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SPECIFICATIONS FOR
REESE AND FRIDAY ROOFS
UNC CHARLOTTE
CHARLOTTE, NORTH CAROLINA
PROJECT NO: FH226151
SCO ID # 22-24654-01
CODE NO. 42126; ITEM NO. 320

Project No. FH226151

BID DOCUMENTS

Explore with us

NOTICE TO BIDDERS

Sealed proposals from licensed General Contractors will be received by UNC Charlotte, at 9201 University Boulevard, Charlotte, NC 28223 until 9:00 a.m. on January 4, 2023. Bids will be publicly opened and read at 9:00 a.m. in Room FM206 of the Facilities Management and Police and Public Safety (FMPPS) building (subject to room availability) (#55 on the campus map – <http://facilities.uncc.edu/maps>) located at 9151 Cameron Blvd., Charlotte, NC 28223 for the furnishing of labor, material and equipment entering into the construction of:

Reese Building
UNC Charlotte
Charlotte, North Carolina
SCO ID No. 22-24654-01, Code No. 42126, Item No. 320

Project consists of roof coating on Reese Building.

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

Please note that any bids delivered to the UNC Charlotte Facilities Management, Capital Projects must be received by 8:00 a.m. on bid day. After that, all bids will need to go to bid opening location.

Visitor parking is available in Lot 26 in front of the Facilities Management and Police and Public Safety (FMPPS) building (#55 on the campus map – <http://facilities.uncc.edu/maps>).

Non-Mandatory Pre-Bid Meeting

A Non-Mandatory Pre-Bid Meeting will be held for all interested bidders on December 14, 2022 from 10:00 a.m. to 11:30 a.m. in Room FM206, Facilities Management and Police and Public Safety (FMPPS) building (#55 on the campus map – <http://facilities.uncc.edu/maps>). The meeting will address project specific questions, issues, bidding procedures and bid forms. After the pre-bid meeting, there will be a site visit to go over the project scope and location.

There are visitor spaces in Lot 26 in front of the Facilities Management and Police and Public Safety (FMPPS) building (#55 on the campus map – <http://facilities.uncc.edu/maps>).

Bidders' questions will be entertained in writing until 5:00 p.m. on December 23, 2022. Address all questions to the Engineer, Vu The Nguyen, EI, RBEC, Terracon Consultants, Inc. (vu.nguyen@terracon.com). Emails shall have subject line as follows: UNC Charlotte Reese Building; (your company name); BIDDER QUESTION." Include your company name, contact information, email addresses, and phone numbers in the body of your email. Cc: Vicky.Neal@terracon.com

A final addendum will be issued December 28, 2022 to all plan holders/bidders of record.

Complete plans, specifications and contract documents will be open for inspection in the offices of:

UNC Charlotte
Facilities Management and Police and Public Safety (FMPPS) Building
Second Floor – Capital Projects
9151 Cameron Blvd.
Charlotte, NC 28223
Phone: (704) 678-7217

Or may be obtained digitally from Terracon Consultants, Inc., Charlotte, North Carolina. Email complete contact information to Vicky Neal at Vicky.Neal@terracon.com

Electronic copies of the plans, specifications and contract documents are available through the following plan rooms:

1. Associated General Contractors, Carolinas Branch (projectinquiries@isqft.com) 800-364-2059
2. North Carolina offices of McGraw-Hill Dodge Corporation (www.constructconnect.com) 877-784-9556
3. Construction Journal – bids@constructionjournal.com 772-781-2144
4. Hispanic Contractors Assoc. of the Carolinas (info@hcacarolinas.org) 877-227-1680
5. NCIMED Plan & Resource Center (info@TheInstituteNC.org)

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

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

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for Building Contractor with an **unlimited** license required by the NC General Contractors Licensing Board under G.S. § 87-1.

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

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

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not

less than five percent (5%) of the proposal, or in lieu thereof a bidder may offer a bid bond of five percent (5%) of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond. Said deposit shall be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

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

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

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of 30 days.

