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ARCHITECTS
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ADDENDUM NO. 6
NEW ADDITION AND RENOVATION FOR RUSSELLVILLE HIGH SCHOOL
PACKAGE B - RENOVATION
Architect Job No. 19-90B
DCM #2021216
July 28, 2022

BIDS DUE:

Tuesday, July 26, 2022, until
2:00 p.m. local time
Russellville City Board of Education
1945 Waterloo Road
Russellville, AL 35653

The Plans and Specifications are hereby amended. The following supersedes all contrary and/or conflicting information and is made part of the contract documents.

USE THE ATTACHED REVISED PROPOSAL FORM AND ACCOUNTING OF SALES TAX FORM

SPECIFICATIONS

1. Section 01010 – Alternates

Revise Alternates as follows:

Alternate No. 1 (Additive) TPO Roofing

The amount to be added to base bid to remove the existing roofing down to the structural decking below. The Contractor is to provide a new TPO roofing system as specified. The new TPO System is to be provided for both the existing roof and the new roof addition.

Alternate No. 2 (Additive) Allowance

The amount to be added to Base Bid for providing Allowance No. 5 as described in Section 01020 - Allowances.

2. Section 07526 - SBS-Modified Bitumen Membrane Roofing

Add this section back to the specifications.

DRAWINGS

1. See Plumbing Supplemental Drawings **PSD6.1 – PSD6.3.**

CLARIFICATIONS

1. Revise the foundation plan to delete all helical anchors and pile caps in the following locations: Compscience 107 east, west, and north walls; Commerce and Technology north, and small portion of east wall past end of existing building towards front wall; Health Science Classroom 119 plan north wall, east wall and small portion of west wall past end of existing building; Health Science Lab 120, north wall and east wall. Keep all anchors and pile caps on south wall of both additions along with anchors and caps on wall adjacent to existing building. Keep all anchors at front entrance. All continuous footings to remain as detailed as grade beams. Plan west addition will require undercut of soil to about 7 feet below existing grade under footings and backfilled with lean concrete. Soil to be proof rolled under slab and excavated as required per geotechnical report. Anchors at the new additions can be designed for 50K (down from 65K noted on contract drawings) service axial loads with 10K tension and 2K lateral loading. Anchors at front entrance to remain as noted on contract drawings.
2. The fencing shown on Sheet C2.0 and A1.1 listed as "Alternate" is NOT to be included in Base Bid. This fencing is a part of the Alternate No. 2 (Additive) Allowance.
3. Under Base Bid the existing modified bitumen roofing system is to remain in place. The Contractor is to provide a new modified bitumen roofing system for the new roof addition.
4. Refer to specification section 15910. The building automation system is not required to integrate to the main high school building automation system.

APPROVED MANUFACTURERS

The following manufacturers have submitted data for prior approval and have been approved by our office, **contingent upon the stipulation that their products must meet or exceed the contract specifications.**

Product

Manufacturer

Epoxy Flooring

Dur-A-Chip

Dur-A-Flex

PROPOSAL FORM

To: Russellville City Board of Education Date: _____

In compliance with your Advertisement for Bids and subject to all the conditions thereof, the undersigned,

(Legal name of Bidder)

hereby proposes to furnish all labor and materials and perform all work required for the construction of

WORK: New Addition and Renovations to Russellville High School, Package B: Renovations, Architect

Job No. 19-90B in accordance with Drawings and Specifications, dated, March 22, 2022 prepared by

Lathan Associates Architects, P.C., 300 Chase Park South, Suite 200, Hoover, AL 35244, Architect.

The Bidder, which is organized and existing under the laws of the State of _____,

having its principal offices in the City of _____,

is: _____ a Corporation _____ a Partnership _____ an individual _____ (other) _____,

LISTING OF PARTNERS OR OFFICERS: If Bidder is a Partnership, list all partners and their addresses; if

Bidder is a Corporation, list the names, titles and business addresses of its Officers:

BIDDER'S REPRESENTATION: The Bidder declares that it has examined the site of the Work, having become fully informed regarding all pertinent conditions, and that it has examined the Drawings and Specifications (including all Addenda received) for the Work and the other Bid and Contract Documents relative thereto; and that it has satisfied itself relative to the Work to be performed.

ADDENDA: The Bidder acknowledges receipt of Addenda Nos. _____ through _____ inclusively.

ALLOWANCES: The Bidder acknowledges by initials _____ that he/she has read Specification Section 01020 - Allowances and has included cost of same in bid.

ALABAMA IMMIGRATION LAW COMPLIANCE: The Bidder acknowledges by initials _____ that he/she will comply with H.B. 56 - Alabama Immigration Law Compliance.

BASE BID: For construction complete as shown and specified, the sum of _____ Dollars (\$ _____)

ALTERNATES: If alternates as set forth in the Bid Documents are accepted, the following adjustments are to be made to the Base Bid:

Alternate No. 1 (TPO Roofing) (add) \$ _____

Alternate No. 2 (Allowance No. 5) (add) \$ _____

UNIT PRICES: See Attachment

BID SECURITY: The undersigned agrees to enter into a Construction Contract and furnish the prescribed Performance and Payment Bonds and evidence of insurance within fifteen calendar days, or such other period stated in the Bid Documents, after the contract forms have been presented for signature, provided such presentation is made within 30 calendar days after the opening of bids, or such other period stated in the Bid Documents. As security for this condition, the undersigned further agrees that the funds represented by the Bid Bond (or cashier's check) attached hereto may be called and paid into the account of the Awarding Authority as liquidated damages for failure to comply.

Attached hereto is a: *(Mark the appropriate space and provide the applicable information.)*

____ Bid Bond, executed by _____ as Surety,
____ cashier's check on the _____ Bank of _____ ,
for the sum of _____ Dollars
(\$ _____) made payable to the Awarding Authority.

BIDDER'S ALABAMA LICENSE:

State License for General Contracting: _____
License Number Bid Limit Type(s) of Work

CERTIFICATIONS: The undersigned certifies that he or she is authorized to execute contracts on behalf of the Bidder as legally named, that this proposal is submitted in good faith without fraud or collusion with any other bidder, that the information indicated in this document is true and complete, and that the bid is made in full accord with State law. Notice of acceptance may be sent to the undersigned at the address set forth below.

