DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 4 TO PROJECT NO. 45634

CONSTRUCTION WORK
REPLACE PENTHOUSE ROOFS
SWAN STREET BUILDING
EMPIRE STATE PLAZA,
ALBANY, NY

May 2, 2025

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

SPECIFICATION GROUP

1. SECTION 075216 SBS MODIFIED BITUMEN ROOFING SYSTEM: Discard the Section bound in the Project Manual and substitute the accompanying Section (pages 075216 – 1 thru 075216 – 16) noted "Revised 4/30/2025".

DRAWINGS

1. Drawing No. M-001:
   a. GENERAL NOTES Column, Change Note B. to Read:

      "B. IF REQUIRED, PROVIDE SHUTDOWNS AND TIE-INS DURING OFF HOURS TO AVOID DISRUPTION OF BUILDING SYSTEMS. COORDINATE ALL SHUT DOWN REQUIREMENTS WITH DIRECTORS REPRESENTATIVE."

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 075216

SBS MODIFIED BITUMEN ROOFING SYSTEM

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Restricted Work Period: Section 011000.

B. Rough Carpentry: Section 061000.

C. Flashing and Trim: Section 076000.

D. Roof Accessories (Commercial): Section 077200.

1.02 REFERENCE

A. ASTM: American Society of Testing and Materials.

B. UL: Underwriters Laboratories, Inc.

1.03 DEFINITIONS

A. Company Field Advisor; An individual meeting the requirements of either subparagraph below:
   1. An employee of the company producing or manufacturing the system (or the company which lists and markets the primary components of the system under their name) who is certified in writing by the company to be technically qualified in design, installation, and servicing of the required products, and has experience in the installation of the required products. Personnel involved solely in sales do not qualify.
   2. An individual employed by an organization (other than the company producing or manufacturing the system), certified in writing by the company producing or manufacturing the system, that the individual is technically qualified in design, installation and servicing of the required products and is capable to act as company field advisor in their behalf, and has experience in the installation of the required products. Personnel involved solely in sales do not qualify.

1.04 ROOFING SYSTEM DESCRIPTION

A. Modified Bitumen Roofing System: Granular surfaced SBS (Styrene Butadiene Styrene) modified bitumen membrane system consisting of a white acrylic coating over smooth modified bitumen base sheet, an intermediate ply sheet, and granular cap ply sheet, applied cold adhesive over gypsum coverboard, insulation and vapor retarder on a concrete deck.
   1. All components of the roof system to be low odor, low VOC formulations.

1.05 QUALITY ASSURANCE

A. Fire Hazard Certification: The modified bitumen roof system shall have an Underwriters Laboratories Class A or B External Fire Resistance rating, as determined by tests conducted in conformity with UL-790 "Tests for Fire Resistance of Roof Covering Materials".
   1. The roof system, which includes a specific generic type of insulation and in some instances, specific name brand insulation, shall have been tested in conjunction with the type of structural roof deck and roof slope applicable to the project.

B. Material Classification Identification: Materials delivered to the site that are a component of the roofing system shall bear the UL Classification mark.

C. Membrane Manufacturer's Qualifications:
   1. The manufacturer shall have been actively marketing a modified bitumen roof system in the United States for a minimum of 5 years.
   2. The manufacturer shall have the technical expertise and qualified technical representatives to resolve questions or problems that may arise both during and after the Work is completed.
   3. The manufacturer shall have installed at least 5 previous projects of comparable size, scope, and complexity as the Work of this Section within the past 5 years.
   4. The manufacturer shall require that the roof system be installed by a licensed or approved applicator.

D. Installer's Qualifications: The installation of the roofing system shall be performed by an installer licensed or approved by the membrane manufacturer. The installer shall have previously installed at least 5 cold process modified bitumen roofing systems for which the manufacturer's warranty was issued.
   1. Workers: The supervisor or crew chief and at least one other member of the roofing crew shall have installed at least 5 cold process modified bitumen roof systems and shall be thoroughly familiar with all aspects of the installation.

E. Pre-Installation Conference: Before the roofing work is scheduled to commence, a conference will be called by the Director's Representative at the site for the purpose of reviewing the Contract Documents and discussing requirements for the Work. The conference shall be attended by the Contractor, the authorized roofing applicator, and the Company Field Advisor.

