# EDGAR ALLAN POE SQUARE CONDOMINIUM **ROOF REPLACEMENT**

96 BROADWAY BOSTON, MA

**ISSUED FOR CONSTRUCTION** 4 AUGUST 2021



LOCUS MAP NOT TO SCALE

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### SECTION 01 10 00

#### 1.0 GENERAL

A. The Edgar Allen Poe Square Condominium is an occupied residential condominium located at 96 Broadway, Boston, MA. The building includes low sloped single-ply membrane roof systems with wood framed rooftop deck structures. The scope herein includes; but is not limited to, removal and replacement of the main roof system and construction of new wood framed rooftop decks at 96 Broadway.

B. Project participants included the following:

- 1. Owner: The Edgar Allen Poe Condominium Trust, 96 Broadway, Boston, MA.
- 2. Building Envelope Consultant: BRS/Building Recon Services, 371 Dorchester Avenue, Boston, MA. Contact Nathan Hogan, (603) 765-2691. The term Building Envelope Consultant, Consultant and Owner's Consultant shall be used interchangeably.
- C. The term Construction Documents shall be understood to mean the Specifications provided herein on Drawing sheets as well as the Drawings inclusive of roof plans and details.

D. The term Contract Documents shall be understood to mean the Construction Documents, Addenda issued during the Bid Period, Clarifications issued by the Consultant, The Agreement Form, and Change Orders issued after the Agreement is signed and other documents as may be deemed needed by the Owner, Contractor and/or the Consultant

#### **1.1 SUMMARY OF THE SCOPE OF WORK**

- A. The Contractor shall furnish and provide the necessary labor, materials, equipment, scaffolding, and resources to undertake the Project as defined herein. The Contractor shall obtain and pay for all necessary permits, fees, and approvals for the Work.
- B. The Work as defined by these Documents is to be performed at the main roof at 96 Broadway, including the stair penthouse and elevator head house. Specifically, the scope includes:
- 1. Removal and replacement of the existing low sloped single-ply roof systems (Base Bid).
- 2. Reconstruction of the rooftop decks using the Bison pedestal and wood paver system (Base Bid).
- C. The Owner has requested pricing for the following:
- 1. Replacement of the aluminum framed, acrylic double dome skylight (Alternate #1).
- 2. Added cost for use of 1x6 boards on dividers (Alternate #2).
- 3. Added cost for use of 1x8 boards on dividers (Alternate #3).

D. The Owner reserves the right to cancel or delay the project or modify the Scope of Work at any time. If the Work or any portion thereof is canceled after the execution of the Owner-Contractor Agreement, the Contractor shall be entitled to compensation for portions of the Work performed.

#### **1.3 ADMINISTRATIVE REQUIREMENTS**

- A. The Owner will award the Contract or Contracts to the contractor of their choice, based on price, gualifications, experience and other criteria the Owner deems important. The awarded Contractor shall enter into an Agreement using the American Institute of Architects (AIA) Form A 107, Owner Contractor Agreement for a Construction Project of Limited Scope.
- B. The entire, and integrated Agreement shall consist of the signed Agreement Form; the Construction Documents; Addenda issued during the bid period; Changes using recognized procedures during the Work including Change Orders and Consultant's Directives, and other documents the Owner and Contractor may deem necessary.

C. The Contractor shall be required to furnish Performance and Payment Bonds for the full amount of the Contract Price. The cost of all required bonds shall be included in the Bid Price(s)

D. The Contractor shall be required to furnish certificates for the following insurance(s):

- 1. Commercial General Liability Insurance in the following minimum amounts:
- A. \$1,000,000.00 per occurrence
- B. \$2,000,000.00 general aggregate
- including Product/Completed Operations and Premises/Operations 2. Automobile Insurance in the following minimum amounts:
- a. \$100,000.00 per person bodily injury
- b. \$500,000.00 per accident bodily injury
- c. \$100,000.00 property damage

3. The successful Bidder shall also be required to furnish certificates of Workman's Compensation, to cover Statutory Requirements, and Employer's Liability for 100/500/100.

4. All insurance certificates shall name the Edgar Allen Poe Square Condominium Trust, the Unit Owners and BRS/Building RECON Services as Additional Insureds.

E. From time-to-time during the Work, changes to the project scope, budget, or schedule may be necessary and will be achieved using the American Institute of Architects (AIA) G 701, Change Order. A change can be proposed by the Owner, Contractor or Building Envelope Consultant. If a change is desired, the Contractor shall submit a Proposal of costs, changes to the schedule or other needed adjustments. If approved by the Owner, the Contractor shall then submit a Change Order.

F.Substitutions requests shall only be permitted during the bid period. If a substation is desired, the bidding contractor shall submit the following:

1. Product data for the specified products.

2. Product data for the proposed products for side-by-side comparison. The bidder shall use a yellow highlighter within the product data of that specified and that proposed and highlight characteristics for the Consultant's comparison.

3. A statement of the reason why the change is desired. If the change is desired for purposes of cost savings, the value of the savings shall be provided.

G. Payments shall be made to the Contractor using the AIA's G 702, Application for Payment. Payment intervals shall be monthly unless otherwise arranged with and agreed to by the Owner. When the time comes for an application to be submitted, the Contractor shall submit a draft (pencil reg.) to the Building Envelope Consultant for preliminary review. The Building Envelope Consultant shall review and comment on the draft, and changes shall be incorporated by the Contractor in the formal submittal. The Building Envelope Consultant's signature is a certification that the amounts requested are warranted; but it is not an approval of payment.

H. Release of Liens forms shall be required from all suppliers prior to final payment to the Contractor.

I. Upon the Owner's issuance of a Letter of Intent to the Contractor or after execution of the Owner-Contractor Agreement, the Contractor shall provide construction submittals for the review and action of the Building Envelope Consultant. For all products, materials and systems the Contractor shall provide the following:

1. Manufacturer's Product Data

- 2. Manufacturer's test reports
- 3. Material Safety Data Sheets (MSDS) for record only 4. Shop drawings to show detail interfaces

The Consultant shall have ten (10) working days to review, act upon and return submittals. The Contractor shall take action on submittals as directed by the Consultant.

J. The Building Envelope Consultant retains the right to undertake testing of any applicable kind to check or verify compliance of the Work with the Contract Documents. Any-and-all corrections shall be as directed by the Consultant, be it repair and/or replacement but at no additional cost to the Owner.