The Bidder also declares that a list of all proposed major subcontractors and suppliers will be submitted at a time subsequent to the receipt of bids as established by the Architect in the Bid Documents but in no event shall this time exceed twenty-four (24) hours after receipt of bids.

Legal Name of Bidder _____

Mailing Address _____

*** By (Legal Signature)** _____ (Seal)

*** Name & Title (print)** _____

Telephone Number _____

Email Address _____

* If other than an individual proprietor, or an above named member of the Partnership, or the above named president, vice-president, or secretary of the Corporation, attach written authority to bind the Bidder. Any modification to a bid shall be over the initials of the person signing the bid, or of an authorized representative.

Note: A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with DCM Form C-3: Proposal Form. Submission of DCM Form C-3A is required, it is not optional. A proposal shall be rendered non-responsive if an Accounting of Sales Tax is not provided.

PROPOSAL FORM ATTACHMENT

UNIT PRICES

For certain items of **credit or extra work**, if required, the undersigned proposes UNIT PRICES as follows:

<u>EARTH EXCAVATION</u>	General	\$ _____/per cu.yd.
	In Trenches	\$ _____/per cu. yd.
<u>EARTH FILL</u>	General	\$ _____/per cu. yd.
<u>UNDERCUTTING & REPLACEMENT OF UNSUITABLE SOILS</u>		\$ _____/per cu. yd.
<u>LEAN CONCRETE</u>		\$ _____/per cu. yd.

Note: All grading shown on the drawings shall be included in the Base Bid as Unclassified to required subgrade elevations. This Base Bid grading shall include the required cutting and filling of the existing grade to the proposed subgrade elevation. Onsite Geotechnical engineer shall determine if unsuitable soils are present.

Refer to SECTION 02300 - EARTHWORK for additional information regarding undercut & replacement of unsuitable soils and associated quantity allowance.

Note: Costs for profit and overhead shall be included in Unit Prices.

Note: Unit Prices are provided for the addition to or deletion from the contract Base Bid.

BIDDER (to be signed by an Officer of the Company)

_____	by _____
(Name/Title)	(Legal Signature)

WITNESS (to the above signature)

_____	by _____
(Name/Title)	(Legal Signature)

ACCOUNTING OF SALES TAX

Attachment to DCM Form C-3: Proposal Form

To: Russellville City Board of Education Date: _____
(Awarding Authority)

NAME OF PROJECT: New Addition and Renovations to Russellville High School
Package B: Renovations

SALES TAX ACCOUNTING

			<u>ESTIMATED SALES TAX AMOUNT</u>
BASE BID:			\$ _____
Alternate No. 1	TPO Roof	(add)	\$ _____
Alternate No. 2	Allowance No. 5	(add)	\$ _____

Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

Legal Name of Bidder _____

Mailing Address _____

* By (Legal Signature) _____

* Name (type or print) _____

* Title _____ (Seal)

Telephone Number _____

Email Address _____

Note: A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with DCM Form C-3: Proposal Form. Submission of DCM Form C-3A with DCM Form C-3 is required, it is not optional. A proposal shall be rendered non-responsive if an Accounting of Sales Tax is not provided.

SBS-MODIFIED BITUMEN MEMBRANE ROOFING - SECTION 07526
(COLD ADHESIVE-APPLIED)

1.0 - GENERAL

1.1 Summary

- A. Work shall include, but is not limited to, the following:
1. Preparation of existing (new), concrete, steel, wood, gypsum, cementitious wood fiber roof deck, and all flashing substrates.
 2. Insulation and Cover-board.
 3. New (existing) lightweight insulating concrete.
 4. SBS-modified bitumen base ply(s) (cold adhesive-applied).
 5. SBS-modified bitumen Cap Sheet (cold adhesive-applied).
 6. SBS-modified bitumen membrane flashings.
 7. Liquid-applied, reinforced flashings.
 8. Sheet metal flashings and sheet metal roof edge system.
 9. All related materials and labor required to complete specified roofing necessary to receive specified manufacturer's warranty.

1.2 Related Sections

Division One - General Requirements

1.3 Definitions

- A. ASTM D 1079-Definitions of Term Relating to Roofing, Waterproofing and Bituminous Materials.
- B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.4 Quality Assurance

- A. Manufacturer Qualifications:
1. Manufacturer shall have 20 years of experience manufacturing SBS-modified bitumen roofing materials.
 2. Manufacturer must participate and currently hold ISO 9001 Certification.
 3. Trained Technical Field Representatives, employed by the manufacturer, independent of sales.
 4. Provide reports in a timely manner of all site visit reports.
 5. Provide specified warranty at Final Inspection.
- B. Contractor Qualifications:
1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
 2. Applicators shall have completed projects of similar scope using same materials as specified herein.
 3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roof system through satisfactory project completion.
 4. Applicators shall be skilled in the application methods for all materials.
 5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
 6. Contractor shall maintain a copy of all submittal documents, on-site, available at all times for reference.
- C. **There shall be no deviations made from the specifications or drawings without prior written approval from the Architect.**

- D. A **minimum** of three (3) field inspections shall be made by a technical representative of the Roofing System Manufacturer at start, mid-way and upon completion of the work. Notification to Architect shall be made at least 2 days prior to those visits. Written reports shall be made and copies of these reports must be submitted to the Architect within 3 days of the inspections. These inspections must be made by a manufacturer's representative employed by the manufacturer.
- E. Installation shall comply with requirements of: FM I-90, FM Fire/windstorm Classification 1A-90 and FM Severe Hail and 2015 International Building Code Severe Hail Impact and Wind speed. ASTM 4637 and ASTM 5019. No exclusions for Hail under 2".
- F. All roofs must have a positive drainage of storm water to gutters, roof drains and other components of an approved sewer system in order to divert water away from the building structure.
- G. The Architect/Owner reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the Roofing Contractor.

1.5 Certification of Roofing System

Contractor(s), Roofing Material Manufacturer, and Roofing Material Manufacturer's Field Inspector shall each execute the Certification of Roofing System, a copy of which immediately follows this Section.

1.6 Pre-Roofing Conference

- A. Pre-Installation Roofing Conference: Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of modified bituminous roofing system installation and associated work.
- B. Require attendance of installer of each component of associated re-roofing work, Contractor, Architect, State Inspector, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, testing agencies and governing authorities. Objectives of conference include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Review roofing system requirements (drawings, specifications and other contract documents).
 - 3. Review required submittals both completed and yet to be completed.
 - 4. Review construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 5. Review required inspection, testing, certifying and material usage accounting procedures.
 - 6. Discuss weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not mandatory requirement).
 - 7. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish copy of 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.

