

Pre-Bid Addendum #1

Response to RFI:

1. Who is responsible for moving and protecting the existing documents and furnishing inside the attic space of the Village Hall building?
 - a. The Town/Village will be responsible for moving existing documents as needed for work to proceed; General Contractor shall be responsible for protection.
2. Will the town allow space for parking or does the contractor own paying for parking?
 - a. Parking accommodations will be made.
3. Will overhead protection and bridging be required over all points of egress on both buildings?
 - a. Yes; provide bridging over building entrances while working overhead.

Revisions to Drawings:

4. **Revise** Detail 1/A450.
5. **Revise** Drawing A200:
 - a. Add snow guards at Village Hall.
 - b. Add roof hatches at Village Hall and Old Post Office.
 - c. Add plywood crickets at Village Hall elevator bulkhead.

Revisions to Project Manual:

6. **Revise** Section 003113 'Preliminary Schedules':
 - a. Bid Due Date 24 May 2022 @ 10 a.m.
7. **Revise** Section 075323 'Ethylene-Propylene-Diene-Monomer (EPDM) Roofing'.
8. **Revise** Section 077200 'Roof Accessories' to include roof hatches.

END OF ADDENDUM 1

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
2. Vapor retarder.
3. Roof insulation.
4. Cover board.

- B. Related Requirements:

1. Section 061000 "Rough Carpentry" Section for wood nailers, curbs, and blocking.
2. Section 077100 "Roof Specialties" for roof edge flashings and counterflashings.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

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

- B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
 - 1. Layout and thickness if insulation.
 - 2. Base flashings and membrane terminations.
 - 3. Flashing details at penetrations.
 - 4. Tapered insulation, thickness, and slopes.
 - 5. Roof plan showing orientation of steel roof deck and orientation of roof membrane and fastening spacings and patterns for mechanically fastened roofing system.
 - 6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Manufacturer Certificates:
 - 1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - a. Submit evidence of complying with performance requirements.
 - 2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
- C. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
- D. Evaluation Reports: For components of roofing system, from ICC-ES.
- E. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed or listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 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. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, and other components of roofing system.
 - 2. Warranty Period: 30 years from Date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, and vapor retarders, for the following warranty period:
 - 1. Warranty Period: Two years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.
 - 1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance: Roof membrane shall resist impact damage when tested in accordance with ASTM D3746, ASTM D4272, or the Resistance to Foot Traffic Test in FM Approvals 4470.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
 - 1. Zone 1 (Roof Area Field): As indicated on Drawings.
 - 2. Zone 2 (Roof Area Perimeter): As indicated on Drawings.
 - 3. Zone 3 (Roof Area Corners): As indicated on Drawings.

- C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
 - 1. Fire/Windstorm Classification: Class 1A-120.
 - 2. Hail-Resistance Rating: MH.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

- A. EPDM Sheet: ASTM D4637/D4637M, Type I, nonreinforced, EPDM sheet.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Versico Roofing Systems; VersiGard® EPDM or comparable product by one of the following:
 - a. Firestone Building Products.
 - b. GenFlex Roofing Systems.
 - 2. Thickness: 90 mils (2.2 mm), nominal.
 - 3. Exposed Face Color: Black.
 - 4. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
 - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil- (1.5-mm-) thick EPDM, partially cured or cured, in accordance with application.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Bonding Adhesive: Manufacturer's standard, water based and, low VOC.
- E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- (75-mm-) wide minimum, butyl splice tape with release film.
- F. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- H. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
 - 1. Where exposed to view, provide termination bar fascia.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 VAPOR RETARDER

- A. Self-Adhering-Sheet Vapor Retarder: ASTM D1970/D1970M, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil- (1.0-mm-) total thickness; maximum permeance rating of 0.1 perm (6 ng/Pa x s x sq. m); cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor retarder manufacturer.

2.5 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured by EPDM roof membrane manufacturer, approved for use in FM Approvals' RoofNav-listed roof assemblies.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Versico Roofing Systems; Versicore MP-H Polyiso or a comparable product by one of the following:
 - a. Firestone Building Products.
 - b. Flex Membrane International Corp.
 2. Compressive Strength: 25 psi (172 kPa).
 3. Size: 48 by 48 inches (1219 by 1219 mm).
 4. Thickness:
 - a. Base Layer: 2.5" (63.5 mm).
- C. Tapered Insulation: Provide factory-tapered insulation boards.
1. Material: Match roof insulation.
 2. Minimum Thickness: 1/4 inch (6.35 mm).
 3. Slope:
 - a. Roof Field: 1/8 inch per foot (1:96) unless otherwise indicated on Drawings.
 - b. Saddles and Crickets: 1/2 inch per foot (1:24) unless otherwise indicated on Drawings.