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

Bidders who will not attend the bid opening need to ensure their sealed bids are delivered no later than 8:00 a.m. on January 4, 2023 to the following:

Mailed and Hand Delivered Proposals:

UNC Charlotte
Attention: Ms. Jeanine Bachtel
Director of Planning, Design and Construction
Facilities Management – Capital Projects
9151 Cameron Blvd.
Charlotte, North Carolina 28223

Designer:

Terracon Consultants, Inc.
Attn: Vu The Nguyen, EI, RBEC
2901 Westport Road
Charlotte, NC 28208
Phone: 704-594-8931

Owner:

UNC Charlotte
Attn: Ms. Jeanine Bachtel
Facilities Management – Capital Projects
9151 Cameron Blvd.
Charlotte, North Carolina 28223

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Friday Building
UNC Charlotte
Charlotte, North Carolina
SCO ID No. 22-24654-01, Code No. 42126, Item No. 320

Project consists of roof replacement on Friday Building.

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

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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.

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Attention: Ms. Jeanine Bachtel
Assistant Director of Planning, Design and Construction
Facilities Management – Capital Projects
9151 Cameron Blvd.
Charlotte, North Carolina 28223

Designer:

Terracon Consultants, Inc.
Attn: Vu The Nguyen, EI, RBEC
2901 Westport Road
Charlotte, NC 28208
Phone: 704-594-8931

Owner:

UNC Charlotte
Attn: Ms. Jeanine Bachtel
Facilities Management – Capital Projects
9151 Cameron Blvd.
Charlotte, North Carolina 28223

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

STANDARD FORM FOR CONSTRUCTION PROJECTS

**UNIVERSITY OF NORTH CAROLINA
SYSTEM OFFICE**

Sixth Edition – June 2021

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 bidders 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 with appropriate attachments to 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 the 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 owner.

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.
- 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 information may 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 of completed work. 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 University of North Carolina, and is distributed by, through and at the discretion of UNC System Office, Chapel Hill, 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 drawings 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 university attorney; 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 and designer and approved by the owner 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, and owner .
- 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 of 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 cannot 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 the approval of the 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 with 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 North Carolina Building Codes.
- aa. **Beneficial Occupancy** is requested by the owner and is occupancy or partial occupancy of the building or project after all life safety items have been completed as determined by the State Construction Office. Life safety items include but are not limited to fire alarm, sprinkler, egress and exit lighting, fire rated walls, egress paths and security.
- bb. **Final Acceptance** is the date on which the State Construction Office approves the project as complying with the North Carolina Building Codes and the owner accepts the construction as totally complete. This includes certification by the Designer that all punch list items are completed.

ARTICLE 2 - INTENT AND EXECUTION OF DOCUMENTS

- a. The drawings and specifications are complementary, one to the other. 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 the 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 two (2) copies (one for the Designer, one for the owner) 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, the 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 State of North Carolina. 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 approve.

- e. The designer is the judge of equality for proposed substitution of products, materials or equipment.
- f. 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 by 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.
- c. 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.

- d. Projects involving local funding may be subject also to county and municipal building codes and inspection by local authorities. The Contractor shall pay the cost of these permits and inspections as noted in the specifications.

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 member 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 correction of 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 correction of damage caused by 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 the designer, special inspector and/or State Construction Office prior to being covered by the contractor. Contractor shall give a minimum notice of two weeks unless otherwise agreed to by all parties. If inspection fails, after the first

re-inspection all costs associated with additional inspections 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 and 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 project conference. The owner will determine the 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 punch list(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 punch list(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.

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 biweekly 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 owner and other prime contractors. The designer shall determine the contractor(s) who caused the delays 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 expediter'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 time commitment of the project superintendent to the project shall be such as to insure satisfactory construction

progress & coordination as determined by the project designer and owner and may be as stipulated in the Supplementary General Conditions.

ARTICLE 15 - SEPARATE CONTRACTS AND CONTRACTOR RELATIONSHIPS

- a. Public contracts may be delivered by the following construction 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 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 and to the owner 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, the designer shall submit his reasons for disapproval in writing to the owner for the owner's consideration with a copy to the contractor. If the owner concurs with the designer's recommendation, the contractor shall submit a substitute for approval. The designer 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.