1.06 SUBMITTALS

A. Waiver of Submittals:
   1. The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this section.

B. Submittals Package: Submit items specified below, except contract closeout submittals and MSDS, at the same time as a complete package. Partial submittals will not be considered.

C. "Or Equal" Submittals: Submit for approval, product data, samples, quality control submittals, and any proposed deviations from the Contract Documents.

D. Approvals: Approval of the roofing system is with the understanding that the requirements of the Contract Documents will be met. Approval of a roofing system does not constitute blanket approval of the manufacturer's installation specifications or details.
   1. If the requirements of the Contract Documents differ from or are more stringent than the requirements of the approved roof system manufacturer, the Contract Documents have precedence over the requirements of the approved manufacturer.

E. Proposed Deviations from the Contract Documents: Submit for approval proposed deviations when the roofing system is submitted. Proposed deviations submitted after the roofing system has been approved will not be considered for approval and may be cause for rejection of the previously approved roofing system.
   1. Manufacturer's Details: Do not use or submit manufacturer's standard details unless there is an omission or a proposed deviation from the Contract Documents. In such instances, submit the revised detail for approval. Label each revised detail with the words "PROPOSED DEVIATION".
   2. Manufacturer's Specifications and Installation Instructions: When there is a proposed deviation from the Contract Documents, submit the proposed deviation for approval. Label each specification and instruction revision with the words "PROPOSED DEVIATION".

F. "Letter of Assembly" submittal: letter from the roofing manufacturer with a descriptive list of the materials and methodologies proposed for use. Include a written statement that the selected assembly is compatible in all respects, meets the specified performance requirements and will be warranted for the specified term.

G. Product Data: Catalog sheets, specifications, installation instructions for each item specified.

H. Samples:
   1. Modified Bitumen Membrane:
      a. Base Ply: Three 6 inch square pieces.
      b. Cap Sheet: Three 6 inch square pieces.
   2. Modified Bitumen Flashing Cap Sheet:
      a. Base Ply: Three 6 inch square pieces.
      b. Cap Sheet: Three 6 inch square pieces.
   3. Fasteners: Three of each type.
   4. Insulation: Three 3 inch square piece of each type.
   5. Coverboard: Three 6 inch square pieces.
   6. Liquid Coating: Three 6 inch square pieces.

I. Quality Control Submittals:
   1. Fire Hazard Certification: Letter from Underwriters Laboratories, or a copy of the Underwriters Laboratories classification listing for the roofing system.
   2. Wind Uplift Certification: Letter from the roofing membrane manufacturer stating that the submitted roofing system meets the Factory Mutual wind uplift requirement.
   3. Material Certification: Written certification from the roofing membrane manufacturer certifying that the insulation, insulation fasteners (if any), flashings and accessory products provided by the membrane manufacturer are approved for use with the roofing system and are included in the full system warranty.
   4. Membrane Manufacturer's Qualifications Data:
      a. Written certification that the manufacturer has been actively marketing the submitted roof system for the past 5 years.
      b. Names and addresses and telephone numbers of 5 previous modified bitumen roofing projects installed within the past 5 years. Include the type and size of each project, and name and telephone number of a contact person at the project locations.
   5. Installer's Qualifications Data:
      a. Written certification from the membrane manufacturer certifying that the installer is licensed or approved to install the submitted roof system.
      b. Names, addresses, and telephone numbers of 5 buildings where the installer has installed the submitted roof system with a manufacturer's full system warranty. Include the manufacturers' names and the warranty numbers.
      c. Written certification that the project supervisor or crew chief and at least one other member of the roofing crew have installed at least 5 of the submitted roof systems and are thoroughly familiar with all aspects of the installation.
   6. Warranty: Sample copy of the 30-year NDL full system warranty.

J. Contract Closeout Submittals:
   1. Warranty: Warranties as specified.
   2. Manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

K. Material Safety Data Sheets (MSDS): Do not include the MSDS in the Submittals Package. Submit the MSDS to the Director's Representative at the Pre-Installation Conference.

