

FROM: Allied Engineering, Inc.
 160 Veranda Street
 Portland, Maine 04103
 Telephone: (207) 221-2260

Date: July 16, 2019

TO: Prospective Bidders, Suppliers, and Other Parties

RE: Addendum No. **1 (One)** to the Bidding Documents for:
Cultural Building Envelope Repair Roof Replacement

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated February 20, 2018. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject Bidder to disqualification.

This Addendum consists of Three hundred thirty-five (18) pages.

INDEX

MANDATORY PRE-BID ATTENDEES CONTACT INFORMATION

Pre-Bid Walkthrough 7-11-19		Cultural Building Envelope Repairs		AEI # - 19041
Name	Firm	Email Address	Phone Number	
Brian Bowman	Bowman Construction	bids@bowmanconstructors.com	368-2405	
Jon Seavey	Gordon Contracting	brian@gcmaine.com	876-3798	
Gabrielle Smith Bird	Kevin W. Smith & Son	gabrielle@kwsansson.com	551-8338	
Mike DiMatteo	Dimatteo Construction	dimatteicms@yahoo.com	767-7410	
Greg Nazaroff	Beacon Sales Co.	gnazaroff@beaconsales.com	653-2384	
Kevin Howe	Tecta America	khowe@tectaamerica.com	878-1732	
Mike Mathieu	Hahnel Bros. Co.	mmathieu@hahnelbroscos.com	784-6477	
Steve Facteau	Firestone	sfacteau@easternar.com	781-572-6631	
Daniel Brady Sr.	Roof Systems of Maine	rsm.roofsystemsofmaine.com	947-0175	

PREBID CONTRACTOR QUESTIONS:

A. Please confirm construction schedule Dates:

AEI Response: Section 011000 – Summary of Work correctly depicts the project schedule as follows:

1. *Estimated Start Date/Letter of Intent Issued: **August 12, 2019.***
2. *Substantial Completion: **November 15, 2019.***
3. *Final Completion: **December 6, 2019.***

B. Please confirm available work hours allowed per Augusta Ordinance and whether a Building Permit will be required for this Scope of Work.

AEI Response: A building Permit for this work will be required. Work Hours are from 7AM – 10PM.

1. Per Augusta Code Enforcement

*Thanks for asking about the permit and noise ordinance. There is no permit needed to re-roof, **unless there is insulation exposed**, or structural changes. If there are then please fill out the*

attached Commercial Building permit and provide stamped plans. **The noise must be restricted to between 7 am and 10 pm.** Please feel free to call if you have any other questions.

2. Reference Ordinance Section

§ 300-514 Air and water quality standards.

A. Air quality.
[Amended 12-1-2011 by Ord. No. 116]
(1)
Noise standards.
[Amended 2-2-2012 by Ord. No. 11-149]

(a)
Applicability.

(1)
Not applicable. This subsection shall not apply to the following:

ii
Construction, development, and maintenance. Sounds emanating from construction, development and maintenance activities conducted between 7:00 a.m. and 10:00 p.m. and conducted in compliance with all other sections of this chapter and all other applicable ordinances shall be exempt.

CHANGES TO SPECIFICATIONS

A. Specification Section 074213.13 - Formed Metal Wall Panels

1. **DELETE** subsection 2.2.C.1 in its entirety. **ADD** in its place the following:

2.2.C.1 Basis of Design: **CENTRIA, Vertical Profile Metal Wall Panels.** Provide basis of design product, or comparable product approved by Architect prior to bid.