- 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. They 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 an approved change order or written field order from the designer, countersigned by the owner. No claim for adjustments of the contract price shall be valid unless this procedure is followed.
A field order, transmitted by fax 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 below under either c.1 or 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 and owner, the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed on 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 c.2. above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors (first tier), or their subcontractors (second tier, third tier, etc.) shall be allowed a maximum of ten percent (10%) on work they each self-perform; the prime contractor shall be allowed a maximum of five percent (5%) on contracted work of his first tier subcontractor; first tier, second tier, third tier, etc. subcontractors shall be allowed a maximum of two and one-half percent (2.5%) on the contracted work of their subcontractors. Under c.1. no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under c.2. and 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; vehicles; 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 a lack of proper submittal by the contractor of all required supporting data shall not constitute grounds for a time extension or basis for 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 approval. The owner shall approve and execute the change order within seven (7) days of receipt. 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 extra 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 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 the 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 c. above. Without prejudice, nothing in this paragraph shall preclude the owner from performing or having 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. 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 by the contractor that complies with the requirements of (a) above be denied by the designer or owner, and cannot be resolved by a representative of The University of North Carolina System Office, the contractor may request a mediation in connection with G.S. 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 claims as a result of mediation, the contractor may pursue his claim in accordance with the provisions of G.S. 143-135.3 and the following:
 1. A contractor who has not completed a contract with an institution of The University of North Carolina and who has not received the amount he claims is due under the contract may submit a verified written claim to the Associate Vice President for Finance & University Property Officer of The University of North Carolina System Office for the amount the contractor claims is due. If the claim remains unresolved after review by the Associate Vice President for Finance, the contractor may submit the 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 an institution of University of North Carolina 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 Associate Vice President for Finance & University Property Officer of The University of North Carolina System Office for the amount the contractor claims is due. If the claim remains unresolved after review by the Associate Vice President for Finance, the contractor may submit the 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 Associate Vice President'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 owner, 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, fires, 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 delay. 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 with copies to the owner within twenty (20) days following cause of delay. In case of continuing cause for delay, the contractor shall notify the designer in writing with copies to the owner of the

delay within twenty (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 completion of the project.
- b. Should the owner request a utilization of the building or portion thereof, the designer shall perform a designer final inspection of the 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, 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 owner and State Construction Office, in such areas the following will be established:
 - 1. The beginning of guarantees and warranties period for the equipment necessary to provide support in the area.
 - 2. The owner assumes all responsibilities for utility costs for the entire building
 - 3. Contractor will obtain consent of surety.
 - 4. 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 owner and SCO final inspection. Prior to owner & 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, the owner and State Construction Office representatives shall make one of the following determinations:

1. That the project is completed and accepted.
 2. That the project will be accepted subject to 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.
 3. 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.
- e. 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.
- f. Prior to issuance of final acceptance date, the contractor shall have his authorized representatives visit the project and give full instructions to the owner's designated personnel regarding operating, maintenance, care, and adjustment of all equipment and special construction elements. In addition, the contractor shall provide 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. The contractor shall correct or make good any defects due thereto and repair any damage resulting therefrom 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 ten (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 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 and the owner 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 and owner 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 and the owner 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 any time. Bond, security and insurance protection shall continue to be the responsibility of the contractor(s).
- e. On projects requiring a Critical Path Method (CPM) construction schedule, the project expeditor will submit with each monthly pay application to the designer a current CPM schedule in a computerized precedence network format on a compact disc. The schedule will include all construction activities to be accomplished during the project to be properly sequenced and coordinated with elements of the work. The schedule shall be assembled from input presented and mutually coordinated by all the contractors (and/or subcontractors) and integrated into a single, overall schedule. The project expeditor will show all the scheduled work activities, including their subcontractors, and the sequence and interdependence (predecessors and successors) of the activities. The schedule shall show the total project duration including milestone dates. The critical path shall be clearly indicated. The schedule shall be in such a format that it can be read (imported) in Microsoft Project or Primavera P6. Failure to submit the construction schedule on compact disc media in an acceptable format will result in the pay application being denied.
- f. In the event of beneficial occupancy, retainage of funds due the contractor(s) may be reduced with the approval of the owner 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 are 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 subcontractors 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 owner 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 owner 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 the contractor's general conditions costs set forth in the approved schedule of values if the contractor has failed to comply with:
 - (1) a request to access its records by the owner's internal auditors pursuant to Article 52;
 - (2) a request for a plan of action and/or recovery schedule under Article 14j;
 - (3) a request to provide electronic copies of contractor's baseline schedule and/or updates with all logic used to create schedules in the original format of the scheduling software; and
 - (4) contractor's failure to have its superintendent on the project as provided in Article 14.1 and/or as stipulated in the Supplementary General Conditions.
- 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 coverage 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 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 may be 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 unless stipulated otherwise in the project specifications. The 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 unless otherwise stipulated. 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 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 General Contractor 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 the 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 acceptance of work by the State Construction Office and owner, 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 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 General Contractor 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 General Contractor 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 General Contractor 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 General Contractor's bid.
 - l. The General Contractor 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 General Contractor. The General Contractor shall provide an onsite 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 General Contractor shall broom clean the building as required to minimize dust and dirt accumulation.
- b. The General Contractor 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 therefrom, 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 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 contractors 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 business 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 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 General Statute 133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, subcontractor, supplier, etc.) to make gifts or give favors to any State employee. This prohibition covers those vendors and contractors who: (1) have a contract with a government agency; or (2) have performed under such a contract during 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 General Statute 133-32.

