

May 1, 2023

Addendum No. 1

**Hurricane Laura Repairs
Calcasieu Parish School Board
Main Building Package
Oak Park Elementary School
2001 18th Street
Lake Charles LA 70601
School LOC Code: HL-043-03
S+MBA Project No. 12030.3**

THE FOLLOWING CHANGES, DELETIONS, AND/OR ADDITIONS TO THE DRAWINGS AND/OR PROJECT MANUAL ON THE ABOVE REFERENCED PROJECT SHALL BECOME A PART OF THE CONTRACT DOCUMENTS.

Item No. 1 – Bid Date (no change) and Pre-bid Meeting

- A. Bids will be received no later than 11:00 A.M., May 4, 2023
- B. A pre-bid meeting was held at the site 10:00 A.M. on April 25, 2023. See attached minutes for a list of attendees.

Item No. 2 - Attachments

- A. The following are attached herein, issued as a part of this addendum:
 - 1. Pre-bid meeting minutes dated April 25, 2023 (3 pages)
 - 2. Bid Form with revised Unit Price Form,
 - 3. Revised Specification Section 01026-Unit Prices
 - 4. Revised Specification Section 07550-Modified Bitumen Roofing
 - 5. New Specification Section 07460-Fiber Cement Siding, Panels and Trim

Item No. 3 - Specifications

- A. Add the attached Bid Form with revised Unit Price Form and Specification Section 01026-Unit Prices and revised Section 07550-Modified Bitumen Roofing as a part of this addendum. Note that Unit Price No.2 & 3 were added in Section 01026 and the Unit Price form.
- B. Add the attached revised Section 07550-Modified Bitumen Roofing and New Specification Section 07460-Fiber Cement Siding, Panels and Trim as a part of this addendum

Item No. 4 - Specifications Section 01010-Summary of Work

- A. 1.12 WORKING CONDITIONS AND SCHEDULING Add the following
 - “M. There is no summer school
 - N. A Sign in log for all workman is required and kept by the Superintendent.”

Item No. 5 - Specifications Section 09650-Resilient Tile Flooring

- A. 2.03: Add “Adhesive must vapor retarding type rated to 98% RH capable of maintaining bond when moisture and vapor is in the existing slab and not be adversely affected by exposure to moisture, vapor, water, or alkalinity.”
- B. 3.02 F&G.: add “perform In-Situ moisture testing, alkalinity testing as specified and test results shall be sent to the Architect.”

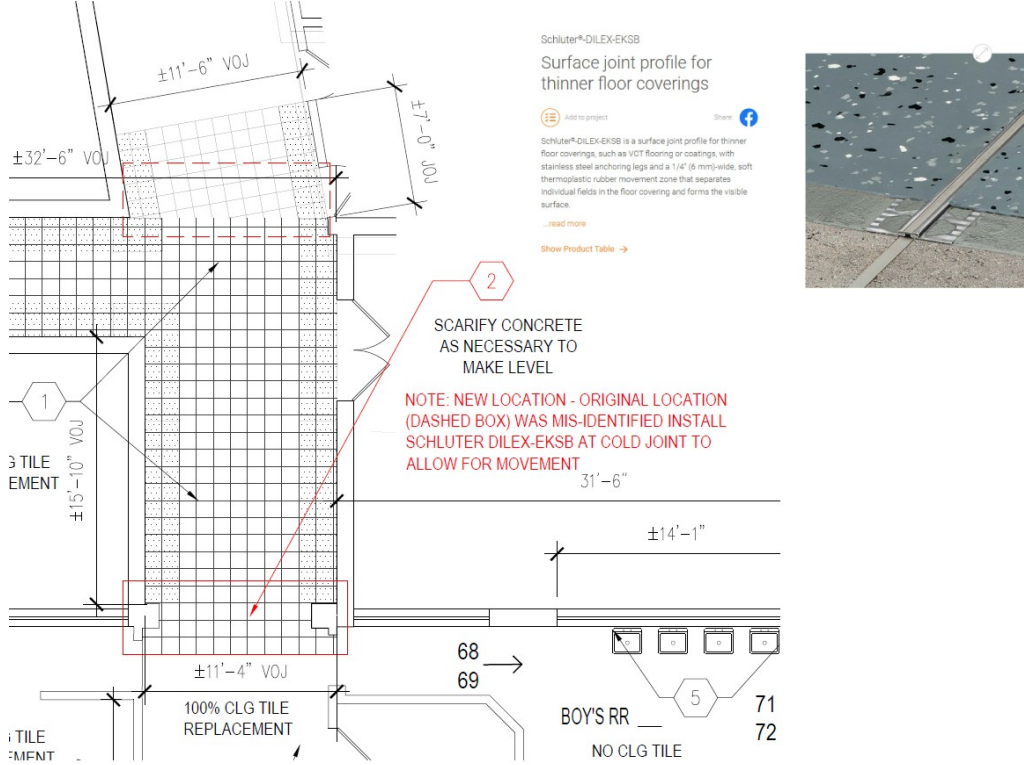
Item No. 6 - Drawing Sheet D-101

- A. In the Roof System Demolition Legend on Sheet D-101, Revise roof type 1C Note to keep the zonolite at roof section 1C to read “AT BUILT UP ASPHALT ROOF SYSTEM OVER LT

WT CONCRETE OVER METAL PAN DECK, REMOVE EXISTING MB ROOFING SYSTEM TO DECK TO RECEIVE NEW MB ROOFING SYSTEM “

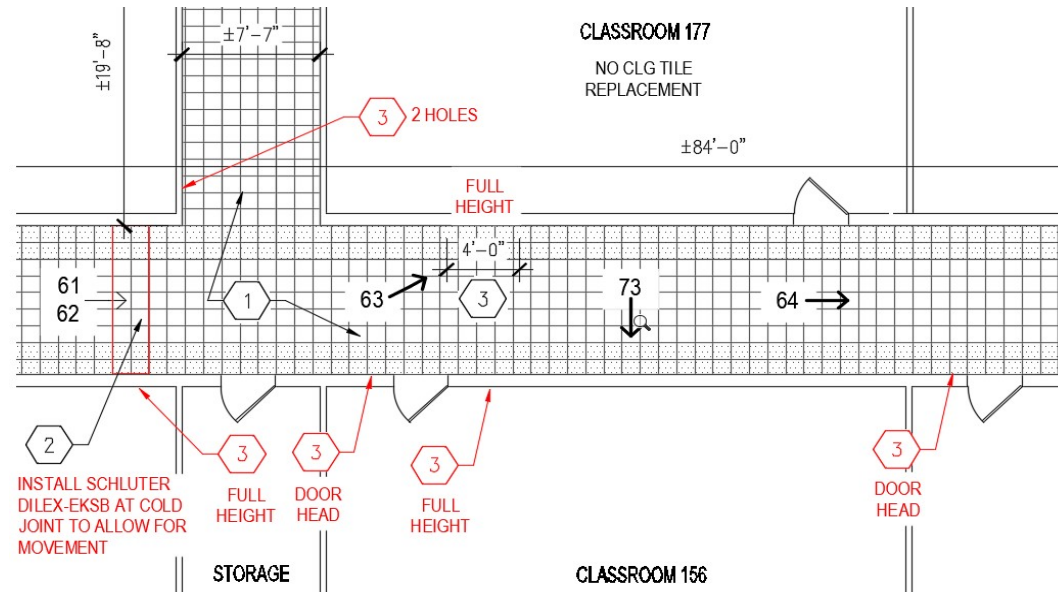
Item No. 7 - Drawing Sheet A-101

A. See drawing below for clarification. The new expansion joint was mis-located on the plan (indicated by red dashed box) See correct location below. Use Schluter DILEX-EKSB at concrete cold joint to allow for movement.



