

November 20, 2020

ADDENDUM NUMBER 003

To the drawings and specifications for:

**Project No. 18051
Sandusky County Park District
River Cliff Office Renovation**

This Addendum supplements and amends the original Drawings and Specifications dated **November 06, 2020** and shall be taken into account in preparing bids and becomes a part of the contract documents. Note: this addendum information is issued to bidders of record. It is the prime contractor's responsibility to forward this Addendum information to all affected suppliers and sub/contractors and make adjustments relative to the proposal. Bidders should acknowledge receipt of Addendum on Page BF-1 of the Bid Form, or the last page of this Addendum.

DRAWINGS AND SPECIFICATIONS

1. Bid Form (Reissued)

- a. Added alternate ALT#1 to the bid form.
- b. Added a unit cost to relocate existing circuits from the demolished RP-K to the new Branch Circuit Panel.

2. Section 010300 – Alternates (Issued)

3. Section 033000 – Cast-In-Place Concrete (Issued)

4. Section 321313 – Concrete Paving (Issued)

5. Section 321373 – Concrete Paving Joint Sealants (Issued)

6. A1.0 – Overall Site Plan (Reissued)

- a. Added notes and dimensions for stoop at main entry.
- b. Corrected site plan scale.

7. A2.0 – Floor Plan (Reissued)

- a. Added Structural Design Criteria.
- b. Added plan detail for vestibule posts.
- c. Added notes for interior vestibule posts.
- d. Added Alt: 1 columns for new glulam beam and description of column to list of abbreviations.
- e. Revise window to accommodate new column at exterior wall.

8. A2.1 – Floor Infill Plan (Reissued)

- a. Added notes for Alt: 1 for foundation underpinning and column connection.
- b. Added dimension for thickness of slab at infill details.

9. A3.0 – Reflected Ceiling Plan (Reissued)

- a. Added notes for Alt: 1 for new Glulam beam.
- b. Clarified the location of new soffit panels.
- c. Added roof truss notes.
- d. Provided product information for attic access panel.

10. A5.0 – Reflected Ceiling Plan (Reissued)

- a. Resized window for new column.
- b. Revise storefront details and elevation to match knee wall shown in wall sections.
- c. Changed sizing on Vestibule to graphically match the rest of the new siding.
- d. Removed extra wall louver.

11. A6.0 – Reflected Ceiling Plan (Reissued)

- a. Alt: 1 - Show new beam.
- b. Revise note to show foundation as existing to match wall sections.

12. A7.1 – Wall Sections and Details (Reissued)

- a. Updated 4/A7.1 to show stoop and provide footing information.
- b. 4/A7.1 Provide attachment information for vestibule wood truss to existing framing.
- c. 4/A7.1 Show new sheathing on existing wall for shear.
- d. Add roof sheathing note to 2/A7.1 and 4/A7.1.
- e. 2/A7.1 Provide footing reinforcing and revised footing depth.
- f. 2/A7.1 Show top course at storefront as a bond beam.
- g. Add details 3/A7.1 for vestibule post.

13. A7.2 – Details (Reissued)

- a. Updated 5/A7.2 to match stoop.
- b. Provide header details and connections for the vestibule.
- c. Add wood blocking and furring strips to 4/A7.2.
- d. Show bond beam on 4/A7.2.

14. E1.0 – Electrical Legends and Details (Reissued)

- a. Mechanical Equipment Schedule edited to reflect EWH-1 & 2
- b. Panel schedule BCP:A – Added circuit breakers and load for EWH-1 and 2 to circuits 36, 38 and 40, 42.

15. E2.0 – Electrical Demolition (Reissued)

- a. Added note D5 to note schedule.
- b. Added note D5 to switch bank along east wall.

16. E4.0 – Floor Plan – Power and Systems (Reissued)

- a. Added mechanical equipment tag and circuit number to EWH-1 in Utility 106.
- b. Added mechanical equipment tag and circuit number to EWH-2 in Work/Break 102 (below sink).

CLARIFICATIONS & RFI RESPONSES

1. A7.2 Details should be added to the Index of Drawings.
2. Detail callouts to exterior wall sheathing should read "NEW 5/8" APA RATED PLYWOOD SHEATHING."
3. RFIs

Q: 074100. 1.11 ab 2. Is calling for a 20 year warranty on this new addition. There is a minimum charge for warranties. Is a 20 year warranty required for the 170 sq ft of new roof?

A: No, no warranty is needed for the roof over the new vestibule.

Q: If the specified 1" high soffit panels are used the existing fascia, gutters and rake edge will need to be removed to allow room for the soffit. Can a DMI V-groove soffit with a 1/2" profile matching the existing soffit be used instead?

A: DMI V-Groove Soffit VS05 may be used instead of the specified soffit. Seem on center, material, gauge, finish and all testing requirements to match originally specified soffit panel.

Q: Is the L1 light fixture surface mounted or does it need to be recessed?

A: L1 is a low profile surface mount fixture. It does not need to be recessed.

Q: Is snow retention required on the new roof?

A: No.

Q: Can footing excavated clean soils be graded off on site or do they need to be hauled from the site?

A: Excavated soils can be dealt with on site.

Q: Existing Fascia (ref. 1/A4.1) Clarify that removal of the existing metal fascia and installation of new metal fascia is limited only to the new roof areas and other areas are to remain as is.

A: Yes, existing fascia is to remain, and the new soffits installed with the fascia in place. The note on 1/A4.1 relating to Alternate 1 to remove the existing fascia does not pertain to this project.

Q: Are the wood door frames to be painted or stained?

A: Frames are to be stained to match the doors.

Q: For the infill we are doing on the wall between the renovation area and the lobby area what are we to do on the lobby side of this infill?

A: For the infill on the Lodge side install the gyp, mud the seams, prep for paint and then prime. The Park District has touch up paint for those walls and can provide the finish coats.

Q: Is conduit required for data or power to access control that is being run in the ceiling.

A: The Parks District has their own vendor that handles security, access control and data. The scope for the EC will be to provide power where needed for devices and set the boxes for data, the vendor will pull their own data wires. The vendor will work directly for the District on this project and will coordinate with the GC to run their wiring and conduit (if desired) while all of the framing is still exposed. Conduit is only required for power to access control devices and strikes as required by code and the electrical specifications.

ATTACHMENTS:

- **Bidding Documents**
 - Bid Form
- **Specifications**
 - Section 010300 – Alternates
 - Section 033000 – Cast-In-Place Concrete
 - Section 321313 – Concrete Paving
 - Section 321373 – Concrete Paving Joint Sealants
- **Drawings**
 - A1.0
 - A2.0
 - A2.1
 - A3.0
 - A5.0
 - A6.0
 - A7.1
 - A7.2
 - E1.0
 - E2.0
 - E4.0
- **Misc.**
 - Acknowledgement of Receipt

END OF ADDENDUM NUMBER 003

Project No. 18051
Sandusky County Park District
River Cliff Office Renovation
Addendum Number 003
November 20, 2020

ACKNOWLEDGEMENT OF RECEIPT

Addendum Number 003

Project No. 18051
Sandusky County Park District
River Cliff Office Renovation

_____ (Company Name)

is in receipt of **Addendum Number 003** for the referenced project.

Signed: _____

Please return this signed sheet by email to Daniel Ebert at daniel.ebert@porterarch.com

BID FORM

Project: River Cliff Lodge – Office Renovation
River Cliff Park
1329 Tiffin Street
Fremont, Ohio 43420

Bids Due: November 20, 2020, 10:00 AM EST

To: Andy Brown, Director
Sandusky County Park District
1970 Countryside Drive
Fremont, Ohio 43420

Submitted By: Bidder : _____
Address : _____
: _____
Telephone : _____
Fax : _____
E-mail : _____

The undersigned acknowledges having received and carefully reviewed the Contract Documents prepared by: **Thomas Porter Architects, 8 N. St. Clair Street, Toledo, Ohio 43604-1028**

The undersigned also acknowledges receipt and inclusion of the following addenda in our Bid:

<u>ADDENDUM #</u>	<u>DATE</u>
_____	_____
_____	_____
_____	_____

In submitting this Bid, the Bidder agrees to the following:

1. To hold their bid open for 90 days after receipt of bids.
2. To provide a form of bid guaranty as described in the Instructions to Bidders.
3. To enter into and execute a Contract, if awarded on the basis of this Bid, and to furnish a Bid Guaranty and Contract Bond in accordance with the project manual.
4. To submit Certificates of Insurance for the coverage specified.

5. To accomplish the Work in accordance with the Contract Documents.
6. To complete the Work covered by this Bid within dates specified in the project manual.

BASE BIDS

The Bidder agrees to execute the work under each of the following Base Bid areas indicated for the lump sum amount(s) given therein. (See Section 01010 – Summary of Work, for work included under the Base Bid)

ITEM 1.0 – Office Renovation

Provide cost to provide all labor, materials and equipment for all demolition, construction and miscellaneous work identified as Base Bid on the contract drawings. Base bid to include allowance indicated in Section 01019 Contract Consideration.

All Labor and Materials, for the sum of \$ _____

Sum in Words _____

ALTERNATES

ALT. #1 – Full Replacement of Existing Fascia Metal (ADD)

Provide cost to provide all labor, materials and equipment for all construction and miscellaneous work identified as Alternate #1 on the contract drawings.

All Labor and Materials, for the sum of \$ _____

Sum in Words _____

UNIT COSTS (refer to Section 01270 Unit Prices)

For changes in the project scope of work from what is indicated in the Contract Documents, the undersigned agrees that the unit prices as stated below will pertain throughout the contract period for work added to or deducted from the contract. Each unit price shall be net to the Owner for work in place and shall include all costs for labor, materials, supervision, permits, equipment, insurance, overhead and profit. To receive consideration, each bidder shall quote as part of proposal unit prices for appropriate items listed below. The Owner reserves the right prior to entering into an agreement to accept or reject any / or all unit prices.

Unit Price

- A. Relocate existing circuits in use the lodge side from demolished RP-K and relocate to BCP:A. Contractor to locate and identify which circuits are in use. \$ _____ / Per Circuit

BIDDERS CERTIFICATION

The Bidder hereby acknowledges that the following representations in this bid are material and not mere recitals:

1. The Bidder has read and understands the Contract Documents and agrees to comply with all requirements of the Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder which might indicate a contrary intention.
2. The Bidder represents that the bid is based upon the Standards specified by the Contract Documents.
3. The Bidder has visited the Project site, become familiar with local conditions and has correlated personal observations with the requirements of the Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the Contract Documents.
4. The Bidder understands that the award of separate contracts for the Project will require sequential, coordinated and interrelated operations, which may involve interference, disruption, hindrance or delay in the progress of the Bidder's Work. The Bidder agrees that the Contract price, as amended from time to time by Change Order, shall cover all amounts due from the Owner resulting from interference, disruption, hindrance or delay caused by or between Contractors or their agents and employees.
5. The Bidder agrees that any such interference, disruption, hindrance or delay is within the contemplation of the Bidder and the Owner and that the Contractor's sole remedy for such interference, disruption, hindrance or delay shall be an extension of time in accordance with the Contract Documents. This provision is intended to be, and shall be construed as, consistent with and not in conflict with, Section 4113.62, ORC, to the fullest extent permitted.
6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a joint or combined bid, each party thereto certifies as to such party's entity, under penalty or perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate Bid in the bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, any Unit Prices and any Alternate bid in the bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or will be made by the Bidder to induce any other individual, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
7. The Bidder will execute the Contract Form with the Sandusky County Park District Board, if a Contract is awarded on the basis of this bid, and if the Bidder does not execute the Contract Form for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the School District Board as provided in Article 6 of the Instructions to Bidders.
8. The Bidder certifies that upon the execution of the Contract Form, the Contractor will make a good faith effort to ensure that all of the Contractor's employees, will work on the site of the Project, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.
9. The Contractor acknowledges that all Work shall be completed within the time established in the Contract Documents, and that each applicable portion of the Work

shall be completed upon the respective milestone completion dates, unless an extension of time is granted in accordance with the Contract Documents.

10. Bidder agrees to furnish any information requested by the School District Board to evaluate the responsibility of the Bidder.

Each bid shall contain the name of every person interested therein. If the Bidder is a corporation, partnership, sole proprietorship, or limited liability corporation, an officer, partner or principal of the Bidder, as applicable, shall print or type the legal name of the Bidder on the line provided and sign the Bid Form. If the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall print or type the legal name of the applicable member on the line provided and sign the Bid Form.

BIDDER'S NAME (PRINT)

Authorized Signature: _____

Title: _____

Company Name: _____

Mailing Address:

Telephone Number: (____) _____

Facsimile Number: (____) _____

Where Incorporated: _____

Type of Business (circle one):

Corporation Partnership

Sole Proprietorship

Limited Liability Corporation

Federal Tax ID Number: _____

Contact Person for
Contract processing:

End of Section

SECTION 010300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Requirements of the contract documents including Division 1 specifications, apply to this section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing Alternates.

1.3 DEFINITIONS

- A. Definition: An alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

- 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.

- 1. Include as part of each alternate, miscellaneous devices, accessory objects, related coordination, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

- B. Notification: Immediately following the award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

- C. Execute accepted alternates under the same conditions as other Work of this Contract.

- D. Schedule: A "Schedule of Alternates" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials necessary to achieve the Work described under each alternate.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

Scope of Work includes:

1. **Alternate #1** – Installation of Glulam beam and associated columns and foundation underpinning (ADD) – All work required to provide a new beam where the existing bearing wall is removed including but not limited to the new beam, columns foundation underpinning, connections, excavation removal and replacement of existing slabs, and removal and reinstallation or replacement of tile on the lodge side to access for underpinning.
 - A. Provide cost to provide all labor, materials and equipment required to perform indicated work in Alternate #1.
 - B. Perform demolition as required for the Work associated with Alternate #1.
 - C. Install all materials drawn and specified for the construction of the Work indicated in Alternate #1.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liners, insulating concrete forms, and waterstops.
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
3. Section 312000 "Earth Moving" for drainage fill under slabs-on-ground.

1.2 DEFINITIONS

- A. Cementitious Materials:** Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, and other pozzolans materials subject to compliance with requirements.
- B. Water/Cement Ratio (w/cm):** The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference:** Conduct conference at 1329 Tiffin St. Fremont OH 43420.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Aggregates.
6. Admixtures:
 - a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

7. Vapor retarders.
8. Liquid floor treatments.
9. Curing materials.
10. Joint fillers.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
10. Intended placement method.
11. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - a. Location of construction joints is subject to approval of the Architect.

D. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Vapor retarders.
5. Joint-filler strips.

B. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Aggregates.
6. Admixtures:

- C. Research Reports: For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
- D. Preconstruction Test Reports: For each mix design.

1.6 QUALITY ASSURANCE

- A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.
 1. Include the following information in each test report:
 - a. Admixture dosage rates.
 - b. Slump.
 - c. Air content.
 - d. Seven-day compressive strength.
 - e. 28-day compressive strength.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and ACI 301 (ACI 301M).

1.9 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 306.1.
- B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M).

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 (ACI 301M) unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type I.
2. Fly Ash: ASTM C618, Class C or F.
3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 1-1/2 inches (38 mm) nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Lightweight Aggregate: ASTM C330/C330M, 1-inch (25-mm) nominal maximum aggregate size.

D. Air-Entraining Admixture: ASTM C260/C260M.

E. Water and Water Used to Make Ice: ASTM C94/C94M, potable or complying with ASTM C1602/C1602M, including all limits listed in Table 2 and the requirements of paragraph 5.4

2.3 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.

2.4 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 (ACI 301M).

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Total of Fly Ash or Other Pozzolans, Slag Cement: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass.
4. Total of Fly Ash or Other Pozzolans: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.5 CONCRETE MIXTURES

- A. Class A: Normal-weight concrete used for footings, grade beams, and tie beams.

1. Exposure Class: ACI 318 (ACI 318M) N.
2. Minimum Compressive Strength: 3500 psi (24.1 MPa) at 28 days.
3. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

- B. Class B: Normal-weight concrete used for interior slabs-on-ground.

1. Exposure Class: ACI 318 (ACI 318M) N.
2. Minimum Compressive Strength: 3500 psi (24.1 MPa) at 28 days.
3. Minimum Cementitious Materials Content: 540 lb/cu. yd. (320 kg/cu. m).
4. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

2.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 INSTALLATION OF EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
 3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.2 INSTALLATION OF VAPOR RETARDER

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
 2. Face laps away from exposed direction of concrete pour.
 3. Lap vapor retarder over footings and grade beams not less than 6 inches (150 mm), sealing vapor retarder to concrete.
 4. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.
 5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
 6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
 7. Protect vapor retarder during placement of reinforcement and concrete.
 - a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches (150 mm) on all sides, and sealing to vapor retarder.

3.3 JOINTS

- A. Construct joints true to line, with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.
1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
 2. Place joints perpendicular to main reinforcement.
 - a. Continue reinforcement across construction joints unless otherwise indicated.
 - b. Do not continue reinforcement through sides of strip placements of floors and slabs.
 3. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
- C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.
 - D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
 2. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
 - E. Doweled Joints:
 1. Install dowel bars and support assemblies at joints where indicated on Drawings.
 2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.
- 3.4 CONCRETE PLACEMENT
- A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
 1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
 2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.
 - B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.
 - C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.
 - D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M), but not to exceed the amount indicated on the concrete delivery ticket.
 - E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
 1. If a section cannot be placed continuously, provide construction joints as indicated.
 2. Deposit concrete to avoid segregation.
 3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.

4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301 (ACI 301M).
 - a. Do not use vibrators to transport concrete inside forms.
 - b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer.
 - c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
 - d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 1. Do not place concrete floors and slabs in a checkerboard sequence.
 2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 3. Maintain reinforcement in position on chairs during concrete placement.
 4. Screed slab surfaces with a straightedge and strike off to correct elevations.
 5. Level concrete, cut high areas, and fill low areas.
 6. Slope surfaces uniformly to drains where required.
 7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
 8. Do not further disturb slab surfaces before starting finishing operations.

3.5 FINISHING FLOORS AND SLABS

- A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish:
 1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
 2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 (ACI A117M) tolerances for conventional concrete.

3.6 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

- A. Filling In:
 1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
 2. Mix, place, and cure concrete, as specified, to blend with in-place construction.

3. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.7 CONCRETE CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
 1. Comply with ACI 301 (ACI 301M) and ACI 306.1 for cold weather protection during curing.
 2. Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.
 3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h (1 kg/sq. m x h), calculated in accordance with ACI 305.1, before and during finishing operations.
 - 1) .
- B. Curing Unformed Surfaces: Comply with ACI 308.1 (ACI 308.1M) as follows:
 1. Begin curing immediately after finishing concrete.
 2. Interior Concrete Floors:
 - a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:
 - 1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
 - a) Lap edges and ends of absorptive cover not less than 12-inches (300-mm).
 - b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
 - 2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive.
 - a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
 - b) Cure for not less than seven days.
 - 3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
 - a) Water.

- b) Continuous water-fog spray.

3.8 TOLERANCES

- A. Conform to ACI 117 (ACI 117M).

3.9 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.
- B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
 - 1. Testing agency shall be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
 - 2. Testing agency shall immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
 - 3. Testing agency shall report results of tests and inspections, in writing, to Owner, Architect, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
 - a. Test reports shall include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
 - 1) Project name.
 - 2) Name of testing agency.
 - 3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
 - 4) Name of concrete manufacturer.
 - 5) Date and time of inspection, sampling, and field testing.
 - 6) Date and time of concrete placement.
 - 7) Location in Work of concrete represented by samples.
 - 8) Date and time sample was obtained.
 - 9) Truck and batch ticket numbers.
 - 10) Design compressive strength at 28 days.
 - 11) Concrete mixture designation, proportions, and materials.
 - 12) Field test results.
 - 13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
 - 14) Type of fracture and compressive break strengths at seven days and 28 days.
- C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.

- D. Inspections:
1. Headed bolts and studs.
 2. Verification of use of required design mixture.
 3. Concrete placement, including conveying and depositing.
 4. Curing procedures and maintenance of curing temperature.
 5. Batch Plant Inspections: On a random basis, as determined by Architect.
- E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
 - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C143/C143M:
 - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - b. Perform additional tests when concrete consistency appears to change.
 3. Slump Flow: ASTM C1611/C1611M:
 - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - b. Perform additional tests when concrete consistency appears to change.
 4. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete;.
 - a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 5. Concrete Temperature: ASTM C1064/C1064M:
 - a. One test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.
 6. Compression Test Specimens: ASTM C31/C31M:
 - a. Cast and laboratory cure two sets of two 6-inch (150 mm) by 12-inch (300 mm) or 4-inch (100 mm) by 8-inch (200 mm) cylinder specimens for each composite sample.
 7. Compressive-Strength Tests: ASTM C39/C39M.

