

# ADDENDUM

ADDENDUM NO.: 1

DATE: October 16, 2026

## PROJECT IDENTIFICATION

**PROJECT NAME:** 2027 Roof Remediation Specifications – Coolidge, Garfield, Roosevelt, and (3) Annex Buildings

**PROJECT NUMBER:** 22-080, 21-032, 26-052, 23-057

**SITE ADDRESS:** Livonia Public Schools

*Street Address*

15125 Farmington Road, Livonia, MI 48154

*City*

*State*

*ZIP Code*

( )

( )

*Site Telephone*

*Site Fax*

## ADDENDUM

The following is a summary of changes to the plans and Specifications that shall be considered part of your Bid. Receipt of this Addendum shall be acknowledged on the Bid Proposal Form.

This Addendum consists of 3 pages, plus attachments.

### SUMMARY OF ADDENDUM:

1. Reminder of Key Dates and Details:
  - Questions regarding the specification are due to Harry Lau (734.744.2537, [hluu@livoniapublicschools.org](mailto:hluu@livoniapublicschools.org)), Ron Kinne (734.591.4444, [rkinne@rtaltd.com](mailto:rkinne@rtaltd.com)), or Alex Wisney (734.591.4444, [awisney@rtaltd.com](mailto:awisney@rtaltd.com)) by 4:00pm on Wednesday October 22<sup>nd</sup>, 2026.
  - Bids will be received at the Livonia Public Schools Board of Education Complex (15125 Farmington Road, Livonia, MI 48154) until 1:00pm on Wednesday October 28<sup>th</sup>, 2026.
  - Sealed bids should be marked “LPS Summer 2027 Roof Replacement Bid (Coolidge, Garfield, Roosevelt, 3 Annex Bldgs.”
  - Mailed bids should be sent to the attention of Mr. Jeffrey Burnside, Director of Operations & District Services, Livonia Public Schools.
  - All bids must be accompanied by a sworn and notarized statement of disclosing any familial relationship that exists between the owner and any employee of the bidder and any member of the Livonia Board of Education, the Livonia Public Schools Schools Superintendent or Chief Financial Officer, any member of the Wayne RESA Board of Education or the Superintendent of Wayne RESA.
  - All bids must be accompanied by a sworn and notarized Affidavit of Compliance - Iran Economic Sanctions Act.
  - All bids must be accompanied by the Equal Opportunity Statement
  - All bids must include a Treasury listed bid bond or certified check made payable to Livonia Public Schools for not less than five percent (5%) of the contract for each bid over \$31,000.00 and must be submitted with the bid forms furnished with specification.
  - The public bid opening will take place on October 28<sup>th</sup>, 2026, at 1:00pm, at the Livonia Public Schools Board of Education Complex (15125 Farmington Road, Livonia, MI 48154). Bids will be publicly opened and read.
  - Roofing work shall begin June 7<sup>th</sup>, 2027 and be fully completed on August 13<sup>th</sup>, 2027.
2. Coolidge Elementary School: See attached Section 07 6200 – Sheet Metal Flashing and Trim. The entire section was missing from the originally published specification.
3. Roosevelt Elementary School: Delete Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 2.05, L. Rooftop Unit Curb Extension.



4. Roosevelt Elementary School: Delete Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.02 A.17. Add Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.02 A.17 – Temporarily lift and displace existing Daikin RTU on Area E. Prepare to install new 2x6 wood nailers to achieve a minimum flashing height of 8-inches.
    1. The Owner's Electrical Contractor will be responsible for disconnecting and reconnecting existing electrical supplies. The Owner's Mechanical Contractor will be responsible for disconnecting and reconnecting the gas supply line, as well as any modifications necessary to the ductwork or unit due to the new height of the curb. Coordinate this work with the Owner's Mechanical and Electrical Contractor's. The Roofing Contractor will be responsible for the crane, lifting of the unit, and resetting the unit on the adjusted roof curb.
  5. Roosevelt Elementary School: Delete Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.05 E. 8.
  6. Garfield Community School: Add Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 2.05 K. Replacement Vinyl Siding.
    1. Vinyl Siding: Match the existing material, profile, texture, and color.
    2. J-Channel Flashing, Corner Post, and other accessories: Match the exiting material, profile, texture, and color.
    3. Replacement vinyl siding is to be installed in accordance with the latest edition of Vinyl Siding Institute, Vinyl Siding Installation Manual.
  7. Garfield Community School: Delete Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.02 A.5. Add Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.02 A.5 – Remove and discard existing vinyl siding. Prepare to install replacement vinyl siding.
  8. Garfield Community School: Add Section 07 5300 – Elastomeric Membrane Roofing, Paragraph 3.05.D. Vinyl Siding.
    1. Verify that EPDM membrane, termination bar, and counterflashing has been installed as specified.
    2. Install building wrap on wall substrates where missing. Follow manufacturer's installation instructions.
    3. Install new j-channel flashing 8-inches on center with siding nails.
    4. Lock the new vinyl siding panels together and secure each nailing hem with siding nails spaced 8-inches on center.
    5. Follow the installation instructions as printed by VSI, Vinyl Siding Installation Manual.
    6. DO NOT FACE NAIL THROUGH THE SIDING. FACE NAILS WILL BE REJECTED AND REPLACEMENT VINYL SIDING WILL BE INSTALLED AT THE CONTRACTOR'S EXPENSE.
  9. Garfield Community School: Delete Section 07 6200 – Sheet Metal Flashing and Trim, Paragraph 2.01 E.6.
  10. Garfield Community School: Delete Section 07 6200 – Sheet Metal Flashing and Trim, Paragraph 3.02 J.
  11. Please find attached, the sign-in sheet from the pre-bid meeting held on October 13, 2026.
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**DESIGN TEAM LEAD:**

NAME: Roofing Technology Associates, Ltd.

ADDRESS: 38031 Schoolcraft  
Livonia, Michigan

TELEPHONE: 734-591-4444 FAX: \_\_\_\_\_

E-MAIL: awisney@rtaltd.com

SIGNATURE: 

**SECTION 07 6200  
SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

**1.02 SECTION INCLUDES**

- A. Premanufactured sheet metal fascia cap, coping, counterflashing and miscellaneous flashing.

**1.03 RELATED REQUIREMENTS**

- A. Section 07 5300 - Elastomeric Membrane Roofing.

**1.04 REFERENCE STANDARDS**

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- B. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.
- C. ANSI/SPRI ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

**1.05 SUBMITTALS**

- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- B. Samples: Submit selection and verification samples for finishes, colors and textures. Color to be selected by the Owner.

**1.06 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience. Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.
- C. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

**PART 2 PRODUCTS**

**2.01 SHEET METAL FLASHING AND TRIM**

- A. Sheet Materials
  - 1. Galvanized Steel for Continuous Cleat: ASTM A 653, with G90 zinc coating; nominal 0.034-inch (22-gauge) thick base metal.
  - 2. Galvanized Steel Base Metal: ASTM A653/A653M, with G90/Z275 zinc coating; nominal 0.028-inch (24-gauge) thick base metal.
- B. Prefinished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; nominal 0.028-inch (24-gauge) thick base metal, shop pre-coated with PVDF coating.
  - 1. Fluoropolymer Coating: High performance organic powder coating, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
  - 2. Color: As selected by Owner from manufacturer's standard colors.

3. Acceptable Manufacturer's:
  - a. Holcim Elevate: Una-Clad
  - b. Petersen Aluminum Corporation: Pac-Clad
- C. Accessories
  1. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer.
  2. Gasketed washers: Soft neoprene washers.
  3. Elastomeric Sealant: High performance, one component polyurethane-base, non-sag elastomeric sealant as manufactured by one of the following manufacturers or approved equivalents:
    - a. Sika Corporation, Sikaflex - 1a
    - b. Tremco, Vulkem 116
- D. Fabrication, General
  1. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal and other characteristics of the item indicated.
  2. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  3. Form material with watertight end joints and seams.
  4. Fabricate vertical faces with bottom edge hemmed 1/2-inch and bent outward to form a drip edge unless specified otherwise.
  5. Form exposed sheet metal work, shop fabricated or field fabricated, that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated.
  6. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
  7. Conceal fasteners and expansion provision where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
  8. Corners: corners must be formed, mitered, lapped, notched, sealed or soldered as necessary to provide a continuous system that is not more susceptible to leaks than straight sections.
- E. Fabrication, Sheet Metal
  1. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
  2. Premanufactured Canted Fascia Cap: ANSI/SPRI/FM 4435/ES-1 to design pressure of 29 psf (perimeters) and 37 psf (corners). The fascia cap shall be 24-gauge prefinished galvanized steel.
    - a. Face dimension required: Varies by area. Fabricate a 3/8-inch stiffening rib at the midpoint or add fascia extensions for face dimensions 8-inches or more.
    - b. Concealed splice plates: 6-inches minimum.
    - c. Formed Lengths: 12'-0".
    - d. Slotted Fastening Holes: 12 inches and 6 inches on center.
    - e. Waterdam: 24-gauge galvanized steel.
    - f. Use premanufactured inside and outside corners.
    - g. Owner to choose from standard available colors.
    - h. See RTA Detail Nos. 1, 3, 5, 6, 10, 11, 14 and 17. Approved manufacturer or approved equal:
      - 1) Metal-Era, Perma-Tite System 200 Fascia, Single-Ply Application, Crimp-On Version.

3. Gravel Stop/ Fascia: Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick. Fabricate the gravel stop/ fascia in accordance with SMACNA Figure 2-5C. Face dimension in accordance with the RTA Details and a 1/2-inch hemmed drip edge along the bottom edge. One-inch tall gravel stop. Nailing flange dimension: 4-inches minimum. Form the outside face with an open lock to receive a continuous cleat. See RTA Detail No. 7.
4. Fascia Extensions: Fabricate from the following material:
  - a. Prefinished Galvanized Steel: 0.028-inch (24 gauge) thick.
  - b. Use a fascia extension at any perimeter edge condition requiring fascia cap coverage greater than 8-inches.
  - c. Fabricate the fascia extension in accordance with SMACNA Figure 2-2A. Face dimension as required to cover the fascia plus extend behind the fascia cap 3-inches minimum. Fabricate the bottom edge with an open lock drip edge to receive a continuous cleat. Fabricate 6-inch wide concealed cover plates
5. Coping: Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick. Fabricate the coping in accordance with SMACNA Figure 3-1. Fabricate the coping with 1-inch tall single lock standing seams. Fabricate the inside face with a minimum face dimension of 3-inches. The outside face of the coping varies by area. Hem the bottom edge of the inside and outside faces and bent outward to form a drip edge. Form the outside face with an open lock to receive a continuous cleat. See RTA Detail Nos. 8 and 15.
6. Gutters and Downspouts: Fabricate from the following material:
  - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the one-piece gutters in accordance with SMACNA Figure 1-2, Style F.
  - c. Gutter Size: 5-inch by 5-inch. Fabricate the front of the gutter 2-inches below the back of the gutter (see RTA Detail Nos. 2 and 12).
  - d. Gutter Nailing Flange Width: 4-inches wide.
  - e. Fabricate the gutter spacers from 1/8-inch x 1-inch galvanized steel bar professionally primed and painted to match the gutter color.
  - f. Gutter Expansion Joints: Fabricate from matching prefinished galvanized steel in accordance with SMACNA Figure 1-7.
  - g. Fabricate the downspouts using the same prefinished sheet metal as the gutter. Downspout size: 3-inch by 4-inch rectangular downspout fabricated in accordance with SMACNA Figure 1-32B. Downspout connection to the gutter shall be in accordance with SMACNA Figure 1-33B. Provide outlet tubes fabricated from 24 gauge galvanized steel.
  - h. Fabricate the downspout straps in accordance with SMACNA Figure 1-35G. Downspout Straps: Fabricate from 1/8-inch x 1-inch galvanized steel bar professionally primed and painted to match the gutter color.
7. Through Fascia Scupper: Fabricate from the following material:
  - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the through fascia scupper in accordance with SMACNA Figure 1-28 and with conductor head and downspout.
8. Conductor Head and Downspout: Fabricate from the following material:
  - a. Conductor Head and Downspout: Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the conductor head in accordance with SMACNA Figure 1-25F. Face width: 12-inches. Face Depth: 6-inches. Height: 8-inches.
  - c. Fabricate the downspout 3-inches by 4-inches plain rectangular with an elbow at the discharge. Fabricate the downspout in accordance with SMACNA Figure 1-32B.
9. Counterflashing: Fabricate from the following material:
  - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the surface mounted counterflashing (slip flashing) in accordance with SMACNA Figure 4-5B. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a minimum face of 4-inches. The top edge to receive behind the curb cap cover 2-inches minimum.