- a. CENTRIA Architectural Systems; Moon Township, PA 15108-2944. Tel: (800)759-7474. Tel: (412)299-8000. Fax: (412)299-8317. Email: info@CENTRIA.com. Web: www.CENTRIA.com.
- b. MBCI Designer Series – Flat: <http://www.mbc.com/products/wall-products/>
- c. Atas International: Opaline: <https://www.atas.com/products/metal-wall-panels/concealed-fastener>
- d. Berridge Manufacturing: HS-12 panel: <https://www.berridge.com/products/fascia-wall-and-soffit-panels/>

B. Specification Section 075323 - Ethylene-Propylene-Diene-Monomer (EPDM) Roofing

1. **DELETE** full specification in its entirety. **ADD** in its place Section 075323R - Ethylene-Propylene-Diene-Monomer (EPDM) Roofing, attached in its entirety

C. Specification Section 086200 - Unit Skylights

1. **DELETE** subsection 2.3.A.1 in its entirety. **ADD** in its place the following:

2.3A.1 Provide Wasco EcoSky3 Deck Mount Model DDSS9898,95 1/2,95 1/2 with Model WRC3 (14 gauge, structural) thermally enhanced curb; 12” curb height mounted on blocking depths matching Insulation depth. NO security screen required.

CHANGES TO DRAWINGS – None

ATTACHMENTS - None

A. SKETCHES (1 PAGE)

1. CSK-1 – Inclusion of a 5,000 gallon floor drain holding tank.

B. REPORTS (283 Pages)

1. Report – Phase I Environmental Site Assessment p Windham Public Works Property, 185 Windham Center Road, Windham, ME. Prepared by S.W. Cole Engineering, Inc. and dated February 16, 2018.

C. DEP APPLICATION DOCUMENTS (49 Pages)

1. Letter of Correspondence #1: SLDA Application: Shared Maintenance Facility – Windham, ME DEP #L-27796-26-A-N, dated February 15, 2018

NOTE: LIST ALL ITEMS THAT APPLY

SECTION 07 53 23 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Adhered Vapor Retarder to Concrete substrates.
2. Adhered Polyisocyanurate insulation layers.
3. Adhered High Density Coverboards.
4. Adhered ethylene-propylene-diene-monomer (EPDM) roofing system.
5. Walkway Pads

B. Related Sections:

1. Section 06 10 53 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 07 62 00 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counter flashings.
3. Section 07 92 00 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure presented on Sheet S-000 and again specified in this section below.

~~D. Energy Performance: Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.~~

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:
 - 1. Base flashings and membrane terminations.
 - 2. Tapered insulation, including slopes.
 - 3. Roof plan showing orientation of steel roof deck and orientation of roofing and fastening spacings and patterns for mechanically fastened insulation systems.
 - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products:
 - 1. Sheet roofing, of color required.
 - 2. Walkway pads or rolls, of color required.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer and manufacturer.
- B. Manufacturer Certificate: Signed by roofing manufacturer certifying that membrane roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of complying with performance requirements.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- D. Research/Evaluation Reports: For components of roofing system, from ICC-ES.
- E. Field quality-control reports.
- F. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

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

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.

- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - 1. Roofing installer with a minimum of 5 years experience installing this type of roof system
- C. Source Limitations: Obtain components including roof insulation fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.
- D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. Preinstallation Roofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Engineer, roofing installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7. Review governing regulations and requirements for insurance and certificates if applicable.
 - 8. Review temporary protection requirements for roofing system during and after installation.
 - 9. Review roof observation and repair procedures after roofing installation.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

