

TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR: **Various Locations – Repair Masonry Stair Towers
at Hudson & Gillett**
Project Number: **CP231031**

Student Recreation Center – East Elevation Masonry Repair
Project Number: **CP231201**

ADVERTISEMENT DATE: 2024-02-21

PREPARED FOR: The Curators of the
University of Missouri

PREPARED BY: PWAarchitects, Inc.
ATTN: Eric Roselle, AIA
2120 Forum Blvd, Ste 101
Columbia, MO 65203
Phone: (573) 449-2683
Fax: (573) 442-6213

Drawings and Specifications for the above noted projects and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

SPECIFICATION CHANGES:

1. Division 01 – General Requirements:
 - o 1.A Bid for Lump Sum Contract – REPLACE the Bid Form with the attached *Bid for Lump Sum Contract – Addendum-01*.
 - Item 3-c-6 Unit Prices for Various Locations – Repair Masonry Stair Towers at Hudson and Gillett, Project Number CP231031 – has been updated.
 - Item 4-c-1 Special Scheduling Requirements for Various Locations – Repair Masonry Stair Towers at Hudson and Gillett, Project Number CP231031 – has been updated to note that “On-site construction activities may begin upon contract issuance.”

- o 1.E Special Conditions – ADD item ‘26’ as follows:

26. COST BREAKOUT FOR ACCOUNTING PURPOSES

Contractor will be required to submit the following cost breakouts on company letterhead prior to the end of the next business day following the bid opening.

1. Cost Break Out #1:
 - a. All work associated with Project Number CP231031: Various Locations - Repair Masonry Stair Towers at Hudson & Gillett.
2. Cost Break Out #2:
 - a. All work associated with Project Number CP231201: Student Recreation Center - East Elevation Masonry Repair.
3. All Contractor costs including but not limited to, General Conditions, Overhead and Profit, Fee, Insurance, and Bonding shall be allocated

ATTACHMENTS:

1. Section 1.A - Bid for Lump Sum Contract – Addendum-01.
2. Addendum 1 – Volume 2: Various Locations – Repair Masonry Stair Towers at Hudson & Gillett: CP231031
3. Addendum 1 – Volume 3: Student Recreation Center – East Elevation Masonry Repair: CP231201

END OF ADDENDUM #1

SECTION 1.A

BID FOR LUMP SUM CONTRACT

Date: _____

BID OF _____
(hereinafter called "Bidder") a corporation* organized and existing under laws of the State of _____

_____ ,
a partnership* consisting of _____ ,

an individual* trading as _____ ,

a joint venture* consisting of _____

_____ .
*Insert Corporation(s), partnership or individual, as applicable.

TO: Curators of the University of Missouri
c/o Associate Vice Chancellor – Facilities
Room L100, General Services Building
University of Missouri – Columbia
Columbia, MO 65211

1. Bidder, in compliance with invitation for bids for construction work in accordance with Drawings and Specifications prepared by:
 - a. PWARECHITECTS, INC., entitled “VARIOUS LOCATIONS – REPAIR MASONRY STAIR TOWERS AT HUDSON AND GILLETT”, project number CP231031, dated December 5, 2023.
 - b. INTERNATIONAL ARCHITECTS ATELIER, entitled “STUDENT RECREATION CENTER – EAST ELEVATION MASONRY REPAIR”, project number CP231201, dated February 21, 2024.

Having examined Contract Documents and site(s) of proposed work and being familiar with all conditions pertaining to construction of proposed project(s), including availability of materials and labor, hereby proposes to furnish all labor, materials and supplies to construct project(s) in accordance with Contract Documents, within time set forth herein at prices stated below. Prices shall cover all expenses, including taxes not covered by the University of Missouri’s tax exemption status, incurred in performing work required under Contract documents, of which this Bid is a part.

Bidder acknowledges receipt of following addenda:

Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____

2. In following Bid(s), amount(s) shall be written in both words and figures. In case of discrepancy between words and figures, words shall govern.

3. BID PRICING

a. Base Bid:

The Bidder agrees to furnish all labor, materials, tools, and equipment required for masonry restoration and repair; all as indicated on the Drawings and described in these Specifications for sum of:

_____ DOLLARS (\$ _____).

b. Additive Alternate Bids:

Above Base Bid may be changed in accordance with following Alternate Bids as Owner may elect. Alternates are as described in Section 1.H of Project Manual. Alternates are written in a priority order, but Owner is not required to accept or reject in order listed. This is a one (1) contract project, therefore, Alternates shall be studied by each Bidder to determine effect on Bids of Contractor and each Subcontractor and/or Material supplier.