2.6 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
- C. Cover Board: ASTM C1278/C1278M, fiber-reinforced gypsum board.
1. Basis-of-Design Product: Subject to compliance with requirements, provide USG Securock® Brand; Gypsum-Fiber Roof Board or comparable product by one of the following:
 - a. CertainTeed Corporation.
 - b. Georgia-Pacific Gypsum LLC.
 2. Thickness: 5/8 inch (16 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
 - 4. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than 75 percent, or as recommended by roofing system manufacturer when tested in accordance with ASTM F2170.
 - a. Test Frequency: One test probe per each 1000 sq. ft. (93 sq. m), or portion thereof, of roof deck, with not less than three test probes.
 - b. Submit test reports within 24 hours of performing tests.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation in accordance with roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

- A. Install roofing system in accordance with roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 VAPOR RETARDER INSTALLATION

- A. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 and 6 inches (90 and 150 mm), respectively.
 - 1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
 - 2. Seal laps by rolling.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.5 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Wood Decking:
 - 1. Install base layer of insulation with joints staggered not less than 24 inches (610 mm) in adjacent rows.
 - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - b. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
 - c. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - d. Adhere each layer of insulation to substrate using adhesive in accordance with FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
 - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
 - 2. Install tapered insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
 - a. Staggered end joints within each layer not less than 24 inches (610 mm) in adjacent rows.
 - b. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
 - c. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - d. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
 - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 INSTALLATION OF COVER BOARDS

- A. 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.
 - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - 2. At internal roof drains, conform to slope of drain sump.
 - a. Trim cover board so that water flow is unrestricted.
 - 3. Cut and fit cover board tight to nailers, projections, and penetrations.
 - 4. Adhere cover board to substrate using adhesive in accordance with FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
 - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.7 ADHERED ROOFING INSTALLATION

- A. Adhere roof membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions.
- B. Unroll membrane roof membrane and allow to relax before installing.

- C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- E. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
 - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 2. Apply lap sealant and seal exposed edges of roofing terminations.
- H. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- I. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.8 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates in accordance with roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Perform the following tests:
 - 1. Flood Testing: Flood test each roofing area for leaks, in accordance with recommendations in ASTM D5957, after completing roofing and flashing. Install temporary containment assemblies, plug or dam drains, and flood with potable water.
 - a. Perform tests before overlying construction is placed.
 - b. Flood to an average depth of 2-1/2 inches (65 mm) with a minimum depth of 1 inch (25 mm) and not exceeding a depth of 4 inches (100 mm). Maintain 2 inches (50 mm) of clearance from top of base flashing.
 - c. Flood each area for 48 hours.

- d. After flood testing, repair leaks, repeat flood tests, and make further repairs until roofing and flashing installations are watertight.
 - 1) Cost of retesting is Contractor's responsibility.
 - e. Testing agency shall prepare survey report indicating locations initial leaks, if any, and final survey report.
2. Testing agency shall prepare survey report indicating locations of initial discontinuities, if any.
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
 - D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
 - E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and in accordance with warranty requirements.

3.11 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner>.
 - 2. Address: <Insert address>.
 - 3. Building Name/Type: <Insert information>.
 - 4. Address: <Insert address>.
 - 5. Area of Work: <Insert information>.
 - 6. Acceptance Date: _____.
 - 7. Warranty Period: <Insert time>.
 - 8. Expiration Date: _____.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
 - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;



- b. peak gust wind speed exceeding 120 mph (53.6 m/s);
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work in accordance with requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

- 1. Authorized Signature: _____.
- 2. Name: _____.
- 3. Title: _____.

END OF SECTION 075323

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Equipment supports.
2. Roof hatches.
3. Pipe supports.
4. Pipe portals.

- B. Related Sections:

1. Section 077100 "Roof Specialties" for manufactured fasciae, copings, gravel stops, gutters and downspouts, and counterflashing.

1.3 COORDINATION

- A. Coordinate layout and installation of roof accessories with interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For manufacturer's special warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories 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.

