2701 Westport Road
Charlotte, NC 28208

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Terracon.com

SPECIFICATIONS FOR
HFR BUILDING
65 WEST UNIVERSITY WAY
CULLOWHEE, NORTH CAROLINA 28723
ROOF REPLACEMENT PROJECT
SCO ID NO. 22-24898-01A

Project No. FH226123

PERMITTING/BIDDING
NOT FOR CONSTRUCTION

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ADVERTISEMENT FOR BIDS

Sealed proposals will be received until **2:00 PM** on **June 28, 2023** in the office of **Western Carolina University Facilities Management, 3476 Old Cullowhee Road, Cullowhee, North Carolina 28723, Attn: Daniel Fiskeaux** for the construction of the **HFR Building Roof Replacement** and immediately thereafter publicly opened and read in the Conference Room of the Facilities Management Building.

Bids will be received for a **Single Prime Contract**. All proposals shall be lump sum.

A **Pre-Bid meeting** will be held for bidders on **June 13, 2023** at **2:00 PM** at **Facilities Management, 3476 Old Cullowhee Road, Cullowhee, NC 28723**. Interested subcontractors and suppliers are strongly encouraged to attend.

Complete plans and specifications for this project can be obtained from ***Terracon Consultants, Inc., 2701 Westport Road, Charlotte, North Carolina 28208, (704) 509-1777 Attn: Vicky Neal*** during normal office hours. Electronic documents are provided at no cost. Plan deposit of **Fifty Dollars ($50.00)** in cash or certified check is required for hardcopy sets.

The state reserves the unqualified right to reject any and all proposals.

Signed: The State of North Carolina through
Western Carolina University
(*Owner)*

N O T I C E T O B I D D E R S

Sealed proposals will be received by Western Carolina University, in the office of Western Carolina University Facilities Management, 3476 Old Cullowhee Road, Cullowhee, North Carolina 28723, Attn: Daniel Fiskeaux, up to 2:00 p.m. on June 28, 2023 and immediately thereafter publicly opened and read for the furnishing of labor, material and equipment entering into the construction of

HFR Building
Roof Replacement Project
Western Carolina University
Cullowhee, North Carolina
SCO ID #22-24898-01

Project consists of the low slope roof replacement of areas A, and A1 which generally consists of the complete removal of all existing roofing membrane, insulation, asbestos containing felt membrane and flashings, asphaltic/thermoset fill, flashings, metal wall panels, metal flashing, coping caps and the installation of a new PVC/KEE membrane, cover board, tapered (where indicated on plans) and base insulation, temporary roof membrane, gypsum underlayment, flashings, metal flashings, metal panels, coping caps, new drains, expanded existing overflow scuppers as indicated, and all associated miscellaneous work as specified herein.

Bids will be received for a Single Prime Contract. All proposals shall be lump sum.

Non-Mandatory Pre-Bid Meeting

A Non-Mandatory Pre-Bid Meeting will be held for all interested bidders on June 13, 2023 **at 2:00 p.m.** at Facilities Management, 3476 Old Cullowhee Road, Cullowhee, NC 28723. The meeting will address project specific questions, issues, bidding procedures and bid forms.

Complete plans, specifications and contract documents will be open for inspection in the offices of Terracon Consultants, Inc., Western Carolina University and in the plan rooms of the Associated General Contractors, Carolinas Branch (projectinquiries@isqft.com), in the local North Carolina offices of McGraw-Hill Dodge Corporation (www.constructconnect.com), and in Minority Plan Rooms in

NCIMED Plan & Resource Center, 114 West Parrish Street, 6th Floor, Durham, NC 27701,
919-956-8889 or 919-287-3036 (info@TheInstituteNC.org)

or may be obtained by those qualified as prime bidders, upon deposit of Fifty Dollars ($50.00) in cash or certified check. The full plan deposit will be returned to those bidders provided all documents are returned in good, usable condition within ten (10) days after the bid date. **Electronic version can be emailed at no expense.** Contact: Vicky.neal@terracon.com

If a contractor is bidding under the dual system both as a single prime contractor and as a separate prime contractor, he must submit the bids on separate forms and in separate envelopes. Bidders should clearly indicate on the outside of the bid envelope which contract(s) they are bidding.

NOTE: The bidder shall include with the bid proposal the form *Identification of Minority Business Participation* identifying the minority business participation it will use on the project and shall include either *Affidavit **A*** or *Affidavit **B*** as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (GS143-128.2c Effective 1/1/2002.)

All contractors are hereby notified that they must have proper license as required under the state laws governing their respective trades.

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for Building Contractor.

> NOTE--SINGLE PRIME CONTRACTS: Under GS 87-1, a contractor that superintends or manages construction of any building, highway, public utility, grading, structure or improvement shall be deemed a "general contractor" and shall be so licensed. Therefore, a single prime project that involves other trades will require the single prime contractor to hold a proper General Contractors license. **EXCEPT**: On public buildings being bid single prime, where the total value of the general construction does not exceed 25% of the total construction value, contractors under GS87- Arts 2 and 4 (Plumbing, Mechanical & Electrical) may bid and contract directly with the Owner as the SINGLE PRIME CONTRACTOR and may subcontract to other properly licensed trades. GS87-1.1- Rules .0210

Plumbing, Mechanical and Electrical prime contractors are notified that General Statutes Chapter 87, Articles 2 & 4, will be observed in receiving and awarding plumbing, mechanical and electrical contracts.

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than five percent (5%) of the proposal, or in lieu thereof a bidder may offer a bid bond of five percent (5%) of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond. Said deposit shall be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

A performance bond and a payment bond will be required for one hundred percent (100%) of the contract price.

Payment will be made based on ninety-five percent (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 30 days.

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

Designer:

Terracon Consultants, Inc.
2701 Westport Road
Charlotte, NC 28208
704-509-1777

Owner:

Western Carolina University
Attention:
3476 Old Cullowhee Road,
Cullowhee, NC 28723

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SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

STANDARD FORM FOR CONSTRUCTION CONTRACTS

WESTERN CAROLINA UNIVERSITY

SUPPLEMENTARY GENERAL CONDITIONS (SGC's) OF THE CONTRACT

This document supplements but does not alter in any way the requirements of the General Conditions of the Contract.

1. DEFINITIONS

As defined in Article 1 of the General Conditions, the Supplementary General Conditions as well as the WCU General Requirements are considered part of the contract documents.

The Owner is the State of North Carolina through Western Carolina University.

Provide shall mean purchase, deliver, install, new, clean, completely operational, fully tested and ready for use.

2. SCOPE OF WORK

See attached Technical Specifications and Drawings for scope of work including WCU General Requirements.

3. ALTERNATES

See Section 012300, "Alternates" for listing.

4. SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

The submittal requirements are described in Article 5 of the General Conditions. Items for which submittals are required are listed below:

Pre-Submittals:

- The contractor shall provide the Owner a complete list of contact information for the Contractor, his key personnel, and all Subcontractors. This list shall be provided to the Owner prior to beginning the Work and shall be updated regularly with the updated provided to the Owner.
- All items referenced in Technical Specifications

Post-Submittals:

- All previously submitted documents revised to show as-built condition.
- O&M Manuals for any equipment requiring a submittal.

Data on the following items shall be sent to the Designer for review and approval. The submittal process is described in Article 5 of the General Terms and Conditions. Refer to "Technical Specifications" for required submittals. All Pre-Submittals shall be delivered to the Designer and Owner no later than the Preconstruction Meeting. All Post Submittals shall be delivered to the Designer and Owner within thirty (30) days of work completion. The final pay request shall be included with Post-Submittals.

5. **WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE**

The Contractor shall maintain at the job site a readable set of the complete set of working drawings and specifications for his work, including all shop drawings. The Contractor shall maintain at the job site an up-to-date, readable set of the As-Built drawings.

6. **MATERIALS, EQUIPMENT, EMPLOYEES**

Should an accident or disruption occur on the project work site, the Contractor shall notify the WCU Project Manager and WCU Safety and Risk Management Office as soon as possible and no less than 24 hours of occurrence.

7. **PERMITS, INSPECTIONS, FEES, REGULATIONS**

The Contractor shall request and obtain permission from the WCU Project Manager for an interruption of utility or services a minimum of seven (7) days in advance. Failure of the Contractor to obtain Owner permission shall not be grounds for an extension of time.

Prior to performing any “hot work” or any work above ceiling in existing buildings, the Contractor shall obtain a permit for such from the WCU Safety and Risk Management Office.

The Contractor shall comply with Owner’s Interim Life Safety Plan requirements to maintain egress from all occupied buildings.

8. **CONSTRUCTION SUPERVISION and SCHEDULE**

The Contractor shall start work within seven (7) days upon receipt of Notice to Proceed. The Contractor shall submit a project work schedule before beginning work. The starting date and work schedule shall be adhered to, and the work shall be performed during the Owner’s normal working hours, 8:00 AM to 5:00 PM. Requests by the Contractor to work outside normal working hours shall be made a minimum of one (1) week in advance to the WCU Project Manager on site. The Contractor’s bid shall include all costs associated with workers working outside of normal business hours and/or costs associated with workers working overtime as required to meet the specified project schedule. The Owner reserves the right to request work to be performed outside normal working hours and to limit Contractor activities when they conflict with Owner operations. Any increased costs due to Owner requirements for work outside normal hours not specified in the Contract Documents will be negotiated.

The Contractor shall maintain a daily field report including, but not limited to, listing of all personnel on site (including all Subcontractors), weather conditions, major scopes of work under construction, material deliveries, safety incidents, progress photographs, and inspections.

9. **SUBCONTRACTS and SUBCONTRACTORS**

All Subcontractors shall be identified in writing and approved by the Owner prior to the start of work.

10. **TIME OF COMPLETION, DELAYS, EXTENSION OF TIME, LIQUIDATED DAMAGES**

The Contractor shall commence work to be performed under this Contract on the date to be specified in the Notice to Proceed from the Contract Administrator and shall fully complete all work hereunder within 70 consecutive calendar days from the date specified in the Notice to Proceed. The following are the critical dates for the project: Anticipated Notice to Proceed: July 17, 2023; Site available for Work: October 2, 2023; Construction Completion: December 22, 2023.

For each day in excess of the above number of days, the Contractor(s) shall pay the Owner liquidated damages in the amount of $500.00 per consecutive calendar day.

If the Contractor is delayed at any time in the progress of the Contractor's work by any act or negligence of the Owner, the Owner's employees or the Owner's separate Contractor; by changes ordered in the work; by abnormal weather conditions; by any causes beyond the Contractor's control; or by other causes deemed justifiable by Owner, then the contract time may be reasonably extended in a written order from the Owner upon written request from the Contractor within ten (10) days following the cause for delay.

Non-compensable weather delays affecting the critical path shall be tracked during the period leading up to the building being dried-in, and calculated and awarded via Change Order if warranted, at the end of the construction period.

11. **USE OF PREMISES**

Work under this contract shall be performed in such a manner as to avoid interruption or interference with the operation of any existing activity on the premises or at the location of the work. The Owner may enforce extra restrictions during certain periods of the year. During examination periods, the Contactor shall restrict noise-making activities. If the project involves work in or near a building in which an exam is being conducted, the Contractor shall be required to restrict operations which are disturbing to students during the hours of the exam(s). Work will not be permitted on Graduation Day, or the day preceding it.

While on campus, Contractor's and Sub-Contractor's personnel shall be identifiable at all times, for example, by wearing company names or logos on garments or hard hats.

Damage done to the University premises that are under the control of the Contractor, or damage caused by the contractor to premises used by the contractor, shall be corrected at the Contractor's expense.

The contractor shall schedule deliveries between 7:00 am and 4:00 pm. The contractor shall have adequate personnel and any necessary equipment onsite to receive deliveries. The contractor shall notify the WCU Project Manager of any deliveries of equipment, material or road work that will impede the flow of vehicular or pedestrian traffic. The contractor shall provide traffic control by certified traffic control personnel (vehicular and pedestrian) during these deliveries. Staging for multiple concrete / steel / other large material deliveries, crane and other large pieces of equipment must be coordinated with the WCU Project Manager. Walks, streets, and drives are most congested with pedestrians at the top of the hour, when making deliveries the carrier should be made aware of this and plan his deliveries accordingly.

A minimum five working days' notice must be given to the WCU Project Manager to block parking spaces, drives, roads, streets and pedestrian walks.

Roads, streets, drives, fire lanes must remain open at all times. Adequate clearance must be maintained for emergency vehicles to negotiate the drive. Maintain a minimum of 20 feet for fire lanes.

Construction vehicles are not allowed to block, park, or stage in a fire lanes. Vehicles blocking fire lanes will be ticketed and towed at the Contractor's expense.

Construction fences should be covered with fabric screening unless it blocks the view of oncoming traffic. Construction gates will swing into the construction area. The construction fences shall not obstruct pedestrian or vehicle traffic unless alternate ways were designed in the site drawings and approved by the WCU Project Manager.

The Contractor will provide additional cleanup, warning signs, and barricades if deemed necessary by the Owner.

The Contractor's scheduling and staging requirements must be coordinated with, and approved by, the WCU Project Manager.

Contractors working for the University are required to comply with Western Carolina University's policies, which are provided herein and hereby incorporated and made a part of this contract.

- Smoking and Vaping Policies
  https://www.wcu.edu/discover/leadership/office-of-the-chancellor/legal-counsel-office/university-policies/numerical-index/university-policy-45.aspx

- Alcoholic Beverages
  https://www.wcu.edu/discover/leadership/office-of-the-chancellor/legal-counsel-office/university-policies/numerical-index/university-policy-81.aspx

- Weapons on Campus
  https://www.wcu.edu/discover/leadership/office-of-the-chancellor/legal-counsel-office/university-policies/numerical-index/university-policy-91.aspx

- Campus/Workplace Violence Prevention and Management
  https://www.wcu.edu/discover/leadership/office-of-the-chancellor/legal-counsel-office/university-policies/numerical-index/university-policy-109.aspx

- Title IX Sexual Harassment Policy
  https://www.wcu.edu/discover/leadership/office-of-the-chancellor/legal-counsel-office/university-policies/numerical-index/university-policy-129.aspx

12. UTILITIES, STRUCTURES, SIGNS

The Owner will provide water and electricity to the extent they are available at the project site. The Contractor shall be responsible for making connections to provided utilities.

The Contractor shall provide restroom facilities. The Contractor's personnel shall not use toilet or washroom facilities in the existing building.

The Contractor shall be responsible for procedures to make temporary disruptions to existing utilities serving the building(s) as well as disruptions to roads and pedestrian walks and any disruptions shall be planned well in advance of the work. The work shall be executed in a manner to provide reasonably continuous service throughout the construction period. Any and all disruptions and interruptions of service shall be coordinated with the WCU Project Manager a minimum of seven (7) days in advance. Failure of the Contractor to obtain Owner permission shall not be grounds for an extension of time.

13. **SECURITY**

The Contractor and Subcontractors shall be responsible for security to their equipment and the site-stored materials under their jurisdiction, whether paid for by the Owner or not, until acceptance of the project. The Contractor shall coordinate security requirements with the WCU Project Manager.

SECTION 011000 – GENERAL SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specifications Sections, apply to this section.

1.2 INSTRUCTIONS TO BIDDERS

A. "Form of Proposal" is provided herein.

B. A form of Bid Bond is provided herein.

C. Bidders must be licensed General Contractors for a minimum of five (5) years of the class required by North Carolina Statutes for executing the work being bid. Bidder's name, address, State license number, and the date of license must appear on the outside of the envelope containing Bidder's proposal.

D. Prior to an award of contract, and upon request, submit to Engineer or Owner satisfactory evidence of current and appropriate license pursuant to the applicable provisions of that State's General Statutes governing the business of "General Contracting" and such other rules, regulations and/or ordinances as may be applicable to performance of the work specified herein. Failure to provide evidence of an appropriate license by any bidder as described herein shall result in that bid, quotation or proposals not being considered.