- (1) STUDENT RECREATION CENTER – EAST ELEVATION MASONRY REPAIR, project number CP231201.

Additive Alternate No. 1: Masonry repairs, removal and reinstallation of the guardrail, and 100% tuckpointing and cleaning shall be done for the retaining wall and site walls at the service entry. Refer to drawing sheet A203 for wall locations and details.
All for sum of:

_____ DOLLARS (\$ _____).

c. Unit Prices:

- (1) For changing specified quantities of work from those indicated by Contract Drawings and Specifications, upon written instructions of Owner, the following Unit Prices shall prevail in accordance with General Conditions.

- (2) The following Unit Prices include all labor, overhead and profit, materials, equipment, appliances, bailing, shoring, shoring removal, etc., to cover all work.

- (3) The following Unit Prices are required where applicable to particular Base Bid and/or Alternate being submitted.

- (4) Only a single Unit Price shall be given and it shall apply for either MORE or LESS work than that indicated on Drawings and called for in Specifications as indicated to be included in Base Bid and/or Alternates. In the event that more or less units than so indicated is actually furnished, Change Orders will be issued for increased or decreased amounts as approved by the Owner.

- (5) Bidder understands that the Owner will not be liable for any Unit Price or any amount in excess of Base Bid and any Alternate(s) accepted at time of award of Contract, except as expressed in written Change Orders duly executed and delivered by Owner's Representative.

(6) VARIOUS LOCATIONS – REPAIR MASONRY STAIR TOWERS AT HUDSON AND GILLET, project number CP231031.

- a. Brick replacement for under 7 bricks grouped together; per unit.

Base Bid quantity = 35 units \$ /unit

- b. Brick replacement for 7 and over bricks grouped together; per sq. ft.

Base Bid quantity = 138 sq.ft. \$ /sq.ft

- c. Repoint mortar joints at brick; per sq. ft.

Base Bid quantity = 2,470 sq.ft. \$ /sq.ft.

- d. Repoint through-wall flashing at shelf angles with new sealant and backer; install weep tubes at 24" o.c. horizontal, min; per ln.ft.

Base Bid quantity = 990 ln.ft. \$ /ln.ft.

- e. Repoint designated control joints with new sealant and backer; per ln.ft.

Base Bid quantity = 275 ln.ft. \$ /ln.ft.

- f. Patching of designated defective areas in stone with repair mortar; per cu. in.

Base Bid quantity = 1,728 cu.in. \$ /cu.in.

- g. Replacement of existing coping stones w/ new Indiana gray limestone coping stone matching the existing profile; per cu. ft.

Base Bid quantity = 0 cu.ft. \$ /cu.ft.

(7) STUDENT RECREATION CENTER – EAST ELEVATION MASONRY REPAIR, project number CP231201.

- a. Crack Injection: All fractures or cracks that are less than or equal to 1/8" shall be injected with dispersed hydrated lime (DHL). If a cavity is too deep to be filled using DHL, an application of NHL shall be used to top over the opening. DHL shall be custom matched to limestone. Refer to Masonry Restoration Keynote 2.

Base Bid quantity = 50 ln. ft \$ /ln. ft

- b. Stone Patch: Prepare spalling stone per Drawings. Patch with historic patching material to match existing stone and profile.

Base Bid quantity = 3 ea. \$ ea.

