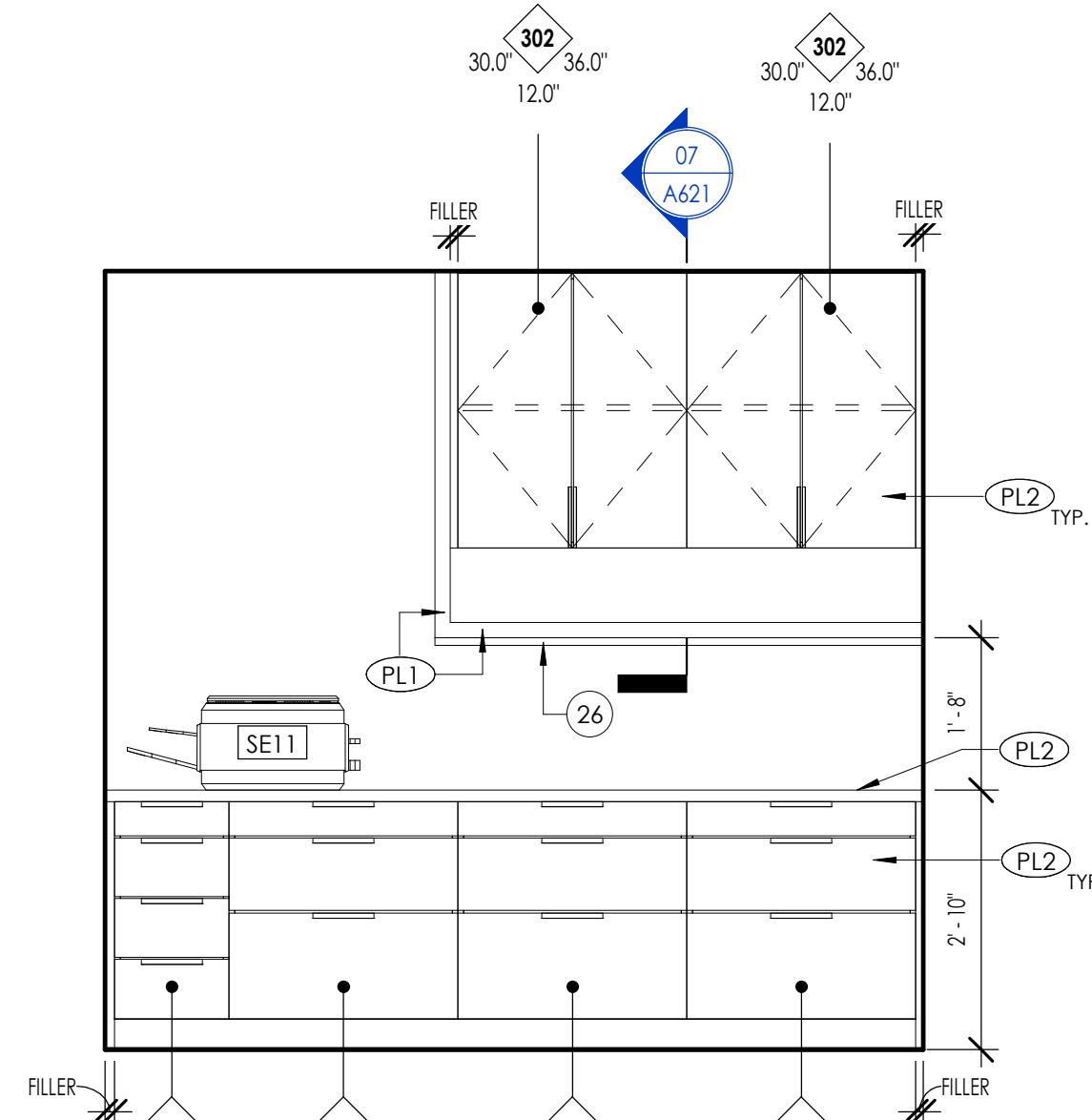
10 ELEVATION
MED. ASSISTANTS - EAST
SCALE: 1/2" = 1'-0"



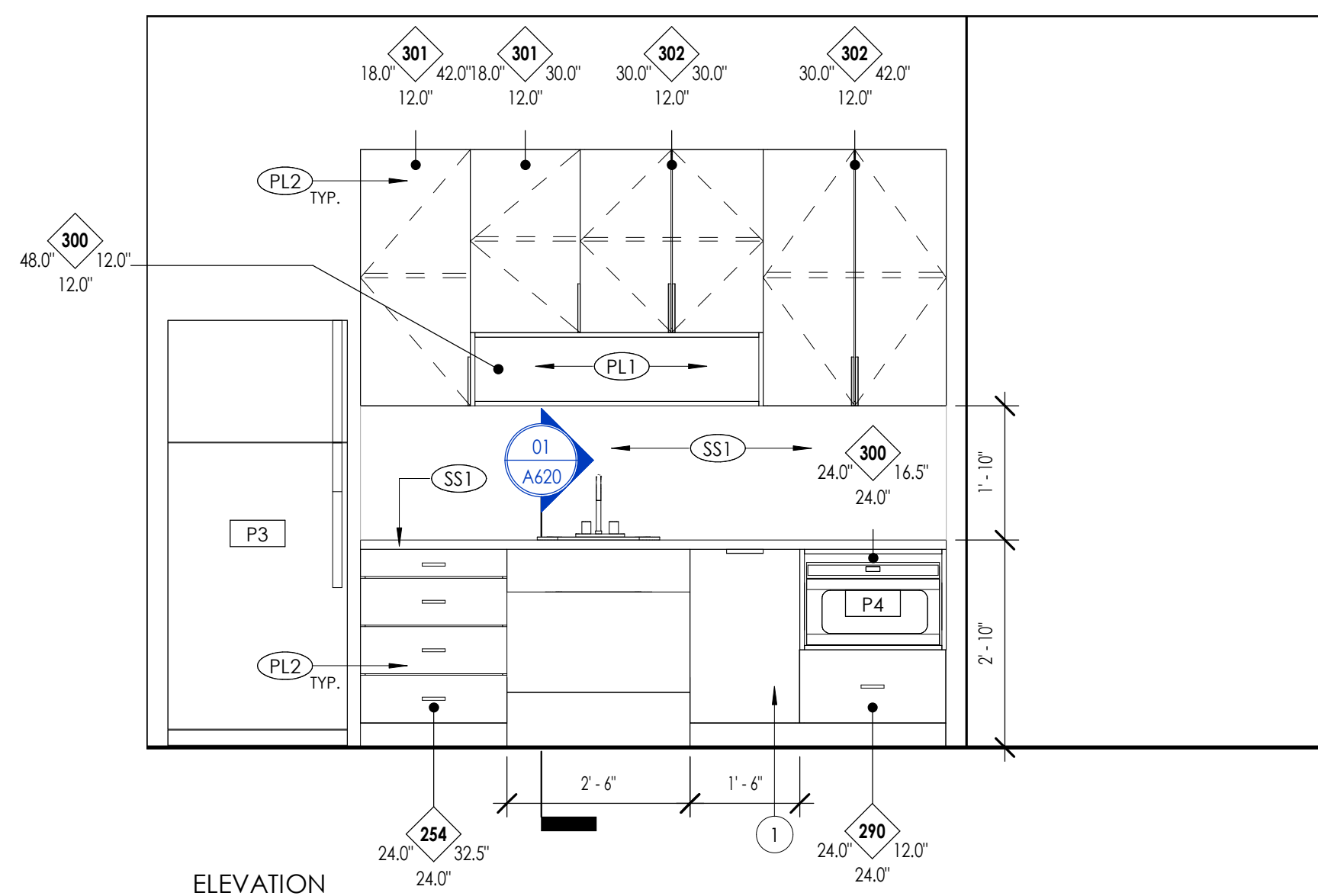
09 ELEVATION
MED. ASSISTANTS - SOUTH
SCALE: 1/2" = 1'-0"



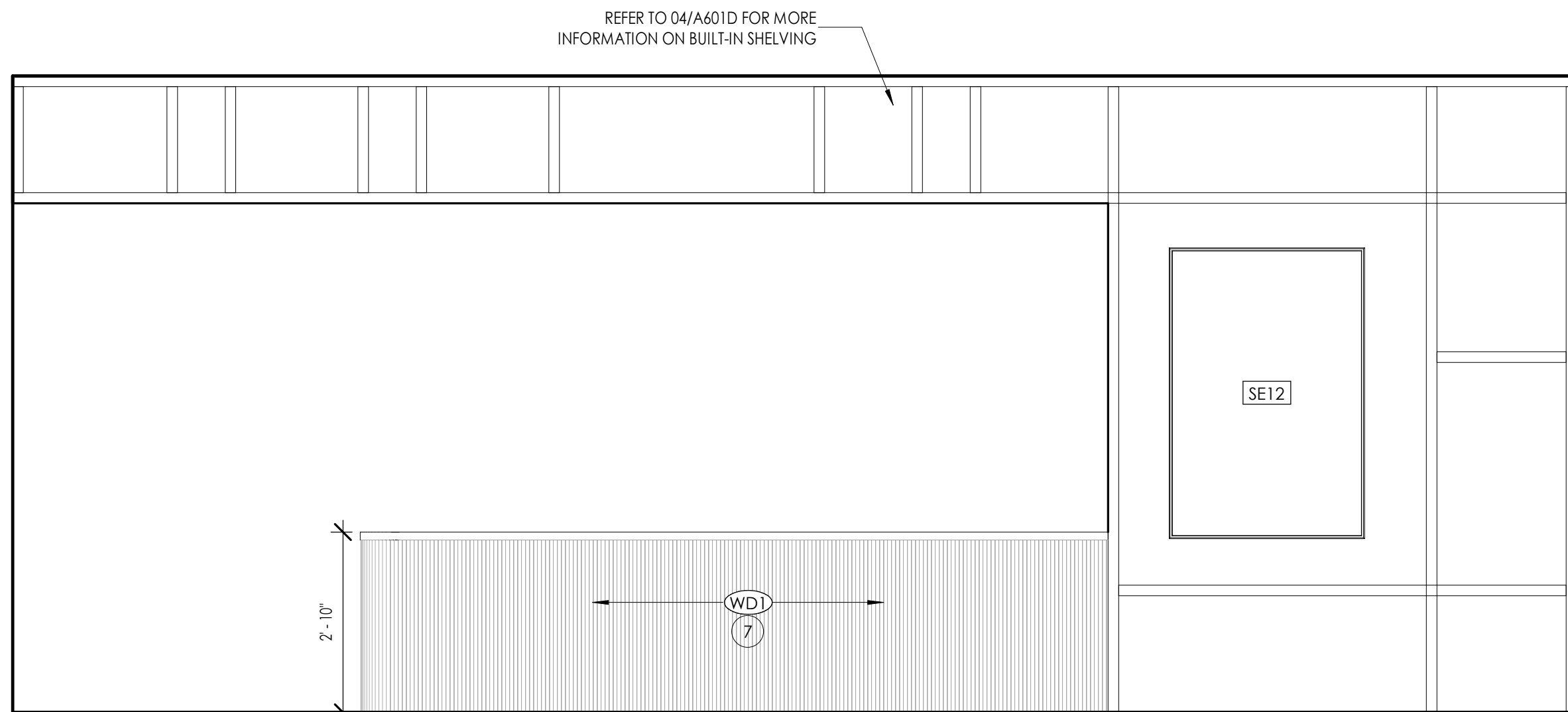
08 ELEVATION
COMMUNITY IMPACT 214A - EAST
SCALE: 1/2" = 1'-0"



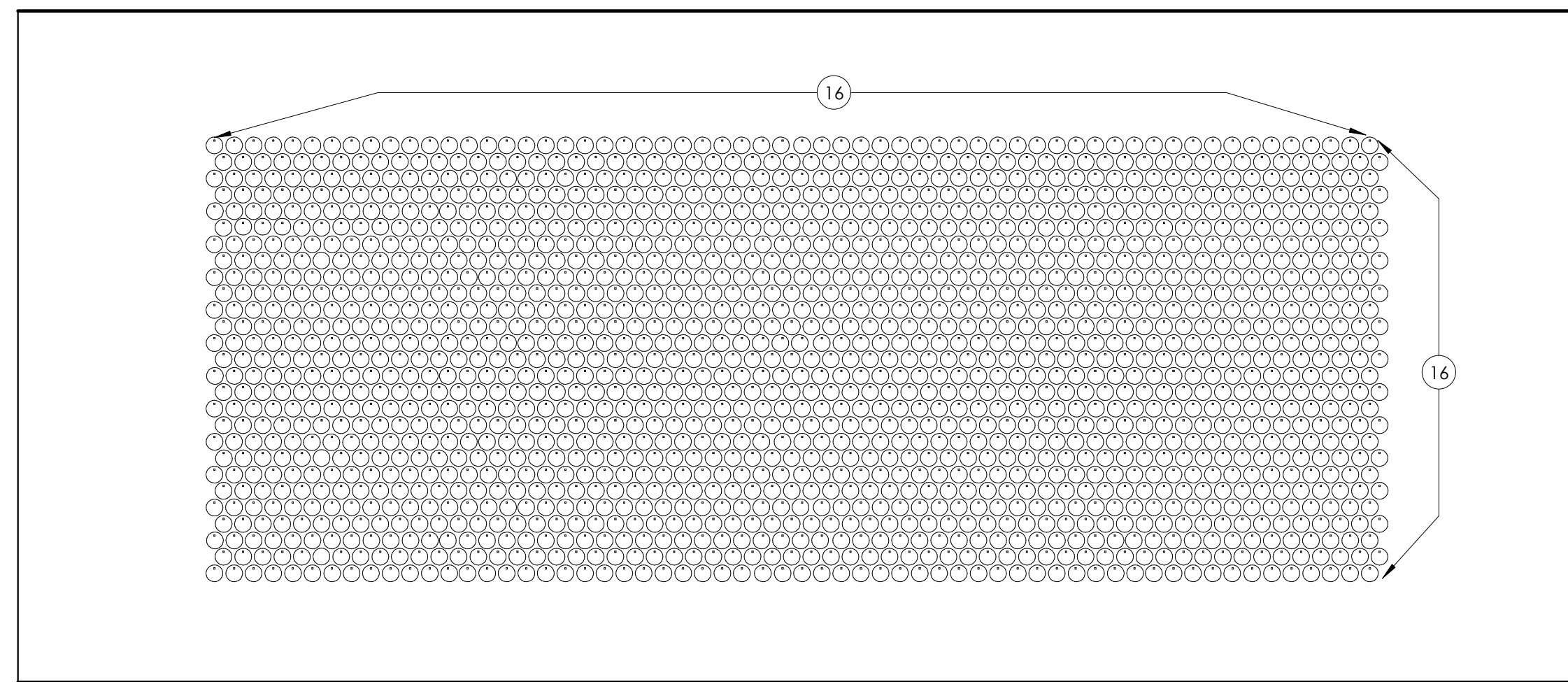
07 ELEVATION
MED. PROVIDERS - EAST
SCALE: 1/2" = 1'-0"



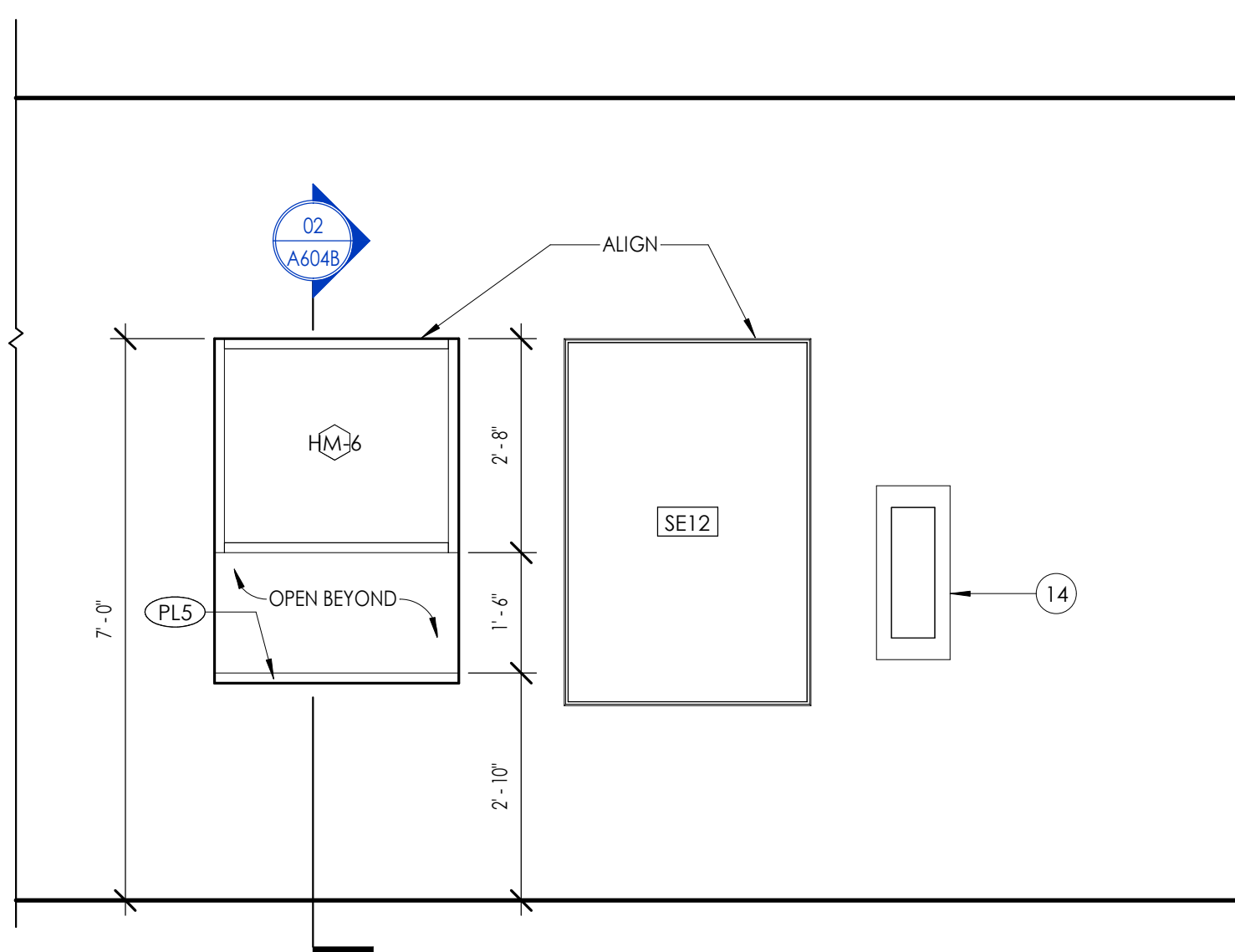
06 ELEVATION
BREAK 204D
SCALE: 1/2" = 1'-0"



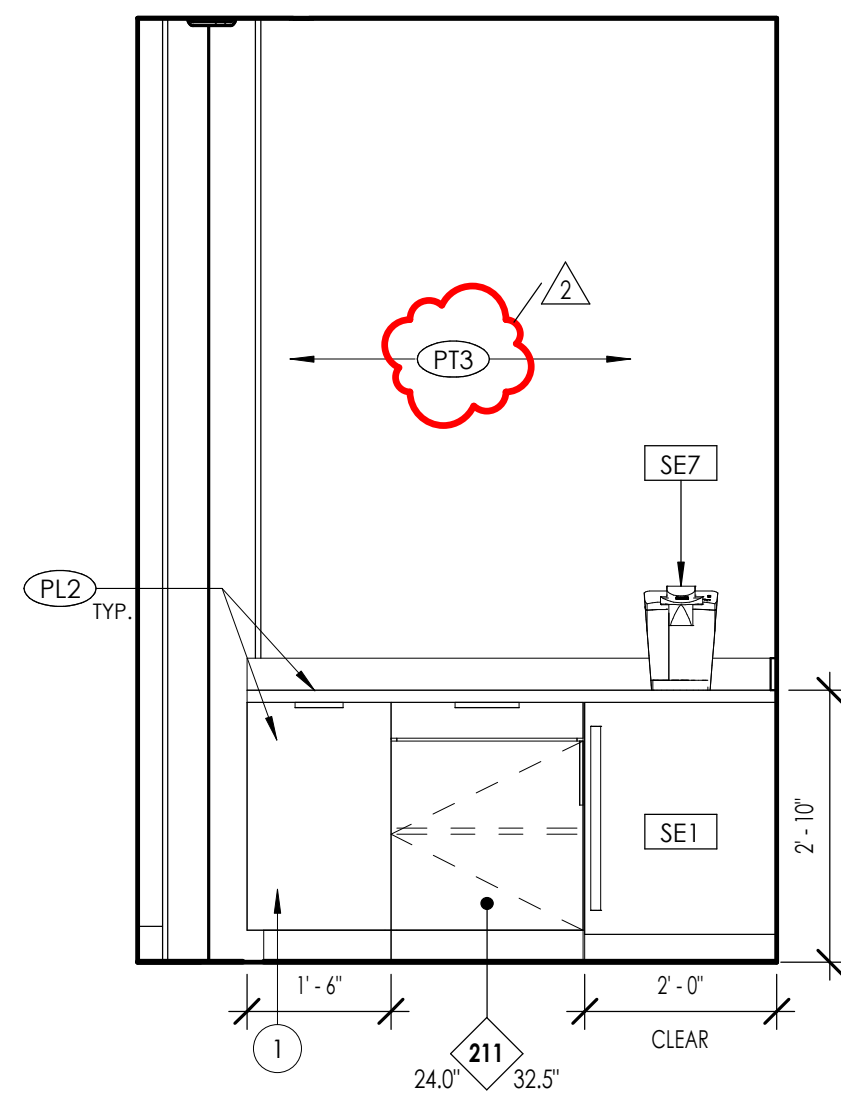
05 ELEVATION
CLINIC RECEPTION
SCALE: 1/2" = 1'-0"



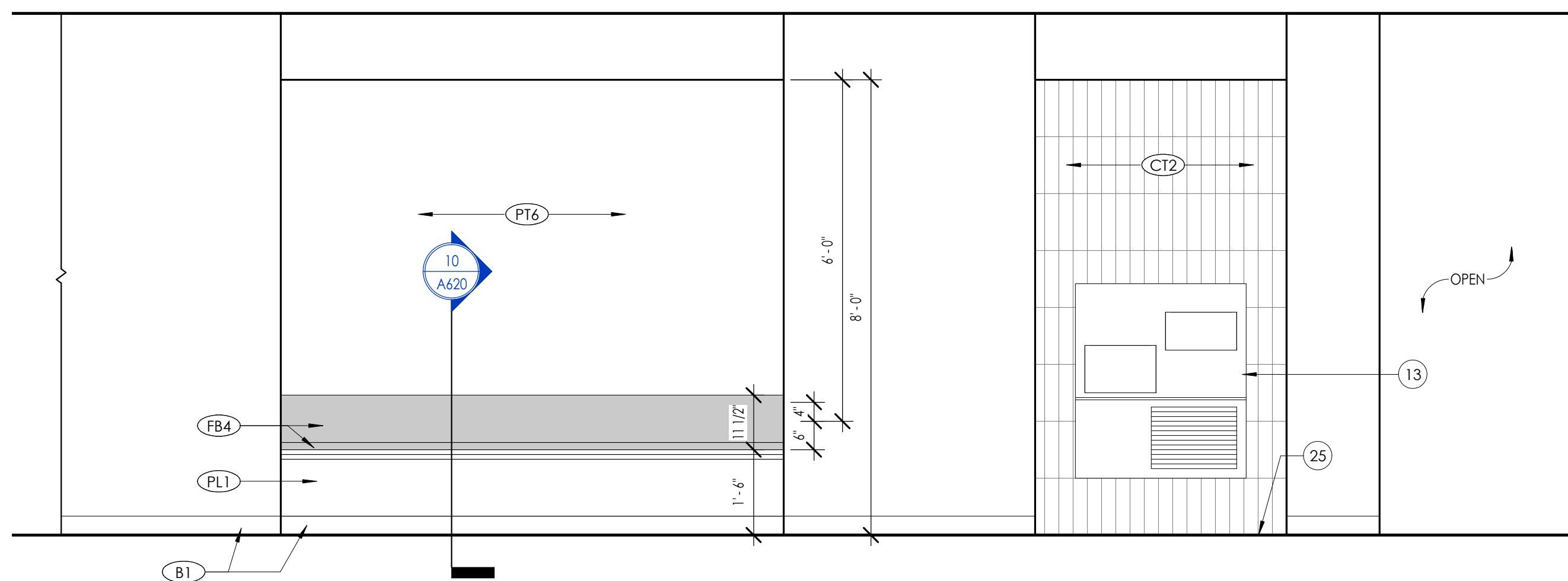
04 ELEVATION
DONOR WALL
SCALE: 1/2" = 1'-0"



03 ELEVATION
PHARMACY PICK-UP WINDOW
SCALE: 1/2" = 1'-0"



01 ELEVATION
CONF ROOM 215 BEV BAR
SCALE: 1/2" = 1'-0"



02 ELEVATION
CORRIDOR 109
SCALE: 1/2" = 1'-0"

GENERAL INTERIOR ELEVATION NOTES

- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.

- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED MISC. STEEL LINTELS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.

- CEILINGS / WALLS:**
- ALL WALLS TO BE PAINTED **PT1**. UNLESS NOTED OTHERWISE.
 - ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**. UNLESS NOTED OTHERWISE.
 - ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL **4** FINISH. UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.

- BASE:**
- ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE **B1** AT THE KICK UNLESS NOTED OTHERWISE.

- MILLWORK:**
- CALLOUT SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER. UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - REFER TO A001 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

SPECIALTY EQUIPMENT TAG
MARK → [S800]

PLUMBING ACCESSORY TAG
MARK → [T00]

FINISH TAG
(DENOTES DIFFERENT FINISH LOCATION)

ARROWS INDICATES EXTENT OF FINISH
INDICATES FINISH MATERIAL

MILLWORK LEGEND

- REFER TO SHEET A620. FOR TYPICAL PLASTIC LAMINATE AWI CABINET DETAIL.
- COORDINATE AND PROVIDE BACKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS.
- PROVIDE FILLERS AS REQUIRED. FILLERS ARE TO MACH MILLWORK ADJACENT.
- MILLWORK IS BASED ON AWI ARCHITECTURAL WOODWORK STANDARDS 2009 EDITION.
- DESIGN DRAWINGS ARE BASED ON CDS (CABINET DESIGN SERIES) NUMBERS. REFER TO CABINET TAG BELOW FOR DESCRIPTION.
- REFER TO TYPICAL CASEWORK DETAILS ON THIS SHEET FOR PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS. THESE MAY BE DEVIATIONS FROM AWI STANDARD.
- REFER TO PROJECT MANUAL/SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PLASTIC LAMINATE AND STAINLESS STEEL CABINETS.
- IF DRAWINGS OR SPECIFICATIONS ARE IN CONFLICT, PROVIDE MORE STRICT OR MORE EXPENSIVE OPTION.
- FILLERS TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER.
- ALL COUNTERTOPS TO BE 24" DEEP. TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER. UNLESS NOTED OTHERWISE.

CABINET TAG

CABINET WIDTH → XX" CABINET TYPE → CABINET HEIGHT → CABINET DEPTH →

FEATURE DESCRIPTION → EXTRA SHELF

INTERIOR ELEVATION KEYNOTES

- PULL OUT TRASH/RECYCLING DRAWER. BASIS OF DESIGN: REV-A-SHELF / S800C-21505COM-217 / 50 QUART DOUBLE TRASH PULL-OUT WASTE CONTAINER. PROVIDE INTEGRATED DRAWER FRONT TO MATCH ADJACENT MILLWORK.
- LEVEL 4 DRYWALL FINISH BETWEEN ALL RIBS.
- LEVEL 5 DRYWALL FINISH.
- COUNTERTOP GROMMET. BASIS OF DESIGN: MCKEY / EDP3-2 1/2" FLIP-TOP GROMMET SET. CONTRACTOR TO SUPPLY FINISHES TO ARCHITECT FOR REVIEW.
- BRASS BAR FOOT RAIL. MINIMUM RAIL DIAMETER TO BE 1-1/2" WITH WALL MOUNTED BRACKETS SPACED MAX 4'-0" O.C. AND NO MORE THAN 6" FROM THE ENDS.
- LOCKABLE CABINET.
- SEE ENLARGED PLAN FOR EXTENT OF FINISH (WD1).
- CURVED DRYWALL CEILING ON COLD FORMED METAL FRAMING. PROVIDE DRYWALL THICKNESS AND BULLNOSES AS REQUIRED TO ACHIEVE INDICATED RADIUS.
- 3/4" WHITE OAK VENEERED PLYWOOD OVER 3/4" PARTICLE BOARD SUBSTRATE.
- ACOUSTICAL FABRIC WRAPPED PANEL BETWEEN EACH RIB OR WOOD FRAME. REFER TO ELEVATION FOR FINISH.
- DROP LEAF COUNTER. BASIS OF DESIGN: KNAPE AND VOGT 16" ADJUSTABLE FOLDING L-SHELF BRACKET. BRACKETS MUST BE FASTENED TO 2X4 WOOD STUD ON 16" CENTERS.
- SOLID SURFACE SS1 AT TOP AND LOWER COUNTER AND RECESSED BACK PANEL. SEE MILLWORK SECTION FOR DETAIL.
- DRINKING FOUNTAIN WITH BOTTLE FILLER - REFER TO MEP DRAWINGS.
- SEMI-RECESSED FIRE EXTINGUISHING CABINET. REFER TO SPECS.
- SIGN. PROVIDE ADDITIONAL BLOCKING. BASIS OF DESIGN: METAL LETTING IN DARK BRONZE FINISH. ON 1" STANDOFFS. TEXT HEIGHT: 3". TEXT STYLE TO BE DETERMINED. COORDINATE WITH OWNER AND ARCHITECT.
- PROVIDE BLOCKING AS REQUIRED.
- WALL COVERING RIBS. REFER TO DETAIL 04/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- WALL COVERING RIBS. REFER TO DETAIL 03/A601C AND CONSTRUCTION PLAN FOR MORE INFORMATION.
- CEILING TO RECEIVE ACCENT PAINT.
- STEEL COLUMN PAINTED (PT1). REFER TO STRUCTURAL DRAWINGS.
- LEGS. ALIGN WITH WINDOW MULLION BEYOND. TYPICAL ALONG LENGTH OF COUNTERTOP. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- UNDER DESK POWER DOCK. ALIGN WITH LEG. REFER TO MILLWORK SECTION FOR ADDITIONAL INFORMATION.
- DRYWALL REVEAL. BASIS OF DESIGN: FRY REGLET / DRYWALL REVEAL MOLDING / 5/8" D X 1" W / DRW-625-100. FINISH: POWDER COAT. WHITE.
- REVEAL BETWEEN ACOUSTIC PANELS. 1" W. DRYWALL BEYOND TO BE PAINTED TO MATCH PANEL. REFER TO DETAIL 1/A601C.
- TILE TO TRANSITION AT VINYL FLOOR. REFERENCE 03/A700 FOR TRANSITION DETAIL.
- 1" DARK BRONZE METAL STRIP BEYOND TO HIDE UNDERCABINET LIGHTING. GC TO PROVIDE PHYSICAL SAMPLES FOR ARCHITECT TO APPROVE FINISH.
- REFER TO SHEET A124 FOR INTERIOR GLASS GUARDRAIL DETAILS.
- REFER TO SHEET A1248 FOR INTERIOR PICKET RAILING DETAILS.
- REFER TO SHEET A1248 FOR INTERIOR PICKET RAILING ALTERNATE #09 DETAILS.
- RACKS SURFACE MOUNT SUPPORT BRACKET - SPACE AT 4'-0" MAX.
- (SS1) BACKSPLASH TO WRAP SIDE WALL AND ALIGN WITH ADJACENT BACKSPLASH. DRYWALL CASED OPENING TRANSACTION WINDOW.

AXIS

618 East Market Street
Indianapolis, Indiana 46202
phone 317.264.8162
axisrchr.com

Revised Drawings:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major structural elements and the type of structural, mechanical and electrical systems. The drawings are of a preliminary nature and are not to be used for construction. On the basis of the general scope indicated or described, the trade contractor shall furnish all items required for the project execution and completion of work.

DRAWN BY: LJ
CHECKED BY: DS
DATE ISSUED: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #02 10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Alexander Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JSO
JAMARIE FLECK, PE
8445 Allison Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317.661.1944

STRUCTURAL ENGINEER
JSO
DANIEL BURCH
8445 Allison Pointe Blvd, Suite 425
Indianapolis, IN 46250
PH 317.661.1944

MEP ENGINEER
BRD CONSULTING
SEAN GURUKOMAN, PE, Managing Partner
1344 South Washington Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., A.S.A.
195 N HARBOR DR #3605
Chicago, IL 60601
PH 847.343.0168

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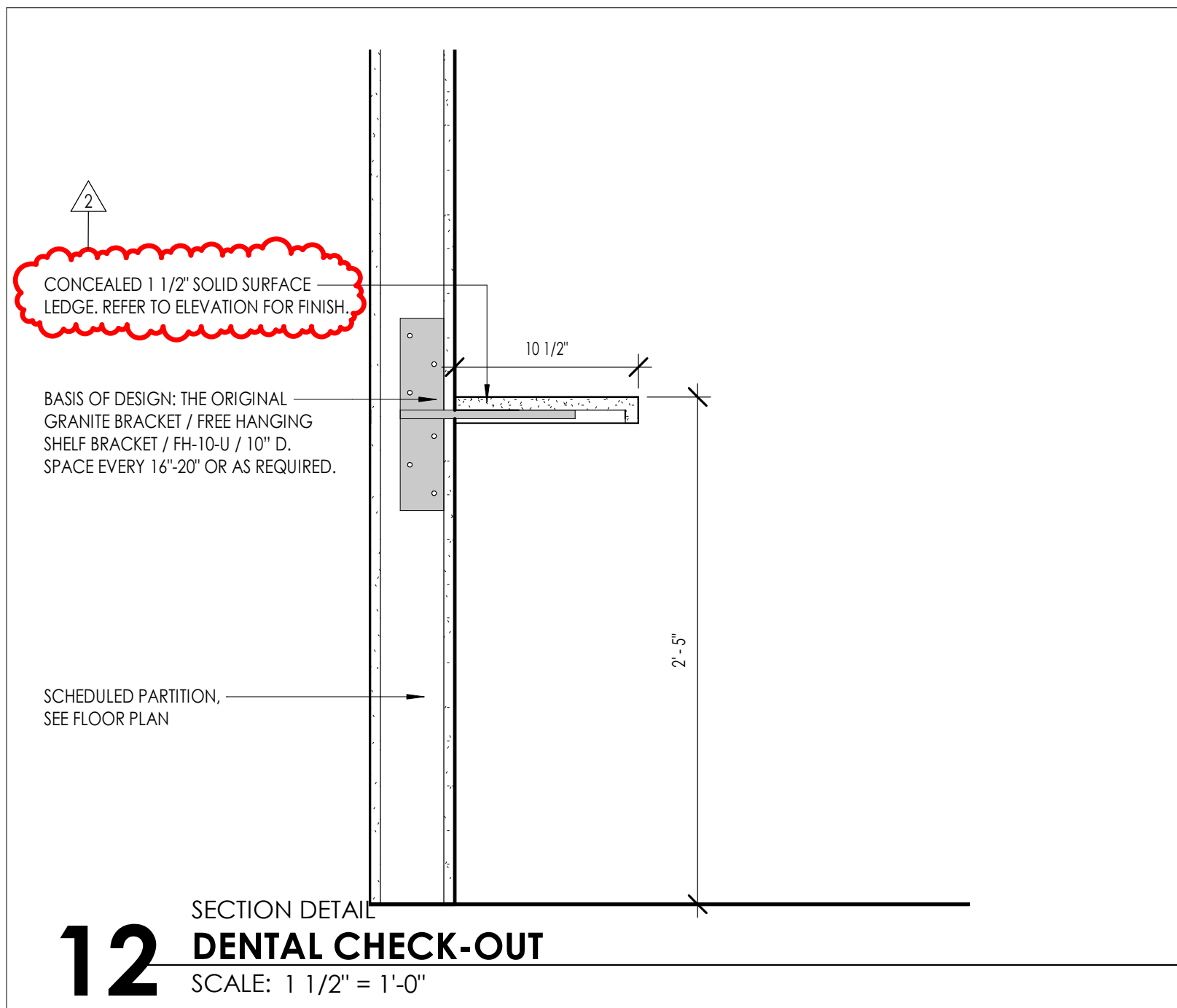
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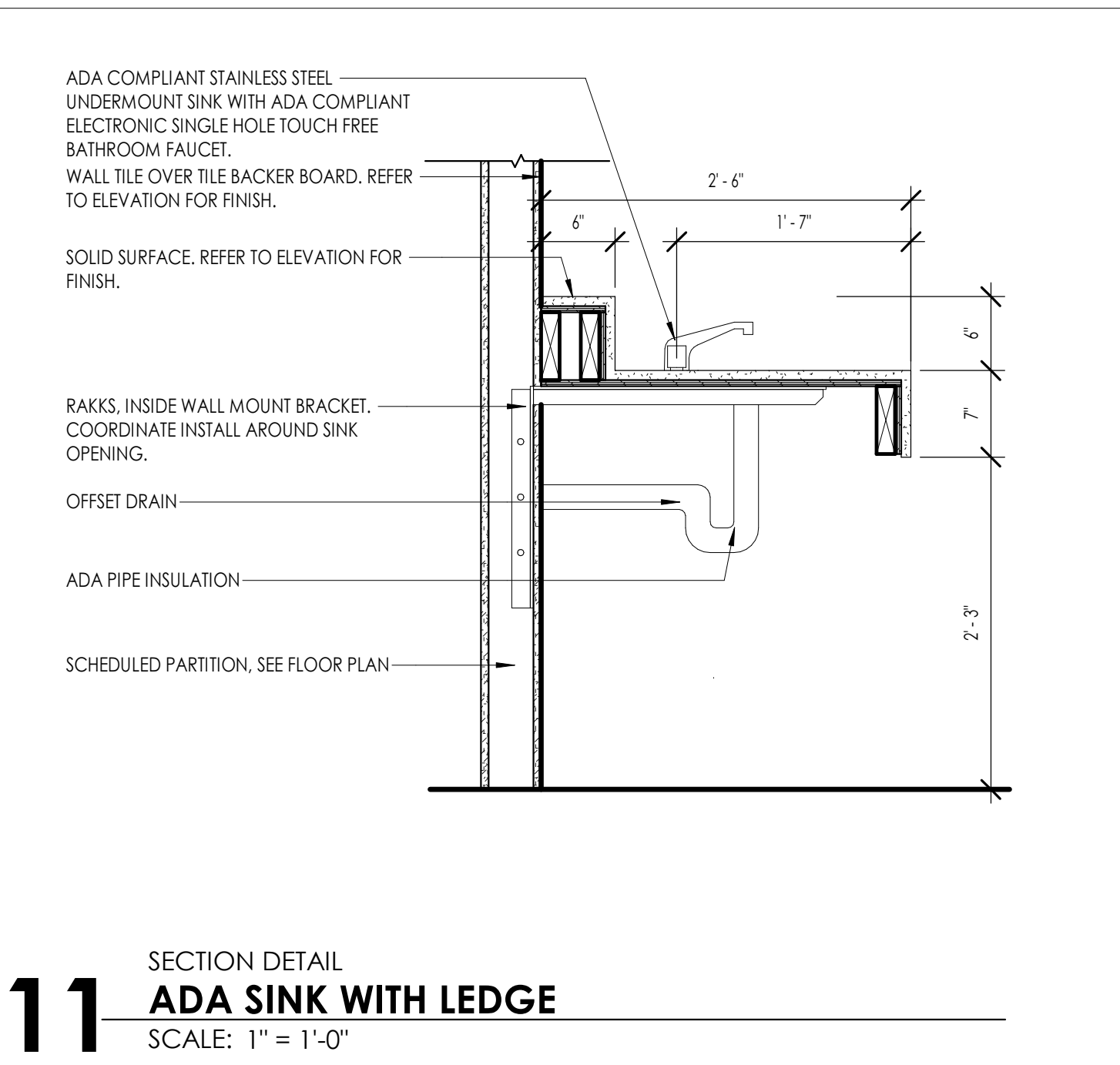
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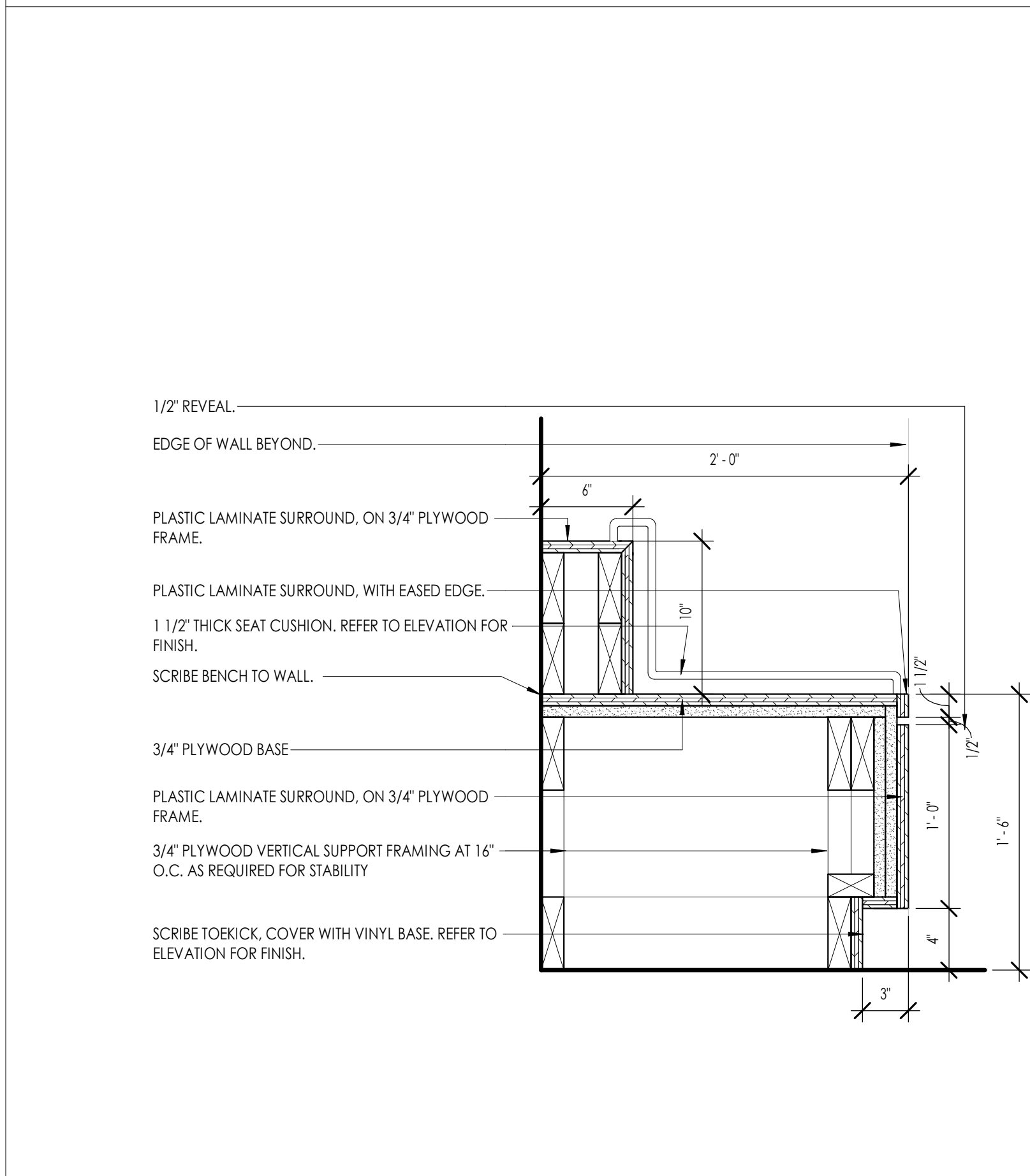
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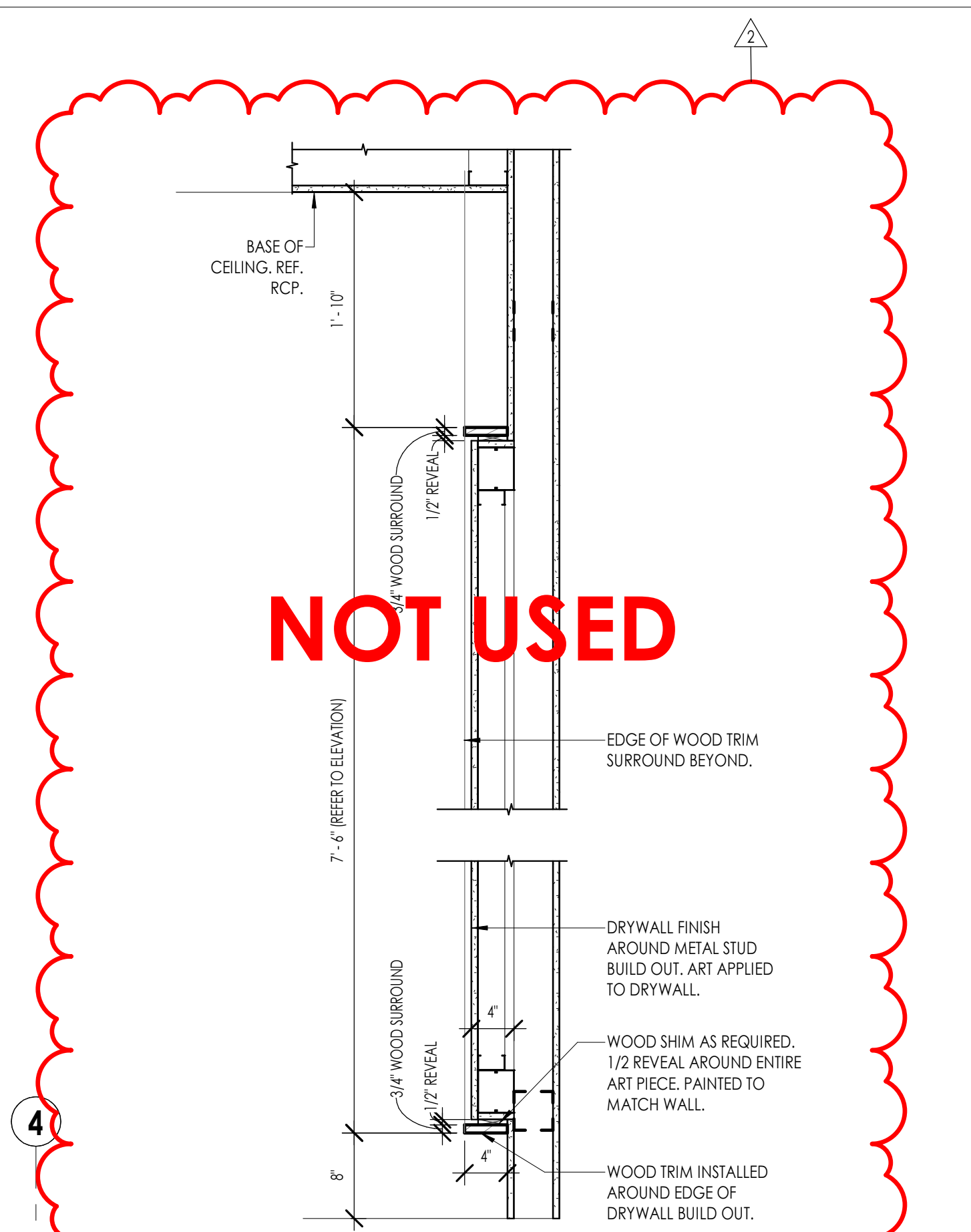
12 DENTAL CHECK-OUT
SCALE: 1 1/2" = 1'-0"



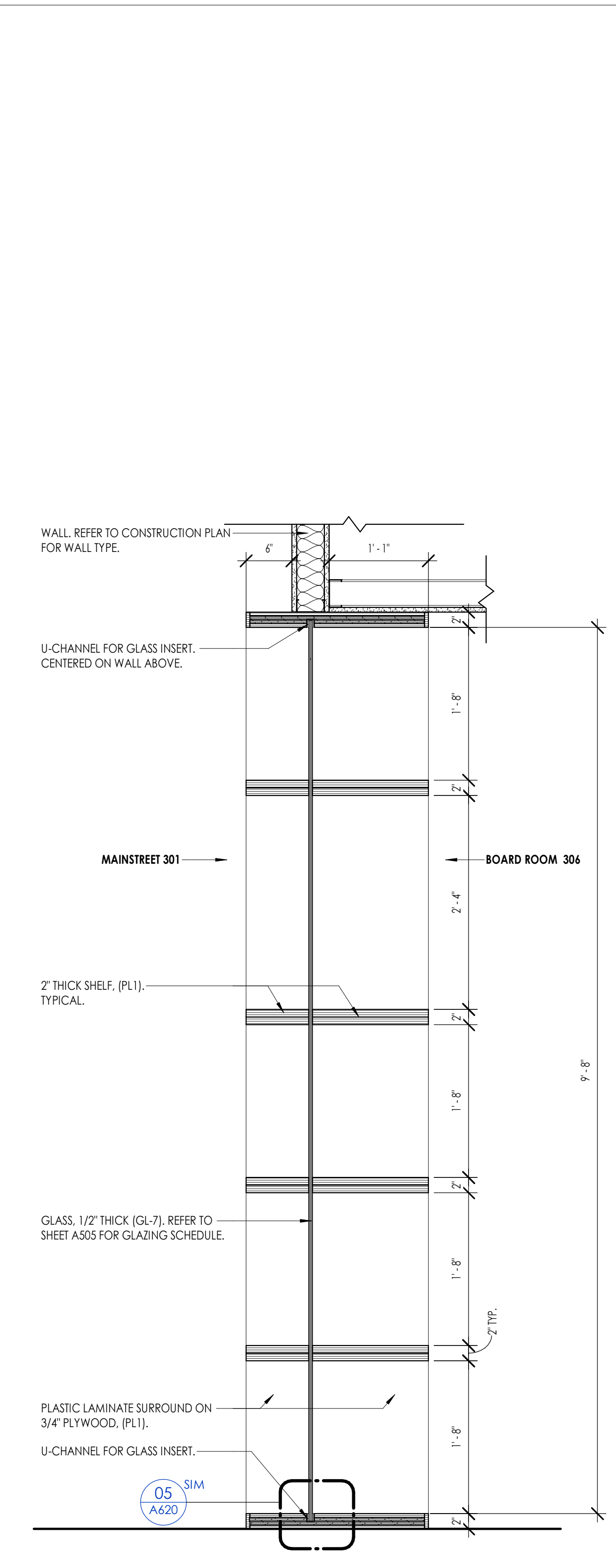
11 ADA SINK WITH LEDGE
SCALE: 1" = 1'-0"