- C. The Architect will record the proceedings and promptly distribute them to the participants for record.
- D. The intent of the conference is to resolve issues affecting the installation and performance of roofing work. Do not proceed with roofing work until such issues are resolved the satisfaction of the Owner and Architect of Record. This shall not be construed as interference with the progress of Work on the part of the Owner or Architect of Record.

1.6 References

- A. American Society Of Civil Engineers - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
- B. American Standard Of Testing Methods (ASTM):
 1. ASTM C 726 - Standard Specification for Mineral Wool Roof Insulation Board.
 2. ASTM C 728 - Standard Specification for Perlite Thermal Insulation Board.
 3. ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
 4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
 5. ASTM C 1177/C 1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 6. ASTM C 1278 - Standard Specification for Fiber-Reinforced Gypsum Panel.
 7. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Insulation Board.
 8. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.
 9. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 10. ASTM D 3019 - Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered.
 11. ASTM D 3746 - Standard Test Method for Impact Resistance of Bituminous Roofing System.
 12. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 13. ASTM D 4601 - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
 14. ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
 15. ASTM D 5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement)
 16. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
 17. ASTM D 7379 - Standard Test Methods for Strength of Modified Bitumen Sheet Material Laps Using Cold Process Adhesive.
 18. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
 19. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

- C. American National Standards Institute (ANSI)::
 - 1. ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.
 - 2. ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
 - 3. ANSI/SPRI IA-1, Standard Field Test Procedure for Determining the Mechanical Uplift Resistance of Insulation Adhesives over Various Substrates.
 - 4. ANSI/FM 4474- American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.
- D. Factory Mutual (FM):
 - 1. FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.
 - 2. FM 4470 - Approval Standard - Class I Roof Covers.
- E. International Codes Council (ICC):
 - 2015 International Building Code (IBC).
- F. National Roofing Contractors Association (NRCA).
- G. Sheet Metal And Air Conditioning Contractors National Association Inc. (SMACNA) Architectural Sheet Metal Manual.
- H. Underwriters Laboratory (UL):
 - 1. UL 790 Standard Test Methods for Fire Tests of Roof Coverings.
 - 2. UL 1256 – Fire Test of Roof Deck Constructions.

1.8 Action Submittals

- A. Manufacturer's ISO 9001 Certification
- B. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.
- C. Sample/Specimen Warranty from the manufacturer and contractor.
- D. Shop Drawings: Provide roof plan and applicable roof system detail drawings.

1.9 Informational Submittals

- A. Contractor Certification: Submit written certification from roofing system manufacturer certifying that the applicator is authorized by the manufacturer to install the specified materials and system.

1.10 Closeout Submittals

Warranty: Provide manufacturer's and contractor's warranties upon substantial completion Final Inspection of the roofing system.

1.11 Delivery, Storage And Handling

- A. Refer to each product data sheet or other published literature for specific requirements.
- B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.

- C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.
- D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with "breathable" tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
- E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.
- F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.12 Site Conditions

- A. Safety:
 - 1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
 - 2. Heat-welding shall include heating the specified membrane ply using propane roof torches or electric hot-air welding equipment. The contractor shall determine when and where conditions are appropriate to utilize heat-welding equipment. When conditions are determined by the contractor to be unsafe to proceed, equivalent SBS-modified bitumen materials and methods shall be utilized to accommodate requirements and conditions.
 - 3. Refer to NRCA CERTA recommendations, local codes and building owner's requirements for hot work operations.
 - 4. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid-applied or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
 - 5. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
 - 6. The contractor shall refer to product Material Safety Data Sheets (MDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.
- B. Environmental Conditions:
 - 1. Monitor substrate temperature and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project

- conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.
2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.
 3. Cold adhesive application: Primer, where used, shall be fully dry before proceeding. During cold weather, store the specified membrane adhesives, flashing cements and mastics in heated storage areas. Take all necessary measures and monitor application conditions, to ensure the adhesive and cement materials are no less than 70°F (21°C) at the point of contact with the membrane.

1.12 Performance Requirements

- A. Wind Uplift Resistance:
 1. Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580 or UL 1897.
 - i. Roof System Design Pressures: Calculated in accordance with ASCE 7, or applicable standard, for the specified roof system attachment requirements:
 - a) Field of Roof (Zone 1): - 0 psf.
 - b) Perimeter of Roof (Zone 2): - 0 psf.
 - c) Corners of Roof (Zone 3):- 0 psf.
- B. Fire Classification:
 1. Performance testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470 to meet the 1/4:12 roof slope requirement.
 - i. Meets requirements of UL Class A or FM Class A.
 2. Performance testing shall be in accordance with UL 1256, FM 4450 or FM 4470 to meet the specified requirements for interior flame spread and fuel contribution.
 - i. Meets requirements of UL 1256, or FM Class 1.
- C. Roof Slope:
 1. Finished roof slope for SBS modified bitumen surfaces shall be $\frac{1}{4}$ inch per foot (2 percent) minimum for roof drainage.
- D. Impact Resistance:
 1. Performance testing for impact resistance shall be in accordance with FM 4450, FM 4470, ASTM D3746 or CGSB 37-GP 56M to meet the specified impact resistance requirements.
 - i. Meets requirements for FM-SH (Severe Hail), ASTM D3746, or CGSB 37-GP 56M.
- E. Cyclic Fatigue:
 1. The roof system shall pass ASTM D5849 Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement). Passing results shall show no signs of cracking, splitting or tearing over the joint.
 - i. Roof system shall pass Test Condition 4, tested at 14°F (-10°C) in accordance with ASTM D5849.

- ii. Roof system shall pass Test Condition 5, tested at -4°F (-20°C) in accordance with ASTM D5849.
- F. Energy Conservation Requirements:
 - 1. Polyisocyanurate Insulation "R" Value: Long-term thermal resistance (LTTR) values of the specified foam insulation shall be determined in accordance with CAN/ULC-S770.
 - 2. Polyisocyanurate Insulation "R" Value: Shall be determined in accordance with ASTM C1289-11a.
 - 3. Thermal Resistance 'R' for the specified roof insulation system shall include the continuous insulation (ci) above the roof deck.
 - i. Total Thermal Resistance R Value, continuous insulation (ci) above-deck: R(21)
- G. Roof Edge System Securement:
 - 1. Performance testing in accordance with ANSI/SPRI ES-1.
 - 2. Performance testing meets requirements for specified roof system design pressures.