E. All experience must have been acquired by bidding contractor named on the form of proposal. Firms using aliases, or who have changed names during the five (5) year period are subject to disqualification at the discretion of the Owner.

F. The roofing contractor shall submit certification from the roofing materials manufacturer that he is a contractor who is qualified and certified by the materials manufacturer to install the roofing system specified and issue the warranty required.

G. Bidder, by submitting a bid for this project, certifies that the bidding contractor is acceptable to the roofing system manufacturer as an installer of the manufacturer's system in all regards and no warranties required by the contract documents will be withheld by the manufacturer solely as a result of the bidder's qualifications to perform the work.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project generally consists of roof replacement of low slope Roof Areas A, and A1 on the H. F. Robinson Administration Building (HFR Building) on the campus of Western Carolina University and the installation of new wall panels, coping caps, counterflashing, drains, overflow scuppers modifications and all other miscellaneous work associated herein.

1. Project location: 65 West University Way, Cullowhee, NC 28723
2. Owner: Western Carolina University
3. Refer to Key Plan KP.

B. The Owner has elected to designate Terracon Consultants, Inc., Charlotte, North Carolina, as Engineer for this Project.

C. The terms "Architect" and "Engineer" used in the contract documents are that individual, partnership, or corporation engaged by the Owner for the preparation of certain of the Contract Documents and referred to in the Contract Documents. The "Architect" or "Engineer" may, however, be an Architect, Architect-Engineer, Engineer or other design professional authorized by the Owner to perform such functions and the terms are interchangeable.

D. The work under the Base Bid is as follows. Refer to Roof Plans.

1. Low Slope Roofing Replacement: Work on HFR building areas A, and A1 which generally consists of the complete removal of all existing roofing membrane, insulation, felt membrane, asphaltic/thermoset fill, flashings, metal wall panels, metal flashing, coping caps and the installation of a new PVC/KEE membrane, cover board, tapered (where indicated on plans) and base insulation, temporary roof membrane, gypsum underlayment, flashings, metal flashings, metal panels, coping caps, new drains, expand existing overflow scuppers as indicated, and all associated miscellaneous work as specified herein.

E. Work under Alternate No. 1 is on Areas B, C, D, E, and E1 and generally consists of the same scope of work as on Areas A and A1. Refer to Section 012300.

F. Work under Alternate No. 2 is to perform demolition and installation of mechanically attached gypsum underlayment and temporary roof membrane on Areas A, and A1, outside of business hours. Refer to Section 012300.

G. Work under Alternate No. 3 is to perform demolition and installation of mechanically attached gypsum underlayment and temporary roof membrane on Areas B, C, D, E, and E1, outside of business hours. Refer to Section 012300.

1.4 DESCRIPTION OF EXISTING SYSTEM

A. Information in this Section is provided only to establish general description and is not necessarily accurate. The Contractor is responsible for visiting the site and becoming satisfied as to the existing conditions, size of roof areas, etc. before preparation and submission of bid. Receipt of bid will be considered evidence Contractor has inspected roof or otherwise become satisfied on all details relating to the work.

B. Existing Systems:

1. **Areas A and A1 (Base Bid)**: Approximately 13,225 square feet. Coated single ply membrane adhered to mechanically attached three-inch-thick polyisocyanurate insulation over a felt membrane over asphaltic/thermoset fill of varying thickness over a metal deck.
2. **Area B (Alternate 1)**: Approximately 3,700 square feet. Coated single ply membrane adhered to mechanically attached three-inch-thick polyisocyanurate insulation over a felt membrane over asphaltic/thermoset fill of varying thickness over a metal deck.
3. **Area C (Alternate 1)**: Approximately 1,800 square feet. Coated single ply membrane adhered to mechanically attached three-inch-thick polyisocyanurate insulation over aggregate surfaced built up roof membrane over asphaltic/thermoset fill of varying thickness over a metal deck.
4. **Area D (Alternate 1)**: Approximately 3,500 square feet. Coated single ply membrane adhered to mechanically attached three-inch-thick polyisocyanurate insulation over a felt membrane over asphaltic/thermoset fill of varying thickness over a metal deck.
5. **Areas E and E1 (Alternate 1)**: Approximately 630 square feet. Coated single ply membrane adhered to adhered three-inch-thick polyisocyanurate insulation over aggregate surfaced built up roof membrane over a concrete deck.

C. Asbestos is present in the felt and BUR membranes and flashings, and in the mastic adhering the insulation to the CMU behind the wall panels.

D. Drainage on all areas is to interior roof drains.

E. Roof Areas A, A1, B, C, and D are generally structurally sloped to the drain with a slope of approximately ¼" per foot. Areas do have portions that require tapered insulation. Refer to drawings for locations.

F. Roof Areas E and E1 contain minimal slope to drains.

G. Top of roof at area A is approximately 72 feet above grade. Top of area A1 is approximately 12 feet above area A. Areas B, C, and D are approximately 17 feet above grade. Areas E, and E1 are approximately 12 feet above grade.

H. Contractor shall be responsible to document all existing damage to facility prior to beginning work and producing documentation acceptable to Engineer prior to starting work. Damage discovered during the project, which was not documented, and which is not clearly the responsibility of others, may be presumed by the Engineer or Owner as the responsibility of the contractor. Documentation may be in the form of written statements and/or drawings but must also be supported with photographs and/or video tape supplied by contractor.

1.5 START AND COMPLETION

A. Refer to General Conditions, Article 23 – Time of Completion, Delays, Extension of Time.

B. After Contracts are fully executed, a Notice to Proceed will follow within thirty (30) calendar days.

C. Work on the project under the Base Bid is to be complete within Seventy (70) calendar days.

D. Work on the project may begin immediately after Contracts are signed. Actual physical work may begin within seven (7) days of the date given in the Notice to Proceed.

E. Materials may be delivered to the site prior to the start of physical work upon approval by the Owner. Material staging will be made available in the parking lot identified on the plans.

F. All time limits stated in the Contract are of the essence with respect to Contractor's obligations hereunder.

G. Prework Conference: Prior to start of work there shall be a conference attended by the Contractor, the representative of the Owner, roofing manufacturer's representative, and other parties who may be designated by the Owner, to be convened at the work site for the purpose of reviewing the specifications and job conditions and resolving any questions then arising. Contractor shall advise the office of the Owner of date and time at least one week before the date to allow proper notification of parties.

H. Refer to General Conditions, Article 25 – Final Inspection, Acceptance, and Project Closeout

I. No work shall take place on the following dates:
   1. September 7th, 2023
   2. September 8th, 2023
   3. December 14th, 2023
   4. December 15th, 2023

1.6 LIQUIDATED DAMAGES

A. Liquidated damages will apply starting the first calendar day after the date established for final completion and will be assessed at a rate of $500.00 per day for each calendar day, until such time as all construction is complete and has been accepted by the Owner.

B. Contractor, by submitting a bid for this project, attests and agrees that the value of liquidated damages as stated are a fair and equitable representation of damages to the Owner in the event project is not completed within the allotted time.

C. In the event the project extends beyond the contract period (including any extensions to contract, approved by Owner), Owner will back charge the contractor for fees and expenses attributable to additional services by Owner's consultants which are provided solely as a result of the project being extended beyond the contract period. Owner may withhold monies attributable to these fees and expenses from contractor's requests for payment. Where liquidated damages are imposed as a result of the contract between the Owner and Contractor, these fees and expenses will be funded from the liquidated damage payments by the contractor. Owner may withhold monies attributable to these fees and expenses from contractor's request for payment.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes the administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Unit-cost lump sums

C. Related Sections include the following:

1. Division 1 Section "Unit Prices" for procedures for using unit prices.

1.3 ALLOWANCE PROCEDURES

A. Prior to the conclusion of the project, credit the amount of unused allowance to Owner by Change Order.

B. Deductive amounts of unit price work included in the Contract Sum will be calculated at 100% of the quoted unit price.

1.4 CONTINGENCY ALLOWANCE

A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

B. Funds will be drawn from the Contingency Allowance only by Change Order.

C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 UNIT PRICE ALLOWANCES SCHEDULE

A. Include the following unit price allowances in the Contract Sum.

1. Allowance No. 1 – Wire brush and paint 3,000 square feet of deteriorated metal decking.

2. Allowance No. 2 – Wire brush, paint and plate 500 square feet of deteriorated metal decking.
3. Allowance No. 3 – Replace 500 square feet of deteriorated metal decking.
4. Allowance No. 4 – Replace 100 board feet of damaged deteriorated wood blocking.
5. Allowance No. 5 – Install 500 fasteners at loose metal deck side laps.
6. Allowance No. 6 – Install 500 fasteners to secure loose metal deck to existing framing members.
7. Allowance No. 7 – Install 1000 linear feet of sheet metal over changes in direction of metal decking, over loose perimeters to wood blocking and over deficiencies in deck.

3.2 CONTIGENCY ALLOWANCE

A. Contingency Allowance: Include the stipulated sum/price of $35,000 for use related to the repair of spray applied fire proofing.

1. In order to claim this allowance, repairs to the spray applied fire proofing must be requested by the Owner. Contractor shall then provide direct quotes for the work to the Owner and Engineer for review and acceptance prior to starting the work.

END OF SECTION 012100

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems or installation methods described in the Contract Documents.

B. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Add Alternate No. 1:

1. Replace Roof Areas B, and D:
   a. Approximately 7,200 square feet. Remove existing system as noted above and install new roof system as denoted in Table 1 of Section 074500, edge metal, new drain, and new overflow scupper modifications and leaders.
2. Replace Roof areas C, E, and E1:
   a. Approximately 2,470 square feet. Remove existing system as noted above and install new roof system as denoted in Table 1 of Section 074500, edge metal, new drain, and new overflow scupper modifications and leaders.
3. In the event Alternate No. 1 is accepted, the contract time will be increased by Fifty (50) calendar days.

B. Add Alternate No. 2:

1. Perform demolition of the existing roofing and installation of mechanically attached gypsum underlayment and temporary roof membrane on Areas A, and A1 outside of business hours. All interior protection and cleaning related to roofing activities shall be performed within work hours. This work can happen during the following times:
   a. Weekdays: 5:00pm – 6:00am
   b. Weekends: Anytime

c. Fall Break (October 16th – 19th): Anytime

C. Add Alternate No. 3:

1. Perform demolition of the existing roofing and installation of mechanically attached gypsum underlayment and temporary roof membrane on Roof Areas B, C, D, E and E1 outside of business hours. All interior protection and cleaning related to roofing activities shall be performed within work hours. This work can happen during the following times:
   a. Weekdays: 5:00pm – 6:00am
   b. Weekends: Anytime
   c. Fall Break (October 16th – 19th): Anytime

END OF SECTION 012300

SECTION 012700 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for procedures for using unit prices to adjust quantity allowances.
2. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.2 DEFINITIONS

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.

1.3 PROCEDURES

A. Include in unit prices all necessary material, plus cost of delivery, installation, insurance, taxes, overhead and profit.

B. Owner reserves 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 surveyor acceptable to Contractor.

C. List of Unit Prices: A list of unit prices if included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

D. Contractor shall maintain a daily log showing dates, location and exact quantities of unit price work. Contractor is responsible for providing photographic evidence of unit price work installed. Copies of log and appropriate change order forms shall be submitted with each application for payment unless no unit price work is accomplished during the period covered by the application.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price No. 1 – Wire brush and paint metal deck.

1. Description: Wire brush and paint rusted metal decking according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per square foot.

B. Unit Price No. 2 – Wire brush, paint and plate metal deck.

1. Description: Wire brush, paint and plate deteriorated metal deck according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per square foot.

C. Unit Price No. 3 – Replace steel deck.

1. Description: Replace damaged/deteriorated metal deck according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per square foot.

D. Unit Price No. 4 – Replace damaged or deteriorated wood blocking.

1. Description: Replace damaged or deteriorated wood blocking according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per board foot.

E. Unit Price No. 5 – Secure metal deck side laps.

1. Description: Secure existing metal deck side laps according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per fastener.

F. Unit Price No. 6 – Resecure metal deck.

1. Description: Resecure existing metal deck to existing structural members according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per fastener.

G. Unit Price No. 7 – Plate steel deck.

1. Description: Install steel plate over changes in direction of steel deck according to Division 7 Section "Roofing Preparation."
2. Unit of Measurement: Per linear foot.

END OF SECTION 012700

SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for procedures for using unit prices to adjust quantity allowances.
2. Division 1 Section "Unit Prices" for procedures for using unit prices.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Prior to start of any work, Contractor must submit to Owner a Schedule of Values on a copy of AIA Document G703 listing each phase of the work and its scheduled value. Contractor must be prepared to verify all material costs by producing supplier invoices, bills of lading, etc. upon request by Owner.
2. Schedule of Values, shall include labor and material line items for all material components with a material value of more than $2,000.00 or 5% of the contract amount (whichever is least). The schedule of values must include, as a minimum, line items for any of the following which are applicable to this project including separate labor and material line items where applicable.
    a. Mobilization
    b. Roof Access
    c. Performance and Payment Bonds
    d. Demolition
    e. Wood Blocking
    f. Underlayment
    g. Cover Board
    h. Single-Ply Membrane
    i. Insulation
    j. Base Flashing
    k. Sheet Metal Flashing and Trim
    l. Metal Wall Panels
    m. Drains
    n. Scuppers
    o. Site Cleanup
    p. Manufacturer's Inspections
    q. Unit Price Work
    r. Guarantee

3. Schedule Updating: Update and resubmit the Schedule of Values before the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.
4. 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.
5. 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.

1.4 APPLICATIONS FOR PAYMENT

A. Monthly pay estimates shall be submitted to Engineer by email on AIA Document G702 and AIA Document G703.

B. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

C. Applications for payment requesting payment for materials will not be certified or approved unless accompanied with Manufacturer's Certificates of Compliance for those materials. It is suggested that Contractor request material certificates of compliance from material suppliers at the time materials are ordered.

D. Include a retainage amount of five percent (5%) for the value of materials stored at the site and work executed.

E. A payment or payments made to Contractor for work performed shall not constitute acceptance or approval of the work and shall in no way relieve Contractor from the requirements of the Contract.

F. All sums received by Contractor for any part or parts of the work furnished or performed by a Subcontractor shall be paid promptly to the latter by Contractor, and while in the hands of Contractor, shall constitute trust funds held for the use and benefit of Owner.

G. If payments are to be made on account of materials or equipment not incorporated in the work but delivered and suitably stored at the Site, or at such other location agreed upon in writing, such payments shall be conditioned upon submission by Contractor of bills of sale or other documents satisfactory to Owner establishing Owner's title to such materials or equipment or otherwise protecting Owner's interest therein including the prepayment of applicable insurance and transportation charges to the Site.

H. Contractor warrants and guarantees the title to all work, materials and equipment covered by an invoice, whether or not incorporated in the work, will pass to Owner upon Contractor's receipt of the payment covering such work, materials and equipment, free and clear of all liens or other similar or dissimilar encumbrances in any way affecting Owner's title thereto.

I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. List of Contractor's staff assignments.
5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
6. Initial progress report.
7. Report of preconstruction conference.
8. Certificates of insurance and insurance policies.

K. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

L. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Affidavit of Payment of Debts and Claims.
5. Affidavit of Release of Liens.
6. Consent of Surety to Final Payment.
7. Completion Agreement Form.

1.5 FINAL PAYMENT APPLICATION

A. Refer to Section 014000 – QUALITY REQUIREMENTS, Paragraph 1.5, Inspection of Work for Final Inspection Requirements and related provisions for final payment and closeout documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012900

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 7 Section for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Shop Drawings: Drawings, diagrams, illustrations, schedules, performance charts, brochures and other data prepared by Contractor or any Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor which illustrate some portion of the work.

B. Samples: Physical examples furnished by Contractor to illustrate materials, equipment or workmanship and establish standards of work.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate the schedule for submittal of shop drawings and samples with progress schedule and the requirements of the Contract. Failure to schedule and submit shop drawings and samples in ample time for checking, correction and rechecking will not justify any delay in the timely performance of the work.