#### **1.4 SITE USE AND SAFETY**

E. The Contractor shall update a project schedule that will be submitted weekly or on another interval acceptable to the Owner. The schedule will be reviewed as a regular agenda

1. Schedule

- 2. Design and technical issues
- 3. Site use and safety 4. Change Orders if needed
- 5. Contractor applications for Payment when applicable
- 6. New business as may be needed.

G. The Contractor shall be responsible for implementation of all regulatory protocols and measures required, as well as those required by the Association to manage and comply with COVID-19 guidelines and processes.

A. The Contractor shall maintain the Owner's use of the building at all times during the Work. The Contractor shall coordinate with the Owner for temporarily closing off various areas of the building for performance of the Work. Prior to the Work, the Contractor, Owner and Consultant shall meet to determine the sequence of the Work, and when areas of the garage shall be closed. The Contractor shall then submit to the Owner and Consultant a written phasing plan for final review and sign-off.

B. The Owner shall provide the Contractor with a lay down area for the Contactor's storage, portable toilet and a trash/debris containers as necessary. The Contractor shall coordinate with the Owner to decide locations for lay down areas.

C. The Contractor shall use electrical power from the building, as well as water for use in the Work. The Contractor shall provide work crews with drinking water.

D. The Contractor shall be responsible for safety in, around and below work areas at all times. The Contractor shall provide the appropriate barricades preventing vehicle and pedestrian traffic from entering the work areas. The Contractor shall likewise provide wayfinding directing vehicular and pedestrian traffic safely around the work areas.

F. The Building Envelope Consultant shall hold and preside over a regular, weekly construction meeting with the agenda to include but not necessarily be limited to:

# Roof Replacement Edgar Allan Poe Square Condominium

96 Broadway Boston, MA

CONSULTANT:



### **BUILDING RECON** SERVICES

371 DORCHESTER AVE BOSTON, MA 02127

PHONE: 617-464-4260 FAX: 617-464-4160 WEBSITE: www.brsinfo.com

No.	Description	Date

# SPECIFICATIONS

Project number		
Date	4 AUGUST 2021	
Drawn by	КС	
Checked by	NR	
A2		
Scale	NTS	

### SECTION 02 41 19 - SELECTIVE DEMOLITION 3.1 EXAMINATION 1.0 - GENERAL 1.1 SUMMARY The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the demolition of the existing membrane roof system and preparation of the existing roof areas. All work shall be performed in a first class, workmanlike manner to provide a secure, properly prepared substrate for the new roof system. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building. 1.2 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

• Section 06 10 53 – Rough Carpentry Section 07 54 19 – PVC Membrane Roofing

The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

### 1.3 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- Factory Mutual Research Laboratories (FM);
- Occupational Safety and Health Administration (OSHA) Construction Standards.
- 1.4 SCOPE OF WORK

A. Removal and disposal of the existing single-ply membrane roof systems, including but not limited to membrane, insulation, underlayment, metal and other flashings.

- B. Removal and disposal of existing drain bowls.
- C. Removal and disposal of all existing deteriorated structural roof deck materials.
- D. Resecurement of all loose or inadequately secured structural roof deck materials found to be in a sound condition.
- 1.5 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- Applicable OSHA requirements

### 1.6 SUBMITTALS

The following items must be submitted to the Consultant for approval prior to commencement of the work:

- Project schedule including start dates and durations of the various phases of work;

1.7 PRODUCT DELIVERY, HANDLING AND STORAGE

- Final landfill destination and copies of hauling and landfill permits.

A. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.

B. Remove and dispose of all demolition materials, trash and debris, except materials specifically designated to remain as property of the Owner, in strict accordance with Local, State and Federal laws.

C. All trash and job related debris shall be removed from the site or stored in approved dumpsters at the end of each day's work.

D. The location of all dumpsters and staging shall be coordinated with the Owner. Dumpsters shall be covered at all times other than loading or unloading.

E. Dumpsters shall be emptied in a timely fashion to provide adequate capacity for job related debris at all times. Storage of job related debris in locations other than dumpsters or approved staging areas shall not be permitted.

1.8 JOB CONDITIONS

A. The Contractor shall provide all access to the work areas. The building shall only be used as needed for access to the work areas.

B. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for hardhats and safety lines.

C. All applicable OSHA requirements for staging and material handling equipment shall be strictly adhered to at all times during the work.

D. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.

E. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Consultant a minimum 48 hours notice prior to the commencement of any demolition or construction activities.

F. The Contractor is cautioned that the buildings will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

### 2.0 - MATERIALS

2.1 MATERIALS

A. New roof deck sheathing shall be 3/4" CD-X plywood if required to make repairs of cover sizeable openings in the deck.

B. Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion.

1. Fasteners for wood deck resecurement shall be #15 threaded fasteners manufactured from SAE 1022 heat treated steel with a corrosion-resistant coating. Fasteners shall be of sufficient length to penetrate the underlying structural framing by 1 1/2"

### 3.0 - EXECUTION

C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

- 3.2 REMOVAL OF EXISTING MATERIALS

D. Deck Preparation

maximum spacing of 16" o.c.

F.All loose, wet or unsound materials and debris shall be removed from the existing deck surface to provide a smooth, sound, uniform substrate free of irregularities.

G. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

#### 3.3 PROTECTION

A. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and completely flashed in the same day's work. No materials shall be removed during periods of inclement or threatening weather.

B. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.

made to emergency exits.

### 3.4 FINAL CLEAN-UP

END OF SECTION

A. The Contractor shall field verify all dimensions and quantities. Notify the Consultant of any discrepancies between the plans and actual conditions.

B. The Contractor is cautioned that the Drawings and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Consultant of any discrepancies between the drawings and actual conditions.

All work shall be performed in a first class, workmanlike manner.

A. The existing membrane roof systems shall be removed down to the structural roof deck. This shall include, but not be limited to, membrane, insulation and underlayment.

B. All existing flashings and other associated materials shall be removed as required for completion of the work. This shall include, but not be limited to, membrane, bituminous, metal and other flashings.

C. Existing roof mechanical units to remain shall be removed and reinstalled as required for completion of the work.

1. All existing wood deck materials shall be inspected and refastened as required. All wood deck materials shall be fastened to the underlying structural framing at a

E. Any sound structural deck or blocking found to be loose or inadequately fastened shall be refastened with approved fasteners at the required rate.

C. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.

D. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is

A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.

B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.