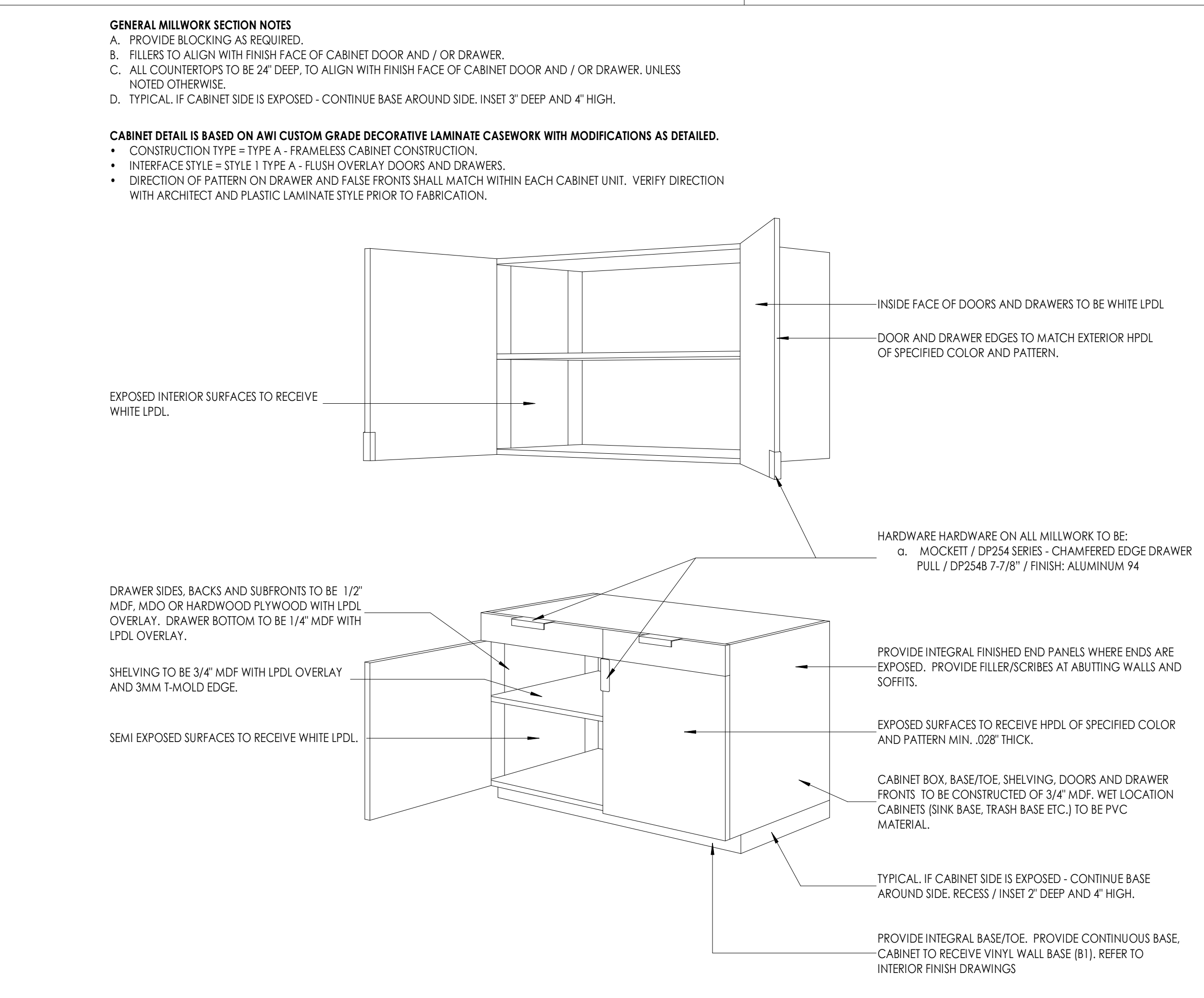
10 TYPICAL CASEWORK
SCALE: 1 1/2" = 1'-0"



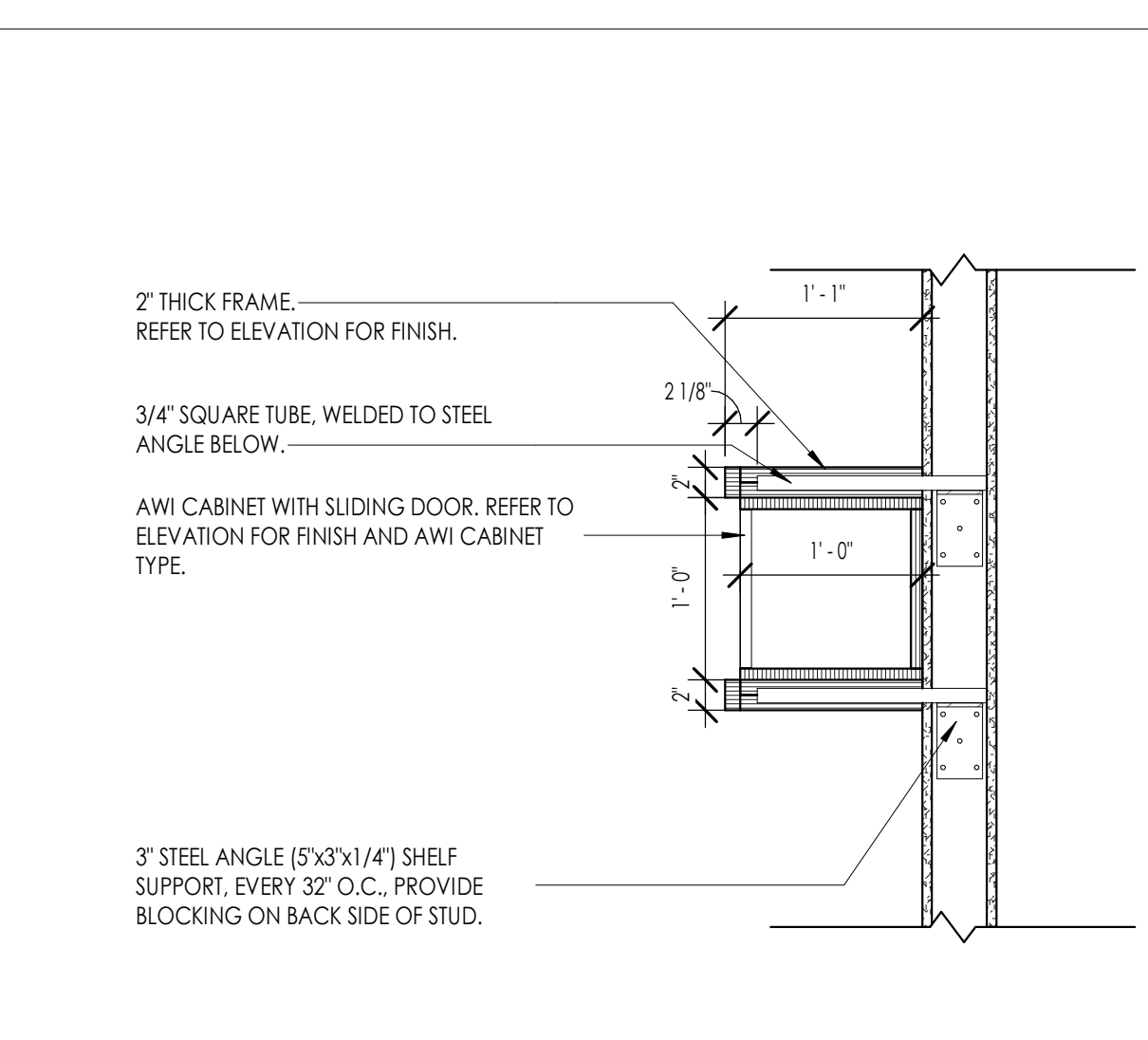
09 WALL ART FRAME
SCALE: 1" = 1'-0"



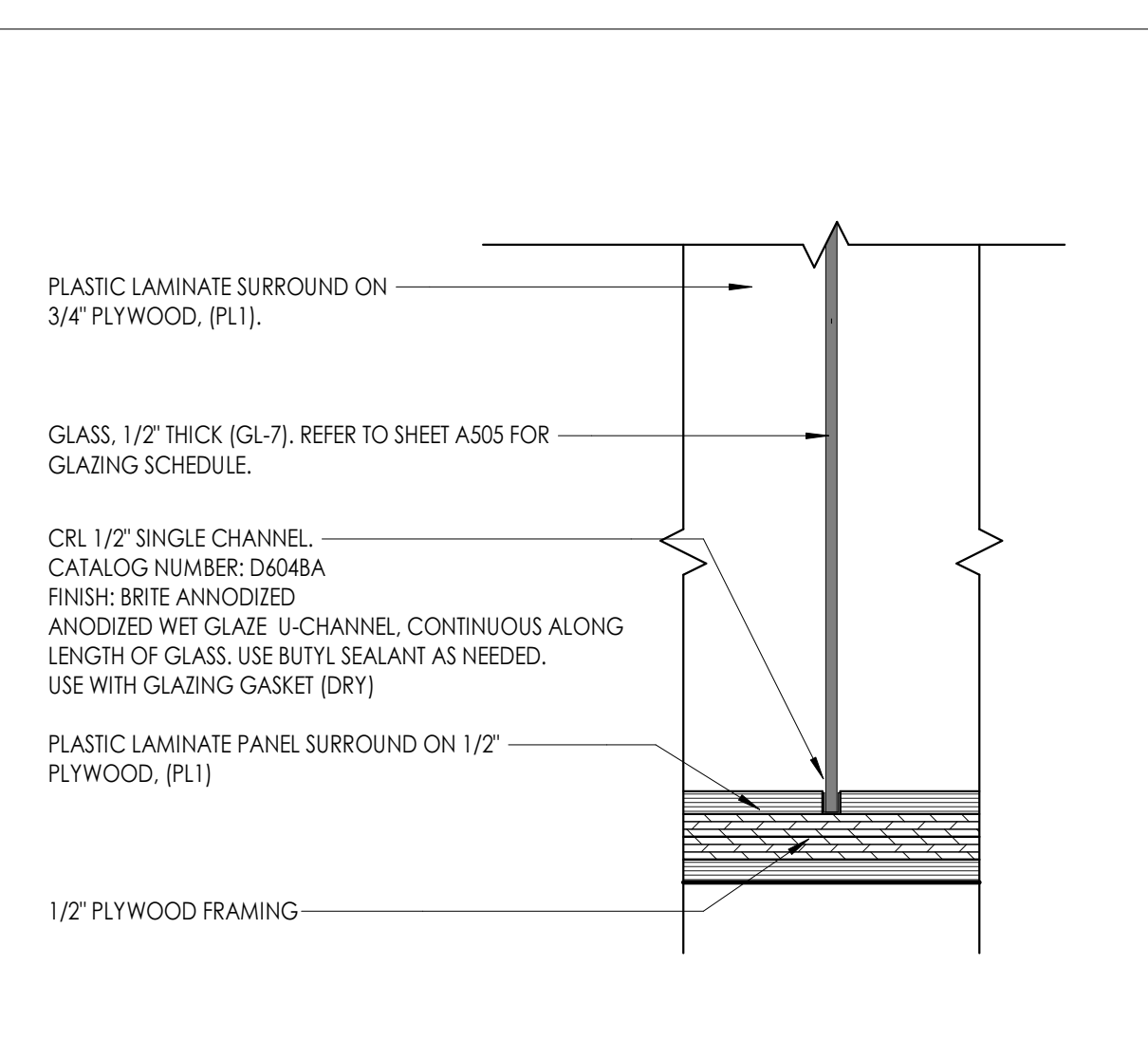
07 GLASS WALL MILLWORK DETAIL
SCALE: 1" = 1'-0"



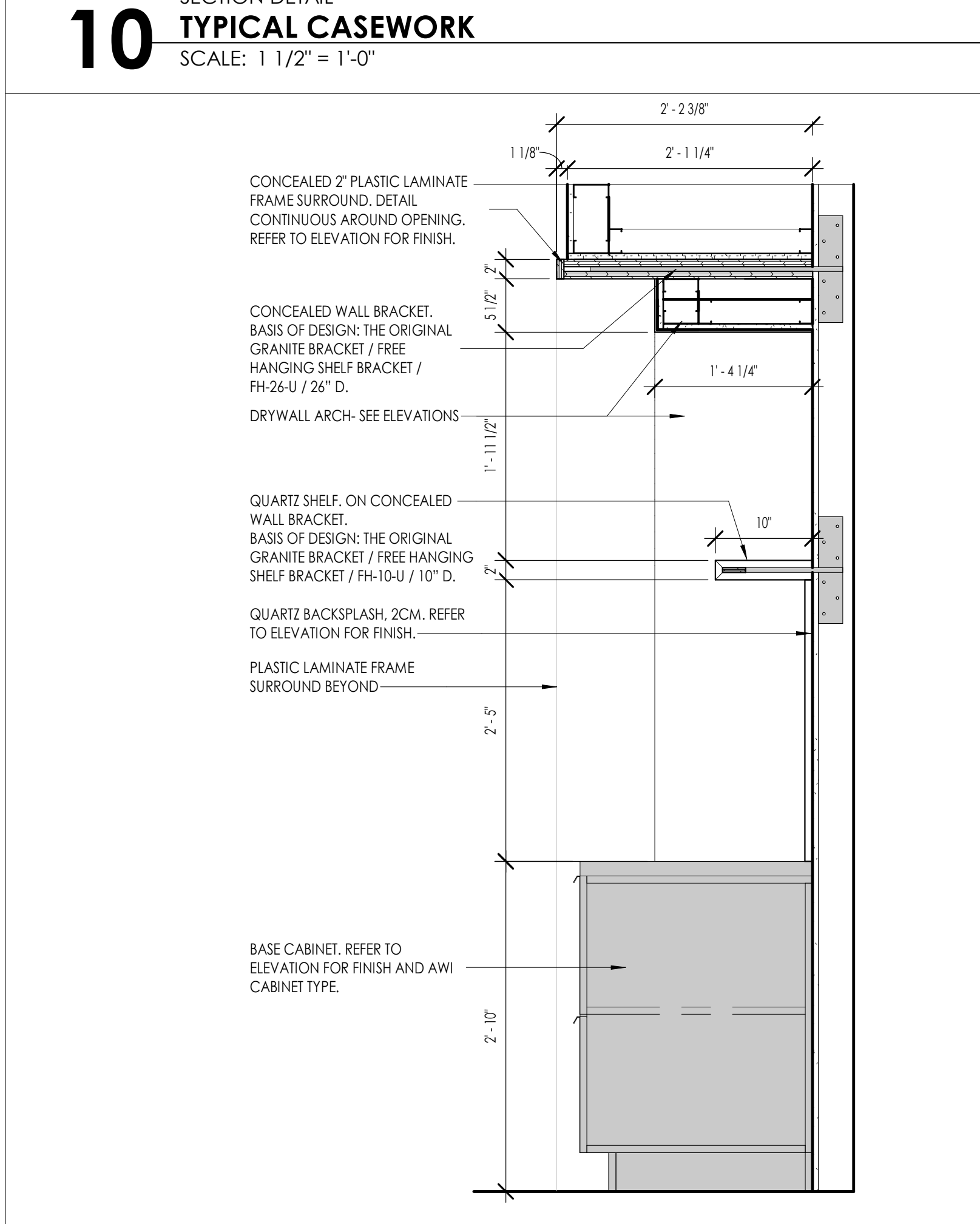
TYPICAL PLASTIC LAMINATE AWI CABINET DETAIL



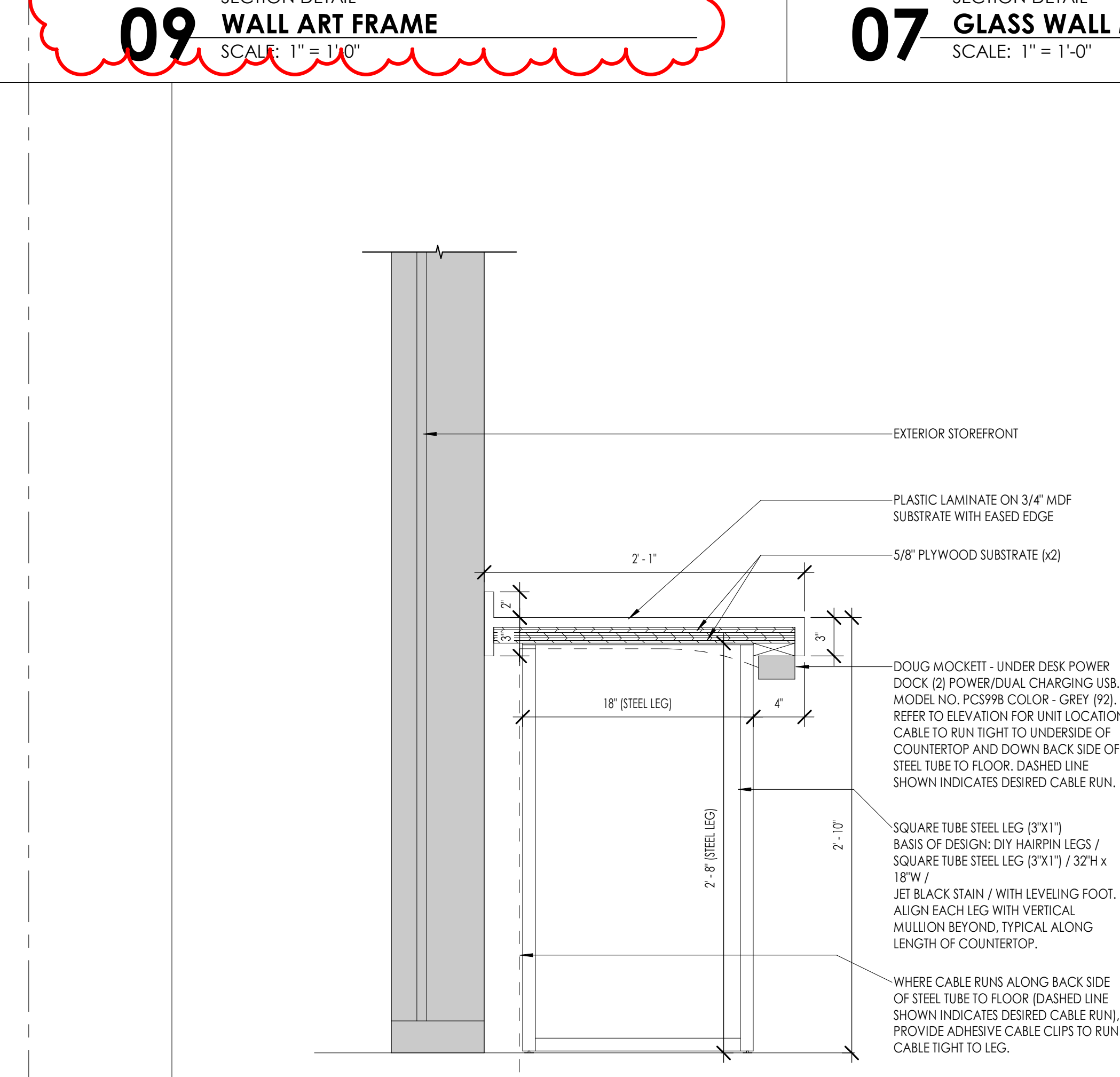
06 BOARD ROOM CASEWORK
SCALE: 1" = 1'-0"



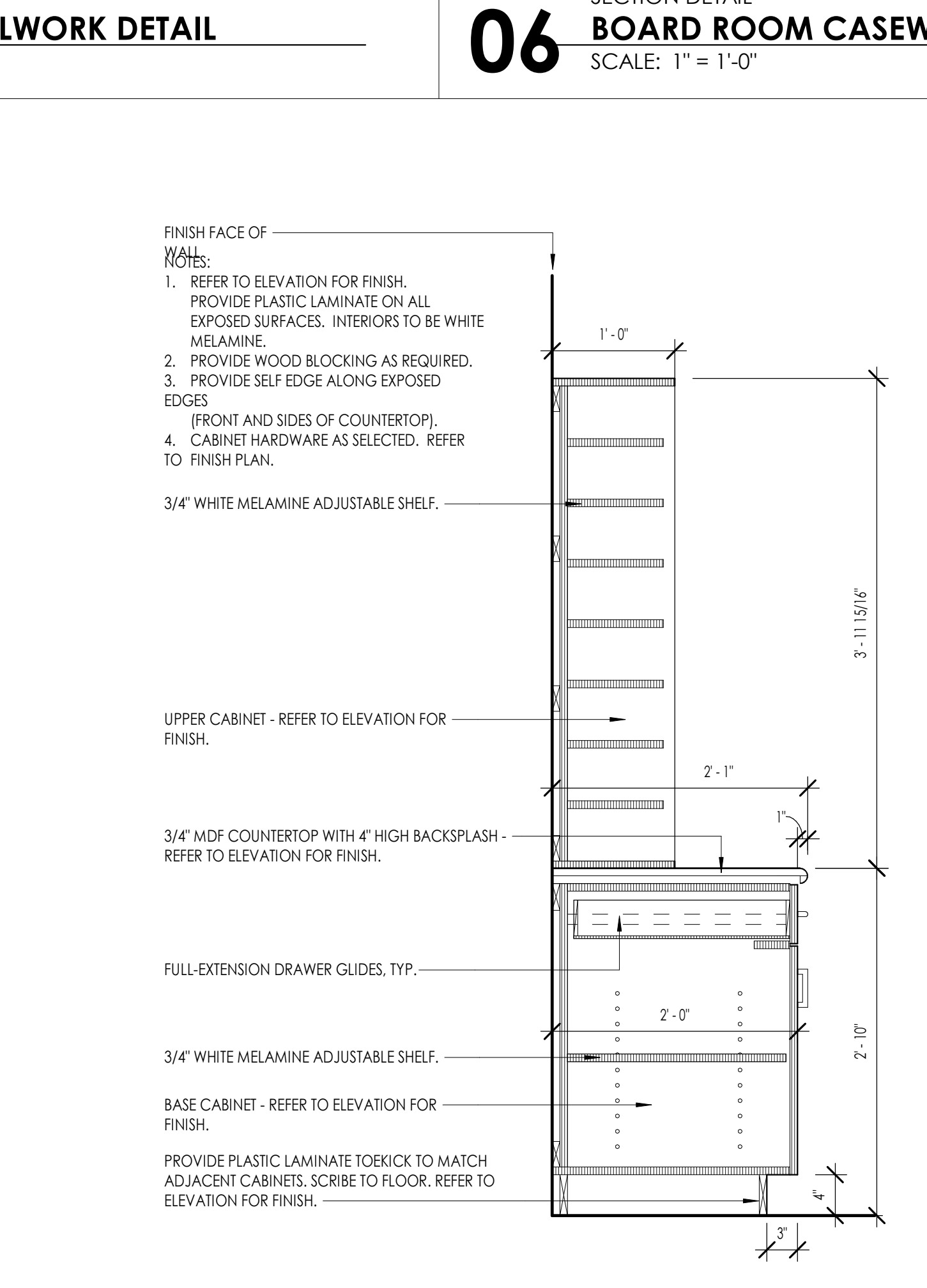
05 CHANNEL GLASS DETAIL
SCALE: 3" = 1'-0"



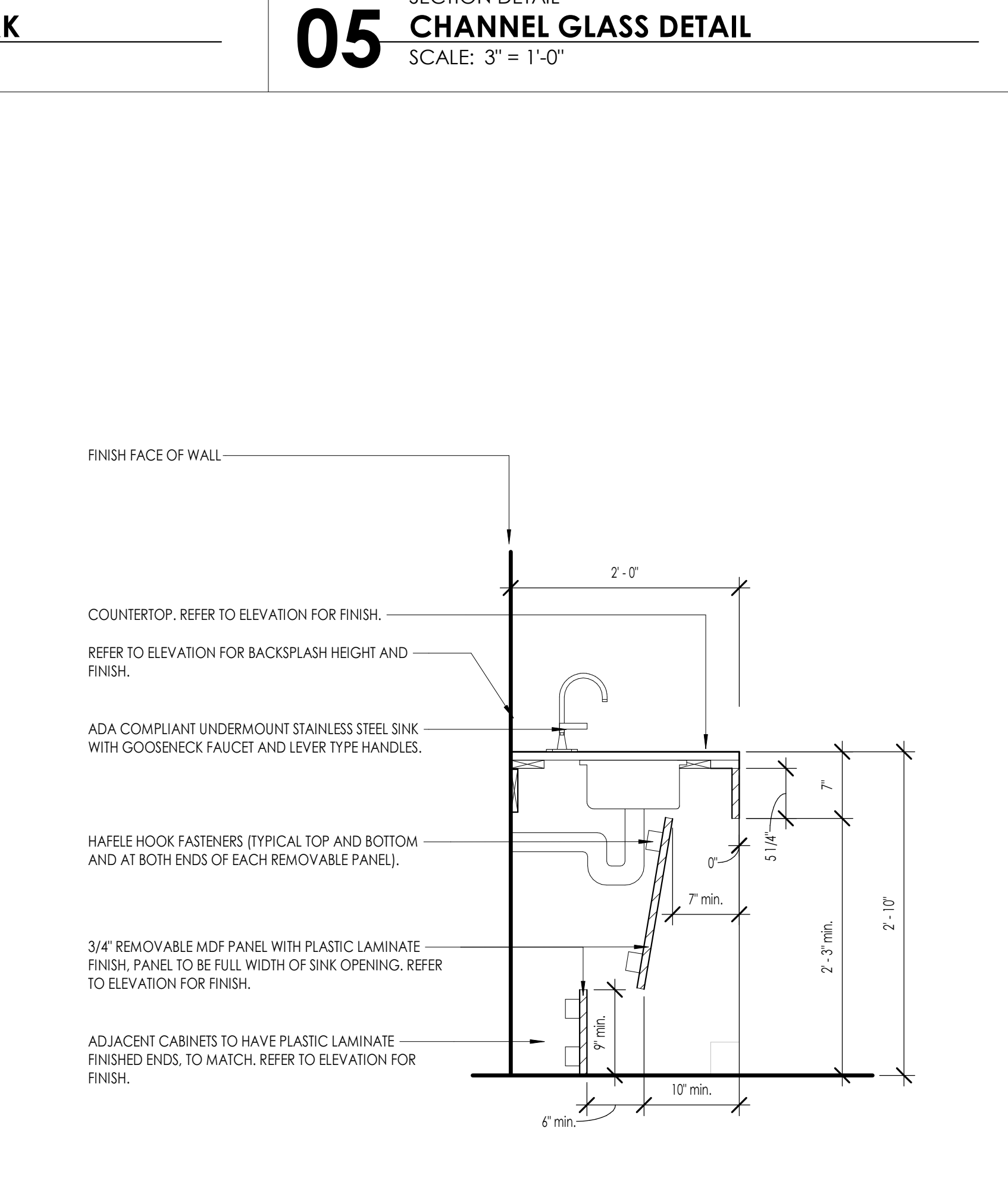
04 SOCIAL HUB SECTION
SCALE: 1" = 1'-0"



03 WORK COUNTER
SCALE: 1 1/2" = 1'-0"



02 CASEWORK - MAIL ROOM
SCALE: 1" = 1'-0"



01 CASEWORK - ACCESSIBLE SINK
SCALE: 1" = 1'-0"

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618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Kentucky Avenue
Indianapolis, Indiana 46201
PH 317.433.0123

CIVIL ENGINEER
JSC
NANNAN FLECK, PE
8445 Allison Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

STRUCTURAL ENGINEER
JSC
DANIEL BURCH
8445 Allison Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

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1344 South Kingsbridge Road, Suite 202
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195 N HARBOUR DR #3605
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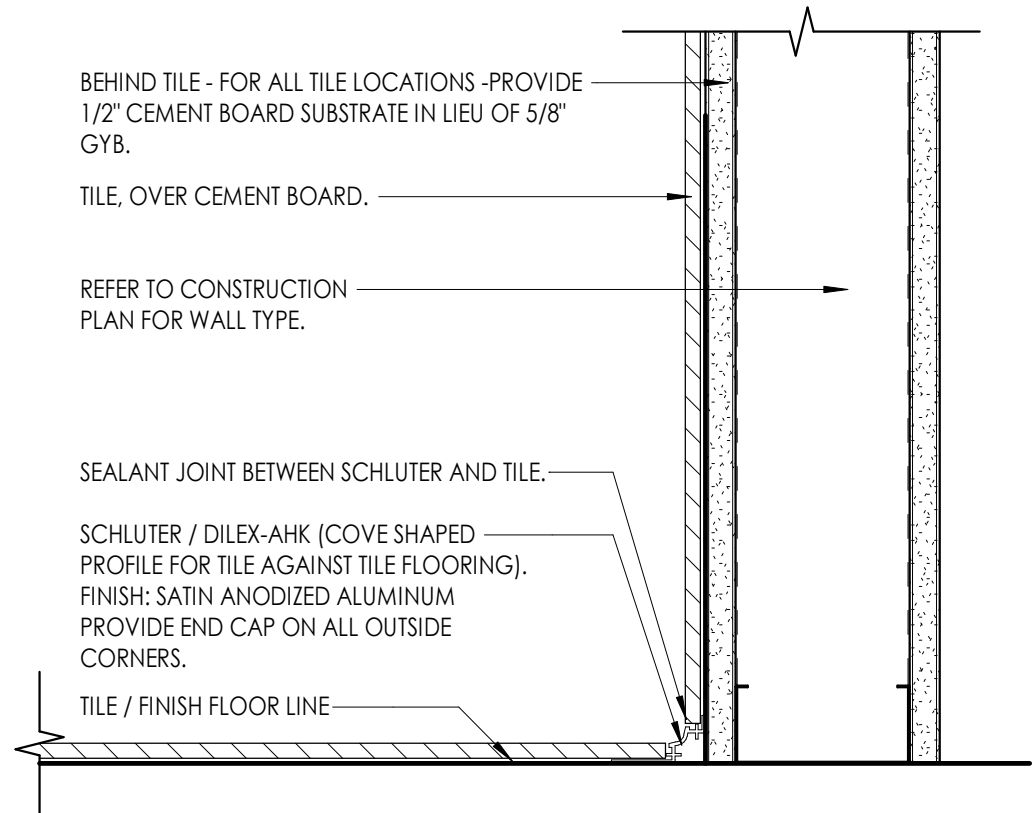
DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

REGISTERED PROFESSIONAL ARCHITECT
No. 1940008
STATE OF INDIANA
Drew Witchey

MILLWORK SECTIONS
A620
PROJECT NUMBER: 2021029

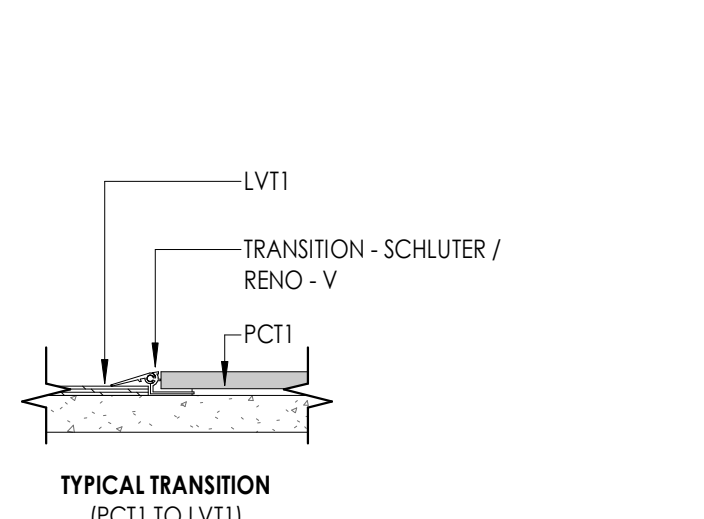
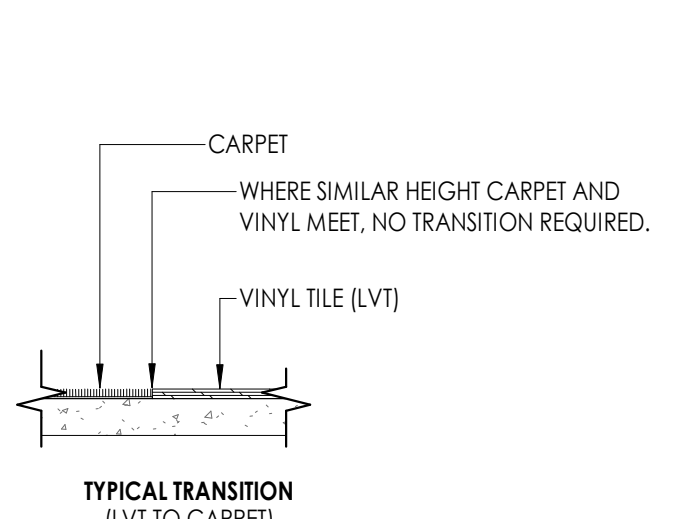
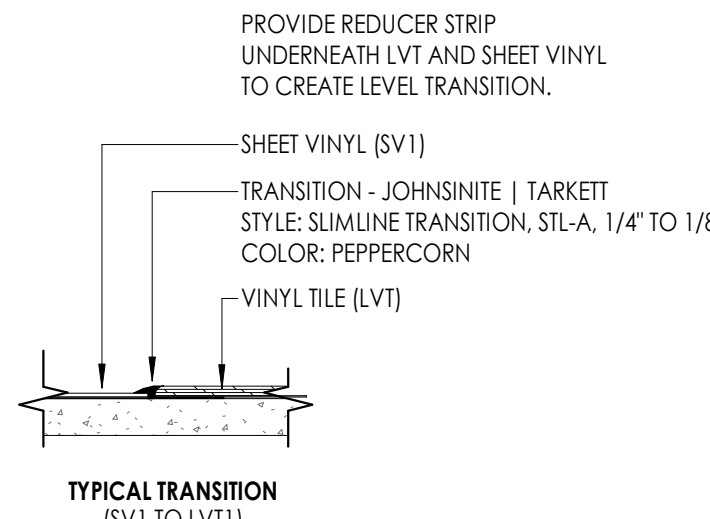
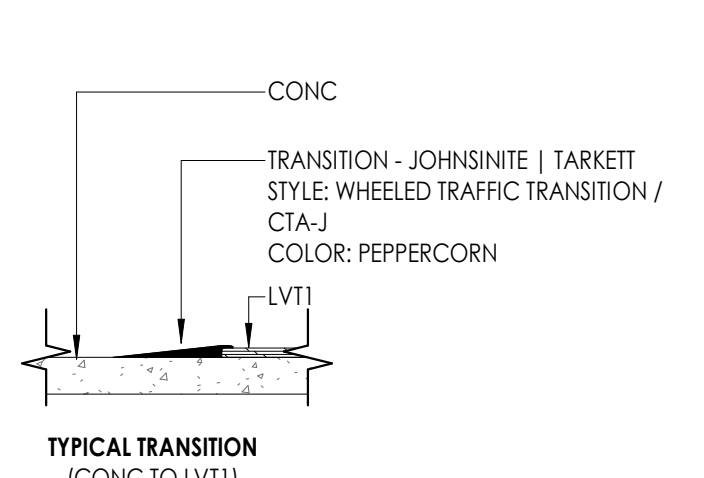
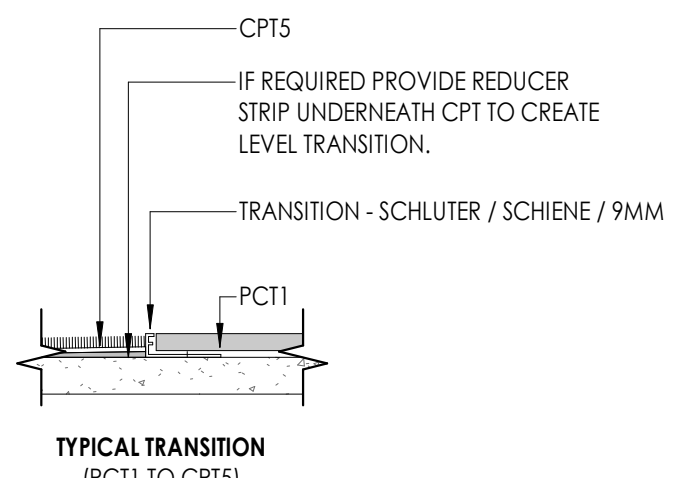
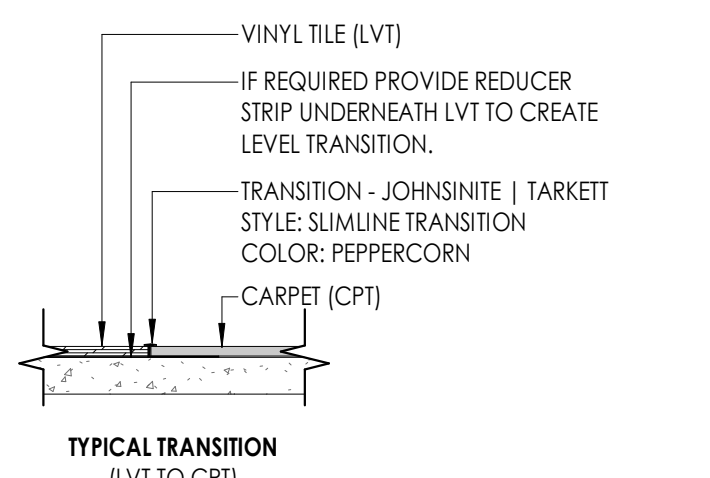
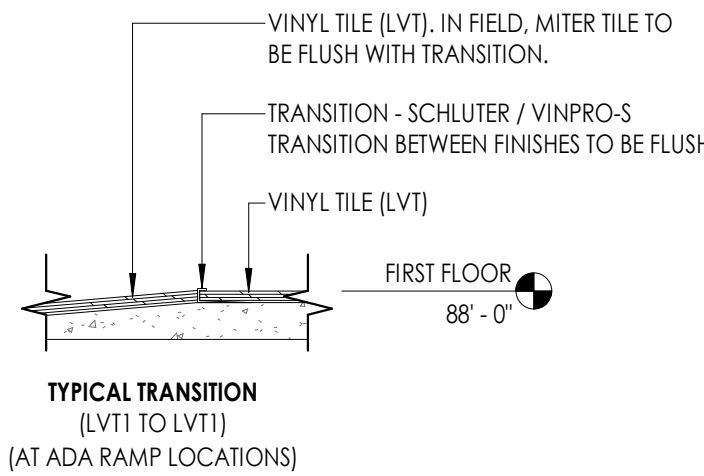
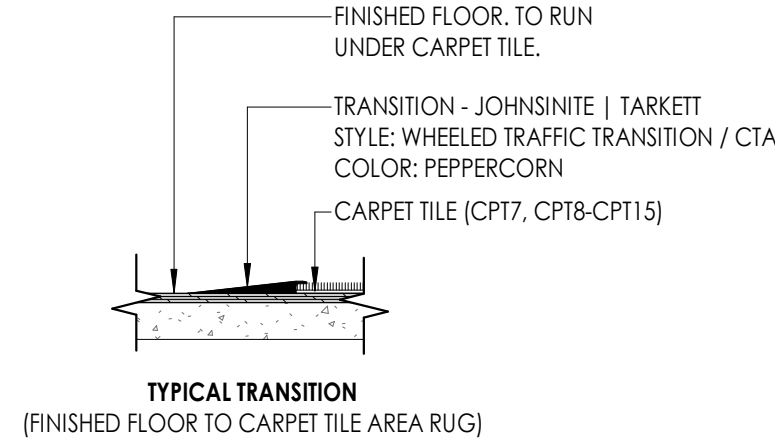
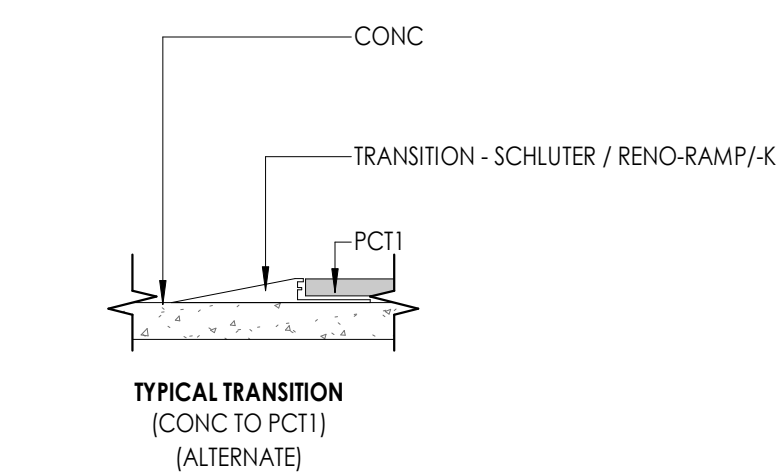
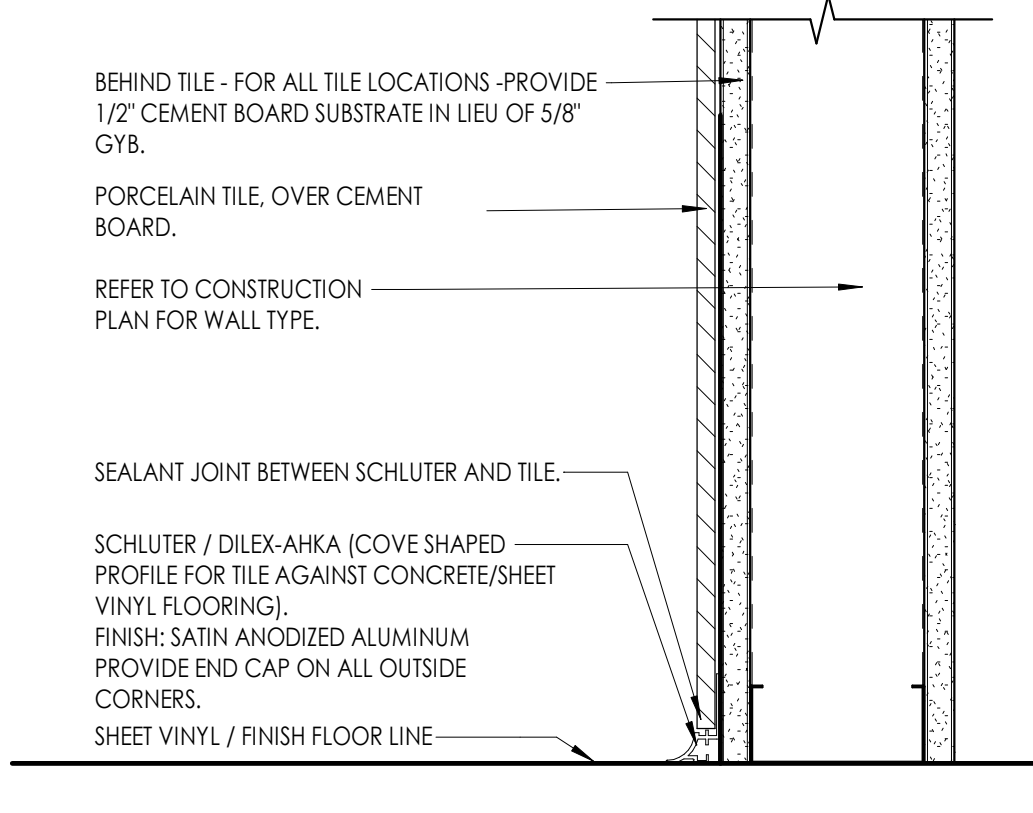
02 TILE TO FINISH FLOOR (TILE) TRANSITION

SCALE: 3" = 1'-0"



03 TILE TO FINISH FLOOR TRANSITION

SCALE: 3" = 1'-0"



01 FLOOR TRANSITION DETAILS

SCALE: 3" = 1'-0"

FINISH LEGEND							
FINISH MARK	FINISH LOCATION / TYPE	DESCRIPTION	MANUFACTURER	PATTERN / STYLE	COLOR	FINISH NOTES	REP CONTACT
ADD ALTERNATE #02							
CP11	ADD ALTERNATE #02	CARPET TILE	MILLIKEN	ENTRANCE FLOORING OBEX CUTX/FRZ	DARK GREY	19.7' x 19.7' INSTALLATION: NON DIRECTIONAL	
ST1	ADD ALTERNATE #02	STAINLESS STEEL	AMERICAN ELEVATOR			WALL PANEL MATERIAL	
CARPET							
CP1	CARPET	CARPET TILE	MILLIKEN	ENTRANCE FLOORING OBEX CUTX/FRZ	DARK GREY	19.7' x 19.7' INSTALLATION: NON DIRECTIONAL	
CP2	CARPET	CARPET TILE	INTERFACE	THREAD STORY / DRAWN THREADS	ONYX TWILL	9.8' x 39.3' INSTALLATION: ASHLAR	
CP3	CARPET	CARPET TILE	INTERFACE	THREAD STORY / LOOM OF LIFE	ONYX TAUPÉ	9.8' x 39.3' INSTALLATION: ASHLAR	
CP4	CARPET	CARPET TILE	INTERFACE	LOOK BOTH WAYS / STEP THIS WAY	ASH	19.6' x 19.6' INSTALLATION: ASHLAR	
CP5	CARPET	CARPET TILE	INTERFACE	IMMENSE	TRAVERTINE	9.8' x 39.3' INSTALLATION: ASHLAR	
CP6	CARPET	CARPET TILE	INTERFACE	INTERMEDIO	TRAVERTINE	9.8' x 39.3' INSTALLATION: ASHLAR	
CP16A	CARPET	CARPET TILE	INTERFACE	OBLIGATO	TRAVERTINE	9.8' x 39.3' INSTALLATION: ASHLAR	
CP7	CARPET	CARPET TILE	INTERFACE	THREAD STORY / FUTURE WOVEN	FIELDSTONE	9.8' x 39.3' INSTALLATION: ASHLAR	
CP8	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	BLUE LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP9	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	BUSH LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP10	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	BROWN LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP11	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	GREEN LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP12	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	MEADOW LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP13	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	RUST LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP14	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	SAGE LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CP15	CARPET	CARPET TILE	INTERFACE	PANOLA MOUNTAIN	YELLOW LICHEN	19.6' x 19.6' INSTALLATION: QUARTER TURNED	PLEASE CALL JAE PARK WITH INTERFACE AT 317.445.2813.
CERAMIC / PORCELAIN TILE							
CT1	CERAMIC / PORCELAIN TILE	CERAMIC TILE	DAITILE	COLOR WHEEL LINEAR	BISCUIT K775 / MATTE	4" x 12" INSTALLATION: MONOETHIC	
CT1A	CERAMIC / PORCELAIN TILE	CERAMIC TILE	DAITILE	COLOR WHEEL LINEAR	ARCTIC WHITE D190	4" x 12" INSTALLATION: MONOETHIC	
CT2	CERAMIC / PORCELAIN TILE	CERAMIC TILE	DAITILE	MESEST	SPRIT	3" x 12" INSTALLATION: MONOETHIC	
G1	CERAMIC / PORCELAIN TILE	GROUT	TEC		935 SILHOUETTE	USE WITH PCT1. SETTING MATERIALS AND GROUT TO BE BY SAME MFG.	
G2	CERAMIC / PORCELAIN TILE	GROUT	TEC		931 STANDARD WHITE	USE WITH CT1 AND CT1A. SETTING MATERIALS AND GROUT TO BE BY SAME MFG.	
G3	CERAMIC / PORCELAIN TILE	GROUT	TEC		909 STERLING	USE WITH CT2. SETTING MATERIALS AND GROUT TO BE BY SAME MFG.	
PC1	CERAMIC / PORCELAIN TILE	PORCELAIN TILE	PLATFORM SURFACES	ARTWORK	ARGILLA	8" x 48" 1/2" x 48" 18'X36" INSTALLATION: ALL TILE TO BE 18'X36" EXCEPT FOR MAINSTREET PATTERNS. REFER TO FINISH PLANS.	
PC2	CERAMIC / PORCELAIN TILE	PORCELAIN TILE	DAITILE	ELEMENTAL SELECTION - PANORAMIC PORCELAIN SURFACES	CAIACATTA TOPAZ CH82	85" x 128" .6MM THICK. INSTALLATION: REFER TO FINISH PLANS.	
CONCRETE							
CONC1	CONCRETE	CONCRETE		LEVEL 3 POLISHED CONCRETE.	FINAL POLISH TO BE 800-GRIT DIAMOND ABRASIVE	PROVIDE HARDENER FOLLING INITIAL GRIDING.	
FABRIC							
CB1	FABRIC	CUBICLE CURTAIN	KNOLL	SIGNAL		LIGHTHOUSE	
FB1	FABRIC	FABRIC	MAHARAM	TEK-WALL LUCENT		002 VILLAGE	
FB2	FABRIC	FABRIC	MAHARAM	TEK-WALL RIDGE		015 SAVIOR	
FB3	FABRIC	DRAPERY	MAHARAM	BOUCLE LENO		002 PEARL	
FB4	FABRIC	FABRIC	DESIGNTEX	BILLIARD CLOTH		SUNFLOWER 3549-201	
MIDMARK							
CAB1	MIDMARK	SYNTHESIS CABINETRY	MIDMARK		PEARL ESSENCE		
FB5	MIDMARK	UPHOLSTERY	MIDMARK		CRANBERRY 659		
SS2	MIDMARK	SOLID SURFACE	CORIAN		ELEGANT GREY	THICKNESS: 1/2"	
MILLWORK							
PL1	MILLWORK	PLASTIC LAMINATE	WILSONART		NEOWALNUT 7991-38		
PL2	MILLWORK	PLASTIC LAMINATE	FORMICA		WOJAVE 8751-PX		
PL3	MILLWORK	PLASTIC LAMINATE	WILSONART		SLATE GREY D91K-18		
Q21	MILLWORK	QUARTZ	CAESARSTONE		PRIMORDIA 4043	SQUARE PROFILE. QUARTZ ON BACKSPASH TO BE 2CM. QUARTZ HORIZONTAL SURFACES / COUNTERTOPS TO BE 3CM. THICKNESS: 1/2"	
SS1	MILLWORK	SOLID SURFACE	STARON	PEBBLE CHIFFON		THICKNESS: 1/2"	
SS2	MILLWORK	SOLID SURFACE	CORIAN	ELEGANT GREY		THICKNESS: 1/2"	
SS3	MILLWORK	SOLID SURFACE	CORIAN	DEEP SABLE		THICKNESS: 1/2". MAINSTREET ARCH MATERIAL.	CONTACT HEDI GESSNER. E: HEDI.GESSNER@OVSCO.COM P: 317.590.0290. PREFERRED THERMOFORM FABRICATOR: TRADEMARK SURFACES. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
PAINT							
PT1	PAINT	PAINT	BENJAMIN MOORE	INTERIOR PAINT	CHINA WHITE OC141		
PT2	PAINT	PAINT	BENJAMIN MOORE	INTERIOR PAINT	REVERE PEWTER HC-172		
PT3	PAINT	PAINT	SHERWIN WILLIAMS	INTERIOR PAINT	SW 7032 WARM STONE		
PT4	PAINT	PAINT	SHERWIN WILLIAMS	INTERIOR PAINT	SW 7020 BLACK FOX		
PT5	PAINT	PAINT	GLIDDEN	INTERIOR PAINT	STEWART HOUSE BROWN 5019R 06/081		
PT6	PAINT	PAINT	PPG	INTERIOR PAINT	CITRUS YELLOW PPG1109-4		
PHARMACY							
PL4	PHARMACY	PLASTIC LAMINATE	FORMICA		NEUTRAL TWILL 8826-58	CABINETS AND END PANELS	
PL5	PHARMACY	PLASTIC LAMINATE	WILSONART		GREY 1590-60	COUNTERTOP	
RESILIENT							
LVT1	RESILIENT	VINYL TILE	SHAW CONTRACT	SOUTUDE 064BV	NATURAL 48250	6' x 48" NOMINAL. 20 MIL. 5MM THICK. DIRECT GLUE	
LVT2	RESILIENT	VINYL TILE	MOHAWK GROUP	BOLDER C0010	888 SCHIST	36" x 36" NOMINAL. 20 MIL. 5MM THICK.	
RS1	RESILIENT	RUBBER STAIR TREAD	MANNINGTON	COLORSCAPE STAIR TREADS	BLACK BROWN 523	TEXTURE: SCULPTED	
SV1	RESILIENT	SHEET GOODS	TARKETT/JOHNSONITE	IQ OPTIMA	RAW IVORY 0862	6.5' x 82' ROLLED GOODS	
WALL BASE							
B1	WALL BASE	WALL BASE - RUBBER	JOHNSONITE COVE	4" TRADITIONAL	TB1 PEPPERCORN	ROLL GOOD.	
B2	WALL BASE	WALL BASE - RUBBER	JOHNSONITE MILLWORK	MANDALAY (4TH)	TB1 PEPPERCORN		
B3	WALL BASE	WALL BASE - RUBBER	JOHNSONITE MILLWORK	MANDALAY (6TH)	TB1 PEPPERCORN		
WALLCOVERING							
WC1	WALLCOVERING	WALLCOVERING	WOLF GORDON	GRAIN	PINE		
WC2	WALLCOVERING	WALLCOVERING	WOLF GORDON	GRAIN	ROSEWOOD		
WP1	WALLCOVERING	WALL PROTECTION	C/S ACROVYN	1.5MM. SUEDE TEXTURED SHEET. PVC FREE	933 MISSION WHITE		
WOOD							
WD1	WOOD	WOOD	SURFACING SOLUTIONS	TAMBOUR SAMPLE: PROFILE 311	SPECIES: WALNUT		
WF1	WOOD	WOOD FLOORING	SOLID WOOD (REFER TO DETAILS)	-	-	BASIS OF DESIGN: FINISH AND STAIN TO MATCH RESAWN JUMBO NORTH AMERICAN WHITE OAK TARANTELLA.	
RS1	WOOD	WOOD STAIR					

GENERAL FINISH NOTES

- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER EFFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.
- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED MISC. STEEL UNTELS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.
- FLOORING:**
- REVIEW AND ABIDE BY ALL MANUFACTURER INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION OF FLOORING MATERIALS.
 - CONTRACTOR TO USE MANUFACTURER'S RECOMMENDED PRIMERS, SEALERS, AND ADHESIVES.
 - SUBFLOOR MUST BE LEVEL, SOUND, RIGID, CLEAN/FREE OF ANY DEBRIS, AND PERMANENTLY DRY PRIOR TO INSTALLATION. LEVEL ALL FLOORS IN ACCORDANCE WITH FLOORING FINISH MANUFACTURERS SPECIFICATIONS. THE INSTALLATION OF FINISH FLOORING MATERIALS SHALL BE AS ACCEPTANCE OF SLAB CONDITION. FLOORING MATERIALS SHALL BE FROM THE SAME PRODUCTION RUN. ALL FLOORING TO RUN UNDER CASEWORK, LOCKERS, ETC.
 - WHERE DISSIMILAR FLOORING FINISHES MEET, THEY MUST DO SO UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
 - FLOORING CONTRACTOR TO PROVIDE AND INSTALL TRANSITION STRIP BETWEEN DISSIMILAR FLOORING MATERIALS. TRANSITION STRIP IS TO BE SCHLUTER SCHIENE OR EQUAL, WITH A BRUSHED ANTIQUE BRONZE ANNOXIDIZED ALUMINUM FINISH. APPLY FLOOR LEVELING COMPOUND, IF NEEDED, TO ALLOW FOR BOTH FLOORING SURFACES TO BE COMPLETELY LEVEL AT POINT OF TRANSITION. REFER TO 01/A700 FOR TYPICAL FLOOR TRANSITION DETAILS.