Item No. 8 - Drawing Sheet A-102

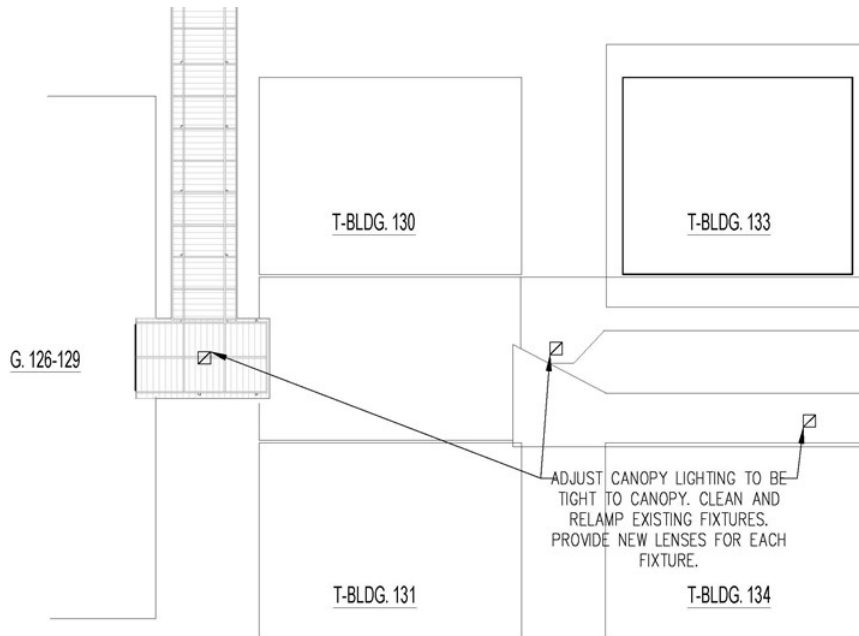
A. See drawing below for clarification. See Keynote #3 references for areas of additional Plaster repair. See also, install Schluter DILEX-EKSB at concrete cold joint to allow for movement.



- B. The 4 ft. patch (Keynote #3) at Cross Corridor 1/A-102 revise to “INSTALL BACK-TO-BACK J-MOLD TRIM AND REPAIR PLASTER AND CAULK JOINT. PAINT WALL CORNER TO CORNER. In the same area, on South wall, patch and repair plaster above doors at 4 locations (approx. 4 sf each). Paint from corner at Cross Corridor to logical stopping point above door at Classroom 157.

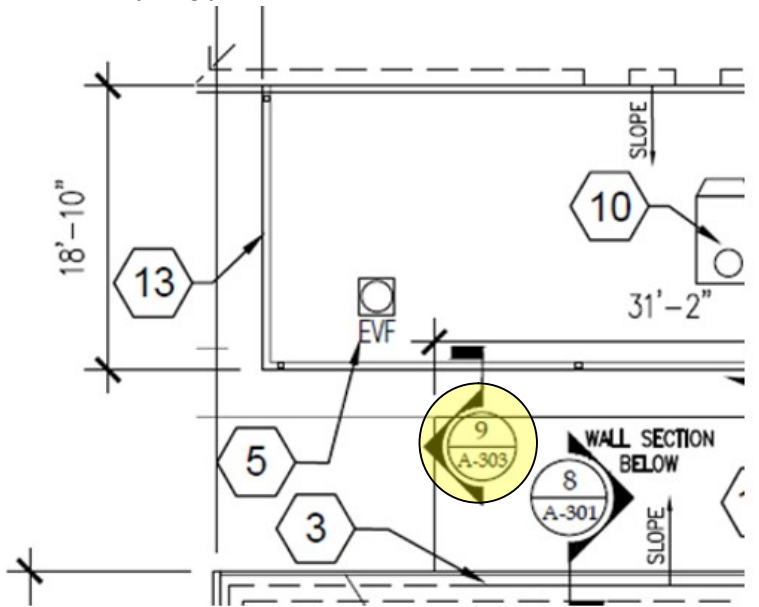
Item No. 9 - New Item

- A. See drawing below. For exterior canopy lighting at T-Bldgs.



Item No. 10 - New Item

- A. See drawing below. Section Cut referencing Dtl. 9/A-303 is mis-referenced. The proper reference is 9/A-301.



Item No. 11 - New Item

- A. Provide perimeter up-lift hold down enhancement for Roof Type – 1C. See detail 3/A104 for similar condition.

Item No. 12 - New Item

- A. Remove and replace 4 VCT tiles in doorway at room labeled LIBRARY on 1/A-102.

Item No. 13 - New Item

- A. Key Note #9 (at Teacher’s Lounge ONLY) revise to state: install backer-rod and caulk. Paint above upper cabinets to ceiling and corner to corner to match existing.

Item No. 14 - Job Staging Area and Security Access

- A. Staging Area will be in South Lawn at 18th Street side of the building. Provide orange fencing around critical root zone (1/2 canopy diameter) of all Oak Trees. Keep Lull Access points to a minimum to prevent damage to lawn and sidewalks. Contractor will be responsible for replacing damaged sidewalks and repairing / regrading lawn, use mats etc. to minimize damage.



- B. Work done inside areas inside School security fencing shall be done after school hours or on holiday or weekends whenever possible. If not possible to do so an approved 6’ tall chain link fence shall be installed to separate work areas from children.

Item No. 15 - Lead Paint

- A. The building was tested for lead paint. There was a positive sample was found on the blue paint on the bollards and canopy frames. Contractor is to follow EPA guidelines when

encountering lead paint.

[Lead Renovation, Repair and Painting Program Rules | US EPA](#)

Item No. 16 - Asbestos Abatement Coordination

A. There is a known presence of Asbestos Containing Materials ACM on this campus. The ACM is in the form of :

- 1). Transite soffit panels at the Multi-Purpose Room and
- 2). Steam pipe insulation throughout the Main Building.

CPSB will be contracting directly with an Abatement Contractor to remediate the hazardous material. The successful Contractor under these bid documents will have no responsibility to handle, abate or be exposed to said materials. The purpose of this addendum item is to notify bidders that there will potentially be some overlap in the work of the two contractors. The majority of abatement work will be indoors and have no impact on roof work. Sufficient time has been allocated in the contract to complete the interiors portion of this work once abatement is complete.

Unit price for ceiling tile and grid is for the eventuality that asbestos remediation contractor repairs and or replaces work defined in these contract documents as part of their work under a separate contract and may be removed from the scope of this project.