10. Miscellaneous Flashing - Fabricate from the following material:
  - a. Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate penetration pockets in accordance with SMACNA Figure 8-11C. Fabricate the penetration pockets with 4-inch tall sides (minimum), 4-inch wide flanges and soldered corner stiffeners.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

#### **3.02 INSTALLATION**

- A. Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions and SMACNA's "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner of intersection.
- C. Prefabricated Sheet Metal Fascia Cap
  1. Install the specified premanufactured sheet metal fascia cap along the designated perimeter edges. The installation shall be in accordance with the manufacturer's requirements. Secure the galvanized sheet metal water dam 6-inches on-center in the flange and 12-inches on-center in the fascia with galvanized ring shank nails. Fully adhere the roof membrane to the cant and fascia.
  2. Install the prefinished fascia cover and concealed splice plates onto the water dam. Field crimp the drip edge at all joints and at 18-inches on-center.
  3. NOTE: Install fascia extension at perimeter edges requiring fascia face dimensions larger than 8-inches.
- D. Fascia Extension
  1. Install prefinished sheet metal fascia extensions to extend the coverage of the fascia cap where required. Secure continuous cleats with nails spaced 12-inches-on-center. Hook the bottom hemmed edges of the fascia extensions over the cleats and secure the tops of the fascia extensions with nails spaced 12-inches on-center. Install concealed cover plates between sections of fascia extension.
- E. Gravel Stop/ Fascia
  1. Install gravel stop/ fascia along the designated perimeter edges. Install 6-inch wide back-up plates at the endjoints in accordance with SMACNA Figure 2-5C. Apply sealant between the concealed cover plates and the gravel stop/ fascia sections. Install gravel stop/ fascia sections with 1/4-inch gaps between sections. Secure the nailing flange with roofing nails spaced 4-inches on center in two staggered rows. Strip in the nailing flashing with 6-inch wide self-adhering EPDM cover strip.
- F. Coping
  1. Install a continuous cleat along the outside face of the parapet wall as shown in the RTA Details in preparation for receiving the coping. Secure the continuous cleat with sheet metal screws spaced 12-inches on-center. Use screws long enough to achieve 1-1/2-inches of embedment into the substrate. Use screws with a screw head which will not contact the back side of the coping.

2. Install coping on the parapet walls as shown in the RTA details. Engage the bottom edge outside face of the coping with the continuous cleat. Hand crimp the bottom edge along the entire length. Secure the coping sections along the inside face with gasketed screws spaced 18-inches on-center. Provide the specified end joints between coping sections.
- G. Conductor Head and Downspout
1. Install the conductor head in accordance with SMACNA Figure 1-26A. Engage the conductor head with the scupper liner as shown level and true to the scupper liner. Secure the conductor head to the masonry wall with lead expansion anchors.
  2. Install the downspout to the conductor head in accordance with SMACNA Figure 1-33B and Detail 1. Secure the downspout to the masonry wall with a minimum of 2 downspout strap supports. Install a downspout elbow to direct water away from the base of the masonry wall. Downspout elbow: 6-inches minimum. Pop rivet the downspout elbow to the downspout.
- H. Gutter and Downspouts
1. Install new sheet metal gutter at locations designated on the Roof Plan. Secure the flange with roofing nails 3-inches on center in two staggered rows. Seal the flange to the roof system with two EPDM stripping layers of self-adhering cover tape: 5-inch and 9-inch.
  2. Install gutter spacers 18-inches on-center. Secure the spacers into the gutter bead and through the back of the gutter with stainless steel nuts and bolts. Caulk the fastener heads and top of the spacers at the back edge of the gutter with the specified sealant.
  3. Lap the joints in the gutter 1-inch and rivet 1-inch on center. Apply a continuous bead of the specified sealant in the lap. Seal the rivets with the specified sealant.
  4. Install butt type expansion joints at or less than the specified maximum gutter length in accordance with SMACNA Figure 1-7. Allowances for gutter expansion shall be in accordance with SMACNA Table 1-7.
  5. Attach the downspouts to the gutters in accordance with SMACNA Figure 1-33B, Detail 1. Secure the new downspouts to the existing wall with a minimum of two downspout straps and appropriate fasteners in accordance with SMACNA Figure 1-35G. Install downspout elbows and downspout extensions as required.
    - a. Downspout strap fasteners for masonry walls: Rawls ZAMAC Nailin fasteners, 2-inches long. Downspout strap fasteners for plywood walls: Gasketed screws.
- I. Counterflashing
1. Roof Curb Slip Flashing: Install counterflashing along the top of any curb where the top of the base flashing is not protected by a minimum of 3-inches. The counterflashing must cover the top edge of the base flashing a minimum of 3-inches. The top edge of the counterflashing must be concealed by the curb cap a minimum of 2-inches. Secure 24-inches on center with gasketed screws. Notch and lap the corners and end joints in the counterflashing 4-inches.
- J. Penetration Pocket
1. Install sheet metal penetration pockets at miscellaneous roof penetrations which cannot be flashed with a prefabricated boot or flange, sleeve and umbrella flashing. Secure the penetration pocket flanges with screws into the roof deck. Seal the flanges in accordance with the manufacturer's typical details.
  2. Fill the flashing with the specified non-shrink grout and pourable sealer. The pourable sealer must be mounded to promote watershedding capabilities.
- K. Hot Stack Flashing
1. Reuse flange, sleeve and umbrella flashing at round stacks and roof penetrations whenever possible.
  2. Secure the flange to the roof deck with screws. Neatly field wrap the sheet metal flashing in accordance with the selected membrane manufacturer's requirements.
  3. Install an umbrella with 1/4-inch minimum clearance from the top of the sleeve. Tightly secure the umbrella in place with a stainless steel drawbands. Seal the top of the umbrella to the penetration with the specified caulk.

**3.03 FIELD QUALITY CONTROL**

- A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

**3.04 CLEANING**

- A. Remove bituminous markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

**END OF SECTION**

**SECTION 07 5300  
ELASTOMERIC MEMBRANE ROOFING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Section 07 6200 - Sheet Metal Flashing and Trim.

**1.02 SECTION INCLUDES**

- A. Elastomeric roofing membrane, adhered conventional application.
- B. Insulation, flat and tapered.
- C. Roofing stack boots and walkway pads.

**1.03 REFERENCE STANDARDS**

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-- Tension 2016 (Reapproved 2021).
- C. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015 (Reapproved 2021).
- D. UL (DIR) - Online Certifications Directory Current Edition.
- E. UL (FRD) - Fire Resistance Directory Current Edition.

**1.04 SUBMITTALS**

- A. Provide Safety Data Sheets (SDS) to the Owner for any materials prior to delivery to the site.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, and fasteners.
- C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and tapered insulation layout plan.
- D. Safety and Work Schedule
  - 1. Submit copies of your written Safety Plan to the Owner.
  - 2. Submit a written work schedule to the Owner with a detailed time line from Contract Award to project completion.
- E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- F. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

**1.05 PRE-CONSTRUCTION MEETING**

- A. Prior to scheduled commencement of roofing work, the Contractor and representatives of other entities directly concerned with performance of roofing system shall have a pre-construction meeting. Review requirements (Contract Documents), submittals, status of coordinating work, availability of materials and installation facilities and establish preliminary installation schedule. Review requirements for inspections, testing, certifications, forecasted weather conditions, governing regulations, insurance requirements, and proposed installation procedures. The Contractor shall record the items discussed including agreement or disagreement on matters of significance; furnish copy of recorded discussions to each participant. Review foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:

1. Tour representative areas of roofing substrates, inspect and discuss conditions of substrate.
2. Review roofing system requirements (drawings, specifications and other Contract Documents).
3. Review required submittals.
4. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
5. Review required inspection, testing, certifying and material usage accounting procedures.
6. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
- C. Store and handle roofing materials in a manner which will prevent moisture damage. Store adhesives and flashings in a dry, warm, well-ventilated, weather-tight place. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

#### **1.07 PROJECT CONDITIONS**

- A. Coordinate the work with installation of associated flashings and counterflashings installed by other sections as the work of this section proceeds.

#### **1.08 WARRANTY**

- A. Furnish the Owner with a Contractor's written warranty covering all materials and workmanship for a 2-year period after Date of Substantial Completion.
- B. Manufacturer's Warranty: Furnish Owner with the selected roofing manufacturer's 20-year total system warranty covering all materials and labor.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Performance: Provide roofing materials recognized to be of generic type indicated and tested to show compliance with indicated performances, or provide other similar materials certified in writing by roofing manufacturer to be equal or better than specified in every significant respect and acceptable to the Owner.
- B. Compatibility: Provide products which are recommended by the roofing manufacturer to be fully compatible with indicated substrates, or provide separation materials as required to eliminate contact between incompatible materials.
- C. EPDM Membrane Materials:
  1. Carlisle SynTec Incorporated; Sure-Tough EPDM Reinforced Membrane Roofing System, Design "A" - Fully Adhered: [www.carlisle-syntec.com](http://www.carlisle-syntec.com).
  2. Holcim Elevate Roofing Systems; RubberGard Max Fully Adhered System: [www.holcimelevate.com](http://www.holcimelevate.com).

#### **2.02 ROOFING MEMBRANE AND ASSOCIATED MATERIALS**

- A. Membrane: Ethylene-propylene-diene-monomer (EPDM); externally reinforced with fabric; complying with minimum properties of ASTM D4637/D4637M.
  1. Thickness: 60 mil, 0.060 inch (1.5 mm).
  2. Membrane shall be .060-inch thick, reinforced, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet size shall be the largest sheet possible as determined by the job conditions.

- B. Base Flashing: Flashing shall be a .060-inch thick semi-cured, self-adhering EPDM flashing sheet as furnished by the roofing manufacturer.
- C. All materials used in the roofing system shall be as furnished by a single roofing manufacturer. Seam tape, adhesives, sealants, water cut-off mastic and other required items shall be as furnished or recommended by a single roofing manufacturer.
- D. All details relating to the installation of the roof system shall be approved by the roofing manufacturer and installed in such a manner that the roofing manufacturer will furnish its 20-year total system warranty for the installation.

## 2.03 INSULATION

- A. Manufacturers: Subject to compliance with requirements:
  - 1. Carlisle SynTec Incorporated, InsulBase Polyiso and InsulBase Tapered Polyiso.
  - 2. Holcim Elevate, ISOGARD GL Flat and ISOGARD GL Tapered.
  - 3. Provide all roof board insulation from a single manufacturer.
  - 4. Insulation must be acceptable by the selected membrane manufacturer.
- B. Insulation Materials:
  - 1. Flat Stock Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Thermal Resistivity (R-value): 15.0 at 75 degrees F for 2.6-inch thick insulation board.
    - b. Thermal Resistivity (R-value): 11.4 at 75 degrees F for 2.0-inch thick insulation board.
    - c. Thermal Resistivity (R-value): 8.5 at 75 degrees F for 1.5-inch thick insulation board.
    - d. Compressive Strength: 20 psi.
    - e. Maximum size (mechanically fastened): 4-feet by 8-feet.
    - f. Maximum size (adhered): 4-feet by 4-feet.
    - g. Provide other thicknesses as required.
  - 2. Tapered Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/8-inch per foot.
    - b. Compressive Strength: 20 psi.
    - c. Maximum size: 4-feet by 4-feet.
    - d. Minimum thickness: 1/2-inch.
  - 3. Roofing Saddles and Roof Sumps (Area A1): Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/2-inch per foot.
    - b. Maximum size: 4-feet by 4-feet.
    - c. Minimum thickness: 1/2-inch.
  - 4. Roof Sumps (Areas A, B, C, D, and E): Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/4-inch per foot.
    - b. Maximum size: 4-feet by 4-feet.
    - c. Minimum thickness: 1-1/2-inch.
  - 5. Tapered Edge Strips: Wood fiber uniform density board complying to ASTM C 208.
    - a. Tapered edge strip: 1-1/2-inches by 18-inches.
- C. Cover Board (Area F): Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to coated glass fiber mat facers; conform to ASTM C 1289-11, Type II, Class 4, All grades.
  - 1. Compressive Strength: 80 psi minimum.