B. Submittal Schedule: Within two weeks after award of Contract, provide a schedule of the dates for submission of each shop drawing and sample required by the Contract.

C. Processing Time: Allow sufficient time for an orderly review with reasonable time for checking, correction and rechecking corrections, as well as returning the approved or rejected shop drawings and samples to Contractor and, in turn, any Subcontractor.

D. Allow a minimum of 10 working days from the date submittal is received until the date the submittal is required to be returned to the Contractor.

E. If a submittal contains more than 10 shop drawings, indicate which drawings must be returned within the period of 10 working days, and, in such event, allow an additional 10 working days for return of the balance of the submittal.

F. Identification: Provide each submittal with the following information:

1. Owner's and Engineer's respective project numbers.
2. Date of submittal.
3. Submittal number.

4. Title of project.
5. Name of Contractor and date of Contractor's approval.
6. Name of Subcontractor or supplier and date of submittal to Contractor.
7. Reference to Specification Section and Paragraph and/or Drawing Number.
8. The specific location of that portion of the work covered by the submission.
9. Any qualification, departure or deviation from the requirements of the Contract.
10. Any additional information required by the Specifications for the particular material being furnished.

G. Provide a space on each shop drawing for the approval stamps of Contractor, Engineer and Engineer's sub-consultants, if any.

H. Transmittal Form: Use form of transmittal contained at the end of this Section, or a similar form containing the same information.

I. Numbering: Number each submittal. Retain numbering system throughout all revisions.

J. Submit all associated shop drawings relating to a complete assembly at the same time, where possible, so that each may be checked in relation to the entire proposed assembly.

K. Prepare composite shop drawings and installation layouts, when required, to depict proposed solutions for tight field conditions. Coordinate composite shop drawings and field installation layouts in the field with Subcontractors for proper relationship to the work of all other trades involved in the work.

L. Prior to submission, review, affix a stamp on, and indicate approval of all shop drawings and samples. Determine and verify field measurements and availability of the material, and coordinate each shop drawing and sample with requirements of the Contract.

M. All submittals are to be submitted electronically to the Engineer.

N. Engineer will review Shop Drawings and Samples to determine conformance with the design concept of the Project and with the information given in the Contract. Engineer's approval of a separate item shall not be construed to mean approval of the assembly of which such item is a part.

O. Engineer's approval of Shop Drawings or Samples shall not relieve Contractor of responsibility for any deviation from the requirements of the Contract unless Contractor has informed Engineer in writing of such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall Engineer's approval relieve Contractor from responsibility for errors or omissions in the shop drawings or samples.

P. Make corrections required by Engineer and resubmit corrected copies of shop drawings or new samples until approved. Direct specific attention in writing, or on resubmitted shop drawings, to revisions other than the corrections required by Engineer. The number and distribution of copies shall be the same as in Contractor's first submission.

Q. In the event that Engineer shall mark shop drawings "approved" or "approved as noted," make such corrections, if any, as may be noted. Correction shall be made on, and prints for final distribution shall be made from, the drawings bearing Engineer's notations and impress stamps. Final distribution of prints shall be made by Contractor.

R. Do not commence any portion of the work requiring a shop drawing or sample until the submission has been approved by the Engineer. All such portions of the work shall be in accordance with approved shop drawings and samples.

S. Do not commence any work which will result in structural changes in walls, steel, floors and masonry prior to Engineer's written approval. Fully describe all details of methods, shoring and bracing in submission for such work.

T. Contractor shall submit a copy of building permit prior to beginning work.

1.5 LIST OF PROJECT SUBMITTALS

A. Refer to Project Document Checklist at the end of this Section for submittals that will be required from contractor and approved by Engineer prior to start of work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

SUBMITTAL TRANSMITTAL Date: _____

From: _____ To: Terracon Consultants, Inc.
_____ 2701 Westport Road
_____ Charlotte, NC 28208

Project Name: HFR Building Roof Replacement
Owner: Western Carolina University, Cullowhee, NC
Owner's Project Number: 22-24898-01
Terracon Consultants, Inc. Project Number: FH226123
Submittal Number: _____ No. of Copies: _____
Specification Section and Paragraph Reference(s): _____
Drawing/Detail Reference(s): _____
Location of Work: _____
Product Manufacturer: _____
Supplier/Subcontractor: _____
Date submitted to Contractor: _____
Qualifications/Deviations From Specifications: _____

CONTRACTOR'S APPROVAL
THIS SUBMITTAL HAS BEEN PREPARED BY THE CONTRACTOR OR THOROUGHLY REVIEWED BY THE CONTRACTOR AND IS A CONTRACTOR APPROVED SUBMITTAL SUBJECT TO ANY QUALIFICATIONS MADE HEREON OR ON THE ATTACHMENTS.

SIGNED: _____ DATE: _____
NAME: _____

ENGINEER'S APPROVAL

APPROVED _____; APPROVED AS NOTED _____; NOT APPROVED - RESUBMIT _____;
REVIEWED _____; APPROVED FOR CONSTRUCTION ACCORDING TO NOTATIONS.
REVISE AND RESUBMIT _____; REFER TO APPROVAL STAMP ON ATTACHMENT _____

Checking by Engineer is only for conformance with the design concept of the project and compliance with the information given in the contract documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction, and for coordination of the work of all trades.

SIGNED: _____ DATE: _____

PROJECT DOCUMENT CHECKLIST

SUBMITTALS

- Materials List
- Materials Data Sheets
  - Lumber
  - Prefinished Galvalume
  - Sealant
  - PVC Membrane
  - Gypsum Underlayment Board
  - Temporary membrane
  - Polyisocyanurate Insulation
  - Gypsum Cover Board
  - Base Flashing
  - Coping Cap
  - Wood Fiber Tapered Edge Strips
  - Self-adhering Underlayment
- Manufacturer's Application Procedures
- Copies of Authorizations and Licenses from Authorities having jurisdiction
- AIA Document G703, Schedule of Values
- Material Safety Data Sheets
- Schedule for Removal and Installation
- Written Safety Procedures
- Underwriter's Laboratories, Inc. Class A Roof Covering Certificate from Roofing System Manufacturer
- Shop Drawings
- Metal Samples
- Color Chart
- Documentation of Existing Conditions
- Certification from Manufacturer that Contractor is an Approved Installer
- List of Subcontractors
- List of Contractor Staff Assignments and Qualifications
- Tapered Insulation Shop Drawings
- Metal Shop Drawings
- Asbestos Abatement Permit and License
- Building Permit
- Fall Protection Documents

END OF SECTION 013300

SECTION 014000 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specifications Sections, apply to this section.

1.2 SUMMARY

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

1.3 SUPERINTENDENT

C. For the purpose of these Specifications the designation "superintendent" is hereby defined as the individual present on the job site at all times work is being performed.

D. The superintendent shall not be changed except with the consent of the Owner and Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employment.

E. 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. Should the superintendent be absent temporarily from the project at any time, he shall designate a competent foreman to assume his duties.

F. The superintendent shall have had a minimum of five (5) years continuous experience as a job superintendent.

G. Only the project superintendent (or the designated foreman in the superintendent's absence) will be permitted inside the facility, except when accompanied by the superintendent to perform work or in cases of emergency.

H. The Contractor shall provide the Owner, in writing, the name of the proposed project manager, job superintendent and foreman for approval no later than seven (7) days prior to the prework conference. Also include chronological listing of superintendent's experience by project name, type system, size and required warranty.

I. Once approved, neither the project manager nor the superintendent will be changed except with the consent of the Owner unless either proves to be unsatisfactory to the Owner or Contractor, or ceases to be in the Contractor's employment.

J. Promotion or reorganization within the company will not be an acceptable cause for reassignment of project manager or superintendent.

K. 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 or Owner's representative, and, immediately thereafter, notify the Owner and/or Engineer. No decisions regarding changes in the Work will be made without the Owner's knowledge.

L. Each day before work begins, superintendent shall indicate on the Roof Plan the area to be reroofed that day. Color markers are appropriate for this purpose. If changes in the work schedule occur, the Owner shall be notified accordingly.

M. The job superintendent will have a local contact phone number.

1.4 INSPECTION OF WORK

A. Work found to be in violation of specifications or not in accordance with established workmanship practices and standards will be subject to complete removal and proper replacement with new materials at Contractor’s expense.

B. Owner will provide inspection during the work. Such inspection may be periodic or daily.

C. The words “supervise” and “inspect” wherever used herein in connection with the duties or activity of the Owner shall in no way, expressed or implied, relieve the contractor from his responsibilities for the safety of the workmen, the preservation of the work or proper performance under this contract. The Owner shall not be responsible for the safety of the workmen, the safeguarding of the work, or the proper performance of the Contractor.

D. No Inspector shall have the power to waive the obligations resting upon the Contractor to furnish good material and do good work as herein prescribed. Any failure or omission on the part of any Inspector or the Engineer to observe, object to or condemn any defective material or work shall not release the Contractor from the obligation to at once tear out, remove, and properly replace or rebuild the same at any time upon discovery of the defect and upon notice from the Owner or Engineer to do so.

E. Materials stored on site which are marked by the Inspector, Engineer or Owner as not meeting the requirements of the contract documents are to be removed from the site by the contractor immediately.

F. Top surfacing will be judged by sight. If Inspector's decision is not acceptable to the Contractor he may, at his own expense, take samples and make tests by methods to which both parties agree.

G. Failure of Owner or Engineer to discover or reject defective work, or work not in accordance with the Contract, shall not be deemed an acceptance thereof, nor a waiver of Owner's rights to Contractor's compliance with the Contract or performance of the work, or any part thereof. No partial or final payment, or partial or entire occupancy, by Owner shall be deemed to be an acceptance of work or of material which is not strictly in accordance with the Contract, nor shall it be deemed to be a waiver by Owner of any of Owner's rights pursuant to this Contract or otherwise.

H. Designer Final Completion Inspection shall be conducted as follows:

1. When Engineer has certified completion, Contractor shall complete all work under the contract, including any outstanding punch list items established at the Designer Final Completion; any required submittals, including warranties, release of liens, unit price logs, consents of surety, final pay request, etc.
2. Designer Final Completion is defined for this project as the successful installation of every component required under the contract documents to be installed for this project. A punch list may be issued by the Engineer for work complete at this time.

I. Final Inspection shall be conducted as follows:

1. Upon final completion, Contractor must notify Engineer and Owner in writing requesting a final inspection.

2. The Engineer and Owner will conduct a final inspection of all work included in the contract as soon as possible after receiving written notification by the Contractor that the work is complete and ready for inspection.
3. The final inspection report shall be prepared by the Engineer and Owner listing observed deficiencies and furnished to the Contractor.
4. Upon satisfactory completion of all deficiencies, Contractor shall initial each item on the report certifying his compliance and return to the Engineer.
5. No portion of the final payment will be made until all items have been satisfactorily corrected and the project closeout documents submitted to the Architect/Engineer.
6. All project completion documents are to be submitted within thirty (30) days following acceptance by the Owner.

1.5 PERMITS

A. Contractor is responsible for obtaining all necessary licenses and permits required by law in order to accomplish the work. Satisfactory evidence that all licenses and permits have been issued must be submitted to Owner prior to starting work.

B. Contractor must provide all protective structures, barriers, or other means of protection necessary to assure the public safety and to fulfill all requirements by governmental authorities.

C. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority having jurisdiction of Contractor's performance of the work or any part thereof. If Contractor knows, or should know, that any requirement of these Specifications is at variance with any such laws, ordinances, rules, regulations or orders in any respect, Contractor shall promptly notify Engineer in writing and obtain written instructions before proceeding with the portion of the work thereby affected. If Contractor performs any work which is contrary to such laws, ordinances, rules and regulations without receiving Engineer's instructions, Contractor shall assume full responsibility therefor and shall bear all penalties and costs of remedying the work attributable thereto. However, this section shall not be construed to require Contractor to perform detailed engineering calculations normally performed by Engineer except when specifically provided.

1.6 SUBCONTRACTORS

A. Use of Subcontractors to accomplish such miscellaneous or associated work as structural modifications, plumbing, relocation of conduit, service piping and/or HVAC equipment, etc. is permitted. Do not subcontract any part of the roofing work specified herein without the prior written consent of the Owner.

1.7 PRE-CONSTRUCTION CONFERENCE

A. Prior to the start of work there shall be a conference attended by the Contractor, the representative of the Owner, and other parties who may be designated by the Owner, to be convened at the work site for the purpose of reviewing the specifications and job conditions and resolving any questions then arising.

1.8 MANUFACTURER’S INSPECTIONS

A. A technical representative of the roof system manufacturer shall conduct periodic inspections throughout the course of the work. The representative shall prepare a written report for each inspection and shall promptly provide a copy of each report to the Owner, Contractor and Engineer. Each report shall note any deficiencies the representative observes which require correction. A minimum of three (3) inspections is required for this project including a final inspection after contractor has completed installation of all roof system components.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 014000

SECTION 015000 – TEMPORARY FACILITIES, CONTROLS AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary facilities, controls, protection and disconnects.

1.3 SUBMITTALS

A. Submit plans for work for approval prior to starting work so that, if necessary, inside operations can be coordinated with the work.

1.4 TEMPORARY UTILITIES

A. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.

B. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

C. Sanitary Facilities: Provide temporary toilets, wash facilities and drinking-water fixtures. Locate at sites approved by the Owner. Facilities in existing buildings are off-limits.

D. Lunchroom Facilities: On-site facilities are not available to Contractor personnel.

1.5 TOBACCO AND VAPORIZING PRODUCTS

A. Tobacco and vaporizing products will not be allowed on site at any time. Enforce the tobacco and vaporizing policy of the Owner with regard to Contractor's personnel. Non-compliance by any of Contractor's personnel will be justification for removal of those individuals from this project.

1.6 SCAFFOLDING AND PLATFORMS

A. Contractor shall provide all necessary platforms and scaffolds of ample strength. Inclusive are all hoisting machinery, all appliances and materials such as ladders, planks, ropes, wedges, centers and other tools and materials including the carriage thereof to and from the buildings as required for proper handling and installation and/or erection of materials and equipment included in the work.

B. Prior to starting work, Contractor shall obtain approval of the Owner for locations of work operations at ground level such as material storage, hoisting, dumping, etc. Work will be restricted to approved locations.

C. Access to the roof will be by external means only. Access by ladder or scaffolding will be the responsibility of the Contractor.

1. Ladders must be taken down daily and locked in storage or removed from site.
2. Scaffolding must be barricaded to deter unauthorized usage by the public.

1.7 TEMPORARY PROTECTION

A. Temporary measures shall be provided and maintained by the Contractor to protect the building and its contents from weather and construction related damages. Damaged or disturbed buildings or grounds to be corrected to the Owner's satisfaction prior to final payment.

B. Protect the existing building, roof, equipment, and grounds from flying or falling debris during the demolition process. Protect so as not to disrupt building operations or cause damage to the building and its contents during construction.

C. Protection of Pedestrians shall be provided during construction. Protection measures shall be in accordance with 3306 of the 2018 NC Building Code.

1.8 PROTECTION OF BUILDINGS AND PROPERTY

A. Note that building will remain occupied during work. Take all precautions necessary to protect building, contents and personnel from damage or injury from operations and from water entry into the building during construction. Keep dust and dirt to a minimum.

B. At conclusion of each day's work, carefully inspect work including temporary daily tie-offs to ensure system is completely water-tight, all stored materials are suitably protected from the weather and all equipment is stored in such a manner as not to interfere with facility operations.

C. On normal workdays when no work is accomplished due to inclement weather or other reasons, visit the site no later than normal start time and verify that the system is completely water-tight, all stored materials are suitably protected from the weather and all equipment is stored in such a manner as not to interfere with facility operations. Be prepared to implement emergency repairs as necessary to prevent leakage into the facility.