- c. Micro-Pin Repair: Use micro pins for locations of detached stone where the thickness of the spall is less than or equal to 2". Use 4 mm stainless steel or titanium surgical bone screws inserted by hand using a hex key. All pins shall have a minimum embedment depth of 2" into the parent stone. Screw heads shall have a 1/4" countersunk depth. Pins shall be spaced a minimum distance of 6" apart. Provide a minimum distance of 3" from the edge of the stone unit.
Base Bid quantity = 2 ea. \$ _____ ea.
- d. 1/8" Threaded Rod Repair: For locations of detached stone where the thickness of the spall is less than 2", 1/8" all threaded rod shall be used. Anchor threaded rods into pilot holes using masonry adhesive grout. All pins shall have a minimum embedment depth of 2" into the parent stone. Threaded rods shall have a 1/4" countersunk depth. Pins shall be spaced a minimum distance of 6" apart. Provide a minimum distance of 3" from the edge of the stone unit.
Base Bid quantity = 11 ea. \$ _____ ea.
- e. 3/8" Threaded Rod Repair: For locations of delaminated stone where the thickness of the spall is greater than 2", 3/8" all threaded rod shall be used. Anchor threaded rods into pilot holes using masonry adhesive grout. All pins shall have a minimum embedment depth of 2" into the parent stone. Threaded rods shall have a 1/4" countersunk depth. Pins shall be spaced a minimum distance of 6" apart. Provide a minimum distance of 3" from the edge of the stone unit.
Base Bid quantity = 1 ea. \$ _____ ea..
- f. Dutchman: Cut and prepare stone to receive Dutchman repair.
Base Bid quantity = 1 ea. \$ _____ ea.
- g. Reset Displaced Stone: Rake mortar joints around the displaced stone. Reset stone to its original location and tuck point mortar joint around the stone.
Base Bid quantity = 1 ea. \$ _____ ea.
- h. Lintel Repair: Remove stone lintel to expose brick arch beyond. Install new hot-dipped galvanized steel loose lintel and reset stone.
Base Bid quantity = 7 ea. \$ _____ ea.
- i. Stone Lintel Pinning Repair: Pin broken pieces of stone lintel with 3/4" threaded rods anchored into pilot holes with masonry adhesive grout. Pins shall have a minimum embedment depth of 4 inches into each piece of stone, and crack between the two pieces shall be patched with historic patching mortar.
Base Bid quantity = 5 ea. \$ _____ ea.
- j. Miscellaneous sealant joint and backer rod installation beyond amounts shown on drawings.
Base Bid Quantity = as shown in drawings \$ _____ /ln. ft
- k. Miscellaneous tuckpointing at building exterior beyond amounts shown on drawings, at locations to be determined by Architect.
Base Bid Quantity = as shown in drawings \$ _____ /ln. ft

4. PROJECT COMPLETION

a. Contract Period - Contract period begins on the day the Contractor receives unsigned Contract, Performance Bond, Payment Bond, and "Instructions for Execution of Contract, Bonds, and Insurance Certificates." Fifteen (15) calendar days have been allocated in construction schedule for receiving aforementioned documents from Bidder.

(1) VARIOUS LOCATIONS – REPAIR MASONRY STAIR TOWERS AT HUDSON AND GILLETT, project number CP231031.

a. Bidder agrees to complete project within One-Hundred Twenty (120) calendar days from receipt of aforementioned documents.

(2) STUDENT RECREATION CENTER – EAST ELEVATION MASONRY REPAIR, project number CP231201.

a. Bidder agrees to complete project within Two-Hundred Twenty-Nine (229) calendar days from receipt of aforementioned documents.

b. Commencement - Contractor agrees to commence work on this project after the "Notice to Proceed" is issued by the Owner. "Notice to Proceed" will be issued within seven (7) calendar days after Owner receives properly prepared and executed Contract documents listed in paragraph 4.a. above.

c. Special scheduling requirements:

(1) VARIOUS LOCATIONS – REPAIR MASONRY STAIR TOWERS AT HUDSON AND GILLETT, project number CP231031.

On-site construction activities may begin up contract issuance.

Aug 15, 2024 All work at Work Area 1, East elevation must be complete
All work at Work Area 2, North elevation must be complete
* See also sheet G101.

5. SUBCONTRACTOR LIST:

Bidder hereby certifies that the following subcontractors will be used in performance of Work:

NOTE: Failure to list subcontractors for each category of work identified on this form or listing more than one subcontractor for any category of work without designating the portion of work performed by each shall be grounds for rejection of bid. List name, city, and state of designated subcontractor, for each category of work listed in Bid For Lump Sum Contract. If work within a category will be performed by more than one subcontractor, Bidder shall provide name, city, and state of each subcontractor and specify exact portion of work to be performed by each. If acceptance/non-acceptance of Alternates will affect designation of a subcontractor, Bidder shall provide information, for each affected category, with this bid form. If Bidder intends to perform any designated subcontract work by using Bidder's own employees, then Bidder shall list their own name, city, and state. The bidder may petition the Owner to change a listed subcontractor only within 48 hours of the bid opening. See Information For Bidders Section 16 List of Subcontractors for requirements.