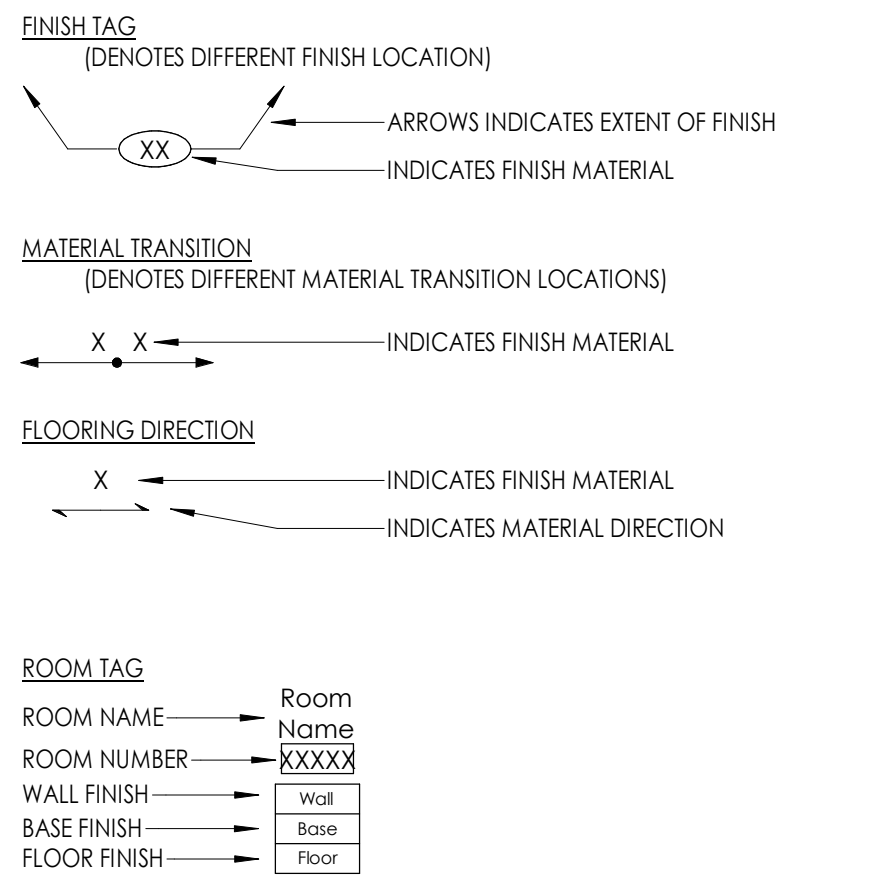
- CEILINGS / WALLS:**
- ALL WALLS TO BE PAINTED **PT1**, UNLESS NOTED OTHERWISE.
 - ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**, UNLESS NOTED OTHERWISE.
 - ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL **4** FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.

- BASE:**
- ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.

- MILLWORK:**
- CALULK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.

- FURNITURE / EQUIPMENT:**
- FURNITURE SHOWN IS NOT PART OF THIS WORK AND IS TO BE SUPPLIED AND INSTALLED BY THE FURNITURE SUPPLIER. FURNITURE FOR REFERENCE ONLY.
 - REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - REFER TO A801 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

GENERAL FINISH SYMBOLS



618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
a x i s o r c h . c o m

Drawn: [Name]
Checked: [Name]
Date: 09/12/2022

REVISIONS:
DESCRIPTION DATE
1 ADDENDUM #01 09/29/2022
2 ADDENDUM #02 10/06/2022

CLIENT
DAMIAN CENTER
ALAN WITCHEY, President and CEO
24 North Algonquin Avenue
Indianapolis, Indiana 46201
PH 317.433.0123

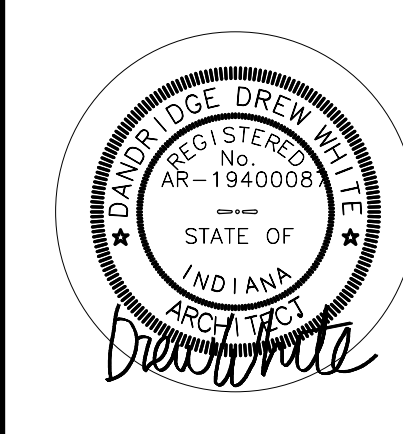
CIVIL ENGINEER
JSC
JANIS CHEN
8440 Algon Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

STRUCTURAL ENGINEER
JSC
JANIS CHEN
8440 Algon Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

MEP ENGINEER
JSC
JANIS CHEN
8440 Algon Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIS CHEN, P.L.A., AIA
195 N HARBOR DR #3605
Chicago, IL 60611
PH 847.363.0168

DAMIAN CENTER
NEW DAMIAN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



FINISH SCHEDULES AND SPECIFICATIONS

A700
PROJECT NUMBER: 2021029

GENERAL FINISH NOTES

- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.

- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED MISC. STEEL LINTELS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.

- FLOORING:**
- REVIEW AND ABIDE BY ALL MANUFACTURER INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION OF FLOORING MATERIALS.
 - CONTRACTOR TO USE MANUFACTURER'S RECOMMENDED PRIMERS, SEALERS, AND ADHESIVES.
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 - WHERE DISSIMILAR FLOORING FINISHES MEET, THEY MUST DO SO UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
 - FLOORING CONTRACTOR TO PROVIDE AND INSTALL TRANSITION STRIP BETWEEN DISSIMILAR FLOORING MATERIALS. TRANSITION STRIP IS TO BE SCHLUTER SCHIENE OR EQUAL, WITH A BRUSHED ANTIQUE BRONZE ANODIZED ALUMINUM FINISH. APPLY FLOOR LEVELING COMPOUND, IF NEEDED, TO ALLOW FOR BOTH FLOORING SURFACES TO BE COMPLETELY LEVEL AT POINT OF TRANSITION. REFER TO 01/A700 FOR TYPICAL FLOOR TRANSITION DETAILS.

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 - ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL **4** FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.

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- ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.

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- CALULK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.

- FURNITURE / EQUIPMENT:**
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- REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE, NOTED WITH TYPE MARK "SE".
- REFER TO A801 FOR PLUMBING ACCESSORY SCHEDULE, NOTED WITH TYPE MARK "T".

GENERAL FINISH SYMBOLS

- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
XX
ARROWS INDICATES EXTENT OF FINISH
INDICATES FINISH MATERIAL
- MATERIAL TRANSITION**
(DENOTES DIFFERENT MATERIAL TRANSITION LOCATIONS)
X X
INDICATES FINISH MATERIAL
- FLOORING DIRECTION**
X
INDICATES FINISH MATERIAL
INDICATES MATERIAL DIRECTION
- ROOM TAG**
Room Name
Room Number
Wall Finish
Base Finish
Floor Finish

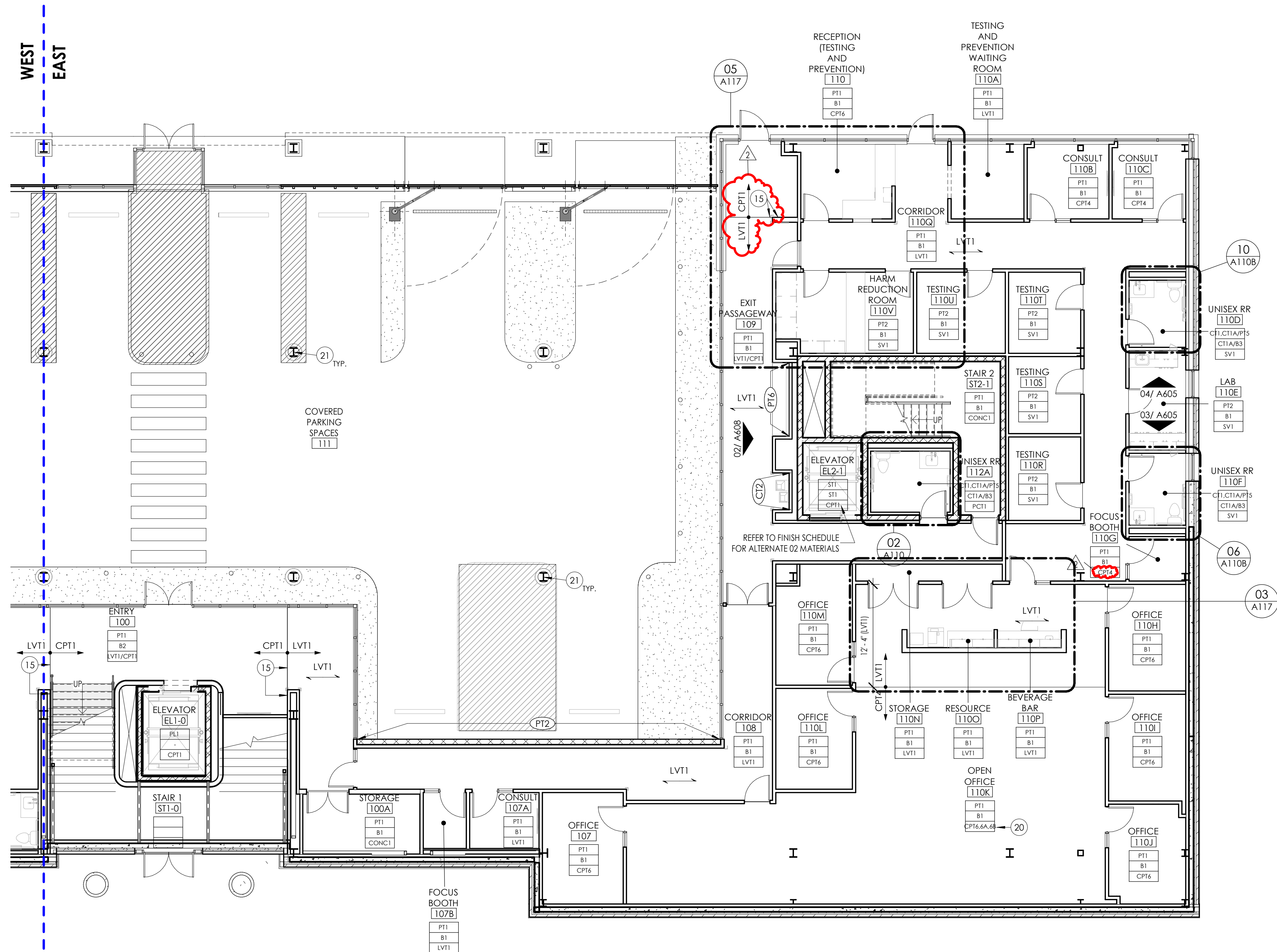
FINISH PLAN KEYNOTES

- WALL PROTECTION (WP1) BEHIND JANITOR SINK (BOTH SIDES) TO BE INSTALLED UP TO 4H AND EXTEND PAST EDGE OF SINK BY 6". UTILIZE APPROPRIATE EDGE TRIM.
- PROVIDE WALL PROTECTION (WP1) FROM ABOVE WALL BASE TO FULL HEIGHT ON ALL WALLS OF WAITING KITCHEN.
- PROVIDE BLOCKING AS REQUIRED.
- FLOOR PATTERN WITHIN THIS AREA COMPOSED OF CARPETS (CPT8-CPT15) ON FINISH SCHEDULE. REFER TO INTERFACE DOCUMENTATION FOR LAYOUT, CARPET ISLAND TO LAY ON TOP OF LVT. REFER TO A700 FOR FLOOR TRANSITIONS.
- BASE BID: LVT FLOORING. ADD ALTERNATE #03 - WOOD FLOORING (WF1) AT ENTRY 300, MAINSTREET 301, MOTHER'S ROOM 304C, CORRIDOR 305 AND SOCIAL HUB 307.
- BASE BID: LVT FLOORING. ADD ALTERNATE #04 - PCT1 AT ENTRY 300, RECEPTION 201, MAINSTREET 202A & 202B, VESTIBULE 202C, CORRIDOR 204, AND CLIENT WAITING 205B.
- PAINT TO TRANSITION IN A CLEAN, SHARP, STRAIGHT LINE.
- FROM THIS POINT ON HEADING WEST, PLAN FOR LVT2 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR LVT2 (MONOLITHIC STEPPING).
- FROM THIS POINT ON HEADING EAST, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT VERTICAL RIBS, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT VERTICAL RIBS, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR (PCT1) (REFER TO 08/A117 FOR TILE PATTERN).
- FROM THIS POINT ON HEADING EAST, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- ALIGN FLOOR FINISH TRANSITION WITH WALL AND/OR VERTICAL STRUCTURE.
- FOR FLOOR TRANSITION AT TOP OF RAMP, REFER TO 01/A700.
- BASE BID: PCT1 FLOORING.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: (S32) COUNTERTOP, (CA81) CASEWORK, AND (F85) EXAM TABLE BY MEDIMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- DRAFFERY FABRIC ON CEILING MOUNT TRACK SYSTEM. REFER TO DETAIL 07/A421.
- CARPET TO BE A BLEND OF 50% (CPT6A) AND 25% EACH (CPT6 AND CPT6B).
- STEEL COLUMNS TO BE PAINTED (HP2). REFER TO EXTERIOR MATERIALS LEGEND FOR MORE INFORMATION.

WEST EAST

KEY PLAN - EAST

SCALE: NTS



01 FIRST FLOOR INTERIOR FINISH PLAN - EAST

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



02 ALTERNATE #04 - SECOND FLOOR INTERIOR FINISH PLAN - WEST
SCALE: 1/8" = 1'-0"



01 SECOND FLOOR INTERIOR FINISH PLAN - WEST
SCALE: 1/8" = 1'-0"

GENERAL FINISH NOTES

- GENERAL:**
- A. PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - B. WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - C. ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - D. AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.
- PAINTING:**
- A. ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - B. PAINT ALL EXPOSED MISC. STEEL UNITS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.
- FLOORING:**
- A. REVIEW AND ABIDE BY ALL MANUFACTURER INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION OF FLOORING MATERIALS.
 - B. CONTRACTOR TO USE MANUFACTURER'S RECOMMENDED PRIMERS, SEALERS, AND ADHESIVES.
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 - D. WHERE DISSIMILAR FLOORING FINISHES MEET, THEY MUST DO SO UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
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- CEILINGS / WALLS:**
- A. ALL WALLS TO BE PAINTED PT1, UNLESS NOTED OTHERWISE.
 - B. ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**, UNLESS NOTED OTHERWISE.
 - C. ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - D. ALL DRYWALL TO BE LEVEL 4 FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - E. ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED PT1.
- BASE:**
- A. ALL BASE TO BE B1 UNLESS NOTED OTHERWISE.
 - B. ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.
- MILLWORK:**
- A. CAULK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - B. ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - C. ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - D. ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
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GENERAL FINISH SYMBOLS

- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
- ARROWS INDICATES EXTENT OF FINISH
 - INDICATES FINISH MATERIAL
- MATERIAL TRANSITION**
(DENOTES DIFFERENT MATERIAL TRANSITION LOCATIONS)
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- FLOORING DIRECTION**
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- ROOM TAG**
- | Room Name | Room Number | Wall Finish | Base Finish | Floor Finish |
|-----------|-------------|-------------|-------------|--------------|
| Room Name | Room Number | Wall Finish | Base Finish | Floor Finish |

FINISH PLAN KEYNOTES

- WALL PROTECTION (WP1) BEHIND JANITOR SINK (BOTH SIDES) TO BE INSTALLED UP TO 4H AND EXTEND PAST EDGE OF SINK BY 6". UTILIZE APPROPRIATE EDGE TRIM.
- PROVIDE WALL PROTECTION (WP1) FROM ABOVE WALL BASE TO FULL HEIGHT ON ALL WALLS OF WAITING KITCHEN.
- PROVIDE BLOCKING AS REQUIRED.
- FLOOR PATTERN WITHIN THIS AREA COMPOSED OF CARPETS (CPT8-CPT15) ON FINISH SCHEDULE. REFER TO INTERFACE DOCUMENTATION FOR LAYOUT. CARPET ISLAND TO LAY ON TOP OF LVT. REFER TO A700 FOR FLOOR TRANSITIONS.
- BASE BID: LVT FLOORING. ADD ALTERNATE #03 - WOOD FLOORING (WF1) AT ENTRY 300, MAINSTREET 301, MOTHER'S ROOM 304C, CORRIDOR 305 AND SOCIAL HUB 307.
- BASE BID: LVT FLOORING. ADD ALTERNATE #04 - PCT AT ENTRY 200, RECEPTION 201, MAINSTREET 202A & 202B, VESTIBULE 202C, CORRIDOR 204, AND CLINIC WAITING 205B.
- PAINT TO TRANSITION IN A CLEAN, SHARP, STRAIGHT LINE.
- FROM THIS POINT ON HEADING WEST, PLAN FOR LVT2 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR LVT2 (MONOLITHIC STEPPING).
- FROM THIS POINT ON HEADING EAST, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT VERTICAL RIBS, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT VERTICAL RIBS, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR (PCT1) REFER TO 08/A117 FOR TILE PATTERN).
- FROM THIS POINT ON HEADING EAST, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- ALIGN FLOOR FINISH TRANSITION WITH WALL AND/OR VERTICAL STRUCTURE.
- FOR FLOOR TRANSITION AT TOP OF RAMP, REFER TO 01/A700.
- BASE BID: PCT1 FLOORING.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: (S32) COUNTERTOP, (CA81) CASEWORK, AND (F85) EXAM TABLE BY MEDIMARK, OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/ DATA REQUIREMENTS WITH MEP DWGS.
- DRAWERY FABRIC ON CEILING MOUNT TRACK SYSTEM. REFER TO DETAIL 07/A421.
- CARPET TO BE A BLEND OF 50% CPT6A AND 50% EACH CPT6 AND CPT6B.
- STEEL COLUMNS TO BE PAINTED (HP2). REFER TO EXTERIOR MATERIALS LEGEND FOR MORE INFORMATION.

KEY PLAN

NTS

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

REVISIONS:

#	DESCRIPTION	DATE
1 <td>ADDENDUM #02</td> <td>10/04/2022</td>	ADDENDUM #02	10/04/2022

CIVIL ENGINEER

JASON
JASON FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

STRUCTURAL ENGINEER

JASON
JASON FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1964

MEP ENGINEER

SEAN
SEAN GOSKOWSKA, PE, Managing Partner
1344 South Kingsley Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT

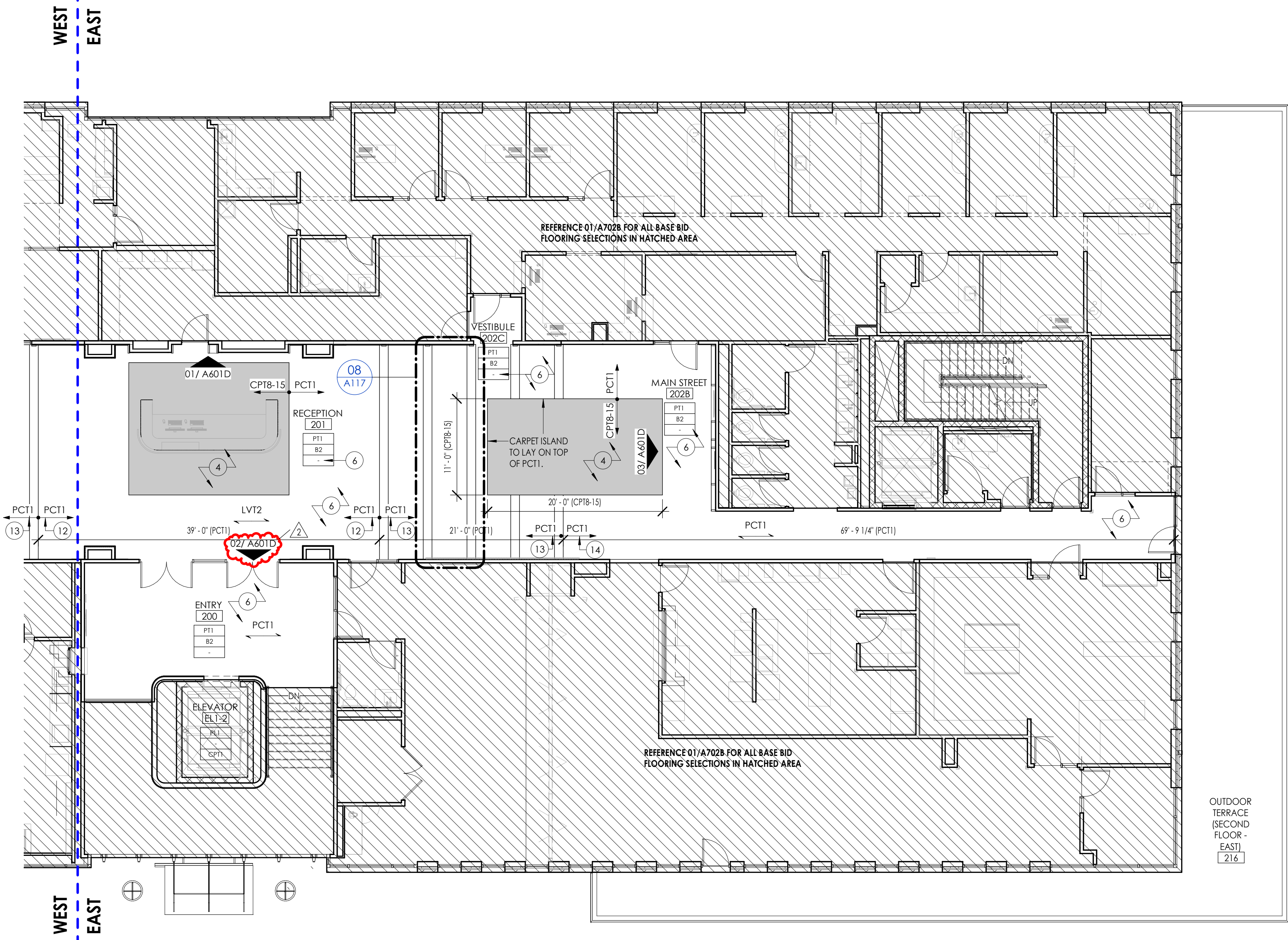
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., AIA
195 N HARBOUR DR #3605
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DAMIAN CENTER
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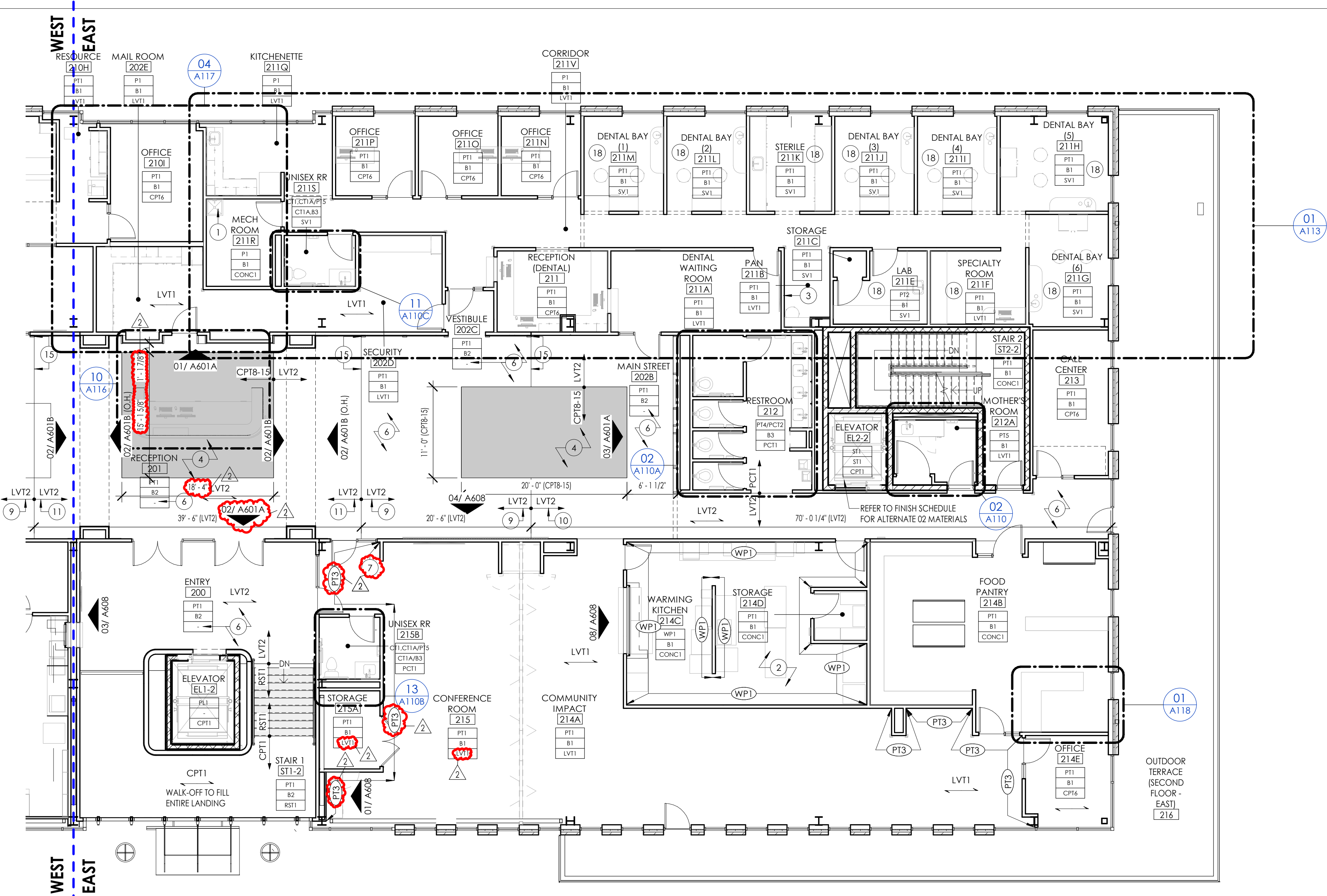
REGISTERED PROFESSIONAL ARCHITECT
No. AR-194008
STATE OF INDIANA
Drew Harte

SECOND FLOOR INTERIOR
FINISH PLAN - WEST

A702A
PROJECT NUMBER: 2021029



02 ALTERNATE #04 - SECOND FLOOR INTERIOR FINISH PLAN - EAST
SCALE: 1/8" = 1'-0"



01 SECOND FLOOR INTERIOR FINISH PLAN - EAST
SCALE: 1/8" = 1'-0"

GENERAL FINISH NOTES

- GENERAL:**
- A. PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - B. WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
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 - C. ALL GYPSUM CEILINGS TO BE PAINTED BRIGHT CEILING WHITE UNLESS NOTED OTHERWISE.
 - D. ALL DRYWALL TO BE LEVEL 4 FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
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 - C. ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - D. ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- A. FURNITURE SHOWN IS NOT PART OF THIS WORK AND IS TO BE SUPPLIED AND INSTALLED BY THE FURNITURE SUPPLIER. FURNITURE FOR REFERENCE ONLY.
 - B. REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - C. REFER TO A001 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

GENERAL FINISH SYMBOLS

- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
- ARROWS INDICATES EXTENT OF FINISH
 - INDICATES FINISH MATERIAL
- MATERIAL TRANSITION**
(DENOTES DIFFERENT MATERIAL TRANSITION LOCATIONS)
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- FLOORING DIRECTION**
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- ROOM TAG**
- | ROOM NAME | Room |
|--------------|--------|
| ROOM NUMBER | XXXXXX |
| WALL FINISH | Wall |
| BASE FINISH | Base |
| FLOOR FINISH | Floor |

FINISH PLAN KEYNOTES

- WALL PROTECTION (WP1) BEHIND JANITOR SINK (BOTH SIDES) TO BE INSTALLED UP TO 4H AND EXTEND PAST EDGE OF SINK BY 6". UTILIZE APPROPRIATE EDGE TRIM.
- PROVIDE WALL PROTECTION (WP1) FROM ABOVE WALL BASE TO FULL HEIGHT ON ALL WALLS OF WAITING KITCHEN.
- PROVIDE BLOCKING AS REQUIRED.
- FLOOR PATTERN WITHIN THIS AREA COMPOSED OF CARPETS (CP18-CP15) ON FINISH SCHEDULE. REFER TO INTERFACE DOCUMENTATION FOR LAYOUT. CARPET ISLAND TO LAY ON TOP OF LVT. REFER TO A700 FOR FLOOR TRANSITIONS.
- BASE BID: LVT FLOORING. ADD ALTERNATE #03 - WOOD FLOORING (WF1) AT ENTRY 300, MAINSTREET 301, MOTHER'S ROOM 304C, CORRIDOR 303 AND SOCIAL HUB 307.
- BASE BID: LVT FLOORING. ADD ALTERNATE #04 - PCT1 AT ENTRY 200, RECEPTION 201, MAINSTREET 202A & 202B, VESTIBULE 202C, CORRIDOR 204, AND CLIENT WAITING 205B.
- PAINT TO TRANSITION IN A CLEAN, SHARP, STRAIGHT LINE.
- FROM THIS POINT ON HEADING WEST, PLAN FOR LVT2 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR LVT2 (MONOLITHIC STEPPING).
- FROM THIS POINT ON HEADING EAST, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR (PCT1) (REFER TO 08/A117 FOR TILE PATTERN).
- FROM THIS POINT ON HEADING EAST, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- ALIGN FLOOR FINISH TRANSITION WITH WALL AND/OR VERTICAL STRUCTURE.
- FOR FLOOR TRANSITION AT TOP OF RAMP, REFER TO 01/A700.
- BASE BID: PCT1 FLOORING.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: (S32) COUNTERTOP, (CA81) CASEWORK, AND (F85) EXAM TABLE BY MEDIMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER DATA REQUIREMENTS WITH MEP DWGS.
- DRAPEY FABRIC ON CEILING MOUNT TRACK SYSTEM. REFER TO DETAIL 07/A421.
- CARPET TO BE A BLEND OF 50% (CP16) AND 25% EACH (CP16 AND CP14B).
- STEEL COLUMNS TO BE PAINTED (HP2). REFER TO EXTERIOR MATERIALS LEGEND FOR MORE INFORMATION.

WEST EAST

KEY PLAN - EAST

SCALE: NTS

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

DRAWN BY: DJ
CHECKED BY: CJ
DATE (BIDD): 09/12/2022

REVISIONS:

#	DESCRIPTION	DATE
2	ADDENDUM #02	10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Kensington Avenue
Indianapolis, Indiana 46201
PH 317 343-0123

CIVIL ENGINEER
JSO
JAMAR FLECK, PE
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

STRUCTURAL ENGINEER
JSO
DANIEL BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317 661-1944

MEP ENGINEER
JSO
SEAN GOSKOWSKA, PE, Managing Partner
134 South Kensington Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8544

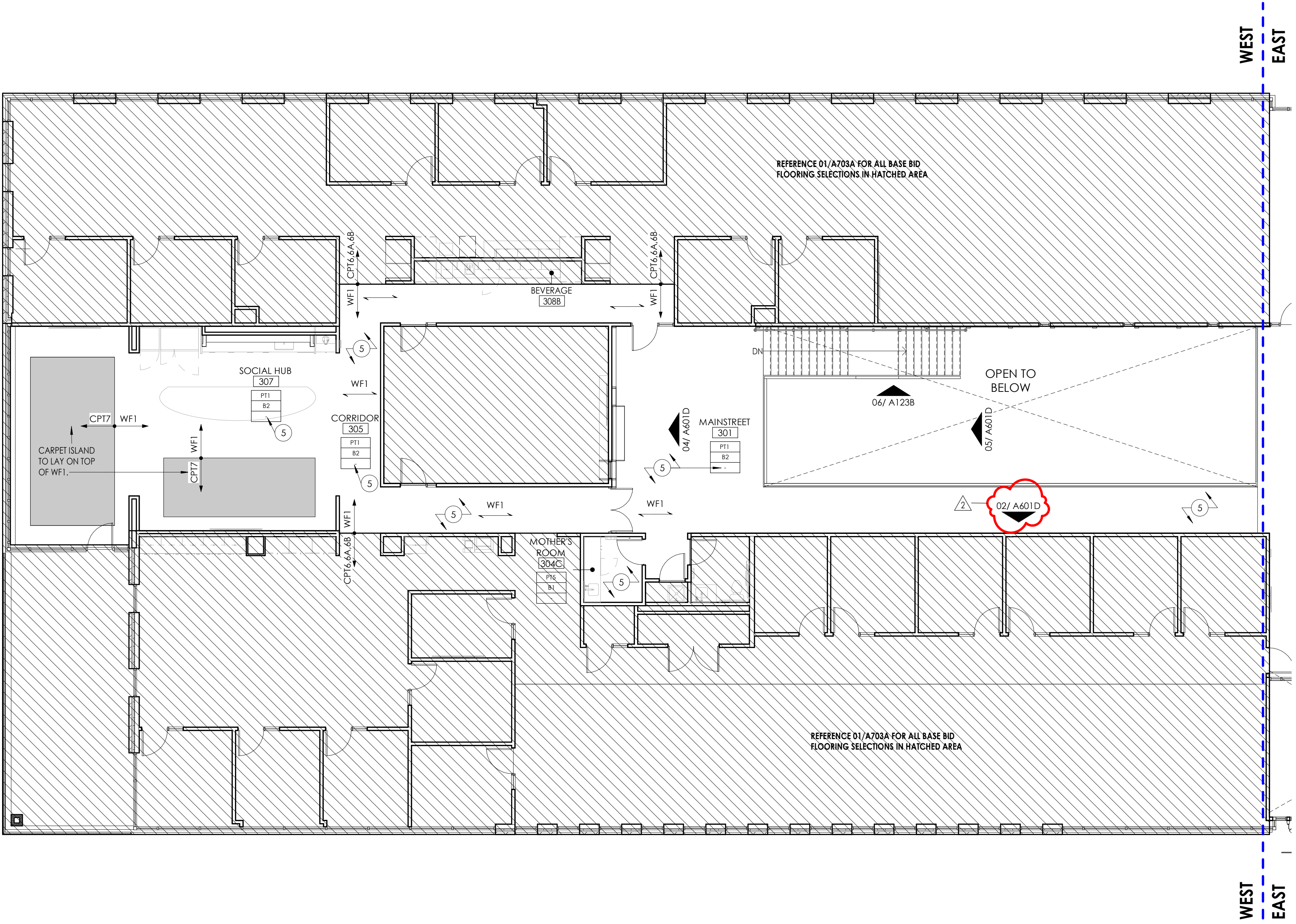
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

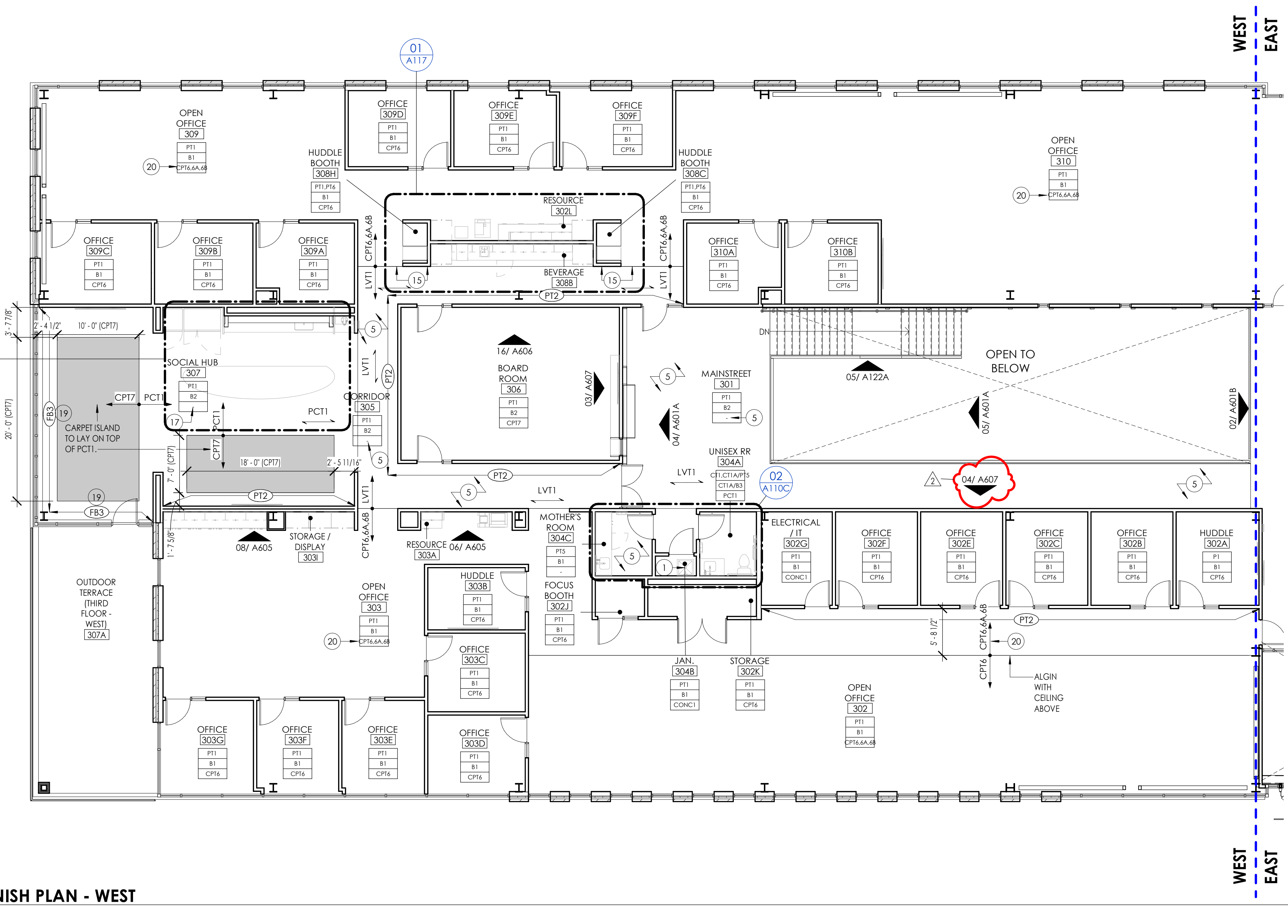


SECOND FLOOR INTERIOR
FINISH PLAN - EAST

A702B
PROJECT NUMBER: 2021029



02 ALTERNATE #03 - THIRD FLOOR INTERIOR FINISH PLAN - WEST
SCALE: 1/8" = 1'-0"



01 THIRD FLOOR INTERIOR FINISH PLAN - WEST
SCALE: 1/8" = 1'-0"

GENERAL FINISH NOTES

- GENERAL:**
- A. PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - B. WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - C. ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - D. AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.
- PAINTING:**
- A. ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - B. PAINT ALL EXPOSED MISC. STEEL LINTELS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.
- FLOORING:**
- A. REVIEW AND ABIDE BY ALL MANUFACTURER INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION OF FLOORING MATERIALS.
 - B. CONTRACTOR TO USE MANUFACTURER'S RECOMMENDED PRIMERS, SEALERS, AND ADHESIVES.
 - C. SUBFLOOR MUST BE LEVEL, SOUND, RIGID, CLEAN/FREE OF ANY DEBRIS, AND PERMANENTLY DRY PRIOR TO INSTALLATION. LEVEL ALL FLOORS IN ACCORDANCE WITH FLOORING FINISH MANUFACTURERS SPECIFICATIONS. THE INSTALLATION OF FINISH FLOORING MATERIALS SHALL BE TO ACCEPTANCE OF SLAB CONDITION. FLOORING MATERIALS SHALL BE FROM THE SAME PRODUCTION RUN. ALL FLOORING TO RUN UNDER CASEWORK, LOCKERS, ETC.
 - D. WHERE DISSIMILAR FLOORING FINISHES MEET, THEY MUST DO SO UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
 - E. FLOORING CONTRACTOR TO PROVIDE AND INSTALL TRANSITION STRIP BETWEEN DISSIMILAR FLOORING MATERIALS. TRANSITION STRIP IS TO BE SCHLUTER SCHIENE OR EQUAL, WITH A BRUSHED ANTIQUE BRONZE ANODIZED ALUMINUM FINISH. APPLY FLOOR LEVELING COMPOUND, IF NEEDED, TO ALLOW FOR BOTH FLOORING SURFACES TO BE COMPLETELY LEVEL AT POINT OF TRANSITION. REFER TO 01/A700 FOR TYPICAL FLOOR TRANSITION DETAILS.
- CEILINGS / WALLS:**
- A. ALL WALLS TO BE PAINTED **PT1**, UNLESS NOTED OTHERWISE.
 - B. ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**, UNLESS NOTED OTHERWISE.
 - C. ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - D. ALL DRYWALL TO BE LEVEL **4** FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - E. ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.
- BASE:**
- A. ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - B. ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.
- MILLWORK:**
- A. CAILK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - B. ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - C. ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - D. ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- A. FURNITURE SHOWN IS NOT PART OF THIS WORK AND IS TO BE SUPPLIED AND INSTALLED BY THE FURNITURE SUPPLIER. FURNITURE FOR REFERENCE ONLY.
 - B. REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - C. REFER TO A801 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

GENERAL FINISH SYMBOLS

- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
- ARROWS INDICATES EXTENT OF FINISH
 - INDICATES FINISH MATERIAL
- MATERIAL TRANSITION**
(DENOTES DIFFERENT MATERIAL TRANSITION LOCATIONS)
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- FLOORING DIRECTION**
- INDICATES FINISH MATERIAL
 - INDICATES MATERIAL DIRECTION
- ROOM TAG**
- | Room Name | Room Number | Wall Finish | Base Finish | Floor Finish |
|-----------|-------------|-------------|-------------|--------------|
| Room | X | W | B | F |

FINISH PLAN KEYNOTES

- WALL PROTECTION (WP1) BEHIND JANITOR SINK (BOTH SIDES) TO BE INSTALLED UP TO 4H AND EXTEND PAST EDGE OF SINK BY 6". UTILIZE APPROPRIATE EDGE TRIM.
- PROVIDE WALL PROTECTION (WP1) FROM ABOVE WALL BASE TO FULL HEIGHT ON ALL WALLS OF WAITING KITCHEN.
- PROVIDE BLOCKING AS REQUIRED.
- FLOOR PATTERN WITHIN THIS AREA COMPOSED OF CARPETS (CP16-CP17) ON FINISH SCHEDULE. REFER TO INTERFACE DOCUMENTATION FOR LAYOUT, CARPET ISLAND TO LAY ON TOP OF LVT. REFER TO A700 FOR FLOOR TRANSITIONS.
- BASE BID: LVT FLOORING. ADD ALTERNATE #03 - WOOD FLOORING (WF1) AT ENTRY 300, MAINSTREET 301, MOTHER'S ROOM 304C, CORRIDOR 305 AND SOCIAL HUB 307.
- BASE BID: LVT FLOORING. ADD ALTERNATE #04 - PCT1 AT ENTRY 200, RECEPTION 201, MAINSTREET 202A & 202B, VESTIBULE 202C, CORRIDOR 204, AND CLIENT WAITING 205B.
- PAINT TO TRANSITION IN A CLEAN, SHARP, STRAIGHT LINE.
- FROM THIS POINT ON HEADING WEST, PLAN FOR LV12 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR LV12 (MONOLITHIC STEPPING).
- FROM THIS POINT ON HEADING EAST, PLAN FOR LV12 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR LV12 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR (PCT1) REFER TO 08/A117 FOR TILE PATTERN).
- FROM THIS POINT ON HEADING EAST, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- ALIGN FLOOR FINISH TRANSITION WITH WALL AND/OR VERTICAL STRUCTURE.
- FOR FLOOR TRANSITION AT TOP OF RAMP, REFER TO 01/A700.
- BASE BID: PCT1 FLOORING.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: (S32) COUNTERTOP, (CA81) CASEWORK, AND (F85) EXAM TABLE BY MIDMARK, OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/DATA REQUIREMENTS WITH MEP DWGS.
- DRAPEY FABRIC ON CEILING MOUNT TRACK SYSTEM. REFER TO DETAIL 07/A421.
- CARPET TO BE A BLEND OF 50% (CP16A) AND 25% EACH (CP16 AND CP16B).
- STEEL COLUMNS TO BE PAINTED (HP2). REFER TO EXTERIOR MATERIALS LEGEND FOR MORE INFORMATION.