D. Prior to starting work, obtain approval from Owner for locations of work operations at ground level, such as material storage, hoisting, dumping, etc. Restrict work to approved locations

E. Prevent any work which could reasonable be deemed to be hazardous from taking place over or adjacent to occupied areas. Coordinate with the Owner the vacating of such affected areas of all occupants and give the Owner adequate notice to allow time to comply. Post a watchman inside the building in the affected area(s) at all times during the work to ensure no one enters or remains in the affected area(s).

F. Contractor shall protect adjacent existing and new roof areas from damage. In the event roofing is damaged, Contractor is to restore to the original condition at no cost to the Owner.

G. Remove debris and other material from the site in a timely manner to minimize accumulation.

H. Owner reserves the right to judge whether or not debris is being removed in a timely manner. In the event debris is not removed from the site as required to maintain the site in a manner acceptable to the Owner, the Owner reserves the right to engage other contractor(s) or its own forces to clean the areas and deduct costs of such operations from this Contract.

I. Protect grounds and landscaping from damage. In the event of damage, restore damaged property to a condition equivalent to that at time of start of operations.

J. Document all existing damage to facility prior to beginning work and produce documentation acceptable to Engineer/Owner prior to starting work. Damage discovered during the project which was not documented and which is not clearly the responsibility of others may be presumed by the Engineer/Owner as the responsibility of the Contractor. Documentation may be in the form of written statements and/or drawings but must also be supported with photographs and/or video tape supplied by the Contractor.

K. Isolate equipment from non-Contractor personnel by whatever means necessary, including the construction of a six-foot tall chain link fence (which completely surrounds the equipment, bitumen storage and personnel necessary to maintain the equipment) with integral lockable gate. Owner reserves the right to judge adequacy of Contractor's methods to isolate equipment and may, at any time, demand construction of the fence as compliance with this requirement. Should the Owner demand the construction of the fence, such shall be accomplished at no additional cost to the Owner.

L. Implement related safety provisions imposed by local fire marshals, etc. Determine what procedures will be acceptable prior to submitting a bid or proposal.

M. Initiate, maintain and supervise all safety precautions and programs in connection with the work. Take all necessary precautions for the safety of, and provide the necessary precaution to prevent damage, injury or loss to:

1. All employees on the work and other persons who may be affected thereby.
2. All the work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
4. Comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. Remedy all damage, injury or loss to any property caused, directly or indirectly in whole or in part, by the Contractor, and Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

1.9 DISCONNECTS

A. In the event it is necessary to disconnect any electrical wiring or connections, plumbing lines or other building services, notify the Owner. Do not disconnect or connect services unless authorized in writing by Owner.

B. Include in Base Bid all costs required for modification of existing service piping, wiring and duct work required in connection with the lifting, removal or relocation of roof-mounted equipment.

C. All associated work is to be accomplished by appropriately licensed personnel in accordance with all applicable codes and regulations.

D. Review roof-top equipment usage with Owner and facility user at beginning of project. Disable equipment determined to be essential to the operations of the facility only at those times prescribed by the Owner. This may require work to be done at other than normal operating hours.

1.10 USE OF PREMISES

A. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
2. Driveways and Entrances: Keep driveways, loading areas, 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.

B. Use of Existing Building: Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.11 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period as this school is on a year round calendar. The construction schedule has been developed around the recess periods for the students. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
2. Owner Occupancy of Completed Areas of Construction: Owner will occupy the building, before Substantial Completion, as provided in the construction schedule.

1.12 GROUNDS RESTORATION

A. Upon completion of required work, contractor is to restore grounds to a level equivalent to the condition prior to the start of the project. This includes but is not limited to:

1. Cleaning grounds of trash and debris.
2. Smoothing ruts and discontinuities in the soil.
3. Reseeding grass.
4. Pavement restoration.
5. Concrete restoration.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 015000

SECTION 017320 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Removals.

B. Related Sections include the following:

1. Division 1 Section "Unit Prices and Allowances."
2. Division 7 Section "Roofing Preparation."

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 REMOVALS

A. Remove all single ply membrane, insulation, felt/BUR membranes, asphalt fill, expansion joint covers, flashings and metal flashings, and discard.

B. Lift or remove all existing equipment so that existing flashings can be totally removed, and new flashings installed.

C. Carefully relocate all electrical, co-axial, telephone, fiber optic, security camera, lightning protection, intercom and miscellaneous wires, cables, etc. as required to accomplish work specified herein. Accomplish such relocation without interrupting the service provided by these lines except as specifically authorized by the Owner.

D. Remove or correct any obstruction which might interfere with the proper application of new materials.

E. Remove all existing roof drain strainers, drain bowls and clamping rings and discard.

F. Remove, maintain, and reinstall hatches, door, and louver components

END OF SECTION 017320

SECTION 017330 – ASBESTOS PRODUCTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements relating to asbestos-containing materials.

B. Related Sections include the following:

1. Division 7 Section 070000 - "Roofing Preparation."

1.3 PROCEDURES

A. It is the intention of these Specifications that no asbestos-containing materials be incorporated into the work and that, unless specifically designated to remain, no existing asbestos-containing materials incorporated in the existing roof system will remain subsequent to completion of the work. In the event additional hidden or unanticipated asbestos-containing materials are present in the existing roof system, stop all work in the affected area, notify the Engineer and provide temporary protection as required. Costs incurred, if any, due to the presence of hidden and/or unanticipated asbestos-containing materials will be resolved by Change Order to this Contract.

B. Products containing asbestos fibers are present on roof areas on which work is specified. Attached to this section you can find the asbestos testing results.

1.4 WARRANTY

A. Upon completion of the work, and before final payment and/or release of retainage, submit, and obtain from each subcontractor, material supplier and equipment manufacturer and submit, a properly executed Asbestos Free Warranty. Provide Warranty in the form included herein. Ensure forms are signed by a responsible officer of the Contractor, subcontractor, material supplier and equipment manufacturer and are notarized.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

ASBESTOS FREE WARRANTY
(on Contractor's standard letterhead)

Owner: Western Carolina University

Location of Building: Cullowhee, North Carolina

Name of Building: HFR Building

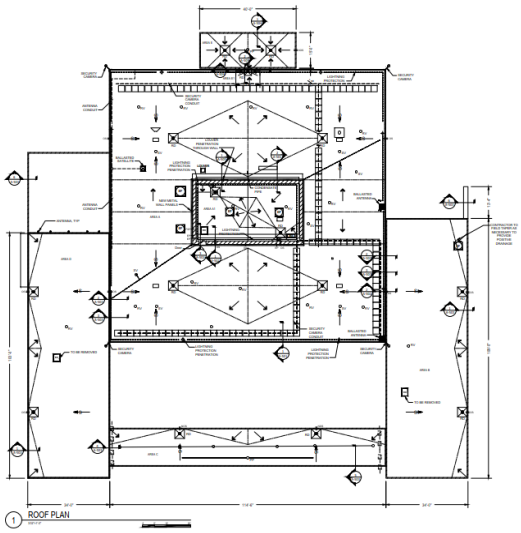
Know all men by these presents that we, _____
(Contractor, Subcontractor, Material Supplier or Equipment

having furnished labor, materials, equipment and/or supplies; removed roofing, roof insulation, vapor retarder, flashings and/or miscellaneous roof system components; accomplished certain repairs to existing roof system; installed new roofing, roof insulation vapor retarder, flashing and/or miscellaneous roof system components;

from, to and/or on _____ as shown on the roof plan below under
(Buildings, Roof Areas, etc.)

contract between _____ and _____
(Owner and Contractor) (Contractor and/or Subcontractor, Material Supplier or Equipment Supplier)

warrant to Owner with respect to said work that no materials containing asbestos fibers were incorporated into the work, and that, to our knowledge and belief, no materials containing asbestos remain in or are covered by the work.



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

IN WITNESS WHEREOF, we have caused this instrument to be duly executed, this _____ day of _____ 20 _____

WITNESS:

_____ _____
Company

_____ _____
By Notary Public

ASBESTOS REPORT

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
AF-1	Asphaltic Fill	None Detected		100% Other	White, Black Non-Fibrous Heterogeneous
10006031_0001					Dissolved, Crushed
AF-2	Asphaltic Fill	None Detected		100% Other	Black, White Non-Fibrous Heterogeneous
10006031_0002					Crushed, Dissolved
AF-3	Asphaltic Fill	None Detected		100% Other	Black, White Non-Fibrous Heterogeneous
10006031_0003					Crushed, Dissolved
AF-4	Asphaltic Fill	None Detected		100% Other	White, Black Non-Fibrous Heterogeneous
10006031_0004					Dissolved, Crushed
BUR-1	2 Ply Built Up Roofing	10% Chrysotile	40% Cellulose	50% Other	Black Fibrous Heterogeneous
10006031_0005					Dissolved, Teased
BUR-2	2 Ply Built Up Roofing	Not Analyzed			
10006031_0006					
BUR-3	2 Ply Built Up Roofing	Not Analyzed			
10006031_0007					
BUR-4	2 Ply Built Up Roofing	Not Analyzed			
10006031_0008					

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Christina Molnar (45)
Analyst

Approved Signatory

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
BUF-1	Built-Up Flashing	**10% Chrysotile**	**20% Cellulose**	**70% Other**	Black Fibrous Heterogeneous
10006031_0009					Dissolved, Teased
BUF-2	Built-Up Flashing	**Not Analyzed**			
10006031_0010					
BUF-3	Built-Up Flashing	**Not Analyzed**			
10006031_0011					
BUF-3	Built-Up Flashing	**Not Analyzed**			
10006031_0012					
PC-1	Parapet Cap Caulking	**None Detected**		**100% Other**	Black Non-Fibrous Homogeneous
10006031_0013					Dissolved
PC-2	Parapet Cap Caulking	**None Detected**		**100% Other**	Black Non-Fibrous Homogeneous
10006031_0014					Dissolved
PC-3	Parapet Cap Caulking	**None Detected**		**100% Other**	Black Non-Fibrous Homogeneous
10006031_0015					Dissolved
FC-1	Fire Caulking on Penetration	**None Detected**	**20% Fiber Glass**	**80% Other**	Red, Black Non-Fibrous Homogeneous
10006031_0016					Dissolved

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Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
FC-2	Fire Caulking on Penetration	None Detected	20% Fiber Glass	80% Other	Red, Black Non-Fibrous Homogeneous
10006031_0017					Dissolved
FC-3	Fire Caulking on Penetration	None Detected	20% Fiber Glass	80% Other	Black, Red Non-Fibrous Homogeneous
10006031_0018					Dissolved
RF-1	Residual Flashing	15% Chrysotile	20% Cellulose	65% Other	Black Fibrous Homogeneous
10006031_0019					Dissolved, Teased
RF-2	Residual Flashing	Not Analyzed			
10006031_0020					
RF-3	Residual Flashing	Not Analyzed			
10006031_0021					
FCR-1 - A	Built-Up Roofing	None Detected		100% Other	Silver Non-Fibrous Homogeneous
10006031_0022	*silver layer*				Dissolved
FCR-1 - B	Built-Up Roofing	15% Chrysotile	30% Cellulose	55% Other	Black Fibrous Heterogeneous
10006031_0037	*built up roofing*				Teased, Dissolved
FCR-2 - A	Built-Up Roofing	None Detected		100% Other	Silver Non-Fibrous Homogeneous
10006031_0023	*silver layer*				Dissolved

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Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
FCR-2 - B	Built-Up Roofing	**Not Analyzed**			
10006031_0038	*built up roofing*				
FCR-3 - A	Built-Up Roofing	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0024	*silver layer*				Dissolved
FCR-3 - B	Built-Up Roofing	**Not Analyzed**			
10006031_0039	*built up roofing*				
FCF-1 - A	Built-Up Flashing with Silver Coat	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0025	*silver layer*				Dissolved
FCF-1 - B	Built-Up Flashing with Silver Coat	**20% Chrysotile**	**30% Cellulose**	**50% Other**	Black Fibrous Heterogeneous
10006031_0040	*built up roofing*				Teased, Dissolved
FCF-2 - A	Built-Up Flashing with Silver Coat	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0026	*silver layer*				Dissolved
FCF-2 - B	Built-Up Flashing with Silver Coat	**Not Analyzed**			
10006031_0041	*built up roofing*				
FCF-3 - A	Built-Up Flashing with Silver Coat	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0027	*silver layer*				Dissolved

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Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
FCF-3 - B	Built-Up Flashing with Silver Coat	**Not Analyzed**			
10006031_0042	*built up roofing*				
CR-1	Built-Up Roofing with Ballast	**15% Chrysotile**	**30% Cellulose** **20% Fiber Glass**	**35% Other**	Silver Fibrous Heterogeneous
10006031_0028					Teased, Dissolved
CR-2	Built-Up Roofing with Ballast	**Not Analyzed**			
10006031_0029					
CR-3	Built-Up Roofing with Ballast	**Not Analyzed**			
10006031_0030	*Built up roof*				
CF-1 - A	Built-Up Flashing with Silver Coat	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0031	*silver coat*				Dissolved
CF-1 - B	Built-Up Flashing with Silver Coat	**20% Chrysotile**	**20% Cellulose**	**60% Other**	Black Fibrous Heterogeneous
10006031_0043	*built up roofing*				Dissolved, Teased
CF-2 - A	Built-Up Flashing with Silver Coat	**None Detected**		**100% Other**	Silver Non-Fibrous Homogeneous
10006031_0032	*silver coat*				Dissolved
CF-2 - B	Built-Up Flashing with Silver Coat	**Not Analyzed**			
10006031_0044	*built up roofing*				

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Christina Molnar (45)
Analyst

Approved Signatory

Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and
40 CFR, Part 763, Subpart E, App.E

NVLAP LAB CODE 200664-0

Lab ID # 173190

Customer: Terracon
72 Pointe Circle
Greenville, SC 29615

Attn: Stephen Ellis
George Flores

Project: WCU HFR Building Roofs FH226123

Lab Order ID: **10006031**
Analysis: PLM
Date Received: 09/13/2022
Date Reported: 09/15/2022

Sample ID *Lab Sample ID*	Description *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes Treatment
CF-3 - A	Built-Up Flashing with Silver Coat	None Detected		100% Other	Silver Non-Fibrous Homogeneous
10006031_0033	*silver coat*				Dissolved
CF-3 - B	Built-Up Flashing with Silver Coat	Not Analyzed			
10006031_0045	*built up roofing*				
CPC-1	Parapet Cap Caulking	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10006031_0034					Ashed
CPC-2	Parapet Cap Caulking	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10006031_0035					Ashed
CPC-3	Parapet Cap Caulking	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10006031_0036					Ashed

Christina Molnar (45)
Analyst

Approved Signatory

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

100106031

Client:	Terracon Greenville
Contact:	Stephen Ellis
Address:	72 Pointe Cir, Greenville, SC 29615
Phone:	423-426-2164
Fax:	
Email:	stephen.ellis@terracon.com
	george.flores2@terracon.com
Project:	WCU HFR Building Roofs
	FH226123
Client Notes:	Positive Stop
P.O. #.	
Date Submitted:	9/10/2022 0:00
Analysis:	PLM
TurnAroundTime:	3 Day TAT

"Instructions:
Use Column "B" for your contact info

To See an Example Click the bottom Example Tab.

Enter samples between "<<" and ">>"
Begin Samples with a "<< "above the first sample and end with a ">>" below the last sample.
Only Enter your data on the first sheet "Sheet1"

Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data.