2. Thickness: 1/2-inch minimum.
  3. Maximum size: 4-feet by 4-feet.
  4. R-value: 2.5.
- D. Fasteners for securing the roof insulation to steel roof deck shall be a heavy duty screw (self-drilling) and metal plate system approved by the roofing manufacturer for the type of deck being covered. The fasteners shall provide a minimum of 300 pounds of pull-out when tested on the subject deck. Length shall be sufficient to penetrate deck a minimum of 1/2-inch to a maximum of 1-1/2-inch. Minimum insulation plate size: 3-inches.
- E. Insulation Adhesive: Two-component, construction grade, insulating polyurethane low-rise adhesive. Approved manufacturers and products:
1. Carlisle SynTec Incorporated, FAST Bag in a Box Adhesive.
  2. Holcim Elevate, I.S.O. Stick Adhesive.

#### 2.04 WOOD NAILERS AND PLYWOOD

- A. Wood nailers and blocking: PS 20, construction grade lumber.
1. Sizes: Nominal sizes as indicated on drawings, S4S.
  2. Moisture Content: S-dry or MC19.
  3. Species: SPF.
  4. Grade: No. 2.
- B. Plywood Sheathing: PS 1, Grade C-D, Exposure I. Thicknesses: 1/2-inch and 3/4-inch.
- C. Fasteners in contact with wood blocking and nailers shall be galvanized nails in conformance with ASTM A153 unless otherwise specified.

#### 2.05 MISCELLANEOUS

- A. Steel deck replacement: Match existing roof deck; material, gauge, profile and finish.
- B. Plates to cover small holes in the various roof deck types and isolated areas of deterioration shall be 18-gauge galvanized steel. Maximum hole size: 6-inches by 6-inches.
- C. Filler for sheet metal penetration pockets shall be non-shrink grout (bottom) and pourable elastomeric sealant (top).
- D. Replacement roof drains and accessories for the low-slope roof areas shall be cast iron as manufactured by J. R. Smith Manufacturing Co., 1000 Series, Size: to match the existing diameter and a bottom outlet to match the existing drain pipe. Acceptable connection: Speedi-Set Gasket. Utilize the drain manufacturer's specified cast iron underdeck clamp, clamping ring and drain strainer.
- E. Replacement roof drain strainers and clamping rings shall be cast iron, sized to fit the existing roof drain bowl.
- F. Expansion Joint Material: 6 mil polyethylene sheeting (vapor retarder), fiber glass batt insulation (unfaced).
- G. Walkway Pads: 30-inch by 30-inch by 0.30-inch thick composite rubber with factory laminated seam tape on the back surface, diamond or button tread.

### Addendum No. 1

- H. Roof hatch shall be Bilco Company Type S-50 aluminum.
- I. Hatch Safety Railing System: OSHA Compliant roof hatch mounted safety rail system. Coated steel; color: yellow. As manufactured by or approved equal: Bilco Company, Bil-Guard 2.0 Roof Hatch Safety Rail.
- J. The new ladder for the roof hatch on Area D shall be a fixed wall ladder to provide permanent access to the roof hatch. Manufactured by ALACO (Model 560) or approved equal.
- K. Premanufactured Pipe Supports: Any pipe support with a integral pipe clamp system suitable for installation on EPDM membrane.
- ~~L. Rooftop Unit Curb Extension: Provide custom-fabricated, fully welded galvanized steel roof curb extension designed specifically for the existing Daikin rooftop unit (located on Roof Area E).~~

- ~~1. Field verify existing rooftop unit model, serial number, curb dimensions, supply and return air openings, structural support locations, and all other conditions prior to fabrication.~~
- ~~2. Curb extension shall be manufactured by a recognized HVAC curb manufacturer and shall be engineered to properly support the existing rooftop unit without deformation of the unit base. Extension shall maintain alignment and separation of existing supply and return air openings and shall not restrict airflow.~~
- ~~3. Provide a minimum 18-inch finished curb height above the completed roof surface. Coordinate the curb height with the Owner's Mechanical Contractor.~~

## PART 3 EXECUTION

### 3.01 EXAMINATION

#### Addendum No. 1

- Surfaces and site conditions are ready to receive work.
- is supported and secure.
- and roof deck are clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify roof deck surfaces are dry and free of snow or ice.
  - E. Maintain a daily watertight condition in the existing roof areas. At no time shall the existing roof remain vulnerable to moisture intrusion. Overnight tie-ins are required regardless of the weather forecast.

### 3.02 DEMOLITION AND SURFACE PREPARATION

- A. Remove and discard the following components or prepare surfaces as described:
  1. Remove and discard PVC roofs, base flashing, roof insulation, cant strips, vapor retarders and other miscellaneous existing roofing down to the structural roof deck.
    - a. NOTE: Existing isocyanurate insulation to remain on Area F.
  2. Remove and replace wet, deteriorated or damaged existing insulation on Areas F.
    - a. NOTE: Existing roof insulation replacement shall be bid as a Unit Price Extra.
  3. Remove and discard the existing fascia cap, counterflashing, gutter, downspout and other sheet metal flashing accessories.
    - a. NOTE: Existing fascia panels are to remain.
  4. Save the receiver at the base of the Area F walls.
  5. Remove and save for reinstallation the existing railing fall protection on Area D.
  6. Remove and save for reinstallation the existing ladder dock mounted to the parapet on Area D.
  7. Remove and discard sheet metal cap flashing at the top of the sheet metal wall panels on Areas C and D.
  8. Remove and discard the termination bars and fasteners from the walls. Remove and discard the repair materials from the walls.
  9. Temporarily displace mechanical ventilator unit covers to facilitate the removal and replacement of the base flashing. Remove and discard existing counterflashing from the roof curbs if present. Prepare to raise roof curbs.
  10. Remove and discard roof hatch on Area D.
  11. Remove and discard existing plumbing vent pipe flashings. Clean off all repair materials and caulk from the pipes.
  12. Save and reuse the existing sheet metal flange, sleeve and umbrella from the hot vent stacks.
  13. Remove and discard the existing penetration pocket flashing and filler material. Clean off the penetrations to remain.
  14. Remove and discard the obsolete rooftop equipment as shown on the Roof Plan. Prepare to infill the resultant openings in the roof deck with matching roof deck.
  15. Temporarily displace supply lines (electrical and gas) to facilitate the removal and replacement of the roof system. Save and reuse the existing pipe supports and clamps.

- a. NOTE: Modifications required to the conduit and gaslines will be conducted by an electrician or a mechanical contractor hired by the Owner.
16. Temporarily displace supply lines (electrical and gas) to facilitate the removal and replacement of the roof system. Adjust existing supports to accommodate new roof thickness. Remove and discard wood blocking pipe supports and clamps. Prepare to install new supports where wood blocking was removed.
  - a. NOTE: Modifications required to the conduit and gaslines will be conducted by an electrician or a mechanical contractor hired by the Owner.
17. ~~Lift and temporarily displace existing Daikin RTU on Area E. Prepare to install new RTU curb extension. Do not lift unit by condenser coils, cabinet panels, piping, or other components not specifically designed as lifting points.~~
  - a. ~~NOTE: The Owner's Mechanical contractor is to disconnect and prepare the RTU prior to lifting and installing the new curb extension. Coordinate work with the Mechanical Contractor to limit the amount of time the unit is disconnected.~~

Temporarily lift and displace existing Daikin RTU on Area E. Prepare to install new 2x6 wood nailers to achieve a minimum flashing height of 8-inches.

  - a. The Owner's Electrical Contractor will be responsible for disconnecting and reconnecting existing electrical supplies. The Owner's Mechanical Contractor will be responsible for disconnecting and reconnecting the gas supply line, as well as any modifications necessary to the ductwork or unit due to the new height of the curb. Coordinate this work with the Owner's Mechanical and Electrical Contractor's. The Roofing Contractor will be responsible for the crane, lifting of the unit, and resetting the unit on the adjusted roof curb.
18. Remove and discard roof drain inserts. Review the existing roof drain for condition and prepare to replace the roof drain if necessary. If the roof drain can be reused, provide new cast iron clamping ring and roof drain strainer.
  - a. NOTE: Roof drain inserts will not be allowed to be installed in the new roof system at the roof drain locations on this project.
19. Remove and discard plastic or broken roof drain strainers. Provide replacement cast iron roof drain strainers.

Closely inspect the existing roof drain bowls for cracks, broken flanges or deteriorated conditions. Remove and replace any damaged drain bowl with a matching cast iron drain bowl. The installation shall be in accordance with local plumbing codes.

  - a. Roof drain replacement shall be bid as a Unit Price extra.
21. Thoroughly clean out the roof drain bowls, clamping rings and roof drain strainers in preparation for reuse.
22. Remove and discard deteriorated wood nailers and plywood.
  - a. NOTE: Wood nailer and plywood replacement shall be bid as a Unit Price extra.
23. Prior to cutting and removing deteriorated roof deck, the area below the required deck replacement area must be cordoned off and monitored by the Contractor's appointed safety coordinator during the entire cutting and patching procedure. The safety coordinator must be in communication with the foreman during removal and replacement and have in his possession a fully charged fire extinguisher.
24. Closely inspect the existing roof deck for deteriorated conditions or holes. Repair isolated deck damage not exceeding 6-inches x 6-inches with 18-gauge galvanized steel plate.
  - a. NOTE: Roof deck repairs shall be bid as a Unit Price Extra.
25. Remove and replace deteriorated steel deck with matching steel deck to provide a structurally sound roof deck.
  - a. NOTE: Steel deck replacement shall be bid as a Unit Price Extra.
26. Remove debris, scrap and rubbish from the roof areas and building grounds daily.
27. The Roofing Contractor is required to follow NESHAP regulations for any asbestos containing material.

Addendum  
No. 1

### 3.03 INSTALLATION - SUBSTRATE

- A. General: Comply with roofing manufacturer's instructions, except where more stringent requirements are indicated herein.
  - 1. Details relating to the installation of the new roof system shall be approved by the roofing manufacturer and the Roofing Consultant and installed in such a manner that the roofing manufacturer will furnish the specified warranty for the installation.
  - 2. Do not begin roofing work until all decks, walls, curbs, nailers, accessories, and underlying substrates are ready and acceptable to have roofing materials installed. Deck surfaces must be clean, smooth, dry and free of moisture prior to beginning roof application.
  - 3. Schedule and supervise work crews so that the area of roofing begun one day is completely finished before leaving the job site that day. Included are all flashings within each day's work area.
  - 4. Do not install any roofing materials during rain or other inclement weather. One exception is that temporary work may be installed during such weather to protect the building interior and new materials that are already installed. Remove all temporary work and materials that have been exposed to such weather, then install permanent materials as specified during acceptable weather conditions.
  - 5. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Install temporary water cut-offs to provide a weather tight seal to both the roof deck and existing roof membrane. Remove temporary water cut-off materials at the beginning of next day's work.
  - 6. Materials must be stored dry and protected with tarps and on pallets at all times. Wet or damaged materials will be removed from the job site.
  - 7. Construct a walkway system from a minimum 1.5-inch thick insulation and 0.5-inch thick plywood to protect the existing roof (inside the areas designated for removal and replacement), where traffic is to cross the roof to the dumpster.
  - 8. The Contractor will be responsible for cleaning the building interior on a daily basis of any reroofing related debris entering the building as a result of deck repair and reroofing operations. Provide 6-mil plastic sheets to cover the interior as directed by the Owner. Immediately remove and discard the plastic sheets when completed on a daily basis.
- B. Steel Deck
  - 1. Repairs: Install 18-gauge galvanized plates at small holes (less than 6-inches by 6-inches) and/or at isolated areas of deterioration of the steel roof decks. The plates shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound roof deck with self-drilling screws spaced 6-inches on center along the perimeter edge of the steel plate.
  - 2. Replacement: Install new steel roof deck to cover resultant openings at obsolete rooftop equipment or where deteriorated steel roof deck was removed.
    - a. The new steel deck shall not span less than three supports when replacing deteriorated decking. The deck may be installed in single spans (two supports) where obsolete curbs are removed, provided the opening is framed with steel and the opening is less than 6-feet wide. The end of each roof deck panel shall be supported for two inches and overlap the purlin a minimum of two inches. Each roof deck panel is to be fastened to the purlins with self-drilling screws drilled through the bottom ribs at intermediate supports at 12-inch centers. Fasteners at end laps and intermediate supports within 6-feet of the building perimeter shall be spaced 6-inch centers. The new roof deck panels shall overlap adjacent panels at the side laps. The side laps shall be mechanically fastened with self-tapping sheet metal screws spaced a maximum of 36-inches on-center. For spans under 6-feet, a single side lap fastener be provided at mid-span. For spans over 6-feet, the side lap fasteners shall be placed at the third points of the span.
- C. Roof Drain Replacement

