

**PROJECT MANUAL  
FOR**

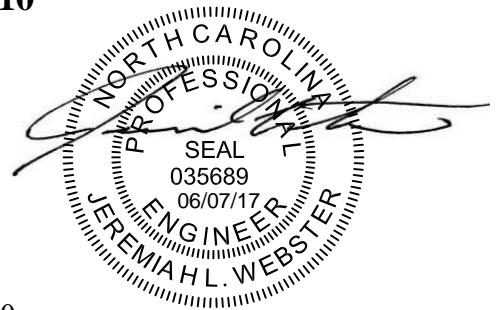


**CANE CREEK MIDDLE SCHOOL  
ROOF REPLACEMENT**

**570 LOWER BRUSH CREEK RD., FLETCHER, NC 28732**

**JUNE 2, 2017**

**REI PROJECT NO. 017CLT-110**



NC ENGINEERS LICENSE # C-1520

**REI ENGINEERS**

1927 J.N. PEASE PLACE, SUITE 201, CHARLOTTE, NC 28262

PHONE 704.596.0331 FAX 704.596.0533

ROOFING, WATERPROOFING AND BUILDING ENVELOPE ENGINEERS AND CONSULTANTS

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AN EMPLOYEE-OWNED COMPANY

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**END OF SECTION 00 01 10**

## NOTICE TO BIDDERS

Sealed proposals from bidders will be received by The Buncombe County Board of Education in the Executive Conference Room of the Office of The Buncombe County Board of Education, 175 Bingham Road, Asheville, North Carolina 28806 no later than 2:00 PM EST, June 28, 2017 for single prime contracts for the furnishing of labor, materials, and equipment entering into the construction of Cane Creek Middle School Roof Replacement.

A pre-bid meeting will be held at Cane Creek Middle School located at 570 Lower Brush Road, Fletcher, North Carolina 28732 at 10:00 AM on June 14, 2017. Attendance is recommended.

In accordance with NC General Statutes 143-128, this project will be bid using the single prime system. All proposals shall be lump sum.

The Buncombe County Board of Education has adopted guidelines for establishing a verifiable percentage goal for participation by minority businesses in projects awarded pursuant to NC General Statute 143-128 (Suppl. 2001) with respect to the erection, construction, alteration or repair of any buildings when the entire cost of such works shall exceed \$300,000. Among other things, these guidelines provide that notification will be given to certain minority businesses of the projects. The Board's contact person on MBE requirements is Mr. Ron Venturella who may be contacted at 828/255-5891 or by writing to him at 175 Bingham Road, Asheville, North Carolina 28806.

Bidders who wish to mail their proposals shall address them to Mr. Ron Venturella, Purchasing Officer, Buncombe County Schools, 175 Bingham Road, Asheville, North Carolina 28806. To prevent accidental opening, all mailed bids should be clearly marked on the mailer to indicate the project bid, "BID FOR: CANE CREEK MIDDLE SCHOOL ROOF REPLACEMENT. DO NOT OPEN UNTIL 3:00 PM EST, JUNE 28, 2017."

Complete plans and specifications for this project can be obtained from Buncombe County Schools, 175 Bingham Road, Asheville, North Carolina 28806, by contacting Mr. Ron Venturella at (828) 255-5891 during normal office hours after June 7, 2017. Qualified Bidders may obtain a full set of digital plans and specifications files in PDF format at no charge upon written request.

All Bidders are hereby notified that they must have proper license under the laws of the State of North Carolina, and that the requirements of Chapter 87 of the General Statutes of North Carolina will be observed.

Bids shall include all taxes and, in particular, North Carolina and local sales and use taxes.

Payment will be made on the basis of ninety-five (95%) of monthly estimates and final payment made upon completion and acceptance of work.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of sixty (60) days.

The Owner reserves the right to reject any or all bids and to waive informalities.

By: The Buncombe County Board of Education  
Ann Franklin, Madam Chair

# STATE OF NORTH CAROLINA/BUNCOMBE COUNTY SCHOOLS REQUEST FOR PROPOSAL

**PROJECT:** CANE CREEK MIDDLE SCHOOL  
ROOF REPLACEMENT (RFP# 41-17)

**PROJECT DESIGNER:** Mary Beth Kingston, AIA, Assistant Director of Facilities

**USING AGENCY:** Buncombe County Schools

**ISSUE DATE:** June 2, 2017

Sealed proposals from bidders subject to the conditions made a part hereof will be received until **2:00 PM on June 28, 2017** for furnishing all labor, materials, equipment, and services incidental and implied, for completion of the project described herein.

**PREBID CONFERENCE:** A pre-bid conference is scheduled for **10:00 AM on June 14, 2017** at the facility, 570 Lower Brush Road, Fletcher, NC 28732.

SEND ALL PROPOSALS DIRECTLY TO THE ADDRESS AS SHOWN BELOW:

**Buncombe County Schools, Purchasing Division**  
175 Bingham Road  
Asheville, NC 28806

NOTE: Indicate firm name and RFP number on the front of each sealed proposal envelope or package, along with the date for receipt of proposals specified above.

Direct inquiries concerning this RFP to: Mary Beth Kingston, Asst. Director Phone: 828-255-5916  
Ron Venturella, Purchasing Officer Phone: 828-255-5891

## THE PROCUREMENT PROCESS

The following is a general description of the process by which a firm will be selected to provide services.

1. Request for Proposals (RFP) is issued to prospective contractors.
2. A preproposal conference and/or deadline for written questions is five days prior to due date.
3. Proposals in one original will be received from each offeror in a sealed envelope or package. Each original shall be signed and dated by an official authorized to bind the firm. Unsigned proposals will not be considered. Bid bond and MBE forms should be included in a separate sealed envelope.
4. All proposals must be received by the issuing agency not later than the date and time specified on the cover sheet of this RFP.
5. At that date and time the proposals from each responding firm will be opened. Interested parties are cautioned that these costs and their components are subject to further evaluation for completeness and correctness and therefore may not be an exact indicator of an offeror's pricing position.
6. At their option, the evaluators may request oral presentations or discussion with any or all offerors for the purpose of clarification or to amplify the materials presented in any part of the proposal. However, offerors are cautioned that the evaluators are not required to request clarification; therefore, all proposals should be complete and reflect the most favorable terms available from the offeror.
7. Proposals will be evaluated according to completeness, content, experience with similar projects, ability of the offeror and its staff, and cost. Award of a contract to one offeror does not mean that the other proposals lacked merit, but that, all factors considered, the selected proposal was deemed most advantageous to the State.
8. Offerors are cautioned that this is a request for offers, not a request to contract, and the State/Buncombe County Schools reserves the unqualified right to reject any and all offers when such rejection is deemed to be in the best interest of the State.

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

**PROPOSAL FORM**

**CANE CREEK MIDDLE SCHOOL  
ROOF REPLACEMENT (RFP# 41-17)**

**DUE DATE: JUNE 28, 2017 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 proposed cost.
- \*\* All labor costs, direct and indirect, have been determined and included in the proposed cost.
- \*\* All taxes have been determined and included in the proposed cost.
- \*\* The offeror has attended the conference or conducted a site visit and is aware of prevailing conditions associated with performing these services.
- \*\* The potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

Therefore, in compliance with this Request for Proposals, and subject to all conditions herein, the undersigned offers and agrees, if this proposal is accepted within 45 days (normally less) from the date of the opening, to furnish the subject services for a cost not to exceed:

OFFEROR: \_\_\_\_\_

**Base Bid:**

\$ \_\_\_\_\_ dollars and \_\_\_\_\_ /100 \$ \_\_\_\_\_

**CONTINGENCY ALLOWANCE INCLUDED:**

It is to be understood that the above base bid amount includes a project contingency allowance of \$25,000.00. This contingency allowance is to be governed as per the terms and conditions specified in Section 01 21 00 of the Project Manual.

The above base bid includes the Quantity Allowances below as per the terms and conditions specified in Section 01 21 00 of the Project Manual.

- QA1:** Replace 5,000 sq. ft. of Plywood Substrate below Asphalt Shingles. \$ \_\_\_\_\_
- QA2:** Replace 300 bd. ft. of Deteriorated Polyisocyanurate Insulation ..... \$ \_\_\_\_\_
- QA3:** Replace 500 bd. ft. of Deteriorated Wood Blocking ..... \$ \_\_\_\_\_

**UNIT PRICES:**

United prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the scope of the work all in accordance with the contract documents.

- UP-1:** Replace Plywood Substrate below Asphalt Shingles..... \$ \_\_\_\_\_ /SF
- UP-2:** Replace Deteriorated Polyisocyanurate Insulation ..... \$ \_\_\_\_\_ /BF
- UP-3:** Replace Deteriorated Wood Blocking..... \$ \_\_\_\_\_ /BF

**(Proposal Form Continued on Next Page)**

**PROPOSAL FORM (CONTINUED)**

**CANE CREEK MIDDLE SCHOOL  
ROOF REPLACEMENT (RFP# 41-17)**

**DUE DATE: JUNE 28, 2017 by 2:00 PM**

OFFEROR: \_\_\_\_\_

**MANUFACTURERS:**

Base bid shall utilize metal roof panel materials manufactured by \_\_\_\_\_ .  
(One manufacturer only)

Base bid shall utilize TPO materials manufactured by \_\_\_\_\_ .  
(One manufacturer only)

**SCHEDULE OF COMPLETION:**

Project approval will be requested during the August 3, 2017 Board of Education meeting. The undersigned hereby agrees commence work on this project no later than March 5, 2018 with all work being substantially complete within one hundred eighty (180) calendar days from date of commencement. Date of commencement will be established by written Notice to Proceed to the Contractor. Contractor is subject to liquidated damages in the amount of \$250.00 per calendar day for each day in excess of the substantial completion deadline. Final completion all work shall be obtained within fifteen (15) calendar days of the date of substantial completion. Contractor is subject to liquidated damages in the amount of \$250.00 per calendar day for each day in excess of the final completion.

**SUBCONTRACTORS:**

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

Trade: _____	Company _____
Trade: _____	Company _____
Trade: _____	Company _____
Trade: _____	Company _____

**We do not plan to use subcontract forces:** \_\_\_\_\_  
Contractor Signature (sign if applicable)

**(Proposal Form Continued on Next Page)**

**PROPOSAL FORM (CONTINUED)**

**CANE CREEK MIDDLE SCHOOL  
ROOF REPLACEMENT (RFP# 41-17)**

**DUE DATE: JUNE 28, 2017 by 2:00 PM**

Attended Pre-Bid Mtg: YES/NO \_\_\_\_\_

Addendums received and used in computing bid: YES/NO \_\_\_\_\_ Number of Addendums received: \_\_\_\_\_

OFFEROR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FAX: \_\_\_\_\_

FED ID No: \_\_\_\_\_ Type & License #: \_\_\_\_\_

E-MAIL: \_\_\_\_\_ MBE Status: \_\_\_\_\_

Principal Place of Business if different from above (See General Information on Submitting Proposals, Item 18.): \_\_\_\_\_

BY: (Signature) \_\_\_\_\_ TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_ (Typed or printed name) \_\_\_\_\_

**End of Proposal Form**

**Bid bond and MBE forms are required. Bidder must use bond forms included in the bid package. Please include bid bond and MBE forms in separate sealed envelope from proposal form.**



## GENERAL INFORMATION ON SUBMITTING PROPOSALS

1. **EXCEPTIONS:** All proposals are subject to the terms and conditions outlined herein. All responses shall be controlled by such terms and conditions and the submission of other terms and conditions, price lists, catalogs, and/or other documents as part of an offeror's response will be waived and have no effect either on this Request for Proposals or on any contract that may be awarded resulting from this solicitation. Offeror specifically agrees to the conditions set forth in the above paragraph by signature to the proposal.
2. **CERTIFICATION:** By executing the proposal, the signer certifies that this proposal is submitted competitively and without collusion (G.S. 143-54), that none of our officers, directors, or owners of an unincorporated business entity has been convicted of any violations of Chapter 78A of the General Statutes, the Securities Act of 1933, or the Securities Exchange Act of 1934 (G.S. 143-59.2), and that we are not an ineligible vendor as set forth in G.S. 143-59.1. False certification is a Class I felony.
3. **ORAL EXPLANATIONS:** The State/Buncombe County Schools shall not be bound by oral explanations or instructions given at any time during the competitive process or after award.
4. **REFERENCE TO OTHER DATA:** Only information which is received in response to this RFP will be evaluated; reference to information previously submitted shall not be evaluated.
5. **ELABORATE PROPOSALS:** Elaborate proposals in the form of brochures or other presentations beyond that necessary to present a complete and effective proposal are not desired.

In an effort to support the sustainability efforts of the State of North Carolina we solicit your cooperation in this effort.

**It is desirable that all responses meet the following requirements:**

- All copies are printed **double sided**.
  - All submittals and copies are printed on **recycled paper with a minimum post-consumer content of 30%** and indicate this information accordingly on the response.
  - Unless absolutely necessary, all proposals and copies should **minimize or eliminate use of non-recyclable or non-re-usable materials** such as plastic report covers, plastic dividers, vinyl sleeves, and GBC binding. Three-ringed binders, glued materials, paper clips, and staples are acceptable.
  - Materials should be submitted in a format which allows for **easy removal and recycling** of paper materials.
6. **COST FOR PROPOSAL PREPARATION:** Any costs incurred by offerors in preparing or submitting offers are the offerors' sole responsibility; the State of North Carolina/Buncombe County Schools will not reimburse any offeror for any costs incurred.
  7. **TIME FOR ACCEPTANCE:** Each proposal shall state that it is a firm offer which may be accepted within a period of 45 days. Although the contract is expected to be awarded prior to that time, the 45-day period is requested to allow for unforeseen delays.
  8. **TITLES:** Titles and headings in this RFP and any subsequent contract are for convenience only and shall have no binding force or effect.
  9. **CONFIDENTIALITY OF PROPOSALS:** In submitting its proposal the offeror agrees not to discuss or otherwise reveal the contents of the proposal to any source outside of the using or issuing agency, government or private, until after the award of the contract. Offerors not in compliance with this provision may be disqualified, at the option of the State/Buncombe County Schools, from contract award. Only discussions authorized by the issuing agency are exempt from this provision.
  10. **RIGHT TO SUBMITTED MATERIAL:** All responses, inquiries, or correspondence relating to or in reference to the RFP, and all other reports, charts, displays, schedules, exhibits, and other documentation submitted by the offerors shall become the property of the State/Buncombe County Schools when received.
  11. **OFFEROR'S REPRESENTATIVE:** Each offeror shall submit with its proposal the name, address, and telephone number of the person(s) with authority to bind the firm and answer questions or provide clarification concerning the firm's proposal.
  12. **SUBCONTRACTING:** Offerors may propose to subcontract portions of the work provided that their proposals clearly indicate what work they plan to subcontract and to whom and that all information required about the prime contractor is also included for each proposed subcontractor.
  13. **PROPRIETARY INFORMATION:** Trade secrets or similar proprietary data which the offeror does not wish disclosed to other than personnel involved in the evaluation or contract administration will be kept confidential to the extent permitted by NCAC T01:05B.1501 and G.S. 132-1.3 if identified as follows: Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL". Any section of the proposal which is to remain confidential shall also be so marked in boldface on the title page of that section. Cost information may not be deemed confidential. In spite of what is labeled as confidential, the determination as to whether or not it is shall be determined by North Carolina law.

14. **HISTORICALLY UNDERUTILIZED BUSINESSES:** Pursuant to General Statute 143-48 and Executive Order #150, Buncombe County Schools invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled.

The Contractor agrees in particular to maintain open hiring and employment practices and to receive applications for employment in compliance with all requirements of applicable federal, state and local laws and regulations issued pursuant thereto relating to nondiscriminatory hiring and employment practices. Each Prime Contractor shall undertake an affirmative action program to ensure that no person shall be excluded from participation in any employment activities because of age, sex, race, religion, color, national origin or handicap.

15. **PROTEST PROCEDURES:** If an offeror wants to protest a contract awarded pursuant to this solicitation, they must submit a written request to the Purchasing Officer, Buncombe County Schools, 175 Bingham Road, or PO Box 16771, Asheville, NC 28806. This request must be received by the Purchasing Division within thirty (30) consecutive calendar days from the date of the contract award, and must contain specific sound reasons and any supporting documentation for the protest. **NOTE:** Contract award notices are sent only to those actually awarded contracts, and not to every person or firm responding to this solicitation. Contract status and award notices are available through the purchasing division or the project designer with contact information as shown on the first page of this solicitation. Offeror's may call to obtain a verbal status of contract award. All protests will be handled pursuant to the North Carolina Administrative Code, Title 1, Department of Administration, Chapter 5, Purchase and Contract, Section 5B.1519.
16. **TABULATIONS:** Offeror's may call the purchasing division to obtain a verbal status of contract award.
17. **VENDOR REGISTRATION AND SOLICITATION NOTIFICATION SYSTEM:** Vendor Link NC allows vendors to electronically register free with the State to receive electronic notification of current procurement opportunities for goods and services available on the Interactive Purchasing System. Online registration and other purchasing information are available on the Internet web site: <http://www.state.nc.us/pandc/>.
18. **RECIPROCAL PREFERENCE:** G.S. 143-59 establishes a reciprocal preference law to discourage other states from applying in-state preferences against North Carolina's resident offerors. The "Principal Place of Business" is defined as the principal place from which the trade or business of the offeror is directed or managed.

## NORTH CAROLINA GENERAL CONTRACT TERMS AND CONDITIONS (Contractual and Consultant Services)

1. **GOVERNING LAW:** This contract is made under and shall be governed and construed in accordance with the laws of the State of North Carolina.
2. **SITUS:** The place of this contract, its situs and forum, shall be North Carolina, where all matters, whether sounding in contract or tort, relating to its validity, construction, interpretation and enforcement shall be determined
3. **INDEPENDENT CONTRACTOR:** The Contractor shall be considered to be an independent contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. The Contractor represents that it has, or will secure at its own expense, all personnel required in performing the services under this agreement. Such employees shall not be employees of, or have any individual contractual relationship with the Agency.
4. **KEY PERSONNEL:** The Contractor shall not substitute key personnel assigned to the performance of this contract without prior written approval by the Agency's Contract Administrator. The individuals designated as key personnel for purposes of this contract are those specified in the Contractor's proposal.
5. **SUBCONTRACTING:** Work proposed to be performed under this contract by the Contractor or its employees shall not be subcontracted without prior written approval of the Agency's Contract Administrator/Project Designer. Acceptance of an offeror's proposal shall include any subcontractor(s) specified therein.
6. **PERFORMANCE AND DEFAULT:** If, through any cause, the Contractor shall fail to fulfill in timely and proper manner the obligations under this agreement, the Agency shall thereupon have the right to terminate this contract by giving written notice to the Contractor and specifying the effective date thereof. In that event, all finished or unfinished deliverable items under this contract prepared by the Contractor shall, at the option of the Agency, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such materials. Notwithstanding, the Contractor shall not be relieved of liability to the Agency for damages sustained by the Agency by virtue of any breach of this agreement, and the Agency may withhold any payment due the Contractor for the purpose of setoff until such time as the exact amount of damages due the Agency from such breach can be determined. In case of default by the Contractor, the State may procure the services from other sources and hold the Contractor responsible for any excess cost occasioned thereby. The State reserves the right to require performance bond or other acceptable alternative guarantees from successful offeror without expense to the State.

Upon the entering of a judgment of bankruptcy of insolvency by or against the Contractor, the Agency may terminate this contract for cause.

Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

7. **TERMINATION:** The Agency may terminate this agreement at any time by *15 days'* notice in writing from the Agency to the Contractor. In that event, all finished or unfinished deliverable items prepared by the Contractor under this contract shall, at the option of the Agency, become its property. If the contract is terminated by the Agency as provided herein, the Contractor shall be paid for services satisfactorily completed, less payment or compensation previously made.
8. **AVAILABILITY OF FUNDS:** Any and all payments to the Contractor are dependent upon and subject to the availability of funds to the Agency for the purpose set forth in this agreement.
9. **CONFIDENTIALITY:** Any information, data, instruments, documents, studies or reports given to or prepared or assembled by the Contractor under this agreement shall be kept as confidential and not divulged or made available to any individual or organization without the prior written approval of the Agency.
10. **CARE OF PROPERTY:** The Contractor agrees that it shall be responsible for the proper custody and care of any property furnished it for use in connection with the performance of this contract or purchased by it for this contract and will reimburse the State for loss of damage of such property.
11. **COPYRIGHT:** No deliverable items produced in whole or in part under this agreement shall be the subject of an application for copyright by or on behalf of the Contractor.
12. **ACCESS TO PERSONS AND RECORDS:** The State Auditor shall have access to persons and records as a result of all contracts or grants entered into by State agencies or political subdivisions in accordance with General Statute 147-64.7. The Contractor shall retain all records for a period of three years following completion of the contract.

13. **ASSIGNMENT:** No assignment of the Contractor's obligations nor the Contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the issuing purchasing authority, the State may:
- Forward the contractor's payment check(s) directly to any person or entity designated by the Contractor, or
  - Include any person or entity designated by Contractor as a joint payee on the Contractor's payment check(s).
- In no event shall such approval and action obligate the State to anyone other than the Contractor and the Contractor shall remain responsible for fulfillment of all contract obligations.
14. **COMPLIANCE WITH LAWS:** The Contractor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements (permits) that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.
15. **AFFIRMATIVE ACTION:** The Contractor shall take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of people with disabilities, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin, or disability.
16. **INSURANCE:** During the term of the contract, the contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:
- Worker's Compensation - The contractor shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of \$150,000.00, covering all of Contractor's employees who are engaged in any work under the contract. If any work is subcontracted, the contractor shall require the subcontractor to provide the same coverage for any of its employees engaged in any work under the contract.
  - Commercial General Liability - General Liability Coverage on a Comprehensive Broad Form on an occurrence basis in the minimum amount of \$2,000,000.00 Combined Single Limit. (Defense cost shall be in excess of the limit of liability).
  - Automobile - Automobile Liability Insurance, to include liability coverage, covering all owned, hired and non-owned vehicles, used in connection with the contract. The minimum combined single limit shall be \$500,000.00 bodily injury and property damage; \$500,000.00 uninsured/under insured motorist; and \$100,000.00 medical payment.

Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

The Contractor shall furnish a Certificate of Insurance as proof of the above coverages. Certificate will contain provision that the insurance coverages cannot be canceled, reduced in amount or coverage eliminated without 30 days written notice to the Buncombe County Board of Education. Owner's Protective insurance must list the Buncombe County Board of Education as a "Named Insured" as it's interest may appear. Owner's approval of Certificate of Insurance does not decrease or relieve the contractor's responsibility for maintaining insurance coverage as required in this Request for Proposal.

17. **ADVERTISING:** Contractor agrees not to use the existence of this contract, the name of the agency, or the name of the State of North Carolina as part of any commercial advertising.
18. **ENTIRE AGREEMENT:** This contract and any documents incorporated specifically by reference represent the entire agreement between the parties and supersede all prior oral or written statements or agreements. This Request for Proposals, any addenda thereto, and the offeror's proposal are incorporated herein by reference as though set forth verbatim.
- All promises, requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statutes of limitation.
19. **AMENDMENTS:** This contract may be amended only by written amendments duly executed by the Agency and the Contractor.

20. **TAXES:** G.S. 143-59.1 bars the Secretary of Administration from entering into contracts with vendors if the vendor or its affiliates meet one of the conditions of G. S. 105-164.8(b) and refuse to collect use tax on sales of tangible personal property to purchasers in North Carolina. Conditions under G. S. 105-164.8(b) include: (1) Maintenance of a retail establishment or office, (2) Presence of representatives in the State that solicit sales or transact business on behalf of the vendor and (3) Systematic exploitation of the market by media-assisted, media-facilitated, or media-solicited means. By execution of the bid document the vendor certifies that it and all of its affiliates, (if it has affiliates), collect(s) the appropriate taxes.
21. **GENERAL INDEMNITY:** The contractor shall hold and save the State/Buncombe County Schools, its officers, agents, and employees, harmless from liability of any kind, including all claims and losses, with the exception of consequential damages, accruing or resulting to any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm, or corporation that may be injured or damaged by the contractor in the performance of this contract and that are attributable to the negligence or intentionally tortious acts of the contractor provided that the contractor is notified in writing within 30 days that the State/Buncombe County Schools has knowledge of such claims. The contractor represents and warrants that it shall make no claim of any kind or nature against the State's agents who are involved in the delivery or processing of contractor goods to the State. The representation and warranty in the preceding sentence shall survive the termination or expiration of this contract.

CONTRACTOR'S SALES TAX REPORT  
 NC State and Local Sales Taxes Paid

*Buncombe County Schools*

CONTRACTOR: \_\_\_\_\_ PO#/RFP# \_\_\_\_\_

Address: \_\_\_\_\_ For Period: \_\_\_\_\_

Invoice Date	Invoice #	Type of Property	NC Tax 4.75%	County Tax 2.25%	Name of County
		<b>TOTAL</b>	<b>\$</b>	<b>\$</b>	

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

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

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

\_\_\_\_\_  
Print or Type Name of Above & Title

Seal

NOTE:  
This certified statement may be subject to audit.

The North Carolina General Assembly has amended the Statute to provide refunds of sales and use tax to local school units in accordance with the provisions of G.S. 105-164. 14(c) effective with tax paid on or after July 1, 1998.

These refunds are to include the "sales and use taxes paid by contractors on building materials, supplies, fixtures and equipment that become a part of or annexed to a building or structure that is owned or leased by the governmental entity and is being erected, altered or repaired for use by the governmental entity (G.S. 105-164.14)."

Sales and Use Tax Technical Bulletin Section 18-2F specifies: "To substantiate a refund claim for sales or use taxes paid on purchases of building materials, supplies, fixtures and equipment by its contractor, the claimant must secure from such contractor certified statements setting forth all of the following information:

- a. the date the property was purchased;
- b. the type of property purchased;
- c. the project for which the property was used;
- d. if the property was purchased in this State, the county in which it was purchased;
- e. if the property was not purchased in this State, the county in which the property was used; and
- f. the amount of sales and use taxes paid.

In the event the contractor makes several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the State and local sales and use taxes paid thereon. Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of sales and use tax paid thereon by the contractor. Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant. Any local sales or use taxes must be shown separately from the State sales or use taxes. The contractor's statements must not contain sales or use taxes paid on purchases of tangible personal property purchased by such contractors for use in performing the contract which does not annex to, affix to or in some manner become a part of the building or structure that is owned or leased by a governmental agency and is being erected, altered or repaired for use by a governmental entity as defined by G.S. 105-164.14(c). Examples of property on which sales or use tax has been paid by the contractor and which shall not be included in the contractor's statement are scaffolding, forms for concrete, fuel for the operation of machinery and equipment, tools, repair parts and equipment rentals.

Please read entire specification package. You will be held accountable for all information. NO payment shall be made if specifications are not followed.

**Scope:** Work shall consist of furnishing all labor, materials, equipment and services, incidental for the completion of work as described herein. All items not specifically mentioned in the specifications, but which obviously are required to make the job complete, shall be included automatically.

**Project Description:** The work consists of roof replacement at Cane Creek Middle School as specified.

**Qualifications:** All Bidders must have proper licenses for contractors as required by North Carolina State Law. Metal roof panels and metal retrofit framing shall not be subcontracted. Installer of metal roof panels and metal retrofit framing shall be the prime contractor. Prime Contractor s must have General Construction license or Specialty Roofing and Specialty Steel Erection License in order to comply with State Law for proper licensure for the work specified.

**Contractor's Responsibility:** The Contractor shall be responsible for the construction site during the performance of the work. The Contractor shall be responsible for any and all damages to persons and property during the performance of the work and shall further provide all necessary safety measures and shall fully comply with all federal state and local laws, building rules, rules and regulations to prevent accidents or injury to persons or property on or about the location of the work site. This is to include OSHA 1910, General Construction, or those regulations mandated by these specifications. Special attention will be made to proper barricading of the work areas due to the work progressing within an actively operating office atmosphere.

**Safety Regulations:** The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974 Federal Register) which is hereby incorporated in these specifications.

**Codes:** All work shall be done in accordance with the specifications and shall comply with North Carolina Building Code, Underwriters' Rules and Regulations and Federal, State and Local Regulations covering work of this nature. Whenever drawings or specifications are in excess of such laws, codes and regulations, the specifications shall hold. All equipment shall have U. L. labels attached.

**Permits:** The Contractor must secure all permits required for the job completion, obtain and deliver to Owner, all certification of inspection issued by the authorities having jurisdiction, with Contractor paying cost of same. Permitting is through the Permitting Division of Buncombe County and Western North Carolina (WNC) Regional Air Quality Agency. **All final certificates must be delivered to owner prior to request for final payment.**

**Workers on Job:** All employees of the Contractor shall, while on Buncombe County Board of Education property, act in a professional and courteous manner. All workers shall be expected to wear long pants and shirts while on Board property. Also, all employees of the Contractor must "sign in" in the main office upon entering the facility and must "sign out" upon leaving the property. Any employee of the Contractor may be told to leave the property by either the Principal or the Assistant Director, if they do not follow the above procedure. The employee shall be replaced with another at no additional cost to the Buncombe County Board of Education.

In accordance with G.S. 14-208.18, all persons who (1) are required to register under the Sex Offender and Public Protection Program AND (2) have been convicted of certain sexually violent offenses or any offense where the victim was under the age of 16 years at the time of the offense are expressly forbidden to knowingly be present on any property owned or operated by the school system, including school buildings, athletic fields, playgrounds, parking lots, school buses, activity buses or other property of any kind for any reason, including



attendance at sporting events or other school related functions, whether before, during or after school hours. It is the responsibility of the contractor or vendor that their employees and sub-contractors are in accordance with G.S. 14-208.18.

**E-Verify:** Contractor shall comply with E-Verify, the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law and as in accordance with N.C.G.S. §64-25 et seq. In addition, to the best of Contractor's knowledge, any subcontractor employed by Contractor as a part of this contract shall be in compliance with the requirements of E-Verify and N.C.G.S. §64-25 et seq.

**Iran Divestment Act:** North Carolina Local Government Units may not enter into contracts with any entity or individual found on the State Treasurer's Iran Final Divestment List N.C.G.S. 143C-6A. By bidding on this project, the bidder certifies it is not listed on the Final Divestment List created by the State Treasurer.

**Equipment and Tools:** The Contractor shall use no equipment or tools that are owned by the Buncombe County Board of Education. Also, no employees of the Buncombe County Board of Education shall be utilized by the Contractor except for opening locked doors and giving directions.

**Materials:** No materials shall be stored on site and the Buncombe County Board of Education is not responsible for any materials, equipment or tools lost or stolen from the site.

**Change in the Work:** Changes in the work after execution of the purchase order shall be based upon written agreement by the Owner and the Contractor.

When unforeseen site conditions are identified that require time sensitive changes in the work, the Owner may authorize the Contractor to perform the work, who shall document the time and materials spent to perform the work. The contractor shall provide a lump sum itemized and supported by sufficient substantiating data to permit evaluation, including timesheets, digital photos, material lists and invoices as requested.

For all Change Orders, Overhead, Profit and General Conditions combined, in the total cost to the Owner, shall not exceed the following:

For additive change order work (lump sum):

1. For a Prime Contractor, for any Work performed by its own forces, twenty percent (20%) of the cost.
2. For a Prime Contractor, for Work performed by its subcontractor, ten percent (10%) of the amount due the subcontractor.
3. For each subcontractor included, for any Work performed by the subcontractor's own forces, fifteen percent (15%) of the cost.

Deductive change order work (lump sum)

The Prime Contractor shall include a deduction of at least ten percent (10%) profit. No deduction is required for overhead.

Additive or Deductive Change Order work (unit price)

Overhead, Profit and General Conditions are included in unit prices. Unit Prices are to be added to or deducted from the purchase order as a net amount.

**Clean Up:** The area of work shall be cleaned daily so that the Buncombe County Board of Education shall not incur any additional costs to make the area suitable for the work process. Also, the Contractor shall utilize no trash receptacles or dumpsters owned by the Buncombe County Board of Education. All trash and removed materials shall be properly disposed of off the property.

**Performance of Work:** All work shall be performed at the highest level of quality. The Owner shall be responsible for determining the quality of work, and may notify the Contractor of same. **ANY WORK COMPLETED THAT IS NOT SUITABLE TO THE OWNER SHALL BE REPEATED BY THE CONTRACTOR AT NO COST TO THE OWNER.** Any damage to existing area or utilities will be the responsibility of the Contractor. **NO EXCEPTIONS.**

**Bonds:** A bid bond is required from each bidder. The winning bidder will be required to provide a performance and payment bond before the contract is awarded. Bond forms are included with the RFP.

**Bidding Instructions:** Proposal form must be completed and signed. Bid bond and MBE forms are required. Bidder must use bond forms included in the bid package. Please include bid bond and MBE forms in separate sealed envelope from proposal form.

The Buncombe County Board of Education reserves the right to reject any or all bids for any or no reason, and to waive informalities.

**END OF SECTION 00 20 01**

Section 00 20 04

**GENERAL CONDITIONS**

The General Conditions for the project shall be AIA Document A201-2007, entitled; "General Conditions of the Contract for Construction". A copy of the General Conditions is available from the owner upon request.

**END OF GENERAL CONDITIONS**

## SUPPLEMENTARY GENERAL CONDITIONS

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### AMENDMENT (MODIFICATIONS) TO GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A201-2007

NOTE: All references to "Article", "§", and "Section" refer to the matching Article number and Section number in AIA document A201-2007.

1. § 1.1.1 shall be amended by adding "as amended" after the first use of "Agreement" in the first sentence of the paragraph, placing a period after "(hereinafter the Agreement)" and deleting the remainder of the first sentence of the paragraph following the period;

Add the words "for Construction" after the word "Contract" in the second sentence of the paragraph and deleting the last sentence of the paragraph.

2. § 1.1.2 shall be amended by adding "Agreement and the" after the first word of the first sentence;

Add "(hereinafter "the Contract")" in the first sentence after "Construction";

Delete the fourth and fifth sentences of the paragraph.

3. § 1.1.7 shall be amended by: Changing the title to "**PROJECT MANUAL**" and deleting the entire paragraph and replacing the paragraph with the following:

The Project Manual is a printed volume or volumes assembled for the Work of the Project which includes the bidding or proposal requirements, sample forms, Conditions of the Contract, Specifications and other Contract Documents. The Project Manual is part of the Contract Documents.

4. § 1.1.9 shall be added as follows:

#### **§ 1.1.9 PROJECT MANUAL ADDENDA**

Project Manual Addenda are written or graphic instruments issued prior to the execution of the Contract, which modify or interpret the bidding or proposal documents, including Drawings and Specifications, by additions, deletions, clarifications, or corrections. Addenda are part of the Contract Documents.

5. § 1.1.10 shall be added as follows:

#### **§ 1.1.10 ABBREVIATIONS**

AIA: American Institute of Architects  
ACI: American Concrete Institute

AHERA:	Asbestos Hazardous Emergency Response Act
AISI:	American Iron and Steel Institute
AISC:	American Institute of Steel Construction
ASA:	American Standards Association
ASTM:	American Society of Testing Materials
AWSC:	American Welding Society Code
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act
EPA:	Environmental Protection Agency
FS:	Federal Specification
NEC:	National Electrical Code
NIC:	Not in Contract. Indicates work not to be done by this Contractor under this contract.
OSHA:	Occupational Safety and Health Administration
SPR:	Simplified Practice Recommendation
UL:	Underwriters Laboratories, Inc.

6. § 1.2.4 shall be added as follows:

**§ 1.2.4** When the Contract Documents refer to standards, building codes, manufacturers' instructions, or other documents, unless otherwise specified, then the current edition as of the date of execution of the Agreement by the last party to execute said Agreement shall apply. It shall be the responsibility of the Architect to address revisions or amendments to applicable codes of standards which arise after the date of execution of the Agreement and until Final Completion, pursuant to the terms of the Agreement between Owner and Architect. Requirements of public authorities apply as minimum requirements only and do not supersede more stringent specified requirements.

7. § 1.3 shall be amended by capitalizing the letter "A" in the word "Articles" and by adding the words "and Sections" after the word "Articles".

8. § 1.5 and § 1.6 shall be deleted and replaced with the following § 1.5:

**§ 1.5 OWNERSHIP AND USE OF THE CONTRACT DOCUMENTS**

The Contract Documents are the property of the Owner which may be used by the Contractor, Subcontractors, materials and equipment suppliers for the Project only, and not for other projects or work.

9. § 2.1.1 shall be deleted and replaced with the following:

**§ 2.1.1** The Owner is the body corporate board of education described in the Agreement. The Owner acts through vote of a majority of its board members (hereinafter "the Board") at official meetings of the Board. The Board, by majority vote, is the only representative of the Owner having the power to enter into or amend the Contract, to approve changes in the scope of the Work, to approve and execute a Change Order or Construction Change Directive modifying the Contract Sum or Guaranteed Maximum Price, or to agree to an extension to the dates of Substantial or Final Completion. The Board will act when requested in writing to do so as soon

as reasonably possible to avoid undue delays. The Board will designate an authorized representative to act on its behalf for day-to-day operations under the Contract. Unless otherwise designated in the Contract Documents, the Owner's authorized representative shall be the Superintendent of Schools. The Owner's authorized representative, or their delegate, has the authority to approve changes to the Work where such changes do not exceed \$ \_\_\_\_\_, or will not increase the dates for Substantial or Final Completion by more than \_\_\_\_ ( ) days. Any such change shall be confirmed in writing between the Contractor and the Owner's Superintendent or designee, and notice of such approved changes shall be given to the Board at its next regular meeting. The Architect does not have such authority except as otherwise provided in the Contract Documents. Neither the Architect nor the Contract Documents may rely upon direction of any employee of the Owner who has not been designated in writing by the Superintendent or the Board; the Owner shall not be financially responsible for actions taken by the Architect or the Contractor in reliance upon direction from unauthorized persons.

10. § 2.1.2 shall be deleted and replaced with the following:

**§ 2.1.2** It shall be distinctly understood that no mechanic, Contractor, Subcontractor, material or equipment supplier, supplier of labor services, shall ever in any manner have, claim, or acquire any lien upon the buildings, equipment, or furnishings or any of the improvements of whatsoever nature or kind so erected or to be erected by virtue of this Contract or upon any of the land on which said buildings or any of its improvements are to be erected, built or situated, such property belonging to a political subdivision of the State of North Carolina.

11. § 2.1.3 shall be added as follows:

**§ 2.1.3** The Owner shall require the Contractor, the Subcontractors, the Architect and the Architect's consultants to meet periodically at mutually-agreed-upon intervals, for the purpose of establishing procedures to facilitate cooperation, communication, and timely responses among the participants in the performance of the Work.

12. § 2.1.4 shall be added as follows:

**§ 2.1.4** The Owner may require that the Contractor use and/or respond to certain Owner furnished forms or inquiries regarding the status of the Work during the course of the Project. From time to time, there may be future revisions, changes, additions, or deletions to these forms. The fact that the Owner modifies and increases reasonable reporting requirements shall not serve as the basis for a claim for additional time or compensation by the Contractor.

13. § 2.1.5 shall be added as follows:

**§ 2.1.5** The Contractor stipulates and agrees that the Owner has no duty to discover any design defects, errors, or omissions whether in the Drawings, Plans, Specifications and other Construction Documents. The Owner will, however, notify the Contractor and the Architect of design defects, errors or omissions of which the Superintendent of the Board or the Board have actual knowledge. By entering into the Contract Documents or any Agreement with any

Architect, the Owner does not warrant the adequacy and accuracy of any Drawings, Plans, Specifications or other Construction Documents.