L. Roofing Manufacturer's Company Field Advisor:
   1. Documentation of 5 years of field experience on the same type of roofing system.
   2. Documentation of 10 projects where role was a Company Field Advisor; include contact names and phone numbers for each project.
   3. Documentation of attendance at a roof specific instructional seminar within the last two years.

1.07 ROOFING MANUFACTURER'S COMPANY FIELD ADVISOR

A. The manufacturer of the roofing system, issuing the final system guarantee on this roofing project, must supply a Company Field Advisor, as a technical representative, with the following minimum qualifications:
   1. Five years of field experience on the same type of roofing system.
   2. Ten projects where role was a Company Field Advisor; include contact names and phone numbers for each project.
   3. Attendance at a roof specific instructional seminar within the last two years.

B. Secure the services of the Company Field Advisor for a minimum of 10 days at a minimum of four hours per day to inspect the workmanship of the roofing system installer.

C. Company Field Advisor Duties and Responsibilities:
   1. Become familiar with the Contract Documents and approved submittals prior to the pre-roofing conference.
   2. Attend the pre-roofing conference and the beginning of the actual membrane installation for the purpose of:
      a. Rendering technical assistance to the Contractor regarding installation procedures of the system.
      b. Familiarizing the Director's Representative with all aspects of the system including inspection techniques.
      c. Answering questions that might arise.
   3. Be objective, unbiased and impartial in each inspection, recommendation, conversation, action and written report.
      a. Inspect and approve the existing substrate, flashing, blocking, and related materials as being acceptable for the installation of the roofing system.
      b. Ensure proper fastening patterns and fastener sizes of wood blocking, insulation, edge flashing, and related components.
   4. Immediately report non-compliant conditions, if any, to the Director's Representative.
   5. Provide to the Director's Representative a written report, submitted prior to leaving the Project Site each day the Company Field Advisor is present. Each daily written report shall contain at a minimum:
      a. Date of report and inspection.
      b. Weather conditions at the start, middle, and end of the work day.
      c. Work performed including Contractor activity, contractor crew size, supervisor's name, area of activity, and progress and quality of the work as observed.
      d. Discussions with Contractor regarding work anomalies and resolution.
      e. Conditions that are not in compliance with the Contract documents.
         1) Continue documenting non-compliance issues in subsequent reports until the issue has been resolved. Document resolution of non-compliance issues when resolved.

6. Report to the Director's Representative in writing failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
7. Confirm, after completion of the roofing work and based on the Company Field Advisor's inspections and tests, that the Company Field Advisor has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to the site in the manufacturer's labeled, unbroken containers.

B. Storage and Handling: Store materials in a dry, well ventilated place protected from the weather.
1. Do not store materials so as to overload the deck or structural assembly.
2. Store all materials on raised platforms covered with properly secured breathable water-resistant covers. Slit shrink wrapping to not permit condensation, and cover with breathable tarp.
3. Store all rolled materials on end.
4. Do not remove materials from factory packaging until ready for use.
5. Remove all materials that become wet or damaged from the site.
6. Volatile liquids shall be stored in a separate storage building or trailer or removed from the site at the end of each workday.
   a. Store volatile liquids at temperatures recommended by the manufacturer.
7. Store adhesives, and sealants at temperatures between 60 degrees F and 80 degrees F.
8. Do not stock pile aggregate surfacing on unsurfaced plies that are in place on the roof.

1.09 PROJECT CONDITIONS

A. Unless otherwise directed, do not execute the Work of this Section if the Director's Representative is not present.

B. Do not execute the Work of this Section unless the substrate is dry and free of dirt and debris.

C. Moisture Protection:
1. Cover, seal or otherwise protect the roof and flashings so that water cannot accumulate or flow under completed portions. When and where necessary to accomplish this, provide temporary water cut-offs in accordance with the membrane manufacturer's written specifications.
2. Limit the removal of existing materials to areas that can be completely re-roofed or temporarily protected within the same day. At the discretion of the Director's Representative, a watertight built-up vapor retarder may be acceptable temporary protection for a maximum of 48 hours.

D. Do not smoke or use open flames near volatile materials.

E. During the progress of the Work make every effort to keep odors generated by the Work from entering the building.
   1. Coordinate the use of materials that could cause noise, dust and odors to permeate the building with the Director's Representative.
   2. Shut off and wrap air intakes in the vicinity of the Work. Coordinate air system shut down with the Director's Representative.
   3. Insure that operable windows in the vicinity of the Work area are closed.

