

Vernon Center Middle School
Partial Roof Replacement
777 Hartford Turnpike, Vernon CT

Maier Design Group Project No. 2018.018
State Project No. SDE-146-0139

Date: 15 May 2018

Addendum #1

Part 1 – General:

1. This Addendum is to modify the Contract Documents dated 2 May 2018. The provisions of this Addendum shall become part of the Contract Documents and all work shall conform to those standards.
2. The selected Contractor shall be responsible for notifying all subcontractors and material suppliers of the contents and requirements of this Addendum. Except as modified, all provisions of the Contract Documents shall remain in force.
3. A link to electronic drawings are available to contractors who have purchased a set of physical plans and specifications from the Town. The link can be requested from Robert Kleinhans via email at rkleinhans@vernon-ct.gov
4. Reminder that all questions about the proposals should be directed to Robert Kleinhans, Director of Public Works, by e-mail at rkleinhans@vernon-ct.gov, no later than 3:00 PM on May 15, 2018. Answers to all so received questions shall be posted by May 17, 2018 on the Town's website under the bid section at <http://www.vernon-ct.gov/legal-notices> under Contract #2032

Part 2 – Clarifications:

1. Roof Area K (See Sheet T-3) is an existing canopy at the main school entrance. New roof material at this location shall be chemically adhered, NOT mechanically fastened.



2. All references in the specifications and drawings to 'metal deck' or 'metal decking' shall be changed to 'gypsum plank decking'.
3. Specification Section 07 62 00, Part 2.3 has been revised. Please refer to the attached updated section.
4. Attached is the scanned copy of the mandatory pre-bid walkthrough sign-in sheet.

END OF ADDENDUM #1

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. All labor, equipment, and materials to fabricate and install the following.
 - 1. Edge strip, edge metal and flashing.
 - 2. Fascia, scuppers and trim.
 - 3. Perimeter gutters and vertical rainwater leaders.
 - 4. Expansion joint and area divider covers.

1.2 RELATED SECTIONS

- A. Section 06 10 00 – Rough Carpentry
- B. Section 07 41 00 – Manufactured Metal Roofing Panels
- C. Section 07 52 00 – Modified Bituminous Membrane Roofing
- D. Section 07 92 00 – Joint Sealants

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (galvanized) or Zinc-Iron Alloy-Coated (galvannealed) by the Hot-Dip Process.
 - 2. ASTM A792 Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.
 - 3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 4. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 5. ASTM D692 Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures.
- B. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI)
 - 1. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal.
- C. Warnock Hersey International, Inc., Middleton, WI (WH)
- D. Factory Mutual Research Corporation (FMRC)
- E. Underwriters Laboratories (UL)
- F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - 1. 1993 Edition Architectural Sheet Metal Manual
- G. National Roofing Contractors Association (NRCA)
 - 1. Roofing and Waterproofing Manual.
- H. American Society of Civil Engineers (ASCE)
 - 1. ASCE 7-05 Minimum Design Loads for Buildings and Other Structures.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data:
 - 1. Provide manufacturer's specification data sheets for each product.
 - 2. Metal material characteristics and installation recommendations.
 - 3. Submit color chart prior to material ordering and/or fabrication so that equivalent colors to those specified can be approved.
- C. Samples: Submit two (2) samples, illustrating typical metal edge, coping, gutters, fascia extenders for material and finish.
- D. Shop Drawings
 - 1. For manufactured and ANSI/SPRI approved shop fabricated gravel stops, fascia, scuppers, and all other sheet metal fabrications.
 - 2. Indicate material profile, jointing pattern, jointing details, fastening methods, flashing, terminations, and installation details.
 - 3. Indicate type, gauge and finish of metal.
- E. Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.

1.5 SUBMITTALS FOR INFORMATION

- A. Submit under provisions of Section 01 33 00.
- B. Design Loads: Any material submitted as equal to the specified material must be accompanied by a report signed and sealed by a professional engineer licensed in the state in which the installation is to take place. This report shall show that the submitted equal meets the wind uplift and perimeter attachment requirements according to ASCE 7-05 and ANSI/SPRI ES-1. Substitution requests submitted without licensed engineer approval will be rejected for non-conformance.
- C. Factory Mutual Research Corporation's (FMRC) wind uplift resistance classification: The roof perimeter flashing shall conform to the requirements as defined by the FMRC Loss Prevention Data Sheet 1-49.
- D. A letter from an officer of the manufacturing company certifying that the materials furnished for this project are the same as represented in tests and supporting data.
- E. Mill production reports certifying that the steel thicknesses are within allowable tolerances of the nominal or minimum thickness or gauge specified.
- F. Certification of work progress inspection. Refer to Quality Assurance Article below.
- G. Certifications:
 - 1. Submit roof manufacturer's certification that metal fasteners furnished are acceptable to roof manufacturer.
 - 2. Submit roof manufacturer's certification that metal furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.6 CONTRACT CLOSEOUT SUBMITTALS