Work to be performed	Subcontractor Name,	City, State
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Masonry _____

Sealants _____

6. SUPPLIER DIVERSITY PARTICIPATION GOALS

a. The Contractor shall have as a combined goal subcontracting with Minority Business Enterprise (MBE), Women Business Enterprise (WBE), Disadvantage Business Enterprise (DBE), and/or Veteran Owned Business of TEN PERCENT (10%); and with Service Disabled Veteran Owned Business (SDVE) of THREE PERCENT (3%) of awarded contract price for work to be performed.

b. Requests for waiver of this goal shall be submitted on the attached Application For Waiver form. A determination by the Director of Facilities Planning & Development, UM, that a good faith effort has not been made by Contractor to achieve above stated goal may result in rejection of bid.

c. The Undersigned proposes to perform work with following Supplier Diversity participation level:

MBE, WBE, DBE, and/or VETERAN PERCENTAGE PARTICIPATION:

_____ percent (____%)

SDVE PERCENTAGE PARTICIPATION:

_____ percent (____%)

d. A Supplier Diversity Compliance Evaluation form shall be submitted with this bid for each diverse subcontractor to be used on this project.

7. BIDDER'S ACKNOWLEDGMENTS

a. Bidder declares that he has had an opportunity to examine the site of the work and he has examined Contract Documents; therefore, that he has carefully prepared his bid upon the basis thereof; that he has carefully examined and checked bid, materials, equipment and labor required thereunder, cost thereof, and his figures therefore. Bidder hereby states that amount, or amounts, set forth in bid is, or are, correct and that no mistake or error has occurred in bid or in Bidder's computations upon which this bid is based. Bidder agrees that he will make no claim for reformation, modifications, revisions or correction of bid after scheduled closing time for receipt of bids.

b. Bidder agrees that bid shall not be withdrawn for a period of Ninety (90) days after scheduled closing time for receipt of bids.

c. Bidder understands that Owner reserves right to reject any or all bids and to waive any informalities in bidding.

d. Accompanying the bid is a bid bond, or a certified check, or an irrevocable letter of credit, or a cashier's check payable without condition to "The Curators of the University of Missouri" which is an amount at least equal to five percent (5%) of amount of largest possible total bid herein submitted, including consideration of Alternates.

e. Accompanying the bid is a Bidder's Statement of Qualifications. Failure of Bidder to submit the Bidder's Statement of Qualifications with the bid may cause the bid to be rejected. Owner does not maintain Bidder's Statements of Qualifications on file.

f. It is understood and agreed that bid security of two (2) lowest and responsive Bidders will be retained until Contract has been executed and an acceptable Performance Bond and Payment Bond has been furnished. It is understood and agreed that if the bid is accepted and the undersigned fails to execute the Contract and furnish acceptable Performance/Payment Bond as required by Contract Documents, accompanying bid security will be realized upon or retained by Owner. Otherwise, the bid security will be returned to the undersigned.

8. BIDDER'S CERTIFICATE

Bidder hereby certifies:

a. His bid is genuine and is not made in interest of or on behalf of any undisclosed person, firm or corporation, and is not submitted in conformity with any agreement or rules of any group, association or corporation.

b. He has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.

c. He has not solicited or induced any person, firm or corporation to refrain from bidding.

d. He has not sought by collusion or otherwise to obtain for himself any advantage over any other Bidder or over Owner.

e. He will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin in connection with performance of work.

f. By virtue of policy of the Board of Curators, and by virtue of statutory authority, a preference will be given to materials, products, supplies, provisions, and all other articles produced, manufactured, mined or grown within the State of Missouri. By virtue of policy of the Board of Curators, preference will also be given to all Missouri firms, corporations, or individuals, all as more fully set forth in "Information For Bidders."

9. BIDDER'S SIGNATURE

Note: All signatures shall be original; not copies, photocopies, stamped, etc.

Authorized Signature	Date
Printed Name	Title
Company Name	
Mailing Address	
City, State, Zip	
Phone No.	Federal Employer ID No.
Fax No.	E-Mail Address
Circle one: Individual Partnership Corporation Joint Venture	
If a corporation, incorporated under the laws of the State of _____	
Licensed to do business in the State of Missouri? ____yes ____no	

(Each Bidder shall complete bid form by manually signing on the proper signature line above and supplying required information called for in connection with the signature. Information is necessary for proper preparation of the Contract, Performance Bond and Payment Bond. Each Bidder shall supply information called for in accompanying "Bidder's Statement of Qualifications.")