F. Do not adhere insulation or membrane plies with cold adhesive when ambient temperatures are below 40 degrees F.
   1. Follow manufacturer's cold weather application guidelines when roofing work is permitted at temperatures below 40 degrees F then.

G. Do not begin work when inclement weather is forecast to occur prior to the anticipated completion time of work planned for the day unless approved by the Director's Representative.

1.10 WARRANTY

A. Warranty Extension: The one-year period required by Paragraph 9.8 of the General Conditions is extended to 2 years for the Work of this Section. Refer to Supplementary Conditions.

B. Manufacturer's Warranty: In addition to the 2-year period specified above, furnish the membrane manufacturer's printed 30 Year, No dollar Limit, Full System Warranty, covering workmanship and materials for the Work of this Section.
   1. Wind speed: Up to 90 mph, 3-second gust, exposure B measured from the nearest NOAA weather station.
   2. The warranty shall include, but not be limited to, repair of leakage and the repair and/or replacement of the roofing system as necessary to correct defects caused by the materials or workmanship.
      a. Materials shall include membrane, insulation, fasteners, adhesives, membrane flashings, and other accessory items provided as part of the complete roof system.
      b. Repair and/or replacement of the roofing system shall include the replacement of wet insulation. For the purpose of this specification, insulation will be considered wet if either of the following exists:
         1) Free water is visible when the insulation is compressed.
         2) No free water is visible when the insulation is compressed, but the insulation is damp to the touch over a large enough area, as determined by the Director's Representative, to jeopardize the integrity of the roof system and any of its components, or to significantly lower the specified R value of the insulation.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Tremco, Inc., 3735 Green Road, Beachwood, OH 44122, 800-852-6013, www.tremcoroofing.com

B. Siplast, Inc., 1000 E. Rochelle, Irving, Texas 75062, 800-922-8800, www.siplast.com

C. The Garland Company, Inc.,3800 East 91st Street, Cleveland, OH 44105, 800-321-9336, www.garlandco.com

D. Soprema Roofing and Waterproofing, 310 Quadral Dr., Wadsworth OH 44281, 1800-356-3521, www.soprema.us.com

2.02 MATERIALS FOR VAPOR RETARDER

A. Materials for Vapor Retarder over Concrete Decks and Existing Vapor Retarders:
   1. Primer: Water-based, polymer modified, asphalt primer.
   2. Smooth surfaced SBS asphalt elastomer sheet reinforced with a combination of polyester fabric/fiberglass scrim composite ASTM 6162 Type II, a fiberglass scrim ASTM D 6163 Type I, or a polyester fabric ASTM D 6164 Type I.
      a. Grade S.

2.03 MODIFIED BITUMEN MEMBRANES

A. Modified Bitumen Roof Membrane System: Two (2) SBS (styrene butadiene styrene) modified bitumen base ply sheets with a SBS modified bitumen cap sheet over an insulation assembly.

B. Modified Bitumen Roof Membrane Ply Sheets:
   1. Base Ply; smooth surfaced SBS asphalt elastomer sheet reinforced with a combination of polyester fabric/fiberglass scrim composite ASTM 6162 Type II, a fiberglass scrim ASTM D 6163 Type I, or a polyester fabric ASTM D 6164 Type I.
      a. Grade S.
   2. Cap Sheet; UL Classified, Granular surfaced SBS asphalt elastomer cap sheet reinforced with a combination of polyester fabric/fiberglass scrim composite or ASTM 6162 Type II, a fiberglass scrim ASTM 6163 Type I or a polyester fabric ASTM D 6164 Type I.
      a. Grade G.
      b. Color: White.

2.04 MODIFIED BITUMEN FLASHINGS

A. Flashing Membrane Plies:
   1. Base Ply; Smooth surfaced SBS asphalt elastomer sheet reinforced with a combination of polyester fabric/fiberglass scrim composite ASTM 6162

Type II, a fiberglass scrim ASTM D 6163 Type I, or a polyester fabric ASTM D 6164 Type I.
a. Grade S.