Scientific Analytical Institute

4604 Dundas Drive
Greensboro, NC 27407
Phone: 336.292.3888
Fax: 336.292.3313
Email: lab@sailab.com

<<			
AF-1	5th Floor Roof	Asphaltic Fill	PLM
AF-2	Penthouse Base Short Side	Asphaltic Fill	PLM
AF-3	Penthouse Upper Roof	Asphaltic Fill	PLM
AF-4	Low Roof High Wall	Asphaltic Fill	PLM
BUR-1	5th Floor Roof	2 Ply Built Up Roofing	PLM
BUR-2	Penthouse Upper Roof	2 Ply Built Up Roofing	PLM
BUR-3	5th Floor Roof Center	2 Ply Built Up Roofing	PLM
BUR-4	Low Roof Drain Area	2 Ply Built Up Roofing	PLM
BUF-1	5th Floor Roof	Built-Up Flashing	PLM
BUF-2	Penthouse Base Long Side	Built-Up Flashing	PLM
BUF-3	Penthouse Upper Roof	Built-Up Flashing	PLM
BUF-3	Low Roof High Wall	Built-Up Flashing	PLM
PC-1	Penthouse Upper Roof	Parapet Cap Caulking	PLM
PC-2	Penthouse Upper Roof	Parapet Cap Caulking	PLM
PC-3	Penthouse Upper Roof	Parapet Cap Caulking	PLM
FC-1	Penthouse Base Short Side	Fire Caulking on Penetration	PLM
FC-2	Penthouse Base Short Side	Fire Caulking on Penetration	PLM
FC-3	Penthouse Base Short Side	Fire Caulking on Penetration	PLM

Accepted ☑
Rejected ☐

Relinquished By

Received By 9/13 10:30am

RF-1	Low Roof High Wall	Residual Flashing	PLM
RF-2	Low Roof High Wall	Residual Flashing	PLM
RF-3	Low Roof High Wall	Residual Flashing	PLM
FCR-1	Front Canopy Roof Field	Built-Up Roofing	PLM
FCR-2	Front Canopy Roof Field	Built-Up Roofing	PLM
FCR-3	Front Canopy Roof Field	Built-Up Roofing	PLM
FCF-1	Front Canopy Roof	Built-Up Flashing with Silver Coat	PLM
FCF-2	Front Canopy Roof	Built-Up Flashing with Silver Coat	PLM
FCF-3	Front Canopy Roof	Built-Up Flashing with Silver Coat	PLM
CR-1	Canopy Roof	Built-Up Roofing with Ballast	PLM
CR-2	Canopy Roof	Built-Up Roofing with Ballast	PLM
CR-3	Canopy Roof	Built-Up Roofing with Ballast	PLM
CF-1	Canopy Roof	Built-Up Flashing with Silver Coat	PLM
CF-2	Canopy Roof	Built-Up Flashing with Silver Coat	PLM
CF-3	Canopy Roof	Built-Up Flashing with Silver Coat	PLM
CPC-1	Canopy Roof Parapet Cap	Parapet Cap Caulking	PLM
CPC-2	Canopy Roof Parapet Cap	Parapet Cap Caulking	PLM
CPC-3	Canopy Roof Parapet Cap	Parapet Cap Caulking	PLM

>>

Relinquished By

Received By

END OF SECTION 017330

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements relating administrative and procedural requirements for contract closeout, including, but not limited to, the following.

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related sections include the following:

1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.

1.3 DESIGNERS FINAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Complete final cleaning requirements, including touchup painting.
3. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Completion. On receipt of request, Engineer and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will notify Contractor of items, either on Contractor's list or additional items identified by Owner, that must be completed or corrected before final completion inspection is scheduled.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Final Inspection shall be conducted as follows:

1. Contractor will have 14 days from Designers Final Completion to reach Final Completion.
2. The Engineer and Owner will conduct a final inspection of all work included in the contract as soon as possible after receiving written notification by the Contractor that the work is complete and ready for inspection.
3. The final inspection report shall be prepared by the Engineer and Owner listing observed deficiencies and furnished to the Contractor.

4. Upon satisfactory completion of all deficiencies, Contractor shall initial each item on the report certifying his compliance and return to the Engineer.
5. No portion of the final payment will be made until all items have been satisfactorily corrected and the project closeout documents submitted to the Engineer. Final payment shall be made within thirty (30) days of receipt of closeout documents.
6. All project completion documents are to be submitted within thirty (30) days following acceptance by the Owner.

B. Refer to Closeout Document Checklist at the end of this Section for all documents to be submitted and approved by Engineer.

C. Contractor shall submit a Certificate of Compliance prior to close-out of the project.

PART 2 - PRODUCTS

2.1 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

3.1 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 Substantial Completion for entire Project or for a portion of Project:

    a. Remove tools, construction equipment, machinery, and surplus material from Project site.
    b. 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.
    c. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
    d. Clean transparent materials, including glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish glass, taking care not to scratch surfaces.
    e. Remove labels that are not permanent.
    f. 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.

        1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

    g. 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.

CLOSEOUT DOCUMENTS CHECKLIST

- Asbestos Manifests.
- Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
- Updated final statement, accounting for final changes to the Contract Sum
- Certificate of Completion
- Contractor's Affidavit of Payment of Debts and Claims
- Contractor's Affidavit of Release of Liens
- Consent of Surety to Final Payment
- Contractor’s Warranty
- Metal Finish Warranty
- Manufacturer’s Warranty
- Copy of Manufacturer Inspection Reports
- Record Drawings
- Certificate of Compliance
- Fall Protection Certification documents
- Builder’s Risk Insurance Cancellation Certificate

THERMOPLASTIC MEMBRANE ROOFING SYSTEM WARRANTY
(on Contractor's Standard Letterhead)

Owner: Western Carolina University

Installer: _____

Location of Building: Cullowhee, North Carolina

Name of Building: HFR Building

Roof Areas: _____

Date of Substantial Completion: _____

Know all men by these presents, that we, Installer as defined above, having installed insulation, roofing, flashings and sheet metal work, and having accomplished certain other work on the roof areas identified above under contract between Owner and Contractor, warrant to Owner, with respect to said work that for a period of two (2) years from date of Final Completion of said work, the roofing including insulation, roofing membrane, flashings and sheet metal work, shall be absolutely watertight and free from all leaks, provided however that the following are excluded from this warranty:

Defects or failures resulting from abuse by the Owner.

Defects in design involving failure of (1) structural frame, (2) load-bearing walls, and (3) foundations.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars riots or civil commotion.

We, Installer, agree that should any leaks occur in the roofing we will promptly remedy said leaks in a manner to restore the roof to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice.

We, Installer, further agree that for a period of two (2) years from date of Final Completion referred to above, we will make repairs at no expense to the Owner, to any defects which may develop in the work including but not limited to open laps, blisters, wrinkles, ridges, splits, warped insulation, and loose flashings in a manner compatible to the system and acceptable under industry standards and general practice.

IN WITNESS WHEREOF, we have caused this instrument to be duly executed, this _____ day of _____ , 20 _____ .

_____
(Installer)

WITNESS:

by _____
President

_____

_____
Notary Public

The undersigned named Owner agrees, from the date of acceptance of the project, to maintain the roof in accordance with the manufacturers written requirements and agrees to avoid damage to the roof surface by any parties under his control working or walking on the roof. The Owner recognizes his responsibility to inspect the roof semi-annually.

_____
Owner Date

END OF SECTION 017700

SECTION 061000 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Rooftop equipment bases and support curbs.
2. Wood nailer.
3. Expansion joint.

B. Related Sections include the following:

1. Division 1 Section "Allowances."
2. Division 1 Section "Unit Prices."
3. Division 7 Section "Thermoplastic Membrane Roofing."
4. Division 7 Section "Sheet Metal Flashing and Trim."

1.3 DELIVERY, STORAGE AND HANDLING

A. Supply and keep all materials dry at all times prior to application.

B. Store all lumber/plywood in dry, covered storage, or on platforms, and with weatherproof, breathable type material such as heavy canvas. Materials which are not stored under specified covers are subject to removal from the site at Engineer's or Owner's discretion.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS

A. Lumber: No. 2 grade (or better) southern yellow pine or douglas fir unless specifically noted otherwise. Each piece of lumber shall bear the inspection stamp of the Southern Pine Inspection Bureau (SPIB) or the Western Wood Products Association (WWPA) indicating the grade and type of lumber.

1. Wood Preservative: Alkaline Copper Quaternary (ACQ) pressure-treatment conforming to AWPA Standard C-2 (above ground). Retention of preservative shall be 0.025 pcf. All material shall be kiln-dried after treatment to 19 percent or less moisture content.

B. Plywood: APA Rated Sheathing (CDX) with waterproof glue for exterior applications in thicknesses specified. All plywood shall comply with the requirements of U.S. Product Standard PS1-09 and each sheet shall clearly bear the APA trademark of the American Plywood Association. Minimum span rating for 1/2 inch plywood shall be 32/16 and shall be so marked on each sheet.

2.2 FASTENERS

A. Provide stainless steel fasteners at all locations where fastener will come into contact with pressure-treated lumber.

B. For securing lumber or plywood to lumber, provide stainless steel ring shank nails of sufficient length to penetrate a minimum of 1½ inches into the underlying member but not smaller than 8d nails.

C. For securing wood to concrete or masonry, secure using Tapcon Masonry fasteners at 12 inches on center, staggered.

D. For securing wood to steel, secure using self-drilling/self-tapping fasteners.

E. Anchor Bolts: ½ inch diameter, length to embed in concrete a minimum of 8 inches, with appropriately-sized nuts and washers.

PART 3 - EXECUTION

3.1 GENERAL

A. Furnish and install new nominal 6-inch wide wood blocking at all edges and openings as required for blocking to finish flush with the top of the roof insulation.

B. Secure wood nailers over existing nailers with ring shank fasteners or screws in two rows staggered and spaced not over 12 inches in each row.

C. Secure wood blocking and curbs at spacings of 8 inches on center in a staggered pattern.

D. Stagger fasteners when securing nominal 6 inch wide lumber or wider.

3.2 EXISTING WOOD

A. Remove all existing loose, wet, damaged or deteriorated wood blocking and discard. Install new wood blocking using the same size and thickness as existing.

B. Inspect existing wood blocking at perimeters. In the event current fastener spacing exceeds 8 inches on center, secure blocking with additional specified fasteners to achieve fastener rate of 8 inches on center or less.

3.3 WOOD BLOCKING

A. Furnish and install new wood blocking at all roof mounted equipment and hatches as required to provide a minimum flashing height of 8 inches above finished roof level.

B. Install new wood blocking at all expansion joints as required to provide a minimum flashing height of 8 inches above finished roof level.

END OF SECTION 061000

SECTION 070000 – ROOFING PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Preparations.
2. Deck repairs.
3. Connects and disconnects.
4. Overflow scupper resizing.
5. Roof drain replacement.

B. Related Sections include the following:

1. Division 1 Section "Allowances."
2. Division 1 Section "Unit Prices."
3. Division 6 Section "Rough Carpentry."

PART 2 - PRODUCTS

2.1 STEEL DECK REPAIR MATERIALS

A. Metal Deck Primer: Sherwin Williams Kem Kromik Universal Metal Primer or approved equal.

B. Sheet Metal for Steel Decks: 20 gauge galvanized steel.

C. Steel Deck: ASTM A 653, galvanized, G-90 deck, manufactured in accordance with the requirements of the Steel Deck Institute, Inc. for narrow rib (Type A) and wide rib (Type B). (Contractor to field verify deck type.) Minimum section properties:

1. Yield strength = 33 ksi.
2. Section Modulus: $0.111in^{3.}$
3. Moment of Inertia: $0.124in^{4.}$
4. Thickness: 22 gauge.

2.2 FASTENERS

A. Self-Drilling Fasteners: Stainless steel of sufficient length to secure steel such as #12 diameter TEKS 5.

B. TEKS 3 for side laps.

2.3 DRAIN MATERIALS

A. Roof Drains: Coated cast iron body with cast iron low-profile dome, with clamping ring and deck clamp assembly. Diameter as shown on Drawings. No hub connection.

B. Drain extensions, if required, provided by drain manufacturer.

2.4 MISCELLANEOUS MATERIALS

A. Steel Plate: For covering openings, 1/8 inch thick, single sheet sized to extend 6 inches beyond opening in all directions.

B. Single Component Polyurethane Sealant: ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, A and O.

C. Primer: As recommended by sealant manufacturer.

D. Primer: Rust-inhibitive primer.

E. Paint: To be applied over steel. Color to be selected by Owner.

PART 3 - EXECUTION

3.1 PREPARATION, GENERAL

A. Prior to commencement of any work, inspect and thoroughly water test all existing roof drains for free flow operation with Owner's maintenance personnel present. Report drain restrictions to Engineer and Owner. Owner's maintenance personnel shall perform repairs to remove any restrictions found. Should drains become clogged at any time after the start of work, correct the condition at no additional expense to the Owner.

B. All vents, hatches and mechanical units must be raised to provide an 8 inch base flashing height above the finished roof system.

C. Prior to the installation of any new roofing, flashings, and metal flashings, clean surfaces of all dust, dirt and other foreign matter.

D. Furnish and install new primer and paint at all exhaust vents, power ventilators and stack vents as specified herein:

1. Remove all loose rust by wire brushing. Sweep away all dirt, dust and debris prior to paint and primer application.
2. Apply one coat of Sherwin Williams Kem Kromik Universal Metal Primer rust-inhibitive primer and two coats of fibrated aluminum roof coating to match roof surface.

E. Over all openings in deck, install new steel plate. Secure to deck using specified fasteners spaced not over 6 inches on center at all edges.

F. Extend all existing vents through the roof to the height required by the local plumbing code but not less than 8 inches above finished roof level.

G. Wire brush, prime and paint rusted mechanical vents.

3.2 CONNECTS AND DISCONNECTS

A. In the event it is necessary to disconnect any electrical wiring or connections, plumbing lines or other building services, notify the Owner. Contractor shall not disconnect or connect services unless authorized in writing by Owner.

B. Modification of existing service piping, wiring and duct work required in connection with the lifting, removal or relocation of roof mounted equipment shall be accomplished by this Contractor and is to be included in the Proposal price.

C. All costs required in connection with electrical and/or mechanical service connections/disconnections, including satellites and weather stations, are to be included in the Bid price. All associated work is to be accomplished by appropriately licensed personnel in accordance with all applicable codes and regulations.

D. Contractor shall review roof top equipment usage with Owner and facility user at beginning of project. Equipment determined to be essential to the operations of the facility may only be disabled at those times prescribed by the Owner. This may require the contractor to work at other than normal operating hours.

3.3 STEEL DECK REPAIR

A. Where steel deck is rusted but remains structurally sound, thoroughly clean deck units of rust and foreign matter with a wire brush. Paint with specified metal primer.

B. Where steel deck is damaged or rusted through in small areas, smaller than 2’ by 2’, clean deck units of rust with a wire brush. Paint with specified metal primer. Install over the damaged area a steel plate secured to the existing steel deck with sheet metal screws around the perimeter of the plate at 6 inches on center. Extend the new steel plate a minimum of 6 inches onto the surface of the existing steel deck beyond the damaged area.

C. Where steel deck units are severely damaged or have deteriorated over large areas, larger than 2’ by 2’, remove the entire existing deck unit and install new decking of the same type and gauge as the existing. Lap new deck units over the existing the same manner as originally installed but not less than 6 inches. Lap ends only over structural framing. Secure to structural framing with specified fasteners at 6 inches on center at each framing member. Secure deck side laps at not more than 36 inches on center.

D. Secure all existing loose steel deck to roof framing members using specified fasteners placed 12 inches on center at each available framing member.

E. Secure metal deck side laps with specified fasteners at spacings not exceeding 36 inches from each other or nearest deck support. For deck supports (framing members) spaced greater than 36 inches on center and less than 72 inches on center, install a single side lap fastener at midspan between framing members.

F. At all changes in direction, install specified steel plate 6 inches across change in direction on each side and secure using specified fasteners at 6 inches on center around the perimeter.

3.4 OVERFLOW SCUPPER

A. Locate bottom of overflow scupper as indicated on plans or no more than 4 inches above surface of the roof system adjacent to the nearest roof drain (excluding sump).