14. § 2.2.1 shall be deleted:
15. § 2.2.5 shall be amended by deleting the number "1.5.2" and adding the number "1.5".
16. §§ 3.1.1, 3.1.2, and 3.1.3 shall be amended by deleting the word "Documents" in all three sections.
17. § 3.1.4 shall be added as follows:

**§ 3.1.4** The Contractor represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute this Contract, which representations and warranties shall survive the execution and delivery of the Contract and the Final Completion of the Work:

- .1 that it is financially solvent, able to pay its debts as they mature, and possessed of sufficient working capital to complete the Work and perform its obligations under the Contract;
- .2 that it is able to furnish the tools, materials, supplies, machinery, equipment and labor required to timely complete the Work and perform its obligations hereunder and has sufficient experience and competence to do so;
- .3 that it is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental, public, and quasi-public authorities having jurisdiction over it, the Work, or the site of the Project; and
- .4 that the execution of the Contract and its performance thereof are within its duly authorized powers.

18. § 3.2.1 shall be amended by adding the following at the end of the existing paragraph:

The Contractor represents and warrants by submission of a Proposal that he has carefully examined the Project Manual and Addenda, the Contract Documents, any soil test reports, drainage studies, geotechnical or other reports and the site of the Work, and that, from his own investigations, he has satisfied himself as to the nature and location of the Work, the condition of the site, the scope of the Work, weather conditions at the site of the Work, the character, quality and quantity of surface and subsurface materials likely to be encountered, the character of machinery and equipment and other facilities needed for the performance of the Work, the character, quality, quantity, and availability of labor and Subcontractors required for the Work, the character, quality and quantity of labor required for the Work, the character, quality and quantity of professional services required for the Work, the character, quality, quantity and availability of materials, machinery, equipment and furnishings required for the Work, and all other matters and things which may in any way affect the Work or its performance. Should the

Contractor find discrepancies, omissions or conflicts within the Contract Documents, or be in doubt as to their meaning, the Contractor shall at once notify in writing the Architect and the Owner, and the Architect will issue a written addendum to all parties that is consistent with the Owner's Scope of the Work. The Contractor shall not be entitled to any additional time or compensation for the Contractor's failure to visit the site, or any additional Work caused by the Contractor's fault, by improper construction, or by the Contractor's failure to visit the site or to carefully study and compare Contract Documents prior to execution of the Work.

19. § 3.2.2 shall be amended by deleting "not" and deleting "; however," in the second sentence of the paragraph;

Adding a period after the word "Documents" and by capitalizing the letter "t" following the deleted word "however";

Add the following at the end of the existing paragraph:

"The Contractor shall not perform any work involving an error, inconsistency, or omission without further instructions to the Architect or revised Contract Documents from the Architect."

20. § 3.2.3 shall be amended by inserting "Neither the Owner nor" at the beginning of the paragraph; changing the upper case "T" to a lower case "t" for the word "The"; and deleting "not" in the first line of the paragraph.

21. § 3.2.4 shall be amended by adding the following at the beginning of the existing paragraph:

If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the Work or to honor its warranties, or will result in a limitation of or interference with the Owner's intended use, then the Contractor shall promptly notify the Architect and the Owner in writing, providing substantiation for its position. Any necessary changes in the Work, including substitutions, shall be accomplished by appropriate Modification.

Add the words "changes in the Work," after the words "because of" in the original first sentence;

Add the words "or this section" after the number 3.2.3 in both the original first sentence and the original second sentence;

Add the words "and the Contractor shall not be entitled to additional compensation or time for performance of the Work." at the end of the original second sentence.

22. § 3.2.5 shall be added as follows:

**§ 3.2.5** Prior to performing any Work, the Contractor shall locate all utility lines as shown and located on the plans and specifications, including telephone company lines and cables, sewer



lines, water pipes, gas lines, electrical lines, including, but not limited to, all buried pipelines and buried telephone cables, and shall perform any Work in such a manner so as to avoid damaging any such lines, cables, pipes and pipelines during its Work, and shall be responsible for any loss, damage or extra expense resulting from such damage. Repairs shall be made immediately to restore all service. Any delay for such break shall be attributable to the Contractor. In addition, the Contractor shall review appropriate AHERA and hazardous material surveys for the Project, and shall notify all Subcontractors and Sub-Subcontractors of the necessity to review said surveys. The Contractor shall perform any Work in such a manner as to avoid damaging, exposing, or dislodging any asbestos-containing materials or other hazardous materials that are clearly identified and located in AHERA and other hazardous material surveys. Before performing any portion of the Work, the Contractor shall fully investigate all physical aspects of the Project Site and verify all dimensions, measurements, property lines, grades, and elevations, existing improvements, and general suitability of existing conditions at the Project site.

23. § 3.2.6 shall be added as follows:

**§ 3.2.6** The Contractor shall arrange meetings prior to commencement of the Work of all major Subcontractors to allow the Subcontractors to demonstrate an understanding of the Work and Contract Documents to the Architect and to allow the Subcontractors to ask for interpretations, when necessary. Each major Subcontractor shall review the Project Manual and the Construction Documents and shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed.

24. § 3.3.4 shall be added as follows:

**§ 3.3.4** The Contractor shall properly and efficiently coordinate the timing, scheduling and routing of all Work performed by all trades and Subcontractors. The Contractor shall develop and maintain a schedule of critical path construction activities for the Work. This critical path schedule shall be updated at least bi-monthly and presented to the Architect upon request.

25. § 3.3.5 shall be added as follows:

**§ 3.3.5** The Contractor shall review Subcontractor safety programs, procedures, and precautions in connection with performance of the Work. However, the Contractor's duties shall not relieve any Subcontractor(s) or any other person or entity, including any person or entity with whom the Contractor does not have a contractual relationship, of their responsibility or liability relative to compliance with all applicable federal, state, and local laws, rules, regulations, and ordinances and manufacturers' instructions which shall include the obligation to provide for the safety of their employees, other persons, and property and the requirements to maintain a work environment free of recognized hazards.

26. § 3.3.6 shall be added as follows:

**§ 3.3.6** It is understood and agreed that the relationship of the Contractor to the Owner shall be that of an independent Contractor. Nothing contained in this Agreement or inferable from this

Agreement shall be deemed or construed to: 1) make the Contractor the agent, servant or employee of the Owner; or 2) create any partnership, joint venture, or other association between the Owner and the Contractor. Any direction or instruction by the Owner or any of its authorized representatives in respect of the Work shall relate to the results the Owner desires to obtain from the Work, and shall in no way affect the Contractor's independent Contractor status.

27. 3.4.1 shall be amended by adding "qualified, careful, and efficient workers and" in the first sentence before "labor", and after "labor" add "eligible to work in accordance with state and federal law.

At the end of the original paragraph add the following:

Before ordering any material or doing any Work, the Contractor shall verify that all dimensions specified in the Drawings, Specifications and other Construction Documents are consistent with all actual dimensions in the field. Any inconsistency shall be brought to the attention of the Architect. In the event that discrepancies exist and the Architect was not notified beforehand, then costs to correct and/or replace ordered materials shall be borne by the Contractor. This subsection does not relieve the Architect of any contractual duties owed to the Owner.

28. § 3.4.2 shall be amended by adding "prior written" before "consent of the Owner".

29. § 3.4.4 shall be added as follows:

**§ 3.4.4** Including, but not limited to, the specific requirements of Section 3.3.5 and Article 10, the Contractor, its Subcontractors and vendors shall bear responsibility for compliance with all federal, state and local laws, regulations, guidelines, and ordinances pertaining to safety of persons and property applicable to the Work. The Contractor further recognizes that the Owner and the Architect do not owe the Contractor any duty to supervise or direct its work so as to protect the Contractor from the consequences of its own conduct.

30. § 3.5 shall be amended as follows:

§ 3.5 shall be amended by changing the first word "WARRANTY" to "WARRANTIES AND GUARANTEES".

The first subsection under Section 3.5 shall be amended by changing the number of the subsection to "§ 3.5.1".

Add the following language after the original second sentence in subsection 3.5.1:

The Contractor further warrants and guarantees that Contractor shall perform the Work in a good and workmanlike manner, continuously and diligently in accordance with generally accepted standards of construction practice for construction projects similar to the Project, except to the extent the Contract Documents expressly specify a higher standard, in which case the standard shall be the higher standard. All material shall be installed in a true and straight

alignment, level and plumb, patterns shall be uniform, and jointing of materials shall be flush and level, unless otherwise directed in writing by the Architect.

Delete the words "or equipment" and replace with "systems, machinery, equipment or components" in the original third sentence of Section 3.5.1.

Change the word "may" to "will" in the original third sentence of Section 3.5.1.

31. § 3.5.2 shall be added as follows:

**§ 3.5.2** All specified express warranties required by the Contract Documents on workmanship, equipment, machinery, materials, systems, or components shall be submitted in writing to the Architect for delivery to the Owner no later than the date of Final Completion. Unless specified otherwise, all warranties shall run from the date of Final Completion for a period of three (3) years. Warranties under Section 3.5.1 are not exclusive of any other warranties or guarantees set out in other places in the Contract Documents or expressed or implied under applicable law.

32. § 3.5.3 shall be added as follows:

**§ 3.5.3** Upon written notice from the Owner or the Architect, the Contractor shall promptly remedy defects in the Work as covered by applicable warranties. If the Contractor does not respond to the written notice within ten (10) days of Contractor's receipt of a written notice, either by beginning corrective work or notifying the Owner in writing regarding when corrective work will begin, the Owner may take measures to correct the Work and the Contractor will be obligated to reimburse the Owner's costs including reasonable consultant, engineering and legal fees. The provisions of this subparagraph shall be in addition to, and not in lieu of, any other rights and remedies available to the Owner.

33. § 3.5.4 shall be added as follows:

**§ 3.5.4** The Contractor agrees to perform the Work in such manner so as to preserve any and all manufacturers, suppliers and installers' warranties.

34. § 3.5.5 shall be added as follows:

**§ 3.5.5** The warranties of the Contractor provided in Section 3.5 shall in no way limit or abridge the warranties of the manufacturers, suppliers, and installers of materials, machinery, equipment, systems or components which are to comprise a portion of the Work and all such warranties shall be in form and substance as required by Contract Documents. The Contractor shall take no action or fail to act in any way which results in the denial, termination, or expiration of such third party warranties or which otherwise results in prejudice to the rights of the Owner under such warranties. The Contractor agrees to provide all notices required for the effectiveness of such warranties and shall include provisions in the contracts with the suppliers, manufacturers, and installers of such materials, machinery, systems, and equipment whereby the Owner shall have a direct right, but not a duty, of enforcement of such warranty obligations.

35. § 3.5.6 shall be added as follows:

**§ 3.5.6** Prior to Final Completion of the Work, and as a requirement for achieving Final Completion the Contractor shall:

- .1 Obtain duplicate originals of all warranties, executed by the Contractor and all Subcontractors, manufacturers, suppliers, and installers, making the dates of beginning of the warranties the Date of Final Completion unless otherwise required by the Contract Documents;
- .2 Verify that the documents are in proper form, contain full information, and have been signed by the proper parties with full authority to sign the same;
- .3 Co-sign or sign warranties when required;
- .4 Bind all warranties in a 8-1/2 x 11 inch three-ring binder, with hardback, cleanable, plastic covers;
- .5 Label the cover of each binder with a typed or printed label entitled "WARRANTIES", along with the title of the Project, name, address and telephone number of the Contractor, and name of its responsible principal;
- .6 Include a Table of Contents, with each item identified, and with the name, address, and telephone numbers of each party executing the warranty;
- .7 Separate each warranty with index tab sheets keyed to the Table of Contents listing;
- .8 Deliver warranties in the form described above, to the Architect who will review same prior to submission to the Owner and who will submit the same to the Owner.

36. § 3.11 shall be amended by adding "field test records, inspection certificates or records, manufacturers' certificates," after "Shop Drawings," in the first sentence and by adding "and the Owner at all times" in the second sentence after the first "Architect".

37. § 3.12.2 shall be deleted and replaced with the following:

**§ 3.12.2** Product Data consists of written, printed, drawn, sound recording, video recording, computer generated, electronic or any other form of communication created by manufacturers, suppliers, testing organizations, standards organizations, manufacturer and supplier associations and trade groups, and similar creators of such communications, regarding materials, equipment, machinery, systems, processes and the components thereof, and regarding the installation, use, testing, operation, service, and maintenance thereof. By way of illustration, but not excluding other forms of such communication, Product Data is found in:

Manufacturer's Recommendations	Installer Experience Requirements
Manufacturer's Instructions	Test Data
Installation Manuals	Performance Data
Construction Manuals	Product Diagrams
Product Manuals	Product Drawings
Operation Manuals	Performance Charts
Product Specifications	Instructions
Product Descriptions	Brochures
Manufacturer's Requirements	Illustrations
Production Information	Assembly Instructions
Installer Licensing Requirements	Charts
Installer Training Requirements	

38. § 3.12.4 is amended by deleting the last sentence of the paragraph and substituting the following: "Informational submittals upon which the Architect is not expected to take responsive action shall be retained by the Architect and preserved for a period of ten (10) years following Final Completion."
39. § 3.12.5 is amended by deleting the word "approved" in the two places it appears in the third line of the paragraph and substituting the word "required" in each place.
40. § 3.12.8 is amended by adding the words "and in accordance with the informational submittals upon which the Architect is not expected to take responsive action" following the words "approved submittals" in the first sentence.
41. § 3.12.10 is amended by deleting the last sentence of the paragraph.
42. § 3.15.1 shall be amended by adding ", on a daily basis," after "Contractor" in the first line of the first sentence.

The following shall be added after the first sentence:

The Contractor shall provide on-site containers for the collection of waste materials, debris, rubbish, and shall periodically, remove waste materials, debris and rubbish from the Work and dispose of all such materials at legal disposal areas away from the Project site. All cleaning operations shall be scheduled so as to ensure that contaminants resulting from the cleaning process will not fall on newly-coated or newly-painted surfaces.

Add the following at the end of the existing paragraph:

Immediately after unpacking materials, equipment and machinery, all packing case lumber or other packing materials, wrapping or other like flammable waste shall be collected and removed from the building. Care shall be taken not to mark, soil, or otherwise deface any finish. In the event that any finish becomes defaced in any way the Contractor or any of its Subcontractors shall clean and restore such surfaces to their original condition.

43. § 3.15.3 shall be added as follows:

**§ 3.15.3** The Contractor shall be responsible for the protection of the Work. Prior to the Architect's inspection for Substantial Completion, the Contractor shall clean the exterior and interior surfaces exposed to view, remove temporary labels, stains, putty, soil, paint and foreign substances from all surfaces, including glass and painted surfaces, polish transparent and glossy surfaces, clean equipment and fixtures to a sanitary condition, replace air filters in mechanical equipment, clean roofs, gutters, and downspouts, remove obstructions and flush debris from drainage systems, clean site, sweep paved areas and rake clean other surfaces, remove trash and surplus materials from the site, clean and polish all floors, clean and polish all hardware, and repair all Work damaged during cleaning.

44. § 3.15.4 shall be added as follows:

**§ 3.15.4** After Substantial Completion and prior to Final Completion, the Contractor shall; (1) employ skilled workers for final cleaning, (2) remove grease, mastic adhesive, dust, dirt, stains, fingerprints, labels and other foreign materials from all sight-exposed interior and exterior surfaces, (3) wash and shine glazing and mirrors, (4) polish glossy surfaces to a clear shine, (5) vacuum clean carpeted and similar soft surfaces, (6) clean (damp mop with clean mop and water) resilient and hard surface floors repeating as necessary until no visible residue remains on floors, (7) clean plumbing fixtures to a sanitary condition, (8) clean surfaces of all equipment and remove excess lubrication, (9) clean permanent filters and replace disposable filters in ventilating systems if units were operated during construction and clean ducts, blowers, and coils, (10) clean light fixtures, (11) remove waste, foreign matter and debris from roofs, gutters, downspouts, yard drains, and drainage ways, (12) remove waste, debris and surplus materials from the site, (13) remove the stains, spills and foreign substances from paved areas, and (14) broom clean exterior concrete and paved surfaces and rake clean the grounds.

45. § 4.2.6 shall be amended by replacing "has authority to" with "shall" in the first sentence.

At the end of the existing paragraph add the following:

The Architect and the Contractor shall promptly notify, orally and in writing, the other party and the Owner of any fault or defect in the Work or nonconformance of the Work with the Contract Documents they may respectively discover and each, upon discovery of the defect or nonconformance, shall be responsible for notifying the other party and the Owner of those corrective actions they respectively take; provided, however, the Contractor shall have no duty to notify the Owner of discoveries made or actions taken by the Architect.

46. § 4.2.9 shall be amended by capitalizing the letter "f" and "c" in the words "final completion" in the first phrase;

Add the words "and Final Completion" before the word "pursuant" in the second phrase;

Add the words "and Section 9.10" after the words "Section 9.8" in the second phrase.

47. § 4.2.11 shall be amended in the first line by deleting "decide matters" and replacing it with "make recommendations".
48. § 4.2.12 shall be amended in the first line by deleting "and decision" and replacing it with "or recommendations"; and placing a period after "Contractor" in the second sentence and deleting all of the remaining language to the end of the paragraph.
49. § 5.1.2 shall be amended by deleting the first sentence and replacing it with the following: "A Sub-Subcontractor is a person or entity of a lower tier than a Subcontractor who has a direct or indirect contract with a Subcontractor or with another Sub-Subcontractor."
50. § 5.2.5 shall be added as follows:
- § 5.2.5** Each Contractor, Subcontractor, and Sub-Subcontractor shall be required to completely familiarize themselves with the plans and specifications, to visit the Work site to completely familiarize themselves with existing conditions, and to conduct any other appropriate investigations, inspections or inquiries prior to submission of a bid or proposal. No increases in Contract Sums shall be allowed for failure to so inspect and investigate.
51. § 5.3 shall be amended by adding "§ 5.3.1" at the beginning of the original paragraph; in the first sentence add the word "written" after "appropriate"; and delete "written where legally required for validity" also in the first sentence.
- The following new sentence shall be added after the first sentence: "The terms and conditions of the Contract Documents shall be incorporated by reference into each subcontract agreement, except as provided below."
52. § 5.3.2 shall be added as follows:
- § 5.3.2** All agreements between the Contractor and Subcontractors shall state that the Owner "is an intended third-party beneficiary of this Contract." Consistent with third-party beneficiary status, neither the Owner nor the Architect shall be obligated to pay or to insure the payment of any monies to Subcontractors and Sub-Subcontractors.
53. § 5.3.3 shall be added as follows:
- § 5.3.3** The Contractor shall require any potential Subcontractor to disclose to the Contractor any ownership interest or familial relationship between or among the Contractor, the Architect, the Owner and the potential Subcontractor prior to entering into a subcontract. The Contractor shall report to the Owner all such disclosures and the Owner shall have the right, in its sole discretion, to reject any such affiliated Subcontractor.
54. § 6.1.1 shall be amended by placing a period after the word "site" in the first sentence and deleting the remainder of the first sentence after the period.
55. § 6.1.4 shall be deleted in its entirety.

56. § 7.1.4 shall be added as follows:

**§ 7.1.4** Allowance balances may be used to fund changes in the Work. The Contractor will not be allowed an overhead, profit or fee mark-up when changes to the Work are funded by one of the Allowances.

57. § 7.2.2 shall be added as follows:

**§ 7.2.2** The Contractor stipulates that the acceptance of a Change Order by the Contractor constitutes full accord and satisfaction for any and all Claims, whether direct or indirect, arising from the subject matter of the Change Order.

58. § 8.1.2 shall be amended by deleting "established in the Agreement" and replacing it with the following language:

established in the written Notice to Proceed issued by the Architect. The Notice to Proceed shall not be issued by the Architect until the Agreement has been signed by the Contractor, representative, and the Owner and the Architect have received, and approved as to form, all required payment and performance bonds and insurance, in compliance with Article 11. Issuance of the Notice to Proceed shall not relieve the Contractor of its responsibility to comply with Article 11.

59. § 8.1.3 shall be amended by adding the following at the end of the sentence:

The date of Final Completion is the date certified by the Architect in accordance with Paragraph 9.10. Unless otherwise agreed in writing by the Owner, the Contractor agrees that Final Completion shall occur not more than thirty (30) days after the date of Substantial Completion.

60. § 8.2.2 shall be amended by deleting the last sentence of this section.

61. § 8.2.3 shall be amended by adding the words "and Final Completion" after the words "Substantial Completion".

62. § 8.2.4 shall be added as follows:

**§ 8.2.4** The Contractor is subject to liquidated damages, as specified in the Agreement if the Work is not completed by the date of Substantial Completion.

63. § 8.3.1 shall be amended by deleting "labor disputes, "; adding "governmental actions," after "fire, "; deleting "unusual delay in deliveries; unavoidable casualties or other causes beyond the Contractor's control"; adding "in writing" after "authorized"; deleting "pending mediation and arbitration"; replacing "shall" with "may"; and adding "and the Owner" after "Architect" in the last line of the section.



64. § 8.3.3 shall be deleted and replaced with the following:

**§ 8.3.3** This Agreement does not permit the recovery by the Contractor of monetary damages, including, without limitation, extended home office overhead expenses, general conditions, consequential damages, or other compensable damages for delay or disruption or for extensions of time due to bad weather or acts of God, unless caused solely by the Owner or its Agent. In the event that a delay, disruption or extension of time beyond the contract date for substantial completion is caused solely by the Owner or its Agent, then the Contractor may claim actual direct expenses that have only been incurred as a direct result thereof.

65. § 9.3.1 shall be amended by deleting the words ", if required," in both the first and second sentences.

66. § 9.3.2 shall be deleted and replaced with the following:

**§ 9.3.2** Payments will be made on the basis of invoices for specific materials or equipment incorporated in the Work and specified materials or equipment (1) suitably stored at the site or (2) suitably stored at some off-site location, provided the following conditions are met for off-site storage:

- .1 The location must be agreed to, in writing, by the Owner and Surety.
- .2 The location must be a bonded warehouse.
- .3 The Contractor's Surety must agree, in writing, to the amounts included in each Application for Payment.
- .4 The Contractor must bear the cost of the Owner's and the Architect's expenses related to visiting the off-site storage area and reviewing the stored contents. The Contractor acknowledges that the Architect's time is an additional service and shall compensate the Architect directly for same.
- .5 Payment shall not include any charges for overhead or profit on stored materials.
- .6 Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance (naming the Owner as insured and naming the specific materials or equipments stored and their location) and transportation to the site for those materials and equipment are delivered to the Owner's site. Failure to follow these procedures shall result in nonpayment for storage of or insurance on stored materials and equipment. Failure to follow these procedures shall also result in nonpayment of materials and equipment until said materials and equipment are incorporated into the Work."

67. § 9.3.3 shall be amended by adding the following at the end of the existing paragraph:

CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER HARMLESS FROM ANY LIENS, CLAIMS, SECURITY INTERESTS OR ENCUMBRANCES FILED BY THE CONTRACTOR, SUBCONTRACTORS, SUB-SUBCONTRACTORS, MATERIAL SUPPLIERS, OR ANYONE CLAIMING BY, THROUGH OR UNDER THE CONTRACTOR, SUBCONTRACTOR, OR SUB-SUBCONTRACTORS FOR ITEMS COVERED BY PAYMENTS MADE BY THE OWNER TO CONTRACTOR.

68. § 9.4.2 shall be amended by placing a period after the word "procedures" in the last sentence of the paragraph and deleting the remainder of the paragraph.
69. § 9.5.1.7 shall be amended by replacing the period with a semi-colon and adding "or" after it.
70. § 9.5.1.8 shall be added as follows:
- .8** failure to submit a written plan indicating action by the Contractor to restore, keep or maintain the Work on schedule for completion of Work within the Contract time.
71. § 9.5.4 shall be added as follows:
- § 9.5.4** Notwithstanding any provision contained within this Article, if the Work has not attained Substantial Completion or Final Completion by the required dates, subject to extensions of time allowed under these Conditions, then the Architect may withhold any further Certificate for Payment to the Contractor to the extent necessary to preserve sufficient funds to complete construction of the Project and to cover liquidated damages. The Owner shall not be deemed in default by reason of withholding payment as provided for in Sections 9.3.2, 9.5.1, or this Section.
72. § 9.6.1 shall be amended by adding "for undisputed amounts" after "shall make payment" and adding the following at the end of the sentence:
- The Owner shall notify the Contractor within twenty-one (21) days if the Owner disputes the Architect's Certificate for Payment or the Contractor's Payment Application, listing the specific reasons for nonpayment. Payments to the Contractor shall not be construed as releasing the Contractor or the Surety from any obligations under the Contract Documents or the Performance and Payment Bonds.
73. § 9.8.1 shall be amended by deleting the words "or designated portion thereof".
74. § 9.8.2 shall be amended by adding "in writing" after the word "Owner".
75. § 9.8.3 shall be amended by deleting the words "so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use".

76. § 9.8.4 shall be amended by deleting the words "or designated portion thereof" from the first sentence, placing a period after the second usage of the words "Substantial Completion", deleting the remainder of the paragraph.

77. § 9.8.5 shall be deleted and replaced with the following:

**§ 9.8.5** The Contractor shall achieve Final Completion of the Work within thirty (30) days after the date of Substantial Completion.

78. § 9.9.1 shall be amended by deleting the remainder of the section after the first sentence.

79. § 9.10.2 shall be deleted and replaced with the following:

**§ 9.10.2** Neither final payment nor any remaining retainage percentage shall become due until the Contractor submits to the Architect (1) using AIA Document G706, an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) evidence satisfactory to the Owner that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) using AIA Document G707, consent of surety, if any, to final payment and (5) except for amounts currently withheld by the Owner, other data establishing payment or satisfaction of obligations, such as AIA Document G706A; notarized Subcontractor's liens release, and (6) receipts, releases and waivers of liens, claims, security interest or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or a waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

Add the following at the end of the existing paragraph:

In addition, the following items must be completed and received by the Owner before Final Payment will be due:

- .1 Written certifications required by Section 10.5, 10.6, and 10.7
- .2 Final list of Subcontractors (AIA Document G705);"
- .3 Warranties, organized as required elsewhere in the Contract Documents;
4. Maintenance and Instruction Manuals; and

5. The Owner's Final Completion Certificate; and
6. Record drawings and "as built" drawings. At the completion of the Project, the Contractor shall submit one complete set of "as built" drawings, with all changes made during construction, including concealed mechanical, electrical and plumbing items. The Contractor shall submit these as electronic, sepi, or other acceptable medium, in the discretion of the Owner.

Documents identified as affidavits must be notarized. All manuals will contain an index listing the information submitted. The index section will be divided and identified by tabbing each section as listed in the index. Upon request, the Architect will furnish the Contractor with blank copies of the forms listed above. Final payment shall be paid by the Owner to the Contractor within thirty (30) days after the Owner's Board has voted to approve Final Payment.

80. § 9.10.4 shall be amended by deleting the entire section and adding a new § 9.10.4 as follows:

**§ 9.10.4** Acceptance of the Work and the making of final payment does not constitute a waiver of any claims by the Owner.

81. § 10.1.1 shall be added as follows:

**§ 10.1.1** The Contractor's employees, agents, Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, shall not perform any service for the Owner while under the influence of any amount of alcohol or any controlled substance, or use, possess, distribute, or sell alcoholic beverages or any controlled substance while on the Owner's premises. No person shall use, possess, distribute or sell illicit or unperceived controlled drugs or drug paraphernalia; misuse legitimate prescription drugs; or act in contravention of warnings on medications while performing the Work or on the Owner's premises.

82. § 10.1.2 shall be added as follows:

**§ 10.1.2** The Contractor has adopted or will adopt its own policy to assure a drug-free and alcohol-free workplace while on the Owner's premises or performing the Work. The Contractor will remove any of its employees, agents, Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, from performing the Work any time there is suspicion of alcohol and/or drug use, possession, or impairment involving such person, and at any time an incident occurs where drug or alcohol use could have been a contributing factor. The Owner has the right to require the Contractor to remove any person from performing the Work any time cause exists to suspect alcohol or drug use. In such cases, the person so removed may only be considered for return to work after the Contractor certifies as a result of a for-cause-test, conducted immediately following removal that said person was in compliance with this Contract. The Contractor will not use any person to perform the Work who fails or refuses to take, or tests positive on, any for-cause alcohol or drug test."

83. § 10.1.3 shall be added as follows:

**§ 10.1.3** The Contractor will comply with all applicable federal, state and local drug and alcohol-related laws and regulations (e.g. Department of Transportation regulations, Drug-Free Workplace Act). The Owner has also banned the presence of all weapons on the Project site, whether or not the Owner thereof has a permit for a concealed weapon, and the Contractor agrees that the Contractor's representatives, employees, agents, Subcontractors and Sub-Subcontractors will abide by same.

84. § 10.2.1.1 shall be amended by adding, after "Work", the following ", school personnel, students, parents and other persons on the Owner's premises", and after "thereby", adding ", including the installation of fencing between the Work site and the occupied portion of a connecting or adjacent educational facility;"

85. § 10.2.1.3 shall be amended by adding "other buildings, and their contents, fencing" after "such as"; and adding "athletic fields, facilities and tracks" after "walks".

86. § 10.2.4 shall be amended by deleting "explosives or other", and adding the following before the final period:

, and shall only conduct such activities after giving reasonable advance written notice of the presence or use of such materials, equipment or methods to the Owner and the Architect. The storage of explosives other than small explosive charges for nail or rivet guns on the Owner's property is prohibited. The use of explosive materials on the Owner's property other than small explosive charges for nail or rivet guns is prohibited unless expressly approved in advance in writing by the Owner and the Architect.

87. § 10.2.5 shall be amended by deleting the words "(other than damage or loss insured under property insurance required by the Contract Documents)".

88. § 10.2.9 shall be added as follows:

**§ 10.2.9** The Contractor shall do all things necessary to protect the Owner's premises and all persons from damage and injury, when all or a portion of the Work is suspended for any reason.

89. § 10.2.10 shall be added as follows:

**§ 10.2.10** The Contractor shall promptly report in writing to the Owner and the Architect all accidents arising out of or in connection with the Work which cause death, bodily injury or property damage, giving full details and statements of any witnesses. In addition, if death, serious bodily injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner and the Architect.

90. § 10.3.3 shall be deleted in its entirety.

91. § 10.3.4 shall be amended by placing a period after the word "site" in the first sentence and by deleting the remainder of the paragraph following the period.
92. § 10.3.6 shall be deleted in its entirety.
93. § 10.4 shall be amended by adding the words "or the environment" following the word "property" and by deleting the words ", at the Contractor's discretion," in the first sentence.
94. § 10.5 shall be added as follows:

**§ 10.5 ASBESTOS or ASBESTOS-CONTAINING MATERIALS**

Prior to payment of retainage and final payment, the Contractor shall submit to the Architect a written certification addressed to the Owner that all materials used in the construction of this Work contain less than 0.10% by weight of asbestos and for which it can be demonstrated that, under reasonably foreseeable job site conditions, will not release asbestos fibers in excess of 0.1 fibers per cubic centimeter. The written certification shall further state that, should asbestos fibers be found at this Work in concentrations greater than 0.1 fibers per cubic centimeter, then the Contractor shall be responsible for determining which materials contain asbestos fibers and shall take all necessary corrective action to remove those materials from the Work, at no additional cost to the Owner. The written certification shall be dated, shall reference this specific Work and shall be signed by an officer of the Contractor.

95. § 10.6 shall be added as follows:

**§ 10.6 LEAD-FREE MATERIAL IN POTABLE WATER SYSTEM**

**§ 10.6.1** Prior to payment of retainage and final payment, the Contractor and each Subcontractor involved with the potable water system shall furnish a written certification that the potable water system installed as a part of the Work is "lead-free".

**§ 10.6.2** The written certification shall further state that should lead be found in the potable water system built under this Work, then the Contractor shall be responsible for determining which materials contain lead and shall take all necessary corrective action to remove lead from the Work, at no additional cost to the Owner. The written certification shall be dated, shall reference this specific Work and shall be signed by an officer of the Contractor.

96. § 10.7 shall be added as follows:

**§ 10.7 HAZARDOUS MATERIALS CERTIFICATION**

The Contractor shall provide written certification that no materials used in the Work contain lead, asbestos, volatile organic compounds, formaldehyde, or other hazardous materials in them in excess of amounts allowed by federal, state or local standards, laws, codes, rules and regulations; the Federal Environmental Protection Agency (EPA) standards; and/or the Federal Occupational Safety and Health Administration (OSHA) standards, whichever is most restrictive. The Contractor shall provide this written certification as part of submittals under the Section in the Project Manual related to Contract Closeout.

97. Article 11 shall be amended as follows:

**ARTICLE 11 - INSURANCE AND BONDS**

The following requirements modify the requirements of Article 11 of the General Conditions: The Contractor shall not commence work under the Contract until it has obtained all insurance required under this Article or as required by law, and evidence thereof has been received by the Owner. The Contractor shall not allow any grading and site work, roofing, mechanical, plumbing or electrical subcontractor(s) to commence work until all similar insurance as specified in this Article has been so obtained and the Contractor has presented the Owner with a Certificate of Insurance evidencing such coverage. Prior to the commencement of any work, the Contractor shall require all other Subcontractors and any Sub-Subcontractors to provide insurance coverage as required by law and as reasonably necessary given the scope of the Subcontractor or Sub-Subcontractor's work. The Contractor shall present the Owner with a Certificate of Insurance evidencing such coverage. All Certificates of Insurance must be on Acord Form 25 or later version as approved by the North Carolina Department of Insurance.

98. Subparagraph 11.1.1.8 – Add the following new paragraph following subparagraph 11.1.1.8 as follows:

The Contractor's Liability Insurance shall include all major divisions of the Work and be on a comprehensive basis including:

- a) Premises/operations (including explosion, collapse and underground as applicable).
- b) Independent Contractor's and Owner's and Contractor's Protective.
- c) Products and completed operations.
- d) Bodily and personal injury liability with employment exclusion deleted.
- e) Owned, non-owned and hired motor vehicles.
- f) Broad form property damage including completed operations.
- g) Any and all liability by way of indemnification, contribution and contractual liability.

99. Subparagraph 11.1.2 – Delete the phrase “whether written on an occurrence or claims-made basis,” in the second sentence and replace with the phrase “which shall be written on an occurrence basis,”.

100. § 11.1.2.1 shall be added as follows:

**§ 11.1.2.1** The insurance required by subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

- 1. Worker's Compensation:
  - a. State Statutory
  - b. Applicable Federal Statutory
  - c. Employer's Liability
    - i. \$100,000 Each Accident
    - ii. \$1,000,000 Disease, Policy Limit

- iii. \$100,000                      Disease, Each Employee
- 2. Commercial General Liability (including premises/operations, independent contractors, products and completed operations, and broad form property damage):
  - a. Bodily Injury & Property Damage (combined single limit):
    - \$1,000,000                      Each Occurrence
    - \$2,000,000                      Aggregate
  - b. Products and completed operations to be maintained for one (1) year after Final Payment.
- 3. Contractual Liability (Hold Harmless Coverage):
  - a. Bodily Injury & Property Damage (combined single limit):
    - \$1,000,000                      Each Occurrence
    - \$2,000,000                      Aggregate
- 4. Personal Injury, with employment exclusion deleted:
  - \$1,000,000                      Aggregate
- 5. Comprehensive Automotive Liability (owned, non-owned and hired):
  - a. Bodily Injury & Property Damage (combined single limit):
    - \$1,000,000                      Each Accident
- 6. Excess Liability (umbrella): Minimum Limits
  - a. \$2,000,000                      Over Primary Insurance
    - Policies must follow the form of the base policies
- 7. Owner's Protective Liability Insurance: The Contractor shall purchase and maintain owner's protective liability covering the Owner's contingent liability for claims which may arise from operations under the Contract Documents.. Limits of coverage required for this insurance shall be not less than \$1,000,000 combined single limit.
- 8. Builders Risk Insurance:

The Contractor shall effect and maintain all ISO Special Causes of Loss perils, including peril of transit upon the entire Project on which the Work is to be done, to one hundred percent (100%) of the insurable value thereof, including but not limited to items of labor and materials connected therewith, whether in or adjacent to the structure insured; materials in place or to be used as part of or in the construction of the permanent construction, including but not limited to surplus materials, shanties, protective fences, bridges, and temporary structures; miscellaneous



materials and supplies incidental to the Work; and such scaffolding, staging, towers, forms, and equipment as are not owned or rented by the Contractor, the cost of which is included in the cost of the Work. Said insurance must be maintained in full until final completion of the Project and, prior to canceling said insurance, Contractor shall notify Owner in writing.

Exclusions: This insurance need not cover: any tools owned by the mechanics; and tools, equipment, scaffolding, staging, towers, and forms rented or owned by the Contractor, the capital value of which is not included in the Work; or any structures erected for housing of or service to workmen.

A loss, if any, is to be adjusted with the Owner, and is to be payable to the Owner and to the Contractor jointly, as their interests may appear. The Owner shall be named on the policy, by rider or other applicable endorsement as an additional insured.

101. Subparagraph 11.1.3 shall be deleted and replaced with the following:

**§ 11.1.3** Certificates of Insurance: No later than the date of the execution of the Contract, the Contractor will submit to the Owner four (4) copies of Certificates of Insurance on the latest approved North Carolina Department of Insurance Acord Form 25 by an insurer authorized to do business in North Carolina by the North Carolina Department of Insurance and rated A-(minus) or better by A.M. Best Company. The certificates shall certify that the insurance policies carried by Contractor were in force before the Work commenced and certifying that these policies will not be canceled during the Contract other than by an endorsement added to the policies and certificates reading substantially as follows: 'The policies herein referred to are not cancelable or subject to reduction of coverage by the Insurer unless the Owner has received thirty (30) days written notice via registered or certified letter.' Additional Certificates of Insurances will be provided, from time to time, as listed policies expire as order to evidence continuance insurance coverage from the date of the Contract through the end of the one (1) year correction period following the date of final completion. Certificates of Insurance containing disclaimers holding the insurer harmless for failure to notify the Owner of Contractor policy cancellations will not be acceptable and should be modified to delete such disclaimers from the Insurance Certificate forms. Evidence of insurance requirements of these Supplementary General Conditions may be provided by modification to Acord Form 25 by endorsement, rider or separate certification by the insurer. No surplus lines insurance shall be acceptable.

In preparation of these forms, the following items should read:

1. The description of the Project / the Work / operations / locations / vehicles / special items.
2. The certificate holder is:

THE \_\_\_\_\_ COUNTY BOARD OF EDUCATION  
(address)

3. The cancellation statement is:

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL THIRTY (30) DAYS PRIOR WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT.

All blanks and questions on certificates must be filled out completely. Incomplete or inadequate certificates will be returned to Contractor as unsatisfactory and commencement of its Work will be delayed until satisfactory certificates are submitted. Such delay will not warrant extension of Contract Time. In the event of a reduction in any aggregate limit, the Contractor shall take immediate steps to have it reinstated. All insurance coverages of the Contractor shall be primary to any insurance or self-insurance program carried by the Owner. Renewal Certificates of Insurance on the Owner's form must be provided to the Owner thirty (30) days prior to expiration of current coverages so that there shall be no interruption in the Work due to lack of proof of insurance coverages required of the Contractor in the Contract Documents.

