

PROJECT MANUAL
FOR



Crescent High School
Roof Areas: D, C, I, K, L, M, and O
Starr-Iva Middle School
Roof Areas: D, E, F, G, and L
Starr Elementary School
Area N

Partial Roof Replacement – **School Roof Specific**
January 2018

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SECTION 00 01 07

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NOTICE OF BID OPPORTUNITY

Crescent High School
Roof Areas: D, C, I, K, L, M, and O
Starr-Iva Middle School
Roof Areas: D, E, F, G, and L
Starr Elementary School
Area N

This notice is for work consisting of roof replacement of low slope roofs at Crescent High School, Starr-Iva Elementary School and Starr Elementary School. Work includes new 80 mil Thermoplastic Roof Membrane (TPO) and the installation of new metal edge, metal copings, expansion joints, counter flashing, drain inserts and overflow drains.

A **mandatory** Pre-Bid meeting will be held on **April 30, 2018 at 10:00am** at Anderson #3 District Office, located at 365 West Front St. Iva, SC 29655. All visitors must check in at the Main Office. A Bid Opening will be held on **Tuesday May 07, 2018 at 3:00pm** at the Administrative Services located at 365 West Front St. Iva, SC 29655.

Bid and construction documents will be available after **Tuesday, April 24** to view and download on the Anderson #3 website at:

Questions regarding bid documents may be directed to Dr. David Nixon, Deputy Superintendent, (864) 348-6196. Questions concerning the technical specifications about this project may be directed to Mr. James Burdette, Facilities at (864) 348-6196.

The Anderson County School District 3 Board of Education reserves the unqualified right to reject any and all proposals.

ROOF MANUFACTURER'S ACKNOWLEDGEMENT

Owners: Anderson County School District #3

Project Name: Roof Replacement designated roof areas **Crescent High School, Starr-Iva Middle School, Starr Elementary School**

Project Address: 365 West Front St. Iva, SC 29655

Roofing Contractor _____

Address: _____

Telephone: _____

This is to advise the owner that having thoroughly reviewed the Specifications and Drawings within the Project Manual dated December 27, 2017 for the above titled project, we acknowledge that the roof system(s) specified are suitable for the issuance of the specific Manufacturer's Warranty on this project and have been tested and approved for the wind uplift pressures outlined in the project specifications. Having reviewed the project requirements in detail, the Manufacturer will provide a written response of exceptions to the Consultant through the contractor before five (5) days of the bid due date or as otherwise outlined in the Instructions to Bidders, if conflicts exists between the Manufacturer's warranty equipments and the above listed documents. Exceptions not submitted accordingly are subject to rejection. The manufacturer also certifies that the installer is approved, authorized, or licensed by the manufacturer to install the specified system and is eligible to provide the specified manufacturer's warranty. The manufacturer will comply with the specified requirements for on-site technical support.

_____ is hereby designated as our Liaison on this project.
(Print or type name of Liaison)

Telephone

Roof Manufacturer's Company Name

Roof Manufacturer Representative's Signature _____
Date

Roof Manufacturer Representative's Name _____
Title

Roof Manufacturers Address _____
Telephone

SUBSTITUTION REQUEST FORM

Project _____
Date: _____ Bid Opening Date: _____
Product and / or Fabrication Method: _____
Specification Section: _____
Related Drawings: _____

Criteria or Specified Product	Included
Product Data	_____
Fabrication Drawings	_____
Samples Where Applicable	_____
List of changes or Modifications Needed	_____
To Work as Noted in Specification	

Criteria or Specified Product	Included
Product Data	_____
Fabrication Drawings	_____
Samples Where Applicable	_____
List of changes or Modifications Needed	_____
To Work as Noted in Specification	

The submission proposed is equal-to or better in every respect to that required by the Contract Documents, and it will perform equal or superior to the product specified in the application indicated. The Contractor waives the right to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

Signed: _____

END OF SECTION 00 63 25

SECTION 00 65 36

CONTRACTOR'S FIVE-YEAR WARRANTY

Contractor will **submit Notarized Five Year Warranty** that all work will be absolutely watertight for a period of five (5) years and free from any leaks, provided however the following are excluded from this warranty:

- a. Defects or failures from abuse by the Owner, Anderson School District 3.
- b. Defect is design involving failure of (1) structural frame, (2) load bearing walls, and (3) foundations.
- c. Damages caused by fire, tornado, hail, hurricane, acts of Gods, wars, vandalism, riots or civil commotion.

Contractor shall complete any corrective action requested by Owner or Manufacturer at no additional cost to the Owner

END OF SECTION 00 65 36

SECTION 00 65 37

ASBESTOS FREE WARRANTY

Owner: Anderson School District 3
Project Name: Specified School Roof Replacements
Project Address: 365 West Front St. Iva, SC 29655
Project Manual Date: December 27, 2017

Date of Substantial Completion: _____

Know by all men by these present that we, _____
(Contractor, Subcontractor, Material Supplier)

Having furnished labor, materials, equipment and/or supplies; removed existing roof system; installed new roof system (s) and/or miscellaneous roof system components; from, to and/or on the above referenced Project under contract between the Owner and Contractor, warrant to Owner with respect to said work that no materials containing asbestos fibers were incorporated into the work, and that, to our knowledge and belief, no materials containing asbestos remain in or are covered by the work.

Exceptions: _____
(If there are no exceptions, state "No Exceptions" here)

Signature: _____

Title: _____

_____ State

_____ County

I, _____, a Notary Public for _____ County,
_____ State, 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 OF SECTION 00 65 37

SECTION 002113 - INSTRUCTIONS TO BIDDERS – **Please read entire specification package. You will be held accountable for all information. NO payment shall be made if specifications are not followed.**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Related Sections include, General Requirements, bidding documents and drawings.

1.2 MANDATORY PRE-BID

- A. Contractors must attend designated pre-bid meeting as part of qualifying as a competent bidder. Only one pre-bid meeting will be held **Monday, April 30, 2018, 10:00am**, at **the District Office**. Bidding Contractors each must have an employee present as a competent representative to receive direction, present questions, address concerns, and provide information pertinent to the success of proposed project.

1.3 SEALED BIDS

- A. Sealed bids will be received until: **Tuesday, May 07, 2018, 3:00pm** for general construction on Roof Areas: All Schools.
- B. Address envelopes to: Dr. David Nixon, Deputy Superintendent, **Anderson School District 3**, 355 W Front Street, Iva, South Carolina 29655.
- C. Write in the lower left corner: Attention: Sealed Roof Bid ROOF CONSTRUCTION AREAS: **Crescent High School** (O, M, L, K, I, D, C and Old Gym); **Starr-Iva Middle School** (D,E,F,G and L (Gymnasium))

1.4 PLANS AND SPECIFICATIONS

- A. Additional copies of specifications and any further information relating to this project may be obtained at office of **Dr. David Nixon, Deputy Superintendent, Anderson School District 3**, 355 W Front Street, Iva, South Carolina 29655

1.5 DEFINITION OF TERMS

- A. Whenever "Owner" occurs in Specifications or other documents, it shall mean **Anderson School District 3**.
- B. Whenever "Contractor" occurs in Specifications or other documents, it shall mean a person, firm or corporation contracting with Owner to supply labor, equipment, and materials specified herein for successful completion of this contract.

1.6 PRE-QUALIFICATION OF BIDDERS

- A. Contractors planning to bid will be required to file, prior to the time of award of contract, a confidential financial statement and experience questionnaire, which may be a complete report of the financial resources and liabilities, equipment, past record, and personnel.

1.7 SUBSTITUTIONS OF MATERIALS OR METHODS

- A. When materials are identified herein, such materials shall be regarded as a "basis of design" Any other make of material will be accepted which is comparably equal to that specified in

formulation, quality, workmanship, economy in operation, and suitability for the purpose intended.

- B. A bidder offering "equal" materials will be responsible to building owner as to chemical content and performance under laboratory tests of materials he/she intends to use. Materials must comply with standards set forth in PART 2 of each section of this specification. Reports must be submitted to the Specifier for approval not less than TEN days prior to Bid Date and show direct comparisons between specified and proposed materials. If testing was done, date, or dates, of testing also must be shown, and tests must have been performed by an independent laboratory for qualitative and quantitative analysis, at no expense to Owner. If approved by Specifier, all Bidders will be notified by Addendum that proposed materials are accepted as equal for purpose of bidding.
- C. If substitute materials are offered, Owner reserves rights to be final authority on their acceptance.
- D. During application of materials, contractor must have material suppliers representative present on the job site on at least three different days each week (Owner may require more if their evaluation of job progress deems it necessary) and material manufacturer's employed representative shall make out a written report upon each inspection and a summary report weekly and submit them no later than Tuesday of following week.
- E. Material supplier's representative must be an agent or full-time employee of the material supplier.
- F. Upon job completion, a final inspection will be made by material manufacturer's representative, Specifier, and Contractor. No further payments will be authorized for work done until such inspection has been made, and all work that is visible is found to be performed in accordance with the specifications and to satisfaction of building owner.
- G. All bids shall be based upon use of type of materials specified herein. Any changes or substitutions require prior approval, in writing, from owner's representative.

1.8 ADDENDUM TO PROPOSAL

- A. Owner reserves rights to modify proposal within three (3) days of date for the opening of proposals. All addenda shall be in writing and sent to all bidders having received a bid document(s).

1.9 AWARDING OF CONTRACT

- A. Owner reserves right to award contract to lowest and best, and not necessarily to lowest bidder, or to reject any or all bids without informalities.

1.10 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF WORK

- A. Bidder is expected to examine carefully site of proposed work, proposal, plans, specifications, supplemental specifications, special provisions and contract forms, before submitting proposal. Submission of bid shall be considered evidence that bidder made such examination and is satisfied as to conditions to be encountered in performing work, and as to requirements of site conditions, plans, specifications, supplemental conditions, special provisions and contracts, and no allowance will be made for lack of knowledge concerning such conditions after contract is signed. Roof System composition is based on random sampling. Contractor is responsible for verification of roof system composition.

1.11 PREPARATION OF BID PROPOSAL

- A. Bidder shall submit his bid proposal upon forms furnished by Owner. All words and figures shall be in ink or typewritten.
- B. Bidder's proposal must be signed with ink by one or more members of partnership, or by one or more officers of a corporation, or by an agent of Contractor or legally qualified and acceptable to Owner. If bid proposal is made by an individual, his/her name and business address must be shown; by a partnership, name and business address of each partnership member must be shown; by a corporation, name of state under the laws of which the corporation is chartered and name and title of the officer or officers having authority under bylaws to sign contracts, name of corporation and business address of its corporate official must be shown.
- C. **Bid Security** – Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after the opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.
- D. **Bidders Qualifications** – Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and insurance in a form acceptable to owner will be required of the successful Bidder.