END OF ADDENDUM NO.1



A Professional Architectural Corporation
201 St. Charles Avenue
Forty-First Floor
New Orleans, Louisiana 70170-4100
Voice 504.586.9303 Fax 504.582.1305

Project: Hurricane Laura Repairs
Calcasieu Parish School Board
Oak Park Elementary School
Main Building Repairs Package
2001 18th Street
Lake Charles, LA 70601
School LOC Code: HL-043-03
S+MBA Project No. 12030.3

April 25, 2023

Subject: Bids, Bonds and Contracts:
Pre-Bid Meeting

Mrs. William Barry
Project Manager
CSRS, Inc.
6767 Perkins Road
Suite 200
Baton Rouge, Louisiana 70808

Dear Mr. Barry:

A pre-bid meeting was held at the site of the above-captioned project at 10:00 on April 25, 2023. The following persons were in attendance.

Mike Solari	Solari+Mathes Brierre	214-505-9977	msolari@sbcglobal.net
Will Tregre	Solari+Mathes Brierre	504-586-9303	wtregre@mathesbrierre.com
William Barry	CSRS Inc.	708-299-5598	william.barry@csrsinc.com
Greg Bertrand	Dunhill Development	832-986-0040	gbertrand@dunhilldevelopment.com
Ronnie Ferguson	Fergusson Roofing	337-785-6053	fergusonroofing@yahoo.com
Skip Session	Fergusson Roofing	337-477-4792	
Lane Daughdrill	Daughdrill Roofing	337-439-5806	Larry@daughdrillroofing.com
Lee Daughdrill	Daughdrill Roofing	337-439-5806	Lee@daughdrillroofing.com
Eddie Touchstone	Alfred Palma LLC	337-436-0830	Eddie@aplamainc.com
			estimating@apalmainc.com
Tim Klinect	Sibley Construction	337-889-6966	tim@sibleyconstruction.com
Eugene Tancret	Roofing Solutions		estimating@roofingsolutions.com
Jaime Franco	Ryder and Ryder		jaimefranco1925@gmail.com
Daryl McGuffee	Priola	337-532-6392	DMcGuffee@Priola.com
Larry Mills	Croup Contractors	225 413-1378	lmills@groupcontractors.com
Dany Kusters	Trahan Construction	302-388-1940	daniela@trahanconstruction.com
Milo Correa	Trahan Construction	337-274-9508	milo@trahanconstruction.com

The following items were discussed:

1. Introduction
Owner & Architect
Attendees-introduce themselves and sign-in on form
2. Brief description of the project

3. **Contract Time:** Bidder acknowledges that all phases of the Project shall be Substantially Complete in 130 calendar days from receipt of written Notice to Proceed from Owner. Liquidated damages are \$700 per day.
4. The construction duration may be extended to include the duration of abatement work which is not included in the scope of this project.
5. **Protection:** Contractor shall protect the buildings and existing property that is adjacent to the work being performed under this contract and protect the public from construction activities.
6. **Access to the site and restrictions.** Work area, Staging area, parking
 - a) Coordinate with Owner for utility shut-downs
 - b) Provide temporary 6' tall chain-link fencing (orange plastic fencing not acceptable) to completely isolate Work Area(s) from existing adjacent school facilities where students may be present. Gates are to be avoided if possible; if not they must be capable of being padlocked from school side. All Contractor and subcontractor personnel must wear company badges and/or uniform shirts and/or similar apparel that somehow identifies their employer whenever they are on-site.
 - c) For projects where physical isolation of Work Area(s) by fencing is not achievable, CPSB badges must be obtained by Contractor prior to commencing work. For such projects, Contractor and his subs will be required to submit list of personnel and digital photo for each for CPSB to create badges.
 - d) Contractor parking is available on 17th Street.
 - e) To the extent practical access to the construction area should be outside of the fenced school yard area.
 - f) Work required at the perimeter fascia must be accomplished from within the fenced area, this work should be coordinated with CPSB.
7. Working hour restrictions are not limited, although the bidders were encouraged to schedule their arrival around the school's peak arrival and discharge times, which are 7:15 – 7:45 am and 3:05-3:35 pm
8. Bids will be received no later than 11:00 a.m. on May 4, 2023.
9. Bidders were reminded to submit all accompanying documents with their bid, which include the Bid Form, Bid Bond and Corporate Resolution. The additional documentation is required within 10 days of the bid date.
10. It is the Architects intention to issue the last addendum on April 28, 2023 or at the latest on the morning of May 1, 2023, so any questions shall be submitted timely to accommodate the last addendum.
11. All questions should be e-mailed to Mike Solari, msolari@sbcglobal.net.
12. Should contractors wish to visit the site following the pre-bid meeting, during school hours, sign in at the Administration office. The school will be undergoing testing beginning Wednesday April 26, 2023 for one week and the building will not be accessible to Contractors.

13. Walk of the site.

If you have any questions, please do not hesitate to contact us.

Yours very truly,

Solari + Mathes Brierre
A Joint Venture



E. W. Tregre II, AIA, NCARB
Principal



Michael Solari, Architect
Principal

cc: CSRS, Inc.
Attn: Ms. Natalie Graham

EWT|MSS/ewt

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Calcasieu Parish School Board
3310 Broad Street, Lake Charles, LA 70615

BID FOR: Hurricane Laura Damages Restoration Project:
Main Building Package, Oak Park Elementary
School
LOC Code: HL-043-03
2001 18th St, Lake Charles LA. 70601

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Solari+Mathes Brierre, a Joint Venture, Architects and dated: April 6, 2023

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____ .

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:
_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 Not Applicable
Not applicable _____ Dollars (\$Not applicable _____)

Alternate No. 2 Not Applicable
Not applicable _____ Dollars (\$Not applicable _____)

Alternate No. 3 Not Applicable
Not applicable _____ Dollars (\$Not applicable _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: Calcasieu Parish School Board
3310 Broad Street, Lake Charles, LA 70615

BID FOR: Hurricane Laura Damages Restoration Project:
Main Building Package, Oak Park Elementary School
School LOC Code: HL-043-03
2001 18th St, Lake Charles LA. 70601

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ Removing existing metal deck and installing new 22 gauge galvanized metal deck. See Section 01026-Unit Prices			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
1	1	Sq. ft.		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ Removing existing lightweight insulating fill (Zonolite). See Section 01026-Unit Prices			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
2	1	Sq. ft		

DESCRIPTION:	<input checked="" type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ Furnish and installing new ceiling panels & grid. See Section 01026-Unit Prices			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
3	1	Sq. ft		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)

Wording for "DESCRIPTION" is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

UNIT PRICES

SECTION 01026

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for Unit Prices.
- B. Documentation of changes to Contract Sum/Price and Contract Time (if applicable).

1.02 REQUIREMENTS

- A. Unit prices, quoted on Bid Form as a price per unit of measurement, will be used during construction as basis for payment for added or deleted quantities of items quoted which may be required to deviate from the base bid quantities shown on the drawings. Items specifically indicated on the drawings shall be included in the base bid price.
- C. Include as part of each, miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not specifically mentioned as part of the Unit Price.
- D. Unit prices include all necessary materials, delivery, installation, insurance, overhead, profit and applicable taxes.
- E. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured by an independent entity.
- D. Execute accepted unit prices under the same conditions as other Work of this Contract. The contract sum will be adjusted by appropriate modification resulting from unit price quantities.