- a. Test one set of two laboratory-cured specimens at seven days and one set of two specimens at 28 days.
 - b. Test one set of two field-cured specimens at seven days and one set of two specimens at 28 days.
 - c. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa) if specified compressive strength is 5000 psi (34.5 MPa), or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi (34.5 MPa).
 9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 10. Additional Tests:
 - a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
 - b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.
 - 1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 (ACI 301M), section 1.6.6.3.
 11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- F. Measure floor and slab flatness and levelness in accordance with ASTM E1155 (ASTM E1155M) within 48 hours of completion of floor finishing and promptly report test results to Architect.

3.10 PROTECTION

- A. Protect concrete surfaces as follows:
1. Protect from petroleum stains.
 2. Diaper hydraulic equipment used over concrete surfaces.
 3. Prohibit vehicles from interior concrete slabs.
 4. Prohibit use of pipe-cutting machinery over concrete surfaces.
 5. Prohibit placement of steel items on concrete surfaces.
 6. Prohibit use of acids or acidic detergents over concrete surfaces.

7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

END OF SECTION 033000

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes Concrete Paving Including the Following:

1. Driveways.
2. Roadways.
3. Parking lots.
4. Curbs and gutters.
5. Walks.

1.2 ACTION SUBMITTALS

- A. Product Data:** For each type of product.
- B. Samples:** For each type of product, ingredient, or admixture requiring color selection.
- C. Design Mixtures:** For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications:** A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1.4 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service:** Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications:** Comply with ACI 301 (ACI 301M) unless otherwise indicated.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, flat sheet.
- C. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420); deformed.
- D. Joint Dowel Bars: ASTM A615/A615M, Grade 60 (Grade 420) plain-steel bars; zinc coated (galvanized) after fabrication according to ASTM A767/A767M, Class I coating. Cut bars true to length with ends square and free of burrs.
- E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.3 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C150/C150M, gray portland cement Type I/II.
 - 2. Fly Ash: ASTM C618, Class C or Class F.
 - 3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C33/C33M, Class 4M, uniformly graded. Provide aggregates from a single source.
- C. Air-Entraining Admixture: ASTM C260/C260M.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- E. Water: Potable and complying with ASTM C94/C94M.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

2.5 RELATED MATERIALS

- A. Joint Fillers: ASTM D1751, asphalt-saturated cellulosic fiber ASTM D1752, cork or self-expanding cork or ASTM D8139, semirigid, closed-cell polypropylene foam in preformed strips.
- B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301 (ACI 301M), for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
- B. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
- D. Concrete Mixtures: Normal-weight concrete.
 - 1. Compressive Strength (28 Days): 3500 psi (24.1 MPa).
 - 2. Maximum W/C Ratio at Point of Placement: 0.45.
 - 3. Slump Limit: 5 inches (125 mm), plus or minus 1 inch (25 mm).

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving:
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch (6-mm) radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- B. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, and placing concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Finish to match existing concrete paving.
- C. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions.
 - 1. After curing, lightly work surface with a steel-wire brush or abrasive stone and water to expose nonslip aggregate.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing.

3.8 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 (ACI 117M) and as follows:
 - 1. Elevation: 3/4 inch (19 mm).
 - 2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
 - 3. Surface: Gap below 10-feet- (3-m-) long; unleveled straightedge not to exceed 1/2 inch (13 mm).
 - 4. Joint Spacing: 3 inches (75 mm).
 - 5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
 - 6. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.9 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold-applied joint sealants.
2. Hot-applied joint sealants.
3. Joint-sealant backer materials.
4. Primers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each kind and color of joint sealant required.
- C. Paving-Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.

1.3 INFORMATIONAL SUBMITTALS

- A. Product certificates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS

- A. Single-Component, Nonsag, Silicone Joint Sealant: ASTM D5893/D5893M, Type NS.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Crafco Inc.
 - b. Pecora Corporation.
 - c. The Dow Chemical Company.
 - B. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D5893/D5893M, Type SL.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Crafco Inc.
 - b. Pecora Corporation.
 - c. The Dow Chemical Company.
 - C. Multicomponent, Nonsag, Urethane, Elastomeric Joint Sealant: ASTM C920, Type M, Grade NS, Class 25, for Use T.
 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. W.R. Meadows, Inc.
 - D. Single Component, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C920, Type S, Grade P, Class 25, for Use T.
 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. W.R. Meadows, Inc.
 - E. Multicomponent, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C920, Type M, Grade P, Class 25, for Use T.
 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Pecora Corporation.
- 2.3 JOINT-SEALANT BACKER MATERIALS
- A. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.
 - B. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.4 PRIMERS

- A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 INSTALLATION OF JOINT SEALANTS

- A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Cleaning of Joints: Clean out joints immediately to comply with joint-sealant manufacturer's written instructions.
- C. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer.
- D. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions.
- E. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of joint-sealant backings.
 - 2. Do not stretch, twist, puncture, or tear joint-sealant backings.
 - 3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.
- F. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:
 - 1. Place joint sealants so they fully contact joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
 - 1. Remove excess joint sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- H. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

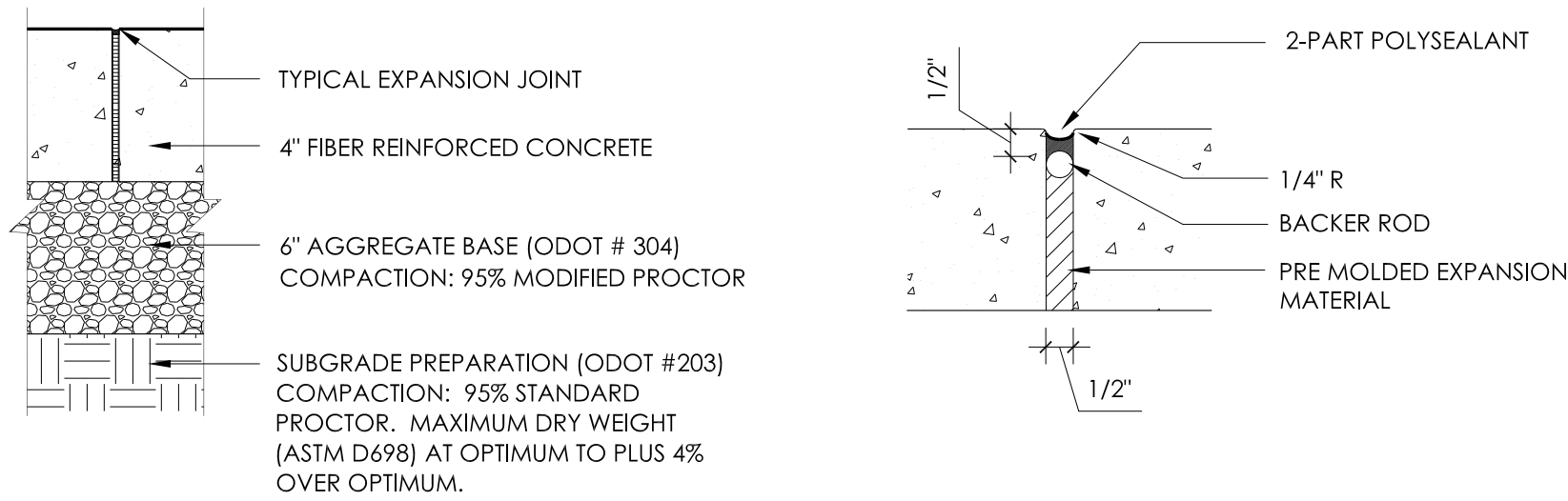
- I. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

END OF SECTION 321373

90
60
30
0 10 20 30
1"=30'
60
40
20
0 5 10 15 20
1"=30'
2
1
0 1 2 3 4
1 1/2"=1'-0"
0 1 2 3 4 5 6
3/4"=1'-0"
0 1 2 3 4 5 6
1/2"=1'-0"
0 1 2 3 4 5 6 7 8
3/8"=1'-0"

TYPICAL CONCRETE NOTES:

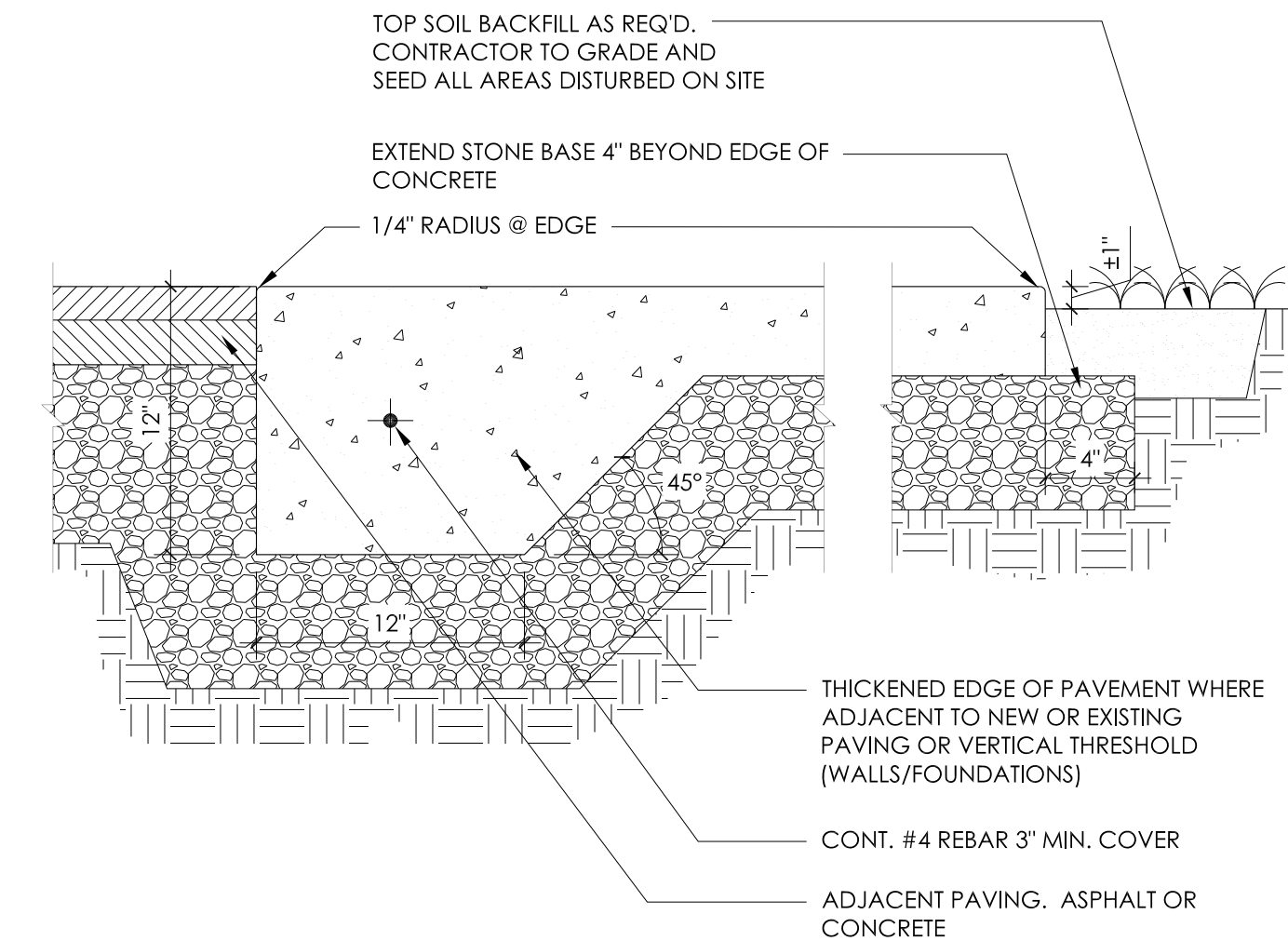
- CONTROL JOINTS ARE TO BE 1/4 DEPTH OF SLAB TOOLED WITH 1/4" RADIUS. CONTROL JOINT METHOD MUST BE UNIFORM THROUGHOUT THE PROJECT.
- EXPANSION JOINTS TO BE 30'-0" O.C., CONTROL JOINTS ARE TO BE 6'-0" O.C. OR AS SHOWN ON PLAN.
- MATCH EXISTING FINISH AFTER JOINT AND EDGE TOOLING TO AVOID TOOL MARKS.
- PROVIDE 1/4" RADIUS ON ALL SLAB EDGES UNLESS NOTED OTHERWISE.
- EXPANSION JOINTS SHALL BE PROVIDED WHERE CONCRETE PAVEMENT IS ADJACENT TO VERTICAL THRESHOLDS (BUILDING WALLS/FOUNDATIONS) OR WHERE NEW PAVING MEETS EXISTING PAVING.
- EXPANSION JOINTS ARE TO BE 1/2" THICK PRE-FORMED FILLER. HOLD FILLER DOWN 1/2" FROM FINISHED SURFACE AND CAULK JOINT WITH SEALANT.



STANDARD DUTY CONCRETE

EXPANSION JOINT DETAIL

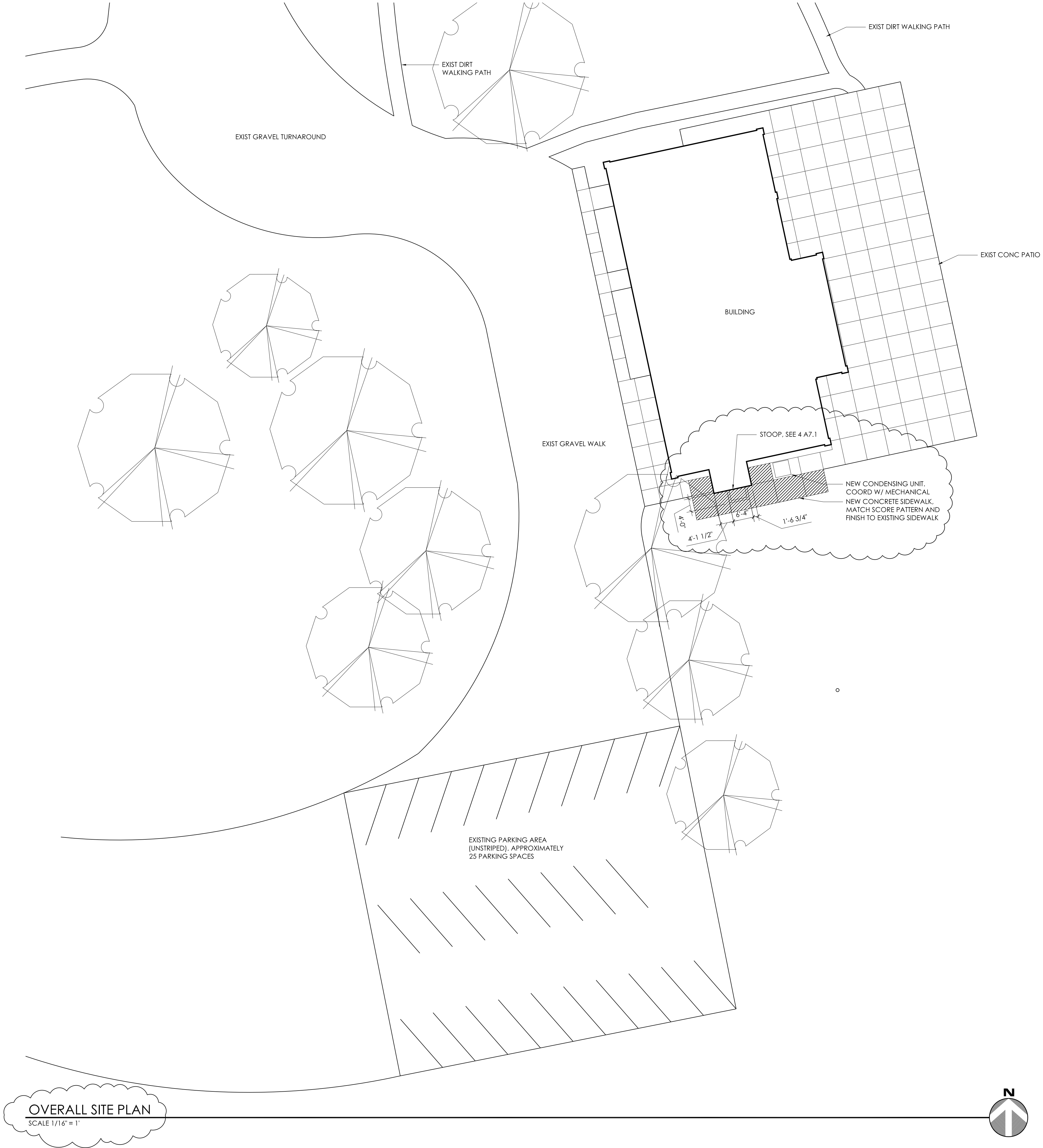
2 CONCRETE PAVEMENT TYPICAL DETAILS AND NOTES
A1.0 SCALE: NTS



1 TYPICAL STANDARD DUTY CONCRETE SIDEWALK
A1.0 SCALE: 1 1/2" = 1'-0"

SITE PLAN GENERAL NOTES

- ALL SITE FEATURES, PAVING, PARKING, PLANTING, TREES ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.



OVERALL SITE PLAN
SCALE 1/16" = 1'

CONSULTANTS:

SEAL:



Expiration Date 12/31/2021

SANDUSKY PARKS
RIVER CLIFF OFFICE RENOVATION

1329 TIFFIN ST.
FREMONT, OH 43420

PROJECT TITLE:

ISSUE OR REVISION:

11-06-2020	ISSUED FOR BIDDING
DATE	ISSUE / REVISION
DESIGNED: AK	
DRAWN: DE	
CHECKED: AK	

TPA COMMISSION NUMBER: 18051

DRAWING TITLE:

OVERALL
SITE PLAN

DRAWING NUMBER:

A1.0

0 1 2 3 4 5 6 7 8
3/8"=1'-0"

0 1 2 3 4 5 6
1/2"=1'-0"

0 1 2 3 4 5 6
3/4"=1'-0"

0 1 2 3 4 5 6 7 8
1 1/2"=1'-0"

0 5 10 15 20
1"=20'

0 2 4 6 8 10 12 14 16 18 20
1"=30'

0 10 20 30 40 60
1"=30'

0 10 20 30 40 60
1"=30'

STRUCTURAL DESIGN CRITERIA

- A. General
1. Building Code: 2017 Ohio Building Code II
2. Occupancy Category: II
- B. Floor Live Load
1. General Areas Unless Indicated: 100 psf
2. Offices: 50 psf
3. Stairs and Exits: 100 psf
- C. Roof Live Load
1. Flat Roof: 20 psf
2. Pitched Roof (6:12): 18 psf

- D. Roof Snow Load
1. Snow Exposure Factor, Ce: 1.00
2. Thermal Factor, Ct: 1.00
3. Snow Load Importance Factor, Is: 1.00
4. Ground Snow Load, Pg: 20.0 psf
5. Flat Roof Snow Load, Pf: 14.0 psf
6. Low-Slope Minimum Snow Load, Pm: 20.0 psf
7. Pitched Roof Balanced Snow Load (6:12), Ps: 14.0 psf
8. Snow Drifts and Unbalanced Loads: 50 psf
- E. Wind Design Data
1. Basic Wind Speed, V: 115 mph
2. Exposure Classification: C Enclosed
3. Mean Roof Height, H: 14 ft
4. Wind Directionality Factor, Kd: 0.85
5. Topographic Factor, Kzt: 1.00
6. Gust Response Factor, G: 0.85
7. Internal Pressure Coefficient, GCpi: 0.18
8. Component and Cladding Pressure (A=10 sf)
9. a. Wall 40.0 psf
- b. Roof 50.0 psf

PLAN NOTES:

GENERAL NOTES:

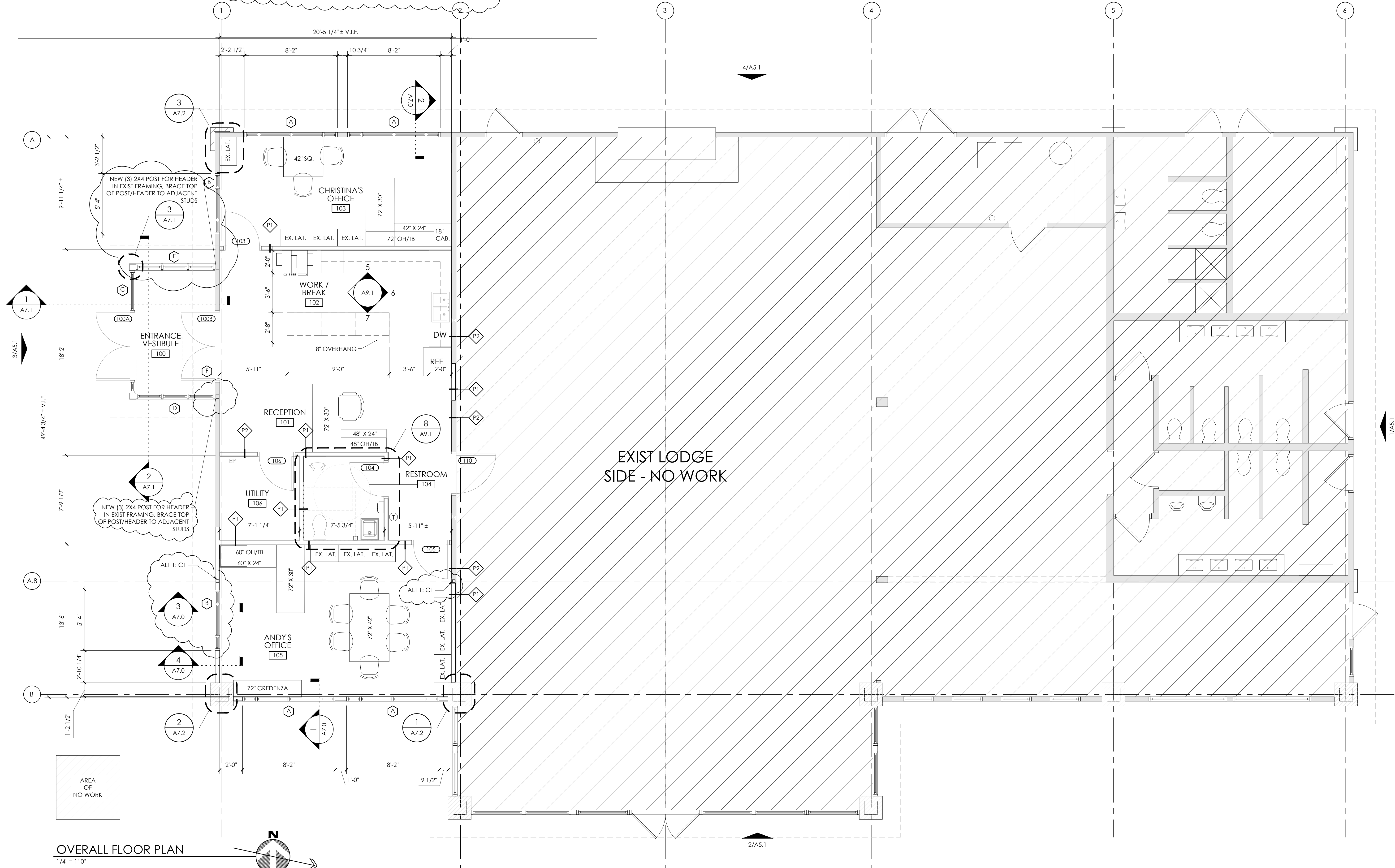
1. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.
2. FLOOR PLANS ARE DIMENSIONED TO FACE OF STUD -TYPICAL.
3. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
4. PROVIDE INTERIOR GYP BD CONTROL JOINTS @ 25' O.C. AT LOCATIONS SHOWN ON PLANS AND/OR INTERIOR ELEVATIONS OR AS DIRECTED BY ARCHITECT IN THE FIELD.
5. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL INTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
6. REFER TO A11 SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES
7. SEE REFLECTED CEILING PLANS FOR AREA OF MOTORIZED AND MANUALLY OPERATED WINDOW SHADES. SEE SPECIFICATION FOR ACCEPTABLE MANUFACTURER AND ADDITIONAL INFORMATION.

LIST OF ABBREVIATIONS

- FEC - FIRE EXTINGUISHER CABINET
- FE - FIRE EXTINGUISHER (W/ WALL BRACKET)
- A - PUNCHED WINDOW TYPE. SEE ENLARGED WINDOW SHEET(S)
- ◇ - WALL PARTITION TYPE - SEE SHEET A7.0
- EP - ELECTRICAL PANEL(S). PAINT SAME COLOR AS WALL SURFACE
- CUH - CABINET UNIT HEATER

ADO - AUTOMATIC POWER DOOR OPERATOR PUSH BUTTON. SEE ELEC. SYMBOLS

C1 - INDICATES COLUMN, HSS4 x 3 x 1/4; BASE PLATE 5/8" x 3 1/2" x 0'-10"; COLUMN CAP - SIMPSON STRONG TIE ECC09 SHOP OR FIELD WELDED TO TOP OF COLUMN, WITH 3/4" THRU-BOLTS TO ROOF BEAM.



OVERALL FLOOR PLAN

1/4" = 1'-0"

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SEAL:



Expiration Date 12/31/2021

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CHECKED: AK

TPA COMMISSION NUMBER: 18051

DRAWING TITLE:

FLOOR PLAN

DRAWING NUMBER:

A2.0

90
60
30
0 10 20 30
1"=30"

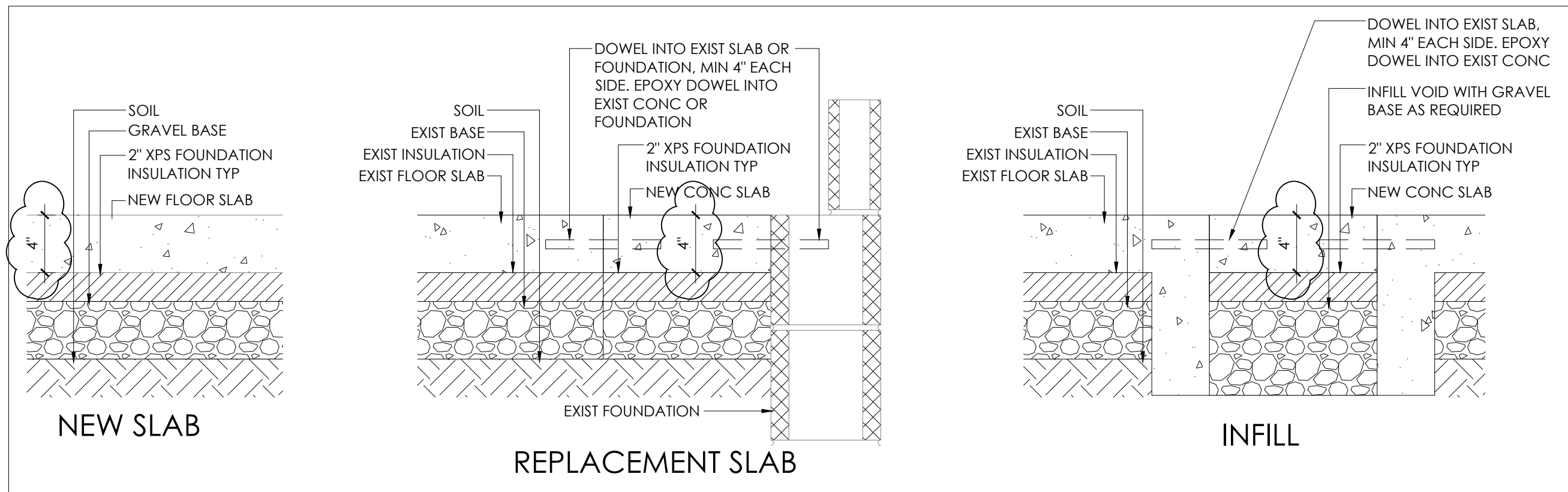
60
40
20
0 5 10 15 20
1"=30"

2
1
0 5 10 15 20
1"=30"

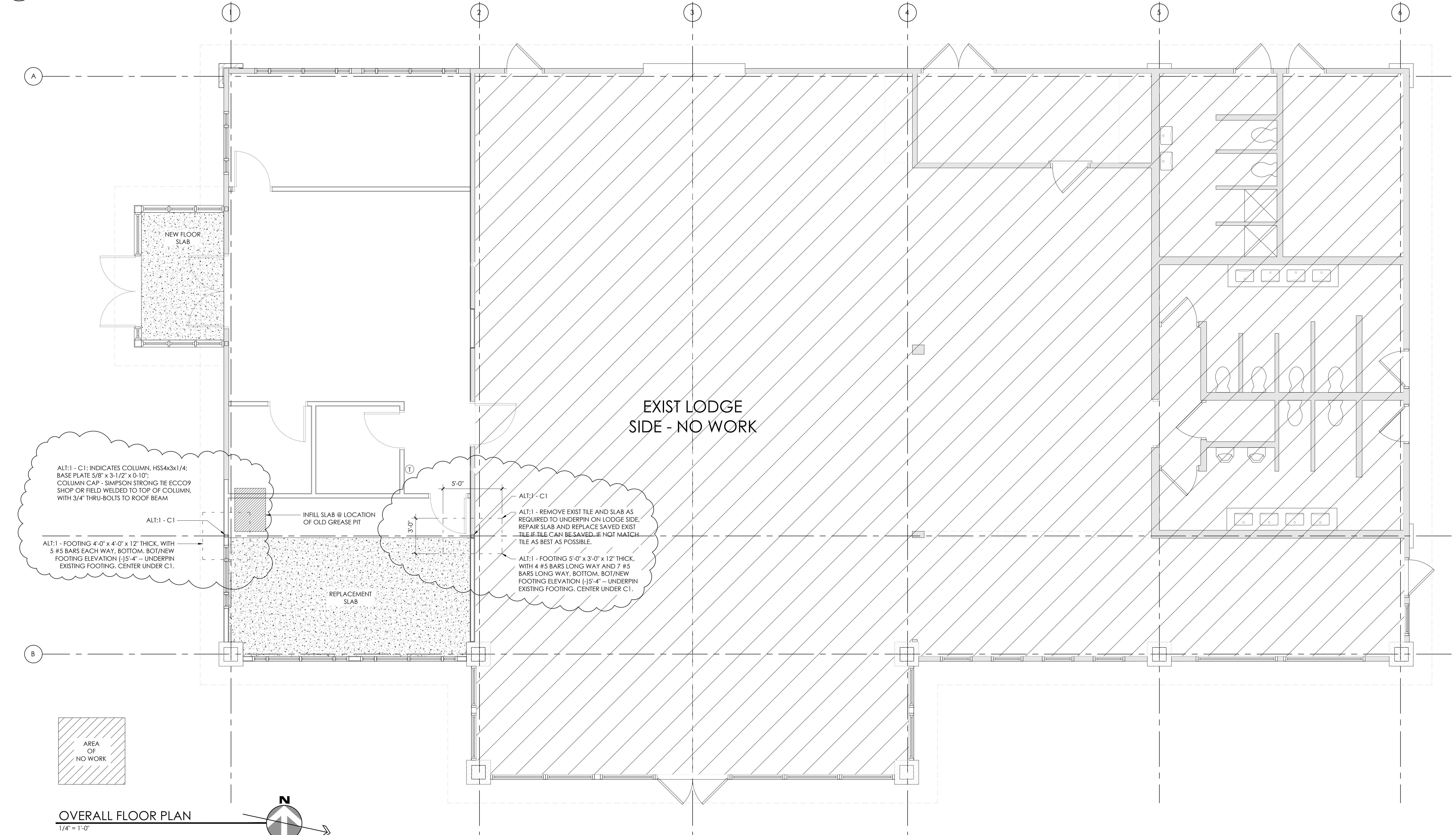
4
3
2
1
0 1 2 3 4 5 6
3/4"=1'-0"

1
0 1 2 3 4 5 6
1/2"=1'-0"

8
7
6
5
4
3
2
1
0 1 2 3 4 5 6
3/8"=1'-0"



1 DETAILS
A2.1 1 1/2\"/>



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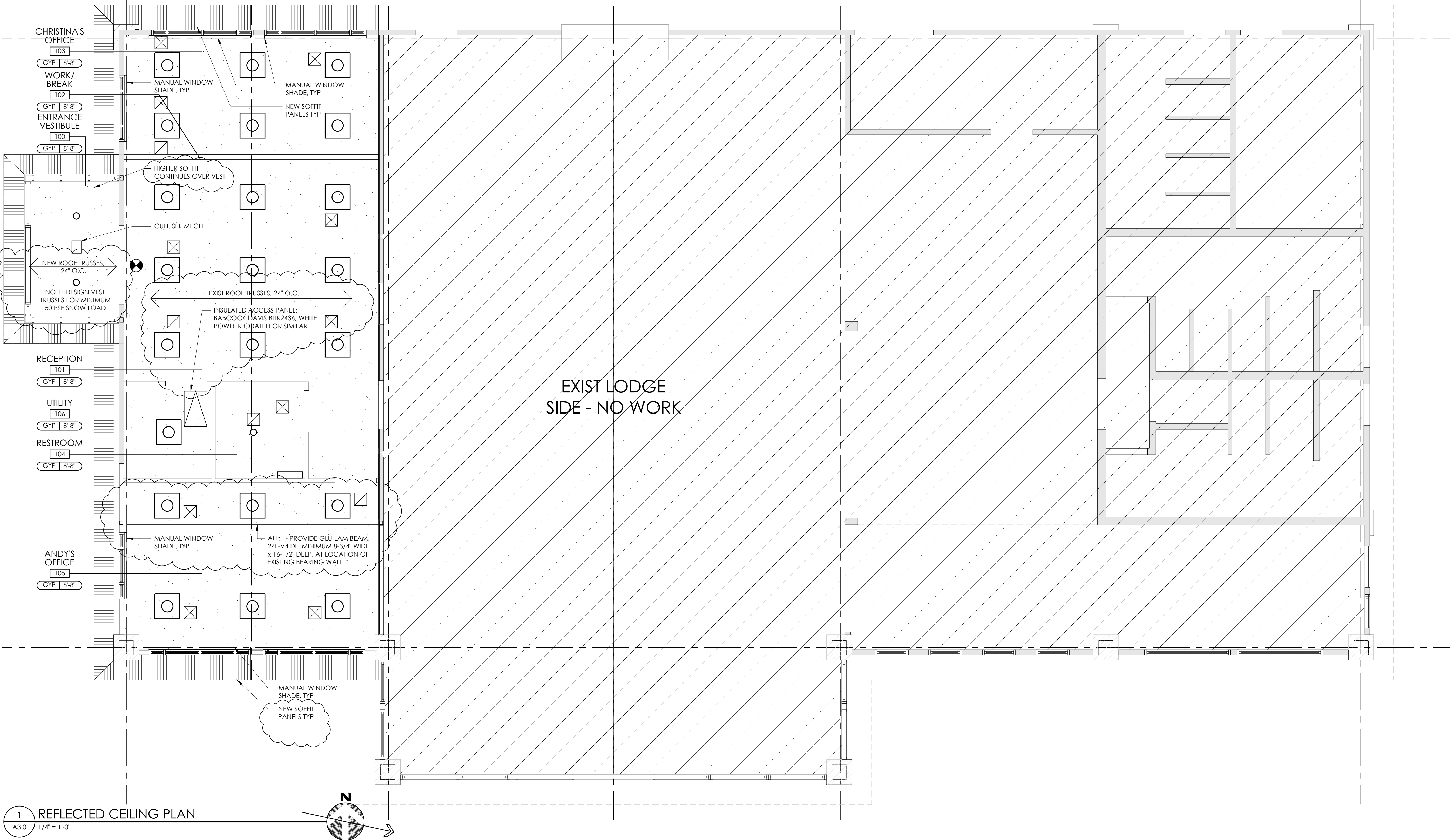
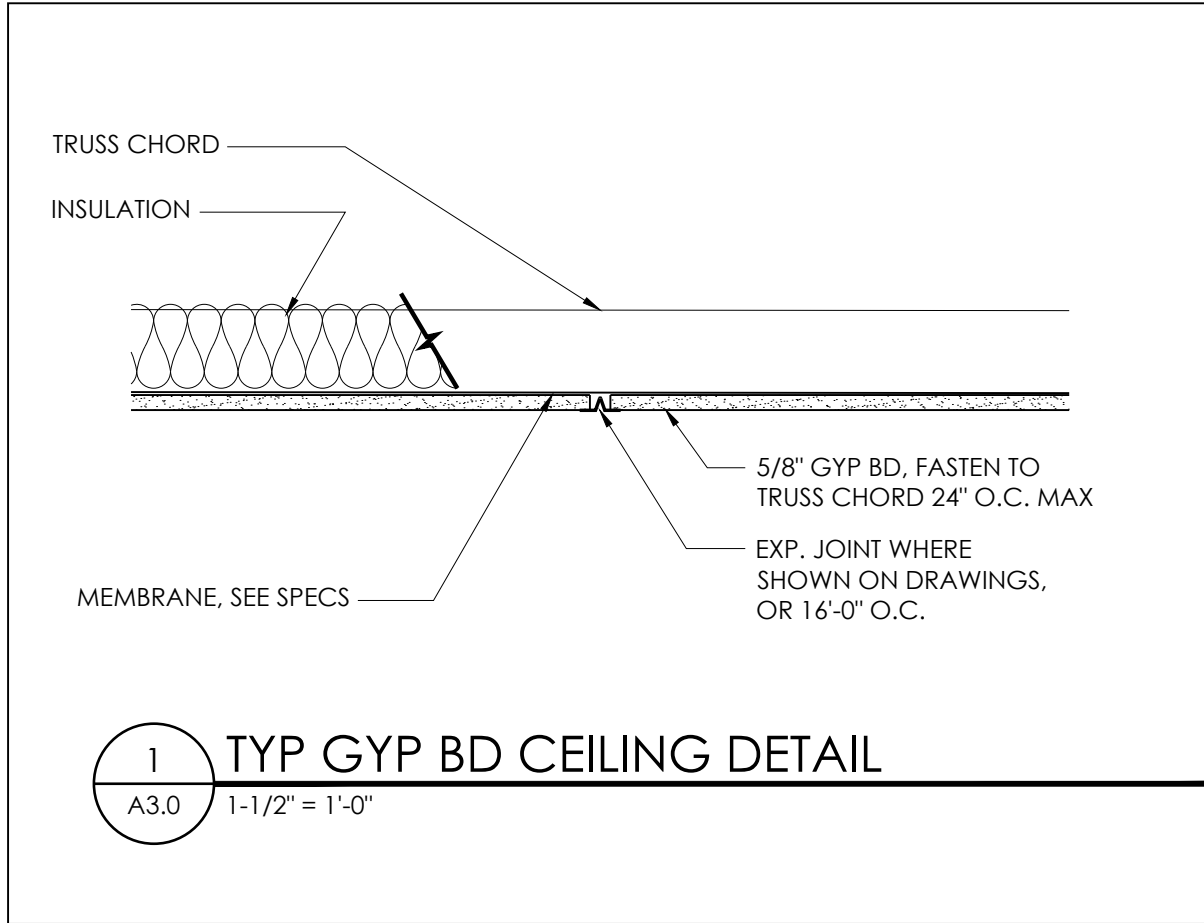
FLOOR INFILL PLAN

DRAWING NUMBER:

A2.1

90
60
30
0 10 20 30
1 1/2"=30'
40
20
0 5 10 15 20
1 1/2"=20'
2
1
0 1 2 3 4
1 1/2"=1'-0"
3
2
1
0 1 2 3 4
3/4"=1'-0"
6
5
4
3
2
1
0 1 2 3 4
1 1/2"=1'-0"
8
7
6
5
4
3
2
1
0 1 2 3 4
3/8"=1'-0"

CEILING LEGEND	
PLAN VIEW	DESCRIPTION
	GYP, BD, CEILING OR SOFFIT, REFER TO CEILING PLAN AND DETAILS
	RECESSED LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
	RETURN GRILLE, REFER TO MECHANICAL DRAWINGS FOR TYPE
	SUPPLY GRILLE, REFER TO MECHANICAL DRAWINGS FOR TYPE
	EXIT SIGN, REFER TO ELECTRICAL DRAWINGS
	ACCESS PANEL
	2x2 LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS FOR TYPE



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DRAWING TITLE:

REFLECTED
CEILING PLAN

DRAWING NUMBER:

A3.0

90
60
30
0 10 20 30
1"=30'
60
40
20
0 5 10 15 20
1"=20'
2
1
0
1 1/2"=1'-0"
4
3
2
1
0
3/4"=1'-0"
6
5
4
3
2
1
0
1 1/2"=1'-0"
8
7
6
5
4
3
2
1
0
3/8"=1'-0"

CONSULTANTS:

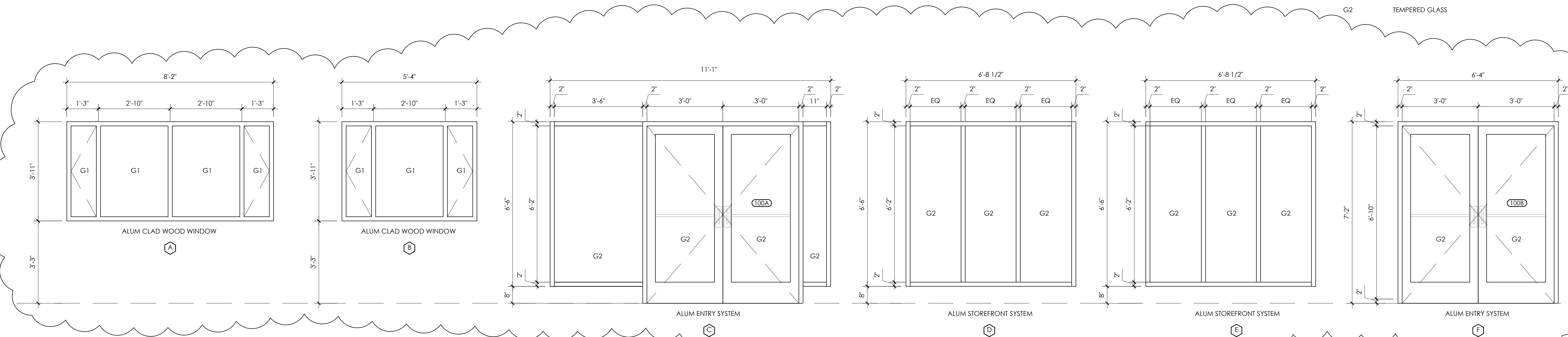
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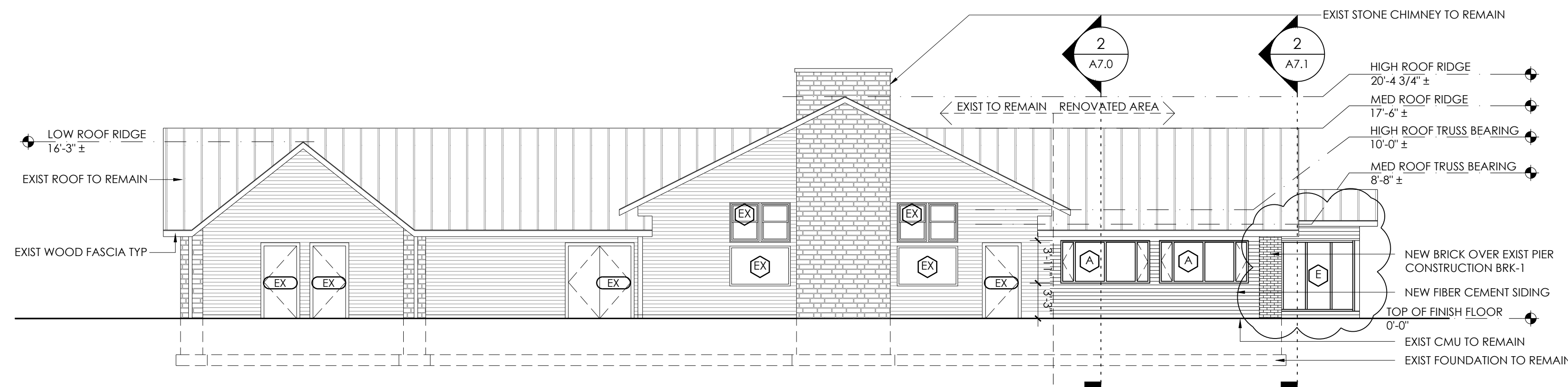
Expiration Date 12/31/2021

EXTERIOR LEGEND

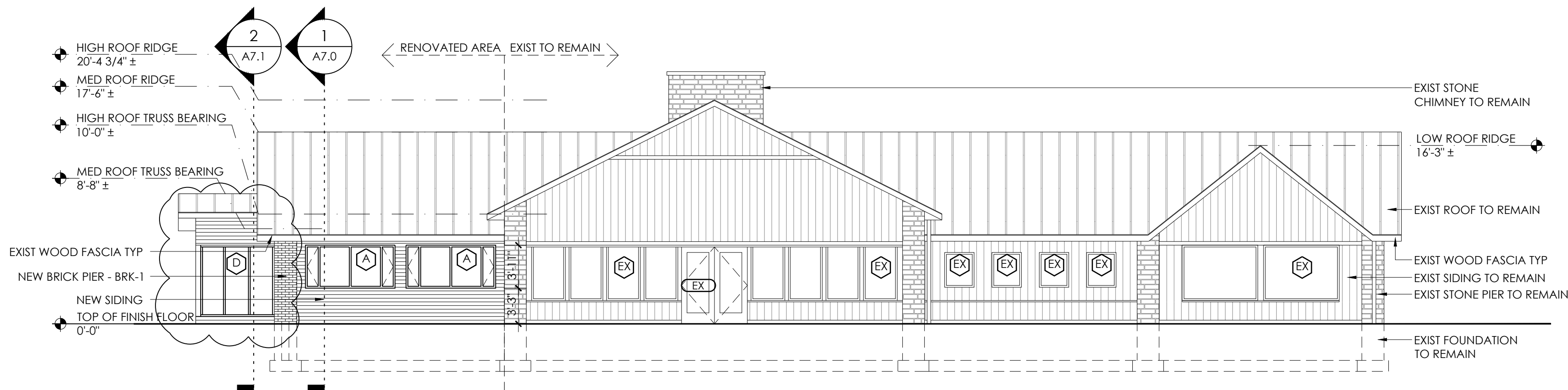
- MTR-1 MATERIAL TAG
- BRICK BRK-1/BRK-2
- STONE SNT-1
- X SH.T. SECTION TAG
- G1 STANDARD GLASS
- G2 TEMPERED GLASS



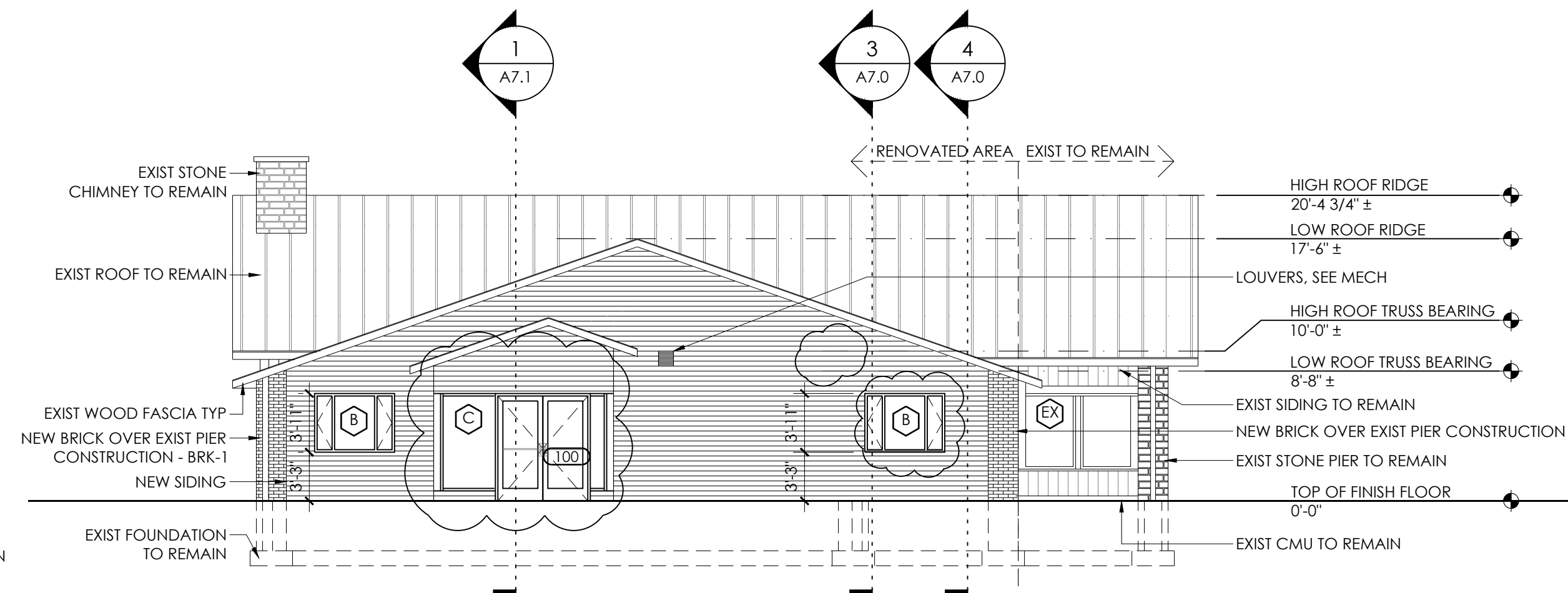
5 WINDOW ELEVATIONS
A5.0 1/2" = 1'-0"



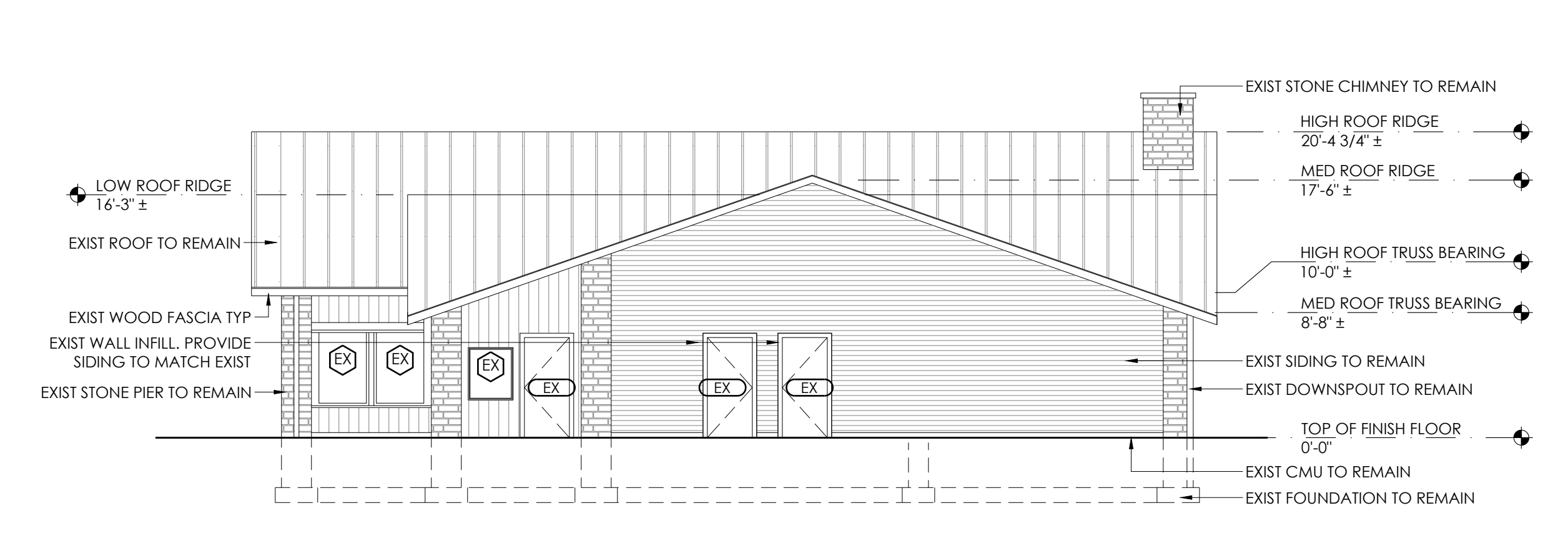
4 WEST ELEVATION
A5.0 1/4" = 1'-0"



2 EAST ELEVATION
A5.0 1/4" = 1'-0"



3 SOUTH ELEVATION
A5.0 1/4" = 1'-0"

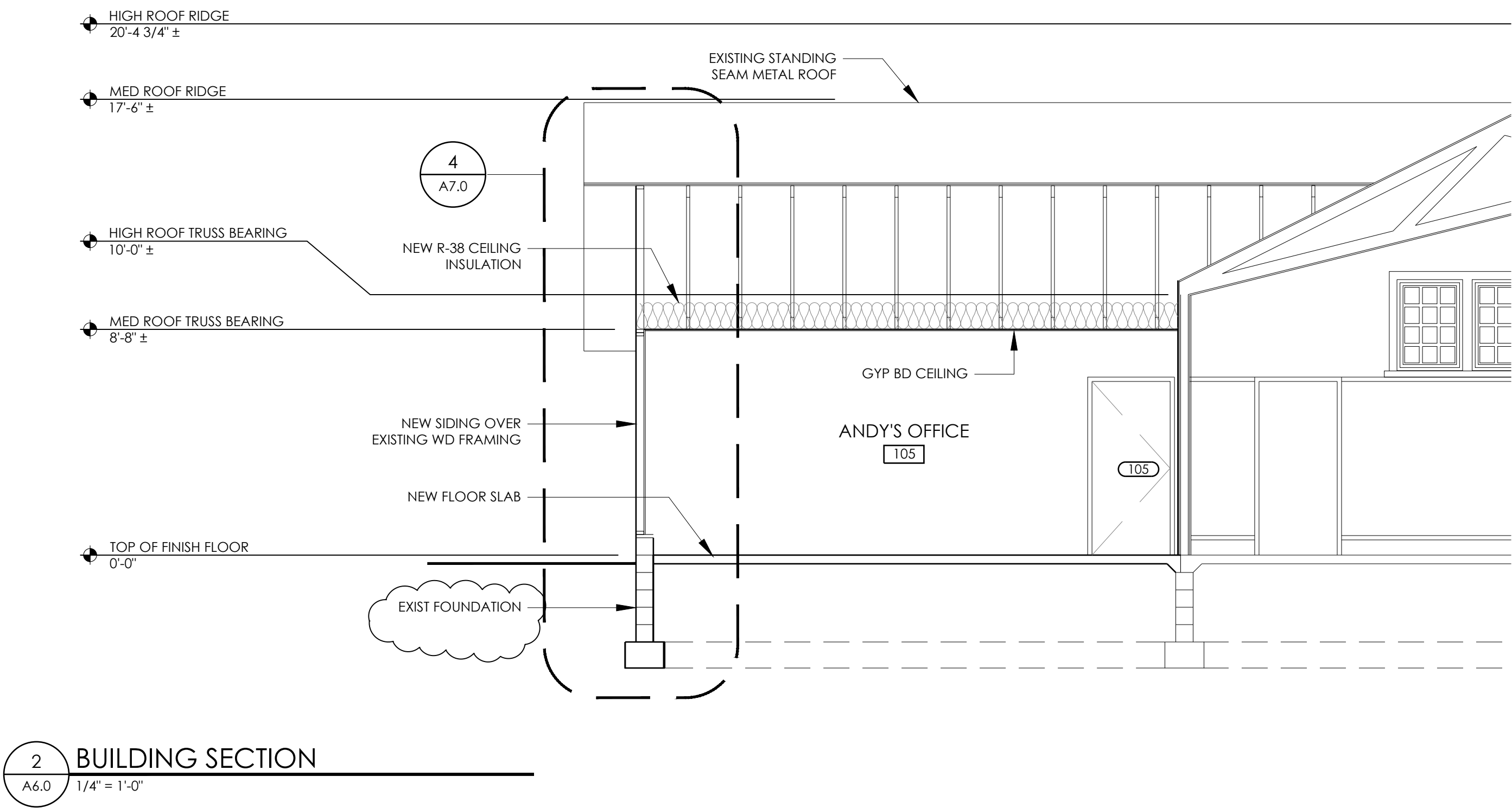


1 NORTH ELEVATION
A5.0 1/4" = 1'-0"

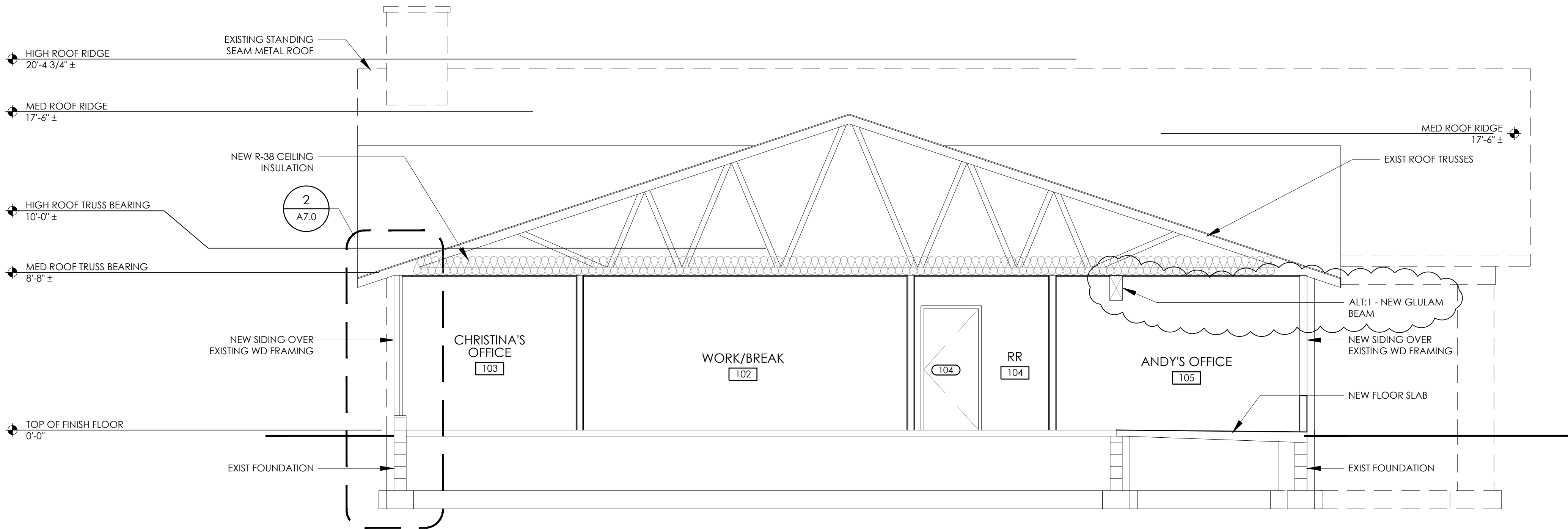
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DRAWING TITLE: OVERALL EXTERIOR ELEVATIONS
DRAWING NUMBER: A5.0