WEST EAST

KEY PLAN

SCALE: NTS

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Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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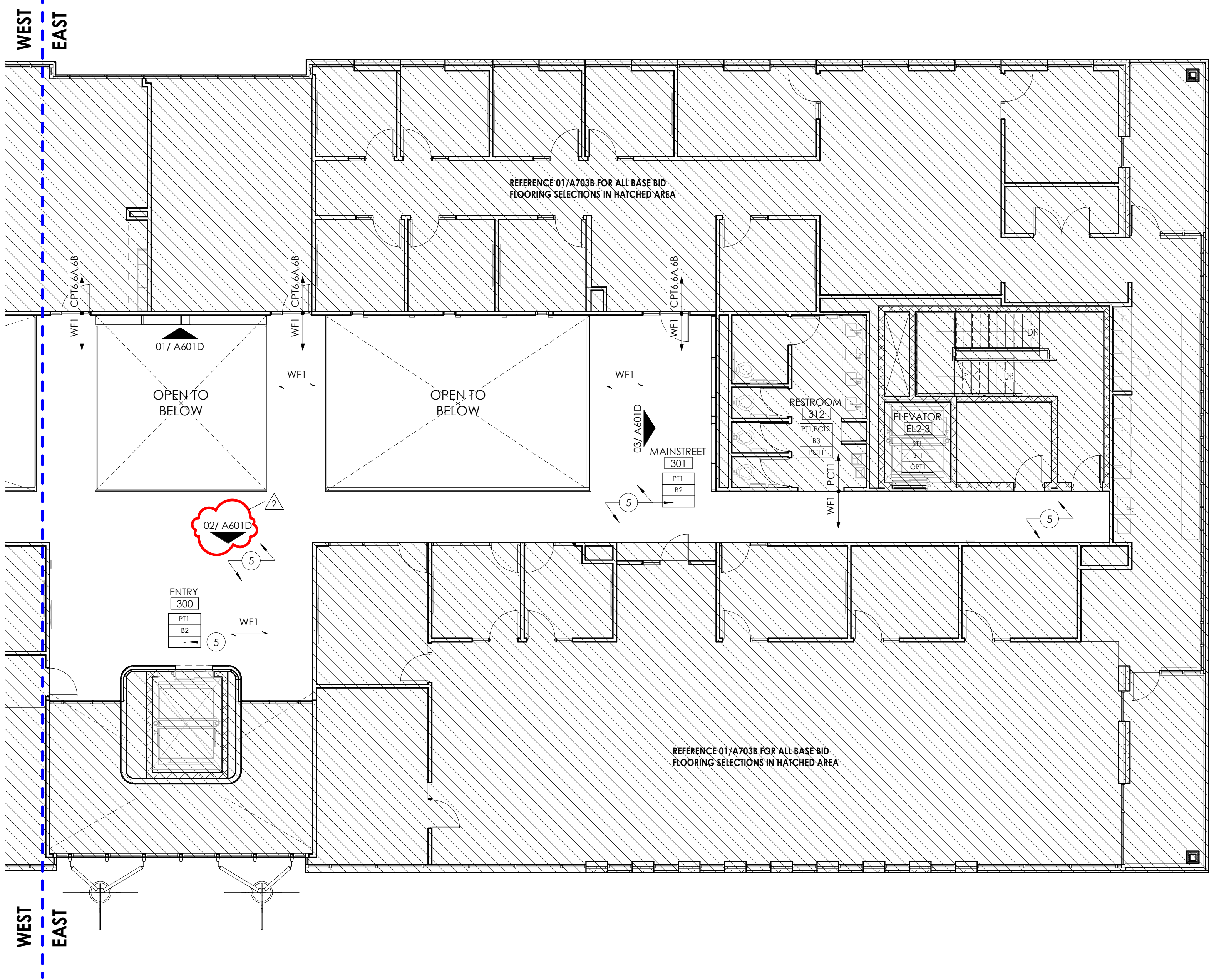
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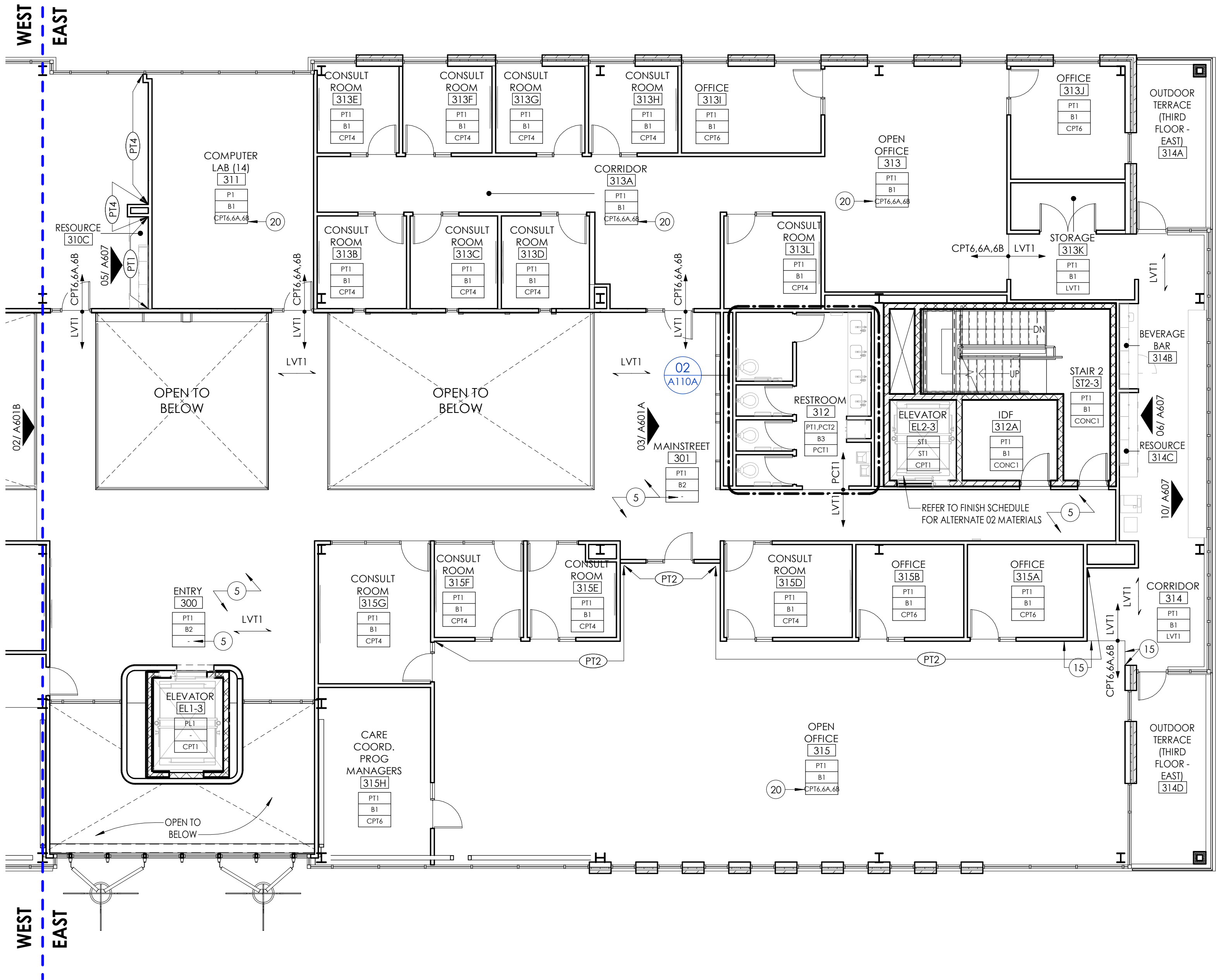
618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

618 East Market Street



02 ALTERNATE #03 - THIRD FLOOR INTERIOR FINISH PLAN - EAST
SCALE: 1/8" = 1'-0"



01 THIRD FLOOR INTERIOR FINISH PLAN - EAST
SCALE: 1/8" = 1'-0"

GENERAL FINISH NOTES

- GENERAL:**
- PROVIDE INTERIOR FINISH SAMPLE SUBMITTALS FOR ALL FINISH ITEMS FOR INTERIOR DESIGN APPROVAL PRIOR TO ORDERING FINISH MATERIALS AND INSTALLATION.
 - WHEN MORE THAN ONE FINISH IS NOTED FOR GIVEN AREA, ALWAYS COORDINATE WITH AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - ANY VARIATION IN PATTERN, TEXTURE, COLOR OR ANY OTHER DEFECT SHOULD BE BROUGHT TO THE ATTENTION OF AXIS ARCHITECTURE + INTERIORS FOR DIRECTION AND/OR APPROVAL.
 - AXIS ARCHITECTURE + INTERIORS STRONGLY RECOMMENDS ORDERING FINISHES IMMEDIATELY TO ENSURE TIMELY DELIVERY FOR AN ON-TIME INSTALLATION.
- PAINTING:**
- ALL PAINT FINISH LOCATIONS TO BE THREE-COAT SYSTEM. REFER TO SPECS FOR PREPARATION, SYSTEM DESCRIPTION AND PRODUCTS.
 - PAINT ALL EXPOSED MISC. STEEL UNTELS, PLATES, ANGLES, ETC. PX UNLESS NOTED OTHERWISE.
- FLOORING:**
- REVIEW AND ABIDE BY ALL MANUFACTURER INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION OF FLOORING MATERIALS.
 - CONTRACTOR TO USE MANUFACTURER'S RECOMMENDED PRIMERS, SEALERS, AND ADHESIVES.
 - SUBFLOOR MUST BE LEVEL, SOUND, RIGID, CLEAN/FREE OF ANY DEBRIS, AND PERMANENTLY DRY PRIOR TO INSTALLATION. LEVEL ALL FLOORS IN ACCORDANCE WITH FLOORING FINISH MANUFACTURERS SPECIFICATIONS. THE INSTALLATION OF FINISH FLOORING MATERIALS SHALL BE FROM THE SAME PRODUCTION RUN. ALL FLOORING TO RUN UNDER CASEWORK, LOCKERS, ETC.
 - WHERE DISSIMILAR FLOORING FINISHES MEET, THEY MUST DO SO UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE.
 - FLOORING CONTRACTOR TO PROVIDE AND INSTALL TRANSITION STRIP BETWEEN DISSIMILAR FLOORING MATERIALS. TRANSITION STRIP IS TO BE SCHLUTER SCHIENE OR EQUAL, WITH A BRUSHED ANTIQUE BRONZE ANODIZED ALUMINUM FINISH. APPLY FLOOR LEVELING COMPOUND, IF NEEDED, TO ALLOW FOR BOTH FLOORING SURFACES TO BE COMPLETELY LEVEL AT POINT OF TRANSITION. REFER TO 01/A700 FOR TYPICAL FLOOR TRANSITION DETAILS.
- CEILINGS / WALLS:**
- ALL WALLS TO BE PAINTED **PT1**, UNLESS NOTED OTHERWISE.
 - ALL VERTICAL + HORIZONTAL FACES OF BULKHEADS TO BE PAINTED **BRIGHT CEILING WHITE**, UNLESS NOTED OTHERWISE.
 - ALL GYPSUM CEILINGS TO BE PAINTED **BRIGHT CEILING WHITE** UNLESS NOTED OTHERWISE.
 - ALL DRYWALL TO BE LEVEL **4** FINISH, UNLESS KEY NOTED OTHERWISE ON FINISH PLANS.
 - ALL EXPOSED STRUCTURE AND MEP RELATED SYSTEMS TO BE PAINTED **PT1**.
- BASE:**
- ALL BASE TO BE **B1** UNLESS NOTED OTHERWISE.
 - ALL CABINETS ARE TO RECEIVE **B1** AT TOE KICK UNLESS NOTED OTHERWISE.
- MILLWORK:**
- CALLK SELECTIONS ARE TO BE PROVIDED TO AXIS ARCHITECTURE + INTERIORS FOR SELECTION AND/OR APPROVAL BEFORE INSTALLATION OF MILLWORK.
 - ALL COUNTERTOPS WITH SINKS WILL BE SOLID SURFACE. SINKS ARE TO BE UNDERMOUNTED.
 - ALL WINDOW SILLS TO BE SOLID SURFACE UNLESS NOTED OTHERWISE.
 - ALL COUNTERTOPS TO BE 24" DEEP, TO ALIGN WITH FINISH FACE OF CABINET DOOR AND / OR DRAWER, UNLESS NOTED OTHERWISE.
- FURNITURE / EQUIPMENT:**
- FURNITURE SHOWN IS NOT PART OF THIS WORK AND IS TO BE SUPPLIED AND INSTALLED BY THE FURNITURE SUPPLIER. FURNITURE FOR REFERENCE ONLY.
 - REFER TO A801 FOR SPECIALTY EQUIPMENT SCHEDULE. NOTED WITH TYPE MARK "SE".
 - REFER TO A801 FOR PLUMBING ACCESSORY SCHEDULE. NOTED WITH TYPE MARK "T".

GENERAL FINISH SYMBOLS

- FINISH TAG**
(DENOTES DIFFERENT FINISH LOCATION)
- ARROWS INDICATES EXTENT OF FINISH
INDICATES FINISH MATERIAL
- MATERIAL TRANSITION**
(DENOTES DIFFERENT MATERIAL TRANSITION LOCATIONS)
- X X X X
INDICATES FINISH MATERIAL
INDICATES MATERIAL DIRECTION
- FLOORING DIRECTION**
- X
INDICATES FINISH MATERIAL
INDICATES MATERIAL DIRECTION
- ROOM TAG**
- | | |
|--------------|-------|
| Room | Name |
| Room Number | XXXXX |
| Wall Finish | Wall |
| Base Finish | Base |
| Floor Finish | Floor |

FINISH PLAN KEYNOTES

- WALL PROTECTION (WP1) BEHIND JANITOR SINK (BOTH SIDES) TO BE INSTALLED UP TO 4H AND EXTEND PAST EDGE OF SINK BY 6". UTILIZE APPROPRIATE EDGE TRIM.
- PROVIDE WALL PROTECTION (WP1) FROM ABOVE WALL BASE TO FULL HEIGHT ON ALL WALLS OF WARNING KITCHEN.
- PROVIDE BLOCKING AS REQUIRED.
- FLOOR PATTERN WITHIN THIS AREA COMPOSED OF CARPETS (CPT6-CPT15) ON FINISH SCHEDULE. REFER TO INTERFACE DOCUMENTATION FOR LAYOUT, CARPET ISLAND TO LAY ON TOP OF LVT. REFER TO A700 FOR FLOOR TRANSITIONS.
- BASE BID: LVT FLOORING. ADD ALTERNATE #03 - WOOD FLOORING (WF1) AT ENTRY 300, MAINSTREET 301, MOTHER'S ROOM 304C, CORRIDOR 305 AND SOCIAL HUB 307.
- BASE BID: LVT FLOORING. ADD ALTERNATE #04 - PCT1 AT ENTRY 300, RECEPTION 201, MAINSTREET 202A & 202B, VESTIBULE 202C, CORRIDOR 204, AND CLIENT WAITING 205B.
- PAINT TO TRANSITION IN A CLEAN, SHARP, STRAIGHT LINE.
- FROM THIS POINT ON HEADING WEST, PLAN FOR LVT2 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR LVT2 (MONOLITHIC STEPPING).
- FROM THIS POINT ON HEADING EAST, PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR LVT2 (MONOLITHIC).
- AREA BETWEEN PATTERN AT 'VERTICAL RIBS'. PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- VERTICAL RIBS' SECTION, PLAN FOR (PCT1) REFER TO 08A117 FOR TILE PATTERN).
- FROM THIS POINT ON HEADING EAST, PLAN FOR 18'X36" PCT1 (MONOLITHIC).
- ALIGN FLOOR FINISH TRANSITION WITH WALL AND/OR VERTICAL STRUCTURE. FOR FLOOR TRANSITION AT TOP OF RAMP, REFER TO 01/A700.
- BASE BID: PCT1 FLOORING.
- CLINIC EXAM ROOMS & DENTAL ROOM FINISHES TO BE: (S32) COUNTERTOP, (CAB1) CASEWORK, AND (F85) EXAM TABLE BY MEDMARK. OWNER COORDINATED EQUIPMENT TO BE SUPPLIED BY OWNER'S VENDOR. COORDINATE POWER/DATA REQUIREMENTS WITH MEP DWGS.
- DRAPEY FABRIC ON CEILING MOUNT TRACK SYSTEM. REFER TO DETAIL 07/A421.
- CARPET TO BE A BLEND OF 50% (CPT6A) AND 25% EACH (CPT6 AND CPT6B).
- STEEL COLUMNS TO BE PAINTED (HP2). REFER TO EXTERIOR MATERIALS LEGEND FOR MORE INFORMATION.

WEST EAST

KEY PLAN - EAST

SCALE: NTS

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Indianapolis, Indiana 46202
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Project Drawings
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DRAWN BY: LJ
CHECKED BY: DS
DATE: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #02 10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Kensington Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JSC
DANIEL BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

STRUCTURAL ENGINEER
JSC
DANIEL BURCH
8445 Albion Pointe Blvd, Suite 425
Indianapolis, IN 46220
PH 317.661.1944

MEP ENGINEER
JSC
SEAN GOSWAMI, PE, Managing Partner
134 South Kensington Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8544

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANIE CHEN, P.A., A.S.A.
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

REGISTERED PROFESSIONAL ARCHITECT
No. 1940008
STATE OF INDIANA
Drew H. Harte

THIRD FLOOR INTERIOR
FINISH PLAN - EAST
A703B
PROJECT NUMBER: 2021029

- 1 CLEARANCE FOR FILTER MAINTENANCE AND REPLACEMENT FROM THE BOTTOM. DO NOT OBSTRUCT.
- 2 FLUE AND COMBUSTION AIR FOR GAS FIRED WATER HEATER. PROVIDE WITH A STAINLESS STEEL SIDEWALL VENT TERMINATION.
- 3 GEF-2 TO OPERATE BASED ON CO/NO2 SENSORS IN GARAGE.
- 4 GEF-1 TO OPERATE CONTINUOUSLY.
- 5 SOFFIT HEATER MOUNTED ABOVE CEILING, CONTROLLED BY INTERNAL THERMOSTAT.
- 6 WALL CASSETTE UNIT MOUNTED ABOVE DOOR.
- 7 CARBON MONOXIDE & NITROGEN DIOXIDE SENSORS TO TRIGGER OPERATION OF GEF-2 WHEN SENSORS ARE ACTIVATED.

The drawings indicate the general scope of the project in terms of overall design concept, the dimensions of the building, the major structural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe the details required for full performance and completion of the requirements set forth in the contract. On the basis of the general scope indicated or implied in the drawings, the Trade Contractors shall furnish all items required for the execution and completion of work.

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ED BY	SJO
SUED	09/12/2022

DESCRIPTION	DATE
ADDENDUM #2	10/06/2022

AMMIEN CENTER
IAN WITCHEY, President and CEO
North Arsenal Avenue
Indianapolis, Indiana 46201
317.632-0123

IL ENGINEER
COL
ANNAH FLECK, PE
0 East Vermont Street
ianapolis, IN 46204
317 661-1964

STRUCTURAL ENGINEER
JOE
DANIEL BURCH
100 East Vermont Street
Indianapolis, IN 46204
317 661-1964

PE ENGINEER
ISO CONSULTING LLC
AN ODUKOMAIYA, PE, Managing Partner
44 South Rangeline Road, Suite 202
Bloomington, Indiana 46032
317 344-8044

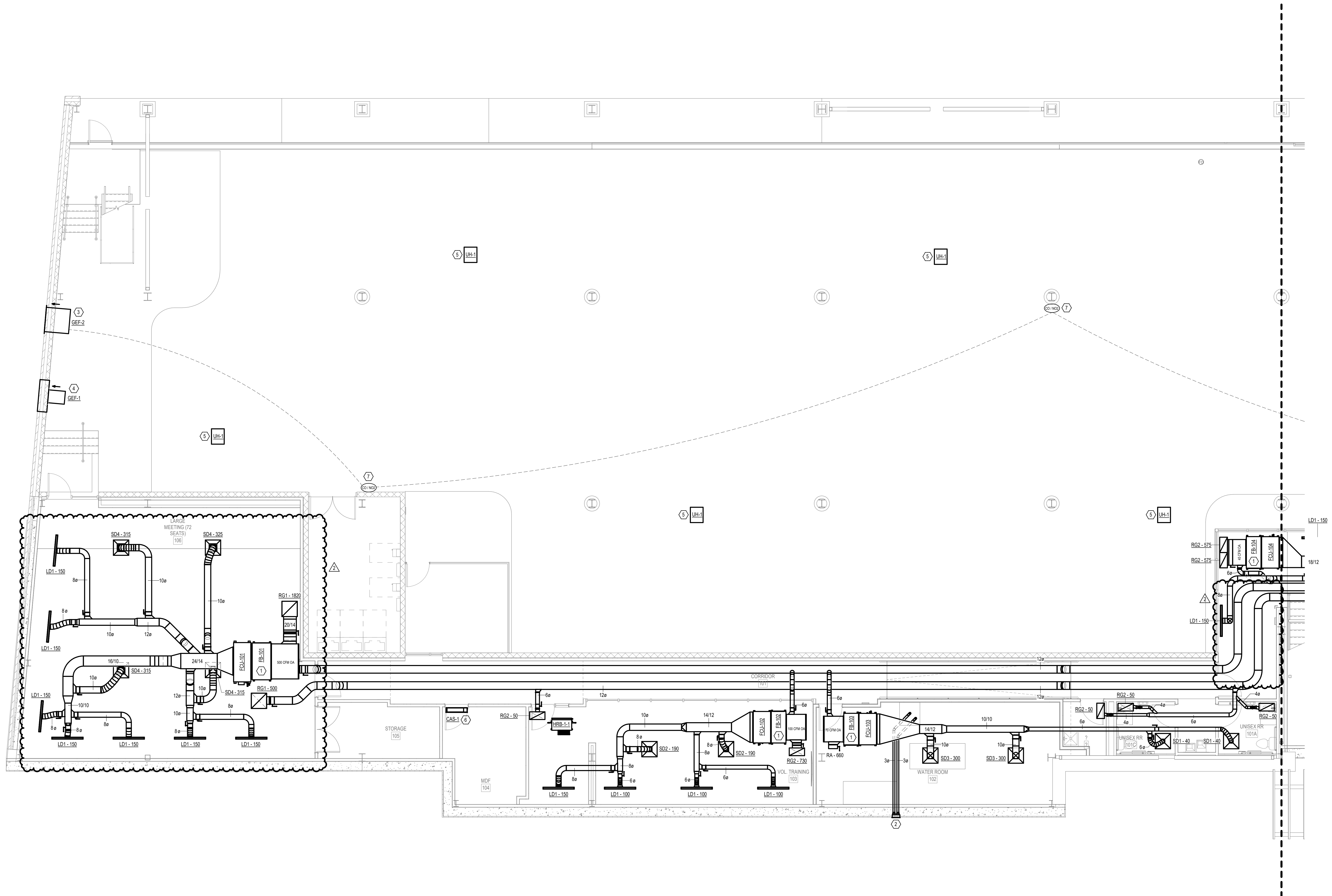
DSCAPE ARCHITECT
HEN SITE DESIGN STUDIO LLC
NE CHEN, PLA, ASLA
5 N HARBOR DR #3605
Chicago, IL 60601
847 363-0168

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NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



ST FLOOR MECHANICAL
PLAN - WEST

MH101A
CT NUMBER: 21034



  FIRST FLOOR MECHANICAL PLAN - WEST
3/16" = 1'-0"

SHEET KEYNOTES

- CLEARANCE FOR FILTER MAINTENANCE AND REPLACEMENT FROM THE BOTTOM. DO NOT OBSTRUCT.
- LINEAR DIFFUSER HUNG FROM STRUCTURE, TAP OFF BOTTOM OF SUPPLY MAIN WITH VOLUME DAMPER.
- LINEAR DIFFUSER HUNG FROM STRUCTURE.
- SOFFIT HEATER MOUNTED ABOVE CEILING, CONTROLLED BY INTERNAL THERMOSTAT.
- CARBON MONOXIDE & NITROGEN DIOXIDE SENSORS TO TRIGGER OPERATION OF FFP-2 WHEN SENSORS ARE ACTIVATED.
- FURNISH AND INSTALL TEMPERATURE CONTROL PANEL IN THIS LOCATION. TCC IS TO PROVIDE BACKNET JACKS AND ANY NECESSARY 24V TRANSFORMER. BACKNET JACKS IS TO INTEGRATE VRF SYSTEM AS WELL AS DOAS UNIT CONTROLS.

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
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REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #2 10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8844

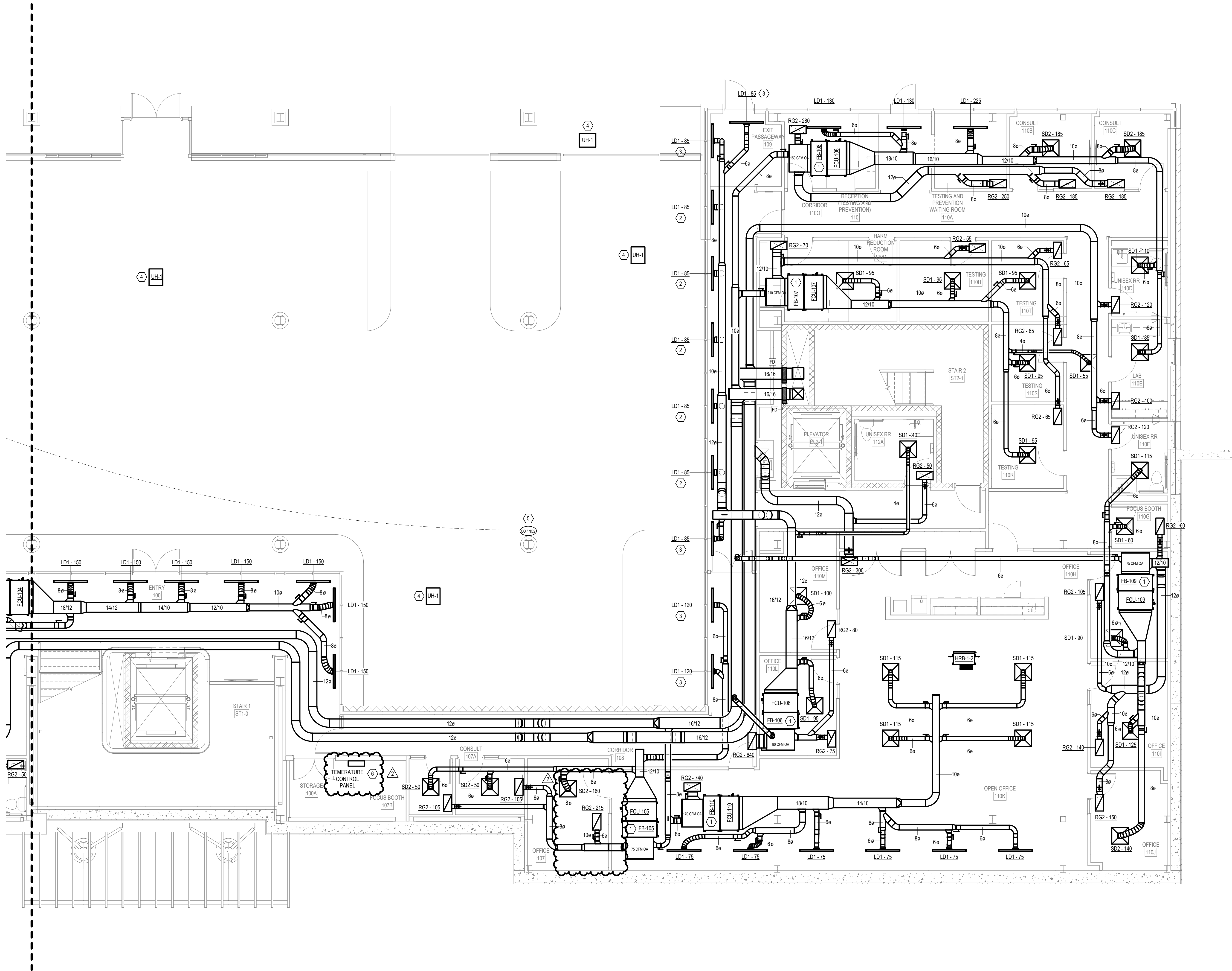
LANDSCAPE ARCHITECT
CHER SHE DESIGN STUDIO LLC
JANE CHEN, FAS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

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FIRST FLOOR MECHANICAL
PLAN - EAST

MH101B
PROJECT NUMBER: 21034



1 FIRST FLOOR MECHANICAL PLAN - EAST
3/16" = 1'-0"

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.



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Indianapolis, Indiana 46202
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DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432-0123

CIVIL ENGINEER:
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661-1964

STRUCTURAL ENGINEER:
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661-1964

MEP ENGINEER:
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317.344-8044

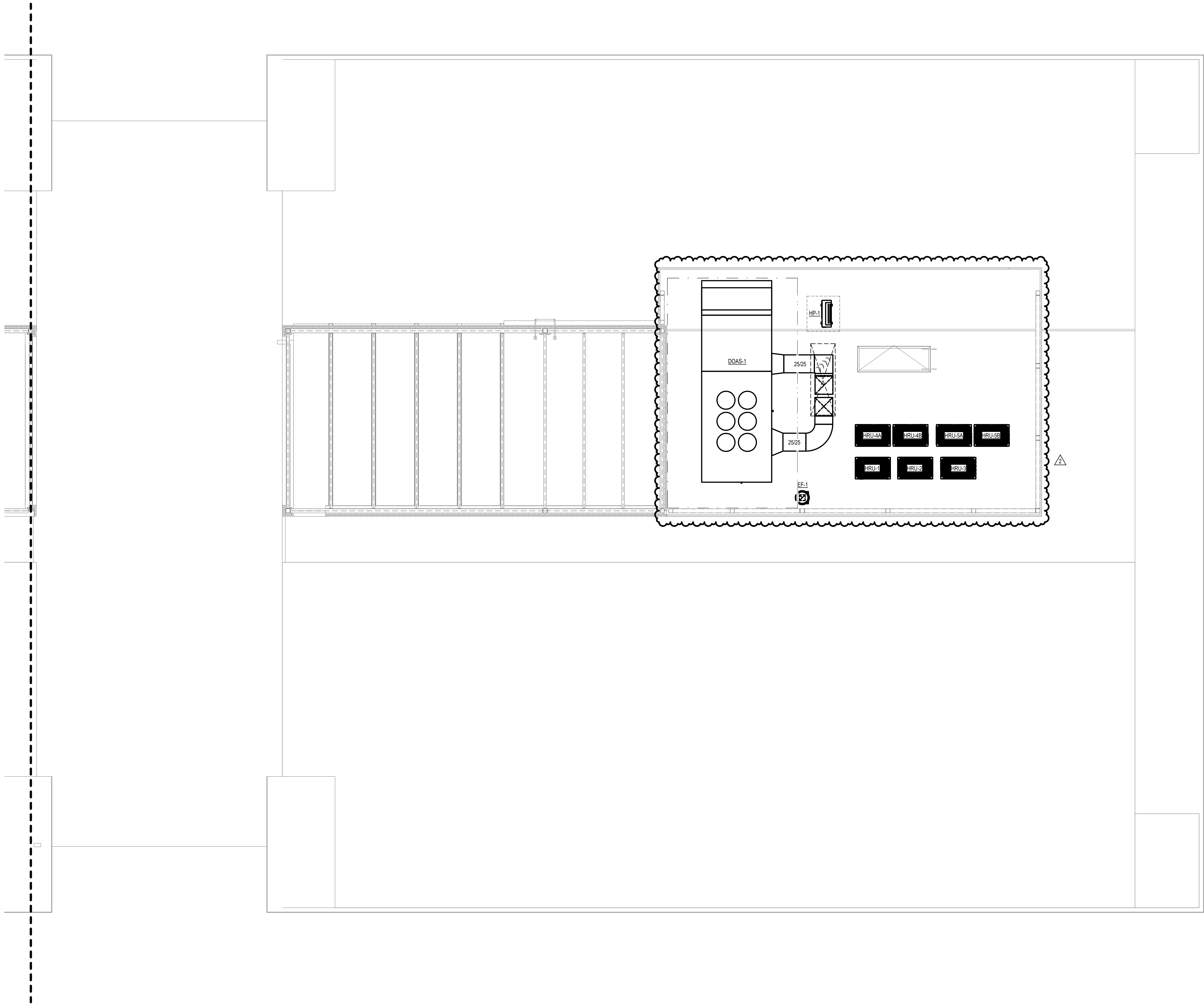
LANDSCAPE ARCHITECT:
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363-0168

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NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

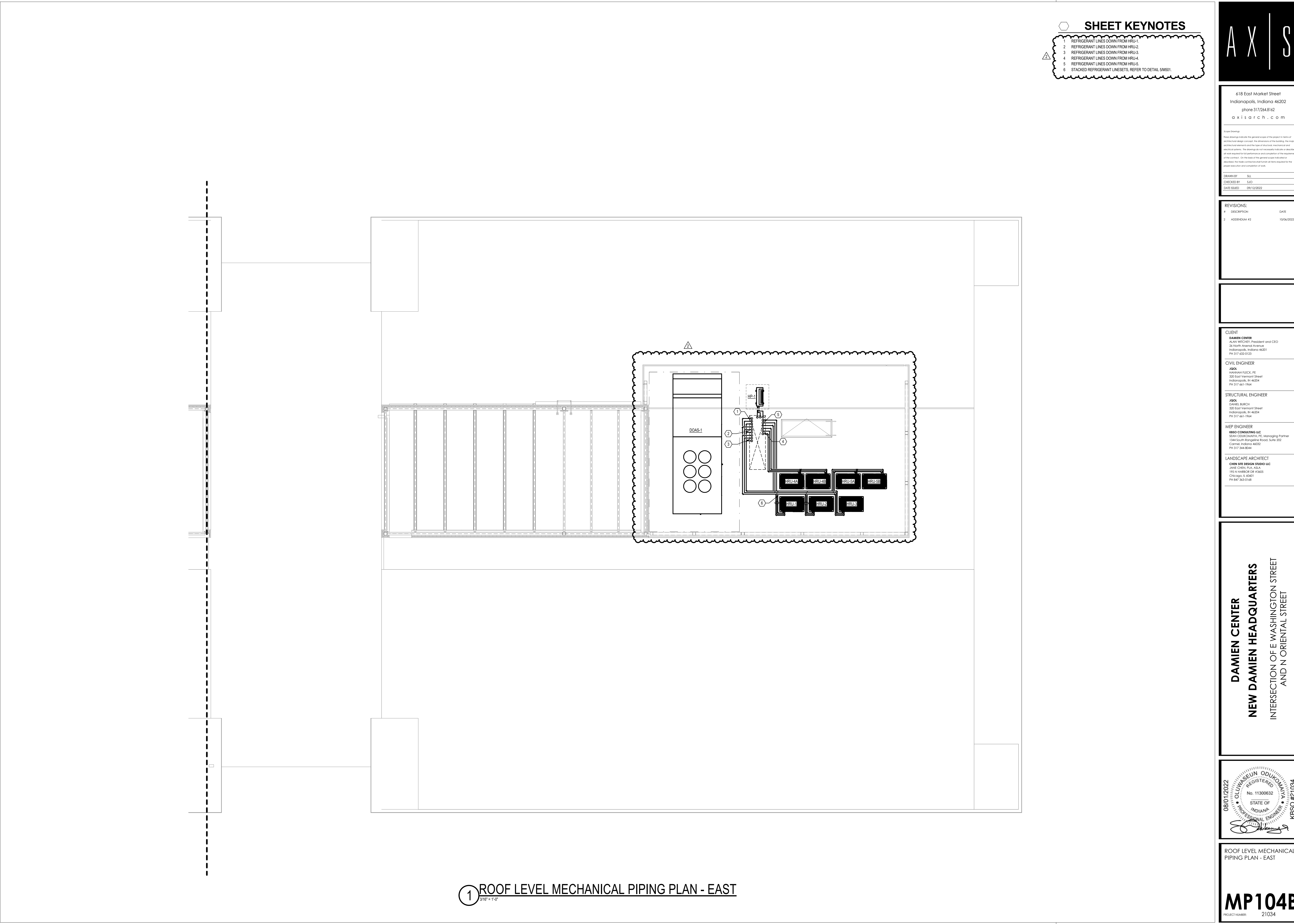


ROOF LEVEL MECHANICAL
PLAN - EAST

MH104B
PROJECT NUMBER: 21034



1 ROOF LEVEL MECHANICAL PLAN - EAST
3/16" = 1'-0"



- SHEET KEYNOTES**
- 1 REFRIGERANT LINES DOWN FROM HRU-1.

2 REFRIGERANT LINES DOWN FROM HRU-2.

3 REFRIGERANT LINES DOWN FROM HRU-3.

4 REFRIGERANT LINES DOWN FROM HRU-4.

5 REFRIGERANT LINES DOWN FROM HRU-5.

6 STACKED REFRIGERANT LINESETS, REFER TO DETAIL 5M501.

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618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

Notes/Drawings

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SL

CHECKED BY

SJO

DATE ISSUED

09/12/2022

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CLIENT

DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432-0123

CIVIL ENGINEER

JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661-1964

STRUCTURAL ENGINEER

JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661-1964

MEP ENGINEER

KBSO CONSULTING LLC
SEAN ODUKOMAYIA, P.E., Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317.344-8844

LANDSCAPE ARCHITECT

CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363-0168

DAMIEN CENTER

NEW DAMIEN HEADQUARTERS

INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

08/01/2022

OLLUKOMAYIA ODUKOMAYIA
REGISTERED PROFESSIONAL ENGINEER
No. 11300632
STATE OF INDIANA
Professional Engineer

KBSO #21034

ROOF LEVEL MECHANICAL
PIPING PLAN - EAST

MP104B

PROJECT NUMBER: 21034

1

ROOF LEVEL MECHANICAL PIPING PLAN - EAST

3/16" = 1'-0"

Scope Drawings

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CHECKED BY	SJO
DATE ISSUED	10/05/22

REVISIONS:		
#	DESCRIPTION	DATE
2	ADDENDUM #2	10/06/2022

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CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
26 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 632-0123

CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMAIYA, PE, Managing Partner
1344 South Rangeline Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8044

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, P.L.A., A.S.L.A.
195 N HARBOR DR #3605
Chicago, IL 60601
PH 847 363-0168

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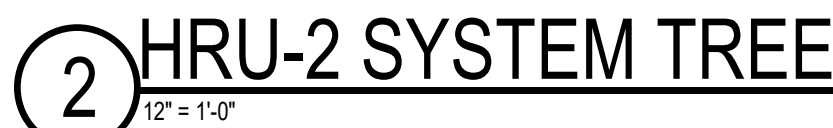
NEW
INTEREST

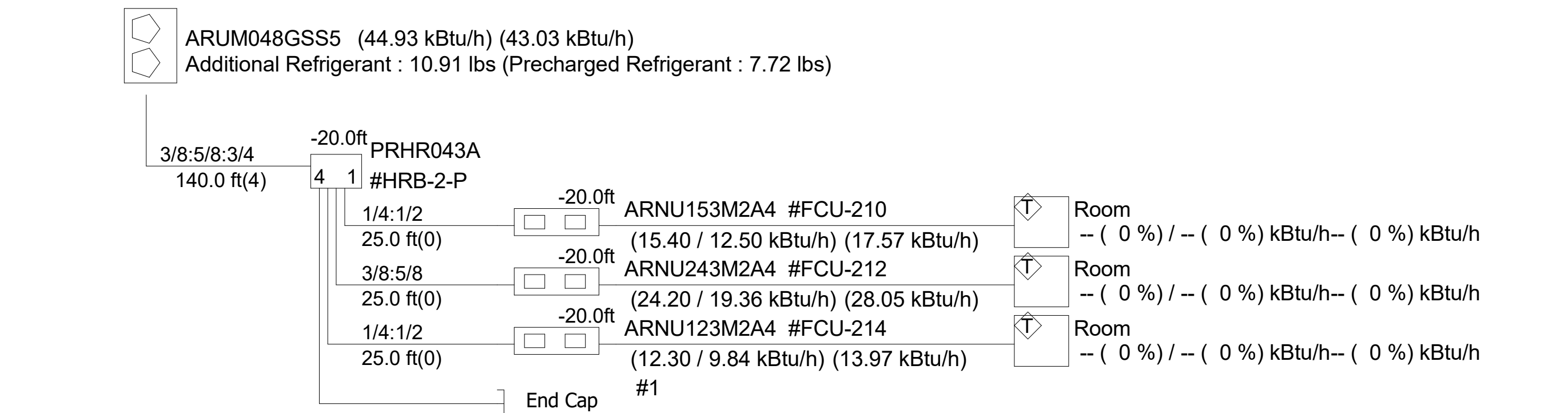
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REGISTERED

MECHANICAL DIAGRAMS

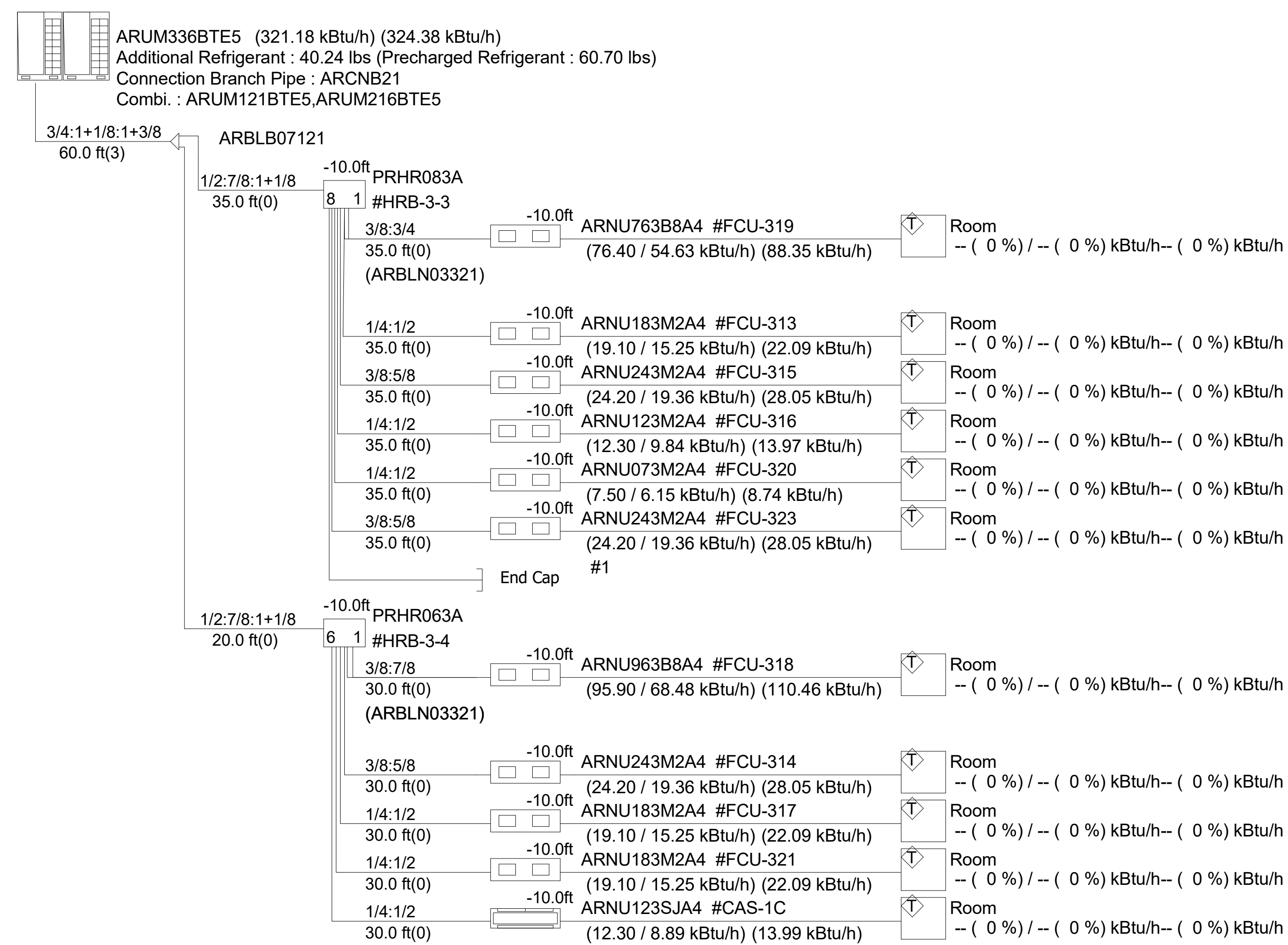
11500

MSJ02
PROJECT NUMBER: 21034





2 HP-1 SYSTEM TREE
1/2" = 1'-0"



1 HRU-5 SYSTEM TREE
1/2" = 1'-0"

FILTER BOX SCHEDULE													
UNIT ID	LOCATION		SPECIFICATION SECTION										
	NAME	NUMBER	FAN COIL ASSOCIATION	ACCESS PANEL LOCATION	FCU CHASSIS	MOUNTING	CONFIGURATION	FILTER RACK DEPTH	FILTER DIMENSIONS	WEIGHT	MANUFACTURER WITH MODEL NUMBER	NOTES	
FB-101			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-102			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-103			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-104			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-105			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-106			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-107			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-108			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-109			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-110			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-200			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-201			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-202			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-203			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-204			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-205			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-206			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-207			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-208			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-209			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-210			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-211			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-212			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-213			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-214			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-215			FCU	SEE PLANS	M3	CLOSE-COUPLED	REAR	1" or 2"	(2) FILTERS 24"x20"x30"x1"	64.00 lb	LG ZFBXM301A		
FB-216			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-217			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-218			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-219			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-220			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-221			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-222			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-223			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-224			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-225			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-301			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-302			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-303			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-304			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-305			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-306			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-307			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-308			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-309			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-310			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-311			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-312			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-313			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-314			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-315			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-316			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-317			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-318			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-319			FCU	SEE PLANS	B8	CLOSE-COUPLED	REAR	2"	(2) FILTERS 24"x24"x2"	72.00 lb	LG ZFBX8B01A		
FB-320			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-321			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		
FB-322			FCU	SEE PLANS	M3	CLOSE-COUPLED	REAR	1" or 2"	(2) FILTERS 24"x20"x30"x1"	64.00 lb	LG ZFBXM301A		
FB-323			FCU	SEE PLANS	M2	CLOSE-COUPLED	REAR	1"	(2) FILTERS 16"x25"x1"	55.00 lb	LG ZFBXM201A		

VRF INDOOR FAN COIL UNIT SCHEDULE																										
SPECIFICATION SECTION 238125																										
UNIT ID	FAN DATA		HEATING COIL DATA		COOLING COIL DATA						ELECTRICAL DATA				WEIGHT	MANUFACTURER WITH MODEL NUMBER		NOTES								
	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	ESP	HEATING MBH	HEATING COIL EAT	TOTAL MBH	DB	EAT	WB	DB	WB	FILTER DATA	MCA	MOCP					VOLTAGE	PHASE						
FCU-101	2320 CFM	500 CFM	0.50 in-wg/100ft	51.2	68 °F	48.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ38B84A									
FCU-102	830 CFM	100 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-103	730 CFM	70 CFM	0.50 in-wg/100ft	17.1	68 °F	15.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-104	1180 CFM	45 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-105	500 CFM	75 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ09M24A									
FCU-106	900 CFM	80 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-107	530 CFM	100 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-108	1050 CFM	150 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-109	530 CFM	75 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-110	920 CFM	170 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-200	1380 CFM	130 CFM	0.50 in-wg/100ft	40.6	68 °F	36.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ38B84A									
FCU-201	570 CFM	65 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-202	450 CFM	165 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ09M24A									
FCU-203	1000 CFM	280 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-204	550 CFM	200 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-205	800 CFM	80 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-206	810 CFM	155 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-207	2600 CFM	175 CFM	0.50 in-wg/100ft	86.0	68 °F	76.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ763B84A									
FCU-208	680 CFM	85 CFM	0.50 in-wg/100ft	17.1	68 °F	15.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ153M24A									
FCU-209	320 CFM	60 CFM	0.50 in-wg/100ft	8.5	68 °F	7.5	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-210	660 CFM	60 CFM	0.50 in-wg/100ft	17.1	68 °F	15.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ153M24A									
FCU-211	450 CFM	80 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ093M24A									
FCU-212	1240 CFM	320 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-213	420 CFM	40 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-214	500 CFM	85 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-215	1350 CFM	50 CFM	0.50 in-wg/100ft	31.5	68 °F	28.0	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.50	15	208	1	96.00 lb	LG ARNUJ283M34A									
FCU-216	510 CFM	70 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-217	350 CFM	45 CFM	0.50 in-wg/100ft	8.5	68 °F	7.5	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-218	1310 CFM	290 CFM	0.50 in-wg/100ft	107.5	68 °F	95.9	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ953B84A									
FCU-219	310 CFM	400 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-220	730 CFM	55 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-221	55 CFM	65 CFM	0.50 in-wg/100ft	10.9	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-222	450 CFM	65 CFM	0.50 in-wg/100ft	10.9	68 °F	9.6	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ093M24A									
FCU-223	550 CFM	60 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-224	620 CFM	140 CFM	0.50 in-wg/100ft	17.1	68 °F	15.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ153M24A									
FCU-225	700 CFM	160 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-301	750 CFM	90 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-302	440 CFM	60 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-303	1470 CFM	155 CFM	0.50 in-wg/100ft	40.6	68 °F	36.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ363B84A									
FCU-304	660 CFM	85 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-305	1670 CFM	40 CFM	0.50 in-wg/100ft	40.6	68 °F	36.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	192.00 lb	LG ARNUJ363B84A									
FCU-306	480 CFM	60 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-307	320 CFM	105 CFM	0.50 in-wg/100ft	8.5	68 °F	7.5	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-308	790 CFM	65 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-309	900 CFM	100 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-310	1950 CFM	300 CFM	0.50 in-wg/100ft	51.2	68 °F	48.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ38B84A									
FCU-311	200 CFM	40 CFM	0.50 in-wg/100ft	8.5	68 °F	7.5	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-312	880 CFM	175 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-313	1070 CFM	60 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-314	1170 CFM	60 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-315	1050 CFM	150 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									
FCU-316	490 CFM	90 CFM	0.50 in-wg/100ft	13.6	68 °F	12.3	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ123M24A									
FCU-317	135 CFM	135 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-318	3000 CFM	235 CFM	0.50 in-wg/100ft	107.5	68 °F	95.9	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ953B84A									
FCU-319	2610 CFM	155 CFM	0.50 in-wg/100ft	86.0	68 °F	76.4	80 °F	67 °F	55 °F	55 °F	FILTER BOX	6.50	15	208	1	192.00 lb	LG ARNUJ763B84A									
FCU-320	310 CFM	40 CFM	0.50 in-wg/100ft	8.5	68 °F	7.5	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ073M24A									
FCU-321	790 CFM	95 CFM	0.50 in-wg/100ft	21.5	68 °F	19.1	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ183M24A									
FCU-322	1140 CFM	115 CFM	0.50 in-wg/100ft	31.5	68 °F	28.0	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	96.00 lb	LG ARNUJ283M34A									
FCU-323	910 CFM	120 CFM	0.50 in-wg/100ft	27.3	68 °F	24.2	80 °F	67 °F	55 °F	55 °F	FILTER BOX	2.90	15	208	1	83.00 lb	LG ARNUJ243M24A									

	Hardware Points				Software Points							
Point Name	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	
Discharge Air Temp	x								x		x	
Zone Setpoint Adjust	x										x	
Zone Temp	x								x		x	
Fan Status			x								x	
Cooling				x					x		x	
Fan Start/Stop				x					x		x	
Heating				x					x		x	
Cooling Setpoint					x				x		x	
Heating Setpoint					x				x		x	
Schedule								x				
Compressor Runtime Exceeded										x		
Fan Failure										x		
Fan in Hand										x		
Fan Runtime Exceeded										x		
High Discharge Air Temp										x		
High Zone Temp										x		
Low Discharge Air Temp										x		
Low Zone Temp										x		
Totals	3	0	1	3	2	0	0	1	7	8	9	
Total Hardware (7)						Total Software (18)						

4

TYPICAL FCU POINTS LIST

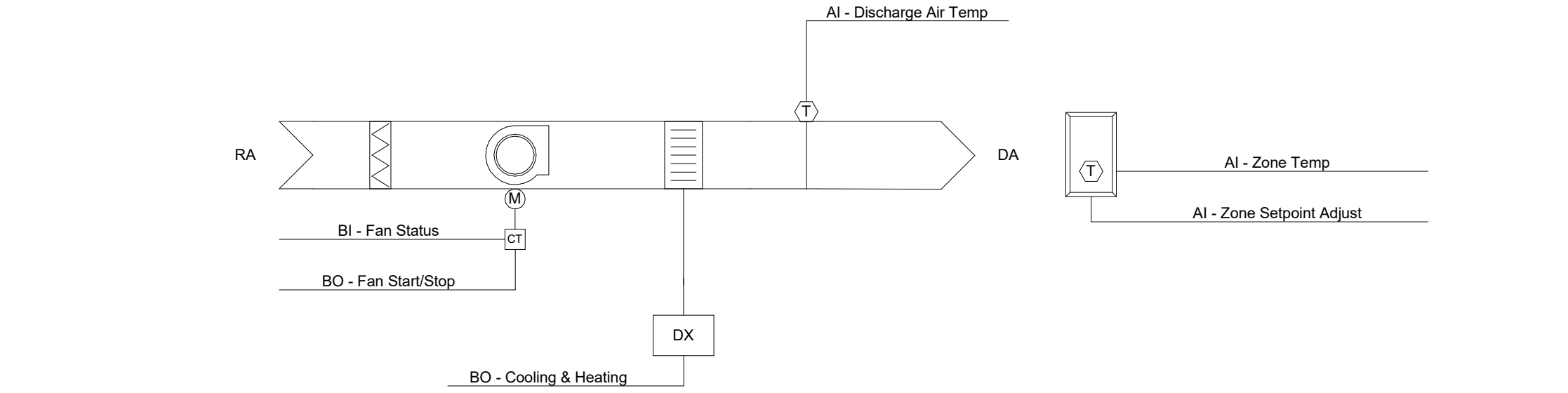
12" = 1'-0"

	Hardware Points				Software Points							
Point Name	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic	
Exhaust Air Temp	x								x		x	
Heat Wheel Discharge Air Temp	x								x		x	
Outside Air Temp	x								x		x	
Return Air Temp	x								x		x	
Supply Air Temp	x								x		x	
Heat Wheel VFD Speed		x							x		x	
Exhaust Fan Status			x						x		x	
Heat Wheel Status			x						x		x	
Heat Wheel VFD Fault			x						x	x	x	
Outside Air Damper Status			x						x		x	
Smoke Detector			x						x	x	x	
Supply Fan Status			x						x		x	
Cooling Stage 1				x					x		x	
Cooling Stage 2				x					x		x	
Exhaust Fan Start/Stop				x					x		x	
Heat Wheel Start/Stop		x							x		x	
Heating Modulation				x					x		x	
Outside Air Damper				x					x		x	
Supply Fan Start/Stop				x					x		x	
Supply Air Temp Setpoint					x				x		x	
Schedule								x				
Compressor Runtime Exceeded										x		
Exhaust Fan Failure										x		
Exhaust Fan in Hand										x		
Exhaust Fan Runtime Exceeded										x		
Heat Wheel in Hand										x		
Heat Wheel Rotation Failure										x		
Heat Wheel Runtime Exceeded										x		
High Supply Air Temp										x		
Low Supply Air Temp										x		
Outside Air Damper Failure										x		
Outside Air Damper in Hand										x		
Supply Fan Failure										x		
Supply Fan in Hand										x		
Supply Fan Runtime Exceeded										x		
Totals	5	2	6	6	1	0	0	1	24	16	24	
Total Hardware (19)Total Software (42)												

3

DOAS-1 POINTS LIST

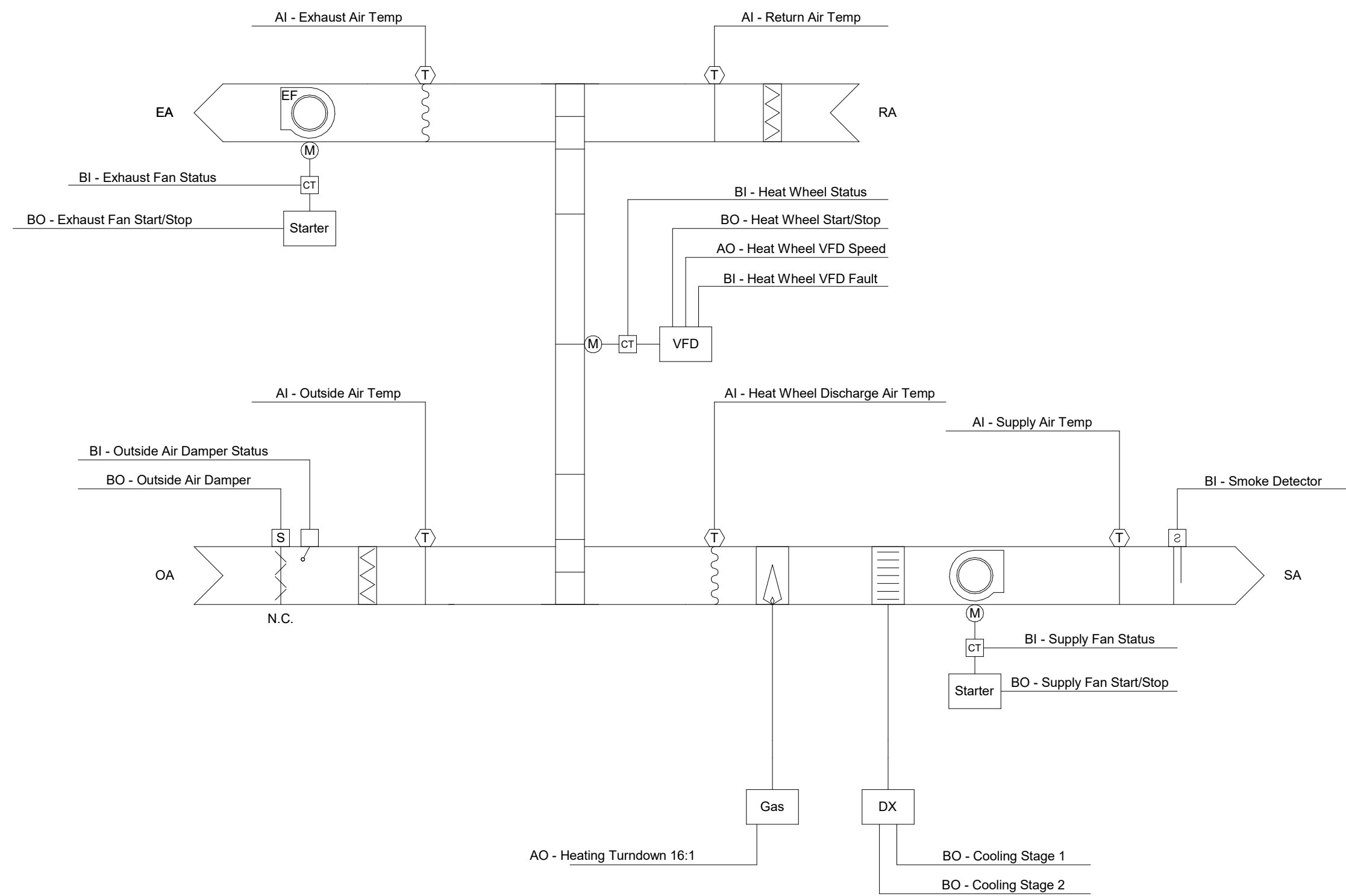
12" = 1'-0"



2

TYPICAL FCU CONTROL SCHEMATIC

12" = 1'-0"



1

DOAS-1 CONTROL SCHEMATIC

12" = 1'-0"

GENERAL NOTES

- A. AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- B. TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES, REFER TO THE PLUMBING FIXTURE ROUGH-IN SCHEDULE ON P101.
- C. PROVIDE APPROPRIATE PIPE BEDDING PER ASTM D2321 FOR NEW UNDERGROUND PVC DWV PIPING.

