

**PROJECT MANUAL
FOR
CAMP BUILDING ROOF REPLACEMENT
WESTERN CAROLINA UNIVERSITY
SCO ID: 18-18885-01A**

Prepared for

**WESTERN CAROLINA UNIVERSITY
FACILITIES MANAGEMENT
3476 OLD CULLOWHEE ROAD
CULLOWHEE, NORTH CAROLINA 28723**

Prepared by

**ATLAS ENGINEERING, INC.
551-A PYLON DRIVE
RALEIGH, NORTH CAROLINA 27606
ATLAS JOB NO. J2245**

JUNE 2019

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**Kelli Wilcox, P.E, R.R.C.
Principal Engineer**

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SET NO. _____

ADVERTISEMENT FOR BIDS

Sealed proposals will be received until **3:00 P.M.** on **July 18, 2019** in the office of **Western Carolina University Facilities Management Department, 3476 Old Cullowhee Road, Cullowhee, North Carolina 28723, Attn: Javier Torres** for the construction of the **Camp 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 non-mandatory **pre-bid meeting** will be held for bidders on **June 27, 2019** at **1:00 p.m.** at the **WCU Cordelia Camp Building, Cullowhee, NC 28723 in Conference Room 101A**. Interested subcontractors and suppliers are strongly encouraged to attend.

Complete plans and specifications for this project can be obtained from **Atlas Engineering, Inc., 551-A Pylon Drive, Raleigh, North Carolina 27606, (919) 420-7676 Attn: Kelli Wilcox, PE, RRC** during normal office hours after June 21, 2019. Electronic documents are provided at no cost. Plan deposit of **One hundred dollars (\$100.00)** 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 the
Western Carolina University
(Owner)

NOTICE TO BIDDERS

Sealed proposals will be received by the **Western Carolina University** in the office of **Facilities Management Department, 3476 Old Cullowhee Road, Cullowhee, NC 28723, Attn: Javier Torres, Project Manager** up to **3:00 p.m. on July 18, 2019** and immediately thereafter publicly opened and read in the Facilities Management Department Conference Room for the furnishing of labor, material and equipment entering into the construction of: **Camp Building Roof Replacement** on the WCU Campus in Cullowhee, NC. The project includes the replacement of the existing 60,800 square foot low-sloped aggregate-surfaced built-up roof system with new heat welded thermoplastic membrane system and associated work.

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

Pre-Bid Meeting

A non-mandatory pre-bid meeting will be held for all interested bidders on **Thursday, June 27, 2019 at 1:00 p.m. at the WCU Cordelia Camp Building, Cullowhee, NC 28723 in Conference Room 101A.** The meeting will address the project scope and description and answer specific questions and issues, anticipated project schedule, bidding procedures, and bid forms. Participants will also be able to visit the building site and roof following the administrative portion of the meeting. Interested subcontractors and manufacturer representatives are strongly encouraged to attend.

Complete plans, specifications and contract documents will be open for inspection in the offices of WCU Facilities Management Department and Atlas Engineering, Inc. at 551A Pylon Drive, Raleigh, NC and in the electronic plan rooms of: Associated General Contractors, Carolinas Branch; McGraw-Hill Dodge Corporation; Reed Construction Data (RCD); Hispanic Contractors Association of the Carolinas (HCAC) in Winston-Salem, Charlotte and Raleigh Areas – 877-227-1680; and the Cherokee Business Development Center, PO Box 1200, Ginger Lynn Welch Complex, 810 Acquoni Road, Cherokee, NC 28719, Phone: 828-497 1666.

Electronic copies of the documents are available at no cost. Hardcopies of the documents may be obtained upon deposit of one hundred dollars (\$100.00) 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. Deposit for one set will be waived for Bidders attending the Pre-Bid Meeting.

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 Unlimited Building or Specialty-Roofing.

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](#)

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:
Atlas Engineering, Inc.
551-A Pylon Drive, Raleigh, NC 27604
(919) 420-7676
PM- Kelli Wilcox: (919) 931-0961 (M)
Kelli@atlasnc.com

Owner:
Western Carolina University
Facilities Management Department
3476 Old Cullowhee Road
Cullowhee, NC 28723
PM-Javier Torres: (828) 227-2345
jtorres@email.wcu.edu

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**INSTRUCTIONS TO BIDDERS
AND
GENERAL CONDITIONS OF THE CONTRACT**

STANDARD FORM FOR CONSTRUCTION PROJECTS

**STATE CONSTRUCTION OFFICE
NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION**

Form OC-15

This document is intended for use on State capital construction projects and shall not be used on any project that is not reviewed and approved by the State Construction Office. Extensive modification to the General Conditions by means of “Supplementary General Conditions” is strongly discouraged. State agencies and institutions may include special requirements in “Division 1 – General Requirements” of the specifications, where they do not conflict with the General Conditions.

Twenty Fourth Edition January 2013

INSTRUCTIONS TO BIDDERS

For a proposal to be considered it must be in accordance with the following instructions:

1. PROPOSALS

Proposals must be made in strict accordance with the Form of Proposal provided therefor, and all blank spaces for bids, alternates, and unit prices applicable to bidder's work shall be properly filled in. When requested alternates are not bid, the proposer shall so indicate by the words "No Bid". Any blanks shall also be interpreted as "No Bid". The bidder agrees that bid on Form of Proposal detached from specifications will be considered and will have the same force and effect as if attached thereto. Photocopied or faxed proposals will not be considered. Numbers shall be stated both in writing and in figures for the base bids and alternates. If figures and writing differ, the written number will supersede the figures.

Any modifications to the Form of Proposal (including alternates and/or unit prices) will disqualify the bid and may cause the bid to be rejected.

The bidder shall fill in the Form of Proposal as follows:

- a. If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
- b. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.
- c. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
- d. If the proposal is made by a joint venture, it shall be executed by each member of the joint venture in the above form for sole owner, partnership or corporation, whichever form is applicable.
- e. All signatures shall be properly witnessed.
- f. If the contractor's license of a bidder is held by a person other than an owner, partner or officer of a firm, then the licensee shall also sign and be a party to the proposal. The title "Licensee" shall appear under his/her signature.

Proposals should be addressed as indicated in the Advertisement for Bids and be delivered, enclosed in an opaque sealed envelope, marked "Proposal" and bearing the title of the work, name of the bidder, and the contractor's license number of the bidder. Bidders should clearly mark on the outside of the bid envelope which contract(s) they are bidding.

Bidder shall identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts or an affidavit indicating work under contract will be self-performed, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f). Failure to comply with these requirements is grounds for rejection of the bid.

For projects bid in the single-prime alternative, the names and license numbers of major subcontractors shall be listed on the proposal form.

It shall be the specific responsibility of the bidder to deliver his bid to the proper official at the selected place and prior to the announced time for the opening of bids. Later delivery of a bid for any reason, including delivery by any delivery service, shall disqualify the bid.

Unit prices quoted in the proposal shall include overhead and profit and shall be the full compensation for the contractor's cost involved in the work. See General Conditions, Article 19c-1.

2. EXAMINATION OF CONDITIONS

It is understood and mutually agreed that by submitting a bid the bidder acknowledges that he has carefully examined all documents pertaining to the work, the location, accessibility and general character of the site of the work and all existing buildings and structures within and adjacent to the site, and has satisfied himself as to the nature of the work, the condition of existing buildings and structures, the conformation of the ground, the character, quality and quantity of the material to be encountered, the character of the equipment, machinery, plant and any other facilities needed preliminary to and during prosecution of the work, the general and local conditions, the construction hazards, and all other matters, including, but not limited to, the labor situation which can in any way affect the work under the contract, and including all safety measures required by the Occupational Safety and Health Act of 1970 and all rules and regulations issued pursuant thereto. It is further mutually agreed that by submitting a proposal the bidder acknowledges that he has satisfied himself as to the feasibility and meaning of the plans, drawings, specifications and other contract documents for the construction of the work and that he accepts all the terms, conditions and stipulations contained therein; and that he is prepared to work in cooperation with other contractors performing work on the site.

Reference is made to contract documents for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the work which have been relied upon by the designer in preparing the documents. The owner will make copies of all such surveys and reports available to the bidder upon request.

Each bidder may, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his bid price for the performance of the work. Any on-site investigation shall be done at the convenience of the owner. Any reasonable request for access to the site will be honored by the owner.

3. BULLETINS AND ADDENDA

Any addenda to specifications issued during the time of bidding are to be considered covered in the proposal and in closing a contract they will become a part thereof. It shall be the bidder's responsibility to ascertain prior to bid time the addenda issued and to see that his bid includes any changes thereby required.

Should the bidder find discrepancies in, or omission from, the drawings or documents or should he be in doubt as to their meaning, he shall at once notify the designer who will send written instructions in the form of addenda to all bidders. Notification should be no later than seven (7) days prior to the date set for receipt of bids. Neither the owner nor the designer will be responsible for any oral instructions.

All addenda should be acknowledged by the bidder(s) on the Form of Proposal. However, even if not acknowledged, by submitting a bid, the bidder has certified that he has reviewed all issued addenda and has included all costs associated within his bid.

4. BID SECURITY

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, or a bid bond in an amount equal to not less than five percent (5%) of the proposal, said deposit to be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after the award or to give satisfactory surety as required by law (G.S. 143-129).

Bid bond shall be conditioned that the surety will, upon demand, forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract. The owner may retain bid securities of any bidder(s) who may have a reasonable chance of award of contract for the full duration of time stated in the Notice to Bidders. Other bid securities may be released sooner, at the discretion of the owner. All bid securities (cash or certified checks) shall be returned to the bidders promptly after award of contracts, and no later than seven (7) days after expiration of the holding period stated in the Notice to Bidders. Standard Form of Bid Bond is included in these specifications and shall be used.

5. RECEIPT OF BIDS

Bids shall be received in strict accordance with requirements of the General Statutes of North Carolina. Bid security shall be required as prescribed by statute. Prior to the closing of the bid, the bidder will be permitted to change or withdraw his bid. Guidelines for opening of public construction bids are available from the State Construction Office.

6. OPENING OF BIDS

Upon opening, all bids shall be read aloud. Once bidding is closed, there shall not be any withdrawal of bids by any bidder and no bids may be returned by the designer to any bidder. After the opening of bids, no bid may be withdrawn, except under the provisions of General Statute 143-129.1, for a period of thirty days unless otherwise specified. Should the successful bidder default and fail to execute a contract, the contract may be awarded to the next lowest and responsible bidder. The owner reserves the unqualified right to reject any and all bids. Reasons for rejection may include, but shall not be limited to, the following:

- a. If the Form of Proposal furnished to the bidder is not used or is altered.
- b. If the bidder fails to insert a price for all bid items, alternate and unit prices requested.
- c. If the bidder adds any provisions reserving the right to accept or reject any award.
- d. If there are unauthorized additions or conditional bids, or irregularities of any kind which tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
- e. If the bidder fails to complete the proposal form where information is requested so the bid may be properly evaluated by the owner.
- f. If the unit prices contained in the bid schedule are unacceptable to the owner and the State Construction Office.
- g. If the bidder fails to comply with other instructions stated herein.

7. BID EVALUATION

The award of the contract will be made to the lowest responsible bidder as soon as practical. The owner may award on the basis of the base bid and any alternates the owner chooses.

Before awarding a contract, the owner may require the apparent low bidder to qualify himself to be a responsible bidder by furnishing any or all of the following data:

- a. The latest financial statement showing assets and liabilities of the company or other information satisfactory to the owner.
- b. A listing of completed projects of similar size.
- c. Permanent name and address of place of business.
- d. The number of regular employees of the organization and length of time the organization has been in business under present name.
- e. The name and home office address of the surety proposed and the name and address of the responsible local claim agent.
- f. The names of members of the firms who hold appropriate trade licenses, together with license numbers.
- g. If prequalified, contractor info will be reviewed and evaluated comparatively to submitted prequalification package.

Failure or refusal to furnish any of the above information, if requested, shall constitute a basis for disqualification of any bidder.

In determining the lowest responsible, responsive bidder, the owner shall take into consideration the bidder's compliance with the requirements of G.S. 143-128.2(c), the past performance of the bidder on construction contracts for the State with particular concern given to completion times, quality of work, cooperation with other contractors, and cooperation with the designer and owner. Failure of the low bidder to furnish affidavit and/or documentation as required by G.S. 143-128.2(c) shall constitute a basis for disqualification of the bid.

Should the owner adjudge that the apparent low bidder is not the lowest responsible, responsive bidder by virtue of the above information, said apparent low bidder will be so notified and his bid security shall be returned to him.

8. PERFORMANCE BOND

The successful bidder, upon award of contract, shall furnish a performance bond in an amount equal to 100 percent of the contract price. See Article 35, General Conditions.

9. PAYMENT BOND

The successful bidder, upon award of contract, shall furnish a payment bond in an amount equal to 100 percent of the contract price. See Article 35, General Conditions.

10. PAYMENTS

Payments to the successful bidders (contractors) will be made on the basis of monthly estimates. See Article 31, General Conditions.

11. PRE-BID CONFERENCE

Prior to the date set for receiving bids, the Designer may arrange and conduct a Pre-Bid Conference for all prospective bidders. The purpose of this conference is to review project requirements and to respond to questions from prospective bidders and their subcontractors or material suppliers related to the intent of bid documents. Attendance by prospective bidders shall be as required by the "Notice to Bidders".

12. SUBSTITUTIONS

In accordance with the provisions of G.S. 133-3, material, product, or equipment substitutions proposed by the bidders to those specified herein can only be considered during the bidding phase until ten (10) days prior to the receipt of bids when submitted to the Designer with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change order.

Submittals for proposed substitutions shall include the following information:

- a. Name, address, and telephone number of manufacturer and supplier as appropriate.
- b. Trade name, model or catalog designation.
- c. Product data including performance and test data, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.
- d. Detailed comparison with specified products including performance capabilities, warranties, and test results.
- e. Other pertinent data including data requested by the Designer to confirm product equality.

If a proposed material, product, or equipment substitution is deemed equal by the Designer to those specified, all bidders of record will be notified by Addendum.

GENERAL CONDITIONS OF THE CONTRACT

The use or reproduction of this document or any part thereof is authorized for and limited to use on projects of the State of North Carolina, and is distributed by, through and at the discretion of the State Construction Office, Raleigh, North Carolina, for that distinct and sole purpose.

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ARTICLE 1 - DEFINITIONS

- a. The **contract documents** consist of the Notice to Bidders; Instructions to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawing and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the proposal; the contract; the performance bond; the payment bond; insurance certificates; the approval of the attorney general; and the certificate of the Office of State Budget and Management. All of these items together form the contract.
- b. The **owner** is the State of North Carolina through the agency named in the contract.
- c. The **designer(s)** are those referred to within this contract, or their authorized representatives. The Designer(s), as referred to herein, shall mean architect and/or engineer. They will be referred to hereinafter as if each were of the singular number, masculine gender.
- d. The **contractor**, as referred to hereinafter, shall be deemed to be either of the several contracting parties called the "Party of the First Part" in either of the several contracts in connection with the total project. Where, in special instances hereinafter, a particular contractor is intended, an adjective precedes the word "contractor," as "general," "heating," etc. For the purposes of a single prime contract, the term Contractor shall be deemed to be the single contracting entity identified as the "Party of the First Part" in the single Construction Contract. Any references or adjectives that name or infer multiple prime contractors shall be interpreted to mean the single prime Contractor.
- e. A **subcontractor**, as the term is used herein, shall be understood to be one who has entered into a direct contract with a contractor, and includes one who furnishes materials worked to a special design in accordance with plans and specifications covered by the contract, but does not include one who only sells or furnishes materials not requiring work so described or detailed.
- f. **Written notice** shall be defined as notice in writing delivered in person to the contractor, or to a partner of the firm in the case of a partnership, or to a member of the contracting organization, or to an officer of the organization in the case of a corporation, or sent to the last known business address of the contracting organization by registered mail.
- g. **Work**, as used herein as a noun, is intended to include materials, labor, and workmanship of the appropriate contractor.
- h. The **project** is the total construction work to be performed under the contract documents by the several contractors.
- i. **Project Expediter**, as used herein, is an entity stated in the contract documents, designated to effectively facilitate scheduling and coordination of work activities. See Article 14(f) for responsibilities of a Project Expediter. **For the purposes of a single prime contract, the single prime contractor shall be designated as the Project Expediter.**
- j. **Change order**, as used herein, shall mean a written order to the contractor subsequent to the signing of the contract authorizing a change in the contract. The change order shall be signed by the contractor, designer and the owner, and approved by the State Construction Office, in that order (Article 19).

- k. **Field Order**, as used herein, shall mean a written approval for the contractor to proceed with the work requested by owner prior to issuance of a formal Change Order. The field order shall be signed by the contractor, designer, owner, and State Construction Office.
- l. **Time of completion**, as stated in the contract documents, is to be interpreted as consecutive calendar days measured from the date established in the written Notice to Proceed, or such other date as may be established herein (Article 23).
- m. **Liquidated damages**, as stated in the contract documents [, is an amount reasonably estimated in advance to cover the consequential damages associated with the Owner's economic loss in not being able to use the Project for its intended purposes at the end of the contract's completion date as amended by change order, if any, by reason of failure of the contractor(s) to complete the work within the time specified. Liquidated damages does not include the Owner's extended contract administration costs (including but not limited to additional fees for architectural and engineering services, testing services, inspection services, commissioning services, etc.), such other damages directly resulting from delays caused solely by the contractor, or consequential damages that the Owner identified in the bid documents that may be impacted by any delay caused solely by the Contractor (e.g., if a multi-phased project-subsequent phases, delays in start other projects that are dependent on the completion of this Project, extension of leases and/or maintenance agreements for other facilities).
- n. **Surety**, as used herein, shall mean the bonding company or corporate body which is bound with and for the contractor, and which engages to be responsible for the contractor and his acceptable performance of the work.
- o. **Routine written communications between the Designer and the Contractor** are any communication other than a "request for information" provided in letter, memo, or transmittal format, sent by mail, courier, electronic mail, or facsimile. Such communications can not be identified as "request for information".
- p. **Clarification or Request for information (RFI)** is a request from the Contractor seeking an interpretation or clarification by the Designer relative to the contract documents. The RFI, which shall be labeled (RFI), shall clearly and concisely set forth the issue or item requiring clarification or interpretation and why the response is needed. The RFI must set forth the Contractor's interpretation or understanding of the contract documents requirements in question, along with reasons for such an understanding.
- q. **Approval** means written or imprinted acknowledgement that materials, equipment or methods of construction are acceptable for use in the work.
- r. **Inspection** shall mean examination or observation of work completed or in progress to determine its compliance with contract documents.
- s. **"Equal to" or "approved equal"** shall mean materials, products, equipment, assemblies, or installation methods considered equal by the bidder in all characteristics (physical, functional, and aesthetic) to those specified in the contract documents. Acceptance of equal is subject to approval of Designer and owner.
- t. **"Substitution" or "substitute"** shall mean materials, products, equipment, assemblies, or installation methods deviating in at least one characteristic (physical, functional, or aesthetic) from those specified, but which in the opinion of the bidder would improve competition and/or enhance the finished installation. Acceptance of substitution is subject to the approval of the Designer and owner.

- u. **Provide** shall mean furnish and install complete in place, new, clean, operational, and ready for use.
- v. **Indicated and shown** shall mean provide as detailed, or called for, and reasonably implied in the contract documents.
- w. **Special inspector** is one who inspects materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with the approved construction documents and referenced standards.
- x. **Commissioning** is a quality assurance process that verifies and documents that building components and systems operate in accordance to the owner's project requirements and the project design documents.
- y. **Designer Final Inspection** is the inspection performed by the design team to determine the completeness of the project in accordance with approved plans and specifications. This inspection occurs prior to SCO final inspection.
- z. **SCO Final Inspection** is the inspection performed by the State Construction Office to determine the completeness of the project in accordance with NC Building Codes and approved plans and specifications.
- aa. **Beneficial Occupancy** is requested by the owner and is occupancy or partial occupancy of the building after all life safety items have been completed as determined by the State Construction Office. Life safety items include but not limited to fire alarm, sprinkler, egress and exit lighting, fire rated walls, egress paths and security.
- bb. Final Acceptance is the date in which the State Construction Office accepts the construction as totally complete. This includes the SCO Final Inspection and certification by the designer that all punch lists are completed.

ARTICLE 2 - INTENT AND EXECUTION OF DOCUMENTS

- a. The drawings and specifications are complementary, one to the other, and that which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a bid for a complete job. In case of discrepancy or disagreement in the contract documents, the order of precedence shall be: Form of Contract, specifications, large-scale detail drawings, small-scale drawings.
- b. The wording of the specifications shall be interpreted in accordance with common usage of the language except that words having a commonly used technical or trade meaning shall be so interpreted in preference to other meanings.
- c. The contractor shall execute each copy of the proposal, contract, performance bond and payment bond as follows:
 1. If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
 2. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.

3. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
4. If the documents are made by a joint venture, they shall be executed by each member of the joint venture in the above form for sole owner, partnership or corporation, whichever form is applicable to each particular member.
5. All signatures shall be properly witnessed.
6. If the contractor's license is held by a person other than an owner, partner or officer of a firm, then the licensee shall also sign and be a party to the contract. The title "Licensee" shall appear under his/her signature.
7. The bonds shall be executed by an attorney-in-fact. There shall be attached to each copy of the bond a certified copy of power of attorney properly executed and dated.
8. Each copy of the bonds shall be countersigned by an authorized individual agent of the bonding company licensed to do business in North Carolina. The title "Licensed Resident Agent" shall appear after the signature.
9. The seal of the bonding company shall be impressed on each signature page of the bonds.
10. The contractor's signature on the performance bond and the payment bond shall correspond with that on the contract. The date of performance and payment bond shall not be prior to the date of the contract.

ARTICLE 3 - CLARIFICATIONS AND DETAIL DRAWINGS

- a. In such cases where the nature of the work requires clarification by the designer, such clarification shall be furnished by the designer with reasonable promptness by means of written instructions or detail drawings, or both. Clarifications and drawings shall be consistent with the intent of contract documents, and shall become a part thereof.
- b. The contractor(s) and the designer shall prepare, if deemed necessary, a schedule fixing dates upon which foreseeable clarifications will be required. The schedule will be subject to addition or change in accordance with progress of the work. The designer shall furnish drawings or clarifications in accordance with that schedule. The contractor shall not proceed with the work without such detail drawings and/or written clarifications.

ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS

The designer or Owner shall furnish free of charge to the contractors electronic copies of plans and specifications. If requested by the contractor, paper copies of plans and specifications shall be furnished free of charge as follows:

- a. General contractor - Up to twelve (12) sets of general contractor drawings and specifications, up to six (6) sets of which shall include drawings and specifications of all other contracts, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work-in-place that is at variance with the contract documents.

- b. Each other contractor - Up to six (6) sets of the appropriate drawings and specifications, up to three (3) sets of which shall include drawings and specifications of all other contracts, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work-in-place that is at variance with the contract documents.
- c. Additional sets shall be furnished at cost, including mailing, to the contractor upon request by the contractor. This cost shall be stated in the bidding documents.
- d. For the purposes of a single-prime contract, the contractor shall receive up to 30 sets of drawings and specifications, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work-in-place that is at variance with the contract documents.

ARTICLE 5 - SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

- a. Within 15 consecutive calendar days after the notice to proceed, each prime contractor shall submit a schedule for submission of all shop drawings, product data, samples, and similar submittals through the Project Expediter to the Designer. This schedule shall indicate the items, relevant specification sections, other related submittal, data, and the date when these items will be furnished to the designer.
- b. The Contractor(s) shall review, approve and submit to the Designer all Shop Drawings, Coordination Drawings, Product Data, Samples, Color Charts, and similar submittal data required or reasonably implied by the Contract Documents. Required Submittals shall bear the Contractor's stamp of approval, any exceptions to the Contract Documents shall be noted on the submittals, and copies of all submittals shall be of sufficient quantity for the Designer to retain up to three (3) copies of each submittal for his own use plus additional copies as may be required by the Contractor. Submittals shall be presented to the Designer in accordance with the schedule submitted in paragraph (a). so as to cause no delay in the activities of the Owner or of separate Contractors.
- c. The Designer shall review required submittals promptly, noting desired corrections if any, and retaining three (3) copies (1 for the Designer, 1 for the owner and 1 for SCO) for his use. The remaining copies of each submittal shall be returned to the Contractor not later than twenty (20) days from the date of receipt by the Designer, for the Contractor's use or for corrections and resubmittal as noted by the Designer. When resubmittals are required, the submittal procedure shall be the same as for the original submittals.
- d. Approval of shop drawings/submittals by the Designer shall not be construed as relieving the Contractor from responsibility for compliance with the design or terms of the contract documents nor from responsibility of errors of any sort in the shop drawings, unless such lack of compliance or errors first have been called in writing to the attention of the Designer by the Contractor.

ARTICLE 6 - WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

- a. The contractor shall maintain, in readable condition at his job office, one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the designer, his authorized representative, owner or State Construction Office.

- b. The contractor shall maintain at the job office, a day-to-day record of work-in-place that is at variance with the contract documents. Such variations shall be fully noted on project drawings by the contractor and submitted to the designer upon project completion and no later than 30 days after final acceptance of the project.
- c. The contractor shall maintain at the job office a record of all required tests that have been performed, clearly indicating the scope of work inspected and the date of approval or rejection.

ARTICLE 7 - OWNERSHIP OF DRAWINGS AND SPECIFICATIONS

All drawings and specifications are instruments of service and remain the property of the owner. The use of these instruments on work other than this contract without permission of the owner is prohibited. All copies of drawings and specifications other than contract copies shall be returned to the owner upon request after completion of the work.

ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES

- a. The contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.
- b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.
- c. Upon notice, the contractor shall furnish evidence as to quality of materials.
- d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the designer for approval or disapproval; such approval or disapproval shall be made by the designer prior to the opening of bids. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the owner and the designer and owner approves.
- e. The designer is the judge of equality for proposed substitution of products, materials or equipment.

- g. If at any time during the construction and completion of the work covered by these contract documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the owner or designer, or if any workman be considered detrimental to the work, the contractor shall order such parties removed immediately from grounds.

ARTICLE 9 - ROYALTIES, LICENSES AND PATENTS

It is the intention of the contract documents that the work covered herein will not constitute in any way infringement of any patent whatsoever unless the fact of such patent is clearly evidenced herein. The contractor shall protect and save harmless the owner against suit on account of alleged or actual infringement. The contractor shall pay all royalties and/or license fees required on account of patented articles or processes, whether the patent rights are evidenced hereinafter.

ARTICLE 10 - PERMITS, INSPECTIONS, FEES, REGULATIONS

- a. The contractor shall give all notices and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the designer in writing. See Instructions to Bidders, Paragraph 3, Bulletins and Addenda. Any necessary changes required after contract award shall be made by change order in accordance with Article 19. If the contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the designer, he shall bear all cost arising therefrom. Additional requirements implemented after bidding will be subject to equitable negotiations.
- b. All work under this contract shall conform to the North Carolina State Building Code and other State, local and national codes as are applicable. The cost of all required inspections and permits shall be the responsibility of the contractor and included within the bid proposal. All water taps, meter barrels, vaults and impact fees shall be paid by the contractor unless otherwise noted.
- d. Projects constructed by the State of North Carolina or by any agency or institution of the State are not subject to inspection by any county or municipal authorities and are not subject to county or municipal building codes. The contractor shall, however, cooperate with the county or municipal authorities by obtaining building permits. Permits shall be obtained at no cost.
- e. Projects involving local funding (community colleges) are subject also to county and municipal building codes and inspection by local authorities. The contractor shall pay the cost of these permits and inspections.

ARTICLE 11 - PROTECTION OF WORK, PROPERTY AND THE PUBLIC

- a. The contractors shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the owner or designer, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the owner's property, or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the owner. All contractors shall have access to the project at all times.
- b. The contractor shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the owner.
- c. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the designer and owner.
- d. The contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around same. He shall barricade all walks, roads, etc., as directed by the designer to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.
- e. The contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.
- f. The contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.
- g. The contractor shall designate a responsible person of his organization as safety officer/inspector to inspect the project site for unsafe health and safety hazards, to report these hazards to the contractor for correction, and whose duties also include accident prevention on the project, and to provide other safety and health measures on the project site as required by the terms and conditions of the contract. The name of the safety inspector shall be made known to the designer and owner at the time of the preconstruction conference and in all cases prior to any work starting on the project.
- h. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the contractor is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage.

Any compensation claimed by the contractor on account of such action shall be determined as provided for under Article 19(b).

- i. Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the contractor. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

ARTICLE 12 - SEDIMENTATION POLLUTION CONTROL ACT OF 1973

- a. Any land-disturbing activity performed by the contractor(s) in connection with the project shall comply with all erosion control measures set forth in the contract documents and any additional measures which may be required in order to ensure that the project is in full compliance with the Sedimentation Pollution Control Act of 1973, as implemented by Title 15, North Carolina Administrative Code, Chapter 4, Sedimentation Control, Subchapters 4A, 4B and 4C, as amended (15 N.C.A.C. 4A, 4B and 4C).
- b. Upon receipt of notice that a land-disturbing activity is in violation of said act, the contractor(s) shall be responsible for ensuring that all steps or actions necessary to bring the project in compliance with said act are promptly taken.
- c. The contractor(s) shall be responsible for defending any legal actions instituted pursuant to N.C.G.S. 113A-64 against any party or persons described in this article.
- d. To the fullest extent permitted by law, the contractor(s) shall indemnify and hold harmless the owner, the designer and the agents, consultants and employees of the owner and designer, from and against all claims, damages, civil penalties, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance of work or failure of performance of work, provided that any such claim, damage, civil penalty, loss or expense is attributable to a violation of the Sedimentation Pollution Control Act. Such obligation shall not be construed to negate, abridge or otherwise reduced any other right or obligation of indemnity which would otherwise exist as to any party or persons described in this article.

ARTICLE 13 - INSPECTION OF THE WORK

- a. It is a condition of this contract that the work shall be subject to inspection during normal working hours and during any time work is in preparation and progress by the designer, designated official representatives of the owner, State Construction Office and those persons required by state law to test special work for official approval. The contractor shall therefore provide safe access to the work at all times for such inspections.
- b. All instructions to the contractor will be made only by or through the designer or his designated project representative. Observations made by official representatives of the owner shall be conveyed to the designer for review and coordination prior to issuance to the contractor.
- c. All work shall be inspected by designer, special inspector and/or State Construction Office prior to being covered by the contractor. Contractor shall give a minimum two weeks notice unless otherwise agreed to by all parties. If inspection fails, after the first reinspection all costs associated with additional reinspections shall be borne by the contractor.

- d. Where special inspection or testing is required by virtue of any state laws, instructions of the designer, specifications or codes, the contractor shall give adequate notice to the designer of the time set for such inspection or test, if the inspection or test will be conducted by a party other than the designer. Such special tests or inspections will be made in the presence of the designer, or his authorized representative, and it shall be the contractor's responsibility to serve ample notice of such tests.
- e. All laboratory tests shall be paid by the owner unless provided otherwise in the contract documents except the general contractor shall pay for laboratory tests to establish design mix for concrete, and for additional tests to prove compliance with contract documents where materials have tested deficient except when the testing laboratory did not follow the appropriate ASTM testing procedures.
- f. Should any work be covered up or concealed prior to inspection and approval by the designer, special inspector, and/or State Construction Office such work shall be uncovered or exposed for inspection, if so requested by the designer in writing. Inspection of the work will be made upon notice from the contractor. All cost involved in uncovering, repairing, replacing, recovering and restoring to design condition, the work that has been covered or concealed will be paid by the contractor involved.

ARTICLE 14 - CONSTRUCTION SUPERVISION AND SCHEDULE

- a. Throughout the progress of the work, each contractor shall keep at the job site, a competent superintendent and supervisory staff satisfactory to the designer and the owner. The superintendent and supervisory staff shall not be changed without the consent of the designer and owner unless said superintendent ceases to be employed by the contractor or ceases to be competent as determined by the contractor, designer or owner. The superintendent and other staff designated by the contractor in writing shall have authority to act on behalf of the contractor, and instructions, directions or notices given to him shall be as binding as if given to the contractor. However, directions, instructions, and notices shall be confirmed in writing.
- b. The contractor shall examine and study the drawings and specifications and fully understand the project design, and shall provide constant and efficient supervision to the work. Should he discover any discrepancies of any sort in the drawings or specifications, he shall report them to the designer without delay. He will not be held responsible for discrepancies in the drawings and/or specifications, but shall be held responsible to report them should they become known to him.
- c. All contractors shall be required to cooperate and consult with each other during the construction of this project. Prior to installation of work, all contractors shall jointly prepare coordination drawings, showing locations of various ductworks, piping, motors, pumps, and other mechanical or electrical equipment, in relation to the structure, walls and ceilings. These drawings shall be submitted to the designer through the Project Expediter for information only. Each contractor shall lay out and execute his work to cause the least delay to other contractors. Each contractor shall be financially responsible for any damage to other contractor's work and for undue delay caused to other contractors on the project.
- d. The contractor is required to attend job site progress conferences as called by the designer. The contractor shall be represented at these job progress conferences by both home office and project personnel. These representatives shall have authority to act on behalf of the contractor. These meetings shall be open to subcontractors, material

suppliers and any others who can contribute toward maintaining required job progress. It shall be the principal purpose of these meetings, or conferences, to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the project on schedule and to complete the project within the specified contract time. Each contractor shall be prepared to assess progress of the work as required in his particular contract and to recommend remedial measures for correction of progress as may be appropriate. The designer or his authorized representative shall be the coordinator of the conferences and shall preside as chairman. The contractor shall turn over a copy of his daily reports to the Designer and Owner at the job site progress conference. Owner will determine daily report format.

- e. The contractor(s) shall, employ an engineer or a land surveyor licensed in the State of North Carolina to lay out the work and to establish a bench mark in a location where same will not be disturbed and where direct instruments sights may be taken.
- f. The designer shall designate a Project Expediter on projects involving two or more prime contracts. The Project Expediter shall be designated in the Supplementary General Conditions. The Project Expediter shall have at a minimum the following responsibilities.
 - 1. Prepare the project construction schedule and shall allow all prime contractors (multi-prime contract) and subcontractors (single-prime contract) performing general, plumbing, HVAC, and electrical work equal input into the preparation of the initial construction schedule.
 - 2. Maintain a project progress schedule for all contractors.
 - 3. Give adequate notice to all contractors to ensure efficient continuity of all phases of the work.
 - 4. Notify the designer of any changes in the project schedule.
 - 5. Recommend to the owner whether payment to a contractor shall be approved.
- g. It shall be the responsibility of the Project Expediter to cooperate with and obtain from several prime contractors and subcontractors on the job, their respective work activities and integrate these activities into a project construction schedule in form of a detailed bar chart or Critical Path Method (CPM), schedule. Each prime contractor shall provide work activities within fourteen (14) days of request by the Project Expediter. A “work activity”, for scheduling purposes, shall be any component or contractual requirement of the project requiring at least one (1) day, but not more than fourteen (14) days, to complete or fulfill. The project construction schedule shall graphically show all salient features of the work required to construct the project from start to finish and within the allotted time established in the contract. The time (in days) between the contractor’s early completion and contractual completion dates is part of the project total float time; and shall be used as such, unless amended by a change order. On a multi-prime project, each prime contractor shall review the proposed construction schedule and approve same in writing. The Project Expediter shall submit the proposed construction schedule to the designer for comments. The complete Project construction schedule shall be of the type set forth in the Supplementary General Condition or subparagraph (1) or (2) below, as appropriate:

1. For a project with total contracts of \$500,000 or less, a bar chart schedule will satisfy the above requirement. The schedule shall indicate the estimated starting and completion dates for each major element of the work.
2. For a project with total contracts over \$500,000, a Critical Path Method (CPM) schedule shall be utilized to control the planning and scheduling of the Work. The CPM schedule shall be the responsibility of the Project Expediter and shall be paid for by the Project Expediter.

Bar Chart Schedule: Where a bar chart schedule is required, it shall be time-scaled in weekly increments, shall indicate the estimated starting and completion dates for each major element of the work by trade and by area, level, or zone, and shall schedule dates for all salient features, including but not limited to the placing of orders for materials, submission of shop drawings and other Submittals for approval, approval of shop drawings by designers, the manufacture and delivery of material, the testing and the installation of materials, supplies and equipment, and all Work activities to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections and completion of final punchlist(s). Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

CPM Schedule: Where a CPM schedule is required, it shall be in time-scaled precedence format using the Project Expediter's logic and time estimates. The CPM schedule shall be drawn or plotted with activities grouped or zoned by Work area or subcontract as opposed to a random (or scattered) format. The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail and logic which will schedule all salient features of the work to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections and completion of final punchlist(s).. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

The CPM schedule will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time shall not be considered for the exclusive use or benefit of either the Owner or the Contractor, but must be allocated in the best interest of completing the Work within the Contract time. Extensions to the Contract time, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change. On contracts with a price over \$2,500,000, the CPM schedule shall also show what part of the Contract Price is attributable to each activity on the schedule, the sum of which for all activities shall equal the total Contract Price.

Early Completion of Project: The Contractor may attempt to complete the project prior to the Contract Completion Date. However, such planned early completion shall be for the Contractor's convenience only and shall not create any additional rights of the Contractor or obligations of the Owner under this Contract, nor shall it change the Time

for Completion or the Contract Completion Date. The Contractor shall not be required to pay liquidated damages to the Owner because of its failure to complete by its planned earlier date. Likewise, the Owner shall not pay the Contractor any additional compensation for early completion nor will the Owner owe the Contractor any compensation should the Owner, its officers, employees, or agents cause the Contractor not to complete earlier than the date required by the Contract Documents.

- h. The proposed project construction schedule shall be presented to the designer no later than fifteen (15) days after written notice to proceed. No application for payment will be processed until this schedule is accepted by the designer and owner.
- i. The approved project construction schedule shall be distributed to all contractors and displayed at the job site by the Project Expediter.
- j. The several contractors shall be responsible for their work activities and shall notify the Project Expediter of any necessary changes or adjustments to their work. The Project Expediter shall maintain the project construction schedule, making biweekly adjustments, updates, corrections, etc., that are necessary to finish the project within the Contract time, keeping all contractors and the designer fully informed. Copy of a bar chart schedule annotated to show the current progress shall be submitted by the Contractor(s) to the designer, along with monthly request for payment. For project requiring CPM schedule, the Contractor shall submit a biweekly report of the status of all activities. The bar chart schedule or status report shall show the actual Work completed to date in comparison with the original Work scheduled for all activities. If any activities of the work of several contractors are behind schedule, the contractor must indicate in writing, what measures will be taken to bring each such activity back on schedule and to ensure that the Contract Completion Date is not exceeded. A plan of action and recovery schedule shall be developed and submitted to the designer by the Project Expediter, when (1) the contractor's report indicates delays, that are in the opinion of the designer or the owner, of sufficient magnitude that the contractor's ability to complete the work by the scheduled completion is brought into question; (2) the updated construction schedule is thirty (30) days behind the planned or baseline schedule and no legitimate time extensions, as determined by the Designer, are in process; and (3) the contractor desires to make changes in the logic (sequencing of work) or the planned duration of future activities of the CPM schedule which, in the opinion of the designer or the owner, are of a major nature. The plan of action, when required shall be submitted to the Owner for review within two (2) business days of the Contractor receiving the Owner's written demand. The recovery schedule, when required, shall be submitted to the Owner within five (5) calendar days of the Contractor's receiving the Owner's written demand. Failure to provide an updated construction schedule or a recovery schedule may be grounds for rejection of payment applications or withholding of funds as set forth in Article 33.
- k. The Project Expediter shall notify each contractor of such events or time frames that are critical to the progress of the job. Such notice shall be timely and reasonable. Should the progress be delayed due to the work of any of the several contractors, it shall be the duty of the Project Expediter to immediately notify the contractor(s) responsible for such delay, the designer, the State Construction Office and other prime contractors. The designer shall determine the contractor(s) who caused the delays and notify the bonding company of the responsible contractor(s) of the delays; and shall make a recommendation to the owner regarding further action.
- l. Designation as Project Expediter entails an additional project control responsibility and does not alter in any way the responsibility of the contractor so designated, nor the

responsibility of the other contractors involved in the project. The project expeditor's Superintendent(s) shall be in attendance at the Project site at all times when work is in progress unless conditions are beyond the control of the Contractor or until termination of the Contract in accordance with the Contract Documents. It is understood that such Superintendent shall be acceptable to the Owner and Designer and shall be the one who will be continued in that capacity for the duration of the project unless he ceases to be on the Contractor's payroll or the Owner otherwise agrees. The Superintendent shall not be employed on any other project for or by the Contractor or by any other entity during the course of the Work. If the Superintendent is employed by the Contractor on another project without the Owner's approval, then the Owner may deduct from the Contractor's monthly general condition costs and amount representing the Superintendent's cost and shall deduct that amount for each month thereafter until the Contractor has the Superintendent back on the Owner's Project full-time.

ARTICLE 15 - SEPARATE CONTRACTS AND CONTRACTOR RELATIONSHIPS

- a. Effective from January 1, 2002, Chapter 143, Article 8, was amended, to allow public contracts to be delivered by the following delivery methods: single-prime, dual (single-prime and separate-prime), construction manager at risk, and alternative contracting method as approved by the State Building Commission. The owner reserves the right to prepare separate specifications, receive separate bids, and award separate contracts for such other major items of work as may be in the best interest of the State. For the purposes of a single prime contract, refer to Article 1 – Definitions.
- b. All contractors shall cooperate with each other in the execution of their work, and shall plan their work in such manner as to avoid conflicting schedules or delay of the work. See Article 14, Construction Supervision.
- c. If any part of contractor's work depends upon the work of another contractor, defects which may affect that work shall be reported to the designer in order that prompt inspection may be made and the defects corrected. Commencement of work by a contractor where such condition exists will constitute acceptance of the other contractor's work as being satisfactory in all respects to receive the work commenced, except as to defects which may later develop. The designer shall be the judge as to the quality of work and shall settle all disputes on the matter between contractors.
- d. Any mechanical or electrical work such as sleeves, inserts, chases, openings, penetrations, etc., which is located in the work of the general contractor shall be built in by the general contractor. The respective mechanical and electrical contractors shall set all sleeves, inserts and other devices that are to be incorporated into the structure in cooperation and under the supervision of the general contractor. The responsibility for the exact location of such items shall be that of the mechanical and/or electrical contractor.
- e. The designer and the owner shall have access to the work whenever it is in preparation and progress and during normal working hours. The contractor shall provide facilities for such access so the designer may perform his functions under the contract documents.
- f. Should a contractor cause damage to the work or property of another contractor, he shall be directly responsible, and upon notice, shall promptly settle the claim or otherwise resolve the dispute.

ARTICLE 16 - SUBCONTRACTS AND SUBCONTRACTORS

- a. Within thirty (30) days after award of the contract, the contractor shall submit to the designer, owner and to the State Construction Office a list giving the names and addresses of subcontractors and equipment and material suppliers he proposes to use, together with the scope of their respective parts of the work. Should any subcontractor be disapproved by the designer or owner, the designer or owner shall submit his reasons for disapproval in writing to the State Construction Office for its consideration with a copy to the contractor. If the State Construction Office concurs with the designer's or owner's recommendation, the contractor shall submit a substitute for approval. The designer and owner shall act promptly in the approval of subcontractors, and when approval of the list is given, no changes of subcontractors will be permitted except for cause or reason considered justifiable by the designer or owner.
- b. The designer will furnish to any subcontractor, upon request, evidence regarding amounts of money paid to the contractor on account of the subcontractor's work.
- c. The contractor is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or of any employee of either. The contractor agrees that no contractual relationship exists between the subcontractor and the owner in regard to the contract, and that the subcontractor acts on this work as an agent or employee of the contractor.
- d. The owner reserves the right to limit the amount of portions of work to be subcontracted as hereinafter specified.

ARTICLE 17 - CONTRACTOR AND SUBCONTRACTOR RELATIONSHIPS

The contractor agrees that the terms of these contract documents shall apply equally to each subcontractor as to the contractor, and the contractor agrees to take such action as may be necessary to bind each subcontractor to these terms. The contractor further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to contractor-subcontractor relationships, and that payments to subcontractors shall be made in accordance with the provisions of G.S. 143-134.1 titled Interest on final payments due to prime contractors: payments to subcontractors.

- a. On all public construction contracts which are let by a board or governing body of the state government or any political subdivision thereof, except contracts let by the Department of Transportation pursuant to G.S. 136-28.1, the balance due prime contractors shall be paid in full within 45 days after respective prime contracts of the project have been accepted by the owner, certified by the architect, engineer or designer to be completed in accordance with terms of the plans and specifications, or occupied by the owner and used for the purpose for which the project was constructed, whichever occurs first. Provided, however, that whenever the architect or consulting engineer in charge of the project determines that delay in completion of the project in accordance with terms of the plans and specifications is the fault of the contractor, the project may be occupied and used for the purposes for which it was constructed without payment of any interest on amounts withheld past the 45 day limit. No payment shall be delayed because of the failure of another prime contractor on such project to complete his contract. Should final payment to any prime contractor beyond the date such contracts have been certified to be completed by the designer or architect, accepted by the owner, or occupied by the owner and used for the purposes for which the project was constructed, be delayed by more than 45 days, said prime contractor shall be paid interest, beginning on the 46th day, at the rate of one percent (1%) per month or fraction thereof unless a lower rate is

agreed upon on such unpaid balance as may be due. In addition to the above final payment provisions, periodic payments due a prime contractor during construction shall be paid in accordance with the payment provisions of the contract documents or said prime contractor shall be paid interest on any such unpaid amount at the rate stipulated above for delayed final payments. Such interest shall begin on the date the payment is due and continue until the date on which payment is made. Such due date may be established by the terms of the contract. Funds for payment of such interest on state-owned projects shall be obtained from the current budget of the owning department, institution or agency. Where a conditional acceptance of a contract exists, and where the owner is retaining a reasonable sum pending correction of such conditions, interest on such reasonable sum shall not apply.

- b. Within seven days of receipt by the prime contractor of each periodic or final payment, the prime contractor shall pay the subcontractor based on work completed or service provided under the subcontract. Should any periodic or final payment to the subcontractor be delayed by more than seven days after receipt of periodic or final payment by the prime contractor, the prime contractor shall pay the subcontractor interest, beginning on the eighth day, at the rate of one percent (1%) per month or fraction thereof on such unpaid balance as may be due.
- c. The percentage of retainage on payments made by the prime contractor to the subcontractor shall not exceed the percentage of retainage on payments made by the owner to the prime contractor. Any percentage of retainage on payments made by the prime contractor to the subcontractor that exceeds the percentage of retainage on payments made by the owner to the prime contractor shall be subject to interest to be paid by the prime contractor to the subcontractor at the rate of one percent (1%) per month or fraction thereof.
- d. Nothing in this section shall prevent the prime contractor at the time of application and certification to the owner from withholding application and certification to the owner for payment to the subcontractor for unsatisfactory job progress; defective construction not remedied; disputed work; third-party claims filed or reasonable evidence that claim will be filed; failure of subcontractor to make timely payments for labor, equipment and materials; damage to prime contractor or another subcontractor; reasonable evidence that subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed the initial percentage retained by owner.

ARTICLE 18 - DESIGNER'S STATUS

- a. The designer shall provide general administration of the performance of construction contracts, including liaison and necessary inspection of the work to ensure compliance with plans and specifications. He is the agent of the owner only for the purpose of constructing this work and to the extent stipulated in the contract documents. He has authority to direct work to be performed, to stop work, to order work removed, or to order corrections of faulty work, where any such action by the designer may be necessary to assure successful completion of the work.
- b. The designer is the impartial interpreter of the contract documents, and, as such, he shall exercise his powers under the contract to enforce faithful performance by both the owner and the contractor, taking sides with neither.
- c. Should the designer cease to be employed on the work for any reason whatsoever, then the owner shall employ a competent replacement who shall assume the status of the former designer.

- d. The designer and his consultants will make inspections of the project. He will inspect the progress, the quality and the quantity of the work.
- e. The designer and the owner shall have access to the work whenever it is in preparation and progress during normal working hours. The contractor shall provide facilities for such access so the designer and owner may perform their functions under the contract documents.
- f. Based on the designer's inspections and evaluations of the project, the designer shall issue interpretations, directives and decisions as may be necessary to administer the project. His decisions relating to artistic effect and technical matters shall be final, provided such decisions are within the limitations of the contract.

ARTICLE 19 - CHANGES IN THE WORK

- a. The owner may have changes made in the work covered by the contract. These changes will not invalidate and will not relieve or release the contractor from any guarantee given by him pertinent to the contract provisions. These changes will not affect the validity of the guarantee bond and will not relieve the surety or sureties of said bond. All extra work shall be executed under conditions of the original contract.
- b. Except in an emergency endangering life or property, no change shall be made by the contractor except upon receipt of approved change order or written field order from the designer, countersigned by the owner and the state construction office authorizing such change. No claim for adjustments of the contract price shall be valid unless this procedure is followed.

A field order, transmitted by fax, electronically, or hand delivered, may be used where the change involved impacts the critical path of the work. A formal change order shall be issued as expeditiously as possible.

In the event of emergency endangering life or property, the contractor may be directed to proceed on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the designer or owner, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the work the change order will be prepared as outlined under either Method "c(1)" or Method "c(2)" or both.

- c. In determining the values of changes, either additive or deductive, contractors are restricted to the use of the following methods:
 - 1. Where the extra work involved is covered by unit prices quoted in the proposal, or subsequently agreed to by the Contractor, Designer, Owner and State Construction Office the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved, except in such cases where a quantity exceeds the estimated quantity allowance in the contract by one hundred percent (100%) or more. In such cases, either party may elect to proceed under subparagraph c2 herein. If neither party elects to proceed under c2, then unit prices shall apply.
 - 2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the contract price.

- d. Under Paragraph "b" and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors(1st tier subs), or their sub-subcontractors (2nd tier subs, 3rd tier subs, etc)) shall be allowed a maximum of 10% on work they each self-perform; the prime contractor shall be allowed a maximum of 5% on contracted work of his 1st tier sub; 1st tier, 2nd tier, 3rd tier, etc contractors shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the contractor shall include no less than five percent (5%) profit, but no allowances for overhead.
- e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the work;
 2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.
 3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;
 4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;
 5. The actual costs of premiums for bonds, insurance, permit fees, and sales or use taxes related to the work.

Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the owner.

- f. Should concealed conditions be encountered in the performance of the work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing method of arriving at net cost as defined above.
- g. In all change orders, the procedure will be for the designer to request proposals for the change order work in writing. The contractor will provide such proposal and supporting data in suitable format. The designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the contractor's accepted proposal including all supporting documentation required by the designer, the designer shall prepare the change order and forward to the contractor for his signature or otherwise respond, in writing, to

the contractor's proposal. Within seven (7) days after receipt of the change order executed by the contractor, the designer shall, certify the change order by his signature, and forward the change order and all supporting data to the owner for the owner's signature. The owner shall execute the change order and forward to the State Construction Office for final approval, within seven (7) days of receipt. The State Construction Office shall act on the change order within seven (7) days. In case of emergency or extenuating circumstances, approval of changes may be obtained verbally by telephone or field orders approved by all parties, then shall be substantiated in writing as outlined under normal procedure.

- h. At the time of signing a change order, the contractor shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

- i. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the work.
- j. If, during the progress of the work, the owner requests a change order and the contractor's terms are unacceptable, the owner, with the approval of the State Construction Office, may require the contractor to perform such work on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the Designer or owner, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the owner from performing or to have performed that portion of the work requested in the change order.

ARTICLE 20 - CLAIMS FOR EXTRA COST

- a. Should the contractor consider that as a result of instructions given by the designer, he is entitled to extra cost above that stated in the contract, he shall give written notice thereof to the designer within seven (7) days without delay. The written notice shall clearly state that a claim for extra cost is being made and shall provide a detailed justification for the extra cost. The contractor shall not proceed with the work affected until further advised, except in emergency involving the safety of life or property, which condition is covered in Article 19(b) and Article 11(h). No claims for extra compensation shall be considered unless the claim is so made. The designer shall render a written decision within seven (7) days of receipt of claim.
- b. The contractor shall not act on instructions received by him from persons other than the designer, and any claims for extra compensation or extension of time on account of such instruction will not be honored. The designer shall not be responsible for misunderstandings claimed by the contractor of verbal instructions which have not been confirmed in writing, and in no case shall instructions be interpreted as permitting a departure from the contract documents unless such instruction is confirmed in writing and supported by a properly authorized change order.
- c. Should a claim for extra compensation that complies with the requirements of (a) above by the contractor and is denied by the designer or owner, and cannot be resolved by a

representative of the State Construction Office, the contractor may request a mediation in connection with GS 143-128(f1) in the dispute resolution rules adopted by the State Building Commission (1 N.C.A.C. 30H .0101 through .1001). If the contractor is unable to resolve its claim as a result of mediation, the contractor may pursue the claim in accordance with the provisions of G.S. 143-135.3, or G.S. 143-135.6 where Community Colleges are the owner, and the following:

1. A contractor who has not completed a contract with a board for construction or repair work and who has not received the amount he claims is due under the contract may submit a verified written claim to the director of the State Construction Office of the Department of Administration for the amount the contractor claims is due. The director may deny, allow or compromise the claim, in whole or in part. A claim under this subsection is not a contested case under Chapter 150B of the General Statutes.
2. (a) A contractor who has completed a contract with a board for construction or repair work and who has not received the amount he claims is due under the contract may submit a verified written claim to the director of the State Construction Office of the Department of Administration for the amount the contractor claims is due. The claim shall be submitted within sixty (60) days after the contractor receives a final statement of the board's disposition of his claim and shall state the factual basis for the claim.
 - (b) The director shall investigate a submitted claim within ninety (90) days of receiving the claim, or within any longer time period upon which the director and the contractor agree. The contractor may appear before the director, either in person or through counsel, to present facts and arguments in support of his claim. The director may allow, deny or compromise the claim, in whole or in part. The director shall give the contractor a written statement of the director's decision on the contractor's claim.
 - (c) A contractor who is dissatisfied with the director's decision on a claim submitted under this subsection may commence a contested case on the claim under Chapter 150B of the General Statutes. The contested case shall be commenced within sixty (60) days of receiving the director's written statement of the decision.
 - (d) As to any portion of a claim that is denied by the director, the contractor may, in lieu of the procedures set forth in the preceding subsection of this section, within six (6) months of receipt of the director's final decision, institute a civil action for the sum he claims to be entitled to under the contract by filing a verified complaint and the issuance of a summons in the Superior Court of Wake County or in the superior court of any county where the work under the contract was performed. The procedure shall be the same as in all civil actions except that all issues shall be tried by the judge, without a jury.

ARTICLE 21 - MINOR CHANGES IN THE WORK

The designer will have the authority to order minor changes in the work not involving an adjustment in the contract sum or time for completion, and not inconsistent with the intent of the contract documents. Such changes shall be effected by written order, copied to the State Construction Office, and shall be binding on the owner and the contractor.

ARTICLE 22 - UNCORRECTED FAULTY WORK

Should the correction of faulty or damaged work be considered inadvisable or inexpedient by the owner and the designer, the owner shall be reimbursed by the contractor. A change order will be issued to reflect a reduction in the contract sum.

ARTICLE 23 - TIME OF COMPLETION, DELAYS, EXTENSION OF TIME

- a. The time of completion is stated in the Supplementary General Conditions and in the Form of Construction Contract. The Project Expediter, upon notice of award of contract, shall prepare a construction schedule to complete the project within the time of completion as required by Article 14.
- b. The contractors shall commence work to be performed under this agreement on a date to be specified in a written Notice to Proceed from the designer and shall fully complete all work hereunder within the time of completion stated. Time is of the essence and the contractor acknowledges the Owner will likely suffer financial damage for failure to complete the work within the time of completion. For each day in excess of the above number of days, the contractor(s) shall pay the owner the sum stated as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the owner by reason of failure of said contractor(s) to complete the work within the time specified, such time being in the essence of this contract and a material consideration thereof.
- c. In the event of multiple prime contractors, the designer shall be the judge as to the division of responsibility between the contractor(s), based on the construction schedule, weekly reports and job records, and shall apportion the amount of liquidated damages to be paid by each of them, according to delay caused by any or all of them.
- d. If the contractor is delayed at any time in the progress of his work solely by any act or negligence of the owner, the designer, or by any employee of either; by any separate contractor employed by the owner; by changes ordered in the work; by labor disputes at the project site; by abnormal weather conditions not reasonably anticipated for the locality where the work is performed; by unavoidable casualties; by any causes beyond the contractor's control; or by any other causes which the designer and owner determine may justify the delay, then the contract time may be extended by change order only for the time which the designer and owner may determine is reasonable.

Time extensions will not be granted for rain, wind, snow or other natural phenomena of normal intensity for the locality where work is performed. For purpose of determining extent of delay attributable to unusual weather phenomena, a determination shall be made by comparing the weather for the contract period involved with the average of the preceding five (5) year climatic range during the same time interval based on the National Oceanic and Atmospheric Administration National Weather Service statistics for the locality where work is performed and on daily weather logs kept on the job site by the contractor reflecting the effect of the weather on progress of the work and initialed by the designer's representative. No weather delays shall be considered after the building is dried in unless work claimed to be delayed is on the critical path of the baseline schedule or approved updated schedule. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any contractor claim for compensable damages for delays is limited to delays caused solely by the owner or its agents. Contractor caused delays shall be accounted for before owner or designer caused delays in the case of concurrent delays.

- e. Request for extension of time shall be made in writing to the designer, copies to the owner and SCO, within twenty (20) days following cause of delay. In case of continuing cause for delay, the Contractor shall notify the Designer to the designer, copies to the owner and SCO, of the delay within 20 days of the beginning of the delay and only one claim is necessary.
- f. The contractor shall notify his surety in writing of extension of time granted.
- g. No claim for time extension shall be allowed on account of failure of the designer to furnish drawings or instructions until twenty (20) days after demand for such drawings and/or instructions. See Article 5c. Demand must be in written form clearly stating the potential for delay unless the drawings or instructions are provided. Any delay granted will begin after the twenty (20) day demand period is concluded.

ARTICLE 24 - PARTIAL UTILIZATION/BENEFICIAL OCCUPANCY

- a. The owner may desire to occupy or utilize all or a portion of the project prior to the completion of the project.
- b. Should the owner request a utilization of a building or portion thereof, the designer shall perform a designer final inspection of area after being notified by the contractor that the area is ready for such. After the contractor has completed designer final inspection punch list and the designer has verified, then the designer shall schedule a beneficial occupancy inspection at a time and date acceptable to the owner, contractor(s) and State Construction Office. If beneficial occupancy is granted by the State Construction Office, in such areas the following will be established:
 - 1. The beginning of guarantees and warranties period for the equipment necessary to support. in the area.
 - 2. The owner assumes all responsibilities for utility costs for entire building.
 - 2. Contractor will obtain consent of surety.
 - 3. Contractor will obtain endorsement from insurance company permitting beneficial occupancy.
- c. The owner shall have the right to exclude the contractor from any part of the project which the designer has so certified to be substantially complete, but the owner will allow the contractor reasonable access to complete or correct work to bring it into compliance with the contract.
- d. Occupancy by the owner under this article will in no way relieve the contractor from his contractual requirement to complete the project within the specified time. The contractor will not be relieved of liquidated damages because of beneficial occupancy. The designer may prorate liquidated damages based on the percentage of project occupied.

ARTICLE 25 - FINAL INSPECTION, ACCEPTANCE, AND PROJECT CLOSEOUT

- a. Upon notification from the contractor(s) that the project is complete and ready for inspection, the designer shall make a Designer final inspection to verify that the project is complete and ready for SCO final inspection. Prior to SCO final inspection, the contractor(s) shall complete all items requiring corrective measures noted at the Designer

final inspection. The designer shall schedule a SCO final inspection at a time and date acceptable to the owner, contractor(s) and State Construction Office.

- b. At the SCO final inspection, the designer and his consultants shall, if job conditions warrant, record a list of items that are found to be incomplete or not in accordance with the contract documents. At the conclusion of the SCO final inspection, the designer and State Construction Office representative shall make one of the following determinations:
 - 1. That the project is completed and accepted.
 - 2. That the project will be accepted subject to the correction of the list of discrepancies (punch list). All punch list items must be completed within thirty (30) days of SCO final inspection or the owner may invoke Article 28, Owner's Right to Do Work.
 - 4. That the project is not complete and another date for a SCO final inspection will be established.
- c. Within fourteen (14) days of final acceptance per Paragraph b1 or within fourteen (14) days after completion of punch list per Paragraph b2 above, the designer shall certify the work and issue applicable certificate(s) of compliance.
- d. Any discrepancies listed or discovered after the date of SCO final inspection and acceptance under Paragraphs b1 or b2 above shall be handled in accordance with Article 42, Guarantee.
- f. The final acceptance date will establish the following:
 - 1. The beginning of guarantees and warranties period.
 - 2. The date on which the contractor's insurance coverage for public liability, property damage and builder's risk may be terminated.
 - 3. That no liquidated damages (if applicable) shall be assessed after this date.
 - 4. The termination date of utility cost to the contractor.
- g. **Prior to issuance of final acceptance date, the contractor shall have his authorized representatives visit the project and give full instructions to the designated personnel regarding operating, maintenance, care, and adjustment of all equipment and special construction elements. In addition, the contractor shall provide to the owner a complete instructional video (media format acceptable to the owner) on the operation, maintenance, care and adjustment of all equipment and special construction elements.**

ARTICLE 26 - CORRECTION OF WORK BEFORE FINAL PAYMENT

- a. Any work, materials, fabricated items or other parts of the work which have been condemned or declared not in accordance with the contract by the designer shall be promptly removed from the work site by the contractor, and shall be immediately replaced by new work in accordance with the contract at no additional cost to the owner. Work or property of other contractors or the owner, damaged or destroyed by virtue of such faulty work, shall be made good at the expense of the contractor whose work is faulty.

- b. Correction of condemned work described above shall commence within twenty-four (24) hours after receipt of notice from the designer, and shall make satisfactory progress, as determined by the designer, until completed.
- c. Should the contractor fail to proceed with the required corrections, then the owner may complete the work in accordance with the provisions of Article 28.

ARTICLE 27 - CORRECTION OF WORK AFTER FINAL PAYMENT

See Article 35, Performance Bond and Payment Bond, and Article 42, Guarantee. Neither the final certificate, final payment, occupancy of the premises by the owner, nor any provision of the contract, nor any other act or instrument of the owner, nor the designer, shall relieve the contractor from responsibility for negligence, or faulty material or workmanship, or failure to comply with the drawings and specifications. Contractor shall correct or make good any defects due thereto and repair any damage resulting there from, which may appear during the guarantee period following final acceptance of the work except as stated otherwise under Article 42, Guarantee. The owner will report any defects as they may appear to the contractor and establish a time limit for completion of corrections by the contractor. The owner will be the judge as to the responsibility for correction of defects.

ARTICLE 28 - OWNER'S RIGHT TO DO WORK

If, during the progress of the work or during the period of guarantee, the contractor fails to prosecute the work properly or to perform any provision of the contract, the owner, after seven (7) days' written notice sent by certified mail, return receipt requested, to the contractor from the designer, may perform or have performed that portion of the work. The cost of the work may be deducted from any amounts due or to become due to the contractor, such action and cost of same having been first approved by the designer. Should the cost of such action of the owner exceed the amount due or to become due the contractor, then the contractor or his surety, or both, shall be liable for and shall pay to the owner the amount of said excess.

ARTICLE 29 - ANNULMENT OF CONTRACT

If the contractor fails to begin the work under the contract within the time specified, or the progress of the work is not maintained on schedule, or the work is not completed within the time above specified, or fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the work unsuitably or shall discontinue the prosecution of the work, or if the contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or for any other cause whatsoever shall not carry on the work in an acceptable manner, the owner may give notice in writing, sent by certified mail, return receipt requested, to the contractor and his surety of such delay, neglect or default, specifying the same, and if the contractor within a period of seven (7) days after such notice shall not proceed in accordance therewith, then the owner shall, declare this contract in default, and, thereupon, the surety shall promptly take over the work and complete the performance of this contract in the manner and within the time frame specified. In the event the surety shall fail to take over the work to be done under this contract within seven (7) days after being so notified and notify the owner in writing, sent by certified mail, return receipt requested, that he is taking the same over and stating that he will diligently pursue and complete the same, the owner shall have full power and authority, without violating the contract, to take the prosecution of the work out of the hands of said contractor, to appropriate or use any or all contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof

or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the owner, together with the costs of completing the work under contract, shall be deducted from any monies due or which may become due said contractor and surety. In case the expense so incurred by the owner shall be less than the sum which would have been payable under the contract, if it had been completed by said contractor, then the said contractor and surety shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the contractor and the surety shall be liable and shall pay to the owner the amount of said excess.

ARTICLE 30 - CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE THE CONTRACT

- a. Should the work be stopped by order of a court having jurisdiction, or by order of any other public authority for a period of three months, due to cause beyond the fault or control of the contractor, or if the owner should fail or refuse to make payment on account of a certificate issued by the designer within forty-five (45) days after receipt of same, then the contractor, after fifteen (15) days' written notice sent by certified mail, return receipt requested, to the owner and the designer, may suspend operations on the work or terminate the contract.
- b. The owner shall be liable to the contractor for the cost of all materials delivered and work performed on this contract plus 10 percent overhead and profit and shall make such payment. The designer shall be the judge as to the correctness of such payment.

ARTICLE 31 - REQUEST FOR PAYMENT

- a. Not later than the fifth day of the month, the contractor shall submit to the designer a request for payment for work done during the previous month. The request shall be in the form agreed upon between the contractor and the designer, but shall show substantially the value of work done and materials delivered to the site during the period since the last payment, and shall sum up the financial status of the contract with the following information:
 1. Total of contract including change orders.
 2. Value of work completed to date.
 3. Less five percent (5%) retainage, provided however, that after fifty percent (50%) of the contractor's work has been satisfactorily completed on schedule, with approval of the owner and the State Construction Office and written consent of the surety, further requirements for retainage will be waived only so long as work continues to be completed satisfactorily and on schedule.
 4. Less previous payments.
 5. Current amount due.
- b. The contractor, upon request of the designer, shall substantiate the request with invoices of vouchers or payrolls or other evidence.
- c. Prior to submitting the first request, the contractor shall prepare for the designer a schedule showing a breakdown of the contract price into values of the various parts of the work, so arranged as to facilitate payments to subcontractors in accordance with Article 17, Contractor and Subcontractor Relationships. The contractor(s) shall list the

value of each subcontractor and supplier, identifying each minority business subcontractor and supplier as listed in Affidavit C, if applicable.

- d. When payment is made on account of stored materials and equipment, such materials must be stored on the owner's property, and the requests for payments shall be accompanied by invoices or bills of sale or other evidence to establish the owner's title to such materials and equipment. Such payments will be made only for materials that have been customized or fabricated specifically for this project. Raw materials or commodity products including but not limited to piping, conduit, CMU, metal studs and gypsum board may not be submitted. Responsibility for such stored materials and equipment shall remain with the contractor regardless of ownership title. Such stored materials and equipment shall not be removed from the owner's property. Should the space for storage on-site be limited, the contractor, at his option, shall be permitted to store such materials and/or equipment in a suitable space off-site. Should the contractor desire to include any such materials or equipment in his application for payment, they must be stored in the name of the owner in an independent, licensed, bonded warehouse approved by the designer, owner and the State Construction Office and located as close to the site as possible. The warehouse selected must be approved by the contractor's bonding and insurance companies; the material to be paid for shall be assigned to the owner and shall be inspected by the designer. Upon approval by the designer, owner and SCO of the storage facilities and materials and equipment, payment therefore will be certified. Responsibility for such stored materials and equipment shall remain with the contractor. Such stored materials and equipment shall not be moved except for transportation to the project site. Under certain conditions, the designer may approve storage of materials at the point of manufacture, which conditions shall be approved by the designer, the owner and the State Construction Office prior to approval for the storage and shall include an agreement by the storing party which unconditionally gives the State absolute right to possession of the materials at anytime. Bond, security and insurance protection shall continue to be the responsibility of the contractor(s).
- e. In the event of beneficial occupancy, retainage of funds due the contractor(s) may be reduced with the approval of the State Construction Office to an equitable amount to cover the list of items to be completed or corrected. Retainage may not be reduced to less than two and one-half (2 1/2) times the estimated value of the work to be completed or corrected. Reduction of retainage must be with the consent and approval of the contractor's bonding company.

ARTICLE 32 - CERTIFICATES OF PAYMENT AND FINAL PAYMENT

- a. Within five (5) days from receipt of request for payment from the contractor, the designer shall issue and forward to the owner a certificate for payment. This certificate shall indicate the amount requested or as approved by the designer. If the certificate is not approved by the designer, he shall state in writing to the contractor and the owner his reasons for withholding payment.
- b. No certificate issued or payment made shall constitute an acceptance of the work or any part thereof. The making and acceptance of final payment shall constitute a waiver of all claims by the owner except:
 1. Claims arising from unsettled liens or claims against the contractor.
 2. Faulty work or materials appearing after final payment.
 3. Failure of the contractor to perform the work in accordance with drawings and specifications, such failure appearing after payment.

4. As conditioned in the performance bond and payment bond.
- c. The making and acceptance of final payment shall constitute a waiver of all claims by the contractor except those claims previously made and remaining unsettled (Article 20(c)).
- d. Prior to submitting request for final payment to the designer for approval, the contractor shall fully comply with all requirements specified in the “project closeout” section of the specifications. These requirements include but not limited to the following:
 1. Submittal of Product and Operating Manuals, Warranties and Bonds, Guarantees, Maintenance Agreements, As-Built Drawings, Certificates of Inspection or Approval from agencies having jurisdiction. (The designer must approve the Manuals prior to delivery to the owner).
 2. Transfer of Required attic stock material and all keys in an organized manner.
 3. Record of Owner’s training.
 4. Resolution of any final inspection discrepancies.
 5. Granting access to Contractor’s records, if Owner’s internal auditors have made a request for such access pursuant to Article 52.
- e. The contractor shall forward to the designer, the final application for payment along with the following documents:
 1. List of minority business subcontractors and material suppliers showing breakdown of contract amounts and total actual payments to subs and material suppliers.
 2. Affidavit of Release of Liens.
 3. Affidavit of contractors of payment to material suppliers and subcontractors. (See Article 36).
 4. Consent of Surety to Final Payment.
 5. Certificates of state agencies required by state law.
- f. The designer will not authorize final payment until the work under contract has been certified by designer, certificates of compliance issued, and the contractor has complied with the closeout requirements. The designer shall forward the contractor’s final application for payment to the owner along with respective certificate(s) of compliance required by law.

ARTICLE 33 - PAYMENTS WITHHELD

- a. The designer with the approval of the State Construction Office may withhold payment for the following reasons:
 1. Faulty work not corrected.

2. The unpaid balance on the contract is insufficient to complete the work in the judgment of the designer.
 3. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- b. The secretary of the Department of Administration may authorize the withholding of payment for the following reasons:
1. Claims filed against the contractor or evidence that a claim will be filed.
 2. Evidence that subcontractors have not been paid.
- c. The Owner may withhold all or a portion of Contractor's general conditions costs set forth in the approved schedule of values, if Contractor has failed to comply with: (1) a request to access its records by Owner's internal auditors pursuant to Article 52; (2) a request for a plan of action and/or recovery schedule under Article 14.j or provide The Owner; (3) a request to provide an electronic copies of Contractor's baseline schedule, updates with all logic used to create the schedules in the original format of the scheduling software; and (4) Contractor's failure to have its Superintendent on the Project full-time; (
- d. When grounds for withholding payments have been removed, payment will be released. Delay of payment due the contractor without cause will make owner liable for payment of interest to the contractor in accordance with G.S. 143-134.1. As provided in G.S.143-134.1(e) the owner shall not be liable for interest on payments withheld by the owner for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

ARTICLE 34 - MINIMUM INSURANCE REQUIREMENTS

The work under this contract shall not commence until the contractor has obtained all required insurance and verifying certificates of insurance have been approved in writing by the owner. These certificates shall document that coverages afforded under the policies will not be cancelled, reduced in amount or coverages eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the owner of such alteration or cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

a. **Worker's Compensation and Employer's Liability**

The contractor shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of \$100,000.

b. **Public Liability and Property Damage**

The contractor shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by the contractor or by any subcontractor, or by

anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury: \$500,000 per occurrence
Property Damage: \$100,000 per occurrence / \$300,000 aggregate

In lieu of limits listed above, a \$500,000 combined single limit shall satisfy both conditions.

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the work performed under the contract.

c. Property Insurance (Builder's Risk/Installation Floater)

The contractor shall purchase and maintain property insurance until final acceptance, upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the owner, the contractor, the subcontractors and sub-subcontractors in the work and shall insure against the perils of fire, wind, rain, flood, extended coverage, and vandalism and malicious mischief. If the owner is damaged by failure of the contractor to purchase or maintain such insurance, then the contractor shall bear all reasonable costs properly attributable thereto; the contractor shall effect and maintain similar property insurance on portions of the work stored off the site when request for payment per articles so includes such portions.

d. Deductible

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the contractor.

e. Other Insurance

The contractor shall obtain such additional insurance as may be required by the owner or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

f. Proof of Carriage

The contractor shall furnish the owner with satisfactory proof of carriage of the insurance required before written approval is granted by the owner.

ARTICLE 35 - PERFORMANCE BOND AND PAYMENT BOND

- a. Each contractor shall furnish a performance bond and payment bond executed by a surety company authorized to do business in North Carolina. The bonds shall be in the full contract amount. Bonds shall be executed in the form bound with these specifications.
- b. All bonds shall be countersigned by an authorized agent of the bonding company who is licensed to do business in North Carolina.

ARTICLE 36 - CONTRACTOR'S AFFIDAVIT

The final payment of retained amount due the contractor on account of the contract shall not become due until the contractor has furnished to the owner through the designer an affidavit signed, sworn and notarized to the effect that all payments for materials, services or subcontracted work in connection with his contract have been satisfied, and that no claims or

liens exist against the contractor in connection with this contract. In the event that the contractor cannot obtain similar affidavits from subcontractors to protect the contractor and the owner from possible liens or claims against the subcontractor, the contractor shall state in his affidavit that no claims or liens exist against any subcontractor to the best of his (the contractor's) knowledge, and if any appear afterward, the contractor shall save the owner harmless.

ARTICLE 37 - ASSIGNMENTS

The contractor shall not assign any portion of this contract nor subcontract in its entirety. Except as may be required under terms of the performance bond or payment bond, no funds or sums of money due or become due the contractor under the contract may be assigned.

ARTICLE 38 - USE OF PREMISES

- a. The contractor(s) shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the designer and owner and shall not exceed those established limits in his operations.
- b. The contractor(s) shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.
- c. The contractor(s) shall enforce the designer's and owner's instructions regarding signs, advertisements, fires and smoking.
- d. No firearms, any type of alcoholic beverages, or drugs (other than those prescribed by a physician) will be permitted at the job site.

ARTICLE 39 - CUTTING, PATCHING AND DIGGING

- a. The contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon or reasonably implied by the drawings and specifications for the completed structure, as the designer may direct.
- b. Any cost brought about by defective or ill-timed work shall be borne by the party responsible therefor.
- c. No contractor shall endanger any work of another contractor by cutting, digging or other means. No contractor shall cut or alter the work of any other contractor without the consent of the designer and the affected contractor(s).

ARTICLE 40 - UTILITIES, STRUCTURES, SIGNS

- a. The contractor shall provide necessary and adequate facilities for water, electricity, gas, oil, sewer and other utility services which maybe necessary and required for completion of the project including all utilities required for testing, cleaning, balancing, and sterilization of designated plumbing, mechanical and electrical systems. Any permanent meters installed shall be listed in the contractor's name until work has a final acceptance. The contractor will be solely responsible for all utility costs prior to final acceptance. Contractor shall contact all affected utility companies prior to bid to determine their requirements to provide temporary and permanent service and include all costs associated with providing those services in their bid. Coordination of the work of the utility companies during construction is the sole responsibility of the contractor.

- b. Meters shall be relisted in the owner's name on the day following final acceptance of the Project Expediter's work, and the owner shall pay for services used after that date.
- c. The owner shall be reimbursed for all metered utility charges after the meter is relisted in the owner's name and prior to completion and acceptance of the work of **all** contractors. Reimbursement shall be made by the contractor whose work has not been completed and accepted. If the work of two or more contractors has not been completed and accepted, reimbursement to the owner shall be paid by the contractors involved on the basis of assessments by the designer.
- d. Prior to the operation of permanent systems, the Project Expediter will provide temporary power, lighting, water, and heat to maintain space temperature above freezing, as required for construction operations.
- e. All contractors shall have the permanent building systems in sufficient readiness for furnishing temporary climatic control at the time a building is enclosed and secured. The HVAC systems shall maintain climatic control throughout the enclosed portion of the building sufficient to allow completion of the interior finishes of the building. A building shall be considered enclosed and secured when windows, doorways (exterior, mechanical, and electrical equipment rooms), and hardware are installed; and other openings have protection which will provide reasonable climatic control. The appropriate time to start the mechanical systems and climatic condition shall be jointly determined by the contractor(s), the designer and owner. Use of the equipment in this manner shall be subject to the approval of the Designer and owner and shall in no way affect the warranty requirements of the contractor(s).
- f. The electrical contractor shall have the building's permanent power wiring distribution system in sufficient readiness to provide power as required by the HVAC contractor for temporary climatic control.
- g. The electrical contractor shall have the building's permanent lighting system ready at the time the general contractor begins interior painting and shall provide adequate lighting in those areas where interior painting and finishing is being performed.
- h. Each prime contractor shall be responsible for his permanently fixed service facilities and systems in use during progress of the work. The following procedures shall be strictly adhered to:
 - 1. Prior to final acceptance of work by the State Construction Office, each contractor shall remove and replace any parts of the permanent building systems damaged through use during construction.
 - 2. Temporary filters as recommended by the equipment manufacturer in order to keep the equipment and ductwork clean and free of dust and debris shall be installed in each of the heating and air conditioning units and at each return grille during construction. New filters shall be installed in each unit prior to the owner's acceptance of the work.
 - 3. Extra effort shall be maintained to keep the building and the site adjacent to the building clean and under no circumstances shall air systems be operated if finishing and site work operations are creating dust in excess of what would be considered normal if the building were occupied.
 - 4. It shall be understood that any warranty on equipment presented to the owner shall extend from the day of final acceptance by the owner. The cost of warranting the

equipment during operation in the finishing stages of construction shall be borne by the contractor whose system is utilized.

5. The electrical contractor shall have all lamps in proper working condition at the time of final project acceptance.
 - i. The Project Expediter shall provide, if required and where directed, a shed for toilet facilities and shall furnish and install in this shed all water closets required for a complete and adequate sanitary arrangement. These facilities will be available to other contractors on the job and shall be kept in a neat and sanitary condition at all times. Chemical toilets are acceptable.
 - j. The Project Expediter shall, if required by the Supplementary General Conditions and where directed, erect a temporary field office, complete with lights, telephone, heat and air conditioning. A portion of this office shall be partitioned off, of sufficient size, for the use of a resident inspector, should the designer so direct.
 - k. On multi-story construction projects, the Project Expediter shall provide temporary elevators, lifts, or other special equipment for the general use of all contractors. The cost for such elevators, lifts or other special equipment and the operation thereof shall be included in the Project Expediter's bid.
 - l. The Project Expediter will erect one sign on the project if required. The sign shall be of sound construction, and shall be neatly lettered with black letters on white background. The sign shall bear the name of the project, and the names of prime contractors on the project, and the name of the designer and consultants. Directional signs may be erected on the owner's property subject to approval of the owner with respect to size, style and location of such directional signs. Such signs may bear the name of the contractor and a directional symbol. No other signs will be permitted except by permission of the owner.

ARTICLE 41 - CLEANING UP

- a. The contractors shall keep the building and surrounding area reasonably free from rubbish at all times, and shall remove debris from the site on a timely basis or when directed to do so by the designer or Project Expediter. The Project Expediter shall provide an on site refuse container(s) for the use of all contractors. Each contractor shall remove their rubbish and debris from the building on a daily basis. The Project Expediter shall broom clean the building as required to minimize dust and dirt accumulation.
- b. The Project Expediter shall provide and maintain suitable all-weather access to the building.
- c. Before final inspection and acceptance of the building, each contractor shall clean his portion of the work, including glass, hardware, fixtures, masonry, tile and marble (using no acid), clean and wax all floors as specified, and completely prepare the building for use by the owner, with no cleaning required by the owner.

ARTICLE 42 - GUARANTEE

- a. The contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the date of final acceptance of the work or beneficial occupancy and shall replace such defective materials or workmanship without cost to the owner.

- b. Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The contractor shall replace such defective equipment or materials, without cost to the owner, within the manufacturer's warranty period.
- c. Additionally, the owner may bring an action for latent defects caused by the negligence of the contractor which is hidden or not readily apparent to the owner at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.
- d. Guarantees for roof, equipment, materials, and supplies shall be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.

ARTICLE 43 - CODES AND STANDARDS

Wherever reference is given to codes, standard specifications or other data published by regulating agencies including, but not limited to, national electrical codes, North Carolina state building codes, federal specifications, ASTM specifications, various institute specifications, etc., it shall be understood that such reference is to the latest edition including addenda published prior to the date of the contract documents.

ARTICLE 44 - INDEMNIFICATION

To the fullest extent permitted by law, the contractor shall indemnify and hold harmless the owner, the designer and the agents, consultants and employees of the owner and designer, from and against all claims, damages, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance or failure of performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the contractor, the contractor's subcontractor, or the agents of either the contractor or the contractor's subcontractor. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this article.

ARTICLE 45 - TAXES

- a. Federal excise taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3442(3)).
- b. Federal transportation taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3475(b) as amended).
- c. North Carolina sales tax and use tax, as required by law, do apply to materials entering into state work and such costs shall be included in the bid proposal and contract sum.
- d. Local option sales and use taxes, as required by law, do apply to materials entering into state work as applicable and such costs shall be included in the bid proposal and contract sum.
- e. **Accounting Procedures for Refund of County Sales & Use Tax**

Amount of county sales and use tax paid per contractor's statements:

Contractors performing contracts for state agencies shall give the state agency for whose project the property was purchased a signed statement containing the information listed in G.S. 105-164.14(e).

The Department of Revenue has agreed that in lieu of obtaining copies of sales receipts from contractors, an agency may obtain a certified statement as of April 1, 1991 from the contractor setting forth the date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. If the property was purchased out-of-state, the county in which the property was delivered should be listed. The contractor should also be notified that the certified statement may be subject to audit.

In the event the contractors make several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, the counties, and the county sales and use taxes paid thereon.

Name of taxing county: The position of a sale is the retailer's place of business located within a taxing county where the vendor becomes contractually obligated to make the sale. Therefore, it is important that the county tax be reported for the county of sale rather than the county of use.

When property is purchased from out-of-state vendors and the county tax is charged, the county should be identified where delivery is made when reporting the county tax.

Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of county sales or use tax paid thereon by the contractor.

Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant.

Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the building or structure.

ARTICLE 46 - EQUAL OPPORTUNITY CLAUSE

The non-discrimination clause contained in Section 202 (Federal) Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the secretary of Labor, are incorporated herein.

ARTICLE 47 - EMPLOYMENT OF INDIVIDUALS WITH DISABILITIES

The contractor(s) agree not to discriminate against any employee or applicant for employment because of physical or mental disabilities in regard to any position for which the employee or applicant is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with such disabilities without discrimination based upon their physical or mental disability in all employment practices.

ARTICLE 48 - ASBESTOS-CONTAINING MATERIALS (ACM)

The State of North Carolina has attempted to address all asbestos-containing materials that are to be disturbed in the project. However, there may be other asbestos-containing materials in the work areas that are not to be disturbed and do not create an exposure hazard.

Contractors are reminded of the requirements of instructions under Instructions to Bidders and General Conditions of the Contract, titled Examination of Conditions. Statute 130A, Article 19, amended August 3, 1989, established the Asbestos Hazard Management Program that controls asbestos abatement in North Carolina. The latest edition of *Guideline Criteria for Asbestos Abatement* from the State Construction Office is to be incorporated in all asbestos abatement projects for the Capital Improvement Program.

ARTICLE 49 - MINORITY BUSINESS PARTICIPATION

GS 143-128.2 establishes a ten percent (10%) goal for participation by minority businesses in total value of work for each State building project. The document, *Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts* including Affidavits and Appendix E are hereby incorporated into and made a part of this contract.

ARTICLE 50 – CONTRACTOR EVALUATION

The contractor's overall work performance on the project shall be fairly evaluated in accordance with the State Building Commission policy and procedures, for determining qualifications to bid on future State capital improvement projects. In addition to final evaluation, interim evaluation may be prepared during the progress of project. The document, *Contractor Evaluation Procedures*, is hereby incorporated and made a part of this contract. The owner may request the contractor's comments to evaluate the designer.

ARTICLE 51 – GIFTS

Pursuant to N.C. Gen. Stat. § 133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, subcontractor, supplier, vendor, etc.), to make gifts or to give favors to any State employee. This prohibition covers those vendors and contractors who: (1) have a contract with a governmental agency; or (2) have performed under such a contract within the past year; or (3) anticipate bidding on such a contract in the future. For additional information regarding the specific requirements and exemptions, vendors and contractors are encouraged to review G.S. Sec. 133-32.

During the construction of the Project, the Contractor is prohibited from making gifts to any of the Owner's employees, Owner's project representatives (architect, engineers, construction manager and their employees), employees of the State Construction Office and/or any other State employee that may have any involvement, influence, responsibilities, oversight, management and/or duties that pertain to and/or relate to the contract administration, financial administration and/or disposition of claims arising from and/or relating to the Contract and/or Project.

ARTICLE 52 – AUDITING-ACCESS TO PERSONS AND RECORDS

In accordance with N.C. General Statute 147-64.7, the State Auditor shall have access to Contractor's officers, employees, agents and/or other persons in control of and/or responsible for the Contractor's records that relate to this Contracts for purposes of conducting audits under the referenced statute. The Owner's internal auditors shall also have the right to access and copy the Contractor's records relating to the Contract and Project during the term of the Contract and within two years following the completion of the Project/close-out of the Contract to verify accounts, accuracy, information, calculations and/or data affecting and/or

relating to Contractor's requests for payment, requests for change orders, change orders, claims for extra work, requests for time extensions and related claims for delay/extended general conditions costs, claims for lost productivity, claims for loss efficiency, claims for idle equipment or labor, claims for price/cost escalation, pass-through claims of subcontractors and/or suppliers, and/or any other type of claim for payment or damages from Owner and/or its project representatives.

ARTICLE 53 – NORTH CAROLINA FALSE CLAIMS ACT

The North Carolina False Claims Act ("NCFCA"), N.C. Gen. Stat. § 1-605 through 1-618, applies to this Contract. The Contractor should familiarize itself with the entire NCFCA and should seek the assistance of an attorney if it has any questions regarding the NCFCA and its applicability to any requests, demands and/or claims for payment its submits to the State through the contracting state agency, institution, university or community college.

The purpose of the NCFCA "is to deter persons from knowingly causing or assisting in causing the State to pay claims that are false or fraudulent and to provide remedies in the form of treble damages and civil penalties when money is obtained from the State by reason of a false or fraudulent claim." (Section 1-605(b).) A contractor's liability under the NCFCA may arise from, but is not limited to: requests for payment, invoices, billing, claims for extra work, requests for change orders, requests for time extensions, claims for delay damages/extended general conditions costs, claims for lost productivity, claims for loss efficiency, claims for idle equipment or labor, claims for price/cost escalation, pass-through claims of subcontractors and/or suppliers, documentation used to support any of the foregoing requests or claims, and/or any other request for payment from the State through the contracting state agency, institution, university or community college. The parts of the NCFCA that are most likely to be enforced with respect to this type of contract are as follows:

- A "claim" is "[a]ny request or demand, whether under a contract or otherwise, for money or property and whether or not the State has title to the money or property that (i) is presented to an officer, employee, or agent of the State or (ii) is made to a contractor ... if the money or property is to be spent or used on the State's behalf or to advance a State program or interest and if the State government: (a) provides or has provided any portion of the money or property that is requested or demanded; or (b) will reimburse such contractor ... for any portion of the money or property which is requested or demanded." (Section 1-606(2).)
- "Knowing" and "knowingly." – Whenever a person, with respect to information, does any of the following: (a) Has actual knowledge of the information; (b) Acts in deliberate ignorance of the truth or falsity of the information; and/or (c) Acts in reckless disregard of the truth or falsity of the information. (Section 1-606(4).) Proof of specific intent to defraud is not required. (Section 1-606(4).)
- "Material" means having a natural tendency to influence, or be capable of influencing, the payment or receipt of money or property. (Section 1-606(4).)
- Liability. – "Any person who commits any of the following acts shall be liable to the State for three times the amount of damages that the State sustains because of the act of that person[:]. ... (1) Knowingly presents or causes to be presented a false or fraudulent claim for payment or approval. (2) Knowingly makes, uses, or causes to be made or used, a false record or statement material to a false or fraudulent claim. (3) Conspires to commit a violation of subdivision (1), (2) ..." (Section 1-607(a)(1), (2).)

- The NCFCA shall be interpreted and construed so as to be consistent with the federal False Claims Act, 31 U.S.C. § 3729, et seq., and any subsequent amendments to that act. (Section 1-616(c).)

Finally, the contracting state agency, institution, university or community college may refer any suspected violation of the NCFCA by the Contractor to the Attorney General's Office for investigation. Under Section 1-608(a), the Attorney General is responsible for investigating any violation of NCFCA, and may bring a civil action against the Contractor under the NCFCA. The Attorney General's investigation and any civil action relating thereto are independent and not subject to any dispute resolution provision set forth in this Contract. (See Section 1-608(a).)

ARTICLE 54 – TERMINATION FOR CONVENIENCE

Owner may at any time and for any reason terminate Contractor's services and work at Owner's convenience. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by Contractor as are permitted by the prime contract and approved by Owner; (3) plus ten percent (10%) of the cost of the work referred to in subparagraph (1) above for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against Owner for any additional compensation or damages in the event of such termination and payment.

Supplementary General Conditions of the Formal Contract

Revised May 6, 2019

The following special requirements of the contract augment the State Construction Office, North Carolina Department of Administration Form OC-15, 24th, January 2013 Edition "General Conditions,". Where any article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplementary General Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS

Delete Paragraph A and replace with the following:

~~General contractor—Up to twelve (12) sets of general contractor drawings and specifications, up to six (6) sets of which shall include drawings and specifications of all other contracts, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work in place that is at variance with the contract documents.~~

The Designer shall furnish at no cost to the General Contractor (GC) or Construction Manager (CM) an electronic copy in PDF format of the bid documents.

Delete Paragraph B:

~~Each other contractor—Up to six (6) sets of the appropriate drawings and specifications, up to three (3) sets of which shall include drawings and specifications of all other contracts, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work in place that is at variance with the contract documents.~~

Delete Paragraph D:

~~For the purposes of a single prime contract, the contractor shall receive up to 30 sets of drawings and specifications, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the contractor shall clearly and legibly record all work in place that is at variance with the contract documents.~~

ARTICLE 5 - SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

Add Paragraph E:

The GC/CM shall submit with initial approval of the design documents for compliance and accuracy, electronic copies in PDF format of all shop drawings and submittals. Physical samples shall be submitted for color and workmanship (mock-up) approval.

All Shop Drawings, Samples and Submittals for approval shall be completed within ninety (90) days after award of the sub-contract agreement between the GC/CM and the specialty subcontractor.

Add Paragraph F:

The GC/CM shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions or modifications including those requested by the Designer on previous submittals. In the absence of such written notice, the Designer's approval of a resubmission shall not apply to such revisions.

ARTICLE 6 - WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

Modify Paragraph B as follows:

The contractor shall maintain at the job office, a day-to-day record of work-in-place that varies from the contract documents. Such variations shall be fully noted on project drawings by the contractor and submitted to the Designer and Owner upon request, and at project completion and no later than 30 days after final acceptance of the project.

Add Paragraph D:

The GC/CM shall submit a copy of the daily field reports by its field supervision listing but not limited to personnel on site (including all subcontractors); weather conditions; major scopes of work under construction; material deliveries; safety incidents; progress photographs, and inspections.

ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES

Modify Paragraph A as follows:

The contractor GC/CM shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, temporary heat and humidity control required for concurrent building occupancy (when applicable), sensitive construction material storage, concrete curing, drywall joint compound curing, painting, etc., sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.

Add Paragraph H:

The GC/CM shall provide the Owner a complete list of addresses and emergency telephone numbers for the GC/CM, 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.

Add Paragraph I:

The GC/CM acknowledges and agrees that, to the best of its knowledge, neither GC/CM nor its employees, representatives or sub-contractors has at any time (1) been charged with personal or professional misconduct; (2) been convicted of any crime (other than traffic fines); (3) been required to register as a sex offender under Title I of the Sex Offender Registration and Notification Act of 2006 (SORNA). GC/CM shall notify Owner immediately should any of the above conditions come into being.

Add Paragraph J:

The GC/CM and subcontractors at its cost, agrees to perform criminal background checks, using services through companies such as 123nc.com, and screen all its employees, Consultants, and representatives prior to assigning them to perform any Service at Western Carolina University. Such background checks will be made available to Western Carolina University upon request.

Add Paragraph K:

The GC/CM and subcontractors shall verify the work authorization of all employees that work on Western Carolina University property through E-Verify. Such authorization will be made available to Western Carolina University upon request.

Add Paragraph L:

Should an accident or disruption occur on the project work site, the GC/CM shall notify Western Carolina University Safety Officer within 24 hours of occurrence.

Add Paragraph M:

The GC/CM and each of its subcontractors shall be responsible for security to his/their equipment and the site-stored materials under his/their jurisdiction whether paid for by the Owner or not, until acceptance of the Project.

ARTICLE 10 - PERMITS, INSPECTIONS, FEES, REGULATIONS

Add Paragraph F:

A minimum of 7 days for any interruption of utility or services, the GC/CM shall request and obtain permission from the Owner for such interruption. Failure of the GC/CM to obtain Owner permission shall not be grounds for an extension of time.

Add Paragraph G:

Prior to performing any "hot work" or any work above ceiling in existing buildings, the GC/CM shall obtain a permit for such from the Owner's Facilities Management Department.

Add Paragraph H:

The GC/CM shall comply with Owner's Interim Life Safety Plan requirements to maintain egress from all occupied buildings.

ARTICLE 14 - CONSTRUCTION SUPERVISION AND SCHEDULE

MODIFY Article 14, Section 'e' as follows:

e. ~~The contractor(s)~~ GC/CM shall employ an engineer or a land surveyor licensed in the State of North Carolina, to lay out the work and to establish a bench mark in a location where same will not be disturbed and where direct instruments sights may be taken.

ADD the following as the third paragraph of Article 14, Section 'g', under the heading 'CPM Schedule':

CPM schedule shall indicate early start; early finish; late start; late finish; and float for each listed task.

Critical Path shall be defined as zero float.

Promptly following Contract Award, the Contractor shall hold a meeting for the purpose of establishing and preparing Contractor's construction schedule for the Work. Each major subcontractor shall be represented. The Contractor's construction schedule shall be in a detailed format satisfactory to the Owner and the Architect. If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and re-submitted for acceptance. The Contractor' construction schedule shall be sufficiently detailed to permit proper and complete coordination of all trades in each portion of the Work. Therefore, the Contractor's construction schedule shall specifically indicate the following dates:

- Dates scheduled for completion of installation of major items of equipment.
- The anticipated date of Substantial Completion.
- The date of Final Completion of the Project, as established by the Contract.

The accepted Contractor's construction schedule, bearing the approval signature of the Contractor and major subcontractors, shall be distributed to all interested parties in quantities as required. No application for payment will be approved until the Contractor's construction schedule has been received and accepted by Owner.

ARTICLE 23 - TIME OF COMPLETION, DELAYS, EXTENSION OF TIME

ADD the following paragraph at the end of Section 'b', Article 23:

The Contractor shall commence work to be performed under this Contract on a Notice to Proceed (NTP) date to be specified in written order from the Designer and Owner. The Notice to Proceed date will be set as early as possible based on execution of the construction contract. The Contractor shall fully complete all work hereunder within **180 (One-hundred and Eighty)** consecutive calendar days from the Notice to Proceed for the contracted work. No increase in contract time will be allotted for the addition of Bid Alternate work. If the Contractor should fail to complete the Work within the time specified (including approved Change Orders) and this failure directly prevents the Owner from utilizing and/or occupying the building, or results in other direct costs to the Owner, Liquidated damages in the amount of **\$500.00 (Five-hundred Dollars)** per day will be assessed for each day the schedule of the Work exceeds the contractual duration set forth in the contract or therefore extended by approved change order. Other reduction/restrictions to work hours, site use, and other construction general conditions may occur if the contract time extends beyond the contract time specified (including approved Change Orders). Refer to the plans and specifications for additional information.

ADD the following statement after second sentence of second paragraph of Article 23, Section 'd':

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.

ARTICLE 34 - MINIMUM INSURANCE REQUIREMENTS

ADD the following to the end of first paragraph, Article 34:

GC/CM shall provide and maintain, or cause to be provided or maintained in the case of sub-consultants to GC/CM, the following insurance at GC/CM's sole expense:

DELETE Article 34, Section 'a', and substitute the following in lieu thereof:

Workers' Compensation insurance (the "WC Insurance") insuring the GC/CM and GC/CM's employees in such amounts as otherwise required by applicable law. **Employer's liability insurance** (the "EL Insurance") for claims and all perils for errors, omissions, and damages of any kind or character which may arise out of or result from GC/CM's performance under this Agreement. **The EL Insurance shall be written with limits of coverage of no less than \$100,000 per occurrence.**

ADD the following paragraphs to Article 34:

g. Automobile Liability insurance (the "Auto Insurance") for claims and all perils for errors, omissions, and damages of any kind or character which may arise out of or result from GC/CM's performance under this Agreement. **The Auto Insurance shall cover owned, non-owned, and hired vehicles. The Auto Insurance shall be written in the amount of no less than \$1,000,000 Combined Single Limit (property and bodily injury) per occurrence.**

h. All insurance required shall be written by a company or companies with a current and ongoing A.M. Best rating of "A" or better lawfully authorized to do business in North Carolina. Insurance shall be written on a first dollar basis without application of a deductible or self-insured retention.

i. If insurance is written on a claims-made basis, GC/CM shall purchase and maintain an unlimited term extended reporting period endorsement ("Tail Insurance") on the same terms and conditions as otherwise required herein upon cancellation or non-renewal of the respective insurance for any reason. All insurance and Tail Insurance required shall be primary and noncontributory to any other insurance coverage available.

j. All insurance required shall be endorsed to specify that, without thirty (30) days prior written notice to Western Carolina University (WCU), the insurance shall not be canceled, non-renewed, or coverage and/or limits materially altered. The endorsement shall also provide that the notices required by this paragraph be sent by certified mail to WCU at the notice address otherwise provided by this Agreement. Prior to commencing work under this Agreement, GC/CM shall provide WCU with certificates of insurance evidencing the insurance required under this paragraph.

k. Provide insurance certificate(s) to this office with language appropriately inserted in the insurance certificate block provided for Special Provisions, as follows:

1. "Notwithstanding the preprinted cancellation provisions on this form, coverages afforded under the policies will not be cancelled, reduced in amount nor will any coverages be eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the owner, of such alteration or cancellation."

ARTICLE 41 - CLEANING UP

ADD the following paragraph to Article 41:

d. GC/CM shall comply with Owner's requirements for Interim Life Safety Plan requirements.

ARTICLE 42 – GUARANTEE

ADD the following sentence to the end of Article 42, paragraph 'a':

Individual specifications requirements shall have warranties start at the date of Final Acceptance.

ADD the following paragraph to Article 42:

e. In addition to the individual guarantees and warranties provided for components of the Work, the GC/CM shall provide a general warranty on the entire Work, for a period of 24 months, in the form provided within the Project Manual, warranting the quality and performance of the Work in accordance with these stipulations.

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN UNIVERSITY OF NORTH CAROLINA CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on University of North Carolina construction projects in the amount of \$300,000 to \$2,000,000. The legislation provides that the State (University of North Carolina) shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State through The University of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. **Minority** - a person who is a citizen or lawful permanent resident of the United States and who is:
 - a. Black, that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
 - e. Female
2. **Minority Business** - means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. **Socially and economically disadvantaged individual** - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
4. **Public Entity** - means State and all public subdivisions and local governmental units.
5. **Owner** - The State of North Carolina, through the constituent institution named in the contract.
6. **Designer** – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.

7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested.
- b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
- c. Assist in the determination of technical assistance needed by minority business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the University of North Carolina and other public entities.
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
- (5) The HUB Office also oversees the minority business program by:
 - a. Monitoring compliance with the program requirements.
 - b. Assisting in the implementation of training and technical assistance programs.
 - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
 - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. The University of North Carolina

The University of North Carolina will be responsible for the following:

- a. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal prior to award of contracts. The State (University of North Carolina) reserves the right to reject any or all bids and to waive informalities.
- b. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- c. Providing statistical data and required reports to the HUB Office.

d. Resolving any protest and disputes arising after implementation of the plan.

3. Constituent Institutions of The University of North Carolina

Before awarding a contract, constituent institution shall do the following:

- a. Implement the University of North Carolina HUB plan.
- b. Attend the scheduled prebid conference.
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 1. A description of the work for which the bid is being solicited.
 2. The date, time, and location where bids are to be submitted.
 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
 4. Where bid documents may be reviewed.
 5. Any special requirements that may exist.
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
- e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the University of North Carolina.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to University of North Carolina.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Document evidence of implementation of Owner's responsibilities.

4. Designer

Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.
- e. During construction phase of the project, review "MBE Documentation for Contract Payment" – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the University of North Carolina.
- f. Make documentation showing evidence of implementation of Designer's responsibilities available for review by University of North Carolina and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

Under the single-prime bidding, the separate-prime bidding, construction manager at risk and alternative contracting methods, contractor(s) will:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
 - (1) A description of the work for which the subbid is being solicited.
 - (2) The date, time and location where subbids are to be submitted.
 - (3) The name of the individual within the company who will be available to answer questions about the project.
 - (4) Where bid documents may be reviewed.
 - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.

- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
- f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by University of North Carolina and HUB Office, upon request.
- g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), "MBE Documentation for Contract Payment" – (Appendix E), for designer's review.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, University of North Carolina, and the Director of the HUB Office in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.
- k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
- l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities

While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION D: DISPUTE PROCEDURES

It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION E: These guidelines shall apply upon promulgation on University construction projects. Copies of these guidelines may be obtained from The University of North Carolina, (physical address) 910 Raleigh Road, Chapel Hill North Carolina, 27515, (mail address) PO Box 2688, Chapel Hill, North Carolina, 27515-2688, phone (919) 962-1000, Website:

http://www.northcarolina.edu/info/vendors/UNC_HUB_Guidelines2002_Rev 7-10

SECTION F: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing MBE participation in State building projects. An explanation of the process follows, titled “MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)” along with relevant forms for its implementation (“Identification of Minority Business Participation” form, Affidavits A, B, C, D and Appendix E).

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in University of North Carolina Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from The University of North Carolina, (physical address) 910 Raleigh Road, Chapel Hill North Carolina, 27515, (mail address) PO Box 2688, Chapel Hill, North Carolina, 27515-2688, phone (919) 962-1000, Website:
http://www.northcarolina.edu/info/vendors/UNC_HUB_Guidelines2002_Rev 7-10

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid (by using the “Identification of Minority Business Participation” form provided in the bid document), the minority businesses that will be utilized on the project with corresponding total dollar value of the bid. In addition, the bidder must submit with his/her bid an affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, if the portion of work to be performed by minority firms is equal to or greater than 10% of the bidder’s total contract price. Affidavit C includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, and lists the participating minority firms with the dollar value of their contracts.

OR

Provide Affidavit D, if the portion of work to be performed by minority firms is less than 10% of the bidder’s total contract price. Affidavit D includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, lists the participating minority firms with the dollar value of their contracts and includes **documentation of Good Faith Effort**.

OR

Have provided Affidavit B with his/her bid as noted above, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

Summary of required submissions:

(use check boxes to assist in ensuring that all appropriate forms are submitted)

**ALL BIDDERS SUBMIT
WITH THEIR BID:**

- “Identification of Minority Business Participation” form

AND EITHER

- Affidavit A – “Listing of Good Faith Efforts”

OR

- Affidavit B – “Intent to Perform Contract with Own Workforce”

**IN ADDITION, THE
APPARENT LOWEST
RESPONSIVE,
RESPONSIBLE BIDDER
SUBMITS (IF HE HAS
NOT SUBMITTED
AFFIDAVIT B):**

- Affidavit C – “Portion of the Work to be Performed by Minority Firms” if the percentage of work to be performed by minority firms is 10% or more. This form is to be submitted within 72 hours of notification of being low bidder.

OR

- Affidavit D “Good Faith Efforts” if the percentage of work to be performed by minority firms is less than 10%.

MINIMUM COMPLIANCE REQUIREMENTS:

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

In determining whether a contractor has made Good Faith Efforts, the University of North Carolina will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting 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 or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making 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 bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting 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) Providing 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. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating 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) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

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)

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 (\$)_____.

The University of North Carolina - AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

Affidavit of _____

(Name of Bidder)

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.

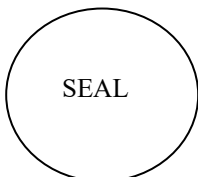
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

The University 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.

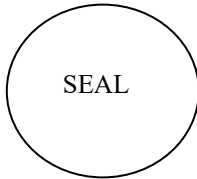
The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

The University 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

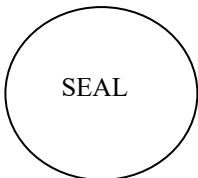
*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

** **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: _____



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

University 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.

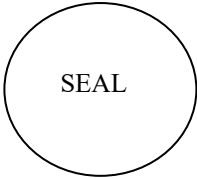
Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments to be made to minority business contractors on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

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

Date: _____

Approved/Certified By: _____
Name

Title

Signature

Signature certifies that any minority firms not previously verified in the bid/award process have been appropriately verified, services have been rendered, and payment is due as processed.

****THIS DOCUMENT MUST BE SUBMITTED WITH EACH PAY REQUEST & FINAL PAYMENT****

SECTION 010100

SUMMARY OF WORK

PART 1 GENERAL

1.01 GENERAL DESCRIPTION OF WORK INCLUDED

- A. Furnish labor, equipment, materials, services and supervision necessary to complete the work outlined in these technical specifications and drawings for roof replacement and associated work at the Camp Building at the campus of Western Carolina University in Cullowhee, North Carolina.
- B. The following is a summary of roof replacement work items included. This summary is not intended to be an all-inclusive scope of work. Refer to individual specification sections and drawings for more specific project requirements.
1. Perform a Pre-Job Damage Survey prior to the start of work. The purpose of the survey is to document existing conditions and identify existing damages/distresses. Survey must include roof-top components, building exterior, site features (pavements, walkways, landscaping, etc.), building interior, applicable equipment and other applicable components. A pre-job damage survey is considered to be a protection for the contractor and documentation will be used to assist the Owner, Designer and Contractor in determining whether damages noted during construction were caused by construction activities or were existing.
 2. Clean and test roof drains and drainage lines to their outlet from the building and water test underground drain line from existing boot at grade. Remove readily accessible debris from the drain strainer, bowl, and initial section of vertical drain leader (up to 2'). Water test the drains to confirm that the existing assembly allows the free flow of water without visible leaks/water entry to the interior prior to the start of construction. Testing must be completed prior to the demolition of the existing roof system. Notify the Designer and Owner if water testing indicates suspected or confirmed clogged or damaged drain/drain leader/or underground drain line components. During this testing, inspect existing drain components for damage or conditions that may prevent installation of the specified retrofit drain assembly.
 3. The roof consists of a total of 16 identified roof sections. Sections are separated by expansion joints, area dividers, or a change in system type/slope, etc.
 - a. **Areas 1A-1C, 2A-2C, 2E, 3A-3B, and 4A-4C**: The existing roof systems generally consist of an aggregate-surfaced, multi-ply built-up roof membrane over tapered perlite insulation (approx.. 4" to 8" thick and with tapered edge strips at isolated locations), over a bituminous vapor barrier/base sheet, and poured gypsum roof deck on cementitious form board. Slope to internal drains is provided by the tapered insulation.
 - b. **Areas 1D and 2D**: The existing roof systems generally consist of an aggregate-surfaced, multi-ply built-up roof membrane over 1.5" thick perlite insulation with

010100.1 –SUMMARY OF WORK

- isolated tapered perlite crickets (approx. 1” to 10.5” thick) over a bituminous vapor barrier/base sheet, and poured gypsum roof deck on cementitious form board. Slope to perimeter scuppers and adjacent roof areas is provided by the roof deck (3:12 slope) and tapered insulation crickets.
- c. **Area 2F:** The existing roof system consists of a ballasted EPDM single-ply roof system over tapered polyisocyanurate insulation (approximately 2” to 4” thick), 2” thick extruded polystyrene insulation, ½” gypsum board and a corrugated metal deck. Slope to a perimeter gutter is provided by the tapered insulation.
 - d. **Area 2G:** The existing roof system consists of a ballasted EPDM single-ply roof system over 1.5” thick extruded polystyrene insulation, and a concrete deck. Slope to a perimeter gutter appears to be provide by the deck.
4. Remove all existing roof membrane, insulation, vapor barrier/base sheet, and flashings from all roof areas down to the top of the roof deck and legally dispose of off-site. Do not remove more existing roof system than can be returned to a watertight condition prior to the end of the work day. ***The perimeter membrane flashings, silver-coated expansion joint flashings, and silver-coated penetration flashings of the existing built-up roof system contain asbestos and must be removed and disposed of in strict accordance with Section 024120 of this Project Manual. An asbestos test report from a NC accredited asbestos inspector is available upon request from the Designer.***
 5. Remove existing sheet metal flashings, counterflashings, gutters, receivers, expansion joint caps, partial perimeter blocking, and other existing flashing accessories and dispose of off-site as necessary to allow for the proper installation of the new roof system assembly and details. Components shall remain if they are noted to be incorporated into the new roof system/detail. Protect components that will remain for reuse, including, but not limited to, penetrations, curbed equipment, portions of wood blocking, masonry chimney, drain bowls, etc.
 6. Inspect the existing roof decks, wood blocking, and other components noted to remain and make repairs, or replace, damaged or deteriorated materials in accordance with applicable sections of these specifications. Protect and reuse existing wood blocking only where shown on the design details or when specifically approved on-site by the Designer. Otherwise install new materials. Methods of repair for the gypsum roof deck will vary dependent upon severity of damage. Refer to base bid allowances (estimated quantities of work in Section 012100) for additional information.
 7. Remove roof penetrations that are identified on the drawings as “abandoned”, “capped”, or “for removal”. Make required repairs to the formboard and gypsum roof deck. Repairs will vary based on the size of the penetration removed.
 8. Inspect existing securement of wood blocking that will remain in use. Install supplemental fastening of existing blocking where noted on the drawings to ensure adequate wind uplift pressure resistance. Install new wood blocking where shown on the drawings to form the roof perimeter, raise existing curbs to accommodate the new thickness of the roof system, form expansion joint, and to provide securement points for membrane transitions.

010100.2 –SUMMARY OF WORK

9. Install a mechanically-fastened base sheet over the gypsum deck at Areas 1A-1D, 2A-2E, 3A-3B, and 4A-4C and secure at fastener patterns specified. Fastener pull-out testing to confirm base sheet fastener type and spacing must be performed. Install a new torch-applied modified bitumen vapor barrier over the base sheet. This vapor barrier should be installed in a watertight condition and must be sealed at all penetrations, including internal drains and perimeter scuppers to allow it to act as a temporary roof membrane.
10. At Area 2F, mechanically-fasten a thermal barrier (coverboard) over the corrugated metal deck and secure at fastener patterns specified. Fastener pull-out testing must be performed. Install a new torch-applied modified bitumen vapor barrier over the base sheet. This vapor barrier should be installed in a watertight condition and must be sealed at all transitions with adjacent roof areas to allow it to act as a temporary roof membrane.
11. At Area 2G, install a new torch-applied modified bitumen vapor barrier over the deck. This vapor barrier should be installed in a watertight condition and must be sealed at all transitions with adjacent exterior walls to allow it to act as a temporary roof membrane.
12. The installed vapor barrier may be used as a temporary roof system until installation of the completed new roof system. The Contractor may not have an exposed vapor barrier/temporary membrane on areas larger than one wing (wing sizes/layout are as defined by the overall roof plan in the project drawings). The Contractor remains responsible for adequate temporary drainage and overall watertightness of the temporary roof membrane until installation of the completed new system occurs. Drain clamping rings and strainers must be reinstalled as a part of the temporary roof system to promote watertight temporary detailing at internal drains. Temporary retrofit roof drains may also be utilized as an alternate method.
13. Roof demolition, deck inspection and repair, and base sheet and vapor barrier installation over occupied areas must be performed after hours (between the hours of 5:00 p.m. and 6:30 a.m.). In areas where the underside of the roof deck is exposed to the interior (no suspended ceiling finish), the Owner will require the Contractor to place temporary protection (loose plastic) over interior contents in the area(s) directly beneath the roof area to be removed. Plastic should be removed at the end of the work day and readily noticeable debris vacuumed, wiped, from interior floors and surfaces (rough clean). For areas with suspended ceilings, the Contractor must perform a walkthrough at the end of their work day and clean readily noticeable debris from surface areas.
14. Prior to installation of the new roof system over the vapor barrier, remove existing drain strainers and clamping rings and install wood blocking and install retrofit drain assemblies at all internal drains.
15. Clean and prepare the surface of the vapor barrier to form an acceptable substrate for new roof system installation. Install two, 2" thick base layers of new rigid insulation (total of 4") over the vapor barrier secured with a low-rise polyurethane foam adhesive at all roof areas in accordance with specified adhesion patterns.
16. At Areas 1A-1C, 2A-2C, 2E, 3A-3B, and 4A-4C install ¼" per foot tapered rigid insulation with a minimum thickness of 1.5" over the base layers. Install tapered

010100.3 –SUMMARY OF WORK

insulation to form saddles and crickets (min. ½” per foot slope) between drains and at upslope sides of penetrations greater than 18” and tapered drain sumps as shown on the design drawings. Install tapered edge strips where shown to transition along raised perimeters. All layers of insulation shall be adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns.

17. At Areas 1D and 2D install a top layer of 1.5” thick rigid insulation over the base layers. Install tapered insulation to form saddles (1/4” per foot with a ½” thick minimum) in the valleys of the sloped roof areas to direct water to perimeter scuppers or onto adjacent roof areas. Install tapered sumps at perimeter scuppers and crickets at upslope side of curbed penetrations greater than 18”. All layers of insulation shall be adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns.
18. At Area 2F, install ¼” per foot tapered rigid insulation with a minimum thickness of 1.5” over the base layers. All layers of insulation shall be adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns.
19. At Area 2G, install a top layer of 1.5” thick rigid insulation over the base layer. All layers of insulation shall be adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns.
20. At all areas, install a ½” coverboard over the insulation adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns.
21. Insulation adhesive patterns must provide wind uplift resistance in accordance with these specifications, the North Carolina State Building Code and ASCE-7, latest edition and submittal of adhesion testing data for existing conditions will be required.
22. Provide and install a fully-adhered, thermoplastic roof membrane and membrane flashings with heat-welded seams. Provide and install other associated system components. Provide additional blocking, securement, and flashing on sloped roof areas. New roof system must meet the requirements for UL Class A fire classification and wind uplift resistance in accordance with these specifications, the North Carolina State Building Code and ASCE-7, latest edition and be eligible for the specified manufacturer warranty.
23. Provide and install clad-metal components, membrane flashings at roof perimeters and flashings at penetrations. Raise and/or extend equipment curbs, pipe vents and other roof penetrations as necessary to provide minimum 8-inch vertical flashing heights above the new roof membrane. Extend/modify any mechanical and/or electrical connections, ductwork, communication lines, etc. as necessary to raise penetrations to required heights. Make specific modifications to penetration components where noted on the drawing details.
24. Provide and install membrane system walk tread at locations shown on the drawings and at other locations requested by the Owner (additional locations in accordance with estimated quantity work).

010100.4 –SUMMARY OF WORK

25. Locate new overflow scupper cuts in the raised edge detail where indicated on the design drawings. Confirm overflow scupper locations and detailing with the Designer prior to installing the associated flashings and sheetmetal.
 26. Provide and install termination bars, counterflashings, sheetmetal flashings, clad-metal cleats, fascia, closures, and extensions, trim, gutters, downspouts, straps, and other sheetmetal trim and sealants as shown on the drawings for proper installation of the design details.
 27. Install new hat channel supports, angles, trim, and sheetmetal soffit panels at all overhang and door alcove locations around the building. Modify existing soffit-mounted lighting fixtures to lower them to accommodate the new soffit or trim around (box out) around fixtures. Clean and paint steel lintels that will remain exposed at overhang/soffit locations.
 28. Remove existing exterior wall-mounted conductor heads and downspouts at drain leader outlets and dispose of off-site. Install new conductor heads and downspouts and connect to existing underground drain leader boot. Clean and coat existing boots where exposed above grade. Clean and coat portions of the existing drain leader outlet that extend beyond the surface of the exterior wall.
 29. Prior to each day's work, plan and sequence work to maintain the roof and building in a watertight condition during construction. Refer to Section 015000 for additional requirements.
 30. Provide and install other accessory or incidental components, or modify other roof features/items, not specifically listed or shown on drawings, but required for the complete and proper installation of the new roof system.
 31. Roof system including membrane, flashings, and accessory components shall be installed in a watertight condition and with an overall quality of system installation that will allow the membrane and flashings to continue to perform in a watertight condition, with reasonable maintenance, over its manufacturer warranty period.
- B. The technical specifications and drawings provided are for communicating design intent. It is the responsibility of the Contractor to examine the technical specifications and drawings, and the site, and become familiar with and verify the existing conditions, specified design intent, and other conditions necessary for an accurate proposal and execution of the work. Any discrepancies discovered should be brought to the attention of the Designer for clarification or correction.

010100.5 –SUMMARY OF WORK

1.02 COORDINATION AND CONTRACTOR USE OF PREMISES

- A. The Owner will occupy portions of the premises during the period of construction for the conduct of normal operations (during summer and fall semesters). Limit the use of the premises for construction operations, to allow for Owner occupancy to the building and adjacent buildings through the duration of the project. Contractor shall schedule and coordinate work with the designated points of contact at Facilities Management and within the building.
- B. For the purpose of bidding, acceptable work hours shall be Monday-Friday between 5:00 p.m. and 6:30 a.m. for demolition activities and installation of base sheet and vapor barrier/temporary roof membrane over occupied areas and 7:00 a.m. and 7:00 p.m. for other work scope. The WCU Project Manager must be notified in advance of work on weekends or outside of the hours listed above to allow for coordination and approval. This anticipated schedule is provided for general planning and does not eliminate the requirement for the Contractor to coordinate with the Owner to limit disruption to potential interior functions/use.
- C. The Contractor must follow all requirements of Western Carolina University including, but not limited to, use of staging and storage areas as designated by the project documents, entrance to the site by workers and delivery vehicles, coordination to avoid significant noise disruption, and coordination of construction scheduling around the events of the building and University. Contractor shall not perform work if requested by the Owner due to special events at the building. Contractor shall receive additional contract time for time not permitted to work, but shall not receive additional compensation.
- D. Do not permanently block ingress and egress from the building. Maintain access that does not interfere with the Owner's vehicular or pedestrian traffic, unless indicated on the drawings (such as an approved staging and storage area) or if coordinated with the Owner. Where vehicular or pedestrian traffic will be rerouted or temporarily blocked, provide protective fencing and signage to safely redirect traffic as needed. Provide covered walkways to maintain safe access for pedestrians at sidewalks along the building and at entrance/exits from the building where overhead work may occur. Alternative protection methods such as spotters located on the ground will be entertained by the Owner and Designer for short-term/isolated work over ancillary or less used egress/entrance points.
- E. Utilities are to remain undisturbed and in continuous operation, or provide alternate or temporary services acceptable to the Owner. Terminate no utility even for a short period without the prior approval from the Owner. The Contractor is responsible for the location and protection of existing utilities from damage due to construction. Repairs required due to damages to or outage of existing utilities must be immediately coordinated and paid for by the contractor. Where requested by the Owner, the Contractor must maintain a minimum 8' clearance from specific equipment or utilities that may require Owner access.
- F. Parking and access to the site must be coordinated with the Owner's representative. Designated limits for delivery trucks and other parking associated with the project will be defined at the pre-construction conference. Contractor may be required to pay fees associated with parking of worker's vehicles and additional storage and staging.

010100.6 –SUMMARY OF WORK

- G. Contractor shall provide a superintendent, foreman, or other representative from the Contractor that is in a supervisory position and fluent in English, who will be on the site anytime that work is in progress. A representative or personnel in a supervisory position (Superintendent) directly employed by the Prime Contractor must be present full time anytime work is occurring on site.

1.03 PERMITS

- A. The Contractor shall apply for, secure and pay for all permits, governmental fees, inspections and licenses necessary for the proper execution and completion of the Work, which are applicable at the time that Bids are received. Contractor shall provide evidence of acceptance of work by submitting inspection forms from appropriate agencies indicating acceptance of work.
- B. The Contractor may be required to fill out WCU's Hot Work Permit and to follow any requirements of the permit on days when work performed involves welding, torching, or heat-welding of materials. Permits must be completed daily unless otherwise agreed upon with the Owner.

1.04 CONTRACT TIME AND SCHEDULING

- A. The contract time from the Notice to Proceed to project acceptance for Base Bid work is 180 days. The Notice to Proceed date is anticipated to be set as early as possible following execution of construction contracts.
- B. Roof demolition, deck inspection and repair, and base sheet and vapor barrier installation over occupied areas must be performed after hours (between the hours of 5:00 p.m. and 6:30 a.m.). Other work that significantly effects interior/below deck spaces (removal of abandoned penetrations, deck repair, etc.) should be performed when the specific areas beneath are unoccupied by building occupants, unless otherwise coordinated with/approved by the Owner.

1.05 BASE BID

- A. The Base Bid includes the following scope of work shown on the drawings and specified in the Project Manual: Roof replacement of the existing systems on Roof Areas 1A-1D, 2A-2G, 3A-3B, and 4A-4C and all associated work
- B. **The Base Bid shall also include the estimated quantities of work specified in Section 012100 of this Project Manual.**

1.06 BID ALTERNATES

- A. Refer to Section 012300 for information regarding Bid Alternates for this project.

1.07 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with the requirements of the latest standard, except when more rigid requirements are specified or required by applicable codes.

010100.7 –SUMMARY OF WORK

- B. Install items necessary to ensure compliance with the most recent adopted edition of the North Carolina Building Code whether or not shown on project drawings or specifically indicated in the technical specifications.

1.08 DESIGNER’S SITE VISITS

- A. Designer or site representative will perform periodic visits to the site to observe Contractor activities and note non-conformance with the specifications to the Owner and Contractor. Non-conformance items must be corrected by the Contractor prior to approval of payment.
- B. Contractor shall cooperate with the representatives and personnel of the Designer to provide safe means and facilities for the Designer to observe all parts of the work for the purpose of determining conformance/non-conformance with the specifications.
- C. Contractor must notify the Designer a minimum of 48 hours prior to specific activities for which the Designer wishes to be present. The applicable activities will be defined by the Designer during the Pre-Construction Meeting, but are anticipated to include first day of removal and replacement on main roof areas or installation of specific details. If Contractor fails to notify the Designer to allow for observation, Designer may request to observe work, including covered work, to confirm conformance with the contract documents at no additional cost to the Owner.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 010100

010100.8 –SUMMARY OF WORK

SECTION 012100

BASE BID ALLOWANCES (ESTIMATED QUANTITIES)

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes requirements governing estimated quantities of work to be included within the Base Bid cost and the associated unit prices requested to aid in reconciliation between quantities estimated and actual work performed. Refer to Section 010100 for additional information regarding Base Bid scope of work.
- B. Refer to specification sections 24110, 061140, and 075400 for technical requirements regarding base bid allowance (estimated quantity) work.

1.02 SUBMITTALS

- A. Provide submittals for products to be repaired, removed, and or installed as a part of the work in accordance with Section 013300 and the technical specification sections in which they are specified.

1.03 ESTIMATED QUANTITY WORK

- A. Estimated quantities are provided below for replacement of materials discovered to be deteriorated, damaged, missing, and/or installation of additional work that is not specifically designated in the specifications, but may become necessary. The cost to perform the estimated quantity of each work item listed below shall be included within the Base Bid.

<u>Work Item</u>	<u>Estimated Quantity</u>
1. Wood Blocking Replacement per Section 06114 0	500 BD FT
2. Isolated Gypsum Deck Repair per Section 024110	350 SQ FT
3. Gypsum Deck Repair per Section 024110	40 CU FT
4. Walktread per Section 075400	100 LFT

1.04 UNIT PRICES FOR ESTIMATED QUANTITY WORK ITEMS

- A. A unit price for each of the estimated quantity work items listed above is requested on the Form of Proposal. Unit prices provided by the Contractor will be used for the purpose of adding or deducting from the Contract Sum by Change Order in the event that the actual performed amounts of each estimated quantity work item listed in Paragraph 1.03A are more than, or less than, the estimated quantity included in the Base Bid.
- B. The unit prices provided on the Form of Proposal shall include all costs associated with the work including, but not limited to, removal of materials to be replaced, preparation of substrates and adjacent surfaces for associated installation, and material, labor, overhead and profit, insurance, taxes, shipping costs, accessory items/equipment/tools.

PART 2 PRODUCTS - Not Used.

012100.1 – BASE BID ALLOWANCES (ESTIMATED QUANTITIES)

PART 3 EXECUTION - Not Used.

3.01 PREPARATION AND INSTALLATION

- A. Prepare, supply, and install products associated with estimated quantity work in accordance with the technical specification sections in which they are specified.

3.02 DOCUMENTATION OF ESTIMATED QUANTITY WORK

- A. A representative of the Owner and/or Designer should be made aware when work items performed as a part of the estimated quantity work are anticipated, unless otherwise agreed upon during the pre-construction meeting.
- B. Documenting and tracking of actual estimated quantity work performed is the responsibility of the Contractor is important to allow for comparison with estimated quantities during work progress and a proper reconciliation of contract work at project acceptance. The Designer/Owner may deny payment for work performed by the Contractor if adequate documentation of work performed cannot be provided. At minimum, photographic documentation of the existing condition requiring estimated quantity work, removal of existing materials, and installation of replacement materials will be required if direct observation by the Engineer or Owner is not possible.

END OF SECTION 012100

012100.2 – BASE BID ALLOWANCES (ESTIMATED QUANTITIES)

SECTION 012300

BID ALTERNATES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes requirements governing Bid Alternates for the project. Section 010100 includes a summary of work items for both Base Bid and bid alternate scope of work.
- B. Refer associated technical specification sections for technical requirements regarding bid alternate work.

1.02 BID ALTERNATES

- A. The Contractor shall propose an amount stated on the Form of Proposal for certain work defined in the technical specifications that may be added to or deducted from the Base Bid amount if the Owner decides to accept the corresponding change to the scope of work.
- B. The cost or credit for each bid alternate is the net addition or deduction from the Contract Sum of the amount listed on the Form of Proposal. No other adjustments are made to the Contract Sum.
- C. Refer to the Special Conditions of the Formal Contract (Supplementary General Conditions) to determine whether the Contract time for the project will be increased, decreased, or will remain the same based on acceptance of Bid Alternates by the Owner.
- D. The Owner will notify the Contractor of acceptance, rejection, or deference of each Bid Alternate upon award of the Contract.
- E. Execute accepted alternates under the same conditions as other work of the Contract.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

3.01 LIST OF BID ALTERNATES

- A. A list of Bid Alternates is provided in this Section. A general work summary for Bid Alternates was included in Section 010100 and additional information necessary to achieve the work described under each alternate is provided within technical specification sections referenced.
- B. Bid Alternate No. 01: The scope of work for Bid Alternate No. 02 includes provision of pre-finished sheetmetal in the manufacturer's "premium" color (color included on the manufacturer's published color chart but specifically noted to have an associated premium charge due color availability for gauge or material type) in accordance with the specified requirements.

012300.1 – BID ALTERNATES

- C. Bid Alternate No. 02: The scope of work for Bid Alternate No. 03 includes provision of pre-finished sheetmetal in a custom color (color not included on the manufacturer's published color chart, or one specifically noted on the chart to not be available in a color due to required material type or gauge) in accordance with the specified requirements.

END OF SECTION 012300

012300.2 – BID ALTERNATES

SECTION 012500

PROJECT MEETINGS

PART 1 GENERAL

1.01 PRE-CONSTRUCTION CONFERENCE

- C. The Engineer will schedule and administer a Pre-Construction Conference upon award and execution of the contract. Representatives of the Owner, Engineer, Contractor, and representatives of other Governmental or regulatory agencies (as necessary) shall be in attendance. The Contractor's Project Manager, anticipated Site Superintendent/Foreman, a representative of the roof system manufacturer, and applicable subcontractors shall be present at the Pre-Construction Conference unless otherwise discussed and agreed upon. Engineer shall distribute meeting minutes to all attendees.
- D. Suggested Agenda: Confirmation of the execution of Owner-Contractor Agreement, exchange and discussion of preliminary submittals and procedures, designation of key representatives and personnel, discussion of construction schedule and work sequencing, designated storage and parking areas, security and housekeeping procedures, maintenance of record documents, and technical material and installation information.

1.02 PROGRESS MEETINGS

- A. Engineer will schedule and administer progress meetings throughout progress of the Work at regular and appropriate intervals (typically monthly meetings, more if the project requires).
- B. Engineer will make physical arrangements for meetings, preside at meetings, record minutes, and distribute copies of the minutes to the Owner, Contractor, other meeting participants, and those affected by decisions made at meetings.
- C. Attendance: Contractor's project manager, Contractor's superintendent and foreman, major subcontractors and suppliers (as applicable), Owner's representative, and Engineer. Additional attendees may be requested as appropriate to agenda topics for each meeting.
- D. Suggested Agenda: Review of work progress, status of progress schedule and contract sum and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of Work.

1.03 COORDINATION MEETINGS

- A. The contractor must attend informal coordination meetings with the Owner's Project Manager and building contacts as needed to properly coordinate the work to avoid disruption to building use.
- B. The frequency of the meetings will be determined by the contractor's coordination efforts.
- C. Attendance: Contractor's superintendent and foreman and foreman of major subcontractors.

012500.1 – PROJECT MEETINGS

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION 012500

012500.2 – PROJECT MEETINGS

Project Manual for Camp Building Roof Replacement
Western Carolina University – SCO ID: 18-18885-01A
Prepared by Atlas Engineering, Inc., 551-A Pylon Drive – Raleigh, NC 27606
June 2019

SECTION 013300

SUBMITTALS

PART 1 GENERAL

1.01 PROCEDURES

- A. Make submittals required by the Contract Documents in a timely manner to allow for sufficient review and approval by the Engineer. Revise and resubmit as necessary to establish compliance with the specified requirements. Submit documents to Engineer with Submittal Form SF-1 attached to document and consecutively numbered. An electronic version of SF-1 will be made available upon request.

1.02 WORK INCLUDED

- A. If hardcopies of submittals are provided, submit a minimum of four complete sets of "Pre-Job Submittals," including shop drawings (as necessary), to the Engineer for review. Electronic copies of submittals may be provided in lieu of hardcopies for submittals that do not include material samples, color charts, sheets larger than 11"x17", or documents with original signatures or seals.
- B. The Work may not proceed until the complete pre-job submittal package, including shop drawings, has been reviewed and approved by the Engineer. Update submittals to the Engineer during construction to account for new equipment, products, etc. used on the project. Engineer may elect to allow phased submittals to meet work schedule if agreed upon by the Owner.
- C. Submit a minimum of four complete sets of "Post-Job Submittals" to the Engineer for review, following the final acceptance of the Work. These submittals must be provided as hardcopies due to the types of documents involved. Requests for final payment will not be approved until the Post-Job Submittal package has been accepted by the Owner. Organize post-job submittals keyed to a list of items required under Article 1.04 of this Section.
- D. Identify individual submittals by product type or name on the submittal form and include a table of contents in each submittal package or transmittal email listing items included.
- E. Submittals listed in this Section and required by other Sections to be submitted in accordance with this Section are applicable. If in the opinion of the Contractor, an item listed is not applicable, the Contractor must submit documentation substantiating his position. Likewise, if a submittal is unavailable, the Contractor must submit documentation reconstructing the missing information as best as can be accomplished.

1.03 CONTRACTOR'S PRE-JOB SUBMITTALS

- A. The following material and product submittals shall be provided:
 - 1. Product data for each material and product to be installed to confirm conformance with specified requirements or to provide information on additional products required for installation.
 - 2. Product manufacturers' installation instructions for each material and product to be installed

013300.1 –SUBMITTALS

3. Product SDS for each material to be installed and associated equipment/products to be used during installation.
 4. Material samples of membrane or insulation materials to be used only if requested by the Engineer. Material samples must have manufacturer's product identification on the sample.
 5. Color selection materials for pre-finished metal, sealants, membrane, or other products as noted in the applicable specification sections. Physical metal chip samples in addition to a color chart will be requested for pre-finished metal color selection.
- B. The following technical submittals shall be provided:
1. Detailed outline of the methods and means to be followed during the installation of the roof system. Once accepted, this outline may only be changed with written approval. Include procedures to keep roof areas dry through each stage of the construction process. Emergency contact numbers will be provided with plans for checking the building interior during rain events and maximum response times listed.
 2. Shop drawings for details or constructions for the purpose of providing additional information, such as tapered insulation layout, detail configurations, metal fabrication shapes and sizes, etc. Show adhesive patterns as well as perimeter and corner dimensions to meet code-required and specified wind uplift loads. If any details provided on the shop drawings vary from those shown on the project documents, the Contractor must note such variance on the submittal to indicate that a change is requested. The Engineer will review such requested revisions and will approve or reject at their sole discretion.
 3. Certifications that materials to be installed are asbestos-free and are compatible with the substrates to which they will be applied.
 4. Letter from the roof system manufacturer stating that the Contractor (or subcontractor when applicable) is an approved applicator of its roof system as specified.
 5. Letter from the roof system manufacturer indicating review of the project documents, acceptance of design intent and details as shown, and intent to issue the specified warranty, including acknowledgment of any warranty modifications specified. Refer to Section 014000 for additional information. Letter must be project specific and shall include the type and duration of warranty, riders, any manufacturer's additional requirements, and a sample copy of actual 20-year warranty; including materials and weathertightness as applicable.
 6. A sample copy of the Contractor's Two-Year Warranty.
 7. Pre-Job Damage Survey in accordance with Section 024110 of this Project Manual.
 8. Additional submittals as requested in each section.
- C. The following administrative submittals shall be provided:
1. Building permits as required by the federal, state or any local entity for the construction or demolition work required during the progress of the Work. If no permits are required, so state.
 2. Proposed preliminary progress schedule for the Work. Revise and submit progress schedule as necessary. Review Owner requirements for progress schedules. Progress schedules should include line items for specific work activities at each roof area or group of areas with both schedule dates for the line item and a graphical representation of those dates along with a line to compare actual schedule progress.
 3. Schedule of Values for the project. Work Items shall be generally divided by Project Manual Section and into materials and labor cost. Copies of invoices/quotes from supplier for materials may be requested to ensure that material costs listed are not significantly increased in comparison to labor costs.

013300.2 –SUBMITTALS

4. Insurance certificate issued to Owner by Contractor's insurance carrier listing required coverage. The Owner and the Engineer shall be listed as "Additional Insured."
5. Written security plan, if required by the Owner.
6. Contractor Safety Program, specifically designed for this project that recognizes and mitigates the specific hazards present in performing the Work.
7. Provide a list of any subcontractors to be utilized in performance of the work. Submit information regarding the subcontractors including contact information, copies of licenses/certifications, and references (if requested).

1.04 CONTRACTOR'S POST-JOB SUBMITTALS

- A. Provide all original copies, unless otherwise noted, of each of the following post-job submittals:
1. Consent of Surety to Final Payment
 2. Contractor's Affidavit of Release of Liens (properly signed, notarized, etc.)
 3. Final Application for Payment (5 original copies)
 4. Contractor's Affidavit of Payment of Debts and Claims (properly signed, notarized, etc.)
 5. Properly executed release of liens by subcontractors and/or vendors
 6. Certification letter that no asbestos containing materials were used.
 7. Final list of all subcontractors and suppliers with names, addresses, and phone numbers
 8. Specific operating and maintenance manual for the new roof system and components.
 9. Owner Log Book, load test verification, signage and user instructions for fall protection anchor system.
 10. Duplicate, notarized copies of the Contractor's 2-year and the Manufacturer's warranty.
 11. Three complete sets of as-built drawings- including a copy of both design and shop drawings with changes clearly marked.

PART 2 – PRODUCTS – Not Used

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

- A. Number consecutively and clearly identify submittals. Submittal Form (SF-1) must accompany each submittal package provided. This form will be provided electronically if requested. Show identification on at least the first page of each submittal, and elsewhere as necessary for positive identification of the submittal.
1. When material is resubmitted, cite the original submittal number for reference or add a suffix such as "-A, -B" (2-A, 2-B, etc.).
- B. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals. Make the submittal log available to the Owner's representative for their review.
- C. Keep one approved set of design and shop drawings, specifications, and submittals (including data sheets, instruction sheets, etc.) at the job site.

013300.3 –SUBMITTALS

3.02 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates of Notice to Proceed, and the start of work or installation of specific products to provide time required for review by the Engineer, for securing necessary approvals, for possible revisions and resubmittals, and for placing order and securing delivery of materials.
- B. In scheduling, allow a minimum of ten (10) working days from date of Engineer's receipt of the submittal for his review.
- E. Contractor accepts responsibility for delays resulting from incomplete or late submittal packages.
- F. Work completed without approved submittals may be subject to rejection.

3.03 DESIGNER'S REVIEW

- A. Partial submittals may be rejected for non-compliance with the Contract Documents.
- B. Review by Designer does not relieve Contractor from responsibility of conforming to the technical specifications and drawings or for errors which may exist in the submitted data.
- C. Revisions:
 - 1. Make revisions when required by Designer and resubmit for review.
 - 2. If the Contractor considers any required revision to be a change, he shall so notify the Designer as provided for in the article for "Changes in the Work" of the General Conditions.
 - 3. Make only those revisions directed or approved by the Designer.
- D. The Engineer will provide an initial review and up to two subsequent reviews of each required submittal.

- 3.04 CLAIMS FOR EXTRA COST: No claim for extra cost shall be based on work shown on shop drawings unless such claim is made on the Contractor's letter of transmittal accompanying the shop drawings and is approved by the Owner in writing.

END OF SECTION 013300

013300.4 –SUBMITTALS

SUBMITTAL TRANSMITTAL FORM

(This Form Must Be Physically Attached To Each Submittal And **Must Be Numbered Consecutively**)

Project Name: Camp Building Roof Replacement
 Code: SCO ID: 18-18885-01A;

 Contractor Name: .
 Specification Section Number: _____
 Subcontractor: _____
 Product Type: _____
 Product Trade Name: _____
 Major Supplier _____
 Applicable Drawing or Detail: _____
 Remarks: _____

Submittal Identification
 (Use Unique I.D. for Attachment)
 Submittal Number: _____
 Date of Submittal: _____

SEAL

Contractor Seal:

I have reviewed the attached submittal and it complies with the requirements of the General Conditions and other applicable sections of the Contract Documents.

 Signature of Contractor

FOR DESIGNER'S USE ONLY

DATE RECEIVED: _____
 DATE RETURNED: _____

ATLAS Job No.: J2245
 -No corrections noted
 -Make corrections noted
 -Revise and resubmit
 -Not acceptable - see remarks

Corrections Noted:

Review is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents.

Remarks:

Contractor is responsible for compliance with contract documents, confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques, including means, methods, and sequencing of construction, coordinating the work with that of all other trades, and performance of the work in a safe and satisfactory manner.

ATLAS ENGINEERING, INC.

BY: _____
 DATE: _____

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

1.02 CONTRACTOR WORKMANSHIP

- A. The bidding contractor shall have been in business a minimum of two (2) years prior to the date of bid and must have (or utilize a subcontractor who has) a minimum of 2-year's prior experience with installation of the specified roof system(s) on commercial or public buildings. Upon request, Contractor must be able to provide documentation of age of business, and of completed projects of the same system (with similar size and scope). This documentation may be requested for the purpose of reviewing and evaluating bids and failure to provide requested documentation may result in disqualification of bid.
- B. Roof system including membrane, flashings, and accessory components shall be installed in a watertight condition and with an overall quality of system installation that will allow the membrane and flashings to continue to perform in a watertight condition, with reasonable maintenance, over the system manufacturer warranty period. Work must be performed by persons qualified to produce workmanship of the above quality. Project Manager and Project Superintendent must have specific experience with the system(s) to be installed and on projects of similar size and complexity.
- C. Contractor must maintain the same Project Manager and Superintendent throughout the project duration unless a change is reviewed by and agreed upon by the Owner. The Contractor must replace the Project Manager or Superintendent if specifically requested by the Owner due to concerns with quality of workmanship or inattentiveness to the requirements of the project. If work is being completed by a subcontractor, the prime contractor must have a representative present on site while subcontracted work is underway.
- D. Contractor shall have a minimum of one bilingual person on site at all times if any crew member to be present on-site does not speak fluent English. Designated translators must have identification of this role clearly visible while on site.

1.03 MANUFACTURER'S SERVICES AND INVOLVEMENT

- A. The installing Contractor (or subcontractor performing the work) shall be an approved applicator for the manufacturer of the roof system for installation of replacement roof systems *at the time of bidding*. Certification of the contractor's status with the manufacturer may be requested for the purpose of reviewing and evaluating bids and failure to provide requested documentation may result in disqualification of bid.

014000.1 – QUALITY CONTROL

- B. The Contractor shall be responsible for providing the design documents to the manufacturer to allow for review and approval regarding design intent and to confirm ability of their system to meet specified requirements and specified system warranty prior to provision of a bid for the project. Failure of a particular roof system to meet the requirements of the specifications, or failure of the manufacturer to provide intent to warranty for the project may result in the requirement for the Contractor to utilize another conforming roof system manufacturer's products at no additional cost to the Owner.
- C. Comply with the manufacturer's installation instructions, including each step in proper sequence. Should manufacturer's instructions or detail requirements be less stringent than the Contract Documents, use the more stringent requirements. If the manufacturer's instructions or detail requirements conflict with the Contract Documents, request clarification from the Engineer before proceeding.

1.04 ENGINEER'S CONSTRUCTION OBSERVATIONS

- A. Contractor shall notify Engineer weekly of significant project activities. Contractor must notify Engineer a minimum of 48 hours prior to specific activities for which the Engineer wishes to be present. The applicable activities will be defined by the Engineer during the Pre-Construction Meeting, but may include first day of tear-off and replacement on specific roof areas or installation of specific details. If Contractor fails to notify Engineer to allow for observation, Engineer may request to observe work, including covered work, to confirm conformance with contract documents at no additional cost to the Owner.
- B. Contractor shall provide reasonable access, personnel and equipment required by Engineer to observe the Work.

1.05 WARRANTY AND GUARANTEE

- A. Provide a Contractor's Two-Year Warranty for all of the work included in this project. The Contractor shall warrant workmanship, materials, and weathertightness of the roof system against defects due to faulty materials, poor workmanship, or work not installed in conformance with project technical requirements or level of quality as required by the general and supplemental conditions. Warranty must cover repair of distresses that are discovered in the roof system or other installed work whether or not they are actively causing water entry into the system or building. The warranty will extend for a period of twenty-four (24) months from the date of Final Acceptance. The provided warranty shall be in addition to and independent from the roof system manufacturer's warranty. The Contractor shall include language in the warranty setting the maximum response time to a warranty complaint by the Owner to 24 hours for emergency conditions and five (5) working days for non-emergency conditions, unless otherwise agreed upon by the Owner. Refer to specific sections of this specification for any additional warranty requirements.
- B. Install roofing systems to allow for issuance of manufacturer's warranties as required by specific sections of these specifications.
- C. When specified in respective Specification Sections and/or required to obtain specified system warranty, require the manufacturer to provide qualified personnel to observe field conditions,

014000.2 – QUALITY CONTROL

conditions of surfaces and installation, quality of workmanship, as applicable, and to make appropriate recommendations. A minimum of 8 visits to the site (plus 1 final/warranty inspection) by the roof system manufacturer's *technical* representative are required. Representatives of the manufacturer shall submit written reports observations and recommendations during field services. A copy of the manufacturer's report must be provided to the Engineer within 2 days of receipt by the Contractor.

- D. Should workmanship samples or specific system testing be required by the manufacturer issuing a warranty, contractor shall provide such testing or sampling. If, for any reason, deficiencies are found within the system during sampling or testing, the Contractor shall, at his expense, make repairs and replacements as necessary, to correct deficiencies and satisfy the requirements of the manufacturer issuing the warranty.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION 014000

014000.3 – QUALITY CONTROL

SECTION 015000

CONSTRUCTION FACILITIES

PART 1 GENERAL

1.01 SITE CONDITIONS AND PRE-JOB DAMAGE SURVEY

- A. The Contractor is to accept the building “as is” and shall exercise care to protect existing utilities, site, and building components. Verify existing conditions and notify Owner and Designer should the conditions vary significantly from those described in the technical specifications and drawings. Should minor conditions be encountered which are not exactly as indicated, modification to accommodate new work shall be made as required at no additional cost to the Owner.
- B. The Contractor shall perform and submit a Pre-Job Damage Survey to document existing conditions and specific damages/defects to existing building or building components. Pre-Job Damage Survey shall be provided in accordance with Section 024110 of these specifications and must be completed prior to the start of staging, storage, or material delivery to the site.

1.02 TEMPORARY FACILITIES

- A. Temporary Water: Water for construction will be furnished by the Owner from existing facilities if exterior connections are available, functioning, and adequate for use. Required connections and extensions for temporary use shall be provided by the Contractor from a point designated by the Owner. Temporary connection to existing water must be turned off and disconnected with not in use or when Contractor is not on site. Abuse of water privilege shall be grounds for cancellation of same by Owner. Contractor will be responsible for providing water if existing facility connections are not functioning or adequate for the needs of the Contractor during the project. If provision of temporary water is critical to installation or proper equipment function, the Contractor is responsible for confirming existing availability prior to bidding and should provide, as a part of his work and within his Base Bid, any supplemental water required for proper installation of the work.
- B. Temporary Power: Power for construction will be furnished by the Contractor unless otherwise agreed upon by the Owner. If the Owner agrees to provide temporary power, and existing exterior power supply is adequate for required equipment and installation, the required connections and extensions for temporary use shall be provided by the Contractor from a point designated by the Owner. The Contractor shall provide required distribution boxes, grounding requirements and breaker protection. Contractor shall be responsible for the coordination and cost of any required inspection of temporary power components. Abuse of power privilege shall be grounds for cancellation of same by Owner. The Contractor must provide a dedicated generator for use during heat welding of the thermoplastic membrane with an automatic robot welder.
- C. Toilet Facilities: Provide temporary toilet facilities meeting the requirements of the Health Department with authority. Contractor’s personnel shall not use Owner’s toilet facilities.

015000.1 - CONSTRUCTION FACILITIES

- D. Sanitary Facilities: Provide temporary containers to dispense drinking water and general washing facilities for construction personnel meeting the requirements of the Health Department with authority. Contractor's personnel shall not use Owner's restroom facilities.
- E. Existing Utilities: On-site underground utilities shall be located and marked by an independent locating service at the Contractor's expense. Location and marking is necessary if excavation work will be performed or if heavy equipment, vehicle, or other construction traffic will occur over portions of the site. Contractor shall pay for damage to interruption of any utility service due to construction activities.

1.03 ACCESS TO THE SITE

- A. Access to the site and parking may be restricted to storage and staging areas as designated on the design drawings or as otherwise required by the Owner. Provide all Contractor employees with visible identification (badges, shirts, or hardhats) bearing the name of the Contractor and/or employee. Employees not displaying identification may be required to leave the site.
- B. Contractor's personnel shall coordinate with the Facilities Management point of contact prior to performing work on the building interior. Contractor's personnel shall only communicate with designated personnel at the site. Conduct by the Contractor's personnel that causes any complaint will result in the permanent removal of the offending individual(s) from the site.

1.04 PROTECTION AND RESTORATION

- A. Perform a Pre-Job Damage Survey prior to the start of construction in accordance with Section 024110 of this Project Manual. Protect existing building, adjacent buildings, walkways, grass areas, landscaping, paved and concrete parking lots, brick pavers, and other site features and equipment from damage as a result of construction operations. Any damaged items or conditions not documented in the Pre-Job Damage Survey to have been existing prior to the start of construction, shall be considered to have been damaged by construction activities and shall be restored to their original condition, or replaced, at no cost to the Owner. Whenever demolition, patching or restoration is required for completion of the work, provide protection of site and building features regardless of being shown or not shown on the drawings. Repair of grass areas, walkways, landscaping and other site features damaged by construction activities shall be performed to the satisfaction of the Owner to meet the condition of the feature prior to construction activities. It is recommended that the Contractor discuss expectations for landscaping and grass repair, and/or sodding with the Owner during bidding, and prior to the start of work.
- B. Protect interior finishes, equipment and other University or building user property located inside the building as necessary. Contractor shall be responsible for damages resulting from construction activities including damages to interior finishes and university and personal property within the building. In areas where the underside of the roof deck is exposed to the interior (no suspended ceiling finish), the Owner will require the Contractor to place temporary protection (loose plastic) over interior contents in the area(s) directly beneath the roof area to be removed. Plastic should be removed at the end of the work day and readily noticeable debris vacuumed, wiped, from interior floors and surfaces (rough clean). For areas with suspended ceilings, the Contractor must perform a walkthrough at the end of their work day and clean readily noticeable debris from surface areas.

015000.2 - CONSTRUCTION FACILITIES

- C. Provide temporary weather and debris protection at all locations where existing building materials are removed. Contractor shall be responsible for damages resulting from inadequate protection and entry of water, debris or other items into the interior spaces. Refer to specific roof system specification sections for additional requirements for weathertightness during construction.
- D. Provide barriers around trees, plants and ground-mounted equipment. Tree protection fencing must be installed at all trees located in the general vicinity of staging and storage, anticipated equipment traffic routes, dumpsters and other construction activities unless otherwise agreed upon with the Owner's representative. Protect trees, landscaping, grass areas and other site vegetation against vehicular traffic, stored materials, chemically injurious materials, and puddling or continuous running water.
- E. Comply with OSHA and other applicable safety regulations. Contractor shall be solely responsible for the safety and health of its employees.
- F. Provide temporary protection against damage of both stored and installed products. Damaged materials or products shall be removed from the site and replaced at no cost to the Owner.
- G. Limit traffic and storage to areas located on the site plan and agreed upon by the Owner's representatives.
- H. Roof replacement must be sequenced to limit foot and equipment traffic over areas of temporary membrane and new roof system installation. Where foot and equipment traffic over the existing roof system is unavoidable, provide protective walkways or other methods to adequately protect the new materials. The Contractor is responsible for leaks in the existing roof system caused by or exacerbated by construction traffic.

1.05 SITE CLEANING

- A. Clean debris from construction activities daily at minimum. Place debris in closed containers.
- B. Clean up shall include removal of mud, oil, sand, dirt, trash, scrap, debris, and excess materials from any areas outside of designated and barricaded storage area.
- C. Cleaning of site and removal of debris shall be to the satisfaction of the Owner. Windy conditions that cause blowing of materials or debris may require the Contractor to put in place more restrictive cleaning and protection requirements.

1.06 STORAGE AREA

- A. Limited storage and staging area will be provided on site as shown on the project drawings and coordinated with the Owner. It is the Contractor's responsibility to adequately secure stored materials and equipment. Install chain link fencing around the main staging and material storage area. Fencing should include necessary gates. Chain link fencing installed shall be a minimum of 6' tall, have movable bases and shall not be installed such that existing concrete or asphalt surfaces are damaged. At isolated staging and access areas (one per wing), provide 3' tall orange snow fencing surrounding the perimeter of the area. Fencing must have movable bases if located

015000.3 - CONSTRUCTION FACILITIES

on concrete or asphalt. Alternate fencing must be discussed with and agreed upon by the Owner. Remove evidence of use and leave area and entire limits of site clean upon completion of the project. Restore areas damaged by stored materials to original condition.

- B. Contractor shall load materials onto the roof when areas below loading area are unoccupied by building occupants unless otherwise coordinated with the Owner. It is the responsibility of the Contractor to space materials stored on roof such that they do not overload the existing roof deck and structure. Storage of materials on the roof surface shall be limited to those expected to be installed within 5-7 work days unless discussed with and agreed upon by the Owner and Designer.
- C. Contractor shall not stockpile removed materials on site.
- D. The Contractor is responsible for scheduling delivery of materials to the site to allow for continued work and taking into consideration the size and location of storage area. Contractor shall obtain and pay for use of additional storage or work areas if needed for operations under this Contract.
- E. No Contractor sign or advertisement shall be allowed to be displayed without the Owner and Designer's approval.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 015000

015000.4 - CONSTRUCTION FACILITIES

SECTION 016000

MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.01 TRANSPORTATION AND HANDLING

- A. Provide equipment and personnel to handle products by methods to avoid product damage. Deliver products in undamaged condition in the manufacturer's unopened and marked containers or packing.
- B. Promptly inspect shipments to assure that products comply with specified requirements, quantities are correct, and products are undamaged.

1.02 STORAGE AND PROTECTION

- A. Store products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Products requiring fire resistance classification shall be delivered and stored with labels attached and packaged as required by labeling.
- B. For exterior storage of products, place on sloped supports above the ground. Cover products with impervious sheet covering and provide ventilation to avoid condensation. Maintain temperature and humidity ranges required by the manufacturer for each product.
- C. Store loose or granular materials on solid surfaces in a well-drained area and prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect materials to assure products are undamaged and are maintained under required conditions.
- E. Select and operate material handling equipment so as not to damage existing construction and/or materials. Protect materials against construction traffic.
- F. Materials that are damaged or that become saturated shall not be used and shall be removed from the project site. The Designer reserves the right to mark damaged or wet materials and require immediate disposal/removal of material.
- G. Handle rolled goods so as to prevent damage to edges or ends. Store rolled goods in accordance with the product manufacturer's recommendations.
- H. The Contractor shall not load more materials on the roof than can be installed within 5-7 working days, unless otherwise approved. Materials shall be distributed and not stacked. Gasoline storage containers, open cleaners, or other flammable or volatile materials shall be removed from the roof daily.
- I. Payment by the Owner for any materials, equipment or labor incorporated in the work shall not be deemed to be an acceptance by the Owner. The risk of loss of such materials, equipment or cost of labor spent to install such, shall remain with the Contractor. Stolen, damaged, vandalized,

016000.1 – MATERIALS AND EQUIPMENT

missing, or weather-damaged equipment, material, and work shall be considered the property of the Contractor until final acceptance of the project by the Owner.

- J. No payment by the Owner will be made for any material not physically located on the site unless the storage of such material can be verified by the Designer and is marked specifically for the project use and scheduled for installation within 30 days of payment request.

1.03 SUBSTITUTIONS AND PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Provide a product meeting those standards. The Owner and Engineer reserve the right to require confirmation by the roof manufacturer that their system/products intended for use meet the requirements of the specifications prior to award of the contract. Failure of the contractor to provide requested confirmation may result in disqualification of their bid.
- B. Products Specified by Naming Several Manufacturers: Provide a product of named manufacturers meeting specifications: Requests for product substitutions must be made in writing for any manufacturer not specifically named in accordance with the following requirements in paragraphs 1.03C, D, E, F, and G. **When a minimum of three approved manufacturers/products are listed, the Engineer reserves the right to not accept any requests for manufacturer/system substitutions.**
- C. If the Engineer will allow requests for substitution of the roof membrane/system and manufacturer from those listed in the applicable section of these specifications, requests must be submitted no less than ten (10) days prior to the bid date. Requests must be made by the Contractor, requests from suppliers or manufacturers will not be reviewed.
- D. Each written request for a substitution shall be submitted with complete data substantiating compliance of proposed substitution with the technical specifications and drawings.
- E. The request shall constitute that the Contractor:
 - 1. Has investigated the proposed product and determined that it meets or exceeds, in all respects, specified product.
 - 2. Will provide the same warranty as the specified product.
 - 3. Will coordinate installation and make any other change that may be required for work to be complete with substituted item.
 - 4. Waives claims for additional costs that may subsequently become apparent due to use of substituted item.
- F. Substitutions will not be considered when they are included without identification as a substitution or implied on shop drawings or product data submittals without separate written request, or when acceptance will require substantial revision of technical specifications.
- G. The Designer will determine acceptability of proposed substitution, and will notify the Contractor of acceptance or rejection in writing within a reasonable time.

016000.2 – MATERIALS AND EQUIPMENT

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 016000

016000.3 – MATERIALS AND EQUIPMENT

SECTION 017700

PROJECT CLOSE-OUT

PART 1 GENERAL

1.01 SUMMARY

- A. When Contractor considers Work to have reached completion, submit written certification that Contract Documents have been reviewed, the Contractor has inspected Work, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection. For the purpose of requesting a pre-final inspection, "completion" is defined as the performance of all of the work items listed in the Project Manual and as required for proper installation of the roof system.
- B. Designer shall make one pre-final inspection during which a list of incomplete items, or items requiring repair (punchlist) will be compiled. Upon completion of punchlist items, the Contractor submit in writing that completion of the punchlist items has been confirmed by the Contractor and is ready for the Designer's final inspection. The Designer will perform the Final Inspection to confirm completion of outstanding punchlist items.
- C. If the Contractor fails to complete contract on time, the Owner reserves the right to assess liquidated damages in accordance with the Supplementary Conditions of the Contract.
- D. If the Contractor fails to complete contract on time, additional restrictions from the Owner to work schedule, noise, storage, staging, and other site and building restrictions may apply.
- E. In addition to post-job submittals required by Section 01330, provide any submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- F. Designer will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.02 FINAL CLEANING

- A. Execute final cleaning of the roof membrane surface and all components prior to performance of the Pre-Final inspection. Execute final cleaning of the site and punchlist repair areas prior to requesting the final inspection.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances.
- C. Clean site; sweep paved areas, rake clean other surfaces affected by the work, storage or access. Contractor may be required to re-sod areas of grass that are killed/damaged as a result of construction activity if required by the Owner to return site conditions to their original condition.

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- D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

1.03 PROJECT RECORD DOCUMENTS

- A. Keep a record document set on site stored for protection from construction activity.
- B. Keep record documents current; do not permanently conceal any changed work until required information has been recorded.
- C. At Contract close-out, submit record documents (as-built drawings) as indicated in Section 01330 with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor. Record drawings with handwritten red-line mark-ups are acceptable for submittal to fulfill this requirement.

1.04 OPERATION AND MAINTENANCE DATA

- A. Provide data for roof systems and other installed equipment in accordance with Section 01330.

1.05 WARRANTIES AND BONDS

- A. Provide required contractor and manufacturer's warranties in accordance with Section 01330.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION 017700

017700.2 – PROJECT CLOSEOUT

SECTION 024110

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Perform a Pre-Job Damage Survey prior to the start of work on-site including mobilization of equipment, material delivery, and set-up of storage and staging areas.
- B. Clean and test roof drains and drainage lines to their outlet from the building and water test underground drain line from the existing boot at grade. Remove readily accessible debris from the drain strainer, bowl and initial section of vertical drain leader (up to 2'). Notify the Designer and Owner if water testing indicates suspected or confirmed clogged or damaged drain/drain line components. Water test the drains with a standard water hose to confirm that the existing assembly allows the free flow of water without visible leaks/water entry to the interior prior to the start of construction. Testing must be completed prior to the demolition of the existing roof system (in conjunction with the Pre-Job Damage Survey). Notify the Designer and Owner if water testing indicates suspected or confirmed clogged or damaged drain/drain leader/or underground drain line components. During this testing, inspect existing drain components for damage or conditions that may prevent installation of the specified retrofit drain assembly.
- C. Provide labor, materials, equipment, and supervision necessary to perform selective demolition, which includes, but is not limited to the following:
 1. Remove all existing roof membrane, insulation, vapor barrier/base sheet, and flashings from all roof areas down to the top of the roof deck and legally dispose of off-site. Do not remove more existing roof system than can be returned to a watertight condition prior to the end of the work day. ***The perimeter membrane flashings, silver-coated expansion joint flashings, and silver-coated penetration flashings of the existing built-up roof system contain asbestos and must be removed and disposed of in strict accordance with Section 024120 of this Project Manual. An asbestos test report from a NC accredited asbestos inspector is available upon request from the Designer.***
 2. Remove existing sheet metal flashings, counterflashings, gutters, receivers, expansion joint caps, partial perimeter blocking, and other existing flashing accessories and dispose of off-site as necessary to allow for the proper installation of the new roof system assembly and details. Components shall remain if they are noted to be incorporated into the new roof system/detail. Protect components that will remain for reuse, including, but not limited to, penetrations, curbed equipment, portions of wood blocking, masonry chimney, drain bowls, etc.
 3. Remove roof penetrations that are identified on the drawings as “abandoned”, “capped”, or “for removal”. Make required repairs to the formboard and gypsum roof deck. Repairs will vary based on the size of the penetration removed.
 4. Inspect the existing poured gypsum deck, wood blocking, and other components noted to remain and repair or replace damaged or deteriorated materials in accordance with applicable sections of these specifications. Reuse existing wood blocking only where

024110.1 – SELECTIVE DEMOLITION

- shown on the design details or specifically approved on-site by the Designer, otherwise install new materials.
5. Roof demolition, deck inspection and repair, and base sheet and vapor barrier installation over occupied areas must be performed after hours (between the hours of 5:00 p.m. and 6:30 a.m.). In areas where the underside of the roof deck is exposed to the interior (no suspended ceiling finish), the Owner will require the Contractor to place temporary protection (loose plastic) over interior contents in the area(s) directly beneath the roof area to be removed. Plastic should be removed at the end of the work day and readily noticeable debris vacuumed, wiped, from interior floors and surfaces (rough clean). For areas with suspended ceilings, the Contractor must perform a walkthrough at the end of their work day and clean readily noticeable debris from surface areas.
 6. Prior to installation of the new roof system, remove existing drain strainers and clamping rings and install wood blocking and install retrofit drain assemblies at all internal drains.
 7. Remove existing exterior wall-mounted conductor heads and downspouts at drain leader outlets and dispose of off-site.
 8. Provide other demolition whether or not indicated on the drawings or in the specifications as required to perform the specified work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PRE-JOB DAMAGE SURVEY

- A. Contractor shall perform a pre-job damage survey of the existing rooftop and site components including roof, building exteriors, walkways, pavers, pavements, site features, landscaping, grass, and building interior finishes to document existing damaged conditions prior to beginning work. It is recommended that the Contractor coordinate with the Owner's representative to have the current working condition of any roof-mounted equipment/fans to remain confirmed as a part of the Pre-Damage Survey.
- B. Contractor shall submit required documentation, including either videotape footage of the survey and/or photographs and sketches, as necessary to adequately describe existing conditions and to allow for the location of noted defects. If no time stamp is provided on documents, it is critical that the Contractor submit the Pre-Job Damage Survey to the Engineer prior to the start of work. Video of the existing conditions is acceptable as long as the footage is narrated to describe conditions observed and footage is taken at the proper distance and focus to make described conditions visible.
- C. It shall not be the responsibility of the Owner and/or Engineer to review or approve the contents of the Contractor's Pre-Job Damage Survey. The contractor may request that the Engineer or Owner accompany them to observe a specific condition if there are questions or adequate documentation by video or photographs may not be feasible. A pre-job damage survey is considered to be a protection for the contractor and documentation will be used to assist the Owner, Designer and Contractor in determining whether damages noted during construction were caused by construction activities or were existing prior to the start of construction.

024110.2 – SELECTIVE DEMOLITION

- D. The Contractor shall be responsible for repair or replacement of materials that are damaged during construction activities and were not documented within the Pre-Job Damage Survey to have been damaged prior to beginning the work. Items/materials that are damaged shall be returned to the condition they were in prior to construction activities. If return to pre-construction condition is not possible/practical, Contractor shall replace item/material with new to the satisfaction of the Engineer and Owner.

3.02 TESTING OF DRAINS

- A. Water test drains and leaders in conjunction with the Pre-Job Damage Survey. The purpose of the test is to confirm that water flows freely through the drain lines and leaders without evidence of clogging, or backup. Roof drains should be water tested prior to start of demolition at respective areas.
- B. At minimum, cleaning should include removal of any visible and readily accessible debris at the drain strainer, bowl, and at least a 2' portion of the vertical drain leader accessible from the roof.
- C. At minimum, water testing should include placement of water from a garden hose into each roof drains for a minimum of 10 minutes per drain with visual confirmation that water continues to flow freely through the drain without backing up or another noticeable decrease in drainage flow. Notify the Engineer and Owner of suspected or observed damage/clogging of drainage leaders.

3.03 DEMOLITION

- A. Demolish roof materials and components in an orderly and careful manner. Limit the size of work sections to safeguard adjacent materials and building structures and to minimize potential dust, noise, and debris sources.
- B. Do not remove more existing roof system materials than can be replaced with new materials to a watertight condition by the end of the same work day. Contractor shall have ready necessary temporary protection from weather at all areas of demolition to protect interior of building from elements in the event of unexpected inclement weather.
- C. Cease operations and notify the Owner immediately if adjacent buildings, finishes, or structures appear to be endangered. Do not resume operations until corrective measures have been taken.
- D. Clean all dust and debris from the exposed substrate. Debris will not be allowed to accumulate on the roof surface and must be removed from the roof daily. Material and debris shall be transported to and from the roof by crane, hoist, or forklift unless otherwise approved by the Engineer or Owner. If crane is used, it shall be operated by a certified crane operator.
- E. Provide wind screens or other protection as necessary to prevent windblown debris from the roof surface or from dumpsters.
- F. Debris must be removed from the site daily unless enclosed by a dumpster, trailer, or other sided container that can be covered if necessary to prevent blowing debris. Do not stockpile materials on the site unless agreed upon with the Owner's representative. Do not burn or bury materials on site.

024110.3 – SELECTIVE DEMOLITION

- G. Inspect existing substrates such as the gypsum roof deck, wood blocking to remain, drain components, and other substrates as exposed. Substrates discovered to be damaged, wet, or deteriorated such that they are unacceptable as a substrate for the new roof materials must be replaced or repaired prior to installing new roof system in accordance with the Project Manual. Notify the Engineer upon discovery of materials requiring repair or replacement. Contractor shall have required repair materials on site prior to the start of demolition to avoid delay in repairs.
- H. Estimated quantities of work are included in the Base Bid per Section 012100 for repair/replacement of the gypsum deck and wood blocking. At project completion, or completion of particular project milestones, the actual quantities work performed will be compared with the estimated quantities to determine if changes to the contract sum (addition or deduct) may be required. To ensure that accurate quantities of work performed are included in this comparison, the Contractor must provide specific documentation of work type, quantities, and confirmation that work was warranted. Documentation can include review of existing conditions or work performed (prior to covering) by the Contractor and Engineer (or Owner's representative) with agreed upon quantities photographed and documented in the Engineer's site visit report. If the Engineer is not available, the Contractor is responsible for photographing the damaged/deteriorated materials/conditions, and photographing the repaired/replaced materials (with scale to allow for confirmation of measurements) of the material and submitting these to the Engineer at the next site visit or progress meeting. If approved by the Engineer, it may be acceptable to stockpile removed deterioration component/material (when applicable) until confirmation by the Engineer can be made. Payment for work performed (or consideration of work performed toward the estimated quantities) may not be provided without proper documentation.

END OF SECTION 024110

024110.4 – SELECTIVE DEMOLITION

SECTION 024120

REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment, and supervision necessary to perform removal of asbestos containing roofing material, which includes, but is not limited to the following:
- 1. The perimeter membrane flashings, silver-coated expansion joint flashings, and silver-coated penetration flashings of the existing built-up roof system contain asbestos and must be removed and disposed of in strict accordance with all appropriate Local, State, and Federal regulations so as to protect human health and the environment.**
 2. Sampling and testing for asbestos was performed by a North Carolina Accredited Asbestos inspector (Mr. Clay Hinson, NC Inspector No. 12734 with Fleetwood Daniels Group, LLC) and a copy of the test results are available upon request.
 3. Provide copies of chain of custody and waste removal documentation (landfill tickets, etc.) for asbestos-containing materials to the Owner for their records.
- B. The Contractor shall furnish and is responsible for costs including, but not limited to: notifications, permit fees, insurance, bonding, certifications, training, and equipment necessary to carry out removal and disposal operations in accordance with the plans and specifications, current EPA and OSHA regulations, and any applicable state and local government regulations.
- C. The Contractor must coordinate with WCU EH&S to ensure that any additional paperwork or requirements of WCU are followed during removal and disposal.

1.02 QUALITY ASSURANCE

- A. Follow OSHA and NESHAP regulations and procedures, latest edition applicable to the removal of roofing materials containing asbestos. Also, conform to North Carolina Asbestos Hazard Management Program (NCAHMP) requirements. The Contractor shall meet the requirements listed under the OSHA Standard 29 CFR 1926.1101 for roofing.
- B. Contractor shall contact the NC Health Hazards Control Branch (HHCB) concerning the need for permit, fees, and accredited roofing workers and supervisors when removing regulated roofing materials. A courtesy notification for any amount of asbestos, regulated or non-regulated, to be removed shall be sent to the HHCB 10 working days prior to the start date of the asbestos removal. Utilize a waste shipment record acceptable to the State of North Carolina.
- C. Provide required signage and coordinate removal with Owner and occupants to reduce possible contact with ACM.
- D. Train personnel in health effects of asbestos, work practices for proper handling of ACM,

024120.1 – REMOVAL OF ASBESTOS-CONTAINING MATERIALS

applicable regulation, and air monitoring and hazard communication. Maintain current licenses for contractors and accreditation for workers and supervisors as required by applicable State or local jurisdictions for the removal, transportation, disposal or other regulated activity relative to the work of this contract. ***Copies of licenses, permits and certifications must be submitted to the Designer and Owner before the start of demolition.***

- E. There shall be one supervisor for every 10 workers on the site at all times that asbestos containing materials are being removed to monitor material removal and to determine if the materials have become friable. This supervisor shall be trained in the provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) and OSHA Standard 29CFR1926.1101. Provide all required safety equipment including respirators, unless otherwise shown to be unnecessary through negative exposure assessments or by the requirements of the referenced standards.

1.03 SUBMITTALS

- A. Provide copies of written notification to the NC HHCB, local (campus) EMS, fire and police departments.
- B. Provide copies of lists of supervisors and workers, along with their accreditation to be utilized during removal of asbestos containing materials. ***Copies of licenses, permits and certifications must be submitted before the start of demolition.***
- C. Provide copies of approval of a waste disposal site in compliance with OSHA 40 CFR 61.154. Provide a sample of the waste shipment record that will be maintained during disposal.
- D. Provide a time schedule for the project, outlining the start and stop dates for phases of the project containing removal of asbestos-containing materials.
- E. Provide a sample of any signage to be used during asbestos removal to the Owner in advance of installation on the site.
- F. Provide copies of exposure assessments, or other documentation required to support anticipated removal methods and personnel protection equipment.
- G. Provide other documents requested or required by WCU.

PART 2 PRODUCTS - Not used.

PART 3 EXECUTION

3.01 PREPARATION

- A. Wet non-friable materials with water and establish a regulated area.
- B. Post required signage at site entrances, dumpsters, and work areas.

024120.2 – REMOVAL OF ASBESTOS-CONTAINING MATERIALS

- C. Ensure no ACMs are released into the environment or into the building. Lock and tag any HVAC intakes in the general vicinity of asbestos abatement activities. Additionally, cover these intakes with one layer of 6-mil polyethylene sheeting until removal is complete.
- D. Allow no activities or equipment to be used that could cause fiber release such as drilling, sawing, sanding or cutting with power tools unless combined with approved wetting methods.
- E. Allow no throwing or dropping of materials. Contain and lower materials to ground level by a means that will not generate airborne dust. If lowering materials to the ground presents a hazard or there is a risk that the materials will become friable, double bag the materials on the roof prior to lowering. If materials are not contained within double bagging or closed canisters, dumpsters must be covered or double lined to meet referenced State and Federal regulations.

3.02 DISPOSAL

- A. Transport materials to a permitted landfill in a covered truck in double bags or dumpster covering as required by State and Federal regulations regarding transport of asbestos-containing materials. Materials will be disposed of as asbestos-containing construction waste. Landfill must be notified in advance of the delivery of asbestos containing materials.
- B. Provide copies of the waste manifests to the Owner throughout the project and provide a complete set of waste manifests as a post-job submittal to be submitted before final payment. Include date, quantity of material delivered, signature of authorized representative of landfill and name of waste transporter.

END OF SECTION 024120

024120.3 – REMOVAL OF ASBESTOS-CONTAINING MATERIALS

SECTION 061140

ROUGH CARPENTRY

PART 1 GENERAL

1.01 WORK INCLUDED

A. Provide labor, materials, equipment and supervision necessary to complete the following work:

1. Install new wood nailers/blocking at locations shown on project drawings and where required by the roof system manufacturer for proper installation of details. Locations include, but aren't limited to roof perimeters, curbed penetration extensions, expansion joints, transitions between sloped and flat roof assemblies, along ridges of sloped areas, and retrofit drains.
2. Install new plywood on the exterior face of the roof edge and any other locations where shown on the design documents.
3. Install supplemental fastening of existing blocking where noted on the drawings to ensure adequate securement to the building structure.
4. Replace existing wood blocking and plywood that is discovered to be missing, deteriorated, or damaged, if it was marked as existing on the design drawings and was intended for reuse within the new roof system. Estimated quantities for material replacement are included in Section 012100.

1.02 QUALITY ASSURANCE

- A. Contractor shall provide sufficient qualified workmen and supervisors who shall be present at all times during execution of this portion of the work and who shall be familiar with the type of construction involved and the materials and techniques specified.
- B. No allowance in the project requirements shall be made for lack of skill of the workmen.

1.03 SUBMITTALS

- A. Submit product data and SDS for each product listed in this specification section. For treated wood, confirm preservation treatment type and moisture content.
- B. Submit product data for each fastener type to be used in the securement of the blocking to the deck and other blocking, plywood to masonry and other plywood, along with a physical sample of each fastener type if requested. Clearly mark product data sheets to confirm fastener type, length, and location of intended use. The Contractor may re-submit additional fastener types and data if any change to the fasteners to be used occurs.

061140.1 – ROUGH CARPENTRY

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver blocking, plywood, fasteners, and other required accessories in manufacturer's original protective containers/wrapping/bundles with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas, on clean, raised platforms with securely anchored weather protective coverings in accordance with Section 016000. Store flammable products away from sparks or open flames.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wood Blocking (Treated): Shall be No. 2 or better southern yellow pine, kiln-dried prior to and to a moisture content of not more than 19 percent. Shall be sound, thoroughly seasoned, dressed to nominal finish dimension, and free of warpage, cupping, and bowing. All nailers and other blocking associated with the roofing installation shall be pressure treated with 0.40 pcf retention of alkaline copper quaternary (ACQ) and shall conform to AWPA Standard U1, to the requirements of use category for ground contact. Asphaltic or creosote preservatives shall not be used. The presence of a mark or tag identifying preservative type and retention on each piece is required. Where full penetration of ACQ is not evident, field cuts shall be coated in accordance with AWPA standard M-4. Dimensions shall be determined by job conditions. Site-sawn ends shall be treated with one coat of preservative treatment. If the roof membrane manufacturer does not accept the use of the specified preservative treatment for use in their warranted system, or lead times for specified retention rate is substantial, notify the Engineer to allow for approval of an alternate product. Alternate preservative treatments must provide an equivalent retention for the required use category.
- B. Plywood: Shall be stamped APA –rated CDX (C side out), smooth-surfaced, exterior grade. Plywood thickness shall be 3/4" thickness as noted on the design details or required by the manufacturer. If plywood is installed to repair/replace existing damaged materials, match the existing plywood in thicken even if less than noted above.

2.02 FASTENERS

- A. General: Fasteners specified shall be the minimum required product. If a condition exists that does not match a fastener condition or type listed below, the Contractor may submit a separate type and profile of fastener for review. All fasteners to be used to secure treated wood products containing copper must be stainless steel or nylon (for gypsum deck). If alternate wood preservative treatments are provided that do not contain copper, the Designer will review possible use of corrosion coated fasteners.
- B. Wood to masonry/concrete: Minimum 1/4" diameter stainless steel masonry/concrete anchors. Where additional wood blocking, roof membrane, or sheetmetal flashing will cover the secured wood component, anchor heads must be either countersunk or otherwise finish flush with the surface of the wood. Minimum embedment into the substrate shall be 2", unless otherwise

061140.2 – ROUGH CARPENTRY

required by the manufacturer to meet required pull-out resistance. Pre-drill for fasteners if required/recommended by the manufacturer, or necessary to prevent spalling of the substrate material.

- C. Wood to metal (general): Minimum self-drilling, self-tapping, stainless steel no. 12 screws. Where additional wood blocking, roof membrane, or sheetmetal flashing will cover the wood component, anchor heads must be either countersunk or otherwise finish flush with the surface of the wood. Minimum fastener penetration shall be 1", unless otherwise required by the manufacturer to meet required pull-out resistance. Fasteners must be capable of securing new plywood to the new cold-formed steel hat channels and cee-shaped supports.
- D. Wood to wood: Minimum No. 10 stainless steel wood screws. Where additional wood blocking, roof membrane, or sheetmetal flashing will cover the wood component, fastener heads must be either countersunk or otherwise finish flush with the surface of the wood. Minimum fastener penetration into the wood blocking substrate below shall be 1-1/4".
- E. Wood to poured gypsum: Fastener specifically designed for securement to poured gypsum similar to a wide thread nylon fastener. Pre-drill of the blocking may be necessary. Length to penetrate into poured gypsum deck a min 1.5" but not through to the formboard.
- F. Fastener spacing is generally indicated on the design details, but if fasteners are not specifically shown or spacing not noted, provide a maximum 12" on center, unless otherwise required by the roof system manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install new wood blocking and plywood as shown on the drawings or as required by the roof system manufacturer for proper installation of the details.
- B. Install new wood materials true to line, level, plumb, and securely fastened to the approved substrate with fastener type and fastening requirements as specified. Cut blocking and plywood to size and angle/miter corners or edges where required to provide a clean fit at angle transition, or as otherwise needed for proper installation of the work.
- C. Fasten existing wood nailers, at spacing to comply with the fastening requirements provided in the detail drawing or this specification section, whichever is more stringent. Wood blocking and nailers shall be securely anchored to the roof deck/structure/wall and to each other, to resist a minimum uplift force of 300 pounds per linear foot. Based on this requirement, a maximum spacing of 12" on center for wood blocking to wood blocking along the perimeter shall not be exceeded (this maximum spacing shall only be used if a more stringent spacing requirement is not listed on the details or within the specifications). If fastener pull-out values performed by the Contractor prior to start of work indicate that specified fastening spacing will not meet this 300 pounds per foot load requirement, increase the number of fasteners as necessary to meet requirement.

061140.3 – ROUGH CARPENTRY

- D. Wood nailer pieces shall be no less than 12” in length and shall be secured with a minimum of two fasteners per piece. Where length is adequate, fasteners shall be positioned 6-inches from each end and a maximum of 12 inches o.c. and staggered 1/3 of the nailer width. Two fasteners shall be installed at the ends of each nailer.
- E. New wood blocking shall have a 1/8” gap between each length unless otherwise restricted by the roof system manufacturer’s requirements.
- F. Where wood curbs are to be installed or extended, corners shall be formed by lapping side members alternately.
- G. Secure plywood at 24” o.c. staggered in both directions, or to the top and bottom of each vertical stud if closer than 24” o.c. unless otherwise noted in the design details.

3.02 REPLACEMENT OF DETERIORATED/DAMAGED MATERIALS

- A. If existing wood blocking is marked on design details to be existing and remain for reuse in the new roof system and it is discovered to be missing, deteriorated, or otherwise damaged, remove portions of the damaged existing wood blocking and install new blocking to match sizes of pieces to be replaced unless otherwise approved. Minimum length of blocking for replacement is 12”.
- B. Notify Engineer upon discovery of materials requiring repair or replacement in accordance with Section 024110 and 12100.

END OF SECTION 061140

061140.4 – ROUGH CARPENTRY

SECTION 075400

THERMOPLASTIC SINGLE-PLY ROOF SYSTEM

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment and supervision necessary to install a new thermoplastic single-ply roof membrane system, flashings, and accessories following removal and disposal of the existing roofing materials.
- B. Perform a Pre-Job Damage Survey and clean and test roof drains and drain lines to their outlet from the building prior to the start of work in accordance with Section 024110 of the Project Manual.
- C. Remove all existing roof membrane, insulation, vapor barrier/base sheet, and membrane and sheetmetal flashings, and abandoned/capped penetrations from all roof areas down to the top of the roof deck and legally dispose of off-site in accordance with Sections 024110 as necessary to allow for proper installation of the new roof system. Do not remove more existing roof system than can be returned to a watertight condition prior to the end of the work day. ***The perimeter membrane flashings, silver-coated expansion joint flashings, and silver-coated penetration flashings of the existing built-up roof system contain asbestos and must be removed and disposed of in strict accordance with Section 024120 of this Project Manual. An asbestos test report from a NC accredited asbestos inspector is available upon request from the Designer.***
- D. Inspect the existing roof decks, wood blocking, and other components noted to remain and make repairs, or replace, damaged or deteriorated materials in accordance with this specifications section (gypsum deck repair) and Section 064110 (wood blocking repair/replacement) to provide suitable substrates for new roof system installation. Refer to base bid allowances (estimated quantities of work in Section 012100) for additional information regarding documentation and tracking.
- E. Install a mechanically-fastened base sheet over the gypsum deck (Areas 1A-1D, 2A-2E, 3A-3B, and 4A-4C) and secure at fastener patterns specified. At Area 2F, mechanically-fasten a thermal barrier (coverboard) over the corrugated metal deck and secure at fastener patterns specified. Fastener pull-out testing must be performed for each fastener and deck type.
- F. Install a new torch-applied modified bitumen vapor barrier over the base sheet or thermal barrier (or concrete deck at Area 2G). This vapor barrier should be installed in a watertight condition and must be sealed at all penetrations, including internal drains and perimeter scuppers to allow it to act as a temporary roof membrane.
- G. Base sheet and vapor barrier installation is expected to occur in conjunction with demolition of the existing roof system. Above occupied areas, this work must be performed after hours (between the hours of 5:00 p.m. and 6:30 a.m.) same as the removal of the existing roof system. Refer to Section 024110 for information regarding protection and cleaning of interior spaces.

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- H. Install wood blocking and retrofit drain assemblies at all internal drains.
- I. Clean and prepare the surface of the vapor barrier to form an acceptable substrate for new roof system installation. Install two, 2” thick base layers of new rigid insulation (total of 4”) over the vapor barrier secured with a low-rise polyurethane foam adhesive at all roof areas.
- J. At Areas 1A-1C, 2A-2C, 2E, 3A-3B, and 4A-4C install ¼” per foot tapered rigid insulation with a minimum thickness of 1.5” over the base layers. Install tapered insulation to form saddles and crickets (min. ½” per foot slope) between drains and at upslope sides of penetrations greater than 18” and tapered drain sumps as shown on the design drawings. Install tapered edge strips where shown to transition along raised perimeters.
- K. At Areas 1D and 2D install a top layer of 1.5” thick rigid insulation over the base layers. Install tapered insulation to form saddles (1/4” per foot with a ½” thick minimum) in the valleys of the sloped roof areas to direct water to perimeter scuppers or onto adjacent roof areas. Install tapered sumps at perimeter scuppers and crickets at upslope side of curbed penetrations greater than 18”.
- L. At Area 2F, install ¼” per foot tapered rigid insulation with a minimum thickness of 1.5” over the base layers.
- M. At Area 2G, install a top layer of 1.5” thick rigid insulation over the base layer.
- N. At all areas, install a ½” coverboard over the insulation adhered in low-rise polyurethane foam.
- O. All layers of insulation and coverboard shall be adhered in low-rise polyurethane foam adhesive in accordance with specified adhesion patterns. Insulation adhesive patterns must provide wind uplift resistance in accordance with these specifications, the North Carolina State Building Code and ASCE-7, latest edition and submittal of adhesion testing data for existing conditions will be required. Adhesion testing may be required dependent on vapor barrier material submitted and surface conditions observed.
- P. Provide and install a fully-adhered, thermoplastic roof membrane and membrane flashings with heat-welded seams. Provide and install other associated system components. Provide additional blocking, securement, and flashing on sloped roof areas. New roof system must meet the requirements for UL Class A fire classification and wind uplift resistance in accordance with these specifications, the North Carolina State Building Code and ASCE-7, latest applicable edition and be eligible for the specified manufacturer warranty.
- Q. Raise and/or extend equipment curbs, pipe vents and other roof penetrations as necessary to provide minimum 8-inch vertical flashing heights above the new roof membrane. Extend/modify any mechanical and/or electrical connections, ductwork, communication lines, etc. as necessary to raise penetrations to required heights. Make specific modifications to penetration components where noted on the drawing details.
- R. Provide and install clad-metal components, membrane flashings at perimeters and at roof penetrations.

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- S. Provide and install membrane system walk tread at locations shown on the drawings and at other locations requested by the Owner (additional locations in accordance with estimated quantity work in Section 012100).
- T. Provide and install termination bars, counterflashings, sheetmetal flashings, clad-metal cleats, fascia, closures, and extensions, trim, gutters, downspouts, conductor heads, straps, soffit panels and supports, and other sheetmetal trim and sealants as shown on the drawings for proper installation of the design details in accordance with Section 076200.
- U. Clean and coat existing downspout boots where exposed above grade, portions of the existing drain leader outlet that extend beyond the surface of the exterior wall, and steel at lintels adjacent to door alcoves in accordance with Section 099113.
- V. Prior to each day's work, plan and sequence work to maintain the roof and building in a watertight condition during construction. Refer to Section 015000 for additional requirements.
- W. Provide and install other accessory or incidental components, or modify other roof features/items, not specifically listed or shown on drawings, but required for the complete and proper installation of the new roof system.
- X. The new roof system shall be watertight, must meet the requirements for UL Class A fire classifications, and shall meet the requirements for wind uplift as specified herein and in accordance with the current versions of the North Carolina State Building Code and code-referenced version of ASCE-7. The overall quality of roof system installation shall be sufficient to obtain the manufacturer's specified warranty, meet recognized industry standards, and shall not include distresses or damages that may prevent the membrane and flashings to continue to perform in a watertight condition, with reasonable maintenance, over the 20-year manufacturer's warranty period.

1.02 QUALITY ASSURANCE

- A. Obtain roof membrane, insulation, flashings and accessories, from a single manufacturer with not less than 10 years of successful experience in manufacture of a thermoplastic membrane meeting the specified requirements and without significant change to the chemical formulation. Provide other system components such as adhesives, fasteners, termination bars, pipe boots, detail flashing membrane, pre-fabricated patches and corners, and membrane-coated metal flashings, sealants, etc. as manufacturer, supplied, or otherwise directly approved by the manufacturer of the primary membrane material for the warranted system.
- B. Contractor shall be an approved/authorized applicator of the manufacturer for installation of the product to be installed. Approved status must be in-place prior to the bid date. Certification of the contractor's status, or the status of a designated subcontractor, with the manufacturer may be requested for the purpose of reviewing and evaluating bids and failure to provide requested documentation may result in disqualification of bid.

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- C. Use adequate number of skilled workmen who are trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed for performance of the Work. The Project Superintendent and foreman of the installing crew shall have a minimum of two (2) years experience with the installation of the specific single-ply thermoplastic membrane and manufacturer to be installed. Proof of completed projects through submittal of project names and references may be requested to confirm this requirement is met.
- D. Comply with pertinent codes and regulations including recommendations contained in the most recent edition of the Manual of Low-Sloped Roofing and single-ply thermoplastic details published by the NRCA and the manufacturer's written installation instructions. Where manufacturer or NRCA recommendations differ from the design specifications and drawings, the more stringent requirement will take precedence unless otherwise agreed upon with the Engineer. The Contractor is responsible for bringing differences to the attention of the Designer before proceeding.
- E. Unless otherwise agreed upon with the Designer and Owner, provide an on-site refresher course/training session by the manufacturer's technical personnel to ensure the crew is capable of proper heat-welding of the manufacturer's membrane. The Contractor may hold this training at their office in lieu of on-site if approved with the Designer in advance. This requirement may be waived if the Contractor can provide written confirmation from the manufacturer that the specific workers that will perform installation have undergone manufacturer-provided heat-welding training on their membrane or successfully completed a project with the manufacturer's membrane within 6 months of the start date of the project.
- F. Provide a minimum of eight (8) on-the-job inspections and one (1) final/warranty inspection by the manufacturer during membrane installation. The manufacturer shall be available to provide technical assistance, and material application guidance as necessary to complete the roof membrane system installation in accordance with the membrane system manufacturer's warranty requirements and these specifications. The initial visit to the site should be made within the first three (3) days of new membrane system installation.
- G. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is desired for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials, and exercise care in ensuring that the finished application is acceptable to the Engineer and Owner.

1.03 SUBMITTALS

- A. Submit written confirmation of contractor's approved applicator's status from the roof membrane system manufacturer if not provided as a part of the bid evaluation and approval process. Provide other confirmations from the manufacturer as needed to confirm contractor and installing crew experience.
- B. Submit a 12-inch by 12-inch sample of roofing membrane, insulation board, coverboard, and other accessories, with manufacturer's identification labels attached (if specifically requested by the Engineer). Submit a sample of the vapor barrier/temporary roof membrane.

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- C. Submit product data and SDS for each product listed in this specification section, for roof accessories, and for other products required by the roof membrane manufacturer for a complete installation of the work. The contractor is responsible for filing SDS with the Owner's safety department and maintaining a complete set of SDS on the project site as a part of their internal safety program.
- D. Submit membrane manufacturer's application manuals (or a link to the application manual/guide), which describe completely the preparation of surfaces and application of specified materials. Manuals or guides may contain standard manufacturer details. Where manufacturer recommendations or requirements differ from the design specifications and drawings, the more stringent requirement will take precedence unless otherwise agreed upon with the Designer. The Contractor is responsible for bringing differences to the attention of the Designer before proceeding.
- E. Submit a tapered insulation layout. Layout plan must show drain sumps, crickets at upslope side of curbed units, and shall be confirmed by the contractor prior to submittal to show actual intended installation and not be solely for the purpose of material take-off or ordering.
- F. Submit project specific shop drawings showing details, fabrication, and fastening devices for each condition encountered. (This includes, but is not limited to: perimeter and corner zone dimensions, insulation adhesive patterns, membrane sheet layout/orientation, metal fabrication shapes, fastener types and spacing, and other specific components, etc.) Due to site-specific conditions, some design details may have non-standard conditions and standard manufacturer's detail may not be applicable. The contractor is responsible for reviewing the design details and on site conditions with the warranting manufacturer during bidding to ensure acceptability.
- G. Submit a sample copy of the membrane manufacturer's warranty and contractor's warranty. Although the warranty may be a sample copy, it should bear the project name and have any warranty lengths and applicable riders marked in to confirm it meets the specified requirements.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials, insulation, and accessories in manufacturer's original protective containers with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas, on clean, raised platforms with securely anchored weather protective coverings in accordance with Section 016000.
- C. Store flammable products away from sparks or open flames. Gasoline and open flammable materials shall be removed from the roof daily.
- D. Store roofing materials within temperature and humidity ranges recommended by the prior to use as recommended by the roof membrane system manufacturer. Protect material from freezing.

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1.05 ENVIRONMENTAL REQUIREMENTS

- A. Proceed with roofing work only when weather conditions comply with roof membrane system manufacturer's recommendations. Do not violate temperature or humidity limitations recommended by the manufacturer.

1.06 WARRANTIES

- A. Provide a Contractor's Two-Year Warranty for work included in this project in accordance with Section 014000 of these specifications.
- B. Provide Roof Membrane Manufacturer's non-prorated, no dollar limit (NDL), full system warranty covering labor, materials and workmanship of the roofing system against leakage and material defects. The warranty will extend for a period of twenty (20) years from the date of Final Acceptance.
 - 1. If the warranty includes exclusionary language for wind events such as "gale" or "hurricane", the warranty shall clarify, or shall have an attached letter from the manufacturer to clarify, the maximum wind speed covered by the warranty. Warranty shall cover, at minimum, wind speeds up to 72 miles per hour.
 - 2. The manufacturer warranty shall include replacement of insulation and other roof system materials which have been damaged by leakage when that insulation or material contains detrimental amounts of moisture.
 - 3. The standard manufacturer's warranty shall not be voided by ponding or standing water.
 - 4. The manufacturer's warranty shall not require the signature of the Owner's representative to be valid.
 - 5. The Contractor must coordinate the number of site visits required by the manufacturer to issue the warranty.
 - 6. A minimum of eight (8) visits to the site and one (1) final/warranty inspection, all by a technical representative of the roof system manufacturer, are required. The roofing contractor is solely responsible for scheduling site visits by the roof system manufacturer at even intervals and as necessary for the specific purpose of issuing the specified warranty. A copy of the manufacturer's inspection report and list of items requiring repair/completion shall be provided to the Engineer for review.
- C. Manufacturer and Contractor warranties shall both state that the Owner has the right, at any time during the warranty period, to make emergency roofing repairs to protect the contents of the building or the building itself from damage due to leaking. Emergency repairs by the Owner shall be made in accordance with roofing industry standards for temporary repair and will not absolve the Owner of contacting the warranting Contractor or Manufacturer as required by the warranty language. If emergency repairs will not be allowed by the warranty, the warranting entity must provide emergency response within the initial 12 hours for the Contractor Warranty and within 24 hours for the Manufacturer warranty following notification.

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PART 2 PRODUCTS

2.01 BASE SHEET, THERMAL BARRIER, AND VAPOR BARRIER

- A. Base Sheet: Provide an asphalt coated fiberglass nailable base sheet or base ply meeting ASTM D4601, Type II and capable of being mechanically-fastened to the poured gypsum roof deck and compatible as a base for the torch-applied vapor barrier/temporary roof membrane. Base sheet shall be classified as a UL-rated G2 base sheet with a minimum 20 lb coverage weight per square and nominal 40 mil thickness and shall be approved by the manufacturer of the thermoplastic roof system to be installed.
- B. Base Sheet Fasteners: Provide a corrosion-resistant coated fastener specifically designed for securement of base sheet material to existing poured gypsum roof decks. The fastener should include an plate/cap (approx.. 2.7” diameter) with a maximum length of 1.7” to prevent potential for damage to the formboard. Selected fastener length must be confirmed on site to work with the deck thickness and must obtain adequate on-site pull-out test values to resist design wind uplift loads at the required base sheet fastening patterns. It is possible that isolated areas of past deck repair exist where pressed wood fiber decking (Tectum), or other deck repair material is present. Obtain a variety of fasteners such as nylon fasteners or Tube-Loc style fasteners for use in gypsum or tectum, to ensure that the crew is prepared to secure the base sheet at past repair areas also.
- C. Thermal Barrier: Shall be a non-structural, fire-rated, fiberglass-faced gypsum product with a silicone-treated, water-resistant gypsum core. Shall have factory-laminated fiberglass surface mats, front and back. Thickness of thermal barrier shall be 1/2”. Board shall meet or exceed the requirements of ASTM C1177 and ASTM D3273. Board shall have a flame spread of 0 and smoke developed rating of 0 in accordance with ASTM E84. Board shall be specifically designed for use in roof assemblies and shall be approved by the roof membrane manufacturer. Maximum board size of 4'x8' for mechanically-fastened applications.
- D. Mechanical Fasteners for Thermal Barrier: Shall be corrosion-resistant, self-tapping, self-drilling screw with low profile head and minimum 2.5” diameter high-density polypropylene stress plate. Fasteners shall be carbon steel, coated to resist corrosion, and shall show no sign of corrosion after 30 cycles of Kesternich testing. Screw shall be 14-10 heavy duty all-purpose specifically designed for securing into metal deck. Fastener shall be of sufficient length to penetrate through the flange of the metal deck a minimum of 1-inch. Screw and plate shall be part of a rated system capable of providing the required wind uplift resistance at tested fastener patterns. Fastener pull-tests will be required prior to installation.
- E. Vapor Barrier/Temporary Roof Membrane: Provide a torch-grade SBS modified bitumen base ply recommended by the manufacturer for torched application over existing structural lightweight concrete deck or existing bituminous membrane. Sheet surfacing should be compatible with the existing vapor barrier and any roof insulation products to be installed over the vapor barrier. Membrane shall be reinforced with fiberglass or non-woven polyester, shall have a minimum 90-mil thickness, and shall conform to the requirements of ASTM D6163, Type I or ASTM D6164, and UL 790. Provide an accompanying asphaltic primer conforming to the requirements of

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ASTM D41, if required or recommended by the roof system manufacturer for use in their warranted system.

2.02 ROOF INSULATION AND COVER BOARD

- A. General: Provide preformed, roofing insulation and cover boards that comply with requirements, selected from manufacturer's standard sizes and of thicknesses indicated. Insulation and coverboard must be supplied by, or approved in writing by, the warranting manufacturer of the roof membrane system.
- B. Flat and Tapered Board Insulation: Closed-cell polyisocyanurate rigid insulation with foam core and factory laminated fiberglass reinforced facers (ASTM C1289, Type II, Class 1) and acceptable for installation in an adhered system. Foam core shall have a flame spread of 25 or less per ASTM E-108 and shall have a minimum density of 2 pcf. Compressive strength shall be 20 psi minimum in accordance with ASTM D1621. Board insulation shall conform to ASTM 1289-02.
1. For All Roof Areas: Flat board insulation to follow the deck profile shall be provided as two layers of 2" thick base.
 2. At Areas 1A-1C, 2A-2C, 2E, 3A-3B, and 4A-4C: ¼" per foot tapered insulation with a minimum thickness of 1.5" over flat board. Tapered insulation at crickets and saddles shall have slope of ½" per foot to provide a final ¼" per foot slope to drains. Provide tapered edge strips and tapered insulation at drain and primary scupper sumps.
 3. At Areas 1D and 2D: Additional layer of flat board insulation, 1.5" thick. Tapered insulation, ¼" per foot slope with a minimum thickness of 0.5" to form crickets at valley lines and upslope of curbs.
 4. At Area 2F: ¼" per foot tapered insulation with a minimum thickness of 1.5" over flat board.
 5. At Area 2G: Additional layer of flat board insulation, 1.5" thick.
 6. Drain sumps minimum thickness shall be ½" thick and slope shall be as required to accommodate the sump dimensions and new retrofit drain conditions.
 7. Maximum board size shall be 4'x4' for adhered applications.
 8. Polyisocyanurate tapered edge strips that taper to 0" thick shall be provided along minimum edge of tapered insulation at crickets and saddles and at transitions to perimeters and expansion joints as shown on the details.
- C. Coverboard (All Areas): Shall be a non-structural, fire-rated, fiberglass-faced gypsum product with a silicone-treated, water-resistant gypsum core. Shall have factory-laminated fiberglass surface mats, front and back. Overlayment shall be factory-primed. Thickness of overlayment shall be 1/2". Board shall meet or exceed the requirements of ASTM C1177 and ASTM D3273. Board shall have a flame spread of 0 and smoke developed rating of 0 in accordance with ASTM E84. Board shall be specifically designed for use in roof assemblies and shall be approved by the roof membrane manufacturer. Maximum board size of 4'x4' for adhered applications.
- D. Membrane Fasteners and Plates: Shall be corrosion-resistant, 14-10 heavy duty all-purpose screw or nail-in fastener with low profile head and minimum 2.5" diameter galvanized steel, or AZ 55 galvalume stress plate. Fasteners shall be carbon steel, coated to resist corrosion in accordance with

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FM4470. Fastener and plate shall be Factory Mutual approved for use together. Fasteners must be intended for securement of insulation into a poured gypsum deck or into wood blocking that has been separately secured into the poured gypsum deck and be approved for use by the membrane system manufacturer. Fastener shall be of sufficient length to penetrate through the required layers of insulation/coverboard and into the top of the deck (or wood blocking if insulation thickness exceeds typical fastener lengths) a minimum of 1.75” unless otherwise required by the fastener manufacturer. Pre-drilling shall be performed if required by the fastener manufacturer for proper installation of the fastener into the deck. Pull out testing of the fastener into the deck will be required for final confirmation of fastener spacing and pattern.

- F. Adhesive for Insulation Attachment: Provide low-rise polyurethane adhesive specifically designed for bonding specified insulation to the vapor barrier, insulation to insulation, and coverboard to the insulation. Exact installation will be dependent upon securement method selected. Adhesive shall be pre-approved by the roof system manufacturer for use with the proposed system, insulation, and membrane. Adhesion testing will be required.

2.03 ROOF MEMBRANE AND ACCESSORIES

- A. Membrane: Roof membrane shall be a thermoplastic polymeric single-ply polyvinyl chloride (PVC) or ketone ethylene ester (KEE) membrane with fiberglass or polyester reinforcement, meeting ASTM D4434 (PVC) or D6754 (KEE) and the technical membrane properties specified. The membrane shall be acceptable for adhered applications. Membrane color will be confirmed during the pre-job submittal process. For the purpose of bidding, it is anticipated that the color selected will be a standard color such as white or off-white, but the Owner will be provided the opportunity to select from the manufacturers standard colors. Manufacturers must have a minimum of three (3) standard colors that incorporate a white, off-white, and gray color at minimum.

- 1. Acceptable manufacturers and products include:
 - a. Sarnafil (G410), 60 MIL minimum
 - b. Fibertite (SM), 45 MIL minimum
 - c. IB Roof Systems, 60 MIL minimum

- 2. The listed roof membrane manufacturers are provided as examples of manufacturers and products that typically meet the requirements of these specifications. The listed manufacturers are used to denote the quality standard of product desired and are acceptable only if they are able to meet the requirements of the specifications including warranty requirements. If requests for substitution of another manufacturer or product will be entertained by the Designer, they must be submitted in writing to the Designer for approval or disapproval no less than ten (10) days prior to the bid date. Submitted requests must include sufficient documentation to indicate that manufacturer and/or product submitted meet the requirements of these specifications and are equivalent to the quality of those listed in accordance with Section 016000.

- 3. The membrane properties shall meet or exceed the following minimum values:

PVC

- a. Breaking Strength ASTM D751(Grab Method) 438x390
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	Tensile Strength	ASTM D638	1600 psi
b.	Elongation at break	ASTM D751(Grab Method)	31%
		ASTM D638	150%
c.	Linear Dimensional Stability	ASTM D1204	.2%
d.	Tear Strength	ASTM D751	132x163 lbf
e.	Tear Resistance	ASTM D 1004	14 lbf
f.	Weight Change after immersion in water, % per		2.6
	ASTM D570		
g.	Static Puncture Resistance	ASTM D5602	33 lbf
h.	Dynamic Puncture Resistance, 7.3 ft-lbf per	D5635	Pass

KEE

a.	Thickness over Scrim		.37 mm
b.	Breaking Strength	ASTM D751 Proc. B	350 lbf
c.	Elongation at Break	ASTM D751	18%
d.	Tearing Strength	ASTM D751 Proc. B	100 lbf
e.	Static Puncture Resistance	ASTM D5602	99 lbf

4. All membranes submitted for review as a request for substitution must have a membrane thickness of no less than 80 mil, nominal.

B. Membrane and Flashing Adhesives: Shall be solvent based adhesives as provided by the manufacturer unless otherwise requested and approved by the Designer.

C. Provide membrane sheet flashing materials, membrane and flashing adhesives, fasteners, plates, pre-molded pipe vent flashings, foam rods, non-reinforced detail flashing, metal termination bars, pre-fabricated inside and outside corners, pre-fabricated patches, membrane clad-metal, sealants, mastics, solvents, hot-air welding equipment, separation sheets/tape and other materials specifically recommended/required by the membrane manufacturer and intended for use with the membrane specified, existing substrate conditions observed, and application methods specified. Minimum thickness of flashings shall match that of the specified membrane to which it will be applied (Refer to Paragraph 2.03 A.1). Products shall be approved for inclusion in the specified membrane manufacturer's warranty. ***Exposed flashings, sealants, and other products provided must match the color of the adjacent roof membrane on which they will be installed.***

D. Membrane clad-metal flashing will be used on this project and are specified in Section 076200. Clad-metal must be provided by the membrane manufacturer warranting the overall system.

2.04 ADDITIONAL ROOF ACCESSORIES

A. Retrofit Drain Assembly: Provide a flanged, aluminum retrofit drain assembly that is designed to fit down into an existing drain bowl and leader. Retrofit drain shall have flanges clad with the membrane manufacturer's membrane and must be approved by the roof system manufacturer for use with their warranted system. The retrofit drain leader shall have a urethane backflow seal that can be mechanically expanded to fit tightly into the inside of the existing leader. A compatible metal drain strainer shall be provided. Drain strainer must be capable of being removed without removal of the

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retrofit drain assembly. The retrofit drain shall not reduce the overall diameter of the existing drain leader by more than ½”.

- B. Walk Tread: Use manufacturer-provided slip-resistant walk tread in yellow or gray. Walk treads must be capable of being hot-air welded to the roof membrane. Minimum width of walk tread shall be 30". Walk tread material must be capable of being cut to size to accommodate existing roof conditions. The Owner may request additional walktread in excess of areas shown on the drawings as part of estimated quantity work.
- C. Sealants (Exposed): For exposed sealants at locations not specifically provided or recommended by the roof system manufacturer, use low modulus, non-staining two-part urethane and of gun-grade consistency. Sealant shall be easily workable and shall be capable of producing a smooth attractive finish. Provide ASTM C 920, Type S or M, Grade NS, Class 25, Use NT. Color shall be approved to match the color of the materials being sealed. Acceptable manufacturers/products shall be Dynatrol II, by Pecora Corporation; or Sikaflex 2c, by Sika Corporation, or approved equivalent. Make sure materials are compatible with substrates and provide substrate cleaner and primer unless otherwise approved by the Designer.
- D. Sealants (Concealed): For concealed sealants required for details, and not specifically provided by or recommended by the roof system manufacturer, use butyl sealant (if tape sealant, minimum 1" wide and 1/8" thick unless otherwise shown).
- E. Primer: Primers for masonry/coping, plywood, wood blocking, and other substrates shall be provided by, or approved by, the roof system manufacturer. Primers must be provided and installed unless recommended against by the manufacturer and accepted by the Engineer.
- F. Compressible Insulation and Sleeve (at Expansion Joints): Provide preformed unfaced glass fiber batt insulation conforming to the requirements of ASTM C-665 and ASTM E-136, thickness to allow for a snug friction fit, placed in a polyethylene sleeve, min. 6 mil thickness.
- G. Compressible Insulation at Perimeter Blocking: Provide preformed unfaced glass fiber batt insulation conforming to the requirements of ASTM C-665 and ASTM E-136, thickness to allow for a snug friction fit, placed between wood studs at perimeter raised edge
- H. Vent Pipe Extensions: Shall be schedule 40 PVC connected to the existing vents with rubber connectors and stainless steel clamps. Pipe extensions must be painted in accordance with Section 099113.
- I. Stainless steel clamp (at penetrations): Provide a min. ½” wide stainless steel plumbers clamp.
- J. Metal Deck Coating (Rust-Inhibitive Primer): Provide a solvent-free, moisture-tolerant product specifically formulated as an anti-corrosion coating. Provide primer as recommended by the manufacturer. Acceptable product and manufacturer includes, but is not limited to: Rust-Oleum Rusty Metal Primer. Use this product on metal deck only if surface rust is observed.
- K. Provide membrane clad-metal perimeter flashings, pre-finished sheetmetal flashings, trim, and counterflashings in accordance with Section 076200.

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- L. Provide other roof system accessories not specifically listed, but required for the proper and complete installation of the roof system.

2.03 DECK REPAIR MATERIALS

- A. Isolated Gypsum Deck Repair: For openings in the deck smaller than 12"x12" in size, provide 22 gauge stainless steel sheetmetal and gypsum fasteners to cover the opening and secure the material. If formboard is intact, repair to the poured gypsum per 2.03B is preferred, or the opening infilled with gypsum deck repair material prior to sheetmetal placement. Sheet metal cover must extend a minimum of 3" past the edges of the opening. This repair can also be used for repair of deck at removal of abandoned/capped round penetrations. Confirm alternate fasteners to be used for securement of base insulation or base sheet to sheetmetal.
- B. Poured Gypsum Deck Repair: Where surface damage to the existing gypsum deck is discovered but the formboard is intact, repair by placing a gypsum repair fill, appropriate for proper repair of the existing poured gypsum deck. Repair grout or fill must be a quick set and capable of being feathered to allow for smooth transitions to adjacent sound gypsum. Acceptable product and manufacturer includes, but is not limited to: PYROFILL by United States Gypsum.
- C. Gypsum Plank Deck Repair (Major): If damaged area is both larger than 12"x12" and extends through the thickness of the poured gypsum with a compromised formboard, notify the Designer for additional direction.
- D. Repair of Openings Greater than 12"x12": For openings greater than 12"x12" in size resulting from removal of abandoned penetrations, install 22 gauge sheetmetal from the interior to cover the opening in the deck from the underside, size cover to allow edges to be secured into steel framing around the opening. Install two layers of ½" thick gypsum overlayment/thermal barrier over the sheetmetal closure/cover. Infill any remaining thickness with rigid polyurethane insulation flush with the top of the roof deck and place a 22 gauge sheetmetal flashing over the insulation (for openings less than 20" per dimension) or a ¼" thick steel plate (painted) to cover openings of greater than 20" per dimension. Confirm alternate fasteners to be used for securement of base insulation or base sheet to sheetmetal/steel.

PART 3 EXECUTION

3.01 INSPECTION AND SURFACE PREPARATION

- A. Where base sheet will be installed over the poured gypsum deck, perform pull fastener testing prior to beginning roof removal to test suitability of the planned fastener. A minimum pullout of 40 lbs is required. A minimum of 10 tests per roof area are required unless otherwise agreed upon with the Designer.
- B. Where insulation and coverboard will be secured to the vapor barrier with adhesives, perform adhesion testing prior to the beginning of roof removal to test the suitability of the planned adhesive with the vapor barrier membrane. A modified test procedure to check adhesion to the

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vapor barrier should be performed. Perform additional testing if results contain significant variation unless otherwise recommended by the adhesive manufacturer. Tests must be performed in the presence of Designer, Owner's Representative, or by an independent adhesive manufacturer's representative. Test results shall be provided to the Designer prior to beginning installation of the insulation system.

- B. Where thermal barrier will be secured to the metal deck with fasteners, perform fastener pull testing prior to the beginning of roof removal to test the suitability of the planned fasteners.
- C. Remove the existing roof system membrane and insulation, flashings, sheetmetal flashings, and other items necessary for installation of new roof system and dispose of off-site in accordance with Section 024110 and 024120 of these specifications. Remove only portions of the existing roofing system that can be covered with the new roofing materials and made watertight during the same work day. If any fasteners into the deck remain, remove or trim level with the existing deck/vapor barrier to allow for proper installation of the new roof insulation. Follow after hour work requirements for removal of the existing roof system over occupied spaces.
- D. Prepare and clean roof substrate in areas to be completed that day in accordance with the roof membrane manufacturer's installation instructions. Inspect the substrate and note any damages or deterioration that may affect the proper installation of the new roof system. Roof application shall not proceed until the surface is sufficiently intact to receive roofing system. Remove abandoned/capped penetrations. Make repairs to the deck surface and cover openings in the roof deck at abandoned penetrations. Follow the manufacturer's recommended installation instructions for deck repair materials.
- E. Poured Gypsum Deck Repair: Inspect the existing poured gypsum deck and repair where substrate is wet, damaged, or deteriorated to the degree where covering with a mechanically-fastened base layer of insulation will not be able to be properly performed:
 - 1. Deflections or irregularities that may affect proper roof system installation and will require repair include, but are not limited to: cracks and/or camber differentials greater than 3/16 inch, surface spalling or deterioration of a depth of more than 1/2" or over an area with both dimensions of greater than 60", and other surface irregularities that would create large voids or irregularities beneath the new base insulation.
 - 2. Remove wet or loose materials from the deteriorated/damaged area and repair defects and irregularities by using an appropriate gypsum repair fill. Perform surface preparations and repairs in accordance with the fill manufacturer's installation instructions. Feather the fill along edges to allow for a smooth transition with adjacent sound material.
 - 3. If a repair area falls within a perimeter or corner area, as defined on the drawings, and covers an area of more than 5'x5', notify the Engineer to allow for review regarding potential supplemental fastening.
 - 4. If material must be removed to greater than a 1.5" depth or the wire fabric reinforcement becomes visible, clean the reinforcement to allow for reuse in place.
 - 5. Roof application shall not proceed until the surface is sufficiently intact to receive roofing system.

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- E. Prepare vertical surfaces, drain bowls, and other components that must be in place or ready prior to base sheet, thermal barrier, and vapor barrier installation. Verify that elements penetrating the roof area solidly set and do not have visible damage. Raise all curbs and other penetrations to provide adequate vertical flashing heights.
- E. Replace wood blocking where existing materials are damaged, deteriorated, or do not meet the specified requirements in accordance with Section 061140. Install new wood blocking to raise existing equipment curbs, roof perimeter, and to modify expansion joints and other transitions.
- F. Do not apply roofing materials to deck surfaces which are damp, frozen, dirty, dusty, or otherwise unacceptable to roof system manufacturer or Engineer. Beginning installation means acceptance of existing conditions.

3.02 BASE SHEET/THERMAL BARRIER AND VAPOR BARRIER INSTALLATION

- A. Base Sheet Securement to Deck: Lay the base sheet over entire area to be roofed starting at the drains and working upslope, lapping sides 3 inches and ends 6 inches. Using the specified fasteners, fasten each sheet every 9 inches through laps and stagger fasten the remainder of the sheet in 2 rows on nominal 12 inch centers with fasteners in each row on 12 inch centers in the field of the roof. Increase the fastening pattern by 70% at the perimeter of the roof and 160% at the corners as shown on the project drawings. Apply base sheet free of wrinkles, creases or fishmouths which could affect insulation installation.
- B. Thermal Barrier: Place the thermal barrier over the metal roof deck where applicable.
 1. The long dimension of boards shall be installed perpendicular to the planned layout of the membrane seams. Stagger end joints of adjacent boards a minimum of 24".
 2. Mechanically fasten the base layer of insulation into the deck at a minimum rate of 24 fasteners per 4'x8' board at the corners.
 3. Fasteners shall be positioned no closer than 6" from the perimeter of the board for a 4'x8' board and no closer than 12" from the perimeter for a 4'x4' board, and shall follow insulation manufacturer's fastener patterns.
 4. Fasteners shall be installed as recommended by the manufacturer. Do not under drive or overdrive fasteners, avoid cupping of plates.
- C. Priming: If recommended by the modified bitumen membrane manufacturer, prime base sheet fastener plates, wood, masonry or other substrate surfaces with a uniform coating of the specified primer.
- B. Vapor Barrier/Temporary Roof Membrane: Installation: Roll out the base ply and allow to relax a minimum of 15 minutes prior to installation. Center base ply over drains or along the eave. Apply base ply free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets. Torch-apply the base ply to the base sheet (or concrete deck, or thermal barrier), utilizing minimum 4" side and 6" end laps. End laps shall be staggered a minimum of 3 feet. Protective plastic film shall be melted off the selvage edge of the sheet. Flame shall be moved from side to side and up the side of lap area of the previously applied sheet. A continuous bead of bitumen extending between 3/8" and 1" shall be visible at all laps after application. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a

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clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Laps and leading edges shall be thoroughly examined for quality of fusion. Prior to the end of each day's work, all laps should be checked/probed and discrepant areas shall be reworked and properly fused. Turn base ply membrane up and provide flashing at perimeters and penetrations to maintain a watertight condition.

- C. The installed vapor barrier may be used as a temporary roof system until installation of the completed new roof system. The Contractor may not have an exposed vapor barrier/temporary membrane on areas larger than one wing (wing sizes/layout are as defined by the overall roof plan in the project drawings). The Contractor remains responsible for adequate temporary drainage and overall watertightness of the temporary roof membrane until installation of the completed new system occurs. Drain clamping rings and strainers must be reinstalled as a part of the temporary roof system to promote watertight temporary detailing at internal drains. Temporary retrofit roof drains may also be utilized as an alternate method. Base ply may remain exposed prior to insulation installation no more than 21 days without inspection and approval from the material manufacturer.

3.03 INSULATION AND COVER BOARD INSTALLATION

- A. Install flat and tapered insulation boards, and coverboard in accordance with roof membrane manufacturer's installation instructions, approved adhesive patterns, the approved tapered insulation layout, and this specification section. Install no more insulation than can be covered with roof membrane and completed before the end of the day's work, or before the onset of inclement weather.
- B. Adhered insulation and coverboard:
 - 1. Stagger end joints of the coverboard a minimum of 24" from the insulation joints below and provide a maximum insulation and coverboard size to 4'x4'.
 - 3. Set board into a continuous minimum 3/4" wide bead of adhesive at a minimum rate of one linear foot of adhesive for every one square foot of insulation board (12" bead maximum spacing) located in the field of the roof. The insulation adhesive shall be installed at a maximum of 6" from the perimeter of the insulation board. Increase adhesive rates to a maximum 6" bead spacing at the roof perimeter and a maximum 4" bead spacing at the roof corner areas unless adhesion test data or the system manufacturer's design recommendations require more stringent (closer) spacing.
 - 4. Do not apply the adhesive unless the temperature is 40 degrees Fahrenheit and rising.
 - 5. Place, do not slide, boards onto the adhesive and walk on the boards to spread the adhesive for maximum contact. Evenly weight the boards to hold them in contact with the insulation below until the second walking is performed (10 minutes after initial walk-in).
- C. When handling rigid insulation boards and coverboard, take care not to rupture/damage the facers of the boards. Butt edges of boards without forcing joints. Cut boards to fit neatly to perimeter blocking and penetrations through roof. Cut holes in the insulation for round penetrations (do not install pieces). Miter board edges if necessary for proper fit at transitions in deck slope. Fill in gaps between boards greater than 1/4" with insulation. Avoid the use of insulation pieces with dimensions less than 18".

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- D. Stagger board joints a minimum of 24” throughout each layer and between layers.
- E. Tapered insulation including crickets, saddles, and drain sumps are shown on the drawings and should be provided to promote positive drainage. Check insulation surfaces as each layer is installed to ensure that no unanticipated deflections, cambers, gaps, or other conditions exist that may impede proper drainage.

3.04 MEMBRANE SYSTEM INSTALLATION

- A. Position single-ply membrane over roof area without stretching. Allow membrane to relax for a minimum of one-half hour prior to any fastening, adhering, or seaming. Shingle all laps in the direction of water flow starting at the drain or low point and working upslope.
- B. Fully-Adhered Installation: Position the membrane to allow for exposure of the underside of the sheet. Apply a continuous coverage of membrane adhesive to the underside of the membrane and a mirrored area of the prepared substrate/surface. Adhesive coverage shall be a minimum of 100 sq. ft. per gallon net coverage for the membrane and mirrored substrate combined, or as recommended by the roof system manufacturer. Do not allow the adhesive within a minimum of 3-inches from the edge of the membrane. Avoid holidays, globs, and puddles. Follow the manufacturer’s instructions for determining sufficient adhesive tack/dryness for mating membrane with substrate. Place membrane onto the substrate surface avoiding wrinkles and air pockets. Broom the adhered portion of the membrane to insure full contact with the substrate and complete process by firmly pressing the adhered membrane into place with a weighted roller in accordance with the manufacturer’s instructions.
 - 1. Adhesive is to be applied using rollers in accordance with the roof system manufacturer’s instructions and recommendations. Do not pour adhesive out of buckets to roll in. The amount of membrane and substrate that can be covered with adhesive at one time must be determined by the method of application, the ambient temperature, humidity and number of workers available. Only apply adhesives to areas which can be completely covered with membrane within the same work day.
 - 2. For adjacent membrane rolls, provide a minimum 3-inch lap, maximum 6" lap, at subsequent, adjacent rolls of membrane. Do not apply adhesive to the lap “seam” areas of the membrane that will be hot-air welded.
 - 3. Track and record the amount of pails of adhesive used per square foot area by saving and dating the tops of the adhesive pails. Note in daily logs the area of membrane installed each day. Keep the dated lids from each day of membrane installation until the Designer and/or Owner can verify conformance to the specified adhesive rate.
- C. Once the membrane has been adhered to the substrate, clean area of the two membrane sheets to be seamed with approved seam cleaner in accordance with the manufacturer’s instructions. Allow cleaning solvents to fully dissipate and the seams to dry prior to initiating any field welding.

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- D. Hot-air weld membrane seam using an automatic hot air welder to provide a continuous, homogeneous weld, a minimum of 1.5-inches in width; hand held welders to be used for small areas and repairs only with a minimum of 2-inch width heat-weld. Welding equipment used must be acceptable to the warranting manufacturer. Provide a dedicated generator for seaming equipment.
- E. Once seam area has cured, probe the entire length of lap edge with an approved seam-probing tool for voids or seam deficiencies. Repair deficiencies same day seam is probed. Perform destructive testing of seams (peel tests) at the frequencies and test sizes required by the membrane manufacturer. Repair test locations.

3.05 FLASHINGS

- A. Install flashing membrane where shown on the drawing to provide watertight transitions at perimeter details, transitions, and at items penetrating membrane in accordance with project specifications and drawings and the manufacturer's installation instructions. Confirm use of proper flashing color to match the adjacent membrane.
- B. Flashing membrane shall be fully adhered and fastened to penetration substrates, and heat-welded to the adjacent membrane, as shown on the project drawings. Where adhered, flashing should be installed in adhesive as shown on the drawings or required by the manufacturer, in sufficient quantity to insure total adhesion. Use substrate primers as recommended by the roof manufacturer.
- C. Secure the membrane at the base of expansion joints, wall transitions, curbs, etc. 8" on center, unless otherwise noted on the detail drawings or specified by the membrane manufacturer. Securement of the membrane perimeter to the deck is also acceptable.
- D. Install "T" patches at all intersections. Install patches at all automatic welder "starts" and "stops" (locations should be marked as seaming is being performed).
- F. Clean all pipes, curbs, walls, and other existing substrates to remove debris and previous materials prior to installation of new flashings. Install new plywood and blocking where shown on the design details.
- F. Use pre-formed corners on all inside and outside corner flashings.
- G. Vertical flashing shall be terminated a minimum of 8" above the roof surface. For flashing heights lower than 8" the contractor must either make modifications to the existing penetration to allow for proper vertical flashing height or shall obtain written approval of the variance from the manufacturer for review by the Engineer.
- H. Probe and repair all seams between the flashing and the membrane the day of installation. Use probing methods and tools recommended by the roof system manufacturer.

3.06 MEMBRANE PATCHES

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- A. Patches shall not be less than 6 inches by 6 inches. Patches shall be centered over damaged area and extend a minimum of 6 inches beyond the perimeter of damaged area. Round corners of patches and fully seal.
- B. Other than the patches required by the membrane manufacturer at critical locations such as “T” intersections of seams or corners of curbed equipment, at weld test cuts, and at welder starts and stops, the number of allowable patches due to weld issues or membrane damages shall be limited to 10 per 1,000 square feet on the main roof areas. If the number of patches exceeds this amount, the Owner or Designer will review the installation and the cause for patches and may require that the affected roof section be replaced in its entirety.

3.07 PIPE FLASHING

- A. Form and install new pipe flashing, vent pipe flashing, etc. in accordance with the detail drawings. Pre-fabricated boots for pipe penetrations, as supplied by the roof membrane manufacturer, shall be the preferred flashing and shall be used when possible for vent pipe flashing. When a boot installation is not feasible, field wrap the pipe penetration in accordance with the manufacturer's requirements.
- B. Flanges of pipe flashings shall be a minimum of 4 inches in width and shall be fully heat welded to the membrane. Provide securement of the membrane to the deck around pipe penetrations if/as required by the membrane manufacturer. Provide required separation tape, sealants, and other accessories for proper detail installation.
- C. For hot pipe/high-temperature penetration flashings, if applicable: If an existing sleeve is available and provides as acceptable substrate for the new flashing, it may be reused. If an adequate sleeve is not available, install a new metal sleeve as shown on the detail drawings.

3.08 INSTALLATION OF ROOF ACCESSORIES

- A. Retrofit Drains: Install retrofit drains in strict accordance with the drain manufacturer’s installation instructions. Place additional wood blocking beneath retrofit drain flange and secure blocking to the roof deck as required for proper installation.
- B. Walk Tread: Place walk tread where shown on the roof plan. Determine location/path of additional walk tread in advance (Owner may determine path of additional walk tread as part of estimated quantity of work. Layout walk tread to avoid installation of the tread over membrane and flashing seams. Clean membrane in accordance with the manufacturer’s recommendations. Adhere field of walk tread to the deck and hot-air weld around entire perimeter of walk tread.
- C. Sealants and Primers: Install gunnable and tape sealants, primers, and other accessory items in accordance with the recommendations of the warranting manufacturer.
- D. Install perimeter metal, membrane-clad metal, trim, and counterflashings in accordance with Section 076200.

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- E. Install other roof system accessories as shown on the detail drawings or required by the membrane manufacturer in accordance with the manufacturer's instructions.

3.09 FIELD QUALITY CONTROL

- A. The Contractor is responsible for initiating and maintaining daily execution of a quality control program that will include, but is not limited to supervision by the job foreman or supervisor during substrate preparation, installation of insulation and coverboard, installation of fasteners and adhesives, calibration of heat-welding equipment, and probing of heat-welded seams.
- B. Correct defects and irregularities as directed by Engineer or Owner's representative. If inconsistency in the overall quality of the installation is observed or suspected by the Engineer, Owner, or roof system manufacturer, work shall stop until proper corrective actions are taken to ensure continuity of the workmanship.
- C. Require representative of membrane manufacturer to make inspections as necessary, (minimum of eight visits and 1 final warranty inspection) to qualify roofing system for manufacturer's warranty specified in this section. Refer to Section 014000 for additional requirements.
- D. Inform Engineer of all manufacturer inspections a minimum of 24 hours before inspection is to take place. Provide a copy of manufacturer's inspection reports to the Engineer.

3.10 JOB AND WEATHER CONDITIONS

- A. Suspend all application and installation activities during inclement weather and confirm proper temperature and humidity ranges prior to application of sealants, adhesives, and other products reliant upon temperature/humidity for proper curing.
- B. Protect the roof deck and insulation from moisture by providing water cut-offs at the end of each day's work or when the weather is threatening. Failure to protect the deck and roofing from moisture will result in the removal of damaged materials containing excessive moisture. Remove water cut-offs prior to start of new work. Cut back a sacrificial section of membrane and insulation adjacent to and contaminated by the water-cut-off and dispose of off-site. Layout of insulation boards at nightly tie-ins must be planned to allow for staggering of the insulation boards across these joints.
- C. Strictly limit foot traffic and material storage on completed roof surfaces. Roof replacement must be sequenced to limit foot and equipment traffic over areas of new roof system/membrane installation. Where foot and equipment traffic over the newly installed roof system cannot be avoided and where sheetmetal installations are occurring over new membrane installations, provide minimum 1" thick rigid insulation board and 3/4" thick plywood walkways to protect the new roof system.

3.11 TEMPORARY WATER CUT OFFS AND WATERTIGHTNESS DURING CONSTRUCTION

- A. Install a temporary watertight seal between the section of the new roof completed and the adjacent existing roof system at the end of each workday. The new roof system shall be sealed so

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that water will not be allowed to travel under the new or existing roof system. When work resumes, contaminated materials from the water cut off including membrane and insulation shall be removed from the work area and disposed of off-site. None of these materials shall remain or be reused in the new system installation. The insulation at the temporary cut off shall be modified to provide a toothed installation of new insulation to prevent an in-line vertical gap at cut-off locations.

- B. The Contractor shall provide the on-site labor necessary to visually check the interior conditions of the building at times when inclement weather occurs (strong thunderstorms, hurricanes, tropical depressions, extended rain events) and the work crew is not otherwise already on-site or local to the project, including after work hours, weekends, and holidays. Discovery of water entry into the building during inclement weather must be immediately followed by action by the Contractor or representative to prevent or limit damage or affect on interior finishes and materials. Immediate preventative actions shall be followed promptly by temporary repair activities to reduce or stop water entry into the roof system.
- C. The Owner may make temporary repairs or take temporary action to prevent water from entering the building. Performance of these repairs/actions by the Owner does not indicate acceptance of the condition and does not absolve the Contractor from the responsibility of prompt permanent repairs and replacement, repair, or reimbursement for damaged interior finishes/features. The contractor will make permanent repairs with no cost to the Owner.
- D. If water entry into the roof system occurs, the affected materials shall be removed back to dry/sound materials and replaced with new materials at the Contractor's expense.
- E. If water entry into the building occurs, the Contractor must promptly review and agree upon the damages with the Owner's representative. Repairs to the interior finishes must be completed promptly within a scheduled time frame agreed upon by the Owner. Replacement, repair, or reimbursement for damaged interior materials (equipment, books, furniture, etc.) must be completed promptly within a scheduled time frame agreed upon by the Owner. If the timeline provided by the Contractor is not satisfactory to the Owner, and an agreement cannot be promptly reached, the Owner reserves the right to perform such repairs or replacements and shall deduct the cost of repairs from the Contract Sum.
- F. The Contractor may, at his option, provide after hours protection of interior materials (computers, books, etc.) at areas of specific concern or liability. Installation of protection such as plastic sheets, etc. shall be performed by the Contractor's personnel with the advance approval of Facilities Management. Installations shall not damage permanent materials or finishes. Contractor shall be responsible for removal of the temporary protection for normal use of the interior contents during standard building hours.

3.12 JOB COMPLETION

- A. Inspect completed roofing and correct defects to meet the specification requirements.
- B. Roof system manufacturer's representative shall inspect the completed roofing system and notify the Contractor of any defects in the application.

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- C. Clean up debris, excess materials and equipment, and remove from site.
- D. Clean drips or spills of adhesive or primers. Provide an overall surface cleaning of the roof membrane and flashings using detergents or cleaners as approved/recommended by the roof system manufacturer.

END OF SECTION 075400

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SECTION 076200

FLASHING AND SHEET METAL

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide all labor, materials, equipment and supervision necessary for fabrication and installation of metal flashing, perimeter raised edge, fascia, closures, fascia extensions, cleats, clad-metal, counterflashings, trim, gutters, downspouts, conductor heads, and accessories, as specified herein and as required by detail drawings.
- B. Coordinate work of this section with work of Sections 024110, 061140 and 075400.

1.02 QUALITY ASSURANCE

- A. Standards: Comply with standards specified in this section as they apply to the provision and installation of components specified herein.
- B. Qualifications of Manufacturer/Fabricator:
 - 1. Products used in the work included in this section shall be produced by manufacturers regularly engaged in the manufacture of specified items and with a history of successful production for a minimum of 10 years in the United States.
 - 2. Sheet metal flashings and trim must be fabricated in accordance with the requirements of SMACNA and the NRCA with adequate shop and field fabrication equipment to provide required profiles and prevent damage to pre-finish.
 - 3. Shop or pre-fabricated perimeter metal flashing configurations must be tested and meet the requirements of ANSI/SPRI ES-1.
- C. Qualifications of Installer:
 - 1. The roofing installer must have experience installing sheetmetal on projects of equal to greater size, for a minimum of five (5) years
 - 2. The roof system installer must have adequate number of skilled workmen, thoroughly trained and experience in the necessary craft. Workers performing installation must be led by a job foreman with a minimum of three (3) years of experience in the type of installation specified whenever work installed will become part of a warranted roof system (including related flashing work). In determination of acceptance or rejection of work, no allowance will be made for lack of skill on the part of the workmen.
 - 3. The roofing/sheetmetal foreman must be capable of communicating fluently in English or a full-time translator must be provided and identified by the roofing installer. The translator must be on site at all times that the crew and foreman are present.
 - 4. Attend a Pre-Installation Roofing Conference at the project site prior to the start of roofing installation.

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1.03 SUBMITTALS

- A. Submit product data, installation instructions, sample warranties, and SDS sheets for sheetmetal components to be installed.
 - 1. When multiple products, thicknesses, etc. are shown on a single product data sheet, identify specific components intended for use.
 - 2. For fasteners identify exact fastener type, material, length, and locations intended for use.
 - 3. Product data provided must be sufficient to confirm that materials meet these specifications.
- B. Submit color sample chart(s) for pre-finished materials. Physical metal color sample chips will be required to aid in final selection of color(s).
- C. Submit shop drawings clearly detailing shaping, jointing, length of sections, fastener type and spacing, gauge of materials, and installation details. The Designer may choose to locate joints in sheetmetal components to align with architectural features. This information may be incorporated into the overall roof system shop drawings.
- D. Provide confirmation that perimeter detailing submitted in the shop drawings meets the requirements of ANSI/SPRI ES-1.
- E. Provide a sample copy of the manufacturer's standard pre-finish warranty.
- F. Mock-Ups: The Contractor will be required to install in-place mock-up installations of representative perimeter edge metal assemblies, scuppers, gutters, conductor heads and downspouts, soffit panels, counterflashings, and other flashing installations upon request to ensure that detailing is understood and level of workmanship is acceptable prior to the start of full sheetmetal fabrication/installation. If accepted, mock-up installations may remain in place as part of the new installation.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver sheet metal materials and accessories with original protective wrap or boxing with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas, on clean, raised platforms with securely anchored weather protective coverings and in such manner as to prevent condensation or staining. Stack material to prevent twisting, bending, or abrasion.
- C. During storage prevent material contact with any substance that would discolor or stain, including soil and water.

1.05 SCHEDULING

- A. The Contractor shall field verify existing conditions prior to fabrication of sheetmetal components. Minor dimensional detail changes may be required to fit existing conditions. Field verification must be performed with enough time to make revisions to shop drawings and to allow for proper fabrication of components without project delay.

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- B. Sheet metal work shall be closely coordinated with the installation of new roofing materials.
- C. Sheet metal installations shall be scheduled such that roofing terminations will not be left unprotected longer than necessary.

1.06 WARRANTIES

- A. Provide a Contractor's Two-Year Warranty for work included in this project in accordance with Section 014000 of these specifications.
- B. Pre-finished sheet metal shall have a 20-year finish warranty stating that the pre-finish will be free of fading or color change in excess of 5 NBS units in accordance with ASTM D-2244; will not chalk in excess of numerical rating of 7 in accordance with ASTM D 659; and will not peel, crack, chip or delaminate.

PART 2 PRODUCTS

2.01 SHEETMETAL MATERIALS

- A. Pre-Finished Sheet Metal (All Exposed Metal): Provide 24 gauge G-90 galvanized steel or galvalume, pre-finished in accordance with a two-coat, coil-applied, baked-on fluoropolymer coating system based on Kynar 500 Fluorocarbon coating with a top side total dry film thickness of 1.0 mil; bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, fading, chalking, peel resistance and longevity in accordance with ASTM D 2244 and ASTM D 659. Colors shall be selected by the Owner from the manufacturer's standard colors. The selection of up to three different colors shall be included within the Base Bid. Bid Alternates 01 and 02 include the selection of premium colors or custom colors, respectively. Refer to Section 012300 for additional information on bid alternates.
- B. Membrane -Clad Metal (Raised Edge Cleat, Drip Edge, and other locations marked on the drawings): Provide 24-gauge *galvanized steel or galvalume* substrate, coated/laminated with the membrane manufacturer's approved membrane material, 20 mil minimum thickness. Color to be selected to match the thermoplastic membrane color. Product shall be manufactured by the low-sloped single-ply thermoplastic membrane manufacturer and compatible for hot-air welding to roof system membrane and flashing materials.
- C. Stainless Steel (Reglet-Mounted Receivers at Masonry Walls and other locations marked on the drawings): Shall be type 316 stainless steel, cold rolled, annealed, with a 2B finish and conforming to the requirements of ASTM A480 and Federal Specification QQ-S-766C.
- D. Cleats: Material to match associated flashing unless otherwise noted, one gauge larger/heavier than the material being cleated, unless otherwise noted.
- E. Soffit Panels: minimum 24 gauge, G90 galvanized or galvalume panels, 12-inches wide with concealed fasteners and a flush joint profile. Provide the sheetmetal manufacturer's perforated/vented soffit panels. Soffit panels, J-channel, trim around lights, perimeter trim, etc. shall be pre-finished by the same manufacturer as the main sheetmetal for the building with a color selected from the same color chart and sample chips. The soffit color may or may not be

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selected to match the color of the perimeter metal flashings. Provide required cold-formed steel, 18 gauge, G90 galvanized with minimum yield strength of 33 ksi per ASTM C955 formed into hat channel and angle support framing for the soffit panels as indicated on the drawings. Provide fasteners, trim and other accessories required for a proper installation of the panels.

- F. Gutters: Shall be fabricated from minimum 24-gauge galvanized steel or galvalume (same material and prefinish as 2.01A). Gutter size(s) shall be as shown on the design details and profile shall be generally based on SMACNA Style A-Figure 1-2 with a back leg and secured beneath the new drip edge. Gutter support straps/spacers shall be formed from minimum 1/16" x 1" aluminum and shall be located as noted on the detail drawings. Gutter support brackets shall be 3/16"x1", 3003-H14 aluminum conforming to the requirements of ASTM B209. Brackets shall match the gutter outer profile and have predrilled countersunk holes for flathead screws; two holes minimum per bracket. Neatly wrap the bracket in pre-finished metal per 2.01A to match color of the gutter. Joint of the bracket wrap must be located where it is not visible.
- G. Downspouts: Shall be fabricated from minimum 24-gauge galvanized steel or galvalume (same material and prefinish as 2.01A). Minimum downspout size shall be 3"x4" rectangular, unless other sizes and profiles are shown on the design details. Downspout seams should run along the backside. Downspout outlet flashings to match downspout materials and be a minimum 4" in length with a min. 3/8" flange at top for securement to the downspout opening. Outlet dimensions may not be more than 1/8" less than those of the inside of the downspout. Downspout hangers/strap shall be formed from min. 2" wide, 24 gauge pre-finished metal to match downspout and be secured to the wall with masonry fasteners with washers. Hangers must be of two-piece fabrication. Fasteners should be pre-finished to match the color of the straps. The contractor is responsible for making the transition from the downspouts into the existing storm water drainage line boots. Minimum of two hangers/straps per downspout.
- H. Conductor Heads: Shall be fabricated from minimum 24-gauge galvanized steel or galvalume (same material and prefinish as 2.01A). Form conductor heads to the sizes and profiles shown on the detail drawings. Conductor heads must be open on the top, watertight and must transition into new downspouts. Conductor head should be fabricated to allow for securement through the back side of the conductor head into the exterior wall or perimeter blocking.

2.02 FASTENERS AND ACCESSORIES

- A. Metal-to-metal fasteners: Where not specifically provided as a part of the manufacturer assembly/system, provide self-tapping, self-drilling, no. 12 sheet metal screws. Use stainless steel fasteners with EPDM washers for all exposed fasteners and coat fasteners to match color of adjacent metal flashing. Fastener spacing: maximum 6" o.c. unless a larger spacing is noted on drawings.
- B. Metal to wood: No. 10, stainless steel wood screws with a flush head profile where not exposed. The contractor may request the use of stainless steel ring shank nails for securement of perimeter sheet metal such as cleats, etc. where head profile is critical and fastener is part of an ES-1 approved detail. Minimum embedment shall be 1 1/2". Where exposed, screws must be stainless steel and have an EPDM washer. Fastener spacing: maximum 6" o.c. unless a larger spacing is noted on drawings.
- C. Metal to masonry or concrete: Use 1/4" diameter stainless steel masonry anchors, Rawl "Tapcon" or approved substitute where not exposed. Do not use drive-pin or powder-actuated fasteners unless

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specifically approved by the Designer to allow for consideration of potential damage to substrates. Minimum embedment shall be 1". Where exposed, fasteners must be stainless steel and have EPDM washers. Exposed fasteners must be coated to match color of adjacent metal flashing. Fastener spacing: maximum 12" on center unless a larger spacing is noted on drawings.

- D. Pop Rivets (Stainless Steel): Shall be minimum 3/16" diameter with stainless steel mandrels and washers. Where exposed, pre-finish rivets to match adjacent flashing material.
- E. Termination bar: Use only membrane manufacturer-supplied aluminum or stainless steel termination accessories, 1/8" x 1". Bar shall have pre-drilled slotted holes at 8" o.c. No plastic or polymer termination bars will be accepted.
- F. Pipe Clamps: Shall be stainless steel.
- G. Tape Sealant: Shall be a 7/8" x 3/16" butyl tape sealant with a double bead. Tape sealant shall be non-curing, non-skinning, non-staining, non-corrosive, non-shrinking, non-oxidizing, non-toxic and non-volatile. Composition shall be 99% minimum solids with a butyl base meeting performance standards in Federal Specification TT-C-1796A; Type II, Class B. Service temperature shall be -60 degrees F to +212 degrees F. Tape sealant will not be used at exposed locations.
- H. Gunnable Sealant: For sealant in contact with metal, provide gun-grade butyl (concealed) or polyurethane-based sealants (exposed), colors to be selected based on location of use to match the flashing being sealed.
- I. Sheetmetal Angle: Provide sheetmetal support angles, G90 galvanized, 20 gauge unless otherwise noted on the drawings, and size where noted on the details to provide additional support for wood blocking.
- J. Provide other flashing components and fasteners not specifically described, but required for a complete and proper installation of the work and subject to the approval of the Engineer and/or the Owner's representative.

PART 3 EXECUTION

3.01 FABRICATION

- A. General: Fabricate sheet metal flashings, trim, and components to comply with design details shown and general recommendations as provided in the latest editions of SMACNA.
- B. Form flashings to provide weathertight or watertight installations as specified. Allow for proper expansion and contraction. No exposed fasteners will be allowed unless specifically shown on the detail drawings.
- C. Confirm compatibility of flashing materials with those that will be flashed and those that will in direct contact with such materials. Prevent contact between dissimilar metals to prevent galvanic action. If contact cannot be avoided, use preventive measures to provide adequate separation.

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- D. Form flashings to profiles shown on approved shop drawing details. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance and performance.
- E. Form sections in maximum ten-foot lengths. The Designer may choose to limit the length of sheetmetal sections to locate joints in the sheetmetal with architectural features. Hem exposed edges of flashings 1/2" on underside. Fabricate corners so that joints near roof perimeter corners are at least 18 inches away from corner.
- F. At locations where new sheet metal sections abut walls or terminate, the metal flashing shall be fabricated to terminate with end sections of one-piece construction.

3.02 INSPECTION AND SURFACE PREPARATION

- A. Inspect masonry walls, perimeter blocking, curbed units, deck, and other penetrations/surfaces to receive flashing or trim to ensure complete installation, proper securement, and that they are free of loose debris and excess sealant.
- B. Confirm that proper installation of thermoplastic membrane/flashings, in accordance with Section 075400 have been completed prior to installation of metal flashings.
- C. Where practical, address damages or other conditions that would negatively impact the sheetmetal flashing installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 INSTALLATION - GENERAL

- A. Form and install roof system flashings in accordance with the detail drawings.
- B. Dissimilar metals shall be kept separated to prevent galvanic action. Preventive measures shall include separation by suitable bituminous paint, underlayment, or other non-conductive separation membrane acceptable to the Designer.
- C. All exposed edges of sheet metal shall be folded back, or "hemmed" 1/2", on concealed surfaces. Do not allow cut/sharp edge of flashings to come into direct contact with the membrane flashing in a manner that could cause damage.
- D. Finish sheet metal watertight and weathertight. Lock seams and end joints. Fit flashings tight in-place. Make corners square, surfaces true, and plane surfaces free from warps and buckles.
- E. Make seams and joints lap in the direction of water flow. Where end laps/seams do not have a separate joint cover, lap a minimum of 4 inches.
- F. Sheetmetal corners must be cleanly mitered (not bent around corner) so they fit tightly along face and hem. Do not split the hem at the corner – cut a miter in the hem also. Properly tab the sheetmetal to allow for securement. Use of sealant along cut edges or at corners/transitions is acceptable if it is minimal and neatly applied. Sealant should not be used to hide/cover poor workmanship.

076200.6 – FLASHING AND SHEET METAL

3.04 CLAD-METAL EDGE INSTALLATION (RAISED CLEAT AND DRIP EDGE)

- A. Install the clad-metal components in accordance with these specifications and the installation requirements of the membrane manufacturer. Clad-metal should be installed over membrane that turns down the exterior face of the assembly.
- B. Where shown on the drawings, secure the flanges of edge metal with appropriate fasteners at a maximum of 3" o.c. Fasteners shall be staggered in two rows with the first row positioned one inch from the leading edge of the flange; the second row shall be positioned one inch from the first row. Where clad-metal will be covered with a pre-finished cover flashing, install a fastener in the outside face of the clad-metal at 8" o.c. Where clad-metal will result in the final flashing (drip edge at primary scupper), do not install fasteners in the face.
- C. Leave a space between adjacent sections of clad-metal. Cover joint with aluminum tape and strip-in with a heat welded flashing to ensure watertightness of the clad-metal joint. Strip in the clad-metal flange with thermoplastic flashing heat-welded to the membrane and clad-metal surface. Leave a 1/4" gap between edge metal. Cover gap with aluminum tape if required by the manufacturer and a six-inch wide strip of thermoplastic membrane flashing.
- D. Install cover plate over raised outer leg of edge metal and secured by the edge metal acting as a cleat where shown on the design detail (raised edge detail).

3.05 RECEIVER AND COUNTERFLASHING INSTALLATION

- A. The bottom of the counterflashings shall extend below the termination bar a minimum of 3", but shall in no case touch the surface of the roof membrane. If vertical flashing terminates, extend counterflashing 6" along wall or around corners as needed to properly cover termination flashings, unless otherwise agreed upon.
- B. Where shown on the design details, cut a new reglet in an existing mortar joint. Form and install new receiver into the reglet and secure with lead wedges at 24" o.c. and continuous sealant.
- C. Secure counterflashings to new cut reglet receivers, curbed penetrations, or at other locations as shown on the drawings.
- D. Lap counterflashing joints a minimum of 3"; stagger joints in clamping/termination bar from counterflashing joint by 3' minimum.
- E. Apply sealant between flat surface of counterflashing and receivers, walls, curbs, etc. prior to securing.
- F. Provide metal closures at ends of receivers and counterflashing. Miter/lap corners so that counterflashing meets tightly at each corner and the hem is not split. Do not bend the counterflashing around corners.

3.06 CLEAN-UP

076200.7 – FLASHING AND SHEET METAL

- A. Excess sealant, adhesives, and/or other materials must be cleaned from the sheetmetal surfaces.
- B. All handprints, smudges and other superficial stains that were placed on the sheet metal during fabrication and installation shall be removed.
- C. All factory-applied protective plastic films shall be removed.
- D. All abrasions, scratches, scrapes, etc. shall be touched up with paint furnished by the sheet metal manufacturer.

3.07 FIELD QUALITY CONTROL

- A. The Contractor is responsible for initiating and maintaining daily execution of a quality control program that will include, but is not limited to supervision by the job foreman or supervisor during substrate preparation, installation of sheet metal components, avoidance of oil canning and irregularities in the metal finish, proper metal termination and securement.
- B. Do not install or force fit metal flashing components that do not fit properly due to errors during field measurement and fabrication. Oil canning of sheetmetal surfaces due to fabrication and/or installation may be considered cause for rejection.
- C. Correct defects and irregularities observed by Engineer or Owner's representative.
- D. Contractor shall plan sequence of work to prevent damages to the sheetmetal installations. Protect pre-finished flashings from exposure to mortar, concrete, and other cementitious materials.
- E. Abrasions, scratches, scrapes, etc. in pre-finished metals shall be touched up with paint furnished by the sheet metal manufacturer. Physical damage to flashings may result in rejection by the Designer, and require removal and replacement. Minor damage that is accepted by the Designer must be touched-up to prevent potential corrosion at damaged pre-finish coat. Touch-up paint activities must be coordinated with the Designer to allow for direction by Designer and Owner prior to proceeding.

3.09 JOB AND WEATHER CONDITIONS

- A. Suspend all application and installation activities during inclement weather.
- B. Protect adjacent building surfaces against damage.
- C. Remove debris from roof and site on a daily basis and dispose at an approved disposal site.
- D. Do not permit traffic over completed roof surfaces.

END OF SECTION 076200

076200.8 – FLASHING AND SHEET METAL

SECTION 099113

PAINTING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment and supervision necessary for cleaning and painting existing and new components, and other items as shown on the drawings and specified herein.
- B. Scope of work included in this Section is as follows:
 - 1. Clean and coat existing painted steel lintels at the door alcoves located around the building exterior.
 - 1. Clean and coat existing drain outlets where they extend from the exterior wall and associated existing downspout transition boots to underground storm lines where they extend above grade.
 - 3. Clean and coat existing pipe penetrations, non-aluminum or stainless roof penetrations/equipment, and new PVC pipe extensions.
 - 4. Clean and coat other isolated items as noted on the drawings.

1.02 QUALITY ASSURANCE

- A. Qualifications of manufacturer: Products used in this work shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Designer.
- B. In acceptance or rejection of the work of this section, the Owner will make no allowance for lack of skill on the part of the workmen.

1.03 SUBMITTALS

- A. Submit manufacturer's latest literature, SDS sheets, and specifications for products used including surface preparation and installation instructions.
- B. Submit sample samples of paint color(s) for Owner selection of color.

1.04 DELIVERY, STORAGE, AND HANDLING

099113.1 – PAINTING

- A. Deliver paint materials and accessories in manufacturer's original protective containers with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas. Store flammable products away from sparks or open flames.
- C. Maintain temperature and humidity ranges required by the manufacturer for each product.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Do not proceed with installation of coatings when weather conditions (temperature, humidity) are outside the manufacturer's recommended limitations for application.

1.06 WARRANTY

- A. Provide the coating manufacturer's standard warranty against defects of materials and workmanship. The manufacturer's warranty shall not replace or void the Contractor's Two-Year Warranty for installed work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Rust-Inhibitive Primer: Provide a solvent-free, moisture-tolerant product specifically formulated as an anti-corrosion coating, 2 coats, 20 mils total dry film thickness minimum. Provide surface preparation cleaners as recommended by the manufacturer.
- B. Coating for Non-galvanized steel: 2 coats, 2 mils dry film thickness per coat. Provide primers as recommended by the manufacturer. Colors to be approved by the Owner. The manufacturer must offer reasonable ability to match color of existing painted components. Acceptable products and manufacturers include, but are not limited to: 9100 High Performance Epoxy, by RustOleum Corporation; Super Spec HP D.T.M. Acrylic Low Lustre P25, by Benjamin Moore and Co., and Ironclad Latex Low Lustre Metal and Wood Enamel 363, by Benjamin Moore and Co.
- C. Other Substrates (PVC): Provide primers and finish coatings as recommended by the coating manufacturer for substrate.

2.02 OTHER MATERIALS

- A. Provide other materials such as plastic sheeting, asking tape, brushes, rollers, wire brushes, and other items not specifically described but required for a complete and proper installation, as selected by the Contractor subject to review of the Engineer.

099113.2 – PAINTING

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 MATERIALS PREPARATION

- A. Mix and prepare materials in accordance with the manufacturer's recommendations. When materials are not in use, store in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
- B. Stir materials before application, producing a mixture of uniform density.

3.03 SURFACE PREPARATION

- A. Perform preparation and cleaning procedures in accordance with the manufacturer's recommendations. Provide protection for adjacent items and finishes that are not receiving coating.
- B. Wire brush to remove any rust, loose adjacent coatings, and/or surface corrosion prior to cleaning. Clean each surface to be painted to remove previous roof system materials (sealants, flashing, mastic, etc.). Schedule so that dust and other contaminants from construction will not fall onto wet or newly coated surfaces.
- C. If removal of existing paint or grinding of shop primed surfaces are required, the contractor is responsible for treating the existing paint as a lead containing material and removing and disposing of the material to meet WCU requirements. The Contractor may elect to have the existing paint tested for lead and may waive the requirements for removal and disposal if paint is confirmed by an accredited inspector and testing results to not contain lead.

3.04 FIELD TEST APPLICATION

- A. Provide a test application of primer and finish coat on sample prior to proceeding with coating work to verify adhesion. If recommended by manufacturer, perform adhesion test.
- B. Obtain approval from Engineer and Owner prior to proceeding with coating work.

3.05 INSTALLATION

- A. General: Apply in accordance with manufacturer's installation instructions, latest edition.
- B. Drying: Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.

099113.3 – PAINTING

- C. Brush out and work the brush coats onto the surface in an even film.
- D. Cloudiness, spotting, holidays, laps, brush marks, runs, sags and other surface imperfections will not be acceptable.

END OF SECTION 099113

099113.4 – PAINTING

SECTION 230800

GENERAL MECHANICAL AND ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment, coordination and supervision necessary for disconnection, relocation, reinstallation, reconnection, of existing rooftop mechanical systems including but not limited to: conduit, duct work, electrical, and/or mechanical components/services ***associated with raising existing equipment curbs, lowering soffit-mounted light fixtures, and/or lifting equipment caps to accommodate new roof system installation.*** Coordinate work with the Owner's Representative.
- B. Provide materials, equipment and supervision necessary for other miscellaneous electrical and/or mechanical work not specifically listed but required for complete and proper installation of the work as specified herein or shown on the drawings.

1.02 QUALITY ASSURANCE

- A. Perform mechanical and electrical work in accordance with the latest adopted editions of the North Carolina State Building Code, The North Carolina Department of Administration Electrical Guidelines and Policies the National Mechanical Code, the National Electrical Code, EPA, NFPA, and other applicable Owner-permitted regulations.
- B. In addition to compliance with laws and regulations stated in Paragraph 1.02A, work shall conform to applicable standards of UL, ASME, ANSI, and other authorities or agencies to which specific reference is made by specifications and/or by the manufacturer's installation instructions.
- C. Work must be performed by licensed contractors that are currently approved by the Owner to perform work at their facilities. Contact information regarding approved contractors can be obtained from the Owner's Representative.
- D. The Contractor shall secure and pay for all necessary permits, fees and inspections and prepare all drawings required by applicable state and local codes.

1.03 SUBMITTALS

- A. Include review of the mechanical/electrical rooftop and soffit and wall-mounted equipment and fixtures, as a part of the Pre-Job Damage Survey (required by Section 024110) that includes documentation of existing condition of units, fixtures, and services including whether they are in working condition prior to the start of roofing work.
- B. Upon completion of work to disconnect and reconnect electrical, mechanical, and/or communication components or services, provide certification from the licensed Contractor or Sub-contractor confirming that the work is in conformance with the applicable standards.

230800.1- GENERAL MECHANICAL AND ELECTRICAL REQUIREMENTS

1.04 WARRANTY

- A. If replacement of an existing mechanical unit(s) or electrical component(s)/fixture is necessary, due to damage during construction activities, replacement will be performed at no cost to the Owner and the equipment or component manufacturer's standard product warranty shall be provided in addition to the Contractor's two year warranty against defects of materials and workmanship.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Provide materials and accessories required for a complete and proper installation of the work as specified herein and on the project drawings in accordance with applicable local, state, and federal codes and regulations.
- B. Materials and equipment shall bear certification of UL, ASME where such labels are customary, required, or specified.

PART 3 EXECUTION

3.01 DOCUMENTATION OF EXISTING CONDITIONS

- A. Document locations of units, fixtures, utilities, piping/conduit and other services.
- B. Inspect and test equipment that may require modification, disconnection and/or relocation or may be in an area where contact/disruption or exposure to debris or other construction activities is likely to confirm working order. Coordinate with the Owner to allow for them to be present during inspection.

3.02 DISCONNECTION/RECONNECTION OF MECHANICAL AND ELECTRICAL SERVICES

- A. Disconnect mechanical piping, HVAC, electrical/control wiring, conduit, or other components to allow for safe temporary movement from their existing locations as necessary to accommodate proper installation of the new roof system, soffit panel system, and associated components shown on the drawings.
- B. Work shall be performed in accordance with specified current North Carolina codes and regulations. It is the responsibility of the contractor to make all necessary investigations of the existing electrical and mechanical units/components/fixtures to determine which items may require movement or removal of the cover or other components to accommodate flashing installation, prior to the bid. Necessary costs for disconnection and reconnection of existing mechanical and electrical systems as required for proper installation of the new roof systems shall be included in the base bid.
- C. Once services have been reconnected, test equipment and components to ensure that they are in working condition and meet or exceed the condition as documented in the pre-job survey.
- D. If physical damage to units and/or systems is observed, or units, fixtures, and/or systems are not in working condition and the damages were not previously listed on the pre-job mechanical condition survey, the equipment or service shall be repaired by the Contractor at no cost to the Owner. If

230800.2- GENERAL MECHANICAL AND ELECTRICAL REQUIREMENTS

testing indicates that units are not performing as documented in the pre-job condition survey, provide necessary services, at no cost to the Owner, to assure the proper operation of the unit and/or system.

END OF SECTION 230800

230800.3- GENERAL MECHANICAL AND ELECTRICAL REQUIREMENTS

FORM OF PROPOSAL

Camp Building Roof Replacement _____

Contract: **Roof Replacement** _____

Western Carolina University _____

Bidder: _____

SCO ID: 18-18885-01A _____

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 the **Camp Building Roof Replacement** in full and complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the State of North Carolina, the **Western Carolina University, and the Designer - Atlas Engineering** 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:

_____ Dollars(\$)

Roofing Subcontractor:

Other:

_____ Lic _____

_____ Lic _____

Other:

Other:

_____ Lic _____

_____ 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.

ALTERNATES:

Should any of the alternates as described in the contract documents be accepted, the amount written below shall be the amount to be "added to" or "deducted from" the base bid. (Strike out "Add" or "Deduct" as appropriate.)

GENERAL CONTRACT:

Bid Alternate 01: Provide pre-finished sheetmetal in the manufacturer's "premium" color (color included on the manufacturer's published color chart but specifically noted to have an associated premium charge due to color or gauge/type of metal required) in accordance with the specified requirements.

(Add) ~~(Deduct)~~ _____ Dollars(\$)

Bid Alternate 02: Provide pre-finished sheetmetal in a custom color (color not included on the manufacturer's published color chart, or one specifically noted on the chart to not be available in a color due to required material type or gauge) in accordance with the specified requirements.

(Add) ~~(Deduct)~~ _____ Dollars(\$)

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.

GENERAL CONTRACT:

Estimated quantities for each item listed below are defined in Section 010100, Paragraph 1.05B of the Project Manual.

<u>Item:</u>	<u>Unit:</u>	<u>Unit Price:</u>
1. <u>Wood Blocking Replacement (bd.ft.)</u>		Unit Price (\$) _____
2. <u>Isolated Gypsum Deck Repair (sq.ft.)</u>		Unit Price (\$) _____
3. <u>Gypsum Deck Repair (cuft.)</u>		Unit Price (\$) _____
4. <u>Walk Tread Installation (lft.)</u>		Unit Price (\$) _____

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 MBE 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

Camp Building Roof Replacement (SCO# 18-18885-01A)

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:

(Proprietorship or Partnership)

By: _____
Signature

Name: _____
Print or type

Title _____
(Owner/Partner/Pres./V.Pres)

Address _____

ATTEST:

By: _____

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

License No. _____

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. 6 _____

Addendum No. 2 _____ Addendum No. 4 _____ Addendum No. 6 _____ Addendum No. 7 _____

The University of North Carolina - AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

Affidavit of _____

(Name of Bidder)

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.

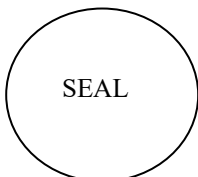
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

The University 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.

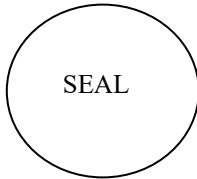
The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



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 _____ 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)

FORM OF CONSTRUCTION CONTRACT

(ALL PRIME CONTRACTS)

THIS AGREEMENT, made the _____ day of _____ in the year of 20__ by _____ and _____ between _____

hereinafter called the Party of the First Part and the State of North Carolina, through the _____

_____ 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:

Consisting of the following sheets:

Dated: _____ and the following addenda:

Addendum No _____ Dated: _____ Addendum No. _____ Dated: _____

Addendum No _____ Dated: _____ Addendum No. _____ Dated: _____

Addendum No _____ Dated: _____ Addendum No. _____ Dated: _____

Addendum No _____ Dated: _____ Addendum No. _____ 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:

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 _____ counterparts, each of which shall without proof or accounting for other counterparts, be deemed an original contract.

Witness:

(Proprietorship or Partnership)

Contractor: (Trade or Corporate Name)

By: _____

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)

(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:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

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

(Corporate Seal)

Contractor: (Trade or Corporate Name)

By: _____

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

(Surety Company)

By: _____

Title: _____
(Attorney in Fact)

Witness:

Countersigned:

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

(Surety Corporate Seal)

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:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

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

(Corporate Seal)

Witness:

Countersigned:

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

Contractor: (Trade or Corporate Name)

By: _____

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

(Surety Company)

By: _____

Title: _____
(Attorney in Fact)

(Surety Corporate Seal)

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 Officer