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 employees that may have any involvement, influence, responsibilities, oversight, management and/or duties that pertain to and/or relate to the construction administration, financial administration and/or disposition of claims arising from and/or relating to the contract and/or the project.

ARTICLE 52 – AUDITING – ACCESS TO PERSONS AND RECORDS

In accordance with General Statute.147-64.7, the State Auditor shall have access to the contractor's officers, employees, agents and/or other persons in control of and/or responsible for the contractor's records that relate to this contract 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 lost 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 the owner and/or the owner's project representatives.

ARTICLE 53 – NORTH CAROLINA FALSE CLAIMS ACT

The North Carolina False Claims Act (NCFCA), General Statute 1-605 through 1-618, applies to this contract. The contractor should familiarize itself with the entire NCFCA and its applicability to any requests, demands and/or claims for payment submitted to the State through the contracting university or affiliate.

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 NCFCA may arise from, but not be 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 lost 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 for claims, and/or any other request for payment from the state through the contracting state agency, institution or university. 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 by 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©.)

Finally, the contracting university or affiliate 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

- a. The owner may, at any time and for any reason terminate the contractor's services and work at the owner's convenience. Upon receipt of such notice, the contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing orders for materials, facilities and supplies in connection with the performance of this agreement.
- b. Upon such termination, the 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 the contractor as are permitted by the prime contract and approved by the 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 the contractor prior to the date of the termination of this agreement. The contractor shall not be entitled to any claim or claim of lien against the owner for any additional compensation or damages in the event of such termination and payment.

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE 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 State construction projects in the amount of \$300,000 or more. The legislation provides that the State 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 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 Agency/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 State Construction Office 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. State Construction Office

The State Construction Office will be responsible for the following:

- a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
 - (1) Project description and location;
 - (2) Locations where bidding documents may be reviewed;
 - (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
 - (4) Date, time and location of the bid opening.
 - (5) Date, time and location of prebid conference, if scheduled.
- b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

- c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
- d. Reviewing of minority business requirements at Preconstruction conference.
- e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- f. Provide statistical data and required reports to the HUB Office.
- g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner

Before awarding a contract, owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
- 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 State Construction Office.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

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 State Construction Office.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by State Construction Office 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 State Construction Office 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, State Construction Office, 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 4: 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 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: www.nc-sco.com

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State 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 Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

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, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if 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, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

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

OR

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

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

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 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 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 whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State 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.

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

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

MBE FIRM NAME	* 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), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____

Name

_____ Title

_____ Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

ASBESTOS REPORT - REESE BUILDING



Bulk Asbestos Analysis

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



Customer: Terracon
 2701 Westport Rd
 Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996237
Analysis ID: 71996237_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Reese Building - FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
1 - A	Lower roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_1	membrane				Ashed
1 - B	Lower roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_7	adhesive				Dissolved
1 - C	Lower roof	None Detected	85% Cellulose	15% Other	Brown Fibrous Homogeneous
71996237PLM_8	fibrous insulation				Teased
2 - A	Lower roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_2	membrane				Ashed
2 - B	Lower roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_9	adhesive				Dissolved
3 - A	Lower roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_3	membrane				Ashed
3 - B	Lower roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_10	adhesive				Dissolved
3 - C	Lower roof	None Detected		100% Other	Black Non Fibrous Homogeneous
71996237PLM_11	tar				Dissolved

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Charmel Dozier (18)

Analyst

Approved Signatory



Bulk Asbestos Analysis

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



Customer: Terracon
2701 Westport Rd
Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996237
Analysis ID: 71996237_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Reese Building - FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
4 - A	Upper roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_4	membrane				Ashed
4 - B	Upper roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_12	adhesive				Dissolved
4 - C	Upper roof	None Detected	85% Cellulose	15% Other	Brown Fibrous Homogeneous
71996237PLM_13	fibrous insulation				Teased
5 - A	Upper roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_5	membrane 1				Ashed
5 - B	Upper roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_14	adhesive 1				Dissolved
5 - C	Upper roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_15	membrane 2				Ashed
5 - D	Upper roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_16	adhesive 2				Dissolved
6 - A	Upper roof	None Detected	5% Synthetic Fibers	95% Other	White Fibrous Homogeneous
71996237PLM_6	membrane				Ashed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Charmel Dozier (18)