2 BUILDING SECTION
A6.0 1/4" = 1'-0"



1 BUILDING SECTION
A6.0 1/4" = 1'-0"



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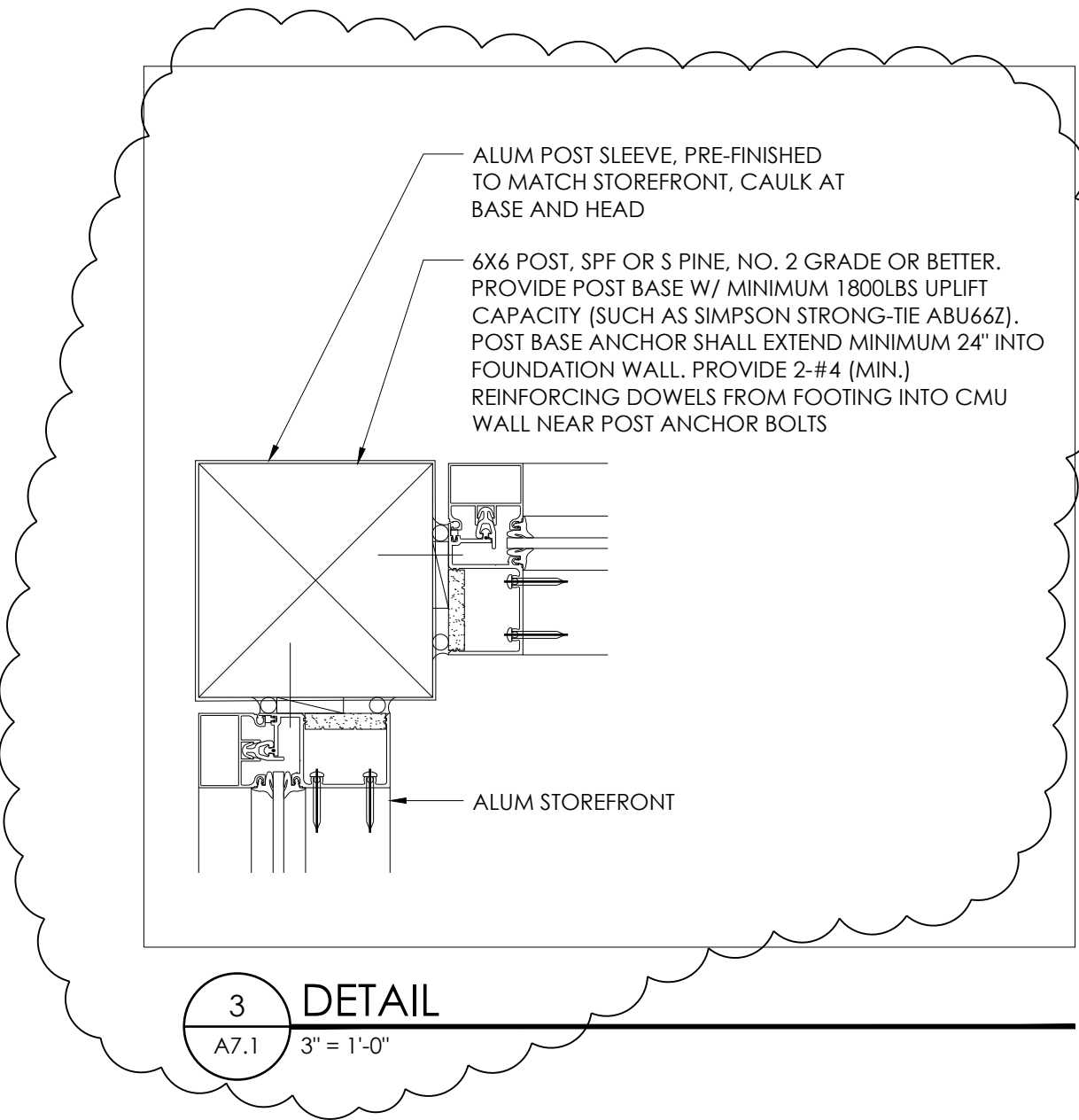
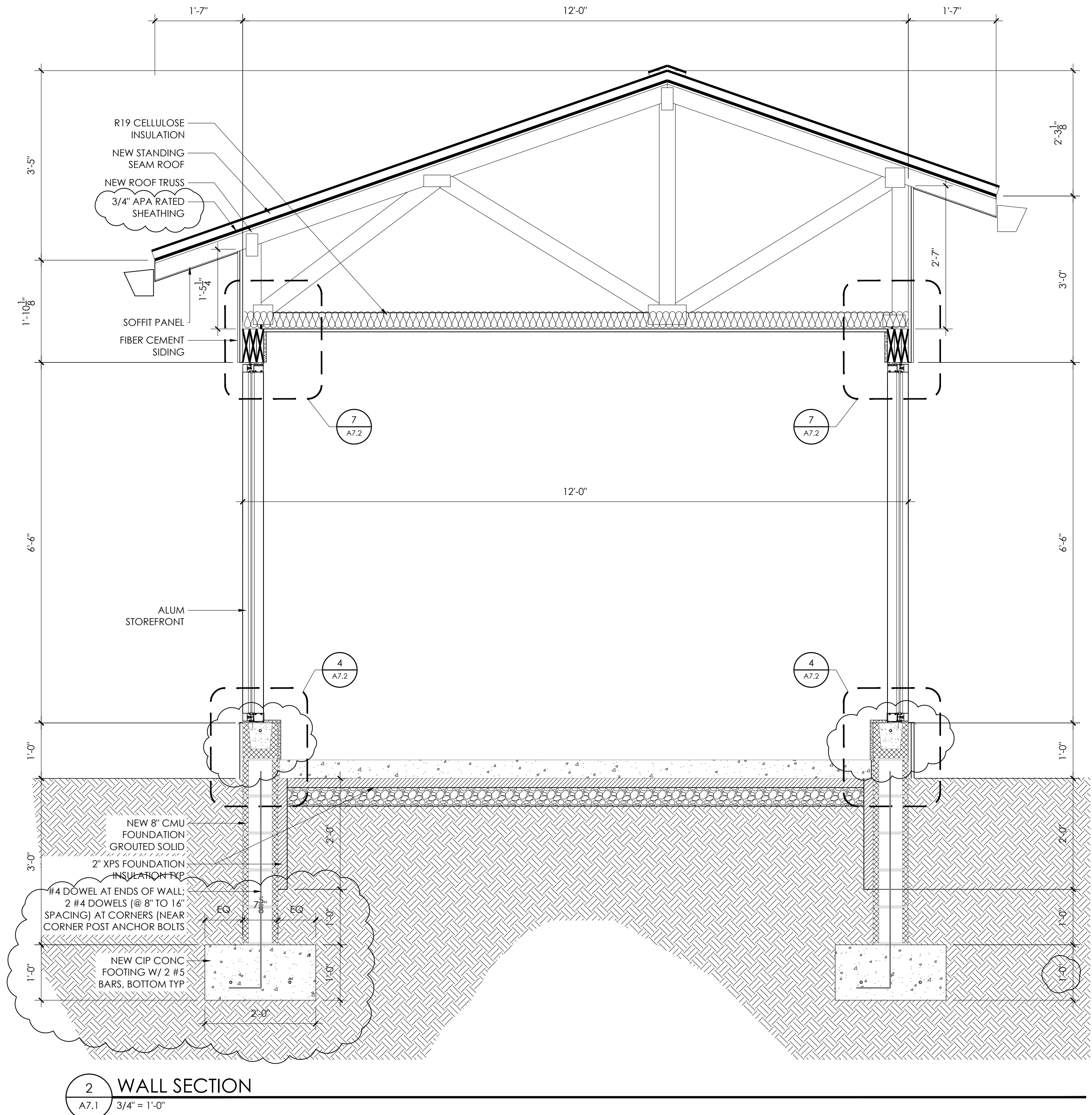
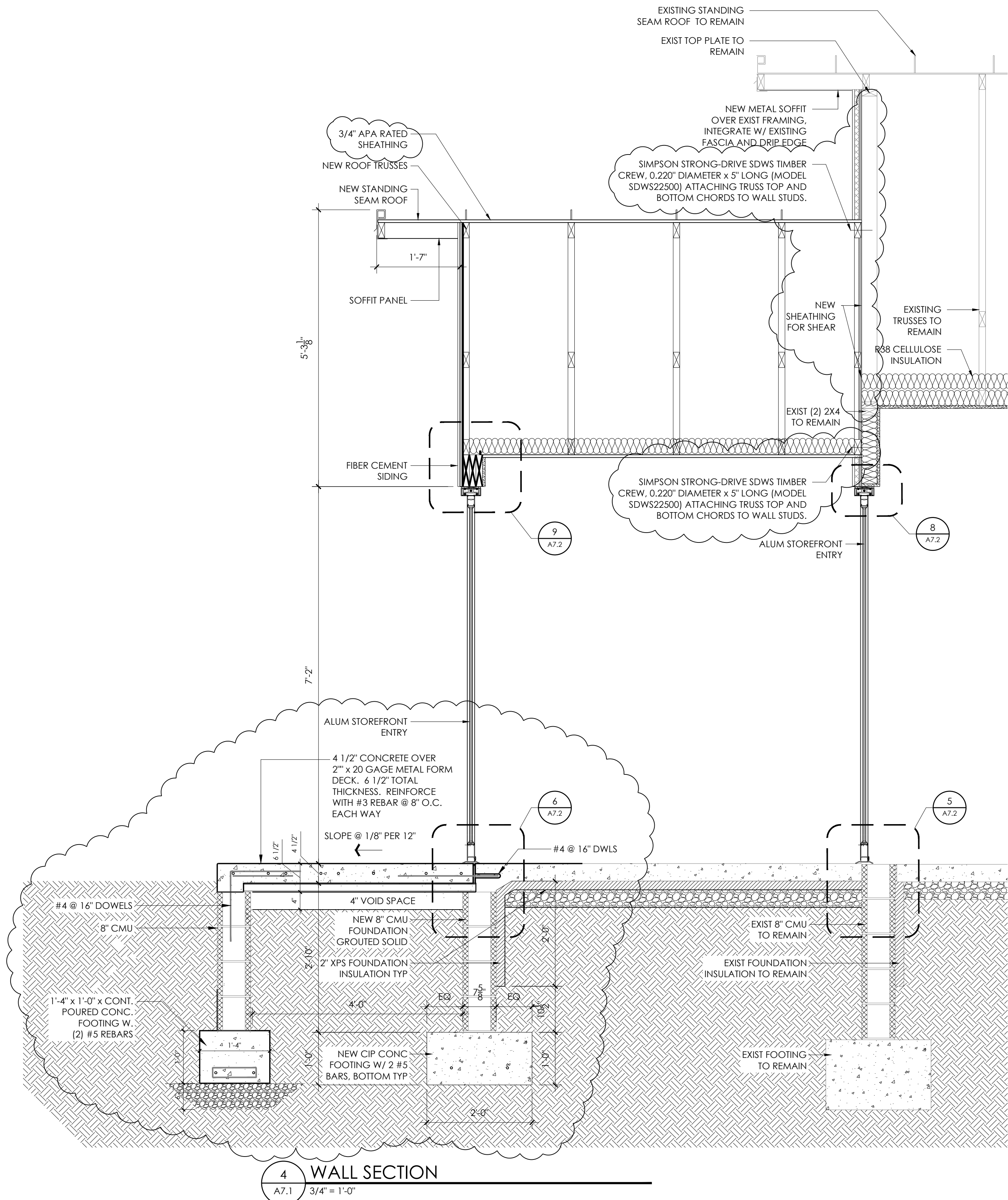
DRAWING TITLE:

BUILDING
SECTIONS

DRAWING NUMBER:

A6.0

90
60
30
0 10 20 30 40 50 60 70 80 90
1 1/2"=30'
2
0 5 10 15 20 30 40 50 60 70 80 90
1 1/2"=20'
1
0 1 2 3 4 5 6 7 8 9 10 11 12
1 1/2"=1'-0"
4
0 1 2 3 4 5 6 7 8 9 10 11 12
3/4"=1'-0"
6
0 1 2 3 4 5 6 7 8 9 10 11 12
1 1/2"=1'-0"
8
0 1 2 3 4 5 6 7 8 9 10 11 12
3/8"=1'-0"



THOMAS
PORTER
ARCHITECTS

8 North St. Clair - Toledo, Ohio 43604-1028
T 419.243.2400
www.thomasporterarchitects.com

CONSULTANTS:

SEAL:



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DRAWING TITLE:

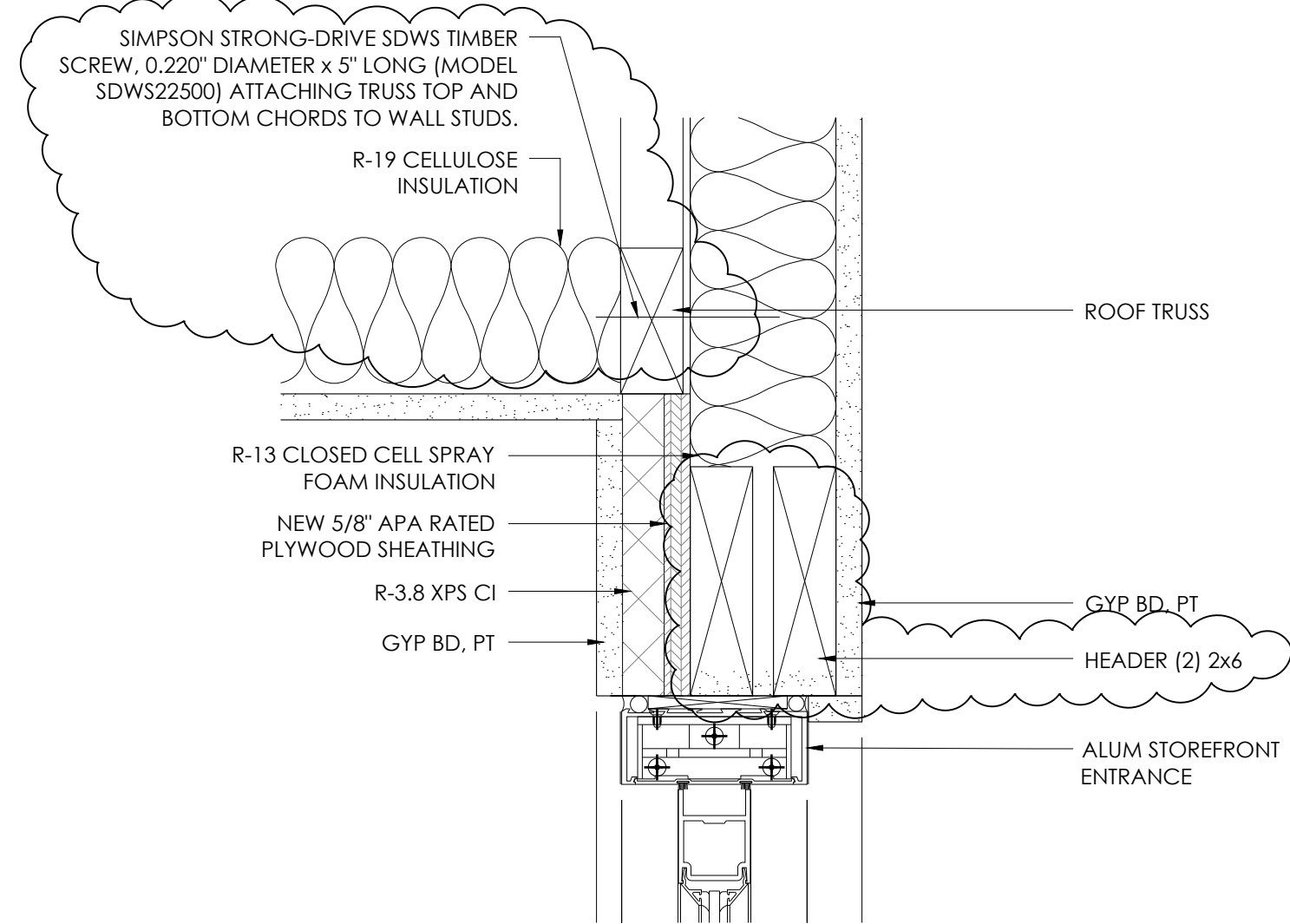
DRAWING NUMBER:

WALL SECTIONS

AND DETAILS

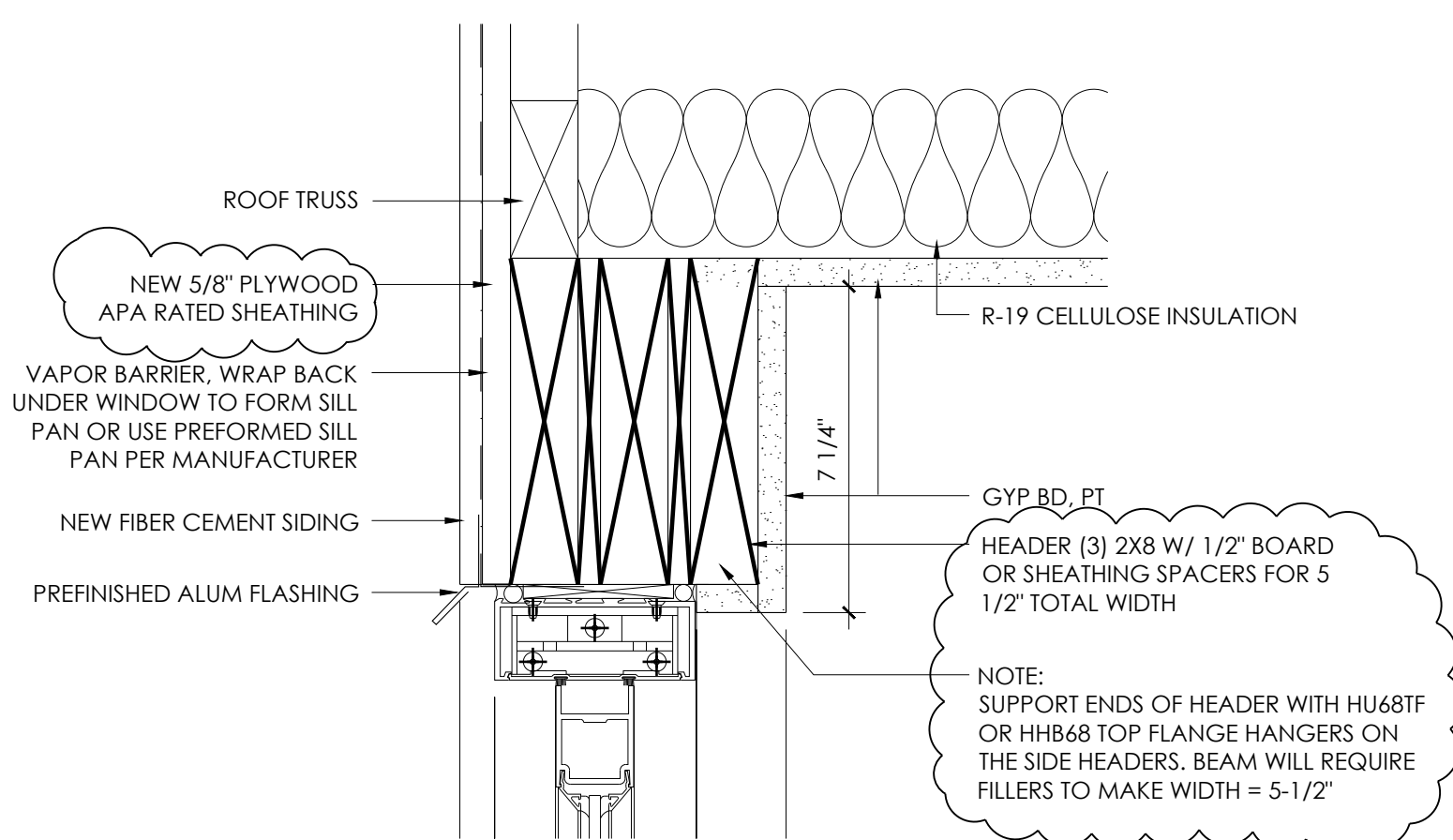
A7.1

90
60
30
0 10 20 30
1 1/2"=30'
40
20
15
10
5
0 5 10 15 20
1 1/2"=20'
2
1
0 1 2 3 4
1 1/2"=1'-0"
4
3
2
1
0 1 2 3 4
3/4"=1'-0"
6
5
4
3
2
1
0 1 2 3 4 5 6
1 1/2"=1'-0"
8
7
6
5
4
3
2
1
0 1 2 3 4 5 6
3/8"=1'-0"



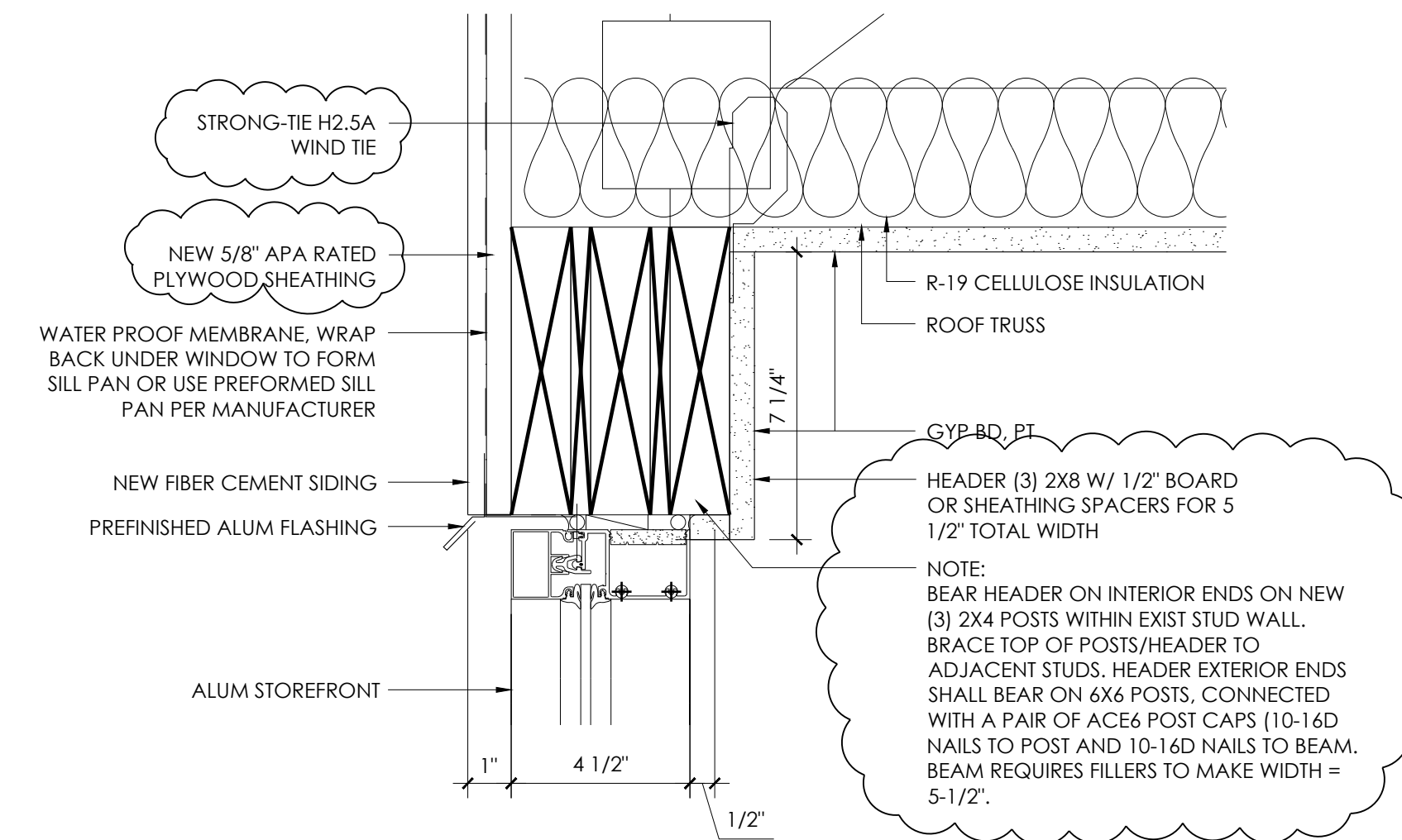
9 DETAIL

A7.2 3" = 1'-0"