1. The Contractor shall hire a licensed plumbing subcontractor to install replacement roof drains as necessary. The Contractor shall coordinate the roof drain installation with the plumber. Temporary roofing work needed at the roof drain location shall be provided by the Contractor at no additional cost to the Owner.
  - a. Install new roof drain assemblies at the deteriorated roof drain locations. Utilize the manufacturer's recommended underdeck clamp to secure the drain bowl in place or to the sump pan.
  - b. The new roof drain shall be connected to the existing drain pipes in accordance with state and local plumbing codes and the drain manufacturers requirements. Insulate the new roof drain and drain pipe to prevent condensation. Water test the new roof drain to verify that the new roof drain functions properly.
  - c. Install new cast iron clamping rings and cast iron roof drain strainers at the new replacement roof drain locations.
- D. Wood Nailers
  1. Install new wood nailers as designated on the attached RTA Details. Secure the wood nailers to existing wood nailers with galvanized 16d nails in two staggered rows spaced 12-inches on center.
  2. Resecure all loose existing wood nailers to provide solid securement for the new roof system and perimeter edge sheet metal. Secure the existing wood nailers with appropriate fasteners.
  3. Install wood nailers at roof curbs which are not 8-inches above the new finished roof surface. The wood nailers shall be installed to match the existing opening or inside dimension of the curb. The wood nailers shall be a minimum of 1.5-inches thick and shall be of sufficient width to provide a minimum curb height of 8-inches above the completed roof surface. Secure the wood nailers with appropriate fasteners.
  4. Install replacement wood nailers where the existing wood nailers were removed due to deterioration. The wood nailers shall be secured using the same methods that the originally installed wood nailers were secured and/or in a manner to provide solid securement.
- E. Expansion Joint
  1. Install new expansion joint curb in accordance with RTA Details at the locations shown on the Roof Plan. Secure the expansion joint curb to the existing wood deck with heavy duty screws spaced 12-inches on center.
  2. Drape polyethylene sheeting vapor retarder into the expansion joint openings. Extend the vapor retarder until flush with the roof deck underside. Secure the vapor retarder with roofing nails.
  3. Fill the vapor retarder with unfaced fiberglass batt insulation.
  4. Install foam backer rod over the expansion joint opening with tight endjoints and bevel cut, tight corners.
  5. Cover the expansion joint with fully adhered EPDM flashing on the same day. Joints in the EPDM flashing covering the expansion joint shall be seamed with 3-inch seam tape. EPDM flashing must be neatly and professionally installed onto the foam backer rod.
- F. Area Divider
  1. Install new area divider curb in accordance with the RTA Detail at the locations shown on the Roof Plan. Secure the area divider curb to the existing steel deck with heavy duty screws spaced 12-inches on center.

### **3.04 INSTALLATION - INSULATION SYSTEM**

- A. General
  1. Install the specified insulation in accordance with manufacturer's latest printed instructions as shown on the Roof Plan Insulation Schedule.
  2. Install the specified insulation with staggered board joints between boards and layers of insulation.

3. Stagger board joints by the maximum dimension possible. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
  4. When adhering the insulation in foam adhesive, weigh down each board immediately until the adhesive sets up.
  5. Install tapered edge strips at perimeter edges as needed or in lieu of installing reinforced perimeter attachment strips if height difference will permit. Trim the tapered edge strip as required to provide a smooth transition. Mechanically fasten or foam adhere the tapered edge strip to provide solid securement.
- B. Roof Sump Insulation - Area A, B, C, D and E.
1. Install 8-foot by 8-foot, 1/4-inch per foot tapered insulation to form roof sumps at the roof drains as shown on the Roof Plan.
    - a. Secure the tapered insulation to the roof deck as follows:
      - 1) One approved fastener per two square feet (8 fasteners per 4-foot by 4-foot board).
- C. Roof Sump Insulation - Areas A1.
1. Install 8-foot by 8-foot, 1/2-inch per foot tapered insulation to form roof sumps at the roof drains as shown on the Roof Plan. Start the roof sump insulation at 3.1" thickness (2.6-inch thick flat stock base layer of insulation plus tapered insulation starting at 1/2-inch thick for the top layer of insulation).
    - a. Mechanically fasten the base layer of insulation to the roof deck. One approved fastener and plate per two square feet (8 fasteners per 4-foot by 4-foot board).
    - b. Adhere the top layer of tapered insulation in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- D. 4-Way Tapered Insulation - Areas A, B, C, D, and E.
1. Install a base layer of 2.0-inch thick insulation in the field of the roof. Stagger the board joints between rows and layers of insulation. Properly secure the insulation as follows:
    - a. One approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board.
    - b. 8-foot wider perimeter edges of roof: increase the number of fasteners by 50%.
    - c. 8-foot by 8-foot building corners: Increase the number of fasteners by 100%.
  2. Install tapered insulation in accordance with the approved tapered insulation layout plan. The tapered insulation shall be sloped 1/8-inch per foot. The minimum starting thickness of the tapered insulation shall be 2-1/2-inches (2.0-inch thick flat stock base layer of insulation plus tapered insulation starting at 1/2-inch thick for the top layer of insulation). Secure the tapered insulation to the base layer of insulation as follows:
    - a. Adhere the tapered insulation with the approved foam adhesive. Bead spacing (Perimeter): 6-inches on center (8-feet perimeter). Bead spacing (Field): 12-inches on center.
- E. Insulation - Areas A1.
1. Install two layers of 2.6-inch thick insulation in the field of the roof. Stagger board joints between rows and layers of insulation. Properly secure the insulation:
    - a. Mechanically fasten the base layer of 2.6-inch thick insulation to the roof deck with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
    - b. Adhere the second layer of 2.6-inch thick insulation to the base layer of insulation with the approved foam adhesive. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.

- c. Install tapered insulation saddles at the locations shown on the Roof Plan and areas susceptible to ponding water conditions. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.
- F. Insulation - Area F.
  1. Install a layer of 2.0-inch thick insulation over the existing insulation in the field of the roof. Replace existing wet and deteriorated insulation with matching thickness. Stagger board joints between rows and layers of insulation. Properly secure the insulation:
    - a. Mechanically fasten the layer of 2.0-inch thick insulation through the existing insulation and to the roof deck with one approved fastener per four square feet (12 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
    - b. Install tapered insulation saddles at the locations shown on the Roof Plan and areas susceptible to ponding water conditions. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.
  2. Install a layer of 1/2-inch thick isocyanurate insulation HD cover board on the properly installed layers of insulation. Adhere the cover board insulation to the layers of insulation as follows:
    - a. Adhere cover board insulation with the approved foam adhesive. Bead spacing (Perimeter): 6-inches on center (8-foot perimeter). Bead spacing (Field): 12-inches on center.
- G. Tapered Saddles and Tapered Edge Strip
  1. Install tapered insulation saddles at the locations shown on the Roof Plan. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.
  2. At appropriate locations, install tapered edge strip to provide smooth transitions in the insulation system. Adhere the tapered edge strip with the approved foam adhesive. Bead spacing: 6-inches on center.

### **3.05 INSTALLATION - ROOF SYSTEM**

- A. Membrane Installation
  1. Roofing system shall be installed following the latest printed installation instructions of the roofing manufacturer.
  2. Evenly apply adhesives at rate recommended by the roofing manufacturer to both the underside of the membrane and the insulation. Apply bonding adhesive uniformly, stopping short of the splice areas along the seams and base tie-ins. Allow the adhesive to flash off until tacky.
  3. Reposition the membrane, free of air pockets and wrinkles. Firmly press the sheet into place without stretching. Broom the surface to improve adhesion immediately after installation.
  4. Overlap edges and ends and seal by roofing manufacturer's recommended dimensions.
  5. Shingle lap joints on sloped substrates in the direction of drainage.
  6. Complete the roof membrane seams with the roofing manufacturer's seam tape wherever possible. Apply the seam tape in accordance with the roofing manufacturer's instructions, including seam preparation work, proper seam tape alignment and exposure. Roll the completed seam with a hand roller across and along the seam.
  7. Secure the roof membrane at base tie-ins with the roofing manufacturer's reinforced perimeter attachment strips. Adhere the reinforced perimeter attachment strips to the insulation with bonding adhesive. Fasten the attachment strips with the roofing manufacturer's approved fasteners. After adhering the roof membrane to the reinforced perimeter attachment strip, roll the splice area with a hand roller across the strip over the length of the splice.
  8. Apply T-joint covers, stripping and appropriate sealant where specified by the roofing manufacturer on a daily basis.

B. Flashing Installation

1. Perimeter edge flashing, wall flashing and roof curbs shall be installed in accordance with the roofing manufacturer's flashing details using the longest pieces practicable. The installed flashing shall be fastened along the top edge 12-inches on-center (maximum). The latest printed flashing instructions must be followed as issued by the roofing manufacturer. Hand roll the flashings to promote adhesion.
  - a. NOTE: ALL FLASHINGS SHALL BE COMPLETED DAILY AS THE PROJECT PROGRESSES WITH THE INSTALLATION OF THE NEW ROOF SYSTEM.
2. Install a termination bar at the horizontal and vertical ends of the flashing where the flashing is exposed to the weather or as shown on the details. The termination bar shall be mechanically fastened (12-inches on-center, maximum) into slotted holes. The termination bar and fastener heads shall be sealed with the specified sealant.
3. Secure the top edge of the flashing installed on the roof hatch curb with foam backer rod. Adhere the backer rod in place as required by the roofing manufacturer.
4. Seal roof drains per the roofing manufacturer's required details. Install clamping rings and cast iron drain strainers immediately after placing the membrane. Drain strainers and clamping rings must be securely fastened to the roof drain bowl.

C. Penetration Flashing

1. Flash all penetrations passing through the membrane and flashing. Factory prefabricated pipe flashing shall be used to flash all penetrations where installation is possible. Where factory prefabricated pipe flashing cannot be installed, field fabricated penetration flashing may be used. All flashings and terminations shall be completed in accordance with the roofing manufacturer's requirements.
2. Penetration pocket flashings shall be provided at miscellaneous roof penetrations which cannot be flashed with a prefabricated boot or flange, sleeve and umbrella flashing. The pans shall be sheet metal as approved by the roofing manufacturer. Fill the penetration pocket with non-shrink grout (bottom half) and the roofing manufacturer's pourable sealer (top half). Mound the pourable sealer to shed water.
3. Return multiple pipe penetration flashings to their original position and secure the flanges in place with heavy duty screws. Return the EPDM covers onto the sheet metal bases and neatly seal and clamp the penetrations.

D. Sheet Metal Installation

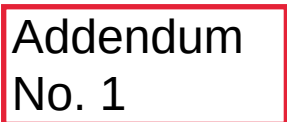
1. See Section 07 6200 Sheet Metal Flashing and Trim.

E. Miscellaneous

1. Return the existing mechanical units to their original positions and secure to the existing roof curb with EPDM-gasketed screws, a minimum of two on each side of the roof curb.
2. Reinstall the existing pate curb covers to the existing roof curb with EPDM-gasketed screws, a minimum of two on each side of the roof curb.
3. Install rubber walkpads at the mechanical unit access panels, doors, ladders, downspouts, and beneath equipment on roof surface. Install additional rubber walkpads at the designated locations shown on the roof plan. The walkpads shall be adhered to the roof membrane in accordance with the manufacturer's requirements.
4. Return the existing supply lines to their original positions. Reinstall the existing pipe supports on the supply lines. Provide membrane protection if required by the roofing manufacturer.
5. Return the existing supply lines to their original positions. Adjust supports to account for the new roof thickness or install new premanufactured pipe supports spaced 10-feet on center where existing wood pipe supports were removed. Each pipe support must be loosely secured to the supply line and set on rubber walkpads if required by the roofing manufacturer.
6. Reinstall the existing safety railing fall protection in Area D. Set the support legs on rubber walkpads.