C. All landscaped areas shall be raked clean at the end of each day's work.

D. All paved areas shall be swept clean at the end of each day's work.

E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.

F.A final inspection of the work, including final clean-up, shall be required by the Owner and Consultant.

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SECTION 06 10 53 – MISCELLANEOUS ROUGH CARPENTRY	2.0 - MATERIALS
1.0 - GENERAL	2.1 MATERIALS
1.1 SUMMARY	A. Structural Lumber
The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the construction of rooftop exterior wood framed decks. All new materials shall be installed in a first class, workmanlike manner to provide a structurally sound, properly flashed deck. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.	1.All lumber shall be no surfaced-four-sides an
1.2 RELATED WORK	2. All lumber shall be th
The work under this Section shall be directly related to the work under the following Sections:	3. Lumber dimensions
- Section 02 41 19 – Selective Demolition	4. General Lumber Sch
The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.	<u>ltem</u> Lumber 2"
1.3 REFERENCES	nominal thickness or greater
The following publications and references shall be included as part of this specification to the extent referenced:	Lumber less than Me
<ul> <li>American Plywood Association (APA);</li> <li>American Society for Testing and Materials (ASTM);</li> <li>American Wood Preserver's Association (AWPA);</li> <li>Federal Specification (FS);</li> <li>National Forest Products Association (NFoPA);</li> <li>Output Products Association (NFoPA);</li> </ul>	2" nominal thickness 5. All lumber for new exter ACQ-02-02 and the appr preservative pressure-tre
	P Decking
1.4 SCOPE OF WORK	B. Decking
A. Installation of new wood sleepers.	weight bearing capacity of 70
B. Construction of new structural deck frames.	shall be lipe Smooth Wood tile according to manufacturer's i
C. Installation of new decking.	C. Deck Dividers – New deck privacy of
D Installation of new wood privacy walls.	accordance with AWPA U1 and P5, P appropriate. Acceptable material for v
E. Provide final clean-up.	2.2 RELATED MATERIALS
1.5 REQUIREMENTS OF REGULATORY AGENCIES	A. Fasteners
All work shall be in strict accordance with Local, State and Federal laws, as well as the following:	Fasteners shall be of prope
<ul> <li>NFoPA, National Design Specification for Wood Construction;</li> <li>NFoPA-81, Design Values for Joists and Rafters;</li> <li>Material Manufacturer's Requirements.</li> </ul>	prevent galvanic corrosion. 1. Fasteners for decking se
1.6 SUBMITTALS	equal.
The following items must be submitted to the Consultant for approval prior to the commencement of the work:	A153 specifications. Faster
- Lumber and Mill Slips; - Fasteners;	3.Lag screws shall be 1/2" galvanized in accordance v
<ul> <li>Project schedule including start dates and durations of the various phases of the work.</li> </ul>	4. Bolts for through bolted o
1.7 PRODUCT DELIVERY, HANDLING AND STORAGE	5 New joint bangara and at
A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.	loads. Metal connectors sh
B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.	quantity for each type of co
C. Lumber materials shall not be exposed to moisture in any form before, during or after delivery to the site. Lumber materials shall be stored in well ventilated areas without contact with the ground.	B. New joist hangers and other me Metal connectors shall be galvanize the Manufacturer for use with ACO
D. All lumber shall bear a grade mark indicating grade and species of an association or agency certified by the Board of Review, American Lumber Standards Committee.	connector.
E. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground	C. Metal Flashings
E All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material	1. New lead flashings shall be 2.5 lb
Manufacturer/supplier.	2. All flashings shall be approved by
G. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.	D. Sealant materials shall be a low shall be Silpruf as manufactured by
H. The location of all storage facilities and staging shall be coordinated with the Owner.	E. Deck Divider Coating – Finish n
1.8 JOB CONDITIONS	Shermin-Williams of Cleveland, OH
A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.	
B. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.	
C. All materials shall be installed over dry, sound, properly prepared surfaces.	
D. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work.	
E. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.	
F. All applicable OSHA requirements for staging and material handling equipment shall be strictly adhered to at all times during the work.	
G. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.	
H. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.	
I. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Consultant a minimum 48 hours notice prior to the commencement of any demolition or construction activities.	
J. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use	

of the building and inconvenience to the building occupants.

e new, sound, straight, of consistent size, free of stains and mildew, and kiln-dried to a moisture content of not more than 19%. Lumber shall be and shall bear grade and trademarks.

the longest practical lengths for its intended use, with single length pieces wherever possible.

ns shall be construed to be nominal dimensions, except as specifically noted.

Schedule:

Grade	Species
No. 2 and Better	Hem-Fir or Southern Yellow-Pine

rchantable Hem-Fir or

Spruce

kterior deck structures shall be non-arsenic and non-chromium pressure-treated wood produced in accordance with ACQ Preserve Standard propriate AWPA Standards (U1, T1, UC1, UC2, UC3A, UC3B, UC4A, UC4B), ICBO ER 4981. New lumber for exterior decks shall be treated from the manufacturer. Retention shall be at least 0.15 lb/ft<sup>3</sup> (2.4 kg/m<sup>3</sup>) of ACQ. Acceptable material for exterior wood deck reserve ACQ treated lumber, as manufactured by Viance, LLC of Charlotte, NC, or approved equal.

consist of a pedestal and paver deck system. Pedestals shall be height adjustable, high density copolymer polypropylene units with a minimum 7050 lbs. per pedestal. Units shall be Level.It Adjustable Pedestals as manufactured by Bison Innovative Products of Denver, CO. Pavers d tiles as manufactured by Bison Innovative Products of Denver, CO. All pedestal and paver deck system components shall be installed so installation requirements.

cy dividers shall be of a horizontal slatted design composed of preservative treated wood. Preservative shall be ACQ as manufactured in 5, P26, P27, P28, P29 as appropriate. Preservation rate shall be 0.15 lb/ft<sup>3</sup> (2.4 kg/m<sup>3</sup>) of ACQ in accordance with AWPA U1: (UC3B) as or wood slats and frame shall be Preserve ACQ treated lumber, as manufactured by Viance, LLC of Charlotte, NC, or approved equal.

oper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to ion. All fasteners shall be approved by the Manufacturer for use with ACQ treated lumber.

g securement shall be Trex Universal Hideaway Hidden fasteners as manufactured by the Trex Company, Inc. of Winchester, VA, or approved

tural lumber securement shall be 16d, electroplated galvanized steel ring shank nails. Fasteners shall be galvanized in accordance with ASTM steners shall have minimum 1 1/2" penetration into sound substrate.