Analyst

Approved Signatory



Bulk Asbestos Analysis

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



Customer: Terracon
2701 Westport Rd
Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996237
Analysis ID: 71996237_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Reese Building - FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
6 - B	Upper roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996237PLM_17	adhesive				Dissolved
6 - C	Upper roof	None Detected	85% Cellulose	15% Other	Brown Fibrous Homogeneous
71996237PLM_18	fibrous insulation				Teased

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Charmel Dozier (18)

Analyst

Approved Signatory

ASBESTOS REPORT - FRIDAY BUILDING



Bulk Asbestos Analysis

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



Customer: Terracon
2701 Westport Rd
Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996235
Analysis ID: 71996235_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Friday - Building/FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
1 - A	Upper roof	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_1	sealant				Dissolved
1 - B	Upper roof	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_7	rubber membranes				Ashed
1 - C	Upper roof	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996235PLM_8	adhesive				Dissolved
1 - D	Upper roof	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_9	fibrous insulation				Teased
1 - E	Upper roof	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_10	foam insulation				Crushed
2 - A	Upper roof	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_2	rubber membrane				Ashed
2 - B	Upper roof	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_11	fibrous insulation				Teased
2 - C	Upper roof	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_12	foam insulation				Crushed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Charmel Dozier (24)

Analyst

Approved Signatory



Bulk Asbestos Analysis

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



Customer: Terracon
 2701 Westport Rd
 Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996235
Analysis ID: 71996235_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Friday - Building/FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
3 - A	Upper roof	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_3	rubber membranes				Ashed
3 - B	Upper roof	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_13	fibrous insulation				Teased
3 - C	Upper roof	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_14	foam insulation				Crushed
4 - A	Small roof wall	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_4	sealant				Dissolved
4 - B	Small roof wall	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_15	rubber membranes				Ashed
4 - C	Small roof wall	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996235PLM_16	adhesive				Dissolved
4 - D	Small roof wall	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_17	fibrous insulation				Teased
4 - E	Small roof wall	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_18	foam insulation				Crushed

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Charmel Dozier (24)

Analyst

Approved Signatory



Bulk Asbestos Analysis

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



Customer: Terracon
 2701 Westport Rd
 Charlotte, NC 28208

Attn: Erick Hutson

Lab Order ID: 71996235
Analysis ID: 71996235_PLM
Date Received: 7/12/2022
Date Reported: 7/12/2022

Project: Friday - Building/FH226151

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
5 - A	Small roof field	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_5	rubber membrane				Ashed
5 - B	Small roof field	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_19	fibrous insulation				Teased
5 - C	Small roof field	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_20	foam insulation				Crushed
6 - A	Small roof parapet	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_6	sealant				Dissolved
6 - B	Small roof parapet	None Detected		100% Other	Black Non Fibrous Homogeneous
71996235PLM_21	rubber membranes				Ashed
6 - C	Small roof parapet	None Detected		100% Other	Yellow Non Fibrous Homogeneous
71996235PLM_22	adhesive				Dissolved
6 - D	Small roof parapet	None Detected	80% Cellulose	20% Other	Brown Fibrous Homogeneous
71996235PLM_23	fibrous insulation				Teased
6 - E	Small roof parapet	None Detected		100% Other	Blue Non Fibrous Homogeneous
71996235PLM_24	foam insulation				Crushed

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Charmel Dozier (24)

Analyst

Approved Signatory



Company Contact Information	
Company: Terracon	Contact:
Address: 2701 West Port Road Charlotte NC 28205	Phone <input type="checkbox"/> : 704-509-1777
	Fax <input type="checkbox"/> :
	Email <input checked="" type="checkbox"/> Erich.Hutson@Terracon.com
Billing/Invoice Information	
Company: Terracon	90 Min. <input type="checkbox"/> 48 Hours <input checked="" type="checkbox"/>
Contact: Erich Hutson	3 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/>
Address: 2701 West Port Road Charlotte NC 28205	6 Hours <input type="checkbox"/> 96 Hours <input type="checkbox"/>
	12 Hours <input type="checkbox"/> 120 Hours <input type="checkbox"/>
	24 Hours <input type="checkbox"/> 144* Hours <input type="checkbox"/>