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

1.10 PROJECT CONDITIONS

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

1.11 WARRANTY

- A. A manufacturer's sole source 20 year Total Roofing System Warranty shall be provided with Extended Wind Speed Coverage for a peak gust wind speed limitation of, 72 MPH,,,,, (measured, 60 feet, above the ground, Exposure C). Warranty shall cover both labor and materials with no dollar limitation and shall state that the Total Roofing System will remain in a watertight condition. The contractor shall provide as part of the shop drawing submittal process, certification indicating that the manufacturer has reviewed and has agreed to such wind coverage indicated.
 1. Total Roofing System is defined as the following materials and provided by the roof system manufacturer: membrane, flashings, counter flashings, adhesives, sealants, insulation, overlayment, fasteners, fastener plates, fastener strips, hard rubber, metal edging, preformed fascia system, metal termination anchor bars, roof drain flashing and sealants, and any other product utilized in this system installation.
 2. The warranty shall also provide without any limitations that the insulation shall retain at least 80% of its thermal resistance.
 3. The warranty shall be for twenty (20) years starting after final acceptance of the total roofing system by the roof system manufacturer. Defective materials or installation shall be removed, properly disposed of, and replaced at the manufacturer's expense.
 4. The warranty shall provide that if within the warranty period the roofing system becomes non-watertight or if the Thermoplastic membrane splits, tears, or separates at the seams because of defective materials and/or workmanship that correction of defective workmanship and/or material and cost thereof shall be the responsibility of the manufacturer. Should the manufacturer or his approved applicator fail to perform repairs within 72 hours of notification, the warranty will not be voided because of work being performed by others to repair the roofing regardless of the manufacturer's warranty to the contrary.
 5. The Total Roofing System shall be applied by a Roofing Contractor approved by the system manufacturer. After inspection and acceptance of the installed roof system, the warranty will be issued.

- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of membrane roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
 - 1. Warranty Period: Two 2 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 VAPOR RETARDER

- A. Self-Adhering-Sheet Vapor Retarder: ASTM D 1970, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.

2.2 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated on the drawings.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class I, Grade 3, felt or glass-fiber mat facer on both major surfaces.
- C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
- D. Adhere Insulation to Vapor Retarder using approved manufacturer's adhesive.

~~2.3 COVER BOARDS~~

- ~~A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle SynTec Incorporated SecureShield HD Plus Polyiso
 - b. Firestone Building Products ISOGARD™ HD Coverboard
 - c. Versico Incorporated SecureShield HD FR Polyiso~~
- ~~B. Substrate Board: ASTM C1289 Type II, Class 4, Grade 1 (109 psi max) 1/2 inch thick.~~
- ~~C. Cover board Adhesive: Insulation manufacturer's recommended adhesive formulated to attach cover insulation layer as follows:
 - 1. Full spread spray applied, low rise, two component urethane adhesive.~~

2.4 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle SynTec Incorporated.
 - b. Firestone Building Products.
 - c. Versico Incorporated.
 2. Thickness: 60 mils, nominal.
 3. Exposed Face Color: Black.
 4. Fastener type: Fully Adhered, non-mechanical fastening

2.5 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Tested by a qualified testing agency to resist the following uplift pressures:
1. Components and cladding in roof construction, assuming effective wind area > 40 square feet and Zone perimeter/corner width of a = 12'. (Roof Areas 4 and 5)
 - a. Zone 1 (field) = -36.0 psf
 - b. Zone 2 (perimeter) = -50.0 psf
 - c. Zone 3 (corners) = -62.5 psf

2. Components and cladding in roof construction, assuming effective wind area > 40 square feet and Zone perimeter/corner width of a = 8'. (Roof Areas 1,2 & 3)
 - a. Zone 1 (field) = -33.5 psf
 - b. Zone 2 (perimeter) = -46.5 psf
 - c. Zone 3 (corners) = -59.0 psf
- D. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- E. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.6 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.
- C. Bonding Adhesive: Manufacturer's standard.
- D. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 6-inch-wide minimum, butyl splice tape with release film.
- E. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- F. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- G. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8-inch-thick with anchors.
- H. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, pre-punched.
- I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening insulation to substrate, and acceptable to roofing system manufacturer.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.7 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

2.8 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads, approximately 3/16-inch-thick and acceptable to roofing system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and those nailers match thicknesses of insulation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Conduct a factory pull test on the existing each of the respective concrete roof decks to verify it will meet wind uplift requirements.
- B. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- C. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- D. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 SELF-ADHERED VAPOR-RETARDER INSTALLATION

- A. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.4 ADHERED INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so that insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.
- D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F of equiviscous temperature.
 - 2. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
 - 3. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