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

Notes:
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DRAWN BY: Author
CHECKED BY: Checker
DATE ISSUED: 09/12/2022

#	DESCRIPTION	DATE
1	ADDITION #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
220 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8244

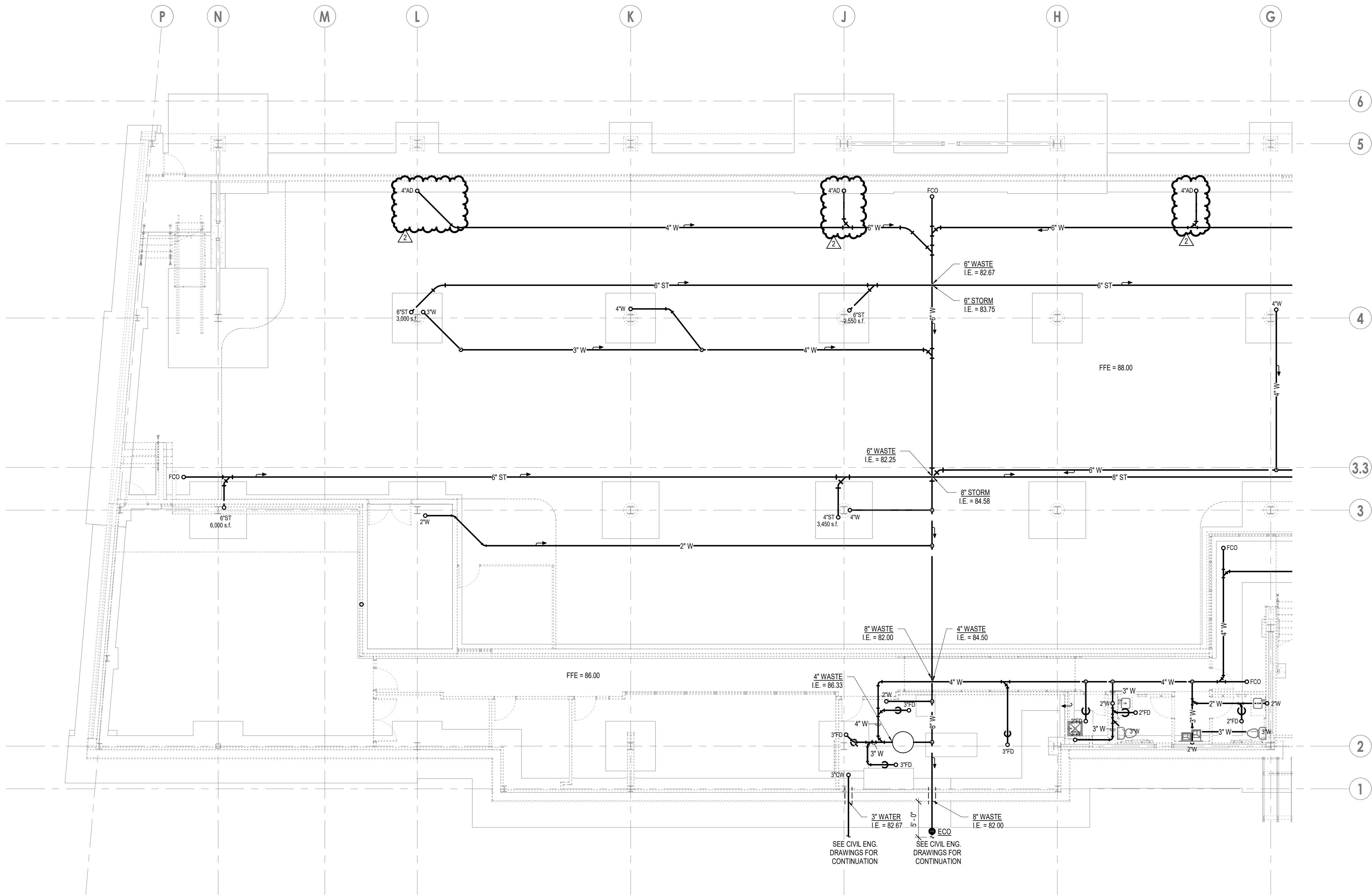
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
115 N HARBOR DR #3605
Chicago, IL 60611
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



FOUNDATION PLUMBING
PLAN - WEST

P100A
PROJECT NUMBER: 21034



1 FOUNDATION PLUMBING PLAN - WEST
1/8\"/>

GENERAL NOTES

- A. AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- B. TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES, REFER TO THE PLUMBING FIXTURE ROUGH-IN SCHEDULE ON P101.
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618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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REVISIONS:	DATE
1. DESCRIPTION	10/04/2022
2. ADDENDUM #2	

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8844

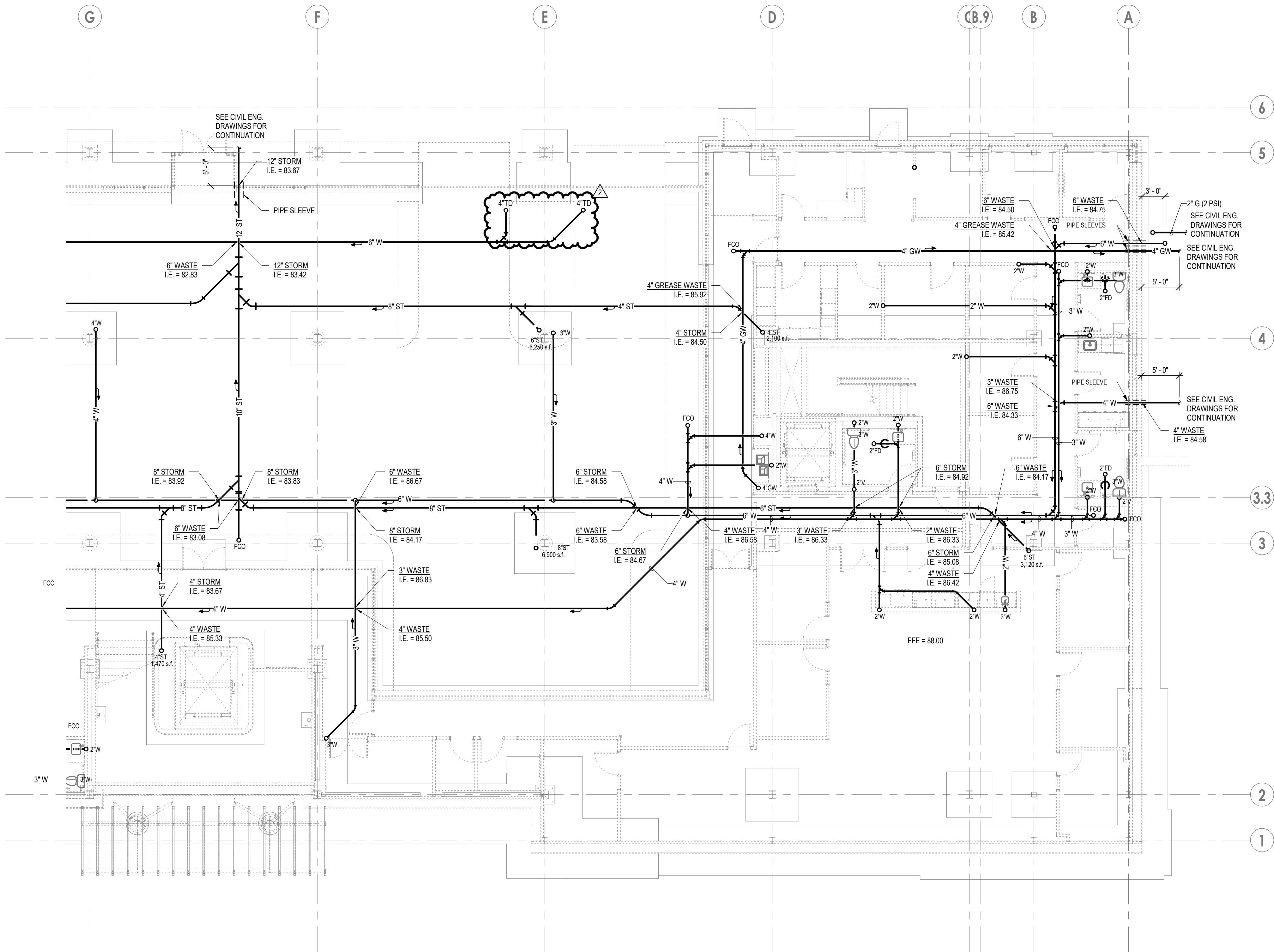
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
115 N HARBOR DR #3605
Chicago, IL 60611
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



FOUNDATION PLUMBING
PLAN - EAST

P100B
PROJECT NUMBER: 21034



1 FOUNDATION PLUMBING PLAN - EAST
1/8" = 1'-0"

GENERAL NOTES

- A. AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- B. TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES, REFER TO THE PLUMBING FIXTURE SCHEDULE ON P601.
- C. PROVIDE A BALL VALVE AND AN INLINE CHECK VALVE ON HOT AND COLD WATER BRANCH LINES SUPPLYING MOP BASIN FAUCETS.
- D. PROVIDE A SHUT-OFF VALVE, DIRT LEG, REGULATOR, AND UNION AT CONNECTION OF NATURAL GAS PIPING TO GAS-FIRED EQUIPMENT AND APPLIANCES.

SHEET KEYNOTES

- 1. REFER TO ENLARGED FIRST FLOOR RESTROOMS PLUMBING PLAN, VIEW 2 ON SHEET P401, FOR CONTINUATION OF WATER DISTRIBUTION IN THIS AREA. DISTRIBUTION PIPING IS RUN AT LOWER ELEVATION THAN THE DISTRIBUTION MAINS SHOWN ON THIS PLAN. VENT PIPING IS CONTINUED ON ENLARGED PLAN.
- 2. PROVIDE DRIP PAN BELOW PIPING INSTALLED WITHIN ELECTRICAL AND IT ROOMS. SLOPE DRAIN PAN TOWARD 2" DRAIN LINE. 2" DRAIN TO BE ROUTED TO AND TERMINATE 2" ABOVE NEAREST FLOOR DRAIN.

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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1	ADDITION #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

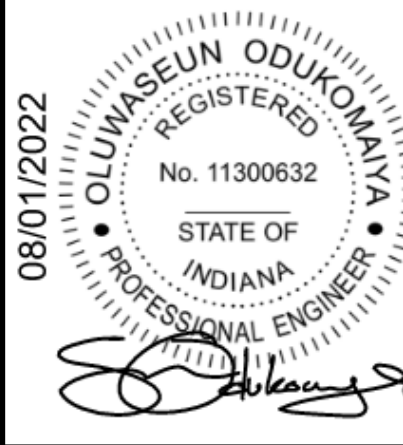
CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMANKA, PE, Managing Partner
1344 South Bangorville Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8844

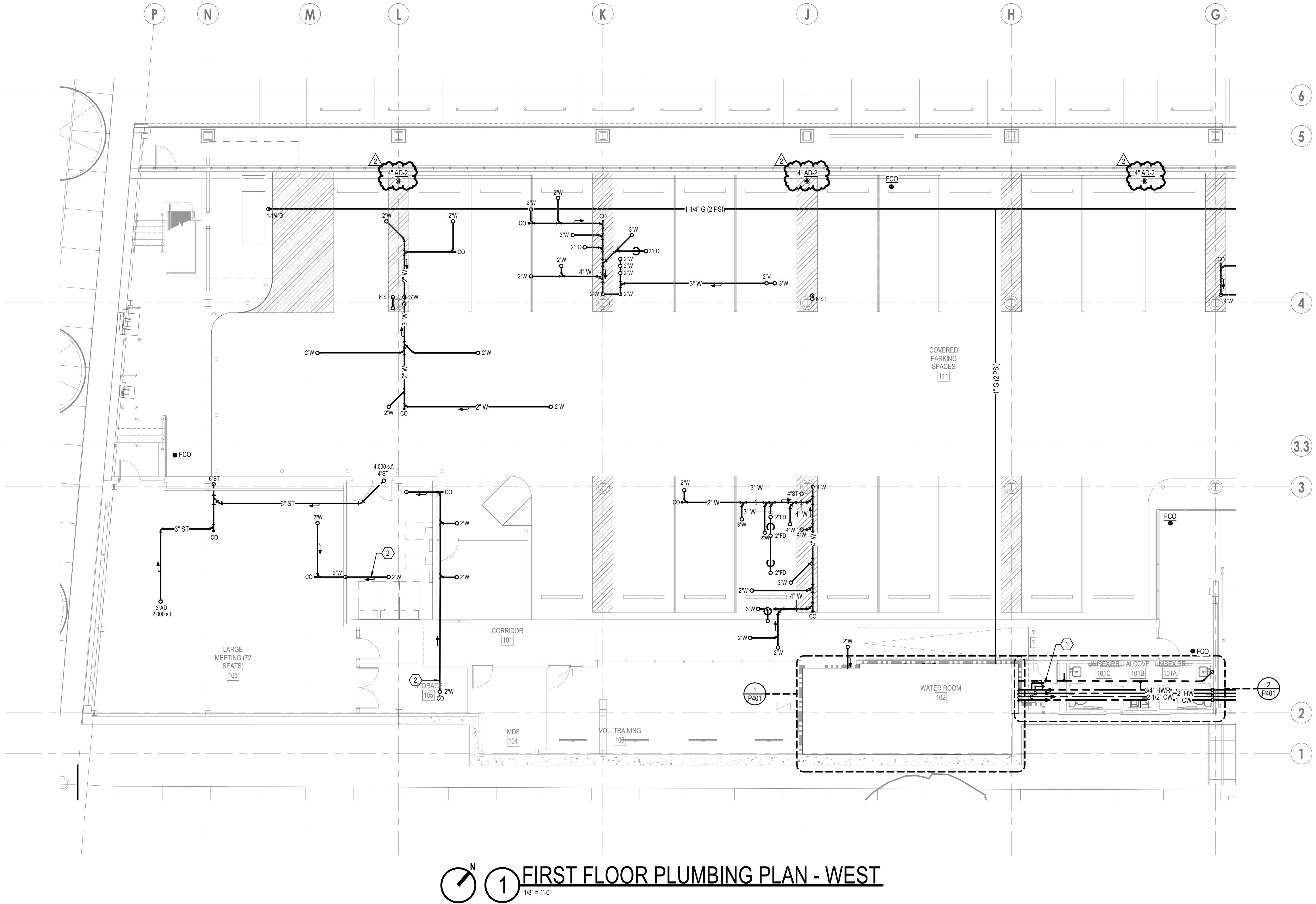
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA, AIA
195 N HARBOR DR #3605
Chicago, IL 60601
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



FIRST FLOOR PLUMBING
PLAN - WEST

P101A
PROJECT NUMBER: 21034

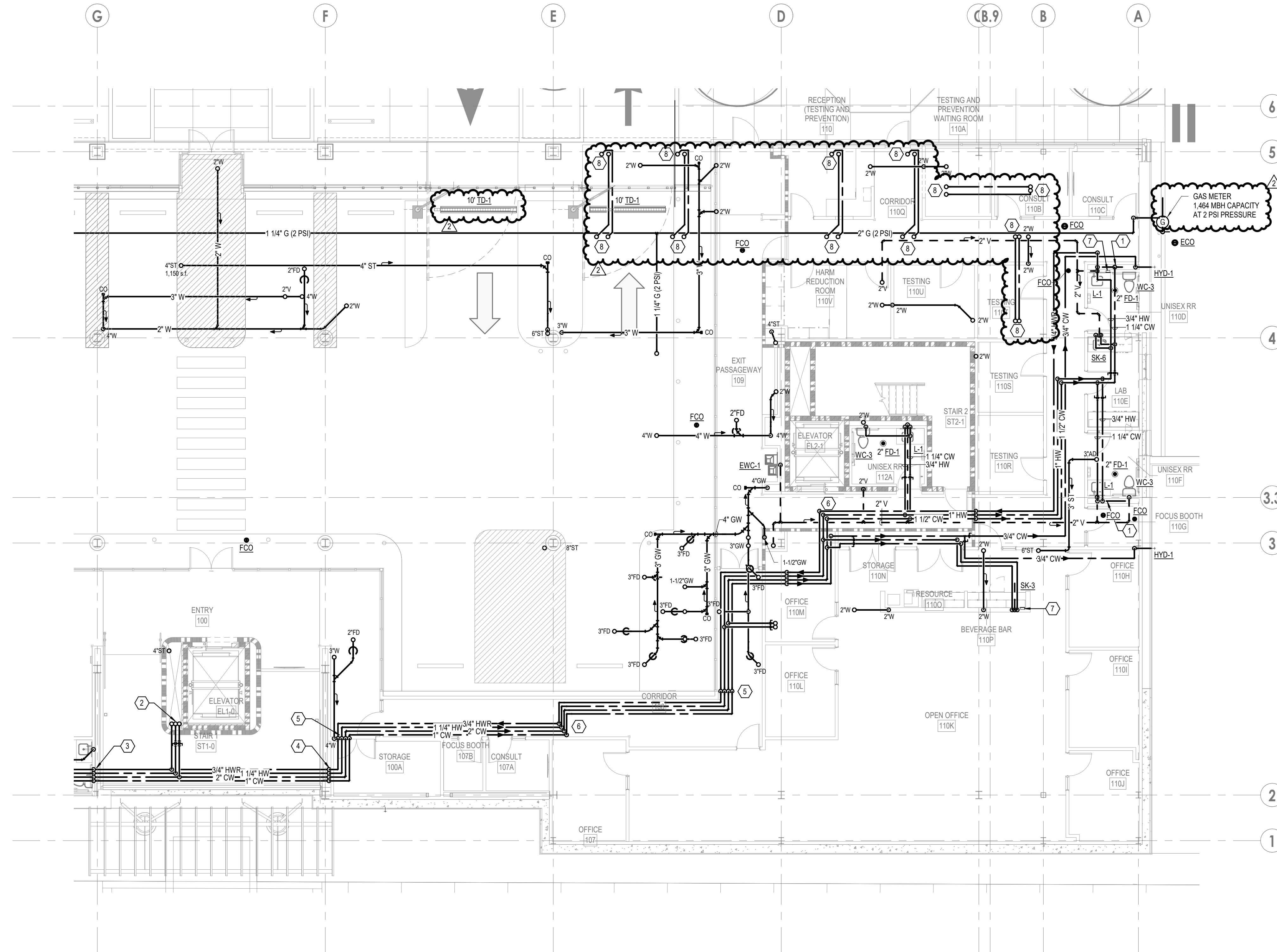


GENERAL NOTES

- AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES, REFER TO THE PLUMBING FIXTURE ROUGH-IN SCHEDULE ON P601.
- PROVIDE A BALL VALVE AND AN INLINE CHECK VALVE ON HOT AND COLD WATER BRANCH LINES SUPPLYING MOP BASIN FAUCETS.
- PROVIDE A SHUT-OFF VALVE, DIRT LEG, REGULATOR, AND UNION AT CONNECTION OF NATURAL GAS PIPING TO GAS-FIRED EQUIPMENT AND APPLIANCES.

SHEET KEYNOTES

- 1-1/4" COLD WATER DOWN IN CHASE - ROUTE FULL SIZE HEADER WITHIN CHASE TO FIXTURES. PROVIDE A WATER HAMMER ARRESTOR (WHA) PRIOR TO FLUSH VALVE. PROVIDE A NORMALLY OPEN SOLENOID VALVE ON BRANCH LINE SERVING WATER CLOSET, CONTROLLED BY A WALL SWITCH LOCATED
- 2-1/2" CW, 1-1/2" HW, 3/4" HWR UP
- OFFSET PIPES IN WALL TO RUN BELOW STAIR LANDING.
- OFFSET PIPES IN PLUMBING BUILD-OUT BEYOND ANGLED BRACE FROM BELOW STAIR LANDING TO JOIST SPACE.
- OFFSET PIPES AROUND STEEL BEAM.
- OFFSET PIPES IN LOCATION SHOWN TO AVOID DUCTWORK. COORDINATE WITH MEC.
- ROUTE 1/2" CW AND 1/2" AIR FROM DROPS IN REAR CABINET LOCATION ABOVE WITHIN CONDITIONED CEILING SPACE TO UTILITY CENTER LOCATION.



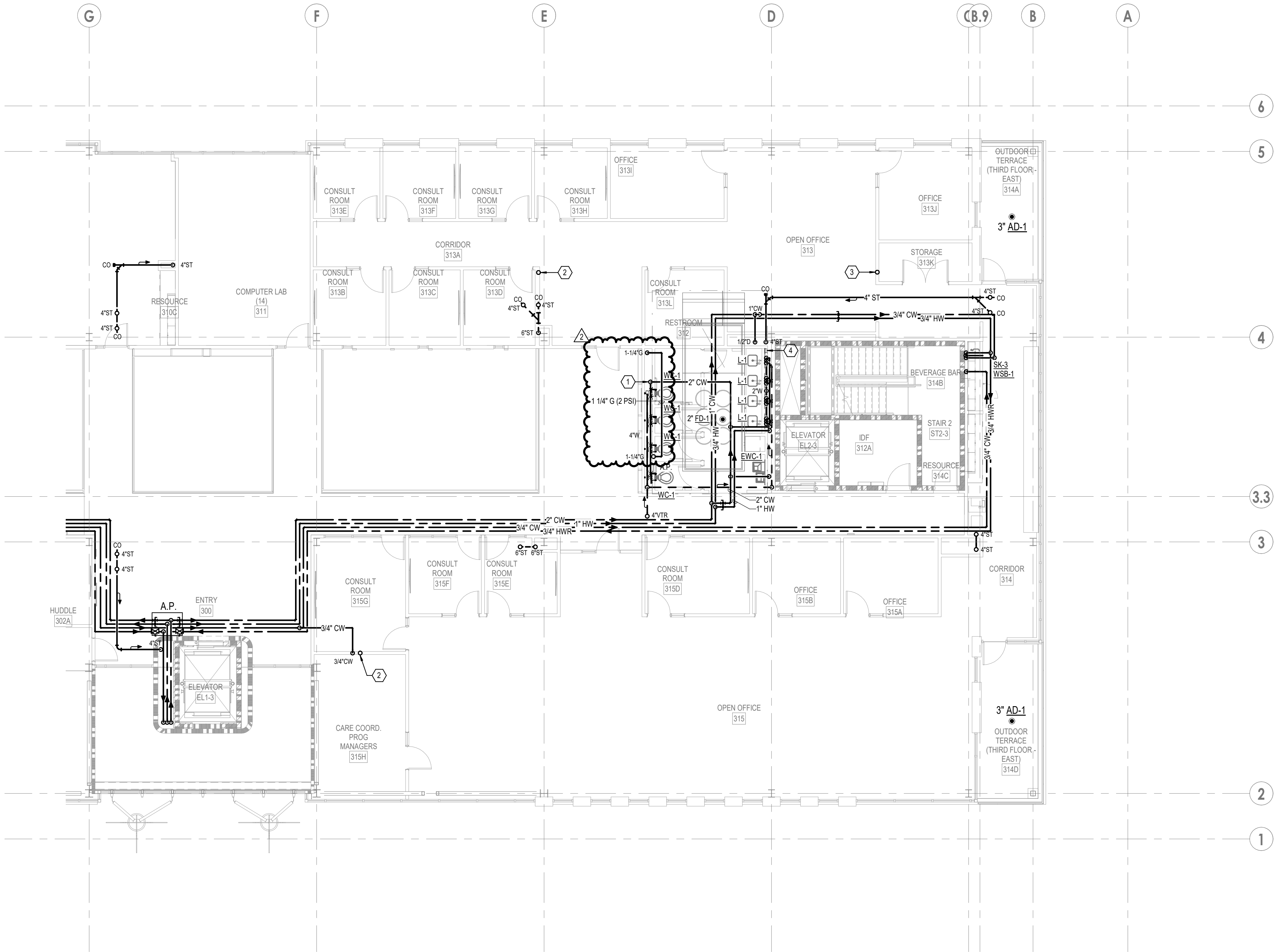
1 FIRST FLOOR PLUMBING PLAN - EAST
1/8" = 1'-0"

GENERAL NOTES

- A AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- B TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES. REFER TO THE PLUMBING FIXTURE ROUGH-IN SCHEDULE ON P501.
- C PROVIDE A BALL VALVE AND AN INLINE CHECK VALVE ON HOT AND COLD WATER BRANCH LINES SUPPLYING MOP BASIN FAUCETS.
- D PROVIDE A SHUT-OFF VALVE, DIRT LEG, REGULATOR, AND UNION AT CONNECTION OF NATURAL GAS PIPING TO GAS-FIRED EQUIPMENT AND APPLIANCES.

SHEET KEYNOTES

- 1 2" COLD WATER DOWN IN CHASE - ROUTE FULL SIZE HEADER WITHIN CHASE TO FIXTURES. PROVIDE A WATER HAMMER ARRESTOR (WHA-C) PRIOR TO LAST FLUSH VALVE, ACCESSIBLE THROUGH WALL ACCESS PANEL.
- 2 2" V DOWN, 4"VTR
- 3 3" V DOWN, 4"VTR
- 4 CONDENSATE DRAIN BOX; REFER TO DETAIL P501/11.



1 THIRD FLOOR PLUMBING PLAN - EAST
1/8" = 1'-0"

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

Drawn By: Author
Checked By: Checkplot
Date Issued: 09/12/2022

#	DESCRIPTION	DATE
2	ADDENDUM #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JGOL
HANNAN FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUMKANYA, PE, Managing Partner
1344 South Bangorville Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8844

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



THIRD FLOOR PLUMBING
PLAN - EAST

P103B
PROJECT NUMBER: 21034

GENERAL NOTES

- A. AVOID ALL CONFLICTS BETWEEN PLUMBING SYSTEMS AND CONDUIT, DUCT, EQUIPMENT, STRUCTURAL MEMBERS, AND ANY OTHER OBSTRUCTIONS ENCOUNTERED. PIPING LAYOUTS ARE DIAGNOSTIC AND SHOW SYSTEM INTENT. PIPING MAY REQUIRE ADDITIONAL OFFSETS, DROPS, RISERS, ETC.
- B. TO SIZE BRANCH LINES TO INDIVIDUAL PLUMBING FIXTURES, REFER TO THE PLUMBING FIXTURE ROUGH-IN SCHEDULE ON P601.
- C. PROVIDE A BALL VALVE AND AN INLINE CHECK VALVE ON HOT AND COLD WATER BRANCH LINES SUPPLYING MOP BASIN FAUCETS.
- D. PROVIDE A SHUT-OFF VALVE, DIRT LEG, REGULATOR, AND UNION AT CONNECTION OF NATURAL GAS PIPING TO GAS-FIRED EQUIPMENT AND APPLIANCES.

618 East Market Street
Indianapolis, Indiana 46202
phone 317.284.8162
a x i s a r c h . c o m

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DRAWN BY: Author
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2	ADDENDUM #2	10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER:
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER:
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER:
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, P.E., Managing Partner
1344 South Bangorlane Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8044

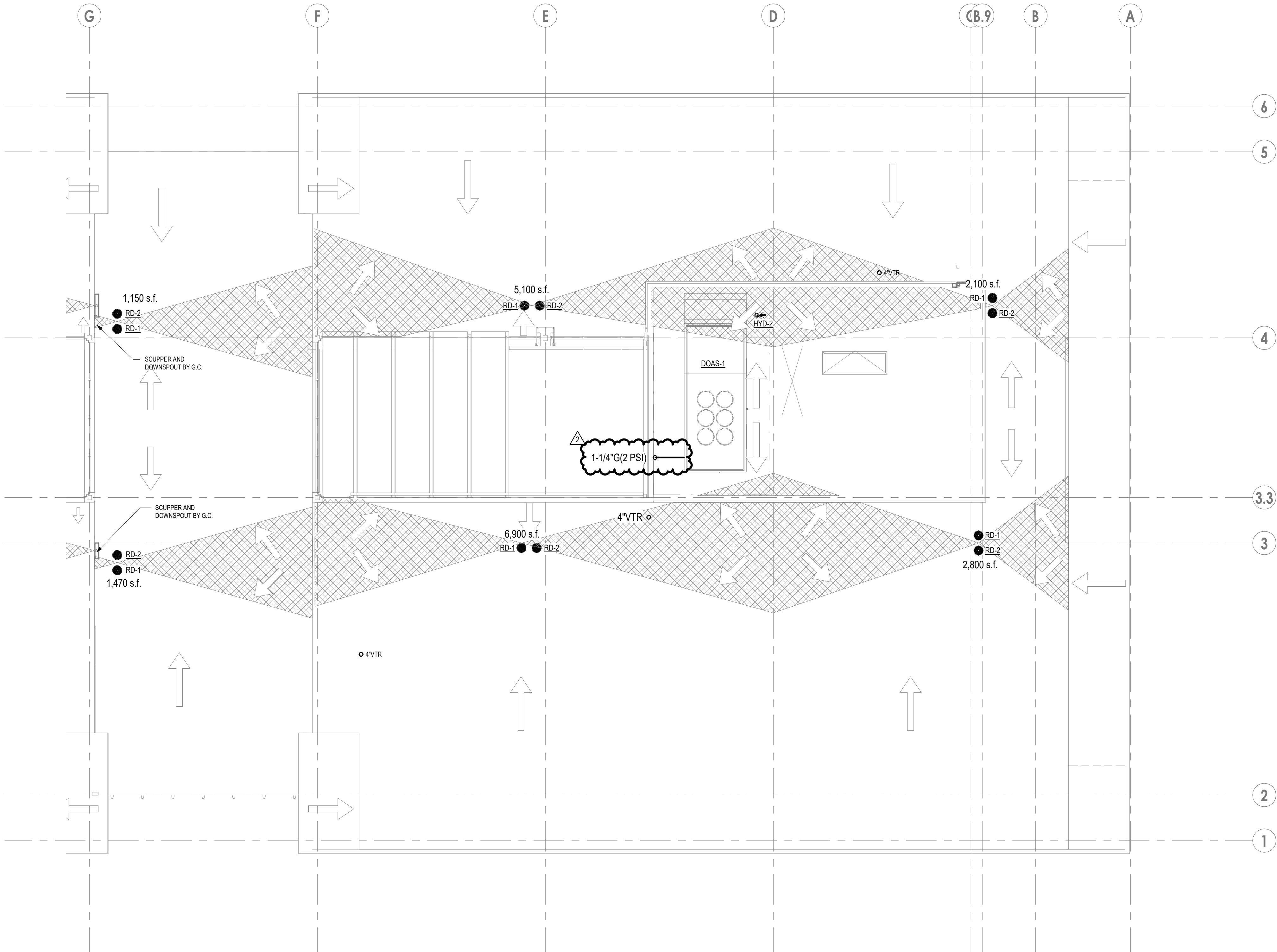
LANDSCAPE ARCHITECT:
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



ROOF LEVEL PLUMBING
PLAN - EAST

P104B
PROJECT NUMBER: 21034



1 ROOF LEVEL PLUMBING PLAN - EAST
1/8" = 1'-0"

GENERAL NOTES

- A. GROUP OCCUPANCY SENSORS TO CONTROL UNBROKEN SECTIONS OF HALLWAY.
- B. EMERGENCY LIGHT FIXTURE LOCATIONS SHOWN ARE NOT EXACT. SPACE FIXTURES AT APPROXIMATELY 18" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT AT 7'-6" AFF.
- C. OCCUPANCY SENSOR LOCATIONS SHOWN ARE NOT EXACT. CENTER SENSORS WITHIN HALLWAY AND SPACE AT APPROXIMATELY 30'-0" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT TO BOTTOM OF DUCT SUPPORTS. COORDINATE WITH MECHANICAL.
- D. MOUNT EXIT SIGNS AT 7'-0" WALL MOUNT WHERE POSSIBLE. PENDENT MOUNT ELSEWHERE.

SHEET KEYNOTES

1. PROVIDE JUNCTION BOX WITH 120V CIRCUIT FOR FUTURE FURNITURE CONNECTION. CAP WIRES AND LEAVE COILED INSIDE J BOX. PROVIDE BLANK COVER PLATE.
2. PROVIDE PROGRAMMABLE TIME CLOCK FOR ALL EXTERIOR BUILDING MOUNTED LIGHTS.
3. PROVIDE 120V POWER CONNECTION FOR PROCEDURE ROOM EXAMINATION LIGHT.

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Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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CHECKED BY: SJB
DATE ISSUED: 09/12/2022

REVISIONS:		
#	DESCRIPTION	DATE
2	ADDENDUM #2	10/04/2022

CLIENT:
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.433.0723

CIVIL ENGINEER:
JSC
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER:
JSC
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER:
KSD CONSULTING LLC
SEAN ODUMKANYA, PE, Managing Partner
1344 South Bangor Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8044

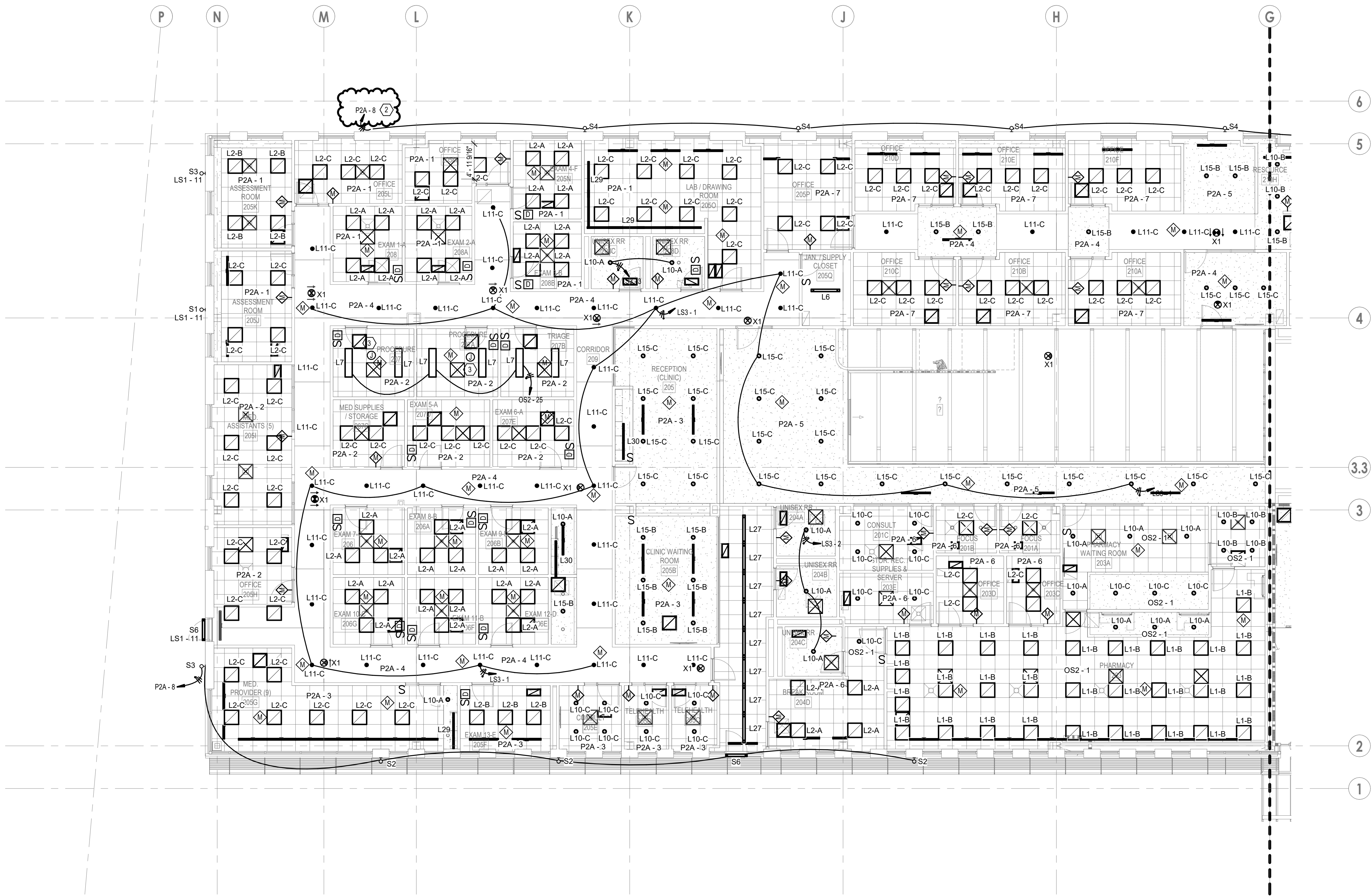
LANDSCAPE ARCHITECT:
CHEN SHE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
115 N HARBOUR DR #3605
Chicago, IL 60611
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



SECOND FLOOR LIGHTING
PLAN - WEST

EL102A
PROJECT NUMBER: 21034



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

A X | S

Scope Drawings

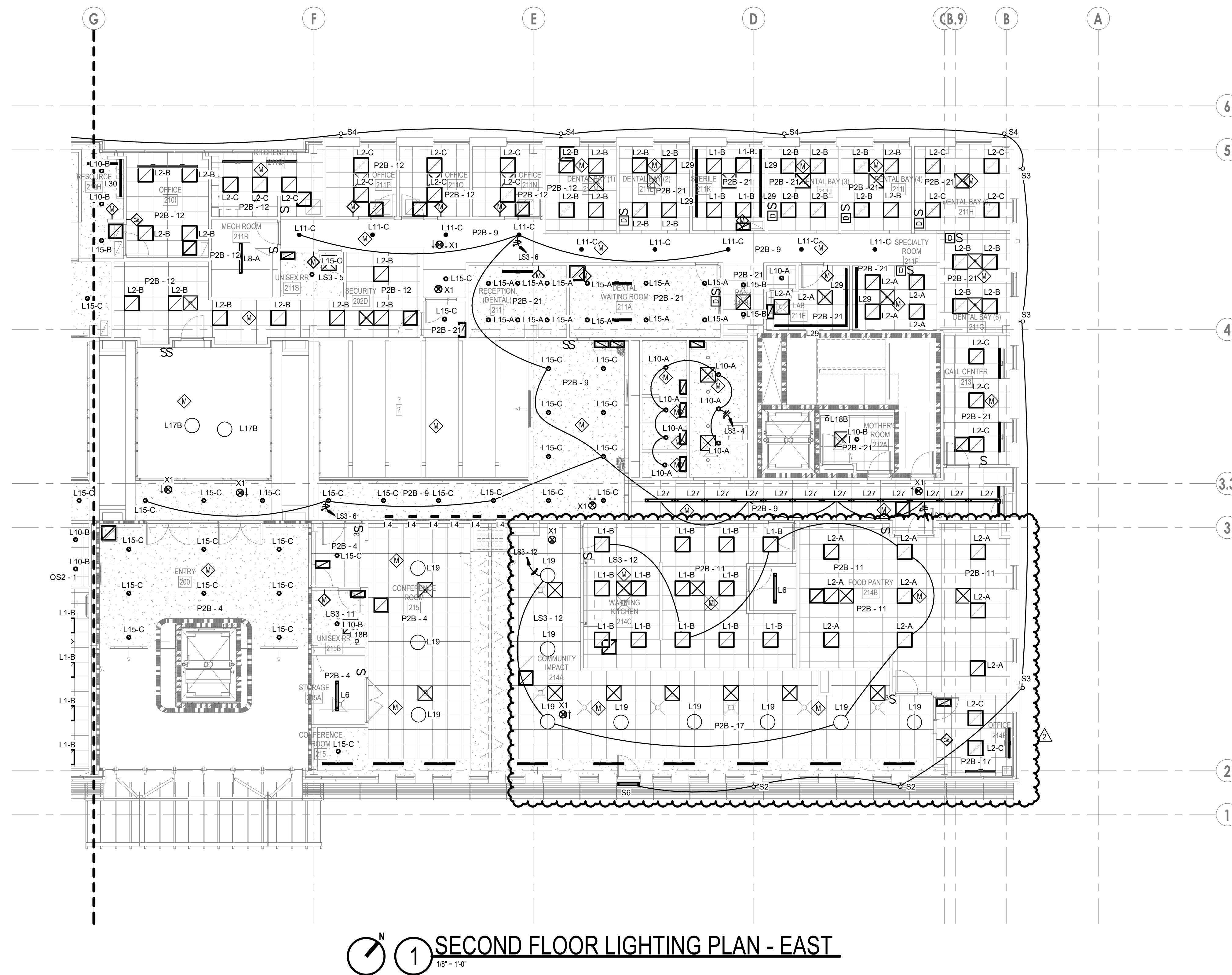
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems. The drawings do not necessarily indicate or describe all work required for full performance and completion of the requirements of the contract. On the basis of the general scope indicated or described, the trade contractors shall furnish all items required for the proper execution and completion of work.

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CHECKED BY	SJB
DATE ISSUED	09/12/2022

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

SECOND FLOOR LIGHTING
PLAN - EAST

PROJECT NUMBER: 21034



GENERAL NOTES

- A GROUP OCCUPANCY SENSORS TO CONTROL UNBROKEN SECTIONS OF HALLWAY
- B EMERGENCY LIGHT FIXTURE LOCATIONS SHOWN ARE NOT EXACT. SPACE FIXTURES AT APPROXIMATELY 18" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT AT 7'-0" AFF.
- C OCCUPANCY SENSOR LOCATIONS SHOWN ARE NOT EXACT. CENTER SENSORS WITHIN HALLWAY AND SPACE AT APPROXIMATELY 30'-0" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT TO BOTTOM OF DUCT SUPPORTS. COORDINATE WITH MECHANICAL.
- D MOUNT EXIT SIGNS AT 7'-0" WALL MOUNT WHERE POSSIBLE. PENDENT MOUNT ELSEWHERE.

618 East Market Street
Indianapolis, Indiana 46202
phone 317/284.8162
axisarch.com

These drawings include the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structure, mechanical and electrical systems. The drawings do not necessarily include or indicate all work required for full performance and completion of the requirements of the contract. On the basis of the general scope and information described, the trade contractor shall furnish all items required for the proper execution and completion of work.

DRAWN BY: MHS
CHECKED BY: SJB
DATE ISSUED: 09/12/2022

REVISIONS:		
#	DESCRIPTION	DATE
2	ADDENDUM #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

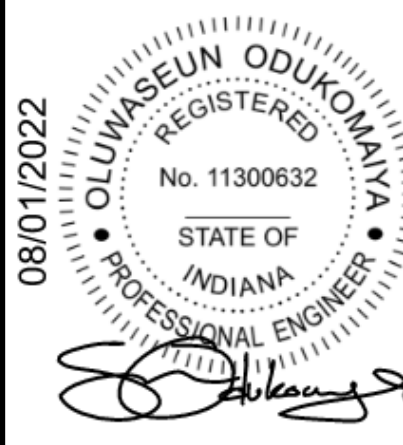
CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKUMAYIA, PE, Managing Partner
1344 South Bangorville Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8844

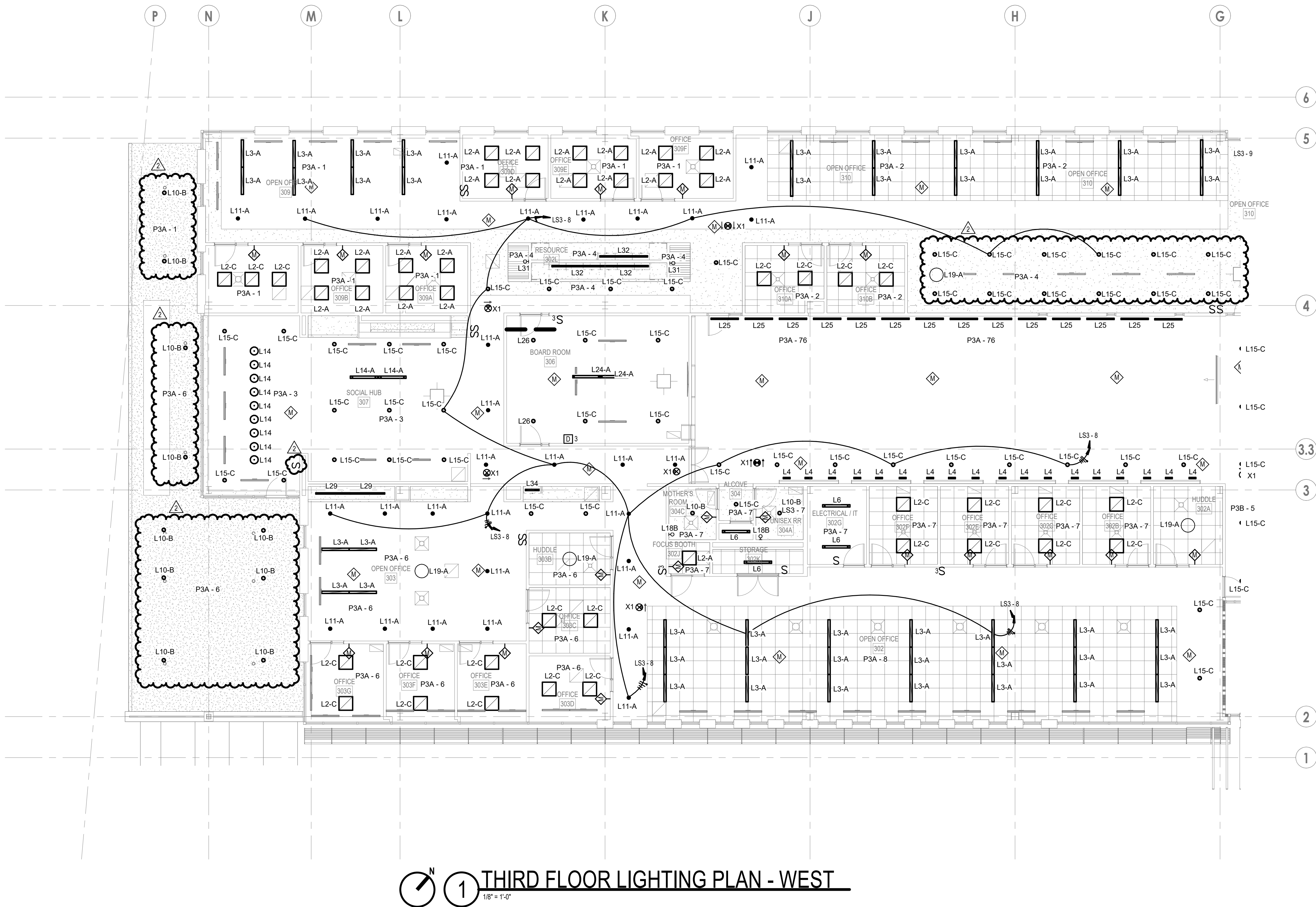
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
115 N HARBOUR DR #3605
Chicago, IL 60611
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



THIRD FLOOR LIGHTING
PLAN - WEST

EL103A
PROJECT NUMBER: 21034



GENERAL NOTES

- A GROUP OCCUPANCY SENSORS TO CONTROL UNBROKEN SECTIONS OF HALLWAY.
- B EMERGENCY LIGHT FIXTURE LOCATIONS SHOWN ARE NOT EXACT. SPACE FIXTURES AT APPROXIMATELY 18'-0" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT AT 7'-6" AFF.
- C OCCUPANCY SENSOR LOCATIONS SHOWN ARE NOT EXACT. CENTER SENSORS WITHIN HALLWAY AND SPACE AT APPROXIMATELY 30'-0" ON CENTER OR ACCORDING TO MANUFACTURERS RECOMMENDATION. MOUNT TO BOTTOM OF DUCT SUPPORTS. COORDINATE WITH MECHANICAL.
- D MOUNT EXIT SIGNS AT 7'-0" WALL MOUNT WHERE POSSIBLE. PENDENT MOUNT ELSEWHERE.