7. Install new interior ladder for access to the roof hatch (Area D). Ladder is to be secured to the interior masonry wall.
8. ~~Install new curb extension and reinstall Daikin RTU in accordance with RTU manufacturer requirements. After installation, coordinate with the Owner's Mechanical contractor to verify that the rooftop unit is level, properly supported, and that condensate drains freely.~~
  - a. ~~NOTE: The Owner's Mechanical Contractor will reconnect all utilities and controls and complete operational testing of the rooftop unit.~~

### 3.06 PRECAUTIONS

- A. Do not use oil base or plastic roof cement in conjunction with EPDM materials.
- B.  Waste products (petroleum, grease, oil and solvents - vegetable or mineral oil and animal fat - in direct contact with steam venting) should not be allowed to come in contact with the EPDM roof membrane system.
- C. Splicing and bonding surface must be dry.
- D. Daily Seal: Care should be exercised to ensure that water does not flow beneath any completed sections of roof by temporarily sealing the loose edge of the membrane when the weather is threatening. The roofing manufacturer's requirements should be followed closely.
- E. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

### 3.07 FIELD QUALITY CONTROL

- A. The Contractor shall coordinate inspection services during roof application. Prior to final payment, and as a condition thereof, the Contractor shall obtain final approval from the Roofing Consultant indicating proper compliance with the Contract Documents.
- B. The Roofing Consultant shall review and approve all shop drawing submittals.
- C. Notify Roofing Consultant whenever roofing work is to be done, in sufficient time to arrange inspections. Provide safe access to roof for monitoring.
- D. Furnish Roofing Consultant with all pertinent job information prior to beginning work in accordance with Roofing Consultant's directions.
- E. The Roofing Consultant may perform any testing required to verify the integrity of the work and confirm that work is in conformance with roofing manufacturer's recommendations.

### 3.08 CLEANING

- A. Remove bituminous markings, adhesives or other markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

### 3.09 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using rigid insulation and plywood.
- C. Protect the property grounds and building during the course of the project. At set-up locations, protect the pavement, sidewalks, walls, windows, etc. to prevent damage. Repair damage to the areas to match the condition of the area prior to the reroofing project.

**END OF SECTION**

**SECTION 07 5300  
ELASTOMERIC MEMBRANE ROOFING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Section 07 6200 - Sheet Metal Flashing and Trim.

**1.02 SECTION INCLUDES**

- A. Elastomeric roofing membrane, adhered conventional application.
- B. Insulation, flat and tapered.
- C. Roofing stack boots and walkway pads.

**1.03 REFERENCE STANDARDS**

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-- Tension 2016 (Reapproved 2021).
- C. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015 (Reapproved 2021).
- D. UL (DIR) - Online Certifications Directory Current Edition.
- E. UL (FRD) - Fire Resistance Directory Current Edition.

**1.04 SUBMITTALS**

- A. Provide Safety Data Sheets (SDS) to the Owner for any materials prior to delivery to the site.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, and fasteners.
- C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and tapered insulation layout plan.
- D. Safety and Work Schedule
  - 1. Submit copies of your written Safety Plan to the Owner.
  - 2. Submit a written work schedule to the Owner with a detailed time line from Contract Award to project completion.
- E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- F. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

**1.05 PRE-CONSTRUCTION MEETING**

- A. Prior to scheduled commencement of roofing work, the Contractor and representatives of other entities directly concerned with performance of roofing system shall have a pre-construction meeting. Review requirements (Contract Documents), submittals, status of coordinating work, availability of materials and installation facilities and establish preliminary installation schedule. Review requirements for inspections, testing, certifications, forecasted weather conditions, governing regulations, insurance requirements, and proposed installation procedures. The Contractor shall record the items discussed including agreement or disagreement on matters of significance; furnish copy of recorded discussions to each participant. Review foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:

1. Tour representative areas of roofing substrates, inspect and discuss conditions of substrate.
2. Review roofing system requirements (drawings, specifications and other Contract Documents).
3. Review required submittals.
4. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
5. Review required inspection, testing, certifying and material usage accounting procedures.
6. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.
- C. Store and handle roofing materials in a manner which will prevent moisture damage. Store adhesives and flashings in a dry, warm, well-ventilated, weather-tight place. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

#### **1.07 PROJECT CONDITIONS**

- A. Coordinate the work with installation of associated flashings and counterflashings installed by other sections as the work of this section proceeds.

#### **1.08 WARRANTY**

- A. Furnish the Owner with a Contractor's written warranty covering all materials and workmanship for a 2-year period after Date of Substantial Completion.
- B. Manufacturer's Warranty: Furnish Owner with the selected roofing manufacturer's 20-year total system warranty covering all materials and labor.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Performance: Provide roofing materials recognized to be of generic type indicated and tested to show compliance with indicated performances, or provide other similar materials certified in writing by roofing manufacturer to be equal or better than specified in every significant respect and acceptable to the Owner.
- B. Compatibility: Provide products which are recommended by the roofing manufacturer to be fully compatible with indicated substrates, or provide separation materials as required to eliminate contact between incompatible materials.
- C. EPDM Membrane Materials:
  1. Carlisle SynTec Incorporated; Sure-Tough EPDM Reinforced Membrane Roofing System, Design "A" - Fully Adhered: [www.carlisle-syntec.com](http://www.carlisle-syntec.com).
  2. Holcim Elevate Roofing Systems; RubberGard Max Fully Adhered System: [www.holcimelevate.com](http://www.holcimelevate.com).

#### **2.02 ROOFING MEMBRANE AND ASSOCIATED MATERIALS**

- A. Membrane: Ethylene-propylene-diene-monomer (EPDM); externally reinforced with fabric; complying with minimum properties of ASTM D4637/D4637M.
  1. Thickness: 60 mil, 0.060 inch (1.5 mm).
  2. Membrane shall be .060-inch thick, reinforced, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet size shall be the largest sheet possible as determined by the job conditions.

- B. Base Flashing: Flashing shall be a .060-inch thick semi-cured, self-adhering EPDM flashing sheet as furnished by the roofing manufacturer.
- C. All materials used in the roofing system shall be as furnished by a single roofing manufacturer. Seam tape, adhesives, sealants, water cut-off mastic and other required items shall be as furnished or recommended by a single roofing manufacturer.
- D. All details relating to the installation of the roof system shall be approved by the roofing manufacturer and installed in such a manner that the roofing manufacturer will furnish its 20-year total system warranty for the installation.

## 2.03 INSULATION

- A. Manufacturers: Subject to compliance with requirements:
  - 1. Carlisle SynTec Incorporated, InsulBase Polyiso and InsulBase Tapered Polyiso.
  - 2. Holcim Elevate, ISOGARD GL Flat and ISOGARD GL Tapered.
  - 3. Provide all roof board insulation from a single manufacturer.
  - 4. Insulation must be acceptable by the selected membrane manufacturer.
- B. Insulation Materials:
  - 1. Flat Stock Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Thermal Resistivity (R-value): 15.0 at 75 degrees F for 2.6-inch thick insulation board.
    - b. Thermal Resistivity (R-value): 11.4 at 75 degrees F for 2.0-inch thick insulation board.
    - c. Thermal Resistivity (R-value): 8.5 at 75 degrees F for 1.5-inch thick insulation board.
    - d. Compressive Strength: 20 psi.
    - e. Maximum size (mechanically fastened): 4-feet by 8-feet.
    - f. Maximum size (adhered): 4-feet by 4-feet.
    - g. Provide other thicknesses as required.
  - 2. Tapered Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/8-inch per foot.
    - b. Compressive Strength: 20 psi.
    - c. Maximum size: 4-feet by 4-feet.
    - d. Minimum thickness: 1/2-inch.
  - 3. Roofing Saddles and Roof Sumps: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/2-inch per foot.
    - b. Maximum size: 4-feet by 4-feet.
    - c. Minimum thickness: 1/2-inch.
  - 4. Roof Sumps: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to heavy non-asphaltic fiber reinforced felt facers; conform to ASTM C 1289-13e1, Type II, Grade 2.
    - a. Slope: 1/4-inch per foot.
    - b. Maximum size: 4-feet by 4-feet.
    - c. Minimum thickness: 1-1/2-inch.
  - 5. Gypsum Barrier Board: Fiberglass mat faced gypsum, roof board. Fire resistance rating (UL 790 and ASTM E108): Class A. Approved for use with fully adhered roof membrane. Thickness: 1/2-inch. Maximum board size: 4-feet by 4-feet.
    - a. Acceptable product or approved equal: GP Gypsum, DensDeck Prime.
  - 6. Tapered Edge Strips: Wood fiber uniform density board complying to ASTM C 208.
    - a. Tapered edge strip: 1-1/2-inches by 18-inches.

- C. Fasteners for securing the roof insulation to steel roof deck shall be a heavy duty screw (self-drilling) and metal plate system approved by the roofing manufacturer for the type of deck being covered. The fasteners shall provide a minimum of 300 pounds of pull-out when tested on the subject deck. Length shall be sufficient to penetrate deck a minimum of 1/2-inch to a maximum of 1-1/2-inch. Minimum insulation plate size: 3-inches.
- D. Fasteners for securing the roof insulation to the Tectum roof deck shall be Polymer fasteners and 3-inch steel plates.
  - 1. Carlisle SynTec Incorporated, Gyptec Fasteners.
  - 2. Holcim Elevate, Polymer Fasteners.
- E. Fasteners for securing the perimeter strip to the gypsum roof deck (if necessary) shall be Polymer fasteners and 2-inch steel plates.
  - 1. Carlisle SynTec Incorporated, Gyptec Fasteners.
  - 2. Holcim Elevate, Polymer Fasteners.
- F. Insulation Screws and Plates For Use On Wood Deck Roof Areas: Fasteners for securing the roof insulation to wood roof deck shall be a heavy duty screw (self-drilling) and metal plate system approved by the roofing manufacturer for the type of deck being covered. The fasteners shall provide a minimum of 300 pounds of pull-out when tested on the subject deck. Length shall be sufficient to penetrate deck a minimum of 1/2-inch to a maximum of 1-1/2-inch. Minimum insulation plate size: 3-inches.
- G. Insulation Adhesive: Two-component, construction grade, insulating polyurethane low-rise adhesive. Approved manufacturers and products:
  - 1. Carlisle SynTec Incorporated, FAST Bag in a Box Adhesive.
  - 2. Holcim Elevate, I.S.O. Stick Adhesive.

#### **2.04 WOOD NAILERS AND PLYWOOD**

- A. Wood nailers and blocking: PS 20, construction grade lumber.
  - 1. Sizes: Nominal sizes as indicated on drawings, S4S.
  - 2. Moisture Content: S-dry or MC19.
  - 3. Species: SPF.
  - 4. Grade: No. 2.
- B. Plywood Sheathing: PS 1, Grade C-D, Exposure I. Thicknesses: 1/2-inch and 3/4-inch.
- C. Fasteners in contact with wood blocking and nailers shall be galvanized nails in conformance with ASTM A153 unless otherwise specified.

#### **2.05 MISCELLANEOUS**

- A. Tectum deck replacement: Match existing roof deck: width, length and thickness.
- B. Steel deck replacement: Match existing roof deck; material, gauge, profile and finish.
- C. Plates to cover small holes in the various roof deck types and isolated areas of deterioration shall be 18-gauge galvanized steel. Maximum hole size: 6-inches by 6-inches.
- D. Filler for sheet metal penetration pockets shall be non-shrink grout (bottom) and pourable elastomeric sealant (top).
- E. Replacement roof drains and accessories for the low-slope roof areas shall be cast iron as manufactured by J. R. Smith Manufacturing Co., 1000 Series, Size: to match the existing diameter and a bottom outlet to match the existing drain pipe. Acceptable connection: Speedi-Set Gasket. Utilize the drain manufacturer's specified cast iron underdeck clamp, clamping ring and drain strainer.
- F. Replacement roof drain strainers and clamping rings shall be cast iron, sized to fit the existing roof drain bowl.
- G. Walkway Pads: 30-inch by 30-inch by 0.30-inch thick composite rubber with factory laminated seam tape on the back surface, diamond or button tread.

**Addendum  
No. 1**

- H. Replacement pipe boot flashings shall be comprised of a flexible aluminum base with flexible, weather resistant EPDM boots as manufactured by one of the following manufacturers or approved equal:
1. Pipe-Master Pipe Flashing; [www.trianglefastener.com](http://www.trianglefastener.com)
    - a. 1-3/4-inch - 3-inch diameter: 002DEKR
    - b. 3-inch - 6-1/4-inch diameter: 004DEKR
  2. Dyna-Flash Pipe Flashing; [www.dynamicfastener.com](http://www.dynamicfastener.com)
    - a. 1-3/4-inch - 3-inch diameter: #2
    - b. 3-inch - 6-1/4-inch diameter: #4
- I. Siding Wrap: Spunbonded polyolefin, non-woven, non-perforated, weather barrier and related assembly components. Approved manufacturer or approved equivalent:  
DuPont Tyvek HomeWrap and related assembly components.
- J. Safety Guard Rail System: OSHA Compliant weighted base, non-penetrating safety guard rail to extend 42-inches above the new roof system. Powder coated steel; color: galvanized. Mid rail maximum spacing: 20-inches. As manufactured by or approved equal:
1. SAFEPRO Fall Protection, Perimeter Safety Rail.
  2. Garlock Safety Systems, Rail Guard 200.
- K. Replacement Vinyl Siding
1. Vinyl Siding: Match the existing material, profile, texture, and color.
  2. J-Channel Flashing: Match the existing material, profile, texture, and color.
  3. Replacement vinyl siding is to be installed in accordance with the latest edition of Vinyl Siding Institute, Vinyl Siding Installation Manual.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify walls and roof deck are clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify roof deck surfaces are dry and free of snow or ice.
- E. Maintain a daily watertight condition in the existing roof areas. At no time shall the existing roof remain vulnerable to moisture intrusion. Overnight tie-ins are required regardless of the weather forecast.