1.12 DELIVERY OF BID PROPOSALS

- A. Bid Proposals shall be placed in a sealed envelope so marked as to indicate identity of project and name and address of bidder. Bid Proposals will be received until hour and date set for opening thereof, and must be in hands of the official indicated by such time. Bid Proposals received after time for opening will be returned to bidder unopened.

1.13 WITHDRAWAL OF PROPOSALS

- A. Bidder may withdraw his/her bid proposal, provided request in writing was received by official indicated in proposal by time set for opening bid proposals. When such bid proposal is reached, it will be returned to bidder unopened.

1.14 DISQUALIFICATION OF BIDDERS

- A. Any of the following reasons may be considered as being sufficient for disqualification of a bidder and rejection of his/her proposal or proposals:
 - 1. If bid is on a form other than that furnished by Owner or if form is altered or any part thereof is detached.
 - 2. If there are unauthorized additions, conditional or substitute bids, or irregularities of any kind which may tend to make bid incomplete, indefinite or ambiguous as to its meaning.
 - 3. If bidder adds any provisions reserving rights to accept or reject an award, or to enter into a contract pursuant to an award. This does not exclude a bid limiting maximum gross amount of awards acceptable to any one bidder at any one bid letting, provided that any selection of awards will be made by the Owner.
 - 4. More than one proposal for same work from an individual firm or corporation under same or different name.
 - 5. Evidence of collusion among bidders. Participants in such collusion will receive no recognition as bidders for any future work of Owner until any such participant shall have been reinstated as a qualified bidder.
 - 6. Bid prices which obviously are unbalanced.

1.15 BID PROPOSAL FORM

- A. Each bidder shall submit an individual Section 004113 Bid Form. Bid Form in these documents must be utilized, no alteration of form shall be made.

1.16 INSURANCE

- A. Successful bidder shall provide **Anderson School District 3** with appropriate insurance coverage, including automobile liability, general liability, property insurance, etc. and name **Anderson School District 3**, an additional insured. Original sets of certificates shall be on file with **Anderson School District 3** before work commences. Each such certificate of insurance shall provide for payment of not less than \$500,000.00 for injury or death of one person and \$1,000,000.00 for any one accident, and \$500,000.00 for property damage for any one accident, and a total aggregate property damage limit of \$1,000,000.00. Successful bidder shall also agree to protect **Anderson School District 3** against all claims, demands, expenses, suits, or judgments arising because of, or resulting from operations of contractors, his/her agents, or his/her employees during execution of contract.

- B. Successful bidder shall present evidence of insurance coverage by presenting the following prior to signing of a contract:

1. Authenticated copies of all insurance coverage.
2. Authorization by the State of **South Carolina** to do business in State of **South Carolina**, if insurance company is not a corporation of the State of **South Carolina**.
3. Workmen's Compensation Certificate of State of **South Carolina**.

- C. Insurance certificate shall be submitted with coverage as follows:

1. Claim under Workers' or Workmen's Compensation, disability benefit of other similar employee benefit acts;
2. Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;
3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than his/her employees;
4. Claims for damages insured by usual personal injury liability coverage which are sustained by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or any other person;
5. Claims for damages, other than to work itself, because of injury to or destruction of tangible property, including loss of use resulting therefore; and claims for damages because of bodily injury or death of any person, or property damage arising out of ownership, maintenance, or use of any motor vehicle.

- D. Contractor shall provide Certificate of Insurance Coverage with coverage as noted in General Requirements.

1.17 OUT OF STATE BIDDERS

- A. If the successful bidder is a corporation not incorporated under the laws of the State of **South Carolina**, a certificate from the Secretary of State of **South Carolina**, showing the right of said bidder to do business in State of **South Carolina**, shall be furnished.

- B. If the successful bidder is a partnership or individual, not a resident of State of **South Carolina**, he shall furnish a Power of Attorney appointing the Secretary of the State of **South Carolina** his/her agent for purpose of receiving service of summons.

1.18 EXPERIENCE OF CONTRACTOR

- A. In addition to requirements listed elsewhere, any contractor submitting a bid must have been in the business of installing roofing systems as specified a **minimum of five (5) years**. Bidders shall submit with their bid letter stating experience in application of systems like specified herein, or briefly stating their experiences with systems similar to one specified.

1.19 TAXES

- A. Successful bidder shall be required to comply with all federal, state and local requirements with regard to any and all taxes owed and/or required.

1.20 SCHEDULING OF WORK

- A. Contractors scheduling will have an influence on choosing lowest and best bid.

1.21 APPLICATION FOR PAYMENT

- A. Material payment will be processed upon delivery of materials to job site, issuance of invoice by Contractor and approval by Owner's Representative. All suppliers and subcontractors must be paid in full and Waiver of Lien by major suppliers and subcontractors issued prior to any subsequent payments being made to contractor.
- B. Once all work has been completed, and final inspection has been made, Contractor may invoice Owner for 100% of remaining labor and materials which were purchased by Contractor. Once all deficiencies have been corrected, Owner will make payment of 90% of remaining labor and materials, with adds and deducts, and will make payment of the remaining 10% once warranty has been issued.

END OF SECTION 002113

SECTION 011100 – SUMMARY OF WORK

PART 2 - GENERAL

2.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

2.2 SUMMARY

- A. Furnish and install roof materials, insulation, flashings, and miscellaneous materials on the following designated roof areas:
- B. Work on **Crescent High School, Starr Elementary and Starr-Iva Middle School** Includes:
 - 1. Tear off designated roofing, insulation, flashings, perimeter metal, and obsolete equipment and properly dispose.
 - 2. Bring to the attention of the building owner of all questionable substrate conditions and repair or replace decking as designated by building owner's representative at a cost in addition to the contracted amount based upon line item quoting on Bid Form.
 - 3. Install first layer of insulation, as specified.
 - 4. Install second layer of insulation, as specified.
 - 5. Install tapered edge and saddles as required to keep water from standing at raised perimeter, upslope from curbs, and between drains and/or scuppers.
 - 6. Install stripping plies as specified around all penetrations, at curbs, and at roof area perimeters.
 - 7. Install lead drain sumps as specified.
 - 8. Install 80 mil TPO as specified. Thirty (30) Year System Warranty**
 - 9. Install flashings as specified.
 - 10. Install gutters and downspouts as specified.
 - 11. Install new coping, drip edge, gravel stop, reglet, counter flashing, lead stack flashings, and other metal components as specified.
.Provide manufacturer's warranty as specified.

2.3 INTENT OF THE SPECIFICATIONS

- A. The intent of these specifications is to describe the materials and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern.

2.4 PROTECTION

- A. The Contractor shall use every available precaution to provide for the safety of property owner, visitors to the site, and all connected with the work under the specification.
- B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless

otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.

C. Barricades shall be erected to fence off all construction areas from operations personnel.

D. Safety Requirements

1. All application, material handling, and associated equipment shall conform to and be operated in conformance with **OSHA** safety requirements.
2. Comply with federal, state, local and owner fire and safety requirements.
3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.
4. Maintain a crewman as a floor area guard whenever roof decking is being repaired or replaced.
5. Maintain proper fire extinguisher within easy access whenever power tools, are being used.
6. All safety requirements of the building owner must be followed. No exceptions will be permitted. Safety orientation meeting required prior to performing any work

2.5 HOUSEKEEPING

A. Keep materials neat and orderly.

B. Remove scrap, waste and debris from project area.

C. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be in strict accordance with the "General Requirements" of this contract.

END OF SECTION 011100

SECTION 011419 – USE OF SITE

PART 3 - GENERAL

3.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

3.2 DESCRIPTION

- A. This Section applies to situations in which Contractor or his representatives including, but not necessarily limited to, suppliers, subcontractors, employees, and field engineers, enter upon Owner's property.

3.3 QUALITY ASSURANCE

- A. Promptly upon award of Contract, notify all pertinent personnel regarding requirements of this Section.
- B. Owner may require all personnel who will enter upon Owner's property certify their awareness of and familiarity with requirements of this Section.

3.4 TRANSPORTATION FACILITIES

- A. Provide adequate protection for curbs and sidewalks over which trucks and equipment pass to reach job site. If any damage occurs contractor is responsible for repairs
- B. Contractor's vehicles:
 - 1. Require Contractor's vehicles, vehicles belonging to employees of Contractor, and all other vehicles entering upon Owner's property in performance of Work of Contract, to use only Access Route approved in advance by Owner.
 - 2. Do not permit such vehicles to park on any street or other area of Owner's property except in area approved by Owner as "Contractor's Parking Area."

3.5 LANDSCAPING

- A. Provide adequate protection for trees, grass, shrubs and all other landscaping during set-up or construction. If any damage occurs contractor is responsible for repairs as designated by Owner
- B. Restrooms and other amenities of building will only be used with permission of Owner. If such authorization is given, Contractor is responsible for maintaining cleanliness and repairs as designated by Owner.

3.6 SECURITY

- A. Restrict access of all persons entering upon Owner's property to Access Route and to actual site of work.

END OF SECTION 011419

SECTION 011419 – WORK RESTRICTIONS

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

4.2 DESCRIPTION

- A. This Section applies to situations in which Contractor or his representatives including, but not necessarily limited to, suppliers, subcontractors, employees, and field engineers, enter upon Owner's property.

4.3 QUALITY ASSURANCE

- A. Promptly upon award of Contract, notify all pertinent personnel regarding requirements of this Section.
- B. Owner may require all personnel who will enter upon Owner's property certify their awareness of and familiarity with requirements of this Section.

4.4 TRANSPORTATION FACILITIES

- A. Provide adequate protection for curbs and sidewalks over which trucks and equipment pass to reach job site. If any damage occurs contractor is responsible for repairs
- B. Contractor's vehicles:
 - 1. Require Contractor's vehicles, vehicles belonging to employees of Contractor, and all other vehicles entering upon Owner's property in performance of Work of Contract, to use only Access Route approved in advance by Owner.
 - 2. Do not permit such vehicles to park on any street or other area of Owner's property except in area approved by Owner as "Contractor's Parking Area."

4.5 LANDSCAPING

- A. Provide adequate protection for trees, grass, shrubs and all other landscaping during set-up or construction. If any damage occurs contractor is responsible for repairs as designated by Owner
- B. Restrooms and other amenities of building will only be used with permission of Owner. If such authorization is given, Contractor is responsible for maintaining cleanliness and repairs as designated by Owner.