END OF SECTION

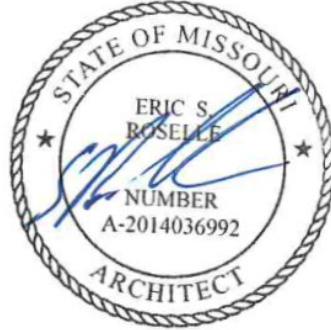
TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR: **Volume 2: Various Locations – Repair Masonry Stair Towers at Hudson & Gillett**
Project Number: **CP231031**

ADVERTISEMENT DATE: 2024-02-21

PREPARED FOR: The Curators of the University of Missouri

PREPARED BY: PWAarchitects, Inc.
ATTN: Eric Roselle, AIA
2120 Forum Blvd, Ste 101
Columbia, MO 65203
Phone: (573) 449-2683
Fax: (573) 442-6213



2024-03-11

Drawings and Specifications for the above noted projects and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

GENERAL:

1. CLARIFICATION: G003 Staging & Traffic Control Hudson & Gillett:



This symbol, a circle, is a light standard (see G003 - Staging Plan Key).



This symbol, a pentagon, is a Scope-of-Work (SOW) note. SOW Note 'L' is one of several notes defining allowable access methods to the building/roof; it typically appears over the roof of the building, similar to notes 'K' and 'M'.

END OF CP231031 ADDENDUM #1

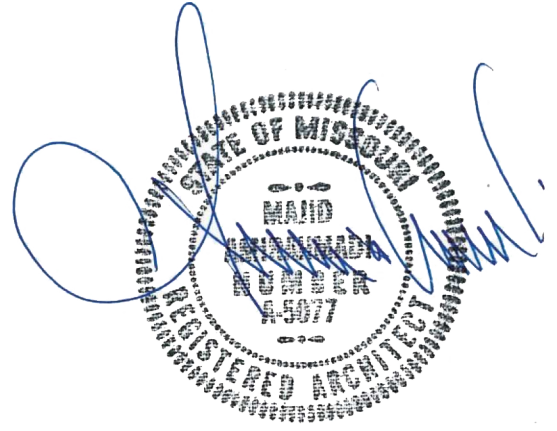
TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR: **Volume 3: Student Recreation Center – East Elevation Masonry Repair**
Project Number: **CP231201**

ADVERTISEMENT DATE: 2024-02-21

PREPARED FOR: The Curators of the
University of Missouri

PREPARED BY: International Architects Atelier
912 Broadway Blvd, Suite 300
Kansas City, Missouri 64105
Phone: (816) 471-6522



03-11-2024

Drawings and Specifications for the above noted projects and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

SPECIFICATION CHANGES:

1. 072726 – FLUID APPLIED MEMBRANE AIR BARRIERS, PARAGRAPH 2.3A, Item 1 - Products
ADD: f. W.R. Meadows; Air-Shield LMP, Product shall meet 40 mil dry film thickness minimum requirements specified in Section 3.4B1.
2. 075323 – EPDM ROOFING
REMOVE: Entire Section
REPLACE WITH: Attached Section 075323 – **MODIFIED BITUMINOUS PROTECTED MEMBRANE ROOFING (ADD. #1)**

DRAWING CHANGES:

1. A500 – WALL SECTION AND DETAILS
REVISE: Details T5 and T13 to show new roofing tie in system to be Modified Bituminous Protected Membrane Roofing in lieu of EPDM roofing.

ATTACHMENTS:

1. Specifications Section 075323 – MODIFIED BITUMINOUS PROTECTED MEMBRANE ROOFING
2. Drawing A500 – WALL SECTION AND DETAILS

END OF CP231201 ADDENDUM #1

SECTION 075323 - MODIFIED BITUMINOUS MEMBRANE ROOFING (ADD. #1)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Modified bituminous smooth membrane/granule surface cap sheet (surface) membrane.
 - 2. Cover board.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.3 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. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.
 - 1. Fire/Windstorm Classification: Class 1A-90.
- D. Severe Hail (SH) Resistance Rating FM Listing

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Base flashings and membrane terminations.
 - 2. Substrate board fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products:
 - 1. Sheet roofing materials, including roofing membrane sheet, membrane cap sheet, of color specified (base flashing plies same material as field of roof).