2.2 EQUIPMENT SUPPORTS

- A. Equipment Supports: Rail-type metal equipment supports capable of supporting superimposed live and dead loads between structural supports, including equipment loads and other construction indicated on Drawings, spanning between structural supports; capable of meeting performance requirements; with welded corner joints, and integrally formed structure-mounting flange at bottom.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Curbs Plus, Inc.
 - b. Pate Company (The).
 - c. Roof Products and Systems (RPS); a division of Hart & Cooley, Inc.
- B. Size: Coordinate dimensions with equipment to be supported.
- C. Material: Zinc-coated (galvanized) steel sheet, 0.064 inch (1.63 mm) thick.
1. Finish: Mill phosphatized.
- D. Construction:
1. Curb Profile: Manufacturer's standard compatible with roofing system.
 2. Nailer: Factory-installed continuous wood nailers 3-1/2 inches (90 mm) wide under top flange on side of curb, continuous around support perimeter.
 3. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as equipment support.
 4. Fabricate equipment supports to minimum height of 12 inches (305 mm) above roofing surface unless otherwise indicated.

2.3 ROOF HATCH

- A. Roof Hatches: Metal roof-hatch units with lids and insulated single-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, straight sides, and integrally formed deck-mounting flange at perimeter bottom.
1. Basis-of-Design Product: Subject to compliance with requirements, provide The Bilco Company; 'S-50' or comparable product by one of the following:
 - a. Babcock-Davis.
 - b. Kingspan Light + Air LLC.
 - c. Nystrom.
- B. Type and Size:
1. Village Hall: Single-leaf lid, 39 by 33 inches (990 by 838 mm).
 2. Old Post Office: 36-1/2 by 30-1/2 inches (927 by 775 mm).
- C. Loads: Minimum 40-lbf/sq. ft. (1.9-kPa) external live load and 20-lbf/sq. ft. (0.95-kPa) internal uplift load.
- D. Hatch Material: Aluminum sheet.
1. Thickness: Manufacturer's standard thickness for hatch size indicated.
 2. Finish: Baked enamel or powder coat.
 3. Color: As selected by Architect from manufacturer's full range.
- E. Construction:

1. Insulation: Glass-fiber board.
 2. Nailer: Factory-installed wood nailer continuous around hatch perimeter.
 3. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
 4. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.
 5. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
 6. Fabricate curbs to minimum height of 12 inches (305 mm) above roofing surface unless otherwise indicated.
- F. Hardware: Spring operators, hold-open arm, galvanized-steel spring latch with turn handles, galvanized-steel butt- or pintle-type hinge system, and padlock hasps inside and outside.
- G. Safety Railing System: One-piece welded safety rail including fasteners, and accessories required for a complete installation; attached to roof hatch and complying with 29 CFR 1910.23 requirements and authorities having jurisdiction.
1. Finish: Manufacturer's standard.

2.4 PIPE AND DUCT SUPPORTS

- A. Adjustable-Height Roller-Bearing Pipe Supports: Polycarbonate pipe stand base, pipe support, and roller housing, with stainless-steel threaded rod designed for adjusting support height, accommodating up to 3 inch (76.2 mm) diameter pipe or conduit; with provision for pipe retainer and with manufacturer's support pad or deck plate as recommended for penetration-free installation over roof membrane type; as required for quantity of pipe runs and sizes.

2.5 PIPE PORTALS

- A. Wall-Mounted Pipe Portal: Gasketed aluminum framed, 3-piece configuration with removable panel and exit seals.
1. Basis-of-Design: Vault Roof Penetration Housings, LLC; 'Wall Vault WV-1017 Series'.

2.6 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation.
- B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
- C. Aluminum Extrusions and Tubes: ASTM B 221 (ASTM B 221M), manufacturer's standard alloy and temper for type of use, finished to match assembly where used; otherwise mill finished.
- D. Stainless-Steel Sheet and Shapes: ASTM A 240/A 240M or ASTM A 666, Type 304.

