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BID ADDENDUM #1

Nanuet Union Free School District
103 Church Street
Nanuet, NY 10954

Nanuet High School Elevator Addition

Date: August 19, 2022

NOTICE TO CONTRACTORS

This Addendum issued prior to receipt of Bid shall and does hereby become a part of the Construction Documents for the above project.

All principal Contractors shall be responsible for seeing that their Subcontractors are properly apprised of the contents of this Addendum.

All information contained in this Addendum shall supersede and shall take precedence over any conflicting information in the original Bidding Documents dated August 2, 2022. and all previous addenda.

All Contractors shall acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may subject Bidder to disqualification.

CHANGES TO SPECIFICATIONS:

1. Add Specification Section 07 56 00.13 – FLUID-APPLIED MEMBRANE ROOFING INSULATED
    a. This specification section has been added to replace the EPDM roofing previously proposed.

2. Add Specification Section 07 71 00 – ROOF SPECIALTIES
    a. This specification section has been added to accompany the Fluid Applied Membrane Roofing Insulated specification added.

3. Replace Specification Section – 07 62 00–SHEET METAL FLASHING AND TRIM

4. Remove Specification Section – EPDM ROOFING

CLARIFICATIONS:

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1. Pleas provide contact information for the current BMS service contractor for the building.
    a. **Response:** The BMS system is Siemens and contact is Joy Slaughter. Telephone #973-396-4162 y.slaughter@siemens.com

REVISIONS TO DRAWINGS:

ARCHITECTURAL

1. HSE-A104 ENLARGED FLOOR PLANS
    A. Detail A13 Updated to note Alphaguard PUMA Roofing System

2. HSE-A200 ELEVATIONS
    A. Detail A1 Updated to note Alphaguard PUMA Roofing System
    B. Detail A7 Updated to note Alphaguard PUMA Roofing System

3. HSE-A300 SECTIONS
    A. Detail A1 Updated to note Alphaguard PUMA Roofing System Assembly
    B. Detail A8 Updated to note Alphaguard PUMA Roofing System

4. HSE-A500 DETAILS
    A. Detail F1 New Detail to show Alphaguard PUMA Roofing System
    B. Detail K1 Updated Detail with Alphaguard PUMA Roofing System at Parapet
    C. Detail J6 Updated Detail with Alphaguard PUMA Roofing System at connection to existing building

ELECTRICAL

1. Drawings ES-101: ELECTRICAL PLANS
    A. Relocate one of the existing building mounted cameras as shown on the revised drawing

ENCLOSURES:

1. SPEC SECTION- 07 56 00.13 – FLUID-APPLIED MEMBRANE ROOFING INSUALTED
2. SPEC SECTION- 07 71 00 – ROOF SPECIALTIES
3. SPEC SECTION- 07 62 00–SHEET METAL FLASHING AND TRIM

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SHEETS

GENERAL	CIVIL	STRUCT	ARCH	MECH	ELEC	PLUMB	FIRE PROT
			HSE-A104		HS-E101		
			HSE-A200				
			HSE-A300				
			HSE-A500				

END OF BID ADDENDUM No. 1

SECTION 075600.13 - FLUID-APPLIED MEMBRANE ROOFING, INSULATED

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes fluid-applied roof membrane system on insulated metal deck, consisting of the following:

1. Substrate board.
2. Roof insulation and cover board.
3. Base-ply sheet.
4. Application of reinforced fluid-applied polyurethane-methacrylate roof membrane and membrane flashings.

B. Related Information:

1. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking and nailers.
2. Division 07 Section "Sheet Metal Flashing and Trim" for formed metal roof flashings, expansion joints, and roof edge metal.

1.2 ROOFING CONFERENCES

A. Roofing Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to roofing system.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative if applicable, roofing materials manufacturer's representative, roofing Installer including project manager and foreman, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.
2. Review methods and procedures related to preparation, including membrane roofing system manufacturer's written instructions.
3. Review drawings and specifications.
4. Review temporary protection requirements for existing roofing system that is to remain, during and after installation.
5. Review roof drainage during each stage of roofing and review roof drain plugging and plug removal procedures.
6. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

7. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect re-coating.

8. Review HVAC shutdown and sealing of air intakes.

9. Review shutdown of fire-suppression, -protection, and -alarm and -detection systems.

10. Review procedures for asbestos removal or unexpected discovery of asbestos-containing materials.

11. Review governing regulations and requirements for insurance and certificates if applicable.

12. Review existing conditions that may require notification of Owner before proceeding.

1.3 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in applicable edition of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product specified.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Provide roof plan showing orientation and types of roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened components.

1. Base flashings and terminations.

2. Tapered insulation, including slopes.

3. Crickets, saddles, and tapered edge strips, including slopes.

C. Samples for Verification: For the following products:

1. 1-by-3-inch sample of fluid applied membrane.

2. 8-by-10-inch sample of SBS-modified base ply.

3. 4-by-4-inch sample of insulation and cover board.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

B. Qualification Data: For Installer & Roof Inspector.

1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty and Manufacturer's Roof Inspector.

C. Warranties: Unexecuted sample copies of special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: To include in maintenance manuals.

B. Warranties: Executed copies of approved warranty forms.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and the following:

1. Qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.

B. Manufacturer Qualifications: Approved manufacturer listed in this Section, with minimum five years' experience in manufacture of specified products in successful use in similar applications.

1. Approval of Other Manufacturers and Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:

a. Product data, including certified independent test data indicating compliance with requirements.

b. Samples of each component.

c. Sample submittal from similar project.

d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.

e. Sample warranty.

C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:

1. An authorized full-time technical employee of the manufacturer.

2. An independent party certified as a Registered Roof Observer by the International Institute of Building Enclosure Consultants (formerly the Roof Consultants Institute) retained by the Contractor or the Manufacturer and approved by the Manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Handle and store roofing materials, and place equipment in a manner to avoid significant or permanent damage to deck or structural supporting members.

C. Protect materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting.

1.9 PROJECT / FIELD CONDITIONS

A. Protect building, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roofing operations.

B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

C. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

1. Store all materials prior to application at temperatures between 60 and 90 deg. F (16 and 32 deg C).

2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer. Do not apply materials when air temperature is below 50 or above 110 deg. F (10 or above 43 deg C).

3. Do not apply roofing in snow, rain, fog, or mist.

D. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

E. Owner will occupy portions of building immediately below roofing area. Conduct roofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

1.10 WARRANTY

A. Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.

1. Form of Warranty: Manufacturer's standard warranty form.

2. Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.

3. Warranty Period: 20 years from date of completion.

B. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.

1. Inspections to occur in following years: 2, 5, 10, 15 following completion.

C. Installer Warranty: Installer's warranty signed by Installer, as follows.

1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.

2. Scope of Warranty: Work of this Section.

3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Inc., www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products or comparable products of one of the following.

1. Tremco CPG Inc., **Alphaguard PUMA** Basis-of-design.

2. Kemper.

3. Henry.

B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General: Provide roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.

2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/D3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design: Provide roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency in accordance with ANSI/FM 4474, UL 580, or UL 1897, and to resist uplift pressures.

1. All Zones (Corner, Perimeter, and Field-of-Roof) Uplift Pressures: As indicated on Drawings.

D. SPRI Wind Design Standard: Manufacture and install roof edge flashings tested according to ANSI/SPRI ES-1.

1. Design Pressure: As indicated on Drawings.

E. Flashings: Comply with requirements of Division 07 Sections "Sheet Metal Flashing and Trim" and "Manufactured Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:

1. FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings.

2. FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components.

3. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.

4. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.

F. Exterior Fire-Test Exposure: ASTM E108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.

2.3 MATERIALS

A. General: Roofing materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.

B. Temporary Roofing Materials: Selection of materials and design of temporary roofing is responsibility of Contractor.

C. General: Provide adhesive and sealant materials recommended by roofing manufacturer for intended use and compatible with built-up roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.4 SHEET MATERIALS

A. Base-Ply Sheet:

1. SBS-modified asphalt-coated fiberglass-reinforced sheet, ASTM D6163 Type I, II or III, Grade S.

a. Tensile Strength at 0 deg. F (18 deg. C), minimum, ASTM D5147: Machine direction, 120 lbf/in; Cross machine direction, 100 lbf/in.

b. Elongation at 0 deg. F (-18 deg. C), minimum, ASTM D5147: Machine direction, 3.0 percent; Cross machine direction, 3.5 percent.

c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction 100 lbf; Cross machine direction, 80 lbf.

d. Low Temperature Flexibility, minimum, ASTM D5147: 0 deg. F (-18 deg. C).

e. Thickness, minimum, ASTM D5147: 0.118 inch (3.0 mm).

2.5 FLUID-APPLIED ROOFING MEMBRANE

A. Polyurethane Elastomeric Fluid-Applied System: Two-coat reinforced fluid-applied roofing membrane formulated for application over prepared existing roofing substrate.

1. Field Base Coat:

a. Polyurethane-modified methyl methacrylate reinforced roof coating system base coat, two-part moisture-curing for use with a compatible top coat.

1) Basis of design product: Tremco, AlphaGuard PUMA Base Coat.

2) Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.

3) Tensile Strength, ASTM D5147: 175 lbf/in (31 N/mm).

4) Elongation, Reinforced, ASTM D5147: 40 percent.

5) Crack Bridging, ASTM D5147: Pass - 2 mm.

6) Hardness, Shore A, minimum, ASTM D2240: 93.

7) Minimum Thickness, Reinforced Base Coat: 80 mils (2.0 mm) wet total: Apply 40 mils (1.0 mm) wet, plus 40 mils (1.0 mm) wet over reinforcing fabric.

2. Field and Flashing Top Coat:

a. Polyurethane-modified methyl methacrylate roof coating system top coat, two-component 0 VOC, UV resistant, for application over compatible base coat.

1) Basis of design product: Tremco, AlphaGuard PUMA Top Coat.

2) Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.

3) Tensile Strength, ASTM D5147: 175 lbf/in (30 N/mm).

4) Elongation, Reinforced, ASTM D5147: 40 percent.

5) Crack Bridging, ASTM D5147: Pass, 2 mm.

6) Hardness, Shore A, minimum, ASTM D2240: 93.

7) Color: White.

8) Minimum Thickness: 32 mils (0.81 mm) wet over cured base coat.

3. Reinforcing Fabric:

a. Polyester Reinforcing and Protection Fabric: 100 percent stitch-bonded mildew-resistant polyester fabric intended for reinforcement of compatible fluid-applied membranes and flashings and as a protection layer under pavers or stone aggregates.

1) Basis of design product: Tremco, Permafab.

2) Tensile Strength, Minimum, ASTM D1682: 50 lbf (23 kg) avg..

3) Elongation, Minimum, ASTM D1682: 60 percent.

4) Tear Strength, Minimum, ASTM D1117: 16 lbf (7.3 kg) avg..

5) Weight: 3 oz./sq. yd (102 g/sq. m).

4. Flashing Base Coat:

a. Two-Component, modified polyurethane methacrylate flashing grade resin for use as flashing base coat application.

1) Basis of design product, Tremco, AlphaGuard PUMA Quick Flash.

5. Primers:

a. Primer, Methyl Methacrylate: Two-component primer for concrete and metal substrates for application of PUMA coatings.

1) Basis of design product: Tremco, AlphaGuard PUMA Primer - 107.

2) Coverage Rate: 1 gal/100 sq. ft (16 mils) (0.40 mm) wet.

2.6 AUXILIARY ROOFING MEMBRANE MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system and fluid-applied roofing system.

B. Joint Sealant: Elastomeric joint sealant compatible with applied coating, with movement capability appropriate for application.

1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.

a. Basis of design product: Tremco, TremSEAL Pro.

b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.

c. Hardness, Shore A, ASTM C661: 40.

d. Adhesion to Concrete, ASTM C794: 35 pli.

e. Tensile Strength, ASTM D412: 350 psi (2410 kPa).

f. Color: Closest match to substrate.

C. PUMA Catalyst: Power Reactive Catalyst.

1. Low odor, powder reactive agent used to catalyze AlphaGuard PUMA liquid products.

a. Basis of design product: AlphaGuard FC Catalyst.

D. Base Ply Sheet Lap Fasteners: Trufast #15 EHD or Tremco #15 EHD with Trufast 2" Barbed Metal Seam Plate or Tremco 2" Barbed Seam Plate.

E. Stripping Adhesive / Sealer:

1. Two-component, modified polyurethane methacrylate flashing grade resin.

a. Basis of design product: Tremco, AlphaGuard THIX.

b. 100% solids.

c. VOC Content: Zero g/L.

F. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.7 SUBSTRATE BOARDS

A. Substrate Boards (choose one of the following):

1. Gypsum panel, glass-mat-faced, primed, ASTM C1177/C1177M.

a. Basis of design product: GP Gypsum DensDeck Prime.

b. Thickness: 1/2 inch (12 mm).

2. Gypsum panel, cellulosic fiber reinforced, water-resistant, ASTM C1278/C1278M.

a. Basis of design product: USG Securock.

b. Thickness: 1/2 inch (13 mm).

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

2.8 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

1. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated.

2. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated, not less than two times the roof slope.

B. Roof Insulation:

1. Board Insulation, Polyisocyanurate: CFC- and HCFC- free, with recycled content glass-fiber mat facer on both major surfaces, ASTM C1289 Type II Class 1.

a. Compressive Strength, ASTM D1621: Grade 2: 20 psi (138 kPa).

2.9 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with built-up roofing.

B. Fasteners: Factory-coated #12 steel fasteners and 3-inch round metal or plastic plates meeting corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation to substrate and acceptable to roofing manufacturer.

C. Insulation Cant Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.

D. Tapered Edge Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.

E. Cover Board (Choose one of the following):

1. Gypsum panel, glass-mat-faced, primed, ASTM C1177/C1177M.

a. Basis of design product: GP Gypsum DensDeck Prime.

b. Thickness: 1/2 inch (12 mm).

2. Gypsum panel, cellulosic fiber reinforced, water-resistant, ASTM C1278/C1278M.

a. Basis of design product: USG Securock.

b. Thickness: 1/2 inch (13 mm).

2.10 WALKWAYS

A. Walkway Materials:

1. Polyurethane-modified methyl methacrylate top coat slip resistant: second top coat, with broadcast slip resistant aggregate.

a. Basis of design product: Tremco, AlphaGuard PUMA Top Coat Slip Resistant.

b. Minimum Thickness: 16 wet mils, (0.40 mm) wet; over cured top coat.

c. Silica Sand Aggregate: 20 to 30 lb./100 sq. ft..

d. Color: As selected from manufacturer's standard colors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.

2. Metal Deck:

a. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Division 05 Section "Steel Decking."

b. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.

B. Proceed with installation once unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing manufacturer's written instructions. Remove sharp projections.

B. Shut down air intake equipment in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with re-coating work that could affect indoor air quality or activate smoke detectors in the ductwork.

1. Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.

C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

3.3 MEMBRANE ROOFING INSTALLATION, GENERAL

A. Install roofing membrane according to roofing manufacturer's written instructions.

1. Commence installation of roofing in presence of manufacturer's technical personnel.

B. Coordinate installation of roofing so insulation and other components of roofing not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed roofing sheets and insulation with a course of coated felt set in roofing cement with joints and edges sealed.

2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.

3. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Substrate-Joint Penetrations: Prevent fluid-applied materials and adhesives from penetrating substrate joints, entering building, or damaging built-up roofing components or adjacent building construction.

3.4 SUBSTRATE BOARD INSTALLATION

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.

3.5 INSULATION INSTALLATION

A. Comply with roofing manufacturer's written instructions for installing roof insulation.

B. Coordinate installing membrane roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.

C. Tapered Insulation and Crickets: Install tapered insulation under area of roofing to conform to slopes indicated.

1. Where saddles or crickets are indicated or required to provide positive slope to drain, make slope of crickets minimum of two times the roof slope.

D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.

1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.

E. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches (70 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.

1. Tapered Insulation System for Flat Roof Deck: Install insulation as follows:

a. Minimum Continuous Insulation R-value: Not less than R-30.

2. Insulation Drain Sumps: Tapered insulation sumps, not less than 2 by 2 ft (600 by 600 mm), sloped to roof drain; sump to maximum depth of not more than 1 inch (25 mm) less than the Project-stipulated continuous insulation thickness based upon code requirements.

F. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

G. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

H. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together.

1. Preliminarily fasten through cover board down to steel deck at a minimum rate of 4 fasteners per 4x8 board.

3.6 BASE-PLY SHEET INSTALLATION

A. Install base sheet starting at low point of roofing. Align base sheet without stretching. Shingle side laps of base a minimum of 4 inches (100 mm). Shingle in direction to shed water. Extend base sheets over edges and terminate above cants.

1. Fasten base ply sheet with 2-inch barbed plate fasteners in center of 4-inch ply side laps. Fasten 6-inches on center.

2. Torch-seal all base ply laps and roll to ensure a proper bond.

B. Extend base flashing up walls or parapets a minimum of 8 inches (200 mm) above roofing and 6 inches (150 mm) onto field of roofing.

C. Install stripping according to roofing manufacturer's written instructions where metal flanges and edgings are set on roofing.

1. Flashing Sheet Stripping: Install flashing sheet stripping in specified cold adhesive and extend onto roofing membrane.

D. Roof Drains: Install base-ply sheet in cold adhesive around drain bowl. Base sheet must be installed so that it will be under compression from the clamping ring. Install base coat, fabric reinforcement, and top coat over base sheet. Install drain clamping ring and strainer.

3.7 FLUID-APPLIED FLASHING APPLICATION

A. Fluid-Applied Flashing and Detail Base Coat Application: Complete base coat and fabric reinforcement at parapets, curbs, penetrations, and drains prior to application of field of fluid-applied membrane. Apply base coat in accordance with manufacturer's written instructions.

1. Extend coating minimum of 8 inches (200 mm) up vertical surfaces and 4 inches onto horizontal surfaces.

2. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.

3. Reinforcing Fabric: Place fabric reinforcement onto wet base coat. Lap adjacent flashing pieces of fabric minimum 3 inches (75 mm) along edges and 6 inches (150 mm) at end laps.

    a. Apply second base coat over installed fabric reinforcement and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing, unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.

4. Roll surface of fabric reinforcing to completely embed and saturate fabric. Leave finished base coat with fabric free of pin holes, voids, or openings.

5. Roof Drains: Set 30 by 30 inch (760 by 760 mm) square metal flashing in bed of compatible mastic/adhesive sealer on roofing base-ply sheet. Cover metal flashing with stripping ply and extend a minimum of 6 inches (150 mm) beyond edge of metal flashing. Allow to cure.

    a. Apply base coat and immediately install target piece of fabric reinforcement into wet base coat, extend into drain bowl and roll to fully embed and saturate fabric. Apply top coat after base coat has cured.

    b. Following application and curing of fluid-applied roofing membrane, install clamping ring and strainer. Replace broken drain ring clamping bolts.

6. Allow base coat to cure prior to application of top coat.

3.8 FLUID-APPLIED MEMBRANE APPLICATION

A. Base Coat: Apply base coat to field of membrane in accordance with manufacturer's written instructions.

1. Apply base coat on prepared and primed surfaces and spread coating evenly.

2. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.

3. Reinforcing Fabric: Place fabric reinforcement onto wet base coat. Lap adjacent flashing pieces of fabric minimum 3 inches (75 mm) along edges and 6 inches (150 mm) at end laps.

    a. Apply second base coat over installed fabric reinforcement and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing, unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.

4. Roll surface of fabric reinforcing to completely embed and saturate fabric. Leave finished base coat with fabric free of pin holes, voids, or openings.

5. Allow base coat to cure prior to application of top coat.

B. Top Coat: Apply top coat to field of membrane and flashings uniformly in a complete, continuous installation.

1. Prime base coat prior to application of top coat if top coat is not applied within 72 hours of the base coat application, using manufacturer's recommended primer.

2. Apply top coat extending coating up vertical surfaces and out onto horizontal surfaces. Install top coat over field base coat and spread coating evenly.

3. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.

4. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

3.9 WALKWAY INSTALLATION

A. Walkways, General: Install walkways according to roofing manufacturer's written instructions.

1. Install walkways at following locations:

a. Where indicated on Drawings.

B. Slip-Resistant Walkway Topcoat: Apply walkway second topcoat following application and curing of top coat. Locate as indicated on Drawings.

1. Mask walkway location with tape.

2. Prime first top coat prior to application of walkway top coat if walkway top coat is not applied within 72 hours of the first top coat application, using manufacturer's recommended primer.

3. Apply walkway topcoat and back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.

4. Broadcast Slip-Resistant Top Coat Aggregate in wet top coat at rate indicated in Part 2 product listing or as otherwise recommended by coating manufacturer.

a. Back roll aggregate and top coat creating even dispersal of aggregate.

5. Remove masking immediately.

3.10 FIELD QUALITY CONTROL

A. Roof Inspection: Contractor shall engage roofing system manufacturer's technical personnel to inspect roofing installation, and submit report to the Architect. Notify Architect 48 hours in advance of dates and times of inspections. Inspect work as follows:

1. Upon completion of preparation of first component of work, prior to application of re-coating materials.

2. Following application of re-coating to flashings and application of base coat to field of roof.

3. Upon completion of re-coating but prior to re-installation of other roofing components.

B. Repair fluid-applied membrane where test inspections indicate that they do not comply with specified requirements.

C. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075600.13

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Roof drainage sheet metal fabrications.

2. Low-slope roof sheet metal fabrications.

3. Miscellaneous sheet metal flashing and trim.

B. Related Requirements:

1. Division 07 Section "Fluid-Applied Membrane Roofing, Insulated" for installing sheet metal flashing and trim integral with roofing and for related warranty requirements.

2. Division 07 Section "Roof Specialties" for manufactured copings and roof edge flashings incorporated in roof system.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.

2. Include identification of material, thickness, weight, and finish for each item and location in Project.

C. Samples for Verification: For each type of exposed finish.

1.3 CLOSEOUT SUBMITTALS

A. Warranties: Manufacturer's executed warranty documents. Submit prior to acceptance of Work.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.6 WARRANTY

A. Refer to warranty requirements of Division 07 Section "Fluid-Applied Membrane Roofing, Insulated" for terms and conditions of warranties covering work of this Section.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Flashings and Fastening: Comply with requirements of Division 07 roofing sections. Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:

1. FM Global 1-49: "Property Loss Prevention Data Sheet for Perimeter Flashings."

2. NRCA: "The NRCA Roofing Manual" for construction details and recommendations.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B209/B209M, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface., alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with

1. Basis of Design Product: Tremco, Inc., TremLock Sheet, or Architect-approved equal.

2. Exposed Coil-Coated Finish:

a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

b. Color: As selected from manufacturer's full range.

3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil (0.013 mm).

C. Stainless-Steel Sheet: ASTM A240/A240M or ASTM A666, Type 316, dead soft, fully annealed; with smooth, flat surface.

1. Finish: ASTM A480/A480M, No. 2B (bright, cold rolled).

D. Copper Sheet: ASTM B370, cold-rolled copper sheet, H00 or H01 temper.

1. Non-patinated, Exposed Finish: Mill.

E. Lead Sheet: ASTM B749 lead sheet.

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Sheet: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.

1. Low-Temperature Flexibility: ASTM D1970; passes after testing at minus 20 deg F (29 deg C) or lower.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.

b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

4. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.

C. Solder:

1. For Stainless Steel: ASTM B32, Grade Sn60 or Grade Sn96, with acid flux of type recommended by stainless steel sheet manufacturer.

2. For Copper: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

E. Elastomeric Sealant: ASTM C920, elastomeric polyurethane at concealed joints and silicone at exposed joints; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

2. Obtain field measurements for accurate fit before shop fabrication.

3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.

4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on

Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.

2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, non-expansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

G. Seams, Soldered: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

H. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

I. Seams for Uncoated Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

J. Do not use graphite pencils to mark metal surfaces.

2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2.4-m-) long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard, but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.

1. Gutter Profile: As indicated on Drawings, or if not indicated, as selected from SMACNA Manual profiles.

2. Expansion Joints: Butt type with concealed splice plate.

3. Accessories: Wire-ball downspout strainer.

4. Gutters with Girth 21 to 25 Inches (530 to 640 mm): Fabricate from the following materials:

a. Aluminum: 0.050 inch (1.27 mm) thick.

5. Gutters with Girth 26 to 30 Inches (660 to 760 mm): Fabricate from the following materials:

   a. Aluminum: 0.063 inch (1.60 mm) thick.

B. Downspouts: Fabricate rectangular downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.

1. Fabricated Hanger Style: As selected from SMACNA Manual styles.

2. Fabricate from the following materials: Matching downspout.

C. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof. Fasten gravel guard angles, if applicable, to base of scupper. Fabricate from the following materials:

1. Aluminum: 0.032 inch (0.81 mm) thick.

2. Stainless Steel: 0.019 inch/26 ga. (0.48 mm) thick.

D. Conductor Heads: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape required, complete with outlet tubes, exterior flange trim, and built-in overflows. Fabricate from the following materials:

1. Aluminum: 0.032 inch (0.81 mm) thick.

2. Stainless Steel: 0.019 inch/26 ga. (0.48 mm) thick.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Expansion Joint Cover: Fabricate from the following materials:

1. Aluminum: 0.050 inch (1.27 mm) thick.

B. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:

1. Aluminum: 0.032 inch (0.81 mm) thick.

C. Flashing Receivers: Fabricate from the following materials:

1. Aluminum: 0.032 inch (0.81 mm) thick.

D. Roof-Penetration Flashing: Fabricate from the following materials:

1. Stainless Steel: 0.019 inch/26 ga. (0.48 mm) thick.

2. Copper: 16 oz./sq. ft. (4.8 kg/m2); 0.22 inch/24 ga. (0.55 mm) thick.

3. Lead: (19.53 kg/m2) 4 lb./sq. ft.; (1.6 mm) 0.0625 inch thick.

E. Roof-Drain Flashing: Fabricate from the following materials:

1. Lead: (19.53 kg/m2) 4 lb./sq. ft.; (1.6 mm) 0.0625 inch thick.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller. Cover underlayment within 14 days.

3.2 INSTALLATION, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.

2. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum and stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.

2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).

2. Prepare joints and apply sealants to comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.

1. Do not solder metallic-coated steel and aluminum sheet.

2. Do not use torches for soldering.

3.3 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Flanged Gutters: Join sections with joints sealed with sealant. Provide for thermal expansion. Attach gutters at flange into wood blocking to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints.

1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c.

2. Provide elbows at base of downspout to direct water away from building.

3. Connect downspouts to underground drainage system.

D. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.

1. Anchor scupper closure trim flange to exterior wall and solder or seal with elastomeric sealant to scupper.

2. Loosely lock front edge of scupper with conductor head.

3. Solder or seal with elastomeric sealant exterior wall scupper flanges into back of conductor head.

E. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch (25 mm) below scupper or gutter discharge.

F. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches (100 mm) in direction of water flow.

3.4 ROOF FLASHING INSTALLATION

A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.

1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.

2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.

C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing.

1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.

2. Extend counterflashing 4 inches (100 mm) over base flashing.

3. Lap counterflashing joints minimum of 4 inches (100 mm).

D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with sealant and clamp flashing to pipes that penetrate roof.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured copings.

2. Manufactured roof-edge specialties (fasciae, drip edges and gravel stops).

B. Related Information:

1. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.

2. Division 07 Section "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.

3. Division 07 Section "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site, in conjunction with roofing preinstallation conference specified in Division 07 roofing section.

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects roof specialties including installers of roofing materials and accessories.

2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.

2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.

3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.

4. Detail termination points and assemblies, including fixed points.

5. Include details of special conditions.

C. Samples for Initial Selection: Color charts from manufacturer showing available color finishes.

D. Samples for Verification: Color chips from manufacturer for final selection.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for copings and roof-edge flashings.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Certificates: Provide manufacturer’s certificates for copings and roof-edge specialties indicating compliance with performance requirements including the following:

1. ANSI/SPRI/FM 4435/ES-1 compliance.

C. Sample Warranty: For manufacturer's special warranty.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are ANSI/SPRI ES-1 tested to specified design pressure.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof specialties installation.

1.7 PROJECT / FIELD CONDITIONS

A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.8 WARRANTY

A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Division 07 roofing Section "Fluid-Applied Membrane Roofing, Insulated".

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction

B. SPRI Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to ANSI/SPRI ES-1.

1. Design Pressure: As indicated on Drawings.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 MANUFACTURERS

A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Inc, Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products or comparable products of one of the following.

1. Manufacturers of comparable products: Approved by Architect, prior to bid.

B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Division 07 roofing Section.

2.3 EXPOSED METALS

A. Aluminum Sheet: ASTM B209/B209M, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

1. Surface: Smooth, flat finish as indicated.

2.4 CONCEALED METALS

A. Aluminum Sheet: ASTM B209/B209M, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.

B. Aluminum Extrusions: ASTM B221/B221M, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.

C. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.

2.5 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F (116 deg C).

2. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C).

2.6 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.

B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:

1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.

2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.

3. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A153/A153M or ASTM F2329.

C. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

2.7 MANUFACTURED COPINGS

A. Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; corner units, end cap units, and concealed splice plates with same finish as coping caps.

1. Coping Profile: As indicated on Drawings.

a. Unit Face Height: Accommodate existing height plus additional insulation and blocking indicated.

2. Basis-of-Design Product: Subject to compliance with requirements, provide Tremco, TremLock Infinity Coping.

3. Coping-Cap Material: Formed aluminum sheet, nominal 0.050-inch (1.27-mm) thick.

a. Finish: High-performance organic (PVDF) coating.

b. Color: As selected by Architect from manufacturer's full range.

4. Corners: Factory mitered and continuously welded.

5. Coping-Cap Attachment Method: Snap-on, fabricated from coping-cap material.

6. Snap-on-Coping Anchor Plates: Concealed, galvanized-steel sheet, 12 inches (300 mm) wide, with integral cleats.

2.8 MANUFACTURED ROOF-EDGE SPECIALTIES

A. Roof-Edge Fascia: Snap-on type fascia with vertical profile.

1. Description: Manufactured two-piece roof-edge fasciae systems consisting of formed-metal fascia covers in section lengths not exceeding 12 feet (3.6 m), with an extruded anchor bar to engage and secure fascia cover, and concealed splice plates. Provide matching prefabricated continuously welded corner units.

a. Roof-Edge Fasciae Profile: As indicated on Drawings.

1) Unit Face Height: Accommodate existing height plus additional insulation and blocking indicated.

b. Splice Plates: Of same material and finish as roof edge flashing units, 8 inches (203 mm) long with factory-installed dual non-curling butyl sealant strips.

2. Basis-of-Design Product: Tremco, TremLock 215 HD Fascia.

3. Fascia Cover Securement: Snap-on, over continuous extruded aluminum anchor bar.

4. Roofing System: Built-up.

5. Fascia Cover Material: Formed aluminum sheet, nominal 0.050-inch (1.27-mm) thick.

a. Finish: High-performance organic (PVDF) coating.

b. Color: As selected by Architect from manufacturer's full range.

B. Fascia Accessories: Provide accessories fabricated from the same materials and for compatibility with roof edge system; provide the following accessories:

1. Fascia extenders.

2. Wall cap.

3. Overflow scuppers.

4. Spill-out scuppers.

5. Downspout scuppers with integral conductor head and downspout adapters.

2.9 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. High-Performance Organic (PVDF) Coating: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A755/A755M and coating and resin manufacturers' written instructions.

1. Aluminum Coil Coating Finishes: Two-Coat Fluoropolymer: AAMA 2605 and as additionally required to meet specified finish performance and warranty requirements. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

E. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering Sheet Underlayment: Install wrinkle free to cover wood blocking. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water. Overlap edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.

3.3 INSTALLATION, GENERAL

A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.

2. Provide uniform, neat seams with minimum exposure of solder and sealant.

3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.

4. Torch cutting of roof specialties is not permitted.

5. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of self-adhering, high-temperature sheet underlayment.

C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.

1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise shown on Drawings.

2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

D. Fastener Sizes:

1. Wood Blocking or Sheathing: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.

2. Other Substrates: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal joints with elastomeric sealant as required by roofing-specialty manufacturer.

F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

3.4 INSTALLATION OF COPINGS

A. Install clips, cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.

B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.

3.5 INSTALLATION OF ROOF-EDGE SPECIALTIES

A. Install clips, cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.

B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.6 CLEANING AND PROTECTION

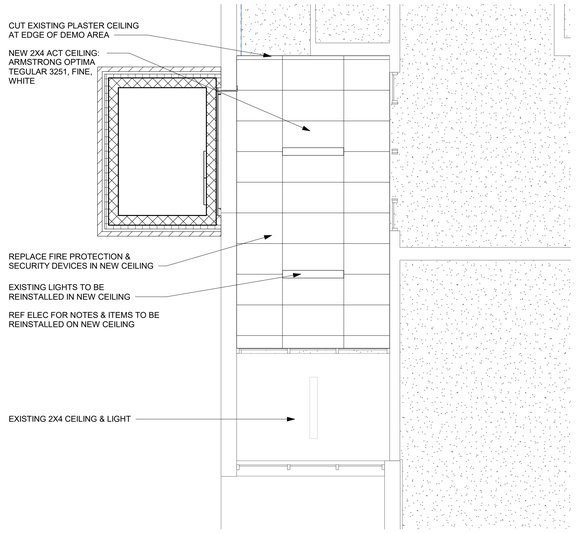
A. Clean exposed metal surfaces.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

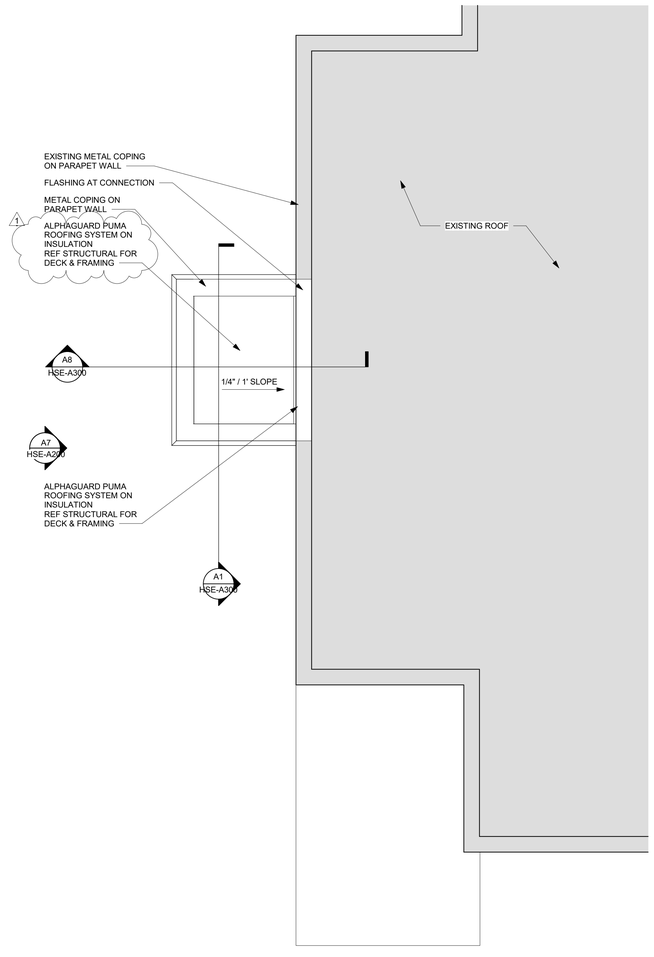
END OF SECTION 077100



ENLARGED FIRST FLOOR RCP K13

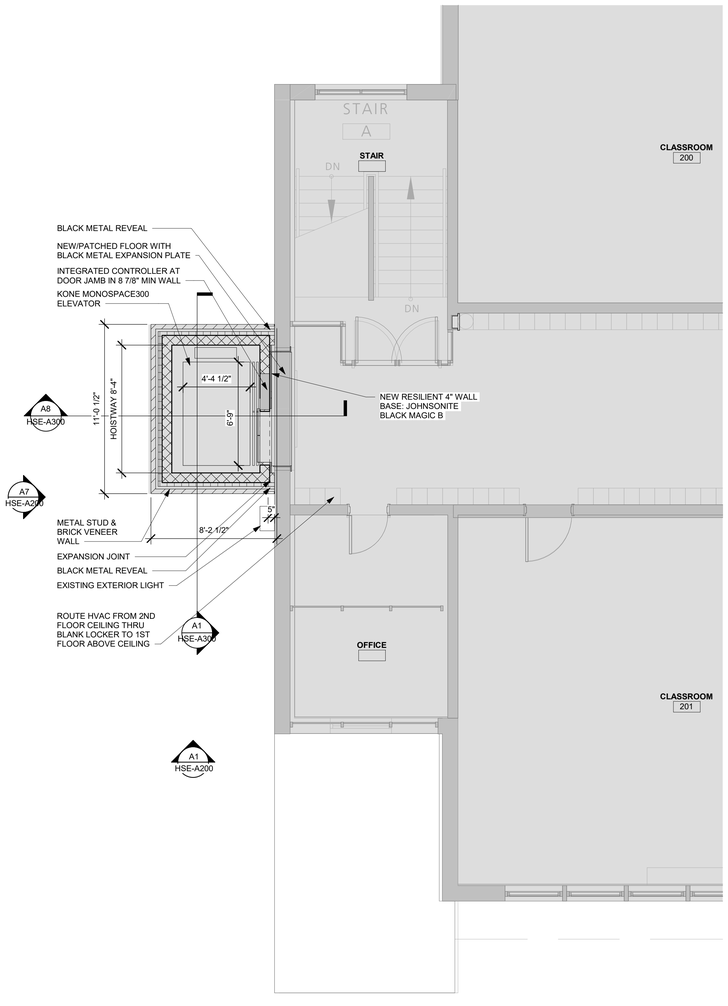
1/4" = 1'-0"

NOTES:
ELEVATOR ADDITION 89 SF EACH LEVEL TOTAL 178 SF



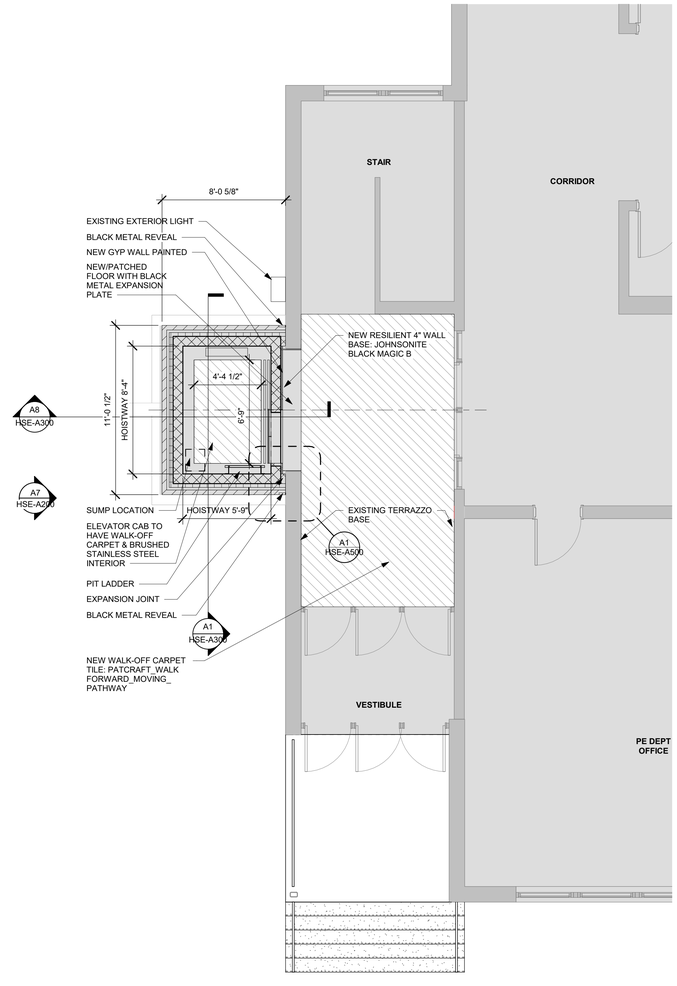
ROOF ENLARGED PLAN A13

1/4" = 1'-0"



ENLARGED SECOND FLOOR PLAN A7

1/4" = 1'-0"



ENLARGED FIRST FLOOR PLAN A1

1/4" = 1'-0"

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REGISTERED ARCHITECT ARMANDO SAMUEL QUADRINI 022313 STATE OF NEW YORK

NANUET HIGH SCHOOL ELEVATOR ADDITION

SED #: 50-01-08-03-0-003-032

103 Church St, Nanuet, NY 10954

N

REVISIONS

No.	Description	Date
1	Bid Addendum #1	8/19/2022

ISSUED: BID SET ISSUANCE

DATE: AUGUST 02, 2022

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

SHEET NAME:
ENLARGED FLOOR PLANS

SHEET NUMBER:
HSE-A104

ISSUE FOR BID SET

PROJECT NUMBER: 2111006.01
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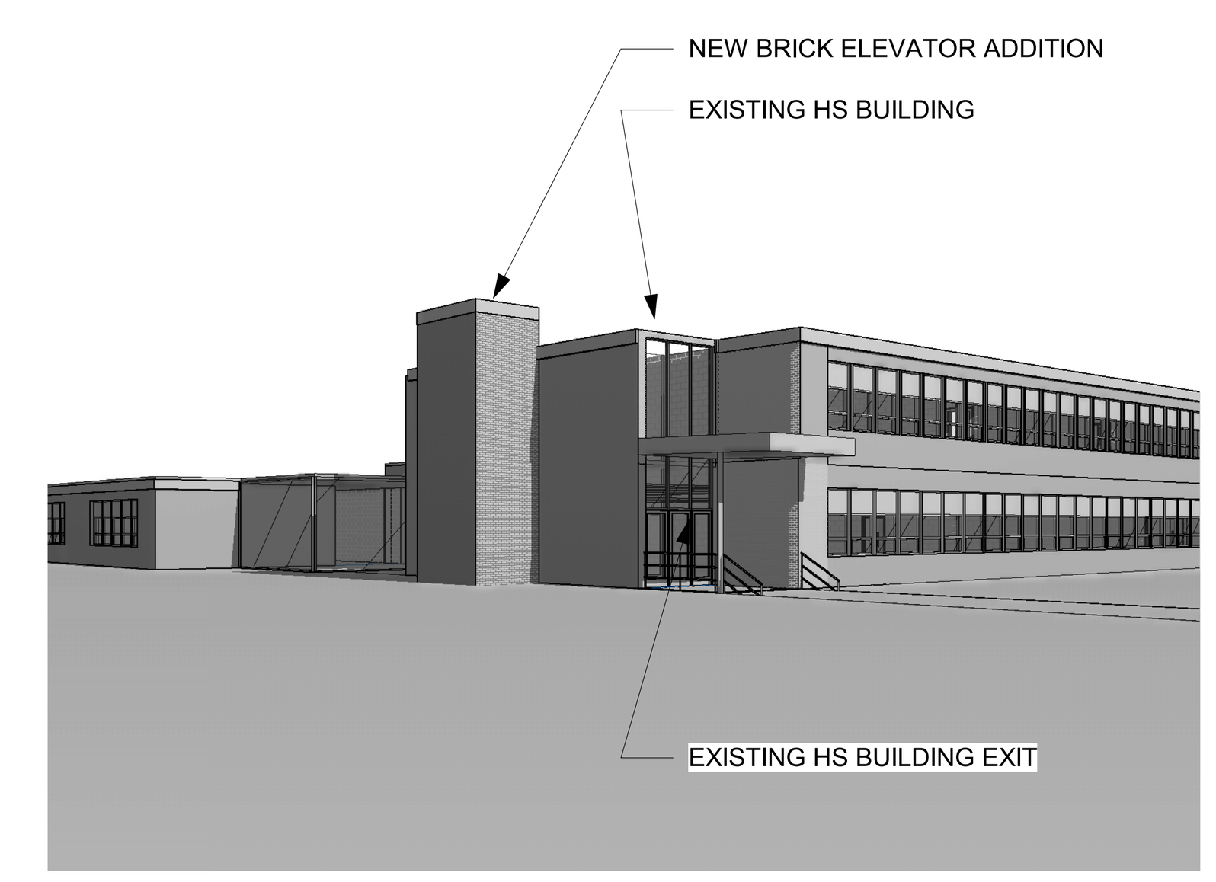
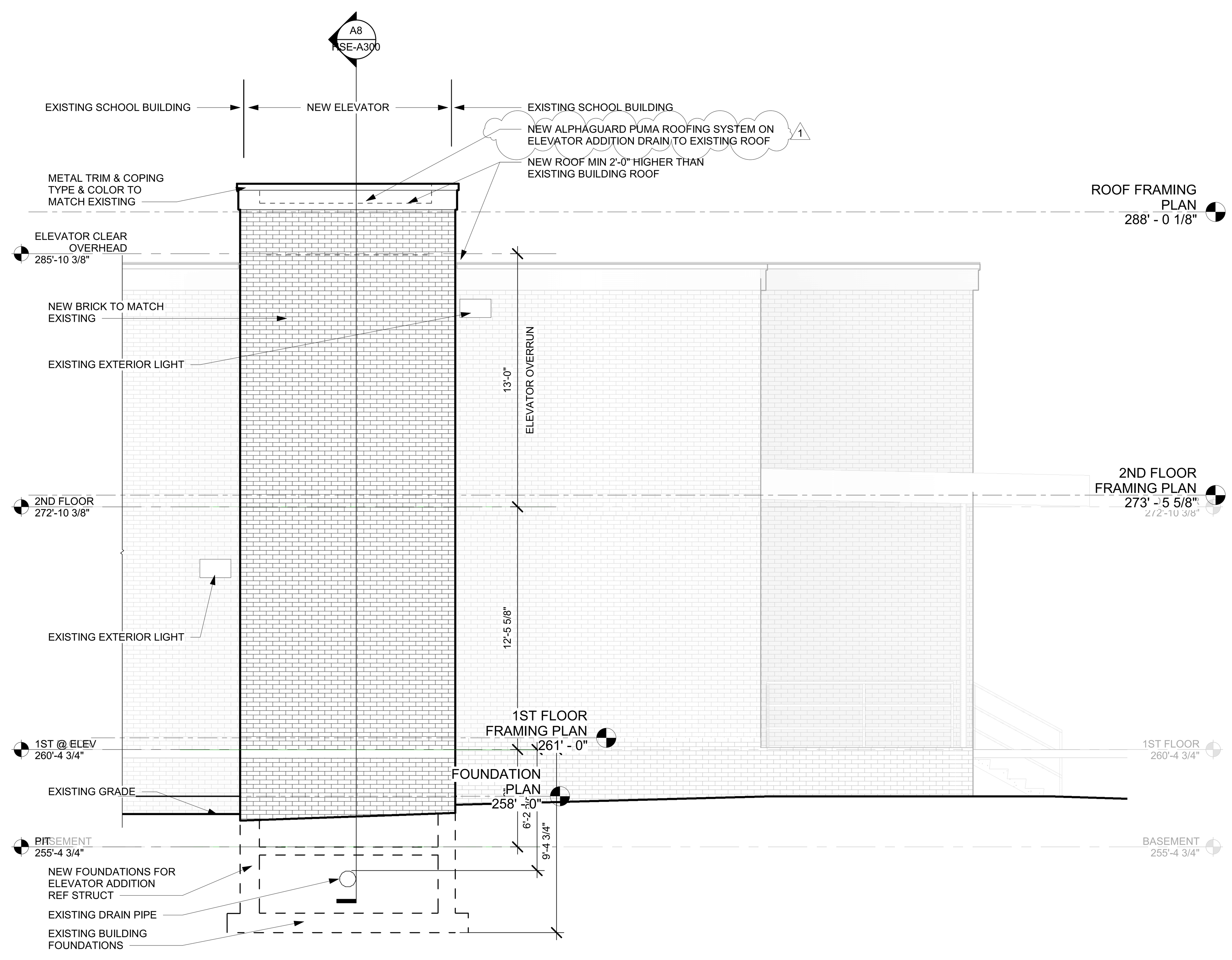
DRAWN BY: Author
CHECKED BY: Checker
C:\Users\mccoy\Documents\RSQ_2111006.00 Nanuet HS Elevator Phase2_tombarlmccoy.rvt
8/19/2022 11:29:55 AM

NOTES:
ELEVATOR ADDITION 89 SF EACH LEVEL TOTAL 178 SF

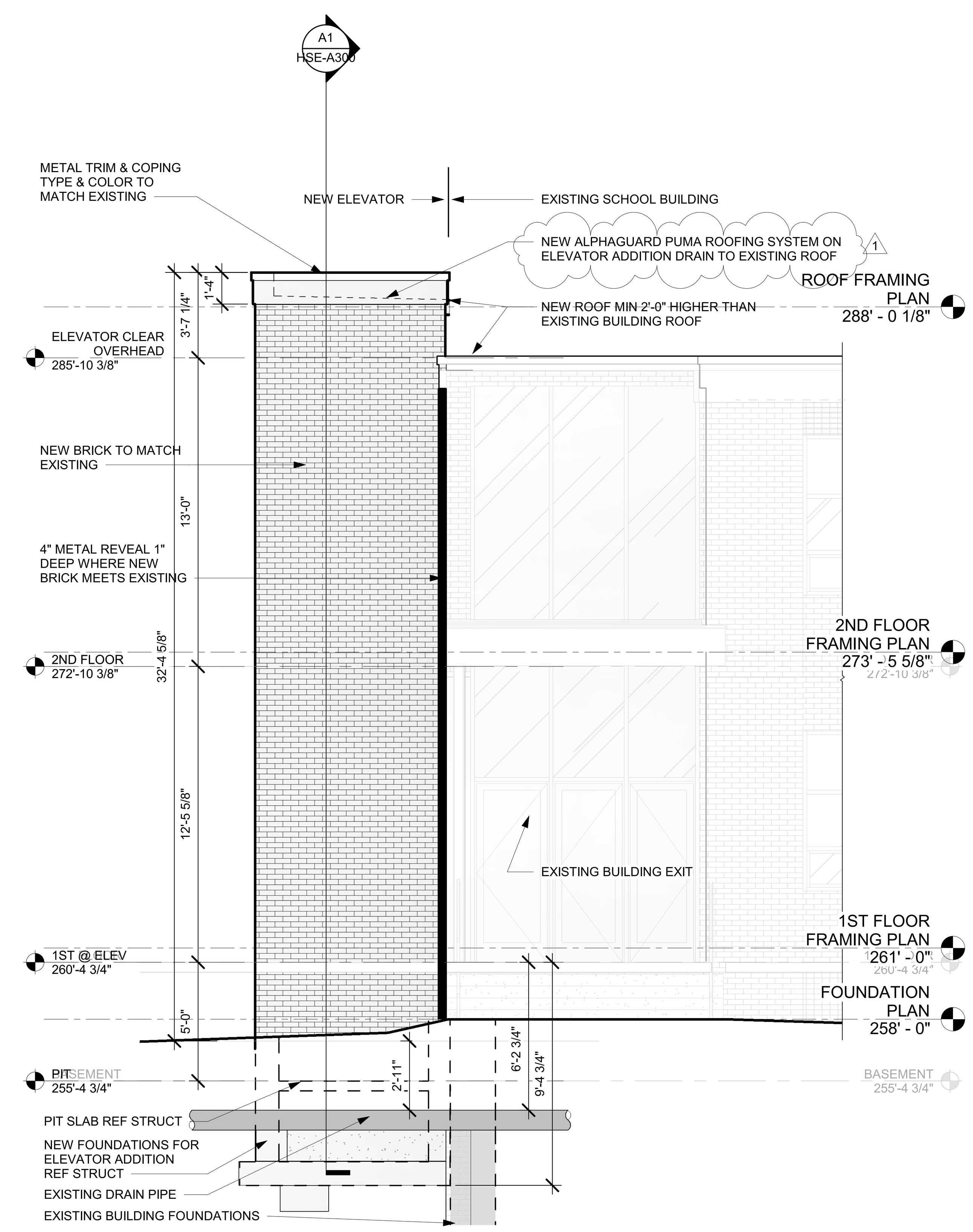
ELEVATOR EXTERIOR 3D VIEW



ELEVATOR EXTERIOR 3D VIEW M1



WEST ELEVATOR ELEVATION A7
1/4" = 1'-0"



SOUTH ELEVATOR ELEVATION A1
1/4" = 1'-0"

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NANUET HIGH SCHOOL ELEVATOR ADDITION

SED #: 50-01-08-03-0-001-023

103 Church St, Nanuet, NY 10954

REVISIONS

No.	Description	Date
1	Bid Addendum #1	8/19/2022

ISSUED: BID SET ISSUANCE
DATE: AUGUST 02, 2022
SCALE: 1/4" = 1'-0"
SHEET NAME: ELEVATIONS
SHEET NUMBER: HSE-A200

PROJECT NUMBER: 2111006.01

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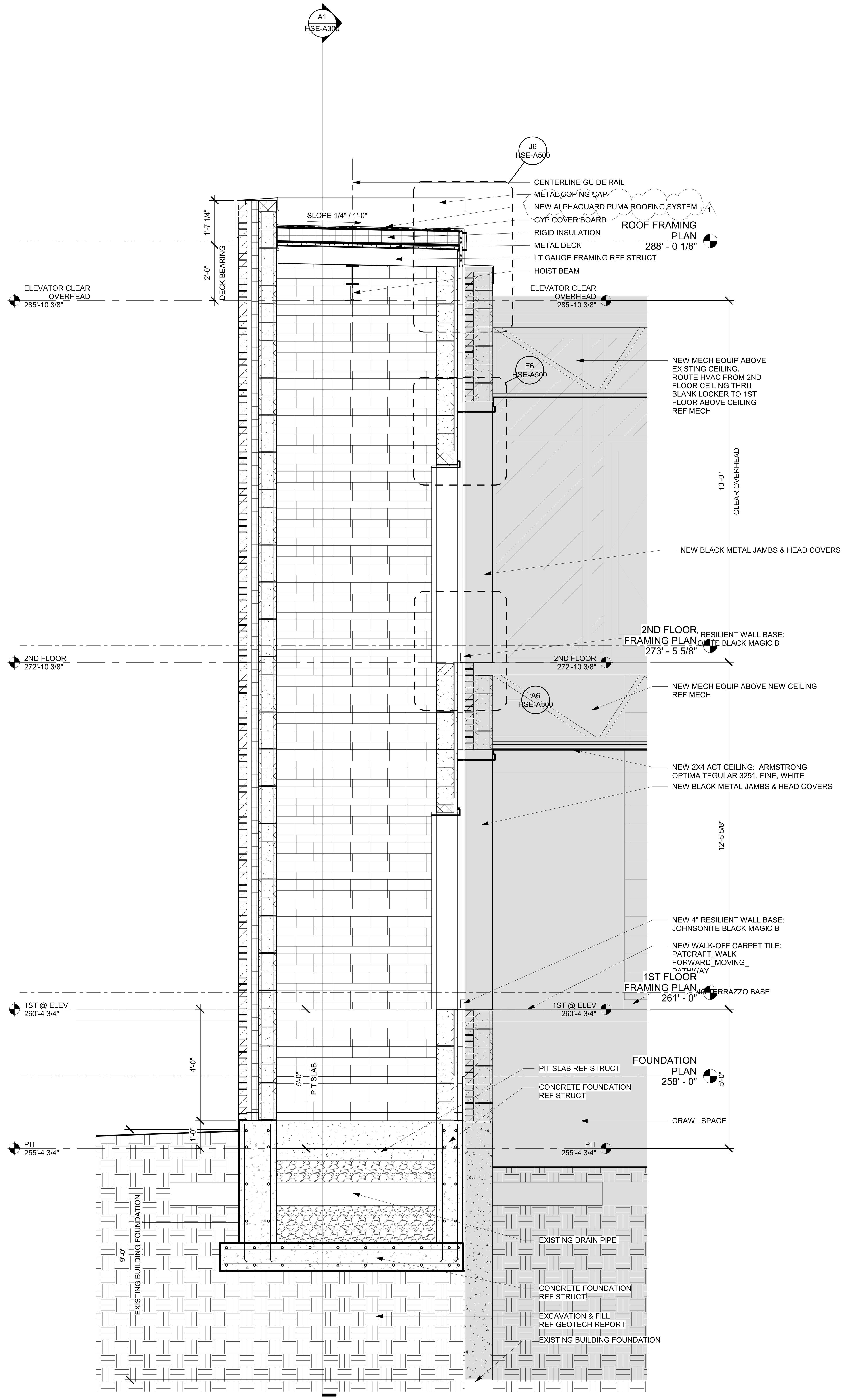
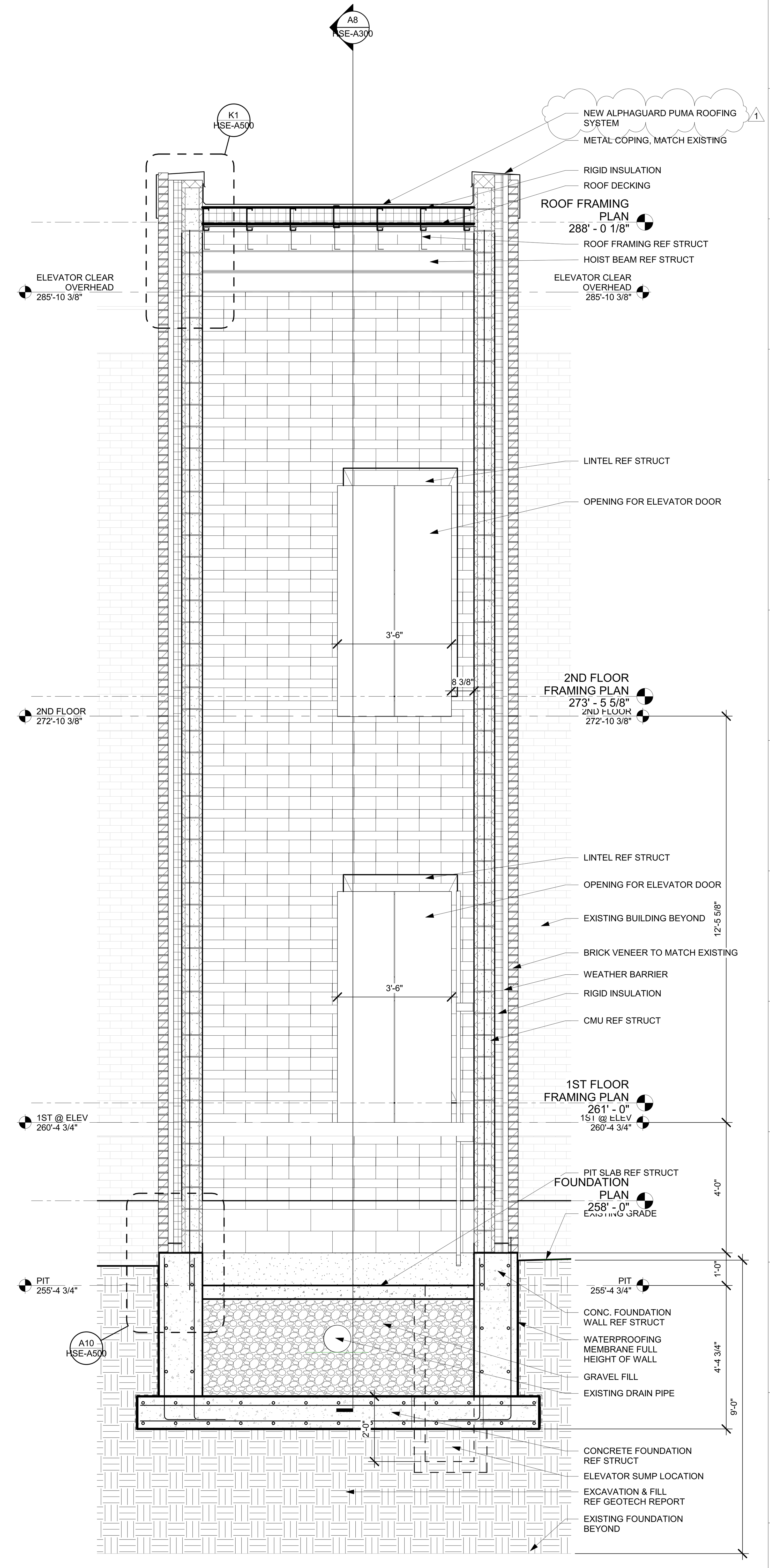


E-W ELEVATOR SECTION A8

1/2" = 1'-0"



N-S ELEVATOR SECTION A1

1/2" = 1'-0"

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NANUET HIGH SCHOOL ELEVATOR ADDITION

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1	Bid Addendum #1	8/19/2022

ISSUED: BID SET ISSUANCE

DATE: AUGUST 02, 2022

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

SHEET NAME: SECTIONS

SHEET NUMBER: HSE-A300

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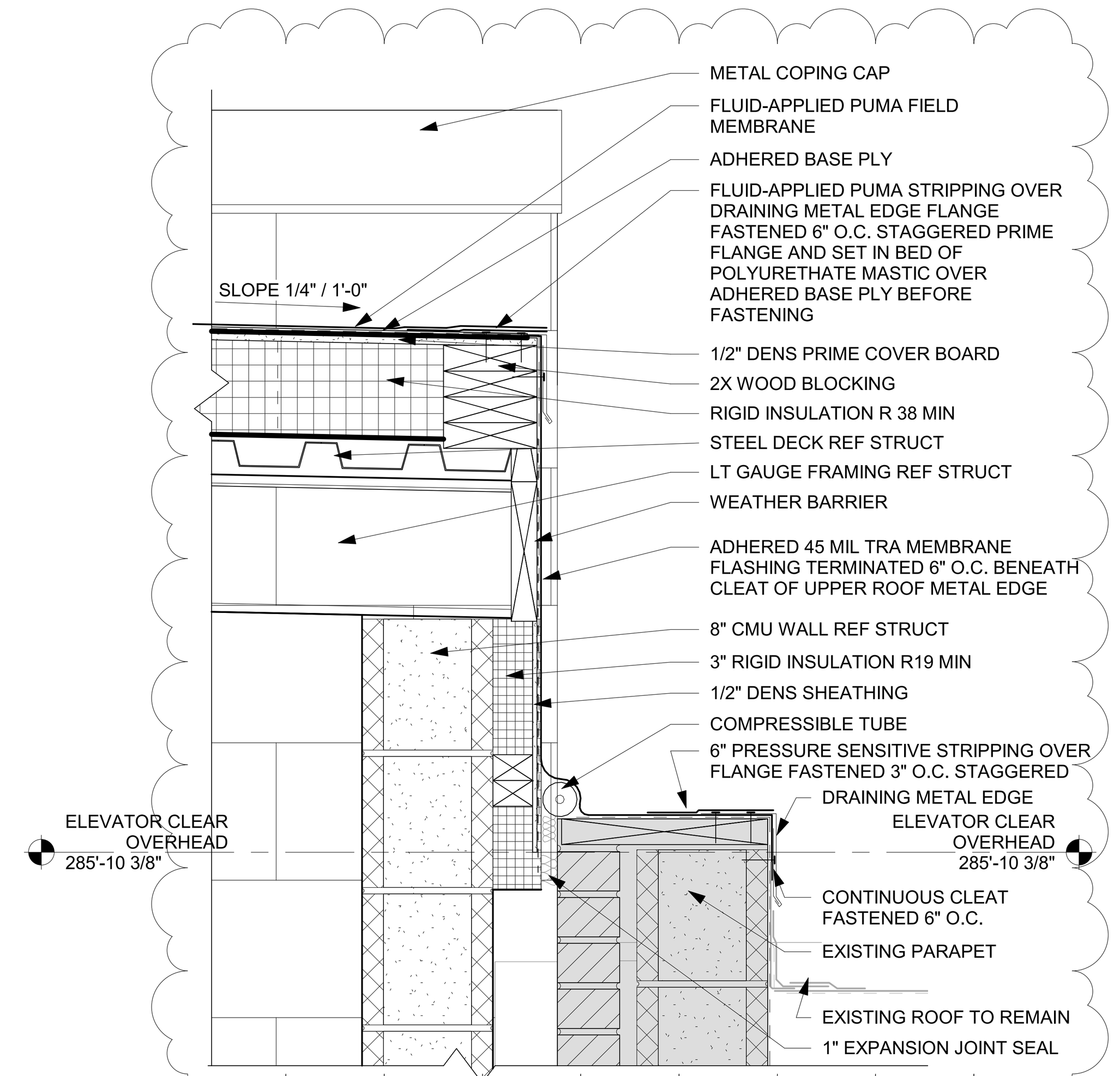
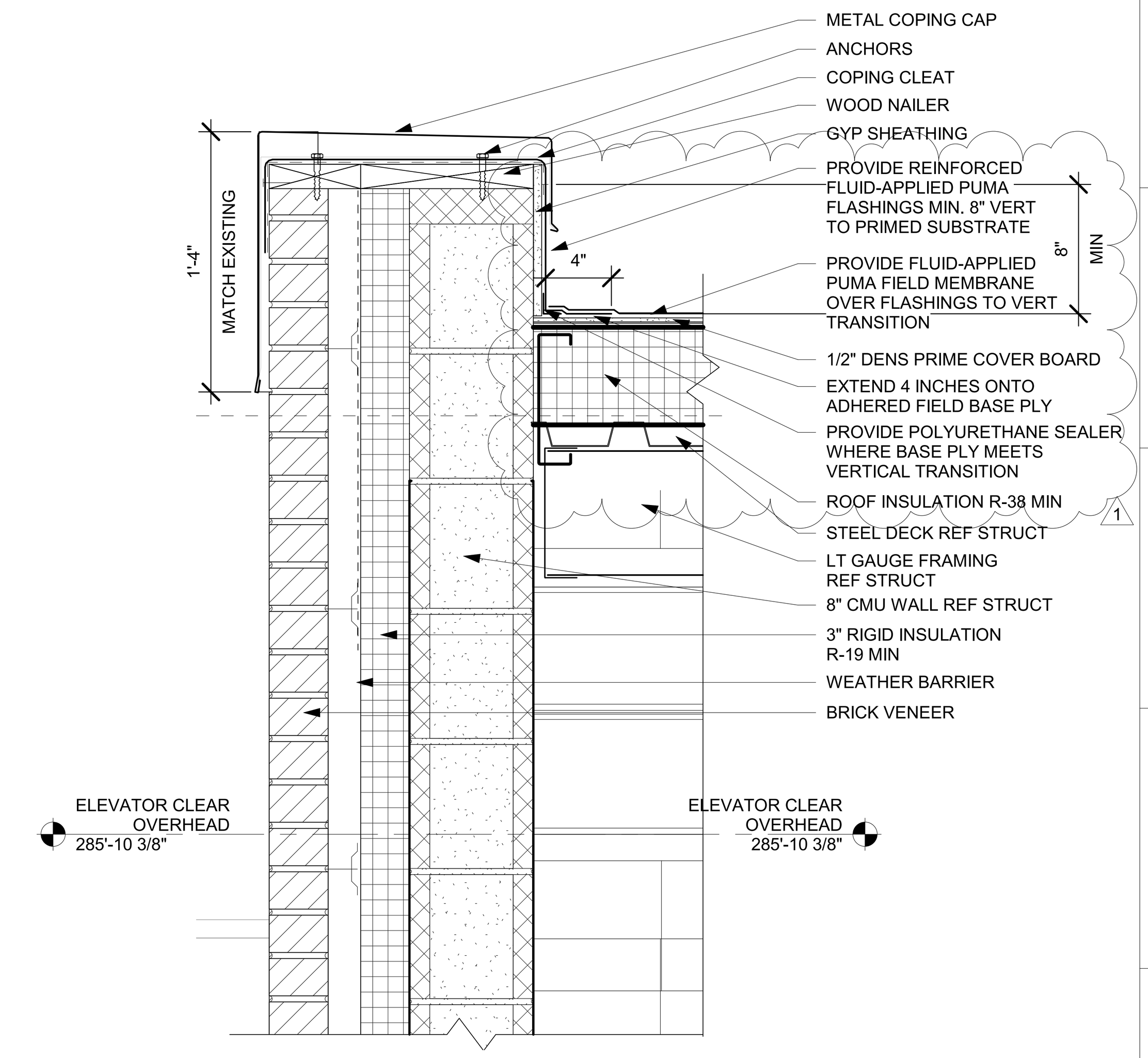


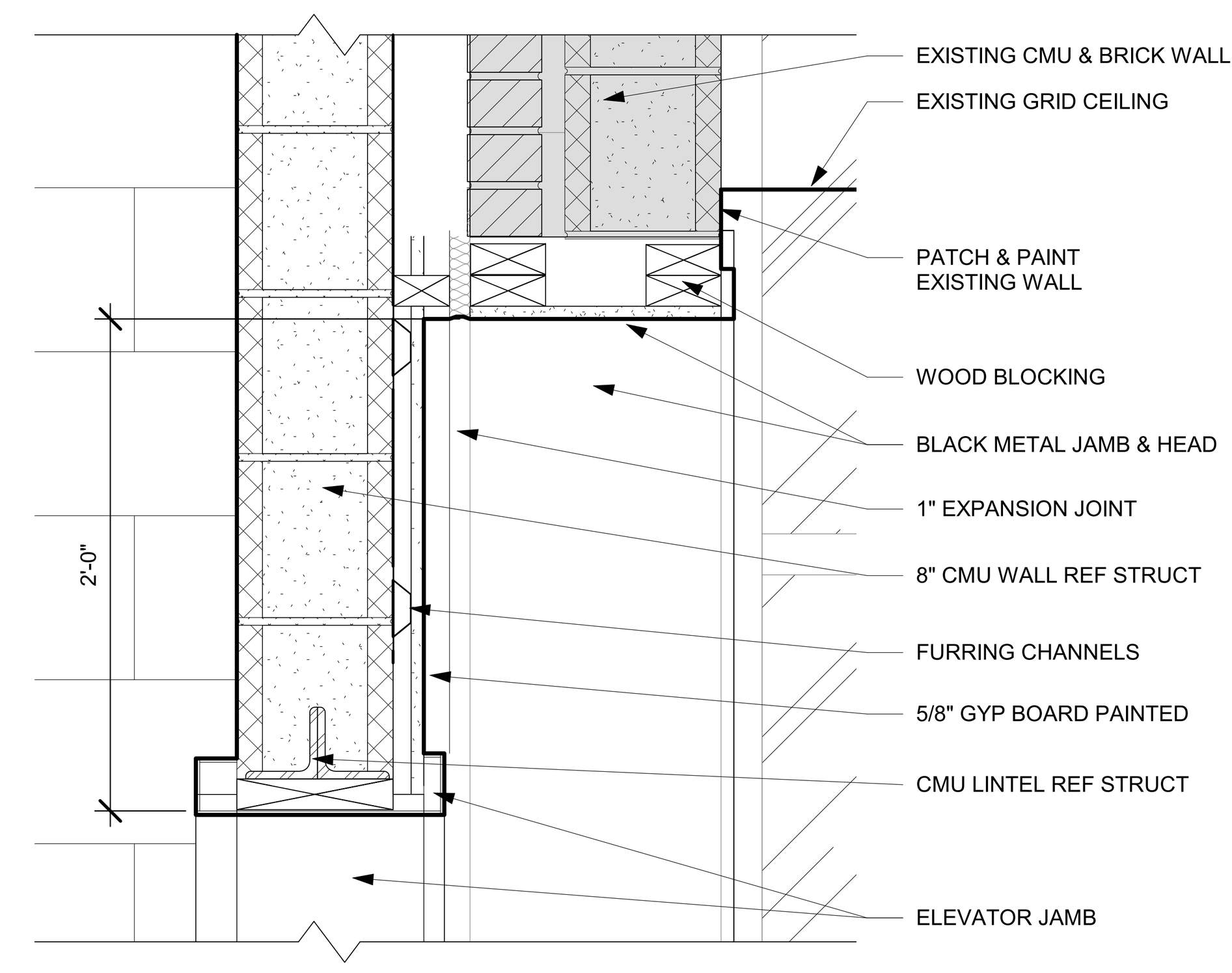
PARAPET DETAIL @ EXISTING J6

1 1/2" = 1'-0"



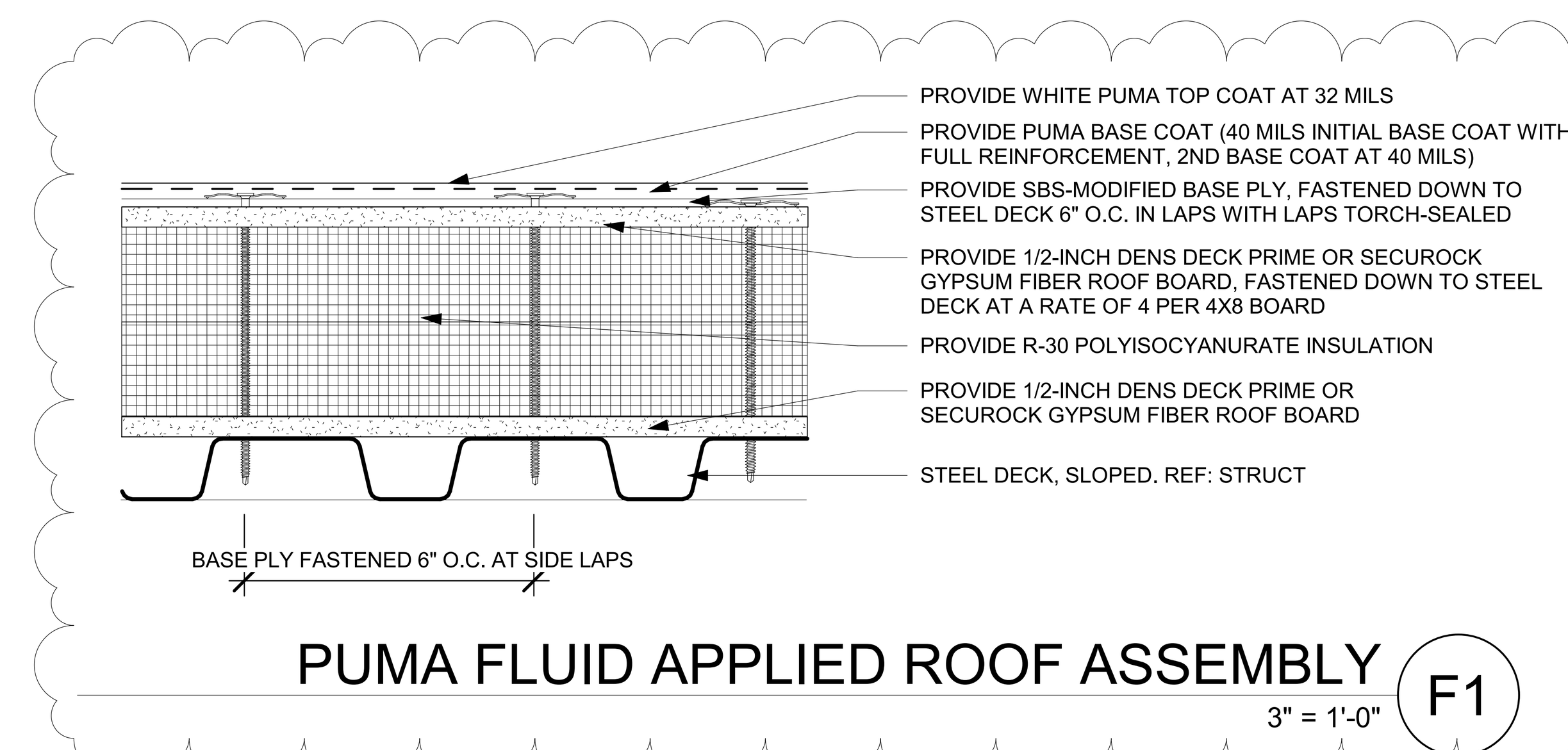
PARAPET DETAIL, TYP K1

1 1/2" = 1'-0"



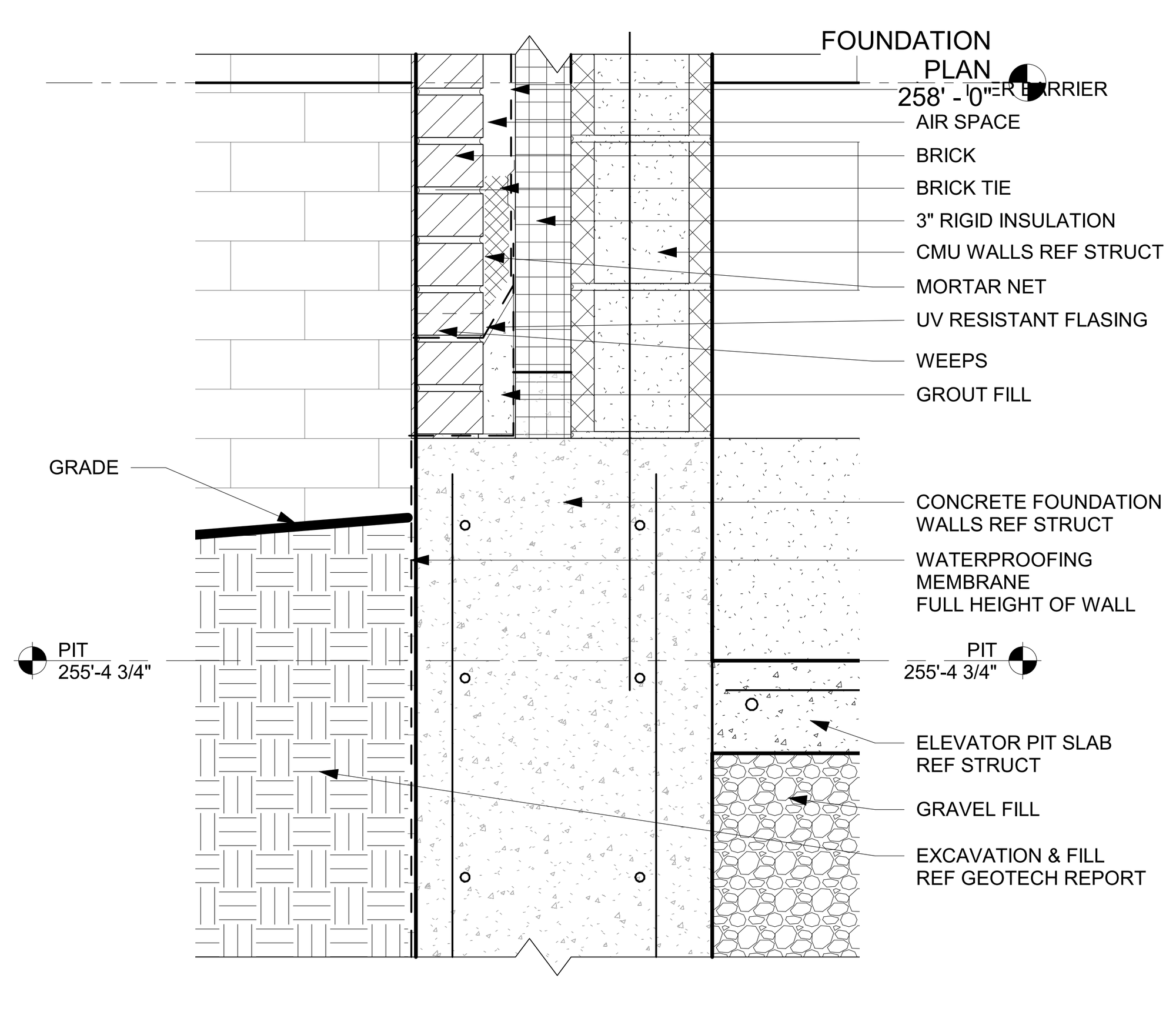
ELEVATOR HEAD E6

1 1/2" = 1'-0"



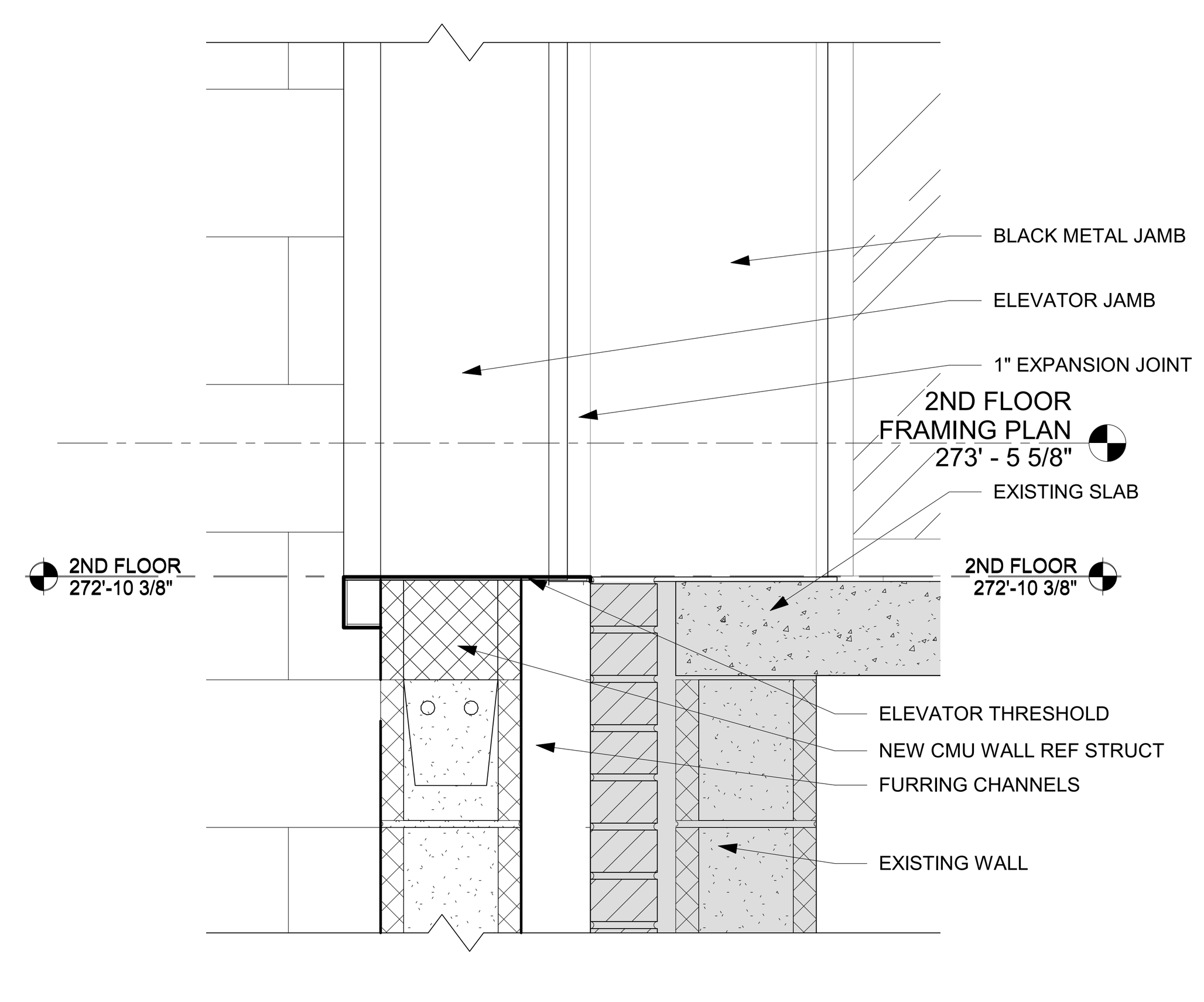
PUMA FLUID APPLIED ROOF ASSEMBLY F1

3" = 1'-0"



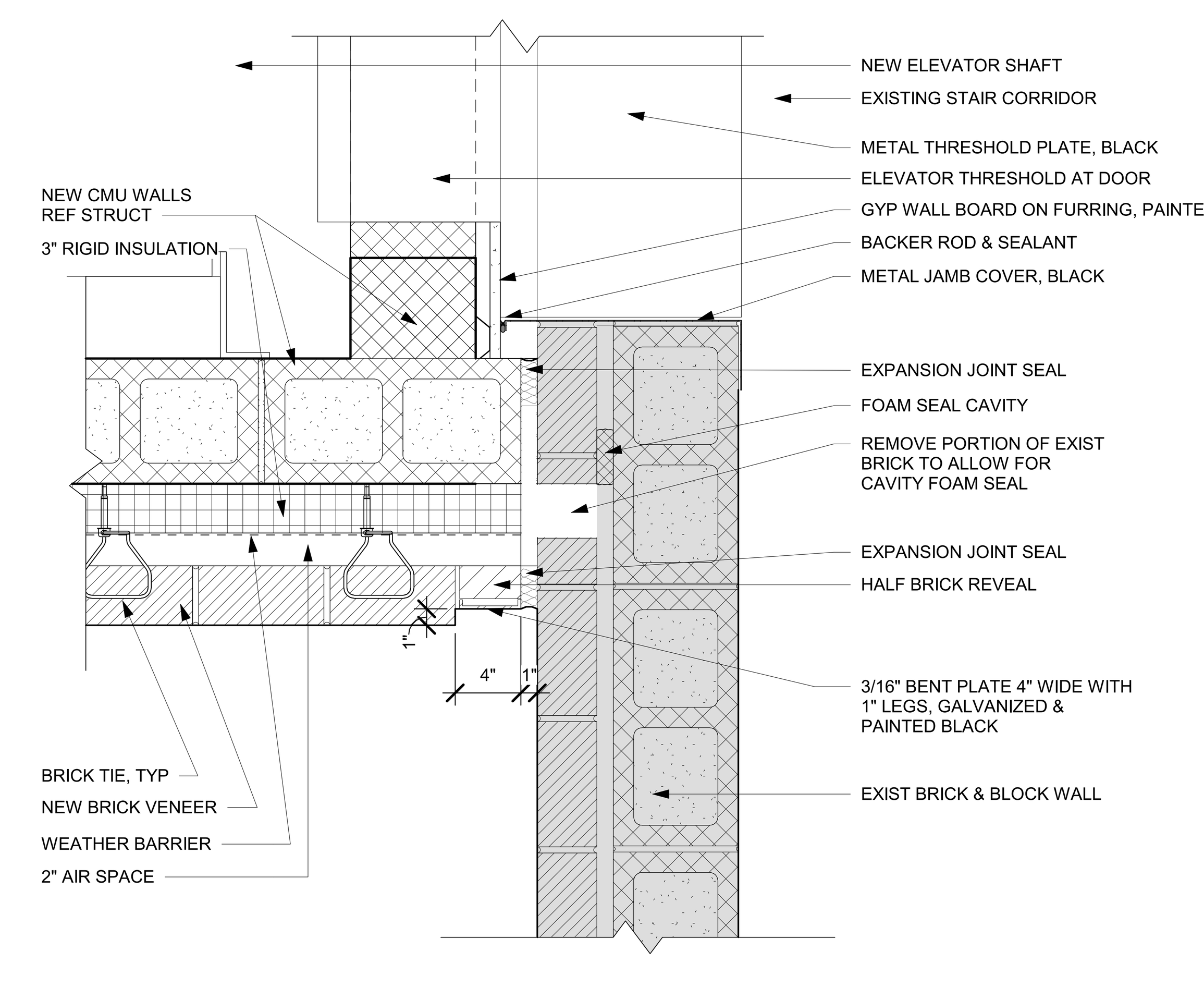
FOUNDATION SECT, TYP A10

1 1/2" = 1'-0"



ELEVATOR THRESHOLD A6

1 1/2" = 1'-0"



PLAN DETAIL AT EXPANSION JOINT A1

1 1/2" = 1'-0"

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REGISTERED ARCHITECT ARMAND SAMUEL QUADRINI 022313 STATE OF NEW YORK

NANUET HIGH SCHOOL ELEVATOR ADDITION

SED #: 50-01-08-03-0-003-032

103 Church St, Nanuet, NY 10954

N

REVISIONS

No.	Description	Date
1	Bid Addendum #1	8/19/2022

ISSUED: BID SET ISSUANCE

DATE: AUGUST 02, 2022

SCALE: As indicated

SHEET NAME: DETAILS

SHEET NUMBER: HSE-A500

ISSUE FOR BID SET

PROJECT NUMBER: 2111006.01

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ABBREVIATIONS: (SOME MAY NOT BE USED)

A	AMP	GC	GENERAL CONTRACTOR	P	POLE
AFF	ABOVE FINISHED FLOOR	GFI	GROUND FAULT CIRCUIT INTERRUPTER	PH	PHASE
BFG	BELOW FINISHED GRADE	H	HEIGHT	PVC	POLYVINYL CHLORIDE
BLDG	BUILDING	HC	HANDICAP ACCESSIBLE	RECEPT	RECEPTACLE
C	CONDUIT	HP	HORSEPOWER	REL	RELOCATE
CB	CIRCUIT BREAKER	HVAC	HEATING, VENTILATION AND/OR AIR CONDITIONING	REM	REMOVE
CFM	CUBIC FEET PER MINUTE	IG	ISOLATED GROUND	REP	REPLACE
CKT	CIRCUIT	IN	INCHES	RGS	RIGID GALVANIZED STEEL
COMM	COMMUNICATION	INT	INTERNAL	SCH	SCHEDULE
CONT.	CONTINUED	IT	INFORMATION TECHNOLOGIES	SF	SQUARE FOOT
CU	COPPER	JB	JUNCTION BOX	SFL	SUB-FEED LUGS
CUH	CABINET UNIT HEATER	K	KILO	SH	SHIELDED
DWG	DRAWING	KVA	KILO-VOLT AMPERE	SR	SURFACE RACEWAY
EC	ELECTRICAL CONTRACTOR	KW	KILOWATT	TBB	TELEPHONE BACKBOARD
ECB	ENCLOSED CIRCUIT BREAKER	LBS	POUNDS	TW	TWISTED
EM	EMERGENCY	LV	LOW VOLTAGE	TYP	TYPICAL
EMT	ELECTRICAL METALLIC TUBING	MAX	MAXIMUM	UG	UNDERGROUND
ELU	EMERGENCY LIGHTING UNIT	MC	METAL CLAD CABLE	UH	UNIT HEATER
EXR	EXISTING TO REMAIN	MCB	MAIN CIRCUIT BREAKER	UON	UNLESS OTHERWISE NOTED
FA	FIRE ALARM	MDP	MAIN DISTRIBUTION PANEL	V	VOLT
FAAP	FIRE ALARM ANNUNCIATOR PANEL	MH	MOUNTING HEIGHT	W	WATT
FACP	FIRE ALARM CONTROL PANEL	MIN	MINIMUM	W/	WITH
FLA	FULL LOAD AMPS	MLO	MAIN LUGS ONLY	WP	WEATHERPROOF
FLR	FLOOR	MS	MOTOR STARTING	XFMR	TRANSFORMER
FT	FEET	MTG	MOUNTING		
G	GROUND	NEC	NATIONAL ELECTRIC CODE		

SYMBOLS LEGEND:

SURFACE MOUNTED PANEL

RECESSED PANEL

J OR J JUNCTION BOX

X-Z, Y HOME RUN TO PANEL

X-Z, Y CIRCUIT CONTINUATION

CIRCUIT CONSISTING OF GROUND, NEUTRAL AND PHASE CONDUCTORS. ADDITIONAL SLASH MARKS INDICATE SWITCHING OR TRAVELER CONDUCTORS, AND A LONG SOLID LINE INDICATES NEUTRAL. A SEPARATE GREEN GROUND CONDUCTOR SHALL BE PLACED IN ALL NEW CIRCUITS

CONNECTION POINT

CAPPED CONDUIT

CONDUIT TURNED DOWN

CONDUIT TURNED UP

$ SINGLE POLE SWITCH, 20 AMP 120/277 UNLESS NOTED OTHERWISE
'MS'-INDICATES 1HP RATED GENERAL USE 'SNAP SWITCH' WITH OVERLOADS SIZED FOR EQUIPMENT AND LOCKABLE HASP
'3MS'-INDICATES 3 POLE 600 VOLT 30 AMP 3HP RATED MANUAL MOTOR STARTER WITH LOCKABLE HASP
'WP'-INDICATES WEATHER PROOF
'K' INDICATES KEYED SWITCH

NEMA 1 NON-FUSED DISCONNECT UON
'XX'- INDICATES DISCONNECT SIZE
'Y'- NUMBER OF POLES

DUPLEX RECEPTACLE,
'GFI'-INDICATES GROUND FAULT CIRCUIT INTERRUPTER
'WP'-WEATHER-PROOF

SIMPLEX RECEPTACLE

DATA OUTLET WITH 1" CONDUIT TO CLOSEST DATA RACK. 2-PORTS IN FACEPLATE. PROVIDE 2-CAT 6 CABLES

FACP FIRE ALARM CONTROL PANEL

F PULL STATION

SD OR SD WALL MOUNTED OR CEILING MOUNTED SMOKE DETECTOR. PHOTOELECTRIC UON

F X WALL MOUNTED STROBE ONLY NOTIFICATION APPLIANCE. 15 CANDELA UNLESS NOTED OTHERWISE
'X' INDICATES CANDELA RATING STROBE UON

F X WALL MOUNTED FIRE ALARM COMBINATION HORN/STROBE. 15 CANDELA UNLESS NOTED OTHERWISE 'X' INDICATES CANDELA RATING STROBE UON

DH DOOR HOLD OPEN DEVICE

CM FIRE ALARM CONTROL MODULE

MM FIRE ALARM MONITOR MODULE

OS OR OS CEILING OR WALL MOUNTED OCCUPANCY SENSOR

OR CEILING OR WALL MOUNTED LED EXIT SIGN, PROVIDE DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS

OR CEILING OR WALL MOUNTED EMERGENCY LIGHTING UNIT

VT WALL MOUNTED VAPOR TIGHT FIXTURE

EXISTING LIGHT FIXTURE

EXISITNG WALL MOUNT FIXTURE

1 X 4 LED STRIPLIGHT SURFACE MOUNTED FIXTURE.
COOPER LIGHTING #4SNLED-LD5-37SL-LN-UNV-L835-CD1-U

OR SECURITY CAMERA

GENERAL NOTES:

1. REMOVALS INDICATE DEVICE LOCATIONS, EQUIPMENT CONNECTIONS, AND PANEL LOCATIONS AS OBSERVED IN THE FIELD. EXISTING PANEL INFORMATION IS BASED ON FIELD OBSERVATION AND AS BUILT DRAWINGS. VERIFY CIRCUITING IN FIELD PRIOR TO REMOVAL. CONFIRM ALL LOCATIONS WITH FIELD OBSERVATIONS, MEASUREMENTS, AND INVESTIGATION. REMOVE ELECTRICAL ITEMS SHOWN ON PLANS UNLESS NOTED OTHERWISE.
2. PROVIDE LIFTS, LADDERS, AND OTHER EQUIPMENT REQUIRED TO GAIN ACCESS FOR ALL ELEVATED WORK. OWNER'S LIFTS AND LADDERS SHALL NOT BE USED.
3. COORDINATE REMOVALS WITH THE ARCHITECTURAL PLANS.
4. COORDINATE ELECTRICAL REMOVALS WITH OTHER TRADES.
5. CONDUCT REMOVALS TO ALLOW EXISTING RECEPTACLES TO REMAIN TO STAY ON THEIR EXISTING CIRCUIT(S) SHOULD A NEW CIRCUIT OR DEDICATED CIRCUIT NOT BE INDICATED ON THE DRAWINGS.
6. REMOVE CONDUCTORS AND CONDUIT BACK TO SOURCE PANEL WHERE NOT INDICATED FOR REUSE.
7. REMOVE CONDUIT AND CONDUCTORS ASSOCIATED WITH FIXTURES, DEVICES, AND EQUIPMENT REMOVED.
8. MAINTAIN CIRCUIT CONTINUITY TO SYSTEMS AND ROOMS ADJACENT TO RENOVATION AND CONSTRUCTION AREAS. PERMANENTLY REPAIR CIRCUITS OR WIRING DISTURBED, MODIFIED, OR DISPLACED BY THE WORK.
9. REPAIR ALL OPEN PENETRATIONS CREATED BY REMOVAL OF ELECTRICAL RACEWAYS.
10. PROVIDE COVER PLATES FOR ABANDONED FLUSH MOUNTED DEVICES.
11. THE EXISTING FIRE ALARM PANEL IS A EST-3. OBTAIN THE SERVICES OF THE OWNER'S FIRE ALARM VENDOR FOR PROGRAMMING, ADDITIONS, AND/OR RELOCATIONS OF EXISTING FIRE ALARM SYSTEM DEVICES.
12. PROTECT SMOKE DETECTORS DURING CONSTRUCTION. TAKE MEASURES TO PREVENT FIRE ALARM SYSTEM TRIP DUE TO CONSTRUCTION. RESTORE FIRE ALARM TO FULL FUNCTION WHEN CONSTRUCTION WORK CEASES EACH DAY OR PORTION OF WORK DAY.
13. DO NOT ALLOW FIRE ALARM CONTROL PANEL TO REMAIN IN 'TROUBLE' DURING REMOVALS. AFTER COMPLETION OF EACH DAY'S WORK REPROGRAM PANEL OR MAKE REPAIRS TO PLACE PANEL IN 'NORMAL' CONDITION.
14. PROVIDE ACCURATE, TYPED, PANEL DIRECTORY FOR ALL PANELS INSTALLED OR MODIFIED AS PART OF THE WORK.
15. PROVIDE CIRCUIT BREAKERS LISTED/LABELED FOR EXISTING PANELS TO SUPPLY BRANCH CIRCUITS.
16. FIRESTOP ALL PENETRATIONS THROUGH RATED WALLS AND FLOOR WITH A LISTED FIRESTOP METHOD MATCHING THE F AND T RATINGS OF THE PENETRATED MEDIUM.
17. COORDINATE WITH OTHER TRADES LOCATIONS OF DISCONNECTS, MOTOR CONTROLLERS AND OTHER ELECTRICAL EQUIPMENT TO PROVIDE REQUIRED CLEARANCES.
18. PROVIDE BRANCH CIRCUIT TO TERMINALS OF MECHANICAL EQUIPMENT AND MAKE TERMINATIONS.
19. CONNECT EXIT SIGNS AND EMERGENCY LIGHTING UNITS (ELU'S) AHEAD OF LOCAL SWITCHING TO THE SAME CIRCUIT AS THE AREA'S GENERAL LIGHTING. TYPICAL FOR ALL ELU'S AND EXIT SIGNS UNLESS OTHERWISE NOTED.
20. PROVIDE MOUNTING HARDWARE AND MANUFACTURER'S ACCESSORIES FOR LIGHTING FIXTURES AS REQUIRED FOR A COMPLETE INSTALLATION.

KEYED NOTES:

(1) PROVIDE 1" CONDUIT FROM ELEVATOR PIT TO ABOVE DROP CEILING AND 1" CONDUIT FROM JANITOR CLOSET TO ABOVE DROP CEILING TO INSTALL PUMP FURNISHED POWER CABLE. INSTALL SUMP PUMP JUNCTION BOX IN ELEVATOR PIT

(2) PROVIDE FIRE ALARM CONTROL MODULES FOR PRIMARY RECALL, SECONDARY RECALL, AND FIREMAN'S HAT FUNCTION OF ELEVATOR.

(3) PROVIDE LOCKABLE, IN THE ON POSITION ELEVATOR CAR LIGHT DISCONNECT.

(4) PROVIDE CONTROLLER POWER DISCONNECT AS INDICATED FOR ELEVATOR MAIN POWER. PROVIDE 3#6, #10 G, 3/4" C FROM PANEL PPA. DISCONNECT SHALL HAVE AUXILIARY CONTACTS TO INDICATE SWITCH IS IN OPEN POSITION. PROVIDE ALL CONTROL WIRING FROM AUXILIARY CONTACTS TO ELEVATOR CONTROLLER. PROVIDE WALL BOXES AND RACEWAY WITH PULL WIRE TO ELEVATOR CONTROLLER FOR ELEVATOR DOOR CONTROLS ON EACH FLOOR. PROVIDE TELEPHONE WIRING CAT6 FROM ELEVATOR MACHINE ROOM TO MAIN TELEPHONE TERMINATION BOARD. REVISE ABOVE INFORMATION IN ACCORDANCE WITH ALL APPLICABLE CODES TO ACCOMMODATE ACTUAL ELEVATOR INSTALLED. COORDINATE ALL RELATED WORK WITH ELEVATOR INSTALLER.

(5) RELOCATE EXISTING DEVICE. PRESERVE CIRCUIT. SEE ELECTRICAL INSTALLATION PLANS TO SEE LOCATION.

(6) TEMPORARILY SUSPEND CEILING DEVICE TO FACILITATE CEILING REMOVAL AND REINSTALLATION. MAINTAIN CIRCUIT OR DEVICE COMMUNICATION. SEE ELECTRICAL INSTALLATION PLANS TO SEE LOCATION.

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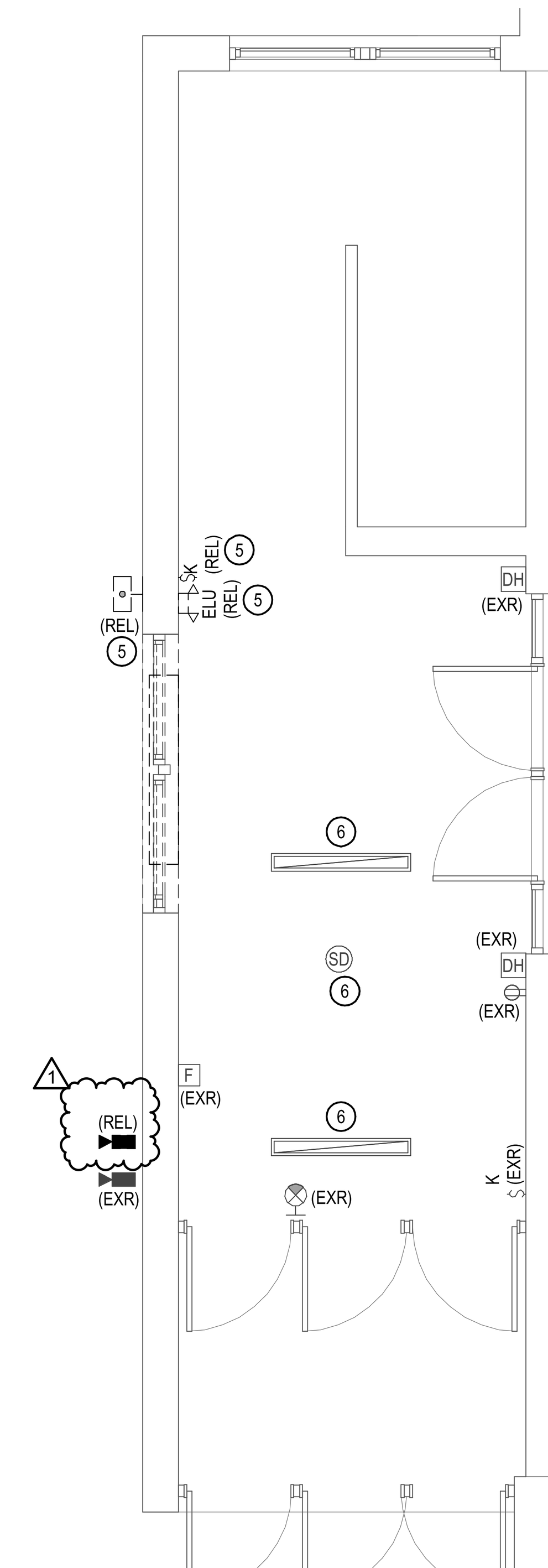
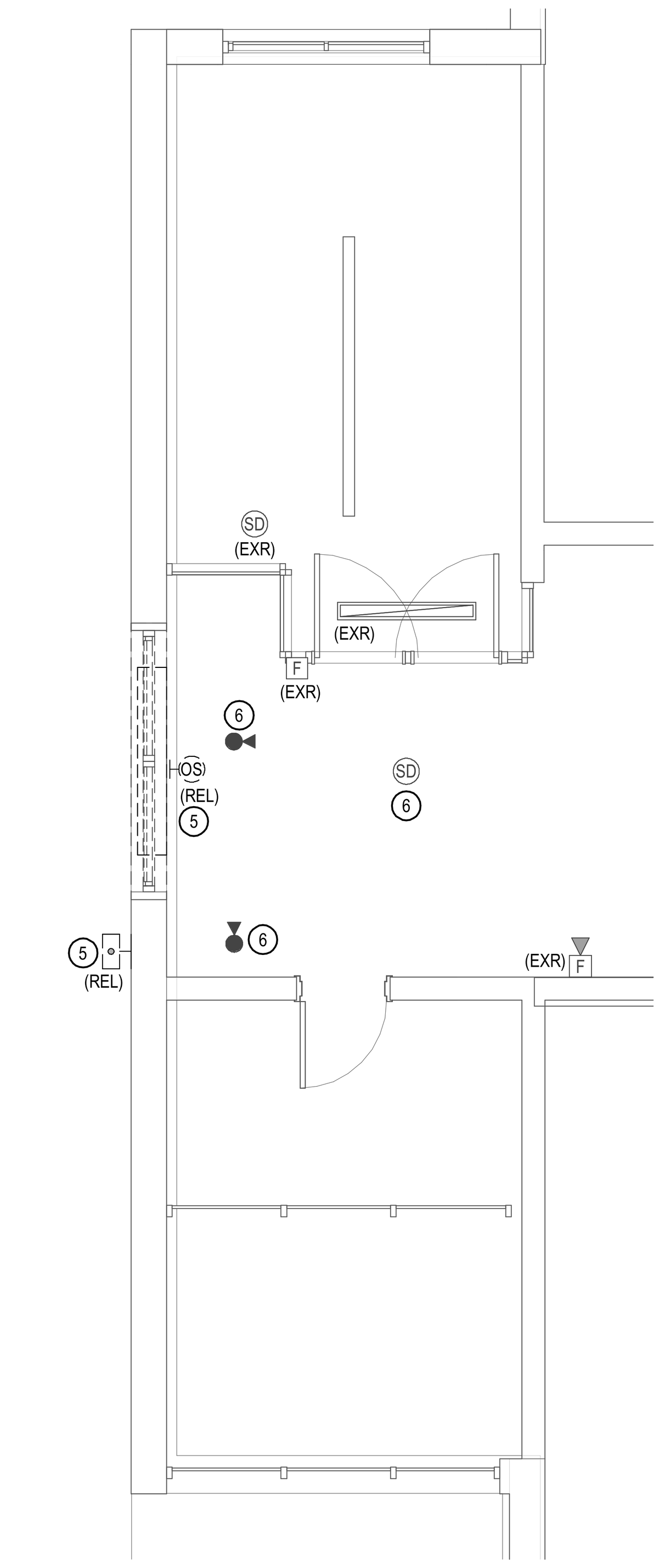
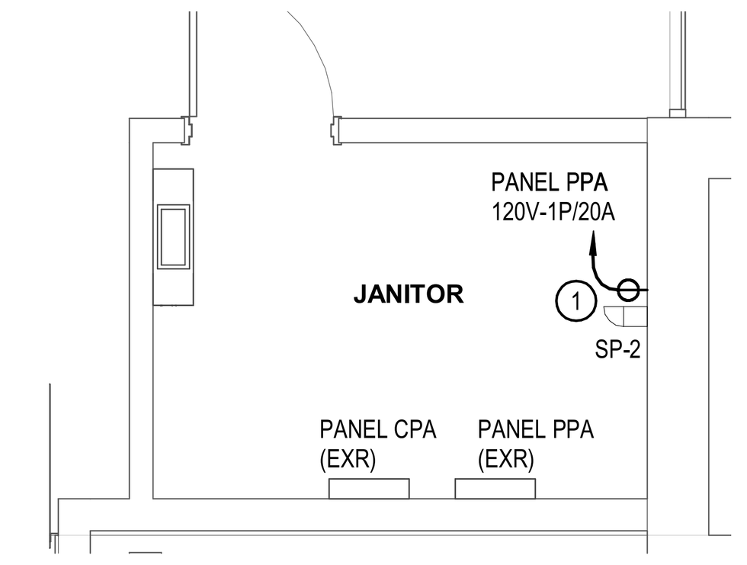
(7) PROVIDE CAT 6 CABLE FROM CLOSEST CAMERA SERVER AND CAMERA. OBTAIN PRODUCTS FROM THE DISTRICT'S PREFERRED ACCESS CONTROL VENDOR A+ TECHNOLOGY & SECURITY SOLUTIONS THAT ARE COMPATIBLE WITH THE EXISITNG CAMERA SYSTEM. A+ WILL MAKE FINAL CONNECTIONS AND ADD THE CAMERA TO THE EXSIITNG SYSTEM



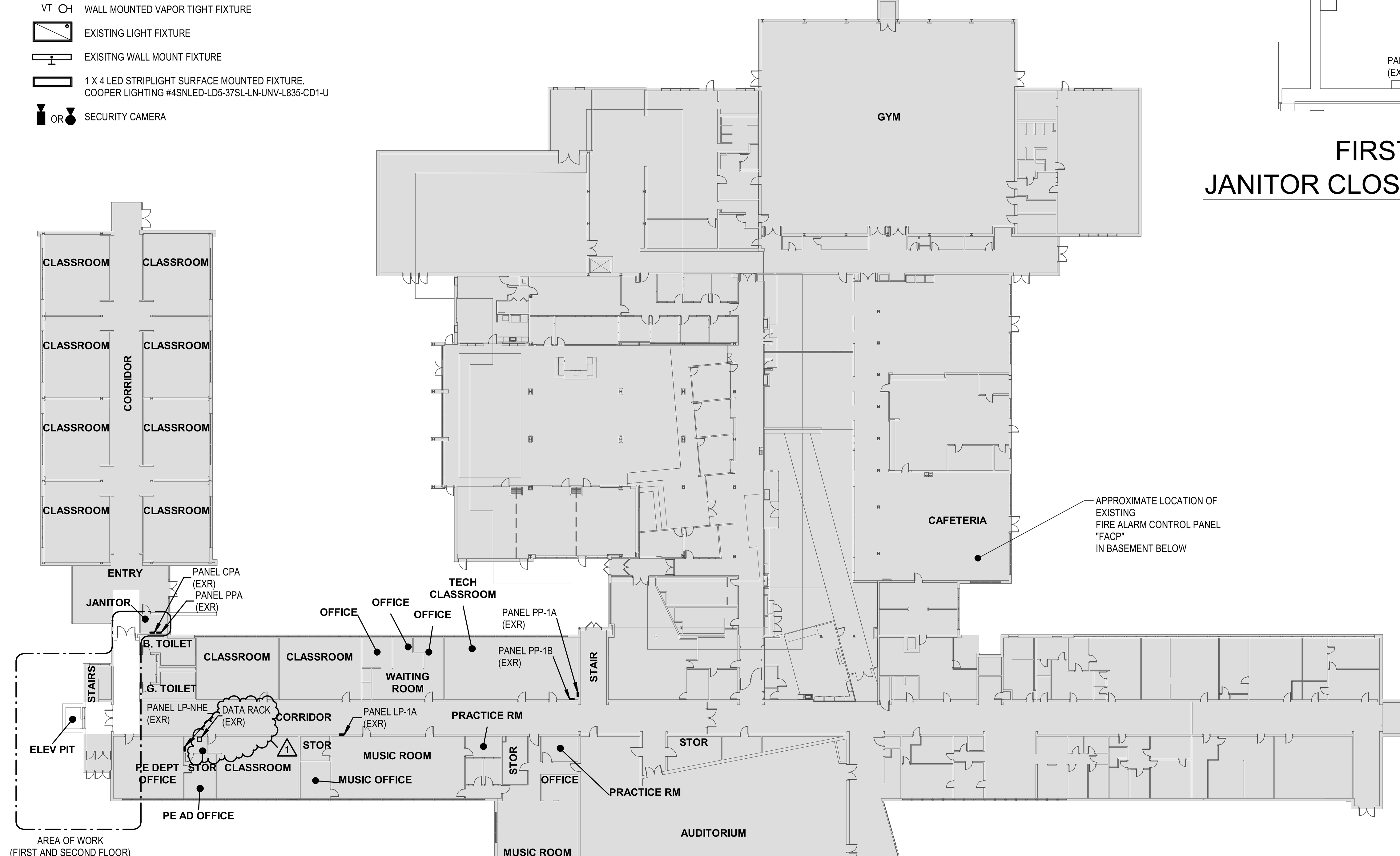
FIRST FLOOR
PARTIAL ELECTRICAL REMOVALS G5
1/4" = 1'-0"



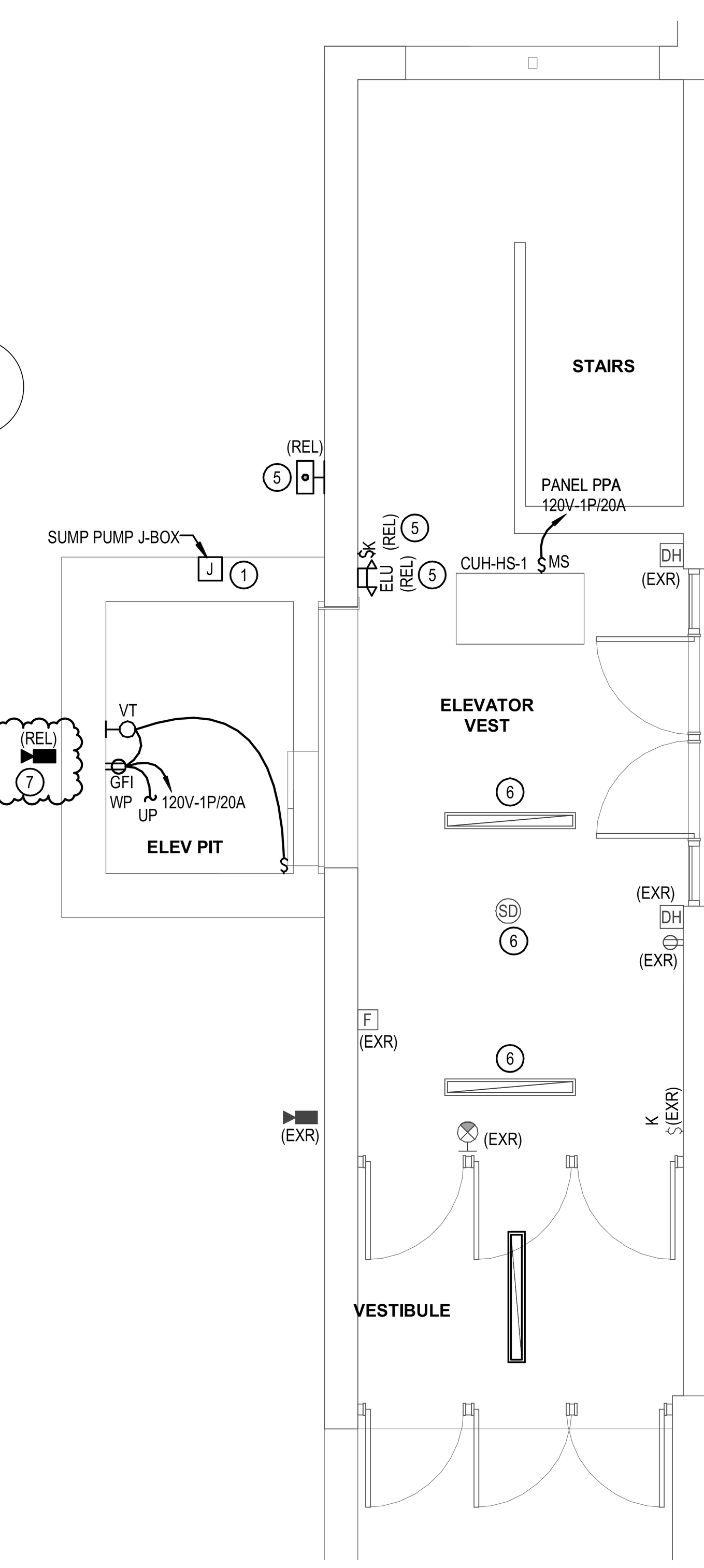
SECOND FLOOR
PARTIAL ELECTRICAL REMOVALS G1
1/4" = 1'-0"



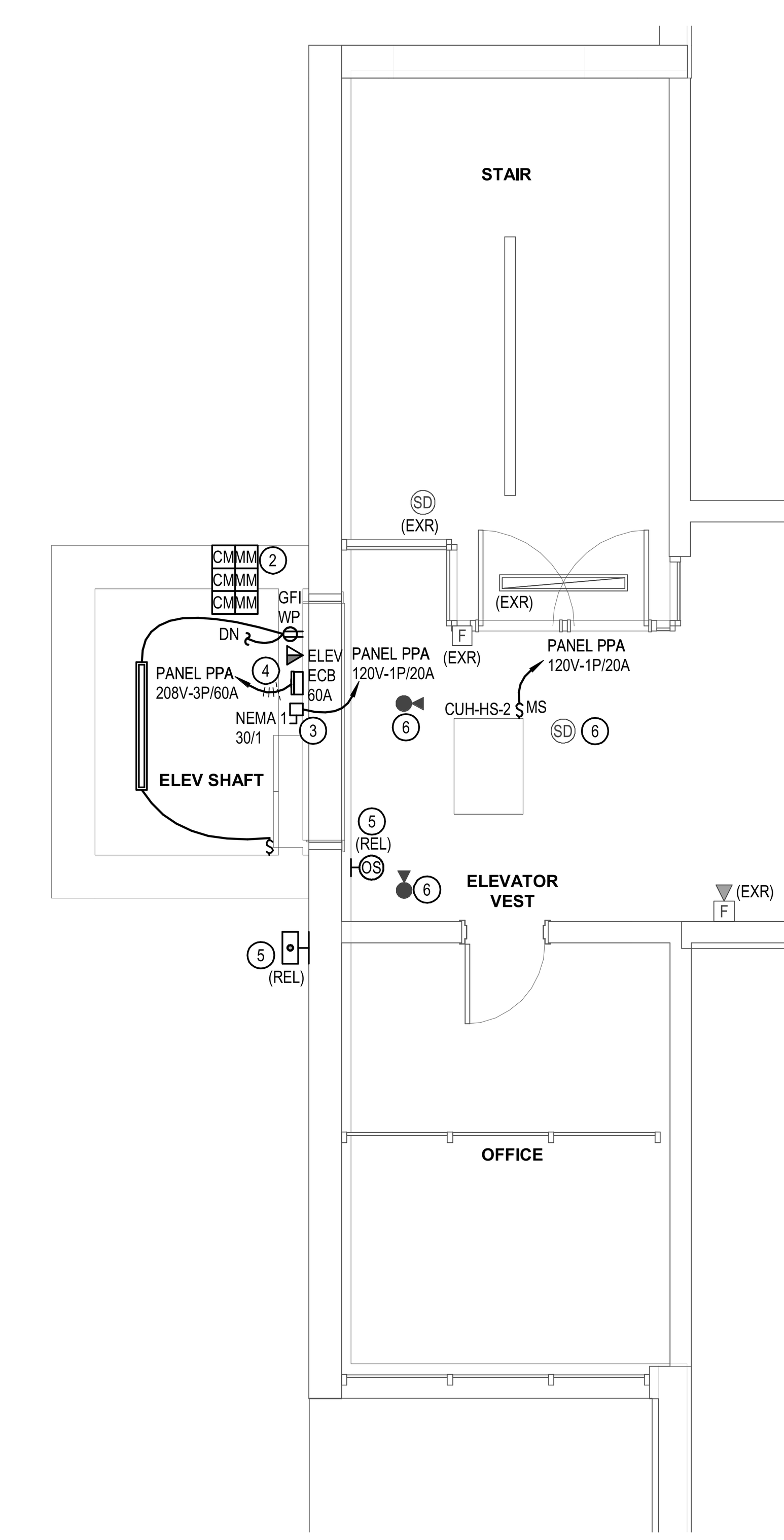
FIRST FLOOR
JANITOR CLOSET PLAN F9
1/4" = 1'-0"



FIRST FLOOR
FIRST FLOOR OVERALL KEY PLAN A14
1" = 30'-0"



FIRST FLOOR
PARTIAL ELECTRICAL PLAN A5
1/4" = 1'-0"



SECOND FLOOR
PARTIAL ELECTRICAL PLAN A1
1/4" = 1'-0"

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NANUET HIGH SCHOOL ELEVATOR

SED #: 50-01-08-03-0-003-032

103 Church Street
Nanuet, NY 10954

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REVISIONS

No.	Description	Date
1	Bid Addendum #1	8/19/22

ISSUED: BID SET ISSUANCE

DATE: AUGUST 02, 2022

SCALE: As indicated

SHEET NAME:
ELECTRICAL PLANS

SHEET NUMBER:
HSE-E101

ISSUE FOR BID SET

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