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data (membrane manufacturer): Provide primary products including each type of roofing membrane, having successfully produced those products for not less than five years. Provide secondary products such as roof insulation, fasteners, and base flashing materials. Provide materials that are compatible with existing conditions and are asbestos free.
- B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of complying with performance requirements.
- C. Warranties: Sample of special warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - 1. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing warranted roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
 - 2. Provide adequate number of experienced workmen, 50% of installing crew minimum, regularly engaged in this type of work who are skilled in the application techniques of the materials specified and certified by the roofing system manufacturer. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
 - a. Contractor shall submit work history data sheets for each worker on the project showing evidence of successful experience installing the specific type of warranted roofing system proposed for use.
 - b. Contractor shall have an experienced, pre-qualified, thoroughly trained superintendent with five (5) years experience with roof systems specified who is familiar with the requirements of this project, on the job at all times when roofing system work is in progress. Training for Superintendent shall include certification of completion of manufacturer's in-house training course or on-site training. On-site training shall consist of at least eighty (80) hours of on-site application monitored by a manufacturer's representative.
- C. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.
- D. Upon completion of the roof, the Owner's roofing inspector will review the installation to verify that the University's roofing standards have been met.
- E. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.

1.7 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.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 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.

1.9 WARRANTY

- A. Installer's Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering labor and materials of this Section, including all components of roofing system such as membrane roofing, base flashing, fasteners, cover boards, and other components of membrane roofing system required to make the system watertight and complete, for the following warranty period:
 - 1. Warranty Period: Three (3) years from date of Substantial Completion.
 - 2. The roofing Contractor and roofing Manufacturer accompanied by a designated owner's representative shall perform, at no additional cost to the owner, an annual inspection of the complete roofing system installation through the three (3) year Contractor's Warranty period. This inspection shall include a written detailed evaluation of the roofing system including system failures and maintenance recommendations. All roofing system failures and defects shall be repaired/corrected by the Contractor at no additional cost to the Owner within thirty (30) days from date of annual inspection. These repairs/corrections shall include replacing any and all wet insulation. All repairs shall be approved by, and made to the satisfaction of the owner's representative.
 - 3. The Owner will promptly notify the roofing Contractor and Manufacturer, in writing, of the defects in the roofing system. Within eight (8) hours after receipt of written notice from the Owner, the roofing Contractor shall make emergency repairs, at its own expense, as required to render the facility watertight. Within five (5) days after receipt of such notice, the roofing Contractor shall, at its own expense, correct any faults or defects in material or workmanship. Should the roofing Contractor or roof Manufacturer fail or refuse to make the necessary repairs or replacements, when requested by the Owner, the Owner may perform, or cause the necessary work to be performed at the roofing Contractor's and Manufacturer's expense.

PART 2 - PRODUCTS

2.1 APP-MODIFIED ASPHALT-SHEET MATERIALS

- A. APP-Modified Bituminous Membrane Roofing:
 - 1. Manufacturer: Subject to compliance with requirements, provide the following or equal:
 - a. Derbigum of America.
 - 2. Other Acceptable Manufacturers:
 - a. Holcim Elevate
- B. Roofing Membrane Sheet: ASTM D 6509, Grade S, 120 mil APP-modified asphalt base sheet (reinforced with a glass fiber mat); smooth surfaced; suitable for application method specified (Derbibase Ultra).
- C. Granule-Surfaced Roofing Membrane Cap Sheet: ASTM D 6223, Grade G, Type II, APP-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); granular surfaced; fire-rated (FR), suitable for application method specified (Derbicolor GP FR).
- D. Granule Material and Colors:
 - 1. Granule Material: Mineral.
 - 2. Granule Color: White.

2.2 BASE FLASHING SHEET MATERIALS

- A. Backer Sheet: ASTM D 6509, Grade S, 120 mil APP-modified asphalt base sheet (reinforced with a glass fiber mat); smooth surfaced; suitable for application method specified (Derbibase Ultra).
- B. Granule-Surfaced Flashing Cap Sheet: ASTM D 6223, Grade G, Type II, APP-modified asphalt sheet (reinforced with a combination of polyester fabric and glass fibers); granular surfaced; suitable for application method specified (Derbicolor GP FR).
- C. Granule Material and Color:
 - 1. Granule Material: Mineral.
 - 2. Granule Color: White.
- D. Fiber Fabric: Woven glass-fiber cloth treated with asphalt, complying with ASTM D 1668, Type I.