**3.02 DEMOLITION AND SURFACE PREPARATION**

- A. Remove and discard the following components or prepare surfaces as described:
  1. Remove and discard built-up roofs, ballast and PVC roofs, base flashing, roof insulation, cant strips, vapor retarders and other miscellaneous existing roofing down to the structural roof deck at designated areas and as shown on the Roof Plan.
    - a. NOTE: See "New and Existing Insulation Schedule" on Roof Plan.
    - b. NOTE: Only remove PVC membrane and XPS insulation from Areas B, D, F and L.
    - c. NOTE: Leave a minimum of 6-inches of existing PVC roof membrane below the adjacent sheet metal roof panels to tie into.
    - d. NOTE: Limit the amount of water sprayed on the built-up roof to prevent leaks in the building.
  2. Remove and replace wet, deteriorated or damaged existing insulation on Areas B, D, F and L.
    - a. NOTE: Existing roof insulation replacement shall be bid as a Unit Price Extra.
  3. Remove and discard the existing fascia cap, coping, gravel stop/ fascia, counterflashing, and other sheet metal flashing accessories.
    - a. NOTE: existing standing seam sheet metal roof panels to remain. Temporarily remove and reinstall as necessary.

**Addendum  
No. 1**

4. Loosen bottom of standing seam sheet metal at low slope roof areas to allow for installation of new sheet metal cleat/receiver.
5. ~~Remove and discard existing vinyl siding. Prepare to install new sheet metal wall panels.~~  
Remove and discard existing vinyl siding. Prepare to install replacement vinyl siding.
6. Cut or recut the reglets as necessary to a depth of 1-1/2-inches in the existing masonry walls in preparation for installing new reglet mounted counterflashing.
7. Remove and discard the termination bars and fasteners from the walls and perimeter edges. Remove and discard the repair materials from the walls and perimeter edges. Temporarily displace mechanical ventilator unit covers to facilitate the removal and replacement of the base flashing. Remove and discard existing counterflashing from the roof curbs if present. Prepare to raise roof curbs.
9. Remove and discard existing plumbing vent pipe flashings. Clean off all repair materials and caulk from the pipes.
10. Remove and discard the existing sheet metal flange, sleeve and umbrellas from the hot vent stacks.
11. Remove and discard the existing pipe boot flashings on the sheet metal roof areas. Clean off all repair materials and caulk from the pipes and roof panels.
12. Remove and discard the existing penetration pocket flashing and filler material. Clean off the penetrations to remain.
13. Remove and discard the obsolete rooftop equipment as shown on the Roof Plan. Prepare to infill the resultant openings in the roof deck with matching roof deck.
14. Temporarily displace supply lines (electrical and gas) to facilitate the removal and replacement of the roof system. Save and reuse the existing pipe supports and clamps.
  - a. NOTE: Modifications required to the conduit and gaslines will be conducted by an electrician or a mechanical contractor hired by the Owner.
15. Coordinate existing ductwork removal and reinstallation with the Owner's Mechanical Contractor for the existing ductwork on Area F.
16. Remove and discard roof drain inserts. Review the existing roof drain for condition and prepare to replace the roof drain if necessary. If the roof drain can be reused, provide new cast iron clamping ring and roof drain strainer.
  - a. NOTE: Roof drain inserts will not be allowed to be installed in the new roof system at the roof drain locations on this project.
17. Remove and discard plastic or broken roof drain strainers. Provide replacement cast iron roof drain strainers.
18. Closely inspect the existing roof drain bowls for cracks, broken flanges or deteriorated conditions. Remove and replace any damaged drain bowl with a matching cast iron drain bowl. The installation shall be in accordance with local plumbing codes.
  - a. Roof drain replacement shall be bid as a Unit Price extra.
19. Thoroughly clean out the roof drain bowls, clamping rings and roof drain strainers in preparation for reuse.
20. Remove and discard deteriorated wood nailers and plywood.
  - a. NOTE: Wood nailer and plywood replacement shall be bid as a Unit Price extra.
21. Temporarily displace the existing safety guard rails on Area A and F. Re-install the existing guard rails with new weighted bases, once the new roof system is installed.
22. Prior to cutting and removing deteriorated roof deck, the area below the required deck replacement area must be cordoned off and monitored by the Contractor's appointed safety coordinator during the entire cutting and patching procedure. The safety coordinator must be in communication with the foreman during removal and replacement and have in his possession a fully charged fire extinguisher.
23. Closely inspect the existing roof deck for deteriorated conditions or holes. Repair isolated deck damage not exceeding 6-inches x 6-inches with 18-gauge galvanized steel plate.
  - a. NOTE: Roof deck repairs shall be bid as a Unit Price Extra.
24. Remove and replace deteriorated steel deck with matching steel deck to provide a structurally sound roof deck.

- a. NOTE: Steel deck replacement shall be bid as a Unit Price Extra.
- 25. Remove and replace deteriorated plywood deck with matching plywood deck to provide a structurally sound roof deck.
  - a. NOTE: Wood deck board replacement shall be bid as a Unit Price Extra.
- 26. Remove and replace deteriorated Tectum roof deck with matching Tectum roof deck to provide a structurally sound roof deck.
  - a. NOTE: Tectum roof deck replacement shall be bid as a Unit Price Extra.
- 27. Remove debris, scrap and rubbish from the roof areas and building grounds daily.

### **3.03 INSTALLATION - SUBSTRATE**

- A. General: Comply with roofing manufacturer's instructions, except where more stringent requirements are indicated herein.
  - 1. Details relating to the installation of the new roof system shall be approved by the roofing manufacturer and the Roofing Consultant and installed in such a manner that the roofing manufacturer will furnish the specified warranty for the installation.
  - 2. Do not begin roofing work until all decks, walls, curbs, nailers, accessories, and underlying substrates are ready and acceptable to have roofing materials installed. Deck surfaces must be clean, smooth, dry and free of moisture prior to beginning roof application.
  - 3. Schedule and supervise work crews so that the area of roofing begun one day is completely finished before leaving the job site that day. Included are all flashings within each day's work area.
  - 4. Do not install any roofing materials during rain or other inclement weather. One exception is that temporary work may be installed during such weather to protect the building interior and new materials that are already installed. Remove all temporary work and materials that have been exposed to such weather, then install permanent materials as specified during acceptable weather conditions.
  - 5. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Install temporary water cut-offs to provide a weather tight seal to both the roof deck and existing roof membrane. Remove temporary water cut-off materials at the beginning of next day's work.
  - 6. Materials must be stored dry and protected with tarps and on pallets at all times. Wet or damaged materials will be removed from the job site.
  - 7. Construct a walkway system from a minimum 1.5-inch thick insulation and 0.5-inch thick plywood to protect the existing roof (inside the areas designated for removal and replacement), where traffic is to cross the roof to the dumpster.
  - 8. The Contractor will be responsible for cleaning the building interior on a daily basis of any reroofing related debris entering the building as a result of deck repair and reroofing operations. Provide 6-mil plastic sheets to cover the interior as directed by the Owner. Immediately remove and discard the plastic sheets when completed on a daily basis.
- B. Steel Deck
  - 1. Repairs: Install 18-gauge galvanized plates at small holes (less than 6-inches by 6-inches) and/or at isolated areas of deterioration of the steel roof decks. The plates shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound roof deck with self-drilling screws spaced 6-inches on center along the perimeter edge of the steel plate.
  - 2. Replacement: Install new steel roof deck to cover resultant openings at obsolete rooftop equipment or where deteriorated steel roof deck was removed.

- a. The new steel deck shall not span less than three supports when replacing deteriorated decking. The deck may be installed in single spans (two supports) where obsolete curbs are removed, provided the opening is framed with steel and the opening is less than 6-feet wide. The end of each roof deck panel shall be supported for two inches and overlap the purlin a minimum of two inches. Each roof deck panel is to be fastened to the purlins with self-drilling screws drilled through the bottom ribs at intermediate supports at 12-inch centers. Fasteners at end laps and intermediate supports within 6-feet of the building perimeter shall be spaced 6-inch centers. The new roof deck panels shall overlap adjacent panels at the side laps. The side laps shall be mechanically fastened with self-tapping sheet metal screws spaced a maximum of 36-inches on-center. For spans under 6-feet, a single side lap fastener be provided at mid-span. For spans over 6-feet, the side lap fasteners shall be placed at the third points of the span.
- C. Plywood Deck
  1. Install replacement roof deck with the long dimension across the supports. Leave a 1/8-inch gap at all edges and end joints. The new roof deck must span a minimum of three supports.
  2. Mechanically attach the new roof deck to the underlying supports using the specified fasteners. Fasten the roof deck edges 6-inches on-center, and 9-inches on-center into the intermediate supports.
- D. Tectum Deck
  1. Install matching replacement decking where the existing decking was removed due to deterioration. Install replacement decking with the long dimension engaged with the manufactured tongue and groove. Support the endjoints on the existing structural supports by the maximum dimension possible. The installation shall be in accordance with the deck panel manufacturer's specifications.
  2. Mechanically fasten and solidly grout the deck joints in accordance with the manufacturer's requirements.
- E. Roof Drain Replacement
  1. The Contractor shall hire a licensed plumbing subcontractor to install replacement roof drains as necessary. The Contractor shall coordinate the roof drain installation with the plumber. Temporary roofing work needed at the roof drain location shall be provided by the Contractor at no additional cost to the Owner.
    - a. Install new roof drain assemblies at the deteriorated roof drain locations. Utilize the manufacturer's recommended underdeck clamp to secure the drain bowl in place or to the sump pan.
    - b. The new roof drain shall be connected to the existing drain pipes in accordance with state and local plumbing codes and the drain manufacturers requirements. Insulate the new roof drain and drain pipe to prevent condensation. Water test the new roof drain to verify that the new roof drain functions properly.
    - c. Install new cast iron clamping rings and cast iron roof drain strainers at the new replacement roof drain locations.
- F. Wood Nailers
  1. Install new wood nailers as designated on the attached RTA Details. Secure the wood nailers to existing wood nailers with galvanized 16d nails in two staggered rows spaced 12-inches on center.
  2. Resecure all loose existing wood nailers to provide solid securement for the new roof system and perimeter edge sheet metal. Secure the existing wood nailers with appropriate fasteners.

3. Install wood nailers at roof curbs which are not 8-inches above the new finished roof surface. The wood nailers shall be installed to match the existing opening or inside dimension of the curb. The wood nailers shall be a minimum of 1.5-inches thick and shall be of sufficient width to provide a minimum curb height of 8-inches above the completed roof surface. Secure the wood nailers with appropriate fasteners.
4. Install replacement wood nailers where the existing wood nailers were removed due to deterioration. The wood nailers shall be secured using the same methods that the originally installed wood nailers were secured and/or in a manner to provide solid securement.