B. Remove existing precast concrete as required. Halt work and notify Engineer if reinforcing is encountered.

C. Extend opening through entire thickness of parapet. Take precautions to avoid damaging adjacent wall surfaces.

D. Provide finished openings as indicated on Drawings.

3.5 COUNTERFLASHING PREPARATION

A. Neatly bend existing counterflashing receiver up at walls as required to completely remove existing base flashings and to install new base flashings. After installation of new base flashings, neatly bend counterflashing receiver back in place using sufficient care to prevent deformation to the finished counterflashing receiver. Rivet new counterflashing to the existing at 6-inches on center.

B. Cut new raggle in walls above roof level for installation of new metal counterflashings. Provide a minimum height of 8 inches above finished roof level.

1. Saw raggle to a minimum depth of 1-1/2 inches in a straight line to allow proper installation of new counterflashings. Utilize all procedures necessary including, but not limited to, saw guides to ensure straight, clean raggles.

3.6 DRAIN AND LEADER INSTALLATION

A. Remove all existing drains and install new drains as specified and matching the existing drain diameter.

B. Set drain bowl next to deck and secure bowl to underside of deck with under-deck clamp supplied by drain manufacturer.

C. If the underside of the deck is not accessible, secure drain by other means acceptable to Engineer. Consult drain manufacturer for alternative means of securement and submit shop drawings to Engineer for approval prior to ordering drain materials.

D. Install new drain extensions to match new insulation thicknesses, over drain bowl using manufacturer-supplied extensions, gaskets, and fasteners.

E. Seal drain to roof leaders in accordance with manufacturer’s latest printed instructions for type of drain specified using only manufacturer-supplied gaskets, seals, clamps, etc.

F. Thoroughly water test all joints upon completion.

G. Upon completion of membrane and flashing installation at drains, install drain clamping rings at all new and existing drains with new manufacturer-supplied bolts of sufficient length to properly engage drain bowl lugs.

END OF SECTION 070000

SECTION 074213 – FORMED METAL WALL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Flush-profile, concealed fastener metal wall panels, with related metal trim and accessories.

1.3 RELATED REQUIREMENTS

A. Division 05 Section "Cold-Formed Metal Framing" for cold-formed metal framing supporting metal panels.

B. Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal flashing items in addition to items specified in this Section.

1.4 REFERENCES

A. American Architectural Manufacturer's Association (AAMA): www.aamanet.org:

1. AAMA 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.
2. AAMA 809.2 Voluntary Specification Non-Drying Sealants.

B. American Society of Civil Engineers (ASCE): www.asce.org/codes-standards:

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International (ASTM): www.astm.org:

1. ASTM A755 - Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
2. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
3. ASTM C920 - Specification for Elastomeric Joint Sealants.
4. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
5. ASTM D4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.
6. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

D. International Accreditation Service (IAS):

1. IAS AC472 Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems, Part B.

1.5 QUALITY ASSURANCE

A. Manufacturer/Source: Provide metal panel assemblies and accessories from a single manufacturer accredited under IAS AC472, Part B.

B. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum five years experience in manufacture of similar products in successful use in similar applications.

1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
   a. Product data, including certified independent test data indicating compliance with requirements.
   b. Samples of each component.
   c. Sample shop drawings from similar project.
   d. Project References: Minimum of five installations not less than three years old, with Owner and Architect contact information.
   e. Sample warranty.
   f. Certificate of accreditation under IAS AC472 Part B.
2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
3. Approved manufacturers must meet separate requirements of Submittals Article.

C. Installer Qualifications: Experienced Installer certified by metal panel manufacturer with minimum of five years experience with successfully completed projects of a similar nature and scope.

1. Installer's Field Supervisor: Experienced mechanic certified by metal panel manufacturer supervising work on site whenever work is underway.

1.6 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Prior to erection of framing, conduct preinstallation meeting at site attended by Owner, Architect, metal panel installer, metal panel manufacturer's technical representative, inspection agency and related trade contractors.

1. Coordinate building framing in relation to metal panel system.
2. Coordinate openings and penetrations of metal panel system.

1.7 ACTION SUBMITTALS

A. Product Data: Manufacturer’s data sheets for specified products. Include data indicating compliance with performance requirements.

B. Shop Drawings: Show layouts of metal panels. Include details of each condition of installation, panel profiles, and attachment to building. Provide details at a minimum scale 1-1/2-inch per foot of edge conditions, joints, fastener and sealant placement, flashings, openings, penetrations, and special details. Make distinctions between factory and field assembled work.

1. Indicate points of supporting structure that must coordinate with metal panel system installation.
2. Include structural data indicating compliance with performance requirements and requirements of local authorities having jurisdiction.

C. Samples for Initial Selection: For each exposed product specified including sealants. Provide representative color charts of manufacturer's full range of colors.

D. Samples for Verification: Provide 12-inch- (305 mm-) long section of each metal panel profile. Provide color chip verifying color selection.

1.8 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Indicating compliance of products with requirements.

B. Qualification Information: For Installer firm and Installer's field supervisor.

C. IAS Accreditation Certificate: Indicating that manufacturer is accredited under provisions of IAS AC472 Part B.

D. Manufacturer's warranty: Unexecuted sample copy of manufacturer's warranty.

1.9 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Manufacturer's Warranty: Executed copy of manufacturer's warranty.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.

B. Deliver, unload, store, and erect metal panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

C. Store in accordance with Manufacturer's written instruction. Provide wood collars for stacking and handling in the field.

D. Shield foam insulated metal panels from direct sunlight until installation.

1.11 WARRANTY

A. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and workmanship within one year from date of Completion.

B. Special Panel Finish Warranty: On Manufacturer's standard form, in which Manufacturer agrees to repair or replace metal panels that evidence deterioration of factory-applied finish within the warranty period, as follows:

1. Fluoropolymer Two-Coat System:
   a. Basis of Design System: MBCI, Signature 300.
   b. Color fading in excess of 5 Hunter units per ASTM D 2244.
   c. Chalking in excess of No. 8 rating per ASTM D 4214.
   d. Failure of adhesion, peeling, checking, or cracking.
   e. Warranty Period: Forty (40) years from date of Substantial Completion

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Approved Manufacturers:

1. MBCI
2. McElroy Metal
3. CMP
4. Metal Roofing Systems Inc.
5. Berridge Manufacturing Company

B. Other manufacturers shall be approved by Engineer prior to bid.

2.2 PERFORMANCE REQUIREMENTS

A. General: Provide metal panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

B. Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated, as determined by ASTM E1592:

1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.
   a. Wind Negative Pressure: Certify capacity of metal panels by actual testing of proposed assembly.
2. Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of 1/120 of the span with no evidence of failure.

C. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

2.3 FORMED METAL WALL PANELS

A. Flush-Profile, Concealed Fastener Metal Wall Panels: Structural metal panels consisting of formed metal sheet with vertical panel edges and flat pan, with flush joints between panels, field assembled with nested lapped edges, and attached to supports using concealed fasteners.

1. Nominal Thickness: 24 gage coated thickness, with smooth surface.
   a. Exterior Finish: Fluoropolymer two-coat system.
   b. Color: As selected by Owner from manufacturer's standard colors.
2. Panel Width: 12 inches (305 mm).
3. Panel Thickness: 1-3/4 inch (44 mm).
4. Attachment Spacing: Existing attachment spacing is approximately 4-foot on center. Provide panels capable of spanning this distance.

2.4 MISCELLANEOUS MATERIALS

A. General: Provide complete metal panel assemblies incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panels.

C. Panel Fasteners: Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by means of factory-applied coating, with weathertight resilient washers.

2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels, trim, and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings.

2.6 FINISHES

A. Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

B. Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621.

1. Basis of Design: MBCI, Signature 300.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine metal panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.

1. Inspect framing that will support insulated metal panels to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to metal panel manufacturer and installer. Confirm presence of acceptable framing members at recommended spacing to match installation requirements of metal panels.

B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal panel installation.

3.2 METAL PANEL INSTALLATION

A. Concealed-Fastener Formed Metal Panels: Install metal panel system in accordance with manufacturer's written instructions, approved shop drawings, project drawings, and referenced publications. Install metal panels in orientation, sizes, and locations indicated. Anchor panels and other components securely in place. Provide for thermal and structural movement.

B. Fasten metal panels to supports with fasteners at each location indicated on approved shop drawings, at spacing and with fasteners recommended by manufacturer. Fasten panel to support structure through leading panel flange. Snap-fit back flange of subsequent panel into secured flange of previous panel. Where indicated, fasten panels together through flush-fitted panel sides.

1. Cut panels in field where required using manufacturer's recommended methods.
2. Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by metal panel manufacturer.

C. Attach panel flashing trim pieces to supports using recommended fasteners.

3.3 ACCESSORY INSTALLATION

A. General: Install metal panel accessories with positive anchorage to building and weather tight mounting; provide for thermal expansion. Coordinate installation with flashings and other components.
   1. Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.
   2. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.
   3. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

3.4 CLEANING AND PROTECTION

A. Clean finished surfaces as recommended by metal panel manufacturer.

B. Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

END OF SECTION 074213

SECTION 074500 – THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Thermoplastic membrane roofing.
2. Cover board.
3. Roof insulation.
4. Gypsum Underlayment
5. Temporary Roof Membrane

B. Related Sections include the following:

1. Division 7 Section "Reroofing Preparation."
2. Division 7 Section "Sheet Metal Flashing and Trim."

1.3 PERFORMANCE REQUIREMENTS

A. Provide a roofing system that complies with the requirements of Underwriters' Laboratories, Inc. for a Class A roof covering.

B. Provide roofing system meeting the Ultimate (LRFD) Wind Uplift Pressures identified on the drawings.

1.4 SUBMITTALS

A. Materials List: Give written notification of the brand name and manufacturer of each material proposed for use and include a statement that all proposed materials meet the specification requirements. Obtain approval prior to placing orders.

1. Submittal of catalog cut sheets, etc. in lieu of the materials list required above is not acceptable.

B. Manufacturers' Installation Instructions.

C. Tapered Insulation Shop Drawings: Submit proposed tapered insulation and cricket system for approval prior to start of work. Provide drawings for each area and include, at a minimum, concise tapered layouts, material identification, cross sections of typical sections with each board labeled, board stagger pattern, slopes and cricket widths.

D. Manufacturer Certificates: As follows:

1. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is

approved, authorized, or licensed by manufacturer to install roofing system.

2. System Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
3. Material Certificates: Original document signed by a responsible officer of the firm, notarized, on manufacturer's standard letterhead, certifying materials furnished for project comply with the referenced standard. Specifically reference the project and applicable compliance standard on certificate.

E. Polyisocyanurate Insulation Certificate: Signed by insulation manufacturer stating that polyisocyanurate insulation shipped to this project complies with requirements listed in Part 2.

F. Warranties: As specified in this Section.

G. Inspection Reports: Copy of roofing system manufacturer's inspection reports.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver all materials to site in original containers bearing manufacturers' name and type of material. All materials used in roof membrane must have appropriate Underwriters' Laboratories, Inc. labels.

B. Supply and keep all materials dry at all times prior to application.

C. Store all insulation, cover board, and tapered edge strips in dry, covered storage, or on platforms, and with weatherproof coverings. Coverings shall be waterproof breathable type material such as heavy canvas. Insulation wrappers are not sufficient. Materials which are not stored under specified covers are subject to removal from the site at Engineer's or Owner's discretion.

D. Store all roll goods on end (does not apply to rolls over 5 foot long) on clean floors or platforms in their manufacturers' wrapper. Do not use flattened rolls or rolls with ends damaged.

E. Materials which, in the opinion of the Engineer, have been prematurely exposed to the weather are subject to immediate removal by the contractor and replaced with new materials at contractor's expense. Engineer may, at Engineer's option, mark such materials with paint or other indelible materials while they remain on-site.

F. Store solvent bearing materials in dry, cool storage and keep lids tight on partially used containers to prevent escape of solvents.

1.6 WARRANTIES

A. Installer's Warranty: Installer's warranty, on form included in these specifications, signed by roofing Installer, properly executed and printed on Installer's letterhead form.

1. Warranty Period: Five (5) years from date of Final Completion.

B. Roofing System Guarantee: Manufacturer's Standard Form without monetary limitation 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.

1. Roofing system guarantee includes roofing membrane, base flashings, cover board, roof insulation, and other components of roofing system.
2. Guarantee Period: Twenty (20) years from date of final completion. Nothing herein is to be interpreted or construed as changing any provisions of the specifications except as stated herein.

PART 2 - PRODUCTS

2.1 GENERAL

A. Listed in this section are specifications for materials required generally for use in accomplishing the work specified. Materials not listed may also be required.

B. Except as specifically noted herein, all reference standards included herein are to be presumed to be the latest published editions of such standards available as of the issue date of these specifications.

C. Brand or manufacturer names are used as standards of quality where no other appropriate reference is available. The Engineer (or Owner) will consider substitution of materials of equal quality and properties provided a written request accompanied by substantiating data is received by him at least 10 days prior to bid date.

D. Where a generic product or a general manufacturer's product is specified and more than one such product is offered by the manufacturer, it is understood that only the manufacturer's premium materials are approved for this project.

E. All roofing system components used on this project shall be compatible and approved for use by the roofing system manufacturer and shall qualify for the specified roofing system guarantee.

2.2 MANUFACTURERS

A. For purposes of these documents, the roof system manufacturer is defined as the manufacturer of the primary roof membrane. The roof system is intended to encompass, but is not necessarily limited to, all components above the structure including roof insulation, metal panels, membrane and metal flashings and any proprietary flashing/components of the system manufacturer. Subject to compliance with the material specifications of these documents, all materials are to be supplied by the same manufacturer.

B. All materials used in systems to be covered by a Manufacturer's Guarantee must be supplied by the same manufacturer, unless the manufacturer issuing the guarantee waives this requirement in writing.

C. The following material manufacturers are approved for this project. Such approval does not relieve the Contractor from the requirement to supply materials which meet all other requirements of these Specifications.

1. Sarnafil Inc.
2. FiberTite, Seaman Corporation
3. Soprema

2.3 FLEXIBLE SHEET MEMBRANE MATERIALS

A. Membrane: The following membranes, meeting the requirements of the warranty, are approved for use on this project.

1. PVC Sheet: ASTM D 4434, Type II, Grade 1, fiber reinforced, as follows:
   a. Exposed Face Color: White.

2. KEE Sheet: ASTM D6754
   a. Exposed Face Color: White.

B. Adhesive: Solvent-based contact adhesive.

C. Base Flashing: As recommended by membrane manufacturer.

D. Walkpads: As recommended by membrane manufacturer.

E. Pre-fabricated Flashing Components: Provide other pre-fabricated components as required, such as corner flashing, vent stacks, etc.

F. Miscellaneous Products: Sealants, preformed sealant pockets, primers and cleaners supplied by the membrane manufacturer.

2.4 ROOF INSULATION MATERIALS

A. Polyisocyanurate Roof Insulation: Rigid, cellular polyisocyanurate thermal insulation with core formed by using HCFCs as blowing agents complying with ASTM C 1289, Type II, with glass-fiber mat on both major surfaces. Maximum board size shall be 4' x 4' for adhered boards and 4x8 for mechanically attached boards. No organic facers shall be used.

B. Polyisocyanurate insulation shall be manufactured to meet the following requirements in addition to the requirements above:

1. Min. Compressive Strength: 20 psi
2. Dimensional Stability: 2% maximum linear change when conditioned at 158°F and 97% relative humidity
3. Min. Curing Time: 24 hrs. plus 24 hrs. for each inch of thickness at a minimum of 60°F before shipment from manufacturer
4. Maximum Board thickness: 3 inches

C. Contractor shall submit a statement from manufacturer of polyisocyanurate insulation stating they will certify compliance of material shipped to this project with these requirements.

D. Gypsum Cover Board: ASTM C 1177, non-structural board, glass mat embedded, water-resistant gypsum core, factory primed, 1/2 inch thick.

1. Maximum board size: 4' x 4'.

E. Gypsum Underlayment: ASTM C 1177, non-structural board, glass mat embedded, water-resistant gypsum core, factory primed, 5/8 inch thick.