2.3 AUXILIARY ROOFING MEMBRANE MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Asphalt Primer: ASTM D 41 (PRS Primer).

-
- C. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one-part, asbestos free, cold-applied adhesive specially formulated for compatibility and use with roofing membrane (Permastic).
 - D. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one-part, asbestos free, cold-applied adhesive specially formulated for compatibility and use with base flashings (Perflash).
 - E. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
 - F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing membrane components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
 - G. Lead Flashing Sheet (drains): 30" by 30" square, 4 pound per square foot.
 - H. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match roofing membrane.
 - I. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.4 COVER BOARD

- A. Cover Board: ASTM C 1177, glass-mat, water-resistant gypsum substrate.
- B. Products: Subject to compliance with requirements, provide product by one of the following:
 - 1. CertainTeed Corporation; GlasRock Sheathing.
 - 2. Georgia-Pacific Building Products; Dens Deck Prime.
 - 3. National Gypsum Company; Gold Bond eXP Extended Exposure Sheathing.
 - 4. USG Corporation; Securock Glass Mat Roof Board.
- C. Thickness: As indicated on Drawings.

2.5 IACCESSORIES

- A. Bead-Applied Cover Board Adhesive: Manufacturer's recommended bead-applied, low-rise, two-component urethane adhesive formulated to attach coverboard to substrate.
- B. Modified cant strips: 1-3/4 inch x 1-3/4 inch x 2 inch.

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:

-
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. 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.

3.3 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Cooperate with testing agencies engaged or required to perform services for installing roofing system.
- D. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. At end of each day's work, provide tie-offs to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt, with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
 - 3. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 APP-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install smooth surfaced field ply modified bituminous roofing membrane according to roofing manufacturer's written instructions, starting at low point of roofing system. Adhere field ply to substrate and up wall to just above cant then mechanically attach the field ply to the top of the designated base flashing to allow for vapor to escape. Unroll roofing membrane sheets and allow them to relax for a minimum time period required by manufacturer. Heat-weld all laps.
- B. Install cap sheet modified bituminous roofing membrane according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants. Adhere to substrate in cold adhesive. Unroll roofing membrane sheets and allow them to relax for a minimum time period required by manufacturer. Heat-weld all laps.
- C. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
 - 1. Repair tears and voids in laps and lapped seams not completely sealed.

2. Apply roofing granules to cover exuded bead at laps while bead is hot (granule surface only).

- D. Install roofing membrane sheets so side and end laps shed water.

3.5 BASE FLASHING INSTALLATION

- A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, prime substrates with asphalt primer if required by roofing system manufacturer, and as follows:
 1. Backer Sheet Application: Adhere backer sheet to substrate in cold-applied adhesive at rate required by roofing system manufacturer.
 2. Flashing Cap Sheet Application: Adhere flashing sheet to substrate in cold-applied adhesive at rate required by roofing system manufacturer.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane or to designated height and 4 inches onto field of roofing membrane for the backer sheet and 8" onto the field of roofing membrane for the cap sheet.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 1. Seal top termination of base flashing with three-course of roofing cement and glass fiber fabric.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections and to prepare test reports.
- B. Field Audits: As part of the warranty, the membrane manufacturer shall perform in progress site audits and prepare submit reports to owner's representative. A minimum of two in progress audits should be performed.
- C. Quality Control Form:
 1. Contractor to complete daily quality control form which is included in the documents. Contractor is to note on provided roof plan areas of daily construction. Completed forms are to be submitted with warranty completion notice.
- D. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
 1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
- E. Roofing system will be considered defective if it does not pass tests and inspections.
 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.7 PROTECTING AND CLEANING

- A. Protect 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 roofing system that does not comply with requirements, repair substrates, and repair or reinstall 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.

3.8 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, 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: <Insert date>.
 - 7. Warranty Period: <Insert time>.
 - 8. Expiration Date: <Insert 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 115 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 <Insert day> day of <Insert month>, <Insert year>.

1. Authorized Signature: <Insert signature>.
2. Name: <Insert name>.
3. Title: <Insert title>.

END OF SECTION 075323