1.13 Warranty

- A. Manufacturer's No Dollar Limit (NDL), Labor and Material Warranty. The manufacturer shall provide the owner with the manufacturer's labor and material warranty covering products and contractor workmanship for 20 years from the date the warranty is issued.
- B. The contractor shall guarantee the workmanship and shall provide the owner with the contractor's warranty covering workmanship for a period of 5 years from substantial completion.
- C. Manufacturer shall warrant materials, installation and workmanship from failure and issue a premium Twenty (20) year (NDL) Weathertightness Warranty for the roofing system upon satisfactory completion of the installation. Warranty shall include windstorm per FM I-90 and Hail impact and windspeed per 2015 International Building Code. Manufacturer's warranties cannot be prorated. Warranty shall be dated no sooner than thirty (30) days of project Substantial Completion as determined by the Architect. **Warranty shall contain language acknowledging that the Laws of the State of Alabama shall govern.** Present Manufacturer's Warranty fully executed at the time of Final Inspection.
- D. Manufacturer's Warranty must state that roofing system is warranted to comply with FM I-90 as stated above and cannot contain maximum wind speed exclusions. This requirement may be met by providing a Rider to Manufacturer's Standard Warranty.
- E. Provide a manufacturer's Severe hail rider warranty.
- F. Provide the Five Year General Contractor's Roofing Guarantee as required by the State of Alabama fully executed at the time of Final Inspection.
- G. **All Roofing Systems must be certified by Roofing contractor and Manufacturer that this roofing system meets or exceeds all requirements of this roofing specification. The Roofing Certification Form follows this section and must be executed at time of Substantial Completion.**

2.0 - PRODUCTS

2.1 Manufacturer

- A. Single Source Manufacturer: All SBS modified bitumen membrane and flashing sheets shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.
- B. Product Quality Assurance Program: Manufacturer shall be an ISO 9001 registered company. A 'Quality Compliance Certificate (QCC)' for reporting/confirming the tested values of the SBS-Modified Bitumen Membrane Materials will be supplied upon request.
 - 1. Basis of Design Products manufactured by Soprema.
 - 2. Other Acceptable Manufacturers: Garland, Siplast and Johns Manville. Other manufacturers must submit for prior approval. See Section 01360 - Product Substitutions and send at least 10 days prior to bid. Written approval shall be made via Addendum.

2.2 Roofing System

- A. Roofing System Basis Of Design: Soprema
 - 1. 2 ply SBS membrane systems.
 - 2. Individual components and system assembly must meet all requirements herein.

2.3 SBS-Modified Bitumen Membranes

- A. Base Ply/Flashing Base Ply
 - 1. Base Ply/Flashing Base Ply, Cold Adhesive-Applied:
 - a. SOPREMA Sopralene 250 Sanded: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement.
 - 1) Thickness: 156 mils (3.9 mm)
 - 2) Width: 39.4 in (1 m)
 - 3) Length: 32.8 ft (10 m)
 - 4) Meets or exceeds ASTM D6164, Type II, Grade S
- B. Cap Sheet/Flashing Cap Sheet:
 - 1. Cap Sheet/ Flashing Cap Sheet, Cold Adhesive-Applied:
 - a. Soprema Sopralene 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements.
 - 1) Thickness: 154 mils (3.9 mm)
 - 2) Width: 39.4 in (1 m)
 - 3) Length: 32.8 ft (10 m)
 - 4) Meets or exceeds ASTM D6164, Type I, Grade G.
 - 5) Granule Surfacing: White mineral granules.

2.4 Thermal Insulation System

- A. Rigid Insulation
 - 1. Polyisocyanurate Insulation

- a. Soprema Sopra-ISO r: Closed cell polyisocyanurate foam core bonded on each side to a glass fiber-reinforced felt facer.
 - 1) Thickness: 1.5 in minimum board thickness. Total thickness to meet specified insulation system thermal resistance 'R' value
 - 2) Meets or exceeds ASTM C1289, Type II, Class 1, Grade 2 (20 psi).
 - b. Soprema Sopra-ISO r Tapered: Closed cell polyisocyanurate foam core bonded on each side to a glass fiber-reinforced felt facer, tapered to provide slope.
 - 1) Taper: 1/4 in per foot. Insulation, crickets and saddles provided with taper as required for positive roof slope.
 - 2) Meets or exceeds ASTM C1289, Type II, Class 1, Grade 2 (20 psi).
- B. Cover-Board
 - 1. Asphaltic or Gypsum Roof Board
 - a. Cover Boards must fall within the range of performance listed below. NO EXCEPTIONS
 - 1) Thickness: 1/8 in - 1/4 in
 - 2) Water Absorbption: 0 gram – 10 grams
 - 3) Compressive Strength: 630 psi – 1000 psi
 - 4) Weight: .91 lbs/sf – 1.25 lbs/sf
 - 5) Mold Resistance: 10 (per ASTM D 3273)
- C. Insulation Cant And Tapered Strip
 - 1. Cant Strip, Rigid Mineral Wool
 - a. Soprema SopraRock Cant Strips: High density, mineral wool, bitumen coated cant strips.
 - 1) Length: 4 ft sections.
 - 2) Cross-section dimensions: 1.5 thick x 4 in face width
Size as required for flashing conditions.
 - 3) Surface: Bitumen coated, sanded.
 - 4) Meets or exceeds ASTM C726.

2.5 Accessories

- A. Primers:

Soprema Elastocol 500 Primer: Asphalt cut-back primer. Primer for the preparation of roof membrane and flashing substrates for asphalt, heat-welded, hot asphalt and cold adhesive-applied applications.

 - 1. Meets or exceeds ASTM D41
 - 2. VOC content: 350 g/L or less.
- B. Membrane Adhesives:

Soprema Colply Adhesive: SBS-modified bitumen membrane adhesive for use with sanded base ply and granule-surfaced Cap Sheet membranes.

 - 1. VOC Content: 250 g/L or less.
 - 2. Meets or exceeds ASTM D3019
- C. Flashing Cement

Soprema Colply Flashing Cement: SBS-modified bitumen membrane flashing cement for use with sanded base ply flashing and granule-surfaced Cap Sheet flashing.