/2" diameter galvanized steel lag screws of sufficient length to provide a minimum 3" penetration into sound materials. Lag screws shall be with ASTM A153 specifications. All lag screws shall be provided with flat washers of the proper size.

ed connections shall be 1/2" diameter zinc plated steel bolts of sufficient length to provide adequate exposed threaded connection for bolting. All with steel nuts and flat washers of the proper size. Bolts and accessories shall be galvanized in accordance with ASTM A153 specifications.

d other metal connecting devices shall be galvanized steel connectors of the proper dimensions and capacities for their intended use and design shall be galvanized in accordance with ASTM A653, designation G185 specifications. Joist hangers and other metal connecting devices shall nufacturer for use with ACQ treated lumber. Fasteners for metal connectors shall be by the same Manufacturer and of the proper size, type and f connector.

r metal connecting devices shall be galvanized steel connectors of the proper dimensions and capacities for their intended use and design loads. nized in accordance with ASTM A653, designation G185 specifications. Joist hangers and other metal connecting devices shall be approved by CQ treated lumber. Fasteners for metal connectors shall be by the same Manufacturer and of the proper size, type and quantity for each type of

5 lb. sheet lead conforming to FS QQ-L-201f specifications.

by the Manufacturer for use with ACQ treated lumber.

low modulus, one part, silicone sealant conforming to FS TT-S-001543A and ASTM C920, Type S, Grade NS Class 25 specifications. Sealant I by GE Silicones of Waterford, NY or approved equal. Color shall match the surrounding materials to the satisfaction of the Owner.

sh materials for deck divider wood materials shall be SuperDeck Exterior Waterborne Semi-Transparent Stain SD3T Series as manufactured by OH, or approved equal. Color shall be Manufacturer's standard color as chosen by the Owner from the

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Checked by	NR

**A4** 

NTS

### CONTINUED

### 3.0 - EXECUTION

#### 3.1 EXAMINATION

A. The Contractor shall field verify all dimensions and quantities. Notify the Consultant of any discrepancies between the plans and actual conditions.

B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Consultant of any discrepancies between the plans and actual conditions.

C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

### 3.2 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

A. Deck Framing

1. All framing shall be plumb, properly level, and true, with tight, close fitting joints, securely attached to the surrounding construction.

2. All new framing member connections shall have maximum contact between members.

3. New members shall be secured on alternate sides to minimize cupping, bowing and twisting of the members.

4. The Contractor shall take all reasonable measures to minimize splitting of the new framing members including, but not limited to, fastening no less than 1" from member ends, predrilling and dulling fasteners before installation.

5. New decks shall be provided with a pitch of 1/8" per foot toward the drains.

B. All lumber shall be fastened with proper fasteners according to the schedule for individual framing members.

Joist to header, end nail 3-16d (Except where joist hanger is provided) Built up girders and beams 3-16d @ 12" o.c. Joist to girder, toe nail 4-8d (end) 8d @ 12" o.c. (continuous) Continuous header (two pieces)3-12d @ 12" o.c. Decking, nominal 4" to joist or header, face nail 2-#8 deck screws Decking, nominal 6" or more to joist or header, face nail 3-#8 deck screws

C. Decking Installation

1. Decking shall be secured to all structural framing members with the specified fasteners at the specified rates.

2. Decking shall be secured on alternate sides and as required to minimize cupping, bowing and twisting of the boards.

D. Metal connectors shall be installed in strict accordance with the Manufacturer's requirements. The Manufacturer's required fasteners shall be used at the required rates and spacings for each type of connector.

#### 3.3 PROTECTION

A. The Contractor shall be responsible for securing access to the decks under construction up to the time of final inspection and acceptance of the work. Acceptance shall include acceptance as required by the Local Building Officials.

B. The Contractor shall be responsible for maintaining the water tightness of the building at all times during the work. No more materials shall be removed than can be replaced and/or made watertight in the same day's work. No materials shall be removed during periods of inclement or threatening weather.

C. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.

D. The Contractor shall repair and/or clean all interior finishes damaged or stained as a result of the work. This shall include but not be limited to all painted, gypsum sheathing and other interior finishes.

E. The Contractor shall take care during staging and other operations that overloading of the structure does not occur.

F. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.

G. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. This shall include all exits except those accessing decks under construction. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.

H. The Contractor shall take all reasonable measures to secure access to decks under construction. This shall include, but not be limited to, posting notices of the work in progress on all egress to the affected decks, and securing barriers over all egress to the affected decks to prevent unauthorized access.

I. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.4 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

#### 3.5 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.

F.A final inspection of the work, including final clean-up, shall be required by the Owner and Consultant.