- A. General: Comply with Requirements of Division 01 Section Closeout Submittals; submit under provisions of Section 01 33 00.
- B. Special Project Warranty: Provide specified warranty for the Project executed by the authorized agent of the Manufacturer.
- C. Roofing Maintenance Instructions: Provide a manual of manufacturer's recommendations for maintenance of installed roofing systems.
- D. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.7 QUALITY ASSURANCE

- A. Engage an experienced roofing contractor specializing in sheet metal flashing work with a minimum of five (5) years experience.
- B. Maintain a full-time supervisor/foreman who is on the job-site at all times during installation. Foreman must have a minimum of five (5) years experience with the installation of similar system to that specified.
- C. Source Limitation: Obtain components from a single manufacturer. Secondary products which cannot be supplied by the specified manufacturer shall be approved in writing by the primary manufacturer prior to bidding.
- D. Upon request fabricator/installer shall submit work experience and evidence of financial responsibility. The Owner's representative reserves the right to inspect fabrication facilities in determining qualifications.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.
- B. Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials which may cause discoloration or staining.

1.9 PROJECT CONDITIONS

- A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for pre-formed metal edge system.

1.10 DESIGN AND PERFORMANCE CRITERIA

- A. Thermal expansion and contraction:
 - 1. Completed metal edge flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.

1.11 WARRANTIES

- A. Owner shall receive one (1) warranty from manufacturer of roofing materials covering all of the following criteria. Multiple warranties are not acceptable.
1. Pre-finished metal material shall require a written twenty (20)-year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D2244 or chalking excess of 8 units per ASTM D659. If either occurs material shall be replaced per warranty, at no cost to the Owner.
 2. Changes: The Contractor shall verify that any changes or alterations in the edge metal system are performed with written consent from the manufacturer and shall render the system acceptable for a warranty.
 3. Warranty shall commence on date of substantial completion or final payment, whichever is agreed by contract.
 4. The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be watertight and secure for a period of two years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.
 5. Installing roofing contractor shall be responsible for the installation of the edge metal system in accordance with the membrane manufacturer's recommendations.
 6. Installing contractor shall certify that the edge metal system has been installed per the manufacturer's printed details and specifications.
 7. One manufacturer shall provide a single warranty for all accessory metal for flashings, metal edges and copings, along with the warranty for metal roof areas, membrane roof areas, and any transitions between two different material types.

PART 2 PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.
- B. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
 2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects

must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.

3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 ACCEPTABLE MANUFACTURERS

- A. Sheet metal flashing and trim manufacturer shall be the same as approved Manufactured Metal Roofing Manufacturer in Section 07 41 00.

2.3 MATERIALS

- A. General: Product designations for the materials used in this section shall be based on performance characteristics as shown below and shall form the basis of the contract documents.
- B. Materials: Flashless Snap-On Fascia Cover and Splice Plate: 22 gauge zinc-coated steel, ASTM A653, coating designation G-90, chemically treated, commercial or lock-forming quality. Minimum gauge of steel shall be in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc. recommendations
- C. Materials: Extruded Base Anchor and Splice Plates: 6005A-T61 extruded aluminum, compression Seal for top of anchor: TPE thermoplastic elastomer. Sealant for Flange: Green-Lock Sealant XL: Single-component high performance 100% solids, interior and exterior polyether joint sealant
- D. Finishes:
 1. Exposed surfaces for coated metal flashing and trim:
 - a. Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
 - b. Coating system shall provide nominal 1.0 mil dry film thickness, consisting of primer and color coat.
 - c. Color shall match roof panel color selection exact. Roof panel color selection will be made at the preconstruction meeting. Weathering finish as referred by National Coil Coaters Association (NCCA).

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>FLUOROCARBON*</u>
Pencil Hardness	ASTM D3363 / NCCA II-2	HB-H
Bend	ASTM D-4145 / NCCA II-19	O-T
Cross-Hatch Adhesion	ASTM D3359	no loss of adhesion
Gloss (60° angle)	ASTM D523	25+/-5%
Reverse Impact	ASTM D2794	no cracking or loss of adhesion

Primer Thickness	ASTM D1005	0.2 mils
Topcoat Thickness	ASTM D1005	0.7 mils min
TOTAL THICKNESS		1.0 mils

2. Exposed and unexposed surfaces for mill finish flashing and trim shall be as shipped from the mill.
3. Exposed and unexposed surfaces for anodized aluminum flashing and trim shall be as shipped from mill.

2.4 RELATED MATERIALS AND ACCESSORIES

- A. Metal Primer: Zinc chromate type.
- B. Plastic Cement: ASTM D 4586
- C. Sealant: Specified in Section 07 92 00 or on drawings.
- D. Underlayment: ASTM D2178, No15 asphalt saturated roofing felt.
- E. Slip Sheet: Rosin sized building paper.
- F. Fasteners:
 1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
 2. Fastening shall conform to Factory Mutual requirements or as stated on section details, whichever is more stringent.
- G. Gutter and Downspout Anchorage Devices: Material as specified for system.
- H. Downspout Cleanouts: Size and configuration compatible with downspout connection to existing under-drain assembly, construct of same material as downspouts. Locate once cleanout at each downspout approximately 12 to 18 inches above grade.