1. Maximum board size: 4' x 8'.

F. Tapered Edge Strips: ASTM C 208, wood fiberboard, 1-1/2 inch at thick edge.

G. Insulation Adhesive: Two component, low rise polyurethane foam, approved by membrane manufacturer for insulation and substrates on this project.

2.5 TEMPORARY MEMBRANE

A. Base Ply: ASTM D 5147 and D 6162, Type I, Grade S, or D 6163 , Type I, Grade S, minimum thickness of 120 mil, SBS-modified asphalt sheet, suitable for application method specified and as follows:

1. Installation Method: Cold process or torch applied.

2.6 FASTENING DEVICES

A. Termination Bar: Extruded aluminum bar, 1 inch by 1/8 inch, with pre-punched holes at 6 inches on center.

B. Insulation Fasteners and Plates: Plated steel fastener and 3 inch diameter round or 3 inch square steel plate as manufactured by or specifically recommended by the roof system manufacturer. Fasteners should be capable of resisting specified uplift pressure.

C. Masonry Anchors: Stainless steel screw anchor for use in concrete, brick or concrete masonry units manufactured with threads for cutting into walls of pre-drilled opening to provide tight friction fit, 1/4 inch diameter, 1.5 inch minimum length.

2.7 FALL PROTECTION

A. Provide fall protection based on plan details.

B. Building anchorages, tie-downs, and any other affected parts of the building shall be designed and certified by a North Carolina registered Professional Engineer (PE) with extensive experience in fall protection to provide the most appropriate fall prevention/protection solution.

2.8 FLUID APPLIED PIPE AND PENETRATION FLASHING:

A. Provided by roof membrane manufacturer

B. Included in the roof system warranty.

C. Fabric reinforcing: As recommended by roof manufacturer.

2.9 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Non-Penetrating Rooftop Support/Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, and not requiring any attachment to roof structure and not penetrating roofing assembly.

1. Design Loadings and Configurations: As required by applicable codes.

2. Height: Provide minimum clearance of 6 inches under supported items to top of roofing.

3. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.

4. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

5. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

B. Pipe Supports: Provide attachment fixtures complying with MSS SP-58 and as indicated.

1. Attachment/Support Fixtures: As recommended by manufacturer; corrosion resistant material.

PART 3 - EXECUTION

3.1 SYSTEM SCHEDULE

A. Refer to Table 1 for a general schedule of the primary roof components (described from the bottom up) for the roof area. Methods of installation and related materials are in other sections of these specifications.

Table 1: Roof System Schedule

Areas A, B and D	Area A1	Area C	Areas E and E1
Metal deck	Metal deck	Metal deck	Concrete Deck
5/8" gypsum underlayment (mechanically attached)	5/8" gypsum underlayment (mechanically attached)	5/8" gypsum underlayment (mechanically attached)	2.6-inch polyisocyanurate insulation (adhered)
Temporary modified bitumen roof membrane (cold or torch applied)	Temporary modified bitumen roof membrane (cold or torch applied)	1/2" gypsum cover board over tapered insulation crickets (adhered)	2-inch polyisocyanurate insulation (adhered)
2.6-inch polyisocyanurate insulation (adhered)	2.6-inch polyisocyanurate insulation (adhered)	Fully adhered single ply membrane	1/4-inch per foot tapered polyisocyanurate insulation (adhered). Starting at ½-inch
2.6-inch polyisocyanurate insulation (adhered)	2-inch polyisocyanurate insulation (adhered)		1/2" gypsum cover board (adhered)
1/2" gypsum cover board (adhered)	1/4-inch per foot tapered polyisocyanurate insulation (adhered). Starting at ½-inch		Fully adhered single ply membrane
Fully adhered single ply membrane	1/2" gypsum cover board (adhered)		
	Fully adhered single ply membrane		

3.2 EXAMINATION

A. Inspect all surfaces to receive work specified herein. Application of materials constitutes approval of the substrate as being satisfactory.

B. Do not proceed with roofing until all vents, drains, curbs, cants, blocking, nailing strips, and projections through the roof deck have been installed.

3.3 INSTALLATION, GENERAL

A. Do not apply materials on wet or damp surfaces, over dust, dirt, or other foreign matter.

B. Accomplish application of roofing materials so that each area will be complete at the end of each workday.

C. Protect edges and incomplete flashings against water entry at all times. Remove cut-offs and temporary protection prior to resumption of work.

D. Where work detailing affects adjacent roof areas, contractor is to coordinate with existing roofing manufacturer as to not affect the existing manufacturer's warranty.

E. Contractor shall by all means necessary, prevent odors from entering building.

F. Install materials in accordance with manufacturers instructions, in manner that maintains roofing system warranty.

3.4 GYPSUM UNDERLAYMENT APPLICATION

A. Clean deck surfaces of all dirt, dust and other foreign matter.

B. Furnish and install new 5/8 inch thick gypsum underlayment over metal decks.

C. On metal decks, apply gypsum sheathing with long dimension of units across deck ribs. On open rib steel decks, ends of units must bear on deck surface.

D. Apply gypsum with end joints staggered approximately one-half the length of units.

E. Fit all gypsum units snugly to each other and to all vertical surfaces.

F. Where gypsum underlayment is to be mechanically fastened, fasten with the number of fasteners as required by the manufacturer to meet the specified wind pressures.

1. Provide insulation fasteners of lengths sized to engage top flange of metal deck a minimum of 3/4 inch and a maximum of 1-1/2 inches.
2. Fasteners shall be a minimum of 6 inches away from any edge of board.

3.5 TEMPORARY MEMBRANE INSTALLATION

A. Apply new torch or cold adhesive grade SBS modified bitumen material in strict accordance with manufacturer's latest printed instructions except as amended in this section.

B. Lap ends at least 6 inches and sides at least 4 inches.

C. Starting at low point in roof, apply base ply. Apply uniformly and without voids. Press into full contact with substrate.

D. Contractor shall provide means of draining standing water from the temporary roof surface where standing water occurs. This includes but is not necessarily limited to the use of sump pumps.

3.6 INSULATION APPLICATION

A. Clean surfaces of all dirt, dust and other foreign matter.

B. Furnish and install new base insulation, and tapered polyisocyanurate insulation, as specified herein.

C. Refer to Roof System Schedule and plans for all locations to receive base layer, and tapered polyisocyanurate insulation.

D. Insulation set in adhesive:

1. Set each layer of insulation in cold fluid applied adhesive with ribbons spaced as directed by the manufacturer to meet the specified wind pressures.

E. Stagger all joints off those of preceding layer.

F. Fit all insulation units snugly to each other and to all vertical surfaces.

G. Apply insulation in two or more separate layers.

H. Form crickets as specified herein:

1. Form crickets along the upslope side of all curb mounted equipment with base widths exceeding 24 inches using factory tapered polyisocyanurate insulation and fill units and tapered edge strips.
2. Form slope between drains using factory tapered polyisocyanurate insulation units, polyisocyanurate insulation fill units, and tapered edge strips.
3. Start cricket construction by striking chalk lines for outer edges of tapered edge strips. Install edge strips along chalk lines, mitering and fitting at the points where lines break.
4. Build crickets over the base layer insulation. Take special care to prevent water penetration into crickets during construction.
5. Unless noted otherwise all crickets are to be fabricated from tapered stock as required to provide an installed slope matching that of the adjacent roof area. For example, where the roof slope is 1/4 inch per foot, crickets are to be fabricated from 1/2 inch per foot stock to provide an installed slope of 1/4 inch per foot.
6. Adhere insulation units as described previously.
7. Provide tapered edge strips as required along cricket edges to provide a smooth transition.
8. Install crickets of sufficient size and slope as required to ensure complete drainage and prevent standing water. Fabricate full crickets between drains with a minimum width-to-length ratio of 0.5 on areas A and A1 and 0.25 on areas B, C, and D. Fabricate partial crickets with dimensions which would result in a minimum width-to-length ratio of 0.25 if they were extended to full size.
9. Fabricate crickets sufficiently wide as to result in valleys with positive slopes of not less than 1/16 inch per foot.

I. Taper insulation down to drains beginning at a point approximately 24 inches from drain. There is to be a 1 inch change from the top of the drain sump to the drain. Furnish and install drain extensions as required to elevate drain level.

J. Form tapered insulation system using factory tapered polyisocyanurate insulation units and polyisocyanurate insulation fill units.

1. Provide a completed slope of 1/4 inch per foot.
2. Provide a starting thickness of ½ inch.

K. Form sumps from factory tapered insulation sloped at a minimum ½ inch per foot.
1. Sumps shall extend two feet out from the center of the drain in each direction.

3.7 COVER BOARD INSTALLATION

A. Install cover board in specified adhesive as described herein.

1. Follow ribbon spacing specified for insulation adhesives.
2. Set cover board into cold adhesive immediately after application while adhesive is still soft and tacky.
3. Stagger all joints off those of preceding layer.
4. Apply high density cover board with end joints staggered approximately one-half the length of units.

B. Ensure full adhesion of all layers of insulation and take whatever steps necessary to achieve full adhesion including, if necessary, temporary ballasting of insulation until adhesive sets.

C. Provide an insulation thickness at eaves as required to maintain edge metal-fascia at uniform elevation and with uniform face widths. Install additional tapered edge strips at eaves, etc. as required to meet this requirement.

3.8 MEMBRANE INSTALLATION

A. Install membrane in strict accordance with manufacturer's recommendations.

B. Unroll membrane and allow to relax before installing.

C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer.

D. Apply bonding adhesive to substrate and underside of roofing membrane at rate(s) required by roofing manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.

E. Mechanically fasten roofing membrane securely at terminations, penetrations and perimeter of roofing.

F. Apply membrane with side laps shingled with slope of roof where possible.

G. Seams: Clean seam areas, overlap roofing membrane and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.

H. Repair tears, voids and lapped seams in roofing that do not meet requirements.

I. Contractor must perform pull tests daily to verify proper bonding at seams and maintain a daily log.

3.9 FLASHING APPLICATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate(s) and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Weld side and end laps to ensure a watertight seam installation.

E. At vertical terminations, terminate and seal top of sheet flashings and mechanically anchor to substrate with specified fasteners through specified termination bar approximately 1 inch below top edge and spaced not over 6 inches on center.

F. Unless specifically stated otherwise in these specifications or on drawings all base flashings are to extend a minimum of 8 inches above finished roof level. Costs for modifications to parapets, equipment curbs, expansion joint curbs, etc. are to be included in the contractor's bid.

G. Fasten base flashing using specified fasteners and termination bar.

H. Follow roofing system manufacturer's instructions for installation and securement of wall flashings when wall height exceeds maximum for base flashing material.

I. Where bituminous materials are present on substrates coming in direct contact with the membrane, Contractor shall remove bituminous materials by any means necessary without compromising the substrate.

3.10 DRAIN FLASHING INSTALLATION

A. Provide a smooth transition from the roof surface to drain clamping ring. Prepare the substrate around each roof drain to avoid membrane bridging at the sump area and possible distortion at the drain clamping ring. Use drain extensions as necessary.

B. Locate membrane field splices a minimum of 24 inches outside drain sump.

C. Cut the membrane so it extends approximately ½ inch beyond the attachment points of the drain clamping ring. Ensure hole is no smaller than drain leader.

D. Provide water cut-off mastic under compression between membrane and drain base.

3.11 FALL PROTECTION INSTALLATION

A. Fall protection installer shall install specified fall protection to locations indicated on plans.

B. Upon close out, the qualified designer and installer shall provide the following:

1. Ensure that documentation of anchorage certification and annual recertification requirements are provided to the Owner prior to the system being put to use.
2. Training to the Owner on the use of the system and system maintenance requirements.
3. Detailed and printed user instructions for the fall arrest system. At a minimum, the instructions shall include the following:
    a. Manufacturer's name, address, and telephone number.
    b. Manufacturer's user instruction for the part and model number
    c. Statement of manufacturers intended use and purpose.
    d. Description of proper methods and limitations on use.
    e. Printed information or illustration of fixed equipment markings
    f. Description of detailed inspection/recertification procedures for fall arrest system.
    g. Criteria for failing inspections and determining unusable equipment.
    h. Procedures for maintenance and repair requirements
    i. Who is authorized to make adjustments and repair to equipment.
    j. Appropriate warnings regarding altering, misusing, and limitation of equipment.
4. Submit reduced shop drawings of the fall protection system to be posed at all roof accesses.
5. Submit manufactures warranty information and documentation that the system was installed in accordance with the manufactures instructions.

3.12 WALKWAY APPLICATION

A. Install new walkway at all locations indicated on Drawings as specified herein.

B. Install new walkway on all sides of all major equipment (motorized equipment, scuttles, or any rooftop unit with any single dimension greater than 4 feet).

C. Adhere flexible walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

END OF SECTION 074500

SECTION 076200 – SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Sheet metal flashing and trim.

B. Related Sections include the following:

1. Division 7 Section "Thermoplastic Membrane Roofing."

1.3 SUBMITTALS

A. Materials List: Give written notification of the brand name and manufacturer of each material proposed for use and include a statement that all proposed materials meet the specification requirements. Obtain approval prior to placing orders.

1. Submittal of catalog cut sheets, etc. in lieu of the materials list required above is not acceptable.

B. Submit shop drawings of all specified types of metal shapes, showing details of proposed installation where appropriate.

C. Submit two 6-inch long samples of each metal shape.

D. Manufacturer Certificates: Original document signed by a responsible officer of the manufacturing firm, notarized, on manufacturer's standard letterhead, certifying materials furnished for project comply with the referenced standard. Certificate shall specifically reference the project and applicable compliance standard.

E. Color Chart: Manufacturer's standard range of colors for prefinished metals, including available gauges.

F. Obtain approval of shop drawings, samples and certifications prior to fabrication and installation.

G. Do not purchase, fabricate or install any sheet metal item until all required shop drawings and related submittals for each item are approved. Items purchased, fabricated and/or installed which are not in compliance with approved shop drawings are subject to immediate removal from the project at contractor's expense.

1.4 STORAGE

A. Restrict on-site storage to minimum for work in progress. Protect all stored metal from exposure to weather and physical damage.

1.5 WARRANTIES

A. Upon completion of the work, furnish from manufacturer a standard twenty (20) year finish warranty.

B. Finish: Deterioration includes, but is not limited to, the following:

1. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
2. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
3. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

PART 2 - PRODUCTS

2.1 SHEET METAL MATERIALS

A. Prefinished Galvalume Steel: Aluminum-zinc alloy-coated steel sheet meeting ASTM A 792, Class A 750, coating designation, Grade 40 (Class AZM 150 coating designation, Grade 275), structural quality with Kynar 500®. Color to be selected by Owner.

B. Exposed Finish Kynar ® 500 Based fluoropolymer coating, containing not less than 70% polyvinylidene fluoride resin by weight. Mask metal with protective film.

C. Color: As selected by Owner from manufacturer’s full range.

D. Membrane Clad Metal: 24 gauge galvanized steel with factory aminated membrane material supplied by manufacturer.

2.2 COPING

A. Factory fabricated to sizes required; corners mitered; concealed fasteners.
1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
3. Material: See Sheet Metal Schedule
4. Finish: 70 percent polyvinylidene fluoride.
5. Color: As selected by Owner from manufacturer's standard range.
6. Joints: Use standing seam joints for coping under 18 inches wide. Use 6 inch cover and 6 inch backup plates with three beads of sealant at coping over 18 inches.

2.3 ROOF EDGE FLASHING

B. Factory fabricated to sizes required; concealed fasteners.
1. Configuration: Fascia, and edge securement for roof membrane.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
3. Exposed Face Height: As indicated on drawings.
4. Material: See Sheet Metal Schedule
5. Finish: 70 percent polyvinylidene fluoride.
6. Color: As selected by Owner from manufacturer's standard range.