4.6 SECURITY

- A. Restrict access of all persons entering upon Owner's property to Access Route and to actual site of work.

END OF SECTION 011419

SECTION 012900 – PAYMENT PROCEDURES

PART 5 - GENERAL

5.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

5.2 DESCRIPTION

- A. Work included:
 - 1. Comply with procedures described in this Section when applying for progress payment and final payment under Contract.

5.3 QUALITY ASSURANCE

- A. Prior to start of construction, secure Designated Owner's representative's approval of schedule of values required to be submitted.
- B. During progress of Work, modify schedule of values as approved by Designated Owner's representative to reflect changes in Contract Sum due to Change Orders or other modifications of Contract.
- C. Base requests for payment on approved schedule of values.

5.4 SUBMITTALS

- A. Formal submittal: Unless otherwise directed by Designated Owner's representative:
 - 1. Make an informal submittal of request for payment by filling in, with erasable pencil, pertinent portions of AIA Document G702, "Application and Certificate for Payment," plus continuation sheet or sheets.
 - 2. Sign and notarize Application and Certificate for Payment.
 - 3. Submit original and three (3) copies of Application and Certificate for payment, plus four identical copies of continuation sheet or sheets, to Designated Owner's representative.
 - 4. Designated Owner's representative will compare formal submittal with approved informal submittal and, when approved, will sign Application and Certificate for Payment, will make required copies, and will distribute:
 - a. One copy to Contractor.
 - b. Two copies to Owner.
 - c. One copy to Designated Owner's representative's file.

5.5 MATERIAL PAYMENT PROCEDURE

- A. Material payment will be processed upon delivery of materials to job site, issuance of invoice by Contractor and approval by Owner's Representative. All suppliers and subcontractors must

be paid in full and Waiver of Lien by major suppliers and subcontractors issued prior to any subsequent payments being made to contractor.

- B. In absence of a letter of credit, performance, payment or materials and labor bond a waiver of lien agreement conditioned upon payment by joint check shall be performed by contractor, owner and materials manufacture for this project.
- C. Once all work has been completed, and final inspection has been made, Contractor may invoice Owner for 90% of remaining labor and materials which were provided by Contractor. The owner will make payment of remaining 10% once warranty has been issued.

END OF SECTION 012900

SECTION 013119 – PROJECT MEETINGS

PART 6 - GENERAL

6.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

6.2 PRE-CONSTRUCTION CONFERENCE

- A. Preconstruction Conference will be scheduled within 15 working days after Owner has issued Notice to Proceed, but prior to actual start of Work.
- B. Attendance: Representative of owner, roofing manufacturer/supplier, and contractor.
- C. Minimum agenda: Data will be distributed and discussed on:
 - 1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and Project Manager.
 - 2. Channels and procedures for communication.
 - 3. Review set-up area.
 - 4. Review all required permits.
 - 5. Review insurance requirements.
 - 6. Construction schedule, including sequence of critical work.
 - 7. Contract Documents, including distribution of required copies of Drawings and revisions.
 - 8. Processing of Shop Drawings and other data submitted to Project Manager for review.
 - 9. Processing of field decisions and Change Orders.
 - 10. Rules and regulations governing performance of work.
 - 11. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.

6.3 PROGRESS MEETINGS

- A. Will be scheduled by owner's representative weekly or as described at pre-bid meeting.
- B. Attendance: Owner, Contractor, Job Superintendent, Roofing Material Manufacturer/Supplier, and Sub-Contractors, as appropriate.
- C. Minimum Agenda:
 - 1. Review of work progress.
 - 2. Field observations, problems, and decisions.
 - 3. Identification of problems which impede planned progress.
 - 4. Maintenance of progress schedule.
 - 5. Corrective measures to regain projected schedules.
 - 6. Planned progress during succeeding work period.
 - 7. Coordination of projected progress.
 - 8. Maintenance of quality and work standards.
 - 9. Effect of proposed changes on progress, schedule, and coordination.
 - 10. Other business relating to work.

6.4 PRE-FINAL INSPECTION

- A. Contractor must inform material supplier and building owner's representative prior to application of flood coat and gravel. Pre-final inspection will then be scheduled.
- B. Installations or details noted as deficient during inspection must be repaired and corrected by applicator.
- C. Once corrections have been made, contractor must inform material supplier and building owner's representative so a second inspection can be scheduled.
- D. Material supplier must approve roofing system prior to application of flood coat, surfacing application and/or gravel surfacing.

6.5 FINAL INSPECTION

- A. Scheduled by roofing material manufacturer upon job completion.
- B. Attendance: Owner or designated representative, contractor, roofing material manufacturer/supplier.
- C. Minimum Agenda.
- D. Walkover inspection.
- E. Identification of needed corrections to be completed by contractor with final approval from warrantor.

END OF SECTION 013119

SECTION 013219 – SUBMITTALS SCHEDULE

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

7.2 SUBMITTAL PROCEDURES

A. Coordination of submittals.

1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and submittal for it conforms in all respects with specified requirements.
3. By affixing Contractor's signature or approval stamp to each submittal, he/she certifies that this coordination has been performed.

B. Substitutions:

1. The Contract is based on standards of quality established in Contract Documents. To give all bidders equal opportunity, use of any materials or methods other than those specified will require proper submittal information and must be pre-approved in written addenda 10 days prior to bid due date.
2. Products requiring no further approval:
 - a. Minor products specified by reference to standard specification such as ASTM and similar standards.
 - b. Products specified by manufacturer's name and catalog model number.
3. Building owner reserves right to final authority on acceptance or rejection of any substitute.
4. Request for substitutions will be accepted from prime bidders only. Requests for substitutions from parties not bidding on project as a primary contractor will not be considered.

C. "Or equal":

1. Specified materials are named to denote kind and quality required, whether or not words "or approved equal" are used. These materials shall serve as standards and all proposals shall be based upon same.
2. Where phrase "or equal," or "or equal as approved by Owner," occurs in Contract Documents, The material or method must be so approved for this Work by Owner prior to receipt of bids.
3. Owner's decision is final.

D. "Basis of Design":

1. Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this

specification. Comply with all manufacturer and contractor/ fabricator quality and performance criteria specified within this document.

7.3 SUBMITTAL DOCUMENTS

- A. A **list of three (3) jobs** of similar size where proposed materials have been used, under similar conditions as specified.
- B. Shop Drawings:
 - 1. Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of item and its method of connection to Work.
 - 2. Owner will review and comment on required changes. The Contractor may make and distribute corrected copies as are required for his purposes.
- C. Copy of roofing supplier's warranty which meets all requirements of specified warranty.
- D. Material supplier providing roofing warranty shall have an ISO 9001 certification.
- E. Letter from material supplier signed by a corporate officer, on company stationery, confirming that all bidding documents have been approved, that site has been inspected and meets requirements for suitability, and that specified warranty shall be provided upon satisfactory completion of project.
- F. Verify material supplier is a financially stable organization with ability to protect building Owner from both product liability and warranty claims relating to roofing that might arise during course of warranty period. It is intent of building Owner to establish requirements that will protect him, be fair to all suppliers and ensure that requirements are in line with exposure of supplier. The following information will be provided by material supplier that will issue warranty and will be submitted by prime bidder:
 - 1. A certificate of insurance for product liability with minimum limits in accordance with following formula:
 - a. Product Liability Insurance will be a minimum aggregate coverage, not less than 25% of total company sales, with coverage of not less than 25 million dollars per occurrence.
 - b. First dollar coverage (no self-insured retention or deductibles).
 - c. Coverage provided by an admitted company licensed to do business in **South Carolina**, with an A.B. Best rating of A, or better.
 - d. An affidavit signed by a corporate officer stating that they are not currently, nor have been within last five (5) years, involved in litigation regarding asbestos content of their materials. Or provide a list of all pending asbestos related litigation, an estimate of dollar amount of all potential asbestos related liability and a summary of all asbestos related settlements over last five years.
 - e. An affidavit signed by a corporate officer that cost of warranty claims has not exceeded 1% of that company's total roofing product sales in any of last five (5) years.
 - f. If material supplier has a parent company, a letter signed by a corporate officer of parent company stating that parent company will sign or issue warranty.
- G. Any proposed substitute materials or methods must also be accompanied by following documentation:
 - 1. A detailed analysis of roofs being bid on.

2. A complete specification of proposed substitute. If, after review, substitute is found to be acceptable, copies will be provided to each bidder who has picked up original specification.
3. Written explanation of why substitutions should be considered is required.

7.4 BID DOCUMENTS

- A. Bid and Proposal Form shall contain quotes to be identified "BASE BID" for specified materials and methods. Quotes for approved substitutions or specified alternates shall be identified as 'DEDUCTION FROM BASE BID" for installation.
- B. Each bid shall be accompanied by a bid guarantee of 10% of bid amount. The bid guarantee may be in form of a bond or a certified check, cashier's check, or letter of credit.
- C. Certificate of insurance with limits specified in Section 002113.
- D. Evidence of experience as specified in Section 002113.

END OF SECTION 013219

(NOTE: THIS FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION OF PROPOSAL)

PROPOSAL FORM

CRESCENT HIGH SCHOOL
Roof Areas: D, C, I, K, L, M, and O

Due Date: April 12, 2018 by 2:00 pm

By submitting this proposal, the potential contractor certifies the following:

- This proposal is signed by an authorized representative of the firm.
- It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
- The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposal cost.
- All labor cost, direct and indirect have been determined and included in the proposed cost.
- All taxes have been determined and included in the proposed cost.
- The authorized representative has attended the conference and or conducted a site visit.
- The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

TO: Anderson School District 3
355 W. Front Street
Iva, South Carolina 29655

DATE: _____

The undersigned hereby proposes to furnish labor and materials necessary for re-roofing in full **compliance with these contract documents.**

OFFEROR: _____

Base Bid: Roof Replacement of areas D, C, I, K, L, M, and O. Work on these areas generally consists of the complete removal of all existing aggregate surfaced built-up roof membrane, insulation, damaged or deteriorated Tectum Decking, base sheet, flashings, metal flashings, new drains, drain extensions, new overflow scuppers, and associated miscellaneous work as specified herein. SBS Modified Base sheet is to be mechanically fastened over Tectum and Lightweight Concrete Decks

Proposed System, manufacturer and description:

The following information is essential for bid evaluation. Failure to attach any of the requested information will invalidate this proposal and bid will be considered as non-responsive.