2.7 MISCELLANEOUS MATERIALS

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

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. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
 - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- 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.
- C. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.
- D. Pipe Support Installation: Comply with MSS SP-58 and MSS SP-89. Install supports and attachments as required to properly support piping. Arrange for grouping of parallel runs of horizontal piping, and support together.
- E. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Clean off excess sealants.
- C. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

4			
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1	04/23/2021	Issue for Bid	DR
No.	Date	Revision	By

Drawn By: _____
 Checked By: _____
 BDS Proj. #: 18-09
 Date: September 27, 2021

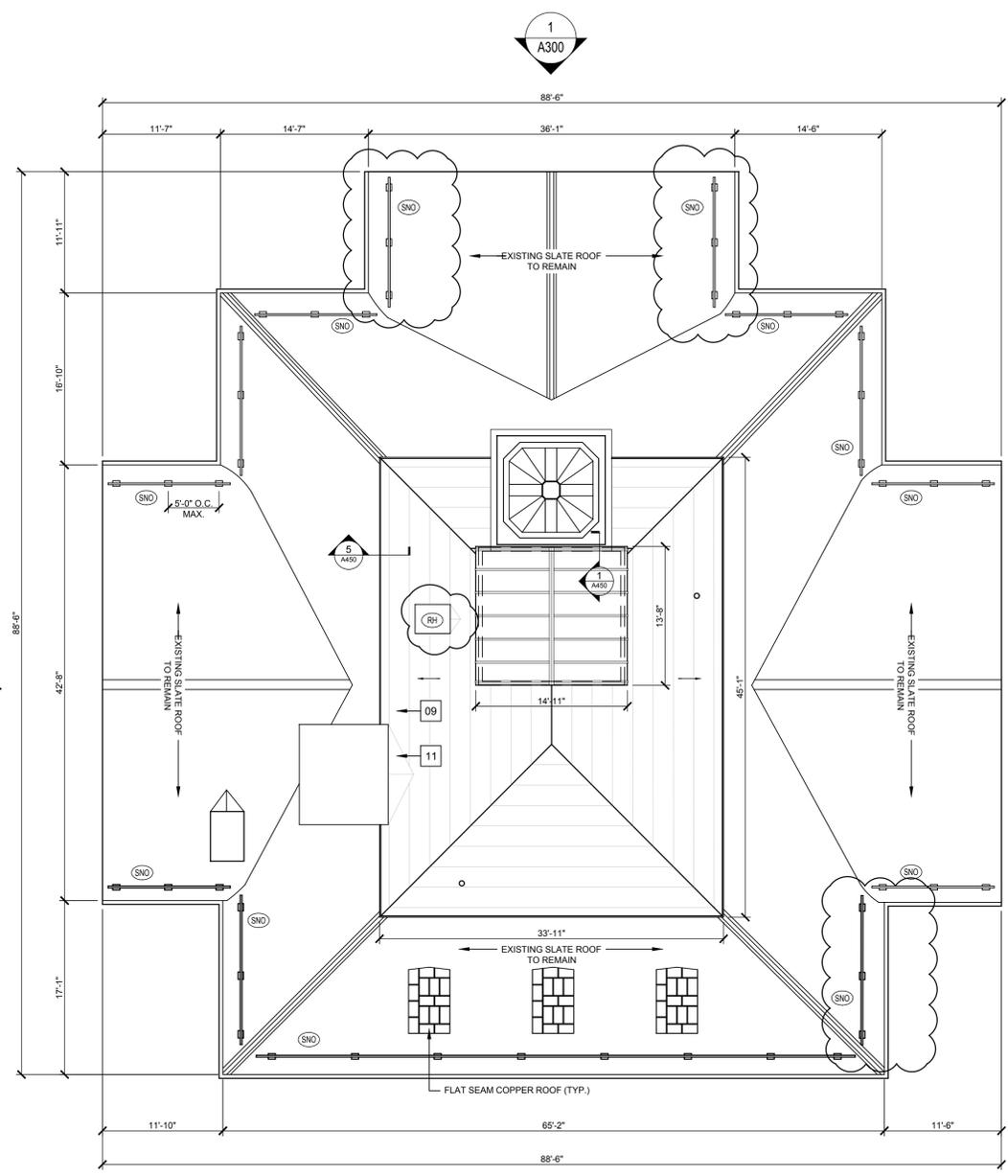
Sheet Title

**CONSTRUCTION
 ROOF
 PLANS**

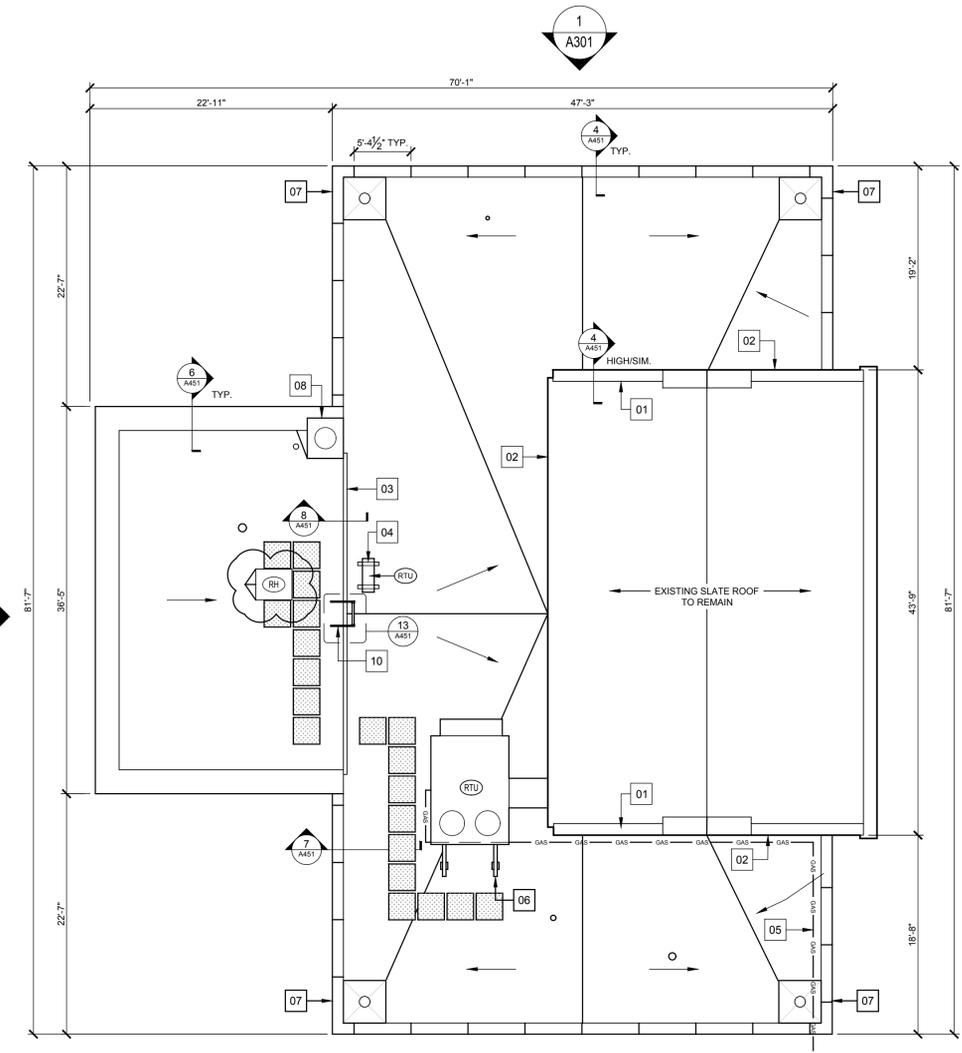
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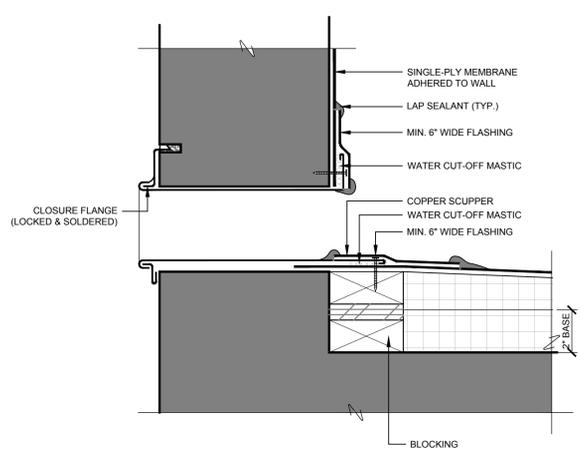
ROOF LEGEND		ROOF DEMOLITION KEY NOTES	ROOF CONSTRUCTION KEY NOTES