 - 1. VOC Content: 250 g/L or less.

2. Meets or exceeds ASTM D4586
- D. General Purpose Roofing Cement And Mastic
 1. Soprema Sopramastic: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 5 gallon pails. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.
 - 1) VOC Content: 190 g/L or less.
 - 2) Meets or exceeds ASTM D4586, Type I, Class II.
 2. Soprema Sopramastic: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 10.4 oz caulk tubes. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.
 - 1) VOC Content: 190 g/L or less.
 - 2) Meets or exceeds ASTM D4586, Type I, Class II.
- E. General Purpose Sealant

Soprema Sopramastic SP1: General purpose, gun-grade, elastomeric sealant for sealing vertical joints/cracks.

 1. VOC Content: 20 g/L or less.
 2. Meets or exceeds ASTM C920, Type S, Grade NS, Class 50.
- F. Walkways

Soprema Soprawalk: SBS-modified bitumen membrane sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced.

 1. Thickness: 200 mils (5.0 mm)
 2. Width: 39.4 in (1 m)
 3. Length: 26 ft (7.9 m)
 4. Granule Surfacing: Grey mineral granules.
- D. Insulation Fasteners And Plates
 1. Soprema #12 DP Fastener and 3 in stress plate: Insulation system fasteners and metal stress plates.
 2. SOPREMA #14 MP Fastener and 3 in stress plate: Insulation system fasteners and metal stress plates.
- E. Membrane Fasteners And Plates
 1. Soprema Twin-Loc Nail: Membrane fastener and metal plate.
 2. Soprema Base Sheet Fastener BSF 1.2 in: Anchor/Base sheet fastener and metal plate.
 3. Soprema Base Sheet Fastener BSF 1.7 in: Anchor/Base sheet fastener and metal plate.
- F. Liquid-Applied Reinforced Flashing System:
 1. Soprema Alsan Flashing: Single-component, polyurethane-bitumen resin with polyester reinforcing fleece fabric fully embedded into the resin to form roof system flashings.
 - a. VOC Content: 250 g/L.
 - b. Alsan Flashing: Liquid resin Meets or exceeds ASTM C836.
 - c. Alsan PolyFleece: Non-woven polyester reinforcement.
 - d. Surfacing: Second coat of Alsan Flashing and mineral granules to match adjacent SBS-modified bitumen cap sheet. Alsan Finish to match adjacent Soprapstar cap sheet.
- G. Mineral Granules:
 1. Soprema Granules: No. 11, mineral coated colored granules, color to match cap sheet, supplied by membrane cap sheet manufacturer.
 - a. SOPREMA Granules

- H. Expansion Joint:
 - 1. Soprema Soprajoint: Low-profile, polyester knit-reinforced, SBS-modified bitumen expansion joint membrane. Top surface consists of an aluminum-clad bond-breaker, with plastic burn-off film on the bottom surface for torch or hot air welding.
 - a. Thickness: 160 mils (4.0 mm)
 - b. Width: 18 in (457 mm)
 - c. Roll Length: 32.8 ft. (10 m)
 - d. Expansion joint, maximum unsupported span: 2 in (51 mm)
 - e. Expansion joint, maximum displacement: 5/8 in (16 mm)
- I. Sheet Metal Flashing:
 - 1. Contractor shall furnish all sheet metal flashings, counter flashings, roof edge system, and all other related sheet metal flashings and associated fasteners necessary to flash and counter flash the specified roofing system.
 - 2. Sheet metal flashing materials and fasteners shall be compatible with adjacent materials, to accommodate all project related exposures.
 - 3. Pre-Finished (Mill Finished) Sheet Metal Flashing Material: Galvanized Steel.
 - 4. Roof Edge System: Tested per ANSI/SPRI ES-1 to meet or exceed design pressures at roof edge.

3.0 - EXECUTION

3.1 Examination

- A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions remain satisfactory throughout the project.
- B. The contractor shall examine all roofing substrates including, but not limited to: insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.
- C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing materials.
- D. During the application of specified materials, the applicator shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified roofing system.

3.2 Preparation

- A. Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securing of substrates, eliminating all incompatible materials, and cleaning.
- B. Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.

3.3 Insulation System Application

- A. Follow insulation system component product data sheets, published general requirements and, approvals.

- B. Install all insulation system components on clean, dry, uniform and, properly prepared substrates.
- C. All insulation system boards shall be carefully installed and fitted against adjoining sheets to form tight joints.
- D. Insulation system boards that must be cut to fit shall be saw-cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation components. Uneven or broken edges shall not be accepted. Remove dust and debris that develops during cutting operations.
- E. Stagger successive layers of insulation 12 in vertically and laterally to ensure board joints do not coincide with joints from the layers above and below.
- F. Crickets, saddles, and tapered edge strips shall be installed before installing Cover-boards.
- G. Install tapered insulation, saddles and crickets as required to ensure positive slope for complete roof drainage.
- H. Cover-boards shall be installed to fit tight against adjacent boards. When required by the Cover-board manufacturer, a uniform gap shall be provided between Cover-boards using a uniform guide placed between board joints to form a gap between all boards during installation.
- I. The finished insulation system surface shall be tight to, and flush with, adjacent substrates to form a satisfactory substrate to install specified roof membrane and flashings.
- J. Install specified cants where required for membrane flashing transitions.

3.4 Insulation Fastener Application

- A. Fasten thermal insulation to the deck using specified insulation fasteners and plates.
- B. Evenly distribute fasteners as required by the board manufacturer's published requirements.
- C. Fasten the insulation to meet the specified wind uplift resistance performance requirements and warranty requirements.
- D. Minimum insulation fastening requirement:
- E. Field of Roof (Zone 1): 1 fastener per 2.00 square ft.
- F. Perimeter of Roof (Zone 2): 1 fastener per 1.33 square ft.
- G. Corners of Roof (Zone 3): 1 fastener per 1.00 square ft.
- H. For insulation and Cover-boards located partially within the defined perimeter and/or corners, install fastening for the entire board as specified herein.

3.5 Insulation Adhesive Application

- A. Apply the specified two-component insulation adhesive to adhere Cover-board to the insulation substrate(s).
- B. Follow insulation adhesive product data sheets and published general requirements for installation requirements.
- C. Apply insulation adhesive in uniform ribbons, 1/2 in to 3/4 in wide.
- D. Immediately install cover board into insulation adhesive, and apply weight to ensure the materials maintain full contact with all ribbons for complete adhesion. Do not allow insulation adhesive to skin-over before placing the insulation materials into the adhesive.
- E. Adhere the insulation system to meet the specified wind uplift resistance performance and specified warranty requirements.
- F. Minimum insulation adhesive ribbon spacing:
- G. Field of Roof (Zone 1): 12 in on-centers.
- H. Perimeter of Roof (Zone 2): 6 in on-centers.
- I. Corners of Roof (Zone 3): 4 in on-centers.

3.6 Primer Application

- A. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified roofing materials.
- B. Apply primer using brush, roller, or sprayer at the rate published on the product data sheet.
- C. Fully prime substrates using brush, roller, or sprayer at the application rate published in the product data sheet
- D. Asphalt Primer: Apply primer to dry compatible masonry, metal, wood and other required substrates before applying asphalt and heat-welded membrane plies. Primer is optional for most solvent based solvent-based SBS adhesives and cements, refer to product data sheets.
- E. Do not proceed applying self-adhered membrane if primer is wet. If self-adhered membrane primer becomes fully dry and loses all tack, re-prime the substrate as necessary to achieve membrane adhesion.
- F. Project conditions vary throughout the day. Monitor changing conditions, monitor the drying time of primers, and monitor the adhesion of the membrane plies. Adjust primer and membrane application methods as necessary to achieve the desired results.

3.7 Membrane Adhesive Application

- A. The ambient temperature shall be above 50°F (10°C), and the adhesive temperature shall be a minimum of 70°F (21°C) at the point of membrane application.
- B. To ensure the adhesive is applied at 70°F (21°C), during cold weather, drums and 5 gallon pails shall be stored in heated areas. Drums and 5 gallon pails exposed to cold temperature on the roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained.
- C. Priming substrates is optional when solvent-based membrane adhesives are used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates
- D. Apply the membrane adhesive to dry, compatible substrates as required to ensure full adhesion.
- E. Follow the adhesive product data sheet requirements for application rates.
- F. Apply a uniform application of membrane adhesive using a 1/4 – 3/8 inch notched squeegee, brush or sprayer at the application rate published on the product data sheet.
- G. Typical application rate is 1-1/2 to 2 gallons per square between membrane plies. The application rate is 2 to 3 gallons per square or more over absorptive substrates and over granule surfaces. Refer to manufacturer's product data sheet, and adjust application rate based upon surface conditions.
- H. Install the SBS membrane ply before the adhesive begins to skin over. Once adhesive skins over, the membrane ply will not adhere.

3.8 Flashing Cement Application

- A. The ambient temperature shall be above 50°F (10°C), and the flashing cement temperature shall be a minimum of 70°F (21°C) at the point of membrane application.
- B. To ensure the flashing cement is applied at 70°F (21°C), during cold weather, pails shall be stored in heated areas. Pails exposed to cold temperature on the

- roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained
- C. Priming substrates is optional when solvent-based flashing cements are used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates.
- D. Apply flashing cement to dry, compatible substrates. Apply flashing cement using a ¼ inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Application rates vary based on substrate porosity and roughness.

3.9 SBS Mastic and General Purpose Roofing Cement Application

- A. Apply general purpose SBS mastic and roofing cement to seal drain leads, metal flanges, seal along membrane edge at terminations, and where specified and required in detail drawings.
- B. Do not use general purpose SBS mastics and roofing cement where flashing cement applications are required. Do not use SBS mastics and roofing cement beneath SBS-modified bitumen membrane and flashing plies.
- C. Apply general purpose SBS mastic and elastic roofing cement using caulk gun, or notched trowel at 2.0 – 2.5 gallons per square on each surface. Application rates vary based on substrate porosity and roughness. Tool-in as necessary to seal laps
- D. Embed matching granules into wet cement where exposed.

3.10 Cold Adhesive-Applied Membrane Application

- A. Follow material product data sheets and published general requirements for installation instructions.
- B. Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the membrane adhesive and membrane plies.
- C. Unroll membrane onto the roof surface and allow the membrane to relax prior to installing the membrane.
- D. Re-roll the membrane in order for the plies to be rolled into the adhesive while ensuring the specified side and end-laps are maintained
- E. Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- F. Cut rolls to working lengths to conform to roof conditions, and lay out to always work to a selvage edge.
- G. Ensure all roofing and flashing substrates are prepared as necessary, and all substrates are acceptable to receive the specified adhesive and membrane.
- H. Install the specified membrane adhesive ahead of the membrane application. Do not allow the adhesive to skin-over before the membrane is applied into the adhesive. The membrane will not adhere where adhesive has skinned over.
- I. Where laps are adhered using membrane adhesive, apply sufficient adhesive coverage to ensure 1/8 to 1/4 in bleed-out is present at all laps.
- J. Once set in place, ensure specified side-laps and end-laps are maintained.
- K. At end-laps, cut a 45 degree dog-ear away from the selvage edge for all T-joints.
- L. For low-slope areas where the roof slope falls below 1/4 in per foot, and where otherwise specified, leave all membrane side and end-laps dry in order to hot-air weld or torch all laps watertight. Embed granules, where present, when heat welding sheets.
- M. Use a follow tool, weighted roller or broom the leading edge of the membrane to the substrate, working forward and outward as necessary to remove wrinkles. Avoid walking over the membrane during application.

- N. Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are sealed.
- O. Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps and all other deficiencies.
- P. Offset Cap Sheet side and end-laps away from the base ply laps so that Cap Sheet laps are not located within 18 in of base ply laps.
- Q. Immediately broadcast matching granules into adhesive bleed-out at cap sheet laps, or otherwise treat bitumen bleed-out using specified Cap Sheet finish once adhesive has fully cured.

3.11 Flashing Application, Cold-Applied Flashing Cement

- A. Refer to manufacturer's membrane application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer's membrane flashing detail drawings.
- B. It is not required to prime substrates to receive solvent-based flashing cement. Priming is recommended to enhance adhesion and reduce the consumption rate of flashing cement for absorptive substrates.
- C. Unroll the flashing base ply and flashing Cap Sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants and the required over-lap onto the horizontal roof surface.
- D. Cut the flashing membrane from the end of the roll in order to always install flashings to the side-lap line or selvage edge line.
- E. Lay out the flashing base ply and flashing Cap Sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.
- F. Install non-combustible cant strips at all horizontal-to-vertical roof transitions.
- G. Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.
- H. ROOF MEMBRANE BASE PLY:
 - 1. Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions and penetrations.
- I. FLASHING BASE PLY:
 - 1. Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the base of the cant. Cut the base ply at corners to form 3 inch side-laps. Install gussets to seal corner transitions.
 - 2. Install one or more flashing base ply(s) at all roof terminations, transitions and penetrations.
- J. ROOF MEMBRANE CAP SHEET:
 - 1. Install the roof membrane Cap Sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition or penetration, and up to the top of cants where present.
 - 2. Using a chalk line, mark a line on the membrane Cap Sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, it is recommended to embed the Cap Sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing Cap Sheet.
- K. FLASHING CAP SHEET:

1. Install the flashing Cap Sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant.
 2. Install the flashing Cap Sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions and penetrations.
- L. Apply flashing cement to the substrate and to the underside of the flashing ply using a ¼ inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Application rates vary based on substrate conditions.
- M. During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids or openings. Ensure bitumen or flashing cement bleed-out is present at all flashing side and end-laps.
- N. Press-in the flashing plies during installation to ensure they are in full contact with the substrate below.
- O. Where sufficient bitumen bleed-out is not present, apply specified gun-grade sealant or mastic to seal the membrane termination along all roof terminations, transitions and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.
- P. Fasten the top leading edge of the flashing 8 inches on-centers with appropriate 1" cap nails or other specified fasteners. Seal fastener penetrations watertight using manufacturer's sealant or mastic.
- Q. Manufacturer's liquid-applied, reinforced flashing systems should be installed where conditions are not favorable to install SBS modified bitumen flashings. Such conditions may include irregular shapes penetrating roof surfaces (I-beams), confined areas and low flashing heights. Liquid-applied, reinforced flashing systems are required in lieu of pitch pans and lead pipe flashings. Refer to manufacturer's installation guidelines

3.12 Liquid-Applied, Single-Component, Bitumen-Urethane Flashing System Application

- A. Refer to manufacturer's details drawings, product data sheets and published general requirements for application rates and specific installation instructions
- B. Pre-cut polyester reinforcing fleece to conform to roof terminations, transitions and penetrations being flashed. Ensure a minimum 2 in overlap of fleece at side and end-laps. Ensure the completed liquid-applied flashing membrane is fully reinforced.
- C. Apply the base coat of liquid-applied flashing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
- D. Immediately apply the reinforcing into the wet base coat of resin. Using a brush or roller, work the reinforcement into the wet resin while applying the second coat of resin to completely encapsulate the fleece.
- E. Allow the liquid membrane to sufficiently cure for 24 to 48 hours, and then apply the finish coat of resin.
- F. Broadcast mineral granules into the wet finish coat as required to match the adjacent cap sheet.

3.13 Sheet Metal Flashing Application

- A. Refer to sheet metal flashing detail drawings, and follow product data sheets and published general requirements for installation instructions.
- B. Follow the most recent edition of the SMACNA Architectural Sheet Metal Manual for fabrication and installation requirements.

3.14 Walkways






- A. At areas outlined on the drawings, and around the perimeter of all rooftop equipment and at all door and stair landings, install walkway protection.
- B. Cut walkway from end of rolls. No piece shall be less than 24 in.
- C. Provide a 2 in space between sheets for drainage.

3.15 Clean-Up

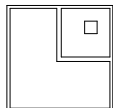
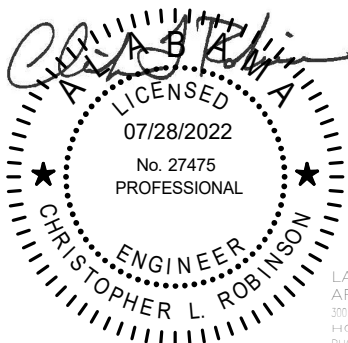
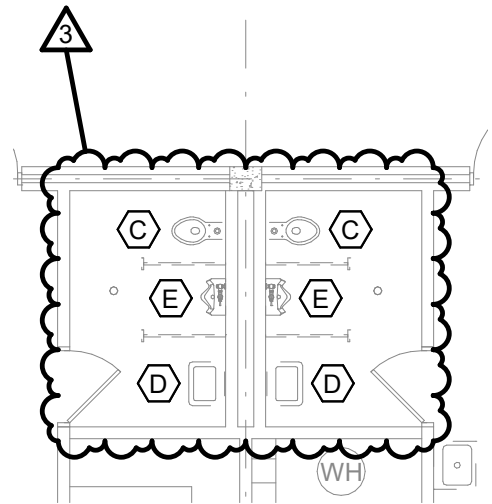
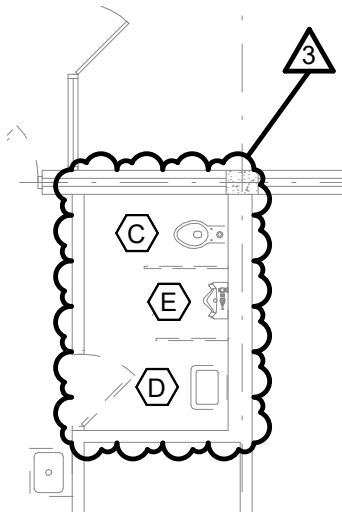
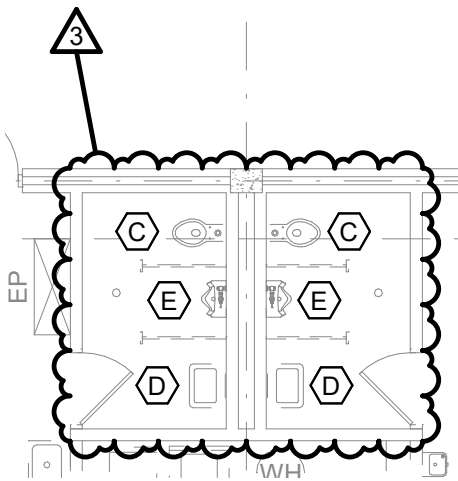
Clean-up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

END OF SECTION

DEMOLITION LEGEND

-  EXISTING WATER COOLER TO REMOVED.
-  EXISTING WALL HYDRANT TO BE REMOVED.
-  EXISTING WATER CLOSET TO BE REPLACED.
-  EXISTING LAVATORY TO BE REPLACED.
-  EXISTING URINAL TO BE REMOVED.