Required bonds attached?	___Yes ___No
Manufacturer's Specimen Warranty that meets specifications attached?	___Yes ___No
Proposed system independent laborator test data attached?	___Yes ___No
Copy of contractor's License with Manufacturer attached?	___Yes ___No
Statement of All Asbestos Litigation during the past five (5) years	___Yes ___No
Manufacturer pertaining to roofing systems attached?	___Yes ___No

Note: Bids shall be both written in words and shown in figures.

Roof Area D

_____ \$ _____

Roof Area C

_____ \$ _____

Roof Area I

_____ \$ _____

Roof Area K

_____ \$ _____

Roof Area L

_____ \$ _____

Roof Area M

_____ \$ _____

Roof Area D

_____ \$ _____

Roof Area O

_____ \$ _____

Attended Pre-Bid Meeting: Yes/No_____

Addendums received and used in computing bid: Yes/No_____

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP _____

TELEPHONE: _____ FAX _____

FED ID NO: _____ TYPE & LICENSE _____

E-MAIL: _____

BY: (Signature) _____ TITLE _____

DATE: _____

(NOTE: THIS FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION OF PROPOSAL)

PROPOSAL FORM

STARR-IVA MIDDLE SCHOOL

Roof Areas: D, E, F, G, and L

Due Date: April 12, 2018 by 2:00 pm

By submitting this proposal, the potential contractor certifies the following:

- This proposal is signed by an authorized representative of the firm.
- It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
- The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposal cost.
- All labor cost, direct and indirect have been determined and included in the proposed cost.
- All taxes have been determined and included in the proposed cost.
- The authorized representative has attended the conference and or conducted a site visit.
- The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

TO: Anderson School District 3
355 W. Front Street
Iva, South Carolina 29655

DATE: _____

The undersigned hereby proposes to furnish labor and materials necessary for re-roofing in full **compliance with these contract documents.**

OFFEROR: _____

Base Bid: Roof Replacement of areas D, E, F, G and L. Work on these areas generally consists of the complete removal of all existing aggregate surfaced built-up roof membrane, insulation, damaged or deteriorated Metal Decking, base sheet, flashings, metal flashings, new drains, drain extensions, new overflow scuppers, and associated miscellaneous work as specified herein. SBS Modified Base sheet is to be mechanically fastened over Tectum Decking.

Proposed System, manufacturer and description:

The following information is essential for bid evaluation. Failure to attach any of the requested information will invalidate this proposal and bid will be considered as non-responsive.

- | | |
|--|----------------|
| Required bonds attached? | ___ Yes ___ No |
| Manufacturer's Specimen Warranty that meets specifications attached? | ___ Yes ___ No |
| Proposed system independent laborator test data attached? | ___ Yes ___ No |
| Copy of contractor's License with Manufacturer attached? | ___ Yes ___ No |
| Statement of All Asbestos Litigation during the past five (5) years | ___ Yes ___ No |
| Manufacturer pertaining to roofing systems attached? | ___ Yes ___ No |

Note: Bids shall be both written in words and shown in figures.

Roof Area D

_____ \$ _____

Roof Area E

_____ \$ _____

Roof Area F

_____ \$ _____

Roof Area G

_____ \$ _____

Roof Area L

_____ \$ _____

Attended Pre-Bid Meeting: Yes/No _____

Addendums received and used in computing bid: Yes/No _____

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP _____

TELEPHONE: _____ FAX _____

FED ID NO: _____ TYPE & LICENSE _____

E-MAIL: _____

BY: (Signature) _____ TITLE _____

DATE: _____

(NOTE: THIS FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION OF PROPOSAL)

PROPOSAL FORM

STARR ELEMENTARY SCHOOL

Roof Areas: N

Due Date: April 12, 2018 by 2:00 pm

By submitting this proposal, the potential contractor certifies the following:

- This proposal is signed by an authorized representative of the firm.
- It can obtain and submit to the Owner insurance certificates as required within 5 calendar days after notice of award.
- The cost and availability of all equipment, materials, and supplies associated with performing the services described herein have been determined and included in the proposal cost.
- All labor cost, direct and indirect have been determined and included in the proposed cost.
- All taxes have been determined and included in the proposed cost.
- The authorized representative has attended the conference and or conducted a site visit.
- The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

TO: Anderson School District 3
355 W. Front Street
Iva, South Carolina 29655

DATE: _____

The undersigned hereby proposes to furnish labor and materials necessary for re-roofing in full **compliance with these contract documents.**

OFFEROR: _____

Base Bid: Roof Replacement of area N. Work on these areas generally consists of the complete removal of all existing aggregate, flashings, metal flashings, new drains, drain extensions, new overflow scuppers, and associated miscellaneous work as specified herein. The membrane and the insulation will remain in place; new roofing will be installed over adhered recover board and completed as outlined.

Proposed System, manufacturer and description:

The following information is essential for bid evaluation. Failure to attach any of the requested information will invalidate this proposal and bid will be considered as non-responsive.

- | | |
|--|----------------|
| Required bonds attached? | ___ Yes ___ No |
| Manufacturer's Specimen Warranty that meets specifications attached? | ___ Yes ___ No |
| Proposed system independent laborator test data attached? | ___ Yes ___ No |
| Copy of contractor's License with Manufacturer attached? | ___ Yes ___ No |
| Statement of All Asbestos Litigation during the past five (5) years | ___ Yes ___ No |
| Manufacturer pertaining to roofing systems attached? | ___ Yes ___ No |

Note: Bids shall be both written in words and shown in figures.

Roof Area N

_____ \$ _____

Attended Pre-Bid Meeting: Yes/No _____

Addendums received and used in computing bid: Yes/No _____

OFFEROR: _____

ADDRESS: _____

CITY, STATE, ZIP _____

TELEPHONE: _____ FAX _____

FED ID NO: _____ TYPE & LICENSE _____

E-MAIL: _____

BY: (Signature) _____ TITLE _____

DATE: _____

SECTION 014110 – REGULATORY REQUIREMENTS

PART 8 - GENERAL

8.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

8.2 TAXES

- A. Contractor shall pay all sales, consumer, use and other similar taxes required by law.

8.3 PERMITS AND FEES

- A. Contractor shall apply for and secure all incidental permits, governmental fees and licenses necessary for proper execution and completion of the Work.

8.4 GOVERNING CODES

- A. Work performed under this specification shall be in compliance with applicable codes, laws, and ordinances of municipal, state, and federal departments concerned. Materials and workmanship required by such regulations shall be provided by the Contractor whether or not specifically noted herein or shown on drawings

8.5 NOTICES

- A. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on performance of Work. If Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, without providing notice to building owner's representative, Contractor shall assume full responsibility and shall bear all costs.

8.6 REGULATORY REQUIRMENTS

- A. State and local building codes.

END OF SECTION 014110

SECTION 014200 – REFERENCES

PART 9 - GENERAL

9.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

9.2 REFERENCE STANDARDS

- A. Referenced specifications and standards published by national societies, associations, and institutes shall be considered as part of this specification. In all cases, referenced specification or standard shall be most recent publication date. Abbreviated identifications for particular organizations involved are as listed below:

1. AIA - The American Institute of Architects
2. ANSI – American National Standards Institute
3. ASCE - American Society of Civil Engineers
4. ASHRAE - The American Society of Heating, Refrigerating and Air-Conditioning Engineers
5. ASTM - American Society for Testing and Materials
6. AWPA - American Wood Preservers Association
7. AWPB - American Wood Preservers Bureau
8. FM - Factory Mutual Global
9. NRCA - National Roofing Contractors Association
10. OSHA - Occupational Safety and Health Administration
11. SMACNA - Sheet Metal and Air-conditioning Contractors National Association
12. UL - Underwriters Laboratory
13. WH - Warnock-Hersey.

END OF SECTION 014200

SECTION 014500 – QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

1.2 QUALITY CONTROL

- A. Contractor shall:
 - 1. Be experienced in Single Ply roofing.
 - 2. Be acceptable by owner and roofing material Manufacturer/supplier.
- B. Roofing manufacturer shall:
 - 1. Be an Associate Member in good standing with National Roofing Contractors Association (NRCA).
 - 2. Be recognized in roofing, waterproofing and moisture survey industry.
 - 3. Be approved by owner.
 - 4. Material manufacturer/supplier must supply representative to perform periodic inspections throughout course of project. Written reports must be submitted to owner's representative and copies to contractor.
 - 5. Material supplier providing roofing warranty shall have an ISO 9001 certification.
- C. Any deficiencies noted during inspections must be corrected by contractor and approved in writing by material manufacturer/supplier's representative.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Comply with Quality Control, References, Specification, and Manufacturer's data. Where conflict may exist, more stringent requirements govern.
- B. Provide primary products, single ply sheet goods, base flashings, miscellaneous flashing materials, and sheet metal components from a single manufacturer, which has produced that type of product successfully for not less than three (3) years. Provide secondary products (insulation, mechanical fasteners, lumber, etc.) only as recommended by manufacturer of primary products for use with roofing system specified.

PART 3 - EXECUTION

3.1 SUBMITTALS

- A. Provide building owner's representative a letter from roof material manufacturer indicating that applicator is approved to install their products and will provide warranty for this installation.

END OF SECTION 014500

SECTION 014516 – FIELD QUALITY CONTROL PROCEDURES

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

4.2 DESCRIPTION

- A. Work included:
 - 1. Provide roofing inspection services as specified herein and as needed for a complete and proper installation.

4.3 SUBMITTALS

- A. Secure designated Owner's representative's advance approval of date and time for roof substrata inspection and pre-roofing meeting.
 - 1. Notify roofing inspection service, roofing contractor, and other interested parties, and secure their agreement to attend.
 - 2. At least three calendar days prior to preconstruction meeting, notify designated Owner's representative of names of persons expected to attend.
- B. Records:
 - 1. Maintain a complete and legible file, in chronological order, containing a copy of each report, certificate, and other communication received relative to work of this Section.
 - 2. Upon completion of work of this Section, deliver a copy of complete file to designated Owner's representative

PART 5 - PRODUCTS

5.1 ROOFING INSPECTION SERVICES

- A. For work of this Section, retain roofing inspection services of company approved in advance by designated Owner's representative.

PART 6 - EXECUTION

6.1 PRE-ROOFING MEETING

- A. Not less than three nor more than ten calendar days prior to scheduled start of roofing installation, conduct a roofing substrata inspection and pre-roofing meeting at job site.
 - 1. Designated Owner's representative will be chairperson of meeting, will take minutes of meeting, and will record all agreements reached as a result of inspection and meeting.
 - 2. Visually inspect all substrata upon which roofing is scheduled to be applied.