618 East Market Street
Indianapolis, Indiana 46202
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axisarch.com

Notes:
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CHECKED BY: SJB
DATE ISSUED: 09/12/2022

REVISIONS:	DESCRIPTION	DATE
1	DESCRIPTION	
2	ADDENDUM #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JGOL
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER
JGOL
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorville Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8844

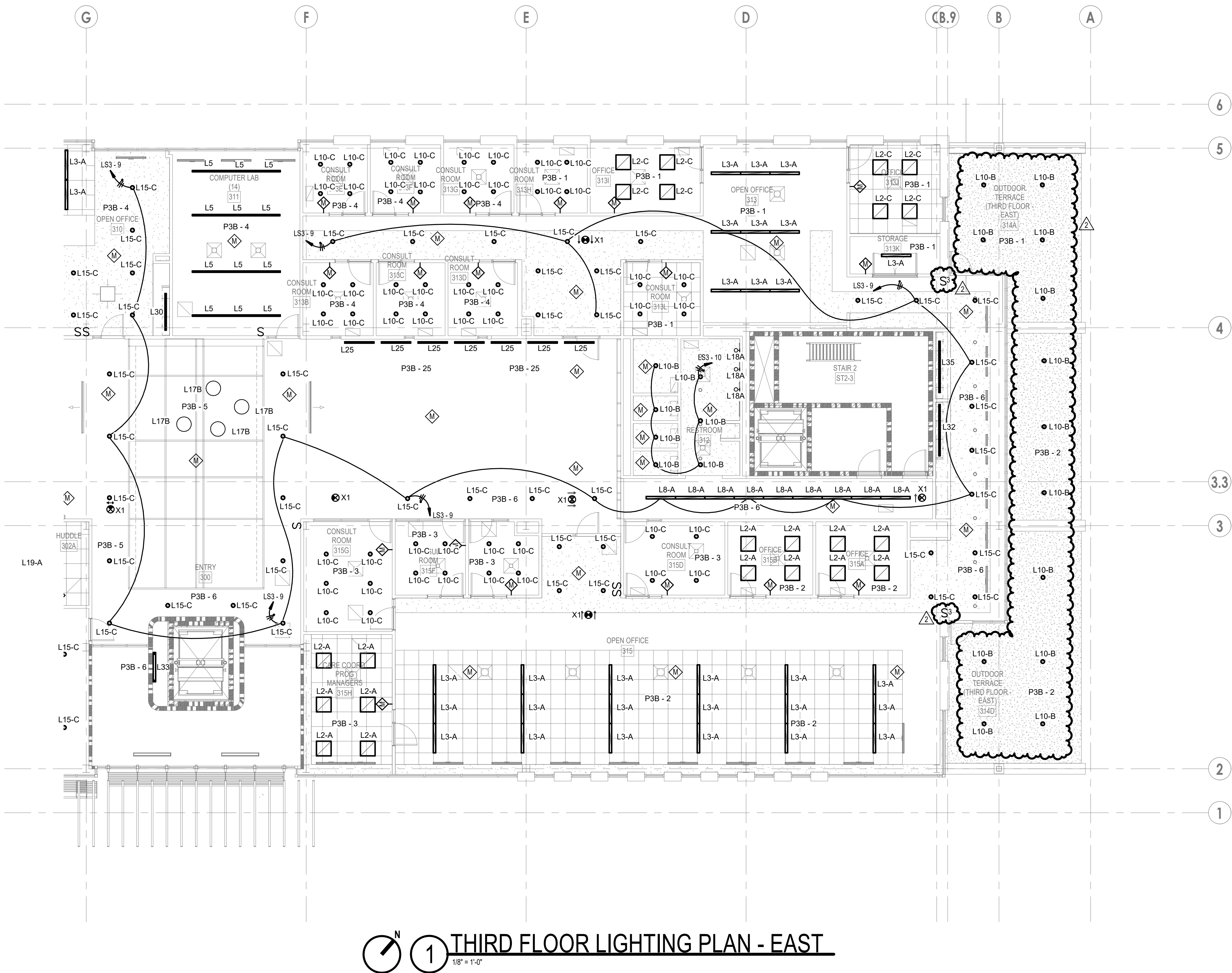
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
115 N HARBOUR DR #3605
Chicago, IL 60601
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



THIRD FLOOR LIGHTING
PLAN - EAST

EL103B
PROJECT NUMBER: 21034

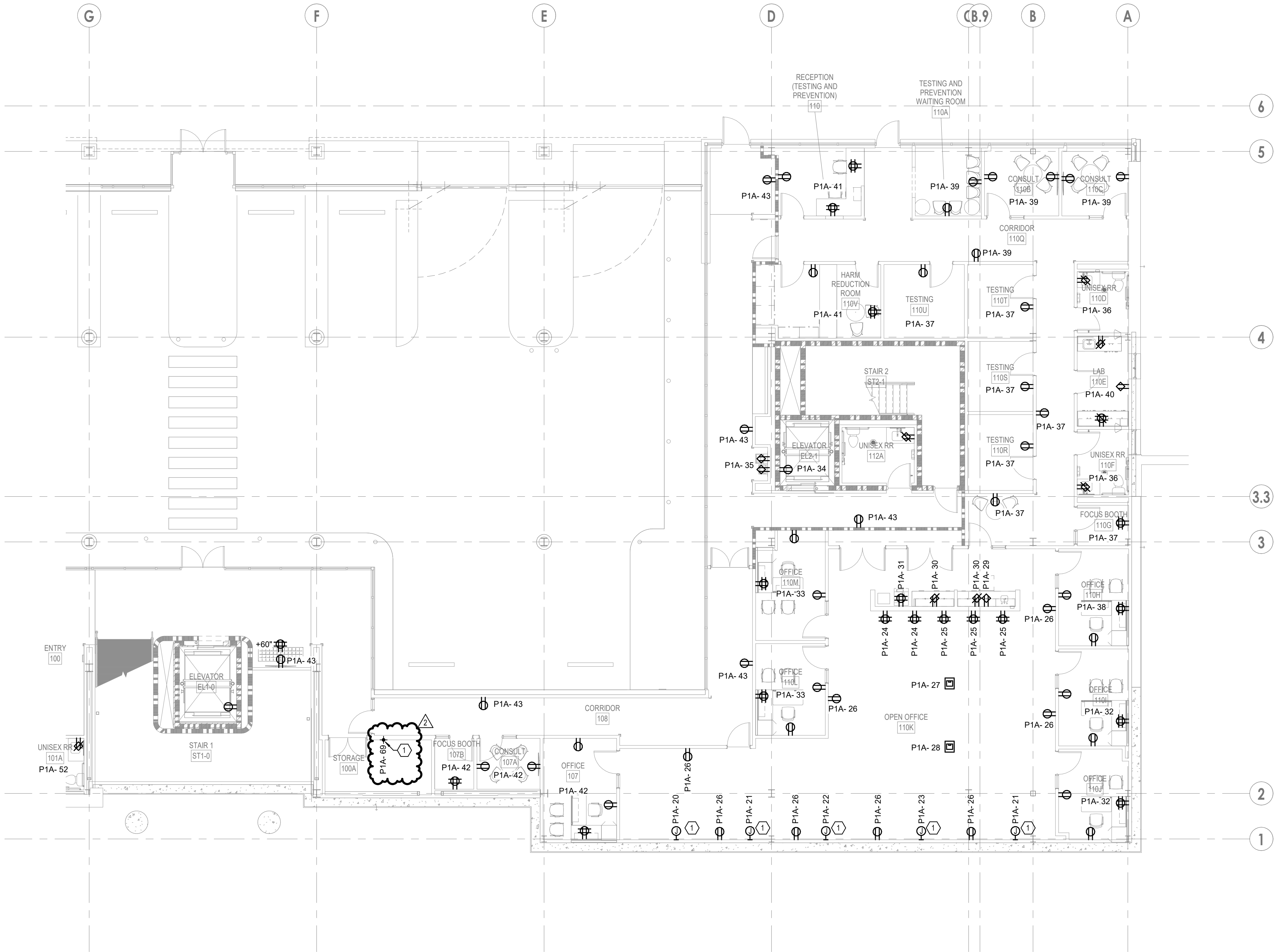


GENERAL NOTES

- A REFER TO SHEET E-000 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
B REFER TO E-000 SERIES SHEETS FOR LOAD CENTER CIRCUIT SCHEDULES.
C VERIFY HEIGHT ALL RECEPTACLES AND ROUGH-INS SERVING MONITORS WITH ARCHITECTURAL ELEVATIONS AND MOUNTING BRACKET INSTALLER PRIOR TO ROUGH IN.
D PROVIDE ADDITIONAL NAC PANELS AND ASSOCIATED 120V CIRCUIT FROM NEAREST PANEL AS REQUIRED TO ACCOMMODATE NEW DEVICES SHOWN.
E COORDINATE ALL KITCHEN DEVICE LOCATIONS WITH KITCHEN CONTRACTOR PRIOR TO ROUGH IN.
F ABOVE COUNTER RECEPTACLES TO BE MOUNTED AT 42" AFF UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

- 1 PROVIDE 120V POWER CONNECTION FOR TEMPERATURE CONTROL PANEL.



1 FIRST FLOOR ELECTRICAL PLAN - EAST
1/8" = 1'-0"

AXIS

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Indianapolis, Indiana 46202
phone 317/284.8162
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DRAWN BY: MHS
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DATE ISSUED: 09/12/2022

#	DESCRIPTION	DATE
1	ADDITION #2	10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
28 North Arsenal Avenue
Indianapolis, Indiana 46201
PH 317 432-0123

CIVIL ENGINEER
JSO
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

STRUCTURAL ENGINEER
JSO
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317 661-1964

MEP ENGINEER
KBSO CONSULTING LLC
SEAN ODUKUMAYIA, PE, Managing Partner
1344 South Bangorville Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8844

LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, AIA
195 N HARBOUR DR #3605
Chicago, IL 60601
PH 847 363-0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



FIRST FLOOR ELECTRICAL
PLAN - EAST

EP101B
PROJECT NUMBER: 21034

GENERAL NOTES

- A REFER TO SHEET E-000 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
B REFER TO E-000 SERIES SHEETS FOR LOAD CENTER CIRCUIT SCHEDULES.
C VERIFY HEIGHT ALL RECEPTACLES AND ROUGH-INS SERVING MONITORS WITH ARCHITECTURAL ELEVATIONS AND MOUNTING BRACKET INSTALLER PRIOR TO ROUGH IN.
D PROVIDE ADDITIONAL NAC PANELS AND ASSOCIATED 120V CIRCUIT FROM NEAREST PANEL AS REQUIRED TO ACCOMMODATE NEW DEVICES SHOWN.
E COORDINATE ALL KITCHEN DEVICE LOCATIONS WITH KITCHEN CONTRACTOR PRIOR TO ROUGH IN.
F ABOVE COUNTER RECEPTACLES TO BE MOUNTED AT 42" AFF UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

- 1 PROVIDE RECESSED RECEPTACLE BOX FOR VITALS INSTRUMENT CONSOLE.
2 COORDINATE FINAL MOUNTING HEIGHT PRIOR TO ROUGH-IN.
3 FLOOR BOX WITH (2) DUPLEX RECEPTACLES. FINAL LOCATION TO BE COORDINATED.
4 PROVIDE 120V POWER TO MOTORIZED WINDOW GATE.

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Indianapolis, Indiana 46202
phone 317.284.8162
axisarch.com

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DRAWN BY: MHS
CHECKED BY: SJB
DATE ISSUED: 09/12/2022

REVISIONS:
DESCRIPTION DATE
2 ADDENDUM #2 10/04/2022

CLIENT
DAMIEN CENTER
ALAN WITCHEY, President and CEO
24 North Avenue
Indianapolis, Indiana 46201
PH 317.432.0123

CIVIL ENGINEER
JSC
HANNAH FLECK, PE
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

STRUCTURAL ENGINEER
JSC
DANIEL BURCH
320 East Vermont Street
Indianapolis, IN 46204
PH 317.661.1964

MEP ENGINEER
KSD CONSULTING LLC
SEAN ODUKOMAYIA, PE, Managing Partner
1344 South Bangorline Road, Suite 202
Carmel, Indiana 46032
PH 317.344.8844

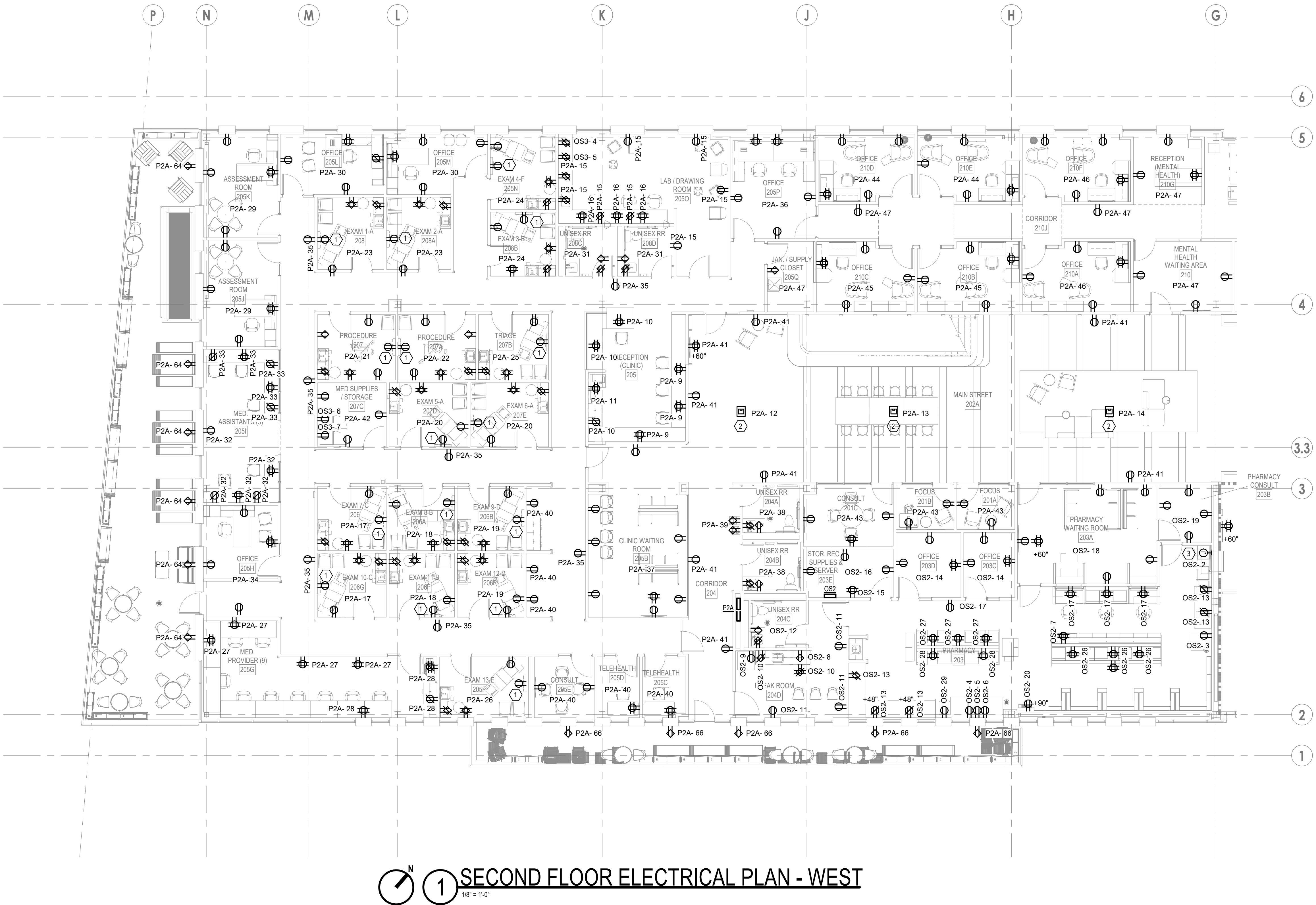
LANDSCAPE ARCHITECT
CHEN SITE DESIGN STUDIO LLC
JANE CHEN, PLS, ASLA
115 N HARBOR DRIVE #305
CHICAGO, IL 60601
PH 847.363.0168

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET

08/01/2022
COLLINS SEUN ODUKOMAYIA
REGISTERED
No. 11300632
STATE OF INDIANA
PROFESSIONAL ENGINEER
KBSO #21034

SECOND FLOOR
ELECTRICAL PLAN - WEST

EP102A
PROJECT NUMBER: 21034



A REFER TO SHEET E-000 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.

B REFER TO E-600 SERIES SHEETS FOR LOAD CENTER CIRCUIT SCHEDULES.

C VERIFY HEIGHT ALL RECEPTACLES AND ROUGH-IN SERVING MONITORS WITH ARCHITECTURAL ELEVATIONS AND MOUNTING BRACKET INSTALLER PRIOR TO ROUGH IN.

D PROVIDE ADDITIONAL NAC PANELS AND ASSOCIATED 120V CIRCUIT FROM NEAREST PANEL AS REQUIRED TO ACCOMMODATE NEW DEVICES SHOWN.

E COORDINATE ALL KITCHEN DEVICE LOCATIONS WITH KITCHEN CONTRACTOR PRIOR TO ROUGH IN.

F ABOVE COUNTER RECEPTACLES TO BE MOUNTED AT 42" AFF UNLESS NOTED OTHERWISE.

1. PROVIDE EQUIPMENT DISCONNECT AND 208V-3PH POWER CIRCUIT ACCORDING TO ONE-LINE DIAGRAM FOR SINGLE FRAME HEAT PUMP HRU.1. PROVIDE UNISTRUT RACK FOR MOUNTING.
2. PROVIDE EQUIPMENT DISCONNECTS AND 208V-3PH POWER CIRCUIT ACCORDING TO ONE-LINE DIAGRAM FOR SINGLE FRAME HEAT PUMP HRU.2. PROVIDE UNISTRUT RACK FOR MOUNTING.
3. PROVIDE EQUIPMENT DISCONNECTS AND 208V-3PH POWER CIRCUITS ACCORDING TO ONE-LINE DIAGRAM FOR DOUBLE FRAME HEAT PUMP HRU.3. PROVIDE UNISTRUT RACK FOR MOUNTING.
4. PROVIDE EQUIPMENT DISCONNECTS AND 208V-3PH POWER CIRCUITS ACCORDING TO ONE-LINE DIAGRAM FOR DOUBLE FRAME HEAT PUMP HRU.4. PROVIDE UNISTRUT RACK FOR MOUNTING.
5. PROVIDE EQUIPMENT DISCONNECTS AND 208V-3PH POWER CIRCUITS ACCORDING TO ONE-LINE DIAGRAM FOR DOUBLE FRAME HEAT PUMP HRU.5. PROVIDE UNISTRUT RACK FOR MOUNTING.
6. PROVIDE SINGLE POINT ELECTRICAL CONNECTION TO DOAS UNIT ACCORDING TO ONE-LINE DIAGRAM.

Scatter Drawing

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DRAWN BY	MHS
CHECKED BY	SJB
DATE ISSUED	09/12/2022

REVISIONS:		
#	DESCRIPTION	DATE
2	ADDENDUM #2	10/06/2022

CLIENT

DAMIN CENTER
ALAN WITCHEY, President and CEO
2540 Northwest Avenue
Indianapolis, Indiana 46201
PH 317 652-0123

CIVIL ENGINEER

JOGL
HANNAH FLECK, PE
300 East Vermont Street
Indianapolis, IN 46204
PH 317 461-1764

STRUCTURAL ENGINEER

JOGL
DANIEL BURCH
300 East Vermont Street
Indianapolis, IN 46204
PH 317 461-1764

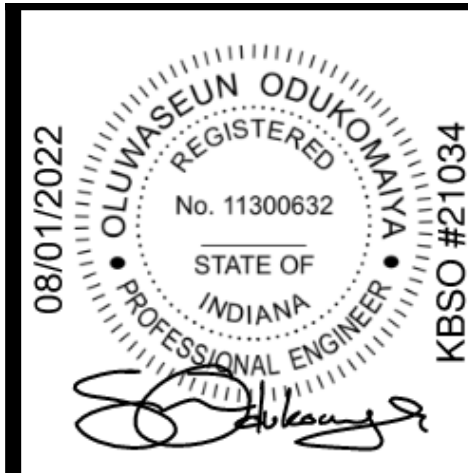
MEP ENGINEER

KASO CONSULTING LLC
JIAN GUO, P.E., Managing Partner
1344 South Rangemore Road, Suite 202
Carmel, Indiana 46032
PH 317 344-8044

LANDSCAPE ARCHITECT

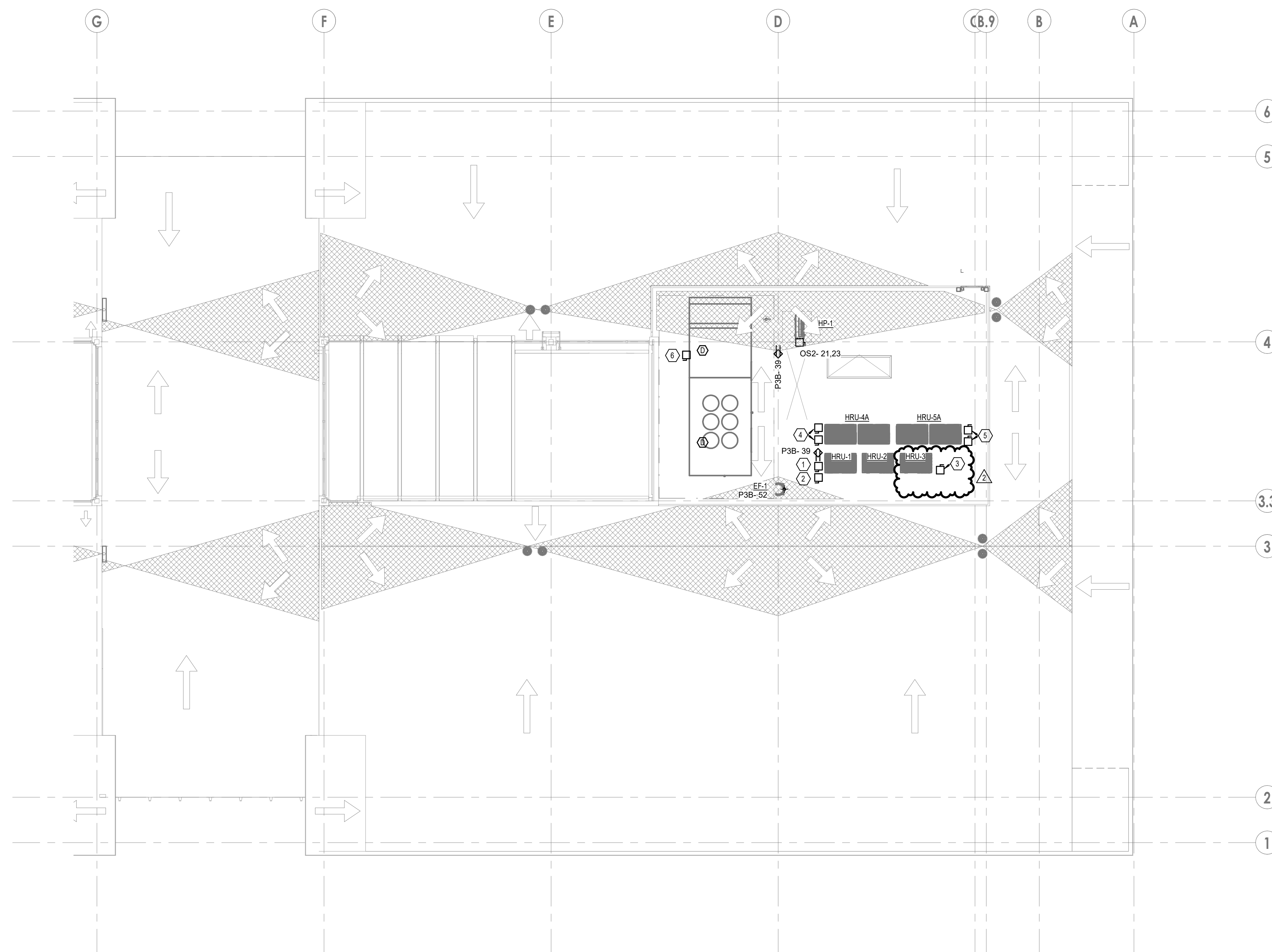
CHEN SITE DESIGN STUDIO LLC
JIAN CHEN, P.L.A., A.S.A.
1915 N HARBOUR DR #3625
CHICAGO, IL 60641
PH 646 383-0148

DAMIEN CENTER
NEW DAMIEN HEADQUARTERS
INTERSECTION OF E WASHINGTON STREET
AND N ORIENTAL STREET



ROOF LEVEL ELECTRICAL
PLAN - EAST

EP104B
PROJECT NUMBER: 21034



 **1** **ROOF LEVEL ELECTRICAL PLAN - EAST**
1/8" = 1'-0"

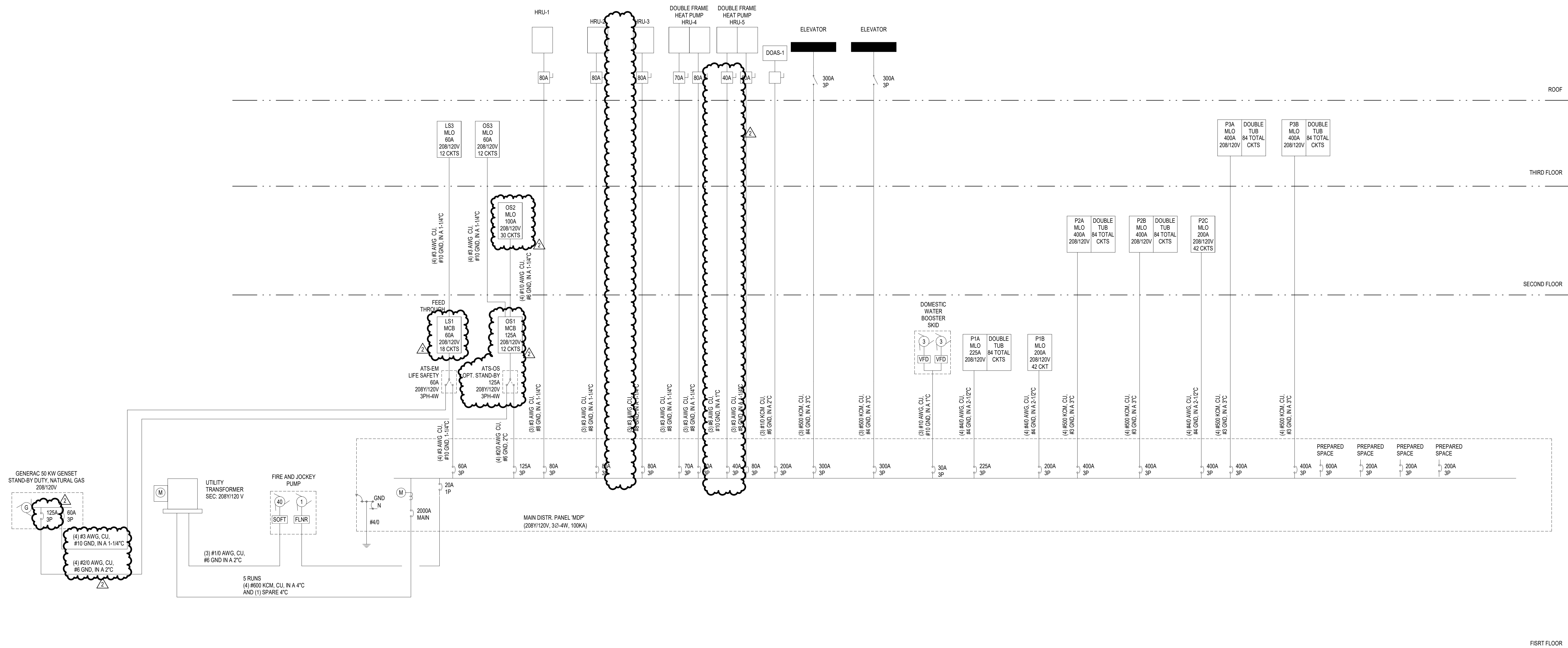
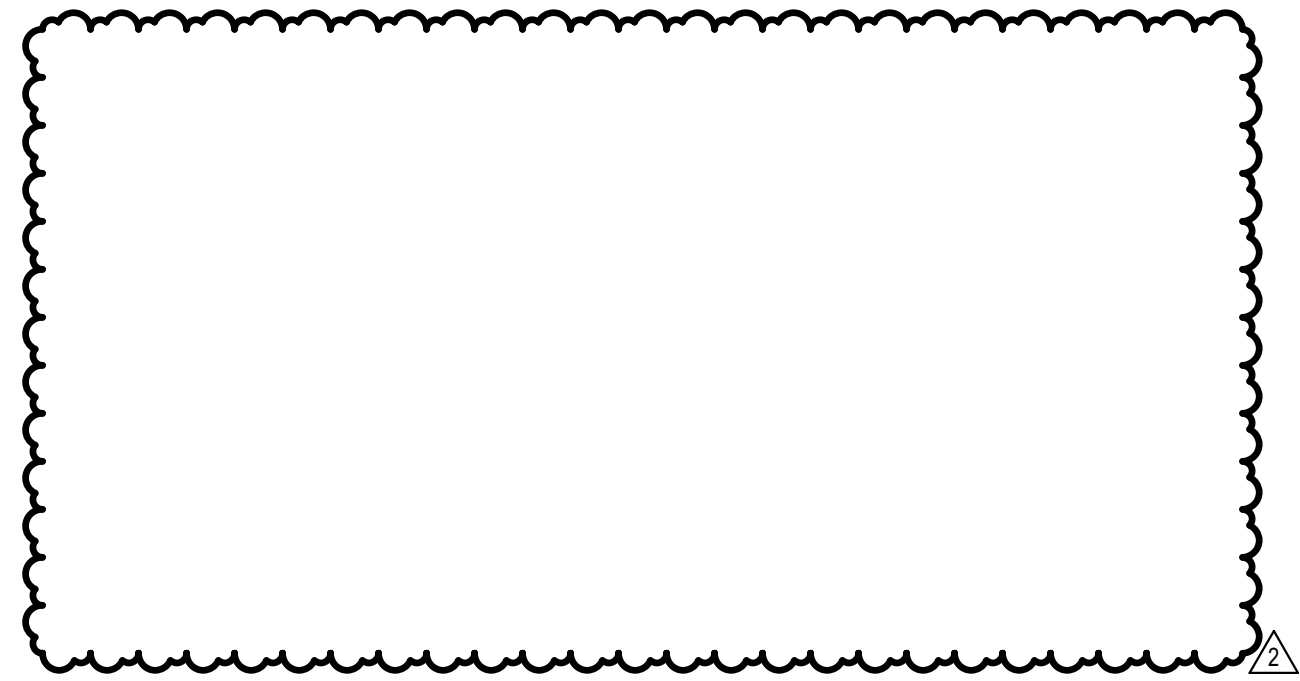
Branch Panel: P1A											
Location: ELECTRICAL 106A					Volts: 120/208 Wye			A.I.C. Rating: 22 KA			
Supply From: MDP					Phases: 3			Mains Type: MLO			
Mounting: SURFACE					Wires: 4			Mains Rating: 225 A			
Enclosure: NEMA 1								MCB Rating: 0 A			
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	LIGHTING-PARKING GARAGE	20 A	1	1181	1283			1	20 A LIGHTING-PARKING GARAGE	2	
3	LIGHTING-MEETING/ELEC/STORAGE/IMF	20 A	1		1347	328		1	20 A LIGHTING-WATER...	4	
5	LIGHTING-CORRIDOR	20 A	1			521	1418	1	20 A LIGHTING-PARKING GARAGE	6	
7	LIGHTING-PARKING GARAGE	20 A	1	1283	1080			1	20 A LIGHTING-PARKING GARAGE	8	
9	LIGHTING-PARKING GARAGE	20 A	1		810	798		1	20 A LIGHTING-TESTING/HARM...	10	
11	LIGHTING-STAIRCASE	20 A	1			379	733	1	20 A LIGHTING-ENTRY/ELEVATOR...	12	
13	LIGHTING-PARKING GARAGE	20 A	1	945	960			1	20 A GATER OPERATORS	14	
15	LIGHTING-PARKING GARAGE	20 A	1		945	1176		1	20 A GEF-1	16	
17	LIGHTING-FIRST FLOOR CORRIDOR	20 A	1			690	36	1	20 A LIGHTING - FLAG POLE	18	
19	LIGHTING-OPEN OFFICE/OFFICE/FOCUS...	20 A	1	1372	180			1	20 A RECEPT - FUTURE WRK STN 110K	20	
21	RECEPT - FUTURE WRK STN 110K	20 A	1		360	180		1	20 A RECEPT - FUTURE WRK STN 110K	22	
23	RECEPT - FUTURE WRK STN 110K	20 A	1			180	720	1	20 A RECEPT - FUTURE WRK STN 110K	24	
25	RECEPT - FUTURE WRK STN 110K	20 A	1	1080	1440			1	20 A RECEPT - OPEN OFFICE 110K	26	
27	RECEPT - FLOOR BOX 110K	20 A	1		360	360		1	20 A RECEPT - FLOOR BOX 110K	28	
29	RECEPT - UC FRIDGE 110K	20 A	1			180	360	1	20 A RECEPT - COUNTER TOP 110K	30	
31	RECEPT - PRINTER SHREDDER 110K	20 A	1	360	1440			1	20 A RECEPT - OFFICE 110I/110J	32	
33	RECEPT - OFFICE 110I/110M	20 A	1		1440	180		1	20 A RECEPT - ELEVATOR PIT	34	
35	RECEPT - WATER COOLERS	20 A	1			360	540	1	20 A RECEPT - RR 110D/110F/112A	36	
37	RECEPT - 110G/110R/110S/110T	20 A	1	1440	720			1	20 A RECEPT - OFFICE 110H	38	
39	RECEPT - 110A/110R/110C/110Q	20 A	1		1260	540		1	20 A RECEPT - LAB 110E	40	
41	RECEPT - 110/110V	20 A	1			1440	1440	1	20 A RECEPT - 107/107A/107B	42	
43	RECEPT - CORRIDORS	20 A	1	1440	1440			1	20 A RECEPT - LARGE MEETING 106	44	
45	RECEPT - ELEC. 106A	20 A	1		360	360		1	20 A RECEPT - MDF	46	
47	RECEPT - MDF	20 A	1			360	720	1	20 A RECEPT - MDF	48	
49	RECEPT - MDF	20 A	1	720	1080			1	20 A RECEPT - VOL. TRAINING 103	50	
51	RECEPT - WATER COOLERS	20 A	1		360	540		1	20 A RECEPT - 101A/101C/101D	52	
53	RECEPT - CORRIDORS	20 A	1			540	1260	1	20 A RECEPT - VOL. TRAINING 103	54	
55	WATER HEATER	20 A	1	500	180			1	20 A RECEPT - WATER SOFTENER	56	
57	RECEPT - WTR ROOM	20 A	1		180	400		1	20 A RECEPT - UC FRIDGE 106	58	
59	RECEPT - UC FRIDGE 106	20 A	1			400	500	1	20 A CP-1	60	
61	RECEPT - SOUTH EXT.	20 A	1	360	2880			1	30 A RECEPT - MOBILE UNIT	62	
63	RECEPT - NORTH EXT.	20 A	1		900	180		1	20 A RECEPT - MOBILE UNIT	64	
65	RECEPT - ELEVATOR PIT	20 A	1			180	1000	1	20 A GENERATOR BLK HTR	66	
67	RECEPT - IT/STORAGE 105	20 A	1	180	0			1	20 A SPARE	68	
69	TCC PANEL	20 A	1		180	0		1	20 A SPARE	70	
71	FCU - 105,106,110	15 A	2	905	933			2	15 A FCU - 107, 108, 109: HRB-1-2	72	
73	FCU - 102,103,104	15 A	2		905	1006		2	15 A FCU101, WCH#, HRB-1-1	74	
75						905	1006			76	
77				937	2101					78	
79					937	2101				80	
81	FP AIR COMPRESSOR	20 A	3			937	2101	3	40 A GEF-2	82	
83										84	
Total Load:				28419 VA		18493 VA		20742 VA			
Total Amps:				240 A		154 A		176 A			
Legend:											
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
HVAC		14974 VA		100.00%		14974 VA					
LIGHTING		15149 VA		125.00%		18937 VA		Total Conn. Load: 67653 VA			
RECEPT		32540 VA		65.37%		21270 VA		Total Est. Demand: 80171 VA			
Miscellaneous Power		4810 VA		100.00%		4810 VA		Total Conn.: 188 A			
ELECTRIC HEATING		180 VA		100.00%		180 VA		Total Est. Demand: 167 A			
Notes:											

Branch Panel: P2A														
Location: Supply From: MDP Mounting: SURFACE Enclosure: NEMA 1					Volts: 120/208 Wye Phases: 3 Wires: 4					A.I.C. Rating: 18 KA Mains Type: MLO Mains Rating: 400 A MCB Rating: 0 A				
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT				
1	LIGHTING-LAB...	20 A	1	1501	1576			1	20 A LIGHTING-ASSISTANTS/OFFICE/EXAM/PR...	2				
3	LIGHTING-MED...	20 A	1		919	1291		1	20 A LIGHTING-SECOND FLOOR CORRIDOR	4				
5	LIGHTING-SECOND FLOOR CORRIDOR	20 A	1			375	552	1	20 A LIGHTING-FOCUS/OFFICE/CONSULT/SUP...	6				
7	LIGHTING-OFFICE/JANITORS	20 A	1	898	561			1	20 A LIGHTING - EXT.	8				
9	RECEPT - RECEPTION 205	20 A	1		1080	900		1	20 A RECEPT - RECEPTION 205	10				
11	RECEPT - PRNTR/SHRDROR 205	20 A	1			360	360	1	20 A RECEPT - MAIN ST FLR BOX	12				
13	RECEPT - MAIN ST FLR BOX	20 A	1	360	360			1	20 A RECEPT - MAIN ST FLR BOX	14				
15	RECEPT - LAB 2050	20 A	1		1440	1080		1	20 A RECEPT - LAB 2050	16				
17	RECEPT - EXAM 206/206G	20 A	1			1800	1800	1	20 A RECEPT - EXAM 206A/206F	18				
19	RECEPT - EXAM 206B/206E	20 A	1	1800	1800			1	20 A RECEPT - EXAM 207D/207E	20				
21	RECEPT - PROCEDURE 207	20 A	1		1260	1260		1	20 A RECEPT - PROCEDURE 207A	22				
23	RECEPT - EXAM 208/208A	20 A	1			1800	2160	1	20 A RECEPT - EXAM 205N/208B	24				
25	RECEPT - TRIAGE 207B	20 A	1	900	900			1	20 A RECEPT - EXAM 205F	26				
27	RECEPT - MED PROVIDER 205G	20 A	1		1440	720		1	20 A RECEPT - MED PROVIDER 205G	28				
29	RECEPT - ASSESSMENT 205K/205J	20 A	1			1800	1800	1	20 A RECEPT - OFFICE 205L/205M	30				
31	RECEPT - RR 206C/206D	20 A	1	720	1260			1	20 A RECEPT - MED ASS. 205I	32				
33	RECEPT - MED ASS. 205I	20 A	1		1260	900		1	20 A RECEPT - OFFICE 205H	34				
35	RECEPT - CLINIC CORR.	20 A	1			1260	1260	1	20 A RECEPT - 205P	36				
37	RECEPT - CLINIC WAITING 205B	20 A	1	1620	720			1	20 A RECEPT - RR 204B/204C	38				
39	RECEPT - WATER COOLERS	20 A	1		360	1620		1	20 A RECEPT - 205C/205D/205E	40				
41	RECEPT - MAIN ST / CORR. 204	20 A	1			1620	540	1	20 A RECEPT	42				
43	RECEPT - 201A/201B/201C	20 A	1	1440	1800			1	20 A RECEPT - OFFICE 210D/210E	44				
45	RECEPT - OFFICE 201B/201C	20 A	1		1800	1800		1	20 A RECEPT - 210A/210F	46				
47	RECEPT - 210/210G210J/205Q	20 A	1			1800	978	2	15 A FCU - 200, 202	48				
49	FCU - 201, 203, 204	15 A	2	603	978			2	15 A FCU - 206, 207	50				
51					603	978		2		52				
53	FCU - 205, 208, 209	15 A	2	603	720			1	20 A RECEPT - ENTRY 200	54				
55								1	20 A RECEPT - MAIN STREET 202B	56				
57	RECEPT - RECEPTION 201	20 A	1		900	360		2		58				
59	RECEPT - MAIL RM 202E	20 A	1			900	302	2	15 A FCU-210, 215	60				
61	HRB-2-2: FCU-211, 224	15 A	2	853	302			1	20 A RECEPT - WEST TERRACE	62				
63					853	1080		1	20 A RECEPT - SOUTH TERRACE	64				
65	SPARE	20 A	1			0	900	1	20 A SPARE	66				
67	SPARE	20 A	1	0	0			1	20 A SPARE	68				
69	SPARE	20 A	1		0	0		1	20 A SPARE	70				
71	SPACE	--	--			0	0	--	20 A SPACE	72				
73	SPACE	--	--	0	0			--	20 A SPACE	74				
75	SPACE	--	--		0	0		--	20 A SPACE	76				
77	SPACE	--	--			0	0	--	20 A SPACE	78				
79	SPACE	--	--	0	0			--	20 A SPACE	80				
81	SPACE	--	--		0	0		--	20 A SPACE	82				
83	SPACE	--	--			0	0	--	20 A SPACE	84				
Total Load:				22274 VA	23904 VA	23947 VA								
Total Amps:				186 A	201 A	202 A								
Legend:														
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals						
HVAC		8632 VA		100.00%		8632 VA								
LIGHTING		7673 VA		125.00%		9591 VA		Total Conn. Load: 70125 VA						
RECEPT		53820 VA		59.29%		31910 VA		Total Est. Demand: 50133 VA						
								Total Conn.: 195 A						
								Total Est. Demand: 139 A						
Notes:														

Branch Panel: OS2													
Location: STOR. REC. / SUPPLIES &...					Volts: 120/208 Wye				A.I.C. Rating: 18 KA				
Supply From: OS1					Phases: 3				Mains Type: MLO				
Mounting: Enclosure:					Wires: 4				Mains Rating: 100 A				
									MCB Rating: 100 A				
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM LIGHTING-SECOND FLOOR...	20 A	1	1515	180					1	20 A	MOTORIZED GATE	2
3	RECEPT - WALL CALL FRIDGE	20 A	1			400	400			1	20 A	RECEPT - ICE PACK FREEZER	4
5	RECEPT - DRUG FRIDGE	20 A	1					400	400	1	20 A	RECEPT - DRUG FRIDGE	6
7	RECEPT - COPIER	20 A	1	1000	1500					1	20 A	RECEPT - MICROWAVE	8
9	RECEPT - REFRIGERATOR	20 A	1			800	360			1	20 A	RECEPT - BREAK ROOM	10
11	RECEPT - BREAK ROOM 204D	20 A	1					540	360	1	20 A	RECEPT - RR	12
13	RECEPT	20 A	1	900	1440					1	20 A	RECEPT - OFFICE 203C/203D	14
15	RECEPT - SERVER	20 A	1			360	540			1	20 A	RECEPT	16
17	RECEPT - DESKS	20 A	1					1260	1260	1	20 A	RECEPT - WAITING 203A	18
19	RECEPT - CONSULT	20 A	1	720	400					1	20 A	RECEPT	20
21	HP-1	40 A	2			2496	1155			2	15 A	FCU - 211, 212, 214	22
23								2496	1155				24
25	EM LIGHTING-PROCEDURE...	20 A	1	150	3360					1	20 A	RECEPT	26
27	RECEPT	20 A	1			3000	2000			1	20 A	RECEPT	28
29	RECEPT - SHREDDER	20 A	1					400					30
Total Load:				11165 VA		11511 VA		8271 VA					
Total Amps:				97 A		100 A		69 A					
Legend:													
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
HVAC		2309 VA		100.00%		2309 VA							
LIGHTING		1665 VA		125.00%		2082 VA		Total Conn. Load: 30947 VA					
RECEPT		21980 VA		72.75%		15990 VA		Total Est. Demand: 25373 VA					
Miscellaneous Power		4992 VA		100.00%		4992 VA		Total Conn.: 96 A					
								Total Est. Demand: 70 A					
Notes:													

Branch Panel: P3A													
Location: ELECTRICAL / IT 302G						Volts: 120/208 Wye			A.I.C. Rating: 18 KA				
Supply From: MDP						Phases: 3			Mains Type: MLO				
Mounting: SURFACE						Wires: 4			Mains Rating: 400 A				
Enclosure: NEMA 1									MCB Rating: 0 A				
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING-OFFICE/OPEN OFFICE/TERRACE	20 A	1	1300	976					1	20 A	LIGHTING-OPEN OFFICE/OFFICE	2
3	LIGHTING-SOCIAL HUB/BOARD ROOM	20 A	1			870	559			1	20 A	LIGHTING-THIRD FLOOR CORRIDOR	4
5	LIGHTING-THIRD FLOOR CORRIDOR	20 A	1					852	1162	1	20 A	LIGHTING-TERRACE /OPEN...	6
7	LIGHTING-OFFICE/ELEC/STORAGE/FOCU...	20 A	1	652	1254					1	20 A	LIGHTING-OPEN OFFICE	8
9	RECEPT - OFFICE 309F	20 A	1			900	1080			1	20 A	RECEPT - OFFICE 309E	10
11	RECEPT - OFFICE 309D	20 A	1					900	900	1	20 A	RECEPT - OFFICE 309A	12
13	RECEPT - OFFICE 309B	20 A	1	1080	900					1	20 A	RECEPT - OFFICE 309C	14
15	RECEPT - OFFICE 310A	20 A	1			1080	1080			1	20 A	RECEPT - OFFICE 310B	16
17	RECEPT - OPEN OFFICE 309	20 A	1					180	180	1	20 A	RECEPT - OPEN OFFICE 309	18
19	RECEPT - HUDDLE 302A	20 A	1	1620	900					1	20 A	RECEPT - OFFICE 302B	20
21	RECEPT - OFFICE 302C	20 A	1			1080	900			1	20 A	RECEPT - OFFICE 302E	22
23	RECEPT - OFFICE 302F	20 A	1					1080	1260	1	20 A	RECEPT - OFFICE 303F, 303G	24
25	RECEPT - OPEN OFFICE 310	20 A	1	180	180					1	20 A	RECEPT - OPEN OFFICE 310	26
27	RECEPT - OPEN OFFICE 310	20 A	1			180	180			1	20 A	RECEPT - OPEN OFFICE 310	28
29	RECEPT - OPEN OFFICE 310	20 A	1					180	1440	1	20 A	RECEPT - OPEN OFFICE 303D, 303E	30
31	RECEPT - OUTDOOR TERRACE	20 A	1	360	180					1	20 A	RECEPT - OPEN OFFICE 302	32
33	RECEPT - OPEN OFFICE 302	20 A	1			180	500			1	20 A	SOCIAL HUB COFFEE MAKER	34
35	SOCIAL HUB DISHWASHER	20 A	1					1500	1500	1	20 A	SOCIAL HUB DISPOSAL	36
37	SOCIAL HUB ICE MAKER	20 A	1	1000	1000					1	20 A	SOCIAL HUB FREEZER	38
39	SOCIAL HUB REFRIGERATOR	20 A	1			1500	360			1	20 A	RECEPT - SOCIAL HUB 307	40
41	RECEPT - SOCIAL HUB 307	20 A	1					900	360	1	20 A	RECEPT - COPIER	42
43	RECEPT - BOARD RM 306	20 A	1	900	1080					1	20 A	RECEPT - BOARD RM 306	44
45	RECEPT - OFFICE 303C	20 A	1			900	900			1	20 A	RECEPT - HUDDLE 303B	46
47	RECEPT - SOCIAL HUB 307	20 A	1					1080	720	1	20 A	RECEPT - FOCUS RM 302J, MOTHERS R...	48
49	RECEPT - BEVERAGE 308B ICE MAKER	20 A	1	1000	1500					1	20 A	RECEPT - BEVERAGE 308B	50
51	RECEPT - IDF	20 A	1			360	720			1	20 A	RECEPT - IDF	52
53	RECEPT - IDF	20 A	1					360	360	1	20 A	RECEPT - IDF	54
55	RECEPT - OPEN OFFICE 310 WORK...	20 A	1	720	720					1	20 A	RECEPT - OPEN OFFICE 310 WORK...	56
57	RECEPT - OPEN OFFICE 310	20 A	1			720	360			1	20 A	COPY MACHINE - OPEN OFFICE 303	58
59	RECEPT - OPEN OFFICE 302 WORK...	20 A	1					720	720	1	20 A	RECEPT - OPEN OFFICE 302 WORK...	60
61	RECEPT - OPEN OFFICE 302 WORK...	20 A	1	720	180					1	20 A	RECEPT - OPEN OFFICE 303 WORK...	62
63	RECEPT - UNISEX RR	20 A	1			360	0			2	15 A	FCU-309, 312	64
65		15 A	2					905	0				66
67	FCU-301, 302, 306	15 A	2	905	978					2	15 A	FCU-310, 311	68
69						1228	978						70
71	FCU-303, 307, HRB-3-1	15 A	2					1228	978	2	15 A	FCU-305, 308	72
73													74
75	FCU-304, HRB-3-2	15 A	2	302	978					1	20 A	LIGHTING-STAIRCASE LOBBY	76
77	RECEPT - MICROWAVE	20 A	1					1500	0	1	20 A	ELEVATOR CAB	78
79	RECEPT - MICROWAVE	20 A	1	1500	0					1	20 A	ELEVATOR CONTROLLER	80
81	RECEPT - FOCUS BOOTHS	20 A	1			360	0			--	--	SPACE	82
83	SPACE	--	--					0	0	--	--	SPACE	84
Total Load:				23063 VA		18028 VA		20964 VA					
Total Amps:				196 A		150 A		178 A					
Legend:													
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
HVAC		8778 VA		100.00%		8778 VA							
LIGHTING		8017 VA		125.00%		10021 VA		Total Conn. Load: 62055 VA					
RECEPT		45260 VA		61.05%		27630 VA		Total Est. Demand: 46430 VA					
Miscellaneous Power		0 VA		0.00%		0 VA		Total Conn.: 172 A					
								Total Est. Demand: 129 A					
Notes:													