102. Subparagraph 11.1.5 shall be added as follows:

**§ 11.1.5** The acceptance of delivery to the Owner of any Certificate of Insurance evidencing the insurance coverages and limits required in the Contract does not constitute approval or agreement by the Owner that the insurance requirements in the Contract have been met or that the insurance policies shown in the Certificates of Insurance are in compliance with the Contract requirements.

103. Subparagraph 11.1.6 shall be added as follows:

**§ 11.1.6** Should at any time the Contractor not maintain the insurance coverages required of it in the Contract Documents, the Owner may either cancel or suspend the Contract or, at its sole discretion, shall be authorized to purchase such coverage and charge the Contractor for such coverages purchased. The Owner shall be under no obligation to 1) purchase such insurance 2) be responsible for the coverages purchased or 3) be responsible for the insurance companies used. The decision of the Owner to purchase such insurance coverages shall in no way be construed to be a waiver of its rights under the Contract Documents.

104. Subparagraph 11.1.7 shall be added as follows:

**§ 11.1.7** If any General Liability Insurance required herein is to be issued or renewed on a "claims made" form as opposed to the "occurrence" form, the retroactive date for coverages shall be no later than the commencement date of the Project and shall provide that in the event of cancellation or non-renewal the discovery period of insurance claims shall be unlimited.

105. Subparagraph 11.1.8 shall be added as follows:

§ 11.1.8 All policies described in this paragraph 11.1 shall be made available to the Owner or its legal representatives by means of exact copies of the original policies and placed in the hands of the Owner or its representatives.

106. Subparagraph 11.1.9 shall be added as follows:

§ 11.1.9 If requested in writing by any party in interest, the Contractor shall, upon occurrence of loss, furnish bond for the proper performance of its duties. The Contractor shall deposit any money received from insurance in an account separate from all its other funds; and it shall distribute it in accordance with such agreement as the parties of interest may reach, or in the absence of such an agreement, as the interest of the parties may appear. Replacement of injured work shall be performed by the Contractor.

107. Paragraph 11.3 – Delete in its entirety.

108. § 11.4.3 shall be added as follows:

§ 11.4.3 The cost of the Bonds shall be included in the Contract Sum. The Bonds shall guarantee the Contractor's faithful performance of the Contract and the payment of all obligations arising thereunder. The Bonds shall remain in force until the later of the following has occurred:

- a. the Contract has been fully performed by the Contractor; and
- b. the Project has been completed and accepted by the Owner; and
- c. the provisions of all warranties and guarantees required by the Contract Documents have been fulfilled; and
- d. the time for the filing of all mechanics liens has expired; and
- e. the applicable statute of repose, in the North Carolina General Statutes has expired.

Bonds which seek to limit the time for bringing a suit on the bonds to less than the foregoing are unacceptable.

109. § 12.1.1 shall be amended by adding "or the Owner's" after the first and second use of the word "Architect's"; and by adding "or the Owner" after "by the Architect".

110. § 12.1.2 shall be amended by adding "or the Owner" after "covered, the Architect".

111. § 12.2.1 shall be amended as follows:

The section number 12.2.1 shall be changed to 12.2.1.1;

§ 12.2.1.1 shall be amended by adding "Work" after the first "or".

112. § 12.2.1.2 shall be added as follows:

**§ 12.2.1.2** The Owner may make emergency repairs to the Work or take such other measures necessary under the circumstances, if the Contractor does not promptly respond to a notice of defect or nonconforming Work. The Contractor shall be responsible to the Owner for this cost if the reason for the repairs is attributable to the Contractor. If payments then or thereafter due to the Contractor are not sufficient to cover such costs, then the Contractor shall pay the difference to the Owner on demand.

113. § 12.2.2.1 shall be deleted and replaced with the following:

**§ 12.2.2.1** In addition to the Contractor's obligation to perform the Work in accordance with the Contract and in addition to all express and implied warranties, if, within one year after Final Completion of the Work, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so.

114. § 12.2.2.1.1 shall be added as follows:

**§ 12.2.2.1.1** If the Contractor fails to perform the corrective Work, then the Owner may perform corrective Work, at the Contractor's expense. If the Owner performs corrective Work, then the Owner may also remove nonconforming Work and store the salvageable materials or equipment at the Contractor's expense. If the Contractor does not pay all costs incurred by the Owner within ten (10) days after written notice, then the Owner may, upon ten (10) additional days' written notice, sell the removed materials and equipment in accordance with the Owner's policies, and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, then the Contractor shall pay the difference to the Owner.

115. § 12.2.2.2 shall be deleted.

116. § 12.2.2.3 shall be deleted.

117. § 12.2.6 shall be added as follows:

**§ 12.2.6** The provisions of this Section 12.2 apply to Work done by Subcontractors of the Contractor and Sub-Subcontractors as well as Work done directly by employees of the Contractor.

118. § 13.1 shall be amended by changing "law" to "laws"; deleting the remainder of the sentence after "of" and replacing it with the following:

The State of North Carolina and any litigation shall be conducted in the appropriate division of the General Court of Justice. Mandatory and exclusive venue for any disputes shall be in the county in which the Owner's main administrative office is located. The invalidity of any part or provision of the Contract shall not impair or affect in any manner whatsoever the validity, enforceability or effect of the remainder of the Contract.

119. § 13.2.2 shall be amended by placing a period after the word "Project" and deleting the remainder of the first sentence following the period.
120. § 13.5.4 shall be amended by inserting "with a copy to the Owner" before the period.
121. § 13.7 shall be deleted in its entirety and replaced with the following:

**§ 13.7 RECORDS**

**§ 13.7.1** The Contractor shall at all times through the date of Final Completion, maintain Job Records, including, but not limited to, invoices, payment records, payroll records, daily reports, diaries, logs, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda, or other financial data and job meeting minutes applicable to the Project, in a manner which maintains the integrity of the documents. Job Records must be retained by the Contractor for at least twelve (12) years after the date of Final Completion of the Project. Within ten (10) days of the Owner's request, the Contractor shall make such Job Records available for inspection, copying and auditing by the Owner, the Architect or their respective representatives, at the Owner's central office.

122. § 14.1.1 shall be amended by deleting subsection 14.1.1.4.
123. § 14.1.3 shall be amended by deleting the words ", and damages".
124. § 14.2.2 shall be amended by deleting the words "Initial Decision Maker" and adding the word "Architect" and by deleting the words ", subject to any prior rights of the surety".
125. § 14.2.4 shall be amended by capitalizing the letter "T" in the word "this" in the last sentence and by deleting the words in that sentence preceding the word "This".
126. Article 15 shall be amended in the title by adding "OF CONTRACTOR" at the end of the existing title.
127. § 15.1.1 shall be amended by deleting "one of the parties" and replacing it with "the Contractor"; inserting "interpretation of Contract terms, extension of time," after "money"; before the period at the end of the first sentence add ", the Project or the Work"; deleting the second sentence in its entirety; and deleting at the end of the paragraph "party making the Claim" and replacing it with "Contractor".
128. § 15.1.2 shall be amended by deleting "either the Owner or" and replacing it with "the"; deleting "other party" and replacing it with "Owner"; deleting "Initial Decision Maker with a copy sent to the"; deleting ", if the Architect is not serving as the Initial Decision Maker."; in the second sentence, deleting "either party" and replacing it with "the Contractor"; inserting "calendar" after "21" in both places; replacing "claimant" with "Contractor"; inserting "knew or should have known of", in place of "recognizes"; and replacing "later" with "earlier".

Add the following at the end of the paragraph:

Claims must be initiated by written notice titled "Notice of Claim" ("Notice") and sent to the Architect and the Owner's designated representative. The Notice shall clearly set out the specific matter of complaint, and the impact or damages which may occur or have occurred as a result thereof. To the extent that the damages cannot be assessed at the time of the Notice, the Notice shall be amended at the earliest date reasonably possible. It is imperative that the Owner receive timely specific Notice of any potential problem identified by the Contractor in order that the problem can be mitigated or resolved promptly. Any alleged damages suffered by the Contractor that have not been included in a Notice within ninety (90) days after the Contractor first knew or should have known of the damages shall be deemed waived by the Contractor.

129. § 15.1.3 shall be amended by deleting "Section 9.7 and" and by adding "undisputed" before "payments" and "for Work performed" after "payments"; and by deleting the last sentence of the paragraph.
130. § 15.1.4 shall be amended by adding "OR INCREASE IN THE CONTRACT SUM" at the end of the existing title.

In the first sentence, insert "additional cost or" after "claim for"; delete "before proceeding to execute the Work" and replace it with "to the Owner and the Architect".

Add the following at the end of the existing paragraph: "The Architect will promptly investigate such claim and report findings and a recommended resolution in writing to the Owner and the Contractor. If the Claim is approved by the Owner's Board, or the Owner's representative, if provided for herein, then the Contractor shall proceed with the execution of the Work that is the subject matter of the Claim. If the Claim is rejected by the Owner, then the Contractor may pursue alternative dispute resolutions provided for in the Contract Documents.

131. § 15.1.5.1 shall be amended by deleting "of cost and"; and by adding "critical path of the" before the word "Work" in the second sentence.
132. § 15.1.5.2 shall be amended by deleting "had an adverse effect on the scheduled construction" and replacing it with "prevented the execution of critical path elements of the Work on normal working days."

Add the following at the end of the existing paragraph: "Adverse weather conditions means unusually severe weather which is beyond the normal weather recorded and expected for the locality and/or the season or seasons of the year."

133. § 15.1.5.3 shall be added as follows:

**§ 15.1.5.3** The Contractor shall anticipate and include in a critical path construction schedule rain days due to adverse weather conditions in accordance with the rainfall table below. A rain day is defined as a day when rainfall exceeds one-half (.5) inch during a 24-hour period. The number of rain days expected for each month is as follows:

*Note: Prior to the execution of the Contract, the Owner shall fill in the blanks below:*

January	[ ] calendar days	July	[ ] calendar days
February	[ ] calendar days	August	[ ] calendar days
March	[ ] calendar days	September	[ ] calendar days
April	[ ] calendar days	October	[ ] calendar days
May	[ ] calendar days	November	[ ] calendar days
June	[ ] calendar days	December	[ ] calendar days

134. § 15.1.5.4 shall be added as follows:

§ **15.1.5.4** Time extensions may be granted for rain days in any month when the cumulative number of rain days during that month exceeds the number scheduled, provided that the rainfall prevented the execution of the critical path of the Work on normal working days as shown on the Contractor's schedule. No day will be counted as a rain day when substantial forces are able to perform Work on the Project for more than fifty percent (50%) of the usual workday or when the critical path of the Work on the Project is not adversely impacted. The number of rain days shown in the above schedule for the first and last months of Contract will be prorated in determining the total number of rain days expected during the period of the Contract.

135. § 15.1.5.5 shall be added as follows:

§ **15.1.5.5** No extension of time shall be made to the Contractor because of hindrances or delays from any cause which is the fault of the Contractor or the Contractor's Subcontractors or Sub-Subcontractors or under the Contractor's control. Claims for extension of time may only be considered because of adverse weather conditions, rain delays, or hindrances or delays which are the fault of the Owner and/or under the Owner's control, but only to the extent that the critical path of the Work is delayed. Other claims for extension of time shall be considered because of hindrances or delays not the fault of either the Contractor or the Owner, but only to the extent that the critical path of the Work is delayed. Board approval shall be required for any extension of time. No damages shall be paid for delays. The Contractor shall only be entitled to time extensions per the terms of the Contract Documents.

136. § 15.1.5.6 shall be added as follows:

§ **15.1.5.6** Requests for time extension shall be submitted on a monthly basis and shall specify the time delay, the cause of the delay, and the responsible party for the delay, whether the Contractor, the Owner, adverse weather, rain day, or other. No claims for damages for delay shall be made by the Contractor. Any claim not submitted under the terms of this Section shall be waived.

137. § 15.1.6 shall be amended by deleting "and Owner" after "Contractor"; changing "waive" to "waives", inserting "all" after "waives"; replacing "each other" with "the Owner"; and inserting after "Contract" the following: "including, but not limited to, any amount owed as

compensation for the increased cost to perform the Work as a direct result of Owner-caused delays or acceleration". Delete the remaining portion of the paragraph.

138. § 15.2 shall be amended by replacing the title with "**RESOLUTION OF CLAIMS AND DISPUTES**".

139. § 15.2.1 shall be deleted and replaced with the following:

**§ 15.2.1 Recommendation of the Architect.** Claims by the Contractor against the Owner, including those alleging an error or omission by the Architect shall be referred initially to the Architect for written recommendation. An initial recommendation by the Architect shall be required as a condition precedent to litigation of all Claims by the Contractor arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Architect with no recommendation having been rendered by the Architect.

140. § 15.2.2 shall be deleted and replaced with the following:

**§ 15.2.2** The Architect will review Claims and within ten (10) days of the receipt of the Claim take one of the following actions: (1) request additional supporting data from the Contractor, or (2) make a written recommendation to the Owner, with a copy to the Contractor.

141. § 15.2.3 shall be deleted and replaced with the following:

**§ 15.2.3** In evaluating Claims, the Architect may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Architect in making a written recommendation.

142. § 15.2.4 shall be deleted and replaced with the following:

**§ 15.2.4** If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten (10) days after receipt of such a request, and shall provide a response on the requested supporting data, advise the Architect when the response or supporting data will be furnished or advise the Architect that no supporting data will be furnished.

143. § 15.2.5 shall be deleted and replaced with the following:

**§ 15.2.5** As required by North Carolina General Statutes § 143-128(f1) the Owner, the Contractor, the Architect and all first tier and lower-tier Subcontractors and Sub-Subcontractors are required to participate in mediation as a precondition to initiating litigation. The dispute resolution process adopted by the State Building Commission pursuant to North Carolina General Statutes § 143-135.26(11) is hereby adopted and incorporated by reference for use in conducting the mediation. Statutory, contract, bond, insurance, warranty and all other time periods (including but not limited to applicable statutes of limitation and statutes of repose) shall be tolled (suspended from running) during the mediation process. The costs of the



mediation shall be paid one-third by the Owner and two-thirds by the other party or parties to the mediation, divided equally among the other parties if there is more than one other party.

144. § 15.2.6 shall be deleted and replaced with the following:

**§ 15.2.6** Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect or the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Architect or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

145. § 15.2.6.1 shall be deleted.

146. § 15.2.7 shall be deleted.

147. § 15.2.8 shall be deleted.

148. § 15.3 and § 15.4 shall be deleted and replaced with the following:

**§ 15.3 LITIGATION**

**§ 15.3.1** Any Claim arising out of or related to the Contract, except Claims waived under the terms of the Contract Documents, shall, subject to the provisions of § 15.2.5, be subject to resolution by litigation.

149. Add a new **ARTICLE 16, GENERAL**

150. § 16.1 shall be added as follows:

**§ 16.1** These Supplementary General Conditions and the General Requirements, the Supplementary Instructions to Bidders, the forms of various required documents, and any Special Conditions, all of which are bound in and incorporated in the Project Manual, modify and amend AIA Document A201-2007, entitled "General Conditions of the Contract for Construction", AIA Document A101-2007, entitled "Standard Form of Agreement Between Owner and Contractor", AIA Document A701-1997, entitled "Instructions to Bidders", and any other AIA documents published, copyrighted, or trademarked by the American Institute of Architects to which reference is or may be made in the Project Manual.

**BID BOND**

**(ALL BIDDERS ARE STRONGLY ENCOURAGED TO USE THIS FORM)**

Date of Execution  
of this Bond: \_\_\_\_\_

Name and Address of  
Principal (Bidder): \_\_\_\_\_

Name and Address  
of Surety: \_\_\_\_\_

Name and Address  
of Obligee: THE BUNCOMBE COUNTY BOARD OF EDUCATION, a body  
corporate of the State of North Carolina, 175 Bingham Road,  
Asheville, NC 28806.

Amount of Bond: 5% of the maximum potential contract award for all bids submitted.

Bid and Proposal  
dated: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL above named and SURETY above named who is duly licensed to act as SURETY in the State of North Carolina, are held and firmly bound unto THE BUNCOMBE COUNTY BOARD OF EDUCATION, a body corporate of the State of North Carolina, as Obligee, in the penal sum of FIVE PERCENT (5%) of the amount bid in the bid and proposal described in lawful money of the United States of America, for the Payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such, that if the Principal shall be awarded the contract for which the bid and proposal above described is submitted and shall execute the contract, give bond for the faithful performance of the contract, and give bond for the payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, within then (10) days after the award of the same to the Principal above named, then this obligation shall be null and void; but the Principal above named fails to so execute such contract and give performance bond and payment bond as required by Section 129 of Chapter 143 of the General Statutes of North Carolina, as amended, and Article 3 of Chapter 44A of the General Statutes of North Carolina, as amended the Surety shall, upon demand, forthwith pay to the Obligee the amount of this bond set forth above.

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IN WITNESS WHEREOF, the Principal above named and the Surety above named have executed this instrument under their several seals on the date set forth above.

\_\_\_\_\_  
*Principal (Name of individual, individual and trade name, partnership, corporation or joint venture)*

WITNESS:

\_\_\_\_\_  
*(Proprietorship or Partnership)*

BY: \_\_\_\_\_ (Seal)

TITLE: \_\_\_\_\_  
*(Owner, partner, office held in corporation, joint venture)*

(Corporate Seal)

ATTEST: (Corporation)

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_  
*(Corporate Secretary or Assistant Secretary only)*

\_\_\_\_\_  
SURETY *(Name of Surety Company)*

WITNESS:

\_\_\_\_\_

BY: \_\_\_\_\_  
TITLE: Attorney-in-Fact

(Corporate Seal of Surety)

\_\_\_\_\_  
*(Address of Attorney-in-Fact)*

COUNTERSIGNED:

\_\_\_\_\_

\_\_\_\_\_  
*N.C. Licensed Resident Agent*

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**BUNCOMBE COUNTY BOARD OF EDUCATION  
GUIDELINES FOR RECRUITMENT AND SELECTION OF  
MINORITY BUSINESS FOR PARTICIPATION IN SCHOOL CONSTRUCTION  
CONTRACTS**

In accordance with G.S. 143-128, these guidelines establish goals for minority participation in single-prime and separate-prime school construction contracts. The legislation provides that public bodies shall have a verifiable percentage goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These guidelines are published to accomplish that end.

**SECTION 1: INTENT AND APPLICATION OF GUIDELINES.**

It is the intent of these guidelines that The Buncombe County Board of Education as awarding authority for school construction projects, and the contractors and subcontractors performing the construction contracts awarded, shall cooperate and in good faith do all things legal, proper and reasonable to achieve the verifiable goal of 10% for participation by minority businesses in each construction project. Nothing contained in these guidelines shall be construed to require awarding authorities to award contracts to or to make purchase of materials or equipment from minority-business contractors who do not submit the lowest responsible bid or bids.

These guidelines shall apply to all contractors for the erection, construction, alteration, or repair of any buildings or other construction projects when the entire cost of such work shall exceed \$100,000.

**SECTION 2: DEFINITIONS.**

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
  - a. Black, that is, a person having origins in any of the black racial groups in Africa;
  - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
  - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
  - d. American Indian or Alaskan Native, that is, a person having origins in any of the original peoples of North America; or
  - e. Female.
  
2. Minority Business - means a business:
  - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51 %) of the stock is owned by one or more minority persons; and

- b. Of which the management and daily business operations are controlled by one or more of the minority persons who owns it.
3. Owner - The Buncombe County Board of Education.
4. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
5. Contract - A mutually binding legal relationship, or any modification thereof obligating the Contractor to furnish labor, equipment, materials, or services for the erection, construction, alteration, or repair of any buildings or other construction projects and obligating the Owner to pay for them.
6. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the Owner to perform a Contract to which these guidelines apply.
7. Subcontractor - Any person, firm, partnership, corporation, association, or joint venture under contract with a Contractor for supplying materials or labor, equipment, materials, or services. The subcontractor may or may not provide materials in his subcontract. Work subcontracted in an emergency and which could not have been anticipated is excluded as part of this program.
8. Verifiable goal means:
  - a. For purpose of separate-prime contract system, that the Owner has adopted written guidelines specifying the actions that will be taken to ensure a good faith effort in the recruitment and selection of minority businesses for participation in contracts awarded; and
  - b. For purposes of single-prime contract system, that the Owner has adopted written guidelines specifying the actions that the prime contractor must take to ensure good faith effort in the recruitment and selection of minority businesses for participation in contracts awarded; the required actions must be documented in writing by the contractor to the Owner.

### **SECTION 3: RESPONSIBILITIES.**

1. Minority Business Development Agency of the Small Business Development Division, North Carolina Department of Economic & Community Development (hereafter referred to as Minority Business Development Agency). The Minority Business Development Agency will establish a program in which it will certify to interested persons businesses which qualify as Minority Business Enterprises (MBE). The Minority Business Development Agency will be responsible for the following:

- a. Determine MBE certification, ie. that those certified are MBEs under GS 143-128 as a contractor and/or subcontractor.
- b. Identify those areas of work for which there are certified MBEs, as requested.
- c. Provide interested parties with a list of prospective certified MBE contractors and subcontractors.
- d. Assist in the determination of technical assistance in the certification program that needs to be provided.

In addition to being responsible for the participation of those small and emerging business that want to participate in the construction program, the Minority Business Development Agency will:

- 1) Maintain a current list of certified MBEs. The list shall include the areas of work in which each MBE is interested.
- 2) From information furnished by the Owner publicize the contracting and subcontracting opportunities available for each construction project being advertised.
- 3) Work with the North Carolina Association of Minority Businesses and the Carolinas Branch of the Association of General Contractors in developing and implementing a certification program intended to improve the ability of MBEs to compete in this program.

2. Owner/Buncombe County Board of Education: Under the single-prime contract system and the separate-prime contract system, the Owner will be responsible for,,\_ the following:

- a. For contracts in excess of \$500,000 in estimated costs, furnish to the Minority Business Development Agency, the Asheville-Buncombe Community Relations Council, and YMI, Inc., of Asheville a minimum of twenty-one (21) days prior to the bid opening the following:
  1. Project description and location;
  2. Locations where bidding documents may be reviewed;
  3. Name of representative of the Owner who can be contracted during the advertising period to advertise who the prospective bidders are;
  4. Date, time, and location of the bid opening; and
  5. Date, time, and location of pre-bid conference, if scheduled.

The twenty-one (21) day advance time period may be reduced to ten (10) days for contracts in the range of \$100,000 to \$500,000 in estimated cost.

- b. The Owner Will request that the Minority Business Development Agency, the Asheville-Buncombe Community Relations Council, and YMI, Inc. notify MBEs of construction projects.

- c. The pre-bid conference, if scheduled, conducted by the representative of the Owner, will be open to all known and anticipated prime contracts, subcontractors, material suppliers, and other bidders. During the conference, this program, including the bidders' responsibilities, will be fully explained.
- d. The Owner will be responsible for reviewing the spent low bidders compliance with the items listed in the proposal that must be complied with if the bid is to be considered responsive and responsible. The Owner reserves the right to reject any and all bids and to waive informalities.
- e. Attend the scheduled prebid conference.
- f. Identify or determine the work areas of a contract where MBEs may have an interest in performing contract work.
- g. At least ten (10) days prior to the scheduled day of bid opening, the Owner will notified certified MBEs in the area of the project of potential contracting opportunities listed in the proposal. The notification will include the following:
  - 1. A description of the work for which the bid is being solicited.
  - 2. The date, time, and location where bids are to be submitted.
  - 3. The name of a representative of the Owner who will be available to answer questions about the Project.
  - 4. Where bid documents may be received.
  - 5. Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three certified MBEs in the area of the Project, the Owner shall notify three, but may contact more, if the Owner so desires.

- h. Maintain documentation of any contacts, correspondence, or conversations with MBE firms made in an attempt to meet the goals.

### 3. Prime Contractor(s)

Under the single prime contract system the prime contractor will:

- a. Attend the scheduled pre-bid conference.
- b. Identify or determine those work areas of a subcontract where MBEs may have an interest in performing subcontract work.

- c. At least ten (10) days prior to the schedule day of bid opening, notify certified MBEs of potential subcontracting opportunities listed in the proposal. The notification will include the following:
  - 1) A description of the work for which the subbid is being solicited.
  - 2) The date, time, and location where subbids are to be submitted.
  - 3) The name of the individual within the company who will be available to answer questions about the project.
  - 4) Where bid documents may be reviewed.
  - 5) Any special requirements that may exist, such as insurance, licenses, bonds, and financial arrangements.

If there are more than three (3) certified MBEs in the area of the project, the contractors shall notify three (3), but may contact more, if the contractors so desires.

- d. During the bidding process, comply with the Owner's requirements listed in the contract documents for minority participation.
- e. Submit with the bid a description of that portion of the work to be executed by MBEs expressed as a percentage of the total contract price.
- f. Upon being named the apparent low bidder, provide the necessary documentation as listed in the contract documents provided by the Owner. Failure to comply with procedural requirements as defined in contract documents may render the bid as nonresponsive and may result in rejection of the bid and award to the next lowest responsible and responsive bidder.
- g. During the construction of a project, if it becomes necessary to replace an MBE subcontractor, advise the Owner.
- h. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit bids from MBES.

4. MBE Responsibilities:

While MBE's are not required to become certified in order to participate in this program, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, MBE's who are contacted by the Owner or bidders should respond promptly whether or not they wish to submit a bid.



#### **SECTION 4: DISPUTE PROCEDURES.**

It is the policy of the Buncombe County Board of Education that disputes with another person that involve a person's rights, duties, or privileges, should be settled through informal procedures. To that end, MBE disputes arising under these guidelines should be resolved, if possible, by informal proceedings arranged by the Superintendent or his designee.

#### **SECTION 5: EFFECTIVE DATE**

These guidelines are effective on December 15, 1989.

Copies of these guidelines may be obtained from the Office of the Superintendent at 175 Bingham Road, Asheville, North Carolina, NC 28806; telephone number 828-255-5916.

#### **SECTION 6: GUIDELINES AND COMPLIANCE DOCUMENTATION TO BE PART OF CONTRACT DOCUMENTS.**

These guidelines will be included in the contract to each construction bid package and provisions for documenting contractual compliance in providing for MBE participation in the construction program %, Will be included in each construction bid package

**ADDITION TO SUPPLEMENTARY  
GENERAL CONDITIONS**

**APPLICATION:**

The requirements of the Buncombe County Board of Education Guidelines for Recruitment and Selection of Minority Businesses for Participation in School Construction Contracts are hereby made a part of these contract documents. These requirements shall apply to all contractors regardless of ownership. A copy of the Buncombe County Board of Education Guidelines for Recruitment and Selection of Minority Businesses for Participation in School Construction Contracts is attached.

**MBE SUBCONTRACT GOALS:**

**The goals for participation by Minority firms as subcontractors on this project have been set by the Buncombe County Board of Education (hereinafter Board) at 10%.**

The bidder must identify on MBE Form 1, the businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

**OR**

Provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

**OR**

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

**The above information must be provided as required. Failure to provide this evidence may result in rejection of the bid and award to the next low bidder.**

**MINIMUM COMPLIANCE REQUIREMENTS:**

If the MBE subcontract goals are not achieved, the Bidder shall provide the following documentation to the Board.

1. MBE Utilization Commitment (MBE Form 1) with the bid.

2. Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions (upon request prior to award). This documentation shall include the following evidence:
  - A. Copies of solicitations for quotes to at least three (3) MBE firms from the source list provided by the Minority -Business Development Agency of the Small Business Development Division, North Carolina Department of Economic & Community Development (hereinafter Minority Business Development Agency) for each subcontract to be let under this contract (if 3 or More firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
  - B. Copies of quotes or responses received from each firm responding to the solicitation.
  - C. A telephone log of follow-up calls to each firm sent a solicitation.
  - D. For subcontracts where an MBE firm is not considered to be the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
  - E. Documentation of any contacts, correspondence or conversation with MBE firms made in an attempt to meet the goals.

Note: If the Bidder provides sufficient evidence (listed in #1) that the goals stated in the contract documents have been met, or awards all subcontracts to MBE'S, the documentation listed in #2 will not be required.

Upon being named apparent low bidder, the Bidder shall provide a Letter of Intent (MBE) Form 3), complete with a description of the scope of services and dollar value from each MBE firm proposed for use in this contract. Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder. The Board reserves the right to waive any irregularities in MBE documentation if they can be resolved prior to award of the contract, and the Board finds it to be in its best interest to do so and award the contract.

#### SUBCONTRACTOR PAYMENT REQUIREMENTS:

North Carolina General Statute 143-134. 1, states that the percentage of retainage on payment made by the prime contractor to the subcontractor shall not exceed the percentage of retainage on payments made by the Board to the prime contractor. Failure to comply with this provision shall be considered a breach of the contract, and the contract may be terminated in accordance with the termination provisions of the contract.

The Contractor shall provide an itemized statement of payments to each MBE subcontractor with each request for payment or before final payment is processed.

**PROGRAM COMPLIANCE REQUIREMENTS:**

All written statements, certification or intentions made by the Bidder shall become a part of the agreement between the Contractor and the Board for performance of this contract. Failure to comply with any of these states, certifications, or intentions, or with the MBE Guidelines shall constitute a breach of the contract. A finding by the Board that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the Board whether to terminate the contract for breach.

In determining whether a contractor has made good faith efforts, the Board will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. The Board may take into account any or all of the following:

1. Whether the Bidder attended any prebid meetings that were scheduled by the Board;
2. Whether the Bidder advertised in general circulation, trade association, and minority-focus media concerning the subcontracting opportunities;
3. Whether the Bidder provided written notice to a minimum of three MBE's for each portion of the work subcontract, that their interest in the contract was being solicited in sufficient time to allow the MBE's to participate effectively;
4. Whether the Bidder followed up initial solicitations of interest by contacting MBE's to determine with certainty whether the MBE's were interested;
5. Whether the Bidder selected portions of the work to be performed by MBE's in order to increase the likelihood of meeting MBE goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate MBE participation);
6. Whether the Bidder provided interested MBE's with adequate information about the plans, specifications and requirements of the contract;
7. Whether the Bidder negotiated in good faith with interested MBE's not rejecting MBE's as unqualified without sound reasons based on a thorough investigation of their capabilities.



# State of North Carolina AFFIDAVIT A – Listing of the Good Faith Effort

County of \_\_\_\_\_

(Name of Bidder)

Affidavit of \_\_\_\_\_

I have made a good faith effort to comply under the following areas checked:

**Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive.** (1 NC Administrative code 30 1.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 – (10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 – (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

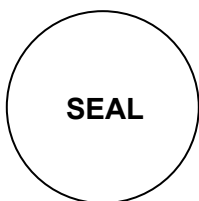
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d). Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

Section 000003

Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid

**State of North Carolina --AFFIDAVIT B - Intent to Perform Contract  
with Own Workforce.**

County of \_\_\_\_\_

Affidavit of \_\_\_\_\_  
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the \_\_\_\_\_  
\_\_\_\_\_ contract.  
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

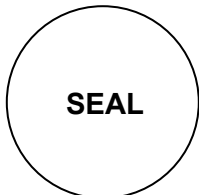
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires \_\_\_\_\_

**State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by Minority Firms**

County of \_\_\_\_\_

(Note: this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by minority businesses as defined in GS143-128.2(g) is equal to or greater than 10% of the bidders total contract price then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of \_\_\_\_\_ I do hereby certify that on the \_\_\_\_\_  
 (Name of Bidder)

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

Project ID# \_\_\_\_\_ Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*Minority Category	Work description	Dollar Value

\*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Socially and Economically Disadvantaged (D)

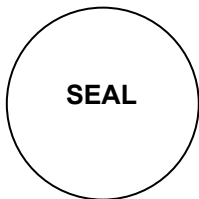
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_



# State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of \_\_\_\_\_

(Note: this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of \_\_\_\_\_ I do hereby certify that on the  
(Name of Bidder)

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

Project ID# \_\_\_\_\_ Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required.)

Name and Phone Number	*Minority Category	Work description	Dollar Value

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**), American Indian (**I**), Female (**F**), Socially and Economically Disadvantaged (**D**)

Examples of documentation include, but are not limited to, the following evidence:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

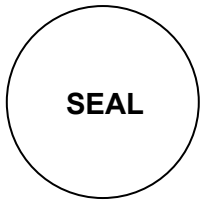
Section 000003

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

**APPENDIX E  
MBE DOCUMENTATION FOR CONTRACT PAYMENTS**

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

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

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

SCO Project ID: \_\_\_\_\_

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

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

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

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

Approved/Certified By: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

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

**SECTION 00 60 00**

**PROJECT FORMS**

**PART 1 GENERAL**

**1.01 GENERAL**

A. The following documents are included in the Project Manual:

1. Performance Bond Form - 00 61 13.13
2. Payment Bond Form - 00 61 13.16
3. Roof Manufacturer's Acknowledgement Form – Section 00 62 33
4. Request for Interpretation - Section 00 63 13
5. Substitution Request Form - Section 00 63 25
6. Change Proposal Form - Section 00 63 55
7. Contractors Two Year Warranty - Section 00 65 36
8. Roofing Close-out Checklist - Section 00 66 00

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 00 60 00**

**PERFORMANCE BOND**

Date of Execution  
of this Bond: \_\_\_\_\_

Name and Address of  
Principal (Contractor): \_\_\_\_\_  
\_\_\_\_\_

Name and Address  
of Surety: \_\_\_\_\_  
\_\_\_\_\_

Name and Address of  
Contracting Body: THE BUNCOMBE COUNTY BOARD OF EDUCATION, a  
body corporate of the State of North Carolina, 175 Bingham Road,  
Asheville, NC 28806.

Amount of Bond: \_\_\_\_\_

Contract: That certain contract by and between the Principal and the  
Contracting Body above named, dated \_\_\_\_\_  
for \_\_\_\_\_  
\_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal and Surety above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain contract with the Contracting Body, as identified and shown above and hereto attached.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

THIS PERFORMANCE BOND is made and given pursuant to the requirements and provisions of Section 129 of Chapter 143 of the General Statutes of North Carolina and pursuant to Article 3 of Chapter 44-A of the General Statutes of North Carolina, and each and every provision set forth and contained in Article 3 of Chapter 44-A of the General Statutes of North Carolina is incorporated herein, made a part hereof, and deemed to be conclusively written into this Bond.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\_\_\_\_\_  
Principal (Name of individual, individual and trade name, partnership, corporation or joint venture)

WITNESS:

\_\_\_\_\_  
(Proprietorship of Partnership)

BY: \_\_\_\_\_ (SEAL)

TITLE: \_\_\_\_\_  
(Owner, partner, office held in corporation, joint venture)

(Corporate Seal)

ATTEST: (Corporation)

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_  
(Corporate Secretary of Assistant Secretary only)

\_\_\_\_\_  
Surety (Name of Surety Company)

WITNESS:

\_\_\_\_\_

BY: \_\_\_\_\_

TITLE: Attorney-in-Fact

(Corporate Seal of Surety)

\_\_\_\_\_  
(Address of Attorney-in-Fact)

COUNTERSIGNED:

\_\_\_\_\_

\_\_\_\_\_  
N.C. Licensed Resident Agent

**PAYMENT BOND:**

Date of Execution  
of this Bond: \_\_\_\_\_

Name and Address of  
Principal (Contractor): \_\_\_\_\_

Name and Address  
of Surety: \_\_\_\_\_

Name and Address of  
Contracting Body: THE BUNCOMBE COUNTY BOARD OF EDUCATION, a  
body corporate of the State of North Carolina, 175 Bingham Road,  
Asheville, NC 28806.

Amount of Bond: \_\_\_\_\_

Contract: That certain contract by and between the Principal and the  
Contracting Body above named, dated \_\_\_\_\_  
for \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal and Surety above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into a certain contract with the Contracting Body, as identified and shown above and hereto attached.

NOW THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications and extensions of time of said contract that may hereafter be made, notice of which modifications and extensions of time to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

THIS PAYMENT BOND is made and given pursuant to the requirements and provisions of Section 129 of Chapter 143 of the General Statutes of North Carolina and pursuant to Article 3 of Chapter 44-A of the General Statutes of North Carolina, and each and every provision set forth and contained in Article 3 of Chapter 44-A of the General Statutes of North Carolina is incorporated herein, made a part hereof, and deemed to be conclusively written into this Bond.

PYB 1

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\_\_\_\_\_  
Principal (Name of individual, individual and trade name, partnership, corporation or joint venture)

WITNESS:

\_\_\_\_\_  
(Proprietorship of Partnership)

BY: \_\_\_\_\_ (SEAL)

TITLE: \_\_\_\_\_  
(Owner, partner, office held in corporation, joint venture)

(Corporate Seal)

ATTEST: (Corporation)

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_  
(Corporate Secretary of Assistant Secretary only)

\_\_\_\_\_  
Surety (Name of Surety Company)

WITNESS:

\_\_\_\_\_

BY: \_\_\_\_\_

TITLE: Attorney-in-Fact

(Corporate Seal of Surety)

\_\_\_\_\_  
(Address of Attorney-in-Fact)

COUNTERSIGNED:

\_\_\_\_\_

\_\_\_\_\_  
N.C. Licensed Resident Agent

PYB 2



**SECTION 00 62 33**

**ROOF MANUFACTURER'S ACKNOWLEDGMENT**

Owner: Buncombe County Schools

Project Name: Cane Creek Middle School Roof Replacement

Project Address: 570 Lower Brush Road, Fletcher, North Carolina 28732

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

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

This is to advise the Owner that having thoroughly reviewed the Specifications and Drawings contained within the Project Manual dated June 2, 2017 for the above-titled project, we acknowledge that the roof system(s) and flashing system(s) specified are suitable for the issuance of the specified 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 Engineer through the contractor before five (5) days of the bid due date or as otherwise outlined in the Instructions to Bidders, if conflicts exist between the Manufacturer's warranty requirements 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 roof 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 Manufacturer's Address

\_\_\_\_\_  
Telephone

**END OF SECTION 00 62 33**

**SECTION 00 63 13**

**REQUEST FOR INTERPRETATION**

---

Project: \_\_\_\_\_ RFI Number: \_\_\_\_\_

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

A/E: \_\_\_\_\_ A/E Project No.: \_\_\_\_\_

Contract For: \_\_\_\_\_ Contract Date: \_\_\_\_\_

---

Specification Section:	Paragraph:	Drawing Reference:	Detail:
------------------------	------------	--------------------	---------

Request: \_\_\_\_\_

Signed By: \_\_\_\_\_

Response: \_\_\_\_\_

Attachments

---

Response From: \_\_\_\_\_ To: \_\_\_\_\_ Date Rec'd: \_\_\_\_\_ Date Ret'd: \_\_\_\_\_

---

Signed By: \_\_\_\_\_ Date: \_\_\_\_\_

---

Copies:     Owner             Contractor             A/E             Other

**SECTION 00 63 25**

**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 Spec	_____

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

The substitution proposed is equal-to or better in every respect to that required by the Contract Documents, and it will perform equal or superior to product specified in the application indicated. The Contractor waives 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 63 55

CHANGE PROPOSAL FORM

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

Project No.: \_\_\_\_\_
Change Order No.: \_\_\_\_\_

Description of change:

Table with columns for item number, description, and amount. Includes sections for Materials, Labor, Equipment Rental, and Subcontractors. Ends with a TOTAL OF CHANGE PROPOSAL row.