1.03 SCHEDULE OF UNIT PRICES

- A. **Unit Price No. 1:** Cost. for removing existing metal deck and installing new 22 gauge galvanized metal deck specified in Section 05310-Steel Decking, **per sq. ft.** Removal of the existing roof substrate to extent indicated on the drawings is a part of the base bid, and also the deck replacement indicated on the drawings is a part of the base bid.
- B. **Unit Price No. 2:** Cost. for removing existing lightweight insulating fill (Zonolite) with average 3 inch thickness down to and including existing metal roof deck. Replace metal deck with new 22 ga. metal deck; **per sq.ft.** This condition occurs at roof type 1C, Base bid includes roofing system as detailed and indicated on the drawings
- C. **Unit Price No. 3:** Cost. for furnishing and installing new ceiling panels and grid specified in Section 09511-Acoustical Ceilings in classrooms affected by asbestos abatement for existing pipe insulation; **per sq.ft.** Existing ceiling grid and ceiling panels are removed as part of the abatement work by Others

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

Revised, issued in Addendum1

MODIFIED BITUMEN ROOFING

SECTION 07550

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Project Summary: 2-ply (SBS) Modified Bituminous Membrane Roofing for torch application
 1. Remove existing gravel, roof, substrate, decking, lightweight fill and related sheet metal items as indicated on the drawings and required to accommodate the new decking and roof system. Install new treated wood blocking at perimeter.
 2. Mechanically attach specified Polyisocyanurate, tapered Polyisocyanurate and Gypsum cover board to the metal deck as specified. Where indicated on the drawings to mechanically fasten roofing components, the type, size and spacing of the non-corrosive fasteners installed shall meet the wind loads and uplift requirements specified
 3. Heat fuse one ply of SBS modified base sheet over the insulation.
 4. Fabricate and install all miscellaneous sheet metal items. Strip in with SBS modified base sheet.
 5. Flash all wall flashing and curb type penetrations with one ply of the specified SBS modified base sheet.
 6. Fabricate and install new drip edge, gutters and downspouts as specified. Strip in with SBS modified base sheet.
 7. Install one ply of a high-performance mineral surfaced modified cap sheet across the field of the roof and up 2” above cant strip. Immediately broadcast granules into bleed out.
 8. Install one ply of a high-performance mineral surfaced modified cap sheet at all wall flashing and curb type penetrations.
 9. Inspect roof area with Owner and Owner’s rep prior to surfacing.
 10. After 30 days, apply two applications of the specified protective coating.
 11. Issue 30 year NDL warranty with wind rider up to the design pressures in stamped wind uplift calculations.
 12. Note: Contractor is solely responsible for providing weathertightness of the new and existing building(s) at all times during the contract time. Provide all required temporary weather protection at all new construction, and at all openings and other construction removed as indicated and also construction removed as required to accommodate the new.
 13. Where “Lt Wt DECK” is indicated on the drawings it refers to “Lightweight Insulating Concrete Fill”
 14. Provide hot-mop application where indicated on the drawings.
- B. Related Requirements:
 1. Division 07 Section "Sheet Metal Flashing and Trim"
 2. Division 07 Section "Joint Sealants"

Revised, issued in Addendum1

3. Division 07 Section “Roof Deck Insulation”

C. Scope of Work:

1. This project consists of removing existing roofing and insulation, installing a new, high performance, fire retardant, SBS modified roofing membrane system. The finished system shall be complete including installation of sheet metal related items, wall panels, roof panels, edge metal and base flashings, and waterproofing. The finished system shall result in a water-tight installation.

1.3 DEFINITIONS

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

1.4 REFERENCES

1. ASTM D 41, Specification for Asphalt Primer Used in Roofing, Damp-proofing, and Waterproofing
2. ASTM D 312, Specification for Asphalt Used in Roofing
3. ASTM D 451, Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products
4. ASTM D 1079, Terminology Relating to Roofing, Waterproofing, and Bituminous Materials
5. ASTM D 1227, Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
6. ASTM D 1863, Specification for Mineral Aggregate Used on Built-Up Roofs
7. ASTM D 2178, Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
8. ASTM D 2822, Specification for Asphalt Roof Cement
9. ASTM D 2824, Specification for Aluminum-Pigmented Asphalt Roof Coating
10. ASTM D 3019, Specification for Lap Cement Used with Asphalt Roll Roofing
11. ASTM D 4601, Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
12. ASTM D 5147, 1991 Test Method for Sampling and Testing Modified Bituminous Sheet Materials
13. ASTM E 108, Test Methods for Fire Test of Roof Coverings
14. FM, Factory Mutual
15. NRCA, National Roofing Contractors Association

1.5 PRE-APPLICATION MEETING

- A. Approximately 2 weeks before the scheduled commencement of the modified bitumen sheet roof system and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing that must precede or follow roofing work (including mechanical work if any), Architect/Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:

Revised, issued in Addendum1

1. Review foreseeable methods and procedures related to roofing work.
2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by other trades.
3. Review structural loading limitations of deck and inspect deck for deflections and for required attachment.
4. Review roofing systems requirements (drawings, specifications, and other contract documents).
5. Review required submittals, both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying, and material usage accounting procedures.
8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
9. Record discussion of the pre-application meeting, including decisions and agreements reached. Furnish a copy of this record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
10. Review notification procedures for weather or non-working days.
11. Perform pull out test(s) with the specified fasteners, if not performed prior to the meeting, to verify the actual pull-out capacity of the fasteners, and adjust engineering calculations and fastener sizes/ layouts accordingly.

1.6 SUBMITTALS

- A. The following items shall be submitted in a letter issued by the Roof Manufacturer, along with the roofing submittals, prior to the Roofing Pre-Installation Conference:
1. Certification by the Roofing Manufacturer that the installer is an “Approved Applicator”, in good standing, and specifically stating that the installer is both acceptable and authorized to install the proposed roofing system(s), including all required warranties.
 2. Certification by the Roofing Manufacturer that the proposed system will comply with the manufacturer’s requirements, in order to qualify the project for all specified warranties and guarantee(s).
 3. Certification that the Roofing Manufacturer will provide the required full 30 year, Non-Pro-rated, No Dollar Limit, Weather Tightness Warranty with wind rider up to the design pressures.
- B. Product Data:
1. Manufacturer's Design Standards and other data for each item or product provided, as needed to prove compliance with specified requirements.
 2. Manufacturer's installation instructions.
- C. Shop Drawings:

Revised, issued in Addendum1

1. The Roofing Manufacturer shall prepare Shop Drawings,
 - a. Include all typical and non-typical roof system details, including, but not limited to: details of edge conditions, joints, corners, transitions, trim, flashing, closures, penetrations, supports, anchorages, and special details related to the project.
 - b. Detail and specify locations for attachments included in the Engineering Calculations.