2.4 AUXILIARY MATERIALS

A. Sealant: ASTM C 920, Type S, Grade NS, Class 25, one-part polyurethane sealant.

B. PVC Stripping: 20 mil PVC

2.5 SHEET METAL SCHEDULE

A.	Counterflashing:	24 gauge prefinished galvalume
B.	Counterflashing Receiver:	24 gauge prefinished galvalume
C.	Overflow Scupper Liner:	24 gauge membrane clad metal
D.	Coping Cap:	24 gauge prefinished galvalume
E.	Edge Metal:	24 gauge prefinished galvalume

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Inspect all surfaces to which metal is to be applied. Do not install metal unless surfaces are even, sound, clean, dry and free from defects that might affect the application.

B. Follow recommendations of Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual (Seventh Edition, 2012) for fabricating in-shop and on-site, and for installation, unless otherwise specified herein or on Drawings.

C. Follow published instructions of the product manufacturer for installation of extruded or proprietary metal products, unless otherwise specified herein or on Drawings.

D. Use nails, screws, bolts, cleats or other fasteners of the same material or, if approved by Engineer, of material chemically compatible with the contacted metal.

1. Use stainless steel fasteners at all locations in contact with pressure-treated lumber.

E. Fabricate cleats to be one gauge heavier than metal to be secured by cleat unless otherwise noted.

1. Secure cleats to substrate with fasteners specifically manufactured for the purpose at spacings of 6 inches, on center. Fasteners are to be manufactured of metal chemically compatible with the contacted metal. Fasteners to be used in wood substrates are to be ring shank. Fasteners are to be located as close to hem of cleat as practical but no more than 2 inches from hem unless specifically indicated otherwise herein or on drawings.

F. Install metal to be water and weathertight with lines, arrises and angles sharp and true and with plane surfaces free of waves or buckles. All raw edges of exposed or finish sheet metal shall be hemmed.

G. Install shop-formed flashings in 10-foot lengths maximum and with minimum number of pieces in each straight run.

H. Do not place dissimilar metals in direct contact or in positions where water sheds across both metals.

I. Miter and seal all inside and outside corners of coping cap. Shop fabricated corner pieces are preferable

J. Shop form all metal shapes, which are to be formed of prefinished metal, with protective plastic film in place. Do not remove plastic film until just prior to (or, if possible, after) installation.

K. At all corners, shop form corner pieces of coping caps, eave and rake flashings with 18 inch legs (joints no more than 18 inches from corner). Seal joint of corner piece.

L. Form faces of fascia with vertical faces of sufficient width to extend to specified length as shown in the details.

3.2 COUNTERFLASHING INSTALLATION

A. Install new counterflashing at various wall and equipment locations as specified herein. Refer to Drawings for additional information.

B. Refer to sheet metal schedule for gauge and metal type.

C. Install new counterflashing at all roof mounted equipment. Extend flange down a minimum of 4 inches over base flashing. Secure counterflashing to top of curb, or to integral flange of unit with appropriate fasteners at 4 inches on center.

D. Insert upper edge of counterflashing receiver in raggle. Secure with driven lead wedges not over 18 inches on center. Fabricate wedges from lead wool.

E. Insert upper edge of counterflashing in metal receiver. Bend receiver neatly and snugly to face of counterflashing.

F. Fill raggle with to full depth with permanent, non-shrinking sealant.

G. Notch and lap joints and inside corners. Notch and seam outside corners. Do not rivet or otherwise secure joints and corners.

H. Lap ends 4 inches. Crimp hem of overlapping section around hem of underlapping section.

3.3 SCUPPER LINER INSTALLATION

A. Install new scupper liners as indicated on plans.

B. Refer to sheet metal schedule for gauge and metal type.

C. Cover all concrete surfaces to be in contact with scupper with a bed of sealant.

D. Install scupper. Install closure flanges at both sides of wall, lock and weld closure flange seams.

3.4 COPING CAP INSTALLATION

A. Submit design drawing for Install new coping cap at locations indicated on plans. Refer to SMACNA Architectural Sheet Metal Manual Figure 3-1.

B. Refer to sheet metal schedule for gauge and metal type.

C. Prior to installation of coping cap, extend the PVC membrane across the top of the wall and extending down the outside face approximately the width of the vertical sections of the coping cap.

D. Secure both vertical sections with a continuous cleat fastened to precast concrete or wood blocking.

E. Refer to SMACNA Architectural Sheet Metal Manual Figure 3-1, Detail 1 for cleat and coping hem dimensions.

F. Join sections with 1-inch vertical single-lock standing seams and caulk with approved sealant. Refer to SMACNA Architectural Sheet Metal Manual Figure 3-3, Seam 22.

END OF SECTION 076200

FORMS

F O R M O F P R O P O S A L

HFR Building Contract:

Western Carolina University Bidder:

SCO ID No. 22-24898-01 Date:

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The bidder further declares that he and his subcontractors have fully complied with NCGS 64, Article 2 in regards to E-Verification as required by Section 2.(c) of Session Law 2013-418, codified as N.C. Gen. Stat. § 143-129(j).

The Bidder proposes and agrees if this proposal is accepted to contract with the State of North Carolina through Western Carolina University in the form of contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of

HFR Building Roof Replacement Project

in full in complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the State of North Carolina, and

Western Carolina University

with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents, for the sum of:

SINGLE PRIME CONTRACT:

BASE BID: Roof Replacement of Areas A and A1.

Dollars

($)

ALTERNATE NO. 1: Roof Replacement of Areas B, C, D, E, and E1.

Dollars

($)

ALTERNATE NO. 2: Perform demolition of the existing roofing and installation of mechanically attached gypsum underlayment and temporary roof membrane on Areas A and A1 outside business hours. (Refer to Section 012300 for hours.) All interior protection and cleaning related to roofing activities shall be performed within work hours.

_____ Dollars

($ _____)

ALTERNATE NO. 3: Perform demolition of the existing roofing and installation of mechanically attached gypsum underlayment and temporary roof membrane on Areas B, C, D, E and E1 outside of business hours. (Refer to Section 012300 for hours.) All interior protection and cleaning related to roofing activities shall be performed within work hours.

_____ Dollars

($ _____)

General Subcontractor:

_____ Lic _____

Plumbing Subcontractor:

_____ Lic _____

Mechanical Subcontractor:

_____ Lic _____

Electrical Subcontractor:

_____ Lic _____

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

UNIT PRICES

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

Description	Unit of Measurement	Quantity	Price
1. Wire brush and paint metal deck.	Sq. Ft.	3,000	
2. Wire brush, paint and plate metal deck.	Sq. Ft.	500	
3. Replace steel deck.	Sq. Ft.	500	
4. Replace damaged or deteriorated wood blocking.	Bd. Ft.	100	
5. Secure metal deck side laps.	Fastener	500	
6. Resecure metal deck.	Fastener	500	
7. Plate steel deck.	Ln. Ft.	1,000	

The bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time specified in the Supplementary General Conditions Article 23. Applicable liquidated damages amount is also stated in the Supplementary General Conditions Article 23.

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify on its bid (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. Also list the good faith efforts (Affidavit A) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit (**B)** to that effect in lieu of Affidavit (**A)** required above. The MB Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An 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 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit D is not necessary;
* OR *
If less than the 10% goal, Affidavit (D) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Note: Bidders must always submit with their bid the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A or Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned.

Respectfully submitted this day of _____

_____
(Name of firm or corporation making bid)

WITNESS:

By:_____
Signature

_____
(Proprietorship or Partnership)

Name:_____
Print or type

Title_____
(Owner/Partner/Pres./V.Pres)

Address_____

ATTEST:

_____

By:_____

License No._____

Title:_____
(Corp. Sec. or Asst. Sec. only)

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 ____ Addendum No. 3 ____ Addendum No. 5_____ Addendum No. 7__

Addendum No. 2 ____ Addendum No. 4 ____ Addendum No. 6 _____ Addendum No. 8__

Identification of HUB Certified/ Minority Business Participation

I,_____,
(Name of Bidder)

do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

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

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

The total value of minority business contracting will be ($) .

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

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 I.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:_____

SEAL

State of_____, County of_____

Subscribed and sworn to before me this_____day of_____20_____

Notary Public

My commission expires

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 Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

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: _____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20___

Notary Public _____

My commission expires _____

Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

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 HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) 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	**HUB Certified Y/N	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**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

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:_____

SEAL

Signature:_____

Title:_____

State of _____, County of _____
Subscribed and sworn to before me this _____day of _____20_____
Notary Public_____
My commission expires_____

Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

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 HUB Certified/ 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 HUB certified/ 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	**HUB Certified Y/N	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**)

****** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

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.

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:_____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public_____

My commission expires _____

FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS THAT _____ _____ _____ as principal, and _____, as surety, who is duly licensed to act as surety in North Carolina, are held and firmly bound unto the State of North Carolina* through Western Carolina University as obligee, in the penal sum of _____ DOLLARS, 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.

Signed, sealed and dated this _____ day of _____ 20_____.

WHEREAS, the said principal is herewith submitting proposal for _____ _____and the principal desires to file this bid bond in lieu of making the cash deposit as required by G.S. 143-129.

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION is such, that if the principal shall be awarded the contract for which the bid is submitted and shall execute the contract and give bond for the faithful performance thereof within ten days after the award of same to the principal, then this obligation shall be null and void; but if the principal fails to so execute such contract and give performance bond as required by G.S. 143-129, the surety shall, upon demand, forthwith pay to the obligee the amount set forth in the first paragraph hereof. Provided further, that the bid may be withdrawn as provided by G.S. 143-129.1

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

Do Not Submit with Bid Do Not Submit with Bid Do Not Submit with Bid

FORM OF CONSTRUCTION CONTRACT
(ALL PRIME CONTRACTS)

THIS AGREEMENT, made the _____ day of _____ in the year of 2022 by and between_____**.** hereinafter called the Party of the First Part and the State of North Carolina through **Western Carolina University** hereinafter called the Party of the Second Part.

WITNESSETH:

That the Party of the First Part and the Party of the Second Part for the consideration herein named agree as follows:

1. Scope of Work: The Party of the First Part shall furnish and deliver all of the materials, and perform all of the work in the manner and form as provided by the following enumerated plans, specifications and documents, which are attached hereto and made a part thereof as if fully contained herein: advertisement; Instructions to Bidders; General Conditions; Supplementary General Conditions; specifications; accepted proposal; contract; performance bond; payment bond; power of attorney; workmen's compensation; public liability; property damage and builder's risk insurance certificates; approval of attorney general; certificate by the Office of State Budget and Management, and drawings, titled:

HFR Building, SCO Project No. 22-24898-01

Consisting of the following sheets:

Dated: ____and the following addenda:

Addendum No. 1 _____	Dated: _____		Addendum No. 5 _____	Dated: _____	
Addendum No. 2 _____	Dated: _____		Addendum No. 6 _____	Dated: _____	
Addendum No. 3 _____	Dated: _____		Addendum No. 7 _____	Dated: _____	
Addendum No. 4 _____	Dated: _____		Addendum No. 8 _____	Dated: _____	

2. That the Party of the First Part shall commence work to be performed under this agreement on a date to be specified in a written order of the Party of the Second Part and shall fully complete all work hereunder within _____ consecutive calendar days from said date. For each day in excess thereof, liquidated damages shall be as stated in Supplementary General Conditions. The Party of the First Part, as one of the considerations for the awarding of this contract, shall furnish to the Party of the Second Part a construction schedule setting forth planned progress of the project broken down by the various divisions or part of the work and by calendar days as outlined in Article 14 of the General Conditions of the Contract.

3. The Party of the Second Part hereby agrees to pay to the Party of the First Part for the faithful performance of this agreement, subject to additions and deductions as provided in the specifications or proposal, in lawful money of the United States as follows:

Summary of Contract Award:

Base Bid _____
Alt. No. 1 _____

TOTAL _____

4. In accordance with Article 31 and Article 32 of the General Conditions of the Contract, the Party of the Second Part shall review, and if approved, process the Party of the First Party's pay request within 30 days upon receipt from the Designer. The Party of the Second Part, after reviewing and approving said pay request, shall make payments to the Party of the First Part on the basis of a duly certified and approved estimate of work performed during the preceding calendar month by the First Party, less five percent (5%) of the amount of such estimate which is to be retained by the Second Party until all work has been performed strictly in accordance with this agreement and until such work has been accepted by the Second Party. The Second Party may elect to waive retainage requirements after 50 percent of the work has been satisfactorily completed on schedule as referred to in Article 31 of the General Conditions.

5. Upon submission by the First Party of evidence satisfactory to the Second Party that all payrolls, material bills and other costs incurred by the First Party in connection with the construction of the work have been paid in full, final payment on account of this agreement shall be made within thirty (30) days after the completion by the First Party of all work covered by this agreement and the acceptance of such work by the Second Party.

6. It is further mutually agreed between the parties hereto that if at any time after the execution of this agreement and the surety bonds hereto attached for its faithful performance, the Second Party shall deem the surety or sureties upon such bonds to be unsatisfactory, or if, for any reason, such bonds cease to be adequate to cover the performance of the work, the First Party shall, at its expense, within five (5) days after the receipt of notice from the Second Party so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the Second Party. In such event no further payment to the First Party shall be deemed to be due under this agreement until such new or additional security for the faithful performance of the work shall be furnished in manner and form satisfactory to the Second Party.

7. The Party of the First Part attest that it and all of its subcontractors have fully complied with all requirements of NCGS 64 Article 2 in regards to E-Verification as required by Section 2.(c) of Session Law 2013-418, codified as N.C. Gen. Stat. § 143-129(j).

IN WITNESS WHEREOF, the Parties hereto have executed this agreement on the day and date first above written in five (5) counterparts, each of which shall without proof or accounting for other counterparts, be deemed an original contract.

Witness:

_____
Contractor: (Trade or Corporate Name)

_____ By: _____
(Proprietorship or Partnership)

Title: _____
(Owner, Partner, or Corp. Pres. or Vice Pres. only)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec. only)

The State of North Carolina through

(CORPORATE SEAL)

Western Carolina University
(Agency, Department or Institution)

Witness:

_____ By: _____

Title: _____

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal (Contractor) _____

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

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, identified as 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.

IN WITNESS WHEREOF, the above-bounden 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.

Executed in _____ counterparts.

Witness: _____

Contractor:(Trade or Corporate Name)

_____ By:_____

(Proprietorship or Partnership)

Attest: (Corporation) Title:_____

(Owner, Partner, or Corp. Pres. or Vice Pres. only)

By: _____

Title: _____

(Corp. Sec. or Asst. Sec. only)

(CORPORATE SEAL)

_____

(Surety Company)

Witness: By: _____

_____ Title: _____

(Attorney in Fact)

Countersigned:

_____ (Surety Corporate Seal)

_____

(N.C. Licensed Resident Agent)

_____

_____

Name and Address-Surety Agency

_____

_____

Surety Company Name and N.C.
Regional or Branch Office Address

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal (Contractor) _____

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

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 identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and 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.

IN WITNESS WHEREOF, the above-bounden 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.

Executed in _____ counterparts.

Witness: _____

Contractor: (Trade or Corporate Name)

_____ By: _____

(Proprietorship or Partnership)

Attest: (Corporation) Title: _____

(Owner, Partner, or Corp. Pres. or Vice Pres. only)

By: _____

Title: _____

(Corp. Sec. or Asst. Sec. only)

(CORPORATE SEAL)

_____

(Surety Company)

Witness: By: _____

_____ Title: _____

(Attorney in Fact)

Countersigned:

_____ (Surety Corporate Seal)

_____

(N.C. Licensed Resident Agent)

_____

_____

Name and Address-Surety Agency

_____

_____

Surety Company Name and N.C.
Regional or Branch Office Address

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

Approval of the Attorney General

CERTIFICATION BY THE OFFICE OF STATE
BUDGET AND MANAGEMENT

Provision for the payment of money to fall due and payable by the

under this agreement has been provided for by allocation made and is available for the purpose of carrying out this agreement.

This _____ day of _____, 20_____.

Signed:_____
Budget Office