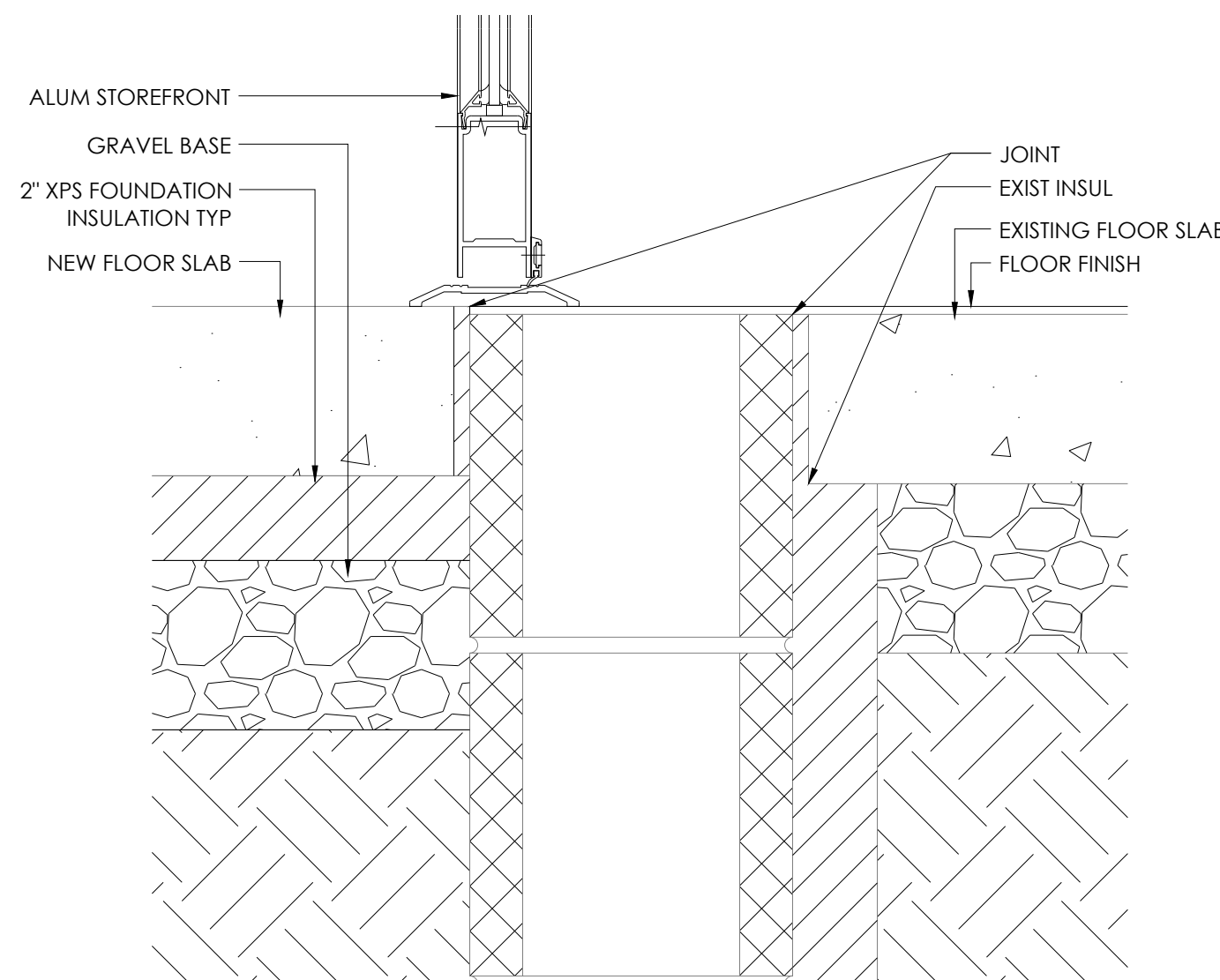
8 DETAIL

A7.2 3" = 1'-0"



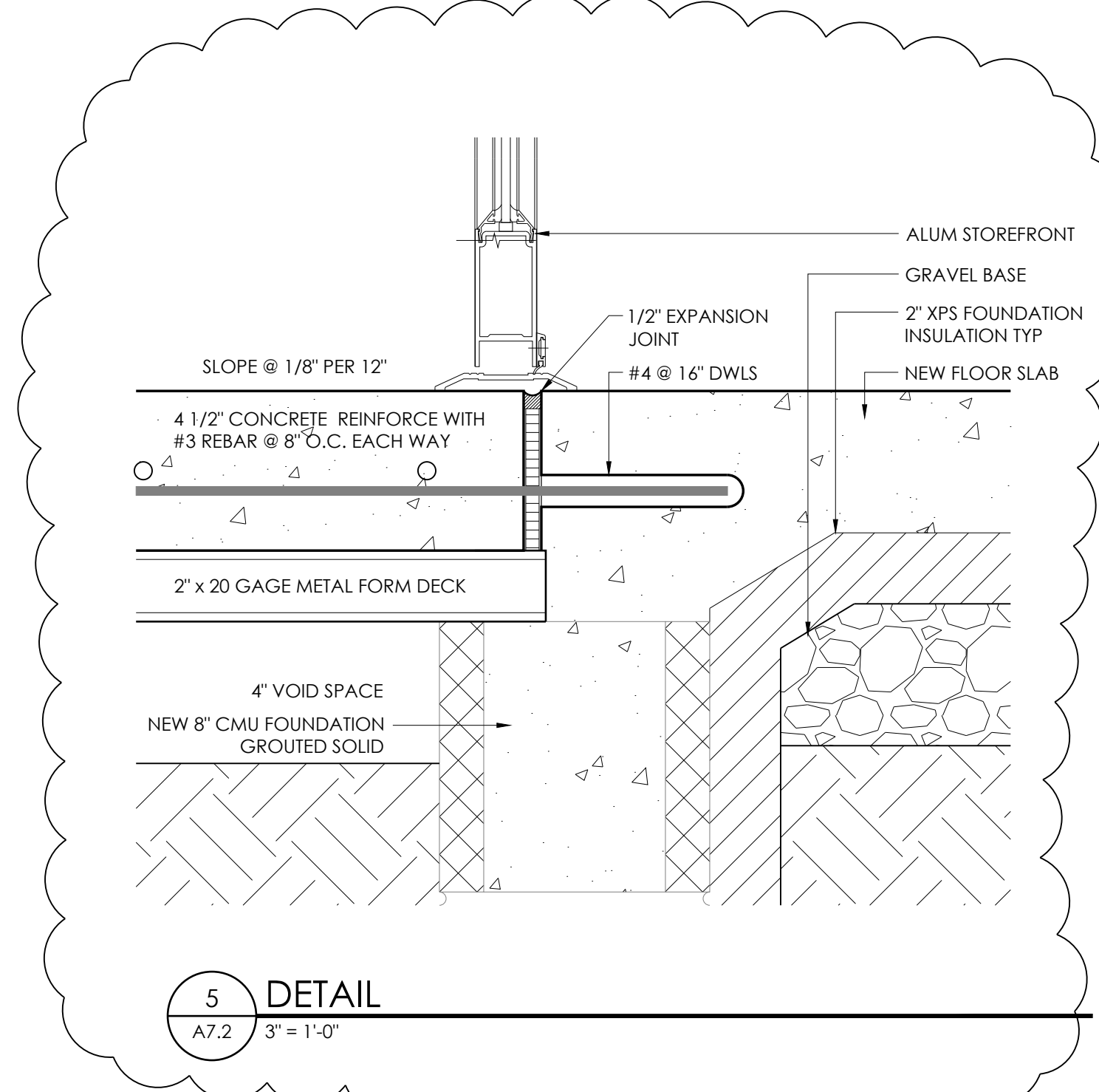
7 DETAIL

A7.2 3" = 1'-0"



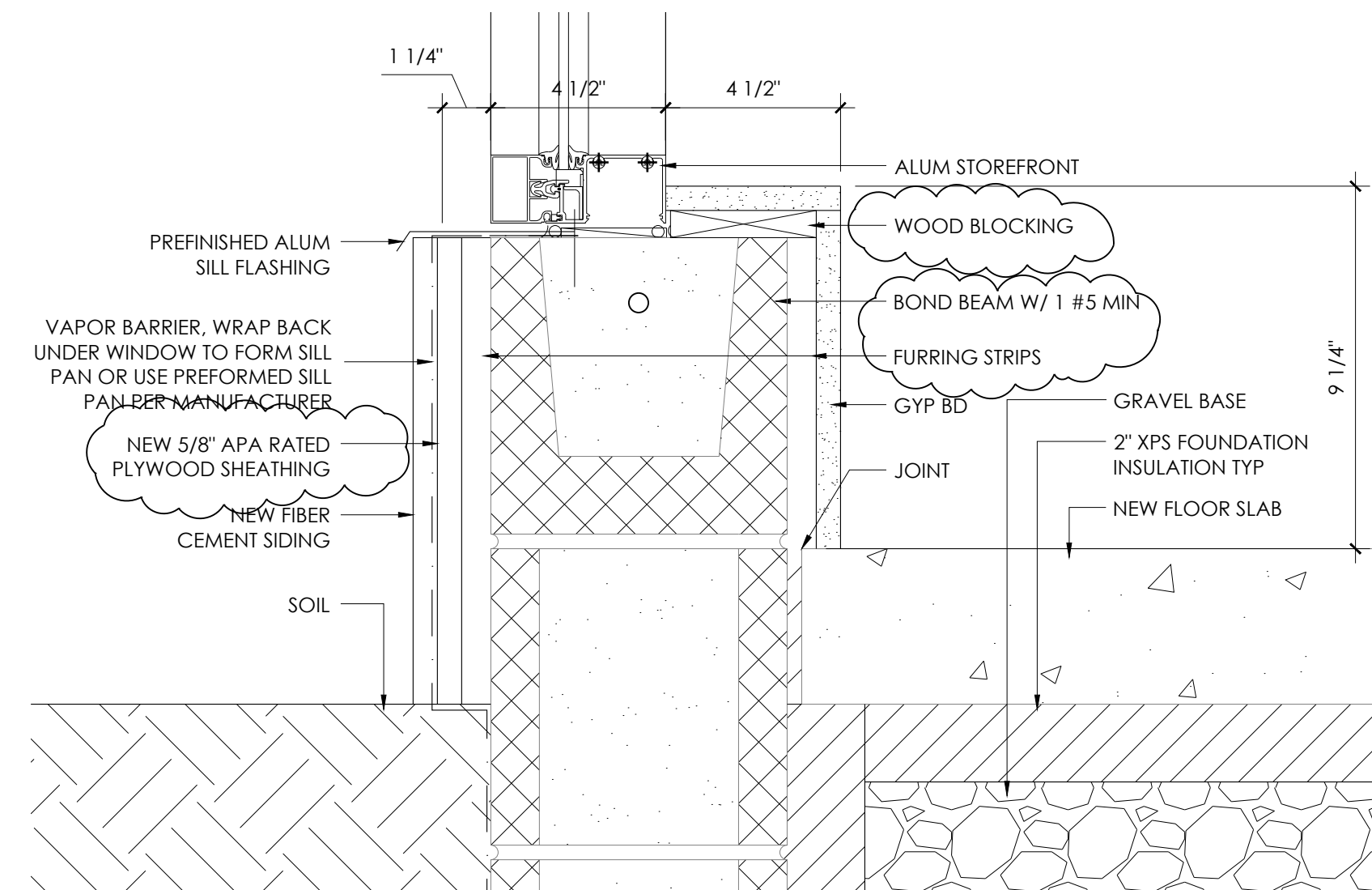
6 DETAIL

A7.2 3" = 1'-0"



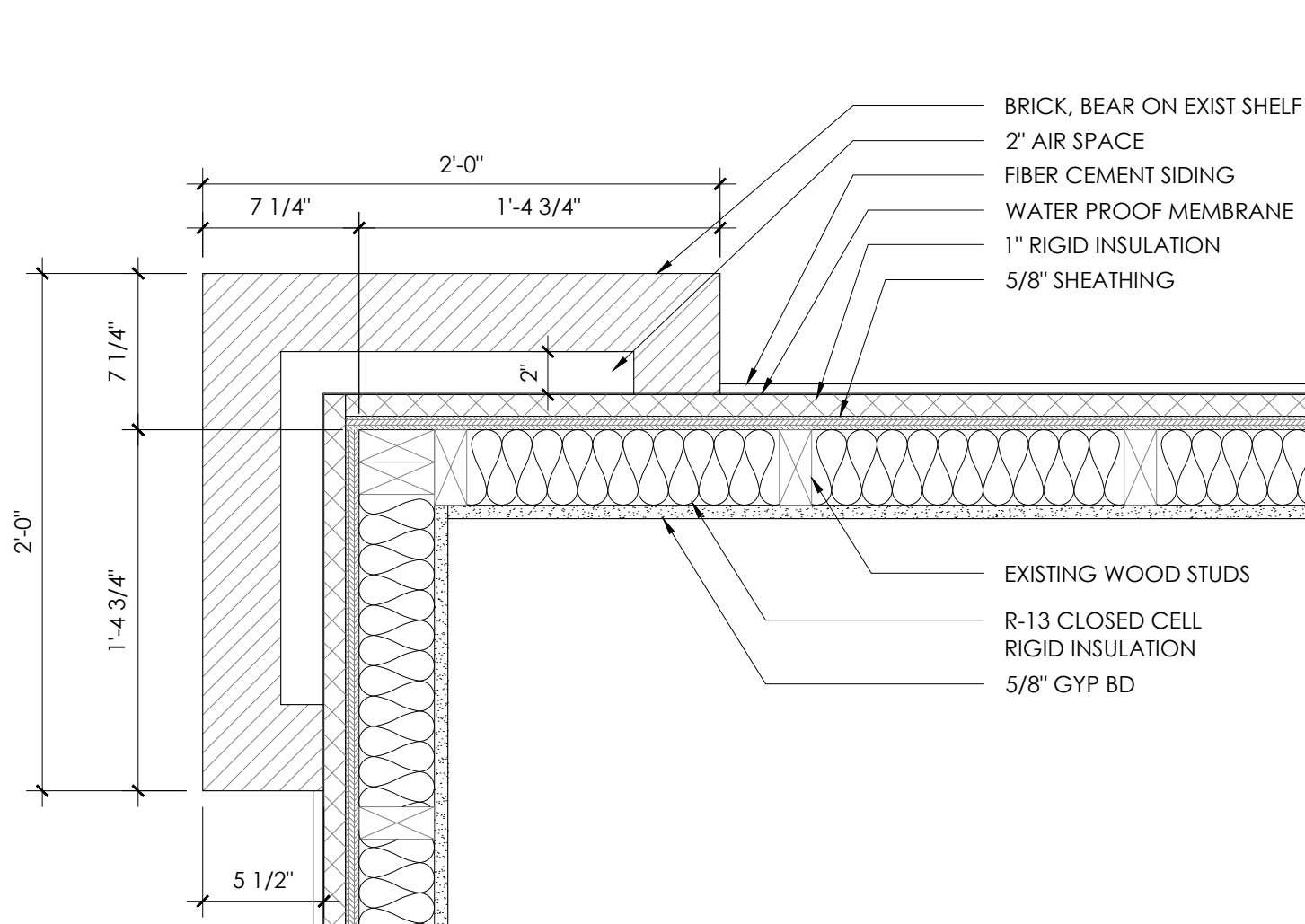
5 DETAIL

A7.2 3" = 1'-0"



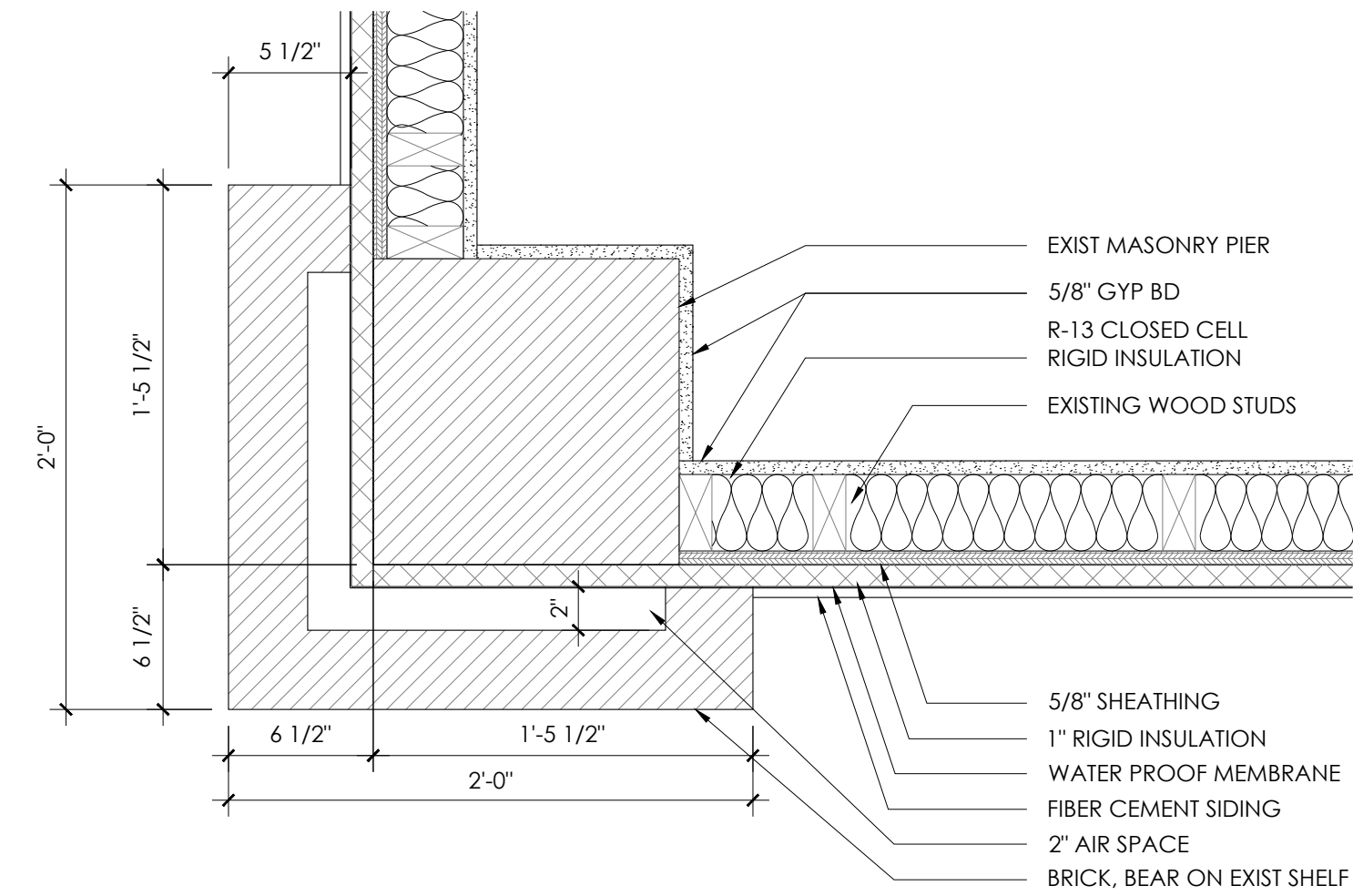
4 DETAIL

A7.2 3" = 1'-0"