3. Determine general acceptability, and determine areas requiring further preparation.
4. Determine acceptable remedies for unacceptable areas.
5. Discuss proposed schedule for installation of roofing, and reach agreement as to dates of start and finish of installation of roofing.
6. Discuss proposed methods for installation of roofing, and equipment and personnel to be used.
7. Discuss inspection methods to be used, reports to be issued by roofing inspector, responsibilities and limits of responsibilities of roofing inspector, and potential problems arising from use of methods not agreed to in pre-roofing meeting.

6.2 INSPECTION DURING ROOFING INSTALLATION

- A. Verify that materials delivered to job site are those approved by designated Owner's representative for use on this Work.
- B. Visually observe installation of roofing including, but not necessarily limited to:
 1. Check kettle temperatures, and verify that bitumens are not heated beyond temperatures recommended by manufacturer of approved roofing system materials.
 2. At least three times daily, check temperatures of bitumens as delivered to roof deck and verify that temperatures of bitumens are within range recommended by manufacturer of approved roofing system materials.
 3. Verify use of installation procedures agreed upon in pre-roofing meeting.
 4. Call attention of contractor's representative on job to unacceptable methods and unacceptable results.
 5. Report to Contractor and to designated Owner's representative if contractor fails to correct unacceptable methods or unacceptable results.
- C. Make Final visual inspection of entire roofing installation.
 1. Compile a list of items required to be revised or replaced.
 2. Deliver a copy of list to contractor's representative on job and to others as appropriate.
 3. Verify proper revision or replacement of all items on list.

6.3 REPORTS

- A. Make daily written reports of roofing inspection activities, delivering copies to roofing contractor and others as agreed in pre-roofing meeting.
- B. Upon completion of roofing installation, compile a comprehensive report covering activities performed under this Section, and deliver a copy of report to:
 1. Designated Owner's representative.
 2. Owner.
 3. Roofing contractor.
 4. Others as agreed in project meetings.

6.4 LIMITS OF ROOFING INSPECTOR'S RESPONSIBILITIES

- A. During progress of roofing installation, roofing inspector is required to:
 1. Make visual observations and compile reports described in this Section;

2. Advise roofing contractor's representative on job as to unacceptable methods and unacceptable results when so observed by roofing inspector.
- B. In connection with roofing installation, "unacceptable methods and unacceptable results" mean methods and results other than:
1. Those recommended by manufacturer of approved roofing system materials.
 2. Those required by pertinent regulations of governmental agencies having jurisdiction;
 3. Those required by these Specifications; and
 4. Those agreed upon in pre-roofing meeting.
- C. The roofing inspector is not empowered to:
1. Act for, or in lieu of, representatives of governmental agencies having jurisdiction;
 2. Give directions to Contractor or workmen on job;
 3. Revise any part of Contract Documents; or
 4. Approve any change in methods agreed upon in pre-roofing meeting.
- D. Failure of roofing inspector to observe unacceptable methods or unacceptable results during progress of Work will not absolve Contractor from his responsibility to complete Work in accordance with specified requirements and agreed methods

END OF SECTION 014516

SECTION 016600 – PRODUCT STORAGE AND HANDLING

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

7.2 DESCRIPTION

A. Delivery of Materials

1. Deliver materials to job-site in new, dry, unopened and well-marked containers showing product and manufacturer's name.
2. Deliver materials in sufficient quantity to allow continuity of work.

B. Storage of Materials

1. Store all roofing materials in dry area protected from water or extreme humidity.
2. Stack insulation on pallets.
3. Remove plastic packing shrouds. Cover all stored materials with canvas tarpaulin top to bottom. Secure tarpaulin.
4. Store formed edge metal in a dry area and protect from water. Remove metal from immediately from wet packaging. Wet packaging may stain and corrode metal, especially mill finish aluminum.
5. Rooftop storage: Disperse material on roof to avoid overloading the structure.

C. Material Handling

1. Handle all materials on site to avoid bending, tearing, or other damage during transportation and installation.
2. Material handling equipment shall be selected and operated so as not to damage existing construction or applied roofing. Do not operate or situate material handling equipment in locations that will hinder smooth flow of vehicular or pedestrian traffic.
Environmental Requirements
3. Do not work in rain, snow or in presence of water

END OF SECTION 016600

SECTION 017700 – CLOSE OUT PROCEDURES

PART 8 - GENERAL

8.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

8.2 DESCRIPTION

- A. Work Included:
 - 1. Provide an orderly and efficient transfer of completed Work to Owner.

8.3 QUALITY ASSURANCE

- A. Prior to requesting inspection by Project Manager, use adequate means to assure Work is completed in accordance with specified requirements and is ready for requested inspection.

8.4 PROCEDURES

- A. Substantial Completion:
 - 1. All roofing materials and components are in place and water tight according to specifications with alternates approved by Designated Owner's representative and Building Owner.
 - 2. Roofing Contractor will notify designated Owner's representative of substantial completion. Within a reasonable time after receipt of notification, designated Owner's representative will inspect to determine status of completion.
 - 3. If the designated Owner's representative determines Work is not substantially completed:
 - a. Designated Owner's representative will promptly notify Contractor, giving reasons therefore.
 - b. Roofing Contractor will remedy deficiencies and notify Designated Owner's representative when ready for re-inspection.
 - c. Designated Owner's representative will re-inspect Work.
- B. Final Completion:
 - 1. Designated Owner's representative will prepare and submit a written statement at final completion.
 - 2. Certify that:
 - a. Contract Documents have been reviewed;
 - b. Work has been inspected for compliance with Contract Documents;
 - c. Work has been completed in accordance with Contract Documents;
 - d. Equipment and systems have been tested as required, and are operational;
 - e. Work is completed and ready for final inspection.

3. Designated Owner's representative will make an inspection to verify status of completion.
4. If the Designated Owner's representative determines that Work is incomplete or defective:
 - a. Designated Owner's representative will promptly notify Contractor, in writing, listing incomplete or defective work.
 - b. Remedy deficiencies promptly, and notify Designated Owner's representative when ready for re-inspection.
5. When Designated Owner's representative determines that Work is acceptable under Contract Documents, he will request Contractor to make close-out submittals.

C. Close-out submittals include, but are not necessarily limited to:

1. Project Record Documents described in Section 013219 SUBMITTALS SCHEDULE, if part of specification;
2. Operation and maintenance data for items so listed in pertinent other Sections of these Specifications, and for other items when so directed by Project Manager;
3. Warranties and bonds;
4. Evidence of payment and release of liens;
5. List of subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.

D. Final adjustment of accounts:

1. Submit a final statement of accounting to Project Manager, showing all adjustments to Contract Sum.
2. If so required, Designated Owner's representative will prepare final Change Order showing adjustments to Contract Sum which were not made previously by Change Orders.

8.5 INSTRUCTION

- A. Instruct Owner's personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of Work.

END OF SECTION 017700

SECTION 017836 – WARRANTIES

PART 9 - GENERAL

9.1 RELATED DOCUMENTS

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

9.2 GENERAL

- A. This specification section sets forth warranty requirements.

9.3 WARRANTY

- A. Quotations will include a price for a **Thirty (30)** year no dollar limit, non prorated warranty to be provided by the material supplier. If the supplier is a subsidiary company, the warranty must be issued by the parent company.
- B. The material supplier will issue the warranty to owner upon material supplier acceptance of project completion and full payment of all bills related to project.
- C. Warranty supplier shall, as part of the warranty, provide one (1) maintenance visit within the first five (5) years of the warranty period. Each maintenance visit will include Inspections, Housekeeping, Routine Maintenance and Preventive Maintenance as described below.

1. General

- a. All repairs will follow the manufacturer's written repair and maintenance guidelines or NRCA recommended repair procedure.

2. Debris

- a. A complete walkover of the existing roof areas to determine the immediate surface conditions of the roof.
- b. Removal of all naturally occurring debris (i.e., leaves, branches, paper and similar items) from the roof membrane.
- c. Service will include removal of surface debris from the roof drains, gutters, and scuppers, but not clogged piped or plumbing.
- d. All debris will be disposed of at the owner's approved site location.

3. Terminations and Flashing

- a. Sealant voids in termination bars, counter flashings and parapet caps will be cleaned and resealed as required.
- b. Exposed fasteners will be resealed on perimeter metal details where required.
- c. All pitch pans will be refilled and topped off as required.
- d. Metal projections (hoods and clamps) will be checked and resealed.

- e. Soil stack leads will be inspected for cuts or holed and temporarily resealed when required with appropriate materials until arrangements can be made for permanent repair.
 - f. Re-secure loose metal coping caps, termination bars, counter flashings and metal edge systems where required with appropriate fasteners.
4. Membrane
- a. Tears, splits and breaks in the perimeter and internal membrane flashing systems and flashing strip-ins will be repaired with appropriate repair materials.
 - b. Visible membrane defects which may allow water into the roofing system will be repaired with appropriate repair materials.
 - c. Check and re-secure drain bolts and clamping rings.
 - d. Check strip-in around drain leads, coat with approved mastics if required.
 - e. Reattach loose gutter straps, seal open gutter joints, and repair gutter strip-ins where required.
 - f. Check scupper boxes for open solder or caulking and seal with appropriate materials if required.

PART 10 - PRODUCTS (Not Applicable)

PART 11 - EXECUTION

11.1 SPECIAL PROJECT WARRANTY:

- A. Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
- B. Warranty Period: **Five (5)** years from date of Substantial Completion.

11.2 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner>.
 - 2. Address: <Insert address>.
 - 3. Building Name/Type: <Insert information>.
 - 4. Address: <Insert address>.
 - 5. Area of Work: <Insert information>.
 - 6. Acceptance Date: _____.
 - 7. Warranty Period: <Insert time>.
 - 8. Expiration Date: _____.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to

be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding **72 mph**;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

PART 12 - GENERAL

12.1 RELATED DOCUMENTS:

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

12.2 GENERAL

- A. Roofing contractor shall furnish and install all materials described herein unless specifically noted otherwise.

12.3 SUMMARY

- A. Deck repairs may only be done with written approval of owner.

END OF SECTION 031517

SECTION 035113 – CEMENTIOUS WOOD FIBER DECKS

PART 13 - GENERAL

13.1 RELATED DOCUMENTS:

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

13.2 GENERAL

- A. Roofing contractor shall furnish and install all materials described herein unless specifically noted otherwise

13.3 SUMMARY

- A. Deck repairs shall be done as required to create a sound substrate for new roof installation. Deck repairs may only be done with written approval of owner.

PART 14 - PRODUCTS

14.1 TECTUM OR INSULROCK PANELS

- A. Match existing panels.