Time Extension Request: \_\_\_\_\_ calendar day(s)

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

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

Approval Recommended by the Engineer: \_\_\_\_\_ Date: \_\_\_\_\_

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

**SECTION 00 65 36**

**CONTRACTOR'S TWO-YEAR WARRANTY**

Know all men by these presents, that we, (Contractor) \_\_\_\_\_, having installed roofing system, flashings and sheet metal on the Cane Creek Middle School Roof Replacement under contract between Buncombe County Schools (Owner) and Contractor, warrant to the Owner with respect to said work that for a period of two (2) years from date of substantial completion, the work shall be absolutely watertight and free from any and all leaks, provided however the following are excluded from this Warranty:

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

We, Contractor, agree that should any leaks occur in the work we will perform emergency repairs within 24 hours notice and perform permanent repairs within a reasonable time in a manner to restore the work to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice, all at no expense to the Owner.

We, Contractor, further agree that for a period of two (2) years from date of substantial completion referred to above, we will make repairs at no expense to the Owner to any defects which may develop in the work in a manner compatible to the system and acceptable under industry standards and general practice as established by the Engineer.

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

\_\_\_\_\_ Carolina  
 \_\_\_\_\_ County

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

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

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

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

**END OF SECTION 00 65 36**

# Buncombe County Schools Facilities Department Re-Roofing Administrative & Close Out Requirements

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## **Pre-Construction Administrative Requirements**

## **Received**

1. Approved Submittals/Shop Drawings
2. Roof Manufacturer's Acknowledgement Form
3. Permits

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## **Project Close Out**

1. Manufacturer's Final Inspection Report
2. Approved completion of Punch List
3. Allowance Authorization & Change Orders
4. Accepted warranties
  - a. TPO Manufacturer's 20-year Roof System Warranty
  - b. Manufacturer's 20-year Metal Roof Weathertight Warranty
  - c. Manufacturer's Metal Panel and Sheet Metal Trim Finish Warranty
  - d. Contractor's 2-year warranty
5. Operations & Maintenance Documents
6. Documentation of acceptance from Authorities Having Jurisdiction (AHJ)
7. Final Invoice

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## **NOTES:**

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## SECTION 01 11 00

### SUMMARY OF WORK

#### **PART 1 GENERAL**

##### **1.01 RELATED DOCUMENTS**

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

##### **1.02 WORK COVERED BY CONTRACT DOCUMENTS**

- A. Project Name: Cane Creek Middle School Roof Replacement
- B. Project Address: 570 Lower Brush Road, Fletcher, North Carolina 28732
- C. Owner: Buncombe County Schools
- D. Engineer: The Contract Documents, dated June 2, 2017, were prepared by REI Engineers, Inc.
- E. This work includes the provision of all labor, material, equipment, supervision and administration to integrate the work outlined in this project manual into the total building system such no leakage into the system occurs. In general, the scope of work in the Base Bid will include:
  - 1. Roof Areas A1-A5:
    - a. Existing asphalt shingles shall remain in place; provide 1” roof insulation over existing asphalt shingles; provide standing seam metal roof panel system including sheet metal flashings, trim, gutters, downspouts and related accessories to provide a complete weathertight, 20-year warrantable roof assembly.
    - b. Provide snow guard system along eave of roof.
    - c. Provide roof curb and raise unit skylights to be mounted to curb on Area A3.
  - 2. Roof Area B2:
    - a. Existing EPDM roof system shall remain in place; prepare existing low slope EPDM roof and provide steep slope retrofit framing and standing seam metal roof system including wall panels, soffit panels, sheet metal flashings, trim, gutters, downspouts, and accessories to provide a complete, weathertight, 20-year warrantable roof assembly.
    - b. Contractor shall be responsible to ensure retrofit framing and fasteners penetrating EPDM roof system are installed in a watertight condition.
    - c. Provide snow guard system along eave of roof.
  - 3. Roof Areas B1, B3-B4:
    - a. Remove and dispose of the existing EPDM roof membrane including flashings and sheet metal down to the existing insulation system to remain; replace deteriorated insulation in accordance with Unit Prices and Quantity Allowances; mechanically attach cover board; fully adhere thermoplastic

polyolefin (TPO), single ply membrane along with flashings and accessories and provide sheet metal flashings and trim to provide a complete, watertight, 20-year warrantable roof assembly.

- F. Asbestos Containing Roofing Materials (ACRM):
  - 1. No Asbestos Containing Roofing Materials (ACRM) have been detected in test samples roof areas included in Contract.
  - 2. It is the intention of these specifications that no asbestos bearing materials be incorporated into the work. In the event the contractor should determine unanticipated asbestos bearing materials to be present in the existing building components, Contractor is to stop all work in the affected area, notify the Engineer and Owner, and provide temporary protection as required. Costs incurred, if any, due to the presence of hidden and/or unanticipated asbestos bearing materials will be authorized by Change Order to this contract.
- G. The contractor is responsible for all electrical, plumbing, mechanical, and other related trade work necessary to facilitate project operations. Contractor is responsible for re-locating any and all conduit, HVAC equipment, curbs, and/or plumbing necessary to comply with the requirements of these documents. All work shall conform to the requirements of the current Building Code approved in the State of the project location.
- H. General requirements and specific recommendations of the material manufacturers are included as part of these specifications. The manufacturers' specifications are the minimum standards required for the completed systems. Specific items listed herein may improve the standards required by the manufacturers and will take precedence where their compliance will not affect the manufacturers' guarantee or warranty provisions.

**1.03 CONTRACT**

- A. Project will be constructed under a single prime general construction contract.

**1.04 SITE INVESTIGATION**

- A. The Contractor acknowledges that he has satisfied himself as to the nature and location of the Work, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, ground water table or similar physical conditions at the site, the conformation and condition of the ground, the character, quality and quantity of surface and subsurface materials to be encountered, the character of equipment and facilities needed prior to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint himself with all the available information concerning these conditions will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. Field measurements shall be taken at the site by the Contractor to verify all data and conditions affected by the Work.

**1.05 WORK UNDER OTHER CONTRACTS**

- A. Separate Contract: Owner may award a separate contract for performance of certain construction operations at Project site. Contractor shall cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract.

**1.06 SPECIFICATION FORMATS AND CONVENTIONS**



- A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC's "MasterFormat" numbering system.
  - 1. Section Identification: The Specifications use section numbers and titles to cross-reference Contract Documents. Sections in the Project Manual are in numeric sequence.; however, the sequence is incomplete. Consult the Table of Contents at the beginning of the Project Manual.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 11 00**

## SECTION 01 14 00

### WORK RESTRICTIONS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Administrative and procedural requirements for work sequence, work restrictions, occupancy requirements and use of premises.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 WORK SEQUENCE**

- A. The Work shall be conducted in the following sequences unless construction phases are otherwise specified.
  1. Construct Work in phases to accommodate the Owner's use; if applicable, of the premises during the construction period; coordinate the construction schedule and operations with the Owner and Engineer.
  2. Construct the Work in phases to provide for public convenience. Do not close off public use of facility until completion of one phase of construction will provide alternative usage.
  3. Construction shall be scheduled in such a manner that once work has commenced on one facility, the Contractor's work force shall remain at that facility continuously each work day through final completion at that facility.

##### **1.04 WORK RESTRICTIONS**

- A. Work hours shall generally be performed during normal business hours. Should the Contractor elect to work outside of normal business hours, notification to the Owner and Engineer at least 48 hours in advance shall be required. No work shall be scheduled without prior notification and authorization.
- B. Contractor shall coordinate work schedule with School's testing and special events schedule and may not be allowed to be on-site during certain testing days/events.

##### **1.05 OCCUPANCY REQUIREMENTS**

- A. Owner Occupancy
  1. Owner will occupy the premises during the entire period of construction to conduct his normal operations. Cooperate with Owner in all construction operations to minimize conflict, and to facilitate Owner usage.
  2. Contractor shall at all times conduct his operations as to ensure the least inconvenience and the greatest amount of safety and security for the Owner, his staff, and the general public.
  3. Control noise from operations so that building occupants are not affected.

##### **1.06 USE OF PREMISES**

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of

site beyond areas in which the Work is indicated.

1. Limits: Confine constructions operations to areas of work being renovated as approved by Engineer and Owner.
2. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  - c. Schedule deliveries to avoid student pick up and drop off times.
3. Move any stored materials and equipment that interfere with operations of the Owner.

**B. Use of Existing Building**

1. Maintain existing building in a weathertight condition throughout construction period.
2. Take every precaution against injuries to persons or damage to property.
3. Protect building, its contents, and its occupants during construction period.
4. The Contractor shall not overload or permit any part of the structure to be loaded with such weights as will endanger its safety or to cause excessive deflection. Materials placed on the roof prior to installation shall be equally distributed over the roof area.
5. Protect any existing surface improvements, such as pavements, curbs, sidewalks, lawn and landscaped areas, utilities, etc.
6. Repair to the Owner and Engineer's satisfaction, or to restore to a condition equal to that existing at the time of award of Contract, or to make restitution acceptable to the Owner, any and all damages to the building, its contents, or surface improvements resulting from, or attributable to, the work operation.

**C. Transportation Facilities**

1. Truck and equipment access:
  - a. Avoid traffic conflict with vehicles of the Owner's employees and customers, and avoid over-loading of street and driveways elsewhere on the Owner's property, limit the access of trucks and equipment to the designated areas.
  - b. Provide adequate protection for curbs and sidewalks over which trucks and equipment pass to reach the job site.
2. Contractor's vehicles:
  - a. Require contractor's vehicles, vehicles belonging to employees of the contractor, and all other vehicles entering the Owner's property in performance of the work the contract, to use only the designated access route.
  - b. Do not permit such vehicles to park on any street or other area of the Owner's property except in the designated area.

**1.07 OWNER POLICIES**

**A. Tobacco Policy**

1. The Owner has adopted a Tobacco Free Policy which applies to all school property. This is a total ban on all tobacco products including cigarettes, cigars, pipes, chewing tobacco, snuff, etc. Contractor is responsible for employee's actions while they are on school property. Failure to follow this policy shall constitute a breach of contract and said contract may be terminated without penalty to the school system.

B. Weapons and Explosives Policy

1. Excluding law enforcement, all persons are prohibited from possessing, carrying, using or threatening to use, or encouraging another person to possess, carry, use or threaten to use, weapons or explosives on school property or while attending curricular or extracurricular activities sponsored by the school. This policy applies to weapons or explosives carried openly or concealed. For purposes of this policy, a weapon includes, but is not limited to, any gun, rifle, pistol or other firearm of any kind; or any BB gun, stun gun, air rifle, air pistol, bowie knife, dirk, dagger, slingshot, leaded cane, switchblade knife, blackjack, metallic knuckles, razors and razor blades (except solely for personal shaving), fireworks, or any sharp-pointed or edged instrument except instructional supplies, unaltered nail files and clips and tools used solely for preparation of food, instruction and/or maintenance on educational property. For purposes of this policy, an explosive includes, but is not limited to and dynamite cartridge, bomb, mine or powerful explosive as defined in N.C. G.S. 14-284.1. For purposes of this policy, school property is any school building or bus, school campus, grounds, recreational area, athletic field, or other property owned, used or operated by The Board of Education. This policy shall not apply to: 1) a weapon or explosive used solely for educational or school sanctioned ceremonial purposes, or used in a school approved program conducted under the supervision of an adult whose supervision has been approved by the school authority, or 2) firefighters, emergency personnel, North Carolina Forest Service personnel, and any private police employed by the School Board, when acting in the discharge of their official duties.

C. Criminal Record Investigation – Contractor Agreement

1. When requested by Owner, the successful bidder shall obtain a county, state and national criminal history covering the past ten years on any contractor applicant or contractor employee, hereafter called prospective worker, providing services to Owner. As a minimum, criminal information sources will include State and National access to the SBI/DCI Criminal History Record Information for the prospective worker's residence(s), past ten years and fingerprints shall be forwarded to the Federal Bureau of Investigation for the search. Previously conducted criminal histories more than one year old must be updated. The Contractor shall provide a Criminal Histories Report two weeks prior to arriving "on-site" and said report will be updated monthly for all new hires. Prospective workers who refuse to provide fingerprints and/or consent to the Criminal Background checks or who have been convicted of sexual deviance, sexual crime, domestic violence, violence against another human being, larceny, alcohol/drug trafficking, alcohol/drug abuse or any other disqualifying offense as determined by the Owner Superintendent, will not be allowed on the property.

D. Conduct Policy

1. The conduct of all contractor employees during any project shall be exemplary; at no time shall profanity, drinking, lewd or suggestive comments or gestures or other acts of this nature be tolerated.

E. Drug Free Policy

1. Owner conforms to a drug free policy. Any contractor employee must be tested upon request of Owner and results provided to Owner. If the employee is found to have been under the influence or using drugs, it shall constitute a breach of contract and said contract may be terminated without penalty to the school system.

F. Dress Code Policy

1. Shirts and shoes are required at all times, as well as long pants. Identification of employees, vehicles, uniforms, etc. may be required when indicated.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 14 00**

## **SECTION 01 21 00**

### **ALLOWANCES**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Administrative and procedural requirements governing allowances.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 CONTINGENCY ALLOWANCE**

- A. A \$25,000.00 contingency allowance shall be included in the base bid.
- B. Any unused portion remaining at the completion of the contract shall be credited back to the Owner as a credit.
- C. The Owner reserves the right to modify the contingency allowance prior to award of Contract.

##### **1.04 QUANTITY ALLOWANCES**

- A. Quantity allowance for the items indicated below shall be included in the base bid. The unit price submitted on the Bid Form shall be used to compute the quantity allowances. The quantities indicated are estimated quantities only for the purpose of comparing bids. The Contractor will be compensated at the unit price bid for the exact quantity of work performed under each unit price item. Deductive amounts of unit price work included in the Contract Sum will be calculated at 100% of the quoted add unit price.
  - 1. QA-1: Remove asphalt shingles and felt underlayment down to plywood substrate, replace deteriorated plywood substrate, fully adhere metal roof panel underlayment to provide watertight condition.
    - a. 5,000 square feet
  - 2. QA-2: Replace deteriorated polyisocyanurate insulation. Refer to Section 07 01 50.
    - a. 300 board feet
  - 3. QA-3: Replace Deteriorated Wood Blocking.
    - a. 500 board feet

**END OF SECTION 01 21 00**

## **SECTION 01 22 00**

### **UNIT PRICES**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Administrative and procedural requirements for unit prices.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITION**

- A. Unit price is an amount proposed by Bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

##### **1.04 UNIT PRICE MEASUREMENT**

- A. Prior to performing any work under a unit price as specified herein, the Contractor shall notify the Engineer to allow for measurement of the actual quantities of work. Any work performed under these items without prior approval and measurement shall be at the Contractor's expense.
- B. The Contractor shall maintain a daily log including visual documentation (i.e. digital photographs) showing dates, location and exact quantities of unit price work.
- C. Owner and Engineer reserve the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent party.

##### **1.05 UNIT PRICE PAYMENT**

- A. Unit prices shall include all costs associated with performing the unit price work including but not limited to labor, material, equipment, insurance, applicable taxes, overhead and profit, etc.

##### **1.06 UNIT PRICE PERFORMANCE**

- A. Unit price work shall be installed in accordance with the applicable specification section(s) and Contract Drawings for the project.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION**

##### **3.01 SCHEDULE OF UNIT PRICES**

- A. Unit prices for the items indicated below shall be provided on the Bid Form.

1. UP-1: Remove asphalt shingles and felt underlayment down to plywood substrate, replace deteriorated plywood substrate, fully adhere metal roof panel underlayment to provide watertight condition. Refer to Section 06 10 00 and 07 01 50.
  - a. Unit of Measurement: Square Foot (SF)
2. UP-2: Replace deteriorated polyisocyanurate insulation. Refer to Section 07 01 50.
  - a. Unit of Measurement: Board Foot (BF)
3. UP-3: Replace Deteriorated Wood Blocking. Refer to Section 06 10 00.
  - a. Unit of Measurement: Board Foot (BF)

**END OF SECTION 01 22 00**



## SECTION 01 25 00

### PRODUCT SUBSTITUTIONS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions prior to the Owner's receipt of bids.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, and equipment, of construction required by Contract Documents proposed by the Contractor are considered requests for "substitutions". The following are not considered substitutions:
  - 1. Substitutions that are requested by Bidders beyond the 14 days prior to bid opening submittal period.
  - 2. Revisions to Contract Documents requested by the Owner or Engineer.
  - 3. Specified options of products and construction methods included in Contract Documents.
  - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

##### **1.04 SUBMITTALS – PRIOR TO BID**

- A. Substitution Request Submittal: Written requests for substitution from prime bidders will be considered if received by the Engineer fourteen (14) calendar days prior to the bid opening.
  - 1. Submit each request for substitution on the form contained in Section 00 63 25-Substitution Request Form for consideration in accordance with procedures required below.
  - 2. Identify the product or the fabrication or installation method to be replaced in each request. Include related specification sections and drawing number.
  - 3. Provide complete documentation on both the product specified and the proposed substitution including the following information as appropriate.
    - a. Comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
    - b. Samples where applicable or requested.
    - c. A detailed comparison of significant qualities of the proposed substitution with those of the work specified.
    - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the

Owner and separate Contractors that will become necessary to accommodate the proposed substitution.

4. Certification by the Contractor or manufacturer that the substitution proposed is equal-to or better in every respect to that required by the Contract Documents, and that it will perform equal or superior to product specified in the application indicated. The Contractor waives any right to additional payment or time, which may subsequently become necessary because of the failure of the substitution to perform adequately.
  5. Engineer's Action: The Engineer may request additional information or documentation necessary for evaluation of the request. The Engineer will notify the Contractors of acceptance of the proposed substitution by means of an addendum to the bid documents. If the proposed substitute is accepted through an addendum use the product specified by name.
- B. Engineer's Substitution Approval during bidding and subsequent addendums does not void the Contractor's responsibility to submit the required shop drawings and comply with the other contract documents and requirements.

## **1.05 SUBMITTALS – AFTER AWARD OF CONTRACT**

- A. After award, requests for approval of equivalent items shall be submitted in writing to the Engineer for approval within seven (7) calendar days after Notice to Proceed.
- B. Submit each request in writing for substitution for consideration in accordance with procedures required below.
- C. Requests for approval of equivalent items shall be accompanied by information sufficient for the Engineer to make a determination as to the equivalency of a product. The determination of the Engineer of the equivalency of a product shall be final. The Engineer reserves the right to request information or documentation for evaluation including but not limited to the following:
  1. Statement indicating why specified product cannot be provided.
  2. Coordination of information, including a list of modifications needed to other parts of the work that will be necessary to accommodate proposed substitution.
  3. Product data including drawings, descriptions, and fabrication/installation procedures.
  4. Samples where applicable.
  5. Material test reports from a qualified testing agency indicating the interpreting test results for compliance with requirements.
  6. Contractor's certification that proposed substitution complies with requirements in the contract documents and is appropriate for applications indicated.
  7. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  8. If requesting product substitution after bid award, Contractor shall provide cost information including proposal of change, if any, in the contract sum.

## **PART 2 PRODUCTS**

### **2.01 SUBSTITUTIONS – PRIOR TO BID**

- A. Conditions: The Contractor's substitution request will be received and considered by the

Engineer when all of the following conditions are satisfied, as determined by the Engineer; otherwise requests will be returned without action except to record noncompliance with these requirements.

1. Extensive revisions to Contract Documents are not required.
  2. Proposed changes are in keeping with the general intent of Contract Documents.
  3. The request is timely, fully documented and properly submitted.
  4. The request is directly related to an “or equal” clause or similar language in the Contract Documents.
- B. The Contractor’s submittal and Engineer’s acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an approval or valid request for substitution.

**2.02 SUBSTITUTIONS – AFTER AWARD OF CONTRACT**

- A. Substitutions after award are solely for the convenience of the Contractor and will be considered and approved by Change Order which is accompanied by a credit to the Owner. The Contractor shall be required to bear any additional costs related to making the substituted material or system work, such as extra engineering, material or system modifications, or any time considerations relating to material or system installation requirements.

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 25 00**

## SECTION 01 26 00

### CONTRACT MODIFICATION PROCEDURES

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Administrative and procedural requirements for handling and processing Contract modifications.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 5 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Engineer.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - 4. Include costs of labor and supervision directly attributable to the change.

5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 1 if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Approval:

1. The form of Change Order shall be AIA Document G701 submitted by the Engineer to be signed by the Contractor and Owner.
2. The Contractor shall not commence work or purchase materials for such change orders until written approval is received from the Owner in the form of an executed Change Order.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 26 00**

## SECTION 01 29 00

### PAYMENT PROCEDURES

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

##### **1.04 SCHEDULE OF VALUES**

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Submittals.
  - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
    - a. Application for Payment Forms with Continuation Sheets
    - b. Submittals Schedule
    - c. Contractor's Construction Schedule
  - 2. Submit the Schedule of Values to Consultant along with Submittals.
  - 3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.
- B. Format and Content: Use the sample Continuation Sheet contained in the Project Manual as a guide to establish line items for the Schedule of Values. Provide one line item for labor and one line item for material for each Specification Section.
  - 1. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location.
    - b. Name of Consultant.
    - c. Consultant's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Submit draft of AIA Document G703 Continuation Sheets.
  - 3. Arrange the Schedule of Values in tabular form with separate columns to indicate

the following for each item listed:

- a. Related Specification Section or Division.
  - b. Description of the Work.
  - c. Change Orders (numbers) that affect value.
  - d. Dollar value.
    - i. Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
  5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
    - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
  7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
  8. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
  9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
    - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
  10. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

## **1.05 APPLICATION FOR PAYMENT**

- A. The Contractor shall submit three originals of applications for payment on AIA Document G702 and G703, current editions.
  1. The date for each progress payment shall be indicated in the Agreement between Owner and Contractor. The period of Work covered by each application is the period indicated in the Agreement
  2. All copies shall be on original AIA forms.
  3. The application for payment shall be complete, notarized and executed by a person authorized to legally sign documents on behalf of the Contractor.
  4. A complete breakdown of the work showing separate labor and material amounts

- shall be shown on Document G703 in accordance with the approved Schedule of Values.
5. Each application shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
  6. Engineer shall return incomplete applications without action.
- B. Payment Terms: Within forty-five (45) days of receipt of engineer-approved request, Owner shall make a progress payment to the Contractor on the basis of a duly certified and approved estimate of the work performed during the preceding calendar month under this Contract.
- C. Retainage: if the total contract amount exceeds \$100,000.00; to ensure the proper performance of this Contract the Owner shall retain five percent (5%) of the amount of any periodic payment due to a Contractor. When the project is fifty percent (50%) complete, the Owner, with written consent of the surety, shall not retain any further retainage from periodic payments due the contractor if the contractor continues to perform satisfactorily and any nonconforming work identified in writing prior to that time by the Engineer, engineer or owner has been corrected by the contractor and accepted by the Engineer, engineer or owner. If the owner determines the contractor's performance is unsatisfactory, the owner may reinstate retainage for each subsequent periodic payment application as authorized in this subsection up to the maximum amount of five percent (5%). The project shall be deemed fifty percent (50%) complete when the contractor's gross project invoices, excluding the value of materials stored off-site, equal or exceed fifty percent (50%) of the value of the contract, except the value of materials stored on-site shall not exceed twenty percent (20%) of the contractor's gross project invoices for the purpose of determining whether the project is fifty percent (50%) complete. Within 60 days after the submission of a pay request and one of the following occurs, as specified in the contract documents, the owner with written consent of the surety shall release to the contractor all retainage on payments held by the owner: (i) the owner receives a certificate of substantial completion for the Engineer in charge of the project; or (ii) the owner receives beneficial occupancy or use of the project. However, the owner may retain sufficient funds to secure completion of the project or corrections on any work. If the owner retains funds, the amount retained shall not exceed two and one half times the estimated value of the work to be completed or corrected. Any reduction in the amount of the retainage on payments shall be with the consent of the contractor's surety.
- D. Entries shall match data on the schedule of values and Contractor's construction schedule. Include amounts of change orders issued before last day of construction period covered by the application.
- E. The Engineer reserves the right to contact material manufacturers directly, without contractor consent, to verify material invoices. Material invoices shall be made available to the Engineer upon his request from the contractor or material manufacturer.
- F. When requesting payment for materials stored on site, the Contractor shall submit with his request an invoice for the materials and a certificate of insurance showing proof of coverage for the materials stored on site. Payment will be made only for stored materials. No payment will be made for anticipated overhead and/or profit.
- G. Prior to initial application for payment, the following items must precede or coincide with submittal:
1. List of subcontractors
  2. Schedule of values



- H. With each application for payment, the Contractor shall also submit the following:
1. County/State Sales/Use Tax Statement: The Contractor shall submit with each pay request an original notarized statement (Refer to Section 00 62 76.13) provided by the Owner showing all taxes paid on the project. It shall list any payments made directly to each supplier indicating the supplier name, invoice date, invoice amount before taxes, taxes paid indicating state and county, and total invoice amount. If no sales taxes have been paid, indicate "NONE" on the statement form and submit accordingly.
  2. Unit Price Daily Logs: Copies of any unit price daily logs and appropriate change order forms shall be submitted with each application for payment unless no unit price work was accomplished during the period covered by the application.
  3. Owner's M/W/SBE Program Forms
  4. AIA Document G706, Contractor's Affidavit of Payment of Debts and Claims
  5. AIA Document G706A, Contractor's Affidavit of Release of Liens
- I. At substantial completion, submit an application for payment showing one hundred percent completion for portion of the work claimed as substantially complete. Include documentation supporting claim that the work is substantially complete.
- J. At final completion, submit final application for payment with releases and supporting documentation not previously submitted and accepted, including but not limited to the following. Final payment shall not become due until all required documents have been submitted.
1. Project Closeout Submittals
  2. Final County/State Sales/Use Tax Statement
  3. AIA Document G706, Contractor's Affidavit of Payment of Debts and Claims
  4. AIA Document G706A, Contractor's Affidavit of Release of Liens
  5. AIA Document G707, Consent of Surety to Final Payment

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 29 00**

## **SECTION 01 31 00**

### **PROJECT MANAGEMENT AND COORDINATION**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
1. General project coordination procedures.
  2. Coordination.
  3. Administrative and supervisory personnel.
  4. Project meetings.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 COORDINATION**

- A. Coordinate construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. The Contractor shall coordinate its operations with those included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Contact Progress Reporting: The scheduling and sequence of all operations shall be carefully coordinated with the Owner and Engineer.
- C. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
  2. Preparation of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.

5. Progress meetings.
6. Pre-Construction conference.
7. Pre-installation conferences.
8. Project closeout activities.

#### **1.04 DAILY SITE REPORTING**

- A. Upon arrival daily, Contractor's lead employee shall report to the facilities office or department where they are working and shall inform the staff that they have arrived, their reasons for being there, and the number of personnel working. "Log/Sign In" as directed by the staff, and show a photo I.D. with company logo.

#### **1.05 PROJECT MEETINGS**

- A. Pre-Construction Meeting
  1. A Pre-Construction Meeting will be scheduled as soon as possible after the award of the contract. The Engineer's Representative will compile minutes of the meeting, and will furnish a copy of the minutes to the Contractor and each person present. The Contractor may make and distribute such other copies as he wishes.
  2. Attendance: Contractor Project Manager, Job Superintendent and Job Foreman, Owner, Engineer's Representative, manufacturer's representatives, installers of related work and all other persons concerned with the installation and performance. The Contractor shall also provide three (3) local telephone numbers, which may be used to contact the Contractor or his authorized representative in the event of an emergency after normal business hours.
  3. Minimum Agenda: Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and the Project Manager; channels and procedures for communication; construction schedule, including sequence of critical work; contract documents, including distribution of required copies of Drawings and revisions; processing of Shop Drawings and other data submitted to the Project Manager for review; rules and regulations governing performance of the work and procedures for safety, first aid, security, quality control, housekeeping and related matters.
- B. Progress Meetings
  1. The Contractor shall attend monthly progress meetings for the purpose of informing the Owner and the Engineer regarding the status of the project. The Engineer will compile minutes of the meeting, and will furnish a copy of the minutes to the Contractor and each person present. The Contractor may make and distribute such other copies as he wishes.
  2. Attendance: Owner, Engineer, Contractor, Job Superintendent, material Supplier, and Subcontractors, as appropriate. Each representative shall be thoroughly familiar with the status of the project and shall be prepared to discuss and act upon any situations, which may arise. The time, date and location of these meetings will be established during pre-construction conference. The Contractor shall provide an updated job progress schedule at each weekly meeting.
  3. Minimum Agenda: Review of work progress; field observations, problems, and decisions; identification of problems which impede planned progress; maintenance of progress schedule; corrective measures to regain projected schedules; planned progress during succeeding work period; coordination of projected progress; maintenance of quality and work standards; processing of field decisions and Change Orders; effect of proposed changes on progress, schedule, and coor-

dination; other business relating to work.

C. Substantial Completion Inspection Meeting

1. Scheduled by Owner and Engineer upon written notification of substantial completion of work from the Contractor.
2. Attendance: Owner, Engineer, Contractor, material manufacturer.
3. Minimum Agenda: Walkover inspection; verification of substantial completion; identification of punch list items; identification of problems, which may impede issuance of warranties.
4. Refer to Section 01 77 00 for other requirements.

D. Final Inspection Meeting

1. Scheduled by Owner and Engineer upon written notification of final completion of work from the Contractor.
2. Attendance: Owner, Engineer, Contractor.
3. Minimum Agenda: Verification of final completion including the completion of the punch list items.
4. Refer to Section 01 77 00 for other requirements.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 31 00**

## **SECTION 01 33 00**

### **SUBMITTAL PROCEDURES**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 SUBMITTAL PROCEDURE**

- A. General: The Contractor is responsible for providing the submittals to the Engineer. Each submittal must be accepted in writing prior to commencement of work.
- B. Submission Requirements: Submit all required submittals electronically in pdf format to the Engineer for review. The submittals will then be returned electronically to the Contractor with comments. Final submittals will require written responses to all Construction Document submittal comments.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as specified below. Time for review shall commence on Engineer's receipt of submittal.
  - 1. Initial Review: Allow 7 work days for initial review of submittals.
  - 2. Allow 7 work days for processing each resubmittal.
  - 3. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- D. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals and provide letter describing in detail any proposed changes, substitutions, or deviations from the project or manufacturer's specifications. A written explanation of why substitutions should be considered is required and shall be included under the appropriate tab.
- E. Transmittal and Identification: Package submittals appropriately and include a title page and/or pdf bookmark for each numbered schedule of submittal item identified below. Engineer will discard submittals received from sources other than Contractor. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
- F. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

##### **1.04 SCHEDULE OF SUBMITTALS**

- A. The following submittal items shall be submitted electronically with a title page and/or pdf bookmark for each submittal item to meet the requirements specified herein:
  - 1. Emergency contact list including pager, mobile and home numbers of key

- Contractor and Subcontractor personnel, and office and mobile numbers of key Owner and REI personnel.
2. Work schedule indicating start date, crew size, production rate, completion date, etc.
  3. Sample Application for Payment including Schedule of Values. Immediately after execution and delivery of the Contract, and before the first partial payment is submitted, the Contractor shall submit to the Owner through the Engineer the following:
    - a. An Application for Payment on AIA G702.
    - b. A schedule of values on AIA G703 Continuation Sheet consisting of a detailed breakdown of the Contract amount showing separate figures for labor and materials. The work listed under the various sections and subsections of the Specifications shall serve as the format for preparation of the following.
  4. Copy of Contractor's Certificate of Insurance
  5. Copy of Performance and Payment Bonds
  6. Copy of Construction Permits
  7. Roof Manufacturer's Acknowledgement Form
  8. Copy of all warranties indicated in Section 01 77 00 to meet the requirements of their respective specification section
  9. Letter describing in detail any proposed changes, substitutions, or deviations from the project or manufacturer's specifications. A written explanation of why substitutions should be considered is required.
  10. Shop drawings or letter stating that the contractor will install materials as detailed in the Contract Drawings unless properly authorized by the Engineer.
  11. Roof Retrofit Framing (Section 05 54 20)
  12. Rough Carpentry (Section 06 10 00)
  13. Preparation for Reroofing (Section 07 01 50)
  14. Roof Insulation (Section 07 22 16)
  15. Metal Roof Panels (Section 07 41 13)
  16. Metal Wall Panels (Section 07 42 13)
  17. Thermoplastic Polyolefin Roofing (Section 07 54 23)
  18. Sheet Metal Flashing and Trim (Section 07 62 00)
  19. Manufactured Gravel Stops and Fascia (Section 07 71 19)
  20. Roof Accessories (Section 07 72 00)
  21. Unit Skylights (Section 08 62 00)
  22. Existing damaged/dysfunctional components documentation (videotape, photos, etc.) including but not limited to; asphalt spills, windows, walls, sidewalks, paving, ceilings, etc. Lack of submission prior to commencement of work indicates Contractor has discovered no existing damaged components and takes responsibility for any damages caused by operations.
  23. Complete list of materials with Safety Data Sheets (SDS)

## **PART 2 PRODUCTS**

### **2.01 SUBMITTALS**

- A. General: Prepare and submit Submittals required herein and by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Manufacturer's catalog cuts.
    - e. Wiring diagrams showing factory-installed wiring.
    - f. Printed performance curves.
    - g. Operational range diagrams.
    - h. Compliance with recognized trade association standards.
    - i. Compliance with recognized testing agency standards.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Shopwork manufacturing instructions.
    - f. Templates and patterns.
    - g. Schedules.
    - h. Notation of coordination requirements.
    - i. Notation of dimensions established by field measurement.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
- D. Contractor's Construction Schedule: Comply with requirements in Division 01.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.
- F. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- G. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- H. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying

that material complies with requirements.

- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- M. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.
- N. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

**PART 3 EXECUTION**

**3.01 CONTRACTOR'S REVIEW**

- A. Review each submittal, check for compliance with the Contract Documents and note corrections and field dimensions prior to submitting to Engineer.

**3.02 ENGINEER'S ACTION**

- A. Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal item with an action stamp and will mark stamp appropriately to indicate action taken.
- B. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

**END OF SECTION 01 33 00**



## SECTION 01 40 00

### QUALITY REQUIREMENTS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

##### **1.04 DELEGATED DESIGN**

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

##### **1.05 SUBMITTALS**

- A. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

##### **1.06 QUALITY ASSURANCE**

- A. It is the intent under this contract that workmanship shall be of the best quality consistent with the materials and construction methods specified. The presence or absence of the Owner's or Engineer's representative shall in no way relieve the Contractor of his responsibility to furnish materials and construction in full compliance with the drawings

and specifications. The Owner and Engineer shall have the authority to judge the quality and require replacement of unacceptable work or personnel at any time.

- B. All contractors shall cooperate in the execution of their work and shall plan their work in such manners as to avoid conflicting schedules or delay of work. If any part of a Contractor's work depends upon the work of another Contractor, defects, which may affect that work, shall be reported to the Engineer in order that prompt inspection may be made and defects corrected. Commencement of work by a Contractor where such condition exists will constitute acceptance of the other Contractor's work as being satisfactory in all respects to receive the work commenced, except defects, which may later develop. Work of all trades under this contract shall be closely coordinated in such a manner as to obtain the best possible workmanship for the entire project. All components of the work shall be installed in accordance with the best practices of the particular trade. The General Contractor is responsible to advise the Owner sufficiently in advance of operations to allow for assignment of personnel.
- C. Materials or methods described by words which, when applied, have a well known technical or trade meaning will be held to refer to such recognized standard. Standard specifications or manufacturer's literature, when referenced, shall be of the latest revision or printing unless otherwise stated, and are intended to establish the minimum requirements acceptable.
- D. All materials shall be new, all materials and workmanship shall be in every respect in accordance with the best modern practice.
- E. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or accepted, such materials shall be delivered to the site in original packages or containers with seals unbroken and labels intact and shall not be opened until inspected and approved by the Engineer. Contractor shall notify the Engineer prior to such material's delivery.
- F. The Contractor's Foreman or Superintendent to maintain one complete set of the contract documents and approved submittals on the job site.
- G. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
  - 1. Acceptable Contractor:
    - a. Be certified in writing for a minimum of two years by the roofing materials manufacturer to install the primary roofing products.
    - b. Have a minimum of five (5) years experience in installing the same or similar materials specified under the same firm name as that submitting the bid. If requested, submit a copy of firm's Articles of Incorporation to verify years in business. Also all crew workers on site are to be experienced and have a working knowledge of the system being installed.
    - c. Principals of the firm to have a minimum of ten (10) years experience in the estimating, supervision, management and administration of a contracting firm engaged in the application of building envelope involving removal of the existing building envelope systems.
    - d. Licensed by state work is occurring in for the type and dollar amount of work contemplated by these Contract Documents.

- e. Never filed bankruptcy or filed for protection from creditors.
- f. At any time during the construction and completion of work covered by these Specifications, if the conduct of any workman of the various crafts be determined unsuitable or a nuisance to the Owner or Engineer, or if the workman be considered incompetent or detrimental to the work, the Contractor shall order such party removed immediately from the grounds with the person not returning at any time during the course of work on the project.
- g. During the performance of any work by the Contractor or subcontractors, the Contractor shall provide for the entire length of the project a full time onsite superintendent/representative meeting the following requirements:
  - i. For the purpose of these Specifications the designation “superintendent” is hereby defined as the individual present on the job site at all times while work is being performed, and whose primary responsibility is to supervise and direct the performance of the Work.
  - ii. The superintendent shall be in attendance at the project site at all times during the progress of the work and his duties as superintendent shall be limited to this project only. The superintendent shall supervise and instruct workmen without engaging in the work process. Should the superintendent be absent temporarily from the project at any time, he shall designate a competent foreman to assume duties. During the superintendent’s absence the foreman shall not engage in the work process but shall supervise and instruct only. Likewise, any communications given to the foreman shall be as binding as if given to the Contractor.
  - iii. It shall be the superintendent’s responsibility to communicate all matters pertaining to the Work with the Owner and/or Engineer. In case of emergency or safety, superintendent shall communicate directly with the Owner and/or Engineer. No decisions regarding changes in the Work will be made without the Owner’s knowledge.
  - iv. Decision making authority and ability.
  - v. Able to demonstrate knowledge of work being installed.
  - vi. Fluent in the English language (i.e. reading, writing and speaking).
  - vii. In possession of mobile telephone at all times.
  - viii. Owner and Engineer/Engineer approval.
- H. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
- I. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
- J. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- K. Factory-Authorized Service Representative Qualifications: An authorized representative

of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

## **1.07 QUALITY CONTROL**

- A. The authorized representatives and agents of Owner shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.
- B. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
  - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- C. Contractor's Responsibilities:
  - 1. Repair and protection of work and materials are Contractor's responsibility.
  - 2. Should any work or materials not conform with requirements of the Specifications or become damaged during the progress of the work, such work or materials shall be removed and replaced, together with any work disarranged by such alterations, at any time before completion and acceptance of the project. All such work shall be done at the expense of the Contractor.
  - 3. Contractor will coordinate documents with manufacturer and perform such testing, reporting, and communication incidental to provisions of the warranty procedures.
  - 4. Inclement Weather
    - a. In the event of temporary suspension of work as during inclement weather, or whenever the Engineer shall direct, the Contractor will protect carefully its work and materials against damage or injury from weather. If, in the opinion of the Engineer, any work or materials have been damaged or injured by reason of failure of the Contractor to protect its work, such materials shall be removed and replaced at the expense of the Contractor.
    - b. During inclement weather and temporary suspension of work, the Contractor shall inspect the facility no later than 9:00 AM each day for leaks and perform temporary repairs if necessary. Inspections shall be made daily during extended periods of inclement weather. Upon arrival at the facility, Superintendent shall immediately inform the Owner of his presence and purpose.
    - c. If Contractor does not inspect the facility by 9:00 AM on days of inclement weather and there is one or more leaks attributable to the Work, at 9:15 AM the Owner shall exercise his right to contact an outside contractor to perform temporary repairs as necessary to prevent damage to the building, its contents and to minimize disruption. The Contractor shall reimburse the outside contractor an equitable amount as determined solely by the outside contractor. If the Contractor arrives at the project site after the outside contractor has been contacted, but before temporary re-

pairs are made, the outside contractor shall be reimbursed the fixed amount of \$500.00, each occasion, for mobilization and/or travel expenses.