 - D. Calculations:
 1. The Roofing Manufacturer and/or his Engineer shall calculate the wind uplift pressures for each zone and exposure, from the specified Design Wind Speed.
 2. Roofing system shall be designed in accordance with IBC 2021, and the wind uplift requirements of ASCE 7-16, See drawings for required wind speeds.
 3. Calculations defining wind loads on all roof areas, based on the specified Building Codes, allowable fastener loads, and required number of fasteners required to secure the roof system to the designated substructure.
 4. Engineering Calculations shall be stamped by a Professional Engineer, licensed in the State of Louisiana.

 - E. Certifications:
 1. Letter of certification from the Roofing Manufacturer that the Roofing Installer is in compliance and meets the specified requirements.
 2. Letter of certification from the Roofing Manufacturer that materials provided for the project have been produced in accordance with the strictest applicable standards to ensure quality.
 3. Certified test results by a nationally recognized testing laboratory or a manufacturer's laboratory, and witnessed and certified by a professional engineer, in accordance the specified performance test methods and criteria for each product or system.
 4. Roofing Manufacturer's certification that materials are in compliance with the specifications.
 5. Manufacturer's affidavit that materials provided for, and used in the Project contain no Asbestos.

 - F. Testing Reports: Showing that the roof system been tested in accordance with specified performance testing requirements.

 - G. Field Reports: As prepared by the Roofing Manufacturer's Technical Field Representative, and required to ensure conformance with the warranty and Weathertightness requirements specified herein.
- 1.7 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For Installer.
 - B. Manufacturer's Certificates: Signed by roofing manufacturer certifying that roofing system complies with specified performance requirements, will provide inspections, and issue the

Revised, issued in Addendum1

specified warranty.

- C. Sample Warranties: For manufacturer's special warranties.
- D. Class of Roofing System: Certification of Class A Roofing System.

1.8 CLOSEOUT SUBMITTALS

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

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified firm that is authorized and approved by the roofing system manufacturer to install the manufacturer's product and that is eligible to receive manufacturer's special warranty. A minimum of five (5) years of experience is required.
- B. Manufacturer Qualifications: Roofing system manufacturer shall have a minimum of 10 years of experience in manufacturing modified bitumen roofing products in the United States and be ISO 9001 certified.
- C. Roofing products or methods to be considered must have a minimum of ten (10) years successful performance in roofing and re-roofing applications.
- D. It is the intent of this specification to provide a roof system with an ASTM E 108 Class A fire rating.
- E. Installer's Field Supervision: The roofing system installer is required to maintain a full-time Superintendent on the job site during all phases of modified bituminous sheet roofing work and at any time roofing work is in progress. Proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen and on the roof at all times.
- F. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction.

1.10 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 and handle roofing sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end and cover these materials with a canvas tarpaulin or other breathable material (not polyethylene).
- C. 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.

Revised, issued in Addendum1

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
 - D. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
 - E. Do not leave unused rolled goods on the roof overnight or when roofing work is not in progress. These items must be stored as mentioned above.
 - F. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.
- 1.11 FIELD 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.
 - B. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or remove roofing when a 40% chance of precipitation is expected.
 - C. Do not apply roofing insulation or membrane to damp deck surface.
 - D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
 - E. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- 1.12 INSPECTIONS AND TESTS
- A. The Architect, Owner's Representative, Project Manager and Roofing Manufacturer's Technical Field Representative shall at all times have access to the job site and work areas.
 - B. The Contractor shall provide proper and safe facilities for such access and inspection, in accordance with applicable Federal, State, and Local laws and regulations.
 - C. Inspections.
 1. The Architect, Owner's Representative, and/or Project Manager's Inspections:
 - a. The Architect, Owner's Representative, and/or Project Manager will perform periodic inspections throughout the duration of the project.
 - b. The Architect, Owner's Representative, and/or Project Manager shall inspect the work after the completion of each major phase of construction.
 2. Manufacturer's Inspections:
 - a. An Authorized Technical Field Representative of the Roofing Material Manufacturer

Revised, issued in Addendum1

- shall make a site visit and inspection, no less than three (3) times each week, for the duration of the performance of Work, to ensure that the installation is installed in strict accordance with the Roofing Manufacturer's requirements, the Contract Documents, the Project Specifications, the approved Shop Drawings and Engineering Data, and the Roofing Manufacturer's standard details.
- b. A written report of each site visit and inspection, consisting of photos and written documentation, shall be prepared by the Roofing Manufacturer's Authorized Technical Field Representative, and shall be forwarded over to the Architect, the Owner's Representative, and/or the Project Manager on each Monday following the prior week.
 - c. The Roofing Manufacturer's Authorized Technical Field Representative shall be responsible for:
 1. Keeping the Architect, the Owner's Representative, and/or the Project Manager informed after periodic inspections as to the progress and quality of the work observed.
 2. Calling to the attention of the Contractor those matters observed which are considered to be in violation of the Contract requirements.
 3. Reporting to the Architect, the Owner's Representative, and/or the Project Manager, in writing, of any failure or refusal of the Contractor to correct unacceptable practices called to his attention.
 4. Confirming, after completion of the work, and based on his observations and tests, that he has observed no application procedures, or other issues in conflict with the Roofing Manufacturer's requirements, the Contract Documents, the Project Specifications, the approved Shop Drawings and Engineering Data, and/or the Roofing Manufacturer's standard details.
- D. Any failure by the Architect, the Owner's Representative, the Project Manager, or the roofing manufacturer's Technical Field Representative to observe, detect, pinpoint, or object to any defect or noncompliance with the requirements of the Roofing Manufacturer's requirements, the Contract Documents, the Project Specifications, the approved Shop Drawings and Engineering Data, and/or the Roofing Manufacturer's standard details – of work in progress or completed work – shall not relieve the Contractor of, or reduce, or in any way limit, his responsibility of full performance of the work required of him under the requirements of the Roofing Manufacturer, the Contract Documents, the Project Specifications, the approved Shop Drawings and Engineering Data, and/or the Roofing Manufacturer's standard details.
- E. The Architect, the Owner's Representative, and/or the Project Manager, on behalf of the Owner, may require tests and inspections as necessary to verify the quality of the roofing materials and/or workmanship of installation.
1. The Owner shall select the Testing Laboratory and shall pay for all costs associated with initial testing.
 2. The costs for any initial tests meeting the applicable requirements shall remain the responsibility of the Owner.
 3. The costs for any initial tests not meeting the applicable requirements shall become the responsibility of the Contractor, and shall be deducted by the Owner from the Contractor's payment for the work.
 4. The costs for re-testing of any work not meeting the applicable requirements shall be the responsibility of the Contractor, and shall be deducted by the Owner from the Contractor's payment for the work.
 5. Subsequent non-compliance with applicable requirements will result in the Owner

Revised, issued in Addendum1

assigning a full time, Third-Party Quality Control Representative to the project. The costs for the Third-Party Quality Control Representative shall be the responsibility of the Contractor, and shall be deducted by the Owner from the Contractor's payment for the work.