PART 15 - EXECUTION

15.1 FIBRATED CONCRETE DECK REPAIRS

- A. Prior to installing any roofing materials, deck must be inspected and all deficiencies corrected.
- B. Remove and replace damaged panels as directed by building owner's representative.

END OF SECTION 035113

SECTION 050130 – MAINTENANCE OF METAL DECKING

PART 16 - GENERAL

16.1 RELATED DOCUMENTS:

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

16.2 GENERAL

- A. Roofing contractor shall furnish and install all materials described herein unless specifically noted otherwise

16.3 SUMMARY

- A. Metal deck repairs shall be done as required creating a sound substrate for new roof installation. Deck repairs may only be done with written approval by building owner's representative.

PART 17 - PRODUCTS

17.1 METAL ROOF DECK

- A. Sheet steel: ASTM A1008, Grade C structural quality; with factory applied prime coat.
- B. Metal roof deck: Gage, rib depth, rib configuration - match existing; three span; lapped and stitched joints.
- C. Butt and finish strips: 20-gage sheet steel.
- D. Acceptable manufacturers:
 - 1. Submit proposed manufacturer's specification for owner approval.
- E. Metal roof deck fastener manufacturers:
 - 1. Buildex Div. of ITW, Itasca, IL
- F. Rust inhibitive primer.
 - 1. Asphalt Primer Low VOC

17.2 METAL ROOF DECK REPAIRS

- A. Deck Reinforcement: Install sheet steel reinforcement profiled to existing decking configuration over all rusted openings 16 sq. inches or less. If two or more rusted openings existing in same deck section, replace deck.

- B. Deck Reattachment:
 - 1. Mechanically reattach loose sections of deck to steel support members twelve inches o.c.
- C. Side laps:
 - 1. Nest able side lap: Mechanically fasten 18 inches o.c.
 - 2. Interlocking side lap: Button punch 18 inches o.c.
- D. Deck Replacement:
 - 1. Saw cut at bar joist/beam center, remove decking. Minimum length: Three spans.
 - 2. Erect metal decking according to SDI Design Manual. If unable to lap, butt to adjacent deck. Minimum bearing on steel supports: one inch.
 - 3. Mechanically fasten side laps 18 inches o.c.
 - 4. Fasten deck to steel support members at ends and intermediate supports with mechanical fasten twelve inches o.c. maximum.
 - 5. Install six inch wide sheet steel butt strip where deck ends butt. Mechanically fasten butt strips to steel deck six inches o.c.
- E. Deck Protection: Apply rust inhibitive primer over surface that was cleaned of rust.

END OF SECTION 050130

SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

PART 18 - GENERAL

18.1 RELATED DOCUMENTS:

- A. Documents affecting work of this Section include, but are not necessarily limited to, General Requirements, bidding documents and drawings.

18.2 GENERAL

- A. Roofing contractor shall furnish and install all materials described herein unless specifically noted otherwise

18.3 SUMMARY

- A. This portion of specification sets forth general requirements, including quality and type of materials required for installation of all lumber used for wood curbs, nailing strips, miscellaneous blocking material, unexposed fillers, fascias, edging strips, etc.

18.4 STORAGE

- A. All material specified herein shall be stored (after delivery to site) and fully protected from damage and weather, and shall be piled to prevent warping. All lumber shall be fully protected to maintain original required moisture content as specified in item titled "Moisture Content".

18.5 OTHER REQUIREMENTS

- A. Dimensions indicated on drawings are nominal dimensions (except where details show actual sizes) and shall be subject to standard reductions required for surfacing or tolerances permitted by grading rules. Unless otherwise indicated on drawings, all material shall be S4S (surfaced four sides).

18.6 PROTECTION

- A. All finished work shall be adequately protected against damage from any source.

18.7 COORDINATION

- A. Carpenters shall coordinate work with other trades so progress continues without interruption.

PART 19 - PRODUCTS

19.1 WOOD - FRAMING AND CURBS, GRADING RULES, GRADES, AND SPECIES

- A. Lumber: Southern Pine, Yellow Pine, Douglas Fir, Spruce, Ponderosa Pine, Larch or Hemlock and shall meet following minimum grade requirement of construction standard (75% #1 and 25% #2); free from warping and visible decay. Lumber shall be graded according to standard grading rules of Southern Pine Inspection Bureau, West Coast Lumber Inspection Bureau, or Western Wood Products Association.

19.2 MOISTURE CONTENT

- A. All lumber shall be air-dried or kiln-dried before treatment, so moisture content is not more than 19%. After treatment, it shall be kiln-dried at temperatures not exceeding 160° F. (71°C) and moisture content is not more than 19% at time of shipment.

19.3 DECAY-RESISTANT TREATMENT

- A. Lumber in contact with roofing or acting as fascias, and all other exterior lumber, shall be Chemically Treated Wood or Natural rot resistant wood.

- B. Chemically Treated Wood

1. Wood shall be pressure-treated with a preservative in accordance with AWPA Specifications and approved by EPA. Chromate copper arsenate, creosote and oil-borne preservatives are not acceptable.
2. Treating processes, material conditions, plant equipment, and other pertinent requirements shall conform to AWPA Specifications for specific kind of lumber and type of preservative to be used. Retention shall be as required for intended use.

- C. Natural rot resistant wood

1. North America Softwoods may be used in lieu of chemically treated wood, limited to:
 - a. Douglas Fir – Heartwood
 - b. Southern Pine – Sapwood
 - c. Western Red Cedar – Heartwood
 - d. Eastern White Cedar – Heartwood
 - e. Western Larch – Heartwood
 - f. Eastern Larch (Tamarack) - Heartwood

- D. All treated lumber shall bear mark of a code recognized third party agency such as AWPA.

19.4 PLYWOOD

- A. Grade: CDX or Cyme exterior Grade.
- B. Description: 5/8" thick Butt and finish strips: 20-gage sheet steel.

19.5 MECHANICAL FASTENERS/WOOD TO STEEL DECK

- A. Acceptable Manufacturers:

1. Buildex Div. Of ITW Itasca, IL.
2. Olympic Manufacturing Group Inc. Agawam, MA.

B. Screw Length: Sufficient to engage steel deck $\frac{3}{4}$ " Submit proposed manufacturer's specification for owner approval.

19.6 WOOD TO WOOD

A. Type: Galvanized, common, annular ring nail. Length: Sufficient to penetrate underlay blocking 1-1/4 inches.

B. Acceptable Manufacturers:

1. Buildex Div. of ITW Itasca, IL.
2. Olympic Manufacturing Group Inc. Agawam, MA.

19.7 WOOD TO MASONRY

A. Acceptable Manufacturers:

1. Buildex Div. of ITW Itasca, IL.
2. Olympic Manufacturing Group Inc. Agawam, MA.
3. Rawl, Powers Fastening Co. New Rochelle, NY.

B. Length: As recommended by manufacturer.

19.8 WOOD TO HOLLOW MASONRY

A. Acceptable Manufacturers:

1. Buildex Div. Of ITW Itasca, IL
2. Olympic Manufacturing Group Inc. Agawam, MA
3. Rawl, Powers Fastening Co. New Rochelle, NY

B. Length: As recommended by manufacturer

PART 20 - EXECUTION

20.1 CARPENTRY

A. At roof edge to receive metal fascia, around all roof top penetration perimeters, and under any flashing component that is to have a roof flange mechanically fastened to roofing substrate;

B. Mechanically attach wood blocking. Blocking thickness: Equal to final insulation thickness. Width: Six inches nominal.

C. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches. Within eight feet of outside corners, spacing shall not exceed twelve inches in any one row.

D. Offset blocking layers twelve inches and weave corners.

- E. When preservative treated wood is cut, cut end shall be treated in accordance with AWPA Specification M4.
- F. Lumber shall be accurately cut to work requirements and shall be well fastened.
- G. Bolted fastenings shall have washers of adequate size under both heads and nuts. Nails shall be of correct size and quantity for proper fastening. Oversized nails that will result in splitting shall not be used. All fasteners shall be galvanized per ASTM A 153.

END OF SECTION 061053

TPO 80 Mil Adhered

Guide-Spec

February 2018

PART 1 GENERAL

1.01 DESCRIPTION

- A. The **Anderson School District 3** is located at 355 W Front Street in Iva, South Carolina. **Dr. David Nixon, Deputy Superintendent**, Project Manager/Coordinator, is the Owner's Representative and may be contacted regarding any questions or for a pre-bid job site inspection, phone **864-348-6196**.

1.02 EXTENT OF WORK

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of the VersiWeld 80-mil thick white reinforced TPO (Thermoplastic Polyolefin) reinforced membrane Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details. **Other qualifying manufacturers are Carlisle SynTech and Flex Membrane Systems.**
- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.
- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.

- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

1.03 SUBMITTALS

- A. Prior to starting work, the roofing contractor must submit the following:
 - 1. Shop drawings showing layout, details of construction and identification of materials.
 - 2. A sample of the manufacturer's Membrane System Warranty.
 - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
 - 4. Certification from the membrane manufacturer indicating the membrane thickness over the reinforcing scrim (top ply membrane thickness) is nominal 15 mil or thicker.
 - 5. Certification of the manufacturer's warranty reserve.
- B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- B. Comply with the manufacturer's written instructions for proper material storage.
 - 1. Store VersiWeld membrane in the original undisturbed plastic wrap in a cool, shaded area. VersiWeld membrane that has been exposed to the elements for approximately 7 days must be prepared with Weathered Membrane Cleaner prior to hot air welding.
 - 2. Store curable materials (adhesives and sealants) between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
 - 3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.05 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

1.06 USE OF THE PREMISES

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.08 PRECONSTRUCTION CONFERENCE

- A. A pre-bid meeting will be held at the job site on Monday April 30, 2018 at 10am . Contact the owner's representative, **Dr. David Nixon, Deputy Superintendent**, at **864-348-6196** if there are any questions. The Site Visit will start at the District Office.
- B. Prior to bid submittal, the roofing contractor should schedule a job site inspection to observe actual conditions and verify all dimensions on the roof. The job site inspection may occur on the day of the pre-bid meeting or prior to such a meeting. Should access to the roof be necessary before or after the pre-bid meeting, the contractor must contact the owner's representative, **James Burdette, Facilities Director** at **Phone 864-314-1266**
- C. Bids must be forwarded to the following address no later than 3:00 pm on May 07, 2018 :

Dr. David Nixon
Deputy Superintendent
Anderson School District #3
355 W. Front Street, Iva, SC 29655

- D. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

1.09 TEMPORARY FACILITIES AND CONTROLS

- A. Temporary Utilities:
 - 1. Water, power for construction purposes and lighting **are** available at the site and **will** be made available to the roofing contractor.
 - 2. Provide all hoses, valves and connections for water from a source designated by the owner when made available.
 - 3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.
- B. Temporary, Sanitary Facilities
Sanitary facilities **will not** be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.
- C. Building Site:
 - 1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
 - 2. The roofing contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.
- D. Security:
Obey the owner's requirements for personnel identification, inspection and other security measures.