- d. Should inclement weather occur after normal business hours Friday, Saturday, and Sunday or holidays, Contractor shall make arrangements with the Owner to provide access to the building to inspect for leaks. The Owner shall be compensated for providing personnel for the service on an hourly rate basis as determined solely by the Owner.

D. Manufacturer's Field Services: During construction and until substantial completion, manufacturer's representative shall perform quality assurance site visits monthly to ensure materials are being properly installed and as required to obtain the specified warranty.

1. The first site visit shall be performed within the first three (3) days of operations.
2. Coordinate all site visits with Engineer. Submit reports of findings within one week of inspection. Payment applications will be rejected until applicable reports are received.
3. Inspections to be performed by an employee of the selected manufacturer that is assigned full time to their technical services department. Sales personnel will not be acceptable for this function and may result in rejection of the work installed that does not fulfill this requirement.
4. Manufacturer's final inspections shall be performed only with REI personnel in attendance. A minimum of seven days' written notice is required. Any manufacturer's final inspection conducted without REI personnel in attendance will be repeated at no additional cost to the Owner.
5. Any violation of this requirement will result in the removal of that manufacturer for a period of not less than one year from the Engineer's accepted materials list.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

**3.01 REPAIR AND PROTECTION**

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Comply with the Contract Document requirements for Section 01 73 29-Cutting and Patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION 01 40 00**

## SECTION 01 42 00

### REFERENCES

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Requirements relating to Referenced Standards.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- J. "Experienced": When used with an entity, "experienced" means having successfully

completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

- K. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

**1.04 INDUSTRY STANDARDS**

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
  - 1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

	Accessibility Guidelines for Buildings and Facilities Available from Access Board <a href="http://www.access-board.gov">www.access-board.gov</a>
CFR	Code of Federal Regulations Available from Government Printing Office <a href="http://www.access.gpo.gov/nara/cfr">www.access.gpo.gov/nara/cfr</a>
FED-STD	Federal Standard (See FS)
FS	Federal Specification Available from National Institute of Building Sciences <a href="http://www.nibs.org">www.nibs.org</a>

**1.05 ABBREVIATIONS AND ACRONYMS**

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change

and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The) <a href="http://www.aluminum.org">www.aluminum.org</a>
ACI	American Concrete Institute/ACI International <a href="http://www.aci-int.org">www.aci-int.org</a>
ACPA	American Concrete Pipe Association <a href="http://www.concrete-pipe.org">www.concrete-pipe.org</a>
AGC	Associated General Contractors of America (The) <a href="http://www.agc.org">www.agc.org</a>
AHA	American Hardboard Association <a href="http://www.ahardbd.org">www.ahardbd.org</a>
AI	Asphalt Institute <a href="http://www.asphaltinstitute.org">www.asphaltinstitute.org</a>
AIA	American Institute of Architects (The) <a href="http://www.aia.org">www.aia.org</a>
AIE	American Institute of Engineers <a href="http://www.aieonline.org">www.aieonline.org</a>
AISC	American Institute of Steel Construction <a href="http://www.aisc.org">www.aisc.org</a>
AISI	American Iron and Steel Institute <a href="http://www.steel.org">www.steel.org</a>
AITC	American Institute of Timber Construction <a href="http://www.aitc-glulam.org">www.aitc-glulam.org</a>
ALCA	Associated Landscape Contractors of America <a href="http://www.alca.org">www.alca.org</a>
ALSC	American Lumber Standard Committee <a href="http://www.alsc.org">www.alsc.org</a>
ANLA	American Nursery & Landscape Association <a href="http://www.anla.org">www.anla.org</a>
ANSI	American National Standards Institute <a href="http://www.ansi.org">www.ansi.org</a>
APA	APA - The Engineered Wood Association <a href="http://www.apawood.org">www.apawood.org</a>
APA	Architectural Precast Association <a href="http://www.archprecast.org">www.archprecast.org</a>
ASCE	American Society of Civil Engineers <a href="http://www.asce.org">www.asce.org</a>
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers <a href="http://www.ashrae.org">www.ashrae.org</a>
ASME	ASME International (The American Society of Mechanical Engineers International) <a href="http://www.asme.org">www.asme.org</a>
ASTM	ASTM International <a href="http://www.astm.org">www.astm.org</a>
AWI	Architectural Woodwork Institute <a href="http://www.awinet.org">www.awinet.org</a>
AWPA	American Wood-Preservers' Association <a href="http://www.awpa.com">www.awpa.com</a>
AWS	American Welding Society <a href="http://www.aws.org">www.aws.org</a>
BHMA	Builders Hardware Manufacturers Association



	<a href="http://www.buildershardware.com">www.buildershardware.com</a>
BIA	Brick Industry Association (The) <a href="http://www.bia.org">www.bia.org</a>
CCFSS	Center for Cold-Formed Steel Structures <a href="http://www.umn.edu/~ccfss">www.umn.edu/~ccfss</a>
CDA	Copper Development Association Inc. <a href="http://www.copper.org">www.copper.org</a>
CIMA	Cellulose Insulation Manufacturers Association <a href="http://www.cellulose.org">www.cellulose.org</a>
CISCA	Ceilings & Interior Systems Construction Association <a href="http://www.cisca.org">www.cisca.org</a>
CISPI	Cast Iron Soil Pipe Institute <a href="http://www.cispi.org">www.cispi.org</a>
CLFMI	Chain Link Fence Manufacturers Institute <a href="http://www.chainlinkinfo.org">www.chainlinkinfo.org</a>
CPA	Composite Panel Association (Formerly: National Particleboard Association) <a href="http://www.pbmdf.com">www.pbmdf.com</a>
CPPA	Corrugated Polyethylene Pipe Association <a href="http://www.cppa-info.org">www.cppa-info.org</a>
CRSI	Concrete Reinforcing Steel Institute <a href="http://www.crsi.org">www.crsi.org</a>
CSI	Construction Specifications Institute (The) <a href="http://www.csinet.org">www.csinet.org</a>
DHI	Door and Hardware Institute <a href="http://www.dhi.org">www.dhi.org</a>
EIMA	EIFS Industry Members Association <a href="http://www.eifsfacts.com">www.eifsfacts.com</a>
EJMA	Expansion Joint Manufacturers Association, Inc. <a href="http://www.ejma.org">www.ejma.org</a>
FMG (FM)	FM Global (Formerly: FM - Factory Mutual System) <a href="http://www.fmglobal.com">www.fmglobal.com</a>
GA	Gypsum Association <a href="http://www.gypsum.org">www.gypsum.org</a>
GANA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) <a href="http://www.glasswebsite.com/gana">www.glasswebsite.com/gana</a>
HPVA	Hardwood Plywood & Veneer Association <a href="http://www.hpva.org">www.hpva.org</a>
IGCC	Insulating Glass Certification Council <a href="http://www.igcc.org">www.igcc.org</a>
LGSI	Light Gage Structural Institute <a href="http://www.loseke.com">www.loseke.com</a>
MBMA	Metal Building Manufacturers Association <a href="http://www.mbma.com">www.mbma.com</a>
MCA	Metal Construction Association <a href="http://www.metalconstruction.org">www.metalconstruction.org</a>
MFMA	Metal Framing Manufacturers Association
MIA	Marble Institute of America <a href="http://www.marble-institute.com">www.marble-institute.com</a>
NAAMM	National Association of Architectural Metal Manufacturers <a href="http://www.naamm.org">www.naamm.org</a>
NAIMA	North American Insulation Manufacturers Association (The)

	<a href="http://www.naima.org">www.naima.org</a>
NCMA	National Concrete Masonry Association <a href="http://www.ncma.org">www.ncma.org</a>
NCPI	National Clay Pipe Institute <a href="http://www.ncpi.org">www.ncpi.org</a>
NECA	National Electrical Contractors Association <a href="http://www.necanet.org">www.necanet.org</a>
NEMA	National Electrical Manufacturers Association <a href="http://www.nema.org">www.nema.org</a>
NETA	InterNational Electrical Testing Association <a href="http://www.netaworld.org">www.netaworld.org</a>
NFPA	National Fire Protection Association <a href="http://www.nfpa.org">www.nfpa.org</a>
NFRC	National Fenestration Rating Council <a href="http://www.nfrc.org">www.nfrc.org</a>
NGA	National Glass Association <a href="http://www.glass.org">www.glass.org</a>
NHLA	National Hardwood Lumber Association <a href="http://www.natlhardwood.org">www.natlhardwood.org</a>
NLGA	National Lumber Grades Authority <a href="http://www.nlga.org">www.nlga.org</a>
NPA	National Particleboard Association (See CPA)
NRCA	National Roofing Contractors Association <a href="http://www.nrca.net">www.nrca.net</a>
NRMCA	National Ready Mixed Concrete Association <a href="http://www.nrmca.org">www.nrmca.org</a>
NSA	National Stone Association <a href="http://www.aggregates.org">www.aggregates.org</a>
NTMA	National Terrazzo and Mosaic Association, Inc. <a href="http://www.ntma.com">www.ntma.com</a>
NWWDA	National Wood Window and Door Association (See WDMA)
PCI	Precast/Prestressed Concrete Institute <a href="http://www.pci.org">www.pci.org</a>
PDCA	Painting and Decorating Contractors of America <a href="http://www.pdca.com">www.pdca.com</a>
PDI	Plumbing & Drainage Institute <a href="http://www.pdionline.org">www.pdionline.org</a>
RCSC	Research Council on Structural Connections <a href="http://www.boltcouncil.org">www.boltcouncil.org</a>
RMA	Rubber Manufacturers Association <a href="http://www.rma.org">www.rma.org</a>
SDI	Steel Deck Institute <a href="http://www.sdi.org">www.sdi.org</a>
SDI	Steel Door Institute <a href="http://www.steeldoor.org">www.steeldoor.org</a>
SGCC	Safety Glazing Certification Council <a href="http://www.sgcc.org">www.sgcc.org</a>
SIGMA	Sealed Insulating Glass Manufacturers Association <a href="http://www.sigmaonline.org/sigma">www.sigmaonline.org/sigma</a>
SJI	Steel Joist Institute <a href="http://www.steeljoist.org">www.steeljoist.org</a>

SMACNA	Sheet Metal and Air Conditioning Contractors' National Association <a href="http://www.smacna.org">www.smacna.org</a>
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) <a href="http://www.sprayfoam.org">www.sprayfoam.org</a>
SPI	The Society of the Plastics Industry <a href="http://www.plasticsindustry.org">www.plasticsindustry.org</a>
SPIB	Southern Pine Inspection Bureau (The) <a href="http://www.spib.org">www.spib.org</a>
SPRI	SPRI (Single Ply Roofing Institute) <a href="http://www.spri.org">www.spri.org</a>
SSINA	Specialty Steel Industry of North America <a href="http://www.ssina.com">www.ssina.com</a>
SSMA	Steel Stud Manufacturers Association (Formerly: ML/SFA - Metal Lath/Steel Framing Association) <a href="http://www.ssma.com">www.ssma.com</a>
SSPC	SSPC: The Society for Protective Coatings <a href="http://www.sspc.org">www.sspc.org</a>
SWI	Steel Window Institute <a href="http://www.steelwindows.com">www.steelwindows.com</a>
TCA	Tile Council of America, Inc. <a href="http://www.tileusa.com">www.tileusa.com</a>
TPI	Truss Plate Institute
UL	Underwriters Laboratories Inc. <a href="http://www.ul.com">www.ul.com</a>
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) <a href="http://www.wdma.com">www.wdma.com</a>
WMMPA	Wood Moulding & Millwork Producers Association <a href="http://www.wmmpa.com">www.wmmpa.com</a>
WWPA	Western Wood Products Association <a href="http://www.wwpa.org">www.wwpa.org</a>

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. <a href="http://www.bocai.org">www.bocai.org</a>
IAPMO	International Association of Plumbing and Mechanical Officials (The) <a href="http://www.iapmo.org">www.iapmo.org</a>
ICBO	International Conference of Building Officials <a href="http://www.icbo.org">www.icbo.org</a>
ICC	International Code Council (Formerly: CABO - Council of American Building Officials) <a href="http://www.intlcode.org">www.intlcode.org</a>
SBCCI	Southern Building Code Congress International, Inc. <a href="http://www.sbcci.org">www.sbcci.org</a>

- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CPSC	Consumer Product Safety Commission <a href="http://www.cpsc.gov">www.cpsc.gov</a>
EPA	Environmental Protection Agency <a href="http://www.epa.gov">www.epa.gov</a>
OSHA	Occupational Safety & Health Administration <a href="http://www.osha.gov">www.osha.gov</a>

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 42 00**

## SECTION 01 50 00

### TEMPORARY FACILITIES AND CONTROLS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

##### **1.02 RELATED DOCUMENTS**

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

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS**

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended.
- B. Portable Chain-Link Fencing: Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide non-permanent bases for support.
- C. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- D. Water: Potable.
- E. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- G. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
  - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure and the requirements of the local Governing agency.
- H. Lamps and Light Fixtures: Provide GFCI protected general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- I. Scaffolds: Scaffolds should be built in their entirety and not left unfinished or in an unsafe condition. All scaffolds must be tagged to indicate the latest inspection. Scaffolds

should be tied into the structure as close to a 3:1 ratio as possible and repeated tie-ins shall follow OSHA guidelines. All scaffolds shall have safe access with stairs being the first choice over a ladder. Scaffolds should include netting on upper levels if there is any possibility for materials to fall over the toe boards, per OSHA guidelines.

### **PART 3 EXECUTION**

#### **3.01 TEMPORARY UTILITIES**

- A. Water Service: Water for construction purposes will be available from the Owner at no charge. Contractor shall operate exterior hose bids only with properly fitted handles which shall be removed at the end of each work day. Any damage to hose bids or hose bib stems shall be repaired by Contractor. Hose bibs shall not be operated with pliers.
- B. Electrical Power Service: Contractor shall provide portable generators for all electrical power requirements.
- C. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
  - 1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

#### **3.02 CONSTRUCTION FACILITIES**

- A. Temporary construction facilities shall include the following:
  - 1. Field Office (if appropriate): prefabricated, mobile units or job-built construction with lockable entrances and serviceable finishes including lights and utilities.
  - 2. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities. Facilities will be located at sites approved by Owner.
    - a. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
    - b. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.
    - c. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
  - 3. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations at a location approved by the Owner. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements. Use of Owner's waste disposal facilities is not acceptable.
    - a. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

#### **3.03 VEHICULAR ACCESS AND PARKING**

- A. Parking for Contractor vehicles may be available only in the approved Set-up and Staging area. No other vehicle parking on site will be allowed.

**3.04 TEMPORARY BARRIERS AND ENCLOSURES**

- A. Contractor shall provide temporary barriers and enclosures for protection from exposure, foul weather, construction operations and other activities. Contractor is responsible for protecting buildings and grounds from damages during construction.
- B. Contractor shall provide environmental protection by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Contractor shall provide storm water controls sufficient to prevent flooding from heavy rain.
- D. Contractor shall provide 6' chain link fencing with lockable gates and green mesh to completely enclose the materials storage and staging area.

**3.05 TEMPORARY CONTROLS**

- A. Contractor shall provide security controls to protect work and materials at the project site.

**3.06 PROJECT SIGNS**

- A. Contractor shall provide temporary signs to provide information to building occupants directing them away for construction operations.

**END OF SECTION 01 50 00**

## SECTION 01 73 29

### CUTTING AND PATCHING

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes procedural requirements for cutting and patching.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

##### **1.04 QUALITY ASSURANCE**

- A. Engineer's Approval: Obtain approval of cutting and patching before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.
- B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio. Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations sealed by a licensed Engineer in the state of the project showing integration of reinforcement with original structure.
- C. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
- D. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- F. Cutting and Patching Conference: If extensive cutting and patching is required, before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.



**1.05 WARRANTY**

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

**3.02 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

**3.03 PERFORMANCE**

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and

similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Floors and Walls: Where walls or partitions that are removed extend from one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
  5. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty and similar materials.

**END OF SECTION 01 73 29**

## SECTION 01 74 00

### CLEANING AND WASTE MANAGEMENT

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. The Owner has established that this Project shall include proactive measures for waste management participation by all parties to the contract.
  - 1. The purpose of this program is to ensure that during the course of the Project all diligent means are employed to pursue practical and economically feasible waste management and recycling options.
  - 2. Upon award, each subcontractor shall be required to furnish documentation from suppliers or manufacturers regarding waste management and recycling options for those products and procedures furnished.
  - 3. Waste disposal to landfills shall be minimized.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 DEFINITIONS**

- A. Waste: Any material that has reached the end of its intended use. Waste includes salvageable, returnable, recyclable and reusable material.
- B. Construction waste: Solid wastes including, but not limited to, building materials, packaging materials, debris and trash resulting from construction operations.
- C. Salvage: To remove a waste material from the Project site to another site for resale or reuse by others.
- D. Hazardous waste: Any material or byproduct of construction that is regulated by the Environmental Protection Agency and that may not be disposed in any landfill or other waste end-source without adherence to applicable laws.
- E. Trash: Any product or material unable to be returned, reused, recycled or salvaged.
- F. Landfill: Any public or private business involved in the practice of trash disposal.
- G. Waste Management Plan: A Project-related plan for the collection, transportation, and disposal of the waste generated at the construction site.

#### **PART 2 PRODUCTS**

##### **2.01 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

#### **PART 3 EXECUTION**

### 3.01

### PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials in a legal manner.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Final Acceptance.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
  - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Final Acceptance.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or

otherwise deleterious exposure during the construction period.

### 3.02

## CONSTRUCTION WASTE MANAGEMENT PLAN

- A. Waste Management Plan shall include the following:
1. Solid Waste Disposal and Diversion document.
    - a. Identification of materials recycled.
    - b. Identification of materials landfill.
    - c. Identification of hazardous wastes and disposal.
  2. Locations of sorting and waste storage facilities on Site Plan of project.
  3. Final documentation of subcontractor/supplier waste management/recycling data.
  4. Final documentation of hazardous waste disposal plan.
- B. Construction Waste Management Plan Implementation:
1. The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting the Waste Management Plan.
  2. The "Summary of Construction Waste/Recycling" shall be completed each month and submitted as part of Application for Payment.
    - a. All materials identified in the Summary shall be reported by weight.
    - b. Where weight is not applicable, Contractor shall report materials by units applicable to material recipient.
    - c. Contractor shall procure receipts or other validation of waste management procedures and include them as part of the submittal.
  3. The Contractor shall distribute copies of the "Summary of Construction Waste/Recycling" to the Consultant, Owner and each subcontractor involved in the plan.
  4. The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse and return methods to be used by all parties at appropriate stages of the Work.
  5. Separation facilities:
    - a. Contractor shall define specific areas to facilitate separation of materials for recycling, salvage, re-use or return.
    - b. Recycle and waste bin areas are to be maintained in an orderly manner and clearly marked to avoid contamination of materials.
    - c. Do not mix recyclable materials.
    - d. Store hazardous wastes in secure areas.
  6. Hazardous wastes:
    - a. Hazardous wastes shall be separated, stored and disposed of in accordance with local and EPA regulations and additional criteria listed below:
      - i. Building products manufactured with PVC or containing chlorinated compounds shall not be incinerated.
      - ii. Disposal of fluorescent tubes to open containers is not permitted.
      - iii. Unused fertilizers shall not be co-mingled with construction waste.

- C. Program profits:
  - 1. All profits from recycling of construction waste shall be granted to the Contractor.

**3.03 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Final Acceptance.
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - e. Remove debris and surface dust from roofs and walls.
    - f. Clean transparent materials and glass in windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
    - g. Remove labels that are not permanent.
    - h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess foreign substances.
    - j. Replace parts subject to unusual operating conditions.
    - k. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

**END OF SECTION 01 74 00**

## SECTION 01 77 00

### CLOSEOUT PROCEDURES

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
1. Inspection Procedures.
  2. Project Record Documents.
  3. Warranties.

##### **1.02 RELATED DOCUMENTS**

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

##### **1.03 SUBSTANTIAL COMPLETION**

- A. The Contractor shall submit written certification to the Engineer that the Project is substantially complete along with the following:
1. Prepare a list of items to be completed and corrected (Contractor's punch list), the value of items on the list, and reasons why the Work is not complete.
  2. Advise Owner of pending insurance changeover requirements.
  3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  5. Advise Owner of changeover in heat and other utilities.
  6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  7. Complete final cleaning requirements, including touchup painting.
  8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Substantial Completion Inspection: On receipt of written substantial completion certification, the Engineer will make a substantial completion inspection within seven (7) days after receipt of certification.
1. Should the Engineer consider the Work not substantially complete, he will immediately notify the Contractor, in writing, stating the reasons. The Contractor shall complete the Work and send a second written notice to the Engineer, certifying the Project is substantially complete, at which time the Engineer will re-inspect the work.
  2. Should the Engineer consider the Work substantially complete, he will prepare and issue a Certificate of Substantial Completion (AIA G704) accompanied by the list of items to be completed or corrected (Punch List).
  3. A punch list of items will be prepared for correction and completion before the Final Inspection. The Contractor shall complete the punch list items within fif-

teen (15) days of the punch list inspection. If the Contractor fails to complete the punch list within this period, the Owner will have the right to impose liquidated damages in the amount of five hundred (\$500.00) dollars for each consecutive day until all of the items are completed.

#### **1.04 FINAL COMPLETION**

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01.
  2. Submit signed copy of Engineer's inspection list of items to be completed or corrected (punch list). The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Final Inspection: The submission of the signed punch list constitutes as written request for final inspection for acceptance. On receipt of request, Engineer along with the Owner's Representative will conduct a final inspection within seven (7) days of receipt of certification.
1. Should the Engineer consider that the Work is finally complete in accordance with requirements of the Contract Documents, he will request the Contractor to make Project Closeout Submittals.
  2. Should the Engineer consider that the Work is not finally complete, he will notify the Contractor, in writing, stating the reasons.
  3. The Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written notice to the Engineer certifying that the Work is complete, at which time the Engineer will re-inspect the Work.

#### **1.05 PROJECT RECORD DOCUMENTS**

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
1. The Contractor shall submit all required record documents and warranties within thirty (30) days of the punch list inspection. If the Contractor fails to properly submit all required items within this period, the Owner will have the right to impose liquidated damages in the amount of five hundred (\$500.00) dollars for each consecutive day until all of the items are properly submitted.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that can-



- not be readily identified and recorded later.
    - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  - 3. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
  - 4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Note related Change Orders and Record Drawings, where applicable.
- D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. The following items shall be submitted, not limited to:
  - 1. Completed and signed Engineer's Punch List
  - 2. Copy of Manufacturer's Final Inspection Report
  - 3. Certificate of Occupancy

## **1.06 WARRANTIES**

- A. Metal Roof Panel Weathertight Warranty and Finish Warranty specified in Section 07 41 13.
- B. Thermoplastic Polyolefin Roofing System warranty as outlined in Section 07 54 23.
- C. Unit Skylight warranty as outlined in Section 08 62 00.
- D. Contractor's two (2) year warranty on their company letterhead using sample contained in the Project Manual.
  - 1. Contractor will be required to attend post construction field inspection no earlier than twenty -three (23) months and no later than twenty-four (24) months after the date of Substantial Completion. Contractor shall complete any corrective action requested by Owner, Engineer, or Manufacturer at no additional cost to the Owner.

## **PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION 01 77 00**

## SECTION 05 54 20

### ROOF RETROFIT FRAMING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Roof Area B2:
1. Provide retrofit framing for specified standing seam metal roofing system and associated components. The roof retrofit framing system shall accommodate the irregularities of the existing building roof and provide the structural framework for supporting the new metal roof panels at the specified slope. Framing design and materials shall be approved by standing seam roofing panel manufacturer.
  2. Provide engineering and design of metal roof retrofit framing system including analysis of existing structure to support the design loads of the retrofit system.

##### 1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
1. Preparation for Reroofing Section 07 01 50
  2. Metal Roof Panels Section 07 41 13
  3. Metal Wall Panels Section 07 42 13

##### 1.03 REFERENCES

- A. Refer to the following references for specification compliance:
1. 2012 North Carolina Building Code
  2. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures.
  3. AISC American Institute of Steel Construction. "Steel Construction Manual."
  4. AISC "2001 North American Specification for the Design of Cold Formed Structural Members."
  5. AISI American Iron and Steel Institute "Cold Form Steel Design Manual", (1996 Edition).
  6. ASTM International
  7. UL580: "Tests for Uplift Resistance of Roof Assembles", Underwriters Laboratories, Inc.
  8. LGS: "Light Gauge Structural Institute."

##### 1.04 DESCRIPTION

- A. Roof Retrofit Framing:
1. Retrofit framing shall include framing members, components and fasteners required to support all specified loads for the specified standing seam metal roofing.
  2. Contractor shall furnish all labor, materials, tools, equipment, services required to provide and install roof retrofit framing for specified standing seam metal roofing, fascia and wall panel systems.
  3. Roof retrofit framing shall be engineered and designed by the standing seam

metal roofing, Manufacturer to meet all requirements specified herein.

## **1.05 DESIGN REQUIREMENTS**

- A. The design shall meet the requirements of the current North Carolina building codes.
1. Design Loads:
    - a. Refer to Contract Drawings
    - b. Dead Load: Shall be the weight of the existing roof system to remain, new roofing system and any collateral loads that may be supported by the retrofit framing.
  2. The retrofit framing shall be designed to withstand design loads for the standing seam metal roofing and fascia system. The design shall meet ASTM E 1592 for negative loading for the proposed framing. Capacity of roof framing span for other than those tested shall be determined by interpolating between submitted test values only.
  3. Retrofit framing shall meet gauge and span requirements listed in specified FM 4471 Approval and UL580 Listing.
  4. The design uplift force for each connection shall be determined by wind uplift pressure in the roof “area” or “zone” and the tributary area supported by the connection. The following safety factors and “prying” shall be considered:
    - a. A safety factor of 3.0 shall be used for single fastener connections.
    - b. A safety factor of 2.25 shall be used for two or more fasteners used per connection.
    - c. Each retrofit framing connection securing new retrofit framing members to existing framing shall consist of a minimum of two (2) fasteners per connection.
- B. Contractor shall provide written certification, from an engineer, licensed in the State, indicating that the existing structure is capable of supporting all additional loads imposed by the retrofit framing system. The engineer will confirm that design loads of the retrofit standing seam metal roof system as being in compliance with all codes.

## **1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications:
1. Manufacturer shall have a minimum of 10 years’ experience supplying roof and wall panel retrofit systems to the region where the work is to be done.
  2. Manufacturer is required to provide shop drawings based on manufacturers’ approved details.
  3. Manufacturer must be able to provide in-house inspection services.
  4. Installer must have successfully completed a minimum of three metal roof retrofit and projects of the size and complexity as that specified. Project references will be required during the submittal process.
  5. Responsibility for the metal roof framing and wall panel framing system installation shall be by only a first-tier subcontractor. The first-tier subcontractor shall not act as a broker, and shall perform all work with its own labor forces. The workers or technicians required to perform the work shall be employees of the installing contractor at time of installation. Split contracts are not acceptable.

## **1.07 SUBMITTALS**

- A. Refer to Section 01 33 00 for Submittals.
- B. Shop drawings:
  - 1. The Contractor shall submit complete shop drawings and erection details, approved by the Standing Seam Metal Roofing, Fascia and Wall Panel Manufacturer, and sealed by a licensed North Carolina engineer within thirty (30) days after a Notice to Proceed is issued to the Contractor.
  - 2. The Contractor shall submit sealed calculations indicating that the existing structure is capable of supporting all additional loads imposed by the retrofit framing system.
  - 3. The Contractor shall submit engineering calculations for the design of the attachment method of the retrofit roofing system to the existing building's roof structural system. Calculations shall indicate the type of fastener and spacing to be used and its installation methods, and shall be sealed by a licensed North Carolina engineer.
  - 4. The Contractor shall not proceed with retrofit framing installation until Manufacturer Approved shop drawings have been submitted for review and acceptance.

#### **1.08 QUALITY ASSURANCE**

- A. Manufacturers On-site Technical Support:
  - 1. The manufacturer shall attend the project start-up meeting, be onsite for the first day of framing, at 50% completion of framing and prior to installation of metal roof and fascia panels. Inspection reports shall be copied to the Engineer within seven (7) days of each visit.
  - 2. The Manufacturer's on-site technical representative shall be employed by the Manufacturer as a Technical Representative.

#### **1.09 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery:
  - 1. Contractor shall ensure metal components are delivered to the job site properly packaged to provide protection against transportation damage.
  - 2. The Contractor shall be responsible for inspecting materials delivered to the project site. Materials damaged during shipping shall be rejected by the Contractor, and shall not be installed on the project.
  - 3. Material shall be delivered in the manufacturer's original sealed and labeled shrouds and in quantities to allow continuity application.
- B. Handling:
  - 1. Contractor shall exercise extreme care in unloading, storing and erecting metal roof system to prevent bending, warping, twisting and surface damage.
  - 2. Dented, bent or damaged materials resulting in improper fit or function shall be removed from the project and replaced.
- C. Storage:
  - 1. If conditions do not permit immediate erection, extra care should be taken to protect materials from damage.
  - 2. Materials shall be stored out of direct exposure to the elements or pallets or

dunnage at least 4 inches above ground level. Non-sweating tarpaulins will be placed to prevent moisture contamination.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Acceptable Manufacturer/Supplier of retrofit framing shall be same as manufacturer of metal roof panels.
- B. System Components:
  - 1. Base members shall be open-faced channels or zee shapes. Vertical columns shall be cee shapes. Roof purlins shall be zee shapes with the top-flange roll formed or press broken to match the slope of the retrofit roof system slope. Eave struts shall be cee shapes or angles with the top flange roll formed or press broken to match the slope of the retrofit roof system.
  - 2. All hot-rolled steel columns, base members, and purlins shall conform to ASTM A1011, minimum yield strength of 55 ksi. The gauge and depth will be as required by the engineering calculations provided by the Manufacturer.
  - 3. Bracing angles and struts shall conform to ASTM A792, 22 gauge, 50 ksi; ASTM A446 18 gauge, 50 ksi; and ASTM A1011, 16 gauge 55 ksi, as required by engineering calculations provided by the Manufacturer.
  - 4. Provide 1-1/4" Steel Strap Banding at a minimum of every other base clip line or as required by Engineer of metal roof framing to provide bracing of framing.
- C. Component Finish:
  - 1. Retrofit framing components shall have a protective shop primer coating conforming to FS TT-P-646 with base steel prepared in accordance with SSPC-SP10.
- D. Fasteners:
  - 1. All fasteners associated with the roofing installation shall be supplied by, and/or approved by, the specified Manufacturer.
    - a. Fastener length and threads and drill point shall be as required for the metal and other substrates being joined. Refer to fastener manufacturer and/or roofing manufacturer published literature.
    - b. All self-tapping/self-drilling fasteners, bolts, nuts, self-locking rivets and other suitable fasteners shall be corrosion resistant, designed to withstand specified design loads.
- E. Accessories:
  - 1. All accessories and associated components shall be manufactured, supplied and/or otherwise approved by the specified Manufacturer.
  - 2. Contractor shall provide and install all components required per the metal roof system Manufacturer's approved shop drawings for a complete metal roof system.

## **PART 3 EXECUTION**

### **3.01 INSPECTION**

- A. General Inspection:
1. Contractor shall inspect substrates and verify that conditions are acceptable and complete such that retrofit framing work may begin.
  2. Contractor shall inspect retrofit framing components before installation. Materials damaged, bent, twisted or warped shall be removed from the project, not to be installed.
  3. Contractor shall verify that installation will be accordance with approved shop drawings and Manufacturer's instructions.
  4. Contractor shall inspect substrates and notify Engineer in writing of any deficiencies observed effecting the installation, and effecting the completed roofing system and associated components.
  5. OSB, rough carpentry, decking and structural components shall be inspected and deficiencies corrected before installation of retrofit framing components.
  6. Commencement of work signifies Contractor's acceptance of substrates. Any defects in roofing work resulting from such accepted substrates shall be corrected to Owner's satisfaction at no additional expense.

### **3.02 PREPARATION**

- A. Damaged, deficient or deteriorated substrate shall be repaired before installing retrofit framing.
- B. Protection:
1. Protect building, grounds, landscaping and exterior components and fixtures from damage during construction activities. Damages shall be repaired/replaced to meet pre-construction conditions to the Owner's satisfaction.
- C. Coordination:
1. Contractor shall be responsible for the following Coordination activities:
    - a. The Contractor shall be responsible for communicating roof work with the Owner so that the Owner and occupants may relocate or take other precautions.
    - b. Coordinate all work and associated work activities with the Owner and occupants.
    - c. Coordinate all interior access and interior work with Owner in advance. The Contractor shall not proceed with interior work unless pre-approved by the Owner and occupants.
    - d. All service interruptions to equipment and facilities services shall be coordinated with the Owner, and approved by the Owner, in advance of the work.
- D. Roof Loading, Staging and Storage:
1. Evenly distribute loads of materials on roofs. Do not pre-load roofs with concentrated loads of materials that exceed the roof deck and structure's load bearing capacity.
  2. The Contractor shall secure all materials and equipment stored on the roof to prevent items from sliding or falling off of the roof.
  3. Secure materials and equipment on the roof to prevent materials from being displaced by wind.

### 3.03

### APPLICATION

- A. General application shall be in accordance with the Manufacturer's published installation instructions and shop drawings for retrofit framing, components, fasteners and all associated accessories.
- B. The Contractor shall provide all electrical, mechanical, plumbing and related services to relocate all services that must be relocated to accommodate new retrofit metal framing for roofing or walls.
  - 1. Plumbing vent pipes located in the standing seams shall be relocated to the center of standing seam panels.
- C. Retrofit Framing:
  - 1. Install retrofit framing per Manufacturer's approved shop drawings.
  - 2. Install retrofit framing true and straight per design and manufacturer's published instructions to ensure completed standing seam metal roofing system is within specified tolerances.
  - 3. Secure retrofit framing members to ensure the existing roofing underlayment remains watertight and prevents water dams.
  - 4. Contractor shall ensure retrofit framing provides the completed standing seam roof panels with a consistent slope as indicated on Roof Plan.
  - 5. Contractor shall ensure retrofit framing spacing is reduced to meet clip spacing requirements at eaves, hips and ridges.
- D. Fasteners:
  - 1. Fasteners shall be of size, length, corrosion resistance, thread and drill point as specified and shown on Manufacturer's shop drawings for each application and substrate.
  - 2. Contractor shall consult Manufacturer and/or fastener manufacturer's published literature for installation requirements and recommendations for optimal fastener performance.
  - 3. Fasteners used for the attachment of the new retrofit framing system to the existing roof structural support system shall be of the type and size that is appropriate for secure attachment to satisfy the required wind uplift pressure values at each location. A minimum of two (2) fasteners shall be installed to secure retrofit framing to the existing structure at each connection point.
  - 4. Fasteners securing new retrofit framing to existing structure shall be installed perpendicular (right angle) to the retrofit framing and top flange of existing structural member.
  - 5. Fasteners under-driven or over-driven shall be corrected or removed and replaced before installing standing seam roofing panels.
- E. Field Cutting Metal Framing:
  - 1. Metal framing shall be cut on the ground, away from pre-finished panels.
  - 2. The Contractor shall not use abrasive/grinding blades, circular saws and reciprocating saws that produce metal chips within range of pre-finished roof panels.
  - 3. Torches and other hot work shall be prohibited unless hot work permit procedures are used by the Contractor.
- F. Squareness:



1. Retrofit framing and components shall be aligned true, straight and square.
2. Installation and sequence shall ensure completed installation is square for proper fit of components.
3. Installation tolerance for squareness shall not exceed 1:500 (1.92 inch per 100 ft).

**3.04 CLEAN UP**

- A. Dispose of excess materials and remove debris from site. Maintain all construction related debris in approved disposal containers.
- B. Debris that enters the building as a result of construction operations shall be cleaned immediately by the Contractor.
- C. The Contractor shall protect work against damage until final acceptance. The Contractor shall replace or repair to the satisfaction of the Owner, any work that becomes damaged prior to final acceptance.
- D. Do not allow framing to come in contact with dissimilar metals such as copper, lead or graphite.

**END OF SECTION 05 54 20**

## SECTION 06 10 00

### ROUGH CARPENTRY

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Rough Carpentry work required to facilitate installation of new roof assembly including:
1. Provide pressure treated wood blocking and plywood sheathing.
  2. Re-securement of existing rough carpentry to remain in place.
  3. Removal and replacement of damaged, rotted or deteriorated rough carpentry with pressure treated rough carpentry to match existing.
  4. Removal and replacement of damaged, rotted or deteriorated plywood substrate with pressure treated plywood to match existing.

##### 1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
1. Preparation for Reroofing Section 07 01 50
  2. Roof Insulation Section 07 22 16
  3. Thermoplastic Polyolefin Roofing Section 07 54 23
  4. Sheet Metal Flashing and Trim Section 07 62 00

##### 1.03 REFERENCES

- A. Refer to the following references, current edition for specification compliance:
1. 2012 North Carolina Building Code
  2. American Society for Testing and Materials (ASTM)
  3. American Wood-Preserver's Association (AWPA)
    - a. AWPA E12 - Standard Method of Determining the Corrosion of Metal in Contact with Wood.
    - b. AWPA M4 - Standard for the Care of Preservative Treated Wood Products.
    - c. AWPA P5 - Standard for Waterborne Preservatives.
    - d. AWPA P23 - Standard for Chromated Copper Arsenate Type C (CCA-C).
    - e. AWPA P25 - Standard for Inorganic Boron (SBX).
    - f. AWPA P26 - Standard for Alkaline Copper Quat Type A (ACQ-A).
    - g. AWPA P27 - Standard for Alkaline Copper Quat Type B (ACQ-B).
    - h. AWPA P28 - Standard for Alkaline Copper Quat Type C (ACQ-C).
    - i. AWPA P29 - Standard for Alkaline Copper Quat Type D (ACQ-D).
    - j. AWPA P47 - Standard for DCOI/Imidacloprid/Stabilizer, Waterborne (EL2).
    - k. AWPA P48 - Standard for Copper Azole Type C (CA-C).
    - l. AWPA T1 - Use Category System: Processing and Treatment Standard.
    - m. AWPA U1 - Use Category System: User Specification for Treated Wood.

4. American Plywood Association (APA)
5. American National Standard
  - a. ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems
6. Underwriters Laboratories, Inc. (UL)
7. FM Global/Factory Mutual Research (FM)

#### **1.04 DEFINITIONS**

- A. Rough Carpentry includes carpentry work not specified as part of other Sections and generally not exposed.
- B. KDAT: Kiln Dried After Treatment.

#### **1.05 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittal Procedures for Submittals.
- B. Manufacturer's Product Data Sheets for all materials specified certifying material complies with this specification.