2. Cap Sheet; UL Classified, Granular surfaced SBS asphalt elastomer cap sheet reinforced with a combination of polyester fabric/fiberglass scrim composite ASTM 6162 Type II, a fiberglass scrim/fiberglass mat ASTM D 6163 Type II, or a polyester fabric ASTM D 6164 Type I.
a. Grade G.
b. Color: White.

2.05 LIQUID FLASHING SYSTEM

A. Liquid flashing system comprising of a 40 mils non-woven, needle punched polyester (fleece) reinforcement with Acrylic resin, (poly methyl methacrylate and Thixotropic PMMS resin primer.
1. Manufacturers: Siplast and Soprema.

2.06 COLD-APPLIED ADHESIVES

A. Vapor Retarder, Flashing and Membrane Base Ply and Cap Sheet and Flood Coat (for Aggregate Surfaced) Adhesive: One-part, cold applied adhesive specially formulated for compatibility and use with specified roofing membranes and flashings, with the following physical properties:
1. Follow New York State Ozone Transport Commission guideline limits for shipment of products containing VOC's.
2. Volatile Organic Compound (VOC): maximum, ASTM D 6511: 250g/L.
3. Density at 77 deg. F, minimum, ASTM D 6511: 8.5 lb/gal.
4. Asbestos content, EPA 600 R-93/116: None.
5. Use squeegee grade for roof areas.
6. Use trowel grade for flashing.

B. Asphalt Primer: Water-based, polymer modified, asphalt primer with the following physical properties:
1. Asbestos Content, EPA 600/R13/116: None.
2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 65 g/L.

2.07 INSULATION

A. The indicated insulation thickness is nominal, allowing for differences in insulating properties of various name brands. Minor variation in thickness is acceptable, provided the specified thermal value and other requirements of this Contract are met.

B. Approval of the insulation is contingent upon certification by the membrane manufacturer that the insulation is approved for use with the specified roof system and that the insulation is included in the full system warranty.

C. Uniform Thickness: Membrane manufacturers approved closed cell isocyanurate foam core insulation skinned on both sides with factory applied fiberglass facers

suitable for installation with cold adhesive. ASTM C1289-01, Type II, Class 1, Grade 2. UL Classified and Factory Mutual approved for direct application over steel deck. Minimum LTTR: 5.5 per inch thickness.

1. Board Size:
    a. Adhesively Secured Insulation: Maximum board size 4 feet x 4 feet.
    b. Mechanically Fastened Insulation: Minimum board size 4 feet x 8 feet.

D. Tapered Edge Strips: Membrane manufacturer's approved 1/2 inch per foot factory tapered polyisocyanurate insulation conforming to ASTM C 1289.

E. Cant Strips: Fiber Cant or cut 4x4 Douglas fir or southern pine lumber.

2.08 COVERBOARD

A. Coverboard: 1/2-inch-thick gypsum roof board composed of a silicone treated gypsum core with fiberglass facers.
1. Acceptable Product: "Dens-Deck" by Georgia-Pacific Corporation, Gypsum Division, 133 Peachtree Street, N.E., Atlanta, GA 30303, (800) 225-6119, www.gp.com
2. Securock Roof Board, 3/8 inch thick by USG, 550 West Adams Street, Chicago, IL 60661-3676, (312)-0436-4000, www.usg.com.
3. Adhesively Attached Coverboard: Maximum board size 4 feet x 4 feet.

2.09 FASTENERS

A. Base Flashing Fasteners, use along top edge of base flashing, beneath cap flashings:
1. Concrete and/or Masonry Surfaces: Hardened masonry nails or zinc alloy hammer driven expansion anchors with stainless steel drive pins through 1 inch minimum sheet metal discs.
2. Sheet Metal Surfaces: Hardened, self tapping, #10 sheet metal screws through one inch minimum sheet metal discs.
3. Wood Surfaces: Galvanized roofing nails with minimum 3/8 inch diameter head.

2.10 INSULATION ADHESIVE

A. Coverboard and Insulation Adhesive:
1. Two-part, low rise polyurethane foam adhesive, supplied by the membrane manufacturer to satisfy warranty requirements.
2. One-part, solvent-free, moisture curing, cold fluid-applied, bituminous-urethane adhesive, supplied by the membrane manufacturer to satisfy warranty requirements.