	AREA OF ROOFING REPLACEMENT	01 REMOVE WOOD FRAMED PLATFORM TO LEVEL OF EXISTING ROOF; REROUTE CONDUIT AS REQUIRED.	01 EXISTING THROUGH-WALL FLASHING TO REMAIN AT SLATE ROOF - REMOVE SEALANT, CLEAN JOINT, AND REPOINT
	STONE COPING TO BE REPLACED	02 REMOVE EXISTING ROOF DRAIN; RELOCATE AND PATCH DECK AS REQUIRED	02 EXISTING COUNTER-FLASHING TO REMAIN - REMOVE SEALANT, CLEAN JOINT, AND RESEAL
	ALUMINUM COPING TO BE REPLACED	03 REMOVE GUTTERS, COUNTERFLASHINGS, CAULK	03 DISCONNECT EXISTING UTILITIES PENETRATING WALL; INSTALL PENETRATION HOUSING AND RECONNECT UTILITIES
	SUMPED ROOF DRAIN/TAPERED INSULATION LAYOUT/SLOPE	04 RE-ROUTE VENT	04 EQUIPMENT SUPPORTS
	BASIS-OF-DESIGN DRAIN, JAY R. SMITH MFG. CO. 1320Y-E-C2-R-C-CID	05 REMOVE COUNTERFLASHING	05 EXISTING GAS LINE; PROVIDE PIPE SUPPORTS
		06 REMOVE SNOW GUARD	06 PROVIDE POURABLE SEALANT POCKETS AT EXISTING RTU SUPPORTS; WELL ANGLE TO SUPPORT TO CREATE 'TUBE'
		07 REMOVE HORN ASSEMBLY	07 COPPER OVERFLOW SCUPPER; SEE DETAILS 2 & 3/A450
			08 PROVIDE BRICKWALL CAP TO MATCH COPING; REPAIR END OF WOOD PARAPET & SEAL; PROVIDE ALUMINUM COUNTERFLASHING AROUND CHIMNEY
			09 PROVIDE FLEXIBLE PENETRATION
			10 ALUMINUM LADDER W/PLATFORM. BASIS-OF-DESIGN OKEEFE'S 503A
			11 PLYWOOD CRICKETS