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

~~1. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.~~

~~3.5 ADHERED HD COVER BOARD~~

- ~~A. Coordinate installing membrane roofing system components so that insulation is not exposed to precipitation or left exposed at the end of the workday.~~
- ~~B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.~~
- ~~C. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.~~
- ~~D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.~~
 - ~~1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.~~
- ~~E. Fasteners: Vendor specific adhesives of quantity and distribution necessary to resist uplift loading criteria offered above.~~

3.6 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Adhere membrane roofing over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll membrane roofing and allow relaxing before installing.
- B. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- C. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.
- D. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- ~~E. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing terminations.~~
 - ~~1. Apply a continuous bead of in seam sealant before closing splice if required by roofing system manufacturer.~~
- F. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
- G. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

- H. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.
- I. Fasteners: Vendor specific Fasteners and plates with patterns necessary to resist uplift loading criteria offered above, where required.
- J. Adhere walkway pads over membrane roofing at locations indicated.

3.7 BASE FLASHING INSTALLATION

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

3.8 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- B. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for

deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.
- E. Flood Testing: Flood test each roofing area for leaks, according to recommendations in ASTM D 5957, after completing roofing and flashing but before overlying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.
 - 1. Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches. Maintain 2 inches of clearance from top of base flashing.
 - 2. Flood each area for 24 hours.
 - 3. After flood testing, repair leaks, repeat flood tests, and make further repairs until roofing and flashing installations are watertight.
- F. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- G. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates, and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

~~3.12 ROOFING INSTALLER'S WARRANTY~~

~~A. A manufacturer's sole source 20-year Total Roofing System Warranty shall be provided with Extended Wind Speed Coverage for a peak gust wind speed limitation of, 115 MPH (measured 50 feet above the ground). Warranty shall cover both labor and materials with no dollar limitation and shall state that the Total Roofing System will remain in a watertight condition. The contractor shall provide as part of the shop drawing submittal process, certification indicating that the manufacturer has reviewed and has agreed to such wind coverage indicated.~~

- ~~1. Total Roofing System is defined as the following materials and provided by the roof system manufacturer: vapor retarder, insulation, membrane, flashings, counter flashings, adhesives, sealants, coverboard, fasteners, fastener strips, hard rubber, metal edging, preformed fascia system, metal termination anchor bars, roof drain flashing and sealants, and any other product utilized in this system installation.~~
- ~~2. The warranty shall also provide without any limitations that the insulation shall retain at least 80% of its thermal resistance.~~
- ~~3. The warranty shall be for twenty (20) years starting after final acceptance of the total roofing system by the roof system manufacturer. Defective materials or installation shall be removed, properly disposed of, and replaced at the manufacturer's expense.~~
- ~~4. The warranty shall provide that if within the warranty period the roofing system becomes non-watertight or if the Thermoplastic membrane splits, tears, or separates at the seams because of defective materials and/or workmanship that correction of defective workmanship and/or material and cost thereof shall be the responsibility of the manufacturer. Should the manufacturer or his approved applicator fail to perform repairs within 72 hours of notification, the warranty will not be voided because of work being performed by others to repair the roofing regardless of the manufacturer's warranty to the contrary.~~
- ~~5. The Total Roofing System shall be applied by a Roofing Contractor approved by the system manufacturer. After inspection and acceptance of the installed roof system, the warranty will be issued.~~

~~B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of membrane roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:~~

- ~~1. Warranty Period: Two 2 years from date of Substantial Completion.~~

3.13 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: **<Insert name of Owner>**.
2. Address: **<Insert address>**.
3. Building Name/Type: **<Insert information>**.
4. Address: **<Insert address>**.
5. Area of Work: **<Insert information>**.

6. Acceptance Date: _____.
7. Warranty Period: <Insert time>.
8. Expiration Date: _____.

- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding 72 MPH;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

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

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

END OF SECTION 07 53 23