Branch Panel: OS3												
Location: ELECTRICAL / IT 302G					Volts: 120/208 Wye				A.I.C. Rating: 18 KA			
Supply From: OS1					Phases: 3				Mains Type: MLO			
Mounting: SURFACE					Wires: 4				Mains Rating: 60 A			
Enclosure: NEMA 1									MCB Rating: 0 A			
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT		
1				2880				1	30 A	RECEPT - IDF	2	
3	RECEPT - IDF	30 A	1		2880	180		1	20 A	RECEPT - LAB FRIDGE	4	
5	RECEPT - LAB FRIDGE	20 A	1			180	180	1	20 A	RECEPT - MED FRIDGE 207C	6	
7	RECEPT - MED FRIDGE 207C	20 A	1	180	1000			1	20 A	RECEPT - DENTAL SERVER	8	
9											10	
11											12	
Total Load:				4060 VA	3060 VA	360 VA						
Total Amps:				37 A	29 A	3 A						
Legend:												
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals				
RECEPT		7480 VA		100.00%		7480 VA		Total Conn. Load: 7480 VA				
								Total Est. Demand: 7480 VA				
								Total Conn.: 21 A				
								Total Est. Demand: 21 A				
Notes:												



1 ELECTRICAL RISER DIAGRAM
1/2\"/>

CONFIGURATION: 50cm INSTALLED NON DIRECTIONAL

CPT-7: PANOLA MOUNTAIN 107304 BLUE LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-3: PANOLA MOUNTAIN 107299 BLUSH LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-1: PANOLA MOUNTAIN 107298 RUST LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-5: PANOLA MOUNTAIN 107301 YELLOW LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-6: PANOLA MOUNTAIN 107302 GREEN LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-2: PANOLA MOUNTAIN 107300 BROWN LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

CPT-4: PANOLA MOUNTAIN 107303 MEADOW LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

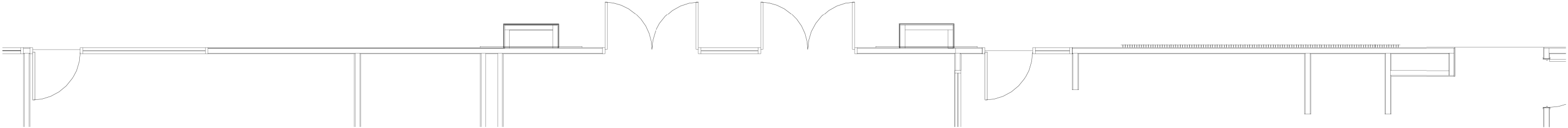
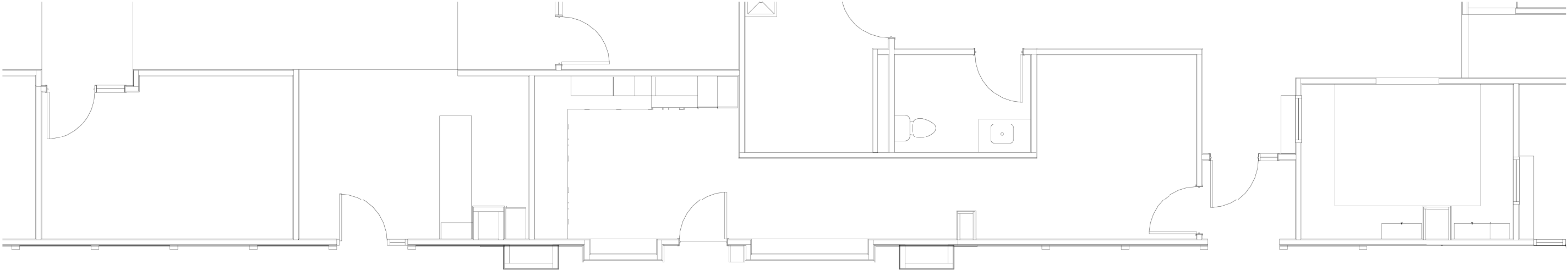
CPT-8: PANOLA MOUNTAIN 107305 SAGE LICHEN 25cm x 1m INSTALLED NON DIRECTIONAL

Scale 1:230 (original drawing scale 1:96)



CONFIGURATION: 50cm INSTALLED NON DIRECTIONAL

Scale 1:80 (original drawing scale 1:96)



DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO:

Project: Damien Center HQ

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Section</u>	<u>Paragraph</u>	<u>Specified Item</u>
074213.16	2.2-A-1	Dri-Design

Proposed

Substitution: Sobotec Surfex

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown on Drawings?
No
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any?
Yes
- C. What effect does substitution have on other trades?
N/A
- D. Differences between proposed substitution and specified item?
Alternate Manufacturer
- E. Manufacturer's guarantees of proposed and specified items are:
X Same Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

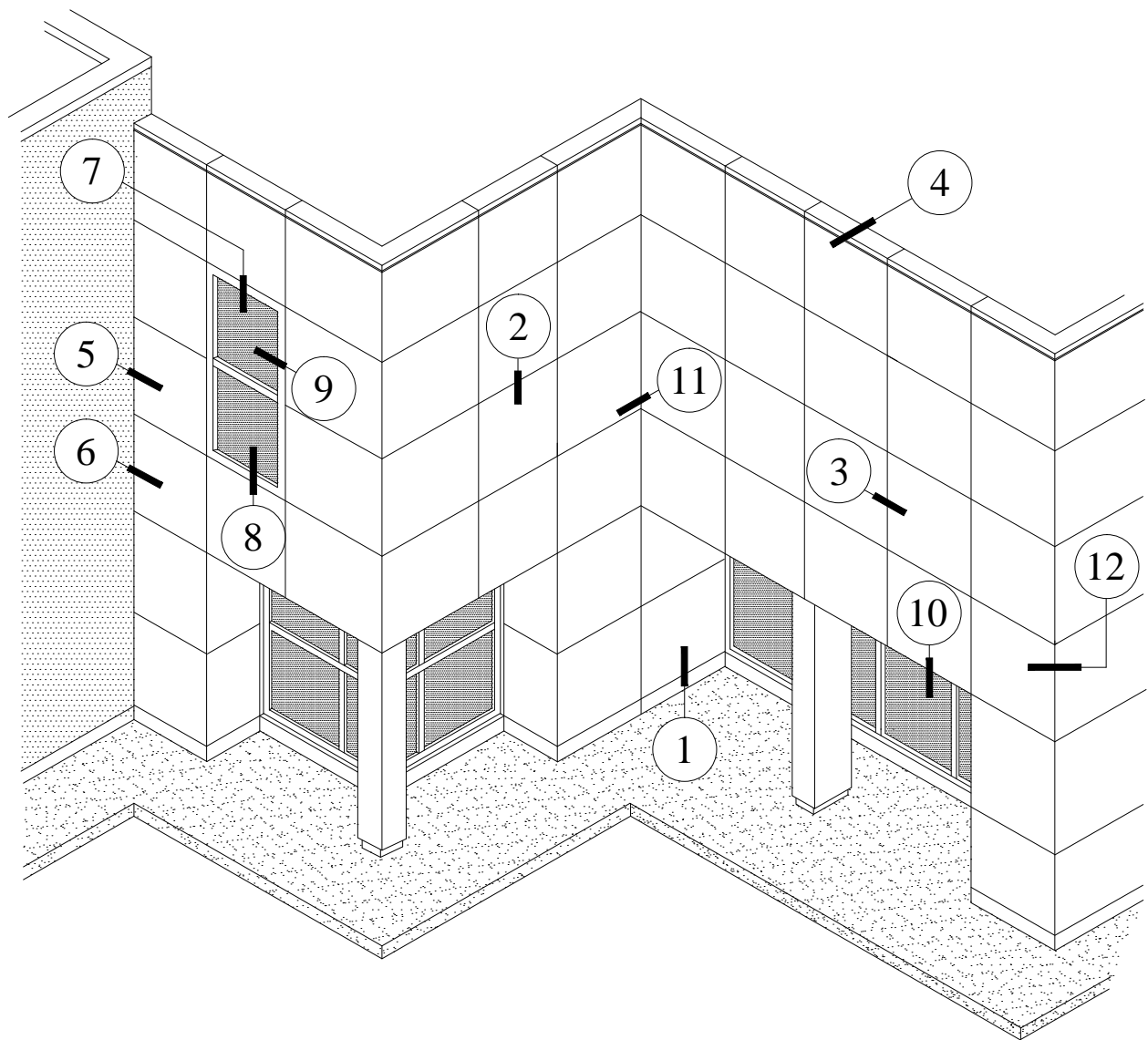
Submitted by:

Brad Hoff
Signature

Firm Spohn Associates
Address 7150 Winton Drive
Indianapolis, IN 46268
Telephone 317-921-0021

For use by Design Consultant

Accepted	Accepted as Noted
Not Accepted	Received too Late
By <u> </u>	
Date <u> </u>	
Remarks <u> </u>	



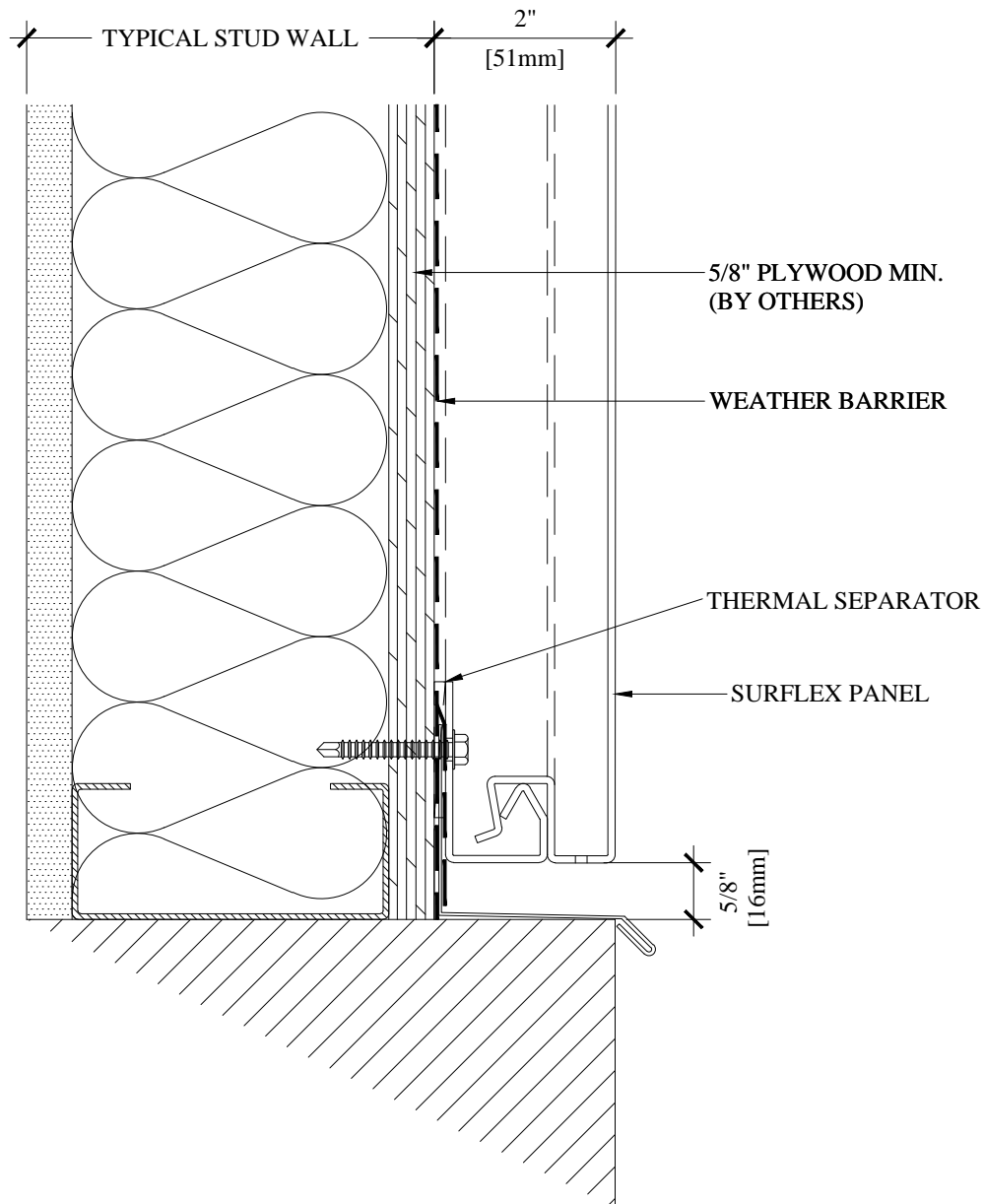
DETAIL LEGEND

- | | |
|---------------------|--------------------|
| 1- BASE CONDITION | 8- SILL DETAIL |
| 2- HORIZONTAL JOINT | 9- JAMB DETAIL |
| 3- VERTICAL JOINT | 10- WALL SOFFIT |
| 4- STANDARD PARAPET | 11- INSIDE CORNER |
| 5- TERMINATION | 12- OUTSIDE CORNER |
| 6- ABUTMENT | |
| 7- HEAD DETAIL | |

T1 SURFLEX DETAIL LAYOUT



HAMILTON,
ONTARIO

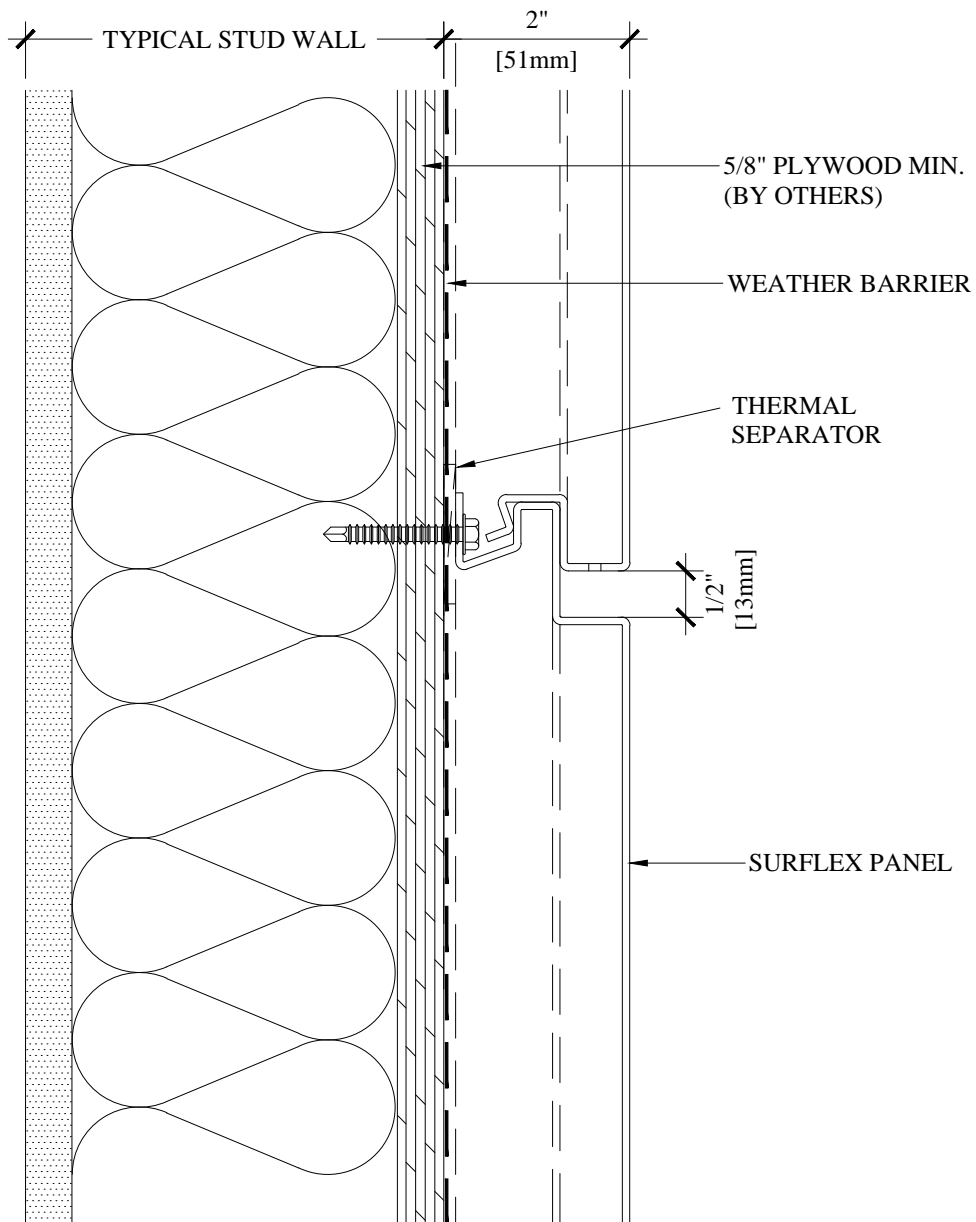


NOT TO SCALE

1 SURFLEX BASE CONDITION



HAMILTON,
ONTARIO

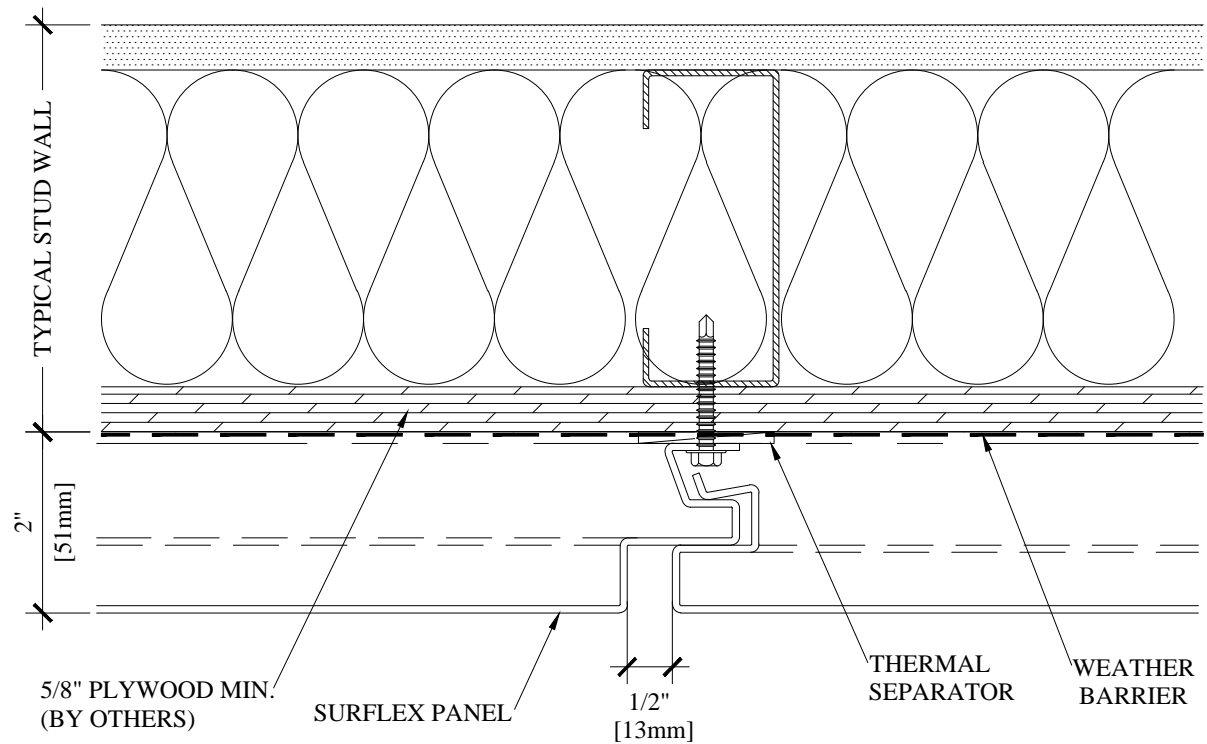


NOT TO SCALE

2 SURFLEX HORIZONTAL JOINT



HAMILTON,
ONTARIO

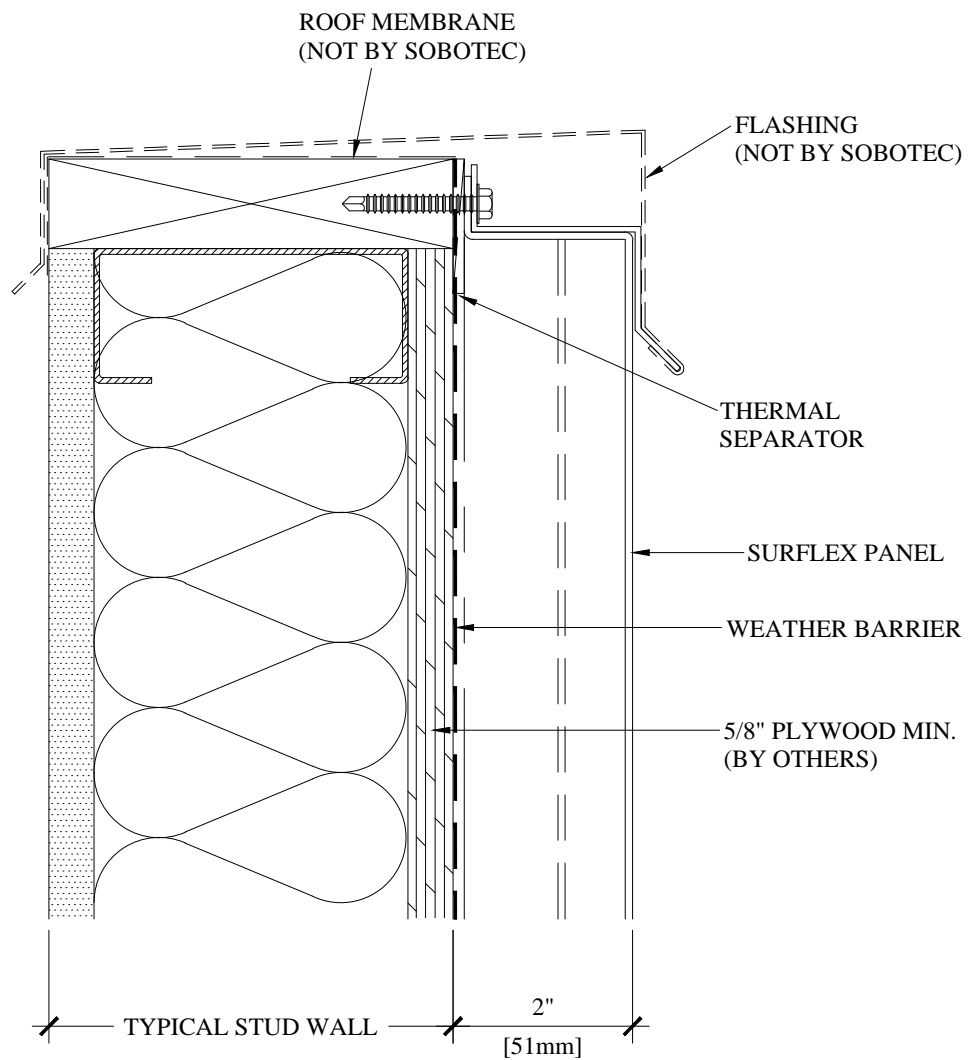


NOT TO SCALE

3 SURFLEX VERTICAL JOINT



HAMILTON,
ONTARIO

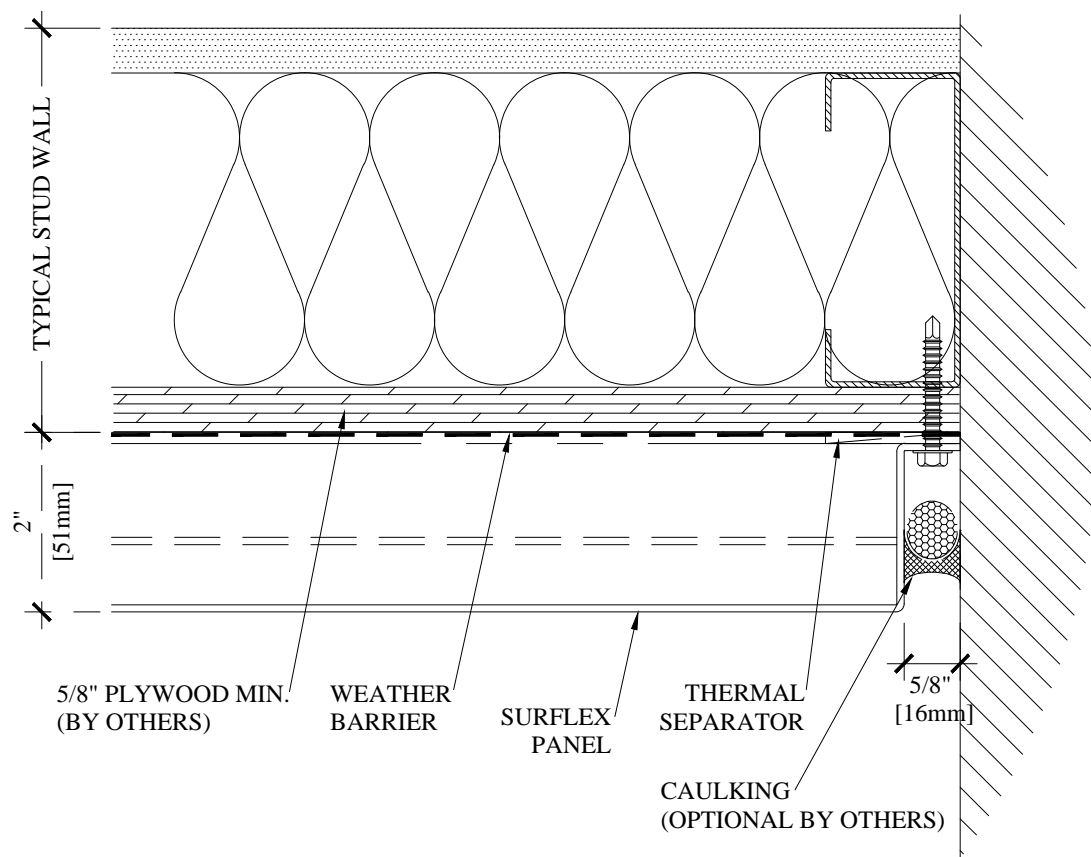


NOT TO SCALE

④ SURFLEX PARAPET DETAIL (STANDARD)



HAMILTON,
ONTARIO

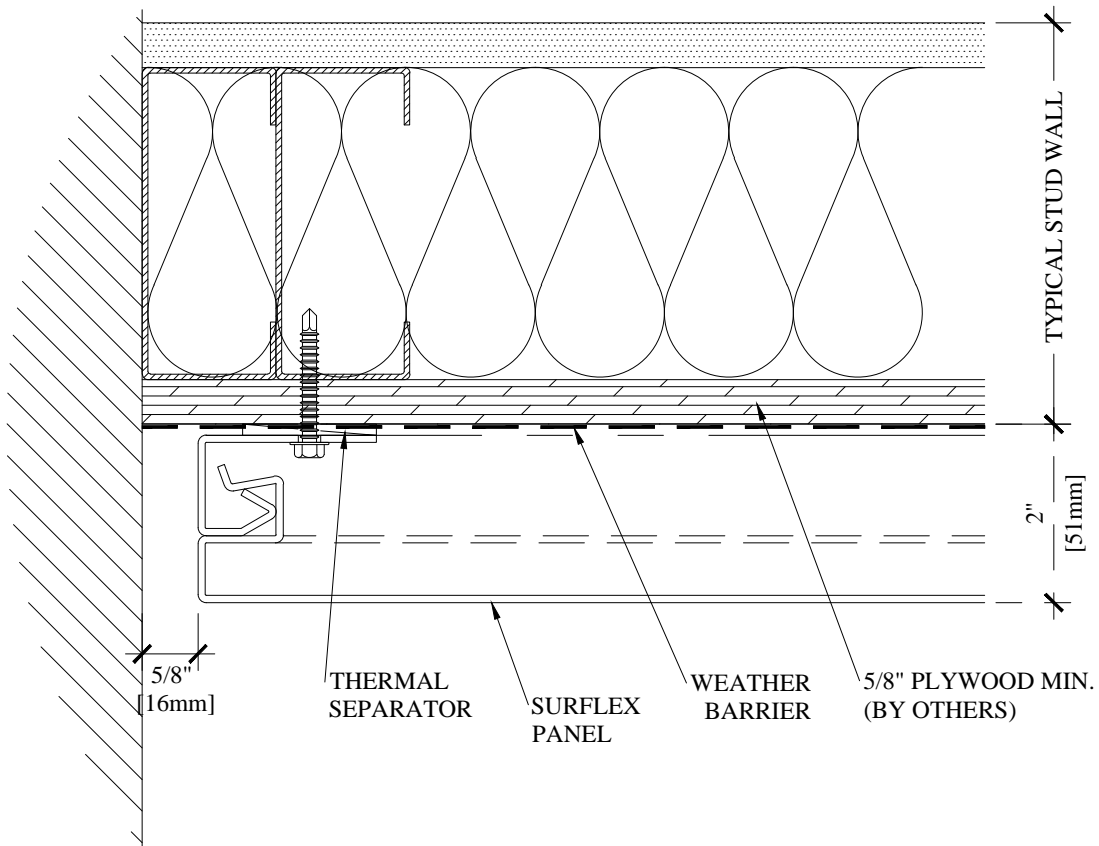


NOT TO SCALE

⑤ SURFLEX TERMINATION



HAMILTON,
ONTARIO

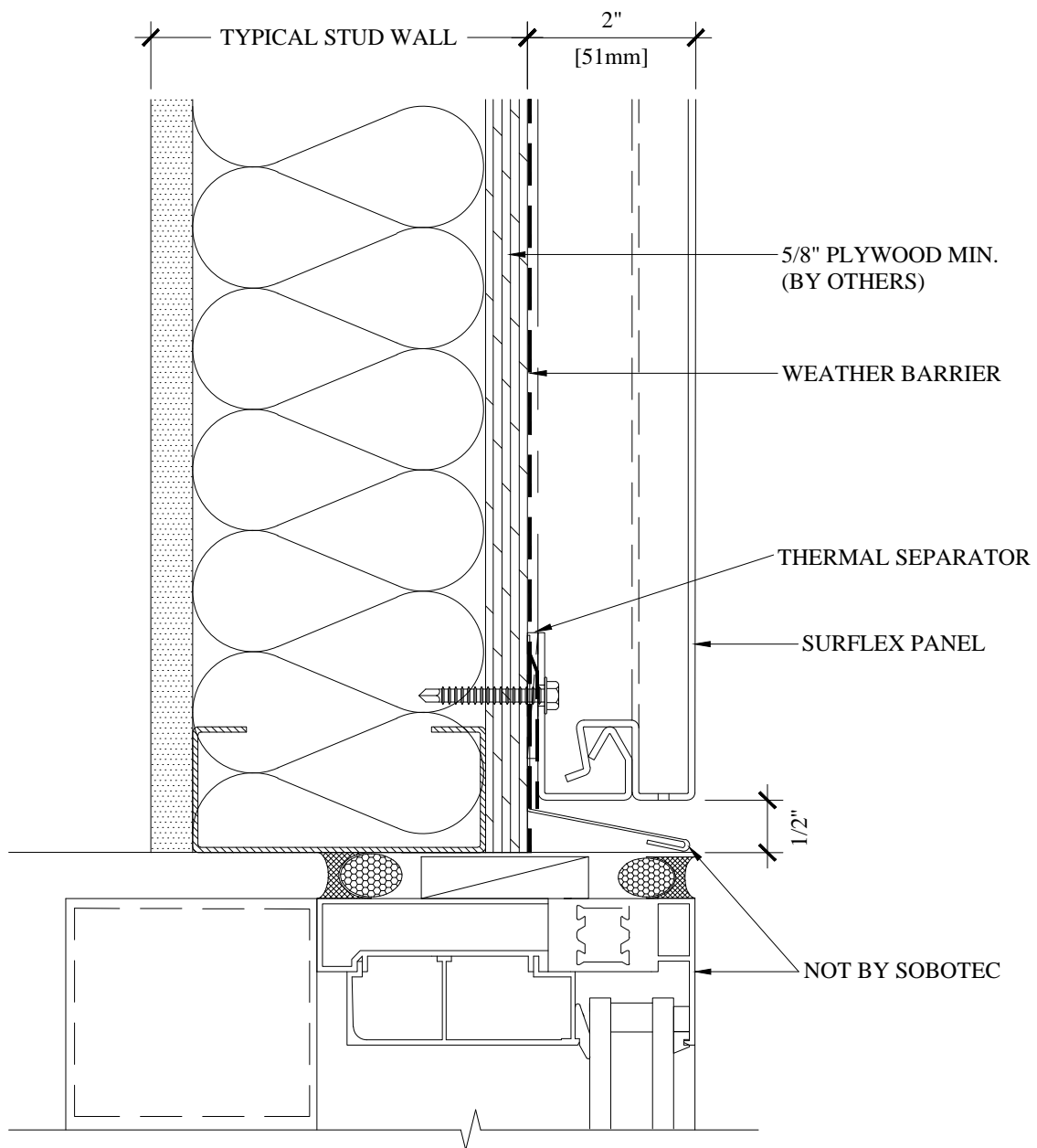


NOT TO SCALE

⑥ SURFLEX ABUTMENT DETAIL



HAMILTON,
ONTARIO

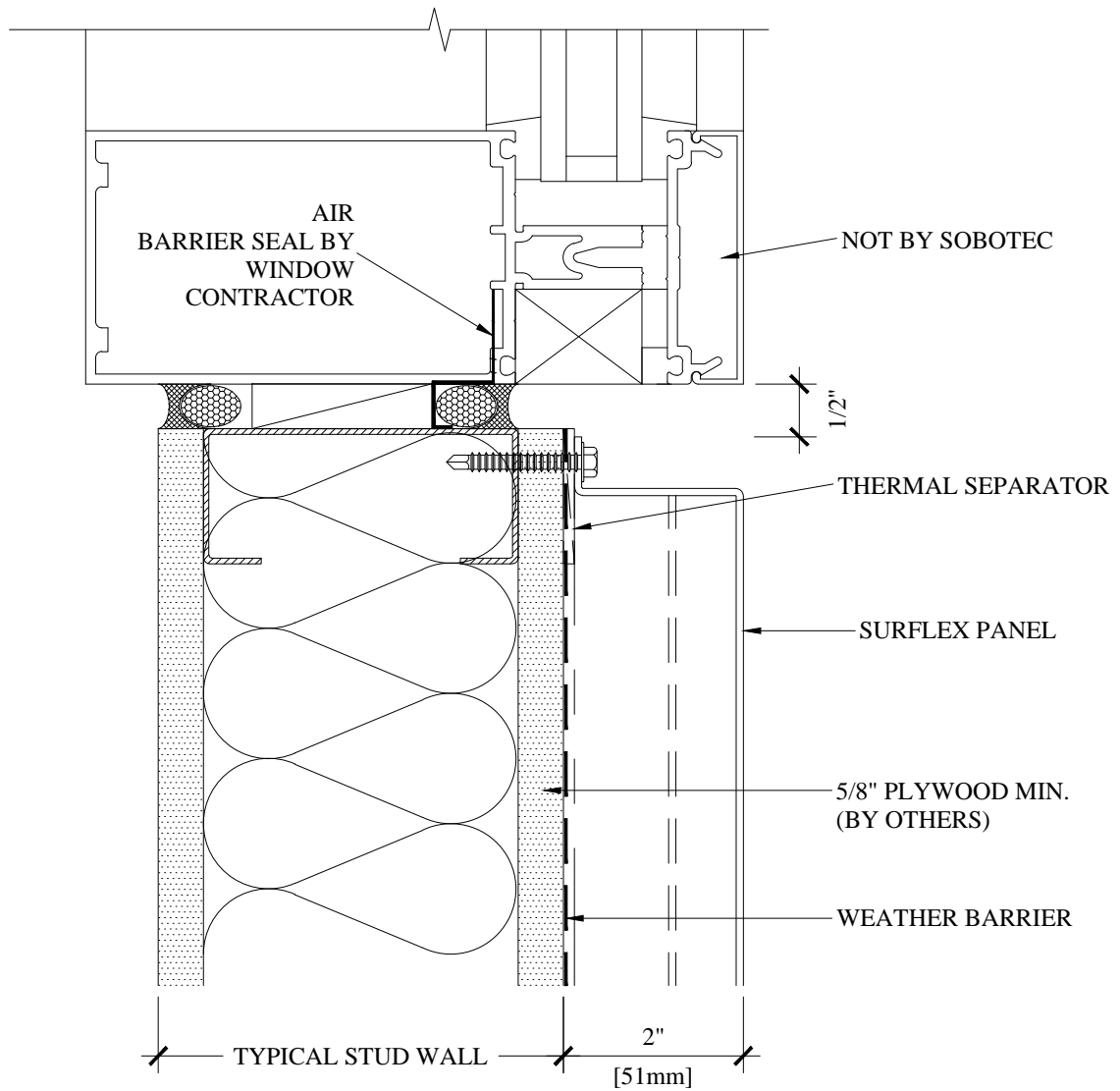


NOT TO SCALE

⑦ SURFLEX WINDOW HEAD DETAIL



HAMILTON,
ONTARIO

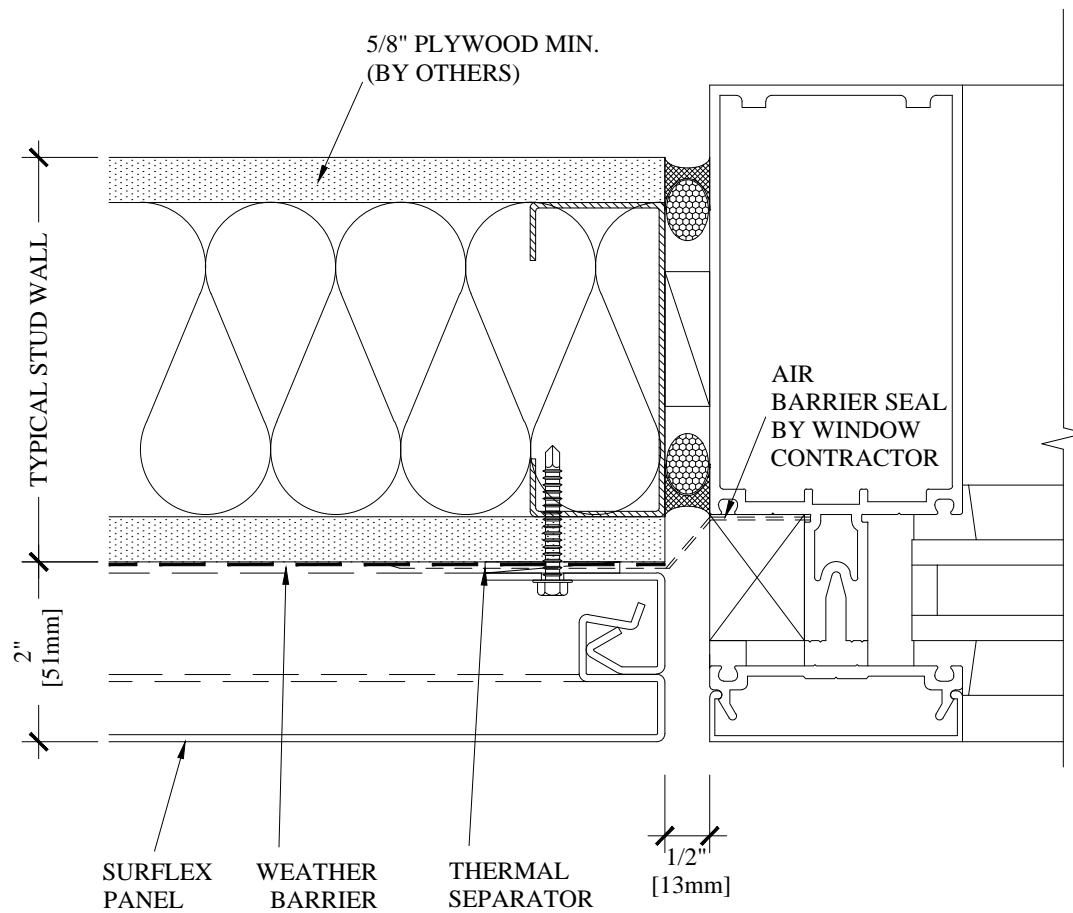


NOT TO SCALE

8 SURFLEX WINDOW SILL DETAIL



HAMILTON,
ONTARIO

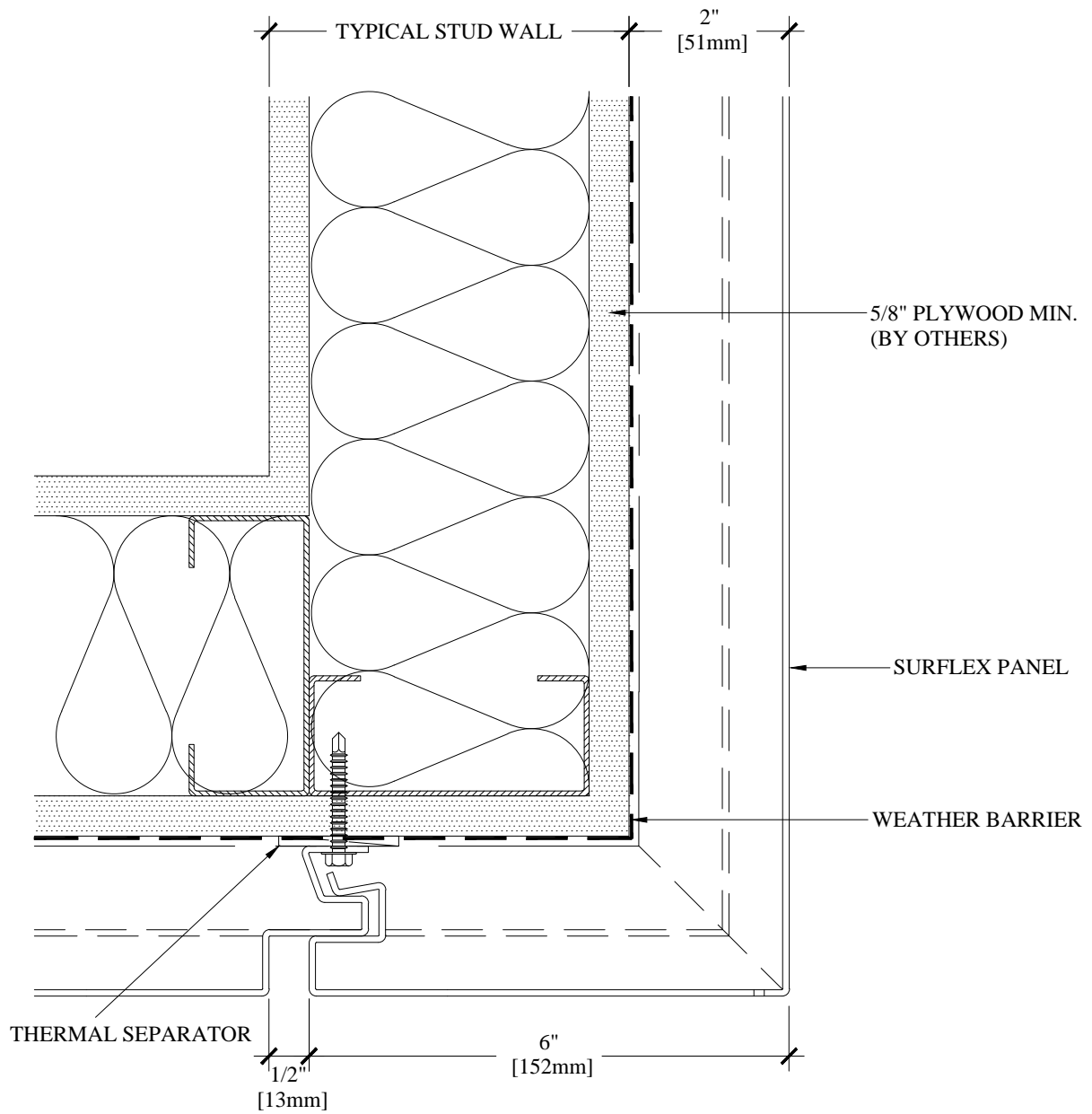


NOT TO SCALE

9 SURFLEX JAMB DETAIL



HAMILTON,
ONTARIO

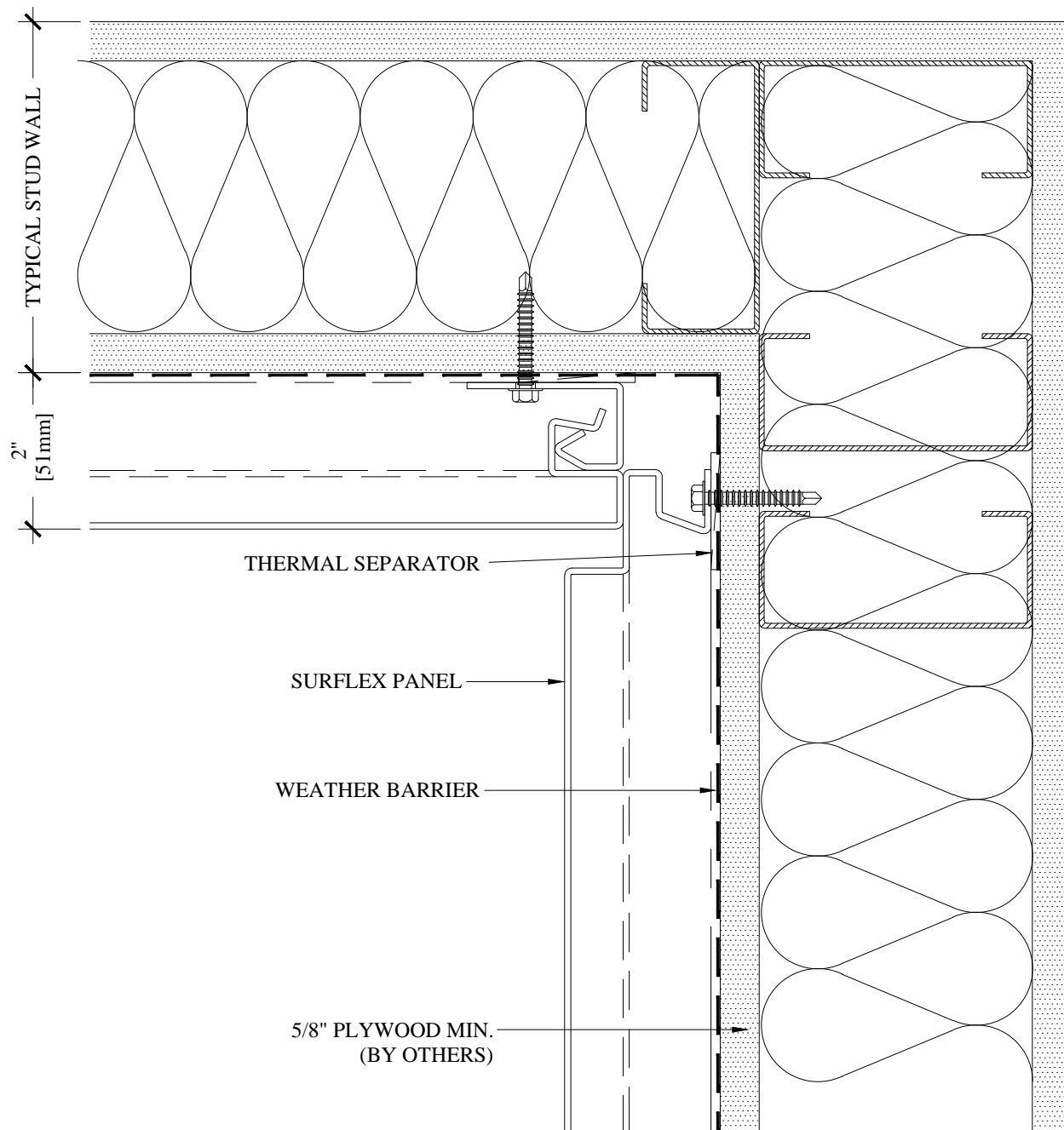


NOT TO SCALE

⑩ SURFLEX WALL SOFFIT



HAMILTON,
ONTARIO

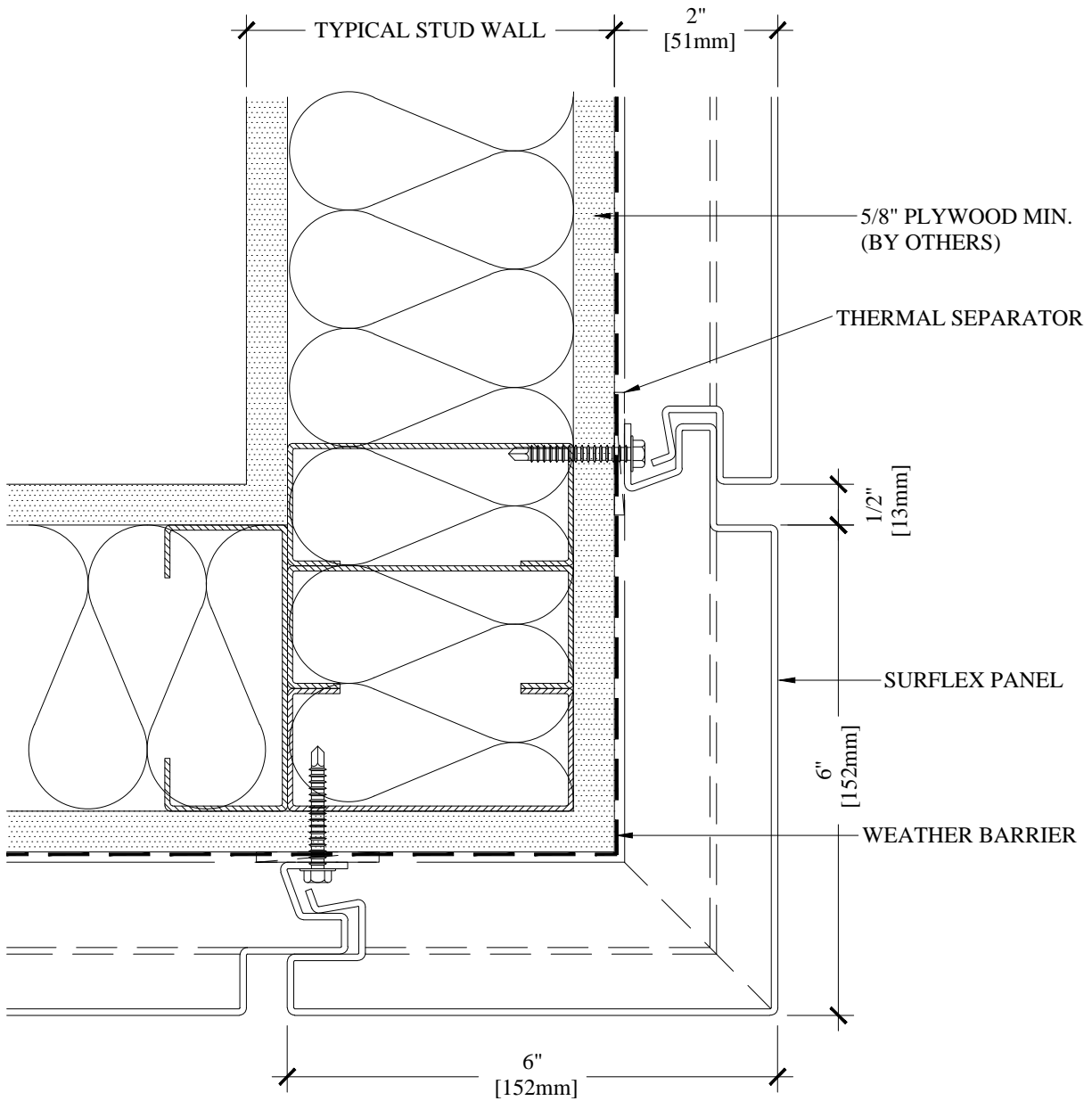


NOT TO SCALE

11 SURFLEX INSIDE CORNER



HAMILTON,
ONTARIO



NOT TO SCALE

⑫ SURFLEX OUTSIDE CORNER



HAMILTON,
ONTARIO

DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO:

Project: Damien Center HQ

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Section</u>	<u>Paragraph</u>	<u>Specified Item</u>
10 71 13	2.1	Kawneer Versoliel

Proposed

Substitution: AGS - Architectural Grilles and Sunshades

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown on Drawings?
No
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any?
Yes
- C. What effect does substitution have on other trades?
N/A
- D. Differences between proposed substitution and specified item?
Alternate Manufacturer
- E. Manufacturer's guarantees of proposed and specified items are:
X Same Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

Brad Hoff
Signature

Firm Spohn Associates
Address 7150 Winton Drive
Indianapolis, IN 46268
Telephone 317-921-0021

For use by Design Consultant

Accepted	Accepted as Noted
Not Accepted	Received too Late
By <u> </u>	
Date <u> </u>	
Remarks <u> </u>	

10 71 13/AGS
Buy Line 5880



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Architectural Grilles & Sunshades, Inc.