#### **1.06 QUALITY ASSURANCE**

- A. Contractor shall inspect wood to be installed for damage, warping, splits, and moisture content as defined by the applicable wood products industry standards. Materials that do not comply shall be rejected.
- B. Rough carpentry installation shall present a smooth, consistent substrate for roof system and flashing installation.
- C. Qualifications of workers: Provide sufficient, competent and skilled carpenters in accordance with accepted practices and supervisors who shall be present at all times during execution of this portion of the work, and who shall be thoroughly familiar with type of construction involved in this section and related work and techniques specified.
- D. Moisture Content:
  1. Treated wood products shall be KDAT.
  2. Treated lumber used in the roofing assembly shall not be stored or installed in a manner exposing it to rain.
  3. Moisture content of treated lumber shall be 19 percent or less before being covered/enclosed into roofing assembly.
  4. Contractor shall be responsible for ensuring lumber is delivered, stored and installed at 19% or less moisture content.
  5. Plywood shall be 18% or less before being covered/enclosed into roofing assembly.
- E. Each piece of treated lumber and plywood shall bear the stamp of the AWPA Quality Mark, indicating compliance with the requirements of the AWPA Quality Control Program.
- F. Lumber Standards: Comply with PS 20 and applicable rules of respective grading and

inspecting agencies for species and products indicated.

- G. Plywood Product Standards: Comply with PS 1 (ANSI A 199.1) or, for products not manufactured under PS 1 provisions, with applicable APA Performance Standard for type of panel indicated.
- H. Installation of all required new rough carpentry for roofing and flashing terminations to ensure plumb, uniform and level metal flashings.
- I. Rough carpentry installation shall ensure roof membrane flashing transitions are smooth for complete roof drainage and appearance.
- J. Installation of all fasteners and associated materials to secure rough carpentry as detailed and specified.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Store a minimum of four inches above ground on framework or blocking. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks. Cover with protective waterproof covering providing for adequate air circulation and ventilation
- B. Exposure to precipitation during shipping, storage or installation shall be avoided. If material does become wet, it shall be replaced or permitted to dry prior to covering or enclosure by other roofing, sheet metal or other construction materials (except for protection during construction).
- C. Immediately upon delivery to job site, place materials in area protected from weather.
- D. Do not store seasoned materials in wet or damp portions of building.
- E. Protect sheet materials from corners breaking and damaging surfaces, while unloading.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Lumber: Shall Be No. 2 or better spruce or southern yellow pine. Shall be sound, thoroughly seasoned, dressed to nominal finish dimension, and free of warpage, cupping, and bowing. Dimensions shall be determined by job conditions or as indicated in detail drawings.
- B. Plywood Sheathing: Shall be structural 1 rated. Plywood shall be stamped APA RATED SHEATHING grade-C or better, and shall be manufactured with exterior glue (exposure 1). Plywood shall have a minimum thickness of 3/4 inch or as required to match existing.
- C. Preservative Treatment:
  - 1. Treatment: ACQ as manufactured for Viance in accordance with AWPA U1 and P5, P26, P27, P28, P29 as appropriate.
    - a. Use 0.15 lb/cu ft (2.4 kg/m3) of ACQ in accordance with AWPA U1: (UC3B) as appropriate.

2. Treatment: Ecolife or EL2 as manufactured by Viance.
  - a. Use 0.019 lb/cu ft (0.3 kg/m<sup>3</sup>) of Ecolife or EL2 (+ 0.2 lb/cu ft MCS) in accordance with AWWA U1 (UC3B) as appropriate.

## **2.02 FASTENERS**

### **A. General:**

1. All fasteners shall be stainless steel or as approved by Engineer.
2. Fasteners securing pressure treated lumber shall be manufactured for corrosion resistance and exposures associated with pressure treated wood applications.
3. Nails shall not be used at roof edges to fasten rough carpentry, lumber, plywood, etc. Screws, anchors, and/or machine bolts shall be used to secure rough carpentry at roof perimeter edges.
4. Masonry screws, spikes, and drive-pins shall not be used to fasten edge/perimeter nailers to concrete decks. Minimum ½” diameter anchors or bolts shall be used to secure roof edge nailers to concrete substrates.

### **B. Wood to steel deck and light gage steel framing (16-ga. or less):**

1. Shall be #14-13 DP1, pancake or panhead, corrosion resistant, ASTM A153, FM Approved, self-drilling and self-tapping screw, length to provide minimum 3 pitches of thread through metal thicknesses. Acceptable manufacturers include:
  - a. ITW Buildex Tek
  - b. Concealor®
  - c. Blazer
  - d. SFS Intec
  - e. Engineers accepted equivalent.

### **C. Wood to wood:**

1. Screws: No. 10 or greater, stainless steel wood screws with flat head, or insulation screws. Length to embed into base substrate a minimum of 1-1/2".
2. Nails: 8, 10 or 16 penny, stainless steel, ring shank nails. Length to embed into base substrate a minimum 1-1/2". Acceptable manufacturers include:
  - a. Maze Nails
  - b. Anchor Staple and Nail
  - c. Swan Secure Products
  - d. Manasquan Premium Fasteners
  - e. Engineers accepted equivalent.

## **PART 3 EXECUTION**

### **3.01 INSPECTION**

- A. Contractor shall inspect substrates to receive rough carpentry, and ensure substrates are in satisfactory condition prior to installation of rough carpentry.
- B. Contractor shall inspect all new and existing rough carpentry including fasteners for material condition before proceeding with installation. Deteriorated, rotted, damaged, split, warped, twisted or wet materials shall be removed and replaced with specified

materials. Refer to Section 01 22 00-Unit Prices.

- C. Contractor shall remove old cants, tapered edge strips, debris, old fasteners, etc. that interfere with the installation of new rough carpentry.
- D. Contractor shall notify Engineer in writing of unsatisfactory conditions.
- E. Commencement of work signifies Contractor's acceptance of substrates. Any defects in roofing work resulting from such accepted substrates shall be corrected at no additional expense to the Owner.

### **3.02 PREPARATION**

- A. Steel/Metal Substrates:
  - 1. Any pressure treated wood to contact steel or metal shall have the steel/metal coated with a heavy coating of asphalt primer.
- B. Roof Deck and Structure:
  - 1. Roof deck and structure shall be dried and broomed and/or vacuumed clean of debris and foreign matter prior to installation of the new rough carpentry.
  - 2. Contractor shall adjust substrates to receive rough carpentry to ensure completed rough carpentry installation is acceptable for roofing and sheet metal flashings.
  - 3. Steel decking shall be coated with a uniform, heavy application of asphalt primer, or separated by membrane or other acceptable means to prevent contact between steel and treated wood products.
  - 4. Treated lumber shall not make direct contact with light gage steel decking.

### **3.03 INSTALLATION**

- A. Remove existing damaged or deteriorated wood blocking, nailers, and curbs and replace with new material of same dimensions.
- B. Re-secure all existing wood nailers at roof edges that are to remain. Fastener type and spacing shall comply with this specification.
- C. Install new wood blocking, nailers, and curbs to achieve a minimum eight inch flashing height above the roof membrane. Wood nailers at perimeter roof edges and expansion joints shall be installed to match insulation height. Maintain constant nailer height at perimeter edges.
- D. Wood blocking and nailers shall be installed concurrently with roof system installation. Removal of insulation and/or folding back of roof membrane to install wood blocking and nailers at a later date is not acceptable.
- E. Set rough carpentry to required levels and lines, with members plumb, true to line, material cut to fit, and braced to hold work in proper position. Use a belt sander to remove any obtrusive surface irregularities. Drive nails and spikes home; and pull bolt nuts tight with heads and washers in close contact with the wood.
- F. Fit rough carpentry to other construction; scribe and cope for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction. All joints between wood shall be installed for a smooth transition.

G. Attachment:

1. The Contractor shall consult the fastener manufacturer's published literature and follow the recommended requirements for pre-drilling, cleaning, placement and compatibility of substrates. Follow manufacturer's requirements for fasteners spacing, substrate preparation and substrate embedment where not specified.
  2. Securely attach rough carpentry work to substrate with fasteners. Anchor to resist a minimum force of 300 lbs/lineal foot in any direction.
  3. Rough carpentry attachment shall meet the requirements herein and that of the current FM Loss Prevention Data Sheet 1-49, Perimeter Flashing.
  4. Install bolts flush with the top surface of nailers where possible to avoid countersinking. Bolt bottom nailers then fasten upper nailers where possible. Countersink bolts, nuts and screws flush with wood surfaces only as detailed.
  5. Install fasteners without splitting wood. Pre-drill where necessary. Split or damaged wood shall be removed, or repaired and/or re-secured to provide acceptable conditions.
  6. For anchors, pre-drill concrete and masonry units to prevent damage or cracking of the masonry. Consult fastener manufacturer's published guides. Damaged masonry shall be repaired, and fasteners shall be removed and re-installed in an acceptable location.
  7. Fastener spacing: Fasteners shall be staggered 1/3 the board width and installed within 6" of each end.
    - a. Screws securing wood to wood shall be installed 12 inches apart, staggered, with two screws installed within 6 inches of each end of nailer lengths to prevent wood from twisting at board joints.
    - b. Nails securing wood to wood shall be spaced 12 inches apart, staggered, with two nails installed within 6 inches of each end of nailer lengths to prevent wood from twisting at board joints.
  8. Plywood Substrate Securement:
    - a. To Steel Deck: Secure plywood with 16 fasteners per 4' by 8' sheet; refer to the attached pattern shown in the Contract Drawings.
    - b. To Wood Trusses: Nail plywood sheathing with 8d ring shank (0.131 inch X 2-1/2 inches) nails or screws at 4 inches on center along the edges of plywood and 6 inches on center along the intermediate roof framing.
- H. Select fasteners of size and length that will not be exposed from the building interior and/or from the ground, or remove protruding fasteners, paint or finish to eliminate exposure.
- I. Thickness of wood nailers shall be flush with adjacent insulation and other materials. Additional fasteners shall be installed to ensure nailers are flush.
- J. Unless otherwise detailed, plywood used as blocking or shim shall be installed below dimensional lumber such that the fastener head terminates at the dimensional lumber surface.
- K. Wood nailers at roof perimeters, expansion joints, roof area dividers, etc. shall not be less than 3 feet long.
- L. When multiple nailers are installed stacked two high or more, offset nailers no less than 12" such that joints at nailer end do not line-up vertically.

- M. Each end of nailers shall be fastened with additional fasteners to ensure a smooth transition at butted joints, and to prevent warping and/or twisting.
- N. Shims:
  - 1. The Contractor shall add plywood and lumber shims as required for the specified height and thickness.
  - 2. Shims shall make full contact with stacked rough carpentry. Partial shim contact, and small shim pieces spaced apart are not acceptable.
  - 3. Plywood used as blocking or shim shall be installed below dimensional lumber such that the fastener head terminates at the dimensional lumber surface.
- O. Curbs:
  - 1. Adjust wood curbs to support rooftop piping, ducts, equipment, etc.
  - 2. Raise equipment to provide required flashing height for roofing.

**3.04 CLEAN-UP**

- A. The Contractor shall ensure the site and building are cleaned to meet pre-construction conditions, as accepted by the Owner.
- B. The site and building shall be free of saw dust from pressure treated lumber, fasteners and other debris.
- C. Damages to the building, grounds, equipment and site shall be repaired or replaced by the Contractor to meet pre-construction conditions, as accepted by the Owner.

**END OF SECTION 06 10 00**



**SECTION 07 01 50**

**PREPARATION FOR REROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preparatory work to be completed prior to roof installation including but not limited to:
1. Unit Price No. 1: Remove asphalt shingles and felt underlayment down to plywood substrate, replace deteriorated plywood substrate as specified in Section 06 10 00, fully adhere metal roof panel underlayment to provide watertight condition.
  2. Unit Price No. 2: Replace deteriorated polyisocyanurate insulation.
  3. Water test of roof drains/below grade storm drainage leaders.
  4. Soil pipe extensions.
  5. Raising of mechanical units/HVAC units to meet the required minimum flashing height.

**1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
1. Roof Retrofit Framing Section 05 54 20
  2. Rough Carpentry Section 06 10 00
  3. Roof Insulation Section 07 22 16
  4. Metal Roof Panels Section 07 41 13
  5. Thermoplastic Polyolefin Roofing Section 07 54 23

**1.03 DEFINITIONS**

- A. Removal: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain property of the Owner.
- B. Existing to remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
- C. Material ownership: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site.

**1.04 EXISTING ROOF ASSEMBLIES\***

- A. Roof Areas A1, A3, A4 and A5
1. Asphalt shingles
  2. Felt underlayment
  3. 3/4" plywood deck
  4. Wood trusses

- B. Roof Area A2
  - 1. Asphalt shingles
  - 2. Felt underlayment
  - 3. 4" composite nail board consisting of 1/2" plywood over 3.5" polyisocyanurate
  - 4. Cementitious wood fiber deck (2.5" thick)
  
- C. Roof Area A3 (Cafeteria)
  - 1. Asphalt shingles
  - 2. Felt underlayment
  - 3. 3/4" plywood substrate
  - 4. Steel deck
  
- D. Roof Area B1, B3 and B4
  - 1. Adhered EPDM roof membrane
  - 2. Tapered polyisocyanurate insulation (mechanically attached)
  - 3. 1.5" polyisocyanurate
  - 4. 5/8" gypsum substrate
  - 5. Steel deck
  
- E. Roof Area B2
  - 1. Adhered EPDM roof membrane
  - 2. 1/2" wood fiber (mechanically attached)
  - 3. 3/4" plywood deck
  - 4. Wood trusses

\*Roof system composition is based on random sampling. Contractor is responsible for verification of roof system composition.

## **1.05 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittal Procedures for Submittals.
- B. Manufacturer's Product Data Sheets for all materials specified certifying material complies with this specification.

## **1.06 QUALITY ASSURANCE**

- A. Qualifications: Previous experience removing existing roof systems.
- B. Requirements: Contractor to comply with governing EPA regulations and hauling/disposal regulations of authorities having jurisdiction.

## **1.07 SCHEDULING**

- A. Conduct demolition so that Owner's operations will not be disrupted. Provide 72 hours notification to Owner of activities that will affect Owner's operations.

**1.08 WARRANTIES**

- A. Any damage to existing items under warranty shall be repaired/replaced with materials acceptable to the Warrantor.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Metal Roof Panel Underlayment: 40-mil minimum thickness sheet; slip-resistant surfacing, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; suitable for high temperature applications up to 250 degrees. Acceptable products include:

- 1. Mid-States Asphalt Quik-Stick HT
- 2. Grace Ice and Water Shield HT
- 3. Carlisle WIP 300 HT

- B. Polyisocyanurate Insulation: Shall be rigid polyisocyanurate roof insulation board with factory applied glass fiber reinforced cellulosic felt facers on the top and bottom. Boards to comply with ASTM C1289 Type II, Class 1, Grade 3 and meet the following requirements:

- 1. Curing time shall be 24 hours minimum, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
- 2. Dimensional stability shall be 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
- 3. Maximum permissible insulation board size for mechanical attachment is 4' x 8' and for foam adhesive and hot asphalt attachment is 4' x 4'. Field cutting of larger boards is not acceptable.
- 4. Thickness and taper shall be as required to match existing.

- C. Soil Pipe Extensions:

- 1. Acceptable Manufacturer:
  - a. OMG Tubos
  - b. Engineers accepted equivalent
- 2. Soil Pipe Extension: Solid-wall PVC fitting consisting of pipe and splice sleeve inserts, configured for insertion and sealing to existing plumbing vent piping, sized to fit inside diameter of plumbing vent piping, enabling extension of piping to field-determined height:
  - a. Material: Solid-wall PVC, white.
  - b. Splice Sleeve Insert:
    - i. 6 inches Length at both ends of precut extension.
    - ii. Outside Diameter to be 1/4" less than outside diameter of soil pipe.
  - c. Length:

- i. Overall Length: 28 inches.
  - ii. Net Usable Length: 16 inches excluding Splice Sleeve Inserts.
- d. Sealant: Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT, and acceptable to roofing membrane manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Survey existing conditions to determine extent of demolition.
- B. Record the conditions of items to be removed/reinstalled and items to be removed/salvaged.
- C. Contractor shall not remove any element that may result in structural deficiency or collapse of any part of the structure or adjacent structures during demolition.
- D. Contractor to inspect substrate for soundness and notify Engineer in writing of any deficiencies. Commencement of work signifies Contractor's acceptance of site conditions.

### **3.02 UTILITIES/SERVICES**

- A. Maintain existing utilities that are to remain in service and protect them against damage during selective site demolition unless authorized in writing by the Owner and authorities having jurisdiction.
  - 1. Locate all conduits and equipment attached to the underside of the decking prior to reroofing. Insulation fastener locations are not to disturb existing conduits or interior components/equipment.
  - 2. If utilities serving occupied portions of the site must be shut down, temporary services shall be provided.
  - 3. Provide 72 hours notice to Owner if shut down is required.
  - 4. Where services are to be removed, relocated or abandoned, provide necessary bypass connections to remaining occupied buildings and areas.

### **3.03 PREPARATION**

- A. Do not begin demolition until utilities have been disconnected/sealed and have been verified as such in writing.
- B. Do not close off or obstruct streets, walks or other adjacent occupied facilities without permission from Owner and authorities having jurisdiction.
- C. Provide safe conditions for pedestrians. Erect temporary protection such as walkways, fences, railings and canopies as required by OSHA and other governing authorities.
- D. Provide protection for adjacent building, appurtenances and landscaping to remain. Erect temporary fencing around trees to remain.
- E. Provide temporary weather protection as required to prevent water leakage and damaged to exterior or interior of adjacent structures.

### **3.04 POLLUTION CONTROLS**

- A. Use water, mist, temporary enclosures and other suitable methods to limit the spread of dust and dirt. Comply with local EPA regulations.
  - 1. Do not use water where damage may occur or where hazardous conditions would be created such as ice or flooding.

### **3.05 REMOVALS**

- A. Demolish and remove existing construction only to the extent required by new construction.
- B. Remove all existing roofing, roof insulation, membrane and sheet metal and discard.
- C. Remove or correct any obstruction which might interfere with the proper application of new materials.
- D. Lift or remove all existing equipment so that existing flashings can be totally removed and new flashings installed.
- E. Remove debris from existing materials to provide clean, dry substrate.
- F. Remove and transport debris in a manner that will prevent damage/spills to adjacent buildings and areas.
- G. Dispose of demolished items and materials on a daily basis. On-site storage of removed items is not permitted.
- H. Transport demolished materials off-site and dispose of materials in a legal manner.
- I. Perform progress inspections to detect hazards resulting from demolition activities.

### **3.06 FLASHING HEIGHTS**

- A. Permanently raise roof top equipment as required to achieve 8” minimum flashing height.
- B. Provide additional wood blocking to top of parapet walls and expansion joints to achieve minimum 8” flashing height.
- C. Extend all existing sanitary vents to height required by the applicable Plumbing Code, but no less than 8 inches and no more than 12 inches above the finished roof system. Refer to Soil Pipe Extension as indicated below.

### **3.07 SOIL PIPE EXTENSION**

- A. Preparation
  - 1. Remove existing flashing from plumbing vent piping to extent required to enable installation of new plumbing vent pipe extensions and completion of flashings.
  - 2. Clean plumbing vent piping to ensure that joint surfaces are clean, dry, and free from contamination including dirt, oils, grease, tar, wax, rust, and other substances that may inhibit adhesive or sealant performance.
- B. Installation

1. Insert end of plumbing vent pipe extension into existing plumbing vent piping.
  - a. Verify circumference of existing plumbing vent piping and plumbing vent pipe extension is appropriate to achieve secure, rigid installation.
  - b. Mark plumbing vent pipe extension at required height above finished roof surface level, and cut to required length.
  - c. Apply adhesive or sealant to plumbing vent piping as appropriate to existing pipe material and plumbing vent pipe extension, and mate plumbing vent pipe extension to existing piping. Apply adequate adhesive or sealant to achieve secure, rigid installation.

### **3.08 ROOF DRAINS AND LEADERS**

- A. Prior to commencement of any work on the project the Contractor shall inspect each existing roof drain/below grade storm drain leader for damage and water flow.
  1. Each drain shall be cleaned of accumulated debris and loose gravel. Drain bowl and drain outlet shall be cleaned of bitumen build-up to bare metal by hand scraping.
  2. A power vacuum shall be provided by the Contractor and utilized to vacuum debris, loose gravel, and bitumen scraping. Vacuum hose shall be of sufficient length to reach the first elbow in the drain line in order to vacuum the line.
  3. After cleaning bitumen from the drain bowl, Contractor shall inspect the bowl carefully for cracks, and the drain pipe connection for possible deterioration.
  4. Each drain/leader shall be water tested for proper flow utilizing a minimum 3/4-inch hose. Water shall flow into the line under maximum pressure available for a period of not less than 15 minutes.
  5. Inspection and testing operation shall precede any roofing tear-off. If deficiencies or damages are observed, Contractor shall record the deficiency on a Roof Plan and forward to the Engineer. The Engineer will notify the Owner's Maintenance Department accordingly. Contractor shall allow 48 hours after notification for any corrective work by the Owner.
  6. If no deficiencies or damages are reported to the Owner prior to commencement of work, Contractor shall assume full responsibility for the condition and operation of the drains/leaders.
  7. Contractor shall install temporary drain plugs while performing any work at or near the roof drains. Drain plugs shall be removed at the end of each work day.

### **3.09 CLEANING**

- A. Inspect the site daily and clean up debris and hazards at the end of each day. Adjacent roads, drives and walkways shall remain in operation and free from construction materials debris.
- B. Clean adjacent structures of dust dirt and debris. Return adjacent areas to original conditions to the satisfaction of the Owner.

**END OF SECTION 07 01 50**

## SECTION 07 22 16

### ROOF INSULATION

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Roof Areas A1-A5: Provide 1" roof insulation over asphalt shingles.
- B. Roof Areas B1, B3-B4: Mechanically attach cover board.
  - 1. Remove existing insulation system in a 4' by 4' area around roof drains and provide tapered edge strip as shown in Contract Drawings.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Rough Carpentry Section 06 10 00
  - 2. Preparation for Reroofing Section 07 01 50
  - 3. Metal Roof Panels Section 07 41 13
  - 4. Thermoplastic Polyolefin Roofing Section 07 54 23

##### **1.03 REFERENCES**

- A. Refer to the following references for specification compliance:
  - 1. 2012 North Carolina Building Code
  - 2. National Roofing Contractors Association – NRCA
  - 3. FM Global
  - 4. Underwriters Laboratories, Inc. – UL
  - 5. ASHRAE Standard 90.1

##### **1.04 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittal Procedures for requirements.
- B. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- C. Tapered insulation plan from material supplier with minimum R-value for each roof area.
- D. Latest edition of the Manufacturer's current material specifications and installation instructions.

##### **1.05 QUALITY ASSURANCE**

- A. Insulation to be installed in accordance with their respective manufacturer's requirements.
- B. Insulation(s) not bearing UL label at point of delivery shall be rejected.

- C. Insulation damaged or wetted before, during, or after installation shall be removed from the job site no later than the next working day from the day such damage or moisture contamination is noted.
- D. Wind Design: Install insulation system to meet the required wind uplift pressures as specified in Section 07 41 13 and 07 54 23.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Material shall be delivered in the manufacturer's original sealed and labeled shrouds and in quantities to allow continuity application.
- B. Storage: Materials shall be stored out of direct exposure to the elements on pallets or dunnage at least 4 inches above ground level at site location acceptable to Owner.
  - 1. Utilize tarps that will completely cover materials to prevent moisture contamination. Remove or slit factory shrouds and/or visqueen; do not use these materials as tarps.
  - 2. Install vapor retarders under material storage areas located on the ground.
  - 3. Remove damaged or deteriorated materials from the job site.
- C. Handling: Material shall be handled in such a manner to preclude damage and contamination with moisture or foreign matter.

**1.07 PROJECT CONDITIONS**

- A. Insulation shall not be applied during precipitation. Contractor assumes all responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Contractor will take necessary action to restrict dust, asphalt, and debris from entering the structure.
- C. No more roofing will be removed than can be replaced with insulation, membrane and base flashings in the same day to create a watertight installation.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Insulation Boards:
  - 1. Extruded Polystyrene Insulation: Shall be extruded polystyrene roof insulation boards. Board shall be a closed-cell foam panel with continuous skin surfaces on face and back surface, and tested in accordance with ASTM D 1621, ASTM C 518, ASTM E 84, ASTM D 2126, ASTM C272, and meet the following requirements:
    - a. Compressive strength, 40 pounds per square inch minimum.
    - b. Water absorption, 0.07 percent maximum by volume;
    - c. Dimensional stability, 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
    - d. Board size shall be 2 feet wide by 8 feet long and thickness shall be 1”.



2. Cover Board: Shall be lightweight, high-density polyisocyanurate roof board with coated fiberglass facers; compressive strength shall be a minimum of 90 psi; R-value of 2.5 and thickness shall be 1/2".
  3. Tapered Edge Strip: Shall be rigid polyisocyanurate roof insulation board with factory applied coated polymer bonded glass fiber mat facers on the top and bottom. Boards to comply with ASTM C1289 Type II, Class 2, Grade 2 and of the following size:
    - a. 2" x 24" to provide slope at outside of drainage sumps.
- B. Insulation Attachment Materials:
1. Steel Deck Mechanical Fasteners and Stress Plates: Shall be corrosion resistant 3" galvalume stress plate and corrosion resistant screw type fasteners for use with steel decks; approved by the insulation manufacturer for the insulation type, thickness and board size specified; fastener length as required by the fastener manufacturer for the insulation thickness specified, and to penetrate the deck a minimum of 3/4 inch and a maximum of 1 inch.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Contractor to inspect substrate for soundness and notify Engineer in writing of any deficiencies.
- B. Commencement of work signifies Contractor's acceptance of substrate. Any defects in roofing work resulting from such accepted substrates shall be corrected to Owner's satisfaction at no additional expense.

#### **3.02 PREPARATION**

- A. General
  1. Roof deck to be dry and broomed clean of debris and foreign matter prior to installation of insulation system.

#### **3.03 APPLICATION**

- A. General
  1. Application shall be in accordance with the insulation/membrane manufacturer's instructions and these specifications.
  2. All insulation to be in full sheets, carefully fitted and pushed against adjoining sheets to form tight joints. Gaps exceeding 1/4 inch will not be accepted.
  3. Insulation and overlayment boards that must be cut to fit shall be saw cut or knife-cut in a straight line, not broken. Chalk lines shall be used to cut insulation. Uneven or broken edges are not acceptable.
  4. Remove insulation dust and debris that develops during insulation cutting operations.
  5. Joints between successive and adjacent layers of insulation to be offset a minimum of six (6") inches.
  6. Stagger joints of cover board one (1') foot (vertically and laterally) to ensure that joints do not coincide with joints from the previous or adjacent layer.

7. Provide necessary modifications to insulation system or nailers at roof edges as required to ensure a flush and smooth transition is provided for the roof membrane and flashing.

B. Roof Drainage:

1. Drainage sumps shall be installed as detailed.
2. The Contractor shall be responsible for carefully laying out the tapered insulation, sumps, drain bowls and scuppers to ensure the finished roof provides complete drainage with no standing water.
3. Contractor shall fabricate miter-cut sumps at scuppers to provide smooth transitions between the insulation system and the drains/scuppers.
4. Sumps shall ensure complete roof drainage and prevent water dams.
5. Contractor shall adjust insulation, drains and scuppers to ensure complete roof drainage and satisfactory substrates for membrane and flashings.
6. Drain sump components shall be fastened to the deck using specified insulation fasteners or adhesives.

C. Insulation Mechanical Attachment

1. Fastener quantity and spacing shall be as indicated in the Contract Drawings.
2. Fasteners shall be installed using manufacturer's recommended equipment and in accordance with the manufacturer's requirements.
3. Fasteners and stress plates shall be set secure and tight against the insulation surface, and shall not be over-driven.
4. Fasteners shall engage the top flange of steel decks only.

**END OF SECTION 07 22 16**

## SECTION 07 41 13

### METAL ROOF PANELS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Areas A1-A5 and B2: Provide standing seam metal roof panel system along with related flashings and accessories.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Rough Carpentry Section 06 10 00
  - 2. Preparation for Reroofing Section 07 01 50
  - 3. Roof Insulation Section 07 22 16
  - 4. Metal Wall Panels Section 07 42 13
  - 5. Sheet Metal Flashing and Trim Section 07 62 00

##### **1.03 REFERENCES**

- A. Refer to the following references for specification compliance:
  - 1. 2012 North Carolina Building Code
  - 2. ASCE 7 Minimum Design Loads for Buildings and Other Structures
  - 3. ASTM International
    - a. ASTM E 1592: "Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference".
    - b. ASTM E 1680: "Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
    - c. ASTM E 1646: "Standard Test Method for Water Penetration Through Exterior Metal Roof Panel Systems.
    - d. ASTM A 792-AZ50 (Painted) & ASTM A792-83-AZ55 (unpainted Galvalume): "Specifications for Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process, General Requirements (Galvalume)".
    - e. ASTM E 1514-03: "Standard Specification for Structural Standing Seam Steel Roof Panel Systems".
    - f. ASTM E 408: Standard Test Method for Total Normal Remittance of Surfaces Using Inspection Meter Techniques.
    - g. ASTM E 903 Standard Test Method for Solar Absorptions, Using Integrating Spheres.
  - 4. Underwriters Laboratory:
    - a. UL580: "Tests for Uplift Resistance of Roof Assemblies", Underwriters Laboratories, Inc.
    - b. UL2218: Class 4 Impact Resistance Rating
  - 5. SMACNA: "Architectural Sheet Metal Manual", Sheet Metal and Air

- Conditioning Contractors National Association, Inc.
6. AISC: "Steel Construction Manual", American Institute of Steel Construction.
  7. National Roofing Contractors Association, NRCA "Roofing and Waterproofing Manual," current edition.
  8. AAMA: American Architectural Manufacturer's Association

#### **1.04 DEFINITIONS**

- A. Metal Roof Panel System: The metal roofing panel system components shall consist of the roofing panels, fascia, clips, fasteners, trim, flashings and associated accessories which when assembled result in a watertight, wind resistant assembly meeting all of the requirements specified herein, including the requirements to meet the specified Manufacturer's Guarantee.

#### **1.05 PERFORMANCE REQUIREMENTS**

- A. General: Provide metal roof panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.
- B. The Contractor shall submit Manufacturer's sealed engineering calculations, test reports and/or other applicable data certifying the proposed standing seam roofing system meets or exceeds the design criteria listed below. Calculations shall be sealed by an Engineer licensed in the State where the project is located.
  1. Water Penetration: Shall meet or exceed ASTM E 1646 when tested with a 6.24 psf pressure differential with no uncontrollable water leakage when five gallons per hour of water is sprayed per square foot of roof area.
  2. Wind Design:
    - a. Provide roof system which has been tested by an approved testing agency to meet or exceed the wind uplift pressures listed in Contract Drawings.
    - b. Standing seam roofing Manufacturer shall submit test reports meeting ASTM E 1592 for negative loading for the proposed panel width and gage, and clip spacing in each area (zone) of the roof. Determine panel bending and clip-to-panel strength by testing in accordance with ASTM E 1592 procedures. Capacity for gauge, span or loading other than those tested shall be determined by interpolating between submitted test values only.
    - c. Standing seam roofing Manufacturer shall submit data/calculations for clip attachment to deck substrate or retrofit framing. Clip attachment shall be designed to withstand loads induced by wind uplift lift pressures as indicated above.
  3. Thermal Movements: Provide metal roof panel assemblies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
    - a. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

4. Structural Panel Deflection: Framing members and clips supporting the standing seam roofing system shall be spaced to ensure a maximum deflection under applied live load of 20 psf shall not exceed L/240 of the span.
5. Fire Testing: Shall meet ASTM E 108 and Class 1A-UL 90

## **1.06 SUBMITTALS**

- A. Refer to Section 01 33 00 for Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified.
- D. Shop drawings:
  1. The Contractor shall submit complete shop drawings and erection details, approved by the Standing Seam Metal Roofing Manufacturer, and sealed by a structural engineer licensed in the State of the project. The Contractor shall not proceed with work until Manufacturer Approved drawings have been submitted for review and acceptance.
  2. The shop drawings shall show methods of erection, framing details, roof and wall panel layout, sections and details, anticipated loads, clip spacing for each wind area or zone of the roofs, flashings, sealants, interfaces with all materials not supplied and proposed identification of component parts and their finishes.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for the following:
  1. Metal Roof Panels: Include reports for air infiltration, water penetration, thermal performance and structural performance. As detailed by all ASTM Standard Test Methods, indicated under the appropriate titles made part of this specification.
- F. Contractor shall provide manufacturer's calculations demonstrating compliance with the performance requirements of this specification and all applicable Codes. Calculations shall be signed and sealed by an Engineer registered to practice in the applicable state.
  1. Contractor shall provide written certification, from an independent engineer, licensed in the State, indicating that the existing structure is capable of supporting all additional loads imposed by the retrofit framing system. The independent engineer will confirm that design loads as provided by the manufacturer of the retrofit standing seam metal roof system as being in compliance with all codes. Manufacturer will provide stamped and sealed plans, by an engineer, licensed in the State, indicating the design for the retrofit metal roof assembly as compliant with wind and snow loads. The architectural specifier of record will provide snow loads for ground snow, dead load, wind load occupancy factors and exposure coefficients for the existing structure and locations. Manufacturer will provide horizontal and vertical reactions for the new roof system.
  2. Contractor shall provide manufacturer's calculations demonstrating holding strength of fasteners, to existing structure, in accordance with submitted test data, provided by fastener manufacturer, based on length of embedment and properties of materials.

- G. Standard Colors: Contractor will submit the manufacturers' standard colors for selection by the Owner.
- H. Testing: Contractor shall submit all testing reports for ASTM E 1592-01, ASTM E 1646, ASTM E 1680 to meet the test results shown in this specification document. Contractor shall submit the appropriate documentation to prove State Building Code design compliance. All test reports for ASTM E 108, ASTM D 5894, ASTM D 968, ASTM G23 and G153.
- I. Manufacturer's Qualifications: Requirements for certification noted in Manufacturer's Qualifications under Quality Assurance and AISC standards.

**1.07 QUALITY REQUIREMENTS**

- A. Source Limitations: Obtain each type of metal panel through once source from a single manufacturer.
- B. Manufacturer's Qualifications: The roof system manufacturer shall meet and provide written certification stating:
  - 1. The manufacturer has been regularly engaged in the fabrication of metal standing seam roof systems for at least ten (10) years, regardless of name change. A brief list of similar projects shall be submitted with the shop drawings.
  - 2. The manufacturer maintains a certified installer program for its products and maintains up-to-date authorized roofing contractor list.
  - 3. The manufacturer has a written warranty covering durability, color and weathertightness of its roof system and shall include the insulation curbs and flashings from the roofing manufacturer. Sample warranties shall be provided with the bid proposal.
  - 4. Manufacturer has reviewed the Project's environmental exposure for proximity to coastal environments, has provided the interpretation that the proximity to the salt and/or brackish water environments is acceptable, and will not make exclusions to the specified Guarantee based solely on the proximity to these exposures.
  - 5. Manufacturer agrees to provide the technical data, shop drawings and calculations specified herein.
  - 6. Manufacturer must be able to provide both in-house inspection services.
  - 7. Manufacturer has an installer training program including the following:
    - a. Experienced instructors with experience in the application of the Metal Roofing System.
    - b. A formal syllabus for the classroom and hands-on training.
    - c. Classroom instruction with review and thorough understanding of the specific product's technical manual.
    - d. Hands-on mock-up instruction with a review and thorough understanding of the specific product's details.
    - e. Written and/or oral examinations that must be taken to pass certification.
    - f. Requirement for re-certification of training at a minimum of every five (5) years.
  - 8. Manufacturer has certified the Contractor's personnel, and has approved the Installer for the specified Metal Roofing System for the specified Guarantee.
  - 9. Manufacturer's Inspection: The manufacturer's on-site technical representative shall be employed by the manufacturer as a Technical Representative. The

manufacturer shall provide a minimum of one (1) on-site visit per month; attend the project start-up meeting, on-site for first two (2) start-up days, including observation of seaming of the first three (3) metal roof panels, and at pre-final or final inspection of the metal roofing system installation. Engineer is to be notified a minimum of forty eight (48) hours prior to all manufacturer's inspections. Inspection report noting deficiencies shall be copied to Engineer within seven (7) days after each site visit.

10. Upon completion of the work and prior to final payment, the manufacturer shall conduct a final inspection in presence of the Contractor and Engineer. Deficiencies in the work shall be recorded and immediately corrected. Final payment will not be certified until the manufacturer has given his certification/approval of the work and the required Guarantee has been reviewed by the Engineer.

C. Contractor's Qualifications:

1. Contractor is an approved installer, certified by the Manufacturer before the beginning of the installation of the standing seam metal roof system.
2. The Contractor's on-site Foreman (provide name and date of training) is the person having received certification and training by the Manufacturer, and has received specific training in the proper installation of the selected standing seam metal roof system.
3. The Manufacturer trained and certified Foreman will be present at all times to supervise work whenever standing seam roofing and associated materials are to be installed.
4. Contractor has no viable claims pending regarding negligent acts or defective workmanship on previously performed or current roofing projects involving the specified standing seam metal roofing system.
5. The Contractor shall provide a list of five projects listing the architect/engineers and/or building owners including individuals names and telephone numbers for five standing seam metal roofing projects that have been in service for a minimum of two years.
6. The Contractor shall ensure the manufacturer provides the specified on-site technical visits, and agrees to compensate the manufacturer as necessary for any additional on-site visits required or deemed necessary by the Engineer to resolve deficiencies in the Contractor's workmanship.

**1.08 PRODUCT DELIVERY, STORAGE, AND HANDLING**

A. Delivery:

1. Contractor shall coordinate delivery with Engineer/Owner and occupants on site.
2. Material shall be delivered in the manufacturer's original sealed and labeled shrouds and in quantities to allow continuity application.
3. Contractor shall ensure metal roof system is delivered to the job site properly packaged to provide protection against transportation damage.
4. The Contractor shall be responsible for inspecting materials delivered to the project site. Materials damaged during shipping shall be rejected by the Contractor, and shall not be installed on the project.

B. Handling:

1. Contractor shall exercise extreme care in unloading, storing and erecting metal roof system to prevent bending, warping, twisting and surface damage.

2. The Contractor shall handle materials to prevent scratches, dents, bending, twisting, warping and other damages.
3. Significantly scratched materials, and materials scratched through to the base steel shall be removed from the project and replaced.
4. Dented, bent or damaged materials resulting in improper fit and detracton from intended aesthetics shall be removed from the project and replaced.

C. Storage:

1. Materials shall be stored out of direct exposure to the elements or pallets or dunnage at least 4 inches above ground level. Non-sweating tarpaulins will be placed to prevent moisture contamination. Factory shrouds and visqueen are not acceptable.
2. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. Prolonged Storage of sheets in a bundle is not recommended.
3. If conditions do not permit immediate erection, extra care should be taken to protect materials from staining, dirt, dust or water marks. Stained materials shall be cleaned before installation, or replaced.
4. The Contractor shall comply with all fire prevention requirements for the storage of materials. Combustible storage shall be located sufficiently away from buildings and non-building structures to eliminate fire exposures. The Contractor shall protect storage of combustible insulation materials from open flame and fire exposures. The Contractor shall control all project related ignition sources.