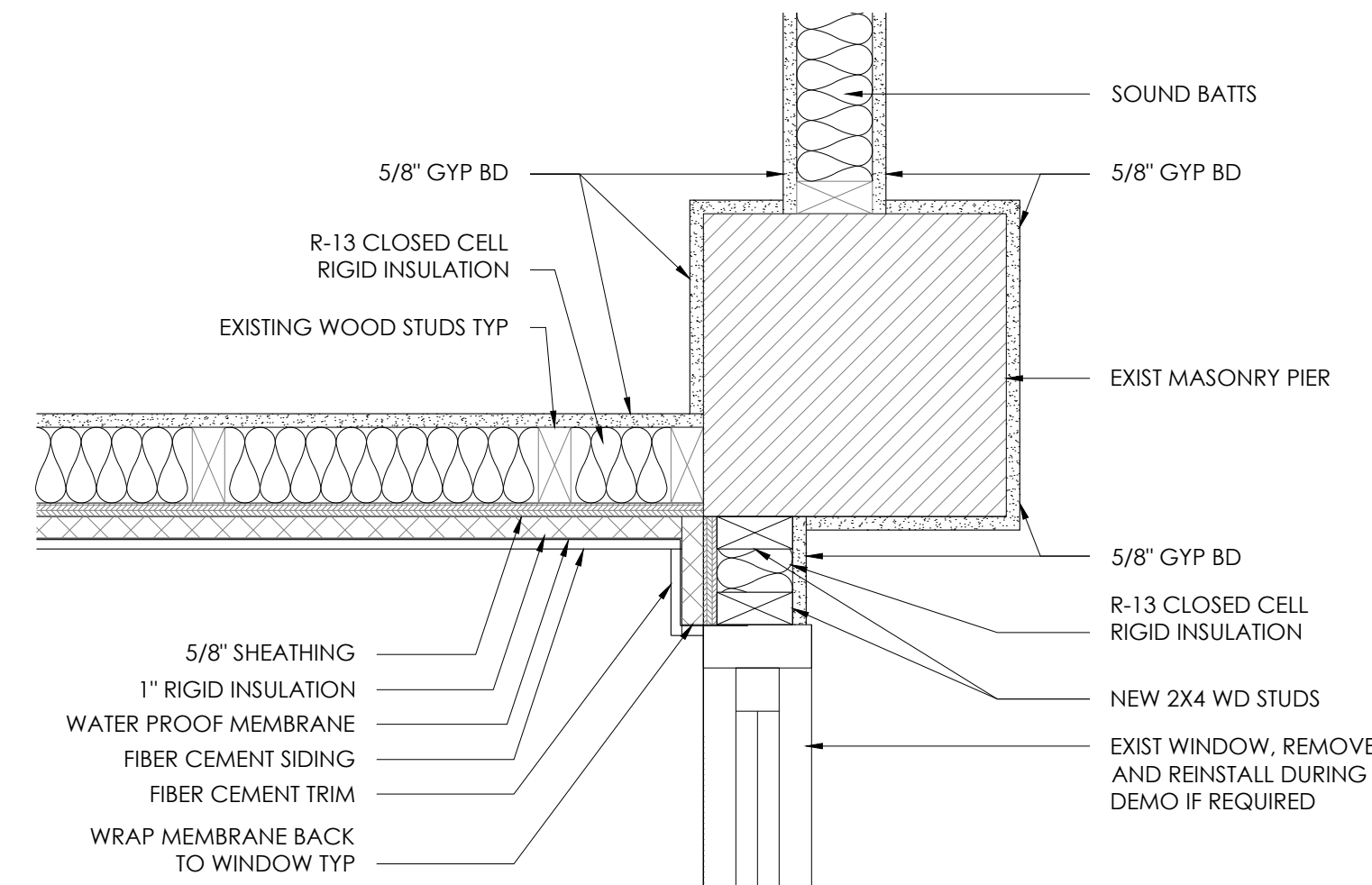
3 PLAN DETAIL

A7.2 3" = 1'-0"



2 PLAN DETAIL

A7.2 3" = 1'-0"



1 PLAN DETAIL

A7.2 3" = 1'-0"

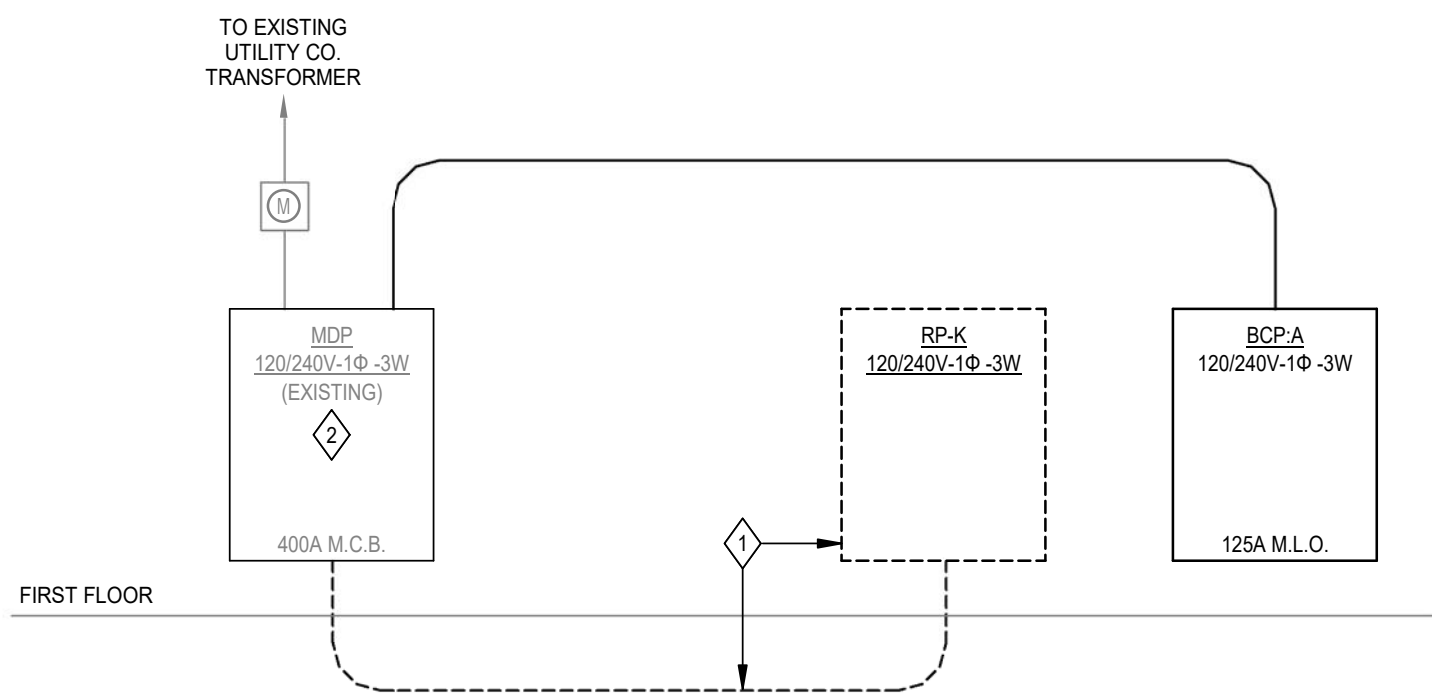


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WIRING DEVICE SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	DUPLEX OR DOUBLE DUPLEX RECEPTACLE, GROUNDING TYPE, NEMA 5-20R, 20A-120V.
	WIRING DEVICE FOR OWNER FURNISHED EQUIPMENT OR EQUIPMENT FURNISHED BY OTHER TRADES. MATCH DEVICE TO PLUG CONNECTOR FOR EQUIPMENT.
	GROUND FAULT INTERRUPTER, BLANK FACE WITH INDICATOR LED AND TEST / RESET PUSH BUTTONS, 20A-120V.
	TELECOMMUNICATIONS OUTLET, 2 1/2" DEEP x 4 11/16" SQUARE BOX WITH 1-GANG PLASTER RING. STUB 1 1/4"C TO ABOVE ACCESSIBLE CEILING OR INTO BUILDING STEEL JOIST SPACE WITH 90° ELBOW AND INSULATED BUSHING. INSTALL BLANK COVER PLATES ON ALL UNUSED OPENINGS TO MATCH WIRING DEVICE COVER PLATES.
	BRANCH CIRCUIT BREAKER PANELBOARD, 120/240V-1Ø-3W. SEE PANELBOARD SCHEDULE.
	MOTOR, HORSEPOWER AND VOLTAGE AS SCHEDULED.
	MANUAL MOTOR SAFETY TOGGLE SWITCH, HORSEPOWER RATED WITH LOCKING HASP.
	OUTDOOR SAFETY DISCONNECT SWITCH WITH SIZE AS INDICATED, NON-FUSED UNLESS NOTED OTHERWISE. FUSED UNITS WILL SHOW FUSE SIZE AS INDICATED WITH REJECTION STYLE FUSE CLIPS

MISCELLANEOUS SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	EQUIPMENT SCHEDULE ITEM, SEE SCHEDULE.
	TELECOMMUNICATIONS CONNECTIVITY, SEE SCHEDULE.
	FEEDER SCHEDULE ITEM, SEE SCHEDULE.
	PLAN NOTE ITEM.
	RISER NOTE ITEM.
	KITCHEN EQUIPMENT SCHEDULE ITEM, SEE SCHEDULE.
	REVISION CALLOUT
	EXISTING DEVICE OR ITEM TO REMAIN
	EXISTING DEVICE OR ITEM TO BE REMOVED
	FUTURE DEVICE OR ITEM
	EXISTING DEVICE OR ITEM TO BE RELOCATED / RELOCATED ITEM.

SECURITY/ACCESS CONTROL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	ACCESS CONTROL SYSTEM PANEL FURNISHED AND INSTALLED BY OWNER. E.C. TO PROVIDE 120V CIRCUIT.
	SECURITY SYSTEM/ACCESS CONTROL DOOR MONITORING CONTACT, FURNISHED BY OTHERS. INTEGRAL TO DOOR/HARDWARE. E.C. SHALL STUB 1/2"C FROM TOP OF DOOR FRAME TO ABOVE ACCESSIBLE CEILING WITH 90° ELBOW AND INSULATED BUSHING.
	ACCESS CONTROL SYSTEM CARD READER, FURNISHED BY OTHERS. E.C. SHALL PROVIDE 1-GANG BOX AND STUB 3/4"C TO ABOVE ACCESSIBLE CEILING WITH 90° ELBOW AND INSULATED BUSHING.
	ACCESS CONTROL SYSTEM ELECTRIC STRIKE LATCH, FURNISHED BY OTHERS. INTEGRAL TO DOOR/HARDWARE. E.C. TO STUB 3/4"C FROM TOP OF DOOR FRAME TO ABOVE ACCESSIBLE CEILING WITH 90° ELBOW AND INSULATED BUSHING.
	CRASH BAR PANIC EXIT DEVICE ALLOW EXIT WHEN SECURITY DOORS ARE LOCKED, MOTOR DRIVEN LATCHING ACTUATOR FOR ACCESS CONTROL, STUB 1/2"C TO CONDUIT JUNCTION BOX ON THE CONTROLLED SIDE OF THE DOOR. ELECTRIC POWER TRANSFER F.B.G.C.
	SECURITY SYSTEM KEY PAD; FLUSH MOUNTED, 44" A.F.F. FURNISHED BY OTHERS. E.C. SHALL PROVIDE 1-GANG BOX AND STUB 3/4"C TO ABOVE ACCESSIBLE CEILING WITH 90° ELBOW AND INSULATED BUSHING.
	VIDEO SURVEILLANCE CAMERA; FURNISHED AND INSTALLED BY OTHERS.



ELECTRICAL RISER DIAGRAM

SCALE: NO SCALE

RISER DIAGRAM NOTES:

- REMOVE EXISTING PANELBOARD AND ASSOCIATED FEEDER/ BRANCH CIRCUIT CONDUCTORS BACK TO MDP.
- INSTALL 125A2P BREAKER IN EXISTING MDP SPACE FOR NEW BCP-A FEEDER. MATCH EXISTING BREAKER TYPE AND INTERRUPTING RATING.

ABBREVIATIONS			
ABBREVIATIONS ARE FOR REFERENCE ONLY AND MAY OR MAY NOT BE USED ELSEWHERE IN CONSTRUCTION DOCUMENTS			
A	AMPERE	I.L.	INTERLOCK
AC	ALTERNATING CURRENT	I.M.C.	INTERMEDIATE-GRADE RIGID METAL CONDUIT
A.C.T.	ACOUSTICAL CEILING TILE	KVA	KILOVOLT-AMPERE
A.F.C.I.	ARC-FAULT CIRCUIT INTERRUPTER (ARC-FAULT PROTECTION)	L.A.D.	LOCATE AS DIRECTED
A.F.F.	MOUNTING HEIGHT ABOVE FINISHED FLOOR	L.F.M.C.	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
A.F.G.	MOUNTING HEIGHT ABOVE FINISHED GRADE	L.R.A.	LOCK ROTOR AMPS
A.H.J.	AUTHORITY HAVING JURISDICTION	LTG.	LIGHTING
A.I.C.	AMP INTERRUPTING CIRCUIT	L.V.	LOW VOLTAGE
AL	ALUMINUM	M.C.	MECHANICAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	M.C.B.	MAIN CIRCUIT BREAKER
B.M.S.	BUILDING MANAGEMENT SYSTEM	M.C.C.	MOTOR CONTROL CENTER
C	CONDUIT	M.H.	MOUNTING HEIGHT, FLOOR TO BOTTOM OF ITEM
CATV	COMMUNITY ACCESS TELEVISION	MIN	MINIMUM
CKT.	CIRCUIT	MISC	MISCELLANEOUS
C.L.	CENTERLINE	M.L.O.	MAIN LUGS ONLY
C.M.	CONSTRUCTION MANAGER	N	NEUTRAL
CU	COPPER	NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
D.D.C.	DIRECT DIGITAL CONTROL	N.F.	NON-FUSED SAFETY DISCONNECT AND/OR COMBINATION STARTER
D.E.S.	DOOR EQUIPMENT SUPPLIER	N.I.C.	WORK NOT IN CONTRACT
DW	DISHWASHER	N.L.	NIGHT LIGHT CIRCUIT FOR CONTINUOUS OPERATION; PROVIDE BREAKER LOCKING STRAP IN 'ON' POSITION
DWG	DRAWING	OCPD	OVERCURRENT PROTECTION DEVICE
D.T.D.T.	DRY TYPE DISTRIBUTION TRANSFORMER	P.C.	PLUMBING CONTRACTOR
EA	EACH	PNL.	PANELBOARD OR PANEL
E.C.	ELECTRICAL CONTRACTOR	P.O.S.	POINT OF SALE
E.M.	EMERGENCY CIRCUIT FOR CONTINUOUS OPERATION; PROVIDE BREAKER LOCKING STRAP IN 'ON' POSITION	REC	RECEPTACLE
E.M.T.	ELECTRICAL METALLIC TUBING.	REF	REFRIGERATOR
E.N.T.	ELECTRICAL NON-METALLIC TUBING.	R.G.S.	RIGID GALVANIZED STEEL
E.W.C.	ELECTRIC WATER COOLER	R.N.C.	RIGID NON-METALLIC CONDUIT
EX	EXISTING	S.E.	SERVICE ENTRANCE
FACP	FIRE ALARM CONTROL PANEL	S.E.S.	SERVICE ENTRANCE SWITCH / SWITCHBOARD
F.B.O.	FURNISHED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	S.M.R.	SURFACE MOUNTED RACEWAY
F.B.X.X.	FURNISHED BY 'XX' INSTALLED BY ELECTRICAL CONTRACTOR	SQFT.	SQUARE FOOT
FLA	FULL LOAD AMPS	STD.	STANDARD
FLUOR.	FLUORESCENT	STP	SHIELDED TWISTED PAIR
F.P.C.	FIRE PROTECTION CONTRACTOR	SUSP. CLG.	SUSPENDED CEILING
FRZ	FREEZER	T.C.	TELECOMMUNICATIONS CONTRACTOR
G	GROUND	T.C.C.	TEMPERATURE CONTROL CONTRACTOR
GD	GARBAGE DISPOSAL	TV	TELEVISION
G.C.	GENERAL CONTRACTOR	U.G.	BELOW GRADE (UNDERGROUND)
G.F.I.C.	GROUND FAULT INTERRUPTER CIRCUIT (GROUND FAULT PROTECTION)	U.N.O.	UNLESS NOTED OTHERWISE
G.W.B.	GYPSUM WALL BOARD	UPS	UNINTERRUPTED POWER SUPPLY
G.R.C.	GALVANIZED RIGID CONDUIT	UTP	UNSHIELDED TWISTED PAIR
HP	HORSEPOWER	V	VOLTS
HVAC	HEATING, VENTILATING, AIR CONDITIONING	VA	VOLT-AMPERE
HZ	HERTZ	V.L.	VERIFY LOCATION WITH OWNER
I.G.	ISOLATED GROUND	W	WATTS
		W.I.C.	WORK IN CONTRACT
		W.P.	WEATHERPROOF ITEM OR DEVICE
		XFMR	TRANSFORMER

PANELBOARD: BCP-A						LOCATION: UTILITY 106					
MOUNTING: SURFACE		SUPPLY FROM: MDP		A.I.C. RATING: 10 KA				MAINS RATING: 125 A			
ENCLOSURE: NEMA TYPE 1		VOLTAGE: 120/240V-1Ø-3W		MAINS TYPE:				M.L.O.			
FEEDER: 3Ø1 & 1Ø6S -1 1/4"											
NOTE	CKT	LOAD DESCRIPTION	BREAKER	A	B	A	B	BREAKER	LOAD DESCRIPTION	CKT	NOTE
	A-1	LTG ROOM 102, 101, 103	20 A1P	579		720		20 A1P	REC CHRISTINA'S OFFICE 103	A-2	
	A-3	LTG ROOM 104, 106, 105, 100	20 A1P		467		900	20 A1P	REC CHRISTINA'S OFFICE 103	A-4	
	A-5	REC ROOM 102 (COPIER)	20 A1P	1000		500		20 A1P	REC WORK/ BREAK 102	A-6	
	A-7	REC WORK/ BREAK 102	20 A1P		500		500	20 A1P	REC WORK/ BREAK 102	A-8	
	A-9	REC WORK/ BREAK 102	20 A1P	500		1200		20 A1P	REC - GARBAGE DISPOSAL	A-10	
	A-11	REC WORK/ BREAK 102 (DW)	20 A1P		1200		500	20 A1P	REC WORK/ BREAK 102	A-12	
	A-13	REC WORK/ BREAK 102	20 A1P	500		500		20 A1P	REC WORK/ BREAK 102 (REFRIG)	A-14	
	A-15	REC RESTROOM 104/ EF-1	20 A1P		180		1040	20 A1P	REC RECEPTION 101	A-16	
	A-17	REC ANDY'S OFFICE 105, EXTERIOR	20 A1P	720		360		20 A1P	REC UTILITY 106, EXTERIOR	A-18	
	A-19	REC ENTRANCE VESTIBULE 100	20 A1P		180		540	20 A1P	REC ANDY'S OFFICE 105	A-20	
	A-21	SPARE	20 A1P	0		0		20 A1P	SPARE	A-22	
	A-23	SPARE	20 A1P	0		0		20 A1P	SPARE	A-24	
	A-25	SPARE	20 A1P	0		0		20 A1P	SPARE	A-26	
	A-27	SPARE	20 A1P	0		0		20 A1P	SPARE	A-28	
--	A-29	SPACE	--		0		0	--	SPACE	A-30	--
	A-31	SPACE	--		0		0	--	SPACE	A-32	--
--	A-33	SPACE	--								
	A-35	AC - CU-1	30 A2P	1955	1095	1250	1250	15 A1P	HVAC - F-1	A-34	
	A-37							20 A2P	EW-1	A-36	
	A-39	HTG - CUH-1	20 A2P		1008	1008	1250	20 A2P	EW-2	A-40	
	A-41				1008	1250				A-42	
SUB-TOTAL PER Ø (KVA):				ØA		ØB		PANELBOARD OPTIONS:			
				12962 VA		11470 VA					
				108 A		96 A					
LOAD CLASSIFICATION		CONNECTED	DEMAND FACTOR		ESTIMATED		PANEL TOTALS				
HVAC		1040 VA	80.00%		832 VA		TOTAL CONNECTED LOAD: 24432 VA				
LTG		926 VA	125.00%		1158 VA		TOTAL ESTIMATED LOAD: 21500 VA				
REC		11540 VA	93.33%		10770 VA		TOTAL CONNECTED: 102 A				
AC		3910 VA	80.00%		3128 VA		TOTAL ESTIMATED DEMAND: 90 A				
HTG		2016 VA	80.00%		1613 VA						
WTR-HTG		5000 VA	80.00%		4000 VA						

BRANCH CIRCUIT PANELBOARD KEY NOTES

BLANK = STANDARD BREAKER

L = LOCKING STRAP

G = GFCI

S = SHUNT TRIP

A = AFIC

H = HACR

X = EXISTING BREAKER

R = REMOVE AND REPLACE EXISTING BREAKER

N = INSTALL NEW BREAKER IN EXISTING PANEL SPACE. MATCH EXISTING TYPE AND INTERRUPTING RATING.