6. Laboratory tests shall be performed in accordance with the applicable ASTM standard testing procedures.

1.13 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet roofing with related units of work specified in other sections to ensure that roof assemblies, including roof accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted. Begin and apply as much roofing in one day as can be completed that same day.

1.14 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of the roofing system that fail in materials, workmanship, and aesthetics within specified warranty period.
 1. Warranty Period: Thirty (30) Year, "No Dollar Limit" "Edge to Edge" Warranty from date of Substantial Completion. Warranty shall include damage to the roof system due to wind pressures less than the design pressures in the stamped wind uplift calculations.
- B. Contractor Warranty: Submit roofing Installer's warranty, signed by Installer, covering the Work of this Section, including all components of roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
 1. Warranty Period: Two years from date of Substantial Completion.
- C. Annual Inspections: Membrane manufacturer will provide, free of charge, at the annual request of the Owner, annual inspections for the life of the warranty.

PART 2 - PRODUCTS**2.1 PRODUCTS**

- A. Description: fully-adhered 2-ply SBS modified bitumen system suitable for application method required, cap sheet to be mineral granule surface with UL Class A and FM I-90 wind uplift criteria, as required to meet the wind speed requirements of IBC-2015 and ASCE 7-10 (specified herein, above).
- B. Approved manufacturers are as listed below:

Revised, issued in Addendum1

1. The Garland Company, Inc. and Ecology Roof Systems
 2. Prior-approved equal.
- C. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.
- D. Substitutions: Submit requests per Specifications.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation or other defects in construction. Roofing and base flashings shall remain watertight.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Roofing System Design: System shall be designed in accordance with IBC-2021, and the wind uplift requirements of ASCE 7-16, for the geographical location based on wind speed indicated on the drawings and corners as defined in Code.
- D. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A. Identify products with appropriate markings of applicable testing agency.

2.3 ROOFING SHEET MATERIALS

- A. Base Ply: ASTM D 5147, Grade S, 110 mil minimum thickness, SBS- modified asphalt sheet (reinforced with glass fibers); smooth surfaced; heat fusible; suitable for application method specified. HPR Torch Base by The Garland Company, Inc. or prior-approved equal.
- B. Top Ply: ASTM D 6162, Grade G, Type III, 195 mil minimum thickness; SBS-modified asphalt sheet (reinforced with glass fibers; white granule surfaced; heat fusible; suitable for application method specified. Stressply IV Plus Mineral by The Garland Company, Inc. or prior-approved equal.

2.4 BASE FLASHING SHEET MATERIALS

- A. Base Ply Sheet: ASTM D 5147, Grade S, 90 mil minimum thickness, SBS-modified asphalt sheet (reinforced with glass fibers); smooth surfaced; heat fusible; suitable for application method specified.
- B. Granule-Surfaced Flashing Sheet: ASTM D 6162, Grade G, Type III, 195 mil minimum thickness; SBS-modified asphalt sheet (reinforced with glass fibers; white granule surfaced; heat fusible; suitable for application method specified.

2.5 AUXILIARY ROOFING MATERIALS

- A. Roof Coating: Aluminum Roof Coating. Garlanbrite by The Garland Company, In. or pre-

Revised, issued in Addendum1

approved equal.

- B. Asphalt Primer: ASTM D 41. Garlaprime by The Garland Company, In. or pre-approved equal.
- C. Asphalt Roofing Cement: Garlaflex by The Garland Company, In. or pre-approved equal.
- D. Quick Setting Grout: Pitch pocket base filler as provided by prime material supplier. GarRock by The Garland Company, In. or pre-approved equal.
- E. Mastic Sealant: Polyisobutylene, plain or modified bitumen; non-hardening, non-migrating, non-skinning, and nondrying.
- F. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel. Nails and fasteners shall be flush-driven through flat metal discs of not less than 1-inch diameter. Metal discs may be omitted when one piece composite nails or fasteners with heads not less than 1-inch diameter are used. Fasteners shall be designed for fastening roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
- G. 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.
- H. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements specified in the appropriated steel deck specifications.
 - 4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.
- 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

Revised, issued in Addendum1

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 INSTALLATION, GENERAL

- A. Comply with roofing system manufacturer's written instructions.
- B. Substrate-Joint Penetrations: Prevent adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.4 ROOFING INSTALLATION, GENERAL

- A. Start installation of roofing in presence of manufacturer's technical personnel.
- B. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing modified bitumen sheet system.
- C. If applicable, where roof slope exceeds 3/4 inch per 12 inches, install roofing membrane sheets parallel with slope.
 - 1. Back nail roofing sheets to substrate according to roofing system manufacturer's written instructions.
- D. Coordinate installation of roofing system so insulation and other components of the roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing 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.

3.5 MECHANICAL COORDINATION

- A. Roof top mounted equipment shall be mounted level.
 - 1. Provide curbs with sloped bases, as required to match the roof deck or structural framing slope. Where roof structure is level, provide level base curbs.
 - 2. Provide curbs with level tops, to allow equipment to be installed level.
 - 3. Provide curb types & heights as required to achieve required minimum base flashing criteria.
 - 4. Unless noted otherwise, curbs shall be fabricated from galvanized steel.
 - 5. Unless specifically noted otherwise, provide insulated curbs.
- B. Gas Equipment heights as required to achieve minimum 3" vertical clearance between roof

Revised, issued in Addendum1

surface and bottom of drip leg piping cap.

- C. For safety, ease of maintenance, and to minimize damage to roof system components, no equipment located within 5 feet of roof expansion joints and/or roof divider joints, vertical parapets; no equipment within 10 feet of roof edges.
- D. Roof system thermal insulation values based on HVAC system design.
- E. Coordinate the removal or relocation of mechanical equipment with the Owner's Representative, and/or Project Manager.
- F. Where roofing work involves removal, relocation, or replacement of existing mechanical equipment, coordinate and phase work to maintain climate control on building at all times.
- G. **DO NOT DISCONNECT OR REMOVE MECHANICAL UNITS WITHOUT OWNER'S PRIOR APPROVAL.**

3.6 BASE-PLY SHEET INSTALLATION

- A. Heat Fused Base: Install one layer of SBS heat fused base sheet to a properly prepared insulation or roof deck board.
 - 1. Shingle in proper direction to shed water on each area of roofing.
 - 2. To a suitable substrate, lay out the roll in the course to be followed and unroll six (6) feet.
 - 3. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
 - 4. After the major portion of the roll is bonded, re-roll the first six (6) feet and bond it in a similar fashion.
 - 5. Repeat this operation with subsequent rolls with side laps of four (4) inches and end laps of eight inches.
 - 6. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
 - 7. Extend underlayment two (2) inches beyond top edges of cants at wall and projection bases. Install base flashing ply to all perimeter and projections details.

3.7 MISCELLANEOUS ROOFING COMPONENTS

- A. Drip Edge:
 - 1. Inspect the wood nailer to assure proper attachment and configuration.
 - 2. Run base ply over to the outside of blocking.
 - 3. Prime metal edge at a rate of one hundred (100) square feet per gallon and allow surface to dry.
 - 4. Mechanically attach metal flashing at 3" c/c staggered.
 - 5. Strip in flange with base flashing ply covering entire flange in bitumen with six (6) inches on to the field of roof. Assure ply laps do not coincide with metal laps.