#### END OF SECTION

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Date	4 AUGUST 2021		
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SECTION 07 54 19 – POLYVINYL CHLORIDE (PVC) ROOFING	1.8 JOB CONDITIONS
1.0 - GENERAL	A. The Contractor shall provide all a
1.1 SUMMARY	B. The new membrane roof system authorized by the membrane Manufac
The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the installation of the new fully adhered	C All materials shall be applied in a
and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.	D All materials shall be installed over
1.2 RELATED WORK	E. Prior to and during application, all
The work under this section shall be directly related to the work under the following Sections:	E. Arrange work sequence to avoid us
- Section 02 41 19 – Selective Demolition	Contractor shall provide all necessary shall be provided for all new and exist
The work shall include all materials, equipment and labor required to properly complete the work under this and related sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.	G. The Contractor is cautioned that of are also incompatible. Such materials
1.3 REFERENCES	Contractor should consult membrane
The following publications and references shall be included as part of this specification to the extent referenced:	<ul> <li>Installation of a PVC membrane of such additional information.</li> </ul>
<ul> <li>American National Standards Institute/Single Ply Roofing Industry (ANSI/SPRI);</li> <li>American Plywood Association (APA);</li> </ul>	I. Contaminants, such as grease, fats
- American Society for Testing and Materials (ASTM); - American Wood Preserver's Association (AWPA);	J. Contractor shall verify that all roof d
- Factory Mutual Research Laboratories (FM);	K. All applicable OSHA requirement
<ul> <li>Sheet Metal &amp; Air Conditioning Contractors National Association (SMACNA);</li> <li>Single Ply Roofing Industry (SPRI);</li> </ul>	requirements for hardhats and safety L. All work, including materials, equipr
- Underwriters Laboratories (UL).	M. All applicable OSHA requirement
1.4 SCOPE OF WORK	N. Liquid materials such as solvents
A. Installation of new mechanically fastened wood blocking and sheathing as required for installation of new membrane roof system.	O. The Contractor shall be required
B. Provide new wood blocking as required to provide a minimum 8" curb height on the existing roof curbs.	P. The Contractor shall coordinate a
C. Installation of new adhered vapor barrier.	the commencement of any demolition
D. Installation of new mechanically fastened rigid insulation.	Q. The Contractor is cautioned that t use of the building and inconvenience
E. Installation of new mechanically fastened cover board.	2.0 - MATERIALS
F.Installation of new fully adhered PVC single ply membrane roof system.	2.1 MATERIALS
G. Installation of new metal flashings.	A. New PVC membrane roof system sha
<ul> <li>H. Installation of new roof drains.</li> <li>1. Installation of new walkway pads from all access doors/hatches to all serviceable mechanical equipment and roof top decks.</li> </ul>	non-woven fiberglass reinforced, 60 mils ( sheet roofing. Classification: Type II, Grad Perimeter Design Pressure of 75 psf, and
J. Provide final clean-up.	parapet wall with a neight greater than thre
1.5 REQUIREMENTS OF REGULATORY AGENCIES	All accessories for PVC membrane syst
All work shall be in strict accordance with Local, State and Federal laws, as well as the following:	including the following:
<ul> <li>Material Manufacturer's Requirements;</li> <li>ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used With Low Slope Roof Systems;</li> <li>FM Class I System Acceptance;</li> <li>FM I-28 And I-29 Loss Prevention Data Sheets;</li> <li>SMACNA Specification for Thermal and Moisture Protection;</li> <li>UL Class A Membrane Requirements.</li> </ul>	<ul> <li>PVC Flashing Membrane &amp; Underla</li> <li>Vapor Barrier and Primer;</li> <li>Insulation and Cover Board;</li> <li>Insulation and Cover Board Fastene</li> <li>Bonding Adhesives;</li> <li>Primers &amp; Cleaners;</li> </ul>
1.6 SUBMITTALS	<ul> <li>Water Cut-Off Mastic;</li> <li>Pourable Sealer;</li> <li>Matel Flashinger;</li> </ul>
The following items must be submitted to the Consultant for approval prior to the commencement of the work:	<ul> <li>Metal Flashings,</li> <li>Edge Metal Flashings and Terminal Termination Derry</li> </ul>
- Samples of materials to be used in the roof system including Membrane Manufacturer's Product Literature;	- Walkway Treads.
<ul> <li>Membrane Manufacturer's Sample Warranty;</li> <li>Insulation Materials;</li> </ul>	2.2 RELATED MATERIALS
<ul> <li>Written approval by the insulation Manufacturer (as applicable) for use and performance of the product in the proposed system;</li> <li>Written documentation from the Roof System Manufacturer stating the required fastener spacings and patterns for the roof field, perimeters and corners based on FM 1-28 and</li> </ul>	A. PVC Flashing Membrane
<ul> <li>1-29 requirements for the specified Roof Field/Perimeter/Corner Design Pressures;</li> <li>Metal Flashings;</li> </ul>	1. PVC flashing membrane shall be
Contractor's Sample Guarantee;     Dimensional shop drawings which shall include:	2. PVC flashing membrane for asph
outline of roof and roof size profile details of flashing methods for penetrations and terminations	B. Bonding adhesive for PVC memb
<ul> <li>Project schedule including start dates and durations of the various phases of the work;</li> </ul>	Application rates for bonding adhes
<ul> <li>Pull-out tests of insulation/cover board fasteners;</li> <li>Pullout tests of edge blocking fasteners.</li> </ul>	Substrate Rate
1.7 PRODUCT DELIVERY, HANDLING AND STORAGE	Aluminum Foil 1-1/4 gal./sq.
A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.	smooth Plywood 1-1/2 gal./sq.
B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.	Fibergiass Mat Facer1-3/4 gal./sq. Smooth Structural Concrete 1-3/4 ga Smooth Cellular Concrete 2 gal./sq. Fiberboard 2-1/4 gal./sg.
C. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.	· ····································
D. Membrane rolls shall be stored lying down on pallets, and fully protected from moisture with clean canvas tarpaulins or equal.	

E. Bonding adhesives shall be stored at temperatures above 60 degrees F.

F.All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.

G. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.

H. The location of all storage facilities and staging shall be coordinated with the Owner.

access to the work areas. The buildings shall not be used as access to the work areas.

shall be applied only by a contractor authorized by the membrane Manufacturer. All work shall be completed by personnel trained and cturer.

accordance with the Manufacturer's requirements for temperature and weather conditions.

ver dry, sound, properly prepared surfaces.

dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods

se of newly-constructed roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the r protection and barriers to segregate the work area and to prevent damage to adjacent areas. Both plywood and polyester felt protection ting roof areas which receive traffic during construction.

certain PVC membranes are incompatible with asphalt, coal tar and oil-based materials and cements. Creosote and penta-based materials Is should not come in contact with PVC membranes at any time. If such contacts occur, the material shall be cut out and discarded. The e Manufacturer with respect to material compatibility, precautions, and recommendations.

over coal tar pitch, or resaturated roof, may require special installation precautions and techniques. Consult membrane Manufacturer for

, oils, and solvents, shall not be allowed to come into contact with the PVC roofing membrane.

drain lines are unblocked before starting work.

ts for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the lines

ment and staging shall be secured from wind blow-off at all times.

nts for staging and material handling equipment shall be strictly adhered to at all times during the work.

and adhesives shall be stored and used away from open flames, sparks and excessive heat.

to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.

all construction related activities with the Owner. The Contractor shall give the Owner and Consultant a minimum 48 hours notice prior to or construction activities.

the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal e to the building occupants.

all be Sarnafil Fully Adhered Roof System as manufactured by Sika Sarnafil Inc. of Canton, MA. PVC membrane shall be Sarnafil G410 (.060" thick), with an 18-ounce felt backing. Membrane shall conform to ASTM D4434 (latest revision) Standard for poly (vinyl chloride) ade 1. The membrane roof system and all components shall meet or exceed the specified Roof Field Area Design Pressure of 45 psf, Corner Design Pressure of 75 psf\* (\*Note: Perimeter and Corner design pressure values are equivalent due to the presence of a perimeter ee feet. Verify corner pressure reduction with membrane Manufacturer).

tems shall be manufactured by the same Manufacturer or approved for use with the membrane roof system by the same Manufacturer.

ystem shall be manufactured by the same Manufacturer or approved for use with the membrane roof system by the same Manufacturer,

ayment;

ers;

tions;

Sarnafil G410, Sarnafil G410-L, or as required by the Manufacturer.

nalt or asphalt contaminated surfaces shall be Sarnafil G459, or as required by the Manufacturer.

brane and flashing membrane to acceptable substrates shall be Sarnacol 2170 adhesive.

sive shall be:

gal./sq.