2.11 MISCELLANEOUS MATERIALS

A. Walkway, Protection Pads:
1. Manufacturer's modified bitumen roof membrane cap sheet.

B. PMMA (Polymethyl-Methacrylate) Flashing: Supplied by the membrane manufacturer to satisfy warranty requirements.

C. Granules: Ceramic No. 11 Granules, ASTM D 451. Size and color to match the membrane surfacing.

2.12 COATING MATERIALS

A. White Reflective Roof Coating: Water-based, Energy Star Certified, CRRC certified, elastomeric acrylic or silicone roof coating formulated for use on bituminous roof surfaces, with the following physical properties:
1. Asbestos Content, EPA/600/R-93/116: None.
2. Non-Volatile Content (by weight), minimum, ASTM D 1644: 59 percent.
3. Percent Solids (by volume), minimum, ASTM D 5201: 65 percent.
4. Solar Reflectance Index: Minimum .78.
5. Volatile Organic Compounds (VOC), ASTM D 3960: None.

2.14 WALKWAYS

A. Type 1: Walkway Cap-Sheet Strips: same material as cap sheet material, granule surfaced; suitable for application method specified, and as follows:
1. Size: 36 by 60 inches.
2. Granule Color: contrasting color to field cap sheet.

B. Type 2: Walkway/Protection Pads: (Type 2)
a. RubberForm Recycled Products, LLC, 75 Michigan Street, Lockport NY 14094-2629, 1-866-424-6981.
b. Or approved equal.
c. Paver Size: 2 feet by 2 feet 6 inches, and 1.5 inches in depth.
d. Provide Type 1 Walkway/Protection pads underneath Type 2 Pads, or protection as required by roof membrane manufacturer.

PART 3 EXECUTION

3.01 VERIFICATIONS OF CONDITIONS

A. Testing Existing Roof Drains and Conductor Pipes: Before commencing with the Work of this Section, water test existing roof drains and conductor pipes and submit a written report to the Director's Representative indicating which drains or conductors, if any, are not functioning properly. Repair of existing drains and conductors is not included in the Work. Repair work (if any) may, at the Director's option, be accomplished by an Order on Contract.

B. Verify that penetrations in the roof deck and work requiring personnel and equipment to cross the roof deck have been completed prior to the installation of the vapor barrier.

C. Examine surfaces for defective conditions, including but not limited to inadequate anchorage, deterioration of the decking, foreign materials, moisture,

and unevenness that would prevent the execution and quality of application of the modified bitumen roofing system to be installed.

D. Do not proceed with the application of the roofing system until all defective conditions are corrected. Coordinate with the Director's Representative.

3.02 SURFACE PREPARATION

A. Ensure roof drain strainers are in place and secured during removal of insulation and other debris. Temporarily cover roof drains to prevent debris from entering drains. Uncover drains at the end of the workday. Provide cast iron strainers where existing strainers are missing.

B. Cleaning: Before the roofing installation commences, sweep, blow or vacuum all surfaces as required to remove all dirt, dust, loose aggregate, foreign matter, and debris left from removals of existing roofing.

3.03 PREPARATIONS OF SURFACES TO REMAIN

A. Remove Existing Vapor Retarder: Remove the existing vapor retarder down to existing deck.

B. Cleaning:
   1. Before the roofing installation commences, sweep and/or vacuum all surfaces as required to remove all dirt, dust, loose aggregate, foreign matter, and debris left from removals of existing roofing.

3.04 PHASING AND CONSTRUCTION TRAFFIC

A. Phasing: Phase roof system installation in accordance with the manufacturer's printed instructions. At the discretion of the Directors Representative, the vapor retarder may be left exposed for up to 7 days provided that it maintains the building in a watertight condition.
   1. At the end of each day, provide temporary water cut offs around the perimeter of all areas of completed roofing. Do not allow water to migrate under completed portions. Construct the water cut offs with at least one modified bitumen ply set in adhesive. Remove the water cut offs before proceeding with the roofing installation.