Revised, issued in Addendum1

6. Install a second ply of modified flashing ply over the base flashing ply, nine (9) inches onto the field of the roof.
- B. Expansion Joint:
1. Run base ply over to the expansion area. Cut prior to installing expansion joint.
 2. Prime metal edge at a rate of one hundred (100) square feet per gallon and allow for drying.
 3. Strip in flange with base flashing ply covering entire flange in bitumen with six (6) inches on to the field of roof. Assure ply laps do not coincide with metal laps.
 4. Install a second ply of modified flashing ply over the base flashing ply, nine (9) inches on to the field of the roof.
- C. Curb Type Penetrations:
1. Minimum curb height is eight (8) inches. Prime vertical at a rate of 100 square feet per gallon and allow for drying
 2. Set cant in insulation adhesive. Run base ply over cant a minimum of two (2) inches.
 3. Install base flashing ply covering curb set in bitumen with six (6) inches on to field of the roof.
 4. Install a top ply of modified flashing over the base flashing ply, nine (9) inches on to the field of the roof. Attach top of membrane to top of curb and nail at eight (8) inches c/c. Apply a three-course application of mastic and mesh at all vertical seams and allow application to cure prior to coating.
 5. Install pre-manufactured cover. Fasten sides at 24 inches c/c with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
 6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.
- D. Plumbing Vent:
1. Minimum vent height shall be eight (8) inches.
 2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 3. Prime flange of new sleeve. Install properly sized sleeves set in ¼ inch bed of roof cement.
 4. Install base flashing ply by torch.
 5. Install membrane by torch.
 6. Caulk the intersection of the membrane with elastomeric sealant.
 7. Turn sleeve a minimum of one (1) inch down inside of stack.
- E. Flange Type Vents:
1. New vents shall match existing size and profile.
 2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 3. Prime flange of new vent and set in ¼ inch bed of elastomeric roof cement.
 4. Install base flashing ply by torch.
 5. Install membrane by torch.
 6. Caulk the intersection of the membrane with elastomeric sealant.

Revised, issued in Addendum1

F. Flashing at Wall:

1. Minimum flashing height is 8". Install insulation and roof deck board as detailed.
2. Set cant in bitumen. Run all roofing plies over cant a minimum of 2".
3. Prepare all walls and penetrations to be flashed with asphalt primer at the rate of ½ gallon per square.
4. Heat fuse bottom ply of flashing membrane.
5. The heat fused flashing membrane will be adhered to an underlying base ply of glass felt bonded in asphalt when torching near wood nailers or combustible surfaces.
6. After the laps have been tested, and a complete positive bond has been achieved, the applicator shall heat the seam edge and trowel along the seam edge. Troweling shall continue until a sloped, beveled edge has been produced.
7. Heat fuse top ply of flashing membrane.
8. After the laps have been tested, and a complete positive bond has been achieved, the applicator shall heat the seam edge and trowel along the seam edge. Troweling shall continue until a sloped, beveled edge has been produced.
9. Install a termination bar at the top of all base flashing. The termination bar shall be mechanically attached every 8" on center. Apply a three course application of mastic and reinforcing mesh over the term bar and onto the wall.
10. All vertical laps in base flashing system shall receive a reinforcement of flashing cement / mesh / flashing cement.

3.8 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

A. Heat Fused or Torch Applied:

1. Over the SBS torch base sheet underlayment, lay out the roll in the course to be followed and unroll six (6) feet. Seams for the top layer of modified membrane will be staggered over the SBS torch base sheet seams.
2. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
3. After the major portion of the roll is bonded, re-roll the first six (6) feet and bond it in a similar fashion.
4. Repeat this operation with subsequent rolls with side laps of four (4) inches and end laps of eight (8) inches.
5. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.

B. Laps: Accurately align roofing 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.

C. Install roofing sheets so side and end laps shed water.

3.9 FLASHING AND STRIPPING INSTALLATION

Revised, issued in Addendum1

- A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows:
 - 1. Prime substrates with asphalt primer if required by roofing system manufacturer.
 - 2. Flashing-Sheet Application: Torch apply flashing sheet to substrate.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 6 inches onto field of roofing membrane.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 - 1. Install a termination bar at the top of all base flashing. The termination bar shall be mechanically attached every 8" on center. Apply a three course application of mastic and reinforcing mesh over the term bar and onto the wall.
 - 2. All vertical laps in base flashing system shall receive a 6 inch wide heat fused reinforcing ply of mineral surfaced base flashing.
- D. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.

3.10 SURFACING

- A. Bleed Out:
 - 1. Immediately broadcast new clean minerals into the bleed out of the modified roof membrane.
 - 2. The overall appearance of the finished roofing application is a standard requirement for this project. The Roofing Contractor shall make necessary preparations, utilize recommended application techniques (i.e. to immediately apply the specified granules into the bleed out) to ensure that the finished application is acceptable to the Owner. The Architect and Owner will be the sole judge as to whether the finished surface is acceptable.
- B. Roof Coating:
 - 1. After a final inspection has been performed and all items have been corrected on the punch list, Contractor shall apply specified coating.
 - 2. Apply two applications of the specified coating at rate of 3/4 gallons per square per coat. First pas shall be North and South. Second pass shall be East and West.

3.12 HOT-MOP APPLICATION

- A. All surfaces to be covered shall be smooth, dry and free from dirt, debris and foreign material which will affect the adherence and integrity of the specified materials. Installation of the roofing felts constitutes the acceptance of the roof deck by the Installer.
- B. Kettles shall be located on the ground at a safe distance from the building. The Contractor shall provide one (1) 10 lb. capacity ABC rated fire-extinguishers close to the kettle location and on the roof. Disperse materials to reduce fire hazard. Kettles brought to the

Revised, issued in Addendum1

job shall be free of all previous job materials. Protect the side of the building with other than roofing felt where bitumen and other materials are being lifted to the roof.