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CONSULTANT:



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3.2 INSTALLATION OF NEW MATERIALS All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements. - Rates include the 1/2 gal./sq. applied to the underside of the membrane. - When outdoor temperature during installation is below 40 degrees F, add 1/2 gal./sq. to application rate for estimating purposes. - Rates will vary with finish of substrate. A. Deck Preparation C. Vapor Barrier shall be Sarnavap SA self-adhering vapor barrier. All primers shall be as required by the membrane manufacturer. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected. 1. The roof deck and existing roof construction must be structurally sound to provide proper support for the new roof system. The structure and deck must be capable of D. New insulation shall be isocyanurate board insulation conforming to FS 1972/GEN specifications and meeting FM Class 1 requirements. Insulation shall have a minimum withstanding expected wind uplift forces created. The Contractor shall perform adhesive pull tests to verify deck condition and confirm adhesion values as required by the compressive strength of 20 psi per ASTM D1621 criteria. Insulation shall be two layers of insulation with thickness of 2.5" for a total minimum thickness of 5.0". Minimum board Manufacturer. size shall be 4' x 8'. New tapered insulation shall be tapered isocyanurate insulation with a pitch of 1/8" per foot, conforming to FS 1972/GEN specifications and meeting FM Class 1 requirements. B. Wood Nailer Installation Insulation shall have a minimum compressive strength of 20 psi per ASTM D1621. Insulation shall have a minimum thickness of 1/2". Minimum board size shall be 4' x 4'. Continuous wood blocking shall be installed as noted on the drawings. Fiberboard tapered edge strips shall be 12" wide strips by 1 5/8" tapered to 1/8" edge strips conforming to FS LLL-I-535B specifications. 1. New wood parapet blocking shall be anchored to resist a minimum force of 300 pounds per lineal foot in any direction. Individual nailer lengths shall not be less than 3' E. Insulation cover board shall be 1/2" thick, closed cell high-density polyisocyanurate with a coated fiberglass facer. Insulation shall have a minimum compressive strength of long. Fastener spacing shall be a maximum of 18" on center, with two staggered rows of fasteners. Fasteners shall be installed within 6" of each end. Spacing and fastener 120 psi. embedment shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. F.Wood Nailers 2. Wood nailers must be installed so that the top of the wood nailer is +/- 1/8" with the top surface of the membrane underlayment and the width of the wood nailer exceeds the width of the metal fastening flange by a minimum of 1". Wood nailers shall be kiln dried structural grade, Douglas Fir or SPF #2 or better lumber with a maximum moisture content of 19% by weight on a dry weight basis. 3. Any existing wood blocking which is to be reused shall be firmly anchored in place to resist a minimum force of 300 pounds per lineal foot in any direction and be free of Wood nailers shall conform to Factory Mutual's Loss Prevention Data I-49 and the requirements of the membrane manufacturer. rot. Additional anchors shall be installed to produce a maximum anchor spacing not to exceed 12" on center. Only woodwork designated to be reused in detail drawings shall be left in place and all other woodwork shall be removed. G. Plywood Sheathing C. Plywood Sheathing Installation Plywood shall be 5/8" C-D EXT - APA. Plywood shall have a maximum moisture content of 19% by weight on a dry weight basis. Plywood sheathing shall be installed at parapet and above roof wall surfaces as noted on the drawings. Plywood fasteners shall be approved fasteners spaced a maximum of 16" o.c. vertically and horizontally. H. New termination bars shall be Sarnabar as manufactured by Sarnafil. New termination bars shall be 14 gauge galvanized steel bar, channel shaped, punched 1" on center. New termination bars for membrane securement at parapet, penetration and other transitions shall be Sarnastop as manufactured by Sarnafil. New termination bars shall be D. Vapor Barrier Installation 16 gauge flat galvanized strip pre-punched every 12" on center. 1. Underlayment surfaces shall be clean, dry and free from all dirt, dust, loose aggregate and sharp protrusions. I. Metal edge flashings shall be Edge Grip Extruded Fascia as manufactured by Sarnafil. Snap on fascia cover shall be formed aluminum with a minimum .050" thickness. All 2. Primer shall be installed on all surfaces by spray, brush or long nap roller at the manufacturer's specified coverage rates. Apply primer only to those areas that will be edge metal flashing systems shall be covered by the membrane manufacturer's Systems Warranty. All edge metal systems shall be certified to meet or exceed the specified design pressures. covered with vapor barrier the same day. J. New metal skirt and other flashings shall be shop fabricated from .040" thick 3003-H 14 alloy aluminum conforming to ASTM B-209 and FS QQ-A-250/2 specifications. Finish 3. Allow primer to dry in strict accordance with the primer manufacturer's requirements. shall be bronze.

K. Flashing underlayment shall be Sarnafelt as manufactured by Sarnafil. Flashing underlayment shall be non-asphaltic polyester felt.

L. Solvent cleaner for removal of contaminants from PVC membrane shall be Sarnasolv as manufactured by Sarnafil.

M. Walkway treads shall be SarnaTred S-380 walkways as manufactured by Sarnafil.

N. Automatic hot air welding apparatus for seaming of sheets shall be Sarnamatic Welder as manufactured by Sarnafil.

O. Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion.

1. Fasteners for securement of insulation, membrane and related materials shall be Sarnafastener screws and anchors as recommended by the Manufacturer. Fasteners shall have with 3" corrosion-resistant stress plates for insulation securement. Fasteners and stress plates shall be Factory Mutual approved and meet FM Standard 4470 for corrosion resistance.

2. Fasteners for attachment of termination bars, blocking and sheathing to masonry shall be stainless steel expansion type fasteners in lead sleeves of sufficient length to provide a minimum 1 1/2" penetration.