1.10 JOB SITE PROTECTION

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.

1.13 QUALITY ASSURANCE

- A. The VersiWeld Membrane Roofing System must achieve a UL Class A. **or equal.**
- B. The membrane must be manufactured by the material supplier. Manufacturer's supplying membrane made by others are not acceptable.
- C. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- D. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply TPO roofing systems and having installed at least one (1)_roofing application or several similar systems of equal or greater size within one year.
- E. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- F. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- G. The VersiWeld TPO White membrane meets CRRC (Cool Roof Rating Council) for reflectance and emittance. When tested in accordance with ASTM C1549, the VersiWeld White material has an initial solar reflectance of 0.79 and a 3-year aged reflectance of 0.70. The material has also been tested for emittance in accordance with ASTM C1371; an initial emittance of .90 and a 3-year aged emittance of 0.86 were achieved.

- H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.

1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Versico's VersiWeld Roofing System specification for General Job Site Considerations.

- A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Versico Authorized Roofing Contractor must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weather tight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

1.15 WARRANTY

- A. Provide manufacturer' **30 year Total System Warranty** covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 55 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.
- B. Warranty shall also cover leaks caused by accidental punctures: 16 man-hours per year.
- C. Pro-rated System Warranties **shall not** be accepted.
- D. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

PART 2 PRODUCTS

2.01 GENERAL

- A. All components of the specified roofing system shall be products of Versico or accepted by Versico as compatible.
- B. All products (including insulation, fasteners, fastening plates, prefabricated accessories and edgings) must be **manufactured and/or supplied** by the roofing system manufacturer and covered by the warranty.

2.02 MEMBRANE

Furnish VersiWeld 80-mil thick white reinforced TPO (Thermoplastic Polyolefin) membrane as needed to complete the roofing system. Membrane thickness over the reinforcing scrim (top-ply thickness) shall be nominal 15 mil thick or greater. Membrane sheets in rolls 12', 10' or 8' wide by 100' long.

2.03 INSULATION/UNDERLAYMENT

- A. Insulation shall be installed in multiple layers. Crickets will be installed at all drains to insure proper drainage.
- B. Insulation shall be VersiCore as supplied by Versico. Minimum R-value required is R-17.2. or equal
 - 1. **VersiCore MP-H Polyiso** – A foam core insulation board (flat and tapered) covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 3 (25 psi). All panels shall be 4' x 4'.
 - 2. **Dens Deck Prime Roof Board ½" is to be used as the Basis of Design.**

2.04 FASTENING COMPONENTS

A. Fasteners, Plates and Bars

- 1. **HPV Fasteners:** a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
- 2. **HPVX Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for membrane or insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
- 3. **Term Bar Nail-Ins:** A 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Versico Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
- 4. **HPVX Plates:** A 2-3/8" diameter metal barbed fastening plate used with Versico HPVX Fasteners for membrane securement.
- 5. **Insulation Fastening Plates:** a nominal 3 inch diameter metal plate used for insulation attachment.

B. Insulation Adhesive:

- 1. **Adhesive:** A two component insulating urethane adhesive used to attach insulation. Packaging formats include 50 and 15 gallon drums as well as Dual Tanks, Dual Cartridges and 5 gallon Bag in a Box formats. Dash as manufactured by Versico or equal

2.05 PRIMERS, ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Versico and specifically formulated for the intended purpose.

- A. **VersiWeld Bonding Adhesive:** A high-strength, synthetic rubber adhesive used for bonding VersiWeld membrane to various surfaces. The adhesive is applied to both the membrane and the substrate at a coverage rate of approximately 60 square feet per gallon per finished surface (includes coverage on both surfaces).
- B. **Cut-Edge Sealant:** A white or clear colored sealant used to seal cut edges of reinforced VersiWeld membrane. A coverage rate of approximately 225 - 275 linear feet per squeeze bottle can be achieved when a 1/8" diameter bead is applied.
- C. **Water Cut-Off Mastic:** Used as a mastic to prevent moisture migration at drains, compression terminations and beneath conventional metal edging (at a coverage rate of approximately 10' per tube or 100' per gallon).
- D. **Universal Single-Ply Sealant:** A 100% solids, solvent free, voc free, one part polyether sealant that provides a weather tight seal to a variety of building materials. It is white in color and is used for general caulking such as above termination bars and metal counter flashings and at scuppers.
- E. **Thermoplastic One-Part Pourable Sealer:** A one-part, moisture curing, elastomeric polyether sealant used to fill TPO Molded Pourable Sealant Pockets. Packaged in 4, 2-liter foil pouches inside a reusable plastic bucket. 1 pouch will fill 2 TPO Molded Pourable Sealant Pockets.
- F. **Weathered Membrane Cleaner:** Used to prepare membrane for heat welding that has been exposed to the elements or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).
- G. **TPO Primer:** A solvent-based primer used to prepare the surface of VersiWeld Membrane prior to application of Pressure-Sensitive Coverstrip and TPO Pressure-Sensitive RUSS.
- H. **CCW 702 Primer:** Used to treat areas of exposed asphalt prior to installation of DASH Adhesive.

2.06 METAL EDGING AND MEMBRANE TERMINATIONS

- A. **General:** All metal edging s shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code.
- B. **VersiTrim 200:** a snap-on edge system consisting of a 24 gauge galvanized metal water dam and, 24 gauge steel, Kynar 500 finish. Metal fascia color shall be as designated by the Owner's Representative. **Fascia size is to match existing!**
- C. **Heat Weldable Drip Edge:** 4'x 10' coated metal sheets made from 24 gauge galvanized steel with a minimum .035" thick non-reinforced white VersiWeld laminate. VersiWeld membrane can be welded directly to the VersiWeld Coated Metal in accordance with the manufacturer's detail. Match Existing size of fascia.
- D. **Coping:** incorporates a 20 gauge anchor cleat with 4 pre-slotted holes, a concealed joint cover and 10 foot continuous sections of coping cap; can accommodate minimum 5 " wide parapet walls. Metal coping cap color shall be as designated by the Owner's

- Representative.
- E. **Termination Bar:** a 1" wide and .098" thick extruded aluminum bar pre-punched 6" on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.
 - F. **Gutter:** New Gutter with Fascia. Fascia must be totally covers by TPO Pressure Sensitive Cover strip with minimum 2" coverage past nail heads. Size to match existing in place gutters.
 - G. **Deck to Deck Expansion Joint:** On mechanically fastened systems, HPVX fasteners and plates or HPV-XL Fasteners and plates are required over steel decks. On concrete decks, CD-10 or MP 14-10 fasteners are used with HPVX Plates.
 - H. **Drains:** Roof drain size and number of drains shall be in accordance with Local Codes. All bolts or clamps must be in place to provided constant compression on water cut-off mastic. Drains are sumped in accordance with strict and existing codes.
 - I. **Scupper with Coated Metal:**
 1. Wood Nailers are installed at scuppers to secure metal sleeve and must extend past the width of the metal sleeve flange.
 2. Install wall flashing prior to scupper installation
 3. Metal scupper box must have continuous flanges with rounded corners.
 4. Water cut-off mastic under scupper flange must be under constant compression.
 5. Scupper flanges must be totals covered by non-reinforced flashing with minimum 2" coverage past nail head.
 6. Universal single-ply sealant is required at flashing edges on scupper edge.

2.07 WALKWAYS

Protective surfacing for roof traffic shall be VersiWeld TPO Walkway Rolls installed per manufacturer's requirements or concrete pavers loose laid over an approved slip sheet (pavers not recommended for slopes greater than 2" in 12").

PART 3 EXECUTION

3.01 GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, job site considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.02 INSULATION PLACEMENT AND ATTACHMENT

- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints horizontally and vertically if multiple layers are provided.
- B. Secure insulation to the substrate with the required mechanical fasteners or insulation adhesive DASH in accordance with the manufacturer's specifications or equal.

- i. Metal Deck – First layer of new insulation shall be attached to the existing metal

- deck using HPV Fasteners and Metal Insulation Plates.
- ii. Lightweight Concrete and Cementitious Wood Fiber Deck – Mechanically fasten SBS Modified Base Ply that meets ASTM D6163, Sure MB is the guide specification recommendation. All layers shall be installed in DASH Adhesive. Exposed asphalt shall be treated with CCW 702 Primer and allowed to dry prior to installing DASH adhesive.
- iii. Concrete Deck – all layers shall be installed using approved adhesive. Exposed asphalt will be approved primer prior in applying the adhesive.

3.03 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Position VersiWeld membrane over the acceptable substrate. Fold membrane sheet back onto itself so half the underside of the membrane is exposed.
- B. Apply Bonding Adhesive in accordance with the manufacturer's published instructions, to the exposed underside of the membrane and the corresponding substrate area. Do not apply Bonding Adhesive along the splice edge of the membrane to be hot air welded over the adjoining sheet. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
 - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
 - 2. Fold back the unbonded half of the sheet and repeat the bonding procedures.
- C. Position adjoining sheets to allow a minimum overlap of 2 inches to provide a minimum 1-1/2" hot air weld.
- D. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.

3.04 MEMBRANE HOT AIR WELDING PROCEDURES

- A. Hot air weld the VersiWeld membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller immediately after welder crossed the membrane step-off to ensure a continuous hot air welded seam. **All splice intersections shall be overlaid with T-joint covers or non-reinforced flashing.**
- B. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
- C. Repair all seam deficiencies the same day they are discovered.
- D. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

3.05 FLASHING

- A. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using VersiWeld reinforced membrane. VersiWeld non-reinforced membrane can be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of prefabricated accessories is not feasible. Deviations from prefabricated accessories must be approved in writing by Versico Roofing Systems prior to installation.

- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.06 WALKWAYS

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.

3.07 DAILY SEAL

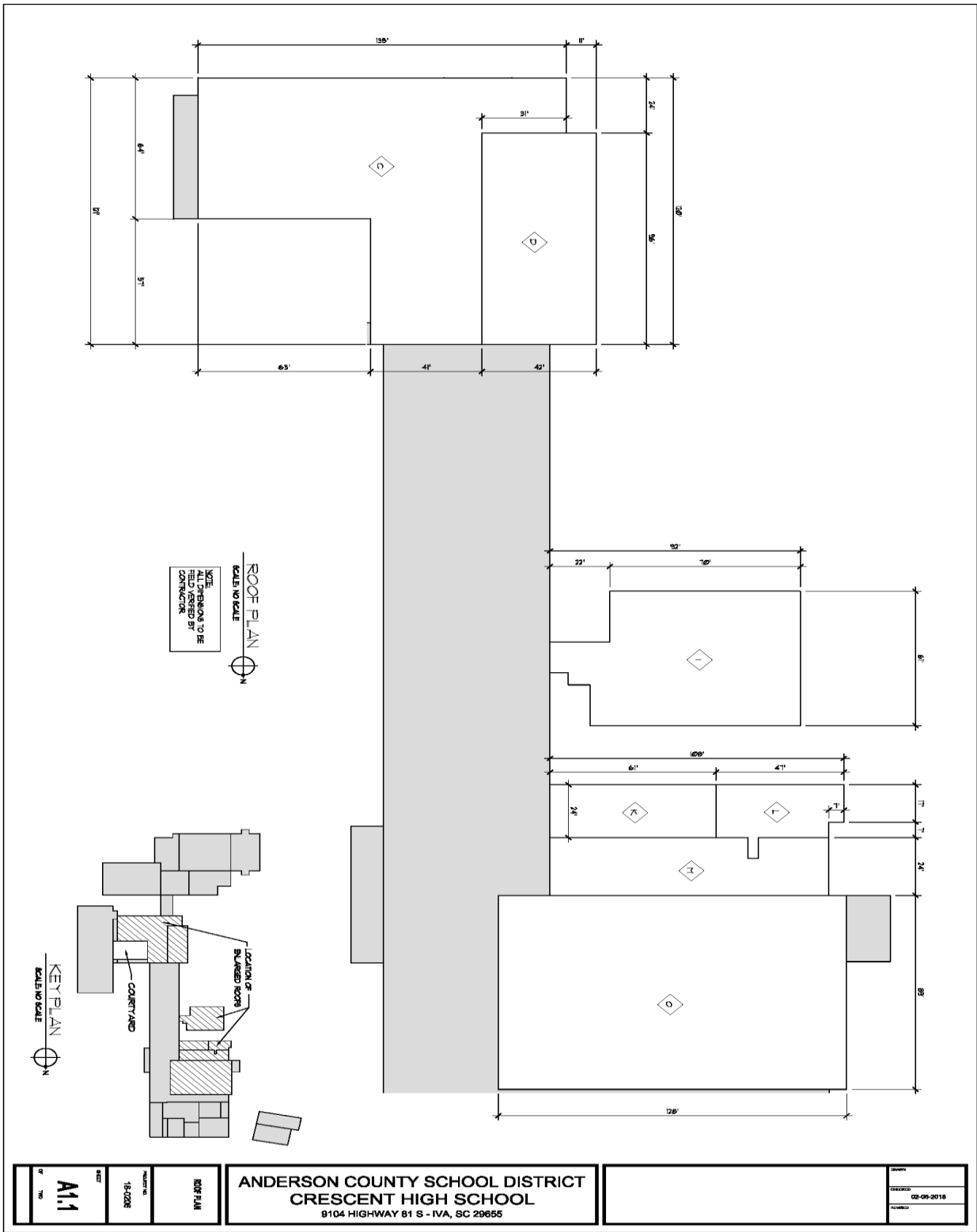
- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
- B. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

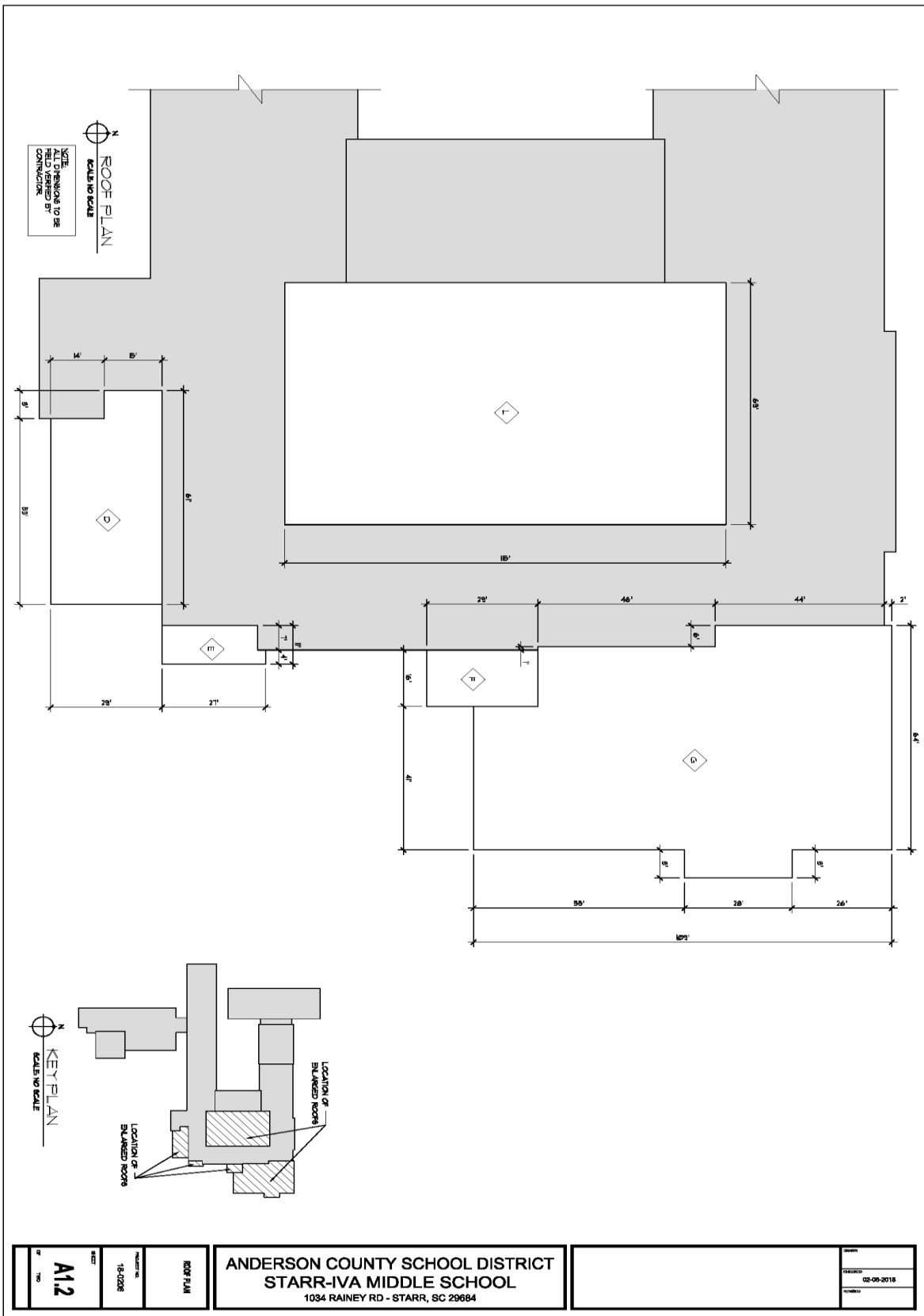
3.08 CLEAN UP

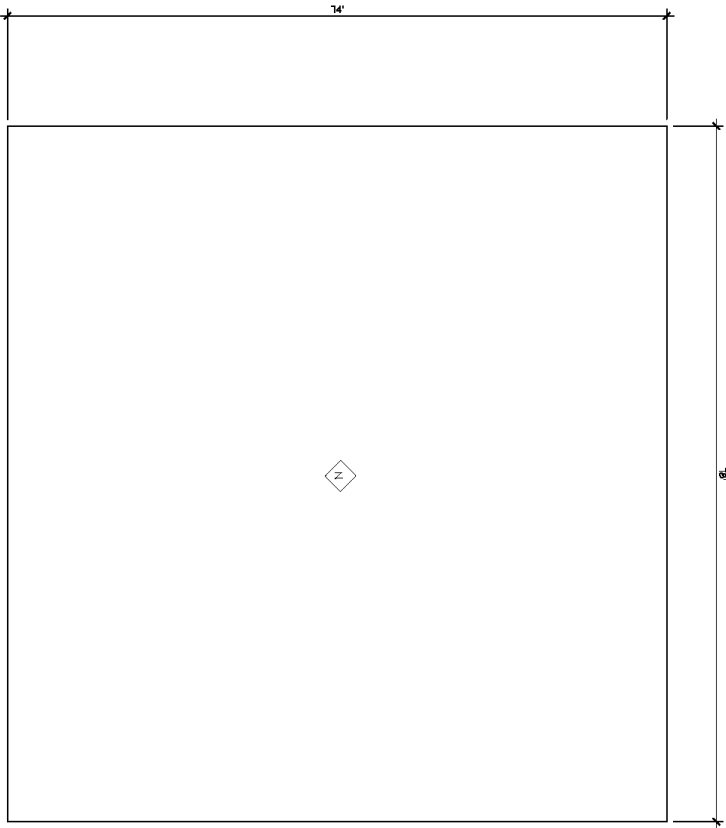
- A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SPECIFICATION

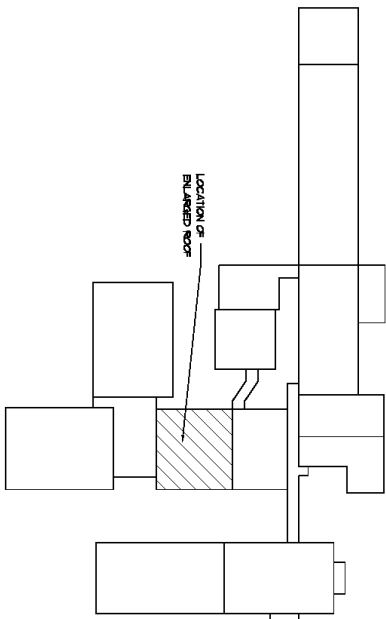
CONTRACT DRAWINGS








ROOF PLAN
 SCALE: NO SCALE
 NOTE: MEASUREMENTS TO BE FIELD VERIFIED BY CONTRACTOR



OF SHEET A1.3	REVISION 18-0305	PROJECT NO. 18-0305	ANDERSON COUNTY SCHOOL DISTRICT STARR ELEMENTARY SCHOOL 400 PROFESSOR BROWN LN, STARR, SC 29684	DRAWN CHECKED 03-05-2018 NUMBER
	ROOF PLAN			

DETAIL DRAWINGS