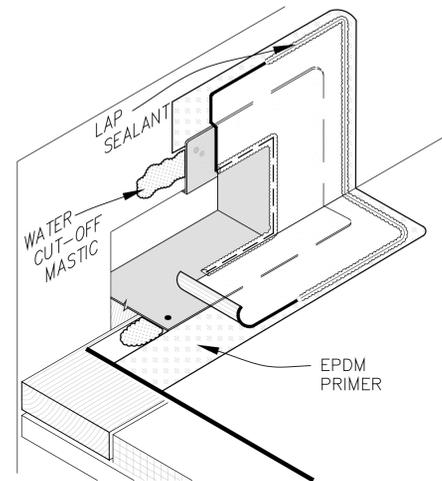
2 Village Hall
 SCALE: 1/8" = 1'-0"



1 Old Post Office
 SCALE: 1/8" = 1'-0"

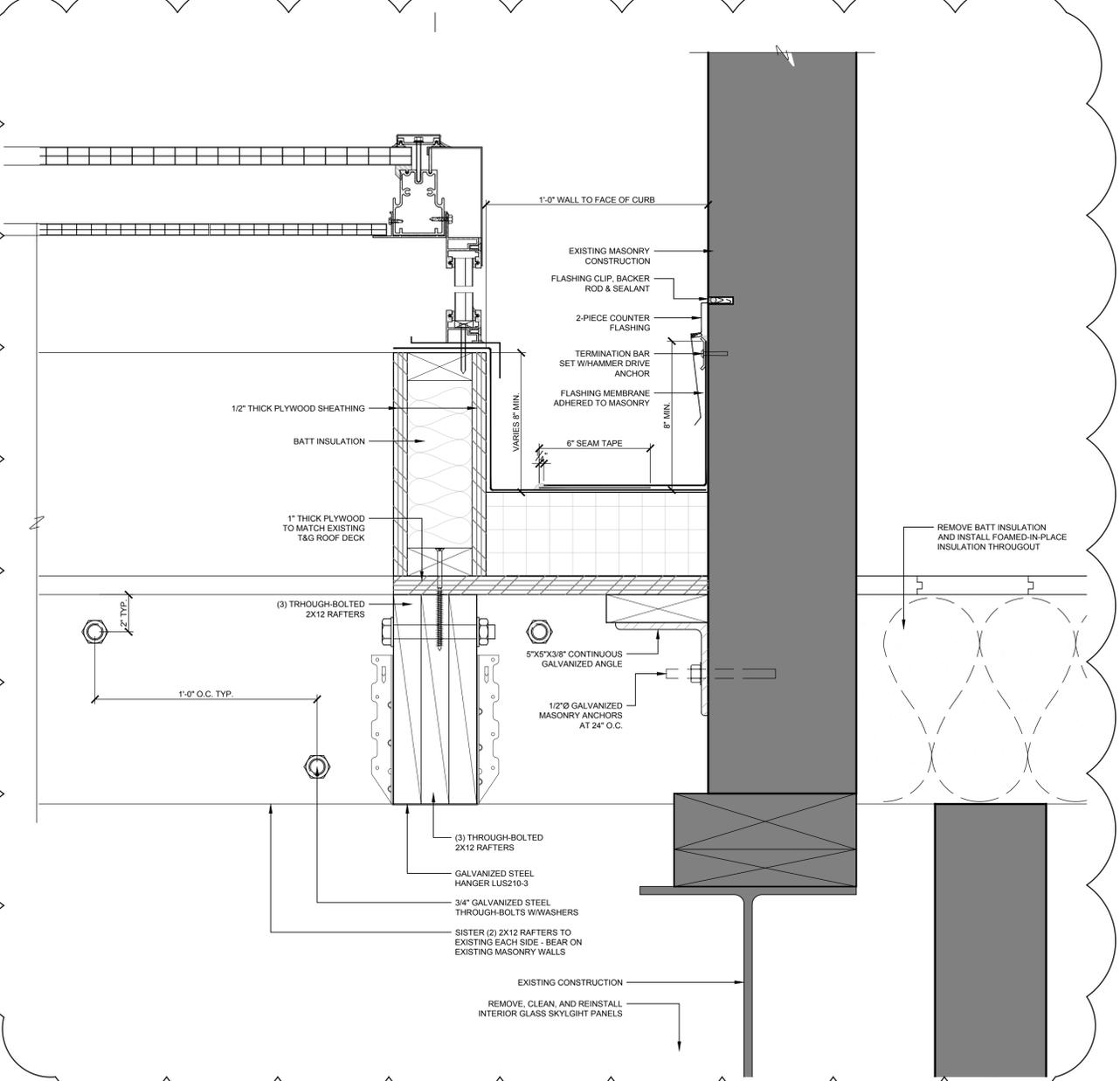


2 Detail at Scupper
 SCALE: 3" = 1'-0"

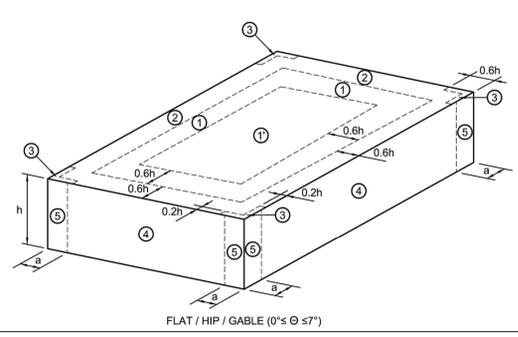


- NOTES:
1. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