3. Fasteners for membrane termination shall be 11 gauge, aluminum nails with 3/8" heads and minimum 1 1/2" length.

4. Existing anchor bolts shall be reused, if in good condition, and shall be securely fastened. New anchor bolts shall be installed if existing bolts are missing or damaged.

5. New anchor bolts for securement of wood edge blocking to concrete shall be ½" diameter, Type 304 stainless steel expansion bolts. Anchor bolt length shall be sufficient to provide a minimum 3" embedment into sound concrete. Anchor bolts shall be Kwik Bolt 3 SS 304 as manufactured by Hilti, Inc. of Tulsa, OK.

6. Fasteners for securement of wood blocking to wood blocking shall be #15 threaded fasteners manufactured from SAE 1022 heat treated steel with a corrosion-resistant coating. Fasteners shall be of sufficient length to penetrate the underlying blocking by 1 1/4".

P. New roof drains shall be Model 1015 Large Area roof drain as manufactured by Jay R. Smith Mfg. Co. of Montgomery, AL or approved equal.

Q. Self-adhering waterproofing membrane shall be self-adhering butyl rubber based membrane with integral polyethylene sheeting with .030" thickness. Waterproofing membrane shall conform to ASTM D 412 and D 146 specifications. Waterproofing membrane shall be Grace Ultra as manufactured by W.R. Grace Construction Products or approved equal.

R. ALTERNATE #3 - New skylight shall be a curb mounted, thermally broken aluminum framed unit with a sealed, clear, double polycarbonate dome. The skylight shall meet the requirements of uniform load test ASTM E330 that requires glazing to withstand a positive and negative test pressure of 30 psf. The skylight shall meet the requirements of ASTM E283 that allows a maximum air infiltration rate of 0.06 cfm per square foot of the total glazed surface area. The skylight shall meet the requirements of ASTM E547/E331 that allows for no water infiltration at a test pressure of 12 psf. Acceptable acrylic double dome skylight shall be model CG2 as manufactured by VELUX America LLC, Greenwood, SC.

2.3 MANUFACTURER'S WARRANTY

A. PVC Membrane Roof Warranty

The Contractor shall provide the Owner a 20-year Systems Warranty, furnished by the membrane Manufacturer, which agrees to repair leaks and other material defects in the membrane roof system at no additional cost to the Owner in accordance with the following conditions:

1. The warranty shall be for minimum period of Twenty (20) Years from the date of Final Completion and acceptance by the Manufacturer.

2. The warranty shall cover system leaks and other material failures.

3. The warranty shall include all edge flashings, insulation, underlayment and insulation adhesive.

#### 3.0 - EXECUTION

3.1 EXAMINATION

A. The Contractor shall field verify all dimensions and quantities. Notify the Consultant of any discrepancies between the plans and actual conditions.

B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Consultant of any discrepancies between the plans and actual conditions.

C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

E. Insulation Installation

1. Insulation shall be fastened with the specified fasteners and fastener patterns as provided by the membrane manufacturer for the specified design pressure. Provide additional fasteners at roof perimeters, corners and terminations according to the underlayment Manufacturer's and membrane Manufacturer's requirements, as well as FM 1-29 requirements for the specified Design Pressures noted in Section 2.1 A.

2. Fasteners shall have a minimum 1 1/2" penetration into sound materials. Structural deck and other substrates shall be pre-drilled as required for proper fastener installation and pull-out resistance.

3. Stagger all lateral insulation joints in the same layer of insulation a minimum of 24". Offset joints in multiple insulation layers a minimum of 24" to prevent continuous joints to the roof deck surface.

F.Cover Board Installation

2. Fasteners shall have a minimum 1 1/2" penetration into sound materials. Structural deck and other substrates shall be pre-drilled as required for proper fastener installation and pull-out resistance.

G. Adhered PVC Membrane Installation

The surface of the insulation or substrate shall be inspected prior to installation of the PVC roof membrane. The substrate shall be clean, dry and smooth with no excessive surface roughness, contaminated surfaces or unsound surfaces such as broken, delaminated, or damaged insulation boards.

The adhesive shall be applied at a rate of approximately 3/4 to 1-3/4 gallons per 100 square feet to the substrate depending upon substrate and finish. The adhesive shall be applied in a smooth, even coating with no holidays, globs, puddles or similar irregularities. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The adhesive shall be allowed to dry completely prior to installing the membrane.

to the specified adhesive rate.

NOTES:

4. Vapor barrier must be stored at a minimum of 60 deg. F prior to installation. Apply vapor barrier in shingle fashion with minimum 2" laps at edges.

5. Roll-in vapor barrier with a 100-150 lb roller wrapped in resilient material immediately after installation. Hand roll all vertical applications.

6. All fish mouths and wrinkles shall be cut out and patched as required.

7. Extend vapor barrier up vertical surfaces and penetrations a minimum of 4". Provide water tight laps at all corners and penetrations.

Insulation shall be installed to provide a clean, smooth, secure surface for the new membrane roof system.

4. Insulation shall be neatly cut to fit around all penetrations and projections. Fill all insulation gaps and/or voids greater than 1/4" in thickness with similar insulation materials. Insulation shall be back cut as required to insure full contact with substrate where deck slope changes.

Cover Board shall be installed to provide a clean, smooth, secure surface for the new membrane roof system.

1. Cover Board shall be fastened with the specified fasteners and fastener patterns as provided by the membrane manufacturer for the specified design pressure. Provide additional fasteners at roof perimeters, corners and terminations according to the cover board Manufacturer's and membrane Manufacturer's requirements, as well as FM 1-29 requirements for the specified Design Pressures noted in Section 2.01 A.

3. No more than a ¼" height difference between adjacent cover baord sheet edges shall be allowed.

4. Stagger all lateral joints in the same layer of cover board a minimum of 24". Offset joints between cover board and insulation layers a minimum of 24" to prevent continuous joints to the roof deck surface.

1. Over the properly installed and prepared substrate surface, bonding adhesive shall be applied using recommended solvent-resistant 3/4 inch nap paint rollers.

NOTES: Drying time increases with cooler temperatures. Also, the Contractor is cautioned against work on days of high humidity because of extremely slow evaporation of the solvent. The Contractor shall check with Manufacturer prior to roofing operations on such days.