PANELBOARD OPTIONS

- NEMA 250 ENCLOSURE RATING:
 - FOR TYPE 1: INDOOR DRY AND CLEAN LOCATION.
 - FOR TYPE 3R: OUTDOOR LOCATION.
 - FOR TYPE 4X: STAINLESS STEEL - WET OR DAMP INDOOR AND OUTDOOR LOCATIONS.
 - FOR TYPE 4: WET OR DAMP INDOOR AND OUTDOOR LOCATIONS.
 - FOR TYPE 12: INDOOR LOCATION SUBJECT TO DUST, FALLING DIRT, AND DRIPPING NONCORROSIVE LIQUIDS.
- PANELBOARD AND BRANCH BREAKERS SHALL BE U.L. SERIES LISTED WITH THE UPSTREAM O.C.P.D. TO ACHIEVE THE SPECIFIED INTERRUPTING RATING WITH A COMBINATION RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT AT THE ELECTRICAL SERVICE; PROVIDE PANELBOARD MAIN BREAKER IF REQUIRED.

RECEPTACLE TYPE ABBREVIATIONS	
C	CEILING MOUNTED OUTLET.
G	GFIC OUTLET OR GFIC PROTECTED OUTLET.
P	PLUG LOAD AUTOMATICALLY CONTROLLED DUPLEX RECEPTACLE, HALF OF RECEPTACLE (1-OUTLET) TO BE RELAY CONTROLLED BY AUTOMATIC PLUG LOAD CONTROLLER.
S	OUTLET WIRED FOR BOTTOM HALF RECEPTACLE OF DUPLEX SWITCHED WITH WALL SWITCH.
T	TAMPER RESISTANT OUTLET.
U	DUPLEX RECEPTACLE WITH USB TYPE A AND C CHARGING PORT OUTLETS; HUBBELL #USB15X2xx OR EQUAL.
WP	WEATHERPROOF GROUND FAULT INTERRUPTER OUTLET, LISTED WEATHER RESISTANT, (POLYCARBONITE) (CAST) "WHILE IN USE" COVER, FLUSH MOUNTED WITH RECESSED BOX IN THE BUILDING EXTERIOR FINISH.
WP1	WEATHERPROOF GROUND FAULT INTERRUPTER OUTLET, LISTED WEATHER RESISTANT DIE-CAST GASKETED SELF CLOSING COVER; FLUSH MOUNTED WITH RECESSED BOX IN THE BUILDING EXTERIOR FINISH.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE													
MARK	DESCRIPTION	LOCATION	LOAD CLASS	EQUIPMENT NAME PLATE						LOAD	FED FROM	FEEDER SIZE	NOTE
				VOLTAGE	KW	HP	FLA	MCA	MOP				
CU-1	CONDENSING UNIT	OUTSIDE	AC	240-1Ø			17	24	30	3910 VA	BCP-A	2#10 & 1#10G - 3/4"C	
CUH-1	CEILING UNIT HEATER	ENTRANCE VESTIBULE 100	HTG	240-1Ø	2					2016 VA	BCP-A	2#12 & 1#12G - 3/4"C	
EF	EXHAUST FAN	RESTROOM 104	HVAC	240-1Ø	2.5		10.4		20	2500 VA	BCP-A	2#12 & 1#12G - 3/4"C	
EW-1	ELECTRIC WATER HEATER	UTILITY 106	WTR-HTG	240-1Ø	2.5		10.4		20	2500 VA	BCP-A	2#12 & 1#12G - 3/4"C	
EW-2	ELECTRIC WATER HEATER	WORK/ BREAK 102	WTR-HTG	240-1Ø	2.5		10.4		20	2500 VA	BCP-A	2#12 & 1#12G - 3/4"C	
F-1	FURNACE	UTILITY 106	HVAC	120-1Ø		1/2	9.8		15	920 VA	BCP-A	2#12 & 1#12G - 3/4"C	

MECHANICAL EQUIPMENT SCHEDULE NOTES - GENERAL

A. DISCONNECTS/STARTERS FURNISHED WITH EQUIPMENT UNLESS NOTED/SHOWN ON FLOOR PLANS / OTHERWISE.

B. COORDINATE FINAL CONNECTION / ROUGH-IN REQUIREMENTS WITH M.C.

C. PROVIDE WIRING CONNECTIONS BETWEEN THE DISCONNECT SWITCH / VFD / CONTROLLER AND THE ASSOCIATED EQUIPMENT.

D. ALL CONNECTIONS TO MECHANICAL EQUIPMENT SHALL BE MADE WITH FLEXIBLE CONDUIT (WP WHERE REQUIRED), MAXIMUM 3' IN LENGTH, TO PREVENT SOUND AND VIBRATION TRANSMISSION TO THE STRUCTURE.

MECHANICAL EQUIPMENT SCHEDULE NOTES - SPECIFIC

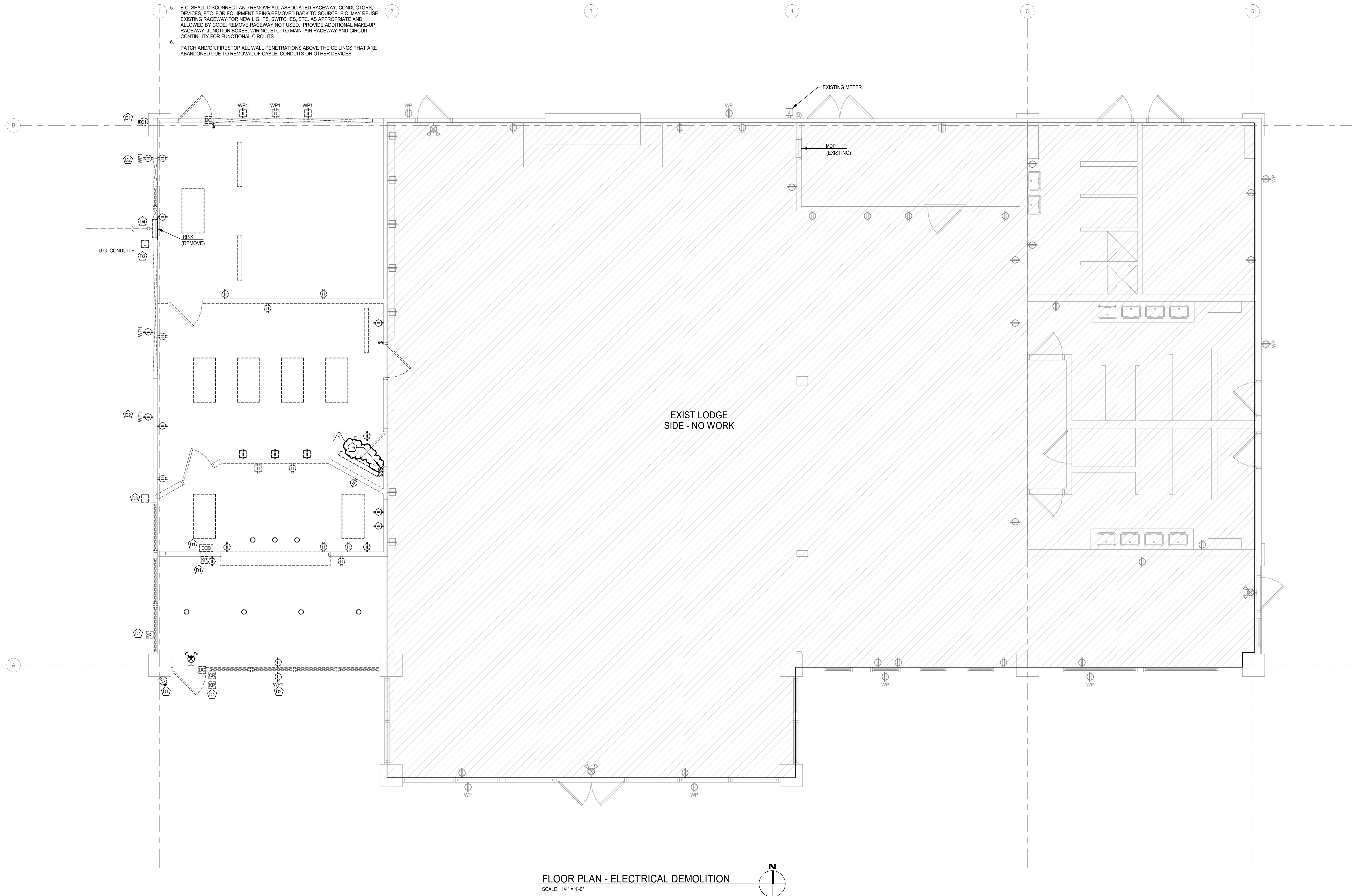
1. EXHAUST FAN TO BE CONTROLLED WITH LIGHT FIXTURES IN SPACE. PROVIDE AUXILIARY HORSEPOWER RATED RELAY WITH AUTOMATIC LIGHTING CONTROLS AS REQUIRED.

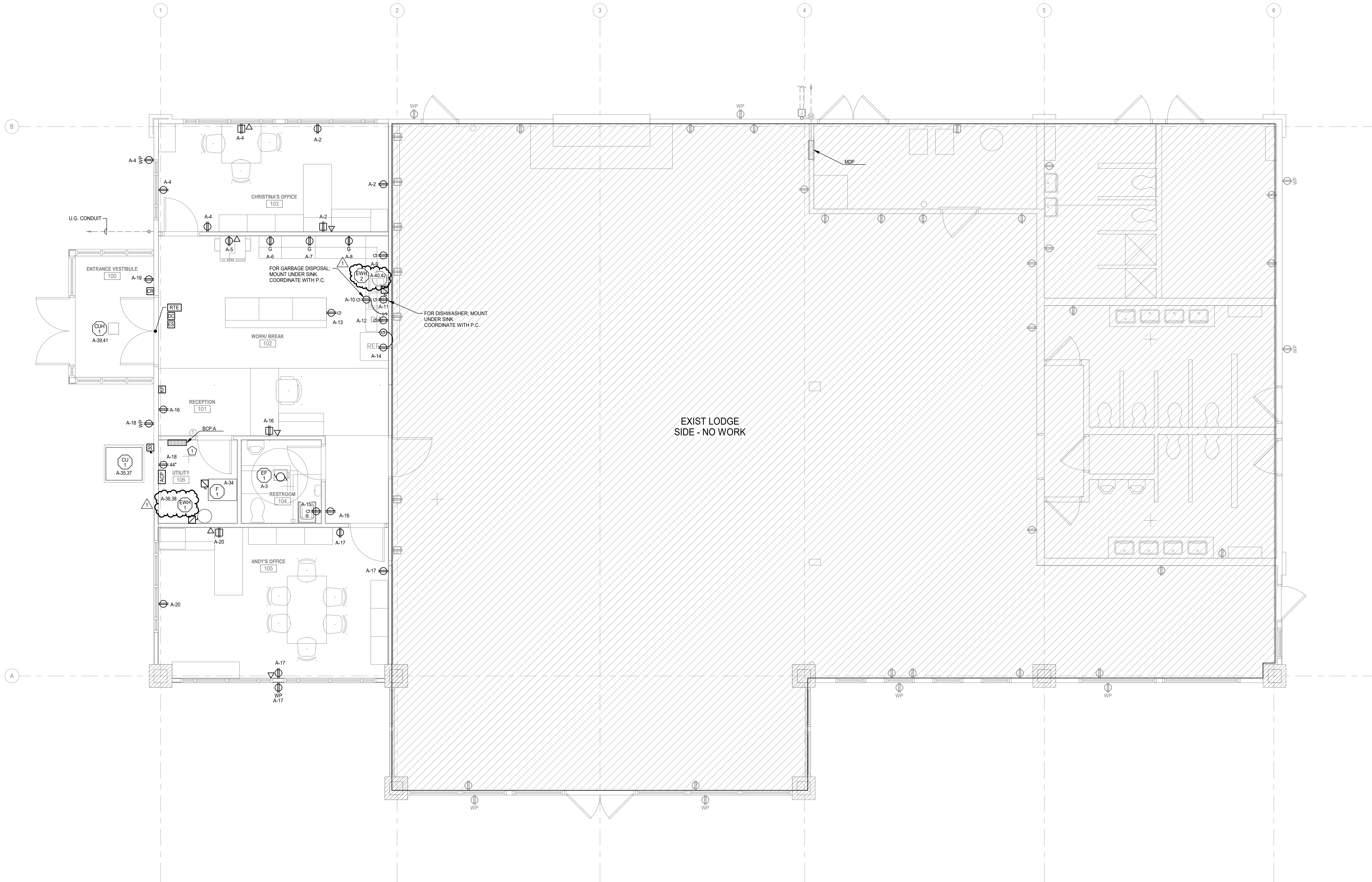
BRANCH CIRCUIT WIRE SIZING TABLE													
LOAD CURRENT	SUPPLY VOLTAGE	MAXIMUM LENGTH FOR 3% VOLTAGE DROP FOR COPPER CONDUCTORS				LOAD CURRENT	SUPPLY VOLTAGE	MAXIMUM LENGTH FOR 3% VOLTAGE DROP FOR COPPER CONDUCTORS					
		AMPS	VOLTS	FEET				AMPS	VOLTS	FEET			
				12 AWG	10 AWG	8 AWG	6 AWG			12 AWG	10 AWG	8 AWG	6 AWG
	120	303	483	771	1222			120	60	96	154	244	
	208	525	838	1336	2118			208	105	167	273	433	
	240	606	967	1542	2443	15	240	121	193	308	488		
	277	699	1116	1780	2820		277	139	223	356	564		
	480	1212	1935	3084	4867		480	242	387	616	977		
6	120	151	241	385	611			120	45	72	115	183	
	208	262	419	668	1059		208	78	125	200	317		
	240	303	483	771	1222	20	240	90	145	231	366		
	277	349	558	890	1410		277	104	167	267	423		
	480	606	967	1542	2443		480	181	290	462	733		
9	120	101	161	257	407			120	-	58	92	146	
	208	175	279	445	706		208	-	100	160	254		
	240	202	322	514	814	25	240	-	116	185	293		
	277	233	372	593	940		277	-	134	213	338		
	480	404	645	1028	1629		480	-	232	370	586		
12	120	75	120	192	305			120	-	46	77	122	
	208	129	208	334	529		208	-	83	133	211		
	240	151	241	385	611	30	240	-	98	154	244		
	277	174	279	445	705		277	-	111	178	282		
	480	303	483	771	1222		480	-	193	308	488		

1. DISCONNECT AND REMOVE ALL DEVICES, FIXTURES, JUNCTION BOXES, ETC. SHOWN WITH A DARK DASHED LINE WITHIN THE AREA OF PROPOSED DEMOLITION WORK.
2. ITEMS SHOWN ON THE DRAWINGS ARE A COMPOSITE FROM SEVERAL DRAWINGS OF PREVIOUS PROJECTS AND FIELD INVESTIGATIONS. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW EACH AND EVERY ITEM INVOLVED IN THE DEMOLITION. IT HAS BEEN PREPARED TO ASSIST THE CONTRACTOR IN ESTIMATING THE COST OF THE PROJECT.
3. THE INTENT OF THIS PROJECT IS TO REMOVE ALL EQUIPMENT, WIRING, RACEWAY, ETC. NO LONGER IN SERVICE AND NOT REQUIRED FOR THE ULTIMATE INSTALLATION WITHIN THE CONFINES OF THE PROPOSED WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVESTIGATE THE SITE.
4. WHERE DEMOLITION OF EXISTING SYSTEMS OR EQUIPMENT CAUSES RELATED AND ANCILLARY DAMAGE TO OTHER ITEMS INCLUDING THE ADJACENT STRUCTURE, CEILING OR FLOOR, THESE DAMAGE ARE ITEMS THAT WILL BE FULLY REPAIRED OR REPLACED TO RETURN THE FACILITY TO THE CONDITIONS BEFORE THE DEMOLITION WORK.
5. E.C. SHALL DISCONNECT AND REMOVE ALL ASSOCIATED RACEWAY, CONDUCTORS, DEVICES, ETC. FOR EQUIPMENT BEING REMOVED BACK TO SOURCE. E.C. MAY REUSE EXISTING RACEWAY FOR NEW LIGHTS, SWITCHES, ETC. AS APPROPRIATE AND IDENTIFY THE CODE. E.C. MAY REMOVE RACEWAY NOT USED. PROVIDE ADDITIONAL MAKEUP RACEWAY, JUNCTION BOXES, WIRING, ETC. TO MAINTAIN RACEWAY AND CIRCUIT CONTINUITY FOR FUNCTIONAL CIRCUITS.
6. PATCH AND/OR FIRESTOP ALL WALL PENETRATIONS ABOVE THE CEILINGS THAT ARE ABANDONED DUE TO REMOVAL OF CABLE, CONDUITS OR OTHER DEVICES.

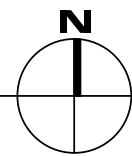
1. EXISTING SECURITY SYSTEM DEVICES TO BE REMOVED BY OWNERS SECURITY VENDOR. E.C. TO COORDINATE REMOVALS WITH OWNER/ VENDOR.
2. PROVIDE NEW WP RECEPTACLE AND CIRCUIT PER NEW FLOOR PLAN.
3. REMOVE EXISTING SURFACE SFOFIT LIGHT.
4. REMOVE EXTERIOR LB FITTING AND CONDUIT TO BELOW GRADE.

EXISTING LIGHT SWITCHES SERVING LODGE SHEDS. REWORK SWITCHING TO OPPOSITE SIDE OF WALL ON LODGE SIDE. REMOVE ABANDONED SWITCHES/ CONDUCTORS AND COMBINE ZONES WHERE ALLOWED BY CIRCUITING LOAD. PROVIDE NEW SWITCHES/ FACE PLATES.



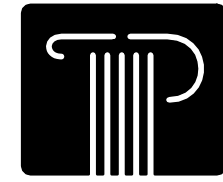


FLOOR PLAN - POWER AND SYSTEMS
SCALE: 1/4" = 1'-0"



KEYED PLAN NOTES:

1. FEED RP-A FROM PANEL MDP. ROUTE CABLE IN SPACE BETWEEN CEILING AND ROOF UTILIZING ACCESS HATCHES AND ATTIC SPACES. COORDINATE WITH C.M. AND OWNER.



THOMAS PORTER
ARCHITECTS

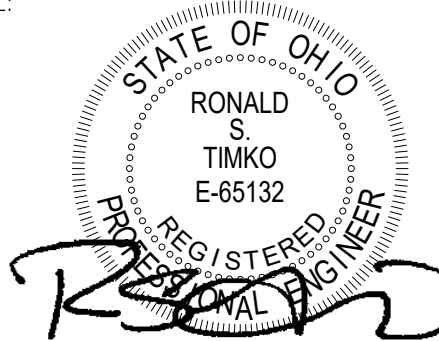
8 North St. Clair - Toledo, Ohio 43604-1028
T 419.243.2400
www.thomasporterarchitects.com

CONSULTANTS:



mda #20118
Mechanical and Electrical Engineers
1415 Holland Road
Maumee, Ohio 43537
Phone: (419) 893-3141
Fax: (419) 893-0687

SEAL:



NOT FOR CONSTRUCTION UNLESS SIGNED & SEALED

SANDUSKY PARKS
RIVER CLIFF OFFICE RENOVATION

1329 TIFFIN ST.
FREMONT, OH 43420

PROJECT TITLE:

ISSUE OR REVISION:

11/20/2020	ADDENDUM #2
11/06/2020	ISSUED FOR BIDDING
DATE	ISSUE / REVISION

DESIGNED: RST

DRAWN: JRWM

CHECKED: RST

TPA COMMISSION NUMBER: 18051

DRAWING TITLE:

FLOOR PLAN -
POWER AND
SYSTEMS

DRAWING NUMBER:

E4.0