B. Construction Traffic: Progress the work so that there is no traffic over completed roofing membrane.
   1. Where traffic over completed roofing cannot be avoided, provide 1/2 inch minimum plywood traffic ways to protect the completed roofing membrane. Limit all traffic to the traffic ways.

3.05 INSTALLING VAPOR RETARDER

A. Installing Vapor Retarder on Concrete Decks:
   1. Apply primer to the substrate before application of vapor retarder.
   2. Install one base ply over the concrete deck with 3" minimum laps set in adhesive.

B. At curbs, walls, and wood blocking, fold the vapor retarder over the top of the insulation a minimum of 6 inches.
   1. Unless approved otherwise by the Director's Representative, follow immediately with the installation of the insulation and roofing membrane.

3.06 INSTALLING INSULATION

A. Keep insulation dry at all times. Discard insulation that contains moisture.
   1. Install only as much insulation as can be covered with roofing membrane the same day.
   2. Discard all units with broken corners or similar defects.
   3. At roof drains, terminate the insulation with tapered edge strips forming a 48-inch square sump.
   4. Adhere all cant strips with cold asphalt adhesive so they are firmly anchored to the deck and the vertical surface.

B. Installing Uniform Thickness Insulation: Set each board in ribbons of insulation adhesive 6 inches on center and 4 inches on center at the perimeter and corners or as an alternative fully spray insulation adhesive over the entire roof area. Install the insulation in a minimum of two layers, top layer joints staggered and offset from the joints of the insulation below. Cut base layer of insulation to a 2 foot width as a starter. Butt edges and ends snugly so that there are no gaps between the insulation boards. Press insulation into the adhesive immediately and as necessary thereafter to assure proper bonding.

C. Installing Coverboard and Insulation with Adhesive:
   1. Install the underlayment board over the deck with the long edges running in the same direction as the flutes of the deck with edge joints bearing on the solid portions of the deck. Do not allow edges of boards to cantilever over open steel deck flutes. Stagger end joints. Butt edges and ends snugly.
   2. Set each board in serpentine ribbons of adhesive applied at the rate of 6 inches on center. Press the board into the adhesive immediately and as necessary thereafter to assure proper bonding. Maintain pressure on the adhesive until the adhesive has completely set (20 to 45 minutes), or as per the Manufacturer's recommendations.

D. Cut and fit the cricket insulation in accordance with the manufacturer's instructions.

E. Install coverboard over the uniform thickness, tapered and cricket insulation.

3.07 INSTALLING COVERBOARD

A. Install coverboard over the insulation to provide protection from insulation facer delamination and to provide protection from foot traffic, etc. Stagger and offset joints of coverboard from the insulation below, staggering end joints. Butt edges and ends snugly.

B. Installing Coverboard with Adhesive:

1. Set each board in serpentine ribbons of adhesive applied at the rate of 6 inches on center. Press the board into the adhesive immediately and as necessary thereafter to assure proper bonding. Maintain pressure on the adhesive until the adhesive has completely set (20 to 45 minutes), or as per the Manufacturer's recommendations.

C. Install coverboard over the uniform thickness, tapered and cricket insulation.

3.08 INSTALLING MODIFIED BITUMEN MEMBRANE AND FLASHINGS

A. Install the membrane in accordance with the Contract Documents or manufacturer's printed instructions, whichever is more stringent.
   1. Installing Membrane Plies:
      a. Beginning at the low point of the roof, fully adhere the base, intermediate and top plies to the insulation with adhesive, lapping sides and ends a minimum of 3 inches. Offset end laps a minimum of 3 feet.
      b. Stagger the end laps of each ply 3 feet.
      c. Fold back the ply in half, exposing the substrate.
      d. Spray or squeegee the adhesive in accordance with the manufacturer's written instructions.
      e. Apply pressure with a broom or roller.
      f. Cut a 45 degree dog ear from the end/side lap corner of the underlying cap sheet prior to installation of the succeeding cap sheet.
      g. Apply granules to adhesive bleed out along the seams.

B. Installing Built-up Modified Bitumen Flashings:
   1. Apply primer to all vertical surfaces before installing the built-up flashing. Allow the primer to completely dry.
   2. Install the built-up flashing consisting of a base ply and a top ply of modified bitumen flashing membrane over the completed roof membrane.
   3. Install the flashing in maximum lengths of 6 feet. Lap end joints a min of 4 inches. Stagger end laps of the base and top ply a min of 1'-6".
   4. Extend the base and top plies 3 inches and 6 inches onto the roof surface beyond the base of the cant and up the vertical wall surface to the underside of the cap flashing.
   5. In accordance with the manufacturer's instructions, adhere the flashing plies to each other and to the substrate with the membrane manufacturer's adhesive.
      a. Do not adhere the base ply to vertical wood surfaces. Dry nail the base ply following the manufacturer's instructions.
      b. Secure the flashing across the top edge with fasteners spaced 8 inches on center or a continuous termination bar.

C. Installing Metal Flashings:
   1. Apply primer to the metal flanges of the flashings that will be installed into the roofing membrane. Allow the primer to completely dry.

2. Embed portions of metal flanges that extend over the roof surface in adhesive. Mechanically fasten the metal flanges as specified in Section 076000.
3. Strip-in all portions of the metal flanges which extend over the roof surface with two plies of modified bitumen coverstrips. In accordance with the manufacturer's instructions, adhere the coverstrip plies to each other and to the substrate with the membrane manufacturer's adhesive.
4. Install the cover strips in maximum lengths of 6 feet. Lap end joints a min of 4 inches. Stagger end laps of the base and top ply a min of 1'-6".
5. Extend the base and top plies 3 inches and 6 inches onto the roof surface beyond the back edge of the metal flange.

D. Installing Walkway Pads, Splash Pads, Protection Pads or Additional Cap Sheets:
1. Set each pad or cap sheet in adhesive. Install the pads and cap sheets where shown on the Contract Drawings. Allow a two inch space between pads. Butt cap sheets.

E. Inspection of Completed Membrane and Flashings:
1. In the presence of the Director's Representative and the membrane manufacturer's Company Field Advisor, inspect the completed membrane and flashings. Locate, identify, and repair all defects in the roofing membrane and flashings that could jeopardize the waterproof integrity of the roof system.

3.09 INSTALLING LIQUID APPLIED FLASHING

A. Prime areas to receive liquid applied flashing with the manufacturer's recommended primer, apply base coat 30 mils minimum thickness, 6 inches horizontally and 10 inches vertically. Apply, wrinkle free, scrim reinforced polyester fabric, 2 inches horizontal and vertically. After setting fabric, apply second base coat, 30 mils minimum thickness, 6 inches horizontally and 10 inches vertically. Embed with white ceramic granules.
1. Apply each course straight to a line.
2. Apply in accordance with manufacturer requirements.

3.10 INSTALLING LIQUID APPLIED ROOF COATING

A. Conduct CFA & Directors Representative inspections and address all open items of roofing work prior to the installation of the Roof Coating.

B. Applying Roof Coating: Wait 30 days before applying roof coating or provide a stain block-based coating first.

C. Install in accordance with the manufacturer's recommendations. Tape, mask and protect all non-painted surfaces. Do not coat the following:
1. Sheet metal flashings and trim.
2. Roof drain bowls and hardware.
3. Vent stacks and flashings and Roof Accessories.

3.11 INSTALLATION OF WALKWAYS

A. Walkway Cap Sheet Strips: Install walkway cap sheet strips over roofing membrane, using same application method as used for roofing cap sheet.[Install walkway cap sheet strips before flood coat and aggregate surface is applied.]

1. Install walkways strips at the following locations:

a. Perimeter of each rooftop unit.
b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
d. Top and bottom of each roof access ladder.
e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 3-inch clearance between adjoining strips

3.12 FIELD QUALITY CONTROL

A. Membrane Test Strip: At the discretion of the Director's Representative and before aggregate surfacing is applied, where directed, cut test strip(s) 3 inches wide by 1'-6" long thru all plies of the roofing membrane. Immediately repair each test area. Fill the void with roofing plies and adhesive. Apply a three ply modified bitumen patch set in adhesive. Extend the patch a min of 1'-6" beyond the cut area on all sides.

1. Turn the test strips over to the Director's Representative who will send the test strips to the Director for examination.
2. Failure of the test strip(s) to meet the specifications will be cause for rejection of the Work.

END OF SECTION