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Functions:

- Limit Heat Gain
- Prevent Glare
- Daylighting
- Distinguish Buildings
- Architectural Signature

Specialties: 10700 & 10705

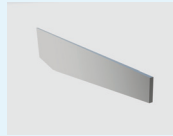
Aluminum Sunshade Components*

AGS, INC. ALUMINUM OUTRIGGERS

Curved



Tapered



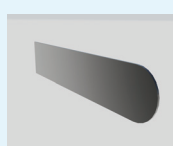
Custom



Square



Bullet

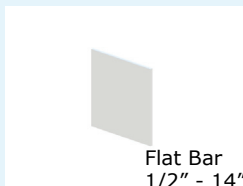


Aluminum Outriggers available in flat bar, rectangular tubes and channels

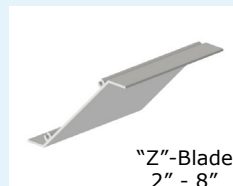
AGS, Inc. ALUMINUM SUNSHADE INFILLS



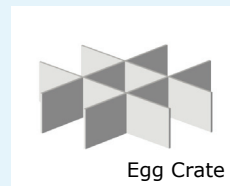
Round Tube
3/4" - 12"



Flat Bar
1/2" - 14"



"Z"-Blade
2" - 8"



Egg Crate



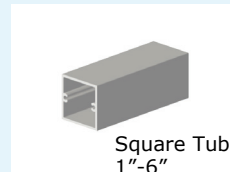
Rectangular Tube
1" - 12"



Airfoil
3" - 24"



Angle
1" - 6"



Square Tube
1"-6"

**Perforated Aluminum
One Direct Run 48" or
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** Multiple Patterns
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*Custom Components Available



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www.agsshade.com

Architectural Grilles & Sunshades, Inc.
Phone (708) 479-9458 Fax (708) 479-9478

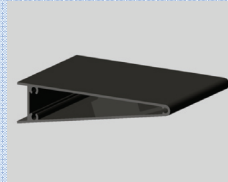
SUN CONTROL DEVICES

Aluminum Sunshade Components

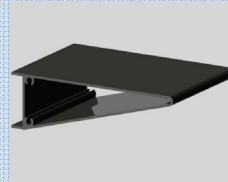


AGS, Inc. Custom Aluminum Fascias

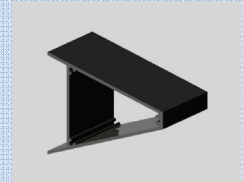
ADDITIONAL FASCIAS AVAILABLE UPON REQUEST



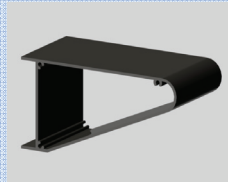
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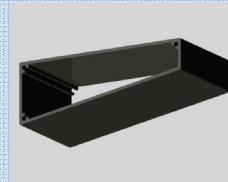
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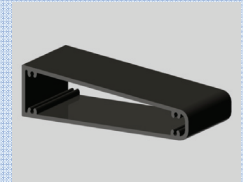
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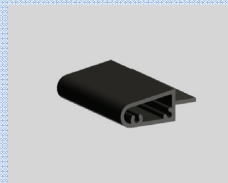
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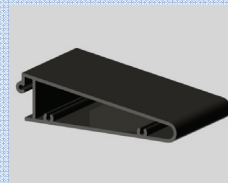
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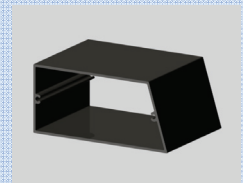
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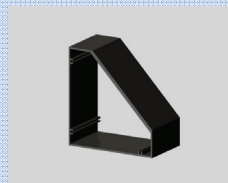
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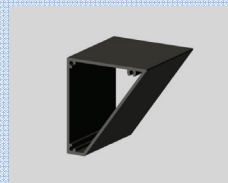
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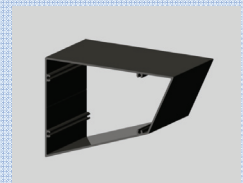
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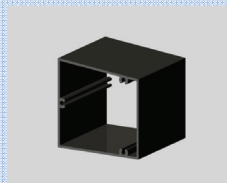
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PT# F-010



PT# F-065



PT# F-049

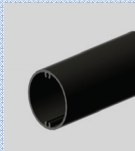


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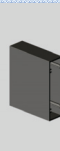


PT# HR-040

STANDARD FASCIAS



Round Tube



Rectangular Tube



Channel



Flat Bar



Square Tube



AGS INC

Architectural Grilles & Sunshades, Inc.

Phone (708) 479-9458 Fax (708) 479-9478

www.agsshade.com

Aluminum Lightshelves

Aluminum Interior, Exterior and Operable Lightshelves

Functions:

- Distribute natural sunlight deep into rooms
- Reduce use of artificial light during the day
- Reduce Brightness and Glare
- Maximize Daylighting and Views
- Provide Shade Near Windows

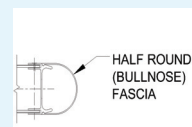
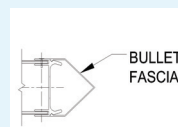
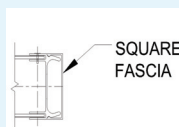
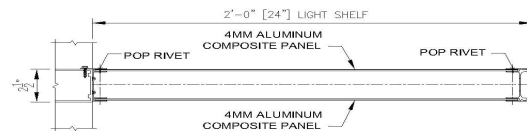
Benefits:

Potentially contribute points to USGBC LEED projects

Increase Energy Efficiency

Increase Comfort and Productivity

Specialties: 10705 (10, 71, 13)



CUSTOM ALUMINUM TRELLIS

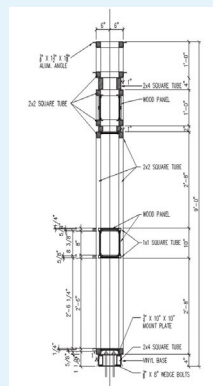
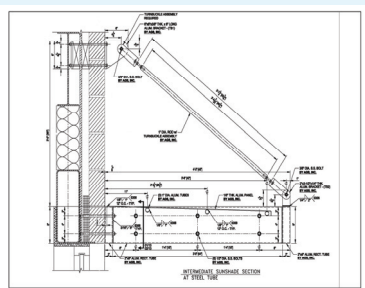
Trellis System

Functions:

- Canopies
- Solar Barriers
- Decorative Walls
- Room Divider
- Specialties: 10705

Benefits:

- Limit Heat of Direct Sunlight
- Provide a Focal Point of Interest
- Privacy Screen



AGS INC

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Architectural Grilles & Sunshades, Inc.
Phone (708) 479-9458 Fax (708) 479-9478

ALUMINUM SUN CONTROL SYSTEMS



Indianapolis, IN
Infill: 2" Round Tube
Outrigger: 1/4" x 7" Flat Bar
Fascia: 4" Round Tube
Finish: Clear Anodized



Dickinson, TX
Infill: 1/4" x 4" Flat Bar
Outrigger: Tapered 2" x 6" Tube
Segmented Fascia: 2" x 4" Tube
Rear Fascia: 2" x 6" Tube
Finish: Clear Anodized



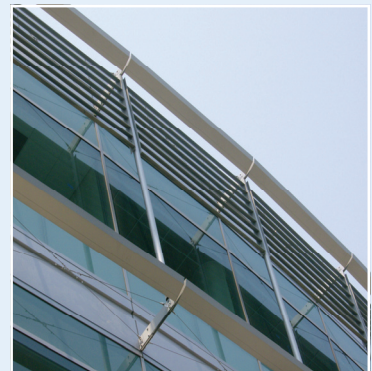
Cicero, IL
Infill: 2" x 2 1/2" Brake Metal
Outrigger: 3/8" x 3" Flat Bar
Front Fascia: 2" x 2" Tube
Rear Fascia: 2" x 3" Tube
Finish: Kynar 2 Coat



Fond du Lac, WI
Infill: 1/8" x 6" Flat Bar
Infill: 1/8" x 4" Flat Bar
Outrigger: 1/4" x 8" Flat Bar
Fascia: 2" x 8" Rect. Tube
Finish: Kynar 2 Coat



Cincinnati, OH
Infill: 1" x 4" Rect. Tube
Outrigger: 1/4" x 6" Flat Bar
Fascia: AGS PT# F-030
Finish: Clear Anodized



Redwood, CA
Infill: 6" Airfoil
Outrigger: 1/4" x 5" Flat Bar
Connector: 4" Round Tube
Fascia: AGS PT# F-060 and F-065
Turnbuckle: S.S. Wire Ropes and Clip
Finish: Kynar 2 Coat



Chicago, IL
Infill: 1/8" Perf. Aluminum 1/4" Stagger
Outrigger: 1/2" x 3" Square Plate
Fascia: 1/8" x 1 1/2" x 3" Channel
Finish: Kynar 2 Coat Mica



Orland Park, IL
Infill: ACM Panel
Outrigger: AGS, Inc.. Custom
Fascia: 2 1/2" Square
Finish: Clear Anodized



AGS INC

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Architectural Grilles & Sunshades, Inc.
Phone (708) 479-9458 Fax (708) 479-9478

Our Sun Control Products are fabricated from the highest quality materials:

Aluminum Extrusions—ASTM B 221 Alloys 6063-T5 or T6 and 6061 T5 or T6

Aluminum Sheet—ASTM B209 Alloys 5052 H32 or greater

Fasteners—300 Series Non—Magnetic, ASTM A307, Grade A or better

Our products can be finished with any one of the following options:

Kynar 2 – Coat , Kynar 3 – Coat, Tri Escent II

Finish on exposed aluminum shall be compliant with the performance standards set forth in AAMA specifications 2605, "Superior Performing Organic Coatings on Aluminum."

2-Coat—One primer coat, one color coat, for a minimum of 1.2 mils of dry film thickness.

3-Coat—One Primer coat, one color coat, one top coat for a minimum of 1.6 mils of dry film thickness.

Tri Escent II—One primer coat, one mica color coat, for a minimum of 1.4 mils of dry film thickness.

Anodized Finish

Class I anodic finish: AA-M12C22A41 (Mechanical Finish: Chemical finished: etched medium matte: anodic coating: Architectural class I, coating 0.018mm or thicker) complying with AAMA 611 specifications.

Powder Coating

A Tri-Treatment Architectural Powder Coating that meets AAMA 2605 Standard for adhesion and AAMA 2604-2 for gloss reaction.

Aluminum is 100% sandblasted with a minimum of 1 1/2 mil etch.

A 2 to 3 mil epoxy powder will be electrostatic applied and heat cured per the manufacturers' specifications.

A minimum of 3 mils of TGIC Polyester powder (color to be selected by the Architect) will be applied and cured per manufacturers' specifications.

Standard ten (10) year warranty.

AGS, Inc. & LEED (Leadership in Energy and Environmental Design)

LEED encourages global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

AGS, Inc. supports the United States Green Building Council's LEED Green Building Rating System.

AGS, Inc. is committed to manufacturing products that comply to LEED standards and promote safer environments for future generations.

Benefits to Earning LEED Certification

Lower Operating Costs and Increased Asset Value

Reduce Waste Sent to Landfills

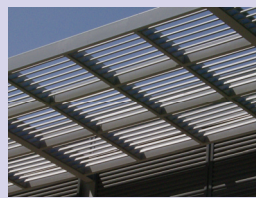
Conserve Energy and Water

Healthier and Safer Buildings for Occupants

Reduce Harmful Greenhouse Gas Emissions

Qualify for Incentives in Numerous Cities

Demonstrate Owner's Commitment to Environmental Stewardship and Social Responsibility



AGS, Inc. manufactures LEED friendly Sun Control Systems providing the highest quality, best performing and most competitively priced products.

See our Grilles in Section 10 82 00



AGS INC

www.agsshade.com

Architectural Grilles & Sunshades, Inc.
Phone (708) 479-9458 Fax (708) 479-9478

9950 W 190th Street

Mokena, IL 60448

Toll Free 866-499-1122

DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO: KBSO

Project: Damien Center Headquarters

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Section</u>	<u>Paragraph</u>	<u>Specified Item</u>
28 13 00	2.1	Lenel/RS2/Open Options/Avigilon

Proposed
Substitution: Genetec

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown on Drawings?
No .
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any? No. No design change needed.
- C. What effect does substitution have on other trades?
None .
- D. Differences between proposed substitution and specified item?
Can integrate with Access Control As well as another competitive option.
- E. Manufacturer's guarantees of proposed and specified items are:
X Same Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

Randy Schuetter

Signature

Randy Schuetter

Firm New Era Technology

Address 8940 Vincennes Circle

Indianapolis, IN 46268

Telephone 317-432-5716

For use by Design Consultant

Accepted

Not Accepted

By

Date

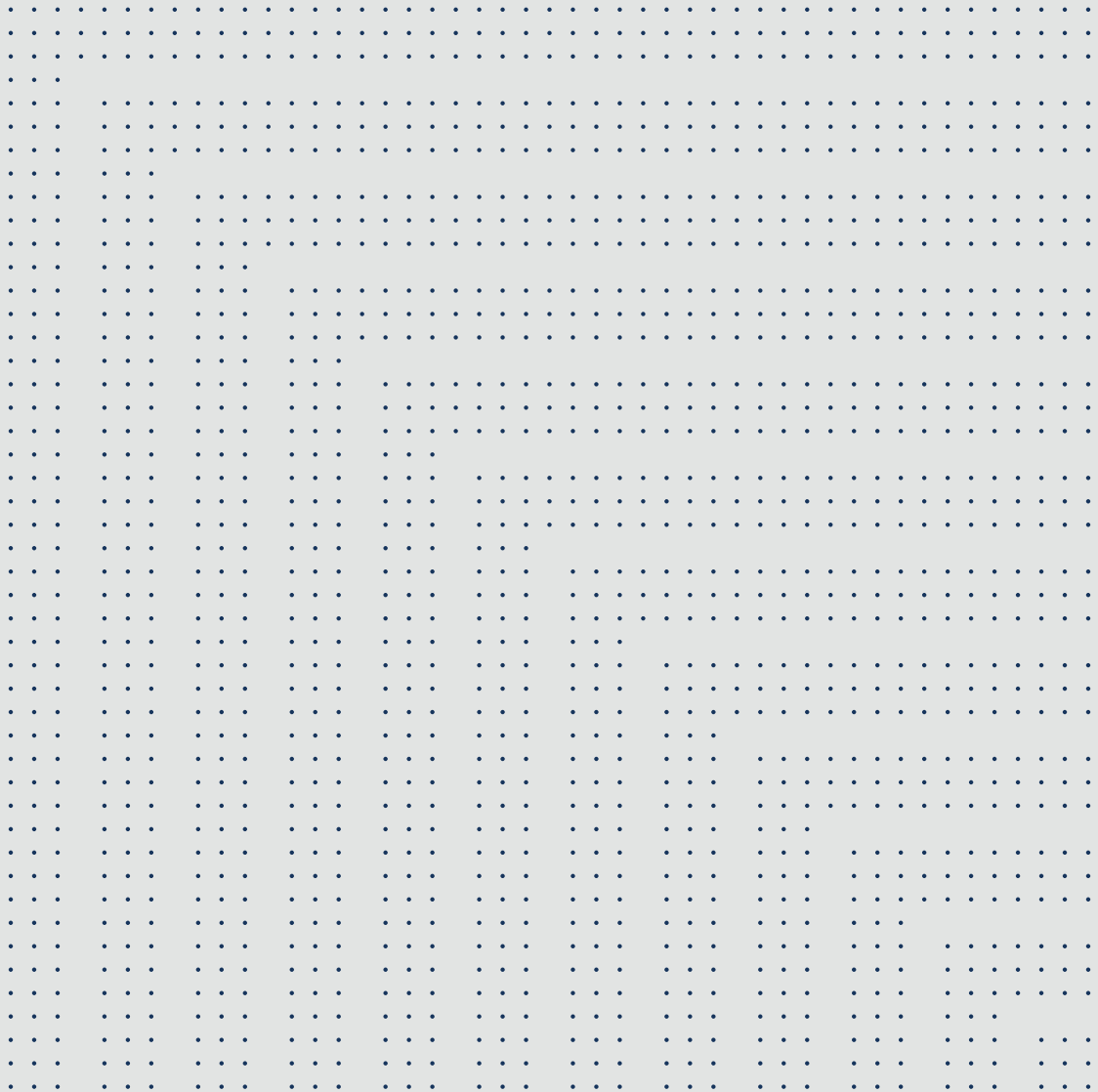
Remarks

Accepted as Noted

Received too Late



Complete access control



The security behind closed doors

Providing a safe, welcoming working environment is necessary for any organization to flourish. But finding a balance between security and free movement isn't always easy. Too restrictive, and it hampers the flow of people. Too permissive, and your security is compromised.

Security Center Synergis is an access control system that helps you find the right balance. Restrict access to critical or important areas, while allowing seamless movement elsewhere. Benefit from complete visibility of all activity to confidently protect your people and assets. And equip your team to react to threats at a moment's notice – restricting access or locking down an entire building.

Synergis is both flexible and adaptable. It improves on traditional access control models – that require proprietary hardware – by letting you choose your hardware. Through the Genetec Security Center platform, you adopt a unified and comprehensive security strategy where access control is merged with video, communications, intrusion, and other systems. So you enhance collaboration and sharing, improve your operational efficiency, and protect your organization against emerging threats.

With Synergis, you are empowered and properly equipped to protect your organization and address threats.



Respond with confidence

With a global view of your security situation at any given time, you are better equipped to make the right decisions at the right time, and respond with confidence. As soon as a situation arises, quickly take action: notify security personnel, trigger a threat level, or lock down a door or a building. And as you proactively prepare for any scenario, you're never caught off guard.



Enhanced cyber security

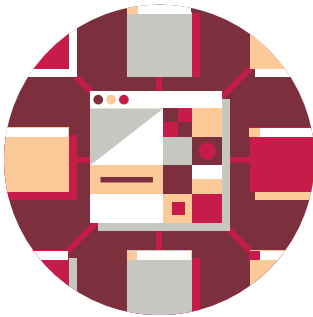
As the cyber threat landscape evolves, organizations need to protect cardholder and visitor identities, maintain secure communications, and defend other critical data from cyber attacks. With native end-to-end encryption from the reader to Synergis software, and advanced claims-based authentication, you instantly augment security and protect your organization's privacy.



A unified system

Make clear, timely decisions based on a richer understanding of your security environment. When you consolidate access control with video, intrusion, and communications through Security Center, you reach higher levels of awareness and get greater operational efficiency. Not only do you monitor everything through a single pane of glass but you also take action in a direct, coordinated way.

It's a modern access control experience that reduces your total cost of ownership.



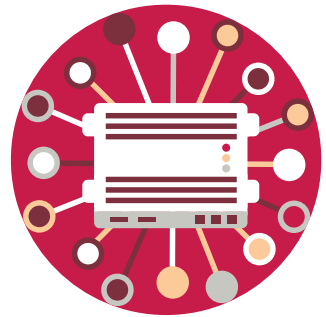
Choose your hardware

Synergis differentiates itself from traditional, proprietary access control. By supporting an ever-growing array of widely deployed access controllers and electronic locks, it gives you newfound flexibility while closely safeguarding the long-term viability of your investments.



Move to a single card approach

When your people travel across your locations, a consistent experience with global cardholder management is key. Centrally manage all your cardholders and credentials, automatically synchronize changes, and move to a single card approach so your colleagues never have to feel like visitors. It will lower costs, and increase operational efficiency as you eliminate redundant activities.



Maintain less infrastructure

Deploy Synergis Cloud Link appliances at all locations as your organization expands across one or more sites. Control the volume of hardware you need, and streamline connectivity, communications, and security. With a scalable and efficient architecture, you immediately benefit from the savings.

Quotes from our customers

Synergis is an established, flexible, market-leading access control system. Here are the words of some of our customers.

“At Canary Wharf Group, we pride ourselves on being at the forefront of technology. When we bring potential clients through our control room, the system provides the wow factor that helps us sell our business district. This system helps us convince our clients how secure they will be here, and how efficient our security team is.”

Canary Wharf Group

“We will never be in the same position as with our older system, where we were restricted to one vendor, locked into their offering – climbing prices and eventually faced with the need to rip-and-replace our old system. We are free to choose the devices that best suit our needs.”

University of Hull

“We started with 12 cameras and a few doors; now we’re closing in on 700 cameras and 500 doors – all connected to our city infrastructure. It’s really impressive to see where we’ve come from, what we can do, and what the future holds for our city. We’ve definitely chosen the right platform as Security Center gives us the flexibility to achieve any objective.”

City of Lakeland

“Setting the door schedules makes our lives so much easier. Our operators still have the flexibility with the Synergis access control system to override certain doors, or make changes when needed, so it remains fluid for our team and operations.”

Levi’s® Stadium

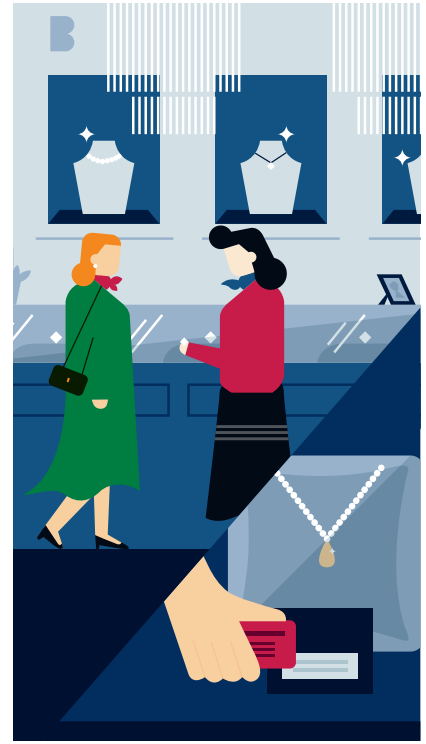
The world of Synergis

With Synergis, organizations of all sizes heighten security and get a better understanding of who is trying to access their buildings. Here's a closer look at who can benefit.





Who are Synergis customers?



A retail store

Jamie owned a downtown jewelry store. It was a high-security atmosphere where small, precious goods required meticulous protection. Using Synergis, Jamie could give clearance to select staff members so they could open cases. She could also monitor who opened cases in real time and, because she had deployed wireless protection to her jewelry case, she was able to manage locks, handle access decisions, and log events in real time. So, at the end of each day, Jamie saw the whole picture, and understood everything that had happened in her store.

From small retail stores to educational institutions and multi-site businesses, Synergis lets you protect your organization with increased confidence.

A higher education institution

Over the past 20 years, the university grew at an impressive pace. During the daytime the campus was a vibrant place, but over the years security had been overlooked, and many students, faculty, and alumni didn't feel safe at night. Crime was negatively affecting the university's reputation and its enrollment numbers. The Security Director needed to protect the campus without interrupting the everyday flow of people. Using Synergis, students got access cards



that they use to get into dorms, pay for meals, and access and check out books from the library. He managed

everything discreetly – from day-to-day operations to big events, and even unplanned emergencies.



A multi-site organization

With multiple offices and refinery facilities around the globe, understanding where people were in this energy business was a big challenge. It used access control readers, but they didn't tell the full story about people's

attendance, or who was where during an emergency. With so many sites to manage, the ACS maintenance was a burden on corporate IT. By moving to the cloud, they were able to focus on their business as opposed to

worrying about their ACS system maintenance. As a welcome bonus, centralized cardholder management and single-card access provided peace of mind and allowed the security team to see who's where, any time.

The unified Genetec experience

Synergis is one of the core systems of Security Center, our comprehensive security platform. Along with video surveillance and automatic license plate recognition (ALPR) – as well as optional Genetec modules and partner add-ons – it forms a unified system that offers enhanced intelligence, security, and operations.

Our core systems

Security Center Omnicast

is a video management system that uniquely addresses your organization's video security and privacy needs. Efficiently manage and monitor HD video, and choose from an ever-growing range of industry-leading cameras.

Security Center Synergis

is an access control system that lets you manage the flow of people coming into your buildings. It secures your organization, simplifies your operations, and ensures you are not locked into a proprietary solution.

Security Center AutoVu

is an automatic license plate recognition system. It makes it easier for commercial and municipal organizations to enforce parking, optimize traffic flow, and identify and track vehicles of interest.

Our optional modules

Plan Manager

offers interactive and graphical mapping, allowing you to visualize and manage security environments. Dynamically navigate through facilities and oversee a greater number of cameras and doors. It provides complete and real-time coverage for both small and large multi-site environments.

Sipelia Communications

Management enables SIP-based communications between operators and intercom devices. When

unified in Security Center, intercom communications are linked to your security applications, significantly improving your security team's awareness and facilitating collaboration.

Security Center Mobile

gives you remote access to Security Center through a suite of mobile apps. View live or recorded video, control remote cameras, and review access control events and system alarms.

Security Center Web Client

allows you to take control of your security system from anywhere you can use a web browser. Monitor cameras, search for and review access control events and system alarms, export video, and manage cardholders and visitors.

Our built-in key features

Security Center Federation provides centralized monitoring, reporting, and alarm management across multiple remote sites and locations, streamlining your global security.

Global Cardholder Management lets you easily synchronize cardholders across different locations. You issue one card that accesses across multiple sites, reducing cost and effort at the same time.

Intrusion Panel Integration allows you to monitor intrusion status and alarms alongside video and access control, as well as eliminate false alarms and associated costs.

Failover offers continuous server access that can tolerate hardware failures without any system interruption.

Threat Level Management lets you quickly change the behavior of your system in response to changing security conditions.

Cloud Archives gives you the capacity to store video recordings in the cloud.

Active Directory Integration synchronizes Windows accounts with Security Center administrator and cardholder accounts, so you save valuable time and eliminate human error.

SDK Integration Tools allow you to augment Security Center by integrating new devices, capabilities, and custom functionality.

Our partner add-ons

Visualization: *video walls, dashboards, AutoCAD.* Get an intelligent, structured view of your security environment. See the big picture with video walls that display more video, images, and data. And, with seamless integration with Security Center, overall situational awareness is enhanced.

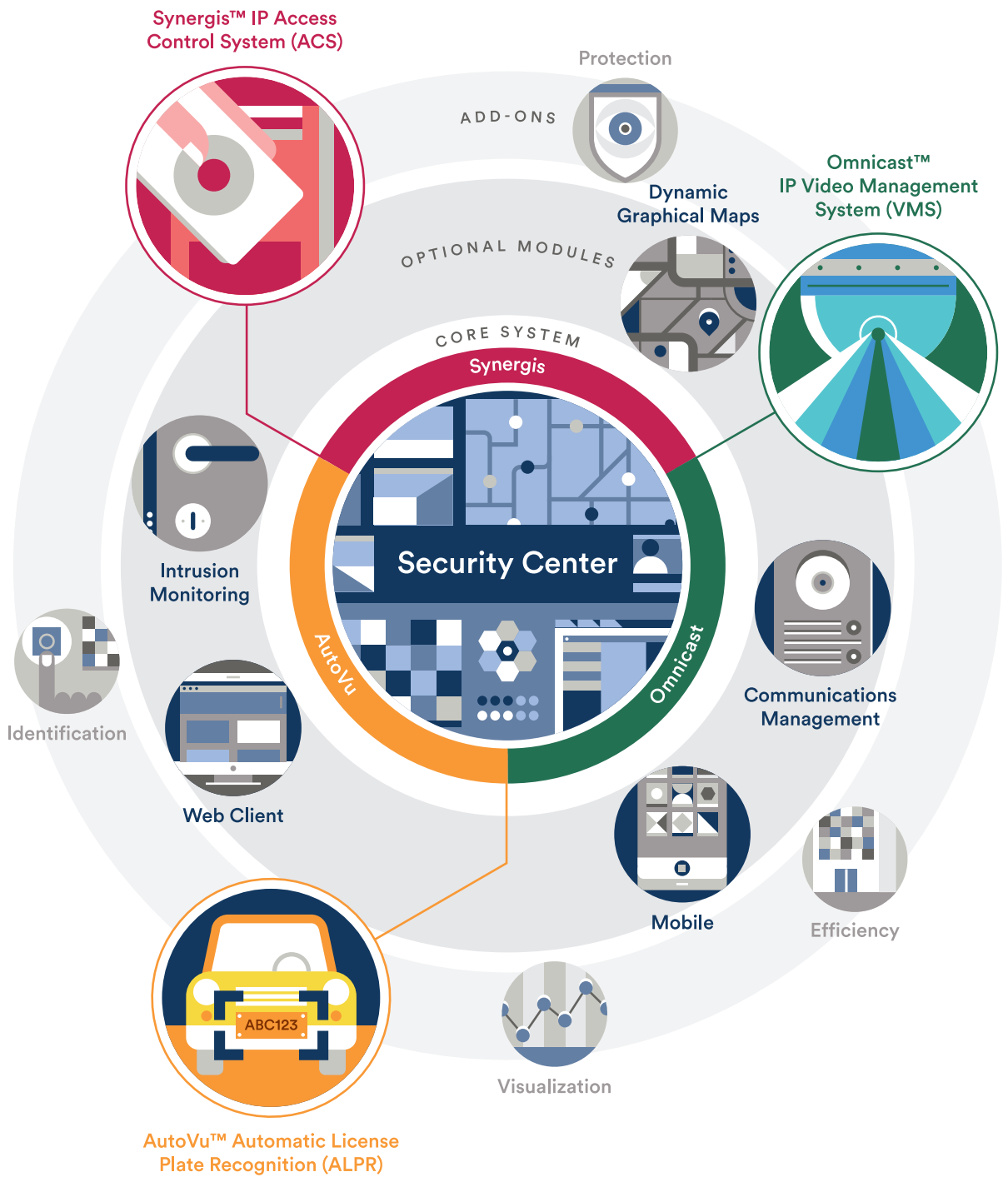
Identification: *face recognition, biometrics, ID scanning.* When an access card isn't enough, control entry with

seamless, non-intrusive, and secure biometric credentials. Identify people through facial recognition technology and use multi-factor authentication to increase security.

Protection: *intrusion, gunshot and perimeter detection, asset management.* Make use of various sensors to improve your monitoring and decision making. Integrate video and audio analytics to automate detection and benefit from smarter forensics

investigations. And augment physical security with video analytics to protect your perimeter, while ensuring personal privacy.

Efficiency: *building automation, parking systems, destination management.* Integrate building automation and intelligent parking systems to Security Center. Manage all elevator traffic from your security platform, giving you more control and visibility of building activity.



A safe, more secure environment

From smaller sites to large, multi-site organizations, Synergis is an intuitive and adaptable access control solution that can be tailored to your needs. It helps you manage the flow of access to your site – whether it's a high-security campus or an institution where free movement is paramount. And because Synergis integrates a growing and versatile selection of hardware from leading manufacturers, you can install the systems that work best for your organization.

Corporate Headquarters

Genetec Inc.

2280 Alfred-Nobel Blvd.,

Montréal QC H4S 2A4

Canada

Toll Free: +1 866 684 8006

Canada & USA:

Tel: +1 514 332 4000

genetec.com

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All images are used for illustrative purposes only

**Security Center Synergis
takes access control beyond
door protection, allowing
you to improve security,
and safeguard the flow of
your people – so they can go
about their days unimpeded.**

DOCUMENT 00 12 10 – SUBSTITUTION REQUEST FORM

TO: KBSO

Project: Damien Center Headquarters

We hereby submit for your consideration the following product instead of the specified item for the above project:

<u>Section</u>	<u>Paragraph</u>	<u>Specified Item</u>
28 23 00	2.8	Exacq, Avigilon, Vicon, Axis

Proposed
Substitution: Genetec

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown on Drawings?
No .
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any? No. No design change needed.
- C. What effect does substitution have on other trades?
None .
- D. Differences between proposed substitution and specified item?

Can integrate with Access Control As well as another competitive option.

- E. Manufacturer's guarantees of proposed and specified items are:

X Same Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted by:

Randy Schuetter

Signature

Randy Schuetter

Firm New Era Technology

Address 8940 Vincennes Circle

Indianapolis, IN 46268

Telephone 317-432-5716

For use by Design Consultant

Accepted

Not Accepted

By

Date

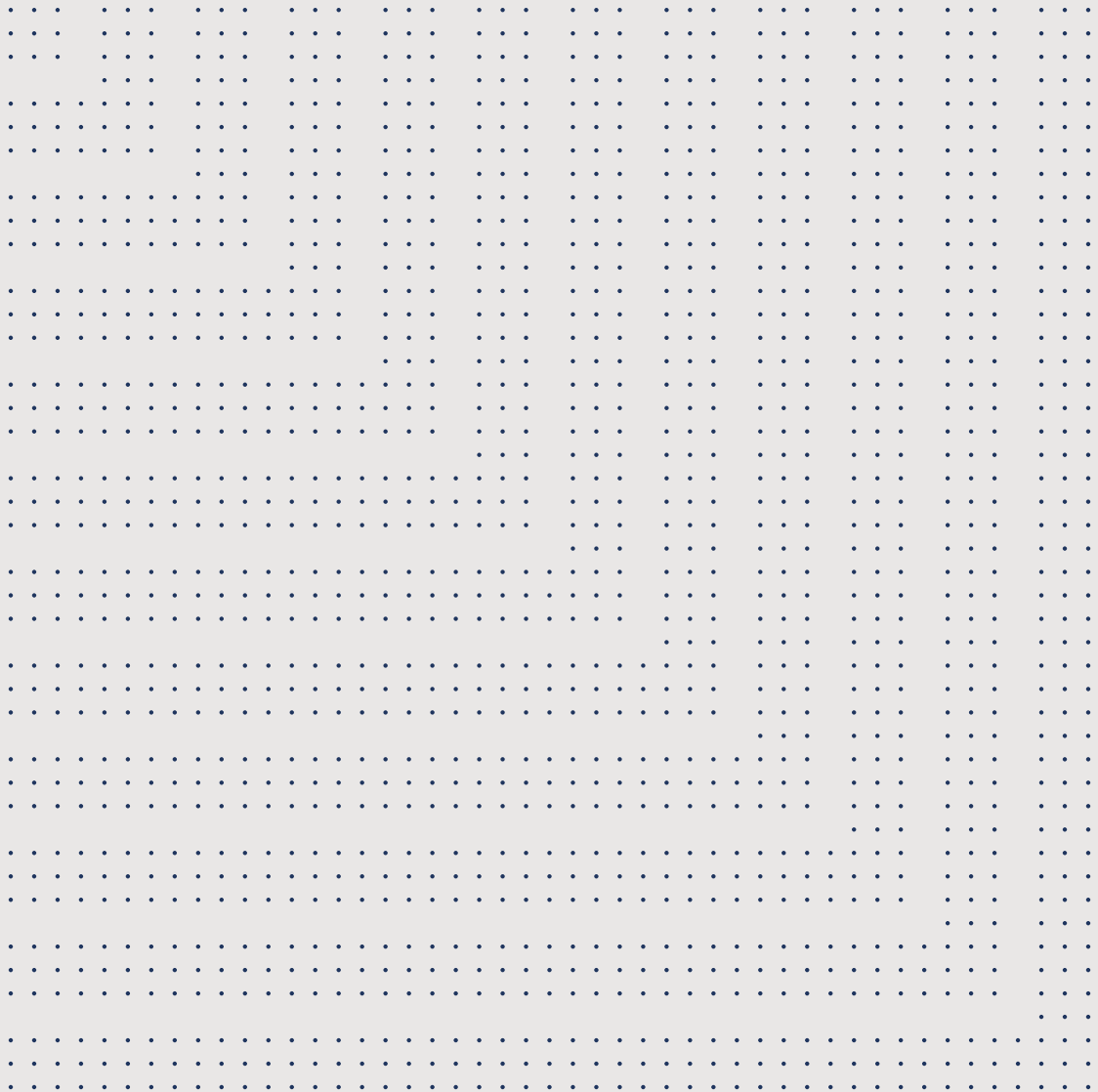
Remarks

Accepted as Noted

Received too Late



Scalable video management



An intelligent view of your environment

Working smarter with video while improving your security shouldn't mean overloading your network and people. Adding more security cameras, relying on higher resolution video, and longer retention lengths put a strain on security systems. Cyber security risks and privacy concerns make it even harder.

Security Center Omnicast is a video management system that gives you the means to effectively protect your people and assets. Beyond capturing reliable and usable evidence, it lets you see and understand your environment. It's one of the core systems of Genetec Security Center, our unified security platform.

Whether you're looking after one site or overseeing operations in multiple places, Omnicast is open, flexible, and scalable. It supports the cameras of your choice and operates seamlessly over your network. Intelligent streaming and bandwidth optimization bring down networking and storage costs.

With an uninterrupted view of camera feeds and security alarms, Omnicast allows operators to rapidly assess and respond to situations. It gives them powerful search and reporting tools so they can tackle investigations faster, whether it's from their desk or on mobile devices, relieving the burden on your people and network.

Unify your video surveillance with your other security systems. By addressing multiple needs behind a single intuitive interface, you control all operations. More importantly, you can instantly react to situations.



Evolves with your organization

Omnicast has a flexible and open architecture that adapts to your organization as your demands and business change. It scales to work for any organization – from very small businesses to very large enterprises – offering certainty that your video system will keep pace as conditions evolve.



A single, unified platform

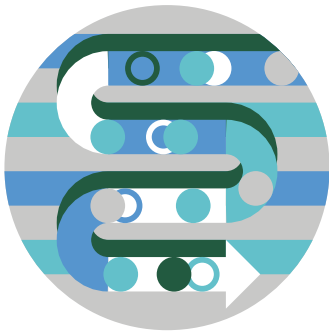
When you unify your security systems with Security Center, you use just one interface for video, access control, and automatic license plate recognition (ALPR). Work smarter as you spend less time jumping between applications. Navigate facilities and oversee cameras and other devices using interactive maps. And achieve more as you tie video to SIP communications and intrusion detection.



See it all

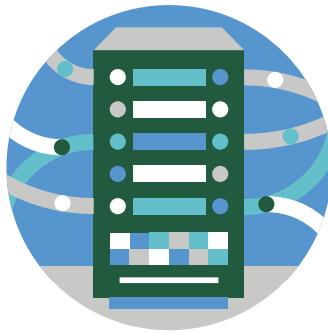
Through Federation™, monitor multiple remote systems and sites as if they were part of a single virtual system. Access your video surveillance system from any location, at any time. Record video and share it across your organization. Control cameras, monitor alarms, and track access control and vehicle activity, to provide a common operational picture of your situation.

Grow your surveillance system and adapt to the changing demands of your team. Make the most of new technology as soon as it's available. And take advantage of flexible purchasing options: buy up-front or through subscription.



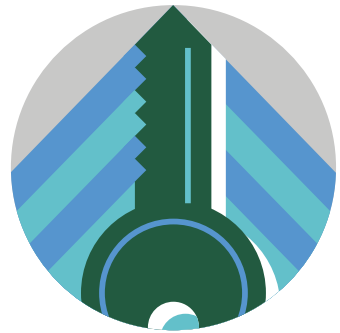
Available when you need it most

Count on live and recorded video being accessible when you need it most. Experience uninterrupted access to your video even if you lose connectivity to your server. With built-in failover and redundancy, Omnicast protects your recordings from network failure and physical damage. Health monitoring notifications give you real-time updates on system health and uptime, so you are always aware.



Fits with any hardware

Security Center Omnicast naturally fits with any hardware and supports thousands of industry-leading cameras, encoders, storage equipment, and sensors of your choice. So you're up and running in less time, adopt Genetec's security appliances pre-loaded with Omnicast software. Fully tested and validated, they lessen your risk over time while performing optimally.



At home on your network

Omnicast eases into your network; so much so you almost won't know it's there until you need it most. Backed by 20 years' experience, our next generation video engine – with its intelligent streaming and bandwidth management – overcomes network overload encountered by less sophisticated solutions.

Quotes from our customers

Omnicast is an innovative, established, market-leading video management system. But don't just take our word for it – here are some of our happy customers.

“The new security system is a great ally. We use it daily to monitor hall traffic and doors, as well as the parking lots and bus loop. It also helps tremendously when dealing with student discipline issues, helping us to communicate facts to parents.”

Hilton Central School District

“This system is very much designed so that the entire building can be managed by this very small team and that meant we needed an intelligent solution with proactive detection and reporting capabilities.”

Brisbane City Hall

“Unlike the old analog system where we had to connect to individual DVRs to find video, all of our cameras are right there in a pool. We can search by dates and times, and fast-forward and rewind with the click of a mouse; all of it is smooth and easy.”

Homemakers Furniture

“Genetec was extremely responsive in helping us accomplish this project, and we were able to save a lot of money through this custom application, as we didn’t have to install an entirely new system.”

Tampa International Airport

Omnicast in action

With Omnicast, organizations of all sizes gain the capacity to bolster security, simplify operational tasks, and gather intelligent data. Here's a closer look at a few of the different types of businesses that can benefit.





Omnicast customer stories



A large enterprise

This global retailer manages stores, distribution centers, and many thousands of cameras, but expansion had outpaced security investment. Their existing system couldn't keep up, lacking multi-site capabilities and access to globally distributed entities. Something as simple as replacing a faulty camera could go undetected or meant a lengthy call. Omnicast's centralized monitoring, efficient multi-site stream management, and scalability was the answer. An immediate benefit was its real-time health monitoring, which gives users a clear view of the uptime of all cameras and components to proactively address imminent problems, all over the world.

Whether it's a small coffee shop, a large office, or an international airport, Omnicast provides you with the uptick you need to protect your organization – and help it flourish.

A coffee shop

An increase in intruder incidents convinced coffee shop manager Jeff that he had to understand what was going on around the store after closing time. He also needed a smarter system than his old school DVR. Using his existing cameras with his new Omnicast system meant he would receive mobile alerts following any after-hours motion and detection of nearby vehicles. A pay-as-you-go subscription gave him a more powerful video option at an affordable price. And the footage he gave the police ensured the perpetrators were found.



An international airport

With millions of passengers traveling through each year, and an extensive perimeter to monitor, safety is paramount for any international airport. One of the main tasks for the security team is to maintain uninterrupted monitoring of the airport's estate, so they

rely heavily on video surveillance. They need accurate, real-time video to secure the airport against everything from trespassers and unwanted intruders to vandals, or worse. Beyond security, Omnicast is used to make sure vehicles aren't

parked illegally and to help improve the flow of airport traffic. It's this combination of security and insight into how to make the facility work better that makes Omnicast such an invaluable tool.

The unified Genetec experience

Omnicast is one of the core systems of Security Center, our comprehensive security platform. Along with access control and automatic license plate recognition (ALPR) – as well as optional Genetec modules and partner add-ons – it forms a unified system that offers enhanced intelligence, security, and operations.

Our core systems

Security Center Omnicast

is a video management system that uniquely addresses your organization's video security and privacy needs. Efficiently manage and monitor HD video, and choose from an ever-growing range of industry-leading cameras.

Security Center Synergis

is an access control system that lets you manage the flow of people coming into your buildings. It secures your organization, simplifies your operations, and ensures you are not locked into a proprietary solution.

Security Center AutoVu

is an automatic license plate recognition system. It makes it easier for commercial and municipal organizations to enforce parking, optimize traffic flow, and identify and track vehicles of interest.

Our optional modules

Plan Manager

offers interactive and graphical mapping, allowing you to visualize and manage security environments. Dynamically navigate through facilities and oversee a greater number of cameras and doors. It provides complete and real-time coverage for both small and large multi-site environments.

Sipelia Communications Management enables SIP-based communications between operators and intercom devices. When

unified in Security Center, intercom communications are linked to your security applications, significantly improving your security team's awareness and facilitating collaboration.

Security Center Mobile

gives you remote access to Security Center through a suite of mobile apps. View live or recorded video, control remote cameras, and review access-control events and system alarms.

Security Center Web Client

allows you to take control of your security system from anywhere you can use a web browser. Monitor cameras, search for and review access control events and system alarms, export video, and manage cardholders and visitors.

Our built-in key features

Security Center Federation provides centralized monitoring, reporting, and alarm management across multiple remote sites and locations, streamlining your global security.

Global Cardholder Management lets you easily synchronize cardholders across different locations. You issue one card that accesses across multiple sites, reducing cost and effort at the same time.

Intrusion Panel Integration allows you to monitor intrusion status and alarms alongside video and access control, as well as eliminate false alarms and associated costs.

Failover offers continuous server access that can tolerate hardware failures without any system interruption.

Threat Level Management lets you quickly change the behavior of your system in response to changing security conditions.

Cloud Archives gives you the capacity to store video recordings in the cloud.

Active Directory Integration synchronizes Windows accounts with Security Center administrator and cardholder accounts, so you save valuable time and eliminate human error.

SDK Integration Tools allow you to augment Security Center by integrating new devices, capabilities, and custom functionality.

Our partner add-ons

Visualization: *video walls, dashboards, AutoCAD.* Get an intelligent, structured view of your security environment. See the big picture with video walls that display more video, images, and data. And, with seamless integration to Security Center, overall situational awareness is enhanced.

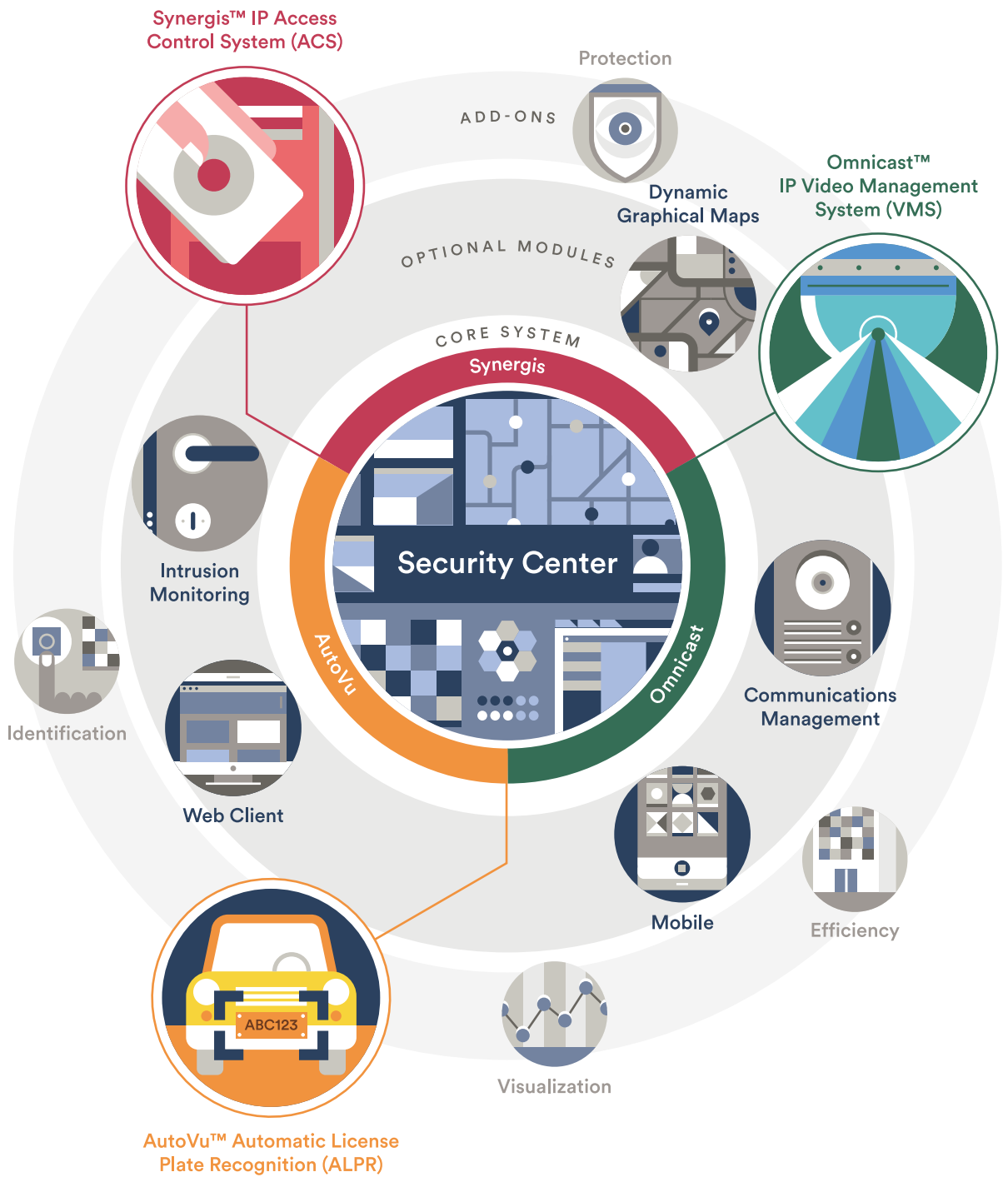
Identification: *face recognition, biometrics, ID scanning.* When an access card isn't enough, control entry with

seamless, non-intrusive and secure biometric credentials. Identify people through facial recognition technology and use multi-factor authentication to increase security.

Protection: *intrusion, gunshot and perimeter detection, asset management.* Make use of various sensors to improve your monitoring and decision making. Integrate video and audio analytics to automate detection and benefit from smarter forensics

investigations. And augment physical security with video analytics to protect your perimeter, while ensuring personal privacy.

Efficiency: *building automation, parking systems, destination management.* Integrate building automation and intelligent parking systems to Security Center. Manage all elevator traffic from your security platform, giving you more control and visibility of building activity.



See it all, all the time

Omnicast is a video management system that provides organizations of all sizes with the ability to deploy a surveillance system that helps them improve, understand, and protect their people, operations, assets, and environments. Supporting a wide range of industry-leading cameras, encoders, and security devices, the Omnicast system scales and adapts to the changing demands of your security environment.

Corporate Headquarters**Genetec Inc.**

2280 Alfred-Nobel Blvd.,

Montréal QC H4S 2A4

Canada

Toll Free: +1 866 684 8006

Canada & USA:

Tel: +1 514 332 4000

genetec.com

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**Security Center Omnicast
empowers organizations
large and small to protect
and secure their people,
assets, and facilities.**