**1.09 JOB CONDITIONS**

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal roof panels to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify locations of roof framing and roof opening dimensions by field measurements before metal roof panel fabrication and indicate measurements on Shop Drawings.
  1. Established Dimensions: Where field measurements cannot be made without delaying the Work, either establish framing and opening dimensions and proceed with fabricating metal roof panels without field measurements, or allow for field-trimming of panels. Coordinate roof construction to ensure that actual building dimensions, locations of structural members, and openings correspond to established dimensions.

**1.10 WARRANTY**

- A. Contractor shall ensure Manufacturer's Warranty is provided to the Owner upon completion of the project. The Contractor shall ensure the warranty includes all conditions specified herein.
- B. Weathertight Warranty: Submit a written warranty executed by Manufacturer agreeing to repair or replace metal roof panel assembly that fails to remain weathertight within the specified warranty period.
  1. Warranty Period: 20 years from date of Substantial Completion.
  2. Prorated Conditions: None.



3. Limitations of liability: Not less than the contract amount.
  4. Wind Speed: not less than 72 mph peak gust or Manufacturer shall not have liability or responsibility for acts of God which are normally covered by hazard insurance.
  5. Include weather tight performance of curbs, equipment supports and pipe portals provided as part of this work.
  6. Include insulation, sub-framing, purlins, clips, fasteners provided as part of this work.
  7. The Manufacturer's warranty shall not include "hold harmless" clause, nor limit liability of Contractor.
  8. Warranty is subject to North Carolina laws
  9. Venue to settle disputes is Buncombe County, NC.
  10. Coating systems are not an approved warranty repair.
  11. The following exclusions will not be accepted in the warranties terms, conditions and/or limitations:
    - a. If a Manufacturer Certified Installer was not present at all times during the installation of the Manufacturer's roof system.
    - b. Failure by the Roofing Contractor to correct all deficiencies listed in the Manufacturer inspection reports.
    - c. If roof leaks are due to ventilators or light transmitting panels.
    - d. Failure to use long-life fasteners in all exposed applications.
- C. Finish Warranty: Provide manufacturer's written panel finish warranty against deterioration of factory applied finishes.
1. Warranty Period: Minimum period of twenty (20) years from date of Substantial Completion.
  2. Prorated Conditions: None.
  3. Limitations of liability: Not less than the contract amount.
  4. Include all pre-finished components provided by the manufacturer.
  5. The Manufacturer's warranty shall not include "hold harmless" clause, nor limit liability of Contractor.
  6. Warranty is subject to North Carolina laws
  7. Venue to settle disputes is Buncombe County, NC.
  8. Coating systems are not an approved warranty repair.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURER**

- A. Manufacturer: Provide standing seam metal roof system meeting the requirements specified herein as manufacturer by:
1. Construction Metal Products (CMP) - Series 2500
  2. MBCI BattenLok HS
  3. McElroy - Maxima 2"
  4. Metal Roofing Systems – MRS System 2500
  5. Engineers Accepted Equivalent

### **2.02 MATERIALS**

- A. Standing Seam Roofing Panels:

1. Factory formed only by the specified Manufacturer, no job formed panels shall be allowed.
2. 16" wide, striated panel, with nominal 2" high standing seam rib, utilizing male and female rib configurations, with factory applied hot-melt mastic in female rib.
3. Standing seam shall be formed with the Manufacturer's electric seaming tool to produce a 90 degree rolled seam.
4. AZ50 Galvalume coated steel, meeting ASTM A792-83-AZ50, minimum 24 ga., maximum 22 ga. where required for specified wind uplift resistance.
5. Clip/Fastener Assembly:
  - a. Low Floating Clip:
    - i. UL Rated Clip: 2.-3/8" high sliding 22-gauge galvanized steel hook in combination with a double fastened 16 gauge galvanized steel base, both at  $F_y$  (min) = 33 ksi. Clip hook shall have a shop installed hot-melt butyl sealant for continuity of seal at clip locations.
  - b. Fasteners:
    - i. Area B2 Retrofit: Manufacturer's standard #12 - 14 x 1 1/4" long self-drilling, self-tapping hex head drive screws for metal; noncorrosive base material.
    - ii. All other Areas: 12 x 2.5" minimum, #2 Phillips/Square Drive Pancake Type "A" for use with plywood substrates.

B. Metal Finish:

1. Manufacturer's smooth finish, pre-finished color coatings consisting of full strength 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer on the finish side, with primer and a wash coat on the reverse in accordance with AAMA 2605, current edition. All measurements per NCCA Technical Bulletin II-4 or ASTM D1005.
2. Color of finish for panels all associated trim to be selected by Owner from Manufacturer's standard color chart.
3. Panel Finish shall meet or exceed the following:
  - a. Abrasion Resistance: Shall pass 67 liters of falling sand per mil thickness per ASTM D968.
  - b. Salt Spray Resistance: Samples diagonally scored and subjected to 5% at 95 degrees F, neutral salt spray per ASTM B117, then taped with Scotch #610 cellophane tape: 1000 hours coated steel, no blistering and no loss of adhesion greater than 1/8 from score line.
  - c. Chemical Resistance: No effect after 24 hour exposure of a 10% solution of hydrochloric acid, and 18-hour exposure to 20% sulfuric acid, per ASTM D1308, including exposure to 10% muriatic acid and nitric acid fumes.
  - d. Humidity Resistance: No blistering, cracking, peeling, loss of gloss or softening of the finish after 3000 hours aluminum 1000 hours coated steel, of exposure at 100% humidity at 95 degrees F, per Federal Test Method Standard 141, Method 6201 or ASTM D2247.
  - e. Chalking Resistance: No chalking greater than #8 rating, per ASTM D659 test procedure after a 3000-hour weatherometer test.
  - f. Color Change: Finish coat color change shall not exceed 5 NBS units per

ASTM D-822, ASTM G-23, and ASTM D2244 (South Florida 10-years) test procedure after 3000-hour weatherometer test.

- g. Specular Gloss: As determined per ASTM D523 at a glossmeter angle of 60 degrees. 35 percent +/-5 specular reflectance.

C. Fasteners:

- 1. All fasteners associated with the roofing installation shall be supplied by, and/or approved by, the specified metal roofing manufacturer.
  - a. Fastener length and threads and drill point shall be as required for the metal and other substrates being joined. Refer to fastener manufacturer and/or roofing manufacturer published literature.
  - b. All self-tapping/self-drilling fasteners, bolts, nuts, self-locking rivets and other suitable fasteners shall be corrosion resistant, designed to withstand specified design loads.
  - c. Contractor shall ensure fasteners have factory applied coating on the exposed fastener head and washer to match metal roof system color.
  - d. All exposed fasteners shall be provided with neoprene-backed washers.
  - e. The Contractor shall position and space all exposed fasteners in a true vertical and horizontal alignment. Use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the neoprene washer.

D. Condensation Control Insulation for Area B2:

- 1. Insulation shall be 2-inch vinyl backed type condensation control blanket of sufficient thickness to provide a minimum "R" value of 6 when tested in accordance with ASTM C 177. Insulation shall have a vinyl backing providing permeability of 0.02 perms or less when tested in accordance with ASTM E 96. Vinyl backing shall have a flame spread rating of less than 25 when tested in accordance with ASTM C 84. Insulation shall conform to ASTM C 665, Type II, Class A or Type III, Class A. Approved Manufacturers:
  - a. Johns Manville
  - b. Certainteed
  - c. Owens Corning
  - d. GAF
- 2. Thermal Spacer: Shall be 3/8" by 3" wide polystyrene block installed along tops of Zee purlins below metal roof panels.

E. Accessories:

- 1. All accessories shall be manufactured, supplied and/or otherwise approved by the standing seam roofing Manufacturer.
  - a. Contractor shall provide all components required per the metal roof system manufacturer's approved shop drawings for a complete metal roof system to include roof panels, panel clips, trim/flashing, fascias, ridge, closures, sealants, seals and any other required items.
  - b. Contractor shall provide all metal closures and trim fabricated from the specified pre-finished metal of the same gauge, finish and color as the roof panels.

- F. Sealants
1. Polyurethane Sealant: One-component elastomeric gun grade polyurethane sealant conforming to ASTM C 920, Type S, Grade NS, Class 25, and use NT, M, A, G, or O as required by substrate conditions. Color to match adjacent materials.
  2. Silicone Sealant: Shall be a one-component, non-sag, neutral cure, low-modulus, UV resistant, high performance silicone sealant. Shall meet ASTM C 920, Type S, Grade NS, Class 100, Use M, G, A or O. Color to match adjacent materials. To be utilized where exposed.
  3. Sealant Tape: 3/16" x 7/8" tri-bead, non-skinning butyl sealant tape.
  4. Butyl Sealant: Shall be gun grade, non-skinning, non-hardening, flexible blend of butyl rubber and polyisobutylene sealant. To be utilized where concealed between sheet metal sections such as laps, etc.
- G. Ridge Vents: Provide minimum 20 sq. inches of NFVA per lineal foot along the ridge.
- H. Eave Vents (Area B2): Provide minimum 10 sq. inches of NFVA per lineal foot along the eave. Approved Manufacturers:
1. Cor-A-Vent.
  2. Cobra Fascia Vent
  3. Metal Roofing System Manufacturer's approved and Engineers similar equivalent.
- I. Curb and Equipment Support units:
1. Acceptable Manufacturers:
    - a. LM Curbs
    - b. KCC International, Inc.
    - c. Approved/Recommended by Standing Seam Roofing Manufacturer, compatible with standing seam roof and seam profile, and accepted by Engineer. Pre-manufactured curb, with cricket to conform to standing seams for watertight fit, meeting specified requirements herein.
  2. Fabrication:
    - a. Pre-manufactured curb shall be continuous by welded connection, with cricket to conform to standing seams for watertight fit, meeting specified requirements herein.
    - b. Curbs shall be fabricated of structural quality aluminum, minimum 0.080 inch thick for mechanical equipment up to 1000 lbs., and 0.125 inch thick for mechanical equipment between 1000 lbs. and 2000 lbs.
    - c. Curbs and associated materials shall either be factory primed and factory finished painted to match roof panels or clad with sheet metal to match the color of the metal roof panels.
    - d. Curb assemblies shall have integral base plates and water diverter crickets. The upper flange of the curb shall be a minimum of 18 inches above the water diverter to allow for 12 inches of free area after the panel is lapped over the flange on the high side.
    - e. Curbs shall be designed to install under metal roof system on the high side, and over metal roof system on the low side.
    - f. Minimum height of prefabricated curb shall be 12 inches above the

- finished metal roof system at any point.
- g. Curbs shall be constructed to match the slope of the roof and provide a level top surface for mounting equipment.
- h. Curb flanges shall be constructed to match the configuration of the metal roof panels and seams.
- i. Curb manufacturer shall provide all curb structural support necessary to support the existing equipment and curb, and allow for thermal movement of the curb with the roofing system.
- j. Contractor shall submit roof curb manufacturer's shop drawings including curb and framing to metal roof system manufacturer for review prior to fabrication.
- k. Contractor shall ensure standing seam metal roof system Manufacturer reviews and approves roof curb manufacturer's shop drawings for compatibility with metal roof system.

J. Prefabricated Roof Jacks:

- 1. Acceptable Manufacturers:
  - a. SFS - Intech
  - b. ITW Buildex
  - c. Approved/Recommended by Standing Seam Roofing Manufacturer, compatible with standing seam metal roofing system, and accepted by Engineer to meet specified requirements herein.
- 2. Pipe flashings shall be a one piece EPDM molded rubber boot having a serviceable temperature range of -65°F to 212°F for standard penetrations, and silicone molded rubber boot having a serviceable temperature range of -100°F to 437°F for high temperature applications
- 3. Pipe flashings shall be resistant to ozone and ultraviolet rays.
- 4. Units shall have a sealed aluminum flanged base ring.

**2.03 FABRICATION**

- A. Roof panels and all associated metal roofing components shall be fabricated by, or provided by, a single-source manufacturer to fit together as a completed roofing assembly meeting the requirements specified herein.
- B. Shop and field fabricated trim components shall meet the roofing Manufacturers requirements for watertight fit.
- C. Roof panels shall be factory formed by the specified Manufacturer, not job formed or formed on portable equipment in the Contractor's shop. Material shall be in-line leveled prior to roll forming panel profile.
  - 1. Roofing panels specified in this section shall be factory roll formed with fixed-base roll forming equipment and in line leveling, assuring the highest level of quality control.
- D. Roof panels shall be roll formed in continuous lengths, full length of detailed runs. Roof panels shall not have laps with fasteners between ridge and eave with no panel end laps.
- E. Fabricate trim, sheet metal flashing and accessories to fit secure and watertight at transitions and details. Improper fit will be rejected and require replacement.

- F. Fabricate roof trim and sheet metal flashing from same specified finish same as roof panel.
- G. Panels and components that result in completed installation being loose, bent or warped shall be replaced and re-fabricated for proper fit.
- H. Surface-applied sealants shall not be accepted to complete poorly fabricated and poorly fitting components. Where components do not fit tight with overlapping metal joints and seams, materials shall be removed and re-installed properly for overlapping, tight and secure fit.

## **PART 3 EXECUTION**

### **3.01 INSPECTION**

- A. General Inspection:
  - 1. Contractor shall inspect all substrates and Work to verify the conditions are acceptable and complete such that metal roofing and associated Work may begin.
  - 2. Pre-existing unsatisfactory, wet or deteriorated roof substrates shall be replaced by the Contractor based on Allowance Quantities and Unit Price. Substrates damaged or altered by the Contractor during the Work shall be repaired, corrected or replaced by the Contractor at no cost to the Owner to meet all requirements specified herein.
  - 3. Contractor shall inspect all new metal roof panels and all other components before installation. Materials with scratches through the finish shall be repaired or replaced. Damaged and dented materials, and materials scratched through to the steel base material shall be removed from the project, not to be installed.
  - 4. Contractor shall verify that installation will be in accordance with approved shop drawings and manufacturer's instructions before beginning work. This specifically includes verifying that secondary structural members and/or decking is satisfactory to install metal roofing system.
  - 5. Contractor shall coordinate with metal roof system manufacturer to insure that reduced clip spacing at eave, rake, ridge and corner areas are accommodated by framing spacing and/or substrate.
  - 6. Contractor shall inspect substrates and notify Engineer in writing of any deficiencies observed effecting the installation, and effecting the completed roofing system and associated components.
  - 7. The Contractor shall inspect conditions at the walls. Rotten plywood and wood framing shall be replaced per Allowance Quantity and Unit Price. All loose plywood and wood framing shall be re-fastened by the Contractor, included in Base Bid.
  - 8. The Contractor shall inspect conditions at each pipe, conduit, fan, stack and curb to determine conditions and work requirements necessary to disconnect services, remove equipment, re-install equipment and install all structural supports necessary to support the equipment and new curbs. The Contractor shall provide all electrical, plumbing, mechanical and all other services necessary to relocate any and all rooftop equipment and roof penetrations.
  - 9. Commencement of work signifies Contractor's acceptance of substrates. Any defects in roofing work resulting from such accepted substrates shall be corrected to Owner's satisfaction at no additional expense.
  - 10. The Contractor shall reject and replace all materials that have been damaged during shipping, storage or handling.
  - 11. The Contractor shall inspect storage conditions daily to ensure materials remain

protected from damage, condensation, dew, rain or other contamination.

### **3.02 PREPARATION**

#### **A. Roof Substrate:**

1. The roof substrate shall be dried and broomed and/or vacuumed clean of all loose gravel, stone, dirt, dust, debris and foreign matter prior to installation of the new roofing system. Blowers shall not be used unless pre-approved by the Engineer/Owner and building Occupants.
2. All free water and wet or damp debris shall be completely removed from deck substrate surface before installing new roofing system.
3. The wall substrates shall be in satisfactory condition before commencement of the Work.

#### **B. Protection:**

1. The Contractor shall protect the building and materials from exposure to weather related damages.
2. Protect building walls and other surfaces with canvas or suitable tarp wherever equipment or materials are taken up to or down from roof.
3. Protect building interiors using suitable methods required to prevent damage from roofing activities.
4. The Contractor shall be responsible for completely drying-in the building each day to ensure the building remains watertight. All necessary measures shall be taken to protect the building from weather related exposures during the project.
5. Seal all deck openings to prevent dust and debris from entering the building.
6. Protect building grounds, landscaping and exterior components and fixtures from damaged during construction activities. Damages shall be repaired/replaced to meet pre-construction conditions.

#### **C. Coordination**

1. Contractor shall be responsible for the following Coordination activities:
  - a. Coordinate all work and associated work activities with the Engineer/Owner
  - b. Coordinate curb replacement and installation of new curbs for fans and equipment with the Engineer/Owner in advance. The scheduled outage of equipment shall be limited to one day or less, and the schedule for outages shall be approved in advance by the Engineer/Owner. Weekend or non business hours work may be required to accommodate the Owner and occupancy.
  - c. Coordinate raising or relocating vent pipe/soil stack pipes with the Engineer/Owner.
  - d. Coordinate all interior access and interior work with Engineer/Owner in advance. The Contractor shall not proceed with interior work unless pre-approved by the Owner and occupants.

#### **D. Roof Loading, Staging and Storage:**

1. Evenly distribute loads of materials on roofs. Do not pre-load roofs with concentrated loads of materials that exceed the roof deck and structure's load bearing capacity.

2. The Contractor shall secure all materials and equipment stored on the roof to prevent items from sliding or falling off of the roof.
3. Secure materials and equipment on the roof to prevent materials from being displaced by wind.

### **3.03 APPLICATION**

#### **A. General:**

1. The installation of sheet metal components shall allow for thermal movement, expansion and contraction. Lengths of metal, fastening type and rate, metal joints, and connections shall be installed to meet sheet metal industry recognized standards and published standards including those referenced herein. Refer to standards in References sections.
2. The various sheet metal sections shall be uniform with corners, joints, and angles mitered, sealed and secured for tight fit.
3. Sheet metal counterflashing corners shall be overlapped, riveted and sealed watertight.
4. All exposed metal edges shall be returned (hemmed) for strength and appearance. Sheet metal shall be fitted closely, uniformly and neatly.
5. Sheet metal counterflashings, expansion joints and other applicable components shall have sheet metal end closures fabricated to terminate each end of the detail. The end closures shall conceal the adjacent substrates for watertight closures. The end closures shall conform the adjacent conditions and provide for a minimum 4 inch overlap.
6. The Contractor shall provide all necessary cleats or stiffeners and other reinforcements as required to make all sections rigid and substantial.
7. Sheet metal shall be fabricated, supported, cleated, fastened and joined to prevent warping, "oil canning" and buckling. The Contractor shall be responsible for adjusting substrates, nailers, framing, etc. to ensure finished sheet metal is installed smooth.
8. Sheet metal shall be installed to prevent moisture from entering beyond the detail.
9. All sheet metal transition details shall be provided with watertight redundancy including, but not limited to self-adhering underlayment membrane, concealed sealants, and metal joint back-up plates. This secondary protection shall be installed, sealed, lapped, etc. to ensure if the sheet metal detail fails to shed water, a redundant layer of protection will be in place to shed limited moisture infiltration.
10. Dissimilar metals or other materials shall not make contact. Where dissimilar material is found in-place, galvanic corrosion between existing material and new metal shall be prevented by a separation barrier approved by Manufacturer and Engineer.
11. Galvalume, galvanized and aluminum materials shall not be in contact with treated wood products. A physical separation, including PVC underlayment membrane or self-adhering underlayment membrane shall be installed to prevent contact.
12. Relocate plumbing vent pipes and vents to center of new metal roof panels.

#### **B. Night Seals/Daily Tie-ins:**

1. At end of day's work, or when precipitation is imminent, a water cut-off shall be built at all open edges and penetrations. These tie-ins shall be constructed to withstand extended periods of service, anticipated storms, precipitation and high



winds.

2. The Contractor shall be responsible for taking all necessary precautions during construction to prevent weather related exposures to the building and materials, roof leaks and other weather related damages resulting from the work included in the project.
3. Building insulation, ceilings, plywood, decking, fixtures, etc. that is wet and damaged during Construction shall be replaced by the Contractor.
4. Damages resulting from water that enters under the new metal roofing and components, and water that enters the building in the work areas during construction, shall be the responsibility of the Contractor.

C. Field-Cutting Pre-Finished Metal:

1. The Contractor shall prohibit the use of abrasive/grinding blades, circular saws and reciprocating saws. Any cutting operation that grinds, rips and tears the metal shall be prohibited.
2. Approved cutting tools for Galvalume and pre-finished steel include aviation snips, sheet metal hand shears, electric metal shears and electric nibblers.
3. Galvalume and Pre-finished metal cut using un-approved methods shall be rejected, removed and replaced by the Contractor.

D. Standing Seam Roof Panels:

1. General application shall be in accordance with the Manufacturers published installation instructions.
2. Install roofing system and components with tools recommended by the roofing manufacturer.
3. Install panels plumb, level and straight with seams and ribs parallel, conforming to design and manufacturer's published instructions as indicated.
4. Roofing panels shall be continuous, with no joints or seams, except where specified.
5. Install metal roof system so that it is weathertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.
6. Provide concealed fastener/clips at all panel attachment locations.
7. Exposed fasteners in trim components shall have pre-painted head and washer with EPDM-backed gasket for watertight seal. Fasteners shall be of size and type for metal thickness and substrate material. The Contractor shall follow the fastener manufacturer's published requirements for fastener application and installation instructions.
8. The roof clips shall be installed to allow the completed roofing assembly to accommodate anticipated specified thermal movement.

E. Roof Panel Seams:

1. Roofing panel seams shall be seamed with the specified Manufacturer's electric seaming tool, producing a 90 degree seam.
2. The Contractor shall ensure the roof panel is seamed per the Manufacturer's published instructions.
3. The Contractor shall ensure seam has factory-applied sealant in place prior to seaming.
4. The seaming tool shall be calibrated and serviced by the roofing manufacturer or other approved seaming tool manufacturer/service center. The electric seaming equipment shall be calibrated and adjusted for the metal gage, type and finish. The seaming tool shall not have been in use since last calibration and service.

5. The seam shall be true, straight and aligned to produce the desired seam without bending, warping or scratching through the panel finish.
6. Improper roof panel seaming shall result in rejection of the panel installation and result in panel removal and replacement by the Contractor.

F. Squareness:

1. Aesthetics of completed roofing is of utmost importance.
2. Panels, framing, components and trim shall be aligned true, straight and square.
3. Installation and sequence shall ensure completed installation is square for proper fit of components.
4. Installation tolerance for squareness shall not exceed 1:500 (1.92 inch per 100 ft).
5. Contractor shall maintain modularity and alignment of roof panels to prevent roof panel “stair-stepping” or “fanning”.
6. The Contractor shall utilize the Manufacturer’s “spacer tools”, “module makers” and/or measuring tape to maintain consistent roof panel coverage.
7. The Contractor shall check for squareness after installing no more than every five (5) panels to ensure the panels are laying-up square and remain true.
8. Completed installation of roofing and associated components shall fit watertight, accommodate concealed sealants where specified, and allow for specified thermal movement.
9. Abrupt and sharp transitions in the substrate shall be corrected by the Contractor to prevent crimping, bending or poor fitting sheet metal components that may result in oil canning.
10. Completed roofing, flashing and sheet metal components that do not meet the specified tolerances shall be rejected, and corrections shall be made by the Contractor.

G. Roof Components, details and trim:

1. Roof eaves, hips, expansion joints, counterflashings and sheet metal trim and closure materials and components shall be fabricated and supplied by the standing seam roofing Manufacturer, unless otherwise specified.
2. Roof details and flashings shall be pre-approved by the Manufacturer for inclusion in specified warranty.
3. Installation shall be in accordance with Manufacturer’s shop drawings, details and published requirements.
4. Details shall be installed with redundancy, including secondary metal flashing, concealed sealant and self-adhering underlayment beneath all details.
5. Refer to Section 07 62 00-Sheet Metal Flashing and Trim for specific requirements.

H. Fasteners:

1. All fasteners shall be installed as specified, detailed and as published and designed by the fastener manufacturer for the materials being joined.
2. The Contractor shall consult and follow the fastener manufacturer’s published literature for proper preparation and installation.
3. Fastener shall be properly seated, not over-driven or under-driven. Fastener installation techniques shall not bend, dent or warp sheet metal.
4. Pre-drill substrates where required to properly install fasteners.
5. Fasteners shall not be installed into exposed exterior horizontal surfaces of sheet metal and roofing unless where specifically required and approved by the Manufacturer.

6. Improperly driven/installed fasteners shall be removed and replaced with properly sized fastener for each application.
- I. Rivets: #44 stainless steel rivets with stainless steel mandrel. Length of rivet to properly fasten particular sheet metal components. Rivets shall be factory painted to match adjacent sheet metal.
  - J. Sealants:
    1. Sheet metal joints, and junctures between sheet metal and adjacent substrates, shall be sealed with specified, compatible sealants.
    2. Sheet metal and adjacent substrates shall be cleaned free of dust, debris and incompatible coatings.
    3. Sheet metal and adjacent substrates shall be primed and prepared to meet sealant manufacturers' published literature and recommendations.
    4. Sheet metal joints shall be inspected by the Contractor before sealant application. Joints shall be fastened and/or tightly fitted to prevent sealed joints from buckling or opening.
    5. Environmental conditions shall be dry, and precipitation shall not be anticipated, during or no less than 24 hours after, sealant application. Follow sealant manufacturers' published literature regarding environmental conditions.
    6. Sealant shall be applied and tooled as indicated and recommended in sealant manufacturers' published literature.
  - K. Roof Curb Installation:
    1. Contractor shall be responsible to ensure new curbs fit accurately to roofing system and equipment. Improperly fabricated, sized and installed curbs shall not be accepted, and shall be replaced with properly sized curbs for accurate fit.
    2. Contractor shall comply with metal roof system manufacturer's shop drawings, instructions and recommendations for installation of roof curbs. Refer to metal roof system manufacturer's standard installation details. Anchor curbs securely in place with provisions for thermal and structural movement.
    3. Contractor shall ensure dimensions of curbs and supports fit the existing rooftop equipment, and conform to the metal roofing system for accurate, watertight fit to accommodate thermally induced panel movement.
    4. Contractor shall coordinate curb replacement for fans and other equipment with the Engineer/Owner in advance of work.
    5. The scheduled outage of equipment shall be limited to one day or less unless otherwise approved by the Engineer/Owner. The schedule for outages shall be approved in advance by the Engineer/Owner. Weekend work may be required to accommodate the Owner and occupancy.
    6. The Contractor shall protect equipment and building from damages during construction.
    7. The Contractor shall install all materials and components supplied by curb manufacturer to support the equipment and curb, and allow for thermal movement of roofing panels.
    8. The curb and seam caps shall be installed and sealed for a permanent watertight detail without relying on exterior applied sealants.
    9. The equipment shall be installed on the curbs, secured and sealed watertight. Re-install equipment to pre-construction operations. Ensure equipment operates to Engineer/Owners satisfaction upon completion of work.
    10. Inaccurate installation and poor fit between curb and roofing panels shall be cause for rejection of curb installation, and require re-installation or replacement.

- L. Pre-Fabricated Roof Jacks (pipe boots):
  1. The Contractor shall move/relocate and re-secure all pipe penetrations that touch roof panel standing seams to ensure the pipe and new roof jack are installed in the flat of the panel pan. The new roof jacks shall not touch the roof panel vertical standing seams.
  2. Refer to referenced standards and applicable State Plumbing Code.
  3. The pipes and other equipment shall be re-installed to ensure the vent pipes, etc. are fully operational to pre-construction function.
  4. Vent pipes shall be sealed air tight at all new joints and connections.
  5. The flange on the new roof jack shall not come in contact with the roof panel vertical seam.
  6. Contractor shall ensure old roof jacks are removed and new installed without damages or exposure to building interior to weather exposure.
  7. Contractor shall be responsible for all electrical, mechanical, plumbing and related services required to relocate pipe penetrations to ensure the roof jacks do not touch the roof panel standing seams, or flashing/trim.
  
- M. Condensation Control Insulation/Thermal Spacer:
  1. Comply with insulation and metal roofing manufacturer's installation instructions for particular conditions of installation and Thermal Spacer.

**3.04 CLEAN UP**

- A. Dispose of excess materials and remove debris from site. Maintain all construction related debris in approved disposal containers.
- B. Clean work in accordance with manufacturer's recommendations.
- C. The Contractor shall protect work against damage until final acceptance. The Contractor shall replace or repair to the satisfaction of the Owner, any work that becomes damaged prior to final acceptance.
- D. Touch up minor scratches and abrasions with touch up paint supplied by the metal roof system manufacturer. Minor scratches shall be considered scratches that extend into the finish only, not down to the base metal.
  1. Minor scratches shall be defined as follows:
    - a. Scratches that extend into the paint finish only and not down to the base metal.
    - b. Scratches that do not extend more than 4" in length.
    - c. Where no more than two (2) scratches in lengths of less than 4" are present in a 1' by 1' area of a metal roof panel.
- E. Replace significantly scratched metal panels.
  1. Significant scratches shall be defined as follows:
    - a. Scratches that extend down to the base metal.
    - b. Scratches that extend more than 4" in length.
    - c. Where more than two (2) scratches in lengths less than 4" are present in a 1' by 1' area of a metal roof panel.
    - d. Where touch up paint is visible when viewing the metal roof panels from

a common pedestrian area from the ground as judged by the Owner and Engineer.

- F. Do not allow panels or trim to come in contact with dissimilar metals such as copper, lead or graphite. Stainless steel shall be “passive stainless steel.” Water run-off from dissimilar materials is also prohibited and should be controlled by the Contractor during construction.
- G. Immediately remove all metal dust and cut debris produced by cutting, drilling and fastening. Do not allow metal dust and cut debris to remain on pre-finished metal panels.
- H. Contractor shall prevent metal chips, shavings, etc. from staining the building, roof and associated fixtures and components. Rust stains shall be removed by the Contractor.
- I. Contractor shall prevent damage during cleaning activities. Cleaning materials and methods shall not damage building, grounds, components or fixtures.
- J. The Contractor shall ensure trash and debris, especially nails and shingles, are removed from the yard and grounds immediately. Nails, shingles, sharp sheet metal scraps and all other construction related debris shall be maintained in suitable waste containers at all times.

**END OF SECTION 07 41 13**

## SECTION 07 42 13

### METAL WALL PANELS

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Installation of prefinished, prefabricated nonstructural flush seam wall panels with interlocking seams providing cladding protection of a weather barrier substrate where indicated:
  - 1. Perimeter roof eave on Area B2
  - 2. Masonry elevation wall above Area B1

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Roof Retrofit Framing Section 05 54 20
  - 2. Sheet Metal Flashing and Trim Section 07 62 00

##### **1.03 REFERENCES**

- A. ASTM International
  - 1. A750/A 750 M – Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil Coating Process for Exterior Exposed Building Products.
  - 2. A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 3. A792 - Standard Specification for Steel Sheet, 50 percent Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
  - 4. B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
  - 5. D523 - Standard Test Method for Specular Gloss.
  - 6. D659 - Standard Guide for Testing Industrial Water-Reducible Coatings.
  - 7. D822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
  - 8. D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
- B. American Architectural Manufacturer's Association (AAMA) 605.2 - Voluntary Specification for High Performance Organic Coatings.
- C. National Roofing Contractors Association (NRCA) - Roofing Manual.
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- E. Underwriters Laboratories (UL) - Building Materials Directory.

##### **1.04 SYSTEM DESCRIPTION**

- A. Design Requirements:

1. Provide factory preformed wall panel system that has been pretested and certified by the manufacturer to comply with specified requirements under installed conditions.
2. Provide one piece, single length wall panels.
3. Provide continuous interlocking seams with open hem male legs that inherently increases load span capability, stiffness, and flexural stress handling.

B. Attachment of Panels:

1. Maximum fastener spacing for attachment of panels shall not exceed 12" on center.

**1.05 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- D. Shop drawings showing all details, trim pieces, transitions and closures necessary to install wall panels.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications:
  1. Manufacturer shall have a minimum of 10 years experience supplying metal siding to the region where the work is to be done.
- B. Installer Qualifications:
  1. Acceptable to, licensed or certified by manufacturer.
  2. Not less than 3 years experience with systems.
- C. Regulatory Requirements:
  1. Comply with local Building Code requirements if more restrictive than those specified.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Protect against damage and discoloration.
- B. Handle panels with non-marring slings.
- C. Do not bend panels.
- D. Store panels above ground, with one end elevated for drainage.
- E. Protect panels against standing water and condensation between adjacent surfaces.
- F. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and allow to air dry.

- G. Remove any strippable film coating prior to installation and do not allow it to remain on the panels in extreme cold, heat or in direct sunlight.
- H. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

**1.08 WARRANTY**

- A. Contractor to provide the manufacturer's thirty (30) year Kynar 500/Hylar 5000 finish warranty.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Shall be same as Metal Roof Panels specified in Section 07 41 13.

**2.02 PRODUCTS**

- A. Flush Seam Wall Panels
  1. Base Metal: 24-gauge, Galvalume coated steel meeting or exceeding AZ50 per ASTM A792.
  2. Face: Panels shall be manufactured with two radii stiffening ribs.
  3. Panel size: 12 inches (305 mm) in width.
  4. Seam size: Nominal 1 inch (25 mm) deep interlocking seams with a structurally qualifying open hem on the male leg.

**2.03 RELATED MATERIALS**

- A. Fasteners
  1. Flush Seam Panel Screws:
    - a. For metal: Manufacturer's standard #10-16 x 1" long self-drilling, self-tapping pancake head Phillips drive screws.
    - b. For untreated plywood: Manufacturer's standard #10-12 x 1" long A-point fastener, pancake head Phillips drive screws.
  2. Exposed Fastener Screws:
    - a. For metal trim and closures: Manufacturer's standard #10-16 x 1" long self-drilling, self-tapping pancake head Phillips drive screws with EPDM or PVC washer under heads of fasteners bearing on weather side of metal wall panels. Screw heads to match color of wall panel by means of plastic caps or factory applied coating.
- B. Accessories:
  1. Provide manufacturer's standard accessories and other items essential to completeness of roof installation including anchor clips, trim, ridge and hip caps, closures, flashing, and fascia.
  2. Form flashings, closure, and trim from same gauge and finish as roof panels.
- C. Hat Channel Sub Framing:



1. 7/8" x 5-1/2", 16 gauge, galvanized steel hat channel.
- D. Sheet Metal Underlayment: Refer to Section 07 62 00-Sheet Metal Flashing and Trim.
- E. Backer Rod: Refer to Section 07 62 00-Sheet Metal Flashing and Trim.
- F. Sealant: Refer to Section 07 62 00-Sheet Metal Flashing and Trim. Sealant color to match wall panel.
- G. Metal Wall Panel Closures: Refer to Section 07 62 00-Sheet Metal Flashing and Trim.

## **2.04 FABRICATION OF SHEET METAL WALL PANELS**

- A. All steel to be correctively leveled and handled to minimize stress and waviness of sheet steel.
- B. Form and fabricate sheets, seams, strips, clips, valleys, ridges, edge treatments, integral flashings, and other components of the metal roofing to the profiles, patterns, and drainage arrangements as determined by Engineer, to provide permanent leakproof construction, with no oil canning or panel distortion.
  1. Fabricate panels in full lengths with no end laps.
  2. Fabricate exposed items of prefinished sheet metal, color to match panels.
  3. Hem exposed edges on underside 1/2 inch (12 mm) miter and seam corners.
  4. Provide for thermal expansion and contraction of the Work.
  5. Seal joints to achieve leak proof construction per manufacturer's detail.
- C. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- D. Unless otherwise shown on drawings or specified herein, panels shall be full length. Fabricate flashings and accessories in longest practical lengths.
- E. Wall panels shall be factory formed. Field formed panels are not acceptable.

## **2.05 FINISH**

- A. Exterior Finish:
  1. Full 70 percent Kynar 500/Hylar 5000 for a total 1.0 mil dry film thickness with a specular gloss of 10-15 percent when tested in accordance with ASTM D523 at 60 degrees.
- B. Interior Finish:
  1. Primer Coat Material: Corrosion-resistant primer; primer coat dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
  2. Total Interior Dry Film Thickness: 0.50 mils.
  3. Color: Off-White.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Substrate:

1. Examine substrate to ensure that is properly secured and prepared to receive metal wall panels.
2. Ensure substrate is installed flat, free from objectionable warp, wave, and buckle.

### **3.02 INSTALLATION**

#### **A. Metal Wall Panels:**

1. Follow panel manufacturer's directions.
2. Install panel seams vertically.
3. Lap panels away from prevailing wind direction.
4. Do not stretch or compress panel side-laps.
5. Secure panels without warp or deflection.
6. Clean and dry surfaces prior to applying sealant.
7. Exposed fasteners are not allowed, except to fasten flashings, at fixed points, or as indicated on Drawings.
8. Field apply sealant to penetrations, transitions, and other locations necessary to prevent water infiltration.
9. Leave 1/4" space between bottom of metal wall panels and receiver flashing.

#### **B. Flashing:**

1. Follow manufacturer's directions and architect approved Shop Drawings.
2. Install flashings to allow for thermal movement.
3. Remove strippable protective film, if used, immediately preceding flashing installation.
4. Make end cuts and install sealant and flashings to achieve weathertight installation.

#### **C. Cutting and Fitting:**

1. Neat, square and true. Torch cutting, electric saws and grinders with abrasive wheels are prohibited where cut is exposed to final view.
2. Openings 6 inches (153 mm) and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.
3. Where necessary to saw-cut panels, debur cut edges.

#### **D. Dissimilar Metals:**

1. Where sheet metal is in contact with dissimilar metals, execute juncture to facilitate drainage and minimize possibility of galvanic action.
2. At point of contact with dissimilar metal, coat metal with protective paint or tape which can be placed between metals.

### **3.03 PROTECTION**

- A. Protect work as required to ensure metal wall panel system will be without damage at time of final completion.

**END OF SECTION 07 42 13**

## SECTION 07 54 23

### THERMOPLASTIC-POLYOLEFIN ROOFING (ADHERED)

#### **PART 1 GENERAL**

##### **1.01 WORK INCLUDED**

- A. Areas B1, B3 and B4: Provide a fully adhered, thermoplastic-polyolefin (TPO) membrane and flashings to provide a permanently watertight system.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Rough Carpentry Section 06 10 00
  - 2. Preparation for Reroofing Section 07 01 50
  - 3. Roof Insulation Section 07 22 16
  - 4. Sheet Metal Flashing and Trim Section 07 62 00
  - 5. Roof Accessories Section 07 72 00

##### **1.03 REFERENCES**

- A. Refer to the following references, current edition for specification compliance:
  - 1. 2012 North Carolina Building Code
  - 2. ASTM International
  - 3. National Roofing Contractors Association (NRCA)
  - 4. Underwriters Laboratory (UL)
  - 5. FM Global
  - 6. Single Ply Roofing Institute

##### **1.04 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittal Procedures for Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified.
- D. Certifications by manufacturers that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.
- E. Submit documentation of approved, tested roof system to meet the specified requirements for the following:
  - 1. Wind uplift pressures
  - 2. UL Fire Resistance Rating

##### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.

- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Follow manufacturer's requirements for storing of membrane rolls. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- D. All adhesives shall be stored at temperatures required by the manufacturer.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- F. All materials which are determined to be damaged by the Engineer, Owner's Representative or membrane manufacturer are to be removed from the job site and replaced at no cost to the Owner.

**1.06 PROJECT CONDITIONS**

- A. Roofing shall not be applied during precipitation. Contractor assumes all responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be cleaned and heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A protection layer of plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- H. Prior to and during application, all dirt, debris and dust shall be removed from surfaces, either by vacuuming, sweeping, blowing with compressed air and/or similar methods.