### **3.04 INSTALLATION - INSULATION SYSTEM**

- A. General
  1. Install the specified insulation in accordance with manufacturer's latest printed instructions as shown on the Roof Plan Insulation Schedule.
  2. Install the specified insulation with staggered board joints between boards and layers of insulation.
  3. Stagger board joints by the maximum dimension possible. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
  4. When adhering the insulation in foam adhesive, weigh down each board immediately until the adhesive sets up.
  5. Install tapered edge strips at perimeter edges as needed or in lieu of installing reinforced perimeter attachment strips if height difference will permit. Trim the tapered edge strip as required to provide a smooth transition. Mechanically fasten or foam adhere the tapered edge strip to provide solid securement.
- B. Roof Sump Insulation - Area A.
  1. Mechanically fasten 2.6-inch base layer of isocyanurate insulation. Adhere 8-foot by 8-foot, 1/2-inch per foot tapered insulation (Q-panel) to form roof sumps at the roof drains as shown of the Roof Plan.
    - a. Mechanically fasten the 2.6-inch isocyanurate insulation to the roof deck with one approved fastener and plate per two square feet (16 polymer fasteners per 4-foot by 8-foot board).
    - b. Adhere the tapered insulation to the 2.6-inch base layer with the approved foam adhesive. Bead spacing: 6-inches on center.
- C. Roof Sump Insulation - Areas B, F, and L.
  1. Mechanically fasten 8-foot by 8-foot, 1/4-inch per foot tapered insulation (X-panel) to form roof sumps at the roof drains as shown on the Roof Plan.
    - a. Mechanically fasten the tapered insulation thro to the steel roof deck with one approved fastener and plate per two square feet (8 fasteners per 4-foot by 4-foot board).
- D. Roof Sump Insulation - Areas E, I, K and N.
  1. Mechanically fasten 8-foot by 8-foot, 1/4-inch per foot tapered insulation (Y-panel) to form roof sumps at the roof drains as shown on the Roof Plan.
    - a. Mechanically fasten the tapered insulation to the steel roof deck with one approved fastener and plate per two square feet (8 fasteners per 4-foot by 4-foot board).
- E. Roof Sump Insulation - Area J.
  1. Mechanically fasten 2.0-inch base layer of isocyanurate insulation. Adhere 8-foot by 8-foot, 1/4-inch per foot tapered insulation (Y-panel) to form roof sumps at the roof drains as shown of the Roof Plan.
    - a. Mechanically fasten the 2.0-inch isocyanurate insulation to the roof deck with one approved fastener and plate per four square feet (8 fasteners per 4-foot by 8-foot board).
    - b. Adhere the tapered insulation to the 2.0-inch base layer with the approved foam adhesive. Bead spacing: 6-inches on center.

F. Insulation - Area A.

1. Install two layers of 2.6-inch thick insulation in the field of the roof. Stagger board joints between rows and layers of insulation. Properly secure the insulation:
  - a. Mechanically fasten the base layer of 2.6-inch thick insulation to the roof deck with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
  - b. Adhere the second layer of 2.6-inch thick insulation to the base layer of insulation with the approved foam adhesive. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.
  - c. Install tapered insulation saddles at the locations shown on the Roof Plan and areas susceptible to ponding water conditions. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.

G. Insulation - Areas B, F, and L.

1. Mechanically fasten one layer of 2.0-inch thick insulation in the field of the roof over the existing insulation. Stagger board joints between rows and layers of insulation. Properly secure the insulation with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
  - a. Install tapered insulation saddles at the locations shown on the Roof Plan and areas susceptible to ponding water conditions. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.

H. Insulation - Areas C, G, H, K1, M, and N1.

1. Mechanically fasten 1/2-inch gypsum board with tight, staggered board joints to the existing plywood roof deck.
  - a. One approved fastener per 2.67 square feet (12 fasteners per 4-foot by 8-foot board) of gypsum barrier board.

I. Insulation - Area D.

1. Mechanically fasten tapered insulation with approved tapered insulation layout plan over existing insulation. The tapered insulation shall be sloped 1/8-inch per foot. Stagger board joints between rows and layers of insulation. Properly secure the insulation with one approved fastener per 2.67 square feet (6 fasteners per 4-foot by 4-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
  - a. NOTE: The minimum starting thickness of the tapered insulation shall be 1/2-inch (AA-panel) and begin at the roof drains.
2. Adhere 1/2-inch gypsum board with tight, staggered board joints to the tapered insulation with approved foam adhesive. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.

J. Insulation - Area E.

1. Mechanically fasten one layer of 2.6-inch thick insulation to the roof deck with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
2. Adhere 1/2-inch gypsum board with tight, staggered board joints to the base layer of insulation with approved foam adhesive. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.

K. Insulation - Area I and J.

1. Mechanically fasten a base layer of 2.0-inch thick insulation to the roof deck with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
    - a. NOTE: Area J to receive two layers of 2.0-inch thick insulation mechanically fastened to the roof deck.
  2. Adhere tapered insulation with approved foam adhesive and in accordance with the approved tapered insulation layout plan. The tapered insulation shall be sloped 1/8-inch per foot. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.
- L. Insulation - Area K and N.
1. Mechanically fasten one layer of 2.0-inch thick insulation to the roof deck with one approved fastener per four square feet (8 fasteners per 4-foot by 8-foot board) of insulation board. Increase the number of fasteners by 50% at 8-foot wide perimeter edges of the roof. Increase the number of fasteners by 100% at 8-foot by 8-foot building corners.
  2. Adhere 1/2-inch gypsum board with tight, staggered board joints to the base layer of insulation with approved foam adhesive. Maximum board size for adhered insulation is to be 4-foot by 4-foot, per manufacturer requirements. Bead spacing (perimeter): 6-inches on center (8-foot perimeter). Bead spacing (field): 12-inches on center.
- M. Tapered Saddles and Tapered Edge Strip
1. Install tapered insulation saddles at the locations shown on the Roof Plan and areas with the potential for ponding water conditions. Adhere the tapered insulation saddles with the approved foam adhesive. Bead spacing: 6-inches on center.
  2. At appropriate locations, install tapered edge strip to provide smooth transitions in the insulation system. Adhere the tapered edge strip with the approved foam adhesive. Bead spacing: 6-inches on center.

### **3.05 INSTALLATION - ROOF SYSTEM**

- A. Membrane Installation
1. Roofing system shall be installed following the latest printed installation instructions of the roofing manufacturer.
  2. Evenly apply adhesives at rate recommended by the roofing manufacturer to both the underside of the membrane and the insulation. Apply bonding adhesive uniformly, stopping short of the splice areas along the seams and base tie-ins. Allow the adhesive to flash off until tacky.
  3. Reposition the membrane, free of air pockets and wrinkles. Firmly press the sheet into place without stretching. Broom the surface to improve adhesion immediately after installation.
  4. Overlap edges and ends and seal by roofing manufacturer's recommended dimensions.
  5. Shingle lap joints on sloped substrates in the direction of drainage.
  6. Complete the roof membrane seams with the roofing manufacturer's seam tape wherever possible. Apply the seam tape in accordance with the roofing manufacturer's instructions, including seam preparation work, proper seam tape alignment and exposure. Roll the completed seam with a hand roller across and along the seam.
  7. Secure the roof membrane at base tie-ins with the roofing manufacturer's reinforced perimeter attachment strips. Adhere the reinforced perimeter attachment strips to the insulation with bonding adhesive. Fasten the attachment strips with the roofing manufacturer's approved fasteners. After adhering the roof membrane to the reinforced perimeter attachment strip, roll the splice area with a hand roller across the strip over the length of the splice.
  8. Apply T-joint covers, stripping and appropriate sealant where specified by the roofing manufacturer on a daily basis.
- B. Flashing Installation

1. Perimeter edge flashing, wall flashing and roof curbs shall be installed in accordance with the roofing manufacturer's flashing details using the longest pieces practicable. The installed flashing shall be fastened along the top edge 12-inches on-center (maximum). The latest printed flashing instructions must be followed as issued by the roofing manufacturer. Hand roll the flashings to promote adhesion.
    - a. NOTE: ALL FLASHINGS SHALL BE COMPLETED DAILY AS THE PROJECT PROGRESSES WITH THE INSTALLATION OF THE NEW ROOF SYSTEM.
  2. Install a termination bar at the horizontal and vertical ends of the flashing where the flashing is exposed to the weather or as shown on the details. The termination bar shall be mechanically fastened (12-inches on-center, maximum) into slotted holes. The termination bar and fastener heads shall be sealed with the specified sealant.
  3. Secure the top edge of the flashing installed on the roof hatch curb with foam backer rod. Adhere the backer rod in place as required by the roofing manufacturer.
  4. Seal roof drains per the roofing manufacturer's required details. Install clamping rings and cast iron drain strainers immediately after placing the membrane. Drain strainers and clamping rings must be securely fastened to the roof drain bowl.
- C. Penetration Flashing
1. Flash all penetrations passing through the membrane and flashing. Factory prefabricated pipe flashing shall be used to flash all penetrations where installation is possible. Where factory prefabricated pipe flashing cannot be installed, field fabricated penetration flashing may be used. All flashings and terminations shall be completed in accordance with the roofing manufacturer's requirements.
  2. Penetration pocket flashings shall be provided at miscellaneous roof penetrations which cannot be flashed with a prefabricated boot or flange, sleeve and umbrella flashing. The pans shall be sheet metal as approved by the roofing manufacturer. Fill the penetration pocket with non-shrink grout (bottom half) and the roofing manufacturer's pourable sealer (top half). Mound the pourable sealer to shed water.
  3. At locations indicated on the Roof Plan, install new pipe boot flashings on sheet metal roof areas.
    - a. Trim the opening in the pipe boot flashing per manufacturer's recommendations.
    - b. Fit the flashing over the existing pipe.
    - c. Press the aluminum frame/base onto the sheet metal roof panel to conform to the roof profile or irregularities.Apply sealant to the base of the flashing and the roof.  
Use fasteners to complete sealing per manufacturer's recommended quantity and spacing.
  4. Return multiple pipe penetration flashings to their original position and secure the flanges in place with heavy duty screws. Return the EPDM covers onto the sheet metal bases and neatly seal and clamp the penetrations.
- D. Vinyl Siding
1. Verify that EPDM membrane, termination bar, and counterflashing has been installed as specified.
  2. Install building wrap on wall substrates where missing. Follow manufacturer's installation instructions.
  3. Install new j-channel flashing 8-inches on center with siding nails.
  4. Lock the new vinyl siding panels together and secure each nailing hem with siding nails spaced 8-inches on center.
  5. Follow the installation instructions as printed by VSI, Vinyl Siding Installation Manual.
  6. DO NOT FACE NAIL THROUGH THE SIDING. FACE NAILS WILL BE REJECTED AND REPLACEMENT VINYL SIDING WILL BE INSTALLED AT THE CONTRACTOR'S EXPENSE.
- E. Sheet Metal Installation
1. See Section 07 6200 Sheet Metal Flashing and Trim.

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F. Miscellaneous

1. Return the existing mechanical units to their original positions and secure to the existing roof curb with EPDM-gasketed screws, a minimum of two on each side of the roof curb.
2. Reinstall the existing pate curb covers to the existing roof curb with EPDM-gasketed screws, a minimum of two on each side of the roof curb.
3. Install rubber walkpads at the mechanical unit access panels, doors, ladders, downspouts, and beneath equipment on roof surface. Install additional rubber walkpads at the designated locations shown on the roof plan. The walkpads shall be adhered to the roof membrane in accordance with the manufacturer's requirements.
4. Return the existing supply lines to their original positions. Reinstall the existing pipe supports on the supply lines. Provide membrane protection if required by the roofing manufacturer.
5. Return the existing safety guard rails to their original positions. Each safety guard rail support must be set on rubber walkpads if required by the roofing manufacturer.

**3.06 PRECAUTIONS**

- A. Do not use oil base or plastic roof cement in conjunction with EPDM materials.
- B. Waste products (petroleum, grease, oil and solvents - vegetable or mineral oil and animal fat - direct contact with steam venting) should not be allowed to come in contact with the EPDM roof membrane system.
- C. Splicing and bonding surface must be dry.
- D. Daily Seal: Care should be exercised to ensure that water does not flow beneath any completed sections of roof by temporarily sealing the loose edge of the membrane when the weather is threatening. The roofing manufacturer's requirements should be followed closely.
- E. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

**3.07 FIELD QUALITY CONTROL**

- A. The Contractor shall coordinate inspection services during roof application. Prior to final payment, and as a condition thereof, the Contractor shall obtain final approval from the Roofing Consultant indicating proper compliance with the Contract Documents.
- B. The Roofing Consultant shall review and approve all shop drawing submittals.
- C. Notify Roofing Consultant whenever roofing work is to be done, in sufficient time to arrange inspections. Provide safe access to roof for monitoring.
- D. Furnish Roofing Consultant with all pertinent job information prior to beginning work in accordance with Roofing Consultant's directions.
- E. The Roofing Consultant may perform any testing required to verify the integrity of the work and confirm that work is in conformance with roofing manufacturer's recommendations.

**3.08 CLEANING**

- A. Remove bituminous markings, adhesives or other markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

**3.09 PROTECTION**

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using rigid insulation and plywood.
- C. Protect the property grounds and building during the course of the project. At set-up locations, protect the pavement, sidewalks, walls, windows, etc. to prevent damage. Repair damage to the areas to match the condition of the area prior to the reroofing project.