PART 3 EXECUTION

3.1 PROTECTION

- A. Isolate metal products from dissimilar metals, masonry or concrete with bituminous paint, tape, or slip sheet. Use gasketed fasteners where required to prevent corrosive reactions.

3.2 GENERAL

- A. Secure fascia to wood nailers at the bottom edge with a continuous cleat.
- B. Fastening of metal to walls and wood blocking shall comply with building code standards.
- C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.
- D. Allow sufficient clearances for expansion and contraction of linear metal components. Secure metal using fasteners as required by the system. Exposed face fastening will be rejected.

3.3 INSPECTION

- A. Verify that curbs are solidly set and nailing strips located.
- B. Perform field measurements prior to fabrication.
- C. Coordinate work with work of other trades.
- D. Verify that substrate is dry, clean and free of foreign matter.
- E. Commencement of installation shall be considered acceptance of existing conditions.

3.4 MANUFACTURED SHEET METAL SYSTEMS

- A. Furnish and install manufactured fascia and coping cap systems in strict accordance with manufacturer's printed instructions.
- B. Provide factory-fabricated accessories including, but not limited to, fascia extenders, miters, scuppers, joint covers, etc. Refer to Source limitation provision in Part 1.

3.5 SHOP-FABRICATED SHEET METAL

- A. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.
- B. Hem exposed edges.
- C. Angle bottom edges of exposed vertical surfaces to form drip.
- D. Lap corners with adjoining pieces fastened and set in sealant.
- E. Form joints for gravel stop fascia system, coping cap with a 3/8" opening between sections. Back the opening with an internal drainage plate formed to the profile of fascia piece.
- F. Install sheet metal to comply with referenced ANSI/SPRI, SMACNA and NRCA standards.

3.6 FLASHING MEMBRANE INSTALLATION

- A. Scupper Through Roof Edge:
 - 1. Install scupper box in a one fourth (1/4) inch bed of mastic. Assure all box seams are soldered and have minimum four (4) inch flange. Close and solder all corners.
 - 2. Prime metal edge at a rate of one hundred (100) square feet per gallon and allow to dry.
- B. Snap On Fascia Detail:
 - 1. Position base plies of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
 - 2. Install scupper boxes and miters first.
 - 3. Cant Dam: Install Cant Dam with roofing nails twelve (12) inches on center through the top of metal flange and outside face.
 - 4. BUR or Modified Flashing: Prime Cant Dam at a rate of one hundred (100) square feet per gallon and allow to dry. Strip in Cant Dam with base flashing membrane extending six (6) inches into roof field, followed with a cap sheet extending nine (9)

inches into the roof field. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.

5. Fascia Cover: Install fascia cover with splice plate under one end by pressing downward firmly until "snap" occurs and cover is engaged along entire length of miter. Field cut where necessary with fine tooth saw. Sealant is to be placed between six (6) inch wide splice plates on metal edge pieces, one bead, approximately one (1) inch from fascia cover joint.

C. GUTTER DETAIL:

1. Position base plies of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
2. Install continuous cleat on face of nailer and fasten six (6) inches on center.
3. Install new Gravel Stop hooked to continuous cleat. Set metal flange into roofing cement, nail every three (3) inches on center, and prime at a rate of one hundred (100) square feet per gallon.
4. Strip in Gravel Stop flange with base flashing membrane extending six (6) inches into roof field, followed with a cap sheet extending nine (9) inches into the roof field. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.

3.7 CLEANING

- A. Clean installed work in accordance with the manufacturer's instructions.
- B. Replace damaged work than cannot be restored by normal cleaning methods.

3.8 CONSTRUCTION WASTE MANAGEMENT

- A. Remove and properly dispose of waste products generated. Comply with requirements of authorities having jurisdiction
- B. Dispose of all waste in a legal manner.

3.9 FINAL INSPECTION

- A. At completion of installation and associated work, meet with Contractor, Architect, installer, installer of associated work, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.
- B. Inspect work and flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Notify the Architect upon completion of corrections.
- E. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

- F. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty-four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

3.10 DEMONSTRATION AND TRAINING

- A. At a time and date agreed to by the Owner, instruct the Owner's facility manager, or other representative designated by the Owner, on the following procedures:
 - 1. Troubleshooting procedures.
 - 2. Notification procedures for reporting leaks or other apparent roofing problems.
 - 3. Maintenance.
 - 4. The Owner's obligations for maintaining the warranty in effect and force.
 - 5. The Manufacturer's obligations for maintaining the warranty in effect and force.

END OF SECTION

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