- I. Contaminants, such as grease, fats, oils, and solvents, shall not be allowed to come into contact with the roofing membrane. All rooftop contamination that is anticipated or that is occurring shall be reported to the Engineer and membrane manufacturer to determine the corrective steps to be taken.
- J. If any unusual or concealed condition is discovered, the contractor shall stop work, notify Engineer of such condition immediately, and in writing within 24 hours.
- K. The roofing membrane shall not be installed under the following conditions without consulting the membrane manufacturer's technical department for precautionary steps:
  - 1. The roof assembly permits interior air to pressurize the membrane underside.
  - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
  - 3. The wall/deck intersection permits air entry into the wall flashing area.
- L. Precautions shall be taken when using membrane adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.

## **1.07 QUALITY ASSURANCE**

- A. Manufacturer Requirements:
  - 1. Manufacturer must have written contractor/installer approval program.
  - 2. The product must have a continuous manufacturing history with the current product formulation of no less than ten (10) years in the United States of America.
  - 3. Products manufactured by other manufacturers and private labeled are not acceptable.
  - 4. See materials section for general product description and specified requirements.
- B. Contractor Requirements:
  - 1. This roofing system shall be applied only by a Contractor authorized by the membrane manufacturer prior to bid.
  - 2. Application of the roofing system shall be accomplished by a primary roofing contractor, his roofing foreman, and sufficient applicator technicians who all have been trained and approved by the manufacturer of the single ply roofing system. Contractor to submit evidence of qualification from the manufacturer.
- C. Upon completion of the installation an inspection shall be made by a representative of the membrane manufacturer to review the installed roof system and list all deficiencies.
- D. There shall be no deviation made from the Contract Documents or the approved shop drawings without prior written approval by the Owner, the Owner's Representative and the membrane manufacturer.
- E. All work shall be completed by personnel trained and authorized by the membrane manufacturer.
- F. Contractor to provide manufacturer written verification indicating all seams have been probed and are watertight.

- G. Install roofing system to meet UL 790 Class A Fire Rating.
- H. Wind Design: Install roofing system to meet or exceed the requirements of the current adopted version of ASCE-7, and shall be an approved assembly tested to the wind uplift pressures listed below:
  - 1. Field of Roof: - 26 psf.
  - 2. Perimeter of Roof: - 43 psf.
  - 3. Corner of Roof: - 43 psf.

**1.08 WARRANTIES**

- A. Manufacturer's Guarantee: Manufacturer's standard form, non-pro-rated, without monetary limitation or deductibles, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks or breaches in the primary roof membrane causing moisture to enter the substrate below (even if visible leaks are not observed inside the facility).
  - 1. Warranty to include but not be limited to membrane, insulation, adhesives, fasteners, sealants, flashings, polymer clad sheet metal, etc.
  - 2. Warranty Period: Twenty years from date of Substantial Completion.
  - 3. Prorated Conditions: None.
  - 4. Warranty to remain in effect for wind speeds up to 72 mph.
  - 5. Warranties requiring the Owner's signature will not be acceptable.
  - 6. The Manufacturer's warranty shall not include "hold harmless" clause, nor limit liability of Contractor.
  - 7. Warranty is subject to North Carolina laws
  - 8. Venue to settle disputes is Buncombe County, NC.
  - 9. Manufacturer's Representative shall attend post construction field inspection no earlier than twenty -three (23) months and no later than twenty-four (24) months after the date of Substantial Completion. Submit a written report within seven (7) days of the site visit to the Engineer listing observations, conditions and any recommended repairs or remedial action.

**PART 2 PRODUCTS**

**2.01 MANUFACTURER**

- A. Membrane materials shall be manufactured by the following:
  - 1. Carlisle SynTec, Inc.
  - 2. Firestone Building Products
  - 3. Johns Manville
  - 4. Engineers Accepted Equivalent

**2.02 MEMBRANE MATERIALS**

- A. Membrane: Shall be a 80-mil nominal thickness thermoplastic-polyolefin membrane with polyester reinforcement.
  - 1. Membrane shall conform to ASTM D 6878 with thickness measured in accordance with ASTM D 751 and thickness above reinforce tested in accordance with ASTM D 4637.
  - 2. Color: White with initial reflectivity of 0.79, initial emissivity 0.85, and solar

reflective index (SRI) of >97.

- B. Flashing:
  - 1. Reinforced 60 mil. thick, TPO membrane for walls and curbs.
  - 2. Unsupported 60 mil. thick, TPO membrane shall be supplied for field-fabricated vent stacks, pipes, drains and corners.

## **2.03 RELATED MATERIALS**

- A. Adhesive: Shall be membrane manufacturer's low VOC, solvent based, bonding adhesive.
- B. T-joint Patch: Shall be membrane manufacturer's circular patch welded over T-joints formed by overlapping thick membranes.
- C. Corner Flashing: Shall be membrane manufacturer's pre-formed inside and outside flashing corners that are heat-welded to membrane or polymer clad metal base flashings.
- D. Termination Bar: Shall be manufacturer's 1/8" by 1" mill finish extruded aluminum bar with pre-punched slotted holes.
- E. Counterflashing Bar: Shall be a prefabricated extruded aluminum metal counterflashing and termination bar. 0.10"-0.12" thick bar with 2-1/4" profile, pre-drilled holes 8" on center and sealant kick out at top edge.
- F. Sealant: Shall be manufacturer's multi-purpose sealant.
- G. Fasteners:
  - 1. Flashing Membrane Termination Screws: #12 corrosion hex or pan head screws with length required to penetrate substrate a minimum of 1-1/2".
  - 2. Concrete and Masonry Flashing Membrane Termination Anchors:
    - a. 1/4" diameter metal based expansion anchor with stainless steel pin of length required to penetrate substrate a minimum of 1-1/2".
    - b. Masonry screws, approved by membrane manufacturer, 1/4 inch minimum diameter, corrosion resistant, with Phillips flat head. Length required to provide minimum 1.5" embedment into substrate.
  - 3. Steel Deck Fasteners and Plates: Shall be #12 corrosion resistant pan head screw approved by membrane manufacturer of length required to penetrate top flange of steel deck a minimum of 1" with galvalume plates approved for membrane attachment.
- H. Primary Membrane Cleaner: Shall be a high quality solvent cleaner provided by membrane manufacturer and approved by engineer for use as a general membrane cleaner.
- I. Pre-weld Cleaner: Shall be a high quality solvent based seam cleaner with moderate evaporation rate provided by membrane manufacturer.
- J. Walkway Pad: Shall be walkway pad by manufacturer of membrane.
- K. Polymer Clad Metal: Refer to Section 07 62 00-Sheet Metal Flashing and Trim.

## **PART 3 EXECUTION**

### **3.01 SUBSTRATE PREPARATION**

- A. Verify that the substrate is dry, clean, smooth, and free of loose material, oil, grease, or other foreign matter. Sharp ridges and other projections and accumulations of bitumen shall be removed to ensure a smooth surface before roofing.
- B. Asphalt roofing substrates shall be removed, covered or flashed using compatible, approved materials. TPO shall not come in contact with substrates containing asphalt materials.
- C. Any deteriorated substrate shall be repaired.
- D. Beginning installation means acceptance of prepared substrate.
- E. Provide necessary protection from adhesive vapors to prevent interaction with foamed plastic insulation.

### **3.02 MEMBRANE INSTALLATION**

- A. The surface of the insulation or substrate shall be inspected prior to installation of the roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.
- B. Position membrane over the properly installed and prepared substrate.
- C. Fold membrane back lengthwise so half the underside of the membrane is exposed.
- D. Adhesive shall be applied using solvent-resistant 3/4" nap paint rollers. The adhesive shall be applied to the substrate and back side of the membrane at a rate according to the membrane manufacturer's requirements. The adhesive shall be applied in smooth, even coatings with no gaps, globs, puddles or similar inconsistencies. Allow the adhesive to dry until it is tacky but will string or stick to a dry finger touch.
  - 1. The Applicator shall count the amount of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.
  - 2. No adhesive shall be applied in seam areas. All membrane shall be applied in the same manner.
- E. Roll the adhesive coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane immediately after rolling the membrane into the adhesive with a soft bristle broom to achieve maximum contact.
- F. Fold back the unbounded half of the sheet lengthwise and repeat the bonding procedures. This process is repeated throughout the roof area.
- G. Position adjoining sheets to allow a minimum overlap of 2" and hot-air weld.
- H. Weld membrane coverstrips at all feltback membrane seams without a factory selvage edge.
- I. Terminate membrane at all walls as shown in the contract drawings.
  - 1. Wood Substrate: Membrane shall be turned up wall one inch and mechanically



- terminated using approved screws eight (8) inches on center with a termination bar.
2. Concrete/Masonry Substrate: Membrane shall be turned up wall one inch and mechanically terminated using approved anchors eight (8) inches on center with a termination bar.
- J. Terminate membrane at all penetrations as shown in the contract drawings.
1. Membrane shall be terminated six inches on center or a minimum of four (4) fasteners per penetration into the structural deck using fasteners and plates as approved by the membrane manufacturer for the deck substrate.
- K. Membrane shall extend over roof edge a minimum of 2” below the perimeter wood blocking. If fleece-back membrane is utilized, trim membrane flush with outside edge of roof and hot-air weld a non-fleece back flashing membrane to extend over the roof edge.

### **3.03 FLASHING INSTALLATION**

#### **A. General**

1. All flashings shall be installed concurrently with the roof membrane as the job progresses.
2. No temporary flashings shall be allowed without the prior written approval of the Engineer and Manufacturer. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Contractor's expense.
3. Seams shall not be “taped” as temporary measure but shall be fully completed before the end of each day.
4. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces.
5. Where substrates are incompatible with adhesives and TPO materials, the Contractor shall remove the incompatible materials and replace it with a compatible substrate, or install compatible TPO flashing materials.
6. Use caution to ensure adhesive fumes are not drawn into the building.

#### **B. Adhesive for Flashing Membrane**

1. Over the properly installed and prepared flashing substrate, flashing adhesive shall be applied according to instructions found on the Product Data Sheet. The membrane adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies.
2. The bonded sheet shall be pressed firmly in place with a hand roller.
3. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels required by welding techniques.

#### **C. All flashings shall mechanically terminated a minimum of 8 inches above the finished roofing surface using approved fasteners and counterflashing bar unless otherwise indicated in the Contract Drawings. Flashing heights less than 8” shall be accepted in writing by the Manufacturer’s Technical Department.**

#### **D. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place.**

- E. All flashings shall be hot-air welded at their joints and at their connections with the (roof) membrane.
- F. All flashings that exceed 30 inches (0.75 m) in height shall receive additional securement. Consult Manufacturer's Technical Department for securement methods.
- G. Corners shall be flashed using the membrane manufacturer's pre-formed corners.
- H. Polymer Clad sheet metal incorporated into the roofing system shall be sealed off with a heat welded stripping ply. The stripping ply shall extend four inches beyond sheet metal onto roof membrane and fit closely to fit closely to edge of sheet metal.
- I. Roof Drain:
  - 1. Mechanically attach membrane 6" on center into structural deck around drain sump. Fully adhere flashing membrane and hot-air weld to membrane a minimum of 4 inches.
  - 2. Flashing membrane shall be set in a full bed of sealant under the clamping ring.
  - 3. Provide new roof drain assembly with cast iron strainer dome and clamping ring and provide new stainless steel clamping ring bolts.
  - 4. Clamping rings shall be secured in place with all bolts at the end of each work day. Contractor shall water test roof drains after every instance the clamping ring is removed and reinstalled. The Contractor shall notify the Owner of the water test schedule.
- J. Soil Pipe/Pipe Penetration:
  - 1. Provide field wrapped pipe penetration flashing or manufacturer's pre-fabricated pipe boot as shown in detail drawing.
  - 2. Apply aluminum tape to penetration if asphalt contamination is present.
  - 3. Extend existing pipe to obtain a minimum 8" finished flashing height.
  - 4. Cut existing pipe to obtain a maximum 12" finished flashing height.
  - 5. Horizontal flashing membrane shall be hot-air welded a minimum of four inches onto the membrane.
  - 6. Vertical flashing membrane shall be fully adhered to pipe penetration and extend a minimum of 1.5" horizontal at the base of penetration. Hot-air weld vertical flashing membrane to horizontal flashing membrane.
  - 7. Install stainless steel draw band and sealant or hot-air weld flashing cap to terminate top edge of pipe flashing.

### **3.04 HOT-AIR WELDING OF SEAM OVERLAPS**

- A. General
  - 1. All seams shall be hot-air welded. Seam overlaps should be 3 inches (75 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.
  - 2. Welding equipment shall be provided by or approved by the membrane manufacturer. All mechanics intending to use the equipment shall have successfully completed a training course provided by a membrane manufacturer's technical representative prior to welding.
  - 3. All membrane to be welded shall be clean and dry.
- B. Hand-Welding

1. Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.
2. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
3. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1½ inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the ¾ inch (20 mm) wide nozzle shall be used.

C. Machine Welding

1. Machine welded seams are achieved by the use of automatic welding equipment. When using this equipment, instructions from the manufacturer shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated off the generator.
2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.

D. Quality Control of Welded Seams

1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark grey material from the underside of the top membrane. On-site evaluation of welded seams shall be made daily by the Applicator to locations as directed by the Engineer or membrane manufacturer's representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.

E. **Apply unreinforced flashing membrane over all cut edges of reinforced membrane after seam probing has been completed. Cut edge sealant will not be acceptable.**

F. Install T-joint patch at all T-seam locations.

**3.05 WALKWAY PAD INSTALLATION**

- A. Roofing membrane to receive walkway pad shall be clean and dry.
- B. Place chalk lines on deck sheet to indicate location of Walkway.
- C. Apply a continuous coat of membrane adhesive to the deck sheet and the back of walkway pad in accordance with membrane manufacturer's technical requirements and press walkway pad into place with a water-filled, foam-covered lawn roller.
- D. Clean the deck membrane in areas to be welded. Hot-air weld the entire perimeter of the walkway to the roofing membrane.
- E. Check all welds with a rounded screwdriver. Re-weld any inconsistencies.
- F. Important: Check all existing membrane seams that are to be covered by walkway with

rounded screwdriver and re-weld any inconsistencies before walkway installation.

**3.06 TEMPORARY CUT-OFF**

- A. All flashings shall be installed concurrently, with the membrane in order to maintain a watertight condition as the work progresses.
- B. When a break in the day's work occurs in the central area of the project install a temporary watertight seal. An 8" strip of flashing membrane shall be welded 4" to the new field membrane. The remaining 4" of flashing membrane shall be sealed to the deck and/or the substrate so that water will not be allowed to travel under the new or existing membrane. The edge of the membrane shall be sealed in a continuous heavy application of pourable sealer of 6 inch width. When work resumes, the contaminated membrane shall be removed and disposed of. None of these materials shall be reused in the new work.
- C. If inclement weather occurs while a temporary water stop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- D. If any water is allowed to enter under the newly-completed system, the affected area shall be removed and replaced at the Contractor's expense.

**3.07 CLEANING AND PROTECTION**

- A. The Contractor shall be responsible for protecting the roof from construction related damages during the Work.
- B. The Contractor shall ensure trash and debris is removed from the roof daily.
- C. Metal scraps, nails, screws and other sharp damaging debris shall be kept off of the roof membrane surface during construction.
- D. The Contractor shall clean off/remove excess adhesive, sealant, stains and residue on the membrane and flashing surfaces.
- E. The Contractor shall repair or remove and replace damaged membrane, flashings and other membrane components. Repairs shall be in accordance with the membrane manufacturers repair instruction to comply with the specified warranty.
- F. The Contractor shall remove temporary coverings and masking protection from adjacent work areas upon completion. Remove construction debris from the project site on a planned and regular basis.

**END OF SECTION 07 54 23**

## SECTION 07 62 00

### SHEET METAL FLASHING AND TRIM

#### **PART 1 GENERAL**

##### **1.01 WORK INCLUDED**

- A. Fabrication and installation of new sheet metal flashings and trim to provide a permanently watertight condition.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Roof Retrofit Framing Section 05 54 20
  - 2. Rough Carpentry Section 06 10 00
  - 3. Metal Wall Panels Section 07 42 13
  - 4. Thermoplastic Polyolefin Roofing Section 07 54 00

##### **1.03 REFERENCES**

- A. Refer to the following references for specification compliance:
  - 1. 2012 North Carolina Building Code
  - 2. ASTM International
  - 3. National Roofing Contractors Association (NRCA)
  - 4. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
    - a. Architectural Sheet Metal Manual, Seventh Edition – January 2012
  - 5. ANSI/SPRI ES-1

##### **1.04 SUBMITTALS**

- A. Refer to Section 01 33 00-Product Submittals for Submittals.
- B. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.
- C. Pre-finished sheet metal and sealant color chart.
- D. Shop Drawings for any transitions and/or terminations not depicted in Contract Drawings.

##### **1.05 MOCK-UPS**

- A. Provide mock-ups of the following sheet metal components prior to fabrication of the components:
  - 1. Gutter and Eave Flashing: Provide mock-up of gutter, gutter bracket and gutter hanger. Mock-up shall include one lap in gutter section.

##### **1.06 QUALITY ASSURANCE**

- A. Installation shall comply with the Contract Drawings. References to figures are from SMACNA Architectural Sheet Metal Manual, Seventh Edition – January, 2012.
- B. Ensure work is free of leaks in all weather conditions.
- C. Fabricate metal edge (where no gutter is present) and coping in accordance with ANSI/SPRI ES-1 requirements.
- D. Workmanship shall be first-class in every respect. The sheet metal work shall be assembled and secured in accordance with these specifications, the manufacturer's requirements and referenced standards.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials within areas designated or approved by the Owner. Ensure materials remain dry, covered and not in contact with the ground.
- C. Handling: Handle material in such manner as to preclude damage and contamination with moisture or foreign matter.

**1.08 PROJECT CONDITIONS**

- A. Environmental: Protect building and its components from the elements at all times during the project.
- B. Coordination and Scheduling: Coordinate all phases of work to allow continuity of work without delays.

**1.09 WARRANTY**

- A. Contractor to provide the pre-finished sheet metal manufacturer's thirty (30) year finish warranty from the date of substantial completion.
- B. Provide certification of air-dried kynar paint or powder coating for specified materials.

**PART 2 PRODUCTS**

**2.01 PRE-FINISHED STEEL**

- A. Shall be same manufacturer and material as metal roof panels specified in Section 07 41 13.
  - 1. 24 gauge
    - a. Eave Flashing
    - b. Gutter
    - c. Downspouts
    - d. Ridge Cap
    - e. Ridge Zee Closure
    - f. Rake Flashing
    - g. Receiver Flashing

- h. Counter Flashing
- i. Headwall Flashing
- j. Valley Flashing
- k. Continuous Cleat (for Sidewall Flashing)
- l. Sidewall Flashing
- m. Scupper Face Plate
- n. Slip Flashing

**2.02 GALVALUME STEEL**

- A. AZ50 Galvalume coated steel, meeting ASTM A792-83-AZ50, mill finish.
  - 1. 22 gauge:
    - a. Continuous Cleat
  - 2. 18 gauge:
    - a. Continuouse Ridge Zee and Splice Plate
  - 3. 16 gauge: Powder coat to match gutter
    - a. Gutter Top Hanger
  - 4. 12 gauge: Powder coat to match gutter
    - a. Gutter Bottom Hanger
  - 5. Downspout Hangers: Powder coat to match gutter, or clad in gutter material. If powder coating, form brackets prior to coating.
    - a. 1/16" x 1"

**2.03 STAINLESS STEEL**

- A. 26 gauge, Type 304 as tested in accordance with ASTM A 167.
  - 1. Watertight Umbrella (Square to Round for High Heat Penetration)
  - 2. Splash Pan
- B. Compression Bar: 1/4" X 1.5" stainless steel flat bar.

**2.04 POLYMER CLAD METAL (TPO)**

- A. Heat-weldable, 24 gauge, AISI G90 galvanized steel sheet with a 35 mil unsupported TPO membrane coating laminated on one side. Polymer-Clad metal shall be manufactured by, and included in the warranty of, the single-ply membrane Manufacturer. Color shall be selected by Owner.
  - 1. Scupper Liner
  - 2. Base Flashing Closure

**2.05 FASTENERS**

- A. Roofing Nails: 11 or 12 gauge stainless steel ring shank roofing nails with diamond point, minimum 3/8" diameter head and length as required to penetrate substrate a minimum of 1-1/4".
- B. Screws:
  - 1. Refer to Specification Section 07 41 13.
  - 2. Sheet metal to wood attachment (exposed): #12 stainless steel, 5/16 HWH with length to penetrate substrate a minimum of 1-1/2". Provide with bonded EPDM washer or washer specified below.
  - 3. Sheet metal to wood attachment (concealed): #10 stainless steel, low profile pancake head with length to penetrate substrate a minimum of 1-1/2".
  - 4. Sheet metal to light gauge steel attachment (exposed): #14-13 DP1 stainless steel low profile pancake head of length as required for three threads to penetrate metal substrate or min. 1" penetration though wood substrates.
  - 5. Sheet metal to sheet metal attachment (exposed): 1/4" x 7/8" carbon steel, self-drilling point, self-tapping, zinc alloy hex head screws with bonded EPDM tubular washer under head of fastener; screw heads to match color of wall panel by means of factory applied coating.
- C. Concrete and Masonry Anchors: 1/4" diameter metal based expansion anchor with stainless steel pin of length to penetrate substrate a minimum of 1-1/2".
- D. Washers: Shall be stainless steel with neoprene gasket backing. Shall be 9/16" diameter for use with #12 screws and 5/8" diameter for use with 1/4" diameter concrete and masonry anchors.
- E. Rivets: #44 stainless steel rivets with stainless steel mandrel. Length of rivet to properly fasten particular sheet metal components. Rivets shall be factory painted to match adjacent sheet metal.

## **2.06 RELATED MATERIALS**

- A. Sealants: Refer to Specification Section 07 41 13-Metal Roof Panels.
- B. Solder: 80-20 lead-TIN alloy conforming to ASTM B32.
- C. Flux: Muriatic acid killed with zinc or an accepted brand of commercial soldering flux designed for use with 80-20 solder.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Coordinate with other work for correct sequencing of items which make up the entire system.
- B. Ensure substrates are installed, secured and modified to accommodate sheet metal flashings.
- C. Deficiencies associated with the sheet metal substrates shall be reported to Engineer before beginning sheet metal work. All such deficiencies shall be corrected before installing sheet metal flashings.



## 3.02

## INSTALLATION

- A. General:
1. All joints to be locked and sealed or soldered.
  2. Provide for thermal movement (expansion and contraction) of all exposed sheet metal.
  3. Where dissimilar metals contact, galvanic action shall be prevented by means of heavy coat of asphalt paint.
  4. All metal flanges shall be installed on top of membrane and adhered as indicated in detail drawings. Metal flanges connected to the roof shall be installed per membrane manufacturer's specifications and the requirements herein.
  5. Various sheet metal sections shall be uniform with corners, joints and angles mitered, sealed and secured.
  6. Exposed edges shall be returned (hemmed); both for strength and appearance, and sheet metal shall be fitted closely and neatly.
  7. Provide cleats or stiffeners and other reinforcements to make all sections rigid and substantial.
  8. Sheet metal shall be fabricated, supported, cleated, fastened and joined to prevent warping, "oil canning", and buckling.
  9. All sheet metal details shall provide for redundancy including but not limited to sheet metal underlayment and/or sealants. This secondary protection shall be installed, sealed and lapped to ensure a redundant layer of protection will shed moisture infiltration in the sheet metal fails.
- B. Exposed Fasteners: Shall be size and type required.
1. All fasteners to be rust resistant and compatible with materials to be joined.
  2. All exposed fasteners shall be stainless steel screws with washers fastened through 5/16" predrilled oversized holes.
  3. All exposed fasteners into concrete or masonry shall be metal based expansion anchor with stainless steel pin with washers fastened through 11/32" predrilled oversized holes.
  4. All exposed fasteners shall have factory painted heads to match the sheet metal color.
- C. High Heat Pen Sheet Metal Laps (General): Unless otherwise indicated provide sheet metal as follows:
1. Fabricate various components as shown in detail drawings in 10' lengths.
  2. Secure as indicated in detail drawings.
  3. Notch and lap ends of adjoining sheet metal sections not less than 4"; apply sealant tape between sections.
  4. Lap miters at corners a minimum of 1 inch and apply sealant between laps. Rivet at 2" on center.
- D. High Heat Penetration Square to Round Watertight Umbrella
1. Fabricate umbrella as shown in detail drawings. Refer to SMACNA Architectural Sheet Metal Manual Figure 8-9C.
  2. Install watertight umbrella with stainless steel draw band and sealant properly tooled to ensure adhesion and slope to shed water.
  3. Vertical leg of umbrella flashing shall extend a minimum of 2" below the curb top.

4. Clean and solder all seams.
- E. Slip Flashing for Curbs
1. Fabricate slip flashing at curbs as shown in detail drawings in 10' lengths.
  2. Slip flashing shall extend a minimum of 2 inches below base flashing termination and shall fit tightly against curb.
  3. Secure slip flashing 12" on center of a minimum of two fasteners per side of the curb.
  4. Notch and lap ends of adjoining sections not less than 4"; apply sealant tape between sections.
  5. Lap miters at corners a minimum of 1 inch and apply sealant between laps. Rivet at 2" on center.
- F. Surface Mounted Two-Piece Receiver and Counterflashing
1. Fabricate receiver and counterflashing as shown in detail drawings in 10' lengths.
  2. Install receiver flashing surface mounted at 12" on center.
  3. Install sealant in kick-out and manually tool concave to ensure proper adhesion and slope to shed water as indicated in detail drawings.
  4. Install counterflashing as indicated in detail drawings and secure to receiver flashing 12 inches on center. Stagger receiver anchors with counter flashing fasteners.
  5. Counterflashing shall extend a minimum of 1.5 inches below base flashing termination.
  6. Notch and lap ends of adjoining sheet metal sections not less than 4"; apply sealant between sections.
  7. Lap miters at corners a minimum of 1 inch and apply sealant between laps. Rivet at 2" on center.
- G. Through-Wall Overflow Scupper
1. Fabricate thru-wall scupper flange, liner, and faceplate as shown in detail drawings. Scuppers dimensions shall be as indicated in the Contract Drawings.
  2. Hot-air weld stripping membrane at seams of the flange and liner.
  3. Install flashing membrane through scupper opening prior to installing new scupper to seal wall cavity.
  4. Provide flange which extends a minimum of 4" on top and sides of scupper, and extends a minimum of 4" out onto the horizontal membrane. Mechanically fasten the horizontal flange into structural deck 8" on center or a minimum of two fasteners per scupper with approved fasteners.
  5. Strip-in flange as specified in Contract Drawings.
  6. Provide faceplate which extends 1.5" around the entire scupper and secure to wall substrate with four fasteners. Set faceplate in a bead of sealant.
  7. Scupper Liner shall extend 1" beyond the exterior wall face and lock onto faceplate.
- H. Gutters
1. Fabricate to profile shown in Contract Drawings.
  2. Gutters shall be formed in 10' lengths. Joints in gutters must be lapped a minimum of 1 inch, riveted 1 inch on center. Install sealant tape between gutter sections and sealant at exposed inside edge and on rivets. Lap joints in the direction of water flow if possible.

3. Provide butt type expansion joints in gutters at spacing appropriate for the type material used to fabricate gutters. Refer to SMACNA Manual Figure 1-7. Maximum length of gutters shall be 50'.
4. Provide downspout outlets in downspout locations. Refer to SMACNA Manual Figure 1-33B. Gutter outlet tubes to be tabbed a minimum of 1", set in a full bead of sealant and secured to gutter with a minimum of two rivets per tab.
5. Provide hangers as shown in detail drawings. Spacing shall be 32" on center or every other panel rib on standing seam metal roofs.
6. Provide hangers as shown in detail drawings. Spacing shall be 32" on center or every other panel rib on standing seam metal roofs and 24" on low slope roofs. Provide a minimum of two fasteners per hanger to secure hanger to standing seam and one fastener to secure hanger to gutter.
7. Provide two fasteners to secure each lower hanger to gutter.
8. Hang gutters level.

I. Downspouts:

1. Fabricate downspouts in 10' lengths. Refer to SMACNA Architectural Sheet Metal Manual Figure 1-32B.
2. Downspouts shall tie into existing below grade storm drainage system or if no below grade system is applicable downspouts shall kick-out above grade onto concrete splash blocks. Fill in soil to provide slope away from building.
3. Provide square to round transition to tie into existing below grade system.
4. Each downspout shall be secured to the structure with two-piece hangers spaced no more than 8' apart with a minimum of two hangers per downspout with a hanger located within 12" from bottom. Hangers shall be primed and painted to match downspouts. Refer to SMACNA Architectural Sheet Metal Manual Figure 1-35H.
5. Downspouts are to be fashioned to run back to (at overhangs) and parallel to the facility walls.
6. Provide discharge elbow at the base of downspout where it kicks out onto splash pan or splash block.
7. Where downspouts discharge onto lower adjacent roof areas, provide splash pans at discharge as specified below.

J. Splash Pans

1. Where downspouts discharge onto adjacent roof; provide splash pans on 18" by 30" walk pads.
2. Splash pan shall be fabricated to meet SMACNA Architectural Sheet Metal Manual Figure 1-36, Alternate Section with 2 v-grooves.

K. Rake Edge

1. Fabricate rake edge as shown in detail drawings in 10' lengths. Refer to SMACNA Manual Figure 2-1.
2. Install continuous cleat as indicated in detail drawings fastened to substrate 6" on center. Locate fasteners no greater than 2" from the bottom hem.
3. Lock rake edge onto continuous cleat and secure at 12" on center.
4. Notch and lap ends of adjoining sheet metal sections not less than 4"; apply sealant between sections.
5. Hand tong all of metal edge onto continuous cleat.

L. Base Flashing Closure

1. Install new closures where base flashings abruptly end.
2. Completely solder or seal all joints to be watertight.
3. Install closures over membrane and under finish ply of base flashing.
4. Extend closures up under counterflashings or copings.
5. Install closures to completely seal ends of base flashings, membrane and cants as well as end joints of edge metal.

**3.03 CLEANING AND PROTECTION**

- A. All sheet metal work shall be thoroughly cleaned of all asphalt, flux, scrapes and dust.
- B. Scratches through the metal finish shall be replaced to the Owner's satisfaction.

**END OF SECTION 07 62 00**

## SECTION 07 71 19

### MANUFACTURED GRAVEL STOPS AND FASCIAS

#### **PART 1 GENERAL**

##### **1.01 WORK INCLUDED**

- A. Provide factory fabricated and finished roof edging where indicated in Contract Drawings.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Rough Carpentry Section 06 10 00
  - 2. Thermoplastic Polyolefin Roofing Section 07 54 23
  - 3. Sheet Metal Flashings and Trim Section 07 62 00

##### **1.03 REFERENCES**

- A. 2012 North Carolina Building Code
- B. FM Global
- C. ANSI/SPRI ES-1

##### **1.04 SUBMITTALS:**

- A. Product Data: Provide manufacturer's product and complete installation data for all materials in this specification.
- B. Shop drawings: Show profiles, joining method, location of accessory items, anchorage and flashing details, adjacent construction interface, and dimensions.
- C. Samples: Available on request; sized to adequately represent material.
- D. Contract Closeout: Submit Special Warranty and Manufacturer's performance certifications.
- E. Installation Guide: The product manufacturer shall provide a written installation guide.

##### **1.05 QUALITY ASSURANCE:**

- A. High performance roof edge shall be CERTIFIED by the manufacturer to comply with ANSI/SPRI Standard ES-1. Roof edge/gravelstop shall meet performance design criteria according to the following test standards: [select, if applicable]:
  - 1. ANSI/SPRI ES-1 Test Method RE-1 Test for Roof Edge Termination of Single-ply Roofing Membranes: The fascia system shall be tested to secure the membrane to minimum 100 lbs/ft in accord with the ANSI/SPRI ES-1 Test Method RE-1. Use the current edition of ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
  - 2. ANSI/SPRI ES-1 Test Method RE-2 Pull-Off Test for Fascia: The fascia system shall be tested in accord with the ANSI/SPRI ES-1 Test Method RE-2. Use the

current edition of ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

3. The roof edge product shall be UL Classified by Underwriters Laboratories, Inc. or other 3<sup>rd</sup> party verification of compliance with the ANSI/SPRI ES-1 Wind Design Standard.

**1.06 PRODUCT HANDLING:**

- A. All materials shall be delivered in the manufacturer's original sealed, labeled containers.
- B. Store materials in a dry, protected, well-vented area. The contractor shall report damaged material immediately to the delivering carrier and note such damage on the carrier's freight bill of lading.
- C. Remove protective plastic surface film after installation.

**1.07 JOB CONDITIONS:**

- A. Verify that other trades are complete before installing the roof edging.
- B. Mounting surfaces shall be straight and secure; substrates shall be of proper width.
- C. Refer to the construction documents, shop drawings and manufacturer's installation instructions.
- D. Coordinate installation with roof membrane manufacturer's installation instructions.
- E. Observe all appropriate OSHA safety guidelines for this work.

**1.08 WARRANTY/GUARANTEE:**

- A. Shall be included in Roof System Warranty as specified in Section 07 54 23:
  1. Manufacturer shall guarantee that a standard size roof edge system, when installed per manufacturer's instructions, will not blow off, leak, or cause membrane failure, even in wind conditions up to 215 mph, or the manufacturer shall replace or repair its materials for a period of twenty years.
  2. Finish Warranty: Shall be thirty (30) years.

**PART 2 PRODUCTS**

**2.01 MANUFACTURER:**

- A. The following manufacturer's are approved for use:
  1. W. P. Hickman Company
  2. Metal Era
  3. OMG Roofing Products
  4. Engineer's accepted equivalent

**2.02 ROOF EDGE:**

- A. Pre-manufactured Edge Metal: Decorative metal fascia with continuous extruded aluminum bar.

1. Construction:
  - a. Fascia metal gauge:
    - i. .040 inch (1 mm) thick formed aluminum.
  - b. Aluminum Finish:
    - i. Standard color Kynar-500 as selected by the Architect from roof edge manufacturer's color chart.
  - c. Fascia: Standard 12 feet 0 inches (3.65 m) lengths.
  - d. Extruded bar: Shall be continuous 6063-T6 alloy aluminum at 12 feet 0 inches (3.65 m) standard lengths with pre-punched slotted holes. All bar miters are welded.
    - i. Injection Molded EPDM Bar Splice to allow thermal movement expansion of extruded aluminum anchor bar.
    - ii. Fasteners: 2 inch (51 mm) stainless steel with driver.
  - e. Model as required to meet field conditions and Contract Drawings.
  - f. Performance:
    - i. Lifetime, 215 mph Wind Warranty.
    - ii. Tested per ANSI/SPRI ES-1 Standard to a design pressure of 290 lbs./ft<sup>2</sup> to comply with the International Building Code.
    - iii. Factory Mutual 1-645 approved for wind up lift protection.
    - iv. Miami-Dade Approved (No. 13-0419.03 12/11/18) to comply with the "High Velocity Hurricane Zone of the Florida Building Code".

**2.03 ACCESSORIES:**

- A. Corners, end caps, fascia sumps, or spillouts, etc. shall be fabricated by the roof edging manufacturer. Factory fabricated mitered corners shall have 12" nominal leg lengths.
- B. Provide matching ledgescaps, downspouts, or other special fabrications as detailed.

**PART 3 EXECUTION**

**3.01 INSPECTION**

- A. Verify that the roof edging installation will not disrupt other trades. Verify that the substrate is dry, clean and free of foreign matter. Report and correct defects prior to any installation.

**3.02 INSTALLATION**

- A. Submit design drawings for review and approval to Engineer before fabrication.
- B. Installing contractor shall check as-built conditions and verify the manufacturer's roof edging details for accuracy to fit the wall assembly prior to fabrication. The installer shall comply with the roof edging manufacturer's installation guide when setting edging.
- C. Installer shall use stainless steel screw type fasteners as provided by manufacturer, nominal

1-1/4" length, with minimum 240 lb. pull-out resistance; suitable for the substrates to which being installed.

- D. Install waterproof sealant to underside of retainer base plate as recommended and supplied by the roofing membrane manufacturer.

**END OF SECTION 07 71 19**



## SECTION 07 72 00

### ROOF ACCESSORIES

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Furnish and install roof accessory assemblies as indicated and required by the Contract Drawings:
  - 1. Provide pipe supports for all rooftop conduit, gas lines, electrical lines, condensation lines, etc.
  - 2. Provide PVC pipe to route condensation from HVAC p-traps to nearest drainage point.
  - 3. Provide snow guards at perimeter roof edge of standing seam metal roof system areas.

##### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section, including but not limited to:
  - 1. Metal Roof Panels Section 07 41 13
  - 2. Thermoplastic Polyolefin Roofing Section 07 54 23

##### **1.03 SUBMITTALS**

- A. Refer to Section 01 33 00-Submittals.
- B. Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Manufacturer's Product Data Sheets for all materials specified certifying material complies with all specified requirements.

##### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

##### **1.05 PROJECT CONDITIONS**

- A. Field Measurements: Verify all dimensions required.

##### **1.06 WARRANTIES**

- A. All roof accessories provided through roof system manufacturer shall be included in the specified roof system manufacturer's warranty.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Pipe Support: Smooth EPDM rubber pipe support sized to fit the diameter of the pipe being supported and height adjustable. Acceptable products include:
  - 1. Olympic Olyflow PipeGuard
  - 2. Erico Caddy Pyramid EZ Series
  - 3. Portable Pipe Hangers
  - 4. Miro Industries
  
- B. Snow Guard: Shall be S-5! Colorgard or Engineer's Accepted Equivalent.
  - 1. Clamps:
    - a. Manufactured from 6061-T6 Aluminum extrusions conforming to ASTM B221 or aluminum castings conforming to ASTM B85 and to AA Aluminum Standards and Data.
    - b. Clamp Model: Shall be as designed for attachment to metal panel seam configuration.
    - c. Set Screws: 300 series stainless steel, 18-8 alloy, 3/8" diameter, with round nose point.
    - d. Attachment Bolts: 300 series stainless steel, 18-8 alloy, 10 mm diameter, with flat washers.
  
  - 2. Cross Members:
    - a. Manufactured from 6061-T6 alloy and temper aluminum extrusions conforming to ASTM B221 and to AA Aluminum Standards and Data.
    - b. Receptacle face to receive color-matched metal strips.
    - c. Provide splice connectors ensuring alignment and structural continuity at end joints.
  
  - 3. Color Strips:
    - a. Shall be same material and finish as roof panels, obtained from roof panel manufacturer.
  
  - 4. Snow and Ice Clips: Aluminum, with rubber foot, minimum 3" wide.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
  
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work

### **3.02           INSTALLATION**

#### **A.       Pipe Supports**

1.       Provide pipe supports at all rooftop gas, electrical conduit and condensation lines with a 5' maximum spacing.
2.       Provide new PVC condensation lines with integral P-trap on HVAC units.
3.       Route condensation lines to nearest drainage point (i.e. roof drain, gutter, or scupper).

#### **B.       Snow Guards**

1.       Install snow guard per manufacturer's instructions where indicated in the Contract Drawings.

### **3.03           CLEANING**

- #### **A.**
- During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.

**END OF SECTION 07 72 00**