- A. Use woven fiberglass mops only for mopping operations. Recent investigations reveal a fire hazard exists due to spontaneous combustion in bituminous soaked cotton mops.
- B. Do not place any load on the roof that will exceed the safe design load.
- C. Provide barricades and, where necessary, signs to ensure the safety of the general public and other workmen on the job from fire and falling materials.
- D. The Roofing Contractor shall be responsible for the proper attachment of the specified work to any work embedded in, in contact with, or forming an integral part of the specified roofing system.
- E. Special care shall be taken to ensure that the bitumen is heated to the proper temperature and that the upper limit is not exceeded. Over-heated bitumen shall not be used and shall be removed from the site. Provide a working and clearly visible thermometer on all kettles.
 - 1. Operations will be shut down and all materials in the kettle rejected until thermometer is provided,
- F. All roof areas shall be accurately laid out for proper lap and sequence of plies, and all plies laid to chalked line. Each ply shall be broomed in place while the bitumen is yet hot and tacky; and felts shall be free from fishmouths, buckles, blisters, or other faulty workmanship.
- G. Water Cut Offs: Provide water cut-offs at the end of each day's work or whenever operations cease due to weather conditions. Water cut-offs shall seal the exposed edges of roof insulation and shall consist of two plies of No. 15 tarred felt extending from a point 12" on the roof deck carrying up and over the roofing and extending 6". Hot mop both edges so that they are weathertight. Follow with a glaze coat. Remove the cut-off before commencing work at that point at a later date.
- J. Asphalt Modified Bitumen Roofing: Two (2) plies of modified bitumen asphalt membrane set in asphalt bitumen equal to systems specified installed in strict accordance with roof manufacturer's printed instructions.
- K. Priming: Prime metal flanges (all jacks, edge metal, lead drain flashings, etc.) and concrete and masonry surfaces with a uniform coating of asphalt primer ASTM D-41-73.
- L. Kettles And Tankers: Kettles and tankers shall be equipped with accurate, fully readable thermometers. Asphalt shall not be heated to or above its flash point. Avoid heating at or above the FBT, should conditions make this impractical, heating must be no more than 25 degrees below the EVT and no more than 25 degrees F above EVT.
- M. Asphalt Temperatures: If the EVT information is not provided, the following asphalt temperature shall be observed. Maximum heating temperature shall be 525 degrees F.

Revised, issued in Addendum1

Minimum application temperature shall be 400 degrees F.

- N. Asphalt Moppings:: All moppings shall be maximum 25 pounds/square, and shall be total in coverage, leaving no breaks or voids.
- O. Bitumen Consistency: Cutting or alterations of bitumen primer, and sealants will not be permitted.
- P. Roofing Application: All layers of roofing shall be laid free of wrinkles, creases or fishmounts. Sufficient pressure shall be exerted on the roll during application to ensure prevention of air pockets. Lap seams of the cap sheet layer. The courses shall be staggered to ensure this.
1. All layers of roofing shall be laid in relation to the slope of the deck as recommended by the manufacturer.
 2. The base ply shall be fully bonded to the prepared substrate and shall have a minimum of three (3) inch side and end laps. Each sheet shall be applied directly behind the asphalt applicator.
 3. The cap sheet shall be bonded to the base ply and have a minimum of three (3) inch side and end laps. Each sheet shall be applied directly behind the asphalt applicator.
 4. All end laps of the metal-clad modified bitumen flashing sheet shall be primed with a uniform coating of the specified asphalt primer and allowed to thoroughly dry prior to overlapping of adjoining sheets.
 5. All side laps of the metal-clad modified bitumen flashing sheet shall be heat fused to ensure a complete seal.
 6. Maximum sheet lengths and special fastening of the specified roof membrane system may be required at various slope increments where the roof deck slope exceeds one-half (1/2) inch per foot. The manufacturer shall provide acceptable sheet lengths and the required for all roofing sheet applications to applicable roof slopes
- Q. Granule Embedment: Mineral granules shall be broadcast over all bitumen overruns on the cap sheet surface, while the bitumen is still hot, to ensure a monolithic surface color
- R. Catalyzed Acrylic Resin Liquid Flashing System: Install the liquid-applied primer and reinforced flashing/coating system in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the manufacturer.

3.11 FIELD QUALITY CONTROL

- A. 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.
 2. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party.
 3. The Architect reserves the right to request a thermographic scan of the roof during

Revised, issued in Addendum1

- final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided for the Owner by the Roofing Material Manufacturer at a negotiated price.
4. If water and/or moisture is discovered beneath the cap and/or base sheets as a result of improper installation, all membranes must be removed and replaced with new at no additional cost to the Owner. This includes any damaged roof deck board and/or insulation boards.
 - a. If the deck system has sustained damage as a result of water and/or moisture as a result of improper installation. The Contractor must replace and/or make repairs to the deck at no additional cost to the Owner.
 - b. Conduct proper sequencing to eliminate water and moisture prior to reinstallation.
 5. If core cuts verify the presence of damp or wet materials, the Roofing Contractor shall be required to replace the damaged areas at his own expense and reimburse the Owner for the cost of the scan.
 6. Replace deteriorated or defective work found during inspections to a condition free of damage and deterioration at time of Substantial Completion.
 7. The SBS roofing membranes (including the cap sheet) must be free from, but not limited to, ripples, fish mouths, blisters, air pockets, bubbles, etc. The surface must be smooth, flat, and aesthetically pleasing for a finished appearance. The cap sheet surface must be free from, but not limited to, adhesives, mastics, smears, foot tracks of substances, and any other substance that will detract from and cause an unpleasing and unacceptable aesthetic appearance.
 - a. The SBS roofing membrane system will not be accepted if these type conditions are experienced.
 8. The Contractor is to notify the Architect upon completion of corrections.
 9. Following the final inspection, acceptance will be made in writing by the material manufacturer.

3.12 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove 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.

END OF SECTION

FIBER CEMENT SIDING, PANELS AND TRIM

SECTION 07460

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fiber cement panels for blind-nailed application, soffit panels, trim, fascia and , moulding and accessories as indicated on the drawings; factory primed for field finishing in Section 09900. Installation required for specified wind resistance.

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Wood framing and bracing.
- B. Section 00261 - Sheathing.
- C. Section 07210 - Insulation: Exterior wall insulation.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used
- B. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

- A. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

- A. Product Warranty: Limited, non-pro-rated product warranty: 30 years for siding and boards and 15 years for trim.
- B. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc. and American Fiber Cement Corp.

2.2 SIDING

- A. Panel requirement for Materials: sealed on 5 sides
 - 1. Fiber-cement - complies with ≈STM C 1186 Type A Grade II.
 - 2. Fiber-cement - complies with ≈STM E 136 as a noncombustible material.
 - 3. Fiber-cement - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
 - 4. Soffit Panels: Smooth non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
 - 5. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
 - 6. US Department of Housing and Urban Development Materials Release 1263d
 - 7. Florida State Product Approval FL889.
- 8. Soffit Panels: Smooth non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
- B. Trim: See drawings

2.3 FASTENERS

- A. Wood Framing Fasteners: No. 11 gauge 1-1/2 inches (32 mm) corrosion resistant roofing nails for blind-nailed installation, pre-drill holes for fasteners
- B. Metal: 1-1/4 inches (32 mm) No. 8-18 by 0.375 inch (9.5 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.

2.4 FINISHES

- A. Factory Primer: Provide factory applied universal primer on all surfaces by siding manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install HardieWrap™ flashing, HardieWrap™ Flex Flashing in strict accordance with manufacturers printed instructions.

3.2 INSTALLATION - BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
 - D. Maintain clearance between trim and adjacent finished grade.
 - E. Trim inside corner with a single board trim both side of corner.
 - F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
 - G. Allow 1/8 inch gap between trim and siding.
 - H. Seal gap with high quality, paint-able caulk.
 - I. Shim frieze board as required to align with corner trim..
 - J. Fasten through overlapping boards. Do not nail between lap joints.
 - K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.
 - L. Shim frieze board as required to align with corner trim.
 - M. Install Trim/ Fascia boards to rafter tails or to sub fascia.
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3.3 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION