

PROJECT MANUAL FOR:

## **Roof Replacement**

### **UNION ELEMENTARY SCHOOL BUILDING B**

**SHALLOTTE, NC**

CONTRACT PO NO. 24000644

CFE PROJECT NO. 549-01

2024-02-14

Prepared by:



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## **PROJECT MANUAL**

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## ADVERTISEMENT FOR BIDS

Brunswick County Schools of North Carolina will receive bids from licensed General Contractors for: **Union Elementary School Building B Roof Replacement**. Must be licensed in the state of North Carolina.

Bids will be due no later than **MARCH 06, 2024, at 2:00 p.m., local time**.

Deliver sealed bids with bidder's company and project name on envelope to bid box at:

**Brunswick County Schools  
Operations, Attn. Megan Grissett  
199 Sessions Drive NE  
Bolivia, North Carolina**

Single Prime Lump Sum Bids will be considered.

**Description of Project:** The work involves the demolition and replacement of approximately 7,000 sf of single ply membrane roofing system at Building B, Union Elementary School. The existing roofing and replacement roofing material is SBS modified bitumen roofing.

No plumbing, mechanical, electrical, or structural work is anticipated, other than required details at existing roof ventilators (passive and/or powered) and various plumbing and other roof vents and drains. The work is to be conducted over the summer of 2024, with completion as noted in the bid form.

**Documents:** Bidding Documents may be obtained on **FEBRUARY 14, 2024** in digital form from Brunswick County School's website.

**Pre-bid conference:** Will be held at Union Elementary School, 180 Union School Rd NW, Shallotte, NC 28470 on **FEBRUARY 20, 2024, at 2:00 p.m.** local time. Prospective prime bidders are encouraged to attend. Subcontractors and suppliers are invited to attend. Visitors must check in at the front office.

**Bid security** required is (5%) of the bid, in cash, certified check or Bid Bond.

**Performance and Payment Bonds** in the amount of (100%) of contract amount will be required.

Bids may not be withdrawn for (45) days after bid due date.

The Owner reserves the right to reject each and every bid and to waive informalities in bidding.

BC Project Manager: Grady Watkins, Brunswick County Schools, Bolivia, North Carolina

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## BID FORM

To: Capital Projects and Planning, Brunswick County Schools  
Bid Box Attn: Megan Grissett  
199 Sessions Drive  
Bolivia, North Carolina 28422

Project: Union Elementary School Roof Replacement Building B

Date: \_\_\_\_\_

Contractor: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: (\_\_\_\_)-\_\_\_\_\_

\_\_\_\_\_ Phone: (\_\_\_\_)-\_\_\_\_\_

Email: \_\_\_\_\_

NC License No.: \_\_\_\_\_ Classification: \_\_\_\_\_ Limitation: \_\_\_\_\_

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto dated **February 14, 2024** as prepared by Cape Fear Engineering and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The Bidder proposes and agrees if this proposal is accepted to contract with the Owner in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools apparatus, means of transportation and labor necessary to complete the construction of the project with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the Contract Documents, for the sum of:

**BASE BID:** \_\_\_\_\_ (\$\_\_\_\_\_.\_\_\_\_\_) (Words) (Figures)

### ALLOWANCES:

Include in the Base Bid a **\$10,000.00** Contingency Allowance. Include in the base bid. Credit unused allowance amount remaining back to Owner at completion of Contract. The Owner reserves the right to change the allowance amount prior to award of the Contract.

### UNIT PRICES:

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of the work in accordance with the contract documents. The unit BF is Board Feet.

**UP-1:** Replace Damaged or Deteriorated Wood Blocking..... \$\_\_\_\_\_/BF

**UP-2:** Replace Wet or Deteriorated Roof Decking..... \$\_\_\_\_\_/BF

**BID HOLDING TIME AND ACCEPTANCE:**

The undersigned hereby agrees that this bid may not be revoked or withdrawn after the time set for the opening of bids, but shall remain open during the bid holding period.

**SCHEDULE OF COMPLETION:**

The undersigned understands that time is of the essence and agrees to the Contract Time and liquidated damages as indicated in General Conditions of the Contract for Construction and Supplementary Conditions apply to this Work. The undersigned hereby agrees to commence work on this project within thirty (30) days following receipt of an Executed Owner/Contractor Agreement. Date of commencement will be established in a Notice to Proceed issued to Contractor. All work to be accomplished under the Base Bid and all alternates accepted shall be within **90 calendar days** from the date of commencement, but not later than **August 19, 2024**. Applicable liquidated damages shall be stated in Supplemental Conditions.

**ADDENDA:**

Addenda received and used in computing bid:

Addendum No. 1 \_\_\_\_\_ Addendum No. 2 \_\_\_\_\_

Addendum No. 3 \_\_\_\_\_ Addendum No. 4 \_\_\_\_\_

**SUBCONTRACTORS:**

If subcontractors are to be utilized, the General Contractor shall fill out all blanks on the list below. All subcontractors shall be listed. The general contractor shall identify work by the general, subcontractor or not applicable. Do not list suppliers. All blanks must be filled in. Failure to do so may result in bid being declared non-responsive. If there is more than one subcontractor per trade identified below, list all. If no subcontractors are to be utilized, indicate by signing at the appropriate place at the bottom of this page.

Trade: \_\_\_\_\_ Company: \_\_\_\_\_

Trade: \_\_\_\_\_ Company: \_\_\_\_\_

Trade: \_\_\_\_\_ Company: \_\_\_\_\_

**We do not plan to use subcontract forces:**

\_\_\_\_\_  
Contractor Signature (sign if applicable)



**ENCLOSURES:**

- Bid Bond
- Minority, Woman, and Small Business Submittals:
  - Identification to Minority Business Participation and
  - Affidavit A or Affidavit B.

Respectfully submitted this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Company: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

North Carolina

\_\_\_\_\_ County

I, \_\_\_\_\_, a Notary Public for \_\_\_\_\_ County, North Carolina, do hereby certify that \_\_\_\_\_ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

\_\_\_\_\_  
Notary Public (OFFICIAL SEAL)

My commission expires \_\_\_\_\_, 20 \_\_\_\_\_.

**END**

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**GENERAL CONDITIONS**  
**OF THE**  
**CONTRACT FOR CONSTRUCTION**  
**FOR ROOFING PROJECTS**

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## **ARTICLE 1**

### **CONTRACT DOCUMENTS**

#### **1.1 GENERAL**

- 1.1.1 The Contract Documents consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order issued pursuant to the provisions of Article 10, (3) a written interpretation issued by the Design Consultant, or (4) a written order for a minor change in the Work issued pursuant to this contract.
- 1.1.2 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.
- 1.1.3 All Drawings, Specifications and copies thereof furnished by the Design Consultant are and shall remain his property. They are to be used only with respect to this Project and are not to be used on any other project.
- 1.1.4 The Contractor will be furnished with one set of drawings and specifications at no cost. Additional copies may be purchased.

#### **END OF ARTICLE 1**

## **ARTICLE 2**

### **OWNER**

#### **2.1 INFORMATION, SERVICES AND RIGHTS OF THE OWNER**

- 2.1.1 The Owner shall at all times have access to the Work whenever it is in preparation or progress. The Contractor shall provide safe facilities for such access.
- 2.1.2 The Owner shall not be responsible for or have control or charge of the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, and will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. This requirement applies continuously throughout contract performance and is not limited to regular working hours.
- 2.1.3 The Owner will have authority to require special inspection or testing of the work whether or not such Work is then fabricated, installed, or completed. However, neither the Owner's authority to act under Subparagraph 2.2.4, nor any decision made by the Owner in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Owner to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the Work.
- 2.1.4 The Owner shall have the authority and discretion to call, schedule, and conduct job meetings to be attended by the Contractor, representatives of his Subcontractors, and the Design Consultant, to discuss such matters as procedures, progress, problems, and scheduling.
- 2.1.5 The Owner and Design Consultant shall not be responsible or liable to Contractor for the acts, errors or omission of the Contractor, any separate Subcontractor, any separate contractor or any contractor's or subcontractor's agents or employees, or any other persons performing any of the Work.
- 2.1.6 Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid unreasonable delay in the orderly progress of the Work.

- 2.1.7 The parties acknowledge that the Owner may perform all or part of its obligations pursuant to this Agreement through the Superintendent or his designee.
- 2.1.8 The foregoing rights are in addition to other rights of the Owner enumerated herein and those provided by law.
- 2.2 OWNER'S RIGHT TO STOP OR TO SUSPEND THE WORK
- 2.2.1 If the Contractor fails to correct defective Work or fails to carry out the Work or supply labor and materials in accordance with the Contract Documents, the Owner by a written order may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.
- 2.2.2 The Owner may order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as he may determine to be appropriate for the convenience of the Owner.
- 2.2.3 If the performance of all or any part of the Work (including the work of the Contractor and its subcontractors) is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner or the Design Consultant in the administration of this Contract, or by failure of any one of them to act within the time specified in this Contract (or if no time is specified, within a reasonable time), an adjustment shall be made for an increase in the actual time required for performance of the Work by the Contractor, due solely to such unreasonable suspension, delay, or interruption and the Contract modified in writing accordingly. However, no claim shall be made under this Subparagraph for any suspension, delay, or interruption pursuant to Subparagraph 2.3.1, or for which claim is provided or excluded under any other provision of this Contract. No claim under this Subparagraph shall be allowed on behalf of the Contractor or its subcontractors, unless within 10 days after the act or failure to act involved, and for continuing or ongoing acts or failures to act within 10 days of the first day of the act or failure to act the Contractor submits to the Owner a written statement setting forth, as fully as then practicable, the extent of such claim, and unless the claim is asserted in writing within 20 days after the termination of such suspension, delay, or interruption. For continuing or ongoing acts or failures to act, the Contractor shall update its written statement every 15 days until the suspension, delay or interruption is terminated. The Contractor shall waive any and all claims not filed in strict conformance with this paragraph. The Contractor shall indemnify, defend and hold the Owner harmless from any claim by a Subcontractor that is waived because it is not filed in strict conformance with this paragraph or any other provision of this Agreement regarding claims.
- 2.2.4 In the event of a suspension of work or delay or interruption of work, the Contractor will and will cause his subcontractors to protect carefully his, and their, materials and work against damage or injury from the weather and maintain completed and uncompleted portions of the work as required by the Contract Documents. If, in the opinion of the Owner, any work or material shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors to so protect same, such work and materials shall be removed and replaced at the expense of the Contractor.
- 2.2.5 No claim by the Contractor shall be allowed if asserted after final payment under this Contract or if it is not asserted in strict conformance with Subparagraph 2.2.
- 2.3 OWNER'S RIGHT TO CARRY OUT THE WORK
- 2.3.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within ten days after the date written notice is mailed by the Owner to commence and continue remedy of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedy he may have, make good such deficiencies and may further elect to complete all Work thereafter through such means as the Owner may select, including the use of a new contractor. In such case the Owner shall issue a Change Order deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Design Consultant's additional services made necessary by such default, neglect or failure. Such action by the Owner and the amount charged to the Contractor are both subject to the prior approval of the Design Consultant. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner. Notwithstanding the Owner's right to carry out a portion of the work, warranty, maintenance and protection of the work remains the

Contractor's responsibility. Further, the provisions of this paragraph do not affect the Owner's right to require the correction of defective or non-conforming work in accordance with this contract.

## **END OF ARTICLE 2**

### **ARTICLE 3**

#### **CONTRACTOR**

##### **3.1 DEFINITION**

- 3.1.1 This entire Contract is not one of agency by the Contractor for Owner but one in which Contractor is engaged independently in the business of providing the services and performing the Work herein described as an independent contractor.

##### **3.2 REVIEW OF CONTRACT DOCUMENTS**

- 3.2.1 Before placing his proposal to the Owner, and continuously after execution of the Contract, the Contractor shall carefully study and compare the Contract Documents and shall at once report to the Owner any error, inconsistency or omission he may discover, including any requirement which may be contrary to any law, ordinance, rule, regulation or order of any public authority bearing on the performance of the Work. If the Contractor has reported in writing an error, inconsistency or omission, has promptly stopped the affected work until otherwise instructed, and has otherwise followed the instructions of the Owner, the Contractor shall not be liable to the Owner or the Design Consultant for any damage resulting from any such errors, inconsistencies or omissions in the Contract Documents. The Contractor shall perform no portion of the Work at any time without Contract Documents and, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.
- 3.2.2 All designs, drawings, specifications, design calculations, notes and other works provided for this contract are the sole property of the Owner and may not be used on any other design or construction project. The use of the design, including tracings and specifications, by any person or entity, for the purpose other than the Project, shall be at the full risk of such person or entity

##### **3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

- 3.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for and have control over all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and all statutory or legal requirements. This requirement applies continuously throughout contract performance and is not limited to regular working hours.
- 3.3.2 The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and Sub- subcontractors, suppliers, their agents and employees, and other persons performing any of the Work and for their compliance with each and every requirement of the Contract Documents, in the same manner as if they were directly employed by the Contractor.
- 3.3.3 The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the acts, failures to act or duties of the Owner or the Design Consultant in their administration of the Contract, or by inspections, tests or approvals (or the lack thereof) required or performed under Paragraph 6.5 by persons other than the Contractor.
- 3.3.4 The Contractor shall verify all grades, lines, levels and dimensions as indicated and shown on the plans and specifications prior to beginning the work and shall immediately report in writing any errors or inconsistencies to the Design Consultant before commencing the work.
- 3.3.5 Contractor shall protect existing surfaces, finishes and adjacent facilities from damage during construction.

Any damage shall be repaired by Contractor at his own expense prior to completion of the Project. Prior to construction start, Contractor and Owner shall perform an inspection to record existing conditions, damaged and undamaged.

### 3.4 LABOR AND MATERIALS

- 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, supplies, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary or proper for or incidental to the execution and completion of the Work required by and in accordance with the Contract Documents and any applicable code or statute, whether specifically required by the Contract Documents or whether their provision may reasonably be inferred as necessary to produce the intended results, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Final payment will not be made until the Work is so completed.
- 3.4.2 The Contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. The Owner may, by notice in writing, require the Contractor to remove from the work any employee the Owner deems incompetent, careless or otherwise objectionable. All agents and workers of the contractor and its subcontractors shall wear identification badges provided by the Contractor at all times they are on the Owner's property. The identification badges shall at a minimum display the company name, telephone number and employee's picture and name and must be worn in plain view at all times. Additionally, once school staff occupies the building, all contractors and their respective subcontractors shall be required to sign in and out of the visitor's log each day they are performing services. They must also wear a visitor's pass which will indicate to staff that they have met this requirement which applies to anyone performing services anywhere on the school property.
- 3.4.3 The Contractor shall be responsible for ensuring that the work is completed in a skillful and workmanlike manner.
- 3.4.4 All equipment, apparatus and/or devices of any kind to be incorporated into the work that are shown or indicated on the drawings or called for in the specifications or required for the completion of the work shall be entirely satisfactory to the Owner and the Design Consultant as regards operations, capacity and/or performance. No approval, either written or verbal, of any drawings, descriptive data or samples of such equipment, apparatus and/or device shall relieve the Contractor of his responsibility to turn over the same in good working order for its intended purpose at the completion of the Work in complete accordance with the Contract Documents. Any equipment, apparatus and/or device not fulfilling these requirements shall be removed and replaced by proper and acceptable equipment, etc. or put in good working order satisfactory to the Owner and Design Consultant without additional cost to the Owner.
- 3.4.5 All materials and Work shall meet North Carolina Building Codes. Should there be any discrepancies between design and code, the more stringent requirement shall apply. All materials shall comply with standards (or approved products) as set by the specifications. Unless otherwise specified, NO ASBESTOS CONTAINING MATERIALS SHALL BE INSTALLED. BY DEFINITION, INSTALLATION OF ASBESTOS MATERIALS WILL BE CONSIDERED CONTRACTOR'S NEGLIGENCE AND THE CONTRACTOR SHALL PERFORM ALL NECESSARY WORK TO REMOVE THE ASBESTOS AND RESTORE THE SITE TO THE 'PRE-CONTRACT' CONDITION. Contractor shall assume all facilities built prior to 1979 have lead-based paint. Any paint removal shall be in accordance with OSHA standard pertaining to lead (29 CFR 1915.1025).



### 3.5 WARRANTY

- 3.5.1 The Contractor warrants to the Owner and the Design Consultant that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all workmanship will be of first class quality, free from faults and defects and in conformance with the Contract Documents and all other warranties and guaranties specified therein. Where no standard is specified for such workmanship or materials, they shall be the best of their respective kinds. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner or the Design Consultant, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of Article 11.
- 3.5.2 The warranties set forth in this Paragraph 3.5 and elsewhere in the Contract Documents shall survive Final Completion of the Work.
- 3.5.3 If, within one year after the Date of Substantial Completion of the Work or designated portion thereof or within one year after acceptance by the Owner of designated equipment or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective, not in accordance with the Contract Documents, or not in accordance with the guarantees and warranties specified in the Contract documents, the Contractor shall correct it within five (5) working days or such other period as mutually agreed, after receipt of a written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice with reasonable promptness after discovery of the condition. For items, which remain incomplete or uncorrected on the date of Substantial Completion, the one-year warranty shall begin on the date of Final Completion of the Work. If the Contract Documents include painting work, the one year warranty period in this section shall be extended to two years.
- 3.5.4 If at any time deficiencies in the Work are discovered which are found to have resulted from fraud or misrepresentation, or an intent or attempt to or conspiracy to defraud the Owner by the Contractor, any Subcontractor or Supplier, the Contractor will be liable for replacement or correction of such Work and any damages which Owner has incurred related thereto, regardless of the time limit of any guarantee or warranty.
- 3.5.5 The Contractor shall bear the cost of making good all work of the Owner, separate contractors or others, destroyed or damaged by such correction or removal required under this Article 3, Article 11 or elsewhere in the Contract Documents.

### 3.6 TAXES

- 3.6.1 The Contractor shall pay all sales, consumer, use and other similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted at the time bids are received, whether or not yet effective.
- 3.6.2 The Contractor shall provide a completed Contractor's Sales Tax Report (attached hereto as Appendix A) with each application for payment for all items provided by the Contractor or any Sub-Contractors and incorporated into this project. The Contractor shall account for at least 2% of the total contract amount in sales tax or provide justification satisfactory to the Owner that the actual sales tax paid is less than 2%. In the event the Contractor does not provide adequate justification to support the shortfall, the Contractor shall pay the Owner the difference between the amount accounted for and the 2% minimum. Such compensation shall not be deemed a penalty, but reimbursement of funds the Owner would otherwise be entitled to recover from the State.
- 3.6.3 Sales and Use Tax. Contractor shall be responsible for complying with any applicable sales and use tax obligations imposed by Chapter 105, Article 5 of the North Carolina General Statutes. Where Contractor has been contracted with to oversee "new construction" or "reconstruction" as defined in G.S. 105-164.4H, Contractor shall be responsible for issuing and maintaining an Affidavit of Capital Improvement.

### 3.7 PERMITS, FEES AND NOTICES

- 3.7.1 The Contractor shall secure and pay for the building permit and for all other permits and governmental fees necessary for the proper execution and completion of the Work. Costs for service and final service connections by public utilities will be reimbursed to the Contractor by the Owner. The Owner shall not be responsible for the cost of any temporary utilities.
- 3.7.2 Each Contractor will pay for his own license and reinspection fees for his part of the work necessary for the proper execution and completion of the work.
- 3.7.3 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work.

### 3.8 PROGRESS SCHEDULE

- 3.8.1 The Contractor shall prepare and submit to the Owner for the Owner's review and approval an estimated progress schedule for the Work. This schedule shall be in accordance with any general requirements included in the specifications for this project.

### 3.9 RESPONSIBILITY FOR COMPLETION

- 3.9.1 The Contractor shall furnish such manpower, materials, facilities and equipment and shall work such hours, including night shifts, overtime operations and Sundays and holidays, as may be necessary to ensure the performance of the Work within the Milestone and Completion dates specified in the Owner-Contractor Agreement.
- 3.9.2 If the actions taken by the Contractor are not satisfactory, the Design Consultant or Owner may direct the Contractor to take any and all actions necessary to ensure completion within the required Milestone and Completion dates, without additional cost to the Owner. In such event, the Contractor shall continue to assume responsibility for his performance and for completion within the required dates.

### 3.10 DOCUMENTS AND SAMPLES AT THE SITE

- 3.10.1 The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be delivered to the Owner upon completion of the Work.

### 3.11 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- 3.11.1 The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate contractor, all Shop Drawings, Product Data, Manuals and Samples required by the Contract Documents.
- 3.11.2 Do not order materials until receipt of written approval. Furnish materials equal in every respect to approved samples.
- 3.11.3 By approving and submitting Shop Drawings, Product Data, Manuals and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Contractor shall adhere to any supplementary processing and scheduling instructions pertaining to Shop Drawings, which may be issued by the Design Consultant.
- 3.11.4 The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Design Consultant's review of Shop Drawings, Product Data, Samples or Manuals under unless the Contractor has specifically informed the Design Consultant in writing of such deviation at the time of

submission and the Design Consultant has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data, Samples, or Manuals by the Design Consultant's review thereof.

3.11.5 The Contractor shall make corrections required by the Design Consultant and shall resubmit the required number of corrected copies of Shop Drawings or new Product Data or Samples. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Design Consultant on previous submittals. Resubmittals necessitated by required corrections due to Contractor's errors or omissions shall not be cause for extension of Contract Time, and any costs associated with the processing of these resubmittals shall be paid by the Contractor.

3.11.6 No portion of the Work requiring submission of Shop Drawings, Product Data, Samples or Manuals shall be commenced until the submittal has been approved by the Design Consultant. All such portions of the Work shall be in accordance with approved submittals.

### 3.12 EQUAL PRODUCTS AND SUBSTITUTIONS

3.12.1 All materials, supplies and articles furnished under this Contract shall, whenever specified and otherwise practicable, be the standard products of recognized, reputable manufacturers. Unless otherwise specifically provided in the Contract Documents, the naming of a certain brand, make, manufacturer or article, device, product, material, fixture or type of construction shall convey the general style, type, character and standard of quality of the article desired and shall not be construed as limiting competition. The Contractor, in such cases, may with Owner approval, use any brand, make, manufacturer, article, device, product, material, fixture, form or type of construction which in the judgment of the Design Consultant is equal to that specified. An item may be considered equal to the item so named or described if, in the opinion of the Owner and Design Consultant (1) it is at least equal in quality, durability, appearance, strength, and design; (2) it will perform at least equally the specific function imposed by the general design for the work being contracted for or the material being purchased; and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the specifications. Approval by the Owner and Design Consultant will be granted based upon considerations of quality, workmanship, economy of operation, suitability for the purpose intended, and acceptability for use on the Project.

3.12.2 Contractor must provide evidence that proposed substitution does not require revisions to the Contract Documents, that is consistent with Contract Documents, and will produce the indicated results, and is comparable with other portions of the Work. Contractor must provide a detailed comparison of significant qualities or proposed substitution with those of the Work Specified, including but not limited to the following significant qualities: performance, weight, size, durability, visual effect, sustainable design features, warranties, and any specific features and requirements indicated in Contract Documents. An annotated copy of applicable Specification Section and point-by-point comparison between specified product and the proposed substitution describing each point of compliance, non-compliance, and variance between the specified and proposed product shall be provided.

### 3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, easements, right-of-way agreements and the Contract Documents. The Contractor shall not unreasonably encumber the site, in the opinion of the Owner, with any materials, equipment or trailers nor shall he block the entrances or otherwise prevent reasonable access to the site, other working and parking areas, completed portions of the Work and/or properties, storage areas, areas of other facilities that are adjacent to the worksite. If the Contractor fails or refuses to move said material, equipment or trailers within 24 hours of notification by the Owner, to so do, the Owner shall have the right, without further notice, to remove, at the Contractor's expense, any material, equipment and/or trailers which the Owner deems are in violation of this paragraph.

### 3.14 CUTTING AND PATCHING OF WORK

3.14.1 The Contractor shall not damage or endanger any portion of the Work or the work of the Owner or any separate contractors by cutting, patching or otherwise altering any work, or by excavation.

- 3.14.2 Existing structures and facilities including but not limited to building, utilities, topography, streets, curbs, walks, etc., that are damaged or removed due to required excavations or other construction work, shall be patched, repaired or replaced by the Contractor to satisfaction of the Design Consultant and the Owner of such structures and facilities and authorities having jurisdiction.
- 3.15 CLEANING UP
- 3.15.1 The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. If the Contractor fails to clean up during or at the completion of the Work, the Owner may do so and the cost thereof shall be charged to the Contractor.
- 3.16 INDEMNIFICATION
- 3.16.1 To the fullest extent permitted by law, the Contractor shall, at his sole cost and expense, indemnify, defend, and hold harmless the Owner and the Design Consultant and their agents, representatives, and employees from and against all claims, actions, judgments, costs, liabilities, penalties, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or caused by any negligent act, error or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. The above obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity, which would otherwise exist as to any party or person, described in this Paragraph 3.16. The parties agree that this indemnification clause is an "evidence of indebtedness" for purpose of N.C. Gen. Stat. § 6-21.2. The parties also specifically acknowledge that the Owner is a public body and it is the intent of the parties that the Owner not incur any expenses when the Contractor is solely responsible for the claims.
- 3.16.2 In any and all claims against the Owner or the Design Consultant or any of their agents, representatives, or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Paragraph 3.16 shall not be limited in any way by Contractor's insurance coverage required herein.
- 3.16.3 No provision of this Paragraph 3.16 shall give rise to any duties on the part of the Design Consultant or the Owner, or any of their agents, representatives, or employees.
- 3.18 CONDITIONS AFFECTING THE WORK
- 3.18.1 The Contractor shall be responsible for taking all steps necessary to ascertain the nature and location of the Work and the general and local conditions, which can affect the Work or the cost thereof. The Owner assumes no responsibility for any understanding or representation about conditions affecting the Work made by any of his officers, employees, representatives, or agents prior to the execution of the Contract, unless such understandings or representations are expressly stated in the Contract Documents.
- 3.19 MISCELLANEOUS.
- 3.19.1 The Contractor shall provide documentation acceptable to the Owner showing the amount of MBE participation (including a complete list of all subcontractors and their final subcontract amounts) and sales tax paid by the Contractor and its subcontractors for materials purchased for Projects completed under this contract.
- 3.20 APPLICABLE LAWS.
- 3.20.1 This Contract and the relationship of the parties shall be governed by the laws of the state of North Carolina.
- 3.20.2 Contractor shall comply with all applicable laws and regulations in providing services under this Contract. Contractor shall not employ any individuals to provide services to the Owner who are not authorized by federal law to work in the United States. Contractor represents and warrants that it is not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this Contract by any governmental department or agency. Contractor must notify Owner within thirty (30) days if debarred by any government entity during this Contract. The Contractor represents that it is aware of and in compliance with the Immigration Reform and Control Act and North Carolina law (Article 2 of Chapter 64 of the

North Carolina General Statutes) requiring use of the E-Verify system. The Contractor further warrants that it will use the E-Verify system to verify employment eligibility of all its employees throughout the term of this Contract, and that it will remain in compliance with all I-9 requirements throughout the term of this Contract. The Contractor shall also ensure that any subcontractors use the E-Verify system at all times while providing subcontracted services in connection with this Contract. Contractor is responsible for providing affordable health care coverage to all of its full-time employees providing services to the school system. The definitions of "affordable coverage" and "full-time employee" are governed by the Affordable Care Act and accompanying IRS and Treasury Department regulations.

- 3.20.3 The Contractor also acknowledges that G.S. § 14-208.18 prohibits anyone required to register as a sex offender under Article 27A of Chapter 14 of the General Statutes from knowingly being on the premises of any school. The Contractor shall conduct or arrange to have conducted, at its own expense, sexual offender registry checks on each of its employees, agents, ownership personnel, or contractors ("contractual personnel") who will engage in any service on or delivery of goods to school system property or at a school-system sponsored event, except checks shall not be required for individuals who are solely delivering or picking up equipment, materials, or supplies at: (1) the administrative office, provided that such office is not located at a school site; (2) non-school sites; (3) schools closed for renovation; or (4) school construction sites. The checks shall include at a minimum checks of the State Sex Offender and Public Protection Registration Program, the State Sexually Violent Predator Registration Program, and the National Sex Offender Registry ("the Registries"). For the Contractor's convenience only, all of the required registry checks may be completed at no cost by accessing the United States Department of Justice Sex Offender Public Website at <http://www.nsopw.gov/>. The Contractor shall provide certification on the Sexual Offender Registry Check Certification Form that the registry checks were conducted on each of its contractual personnel providing services or delivering goods under this Agreement prior to the commencement of such services or the delivery of such goods. The Contractor shall conduct a current initial check of the registries (a check done more than 30 days prior to the date of this Agreement shall not satisfy this contractual obligation). In addition, the Contractor agrees to conduct the registry checks and provide a supplemental certification form before any additional contractual personnel are used to deliver goods or provide services pursuant to this Agreement. The Contractor further agrees to conduct annual registry checks of all contractual personnel and provide annual certifications at each anniversary date of this Agreement. The Contractor shall not assign any individual to deliver goods or provide services pursuant to this Agreement if said individual appears on any of the listed registries. The Contractor agrees that it will maintain all records and documents necessary to demonstrate that it has conducted a thorough check of the registries as to each contractual personnel, and agrees to provide such records and documents to the Owner upon request. The Contractor specifically acknowledges that the Owner retains the right to audit these records to ensure compliance with this section at any time in the Owner's sole discretion. Failure to comply with the terms of this provision shall be deemed a material breach of the Agreement. In addition, the Owner may conduct additional criminal records checks at the Owner's expense. If the Owner exercises this right to conduct additional criminal records checks, the Contractor agrees to provide within seven (7) days of request the full name, date of birth, state of residency for the past ten years, and any additional information requested by the Owner for all contractual personnel who may deliver goods or perform services under this Agreement. The Contractor further agrees that it has an ongoing obligation to provide the Owner with the name of any new contractual personnel who may deliver goods or provide services under the Agreement. The Owner reserves the right to prohibit any contractual personnel of the Contractor from delivering goods or providing services under this Agreement if the Owner determines, in its sole discretion, that such contractual personnel may pose a threat to the safety or well-being of students, school personnel or others.
- 3.20.4 Anti-Nepotism. Contractor warrants that, to the best of its knowledge and in the exercise of due diligence, none of its corporate officers, directors, or trustees and none of its employees who will directly provide services under this Agreement are immediate family members of any member of the Board of Education or of any principal or central office staff administrator employed by the Board. For purposes of this provision, "immediate family" means spouse, parent, child, brother, sister, grandparent, or grandchild, and includes step, half, and in-law relationships. Should Contractor become aware of any family relationship covered by this provision or should such a family relationship arise at any time during the term of this Agreement, Contractor shall immediately disclose the family relationship in writing to the Superintendent of the Schools. Unless formally waived by the Board, the existence of a family relationship covered by this Agreement is grounds for immediate termination by Owner without further financial liability to Contractor.
- 3.20.5 Restricted Companies Lists. Contractor represents that as of the date of this Contract, Contractor is not

included on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C. Gen. Stat. § 147-86.58. Contractor also represents that as of the date of this Contract, Contractor is not included on the list of restricted companies determined to be engaged in a boycott of Israel created by the North Carolina State Treasurer pursuant to N.C. Gen. Stat. § 147-86.81.

**3.21 COMPLIANCE WITH BOARD POLICIES AND PROCEDURES**

The Contractor agrees to comply with the all of the Owner's policies at all times that the Contractor, its subcontractors and employees are on the Owner's property. The Contractor acknowledges that Board policies are available for review at the Owner's website and agrees to comply with the policies. The Contractor also agrees to comply with the following provisions:

- 3.21.1 The Contractor, its Subcontractors and employees shall not possess or carry, whether openly or concealed, any gun, rifle, pistol, or explosive on any property owned by the Owner. This includes firearms locked in containers, vehicles or firearm racks within vehicles. The Contractor, its Subcontractors and employees shall not cause, encourage or aid a minor, who is less than 18 years old to possess or carry, whether openly or concealed, any weapons on any property owned by the Owner.
- 3.21.2 The Contractor, its Subcontractors and employees, are prohibited from profane, lewd, obscene or offensive conduct or language, including engaging in sexual harassment.
- 3.21.3 The Contractor and its Subcontractors shall not manufacture, transmit, conspire to transmit, possess, use or be under the influence of any alcoholic or other intoxicating beverage, narcotic drug, hallucinogenic drug, amphetamine, barbiturate, marijuana or anabolic steroids, or possess, use, transmit or conspire to transmit drug paraphernalia on any property owned by the Owner.
- 3.21.4 The Contractor and its Subcontractors may not at any time use or display tobacco or nicotine-containing products, including but not limited to electronic cigarettes (e-cigarettes), on school premises, both indoor and outdoor. The prohibition of the display of tobacco or nicotine products shall not extend to a display that has a legitimate instructional or pedagogical purpose. For purposes of this Contract, "tobacco product" is defined to include cigarettes, cigars, blunts, bidis, pipes, chewing tobacco, snuff, and any other items containing or reasonably resembling tobacco, tobacco products, or any facsimile thereof. "Tobacco use" includes smoking, chewing, dipping, or any other use of tobacco products.
- 3.21.5 The Contractor, its Subcontractors and employees shall not solicit from or sell to students or staff within the Owner's facilities or campuses, and shall not give gifts of any value to school system employees.
- 3.21.6 Operators of all commercial vehicles on any property owned by the Owner shall be subject to post-accident, random, reasonable suspicion and follow-up testing for drugs and alcohol.
- 3.21.7 The Contractor, its Subcontractors and employees are prohibited from using access to the site pursuant to this Agreement as a means to date, court, or enter into a romantic or sexual relationship with any student enrolled in the School System. The Contractor agrees to indemnify the Owner for claims against the Owner resulting from relationships which have occurred or may occur between a student and an employee of the Contractor or Subcontractor.

**END OF ARTICLE 3**

**ARTICLE 4**

**SUBCONTRACTORS**

**4.1 DEFINITION**

- 4.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the site. The term Subcontractor may be referred to throughout the Contract Documents as if singular in

number and masculine in gender and means a Subcontractor or his authorized representative. The term Subcontractor does not include any Separate Contractor or his subcontractors.

- 4.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform any of the Work at the site or who contracts to perform or supply any of the Work under the scope of a Subcontractor's subcontract. The term Sub-subcontractor may be referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or an authorized representative thereof.
- 4.1.3 Nothing contained in the Contract Documents is intended to, nor shall it create, any contractual relationship between the Owner, the Design Consultant, or any of their agents, consultants, employees, independent contractors, or representatives and any Subcontractor, Sub-subcontractor, Supplier or Vendor of the Contractor, except the relationship between Owner and Contractor, but the Owner shall be entitled to performance of all obligations intended for his benefit, and to enforcement thereof.
- 4.1.4 The Owner and Design Consultant will not deal directly with any Subcontractor, Sub-subcontractor or Material Supplier. Communication will be made only through the Contractor. Subcontractor, Sub-subcontractors or Material Suppliers shall route requests for information or clarification through the Contractor to the Design Consultant.
- 4.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK
  - 4.2.1 The Contractor, in compliance with the requirements of the Contract Documents and within ten (10) days after the Notice to Proceed, shall furnish in writing to the Owner the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Owner will promptly reply to the Contractor in writing stating whether or not the Owner, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner to reply within a reasonable time shall constitute notice of no reasonable objection. The Contractor understands and agrees that no contractual agreement exists for any part of the Work under this Contract between the Owner and any of the Contractor's Subcontractors or Sub-subcontractors. Further, the Contractor understands and agrees that he alone is responsible to the Owner for the Work under this Contract and that any review of Subcontractors or Sub-subcontractors by the Owner will not in any way make the Owner responsible to any Subcontractor, nor responsible for the actions or failures of any Subcontractor or Sub-subcontractor.
    - 4.2.1.1 The Contractor shall identify in the list of names of the Subcontractors proposed, those Subcontractors that are Historically Underutilized Businesses (HUB's) and indicate the portion of the Work that each Subcontractor will perform.
  - 4.2.2 The Contractor shall not contract with any such proposed person or entity to whom the Owner has made reasonable objection under the provisions of Paragraph 4.2.1. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection.
  - 4.2.3 If the Owner has reasonable objection to any proposed person or entity under Paragraph 4.2.1, the Contractor shall name a substitute to whom the Owner has no reasonable objection. The Contract Sum shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued, subject to an audit of said difference by the Owner; provided, however, that no increase in the Contract Sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting names as required by Paragraph 4.2.1 and the original proposed Subcontractor was: (i) able to carry out his work under his proposed subcontract, (ii) able to comply with all applicable laws, (iii) was an ongoing business in the field of his proposed subcontract, and (iv) had a labor force, capital and a means of supply compatible with the scope of his proposed subcontract.
  - 4.2.4 If the Owner requires a change of any proposed Subcontractor or person or organization previously accepted by him on the Project, the Contract Sum shall be increased or decreased by the difference in cost occasioned by such change and an appropriate Change Order shall be issued, subject to an audit by Owner.
  - 4.2.5 The Contractor shall notify the Owner and the Design Consultant of any substitution for any Subcontractor

identified in accordance with Subparagraph 4.2.1.1. The Contractor shall make no substitution for any Subcontractor, person or entity previously selected if the Owner or the Design Consultant makes reasonable objection to such substitution. Also, Contractor may make no substitution of Subcontractors in violation of applicable law.

- 4.2.6 If during the duration of the Project, the Contractor effects a substitution for any Subcontractor per Paragraph 5.2.5, or if additional subcontract opportunities become available, the Contractor shall make a good faith effort to utilize Historically Underutilized Businesses (HUB's).

#### 4.3 SUBCONTRACTUAL RELATIONS

- 4.3.1 By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Contract Documents, assumes toward the Owner. Said agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the agreement between the Contractor and Subcontractor, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Section 4.3, and identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Contract Documents available to his Sub-subcontractors.

- 4.3.2 The provisions herein regarding Subcontractor approvals shall in no way affect the liability of the Contractor to the Owner regarding performance of all obligations by or payment of Subcontractors. Approval to subcontract with any given Subcontractor shall not to any degree relieve the Contractor of his obligation to perform or have performed to the full satisfaction of the Owner the Work required by this Contract.

- 4.3.3 The Contractor shall submit Notice to the Owner of any Claims by Subcontractors for which the Owner is believed to be responsible, in strict conformance with the same time requirements and other procedures established for the submission of the Contractor's Claims to the Owner.

#### 4.4 QUALIFICATION SUBMITTALS

- 4.4.1 Specific qualification submittals may be required of Subcontractors, installers and suppliers for certain critical items of the Work. Required qualification submittals are set forth in detail in the Specifications and shall be collected and submitted by the Contractor for review and approval by the Design Consultant. All information required of a single Subcontractor, installer or supplier shall be contained in a single, complete submittal. The Contractor shall submit the required qualification information within ten (10) days after receipt of the Design Consultant's request.

- 4.4.2 The Owner and Design Consultant shall reject any proposed Subcontractor, installer or supplier, or any qualification submittals related thereto, for the following reasons:

- .1 The Contractor's failure to submit requested information within the specified time; or
- .2 The Contractor's failure to provide all of the requested information; or
- .3 The Contractor's submission of a Subcontractor, installer or supplier, or qualifications thereof, which are unacceptable in the judgment of the Owner or Design Consultant.

- 4.4.3 Should the Owner or Design Consultant have reasonable objection to any proposed Subcontractor, installer or supplier, the Contractor shall submit another person or firm who are reasonably acceptable to the Owner and Design Consultant.



#### 4.5 PREPARATORY WORK

- 4.5.1 Before starting a portion of the Work, the Contractor and the responsible Subcontractor shall carefully examine all preparatory work that has been executed to receive his work. The Subcontractor shall check carefully, by whatever means are required, to ensure that his work and adjacent related work will finish to proper contours, planes and levels. He shall promptly notify the Contractor and the Design Consultant of any defects or imperfections in preparatory work, which will, in any way, affect satisfactory completion of his work. Absence of such notification will be construed as an acceptance of preparatory work and later Claims of defects therein will not be recognized.
- 4.5.2 Under no conditions shall a portion of the Work proceed prior to preparatory work having been completed, cured, dried, and otherwise made satisfactory to receive such related work. Responsibility for timely installation of all materials rests solely with the Contractor, who shall maintain coordination control at all times.

#### END OF ARTICLE 4

### **ARTICLE 5**

#### **WORK BY OWNER OR BY SEPARATE CONTRACTORS**

##### 5.1 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

- 5.1.1 The Owner reserves the right to perform work related to the Project with his own forces, and to award separate contracts in connection with other portions of the Project or other work on the site under these or similar Conditions of the Contract.

##### 5.2 MUTUAL RESPONSIBILITY

- 5.2.1 Should the Contractor cause damage to the work or property of the Owner or of any separate contractor on the Project, or to other work on the Site, or delay or interfere with the Owner's work on ongoing operations or facilities or adjacent facilities or said separate contractor's work, the Contractor shall be liable for the same; and, in the case of another contractor, the Contractor shall attempt to settle said claim with such other contractor prior to such other contractor's institution of litigation or other proceedings against the Contractor.
- 5.2.2 Should a separate contractor cause damage to the Work or to the property of the Contractor or cause delay or interference with the Contractor's performance of the Work, the Contractor shall present directly to said separate contractor any claims it may have as a result of such damage, delay or interference (with an information copy to the Owner) and shall attempt to settle its claim against said separate contractor prior to the institution of litigation or other proceedings against said separate contractor.
- 5.2.3. In no event shall the Contractor seek to recover from the Owner or the Design Consultant, and the Contractor hereby waives any claims against the Owner and Design Consultant relating to any costs, expenses (including, but not limited to, attorney's fees) or damages or other losses incurred by the Contractor as a result of any damage to the Work or property of the Contractor or any delay or interference caused by any separate contractor.

##### 5.3 COORDINATION OF THE WORK

- 5.3.1 By entering into this contract, Contractor acknowledges that there may be other contractors on the site whose work will be coordinated with that of his own. Contractor expressly warrants and guarantees that he will cooperate with other contractors and will do nothing to delay, hinder or interfere with the work of other separate contractors, the Owner or Design Consultant. Contractor also expressly agrees that, in the event his work is hindered, delayed, interfered with or otherwise affected by a separate contractor, his sole remedy will be a direct action against the separate contractor as described in this Article 5. Contractor will have no remedy, and hereby expressly waives any remedy, against the Owner and/or the Design Consultant on account of delay, hindrance, interference or other event caused by a separate contractor.

## END OF ARTICLE 5

### **ARTICLE 6**

#### **MISCELLANEOUS PROVISIONS**

##### **6.1 GOVERNING LAW**

6.1.1 This contract shall be governed by the law of the State of North Carolina. The Contractor and Owner agree that the county where the Project is located shall be the proper venue for any litigation arising out of this Agreement.

6.1.2 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein. If through mistake or otherwise, any such provision is not inserted or is not correctly or fully inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

##### **6.2 CLAIMS AND DAMAGES**

6.2.1 Should the Contractor or any of its Subcontractors suffer injury or damage to person or property because of any act or omission of the Owner or Design Consultant, or of any of their employees, agents or others for whose acts either is legally liable, the claim on behalf of the Contractor or its subcontractors shall be made in writing to the Owner within 10 days after the first observance of such injury or damage; otherwise, the Contractor shall have waived any and all rights he may have against the Owner or the Design Consultant, or their employees, representatives and agents. The Contractor shall indemnify, defend and hold the Owner harmless from any claim by a Subcontractor that is waived because it is not filed in strict conformance with this paragraph or any other provision of this Agreement regarding claims.

##### **6.4 RIGHTS AND REMEDIES**

6.4.1 The duties and obligations of the Contractor imposed by the Contract Documents and the rights and remedies of the Owner available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

6.4.2 Except as may be specifically agreed in writing, the failure of the Owner or the Design Consultant to insist in any one or more instances upon the strict performance of any one or more of the provisions of this Contract, or to exercise any right herein contained or provided by law, shall not be construed as a waiver or relinquishment of the performance of such provisions or right(s) or of the right to subsequently demand such strict performance or exercise such right(s), and the rights shall continue unchanged and remain in full force and effect.

6.4.3 The Contractor agrees that he can be adequately compensated by money damages for any breach of this Contract which may be committed by the Owner and hereby agrees that no default, act, or omission of the Owner or the Design Consultant, except for failure to make progress payments as required by the Contract Documents, shall constitute a material breach of the Contract entitling the Contractor to cancel or rescind the provisions of this Contract or (unless the Owner shall so consent or direct in writing) to suspend or abandon performance of all or any part of the Work. The Contractor hereby waives any and all rights and remedies to which he might otherwise be or become entitled, save only his right to money damages.

6.4.4 Contractor and Owner acknowledge that the Contract Documents shall not be construed against Owner due to the fact that they may have been drafted by Owner. For purposes of construing the Contract Documents, both Contractor and Owner shall be considered to have jointly drafted the Contract Documents.

6.4.5 In the event that Owner incurs attorney's fees or litigation expenses in connection with enforcing or protecting its rights under the Contract Documents or defending any claim or lawsuit brought against it arising out of the

Work or the Contract Documents, Contractor shall reimburse Owner for such reasonable attorney's fees and expenses.

## 6.5 TESTS AND INSPECTIONS

6.5.1 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Owner timely notice of its readiness so the Design Consultant and the Owner may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests or approvals conducted by public authorities. Unless otherwise provided, the Owner shall bear all costs of other inspections, tests or approvals.

6.5.2 Unless otherwise stipulated in other Contract Documents, the Contractor shall pay for all utilities required for testing of installed equipment of all of his work and work of each Subcontractor. Boiler fuel other than gas shall be provided by Subcontractor furnishing boilers. Labor and supervision required for making such tests shall be provided at no additional cost to the Owner.

6.5.3 If the Design Consultant or the Owner determines that any Work requires special inspection, testing, or approval which Subparagraph 6.51 does not include, the Owner will instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided in Subparagraph 6.51. If such special inspection or testing reveals a failure of the Work to comply (1) with the requirements of the Contract Documents, or (2) with respect to the performance of the Work, with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, the Contractor shall bear all costs thereof, including compensation for the Design Consultant's and Owner's additional construction management expenses made necessary by such failure.

## 6.6 UNENFORCEABILITY OF ANY PROVISION

6.6.1 If any provision of this Contract is held as a matter of law to be unenforceable or unconscionable, the remainder of the Contract shall be enforceable without such provision.

## 6.7 ATTORNEYS' FEES AND OTHER EXPENSES

6.7.1 The Contractor hereby agrees that he will not submit, assert, litigate or otherwise pursue any frivolous or unsubstantiated claims or claims he has specifically waived under the terms of the Contract Documents. In the event that the Contractor's or its Subcontractor's claims, or any separate item of a claim, is without substantial justification, the Contractor shall reimburse the Owner or Design Consultant for all costs and expenses associated with defending such claim or separate item, including but not limited to, attorneys' fees, audit costs, accountants' fees, expert witness' fees, additional Design Consultant expenses, additional construction management expenses, or services and any other consultant costs.

6.7.2 If the Contractor breaches any obligation under the Contract Documents, the Contractor shall reimburse the Owner and Design Consultant for all costs and expenses incurred by the Owner relating to such breach, including but not limited to attorneys' fees, audit costs, accountants' fees, expert witness' fees, additional Design Consultant expenses, additional construction management expenses, and any other consultant costs.

6.7.3 If the Owner or Design Consultant prevails in a claim brought against the Contractor, including but not limited to, claims for fraud or misrepresentation, overpayment, defective work, delay damages, and recovery of termination expenses, the Contractor shall reimburse the Owner and Design Consultant for all costs and expenses incurred by them relating to such claim, including but not limited to attorneys' fees, audit costs, accountants' fees, expert witness' fees, additional Design Consultant expenses, additional construction management expenses, and any other consultant costs.

## 6.8 SUCCESSORS AND ASSIGNS

6.8.1 The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor

shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner and the Contractor's Surety.

## **END OF ARTICLE 6**

## **ARTICLE 7**

### **TIME**

#### **7.1 DEFINITIONS**

- 7.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial and Final Completion of the Work, as defined in Subparagraph 7.1.3 and 7.1.4, including any allowances and alternates. The Contractor shall complete his Work within Contract Time, unless the Contract Time is modified.
- 7.1.2 The date of commencement of the Work is the date established in a notice to proceed. If there is no notice to proceed, it shall be the date of the Owner-Contractor Agreement or such other date as may be established therein. The Contractor shall not commence Work or store materials or equipment on site until written Notice to Proceed is issued or until the Contractor otherwise receives the Owner's written consent.
- 7.1.3 The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Design Consultant and the Owner when the Work or a designated portion thereof is sufficiently complete, in accordance with the Contract Documents, so the Owner can fully occupy and utilize the Work or designated portion thereof for the use for which it is intended, with all of the Project's parts and systems operable as required by the Contract Documents. Only incidental corrective work and any final cleaning beyond that needed for the Owner's full use may remain for final completion. The issuance of a temporary or final certificate of occupancy shall not, in itself, constitute Substantial Completion. Educational operational systems such as voice, data, security cameras, security card readers, security motion detection systems and building automation systems including functional graphics at the site are required for Substantial Completion.
- 7.1.4 The date of Final Completion of the work is the date certified by the Design Consultant and the Owner when the Work is totally complete, to include punch list work, in accordance with the Contract Documents and the Owner may fully occupy and utilize the work for the use for which it is intended. The issuance of a temporary or final certificate of occupancy shall not, in itself, constitute Final Completion.

#### **7.2 DELAYS AND EXTENSIONS OF TIME**

- 7.2.1 The time during which the Contractor or any of its subcontractors delayed in the performance of the Work by the acts or omissions of the Owner, Design Consultant or their employees or agents, acts of God, unusually severe and abnormal climatic conditions, fires, floods, epidemics, quarantine restrictions, strikes, riots, civil commotions or freight embargoes, or other conditions beyond the Contractor's or its subcontractors' control and which the Contractor or its subcontractors could not reasonably have foreseen and provided against, shall be added to the time for completion of the Work (i.e., the Contract Time) stated in the Agreement; provided, however, that no claim by the Contractor for an extension of time for delays will be considered unless made in strict compliance with the requirements of this Article and other provisions of the Contract Documents.
- 7.2.1.1 For excessive inclement weather, the Contract time will not be extended due to reasonably anticipated inclement weather or for delays in the aftermath of inclement weather, reasonably anticipated or excessive. The time for performance of this Contract, as stated in the Contract Documents, includes an allowance for calendar days which may not be available for construction out-of-doors; for the purposes of this Contract, the Contractor agrees that the number of calendar days per month based on a five-year average shall be considered reasonably anticipated inclement weather and planned for in the construction schedule per the Contract. Unless the Contractor can substantiate to the satisfaction of the Owner that there was greater than the reasonably anticipated inclement weather considering the time from the Notice to Proceed until the date established for substantial completion using data from the national weather service station noted in the

Supplemental General Conditions or a weather station acceptable to the Owner and that such alleged greater than reasonably anticipated inclement weather actually delayed the Work or portions thereof which had an effect upon the Contract time, the Contractor shall not be entitled to an extension of time.

Also, the Contractor agrees that the calculation of the number of excessive inclement weather days shall be the number of days in excess of the five-year average for each month, in which precipitation exceeded one tenth (.10) inch, or in which the highest temperature was 32 degrees For less as recorded at the approved weather station. Rain days from hurricanes and tropical storms not causing damage in the county where the Project is located shall be deemed inclement weather days.

If the total accumulated number of calendar days lost to excessive inclement weather, from the Notice to Proceed until the date established for substantial completion, exceeds the total accumulated number to be reasonably anticipated for the same period from the table above, time for completion will be extended by the number of calendar days needed to include the excess number of calendar days lost. No extension of time will be made for days due to excessive inclement weather occurring after the date established for substantial completion. No change in Contract sum will be authorized because of adjustment of Contract time due to excessive inclement weather.

- 7.2.2 Should a time extension be granted for Substantial Completion the date for Final Completion shall be appropriately adjusted unless specifically stated otherwise.
- 7.2.3 Neither the Owner nor the Design Consultant shall be obligated or liable to the Contractor or its Subcontractors for, and the Contractor hereby expressly waives any claims against the Owner and the Design Consultant on account of any indirect or direct damages, costs or expenses of any nature which the Contractor, its Subcontractors, or Sub-subcontractors or any other person may incur as a result of any delays, interferences, changes in sequence or the like, which are reasonable, foreseeable, contemplated, or avoidable by Contractor, and it is understood and agreed that the Contractor's sole and exclusive remedy in any such events shall be an extension of the Contract Time in accordance with the Contract Documents, unless the delays, interferences, changes in sequence or the like arise solely from or out of any act or omission of the Owner or the Design Consultant, or their agents, employees, consultants or independent. The Contractor shall not be entitled to any damages pursuant to this section if there are any concurrent delays for which the Owner and/or the Design Consultant are not solely responsible.
- 7.2.4 Subject to other provisions of the Contract, the Contractor may be entitled to an extension of the Contract Time (but no increase in the Contract Sum) for delays arising from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, his Subcontractors or suppliers, unless caused solely by the Owner or Design Consultant.
- 7.2.5 The Contractor and its subcontractors shall not be entitled to and hereby expressly waives any extension of time resulting from any condition or cause unless said claim for extensions of time is made in writing to the Owner within ten (10) days of the first instance of delay.

#### END OF ARTICLE 7

### **ARTICLE 8**

#### **PAYMENTS AND COMPLETION**

- 8.1 SCHEDULE OF VALUES
  - 8.1.1 Before the first Application for Payment, the Contractor shall submit to the Owner a schedule of values allocated to the various portions of the Work.
- 8.2 APPLICATIONS FOR PAYMENT
  - 8.2.1 Prior to the date for each progress payment established in the Owner-Contractor Agreement, the Contractor, shall submit to the Owner an itemized Application for Payment including a completed Contractor's Sales Tax

Report (attached hereto as Appendix A) for all items provided by the Contractor or any Subcontractors included in the application. The Contractor shall also certify that he has paid all due and payable amounts for which previous certificates for payment were issued and payments received from the Owner and that the work for which payment is requested has been completed.

8.2.2 The Owner will retain funds from each progress payment to the maximum extent allowed by N.C. General Statute 143-134.1 until the Work is finally completed and accepted, whether or not the Owner has occupied any or all of the Project before such time. If a reduction in retainage has been made or the Owner stops withholding retainage for any reason, the Owner may increase or commence the retainage as authorized by N.C. Gen. Stat. 143-134.1.

8.2.3 Owner will be under no obligation to make payment to the Contractor on account of materials or equipment not incorporated in the Work. Materials once paid for by the Owner become the property of the Owner and may not be removed from the work site without the Owner's written permission.

8.2.4 The Contractor warrants that title to all Work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article 8 as "liens".

8.2.5 All invoices shall show the following:

- .1 Total amount of contract
- .2 Amount of change orders
- .3 Total value of completed work
- .4 Amount retained by Owner
- .5 Amount due Contractor

### 8.3 CERTIFICATES FOR PAYMENT

8.3.1 By signing a Certificate for Payment, the Design Consultant shall not thereby be deemed to represent that it has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work or that it has reviewed the construction means, methods, techniques, sequences, or procedures, or that it has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum.

### 8.4 PROGRESS PAYMENTS

8.4.1 The Contractor shall promptly pay each Subcontractor (including suppliers, laborers, and material-men) performing labor or furnishing material for the Work, upon receipt of payment from the Owner.

8.4.2 No Certificate for a progress payment, nor any progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

8.4.3 The Contractor shall not submit more than one pay application during any 30-day period.

### 8.5 PAYMENTS WITHHELD

8.5.1 The Design Consultant may decline to certify payment and may withhold their Certificate in whole or in part, to the extent the Design Consultant deems necessary to reasonably protect the Owner from loss associated with unsatisfactory job progress, defective construction, disputed work, claims or any other similar issue. If the Design Consultant is unable to make representations to the Owner and to certify payment in the amount of the Application, it will notify the Contractor as provided herein. The Design Consultant may also decline to certify payment because of subsequently discovered evidence or subsequent observations that may nullify the whole or any part of any Certificate for Payment previously issued to such extent as may be necessary in its opinion to protect the Owner from loss.

## 8.6 FAILURE OF PAYMENT

8.6.1 Payments due and unpaid under the Contract Documents shall not bear interest.

## 8.7 SUBSTANTIAL COMPLETION

8.7.1 The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Design Consultant and Owner when the Work or a designated portion thereof is sufficiently complete, in accordance with the Contract Documents, so Owner can fully occupy and utilize the Work for the use for which it is intended, with all of the Project's parts and systems operable as required by the Contract Documents. Only incidental corrective work and any final cleaning beyond that needed for Owner's full use may remain for Final Completion. The Contractor shall be solely responsible for the cost to repair or replace any work damaged or destroyed prior to the Date of Substantial Completion.

8.7.2 When the Design Consultant and the Owner on the basis of an inspection jointly determine that the Work or designated portion thereof is substantially complete, they will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Contractor shall provide operation & maintenance manuals, and operation training to the Owner as required by the Contract Documents prior to Substantial Completion. The Owner's occupancy of incomplete work shall not alter the Contractor's responsibilities pursuant to this section.

8.7.3 The acceptance of Substantial Completion payment shall constitute a waiver of all claims by the Contractor and its Subcontractors except those previously made in writing and identified by the Contractor as unsettled at the time the Contractor submits the Application for Payment for Substantial Completion, and except for the retainage sums due at final acceptance. The Contractor shall indemnify and hold the Owner harmless against any claims by its Subcontractors that are waived because they were not made in writing and identified by the Contractor as unsettled when the Contractor submitted the Application for Payment for Substantial Completion.

8.7.4 The issuance of the Certificate of Substantial Completion does not indicate final acceptance of the project by the Owner, and the Contractor is not relieved of any responsibility for the project except as specifically stated in the Certificate of Substantial Completion.

8.7.5 There will be two inspections by the Design Consultant at Substantial Completion:

- .1 To generate a list of items to be completed or corrected before Owner takes possession of the Work.
- .2 To check that the list of items has been completed before issuing Final Payment.

Any additional inspections by the Design Consultant requested by Contractor to complete the Punch List shall result in money being withheld from the Final Payment to cover the cost of these additional inspections

## 8.8 FINAL COMPLETION AND FINAL PAYMENT

8.8.1 When the Design Consultant and the Owner find the Work acceptable under the Contract Documents and the Contract fully performed, they will approve a final Certificate of Payment stating that to the best of their knowledge, information and belief, and on the basis of their observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable, except for an amount mutually agreed upon for any work remaining incomplete or uncorrected for which the Owner is entitled a credit under the Contract Documents. If the Design Consultant and the Owner find the Work to be incomplete or unacceptable, the costs of reinspections shall be paid by the Contractor.

8.8.2 Final Payment shall not become due until the Contractor provides to the Design Consultant and Owner: three (3) copies of any of the following required:

- .1 Final Change Order
- .2 Final Application for Payment
- .3 Consent of Surety to Final Payment - AIA G707(if applicable)
- .4 Contractor's Affidavit of Release of Liens - AIA G706A
- .5 Contractor's Affidavit of Payment of Debts and Claims - AIA G706;
- .6 Certificate of Occupancy (if applicable)
- .7 Contractor's Warranty, notarized
- .8 Warranty Summary Sheet with Original Warranties (if not included in O & M Manuals)
- .9 Certification Letter from Contractor that no Asbestos-Containing Materials were used on the project
- .10 Final List of Subcontractors (name, address, phone, fax nos.)
- .11 Record Drawings (As-Built) - 1 set
- .12 Operation and Maintenance Manuals - 3 sets
- .13 Other project close-out submittals, as required by the Contract Documents.

8.8.3 Neither the final payment nor the remaining retained percentage shall become due until the Work is free and clear of any and all liens and the Contractor submits to the Owner:

- .1 an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been paid or otherwise satisfied;
- .2 if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner; and
- .3 As-built drawings, and other project closeout submittals, as required by the Owner.

8.8.4 The making of final payment shall constitute a waiver of all claims by the Owner against the Contractor except those arising from:

- .1 unsettled liens, and claims against the Owner or the Design Consultant, or their employees, agents, or representatives,
- .2 faulty, defective or non-conforming Work discovered or appearing after Substantial or Final Completion,
- .3 failure of the Work to comply with the requirements of the Contract Documents,
- .4 terms of any warranties contained in or required by the Contract Documents,
- .5 damages incurred by the Owner resulting from lawsuits brought against the Owner, the Design Consultant, or their agents, employees or representatives because of failures or actions on the part of the Contractor, his Subcontractors, Sub-subcontractors, or any of their employees, agents or representatives, or
- .6 fraud or bad faith committed by the Contractor or any subcontractor or supplier during performance of work but discovered by Owner after Final Payment.

8.8.5 The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment

## 8.9 LIQUIDATED DAMAGES

8.9.1 Should the Contractor fail to substantially complete the Work on or before the date stipulated for Substantial Completion (or such later date as may result from extension of time granted by Owner), he shall pay the Owner, as Substantial Completion liquidated damages the daily amount stated in the Supplementary Conditions for each consecutive calendar day that terms of the contract remain unfulfilled beyond the date allowed by the Contract, which sum is agreed upon as a reasonable and proper measure of damages which the Owner will



sustain per day by failure of the Contractor to complete work within time as stipulated; it being recognized by the Owner and the Contractor that the injury to the Owner which could result from a failure of the Contractor to complete on schedule is uncertain and cannot be computed exactly. In no way shall costs for liquidated damages be construed as a penalty on the Contractor.

8.9.2 For each consecutive calendar day that the Work remains incomplete after the date established for Final Completion, the Contractor shall pay or Owner will retain the daily amount stated in the Supplementary Conditions as Final Completion Liquidated Damages from the compensation otherwise to be paid to the Contractor. This amount is the minimum measure of damages the Owner will sustain due to the delay in the completion of all remedial work, the delay in the correction of the deficient work, the disruption to the school and the learning environment, the cost of contract management time and resources, administration time, and the inability to use the facilities fully. This amount is in addition to the liquidated damages prescribed above for Substantial Completion.

8.9.3 The amount of liquidated damages set forth above and in the corresponding Supplementary Conditions shall be assessed cumulatively. The items of cost included in the assessment of liquidated damages are as defined in the General Conditions. This provision for liquidated damages does not bar Owner's right to enforce other rights and remedies against Contractor, including but not limited to, specific performance or injunctive relief.

#### 8.10 OWNER'S RIGHT TO OCCUPY INCOMPLETE WORK

8.10.1 Should the Project, or any portion thereof, be incomplete for Substantial or Final Completion at the scheduled date or dates, the Owner shall have the right to occupy any portion of the Project. In such an event, the Contractor shall not be entitled to any extra compensation on account of said occupancy by the Owner or by the Owner's normal full use of the Project, nor shall the Contractor interfere in any way with said normal full use of the Project. Further, in such an event, the Contractor shall not be entitled to any extra compensation on account of the Owner's occupancy and use of the Project, nor shall the Contractor be relieved of any

responsibilities of the Contract including the required times of completion. Such occupancy by the Owner shall not, in itself, constitute Substantial or Final Completion.

### END OF ARTICLE 8

## **ARTICLE 9**

### **INSURANCE AND BONDS**

#### 9.1.1 CONTRACTOR'S INSURANCE AND BONDS

The Contractor shall purchase and maintain in companies properly licensed by the Insurance Department of the State of North Carolina and acceptable to the Owner such insurance as will protect him, the Owner, and the Owner's agents, representatives, and employees from claims which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Such insurance shall include:

##### 9.1.1.1 Worker's Compensation including Occupational Disease and Employer's Liability Insurance

- .1 Statutory - Amount and coverage as required by State of North Carolina Worker's Compensation laws
- .2 Employer's Liability  
\$1,000,000 Each Accident  
\$1,000,000 Policy Limit  
\$1,000,000 Each Employee

- 9.1.1.2 Commercial General Liability (Occurrence Form) - The Contractor shall provide during the life of this Contract such Commercial General Liability (Occurrence Form) Insurance as shall protect Contractor and any Subcontractor performing work under this Contract from claims for damages for Bodily Injury including accidental death, as well as from claims for Property Damage which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them. This insurance shall be on the Standard Insurance Services Office, Inc. (ISO) Commercial Liability Occurrence Form. The Contractor shall procure insurance coverage for direct operations, sublet work, elevators, contractual liability and completed operations with limits not less than those stated below:
- A Combined Single Limit for Bodily Injury, Property Damage and Personal Injury of:
- |             |  |
|-------------|--|
| \$2,000,000 | General Aggregate (except Products - Completed Operations) Limit |
| \$2,000,000 | Products - Completed Operations Aggregate Limit                  |
| \$1,000,000 | Personal and Advertising Injury Limit                            |
| \$1,000,000 | Each Occurrence Limit  |
| \$ 5,000    | Medical Expense  |
- 9.1.1.3 Property Damages, including Broad Form Property Damage and Explosion, Collapse, Underground property damage coverages, and blasting, where necessary.
- 9.1.1.4 Completed Operations Liability: Continuous coverage in force for one year after completion of Work.
- 9.1.1.5 Commercial Automobile Insurance, including coverage for owned, non-owned and hired vehicles - with limits not less than a Combined Single Limit for Bodily Injury and Property Damage of \$1,000,000.
- 9.1.1.6 Umbrella Liability Insurance: Policy to 'pay on behalf of the Insured' with Limits of Liability: \$1,000,000.
- 9.2 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates shall contain a provision that coverages afforded under the policies will not be canceled until at least thirty (30) days prior written notice has been given to the Owner. Failure to provide such notice shall not limit the liability of the Insurer, its agents or representatives.
- 9.3 All insurance policies required in this Article, except Worker's Compensation and Commercial Automobile, shall name the Owner as additional named insured for the insurance. The Owner shall be included in the definition of "insured" in the Commercial Automobile Policy.
- 9.4 Contractor shall not commence work under this Contract until he has obtained all the insurance and bonds required under Article 5 of this Contract and until such insurance and bonds have been approved by the Owner, nor shall Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Approval of the insurance by Owner shall not relieve or decrease the liability of Contractor hereunder.
- 9.5 The Commercial General Liability and Workers Compensation Policies provided by Contractor shall have endorsements waiving subrogation against Owner.
- 9.6 PROPERTY INSURANCE. Contractor shall provide the following property insurance:
- 9.6.1 Unless stated otherwise in the Supplemental Conditions, Contractor shall purchase and at all times maintain such insurance as will protect Contractor, Owner, Subcontractors and Sub-subcontractors from loss or damage to Work or property in the course of construction, including all machinery, materials and supplies on the premises or in transit thereto and intended to become a part of the finished work until Final Completion. This insurance shall be in the form of 'Builder's Risk Covered Cause of Loss Form' to include, but not limited to, theft, collapse, earth movement and flood. Any deductible provision in such insurance shall not exceed \$5,000.00. Notwithstanding any such deductible provision, Contractor shall remain solely liable for the full amount of any item covered by such insurance.

- 9.6.2 If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by Owner and Contractor, and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be canceled or lapsed on account of such partial occupancy or use. Consent of Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.
- 9.7 Owner shall be under no obligation to review any Certificates of Insurance provided by Contractor, or to check or verify Contractor's compliance with any and all requirements regarding insurance imposed by the Contract Documents. Contractor is fully liable for the amounts and types of insurance required herein and is not excused should any policy or certificate of insurance provided by Contractor not comply with any and all requirements regarding insurance imposed by the Contract Documents.
- 9.8 All insurance companies providing the above insurance shall be licensed by the Insurance Department of the State of North Carolina and maintain a rating by AM Best or a similar rating company with a minimum of an "A-" rating.
- 9.9 **PERFORMANCE AND PAYMENT BONDS**
- "If required by law, or in the Supplemental Conditions or the Contract Documents, Contractor must provide performance and payment bonds each in the amount of the Contract Sum. Such bonds shall be on forms acceptable to Owner and issued by surety companies licensed to do business in North Carolina and having a rating of at least AM Best "A" rating. Contractor may, at its option, make deposit in the form of certified check with Owner in lieu of the performance and payment bonds in an amount equal to the Contract Sum for each such bond, for a total of 200% of the Contract Sum."

#### END OF ARTICLE 9

### **ARTICLE 10**

#### **CHANGES IN THE WORK**

- 10.1 **CHANGE ORDERS**
- 10.1.1 The Owner may, at any time, by written order designated or indicated to be a Change Order, make any change or modification in the Work or add to the Work within the general scope of the Contract.
- 10.2 **OWNER DIRECTED CHANGES REQUIRING AN INCREASE IN CONTRACT SUM.**
- 10.2.1 If the Change in the Work will result in an increase in the Contract Sum, the Owner shall have the right to require the performance thereof on a lump sum basis, a unit price basis or a time and material basis, all as hereinafter more particularly described (the right of the Owner as aforesaid shall apply with respect to each such Change in the Work).

If the Owner elects to have the Change in the Work performed on a lump sum basis, its election shall be based on a lump sum Proposal which shall be submitted by the Contractor to the Owner within seven (7) days of the Contractor's receipt of a request therefore (but the Owner's request for a lump sum Proposal shall not be deemed an election by the Owner to have the Change in the Work performed on a lump sum basis). The Contractor's Proposal shall be itemized and segregated by labor and materials for the various components of the Change in the Work (no aggregate labor total will be acceptable) and shall be accompanied by signed Proposals of any Subcontractors who will perform any portion of the Change in the Work and of any persons who will furnish materials or equipment for incorporation therein. The Proposal shall also include the Contractor's estimate of the time required to perform said changes. The Contractor shall provide any documentation that may be requested by the Owner or Architect to support the change proposal, including but not limited to payroll records, insurance rates, material quotes, and rental quotes. The Change Proposal Forms attached as Appendix B shall be used to submit change proposals on the Project.

The portion of the Proposal relating to labor, whether by the Contractor's forces or the forces of any of its Subcontractors, may include reasonably anticipated gross wages of job site labor, including foremen, who will be directly involved in the Change in the Work (for such time as they will be so involved), plus payroll costs (including premium costs of overtime time, if overtime is anticipated, Social Security, Federal or State unemployment insurance taxes and fringe benefits required by collective bargaining agreements entered into by the Contractor or any such Subcontractor in connection with such labor) and up to fifteen percent (15%) of such anticipated gross wages, but not payroll costs, as overhead and profit for the Contractor or any such Subcontractor, as applicable (said overhead and profit to include all supervision except foremen). Payroll costs are limited to 39% of the net pay of the worker.

The portion of the Proposal relating to materials may include the reasonably anticipated direct costs to the Contractor or to any of its Subcontractors of materials to be purchased for incorporation in the Change in the Work, plus transportation and applicable sales and use taxes and up to fifteen percent (15%) of said direct material costs as overhead and profit for the Contractor or any such Subcontractor (said overhead and profit to include all small tools), and may further include the Contractor's and any of its Subcontractor's reasonably anticipated rental costs in connection with the Change in the Work (either actual or discounted local published rates), plus up to eight percent (8%) thereof as overhead and profit for the Contractor or any such Subcontractors, as applicable. The Contractor shall provide an itemized breakdown of all transportation and shipping costs, including receipts documenting the expenses. Notwithstanding the above, overhead and profit shall not be applied to any sales tax paid for any purpose or to any transportation or shipping costs incurred by the Contractor or any subcontractor. If any of the items included in the lump sum Proposal are covered by unit prices contained in the Contract Documents, the Owner may, if it requires the Change in the Work to be performed on a lump sum basis, elect to use these unit prices in lieu of the similar items included in the lump sum Proposal, in which event an appropriate deduction will be made in the lump sum amount prior to the application of any allowed overhead and profit percentages. No overhead and profit shall be applied to any unit prices.

The lump sum Proposal may include up to eight percent (8%) of the amount which the Contractor will pay to any of its Subcontractors for Changes in the Work as overhead and profit for the Contractor. The Contractor shall not be reimbursed for the costs of the Subcontractors' Payment and Performance Bonds, as such bonding is not required by the Owner.

- 10.2.2 In the event that the Contractor fails to submit his Proposal within the designated period, the Owner may order the Contractor to proceed with the Change to the Work and the Contractor shall so proceed. The Owner shall unilaterally determine the reasonable cost and time to perform the Work in question, which determination shall be final and binding upon the Contractor. The Contractor may dispute such action in accordance with the Article 15.
- 10.2.3 In the event that the parties are unable to agree as to the reasonable cost and time to perform the Change in the Work based upon the Contractor's Proposal and the Owner does not elect to have the Change in the Work performed on a time and material basis, the Owner may choose to make a determination of the reasonable cost and time to perform the Change in the Work, based upon its own estimates, the Contractor's submission or a combination thereof. A Construction Change Directive shall be issued in this case for the amounts of cost and time determined by the Owner and shall become final and binding upon the Contractor, subject to Contractor's right to dispute such action in accordance with Article 10.9. Owner has the right to direct by Construction Change Directive a Change in the Work, which is the subject of such Change Order. Failure of the parties to reach agreement regarding the cost and time of the performing the Construction Change Directive, shall not relieve the Contractor from performing the Change in the Work promptly and expeditiously.
- 10.2.3.1 The Owner reserves the right to reject the Contractor's Proposal for a Change in the Work and to elect to perform said Work using a Separate Contractor. Under such circumstances, all provisions of Article 6 shall be in force.
- 10.2.4 If the Owner elects to have the Change in the Work performed on a time and material basis, the same shall be performed, whether by the Contractor's forces or the forces of any of its Subcontractors or Sub-subcontractors, at actual cost to the entity performing the Change in the Work (without any charge for administration, clerical expense, supervision or superintendence of any nature whatsoever, including foremen, or the cost, use or rental of tools or plant), plus fifteen percent (15%) thereof as the total overhead and profit (except that said fifteen

percent (15%) shall not be applied against any payroll costs, as set forth in Paragraph 10.2.1.) The Contractor shall submit to the Owner daily time and material tickets, on a daily basis to include the identification number assigned to the Change in the Work, the location and description of the Change in the Work, the classification of labor employed (and names and social security numbers), the materials used, the equipment rented (not tools) and such other evidence of cost as the Owner may require. The Owner may require authentication of all time and material tickets and invoices by persons designated by the Owner for such purpose. The failure of the Contractor to secure any required authentication shall, if the Owner elects to treat it as such, constitute a waiver by the Contractor of any Claim for the cost of that portion of the Change in the Work covered by a non-authenticated ticket or invoice; provided, however, that the authentication of any such ticket or invoice by the Owner shall not constitute an acknowledgment by the Owner that the items thereon were reasonably required for the Change in the Work.

- 10.2.5 No overhead and profit will be paid by the Owner on account of a Change in the Work except as specifically provided in Section 10.2. Overhead and profit, as allowed under Section 10.2, shall be deemed to include all costs and expenses which the Contractor or any of its Subcontractors may incur in the performance of a Change in the Work and which are not otherwise specifically recoverable by them pursuant to Section 10.2.

### 10.3 CONTRACTOR NOTICE OF CHANGE

- 10.3.1 If the Contractor or any of its Subcontractors asserts that any event or occurrence has caused a change in or addition to the Work which change causes an increase or decrease in the Contractor's or its Subcontractors' cost or the time required for the performance of any part of the Work under the Contract, including Work not affected directly by the change, the Contractor shall, within ten (10) days of such event, give the Owner written notice as herein required. Said notice shall include the instructions or circumstances that are the basis of the claim and the Contractor's best estimate of the cost and time involved.

- 10.3.2 If the Contractor intends to assert a claim under this Article, he must, within ten (10) days after receipt of a written Change Order under Subparagraph 10.2.1 above or the furnishing of a written notice under Subparagraph 10.3.1, submit to the Owner a written statement setting forth the specific nature and cost of such claim, unless this period is extended by the Owner. The statement of claim hereunder may be included in the notice under Subparagraph 10.3.1 above. The statement of claim shall include all direct, indirect and impact costs associated with the change, as well as the Contractor's estimate of the schedule impact of the change, if any. The Contractor and its subcontractors shall not be entitled to reimbursement for any claims that are not filed in strict conformance with this Article. The Contractor shall indemnify and hold the Owner harmless against any claims by Subcontractors that are waived because they are not filed in strict conformance with this Article.

- 10.3.3 If the parties are unable to agree to the reasonable cost and time to perform the Change, or are unable to agree as to whether a change occurred, the Owner shall make a unilateral determination as described in Article 10.2.2. The Contractor shall proceed pursuant to the provisions of that Article.

### 10.4 GENERAL PROVISIONS RELATED TO CHANGES

- 10.4.1 The Contractor shall not be entitled to any amount for indirect costs, damages or expenses of any nature, including, but not limited to, so-called "impact" costs, labor inefficiency, wage, material or other escalations beyond the prices upon which the proposal is based and to which the parties have agreed pursuant to the provisions of Article 10, and which the Contractor, its Subcontractors or Sub-subcontractors or any other person may incur as a result of delays, interferences, suspensions, changes in sequence or the like, for whatever cause, whether reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable, arising from the performance of any and all changes in the Work performed pursuant to this Article 10, unless the delay is caused solely by the Owner or its agent. It is understood and agreed that the Contractor's sole and exclusive remedy in such event shall be recovery of his direct costs as compensable hereunder and an extension of the Contract Time, but only in accordance with the provisions of the Contract Documents. The phrase "Owner or its agent" as used in this Agreement, does not include the Prime Contractors or their Subcontractors.

- 10.4.2 No claim by the Contractor hereunder shall be allowed if asserted after final payment under this Contract. No claim relating to or flowing from a particular change shall be allowed after execution of the Change Order relating to that change or commencement of the change by the Contractor.

- 10.5 CHANGES REQUIRING A DECREASE IN CONTRACT SUM.
- 10.5.1 If the Change in the Work will result in a decrease in the Contract Sum, the Owner may request a quotation by the Contractor of the amount of such decrease for use in preparing a Change Order. The Contractor's quotation shall be forwarded to the Owner within ten (10) days of the Owner's request and, if acceptable to the Owner, shall be incorporated in the Change Order. If not acceptable, the parties shall make every reasonable effort to agree as to the amount of such decrease, which may be based on a lump sum properly itemized, on unit prices stated in the Contract Documents and/or on such other basis as the parties may mutually determine. If the parties are unable to so agree, the amount of such decrease shall be the total of the estimated reduction in actual cost of the Work, as determined by the Owner in its reasonable judgment, plus fifteen percent (15%) thereof as overhead and profit.
- 10.6 DISPUTES REGARDING CHANGES.
- 10.6.1 If any dispute should arise between the parties with respect to an increase or decrease in the Contract Sum or an expansion or contraction in the Contract Time as a result of a Change in the Work, the Contractor shall not suspend performance of a Change in the Work or the Work itself unless otherwise so ordered by the Owner in writing. The Owner shall, however, pay to the Contractor up to the Owner's reasonable estimated value of the Change in the Work, regardless of the dispute, if said Change in the Work results in an increase in the Contract Sum; and the Owner shall have the right to decrease the Contract Sum up to the Owner's reasonable estimated value of the Change in the Work, regardless of the dispute, if said Change in the Work results in a decrease in the Contract Sum.
- 10.7 MINOR CHANGES IN THE WORK
- 10.7.1 The Owner shall have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order, and shall be binding on the Owner and the Contractor. The Contractor shall carry out such written orders promptly.
- 10.7.2 The Contractor shall not perform any changes in the Work unless authorized in writing by the Design Consultant or Owner.
- 10.8 DIFFERING SITE CONDITIONS
- 10.8.1 Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the drawings or indicated in the specifications or differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract, he shall immediately give notice to the Owner of such conditions before they are disturbed. The Owner and the Design Consultant shall thereupon promptly investigate the conditions and if they find that they materially differ from those shown on the drawings or indicated in the specifications, they shall at once make such changes in the drawings and/or specifications as they may find necessary. Any increase or decrease of cost resulting from such changes shall be adjusted in the manner provided herein for adjustments as to extra and/or additional work and changes. However, neither the Owner nor the Design Consultant shall be liable or responsible for additional work, costs or changes to the work due to material differences between actual conditions and any geotechnical, soils and other reports, surveys and analyses made available for the Contractor's review.
- 10.9 CLAIMS AND DISPUTE RESOLUTION
- 10.9.1 Definition. A Claim is a demand or assertion by the Contractor seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question from the Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the Contractor.
- 10.9.2 Time Limits on Claims. Claims by Contractor must be initiated within 10 days occurrence of the event giving rise to such Claim or within 10 days after the Contractor first recognizes the condition giving rise to the Claim,

whichever is later. Claims must be initiated by written notice to the Design Consultant (if there is one) and the other party.

- 10.9.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as otherwise provided in the Contract Documents, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make undisputed payments in accordance with the Contract Documents.
- 10.9.4 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property when the giving of such notice would increase the risk of injury or damage to persons or property.
- 10.9.5 Claims for Additional Time. If the Contractor wishes to make Claim for an extension of the dates set for Substantial or Final Completion, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. Contractor bears the burden of proving it is entitled to an extension of time. Unless Contractor meets this burden, Liquidated Damages shall be assessed automatically.
- 10.9.6 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the relevant period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.
- 10.9.7 Resolution of Claims and Disputes. Claims, including those alleging an error or omission by the Design Consultant, shall be referred initially to the Design Consultant for decision, if there is a Design Consultant with Contract Administration duties which include Claims resolution; otherwise, such Claims by Contractor shall initially be referred to the Owner. An initial decision by such Design Consultant (or Owner as applicable) shall be required as a condition precedent to mediation or litigation of all Claims by the Contractor arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Design Consultant (or Owner as applicable) with no decision having been rendered. The Design Consultant (or Owner as applicable) will not decide disputes between the Contractor and persons or entities other than the Owner.
- 10.9.8 The Design Consultant (or Owner as applicable) will review Claims and within ten days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Design Consultant is unable to resolve the Claim if the Design Consultant lacks sufficient information to evaluate the merits of the Claim or if the Design Consultant concludes that, in the Design Consultant's sole discretion, it would be inappropriate for the Design Consultant to resolve the Claim.
- 10.9.9 Upon receipt of the response or supporting data, if any, the Design Consultant (or Owner as applicable) will either reject or approve the Claim in whole or in part.
- 10.9.10 The Design Consultant (or Owner as applicable) will approve or reject Claims by written decision, which shall state the reasons therefor and which shall notify the parties of any change in the Contract Sum or Contract Time, or both. The approval or rejection of a Claim by the Design Consultant (or Owner as applicable) shall be final and binding on the parties but subject to mediation and litigation.
- 10.9.11 When a written decision of the Design Consultant (or Owner as applicable) states that (1) the decision is final but subject to mediation and litigation and (2) a demand for mediation of a Claim (if required by Owner's Dispute Resolution Procedures) or the commencement of a lawsuit (if mediation is not required as a pre-condition to litigation in Owner's Dispute Resolution Procedures) covered by such decision must be made or done within 30 days after the date on which the party making the demand (or filing the lawsuit) receives the final written decision, then failure to demand mediation in writing (if required) or file the lawsuit within said 30 days' period shall result in the Design Consultant's (or Owner's as applicable) decision becoming final and binding upon the Owner and Contractor. If the Design Consultant (or Owner as applicable) renders a decision after litigation proceedings have been initiated, such decision may be entered as evidence, but shall not supersede litigation proceedings unless the decision is acceptable to all parties concerned.

- 10.9.12 In the event of a dispute, the Owner, Contractor, and other parties involved in the Project shall utilize the Dispute Resolution Procedures adopted by Owner pursuant to N.C.G.S. §143-128(g), if applicable. Owner's Dispute Resolution Procedures are as follows:

These Procedures are applicable to the resolution of disputes with amounts in controversy in excess of \$15,000.00 arising between or among any parties involved in Owner's construction and repair Projects, including the Design Consultant and the Contractors, and the first and lower tier subcontractors, on Claims arising out of the contract or construction process. In no event shall the Owner be subject to arbitration proceedings pursuant to these Procedures. Unless otherwise specified in these Procedures, if there is any conflict between these Procedures and the other provisions of the Contract Documents, the terms of these Procedures control.

Any Claim as defined in the Contract Documents or any dispute between parties to a construction contract involving the Project, other than the Owner's claims, except those Claims which are waived shall be subject to nonbinding mediation as a condition precedent to the institution of legal proceedings by any party, except that any party may institute legal proceedings in order to meet any applicable statute of limitations or similar deadlines prior to engaging in nonbinding mediation.

The parties shall endeavor to resolve their claims by nonbinding mediation, which, unless the parties mutually agree otherwise, shall be in accordance with rules established by Owner if Owner is a party to the mediation. If Owner is not a party to the mediation, the mediation shall be conducted in accordance with rules established by the parties to the mediation. The parties to the mediation shall share the cost of mediation equally. The mediation shall be held in the place where the project is located unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

- 10.9.13 All suits in law or equity between the Owner and the Contractor arising out of the Contract shall be heard in the appropriate court of justice in the county where the Project is located.

#### END OF ARTICLE 10

### **ARTICLE 11**

#### **CORRECTION OF WORK**

##### **11.1 CORRECTION OF WORK**

- 11.1.1 The Contractor shall promptly reconstruct, replace or correct all Work rejected by the Design Consultant as defective or as failing to conform to the Contract Documents or as not in accordance with the guarantees and warranties specified in the Contract Documents whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the Design Consultant's and the Owner's additional construction management services made necessary thereby.
- 11.1.2 The Contractor, unless removal is waived by the Owner, shall remove from the site all portions of the Work which are defective or non-conforming, or if permitted or required, he shall correct such work in place at his own expense promptly after receipt of notice, and such rejected Work shall not thereafter be tendered for acceptance unless the former rejection or requirement for correction is disclosed.
- 11.1.3 If the Contractor does not proceed with the correction of such defective or non-conforming Work within a reasonable time fixed by written notice from the Owner, the Owner may either (1) by separate contract or otherwise replace or correct such Work and charge the Contractor the cost occasioned the Owner thereby and remove and store the materials or equipment at the expense of the Contractor, or (2) terminate this Contract for default as provided in Paragraph 12.3. If the Contractor does not pay the cost of such replacement or correction and the removal and storage within ten (10) days thereafter, the Owner may upon ten (10) additional days' written notice sell such Work at auction or at private sale and shall account for the net proceeds thereof,



after deducting all the costs that should have been borne by the Contractor, including compensation for additional services of the Design Consultant and the Owner made necessary thereby. If such proceeds of sale do not cover all costs, which the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

- 11.1.4 The Contractor shall bear the cost of making good all work of the Owner or separate contractors destroyed or damaged by such correction or removal.
- 11.1.5 Nothing contained in this Paragraph 11.1 shall be construed to establish a period of limitation with respect to any other obligation, which the Contractor might have under the Contract Documents, including Paragraph 3.5 hereof. The establishment of the time period of one year after the Date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to his obligations other than specifically to correct the Work.

#### END OF ARTICLE 11

### **ARTICLE 12**

#### **TERMINATION OF THE CONTRACT**

##### **12.1 TERMINATION BY THE CONTRACTOR**

- 12.1.1 If the Work is stopped for a period of sixty (60) days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon seven (7) additional days' written notice to the Owner and the Design Consultant, terminate the Contract and recover from the Owner payment on a quantum merit basis, for all Work executed. The Contractor shall not be entitled to collect and hereby expressly waives, any profit on work not performed or any damages related to that portion of the Contract, which has been terminated.

##### **12.2 TERMINATION FOR CONVENIENCE OF THE OWNER**

- 12.2.1 The Owner may, at any time upon ten (10) days' written notice to the Contractor which notice shall specify that portion of the Work to be terminated and the date said termination is to take effect, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the work for the convenience of the Owner. The Contractor's sole remedy, in the event of such termination, will be the allowable termination costs permitted by Article 12.4. Contractor shall include termination clauses identical to Article 12 in each of his Subcontracts.

##### **12.3 DEFAULT TERMINATION**

- 12.3.1 Subject to the provisions of Paragraph 2.3.1, ten (10) days after written notice is mailed to the Contractor, the Owner may terminate (without prejudice to any right or remedy of the Owner or any subsequent buyer of any portion of the Work) the employment of the Contractor and his right to proceed either as to the whole or any portion of the Work required by the Contract Documents and may take possession of the Work and complete the Work by contract or otherwise in any one of the following circumstances:
  - .1 if the Contractor refuses or fails to prosecute the work or any separable part thereof with such diligence as will ensure the Substantial or Final Completion of the Work within the Contract Time or fails to complete the Work or remedy a default within said period;
  - .2 if the Contractor is in material default in carrying out any provisions of the Contract for a cause within his control;

- .3 if the Contractor fails to supply a sufficient number of properly skilled workmen or proper equipment or materials;
- .4 if the Contractor fails to make prompt payment to Subcontractors or for materials or labor, unless he otherwise provides the Owner satisfactory evidence that payment is not legally due;
- .5 if the Contractor disregards laws, permits, ordinances, rules, regulations or orders of any public authority having jurisdiction, or fails to follow the instructions of the Owner;
- .6 if the Contractor substantially violates any provisions of the Contract Documents; or
- .7 if the Contractor refuses or fails to properly schedule, plan, coordinate and execute the Work, as specified herein, so as to perform the Work within the specified Milestone and Completion dates, or to provide scheduling or related information, revisions and updates as required by the Contract Documents.

12.3.2 If, after the Contractor has been terminated for default pursuant to Paragraph 12.3, it is determined that none of the circumstances set forth in Subparagraph 12.3.1 exist, then such termination shall be considered a termination for convenience pursuant to Paragraph 12.2. In such case, the Contractor's sole remedy will be the costs permitted by Article 12.4.

12.3.3 If the Owner so terminates the employment of the Contractor, the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the compensation is to be paid to the Contractor hereunder shall exceed the expense of so completing the Work (including compensation for additional managerial, administrative, consultant and inspection services and any damages for delay) such excess shall be paid to the Contractor.

12.3.4 If such expenses shall exceed the unpaid balance, the Contractor shall be liable to the Owner for such excess. If the right of the Contractor to proceed with the Work is partially or fully terminated, the Owner may take possession of and utilize in completing the Work such materials, appliances, supplies, plant and equipment as may be on the site of the terminated portion of the Work and necessary for the completion of the Work. If the Owner does not fully terminate the right of the Contractor to proceed, the Contractor shall continue to perform the part of the work that is not terminated.

#### 12.4 ALLOWABLE TERMINATION COSTS

12.4.1 If the Owner terminates the whole or any portion of the Work pursuant to Paragraph 12.2, then the Owner shall only be liable to the Contractor for those costs reimbursable to the Contractor in accordance with Subparagraph 12.4.2, plus a markup of ten percent for profit and overhead on the actual fully accounted costs recovered under 12.4.2; provided however, that if there is evidence that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed hereunder and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss.

12.4.1.1 After receipt of a Notice of Termination, the Contractor shall submit to the Owner his termination claim, in the form and with certification prescribed by the Owner. Such claim shall be submitted promptly but in no event later than three (3) months from the effective date of termination, unless one or more extensions in writing are granted by the Owner upon request of the Contractor made in writing within such three (3) month period or authorized extension thereof. However, if the Owner determines that the facts justify such action, he may receive and evaluate any such termination claim at any time after such three (3) month period or any extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Owner may determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination.

12.4.2 If the Owner terminates the whole or any portion of the Work pursuant to Paragraph 12.2, the Owner shall pay the Contractor the amounts determined by the Owner as follows:

- .1 an amount for supplies, services, or property accepted by the Owner pursuant to Clause 12.5.1.6 or sold or acquired pursuant to Clause 12.5.1.7 and not heretofore paid for, and to the extent provided in the

Contract such amount shall be equivalent to the aggregate price for such supplies or services computed in accordance with the price or prices specified in the Contract, appropriately adjusted for any saving of freight or other charges; and

.2 the total of:

- (1) the cost incurred in the performance of the Work terminated, including initial costs and preparatory expense allocable thereto, but exclusive of any costs attributable to supplies or services paid or to be paid for under Clauses 12.4.2.1 or 12.4.2.2.(2);
- (2) the cost of settling and paying claims arising out of the termination of Work under Subcontracts or orders, pursuant to Clause 12.5.1.5, which are properly chargeable to the terminated portion of the Work (exclusive of amounts paid or payable on account of completed items of equipment delivered or services furnished by Subcontractors or vendors prior to the effective date of the notice of termination), which amounts shall be included in the costs payable under (1) above; and
- (3) the reasonable costs of settlement, including accounting, legal, clerical and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Work and for the termination and settlement of Subcontracts thereunder, together with reasonable storage, transportation and other costs incurred in connection with the protection or disposition of property allocable to the Contract.

.3 Provided, however, that neither the Owner nor the Design Consultant will be liable for payments to subcontractors pursuant to Article 12.4.2.2 unless each subcontract contains termination provisions identical to those set forth in Article 12. The Owner and the Design Consultant will not be liable to the Contractor or any of his subcontractors for any costs associated with termination if the subcontract of the party involved does not include the proper termination clauses.

12.4.3 In arriving at any amount due the Contractor pursuant to Paragraph 12.4, there shall be deducted the following:

- .1 all unliquidated advance or other payments on account theretofore made to the Contractor applicable to the terminated portion of the Contract;
- .2 any claim which the Owner may have against the Contractor;
- .3 such amount as the Owner determines to be necessary to protect the Owner against loss because of outstanding or potential liens or claims; and
- .4 the agreed price for, or the proceeds of sale of, any materials, supplies or other things acquired by the Contractor or sold, pursuant to the provisions of Clause 12.5.1.7, and not otherwise recovered by or credited to the Owner.

12.4.4 The total sum to be paid to the Contractor under Paragraph 12.4 shall not exceed the Contract Sum as reduced by the amount of payments otherwise made or to be made for Work not terminated and as otherwise permitted by the Contract. Except for normal spoilage, and except to the extent that the Owner shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor, as provided in Subparagraph 12.4.2, the fair value, as determined by the Owner, of property which is destroyed, lost, stolen or damaged so as to become undeliverable to the Owner, or to a buyer pursuant to Clause 12.5.1.7.

12.4.5 If the Owner terminates the whole or any part of the Work pursuant to Paragraph 12.3, the Owner may procure, upon such terms and in such manner as the Owner may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the Owner for any excess costs for such similar supplies or services. The Contractor shall continue the performance of the Contract to the extent not terminated hereunder.

## 12.5 GENERAL TERMINATION PROVISIONS

12.5.1 After receipt of a notice of termination from the Owner, pursuant to Paragraph 12.2 or 12.3, and except as otherwise directed by the Owner, the Contractor shall:

- .1 stop Work under the Contract on the date and to the extent specified in the notice of termination;
- .2 place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the Contract as is not terminated;
- .3 terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the notice of termination;
- .4 at the option of the Owner, assign to the Owner in the manner, at the times and to the extent directed by the Owner, all of the rights in the contracts so terminated, in which case the Owner shall have the right, at his discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
- .5 settle all outstanding liabilities and all claims arising out of such termination or orders and subcontracts, with the approval or ratification of the Owner, to the extent he may require, which approval or ratification shall be final for all the purposes of this Article;
- .6 transfer title and deliver to the entity or entities designated by the Owner, in the manner, at the times and to the extent directed by the Owner to the extent specifically produced or specifically acquired by the Contractor for the performance of such portion of the Work as had been terminated, the following:
  - (1) the fabricated or unfabricated parts, Work in process, partially completed supplies and equipment, materials, parts, tools, dies, jigs and other fixtures, completed Work, supplies and other material produced as part of, or acquired in connection with the performance of, the Work terminated by the notice of termination; and
  - (2) the completed or partially completed plans, drawings, information, releases, manuals and other property related to the Work and which, if the Contract had been completed, would have been required to be furnished to the Owner;
- .7 use his best efforts to sell, in the manner, at the times, to the extent and at the price or prices directed or authorized by the Owner, any property of the types referred to in Clause 12.5.1.6; provided, however, that the Contractor:
  - (1) shall not be required to extend credit to any buyer, and
  - (2) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner; and provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the Owner to the Contractor under the Contract or shall otherwise be credited to the Contract Sum covered by the Contract or paid in such other manner as the Owner may direct;
- .8 complete performance of such part of the Work as shall not have been terminated by the notice of termination; and
- .9 take such action as may be necessary, or as the Owner may direct, for the protection and preservation of the property related to the Contract, which is in the possession of the Contractor, and in which the Owner has or may acquire an interest.

12.5.2 The Contractor shall, from the effective date of termination until the expiration of three (3) years after final settlement under the Contract, preserve and make available to the Owner, at all reasonable times at the office of the Contractor, but without direct charge to the Owner, all his books, records, documents and other evidence bearing on the costs and expenses of the Contractor under the Contract and relating to the Work terminated hereunder, or, to the extent approved by the Owner, photographs, micro-photographs or other authentic reproductions thereof.

12.5.3 If the termination, pursuant to Paragraph 12.2, be partial, the Contractor may file with the Owner a claim for an

equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the notice of termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices. Any claim by the Contractor for an equitable adjustment under this Subparagraph must be asserted within six (6) months from the effective date of the notice of termination.

- 12.5.4 The Contractor shall refund to the Owner any amounts paid by the Owner to the Contractor in excess of costs reimbursable under Paragraph 12.4.
- 12.5.5 The Contractor shall be entitled to only those damages and that relief from termination by the Owner as specifically provided in Article 12.

END OF ARTICLE 12  
END OF GENERAL CONDITIONS

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## **SECTION SC**

### **SUPPLEMENTAL CONDITIONS**

#### **GENERAL CONDITIONS**

Document GC, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, constitutes the General Conditions of this Contract, and is hereinafter called "General Conditions." The General Conditions are further revised and supplemented by the provisions of these Supplemental Conditions. The General Conditions and the Supplemental Conditions are applicable to all of the Work under this contract and shall apply to the Contractor and all Subcontractors and Sub-subcontractors.

#### **SUPPLEMENTS:**

The following supplements modify, change, delete, or add to the General Conditions. Where any article of the General Conditions is modified or any paragraph deleted, subparagraph or clause thereof is modified, or deleted by these supplements, the unaltered provisions of such article, paragraph, subparagraph or clause shall remain in effect. If there is a discrepancy between the General Conditions and these Supplemental Conditions, the Supplemental Conditions shall control.

#### **ARTICLE 3 – CONTRACTOR**

ADD THE FOLLOWING TO PARAGRAPH 3.21:

3.21 The Owner's policies are available for review at [WWW.BCSWAN.NET](http://WWW.BCSWAN.NET).

#### **ARTICLE 7 – TIME**

ADD THE FOLLOWING TO THE END OF THE FIRST PARAGRAPH IN 7.2.1.1:

The Parties agree that the weather station applicable to this Project shall be the one located at ILM Wilmington, NC.

#### **ARTICLE 8 – PAYMENTS AND COMPLETION**

ADD THE FOLLOWING TO PARAGRAPH 8.9:

8.9.1 Substantial Completion Liquidated Damages shall be the sum of one thousand dollars (\$1000) per calendar day, and this amount shall be assessed in accordance with Subparagraph 8.9.1 of the General Conditions.

8.9.2 Final Completion Liquidated Damages shall be the sum of one thousand dollars (\$1000) per calendar day, and this amount shall be assessed in accordance with Subparagraph 8.9.2 of the General Conditions.

ADD THE FOLLOWING PARAGRAPH 8.11:

8.11.1 The schedule below contains certain specific dates in addition to date of Notice to Proceed and Time for Completion. These dates shall be adhered to and are the last acceptable dates unless modified by mutual agreement between the Contractor and the Owner. All dates indicate midnight unless otherwise stipulated. The only exceptions to this schedule are defined in the General Conditions under Paragraph 7.2 DELAYS AND EXTENSIONS OF TIME.

Notice of Intent to Award  
Notice to Proceed  
Substantial Completion  
Final Completion

March 8, 2024  
April 12, 2024  
August 12, 2024  
August 19, 2024

- 8.11.2 The Owner reserves the right to withhold the issuance of Notice to Proceed by up to forty-five (45) days. For each day that Notice to Proceed is withheld pursuant to this Subparagraph, the dates established for Substantial Completion and Final Completion shall be adjusted. The contractor shall not be entitled to additional compensation if the owner withholds the issuance of Notice to Proceed pursuant to this Subparagraph.

#### ARTICLE 10 – CHANGES IN WORK

ADD THE FOLLOWING NEW PARAGRAPH 10.9.14:

- 10.9.14 Additional services and dispute resolution services by the Design Consultant shall be paid by the Contractor at the rate of two hundred ninety-five dollars (\$295) per hour.

END OF SUPPLEMENTAL CONDITIONS



## Appendix A

**PROJECT:**

**FOR PERIOD FROM:**

Sworn to and subscribed before me,

This the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

Seal

Notary Public

My Commission Expires:

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**CHANGE PROPOSAL FORM**  
**Time and Material / Unit Price Estimate**

**Project:** \_\_\_\_\_  
**Contract:** \_\_\_\_\_  
**Contractor:** \_\_\_\_\_

**Proposal #:** \_\_\_\_\_  
**Project #:** \_\_\_\_\_  
**Contractor #:** \_\_\_\_\_

**Description of change:** \_\_\_\_\_

**Materials & Labor**

Estimated cost of labor & materials including shipping, overtime, payroll taxes and insurance, and overhead and profit.

Maintain accurate records for billing purposes.

**SUBTOTALS**

**Unit Price Work**

Estimated quantity of units required less allowance units not used, times the established unit cost.

Maintain accurate records for billing purposes. Third party records may be required.

**Equipment Rental**

Estimated cost of equipment rental including shipping, taxes and overhead and profit.

Maintain accurate records for billing purposes.

**Subcontractors**

Estimated cost of subcontracts including all subcontractor expenses.

Maintain accurate records for billing purposes.

**Subtotal of Proposal**

\_\_\_\_\_

**\* TOTAL NOT TO EXCEED CHANGE PROPOSAL ESTIMATE**

Time Extension Requests: \_\_\_\_day(s) Schedule Activity # Affected: \_\_\_\_\_

The Contractor agrees to perform the work outlined in this change proposal for an amount that shall not exceed the amount stated above and in accordance with the Contract documents if the work is authorized by the Owner. If the price to perform the work is expected to exceed the above stated amount, a new change proposal form for the additional work is required.

\* Actual amount paid will be based on actual documented expenses.

**Contractor's Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Approval Recommended by Design Consultant:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Owner's Representative Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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**CHANGE PROPOSAL FORM**

**Project:** \_\_\_\_\_ **Proposal #:** \_\_\_\_\_  
**Contract:** \_\_\_\_\_ **Project #:** \_\_\_\_\_  
**Contractor:** \_\_\_\_\_ **Contractor #:** \_\_\_\_\_

**Description of change:** \_\_\_\_\_

<b>Materials</b>	(Attach list with Qty, Item, Unit \$, Unit mh, Total mh, OT mh, Total \$)	<b>SUBTOTALS</b>
1 Total Direct Cost of Materials	_____	
2 Overhead & Profit on Item 1.	_____	
(15% maximum, includes small tools & consumables)	_____	
3 Sales Tax	_____	
4 Shipping & Transportation	_____	
<b>Labor</b>	_____	
5 Total Manhours: _____ MH @ _____ /hr.	_____	
6 Overhead & Profit on Item 5.	_____	
(15% maximum on straight labor cost, not premium portion)	_____	
(O & P includes supervisor's time)	_____	
7 Payroll Taxes & Insurance _____ %	_____	
<b>Equipment Rental</b> (Include quotes)	_____	
8 Equipment Rental	_____	
9 Overhead & Profit on Item 8 (6% maximum).	_____	
<b>Subcontractors</b> (Include quotes with material & equipment backup)	_____	
10 Subcontractors	_____	
11 Overhead & Profit on Item 10 (6% maximum).	_____	
<b>Subtotal of Proposal</b>		_____

**TOTAL OF CHANGE PROPOSAL** \_\_\_\_\_

Time Extension Requests: \_\_\_\_\_ day(s) Schedule Activity # Affected: \_\_\_\_\_

The Contractor agrees to perform the work outlined in this change proposal for the amount specified above and in accordance with the Contract documents if the work is authorized by the Owner.

**Contractor's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Approval Recommended by Design Consultant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Owner's Representative Approval:** \_\_\_\_\_ **Date:** \_\_\_\_\_

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**OWNER-CONTRACTOR AGREEMENT**

PROJECT: Roof Replacement

SCHOOL NAME:

THIS AGREEMENT made this \_\_\_\_ day of \_\_\_\_, Two Thousand and Twenty-Four by and between the Owner Brunswick County by and through its authorized agent, Brunswick County Board of Education (herein referred to as the "Owner"), whose mailing address is 30 Government Center Dr., Bolivia, NC 28422 and \_\_\_\_\_, (herein referred to as the "Contractor"), whose mailing address is \_\_\_\_\_. Correspondence, submittals, and notices relating to or required under this Contract shall be sent in writing to the above addresses; unless either party is notified in writing by the other, of a change in address.

WITNESSETH:

WHEREAS, it is the intent of the Owner to obtain the services of the Contractor in connection with the \_\_\_\_\_ (hereinafter referred to as the "Project" or the "Work"); and

WHEREAS, the Contractor desires to perform such construction in accordance with the terms and conditions of this Agreement,

NOW, THEREFORE, in consideration of the promises made herein and other good and valuable consideration, the following terms and conditions are hereby mutually agreed to, by and between the Owner and Contractor:

Article 1

**DEFINITIONS**

- 1.1 All terms in this Agreement which are defined in the Information for Bidders and the General Conditions shall have the meanings designated therein.
- 1.2 The Contract Documents are as defined in the General Conditions. Such documents form the Contract, and all are as fully a part thereof as if attached to this Agreement or repeated herein.

Article 2

**STATEMENT OF THE WORK**

- 2.1 The Project is the Work identified in the plans and specifications prepared by \_\_\_\_\_ dated \_\_\_\_\_ for Brunswick County Board of Education, \_\_\_\_\_, including the following addenda:

A listing of the plans and specifications included in the Contract Documents is attached as Exhibit A.

- 2.2 The Parties agree that the Project shall include the following alternates:

- 2.3 The Parties agree to the following modifications to the Project's plans and specifications, including the noted value engineering items: None
- 2.4 The Parties agree that the following allowances are included in the Contract Sum in Section 5.1 below:
- 2.5 The Contractor shall provide and pay for all materials, tools, equipment, labor and professional and non-professional services, and shall perform all other acts and supply all other things necessary, to fully and properly perform and complete the Work, as required by the Contract Documents.
- 2.6 The Contractor shall further provide and pay for all related facilities described in any of the Contract Documents, including all work expressly specified therein and such additional work as may be reasonably inferred therefrom, saving and excepting only such items of work as are specifically stated in the Contract Documents not to be the obligation of the Contractor. The totality of the obligations imposed upon the contractor by this Article and by all other provisions of the Contract Documents, as well as the structures to be built and the labor to be performed, is herein referred to as the "Work".

#### Article 3

##### DESIGN CONSULTANT

- 3.1 The Design Consultant (as defined in the General Conditions) shall be \_\_\_\_\_ whose address is \_\_\_\_\_, however, that the Owner may, without liability to the Contractor, unilaterally amend this Article from time to time by designating a different person or organization to act as its Design Consultant and so advising the Contractor in writing, at which time the person or organization so designated shall be the Design Consultant for purposes of this Contract.

#### Article 4

##### TIME OF COMMENCEMENT AND COMPLETION

- 4.1 The Contractor shall commence the Work promptly upon the date established in the Notice to Proceed. If there is no Notice to Proceed, the date of commencement of the Work shall be the date of this Agreement or such other date as may be established herein.
- 4.2 Time is of the essence. The Contractor shall achieve Final Completion, as defined in the General Conditions on or before the date established for Final Completion in the Supplemental Conditions.
- 4.3 The Supplemental Conditions contains certain specific dates that shall be adhered to and are the last acceptable dates unless modified in writing by mutual agreement between the Contractor and the Owner. All dates indicate midnight unless otherwise stipulated. The only exceptions to this schedule are defined in the General Conditions under 7.2 DELAYS AND EXTENSIONS OF TIME.
- 4.4 Should the Contractor fail to complete the Work on or before the dates stipulated for Substantial Completion and/or Final Completion, or such later date as may result from an



extension of time granted by the Owner, he shall pay the Owner, as liquidated damages the sums set forth in the General and Supplemental Conditions.

## Article 5

### CONTRACT SUM

- 5.1 Provided that the Contractor shall strictly and completely perform all of its obligations under the Contract Documents, and subject only to additions and deductions by Modification or as otherwise provided in the Contract Documents, the Owner shall pay to the Contractor, in current funds and at the time and in the installments hereinafter specified, the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) herein referred to as the "Contract Sum". This amount includes the base bid and the Alternates in Section 2.2
- 5.2 The Contract Sum includes the value engineering items and other contract modifications noted in Section 2.3 above that total \$0.
- 5.3 Unit Prices are established as follows for the Project:

Unit Price No. 1		
Unit Price No. 2		
Unit Price No. 3		
Unit Price No. 4		
Unit Price No. 5		

## Article 6

### PROGRESS PAYMENTS

- 6.1 The Contractor hereby agrees that on or about the First day of the month for every month during the performance of the Work he will deliver to the Owner's Project Manager an Application for Payment in accordance with the provisions of Article 8 of the General Conditions. This date may be changed upon mutual agreement, stated in writing, between the Owner and Contractor. Payment under this Contract shall be made as provided in the General Conditions. Payments due and unpaid under the Contract Documents shall not bear interest.

## Article 7

### OTHER REQUIREMENTS

- 7.1 The Contractor shall submit the Performance Bond, Labor and Material Payment Bond and Certification of Insurance as required by the Contract Documents.
- 7.2 The Owner shall furnish to the Contractor one (1) set of drawings and one (1) set of specifications, at no extra cost, for use in the Construction of the Work. Additional sets of drawings or specifications may be obtained by the Contractor by paying the Owner for the costs of reproduction, handling and mailing.

- 7.3 The Contractor shall make a good faith effort to utilize Historically Underutilized Businesses (HUB's) per N.C. Gen. Stat. 143-128.2, and as described in the construction documents.
- 7.4 The General Conditions, Supplemental Conditions and the plans and specifications, including any addenda, are incorporated herein by reference.
- 7.5 This Agreement, together with any amendments or modifications, may be executed in one or more counterparts, each of which shall be deemed an original and all of which shall be considered one and the same agreement. This Agreement may also be executed electronically. By signing electronically, the parties indicate their intent to comply with the Electronic Commerce in Government Act (N.C.G.S § 66-358.1 et seq.) and the Uniform Electronic Transactions Act (N.C.G.S § 66-311 et seq.). Delivery of an executed counterpart of this Agreement by either electronic means or by facsimile shall be as effective as a manually executed counterpart.

**COUNTY OF BRUNSWICK, NORTH CAROLINA**

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Chairman, Board of Commissioners

ATTEST:

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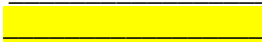
Clerk to the Board of Commissioners

[ Seal]

**YOUR ROOFING COMPANY**

By: 

---

  
, President or Vice-President  
(Print Name)

ATTEST:

---

Corporate Secretary

[Corporate Seal]

This Instrument Has Been Pre-audited In The Manner Required By The School Budget And Fiscal Control Act	This Instrument Has Been Pre-audited In The Manner Required By The Local Government Budget And Fiscal Control Act
Cherie Wisse, Chief Finance Officer Brunswick County Board of Education	Aaron C Smith, Director Of Fiscal Operations, County of Brunswick, North Carolina

APPROVED AS TO FORM

\_\_\_\_\_  
Robert V. Shaver, Jr., County Attorney/  
Bryan W. Batton, Assistant County Attorney  
Brunswick County, North Carolina

## **APPENDIX E PERFORMANCE BOND**

**IT IS HEREBY AGREED** that

(Insert full name and address of Contractor)

as Principal, hereinafter called Contractor, and,

(Insert full name and address of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto the

as Oblige, hereinafter called Owner, in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these obligations.

WHEREAS, Contractor has by written agreement dated \_\_\_\_\_, 20\_\_\_\_, entered into a contract with Owner for the construction of \_\_\_\_\_

(Insert the name of the Project)

in accordance with Drawings and Specifications prepared by \_\_\_\_\_

(Insert full name and address of Architect/Engineer)

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect. The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default, under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- 1) Complete the Contract in accordance with its terms and conditions, or
- 2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the

Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of any applicable statute of limitations under the Contract.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

#### **PRINCIPAL**

[Affix corporate seal]

\_\_\_\_\_  
(Name)\_\_\_\_\_

(Title)\_\_\_\_\_

\_\_\_\_\_  
(Witness)

#### **SURETY**

[Affix corporate seal]

\_\_\_\_\_  
(Name)\_\_\_\_\_

(Title)\_\_\_\_\_

\_\_\_\_\_  
(Witness)

## LABOR AND MATERIAL PAYMENT BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT

**IT IS HEREBY AGREED** that (Insert full name and address of Contractor)

as Principal, hereinafter called "Principal," and, (Insert full name and address of Surety)

as Surety, hereinafter called "Surety," are held and firmly bound unto the

as Obligee, hereinafter called Owner, for the use and benefit of claimants as hereinbelow defined, in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_),  
for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these obligations.

WHEREAS, Principal has by written agreement dated \_\_\_\_\_, 20\_\_\_\_\_,  
entered into a contract with Owner for the construction of \_\_\_\_\_ (Insert the name of the Project)

in accordance with Drawings and Specifications prepared by \_\_\_\_\_ (Insert full name and address of Architect/Engineer)

which contract is by reference made a part hereof, and is hereinafter referred to as the "Contract."

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
  - a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days, after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is

made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail; postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this \_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_.

**PRINCIPAL**

[Affix corporate seal]

\_\_\_\_\_  
(Name) \_\_\_\_\_  
(Title) \_\_\_\_\_

\_\_\_\_\_  
(Witness)

**SURETY**

[Affix corporate seal]

\_\_\_\_\_  
(Name) \_\_\_\_\_  
(Title) \_\_\_\_\_

\_\_\_\_\_  
(Witness)



**Sexual Offender Registry Check Certification Form**

Check the appropriate box to indicate the type of check:

- ☐ Initial  
☐ Supplemental  
☐ Annual

I, \_\_\_\_\_ (insert name), \_\_\_\_\_ (insert title) of \_\_\_\_\_ (insert company name) hereby certify that I have performed all of the required sexual offender registry checks required under this Agreement for all contractual personnel (employees, agents, ownership personnel, or contractors ) who may be used to deliver goods or provide services under this Agreement, including the North Carolina Sex Offender and Public Protection Registration Program, the North Carolina Sexually Violent Predator Registration Program, and the National Sex Offender Registry. I further certify that none of the individuals listed below appears on any of the above-named registries and that I will not assign any individual to deliver goods or perform services under this Agreement if said individual appears on any of the sex offender registries. I agree to maintain all records and documents associated with these registry checks, and that I will provide such records and documents to the school system upon request. I specifically acknowledge that the school system retains the right to audit these records to ensure compliance with this section at any time in the school system's sole discretion. I acknowledge that I am required to perform these checks and provide this certification form before any work is performed under the Agreement (initial check), any time additional contractual personnel may perform work under the Agreement (supplemental check), and at each anniversary date of the Agreement (annual check).

**Contractual Personnel Names**

**Job Title**

- |          |       |
|----------|-------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| 3. _____ | _____ |
| 4. _____ | _____ |
| 5. _____ | _____ |

(attach additional page(s) if needed)

I attest that the forgoing information is true and accurate to the best of my knowledge.

\_\_\_\_\_  
\_\_\_\_\_  
(print name)  
(title)

\_\_\_\_\_  
\_\_\_\_\_  
(signature)  
(date)

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## APPENDIX G

### MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: \_\_\_\_\_

Address & Phone: \_\_\_\_\_

Project Name: \_\_\_\_\_

Pay Application #: \_\_\_\_\_ Period: \_\_\_\_\_

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* TYPE OF MBE	AMOUNT PAID THIS MONTH (With This Pay App)	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

\*Minority categories: Black (B), Hispanic (H), Asian American (AA), American Indian (AI), White Female (WF), Socially and Economically Disadvantaged (SED)

Approved/Certified By:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**SUBMIT WITH EACH PAY REQUEST - FINAL PAYMENT - FINAL REPORT**

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# BRUNSWICK COUNTY SCHOOLS

35 Referendum Drive Bolivia, North Carolina 28422 Phone: 910-406-5100 Fax: 866-291-7891

## SALES TAX AFFIDAVIT

I, \_\_\_\_\_ do attest that all sales taxes have  
(Print name)

been paid on materials used on project \_\_\_\_\_.

Signature of Contractor: \_\_\_\_\_

Date: \_\_\_\_\_

Board Members: Steven P. Barger., Chairperson • Robin A. Moffitt, Vice-Chairperson • Harry E. Lemon, Jr. • Steve Gainey. • David M. Robinson

Les Tubbs, Superintendent

A Community of Learners



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**PART 2 TECHNICAL SPECIFICATIONS**

**ROOF REPLACEMENT, BUILDING B**

AT

180 UNION SCHOOL RD NW  
SHALLOTTE, NORTH CAROLINA  
28470

DESIGN & SPECIFICATIONS BY:

CFE

CAPE FEAR ENGINEERING  
LELAND, NORTH CAROLINA

Date: February 14, 2024

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**PROJECT TABLE OF CONTENTS****DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 01 15 LIST OF DRAWINGS

**DIVISION 01 - GENERAL REQUIREMENTS**

01 11 00 SUMMARY OF WORK  
01 14 00 WORK RESTRICTIONS  
01 33 00 SUBMITTAL PROCEDURES  
01 78 00 CLOSEOUT SUBMITTALS

**DIVISION 02 - EXISTING CONDITIONS**

02 41 00 DEMOLITION

**DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

06 10 00 ROUGH CARPENTRY

**DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

07 52 00 MODIFIED BITUMINOUS MEMBRANE ROOFING  
07 60 00 FLASHING AND SHEET METAL  
07 92 00 JOINT SEALANTS

-- End of Project Table of Contents --

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## DOCUMENT 00 01 15

## LIST OF DRAWINGS

## PART 1 GENERAL

## 1.1 SUMMARY

This section lists the drawings for the project.

## 1.2 CONTRACT DRAWINGS

Contract drawings are as follows:

SHEET NAME	SEQUENCE	SHEET DESCRIPTION
G-001	1	COVER SHEET, GENERAL NOTES, AND INDEX
A-001	2	ARCHITECTURAL NOTES, LEGENDS, AND ABBREVIATIONS
AD101	3	ROOF DEMOLITION PLAN
A-101	4	ROOF PLAN
A-501	5	DETAILS

-- End of Document --

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## SECTION 01 11 00

## SUMMARY OF WORK

## PART 1 GENERAL

## 1.1 WORK COVERED BY CONTRACT DOCUMENTS

## 1.1.1 Project Description

The work includes removal and replacement of existing roofing system and incidental related work.

## 1.1.2 Location

The work is located at Union Elementary School, Shallotte NC, as indicated.

## 1.2 OCCUPANCY OF PREMISES

Buildings will be occupied by school staff during performance of work under this Contract. Work will be done during summer school closure 2024. Occupancy notifications will be posted in a prominent location in the work area.

Before work is started, arrange with the Owner a sequence of procedure, means of roof access, space for storage of materials and equipment, and use of the site.

## 1.3 EXISTING WORK

- a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Owner. At the completion of operations, existing work must be in a condition equal to or better than that which existed before new work started.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

-- End of Section --

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## SECTION 01 14 00

## WORK RESTRICTIONS

## PART 1 GENERAL

## 1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contact Personnel

## 1.2 SPECIAL SCHEDULING REQUIREMENTS

- a. Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work.
- b. The building and facility will remain in operation during the entire construction period, although school classes will be out of session for summer 2024. The Contractor must conduct his operations so as to cause the least possible interference with normal operations of the activity.
- c. Permission to interrupt any roads, or utility service must be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.

## 1.3 CONTRACTOR ACCESS AND USE OF PREMISES

## 1.3.1 Activity Regulations

Ensure that Contractor personnel employed become familiar with and obey regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear appropriate personal protective equipment (PPE) in designated areas. Ensure all Contractor equipment, including delivery vehicles, are clearly identified with their company name.

## 1.3.1.1 Subcontractors and Personnel Contacts

Provide a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

## 1.3.1.2 No Smoking Policy

Smoking is prohibited within and outside of all buildings on site, except in designated smoking areas. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The Owner will identify designated smoking areas.

1.3.1.3 Drugs

This site is a drug-free zone; no use of drugs will be tolerated either on site or by Contractor's personnel.

1.3.1.4 Weapons

No weapons or explosives are permitted on site.

1.3.2 Occupied Buildings

Maintain the building in a weathertight condition throughout the construction period.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --



## SECTION 01 33 00

## SUBMITTAL PROCEDURES

## PART 1 GENERAL

## 1.1 SUBMITTALS

The various Submittals required are specified in each of the technical sections.

Submit an electronic copy of submittals, (product data, drawings, etc.) in pdf format.

Submit all submittals for the project concurrently.

Submittals will be reviewed by the Design Consultant (Design Professional) and / or Owner.

## 1.2 VARIATIONS

## 1.2.1 Considering Variations

Discussion of variations with the Owner and Design Professional / Design Consultant before submission of a variation submittal will help ensure that functional and quality requirements are met and minimize rejections and resubmittals.

Specifically point out variations from contract requirements in a transmittal letter, accompanying information on the proposed variation.

Information on requested variations must be submitted, and approved before incorporating into the work.

## 1.2.2 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

## 1.2.3 Review Schedule Extension

In addition to the normal 10 day submittal review period, a period of 5 days will be allowed for the Owner to consider submittals with variations.

## 1.3 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

- a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial

submittal.

#### 1.4 DISAPPROVED SUBMITTALS

Make corrections required by the Design Consultant / Owner. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Design Consultant / Owner as required under the contract clauses for CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Owner to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

#### 1.5 APPROVED SUBMITTALS

The approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

Approval or acceptance by the Owner for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist. The Contractor is responsible for ensuring information contained within each submittal accurately conforms with the requirements of the contract documents.

After submittals have been approved or accepted, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is proposed.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

-- End of Section --

## SECTION 01 78 00

## CLOSEOUT SUBMITTALS

## PART 1 GENERAL

## 1.1 DEFINITIONS

## 1.1.1 As-Built Drawings

As-built drawings are the marked-up drawings, maintained by the Contractor on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the Owner; design that is the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

## 1.2 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

As-Built Drawings

As-Built Record of Equipment and Materials  
Warranties

## 1.3 WARRANTY MANAGEMENT

## 1.3.1 Warranties

The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 9 month (and other specified) warranty inspection(s) measured from time of acceptance with the Contractor, Owner, Design Consultant and the roof manufacturer's Representative. The warranty information must include, but is not limited to, the following:

- a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

## 1.3.2 Performance Bond

The Performance Bond must remain effective throughout the construction and warranty period.

- a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Owner will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Owner

while performing the work, including, but not limited to administrative expenses.

- b. In the event sufficient funds are not available to cover the construction warranty work performed by the Owner at the Contractor's expense, the COwner will have the right to recoup expenses from the bonding company.
- c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Owner to proceed against the Contractor.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

### 3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and/or red-lined PDF files. Submit As-Built Drawings 30 days prior to Beneficial Occupancy Date (BOD).

### 3.2 CLEANUP

Leave premises "broom clean." Clean equipment and fixtures to a sanitary condition. Clean debris from all work areas. Sweep with magnetic collectors for nails, fasteners and other metal debris. Sweep paved areas and rake clean field work areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

-- End of Section --

## SECTION 02 41 00

## DEMOLITION

## PART 1 GENERAL

## 1.1 PROJECT DESCRIPTION

## 1.1.1 Definitions

## 1.1.1.1 Deconstruction Plan

Deconstruction Plan is the planned steps and processes for dismantling all or portions of a structure or assembly, to include managing sequencing activities, storage, re-installation activities, salvage and disposal mechanisms.

## 1.1.1.2 Demolition/Deconstruction Plan

Prepare a Deconstruction Plan and submit proposed deconstruction and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged and reinstalled, coordination with other work in progress, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Provide procedures for safe conduct of the work. Plan must be approved by Owner prior to work beginning.

## 1.1.1.3 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Owner. Remove rubbish and debris from the project site; do not allow accumulations inside or outside the building(s). Remove rubbish and debris from Owner property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Owner. In the interest of occupational safety and health, perform the work in accordance with general industry standards, these specifications and applicable OSHA regulations.

## 1.2 ITEMS TO REMAIN IN PLACE

Protect existing vegetation, structures, equipment, utilities, and improvements. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements or pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement, or structural replacement require approval by the Owner prior to performing such work.

## 1.2.1 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide protective measures to control accumulation and migration of dust and dirt in all

work areas. Remove dust, dirt, nails, screws and debris from work areas including paved areas daily.

#### 1.2.2 Weather Protection

For portions of the building to remain, protect building interior and materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work, have materials and workmen ready to provide adequate and temporary covering of exposed areas.

#### 1.3 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

#### 1.4 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

Deconstruction Plan

Existing Conditions

#### 1.5 QUALITY ASSURANCE

##### 1.5.1 Dust and Debris Control

Prevent the spread of dust and debris to occupied portions of the building , other roof areas and site and pavements and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Vacuum and dust the work area daily. Use magnetic collectors to remove all fasteners, nails and metallic debris from site and pavements. Sweep pavements as often as necessary to control the spread of dust and debris.

#### 1.6 PROTECTION

##### 1.6.1 Protection of Personnel

Before, during and after the demolition work continuously evaluate the condition of the items being demolished and take immediate action to protect all personnel working in and around the project site.

#### 1.7 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Repair or replace items to be relocated which are damaged by the Contractor with new undamaged items as approved by the Owner.

#### 1.8 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Owner showing the

condition of structures and other facilities adjacent to areas of alteration or removal. Photographs or electronic images with a minimum resolution of 3072 x 2304 pixels, capable of a print resolution of 300 dpi, will be acceptable as a record of existing conditions. Include in the record the location and extent of existing cracks and other damage and description of surface conditions that exist prior to starting work.

## PART 2 PRODUCTS

### 2.1 Not Used

## PART 3 EXECUTION

### 3.1 EXISTING MATERIALS TO BE REMOVED

Inspect and evaluate existing conditions. Disassemble existing construction scheduled to be removed for reuse. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified.

#### 3.1.1 Utilities and Related Equipment

##### 3.1.1.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner.

##### 3.1.1.2 Disconnecting Existing Equipment

Remove existing equipment as indicated and terminate temporarily in a manner conforming to nationally recognized code covering the specific work and approved by the Owner. When utility lines are encountered but are not indicated on the drawings, notify the Owner prior to further work in that area. Reconnect items in appropriate code compliant manner.

#### 3.1.2 Roofing

Remove existing roof system and associated components in their entirety down to existing roof deck. Remove roofing system and insulation without damaging the roof deck. Sequence work to minimize building exposure between demolition or deconstruction and installation of new roof materials.

##### 3.1.2.1 Temporary Roofing

Install temporary roofing and flashing as necessary to maintain a watertight condition throughout the course of the work. Remove temporary work prior to installation of permanent roof system materials unless approved otherwise by the Owner.

##### 3.1.2.2 Reroofing

When removing the existing roofing system from the roof deck, remove only as much roofing as can be recovered by the end of the work day, unless approved otherwise by the Owner. Do not attempt to open the roof covering system in threatening weather. Reseal all openings prior to suspension of work the same day.

### 3.1.3 Miscellaneous Metal

Salvage shop-fabricated items such as flashings and similar items as whole units. Salvage metal gutters, roofing and siding, flashings and similar items. Scrap metal is the Contractor's property. Recycle scrap metal as part of demolition and deconstruction operations. Provide separate containers to collect scrap metal and transport to a scrap metal collection or recycling facility.

### 3.1.4 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Make finished surfaces of patched area flush with the adjacent existing surface and match the existing adjacent surface as closely as possible to texture and finish.

## 3.2 DISPOSITION OF MATERIAL

### 3.2.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, become the property of the Contractor and must be removed from Owner property. Showing for sale or selling materials and equipment on site is prohibited.

### 3.2.2 Reuse of Materials and Equipment

Remove and store materials and equipment indicated to be reused or relocated to prevent damage, and reinstall as the work progresses.

### 3.2.3 Unsalvageable and Non-Recyclable Material

Dispose of unsalvageable and non-recyclable combustible material off the site.

## 3.3 CLEANUP

Remove debris and rubbish from project site. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

## 3.4 DISPOSAL OF REMOVED MATERIALS

### 3.4.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other non-salvageable materials resulting from removal operations with all applicable federal, state and local regulations and as contractually specified.

### 3.4.2 Removal from Owner Property

Transport waste materials removed from demolition from Owner property for legal disposal.



-- End of Section --

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## SECTION 06 10 00

## ROUGH CARPENTRY

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)

ALSC PS 20 (2015) American Softwood Lumber Standard

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B18.2.1 (2012; Errata 2013) Square and Hex Bolts and Screws (Inch Series)

ASME B18.2.2 (2022) Nuts for General Applications: Machine Screw Nuts, and Hex, Square, Hex Flange, and Coupling Nuts (Inch Series)

ASME B18.5.2.1M (2006; R 2011) Metric Round Head Short Square Neck Bolts

ASME B18.5.2.2M (1982; R 2010) Metric Round Head Square Neck Bolts

ASME B18.6.1 (2016) Wood Screws (Inch Series)

## AMERICAN WOOD COUNCIL (AWC)

AWC NDS (2015) National Design Specification (NDS) for Wood Construction

AWC WFCM (2012) Wood Frame Construction Manual for One- and Two-Family Dwellings

## AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)

AWPA M2 (2019) Standard for the Inspection of Preservative Treated Wood Products for Industrial Use

AWPA M6 (2013) Brands Used on Preservative Treated Materials

## APA - THE ENGINEERED WOOD ASSOCIATION (APA)

APA E445 (2002) Performance Standards and Qualification Policy for Structural-Use Panels (APA PRP-108)

APA F405 (19) Product Guide: Performance Rated

## Panels

APA L870	(2010) Voluntary Product Standard, PS 1-09, Structural Plywood
APA S350	(2014) PS 2-10, Performance Standard for Wood-Based Structural-Use Panels

## ASTM INTERNATIONAL (ASTM)

ASTM A153/A153M	(2016a) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A307	(2021) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM C1177/C1177M	(2017) Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM C1396/C1396M	(2017) Standard Specification for Gypsum Board
ASTM D2898	(2010; R 2017) Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing
ASTM F547	(202) Standard Terminology of Nails for Use with Wood and Wood-Base Materials
ASTM F1667/F1667M	(2021a) Standard Specification for Driven Fasteners: Nails, Spikes, and Staples

## CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2010; Version 1.1) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers
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## GREEN SEAL (GS)

GS-36	(2013) Adhesives for Commercial Use
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## NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

NHLA Rules	(2015) Rules for the Measurement & Inspection of Hardwood & Cypress
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## NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)

NELMA Grading Rules	(2013) Standard Grading Rules for Northeastern Lumber
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REDWOOD INSPECTION SERVICE (RIS) OF THE CALIFORNIA REDWOOD  
ASSOCIATION (CRA)

RIS Grade Use (1998) Redwood Lumber Grades and Uses

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168 (2017) Adhesive and Sealant Applications

## SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)

SCMA Spec (1986; Supple. No. 1, Aug 1993) Standard  
Specifications for Grades of Southern  
Cypress

## SOUTHERN PINE INSPECTION BUREAU (SPIB)

SPIB 1003 (2014) Standard Grading Rules for Southern  
Pine Lumber

## UNDERWRITERS LABORATORIES (UL)

UL 2818 (2013) GREENGUARD Certification Program  
For Chemical Emissions For Building  
Materials, Finishes And Furnishings

## WEST COAST LUMBER INSPECTION BUREAU (WCLIB)

WCLIB 17 (2015) Standard Grading Rules

## WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)

WWPA G-5 (2017) Western Lumber Grading Rules

## 1.2 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL  
PROCEDURES:

## SD-03 Product Data

Gypsum Wall Sheathing

Adhesives

Structural-Use And Osb Panels

## SD-06 Test Reports

Preservative-treated Lumber and Plywood

Fire-retardant treatment

Preservative Treatment

## SD-07 Certificates

Certificates Of Grade

### 1.3 DELIVERY AND STORAGE

Deliver materials to the site in an undamaged condition. Store, protect, handle, and install prefabricated structural elements in accordance with manufacturer's instructions and as specified. Store materials off the ground to provide proper ventilation, with drainage to avoid standing water, and protection against ground moisture and dampness. Store materials with a moisture barrier at both the ground level and as a cover forming a well ventilated enclosure. Store wood I-beams and glue-laminated beams and joists on edge. Adhere to requirements for stacking, lifting, bracing, cutting, notching, and special fastening requirements. Do not use materials that have visible moisture or biological growth. Remove defective and damaged materials and provide new materials. Store separated reusable wood waste convenient to cutting station and area of work.

### 1.4 GRADING AND MARKING

#### 1.4.1 Lumber

Mark each piece of framing and board lumber or each bundle of small pieces of lumber with the grade mark of a recognized association or independent inspection agency. Such association or agency must be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Surfaces that are to be exposed to view must not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.

#### 1.4.2 Plywood

Mark each sheet with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark must identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with APA L870. Surfaces that are to be exposed to view must not bear grademarks or other types of identifying marks.

#### 1.4.3 Structural-Use and OSB Panels

Mark each panel with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the panel. The mark must indicate end use, span rating, and exposure durability classification. Oriented Strand Board (OSB), APA F405.

#### 1.4.4 Preservative-Treated Lumber and Plywood

The Contractor is responsible for the quality of treated wood products. Each treated piece must be inspected in accordance with AWPA M2 and permanently marked or branded, by the producer, in accordance with AWPA M6. The Contractor must provide Owner's Representative with the inspection report of an approved independent inspection agency that offered products comply with applicable AWPA Standards. The appropriate Quality Mark on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWPA treatment standards.

#### 1.4.5 Fire-Retardant Treated Lumber

Mark each piece in accordance with AWPA M6, except pieces that are to be natural or transparent finished. In addition, exterior fire-retardant

lumber must be distinguished by a permanent penetrating blue stain. Labels of a nationally recognized independent testing agency will be accepted as evidence of conformance to the fire-retardant requirements of AWPA M6.

#### 1.4.6 Hardboard, Gypsum Board, and Fiberboard

Mark each sheet or bundle to identify the standard under which the material is produced and the producer.

#### 1.5 SIZES AND SURFACING

ALSC PS 20 for dressed sizes of yard and structural lumber. Lumber must be surfaced four sides. Size references, unless otherwise specified, are nominal sizes, and actual sizes must be within manufacturing tolerances allowed by the standard under which the product is produced. Other measurements are IP or SI standard.

#### 1.6 MOISTURE CONTENT

Air-dry or kiln-dry lumber. Kiln-dry treated lumber after treatment. Maximum moisture content of wood products must be as follows at the time of delivery to the job site:

- a. Framing lumber and board, 19 percent maximum
- d. Materials other than lumber; moisture content must be in accordance with standard under which the product is produced

#### 1.7 PRESERVATIVE TREATMENT

- a. 0.25 pcf intended for above ground use.
- b. All wood must be air or kiln dried after treatment. Specific treatments must be verified by the report of an approved independent inspection agency, or the AWPA Quality Mark on each piece. Do not incise surfaces of lumber that will be exposed. Brush coat areas that are cut or drilled after treatment with either the same preservative used in the treatment or with a 2 percent copper naphthenate solution. All lumber and woodwork must be preservative treated. Plastic lumber must not be preservative treated.

#### 1.8 FIRE-RETARDANT TREATMENT

Fire-retardant treated wood must be pressure treated Treatment and performance inspection must be by an independent and qualified testing agency that establishes performance ratings. Each piece or bundle of treated material must bear identification of the testing agency to indicate performance in accordance with such rating. Treated materials to be exposed to rain wetting must be subjected to an accelerated weathering technique in accordance with ASTM D2898 prior to being tested. Such items which will not be inside a building, and such items which will be exposed to heat or high humidity, must receive exterior fire-retardant treatment. Fire-retardant-treated wood products must be free of halogens, sulfates, ammonium phosphate, and formaldehyde.

## 1.9 QUALITY ASSURANCE

### 1.10 CERTIFICATIONS

#### 1.10.1 Certified Wood Grades

Provide certificates of grade from the grading agency on graded but unmarked lumber or plywood attesting that materials meet the grade requirements specified herein.

#### 1.10.2 Indoor Air Quality Certifications

Submit required indoor air quality certifications in one submittal package.

##### 1.10.2.1 Adhesives and Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party programs that products meet the requirements of this Section. Provide current product certification documentation from certification body. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

## PART 2 PRODUCTS

### 2.1 MATERIALS

#### 2.1.1 Virgin Lumber

Lumber fabricated from old growth timber is not permitted. Avoid companies who buy, sell, or use old growth timber in their operations, when possible.

### 2.2 LUMBER

#### 2.2.1 Framing Lumber

Framing lumber such as studs, plates, caps, collar beams, cant strips, bucks, sleepers, nailing strips, and nailers and board lumber such as subflooring and wall and roof sheathing must be one of the species listed in the table below. Minimum grade of species must be as listed.



<u>Table of Grades for Framing and Board Lumber</u>			
<u>Grading Rules</u>	<u>Species</u>	<u>Framing</u>	<u>Board Lumber</u>
WWPA G-5 standard grading rules	Aspen, Douglas Fir-Larch, Douglas Fir South, Engelmann Spruce-Lodgepole Pine, Engelmann Spruce, Hem-Fir, Idaho White Pine, Lodgepole Pine, Mountain Hemlock, Mountain Hemlock-Hem-Fir, Ponderosa Pine-Sugar Pine, Ponderosa Pine-Lodgepole Pine, Subalpine Fir, White Woods, Western Woods, Western Cedars, Western Hemlock	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: No. 3 Common
WCLIB 17 standard grading rules	Douglas Fir-Larch, Hem-Fir, Mountain Hemlock, Sitka Spruce, Western Cedars, Western Hemlock	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: Standard

<u>Table of Grades for Framing and Board Lumber</u>			
<u>Grading Rules</u>	<u>Species</u>	<u>Framing</u>	<u>Board Lumber</u>
SPIB 1003 standard grading rules	Southern Pine	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	No. 2 Boards
SCMA Spec standard specifications	Cypress	No. 2 Common	No. 2 Common
NELMA Grading Rules standard grading rules	Balsam Fir, Eastern Hemlock-Tamarack, Eastern Spruce, Eastern White Pine, Northern Pine, Northern Pine-Cedar	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: No. 3 Common except Standard for Eastern White and Northern Pine
RIS Grade Use standard specifications	Redwood	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	Construction Heart

<u>Table of Grades for Framing and Board Lumber</u>			
<u>Grading Rules</u>	<u>Species</u>	<u>Framing</u>	<u>Board Lumber</u>
NHLA Rules rules for the measurement and inspection of hardwood and cypress lumber	Cypress	No. 2 Dimension	No. 2 Common

### 2.3 PLYWOOD, STRUCTURAL-USE, AND ORIENTED STRAND BOARD (OSB) PANELS

APA L870, APA S350, APA E445, and APA F405 respectively.

#### 2.3.1 Wall Sheathing

##### 2.3.1.1 Plywood

C-D Grade, Exposure 1, and a minimum thickness of 5/8 inch , except where indicated to have greater thickness. Provide exterior grade material with phenol resin for interior and exterior applications.

#### 2.3.2 Other Uses

##### 2.3.2.1 Plywood

Plywood for shims, miscellaneous roof and wall details. C-D Grade, Exposure 1, minimum 5/8 inch thickness.

### 2.4 OTHER MATERIALS

#### 2.4.1 Gypsum Wall Sheathing

ASTM C1396/C1396M, ASTM C1177/C1177M fire retardant (Type X) 5/8 inch thick; 4 feet wide with square edge, glass-mat faced for torch applied roof membranes.

#### 2.4.2 Building Paper

FS UU-B-790, Type I, Grade D, Style 1.

#### 2.4.3 Miscellaneous Wood Members

##### 2.4.3.1 Blocking

Blocking must be standard or number 2 grade, preservative pressure treated.

#### 2.4.4 Adhesives

Comply with applicable regulations regarding toxic and hazardous materials and as specified. Provide non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit

requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide aerosol adhesives used on the interior of the building meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of GS-36.

## 2.5 ROUGH HARDWARE

Unless otherwise indicated or specified, rough hardware must be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials must be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry, or concrete walls or slabs must be hot-dip zinc-coated in accordance with ASTM A153/A153M. Nails and fastenings for fire-retardant treated lumber and woodwork exposed to the weather must be copper alloy or hot-dipped galvanized fasteners as recommended by the treated wood manufacturer.

### 2.5.1 Bolts, Nuts, Studs, and Rivets

ASME B18.2.1, ASME B18.5.2.1M, ASME B18.5.2.2M and ASME B18.2.2.

### 2.5.2 Anchor Bolts

ASTM A307, size as indicated, complete with nuts and washers.

### 2.5.3 Expansion Shields

CID A-A-1923, CID A-A-1924, and CID A-A-1925. Except as shown otherwise, maximum size of devices must be 3/8 inch.

### 2.5.4 Lag Screws and Lag Bolts

ASME B18.2.1.

### 2.5.5 Wood Screws

ASME B18.6.1.

### 2.5.6 Nails and Staples

ASTM F547, size and type best suited for purpose; staples must be as recommended by the manufacturer of the materials to be joined. For sheathing and subflooring, length of nails must be sufficient to extend 1 inch into supports. In general, 8-penny or larger nails must be used for nailing through 1 inch thick lumber and for toe nailing 2 inch thick lumber; 16-penny or larger nails must be used for nailing through 2 inch thick lumber. Nails used with treated lumber and sheathing must be hot-dipped galvanized in accordance with ASTM A153/A153M. Nailing must be in accordance with the recommended nailing schedule contained in AWC WFCM. Where detailed nailing requirements are not specified, nail size and spacing must be sufficient to develop an adequate strength for the connection. The connection's strength must be verified against the nail capacity tables in AWC NDS. Reasonable judgment backed by experience must ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector must be used.

### 2.5.7 Wire Nails

ASTM F1667/F1667M.

### 2.5.8 Miscellaneous Metal Framing

Galvanized 20 gage steel hat channels, 1-1/2" high x 2" width, or as detailed.

## PART 3 EXECUTION

### 3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Conform to AWC WFCM unless otherwise indicated or specified. Select lumber sizes to minimize waste. Fit framing lumber and other rough carpentry, set accurately to the required lines and levels, and secure in place in a rigid manner. Spikes, nails, and bolts must be drawn up tight.

#### 3.1.1 Wall Sheathing

##### 3.1.1.1 Plywood, Structural-Use, and OSB Panel Wall Sheathing

Apply horizontally or vertically. Extend sheathing over and nail to sill and top plate. Abut sheathing edges over centerlines of supports. Allow 1/8 inch spacing between panels and 1/8 inch at windows and doors. If sheathing is applied horizontally, stagger vertical end joints. Nail panels with 6-penny nails spaced 6 inches o.c. along edges of the panel and 12 inches o.c. over intermediate supports. Keep nails 3/8 inches away from panel ledges. Provide 2 by 4 blocking for horizontal edges not otherwise supported.

##### 3.1.1.2 Gypsum Sheathing Board

Apply gypsum sheathing board either horizontally or vertically. Butt joints and locate over the centerlines of supports. Stagger vertical joints and abut sheet closely to frames of openings. Nail sheathing with 11 gage, 3/8 inch head, zinc-coated nails 1-1/2 inches long for 1/2 inch sheathing and 1-3/4 inches long for 5/8 inch sheathing, spaced 3/8 inch minimum from edges. Provide 2 by 4 blocking for horizontal edges of 4 foot wide panels not otherwise supported.

Infill existing spans and edges of parapets and abutting gable and roof edges with blocking and miscellaneous metal framing to support perimeters and edges of sheathing.

### 3.2 MISCELLANEOUS

#### 3.2.1 Wood Roof Nailers, Edge Strips, Crickets, Curbs, and Cants

Provide sizes and configurations indicated or specified and anchored securely to continuous construction.

##### 3.2.1.1 Crickets, Cants, and Curbs

Provide wood saddles or crickets, cant strips, as indicated, specified,

or necessary and of lumber or exterior plywood.

#### 3.2.2 Wood Blocking

Provide proper sizes and shapes at proper locations for the installation and attachment of wood and other finish materials, fixtures, equipment, and items indicated or specified.

#### 3.2.3 Wood Grounds

Provide for fastening wood trim, finish materials, and other items to plastered walls and ceilings. Install grounds in proper alignment and true with an 8 foot straightedge.

#### 3.2.4 Temporary Closures

Provide with hinged doors and padlocks and install during construction at exterior doorways and other ground level openings that are not otherwise closed. Cover windows and other unprotected openings with polyethylene or other approved material, stretched on wood frames. Provide dustproof barrier partitions to isolate areas as directed.

-- End of Section --

## SECTION 07 52 00

## MODIFIED BITUMINOUS MEMBRANE ROOFING

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7-16 (2017; Errata 2018; Supp 1 2018) Minimum Design Loads and Associated Criteria for Buildings and Other Structures

## AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.24 (2022) Roofing - Safety Requirements for Low-Sloped Roofs

## ASPHALT ROOFING MANUFACTURER'S ASSOCIATION (ARMA)

ARMA 410BUR88 (2001) Manual of Roof Maintenance and Repair

ARMA PMBRG98 (1998) Quality Control Guideline for the Application of Polymer Modified Bitumen Roofing

## ASTM INTERNATIONAL (ASTM)

ASTM C728 (2017; R 2022) Standard Specification for Perlite Thermal Insulation Board

ASTM C1289 (2022) Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

ASTM D41/D41M (2011; R 2016) Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing

ASTM D312/D312M (2016a) Standard Specification for Asphalt Used in Roofing

ASTM D4263 (1983; R 2018) Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

ASTM D4586/D4586M (2007; E 2012; R 2012) Asphalt Roof Cement, Asbestos-Free

ASTM D5147/D5147M (2014) Standard Test Methods for Sampling and Testing Modified Bituminous Sheet

## Material

ASTM E108 (2020a) Standard Test Methods for Fire Tests of Roof Coverings

## FM GLOBAL (FM)

FM 4470 (2016) Single-Ply, Polymer-Modified Bitumen Sheet, Built-up Roof (BUR), and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction

FM APP GUIDE (updated on-line) Approval Guide  
<http://www.approvalguide.com/>

## INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z87.1 (2020) Occupational and Educational Personal Eye and Face Protection Devices

## MIDWEST ROOFING CONTRACTORS ASSOCIATION (MRCA)

CERTA (2007) NRCA/MRCA Certified Roofing Torch Applicator Program

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 58 (2020; TIA 20-1; TIA 20-2; TIA 20-3) Liquefied Petroleum Gas Code

NFPA 241 (2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations

## NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)

NRCA C3701 (1997) Repair Manual for Low Slope Membrane Roof Systems

NRCA CONDET (2014) Construction Details Manual

NRCA RoofMan (2020) The NRCA Roofing Manual

## SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793 (2012) Architectural Sheet Metal Manual, 7th Edition

## SINGLE PLY ROOFING INDUSTRY (SPRI)

ANSI/SPRI/FM 4435/ES-1 (2017) Test Standard for Edge Systems Used with Low Slope Roofing Systems

## U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 Occupational Safety and Health Standards



29 CFR 1910.12	Construction Work
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.16	Rules of Construction

## UNDERWRITERS LABORATORIES (UL)

UL 790	(2022) UL Standard for Safety Test Methods for Fire Tests of Roof Coverings
UL RMSD	(2012) Roofing Materials and Systems Directory

## 1.2 DESCRIPTION OF ROOF MEMBRANE SYSTEM

Minimum two-ply SBS modified bitumen roof membrane consisting of modified bitumen base sheet and cap sheet. Modified bitumen roof membrane must be torch applied.

All work must follow the NRCA RoofMan guidelines and standards stated within this Section.

## 1.3 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

## SD-03 Product Data

Modified Bitumen Sheets

Asphalt

Primer;

Modified Bitumen Roof Cement;

Pre-Manufactured Accessories

Fasteners And Plates;

Sample Warranty certificate;

Include in data written acceptance by the roof membrane manufacturer of the products and accessories provided. Provide products as listed in the applicable wind uplift and fire rating classification listings, unless approved otherwise by the Owner.

Cool Roof Rating Council (CRRC)For Top Coating

Roof Insulation

Roof Coverboard

## SD-07 Certificates

Provide evidence that products used within this specification

are manufactured in the United States.

#### Qualification of Manufacturer

Certify that the manufacturer of the modified bitumen membrane meets requirements specified under paragraph QUALIFICATION OF MANUFACTURER.

#### Qualification of Applicator

Certify that the applicator meets requirements specified under paragraph QUALIFICATION OF APPLICATOR.

#### Qualification of Torch Operator

Certify that the torch operator(s) meet requirements specified under paragraph QUALIFICATION OF TORCH OPERATOR. Submit a valid copy of each applicator's Certified Roofing Torch Applicator (CERTA) card.

Wind Uplift Resistance; classification, as applicable

Fire Resistance classification;

Submit the roof system assembly wind uplift and fire rating classification listings.

#### SD-08 Manufacturer's Instructions

Modified Bitumen Membrane Application;

Flashing;

Torches

Base Sheet attachment, including pattern and frequency of mechanical attachments required in field of roof, corners, and perimeters to provide for the specified wind resistance.

Primer

Fasteners

Cold Weather Installation;

Include detailed application instructions and standard manufacturer drawings altered as required by these specifications.

Explicitly identify in writing, differences between manufacturer's instructions and the specified requirements.

#### SD-11 Closeout Submittals

Warranty

Information Card

Instructions To Owner Personnel

Include copies of Safety Data Sheets for maintenance/repair materials.

Submit 20 year "No-Dollar-Limit" warranty for labor and materials.

#### 1.4 QUALITY ASSURANCE

##### 1.4.1 Qualification of Manufacturer

Modified bitumen sheet roofing system manufacturer must have a minimum of 5 years experience in manufacturing modified bitumen roofing products.

##### 1.4.2 Qualification of Applicator

Roofing system applicator must be approved, authorized, or licensed in writing by the modified bitumen sheet roofing system manufacturer and have a minimum of five years experience as an approved, authorized, or licensed applicator with that manufacturer and be approved at a level capable of providing the specified warranty. The applicator must supply the names, locations and client contact information of five projects of similar size and scope that the applicator has constructed using the manufacturer's roofing products submitted for this project within the previous three years.

##### 1.4.3 Qualification of Torch Operator

Torch applicators must be CERTA certified to operate torch equipment and must maintain and carry a valid Certified Roofing Torch Applicator (CERTA) card.

##### 1.4.4 Fire Resistance

Complete roof covering assembly must:

- a. Be Class A rated in accordance with ASTM E108, FM 4470, or UL 790; and
- b. Be listed as part of Fire-Classified roof deck construction in UL RMSD, or Class I roof deck construction in FM APP GUIDE.

FM or UL approved components of the roof covering assembly must bear the appropriate FM or UL label.

##### 1.4.5 Wind Uplift Resistance

Provide a complete roof system assembly that is rated and installed to resist wind loads indicated and validated by uplift resistance testing in accordance with Factory Mutual (FM) test procedures. Do not install non-rated systems, except as approved by the Owner. Base wind uplift on a design wind speed of 72 mph in accordance with ASCE 7-16 and other applicable building code requirements.

##### 1.4.6 Preroofing Conference

After approval of submittals and before performing roofing and insulation system installation work, hold a preroofing conference to review the following:

- a. Drawings, specifications and submittals related to the roof work

- b. Roof system components installation
- d. Contractor's plan for coordination of the work of the various trades involved in providing the roofing system and other components secured to the roofing
- g. Safety requirements

Coordinate preroofing conference scheduling with the Owner. The conference must be attended by the Contractor, the Owner's designated personnel, and personnel directly responsible for the installation of roofing and insulation, torch operator, flashing and sheet metal work, mechanical and electrical work, other trades interfacing with the roof work, designated safety personnel trained to enforce and comply with ASSP A10.24, and a representative of the roofing materials manufacturer. Before beginning roofing work, provide a copy of meeting notes and action items to all attending parties. Note action items requiring resolution prior to start of roof work.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

##### 1.5.1 Delivery

Deliver materials in manufacturers' original unopened containers and rolls with labels intact and legible. Mark and remove wet or damaged materials from the site. Where materials are covered by a referenced specification, the container must bear the specification number, type, and class, as applicable. Deliver materials in sufficient quantity to allow work to proceed without interruption.

##### 1.5.2 Storage

Protect materials against moisture absorption and contamination or other damage. Avoid crushing or crinkling of roll materials. Store roll materials on end on clean raised platforms or pallets one level high in dry locations with adequate ventilation, such as an enclosed building or closed trailer. Do not store roll materials in buildings under construction until concrete, mortar, and plaster work is finished and dry. Maintain roll materials at temperatures above 50 degrees F for 24 hours immediately before application. Do not store materials outdoors unless approved by the Owner. Completely cover felts stored outdoors, on and off roof, with waterproof canvas protective covering. Do not use polyethylene sheet as a covering. Tie covering securely to pallets to make completely weatherproof. Provide sufficient ventilation to prevent condensation. Do not store more materials on roof than can be installed the same day and remove unused materials at end of each days work. Distribute materials temporarily stored on roof to stay within live load limits of the roof construction.

Maintain a minimum distance of 35 foot for all stored flammable materials, including materials covered with shrink wraps, craft paper or tarps from all torch/welding applications.

Immediately remove wet, contaminated or otherwise damaged or unsuitable materials from the site. Damaged materials may be marked by the Owner.

### 1.5.3 Handling

Prevent damage to edges and ends of roll materials. Do not install damaged materials in the work. Select and operate material handling equipment to prevent damage to materials or applied roofing.

### 1.6 ENVIRONMENTAL REQUIREMENTS

Do not install roofing system when air temperature is below 40 degrees F, during any form of precipitation, including fog, or when there is ice, frost, moisture, or any other visible dampness on the roof deck. Follow manufacturer's printed instructions for Cold Weather Installation.

### 1.7 TORCH APPLIED (HEAT WELD) MODIFIED BITUMEN MEMBRANE SAFETY

#### 1.7.1 Property Protection

Take all precautions necessary to prevent ignition of combustible materials during torch application of roofing. Immediately call the fire department if a fire commences. Review all fire safety procedures as outlined at the pre-roofing conference.

Install materials using the techniques recommended by CERTA NRCA/MRCA Certified Roofing Torch Applicator Program available from the National Roofing Contractors Association (NRCA) and the Midwest Roofing Contractors Association (MRCA) as endorsed by the Asphalt Roofing Manufacturers Association (ARMA) and the United Union of Roofers, Waterproofers and Allied Workers. Application procedures must comply with NFPA 241, OSHA 29 CFR 1910 and 29 CFR 1910.12, 29 CFR 1926.16, 29 CFR 1926 Subpart F.

Do not store flammable liquids on the roof.

Provide a minimum of two 2.65 gallon containers of water and two fully charged minimum 20 pound ABC (dry chemical) fire extinguishers in separate, easily accessible locations on the roof and within 30 foot of each torch work area at all times.

No Asphalt Kettles are allowed on roofs. Locate kettles and supply LP-Gas Cylinders safely and secured per NFPA 241 outside of the building's perimeter a minimum of 20 foot from the structure and any combustible materials.

Maintain a minimum separation of 20 foot between LP-Gas Cylinders and kettle. Provide protective fire retardant blanket barrier or shield between any building structure to a minimum height of 8 foot and a clear surround distance of 4 foot if operations force placement of kettle within a distance of 20 foot. Do not obstruct or place kettles or Cylinder storage within 10 foot of exits, means of egress, gates, roadways, entrances. Locate kettles downwind and away from any building air intakes.

Provide a minimum of two portable fully charged 20 pound ABC (dry chemical) fire extinguishers no closer than 5 foot and no further than 25 foot of horizontal travel distance from each kettle at all times while kettle is in operation, in easily accessible and identifiable locations. Also provide a minimum of one multipurpose 2-A:20-B:C portable fire extinguisher on the roof being covered or repaired.

Comply with the following safety procedures:

- a. Fuel containers, burners, and related appurtenances of roofing equipment in which liquefied petroleum gas is used for heating must comply with the requirements of NFPA 58.
- b. Fuel containers having capacities greater than one pound must be located a minimum of 10 foot clear distance from the burner flame.
- c. Clearly label all LP-Gas Cylinders as "Flammable Gas", and secure to prevent accidental tip-over.
- d. Check all pressure regulators and hoses prior to use for proper functioning and integrity.
- e. Turn off fuel supply at LP Gas Cylinder when kettle is not in use.
- f. Equip all kettles with a functioning temperature measuring device to ensure no heating in excess of 50 degrees F below the flash point.
- g. Provide covers, lid, or top which are close fitting, constructed of minimum No.14 manufacturer's gauge steel, and can be gravity closed on all kettles.
- h. Clean all roofing mops and rags free of excess asphalt and store safely away from all combustible materials. Store discarded roofing mops and rags in a non-combustible container and remove from site each day.
- i. Position all pump lines handling hot asphalt securely and equip all pump lines with a shut-off valve on each with a coupler which may be opened when lines are full. Do not subject pump lines to pressures in excess of safe and recommended NRCA and ARMA working pressures. Station an operator near the equipment to cut off flow and care for other emergencies while conducting heating, pumping and application operations.
- j. Asphalt bucket used by roofers or workers in similar trades must be constructed of minimum No. 24 gauge or heavier sheet steel and have a metal bail of no less than 1/4 inch diameter material. The bail is to be fastened to offset ears or equivalent which have been riveted, welded, or otherwise safely and securely attached to the bucket. Soldered bail sockets are prohibited. Position workers and other employees to avoid being struck by bucket or other roofing materials, which may accidentally fall while being hoisted, lowered, or used in the roofing operation. Provide safety barriers and caution signs at all skylights or other roof holes.
- k. Do not use flammable liquids with a flash point below 100 degrees F (gasoline and similar products) for cleaning purposes.

Do not use solid fuel or Class I liquids as fuel for roofing asphalt kettles. Provide a minimum of one employee fully knowledgeable of kettle operations and hazards to maintain constant surveillance during kettle operation within a minimum distance of 25 foot of the kettle.

Check all fire extinguishers prior to commencement of work, and upon completion of the day's work, to ensure fullness and operability.

Project supervisor must make daily inspections with the facility manager of all conditions and operations which could present hazards during

torching applications and issue directives to address all such concerns and items of the work and existing conditions.

Identify and protect all combustible roof components, possible fire traps, and hidden hazards. Seal off voids or openings in the substrate with non-combustible materials prior to installing torch-applied materials in the area. Install protective fire retardant blankets and shields at building walls, eaves, parapets and equipments curbs constructed of combustible materials within 3 foot radius of the area of torch work prior to commencement of the work.

When working around intakes and openings, temporarily disconnect and block to prevent flame of torch from being drawn into the opening. Provide non-combustible shielding or flame guard protection where gaps or voids occur in the construction in area of torch work.

#### 1.7.2 Fire Watch

All personnel on the roof during torch application must be properly trained to use a fire extinguisher. Provide a fire watch for a minimum of two hours after completion of all torch work at the end of each work shift. Maintain the fire watch for additional time required to ensure no potential ignition conditions exist. For torch applications, provide and utilize a minimum of one calibrated thermal imaging camera, minimum 160x120 thermal IR resolution per torch capable of detecting infrared (IR) spectrum heat emission that could indicate a potential fire during the fire watch to verify cool, safe and non-combustible conditions exist. Provide a minimum duration fire watch of two hours conducted by personnel properly trained in the use of the camera to survey the underside of the roof deck, attic, and plenum spaces (where possible) and the topside of possible smoldering elements. Camera must have a manufacturer's certificate of calibration, and the use of the camera must be in compliance with Installation security policies.

Do not torch in areas of poor or no visibility (curbs, corners, eaves, expansions joints, flashing, other voids and small penetrations) which could allow a torch flame to ignite combustible material(s) hidden from view or within the underside of the roof deck or building interior. Use cold finish applications in these areas whenever possible and per manufacturer's printed instructions, NRCA 4002, MRCA R&NW manual for "cold adhered" materials.

Do not leave the rooftop unattended during breaks in work during a work shift. Walk and scan all areas of application checking for hot spots, fumes, or smoldering, especially at wall and curb areas, prior to departure at the end of each work shift. Ensure any and all suspect conditions are eliminated prior to leaving the site each work shift.

#### 1.7.3 Open Flame Application (Torch) Equipment and Personnel Safety

Only NRCA/MRCA CERTA certified roofing applicators are allowed to operate any torching equipment. Verify that all such applicators maintain and are currently carrying a valid Certified Roofing Torch Applicator (CERTA) card.

Train all crew members in preventive measures for indirect and direct dangers and hazards associated with roofing work, which include, but are not limited to the following:

- a. Heat Stress: Wear light colored clothing, a hat for ultra-violet

protection, and other eye protective devices. Drink sufficient quantities of non-alcoholic, non-caffeine liquids. Stage shifts for crew members to allow for breaks from heat and sun exposure without interfering with work progress.

- b. First Aid for Burns: Immediately call for an ambulance. Contact local Occupational Health Services (OHS).

All crew members must wear correct personal protective equipment (PPE), including, but not limited to the following items:

- a. Long-sleeved shirts buttoned at the collar and cuffs, made of non-flammable materials. Polyester materials are not allowed.
- b. Work boots covering ankles with rubber or composite soles.
- c. Long pants without cuffs to extend over the top of the work boots, be made of non-flammable materials. No polyester allowed.
- d. Heavy leather gloves and flame retardant gauntlets which must be worn during all handling of a torch, whether operating or not.
- e. OSHA and ANSI/ISEA Z87.1 approved face shields, goggles or safety glasses to be worn during torching and any other applicable roofing functions.
- f. OSHA and ANSI approved hard hats.

#### 1.7.4 Wind Conditions

Use side shields with all torching operations when winds are occurring to prevent flame distortion of end burners. Use torch machine equipment with bottom shield plate to prevent flame spread on to roof deck and substrate. When high wind gusts are present, notify the safety officer and cease all use of torching equipment until wind conditions lower and authorization from the safety officer to proceed is received.

#### 1.8 SEQUENCING

Coordinate the work with other trades to ensure that components which are to be secured to or stripped into the roofing system are available and that permanent flashing and counter flashing, per NRCA CONDET, and are installed as the work progresses. Ensure temporary protection measures are in place to preclude moisture intrusion or damage to installed materials. Apply roofing immediately following application of insulation as a continuous operation. Coordinate roofing operations with insulation work so that all roof insulation applied each day is covered with roof membrane installation the same day.

#### 1.9 WARRANTY

Provide roof system material and workmanship warranties meeting specified requirements. Provide a manufacturer's warranty that has no dollar limit, covers full system water-tightness, includes the entire roof system and has a minimum duration stated below.

Upon completion of installation, and acceptance by the Owner, the manufacturer must supply the appropriate warranty to the Owner.



When the manufacturer or his approved applicator fail to perform repairs within 72 hours of notification, emergency temporary repairs performed by others does not void the warranty.

#### 1.9.1 Roof System Warranty

Furnish the roof membrane manufacturer's 20-year no dollar limit, non-pro-rated roof system materials and installation workmanship warranty, in compliance with ASTM C1289, necessary for a watertight roof system. Provide warranty directly to the Owner and commence warranty effective date at time of Owner's acceptance of the roof work. The warranty must state that:

- a. Warranty to include but not be limited to membrane, insulation, base sheet, mastics, adhesives, fasteners, sealants, base flashings, sheet metal flashings, sheathing and accessories, etc.
- b. Warranty Period: Twenty years from the date of Substantial Completion.
- c. Manufacturer's Representative shall attend two post-construction field inspections, the first no earlier than twenty-three (23) months and no later than twenty-four (24) months after the date of Substantial Completion, and the second no earlier than fifty-nine (59) and no later than (60) months. Submit a written report of each visit to the Owner and Design Consultant listing observations, conditions and any recommended repairs or actions.

#### 1.9.2 Roofing System Installer Warranty

The roof system installer must warrant for a period of two years that the roof system, as installed, is free from defects in installation workmanship, to include the roof membrane, flashing, insulation, accessories, attachments, and sheet metal installation integral to a complete watertight roof system assembly. Write the warranty directly to the Owner. The roof system installer is responsible for correction of defective workmanship and replacement of damaged or affected materials. The roof system installer is responsible for all costs associated with the repair or replacement work.

#### 1.9.3 Continuance of Warranty

Repair or replacement work, ARMA 410BUR88, NRCA C3701 that becomes necessary within the warranty period and accomplished in a manner so as to restore the integrity of the roof system assembly and validity of the roof membrane manufacturer warranty for the remainder of the manufacturer warranty period.

#### 1.10 CONFORMANCE AND COMPATIBILITY

Provide the entire roofing and flashing system in accordance with specified and indicated requirements, including fire and wind resistance (ANSI/SPRI/FM 4435/ES-1) requirements. Work not specifically addressed and any deviation from specified requirements must be in general accordance with recommendations of the NRCA Roofing and Waterproofing Manual, membrane manufacturer published recommendations and details, and compatible with surrounding components and construction. Submit any deviation from specified or indicated requirements to the Owner for approval prior to installation.

## 1.11 ELIMINATION, PREVENTION OF FALL HAZARDS

### 1.11.1 Fall Protection

Comply with OSHA Standards for General Industry & Construction 29 CFR 1910.23 (c)(1) and 20 CFR 1926.501(b)(1) and ANSI Z359 Fall Protection Code.

## PART 2 PRODUCTS

### 2.1 MATERIALS

Coordinate with other specification sections related to the roof work. Furnish a combination of specified materials that comprise a roof system acceptable to the roof membrane manufacturer and meeting specified requirements. Protect materials provided from defects and make suitable for the service and climatic conditions of the installation.

### 2.2 MODIFIED BITUMEN SHEETS MATERIALS

Furnish a combination of specified materials that comprise the modified bitumen manufacturer's standard system of the number and type of plies specified. Provide materials suitable for the service and climatic conditions of the installation. Modified bitumen sheets must be watertight and visually free of pinholes, particles of foreign matter, non-dispersed raw material, factory splices, or other conditions that might affect serviceability. Polymer modifier must comply with ARMA PMBRG98 and be uniformly dispersed throughout the sheet. Edges of sheet must be straight and flat.

- a. SBS Base Ply Membrane/Base Sheet: ASTM D6163, Type I, Grade S, minimum 110 mils thick.
- b. SBS Cap Ply Membrane / Cap Sheet: ASTM D6163, Type I, Grade G, minimum 130 mils thick.

### 2.3 BASE FLASHING MEMBRANE

Membrane manufacturer's standard, minimum two-ply modified bitumen membrane flashing system compatible with the roof membrane specified and as recommended in membrane manufacturer's published literature. Provide flashing membranes that meet or exceed the properties of the material standards specified for the modified bitumen base and cap sheet, except that flashing membrane thickness must be as recommended by the membrane manufacturer.

### 2.4 ROOF INSULATION

Insulation board must be type compatible with membrane manufacturer's requirements as a substrate for the roof system, 25 PSI minimum, ASTM C1289; (2) layers minimum 2" thickness.

- a. Type II Fibrous felt or glass fiber mat membrane on both major surfaces of the rigid polyisocyanurate core foam.
- b. Fasteners: Provide flush-driven fasteners through flat round or hexagonal steel or plastic plates. Provide zinc-coated steel plates, flat round not less than 1 3/8 inch diameter, hexagonal not less than

28 gage. Provide high-density plastic plates, molded thermoplastic with smooth top surface, reinforcing ribs and not less than 3 inches in diameter. Fully recess fastener head into plastic plate after it is driven. Form plates to prevent dishing. Do not use bell or cup shaped plates. Provide fasteners in accordance with insulation manufacturer's recommendations for holding power when driven, to withstand specified wind speed.

- c. Install first layer of insulation to acceptable condition decking with manufacturer's recommended low-rise foam insulation adhesive, in pattern sufficient to provide required uplift protection.

## 2.5 ROOF COVERBOARD

Glass mat faced moisture resistant gypsum or asphaltic core, minimum 1/4" thickness, per roof manufacturer's requirements.

## 2.6 ASPHALT

ASTM D312/D312M, Type III or IV, in accordance with modified bitumen membrane manufacturer requirements and compatible with the slope conditions of the installation.

## 2.7 PRIMER

ASTM D41/D41M, or other primer compatible with the application and as approved in writing by the modified bitumen membrane manufacturer.

## 2.8 MODIFIED BITUMEN ROOF CEMENT

ASTM D4586/D4586M, Type II for vertical surfaces, Type I for horizontal surfaces, compatible with the modified bitumen roof membrane and as recommended by the modified bitumen membrane manufacturer.

## 2.9 CANT AND TAPERED EDGE STRIPS

Provide standard cants and tapered edge strips of perlite conforming to ASTM C728 treated with bituminous impregnation, sizing, or waxing and fabricated to provide maximum 45 degree change in direction of membrane. Cant strips must be minimum 1-1/2 inch thick and provide for minimum 5 inch face and 3-1/2 inch vertical height when installed at 45 degree face angle, except where clearance restricts height to lesser dimension. Taper edge strips at a rate of one to 1-1/2 inch per foot to a minimum of 1/8 inch of thickness. Provide kiln-dried preservative-treated wood cants, in compliance with requirements of Section 06 10 00 ROUGH CARPENTRY at base of wood nailers set on edge and wood curbing and where otherwise indicated.

## 2.10 FASTENERS AND PLATES

Provide coated, corrosion-resistant fasteners as recommended by the modified bitumen sheet manufacturer's printed instructions and meeting the requirements of FM 4470 and FM APP GUIDE for Class I roof deck construction and the wind uplift resistance specified. For fastening of membrane or felts to wood materials, provide fasteners driven through 1 inch diameter metal discs, or one piece composite fasteners with heads not less than 1 inch in diameter or 1 inch square with rounded or 45 degree tapered corners.

### 2.10.1 Masonry or Concrete Walls and Vertical Surfaces

Use hardened steel nails or screws with flat heads, diamond shaped points, and mechanically deformed shanks not less than 1 inch long for securing felts, modified bitumen sheets, metal items, and accessories to masonry or concrete walls and vertical surfaces. Use power-driven fasteners only when approved in writing by the Owner.

### 2.10.2 Metal Plates

Provide flat corrosion-resistant round stress plates as recommended by the modified bitumen sheet manufacturer's printed instructions and meeting the requirements of FM 4470; not less than 2 inch in diameter. Form discs to prevent dishing or cupping.

## 2.11 PRE-MANUFACTURED ACCESSORIES

Pre-manufactured accessories must be manufacturer's standard for intended purpose, compatible with the membrane roof system and approved for use by the modified bitumen membrane manufacturer.

## PART 3 EXECUTION

### 3.1 EXAMINATION

Ensure that the following conditions exist prior to application of the roofing materials:

- a. Do not install items that show visual evidence of biological growth.
- b. Drains, curbs, cants, control joints, expansion joints, perimeter walls, roof penetrating components, and equipment supports are in place.
- c. Surfaces are rigid, clean, dry, smooth, and free from cracks, holes, and sharp changes in elevation. Joints in the substrate are sealed to prevent dripping of bitumen into building or down exterior walls.
- d. The plane of the substrate does not vary more than 1/4 inch within an area 10 by 10 foot when checked with a 10 foot straight edge placed anywhere on the substrate.
- e. Substrate is sloped as indicated to provide positive drainage.
- f. Walls and vertical surfaces are constructed to receive counter flashing, and will permit mechanical fastening of the base flashing materials.
- g. Treated wood nailers are in place on non-nailable surfaces, to permit nailing of base flashing at minimum height of 8 inch above finished roofing surface.
- h. Protect all combustible materials and surfaces which may contain concealed combustible or flammable materials. All fire extinguishing equipment has been placed as specified.
- i. Verify all Fire Watch personnel assignments.
- j. Treated wood nailers are fastened in place at eaves, gable ends,

openings, and intersections with vertical surfaces for securing of membrane, edging strips, attachment flanges of sheet metal, and roof fixtures. Surface-applied nailers are the same thickness as the roof insulation.

- k. Cants are securely fastened in place in the angles formed by walls and other vertical surfaces. The angle of the cant is 45 degrees and the height of the vertical leg is not less than 3-1/2 inch.
- m. Exposed nail heads in wood substrates are properly set. Warped and split boards sheets have been replaced. There are no cracks or end joints 1/4 inch in width or greater. Knot holes are covered with sheet metal and nailed in place. Wood decks are covered with rosin paper or unsaturated felt prior to base sheet or roof membrane application. Joints in plywood substrates are taped or otherwise sealed to prevent air leakage from the underside.
- n. Insulation boards are installed smoothly and evenly, and are not broken, cracked, or curled. There are no gaps in insulation board joints exceeding 1/4 inch in width. Insulation is being roofed over on the same day the insulation is installed.
- p. Joints between precast concrete deck units are grouted, leveled, and stripped in with felt or bituminous stripping membrane set in bituminous cement prior to applying other roofing materials over the area.
- q. Roof deck and framing are sloped as indicated to provide positive drainage.

### 3.2 PREPARATION

#### 3.2.1 Protection of Property

##### 3.2.1.1 Protective Coverings

Install protective coverings at paving and building walls adjacent to hoists prior to starting the work. Lap protective coverings not less than 6 inch, secure against wind, and vent to prevent collection of moisture on covered surfaces. Keep protective coverings in place for the duration of the roofing work.

##### 3.2.1.2 Bitumen Stops

Provide felt bitumen stops or other means to prevent bitumen drippage at roof edges, openings, and vertical projections before hot mopped application of the roofing membrane.

#### 3.2.2 Equipment

##### 3.2.2.1 Flame-Heated Equipment

Do not place flame-heated equipment on roof. Provide and maintain a fire extinguisher adjacent to flame-heated equipment and on the roof.

##### 3.2.2.2 Open Flame Application Equipment

Utilize torches and other open flame equipment specifically designated for use in application of modified bitumen materials and approved by the

modified bitumen sheet manufacturer. Open flame equipment must not be ignited (burning) when left unattended. Provide and maintain a fire extinguisher adjacent to open flame equipment on the roof. Specific requirements for fire watches and burn permits exist. These requirements will be reviewed at the prerooting conference.

#### 3.2.2.3 Electric-Heated Equipment

Provide adequate electrical service as required by manufacturer of electrical equipment to ensure against damage to equipment and property and to ensure proper application of roofing materials.

#### 3.2.3 Priming of Surfaces

Prime all surfaces to be in contact with adhered membrane materials. Apply primer at the rate of 0.75 gallon per 100 sq. ft. or as recommended by modified bitumen sheet manufacturer's printed instructions to promote adhesion of membrane materials. Allow primer to dry prior to application of membrane materials to primed surface. Avoid flammable primer material conditions in torch applied membrane applications.

##### 3.2.3.1 Priming of Concrete and Masonry Surfaces

After surface dryness requirements have been met, coat concrete and masonry surfaces which are to receive membrane materials uniformly with primer.

##### 3.2.3.2 Priming of Metal Surfaces

Prime flanges of metal components to be embedded into the roof system prior to setting in bituminous materials or stripping into roofing system.

#### 3.2.4 Membrane Preparation

Unroll modified bitumen membrane materials and allow to relax a minimum of 30 minutes prior to installation. In cold weather, adhere to membrane manufacturer's additional recommendations for pre-installation membrane handling and preparation. Inspect for damage, pinholes, particles of foreign matter, non-dispersed raw material, factory splices, or other conditions that might affect serviceability. Edges of seams must be straight and flat so that they may be seamed to one another without forming fish mouths or wrinkles. Discard damaged or defective materials.

#### 3.2.5 Substrate Preparation

Apply membrane to clean, dry surfaces only. Do not apply membrane to surfaces that have been wet by rain or frozen precipitation within the previous 12 hours. Provide cleaning and artificial drying with heated blowers or torches as necessary to ensure clean, dry surface prior to membrane application. Torches may not be used to ensure clean, dry surfaces prior to membrane applications if the roof deck or materials used in the installation of the roofing system are combustible.

### 3.3 APPLICATION

Apply roofing materials as specified herein unless approved otherwise by the Owner. Keep roofing materials dry before and during application. Complete application of roofing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.

Maintain specified temperatures for asphalt. Provide temporary roofing and flashing as specified herein prior to application of permanent roofing system.

### 3.3.1 Phased Membrane Construction

Phased application of membrane plies is prohibited unless otherwise approved by the Owner and supported by the membrane manufacturer's written application instructions. If cap sheet installation is delayed, thoroughly clean the applied membrane material surface and dry immediately prior to cap sheet installation. Priming of the applied membrane surface may be required at the discretion of the Owner prior to cap sheet installation.

### 3.3.2 Temporary Roofing and Flashing

Provide watertight temporary roofing and flashing where construction scheduling or weather conditions require protection of the building's interior before permanent roofing system can be installed. Do not install temporary roofing over permanently installed insulation. Provide rigid pads for traffic over temporary roofing.

#### 3.3.2.1 Removal

Completely remove temporary roofing and flashing before continuing with application of the permanent roofing system.

### 3.3.3 Application Method

#### 3.3.3.1 Torch Applied Modified Bitumen Membrane and Flashing

Base flashing membrane may be torch applied. Ensure substrate membrane surfaces are warmed either naturally or by torch during the installation. Apply heat evenly to underside of roll membrane being installed and exposed side lap area of previously installed sheet. Provide for slight, uniform flow of bitumen in front of roll and full width of roll as the material is being rolled or set into place. Apply uniform positive pressure to ensure membrane is fully adhered and all laps are sealed. Prior to forming lap over granulated surfaces, embed granules of the receiving sheet by heating and troweling-in the granules to form a uniform black compound surface. Roll all lap areas with a weighted roller immediately after forming lap. Provide for visual bleed out of compound in lap areas. Avoid overheating the membrane or burning through to membrane reinforcement. Inspect and ensure all lap areas are fully sealed.

#### 3.3.4 Modified Bitumen Base Sheet

Fully adhere base sheets in accordance with membrane manufacturer's printed instructions. Roll and broom in the base sheet to ensure full contact with the hot asphalt application. Apply sheets in a continuous operation. Apply sheets with side laps at a minimum of 2 inch unless greater side lap is recommended by the manufacturer's standard written application instructions. Provide end laps of not less than 6 inch and staggered a minimum of 36 inch. Apply sheets. Extend base sheets approximately 2 inch above the top of cant strips at vertical surfaces and to the top of cant strips elsewhere. Trim base sheet to a neat fit around vent pipes, roof drains, and other projections through the roof. Application must be free of ridges, wrinkles, and buckles.

### 3.3.5 Modified Bitumen Membrane Application

Ensure proper sheet alignment prior to installation. Bucking or backwater laps are prohibited. Fully adhere membrane sheets to underlying substrate materials. Provide minimum 3 inch side laps and minimum 6 inch end laps and as otherwise required by membrane manufacturer. Stagger end laps minimum 36 inch. Offset side laps between membrane layers a minimum of 12 inch. Offset end laps between membrane layers a minimum of 36 inch. Install all membrane layers the same workday, unless supported otherwise by roof membrane manufacturer application instructions and approved by the Owner. Provide tight smooth laminations of each membrane layer without wrinkles, ridges, buckles, kinks, fishmouths, or voids. Ensure full membrane adhesion and full lap seals. Rework to seal any open laps prior to application of subsequent membrane layers. The completed membrane application must be free of surface abrasions, air pockets, blisters, ridges, wrinkles, buckles, kinks, fishmouths, voids, or open seams.

#### 3.3.5.1 Cap Sheet Installation

Underlying applied membrane must be inspected and repaired free of damage, holes, puncture, gouges, abrasions, and any other defects, and free of moisture, loose materials, debris, sediments, dust, and any other conditions required by the membrane manufacturer prior to cap sheet installation. Do not apply cap sheet if rain or frozen precipitation has occurred within the previous 24 hours. Align cap membrane and apply by the specified method with the proper side and end lap widths. Set cap sheet in hot asphalt or torch apply as recommended by the modified bitumen membrane manufacturer when the roof deck and materials used in the installation of the roofing system are non-combustible. Cut at a 45 degree angle across selvage edge of cap membrane to be overlapped in end lap areas prior to applying overlapping cap membrane. Apply matching granules in any areas of bitumen bleed out while the asphalt is still hot. Minimize traffic on newly installed cap sheet membrane.

### 3.3.6 Membrane Flashing

Apply two-ply modified bitumen strip flashing and sheet flashing in the angles formed where the roof deck abuts walls, curbs, ventilators, pipes, and other vertical surfaces, and where necessary to make the work watertight. Apply membrane flashing in accordance with the roof membrane manufacturers printed instructions and as specified. Cut at a 45 degree angle across terminating end lap area of cap membrane prior to applying adjacent overlapping cap membrane. Press flashing into place to ensure full adhesion and avoid bridging. Ensure full lap seal in all lap areas. Mechanically fasten top edge of modified bituminous base flashing 150 mm (6 inches) on center through minimum 1 inch diameter tin caps with fasteners of sufficient length to embed minimum one inch into attachment substrate. Apply matching granules in any areas of asphalt bleed out while the asphalt is still hot. Apply membrane liner over top of exposed nailers and blocking and to overlap top edge of base flashing installation at curbs, parapet walls, expansion joints and as otherwise indicated to serve as waterproof lining under sheet metal flashing components. Metal flashing per SMACNA 1793 guidelines. Do not set metal flashing in hot asphalt.

#### 3.3.6.1 Membrane Strip Flashing

Set primed flanges of metal flashing in full bed of modified bituminous cement material and securely fasten through to attachment substrate.



Strip-in with membrane flashing so that strip extends not less than 4 inch beyond outer edge of flange. Where multiple membrane stripping plies are installed, extend each additional stripping ply minimum 4 inch beyond edge of previous ply.

#### 3.3.6.2 Membrane Flashing at Roof Drain

Extend membrane sheets to edge of drain bowl opening at the roof drain deck flange in accordance with membrane manufacturer's printed application instructions. Securely clamp membrane sheets and metal roof drain flashing and strip flashing in the flashing clamping ring. Secure clamps so that sheets and metal flashing are free from wrinkles and folds. Trim stripping must be flush with inside of clamping ring.

#### 3.3.6.3 Pre-fabricated Curbs

Securely anchor prefabricated curbs to nailer or other base substrate and flash with modified bitumen membrane.

#### 3.3.6.4 Set-On Accessories

Where pipe or conduit blocking, supports and similar roof accessories are set on the membrane, adhere walkpad material to bottom of accessories prior to setting on roofing membrane. Install set-on accessories to permit normal movement due to expansion, contraction, vibration, and similar occurrences without damaging roofing membrane. Do not mechanically secure set-on accessories through roofing membrane into roof deck substrate.

#### 3.3.7 Correction of Deficiencies

Where any form of deficiency is found, take additional measures as deemed necessary by the Owner to determine the extent of the deficiency and perform corrective actions as directed by the Owner.

#### 3.3.8 Clean Up

Remove debris, scraps, containers and other rubbish and trash resulting from installation of the roofing system from job site each day.

### 3.4 CORRECTION OF DEFICIENCIES

Where any form of deficiency is found, take additional measures as deemed necessary by the Owner to determine the extent of the deficiency and perform corrective actions as directed by the Owner.

### 3.5 PROTECTION OF APPLIED ROOFING

At the end of the day's work and when precipitation is imminent, protect applied modified bitumen roofing system from water intrusion.

#### 3.5.1 Temporary Flashing for Permanent Roofing

Provide temporary flashing at drains, curbs, walls and other penetrations and terminations of roofing sheets until permanent flashing can be applied. Remove temporary flashing before applying permanent flashing.

### 3.5.2 Temporary Walkways, Runways, and Platforms

Do not permit storing, walking, wheeling, and trucking directly on applied roofing materials. Provide temporary walkways, runways, and platforms of smooth clean boards, mats or planks as necessary to avoid damage to applied roofing materials, and to distribute weight to conform to live load limits of roof construction. Use rubber-tired equipment for roofing work.

### 3.6 FIELD QUALITY CONTROL

Perform field tests in the presence of the Owner. Notify the Owner one day before performing tests.

#### 3.6.1 Test for Surface Dryness

Before application of membrane sheets and starting work on the area to be roofed, perform test for surface dryness in accordance with the following:

- a. Foaming: When poured on the surface to which membrane materials are to be applied, one pint of asphalt when heated in the range of 350 to 400 degrees F, must not foam upon contact.
- b. Strippability: On cementitious substrate surfaces, after asphalt used in the foaming test application has cooled to ambient temperatures, test coating for adherence. Should a portion of the sample be readily stripped clean from the surface, do not consider the surface to be dry and do not start application. Should rain occur during application, stop work and do not resume until surface has been tested by the method above and found dry.
- c. Prior to installing any roof system on a concrete deck, conduct a test per ASTM D4263. The deck is acceptable for roof system application when there is no visible moisture on underside of plastic sheet after 24 hours.

#### 3.6.2 Construction Monitoring

During progress of the roof work, make visual inspections as necessary to ensure compliance with specified parameters. Additionally, verify the following:

- a. Materials comply with the specified requirements.
- b. Materials are not installed in adverse weather conditions.  
  
All materials are properly stored, handled and protected from moisture or other damages.
- c. Equipment is in working order. Metering devices are accurate.
- d. Substrates are in acceptable condition, in compliance with specification, prior to application of subsequent materials.

(1) Nailers and blocking are provided where and as needed.

Insulation substrate is smooth, properly secured to its substrate, and without excessive gaps prior to membrane application.

- (2) The proper number, type, and spacing of fasteners are installed.

Membrane heating, hot mopping, or adhesive application is provided uniformly and as necessary to ensure full adhesion of roll materials. Asphalt is heated and applied within the specified temperature range.

The proper number and types of plies are installed, with the specified overlaps.

Applied membrane surface is inspected, cleaned, dry, and repaired as necessary prior to cap sheet installation.

- (3) Lap areas of all plies are completely sealed.

Membrane is fully adhered without ridges, wrinkles, kinks, fishmouths, or other voids or delaminations.

Installer adheres to specified and detailed application parameters.

Associated flashing and sheet metal are installed in a timely manner in accord with the specified requirements.

Temporary protection measures are in place at the end of each work shift.

#### 3.6.2.1 Manufacturer's Inspection

Manufacturer's technical representative must visit the site a minimum of three times during the installation for purposes of reviewing materials installation practices and adequacy of work in place. Inspections must occur during the first 20 squares of membrane installation, at mid-point of the installation, and at substantial completion, at a minimum. Additional inspections must not exceed one for each 100 squares of total roof area with the exception that follow-up inspections of previously noted deficiencies or application errors must be performed as requested by the Owner. After each inspection, submit a report, signed by the manufacturer's technical representative to the Owner within 3 working days. Note in the report overall quality of work, deficiencies and any other concerns, and recommended corrective action.

#### 3.6.3 Samples of Roofing

Take samples per ASTM D5147/D5147M, sized 4-inch by 40-inch cut across width of modified bitumen sheets as directed by the Owner. Cut samples will be examined by the Owner for specified number of plies, proper lap width, complete lap seal, full uniform adhesive compound application and adhesion, full bond between plies, harmful foreign materials, presence of moisture, and wet insulation. Where cuts are not retained by the Owner or disposed, set cut strip back in cut area in bed of modified bitumen cement. Repair area of cut with new minimum two-ply modified bitumen membrane patch.

#### 3.6.4 Roof Drain Test

After completing roofing, but prior to Owner acceptance, perform the following test for watertight integrity. Plug roof drains and fill with water to edge of drain sump for 8 hours. Do not plug secondary overflow drains at the same time as adjacent primary drain. To ensure some

drainage from roof, do not test all drains at same time. Measure water at beginning and end of the test period. When precipitation occurs during test period, repeat test. When water level falls, remove water, thoroughly dry, and inspect installation; repair or replace roofing at drain to provide for a properly installed watertight flashing seal. Repeat test until there is no water leakage.

### 3.7 INSTRUCTIONS TO OWNER PERSONNEL

Furnish written and verbal instructions on proper maintenance procedures to designated Owner personnel. Furnish instructions by a competent representative of the modified bitumen membrane manufacturer and include a minimum of 4 hours on maintenance and emergency repair of the membrane. Include a demonstration of membrane repair, and give sources of required special tools. Furnish information on safety requirements during maintenance and emergency repair operations.

### 3.8 INFORMATION CARD

For each roof, furnish a typewritten information card for facility Records and a card laminated in plastic and framed for interior display at roof access point, or a photoengraved 0.039 inch thick aluminum card for exterior display. Card must be 8 1/2 by 11 inch minimum, identifying facility name and number; location; contract number; approximate roof area; detailed roof system description, including deck type, membrane, number of plies, method of application, manufacturer, insulation and cover board system and thickness; presence of tapered insulation for primary drainage, presence of vapor retarder; date of completion; installing contractor identification and contact information; membrane manufacturer warranty expiration, warranty reference number, and contact information. Install card at roof top or access location as directed by the Owner and provide a paper copy to the Owner.

-- End of Section --

## SECTION 07 60 00

## FLASHING AND SHEET METAL

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M (2017) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM B209 (2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

## SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793 (2012) Architectural Sheet Metal Manual, 7th Edition

## 1.2 GENERAL REQUIREMENTS

Finished sheet metal assemblies must form a weathertight enclosure without waves, warps, buckles, fastening stresses or distortion, while allowing for expansion and contraction without damage to the system. The sheet metal installer is responsible for cutting, fitting, drilling, and other operations in connection with sheet metal modifications required to accommodate the work of other trades. Coordinate installation of sheet metal items used in conjunction with roofing with roofing work to permit continuous, uninterrupted roofing operations.

## 1.3 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Copings

Recycled Content

SD-03 Product Data

Prosoco R-Guard Fast Flash

Self Adhering Membrane Flashings

#### 1.4 MISCELLANEOUS REQUIREMENTS

##### 1.4.1 Product Data

Indicate thicknesses, dimensions, fastenings, anchoring methods, expansion joints, and other provisions necessary for thermal expansion and contraction. Scaled manufacturer's catalog data may be submitted for factory fabricated items.

#### 1.5 DELIVERY, HANDLING, AND STORAGE

Package and protect materials during shipment. Uncrate and inspect materials for damage, dampness, and wet-storage stains upon delivery to the job site. Remove from the site and replace damaged materials that cannot be restored to like-new condition. Handle sheet metal items to avoid damage to surfaces, edges, and ends. Store materials in dry, weather-tight, ventilated areas until installation.

### PART 2 PRODUCTS

#### 2.1 RECYCLED CONTENT

Provide products with recycled content. Provide data for each product with recycled content, identifying percentage of recycled content.

#### 2.2 MATERIALS

Do not use lead, lead-coated metal, or galvanized steel. Use any metal listed by SMACNA 1793 for a particular item, unless otherwise indicated. Provide materials, thicknesses, and configurations in accordance with SMACNA 1793 for each material.

Furnish sheet metal items in 8 to 10 foot lengths. Single pieces less than 8 feet long may be used to connect to factory-fabricated inside and outside corners, and at ends of runs. Factory fabricate corner pieces with minimum 12 inch legs. Provide accessories and other items essential to complete the sheet metal installation. Provide accessories made of the same or compatible materials as the items to which they are applied. Fabricate sheet metal items of the materials specified below and to the gage, thickness, or weight shown below. If not otherwise stated, steel thickness 22 gage, and aluminum thickness .050 inch. Provide sheet metal items with finish specified below.

##### 2.2.1 Exposed Sheet Metal Items

Must be of the same material. Consider the following as exposed sheet metal: Wall copings, fascias, roof flashings and related accessories.

##### 2.2.2 Steel Sheet, Zinc-Coated (Galvanized)

Provide in accordance with ASTM A653/A653M.

##### 2.2.3 Aluminum Alloy Sheet and Plate

Provide in accordance with ASTM B209 color to match existing, form alloy, and temper appropriate for use. Provide material not less than 0.050 inch thickness.

#### 2.2.3.1 Alclad

When fabricated of aluminum, fabricate the following items with Alclad 3003, Alclad 3004, or Alclad 3005, clad on one side unless otherwise indicated.

##### a. Copings

#### 2.2.4 Finishes

Provide exposed exterior sheet metal and aluminum with a baked on, factory applied color coating of polyvinylidene fluoride (PVF2) or approved equal fluorocarbon coating. Dry film thickness of coatings must be 0.8 to 1.3 mils. Color to be selected from manufacturer's full range of color choices. Field applications of color coatings are prohibited and will be rejected. Coil stock utilized for copings and cleats must be prefinished on both sides of roll.

#### 2.2.5 Copings

Unless otherwise indicated, provide copings in aluminum sheet / Alclad, 8 or 10 feet long, joined by butted covered flashing plate splice joint assembly.

#### 2.2.6 Fasteners

Use the same metal as, or a metal compatible with the item fastened. Use stainless steel fasteners to fasten dissimilar metals. Confirm compatibility of fasteners and items to be fastened to avoid galvanic corrosion due to dissimilar materials.

#### 2.3 Self Adhering Membrane Flashings

Self-adhering rubberized asphaltic membrane, a minimum of 40 mils thick, for use as flashing under metal copings.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

##### 3.1.1 Workmanship

Make lines and angles sharp and true. Free exposed surfaces from visible wave, warp, buckle, and tool marks. Fold back exposed edges neatly to form a 1/2 inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of SMACNA 1793, Architectural Sheet Metal Manual.

##### 3.1.2 Nailing

Confine nailing of flashing to one edge only. Space nails evenly not over 3 inch on center and approximately 1/2 inch from edge unless otherwise specified or indicated. Face nailing will not be permitted. Where sheet metal is applied to other than wood surfaces, include in shop drawings, the locations for sleepers and nailing strips required to secure the work.

Secure flashing at one-half the normal interval to ensure a wind-resistant installation.

### 3.1.3 Cleats

Provide continuous cleats for sheet metal copings. Unless otherwise specified, provide cleats the same material and thickness as the sheet metal being installed. Where the fastening is to be made to concrete or masonry, use screws and drive in expansion shields set in concrete or masonry.

### 3.1.4 Mechanical Fastening

Aluminum 0.040 inch or less in thickness must be butted and the space backed with formed flashing plate; or lock joined, mechanically fastened, and filled with sealant as recommended by the aluminum manufacturer. Install membrane flashing under splice plates and over joints in wash surfaces of panels, and turn down front and back face of wall to within 1" of the bottom edge of the cleat.

#### 3.1.4.1 Mechanical Fastening of Aluminum

Use No. 12, aluminum alloy, sheet metal screws or other suitable aluminum alloy or stainless steel fasteners. Drive fasteners in holes made with a No. 26 drill in securing side laps, end laps, and flashings. Space fasteners 12 inches maximum on center. Where end lap fasteners are required to improve closure, locate the end lap fasteners not more than 2 inches from the end of the overlapping sheet.

### 3.1.5 Protection from Contact with Dissimilar Materials

#### 3.1.5.1 Aluminum

Do not allow aluminum surfaces in direct contact with other metals except stainless steel, zinc, or zinc coating. Where aluminum contacts another metal, paint the dissimilar metal with a primer followed by two coats of aluminum paint. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigmented paint.

#### 3.1.5.2 Metal Surfaces

Paint surfaces in contact with mortar, concrete, or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.

#### 3.1.5.3 Wood or Other Absorptive Materials

Paint surfaces that may become repeatedly wet and in contact with metal with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.

### 3.1.6 Expansion and Contraction

Provide expansion and contraction joints at not more than 32 foot intervals. Provide an additional joint where the distance between the last expansion joint and the end of the continuous run is more than half the required interval. Space joints evenly.



### 3.1.7 Copings

Prefabricate in the shapes and sizes indicated and in lengths not less than 8 feet. Profile dimensions (width and face height) to match profile of existing wall copings which were removed under Section 02 41 00 DEMOLITION. Provide prefabricated, mitered corners internal and external corners. In accordance with manufacturers' details, nail flange of cleats securely to wood nailer with large-head, barbed-shank roofing nails 1.5 inch long spaced not more than 3 inches on center, in two staggered rows.

#### 3.1.7.1 Edge Strip

Hook the lower edge of coping faces at least 3/4 inch over a continuous strip of the same material bent outward at an angle not more than 45 degrees to form a drip or in accordance with manufacturers snap-lock detail. Nail hook strip to a wood nailer at 6 inches maximum on center. Where horizontal wood nailers are slotted to provide for insulation venting, install strips to prevent obstruction of vent slots. Where necessary, install strips over 1/16 inch thick compatible spacer or washers.

#### 3.1.7.2 Joints

Leave open the section ends of copings 1/4 inch and backed with a formed flashing plate, mechanically fastened in place and lapping each section end a minimum of 4 inches set laps in plastic cement. Alternatively at coping joints apply self-adhering membrane flashing under joints. If coping joints coincide with joints in wash surfaces of panels, install self-adhering membrane flashing over panel joints before installing copings. Face nailing will not be permitted. Install in accordance with the manufacturer's printed instructions and details.

#### 3.1.7.3 Liquid Applied Flashing

Provide liquid applied flashing to seal all joints and fasteners. Basis of design is PROSOCO R-Guard Fast Flash liquid applied joint flashing or approved equal. No liquid flashing to be visible in finished work.

### 3.2 CLEANING

Clean exposed sheet metal work at completion of installation. Remove grease and oil films, handling marks, contamination from steel wool, fittings and drilling debris, and scrub-clean. Free the exposed metal surfaces of dents, creases, waves and scratch marks.

### 3.3 REPAIRS TO FINISH

Scratches, abrasions, and minor surface defects of finish may be repaired in accordance with the manufacturer's printed instructions and as approved. Repair damaged surfaces caused by scratches, blemishes, and variations of color and surface texture. Replace items which cannot be repaired.

-- End of Section --

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## SECTION 07 92 00

## JOINT SEALANTS

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## ASTM INTERNATIONAL (ASTM)

ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C1193	(2013) Standard Guide for Use of Joint Sealants
ASTM C1521	(2013) Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints
ASTM D1056	(2020) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber

## 1.2 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

## SD-03 Product Data

Sealants

Primers

Bond Breakers

Backstops

## SD-06 Test Reports

Field Adhesion

## SD-07 Certificates

Sealants used in membrane roofing

## 1.3 PRODUCT DATA

Include storage requirements, shelf life, curing time, instructions for mixing and application, and accessories. Provide manufacturer's Safety Data Sheets (SDS) for each solvent, primer and sealant material proposed.

#### 1.4 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 40 and 90 degrees F.

#### 1.5 DELIVERY AND STORAGE

Deliver materials to the jobsite in unopened manufacturers' sealed shipping containers, with brand name, date of manufacture, color, and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Handle and store materials in accordance with manufacturer's printed instructions. Prevent exposure to foreign materials or subjection to sustained temperatures exceeding 90 degrees F or lower than 0 degrees F. Keep materials and containers closed and separated from absorptive materials such as wood and insulation.

#### 1.6 QUALITY ASSURANCE

##### 1.6.1 Compatibility with Substrate

Verify that each sealant is compatible for use with each joint substrate in accordance with sealant manufacturer's printed recommendations for each application.

##### 1.6.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

##### 1.6.3 Adhesion

Provide in accordance with ASTM C1193 or ASTM C1521.

### PART 2 PRODUCTS

#### 2.1 SEALANTS

Provide sealant products that have been tested, found suitable, and documented as such by the manufacturer for the particular substrates to which they will be applied. Sealants used in membrane roofing assemblies or in contact with membrane roofing materials must be compatible with the membrane roof material and certified by the roof manufacturer for use.

##### 2.1.1 Exterior Sealants

For joints in vertical surfaces, provide ASTM C920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C920, Type S or M, Grade P, Class 25, Use T. Provide location(s) and color(s) of sealant as follows. Note, color "as selected" refers to manufacturer's full range of color options:

LOCATION	COLOR
a. Joints and recesses formed where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.	Match adjacent surface color
b. Masonry joints where shelf angles occur.	Match adjacent surface color
c. Control joints.	Match adjacent surface color
d. Voids where items pass through exterior walls.	Match adjacent surface color
e. Metal reglets, where flashing is inserted into masonry joints, and where flashing is penetrated by coping dowels.	Match adjacent surface color
f. Metal-to-metal joints where sealant is indicated or specified.	Match adjacent surface color
g. Joints between ends of gravel stops, fascia, copings, and adjacent walls.	Match adjacent surface color

## 2.2 PRIMERS

Non-staining, quick drying type and consistency as recommended by the sealant manufacturer for the particular application. Provide primers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

## 2.3 BOND BREAKERS

Type and consistency as recommended by the sealant manufacturer to prevent adhesion of the sealant to the backing or to the bottom of the joint. Provide bond breakers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

## 2.4 BACKSTOPS

Provide glass fiber roving, neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell and 40 to 50 percent oversized backing for open cell material, unless otherwise indicated. Provide backstop material that is compatible with sealant. Do not use oakum or other types of absorptive materials as backstops.

#### 2.4.1 Rubber

Provide in accordance with ASTM D1056, Type 2, closed cell, Class A, Grade 2C2, round cross section for cellular rubber sponge backing.

#### 2.4.2 Neoprene

Provide in accordance with ASTM D1056, closed cell expanded neoprene cord Type 2, Class C, Grade 2C2 for neoprene backing.

### 2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer and in accordance with environmental requirements herein. Protect adjacent aluminum and bronze surfaces from solvents. Provide solvents for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

## PART 3 EXECUTION

### 3.1 FIELD QUALITY CONTROL

Perform a field adhesion test in accordance with manufacturer's instructions and ASTM C1193, Method A or ASTM C1521, Method A, Tail Procedure. Remove sealants that fail adhesion testing; clean substrates, reapply sealants, and re-test. Test sealants adjacent to failed sealants. Submit field adhesion test report indicating tests, locations, dates, results, and remedial actions taken.

### 3.2 SURFACE PREPARATION

Prepare surfaces according to manufacturer's printed installation instructions. Clean surfaces from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would destroy or impair adhesion. Remove oil and grease with solvent; thoroughly remove solvents prior to sealant installation. Wipe surfaces dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, provide in accordance with sealant manufacturer's printed instructions for each specific surface.

#### 3.2.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finished work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue free solvent. Remove resulting debris and solvent residue prior to sealant installation.

#### 3.2.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

### 3.2.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity. Remove resulting debris prior to sealant installation.

### 3.2.4 Wood Surfaces

Ensure wood surfaces that will be in contact with sealants are free of splinters, sawdust and other loose particles.

## 3.3 SEALANT PREPARATION

Do not add liquids, solvents, or powders to sealants. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

## 3.4 APPLICATION

### 3.4.1 Joint Width-To-Depth Ratios

Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, or masonry:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 1 inch	1/2 inch	5/8 inch
Over 1 inch	prohibited	

Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is prohibited at metal surfaces.

### 3.4.2 Unacceptable Sealant Use

Do not install sealants in lieu of other required building enclosure weatherproofing components such as flashing, drainage components, and joint closure accessories, or to close gaps between walls, floors, roofs, windows, and doors, that exceed acceptable installation tolerances. Remove sealants that have been used in an unacceptable manner and correct building enclosure deficiencies to comply with contract documents

requirements.

#### 3.4.3 Masking Tape

Place masking tape on the finished surface on one or both sides of joint cavities to protect adjacent finished surfaces from primer or sealant smears. Remove masking tape within 10 minutes of joint filling and tooling.

#### 3.4.4 Backstops

Provide backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide joints in specified depths. Provide backstops where indicated and where backstops are not indicated but joint cavities exceed the acceptable maximum depths specified in JOINT WIDTH-TO-DEPTH RATIOS Table.

#### 3.4.5 Primer

Clean out loose particles from joints immediately prior to application of. Apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's printed instructions. Do not apply primer to exposed finished surfaces.

#### 3.4.6 Bond Breaker

Provide bond breakers to surfaces not intended to bond in accordance with, sealant manufacturer's printed instructions for each type of surface and sealant combination specified.

#### 3.4.7 Sealants

Provide sealants compatible with the material(s) to which they are applied. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the sealant gun. Apply sealants in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Work sealant into joints so as to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Apply sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply additional sealant, and tool smooth as specified. Apply sealer over sealants in accordance with the sealant manufacturer's printed instructions.

### 3.5 PROTECTION AND CLEANING

#### 3.5.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled and no residual tape marks remain.

#### 3.5.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. Masonry and Other Porous Surfaces: Immediately remove fresh sealant that has been smeared on adjacent masonry, rub clean with a solvent,

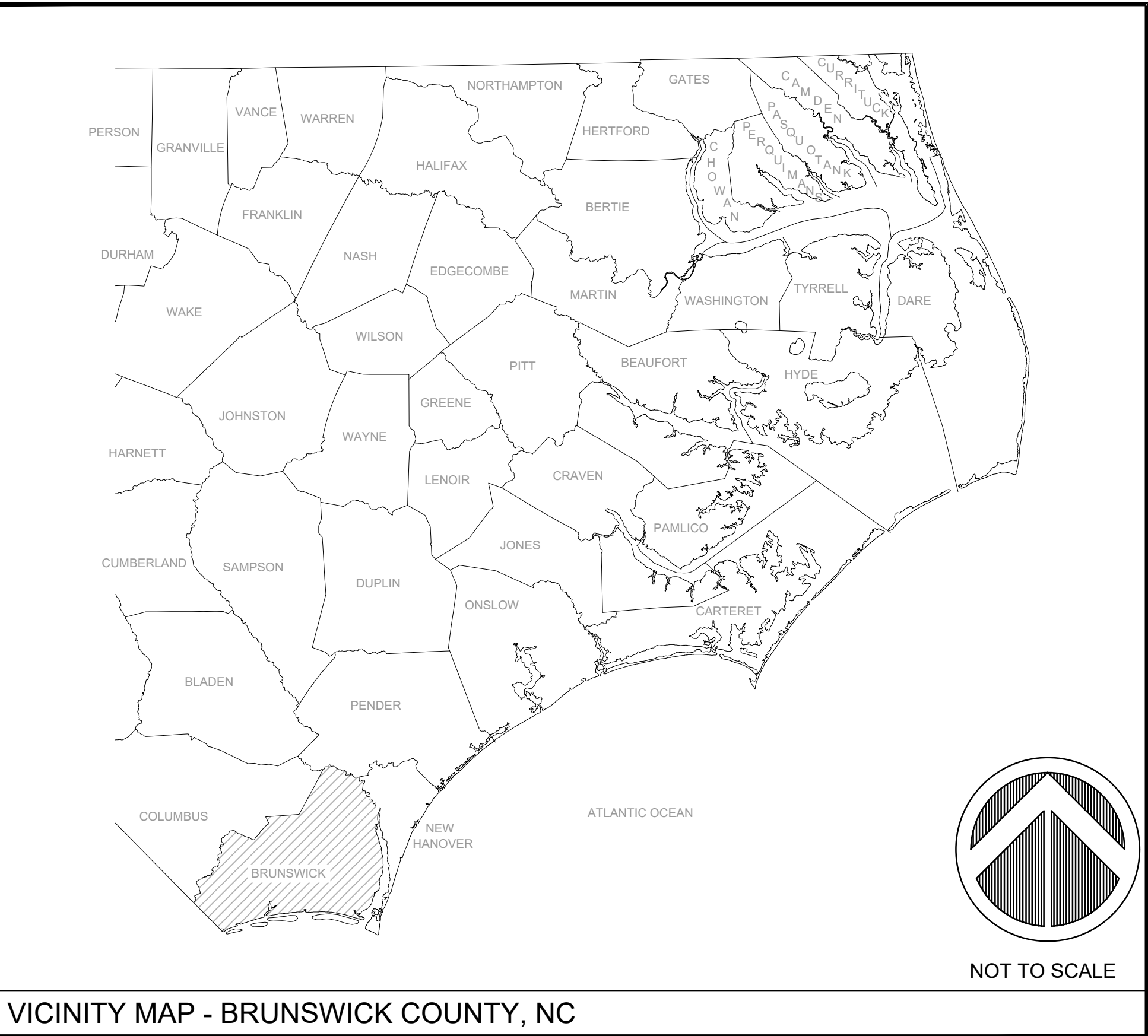


and remove solvent residue, in accordance with sealant manufacturer's printed instructions. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding. Remove resulting debris.

- b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent moistened cloth. Remove solvent residue in accordance with solvent manufacturer's printed instructions.

-- End of Section --

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INDEX OF DRAWINGS		
GENERAL		
SHEET NAME	PAGE	SHEET DESCRIPTION
G-001	1	COVER SHEET, GENERAL NOTES, AND INDEX
ARCHITECTURAL		
SHEET NAME	PAGE	SHEET DESCRIPTION
A-001	2	ARCHITECTURAL NOTES, LEGENDS, AND ABBREVIATIONS
AD101	3	ROOF DEMOLITION PLAN
A-101	4	ROOF PLAN
A-501	5	ROOF DETAILS

## GENERAL PROJECT NOTES

1. ANY REFERENCES TO STATE OWNER, FEDERAL OWNER, OR INDUSTRY STANDARDS OR SPECIFICATION MADE SHALL FORM A PART OF THE WORK TO THE EXTENT REFERENCED AND ALL MATERIALS AND WORKMANSHIP UNDER THIS CONTRACT SHALL COMPLY WITH OR EXCEED THESE STANDARDS AND REFERENCES. ALL REFERENCED STANDARDS SHALL BE THE LATEST EDITION.

2. ALL MANUFACTURED EQUIPMENT AND PRODUCTS SHALL BE NEW MATERIALS IN UNDAMAGED CONDITION AND INSTALLED AS PER MANUFACTURER'S LATEST PRINTED INSTRUCTIONS, UNLESS SPECIFIED OTHERWISE.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF EXISTING FACILITIES AND EQUIPMENT FROM DAMAGE DURING THE WORK.

4. CONTRACTOR SHALL TAKE PRECAUTIONS REGARDING POSSIBILITY OF HAZARDOUS MATERIALS, AS WELL AS THE ENVIRONMENTAL IMPLICATIONS RELATED TO MATERIALS DEMOLISHED. EVERY EFFORT SHALL BE MADE TO RECYCLE ELIGIBLE MATERIALS, AND THOSE NOT SUITABLE, SHALL BE DISPOSED OF OFF SITE IN ACCORDANCE WITH THE REQUIREMENTS OF THE (NCDEQ) NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY.

5. ENSURE THAT ANY DEMOLITION, UTILITY CUT AND CAPPING, AND DEBRIS REMOVAL SERVICE PERFORMED AT THE SITE IS COMPLETED IN SUCH A MANNER THAT WILL RESTORE A NEAT AND PROFESSIONAL APPEARANCE OF ALL AREAS.

6. THE FACILITY ROOF AREA SHALL BE CLEANED IN ITS ENTIRETY, INCLUDING SITE AREAS & ANY ADJACENT ROOF AREAS AFFECTED BUY DUST OR DEBRIS, BEFORE BEING RETURNED TO THE OWNER.
- AS SPECIFICALLY STATED IN CONTRACT DOCUMENTS, AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP STARTING ON THE BENEFICIAL OCCUPANCY DATE.

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL PROVIDE ALL MANAGEMENT, TOOLS, SUPPLIES, EQUIPMENT, LABOR, AND APPLICABLE LICENSES AND PERMITS NECESSARY TO COMPLETE THE WORK. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE CONTRACT AND IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL PLUMBING CODE (IPC), NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE (NESC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), EPA 402-K-01-001 (2008), NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT), NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ), AND ALL OTHER APPLICABLE CODES.

WORKING CONDITIONS:

1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO ENSURE THAT OPERATIONS ARE CONDUCTED IN A MANNER AS TO MINIMALLY INTERFERE WITH THE NORMAL OPERATIONS OF THE BUILDING AND THE SAFETY AND CONVENIENCE OF THE PERSONNEL.

GENERAL PROJECT NOTES:

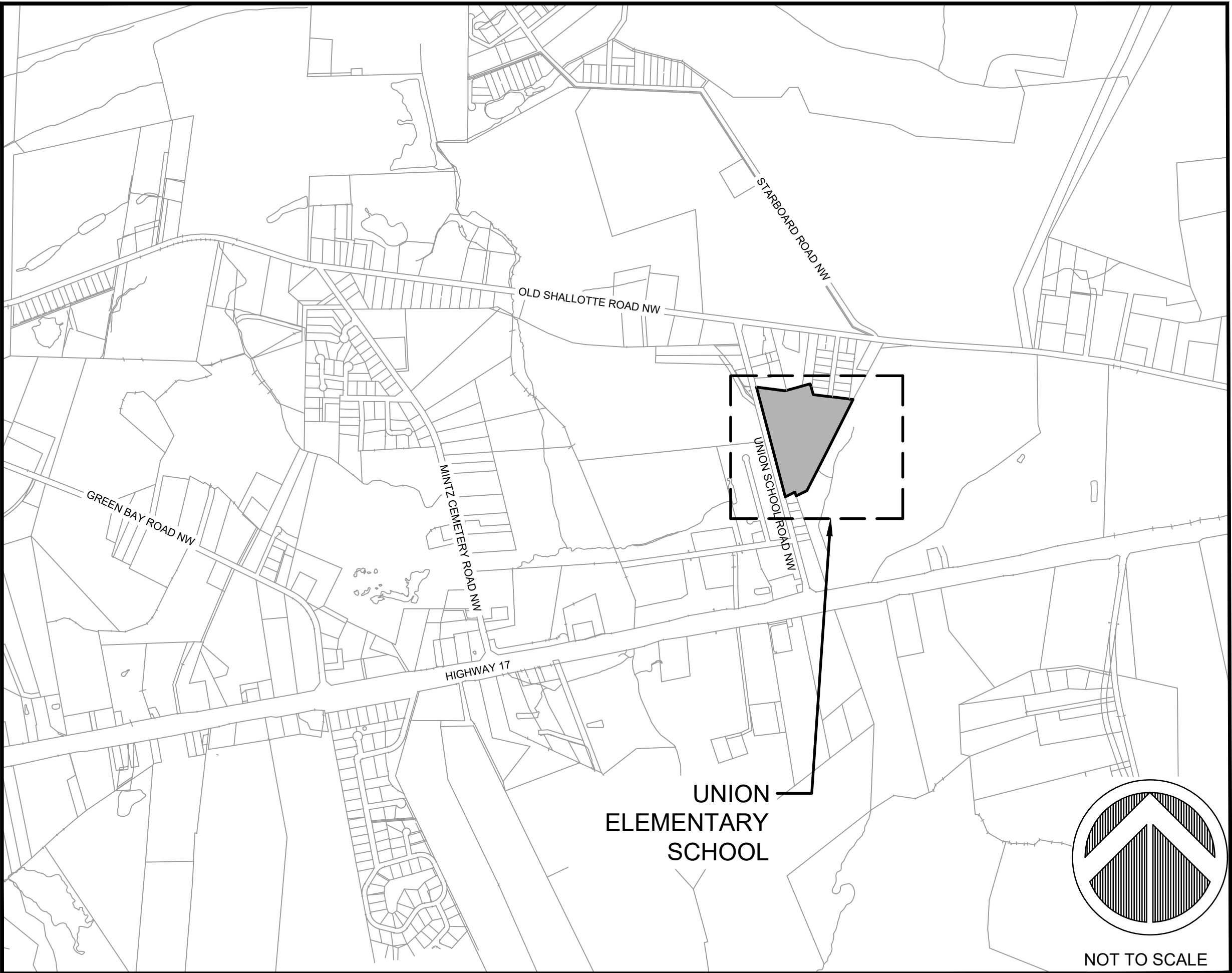
1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS, QUANTITIES AND SQUARE FOOTAGES.

2. THE CONTRACTOR SHALL VIDEO ALL AREAS IN WHICH WORK SHALL OCCUR PRIOR TO STARTING WORK TO INCLUDE ROOF AREAS AND

### WARRANTY:

1. CONTRACTOR SHALL FURNISH A MINIMUM ONE YEAR WARRANTY OR

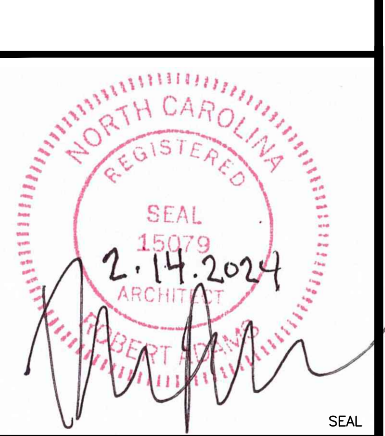
# UNION ELEMENTARY SCHOOL BUILDING B - ROOF REPLACEMENT BRUNSWICK COUNTY SCHOOLS SHALLOTTE, NORTH CAROLINA FINAL DESIGN



FOR BID & CONSTRUCTION

FINAL 02-14-2024

SYN	DESCRIPTION	DATE	APPR



APPROVED	A/E INFO
FOR PROJECT MANAGER	
ACTIVITY	
SATISFACTORY TO	DATE
DES WEB	DRW WEB
CHK RDA	
PM/DM	
BRANCH MANAGER	
CHIEF ENG/ARCH	
FIRE PROTECTION	

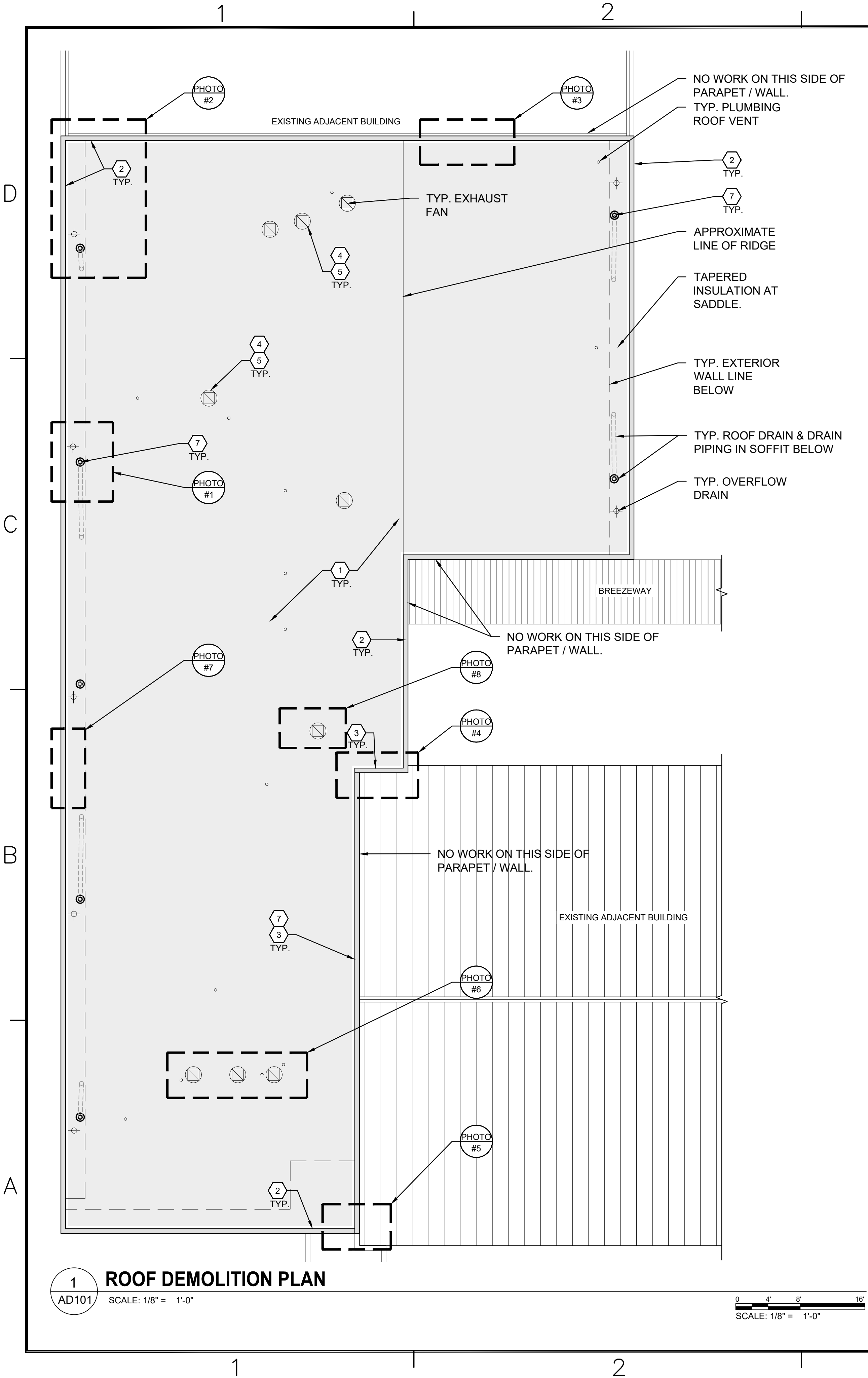
BRUNSWICK COUNTY BOARD OF EDUCATION	SHALLOTTE, NORTH CAROLINA
BRUNSWICK COUNTY	UNION ELEMENTARY SCHOOL
	BUILDING B - ROOF REPLACEMENT
	COVER SHEET, GENERAL NOTES, AND INDEX

SCALE:	
PROJECT NO.:	
PURCHASE ORDER NO.	
	24000644
SHEET 01 OF 05	G-001



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1 ROOF DEMOLITION PLAN

AD101 SCALE: 1/8" = 1'-0"

0 4' 8' 16'  
SCALE: 1/8" = 1'-0"



PHOTO #1

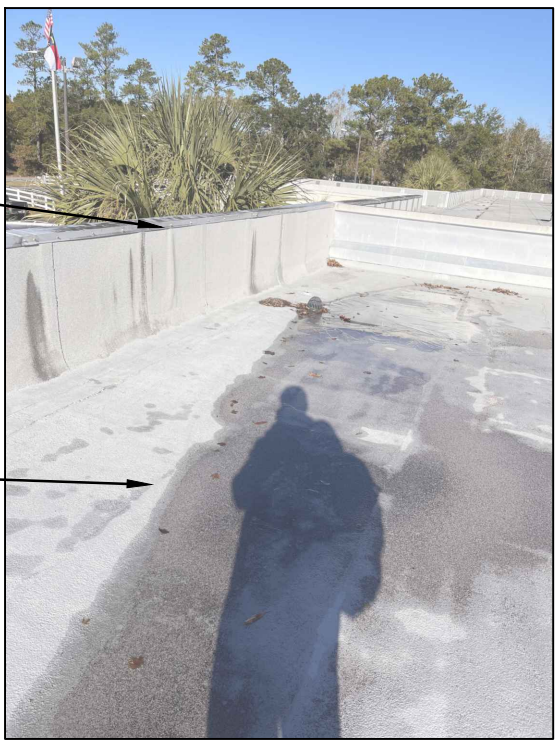


PHOTO #2



PHOTO #3

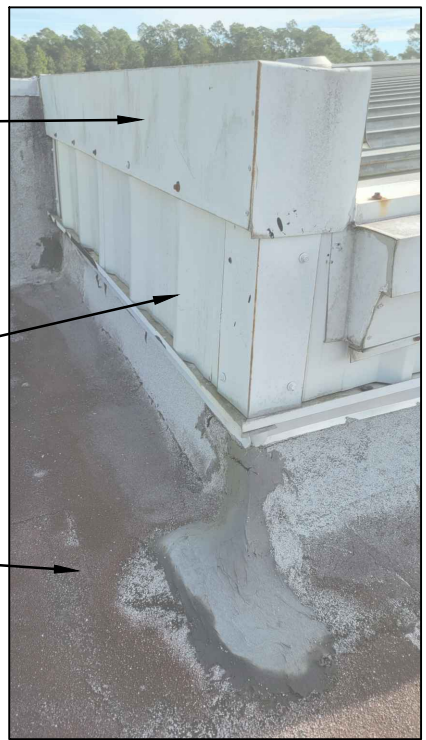


PHOTO #4



PHOTO #5



PHOTO #6

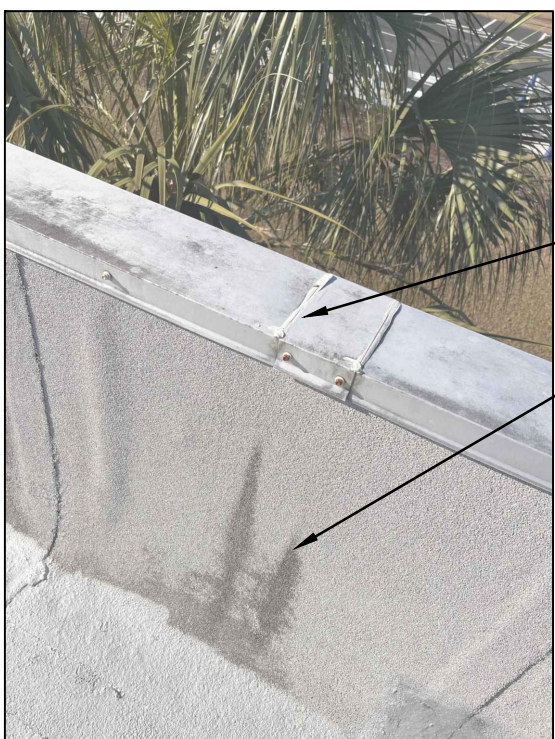


PHOTO #7

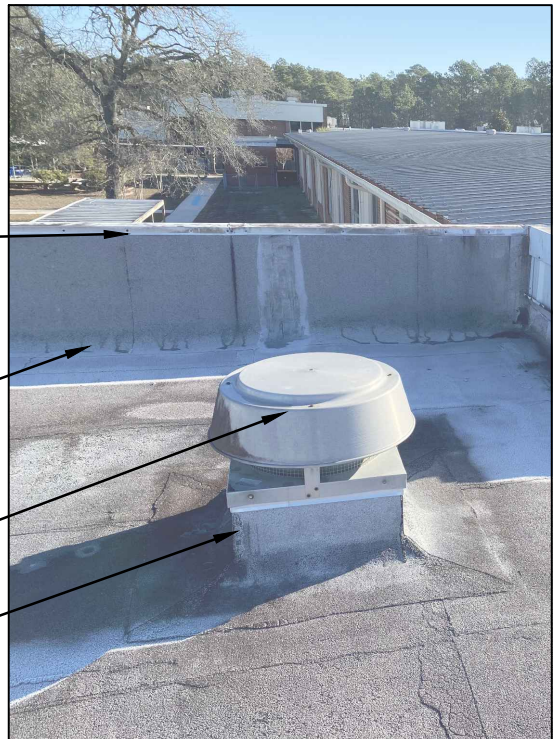


PHOTO #8

2 EXISTING CONDITIONS/ DEMO PHOTOS

AD101 N.T.S.

GENERAL SHEET NOTES

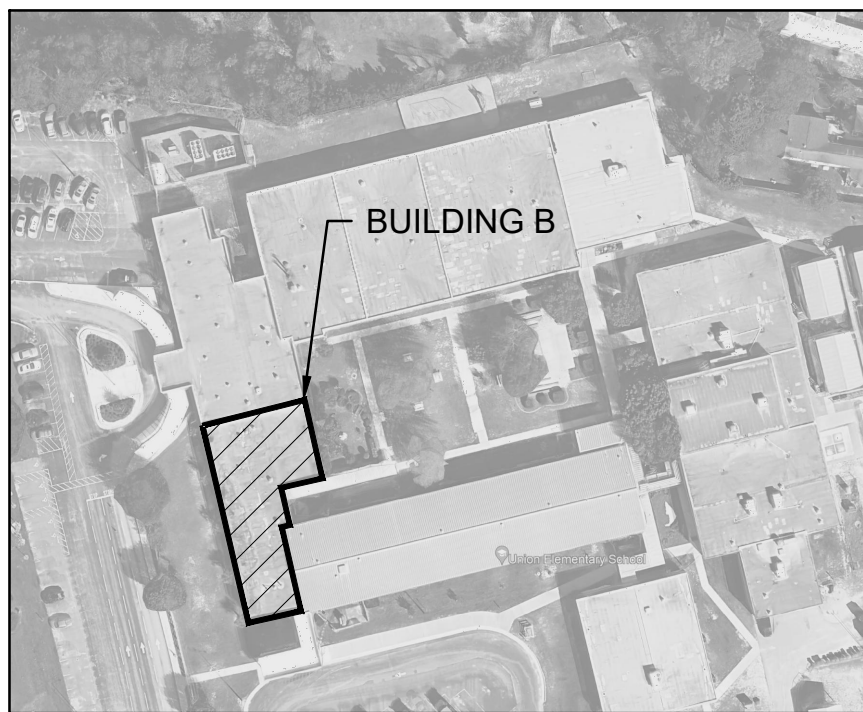
- SEE SHEET A-001 FOR ARCHITECTURAL NOTES, LEGENDS, AND ABBREVIATIONS.
- UNIT PRICES ARE REQUIRED FOR REPLACEMENT OF ANY DAMAGED DECKING & FOR ADDITIONAL WOOD BLOCKING; SEE BID FORM.
- REMOVE ALL WOOD BLOCKING IN ROOF DEMOLITION AREA. UNIT PRICE ON BID FORM IS FOR ADDITIONAL BLOCKING BEYOND WHAT IS SHOWN ON DETAILS.

LEGEND

- ROOF VENT
- EXHAUST FAN
- ROOF DRAIN
- OVERFLOW DRAIN

SHEET KEYNOTES

- REMOVE EXISTING ROOFING SYSTEM TO EXISTING ROOF DECK.
- REMOVE EXISTING PARAPET CAP.
- REMOVE EXISTING GABLE & PARAPET WALL PANELS AND FLASHING.
- REMOVE EXISTING MECHANICAL VENT FANS AND PROTECT FOR RE-INSTALLATION.
- REMOVE EXISTING MECHANICAL CURB TO DECK.
- REMOVE EXISTING RAKE FLASHING CAP & PROTECT FOR RE-INSTALLATION.
- REMOVE ROOF DRAIN COVERS/STRAINER BASKETS, CLEAN AND PROTECT FOR RE-INSTALLATION. CLEAN ROOF DRAIN ASSEMBLIES TO DAYLIGHT.



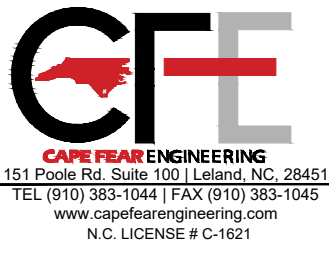
KEY PLAN

N.T.S.



FOR BID & CONSTRUCTION

FINAL 02-14-2024

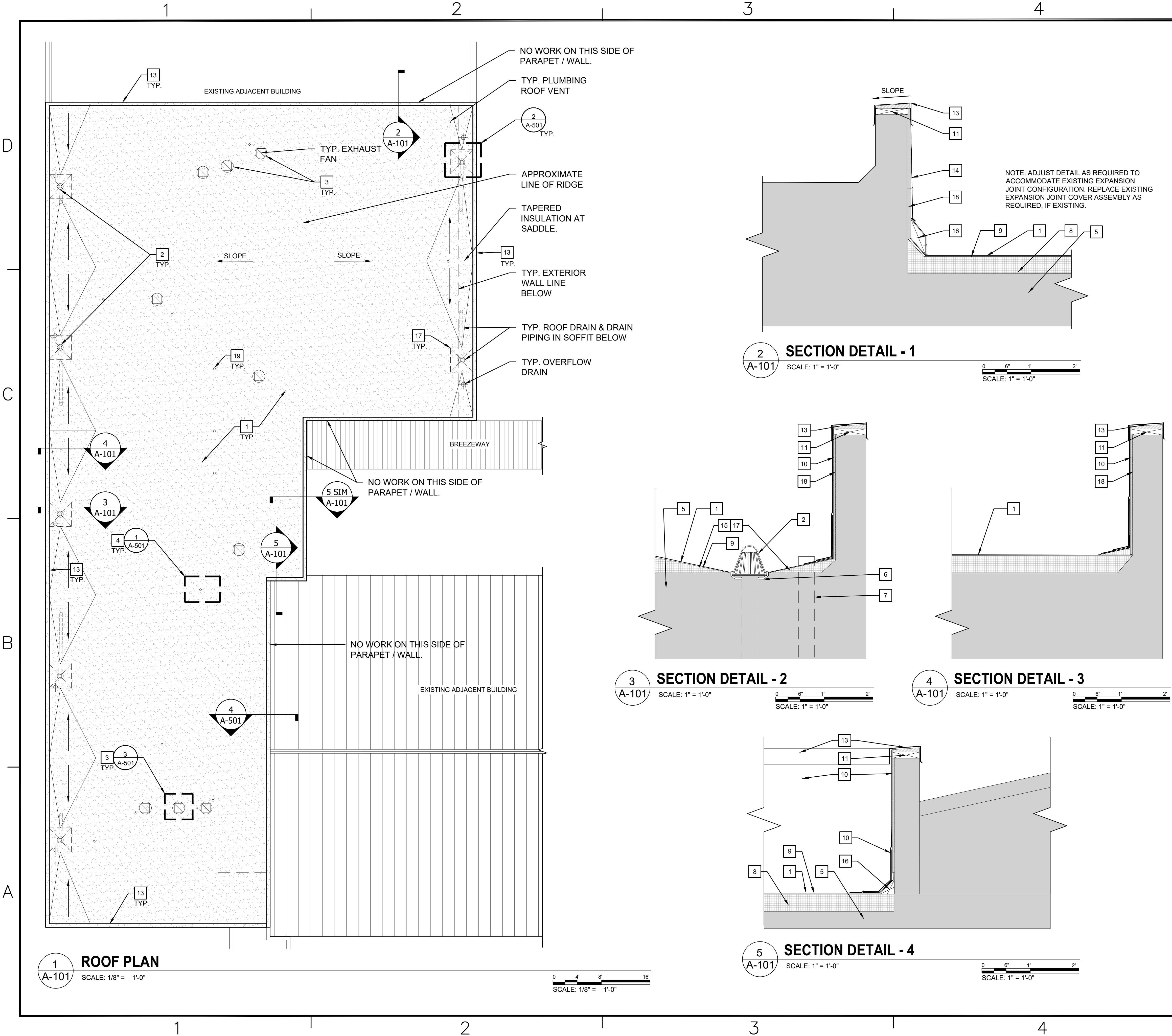


APPROVED	A/E INFO
FOR PROJECT MANAGER	
ACTIVITY	
SATISFACTORY TO	DATE
DWG	WEB
PM/DM	WEB
BRANCH MANAGER	CHK RDA
CHIEF ENG/ARCH	
FIRE PROTECTION	

BRUNSWICK COUNTY BOARD OF EDUCATION  
SHALLOTTE, NORTH CAROLINA  
BRUNSWICK COUNTY  
UNION ELEMENTARY SCHOOL  
BUILDING B - ROOF REPLACEMENT  
ROOF DEMOLITION PLAN

SCALE:	
PROJECT NO.:	
PURCHASE ORDER NO.	
	24000644
SHEET	03 OF 05
	AD101





### GENERAL SHEET NOTES

- SEE SHEET A-001 FOR ARCHITECTURAL NOTES, LEGENDS, AND ABBREVIATIONS.
- REPLACE EXISTING SPLASHBLOCKS AT ALL DOWNSPOUT LOCATIONS FOR THIS ROOF DRAINAGE AREA. REWORK DOWNSPOUT BOTTOM AND GRADE; INSTALL NEW SPLASHBLOCKS; SEE DETAIL 5/A-501.

### LEGEND

- ROOF VENT
- EXHAUST FAN
- ROOF DRAIN
- OVERFLOW DRAIN

### SHEET KEYNOTES

- MEMBRANE ROOFING SYSTEM WITH INSULATION AND COVERBOARD
- CLEAN DRAIN ASSEMBLY TO DAYLIGHT & REINSTALL ROOF DRAIN COVERS, REPLACE BROKEN COVERS
- MECHANICAL CURB
- PLUMBING VENT EXTENSION
- EX. ROOF DECKING AND FRAMING TO REMAIN
- EX. ROOF DRAIN
- OVERFLOW DRAIN PIPE
- 4" RIGID BOARD INSULATION
- 1/4" COVERBOARD
- MEMBRANE ROOFING / FLASHING SYSTEM
- 2x WOOD BLOCKING
- SELF-ADHERING WATERPROOFING MEMBRANE; CONTINUE MEMBRANE OVER BLOCKING AND TURN DOWN
- METAL WALL COPING WITH CONTINUOUS METAL CLEATS BOTH SIDES (REPLICATE HEIGHT AND LIP OF EXISTING CLEATS. CONTINUOUS SLOPED SHIM/ SUPPORT SURFACE
- METAL FLASHING
- TAPERED INSULATION
- CANT STRIP AT EXPANSION JOINT. EXTEND SHEATHING AS REQUIRED.
- TAPERED INSULATION SUMP AROUND PRIMARY ROOF DRAIN
- SHEATHING
- VENT PIPE EXTENSION

### KEY PLAN

N.T.S.

FOR BID & CONSTRUCTION

FINAL 02-14-2024

APPR	DATE	SYN	DESCRIPTION

BRUNSWICK COUNTY SCHOOLS

CAPE FEAR ENGINEERING  
151 Poodle Rd., Suite 100 | Leland, NC 28451  
TEL (910) 383-1541 FAX (910) 383-1045  
www.capefearengineering.com  
N.C. LICENSE # C-1621

APPROVED	A/E INFO
FOR PROJECT MANAGER	
ACTIVITY	
SATISFACTORY TO	DATE
DES: WEB	DRW: WEB
PM/DM	CHK: RDA
BRANCH MANAGER	
CHIEF ENG/ARCH	
FIRE PROTECTION	

BRUNSWICK COUNTY BOARD OF EDUCATION

SHALLOTT, NORTH CAROLINA

BRUNSWICK COUNTY

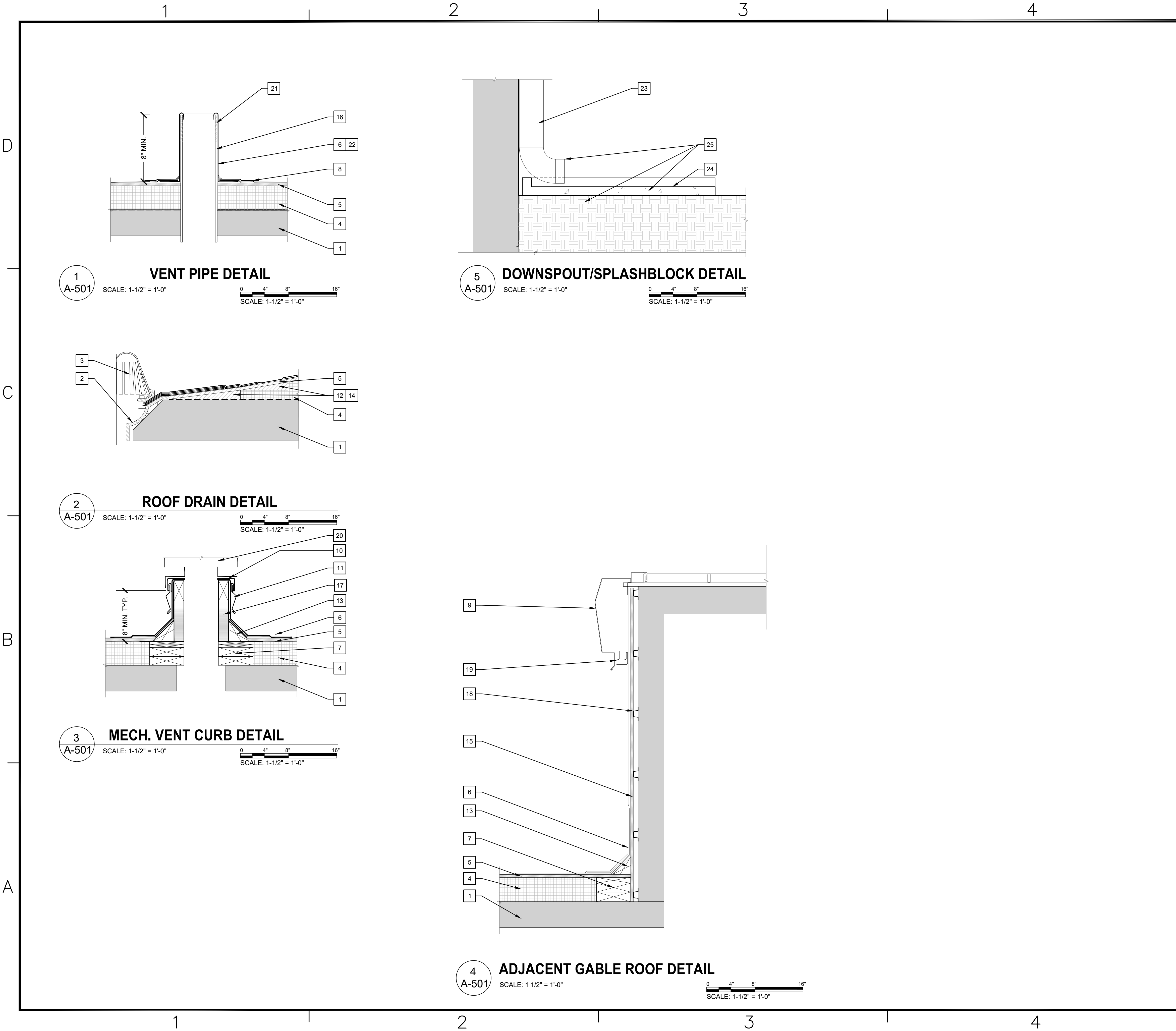
UNION ELEMENTARY SCHOOL

BUILDING B - ROOF REPLACEMENT

ROOF PLAN

SCALE:	
PROJECT NO.:	
PURCHASE ORDER NO.	
	24000644
SHEET	04 OF 05
	A-101





GENERAL SHEET NOTES




1. SEE SHEET A-001 FOR ARCHITECTURAL NOTES, LEGENDS, AND ABBREVIATIONS.

SHEET KEYNOTES

- EX. ROOF DECKING AND FRAMING TO REMAIN
- EX. ROOF DRAIN BOWL
- CLEAN DRAIN ASSEMBLY AND REINSTALL ROOF DRAIN COVER/ STRAINER BASKET. REPLACE ANY BROKEN COVERS.
- 4" RIGID BOARD INSULATION
- 1/4" COVERBOARD
- MEMBRANE ROOFING / FLASHING SYSTEM
- 2x WOOD BLOCKING; BUILD TO REQUIRED HEIGHT
- WATERPROOFING MEMBRANE FLASHINGS
- REINSTALL EXISTING RAKE FLASHING CAP & SEAL ALL PERIMETERS.
- CONTINUE MEMBRANE OVER TOP OF CURB
- METAL FLASHING ASSEMBLY
- TAPERED EDGE STRIPS
- CANT STRIP
- TAPERED INSULATION SUMP AROUND PRIMARY ROOF DRAIN
- SHEATHING
- EX. VENT PIPE
- PREFABRICATED INSULATED METAL CURB W/ FLANGES
- 3/4" HAT CHANNELS @ 12" O.C. MAX AND INCLUDE VERTICAL HAT CHANNEL AT PERIMETERS/ ENDS OF WALLS.
- METAL CLOSURE
- REINSTALL / CONNECT FAN
- WELDED PIPE EXTENSION
- VENT BOOT FLASHING COVER
- EXISTING DOWNSPOUT
- CONCRETE SPLASHBLOCK
- REMOVE EXISTING SPLASHBLOCKS & DISCARD. REGRADE AND INSTALL NEW CONCRETE SPLASHBLOCKS TO DRAIN POSITIVELY AT EACH DOWNSPOUT LOCATION. CUT BACK & REWORK BOTTOM OF DOWNSPOUTS AND ELBOWS AS REQUIRED TO DRAIN POSITIVELY. RESECURE BOTTOM OF DOWNSPOUTS TO WALL.

FOR BID & CONSTRUCTION

FINAL 02-14-2024

APPR	DATE	SYN	DESCRIPTION
			
			
			
APPROVED: _____			
FOR PROJECT MANAGER: _____			
ACTIVITY: _____			
SATISFACTORY TO: _____ DATE: _____			
DES: <b>WEB</b>   DRW: <b>WEB</b>   CHK: <b>RDA</b>			
PM/DM: _____			
BRANCH MANAGER: _____			
CHIEF ENG/ARCH: _____			
FIRE PROTECTION: _____			
BRUNSWICK COUNTY BOARD OF EDUCATION			
SHALLOTTE, NORTH CAROLINA			
BRUNSWICK COUNTY			
UNION ELEMENTARY SCHOOL			
BUILDING B - ROOF REPLACEMENT			
ROOF DETAILS			
SCALE: _____			
EPROJECT NO.: _____			
PURCHASE ORDER NO. _____			
24000644			
SHEET 05 OF 05			
A-501			