The Contractor shall count the amount of adhesive used per square and shall count the number of buckets of adhesive used per area per day to verify conformance

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2. When the bonding adhesive on the substrate is dry, the roof membrane is unrolled. Adjacent sheets shall be overlapped a minimum of 3". Once in place, one-half of the sheet's length shall be turned back and the underside shall be coated with bonding adhesive at a rate of 1/2 gallon per 100 square feet. When the adhesive has dried sufficiently to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously coated substrate being careful to avoid wrinkles. Do not allow adhesive on the underside of the membrane to completely dry. The amount of membrane that can be coated with adhesive before rolling into substrate will be determined by ambient temperature, humidity, and manpower. The bonded sheet shall be pressed firmly in place with a weighted foam-covered lawn roller. The remaining unbonded half of the sheet shall be folded back and the bonding procedure repeated.

No bonding adhesive shall be applied in lap areas. All sheets shall be applied in the same manner, lapping all sheets as required by welding techniques.

3. Over the properly installed and prepared porous substrates, adhesive shall be applied using notched squeegees. The adhesive shall be applied at a rate of approximately 1-1/2 to 2-1/4 gallons per 100 square feet depending on substrate. The adhesive shall be applied in an even coating with no globs, puddles, or similar irregularities. The formation of a film on the surface of the adhesive shall not be allowed to occur. A 6' section of membrane shall be rolled out so as to align with the adjacent sheet. Adjacent sheets shall be overlapped a minimum of 3".

The sheet shall be carefully unrolled into the adhesive while wet. The adhesive shall be spread and the membrane rolled out until the entire roll has been set into adhesive. The bonded sheet shall be pressed firmly in place with a weighted foam covered lawn roller.

4. No bonding adhesive shall be applied in lap areas. All sheets shall be applied in the same manner, lapping all sheets as required by welding techniques.

#### H. Hot Air Welding Of Lap Areas

Adjacent sheets shall be welded in accordance with the Manufacturer's written instructions. All side and end lap joints shall be hot air welded. Lap areas shall be a minimum of 3" wide when machine welding, and a minimum of 4" wide when hand welding.

Welding equipment shall be provided by or approved by the Manufacturer. All mechanics intending to use the equipment shall have successfully completed a course of instruction provided by the Manufacturer's representative prior to welding.

All surfaces to be welded shall be clean according to the Manufacturer's recommendations, and dry. No adhesive shall be present within the lap areas.

#### 1. Hand Welding

Hand welded seams shall be completed in three stages. Equipment shall be allowed to warm up for at least one minute prior to start of welding.

The lap shall be tack welded every 3 feet to hold the material in place.

The back edge of the lap shall be welded with a thin, continuous weld to prevent loss of hot air during the final welding.

The hot air nozzle shall be inserted into the lap, keeping the welding equipment at a 45 degree angle to the side lap. Once the proper welding temperature has been reached and the material starts to flow, the hand roller shall be applied at a right angle to the welding gun and pressed lightly. For straight laps, the 1-1/2" wide nozzle shall be used. For corners and compound connections, the 3/4" wide nozzle shall be used.

#### 2. Machine Welding

Machine welded seams may be achieved by the use of the Manufacturer's various automatic welding equipment. When using this equipment, the Manufacturer's instructions shall be followed and local codes for electric supply, grounding and over current protection observed. The automatic welding machines require 218 to 230 volts at 30 amps. The use of a portable generator is recommended.

When welding sheets adhered with Sarnacol 2121 adhesive, 15 inch wide metal tracks must be used over the deck sheet and under the machine welder to prevent wrinkles.

3. Quality Control of Welded Seams

All completed welded seams shall be checked after cooling for continuity using a rounded screwdriver or other suitable blunt object by the roofing contractor. Visible evidence that welding is proceeding acceptably is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of black material from the edge of completed joints. On-site evaluation of welded seams shall be made daily by the Contractor to locations as directed by the Owner's representative or the Manufacturer's representative. Two inch wide cross-section samples shall be taken three times a day minimum through completed seams. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Contractor at no extra charge to the Owner.

#### I. Membrane Flashings

<u>All flashings shall be installed concurrently with the roof membrane as the job progresses.</u> No temporary flashings shall be allowed without the prior written approval of the project manager and the Manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Contractor's expense. Flashings shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces.

1. Over the properly installed and prepared substrate surface, bonding adhesive shall be applied using recommended solvent-resistant 3/4 inch nap paint rollers. The adhesive shall be applied at a rate of approximately 1-1/2 to 2-1/2 gallons per 100 square feet of surface depending upon substrate. The adhesive shall be applied in smooth, even coatings with no holidays, globs, puddles or similar irregularities. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The surface with adhesive coating shall be allowed to dry completely prior to installing the membrane.

NOTE: Drying time increases with cooler temperatures. Also, the Contractor is cautioned against work on days of high humidity because of extremely slow evaporation of the solvent. The Contractor shall check with the Manufacturer's technical representative prior to roofing operations on such days.

2. When the surface is dry, the flashing membrane is cut to a workable length and the underside shall be evenly coated with bonding adhesive at a rate of 1/2 gallons per 100 square feet. When the adhesive has dried sufficiently to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously coated substrate being careful to avoid wrinkles. Do not allow adhesive on the underside of the membrane to completely dry. The amount of membrane that can be coated with adhesive before applying to substrate will be determined by ambient temperature, humidity, and manpower. Adjacent sheets shall be overlapped a minimum of 4". Flashings shall extend 5" onto the roofing membrane. The bonded sheet shall be pressed firmly in place with a hand roller.

3. No bonding adhesive shall be applied in lap areas that are to be welded to flashings or adjacent sheets. All sheets shall be applied in the same manner, lapping all sheets as required by welding techniques.

4. Install termination bars fastened 12" on center with acceptable fasteners into the structural deck at the base of parapets, walls, and curbs. Termination bars shall also be installed at the base of tapered edge strips and at transitions, peaks, and valleys according to the Manufacturer's recommended details.

5. All flashings shall extend a minimum of 8" above roofing level wherever possible.

6. All flashing membranes shall be fully adhered to solvent resistant substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bituminous elements shall be in contact with the membrane.

7. All flashings shall be hot air welded at their

# Roof Replacement Edgar Allan Poe Square Condominium



Date	4 AUGUST 2021
Drawn by	KC
Checked by	NR

NTS

**A8** 







![](_page_11_Figure_0.jpeg)

CHARLES STREET		Roof Replacement Edgar Allan Poe Square Condominium 96 Broadway Boston, MA CONSULTANT:
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