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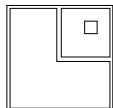
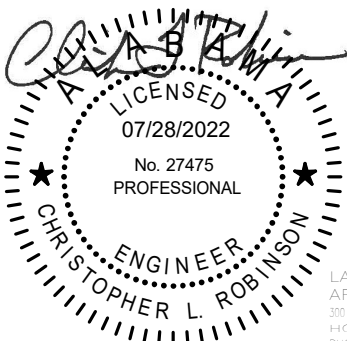
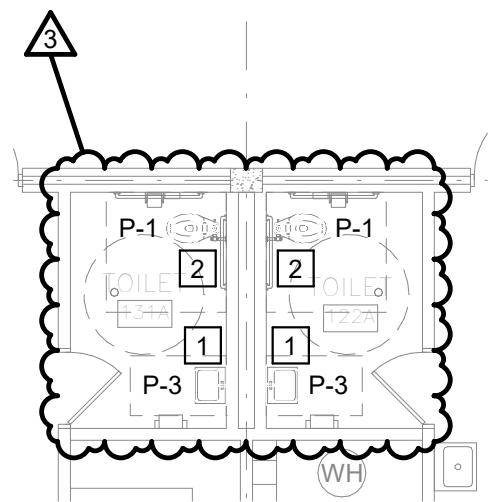
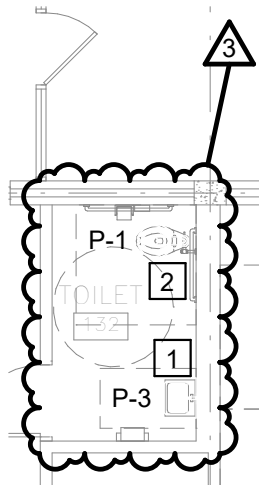
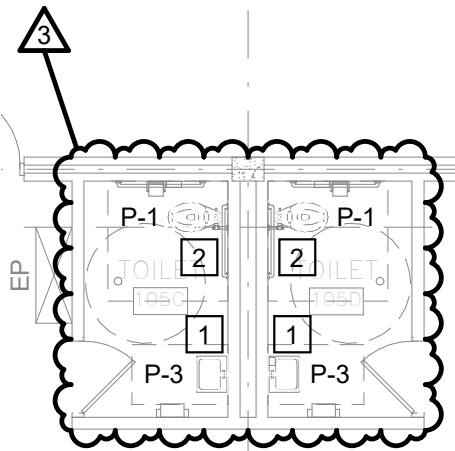
LATHAN ASSOCIATES
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300 CHASE PARK SOUTH SUITE 200
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PROJECT: NEW ADDITION AND RENOVATIONS FOR RUSSELLVILLE HIGH SCHOOL RUSSELLVILLE CITY BOARD OF EDUCATION	PROJECT NO. 19-90B	REFERENCE: Addendum #6
PLUMBING SUPPLEMENTAL DRAWING DRAWING REVISIONS TO SHEET NO. P1.1	DATE: 07/28/22	SHEET NO. PSD6.1 1 OF 3

NON PRESSURE KEY NOTES

- 1 CONNECT TO EX WASTE AND VENT IN WALL.
- 2 CONNECT TO EX WASTE BELOW FLOOR.

3



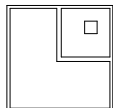
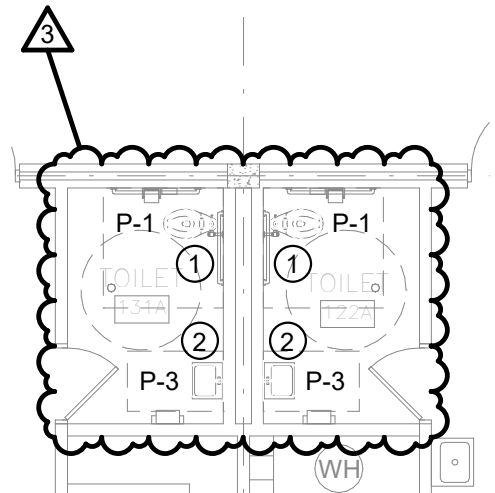
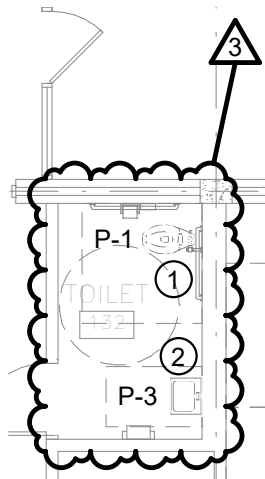
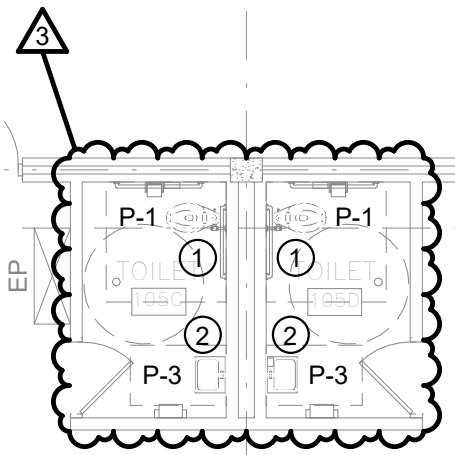
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PROJECT: NEW ADDITION AND RENOVATIONS FOR RUSSELLVILLE HIGH SCHOOL RUSSELLVILLE CITY BOARD OF EDUCATION	PROJECT NO. 19-90B	REFERENCE: Addendum #6
PLUMBING SUPPLEMENTAL DRAWING DRAWING REVISIONS TO SHEET NO. P2.1	DATE: 07/28/22	SHEET NO. PSD6.2 2 OF 3

PRESSURE KEY NOTES

- ① CONNECT TO EXISTING CW IN WALL.
- ② CONNECT TO EXISTING CW & HW IN WALL.

3



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PROJECT: NEW ADDITION AND RENOVATIONS FOR RUSSELLVILLE HIGH SCHOOL RUSSELLVILLE CITY BOARD OF EDUCATION	PROJECT NO. 19-90B	REFERENCE: Addendum #6
PLUMBING SUPPLEMENTAL DRAWING DRAWING REVISIONS TO SHEET NO. P3.1	DATE: 07/28/22	SHEET NO. PSD6.3 3 OF 3