 2. CLEAN METAL FLANGE WITH WEATHERED MEMBRANE CLEANER; AND ALLOW TO DRY.

3 Detail at Scupper
 SCALE: N.T.S.



1 Section at Skylight
 SCALE: 3" = 1'-0"

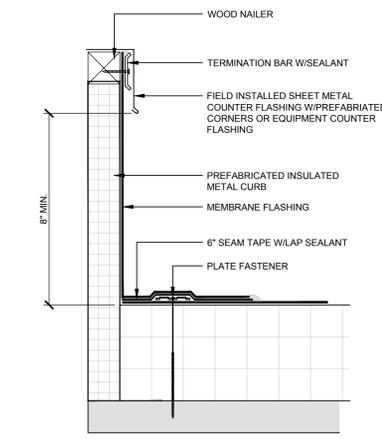


WIND PRESSURE ZONE DESIGNATIONS
 SCALE: N.T.S.

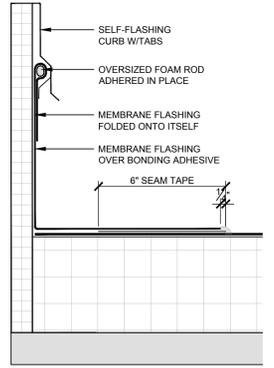
NOTE:
 a = 3'-0"

ULTIMATE WIND PRESSURE FOR EXTERIOR COMPONENTS AND CLADDING MATERIALS

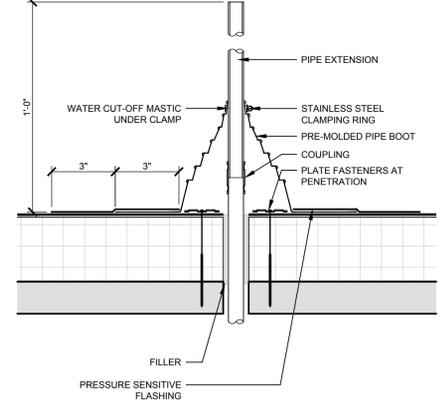
BASIC WIND: Vult = 115 mph EXPOSURE: B H (ft) = 20 Kzt = 1				
ROOF TYPE	SURFACE	EFFECTIVE WIND AREA (sf)	WIND PRESSURE TOWARD SURFACE (psf)	WIND PRESSURE AWAY FROM SURFACE (psf)
ZONE 1 ROOF	10	16.0	16.0	-33.7
	20	16.0	16.0	-31.5
	50	16.0	16.0	-28.6
ZONE 1' ROOF CENTER	10	16.0	16.0	-19.4
	20	16.0	16.0	-19.4
	50	16.0	16.0	-19.4
ZONE 1&1' ROOF OVERHANGS AT MIDDLE OF ROOF	10	NOT APPLICABLE	NOT APPLICABLE	-30.5
	20	NOT APPLICABLE	NOT APPLICABLE	-30.0
	50	NOT APPLICABLE	NOT APPLICABLE	-29.3
ZONE 2 ROOF EDGES	10	16.0	16.0	-19.4
	20	16.0	16.0	-19.4
	50	16.0	16.0	-19.4
ZONE 2 ROOF OVERHANGS AT ROOF EDGES	10	NOT APPLICABLE	NOT APPLICABLE	-41.3
	20	NOT APPLICABLE	NOT APPLICABLE	-37.5
	50	NOT APPLICABLE	NOT APPLICABLE	-32.4
ZONE 3 ROOF CORNERS	10	16.0	16.0	-47.3
	20	16.0	16.0	-47.3
	50	16.0	16.0	-47.3
ZONE 3 ROOF OVERHANGS AT ROOF CORNERS	10	NOT APPLICABLE	NOT APPLICABLE	-57.4
	20	NOT APPLICABLE	NOT APPLICABLE	-50.7
	50	NOT APPLICABLE	NOT APPLICABLE	-41.9
ZONE 4 WALL	10	21.2	21.2	-23.0
	20	20.2	20.2	-22.0
	50	19.0	19.0	-20.7
ZONE 5 WALL CORNERS	10	18.0	18.0	-19.8
	20	18.0	18.0	-19.8
	50	18.0	18.0	-19.8



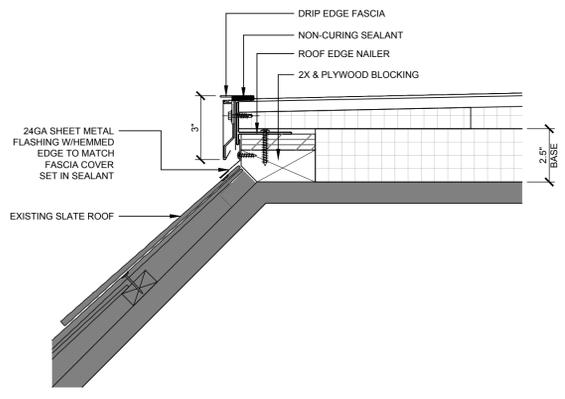
8 Field Flashed Curb
 SCALE: 3" = 1'-0"



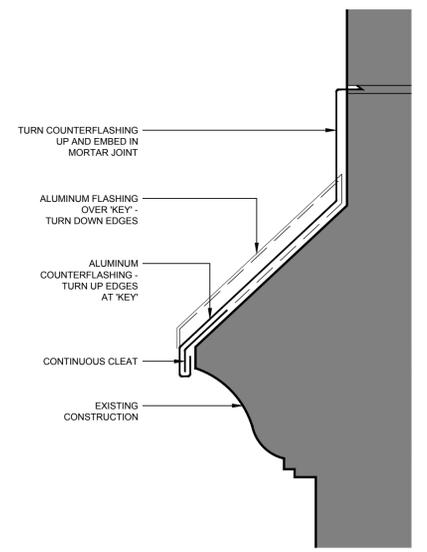
7 Self-Flashing Curb
 SCALE: 3" = 1'-0"



6 Pipe Penetration
 SCALE: 3" = 1'-0"



5 Detail at Roof Edge
 SCALE: 3" = 1'-0"



4 Roof-to-Wall Transition
 SCALE: 3" = 1'-0"

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No.	Date	Revision	By	

Drawn By: _____
 Checked By: _____
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Sheet Title

DETAILS

Sheet No.

A450
 CONSTRUCTION DOCUMENTS