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- D. Protect the roof areas used to access the designated areas of roof removal and replacement. Protect the existing roofs (inside the areas designated for removal and replacement) by placing 1/2-inch plywood over 1.5-inch insulation and fastened together. Any damage to the existing roofs shall be repaired immediately to prevent leakage into the roof and the building interior.

**END OF SECTION**

**SECTION 07 6200  
SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

**1.02 SECTION INCLUDES**

- A. Premanufactured sheet metal fascia cap, coping, counterflashing and miscellaneous flashing.

**1.03 RELATED REQUIREMENTS**

- A. Section 07 5300 - Elastomeric Membrane Roofing.

**1.04 REFERENCE STANDARDS**

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- B. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.
- C. ANSI/SPRI ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

**1.05 SUBMITTALS**

- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- B. Samples: Submit selection and verification samples for finishes, colors and textures. Color to be selected by the Owner.

**1.06 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience. Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.
- C. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

**PART 2 PRODUCTS**

**2.01 SHEET METAL FLASHING AND TRIM**

- A. Sheet Materials
  - 1. Galvanized Steel for Continuous Cleat: ASTM A 653, with G90 zinc coating; nominal 0.034-inch (22-gauge) thick base metal.
  - 2. Galvanized Steel Base Metal: ASTM A653/A653M, with G90/Z275 zinc coating; nominal 0.028-inch (24-gauge) thick base metal.
- B. Prefinished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; nominal 0.028-inch (24-gauge) thick base metal, shop pre-coated with PVDF coating.
  - 1. Fluoropolymer Coating: High performance organic powder coating, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
  - 2. Color: As selected by Owner from manufacturer's standard colors.

3. Acceptable Manufacturer's:
  - a. Holcim Elevate: Una-Clad
  - b. Petersen Aluminum Corporation: Pac-Clad
- C. Accessories
  1. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer.
  2. Gasketed washers: Soft neoprene washers.
  3. Elastomeric Sealant: High performance, one component polyurethane-base, non-sag elastomeric sealant as manufactured by one of the following manufacturers or approved equivalents:
    - a. Sika Corporation, Sikaflex - 1a
    - b. Tremco, Vulkem 116
- D. Fabrication, General
  1. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal and other characteristics of the item indicated.
  2. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  3. Form material with watertight end joints and seams.
  4. Fabricate vertical faces with bottom edge hemmed 1/2-inch and bent outward to form a drip edge unless specified otherwise.
  5. Form exposed sheet metal work, shop fabricated or field fabricated, that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated.
  6. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
  7. Conceal fasteners and expansion provision where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
  8. Corners: corners must be formed, mitered, lapped, notched, sealed or soldered as necessary to provide a continuous system that is not more susceptible to leaks than straight sections.
- E. Fabrication, Sheet Metal
  1. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
  2. Premanufactured Canted Fascia Cap: ANSI/SPRI/FM 4435/ES-1 to design pressure of 29 psf (perimeters) and 37 psf (corners). The fascia cap shall be 24-gauge prefinished galvanized steel.
    - a. Face dimension required: Varies by area. Fabricate a 3/8-inch stiffening rib at the midpoint or add fascia extensions for face dimensions 8-inches or more.
    - b. Concealed splice plates: 3-1/2-inches minimum.
    - c. Formed Lengths: 12'-0".
    - d. Slotted Fastening Holes: 12 inches and 6 inches on center.
    - e. Waterdam: 24-gauge galvanized steel.
    - f. Owner to choose from standard available colors.
    - g. See RTA Detail Nos. 2, 3, 5, 7, 11, 12, and 13. Approved manufacturer or approved equal:
      - 1) Metal-Era, Perma-Tite System 200 Fascia, Single-Ply Application, Crimp-On Version.
  3. Fascia Extensions: Fabricate from the following material:
    - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.

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- b. Fabricate the fascia extension in accordance with SMACNA Figure 2-2A. Face dimension as required to cover the fascia plus extend behind the fascia cap 2-inches minimum. Fabricate the bottom edge as shown in the details with an open lock drip edge to receive a continuous cleat. Fabricate a 3/8-inch stiffening rib at the midpoint for face dimensions 8-inches or more.
- 4. Replacement Ridge Cap:
  - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the ridge cap to match the existing ridge cap profile, dimensions, and color.
- 5. Counterflashing: Fabricate from the following material:
  - a. Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate the reglet mounted counterflashing in accordance with SMACNA Figure 4-4B. Fabricate the counterflashing with a hemmed drip edge along the bottom edge, a minimum face of 4-inches and bent to return into the reglet 1-1/2-inches. See RTA Detail No. 7.
  - c. Fabricate the surface mounted counterflashing (slip flashing) in accordance with SMACNA Figure 4-5B. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a minimum face of 4-inches. The top edge to receive behind the curb cap cover 2-inches minimum.
- ~~6. Wall Panels: Fabricate from the following material:
  - a. ~~Prefinished Galvanized Steel: 0.028-inch (24-gauge) thick.~~
  - b. ~~Fabricate wall panels and termination flashings in accordance with SMACNA Figure 7-3 Wall System Features Non-Exposed Fasteners/Clips Flat Profile. Fabricate for a vertical installation with 8-inch wide by 1-inch deep wall panels. Fabricate wall panel corners in accordance with SMACNA Figure 7-8A. Color to be selected by the Owner. See RTA Detail Nos. 3, 10, 11, and 13. Approved manufacturers:
    - 1) ~~Holcim Elevate: Una-Clad~~
    - 2) ~~Petersen Aluminum Corporation: Pac-Clad~~~~~~
- 7. Miscellaneous Flashing - Penetration Pocket Flashing: Fabricate from the following material:
  - a. Galvanized Steel: 0.028-inch (24-gauge) thick.
  - b. Fabricate penetration pockets in accordance with SMACNA Figure 8-11C. Fabricate the penetration pockets with 4-inch tall sides (minimum), 4-inch wide flanges and soldered corner stiffeners.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

**3.02 INSTALLATION**

- A. Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions and SMACNA's "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner of intersection.

C. Prefabricated Sheet Metal Fascia Cap

1. Install the specified premanufactured sheet metal fascia cap along the designated perimeter edges. The installation shall be in accordance with the manufacturer's requirements. Secure the galvanized sheet metal water dam 6-inches on-center in the flange and 12-inches on-center in the fascia with galvanized ring shank nails. Fully adhere the roof membrane to the cant and fascia.
2. Install the extruded aluminum anchor bar and secure through the face as required by the manufacturer.
3. Install the prefinished fascia cover and concealed splice plates onto the anchor bar.

D. Fascia Extension

1. Install prefinished sheet metal fascia extensions along the designated perimeter edges shown in the RTA Details. Secure continuous cleats with nails spaced 12-inches-on-center. Hook the bottom hemmed edges of the fascia extensions over the cleats and secure the tops of the fascia extensions with nails spaced 12-inches on-center. Lap end joints 4-inches between sections of fascia extension.

E. Replacement Ridge Cap

1. Install replacement prefinished ridge cap flashings on the existing standing seam sheet metal roofs where the existing ridge cap was removed due to deterioration or where required to install the adjacent EPDM roof system. Set the zee closures in continuous sealant on the roof panels and secure as shown in RTA Detail Nos. 8 and 15. Engage the hemmed edges of the ridge cap with the zee closures. Overlap, seal and secure sections of the ridge caps.

F. Cleat/Receiver

1. Engage new sheet metal cleat/receiver with existing sheet metal roof panel hemmed bottom edge on the low slope roof areas. Secure the continuous cleat to the substrate with screws spaced 12-inches on-center. Install sheet metal counterflashing into new receiver. Notch and lap the end joints in the counterflashing 4-inches. Secure the counterflashing to the receiver with stainless steel pop rivets spaced 24-inches on center. See RTA Detail No. 4.

G. Counterflashing

1. Reglet Mounted Counterflashing: Install counterflashing into a sawcut reglet in the walls and chimneys. The counterflashing must cover the top edge of the base flashing a minimum of 3-inches. Insert the top edge of the counterflashing a minimum of 1-1/2-inches into the wall and secure with lead wedges spaced 18-inches on center. Notch and lap the end joints in the counterflashing 4-inches. Fill the reglet with the specified elastomeric sealant and tool the joint to promote adhesion and water shedding capabilities.
2. Curb Slip Flashing: Install counterflashing along the top of any curb where the top of the base flashing is not protected by a minimum of 3-inches. The counterflashing must cover the top edge of the base flashing a minimum of 3-inches. The top edge of the counterflashing must be concealed by the curb cap a minimum of 2-inches. Secure 24-inches on center with gasketed screws. Notch and lap the corners and end joints in the counterflashing 4-inches.

H. Penetration Pocket

1. Install sheet metal penetration pockets at miscellaneous roof penetrations which cannot be flashed with a prefabricated boot or flange, sleeve and umbrella flashing. Secure the penetration pocket flanges with screws into the roof deck. Seal the flanges in accordance with the manufacturer's typical details.
2. Fill the flashing with the specified non-shrink grout and pourable sealer. The pourable sealer must be mounded to promote watershedding capabilities.

I. Hot Stack Flashing

1. Reuse flange, sleeve and umbrella flashing at round stacks and roof penetrations whenever possible.

2. Secure the flange to the roof deck with screws. Neatly field wrap the sheet metal flashing in accordance with the selected membrane manufacturer's requirements.
3. Install an umbrella with 1/4-inch minimum clearance from the top of the sleeve. Tightly secure the umbrella in place with stainless steel drawbands. Seal the top of the umbrella to the penetration with the specified caulk.

~~J. Wall Panels~~

- ~~1. Install the specified building wrap on the wall substrate in accordance with the building wrap manufacturer's requirements.~~
- ~~2. Install flashing to receive the top and bottom edge of the new wall panel system as shown in the RTA Details. Provide laps between flashing sections and secure the flashings in accordance with the manufacturer's installation instructions.~~
- ~~3. Install vertical wall panels in accordance with the installation instructions of the wall panel manufacturer. No exposed fasteners.~~
- ~~4. Install corner trim in accordance with the manufacturer's requirements.~~
- ~~5. Tool marked components are unacceptable. Remove and replace wall panel components exhibiting tool marks.~~

**3.03 FIELD QUALITY CONTROL**

- A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

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Remove bituminous markings from finished surfaces.

- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

**END OF SECTION**

# MEETING ATTENDANCE SIGN-IN SHEET

**TITLE:** LIVONIA PUBLIC SCHOOLS REROOFING PROJECT 2027

Coolidge Elementary School, Garfield Community School, Roosevelt Elementary School, & LPS Annex Bldgs.

**DATE:** October 13, 2026

**TIME:** 12:30 p.m.

| NAME                      | COMPANY          | PHONE NO.      | E-MAIL ADDRESS                                     |
|---------------------------|------------------|----------------|----------------------------------------------------|
| Jess Judd                 | Roof One         | (311) 710 1727 | Commercial <sup>RoofOne.com</sup> <del>Chase</del> |
| Steve McElwain            | Roof One         | (248) 763 1096 | Steve M C Roofone.com                              |
| Scott Doree/Garrett Botte | MTD Construction | (810) 206-3162 | garrett@mtdconstruction.net                        |
| Mike Ruckelshaus          | Brutell Roofing  | (248) 917 6170 | Mike R @ brutellroofing.com                        |
| Colin Frank               | PRR              | (248) 508 0667 | Colin.Frank@prerose.com                            |
| Chase Keathley            | Schena           | (586) 575-1055 | ckeathley@schena-roofing.com                       |
| Craig Hankins             | Royal Roofing    | (248) 755-2372 | CHANKINS@ROYAL-ROOFING.COM                         |
| John Horwath              | CRS / Carlisle   | (989) 233 1492 | john@CRSllc.com                                    |
| Jeddy Eddy                | Royal Roofing    | (248) 276-7663 | Jeddy@royal-roofing.com                            |
| Justin Harbitt            | Tristar Roofing  | (810) 956-4087 | Justin@tristarroofing.net                          |
| SAM SUCURA                | Royal Roofing    | (248) 276-7663 | SSUCURA@ROYAL-ROOFING.COM                          |
| MATT DAVIS                | LUTZ RFG         | (586) 655 2286 | mdavis@lutzroofing.com                             |
| Hony Lee                  | LPS              | ( )            |                                                    |

## MEETING ATTENDANCE SIGN-IN SHEET

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