Asbestos Test Types	
PLM EPA 600/R-93/116 (PLM)	<input checked="" type="checkbox"/>
Positive stop	<input type="checkbox"/>
PLM Point Count 400 (PT4)	<input type="checkbox"/>
PLM Point Count 1000 (PTM)	<input type="checkbox"/>
PCM NIOSH 7400-A Rules (PCM)	<input type="checkbox"/>
B Rules (PCB) <input type="checkbox"/> TWA (PTA) <input type="checkbox"/>	
TEM AHERA (AHE)	<input type="checkbox"/>
TEM Level II (LII)	<input type="checkbox"/>
TEM NIOSH 7402 (TNI)	<input type="checkbox"/>
TEM Bulk Qualitative (TBL)	<input type="checkbox"/>
TEM Bulk Chatfield (TBS)	<input type="checkbox"/>
TEM Bulk Quantitative (TBQ)	<input type="checkbox"/>
TEM Wipe ASTM D6480-05	<input type="checkbox"/>
TEM Microvac ASTM D5755-09	<input type="checkbox"/>
TEM Water EPA 100.2 (TW1)	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>

PO Number:
Project Name/Number: <u>RR - Building / FH 226151</u> Friday

Sample ID #	Description/Location	Volume/Area	Comments
1	Upper Roof		
2	Upper Roof		
3	Upper Roof		
4	Small Roof wall		
5	Small Roof Field		Accepted <input checked="" type="checkbox"/>
6	Small Roof parapet		Accepted <input checked="" type="checkbox"/>

Total # of Samples 6

Relinquished by	Date/Time	Received by	Date/Time
<u>Erich Hutson</u>	7-11-22	<u>B. Mulley</u>	7/12 10:30A

Alice

ANNEX B
WASTE REDUCTION & RECYCLING GUIDELINES

WASTE REDUCTION & RECYCLING GUIDELINES

This section represents the supporting documentation for general Requirements Section 2 Point D. Site Construction & Demolition Waste Management

Waste Management Goals

The University of North Carolina at Charlotte recognizes that there are a number of benefits to implementing waste reduction and recycling practices during construction and demolition projects, including:

- Cost savings for contractors and the University,
- Increased safety and cleanliness at the job site,
- Increased compliance with policies and ordinances.

With this information in mind, the University has established that this project shall generate the least amount of waste possible. The Contractor shall implement processes that generate as little waste as possible, and as many of the waste materials as economically feasible shall be reused, salvaged or recycled. The University has established the following goals for diversion of materials from landfill disposal:

- All site preparation/land-clearing debris should be reused on site or sent to a recycling facility. This includes asphalt, concrete, dirt, and rock/stone.
- All trees and shrubbery should be ground on site or sent to a mulching/composting facility.
- Divert 50% (by weight) of all construction and demolition waste from landfill disposal. Materials that are reused in the same project can be included in this weight, as long as reuse is documented through weights or estimates.

Of waste going to landfill, construction and demolition waste must go to an approved construction and demolition landfill. The Contractor is required to submit weight tickets (preferred) or weight estimates for all waste materials removed from campus.

Waste Management Plan

The goal of the University is to increase recycling and decrease waste hauling and disposal costs without placing undue burden on the Contractor (i.e. increasing labor costs). With these goals in mind, the Contractor is required to meet with a representative from the Office of Waste Reduction & Recycling and develop a Solid Waste Management Plan for the project. This plan will include an analysis of recyclable, reusable, and non-salvageable materials to be removed from the project, and will determine the best way for materials to be disposed of based on the scope of the project.

Copies of example waste management plans and waste management reports can be found in Annex B Section 3.

a) **Draft Waste Management Plan:** Within 10 (ten) days after the Notice to Proceed, and before any materials are removed from site, the Prime Contractor shall submit to the Office of Waste Reduction & Recycling a draft waste management plan containing the following.

- I. Waste Assessment: A list of materials the contractor(s) will be handling based on the project scope of work, and whether these materials will be salvaged and reused, recycled, or landfilled. Materials that will be salvaged in the demolition phase and reused in the construction or renovation phase should be included in this section.
- II. List of landfills to be used for waste disposal, and applicable landfill tipping fees.
- III. List of recycling or reuse facilities expected to be used, as well as costs or tipping fees at facilities (if applicable).
- IV. A description of how any waste materials to be reused or recycled will be protected from contamination (i.e. stored in separate location; a separate bin for materials). How will materials be handled to meet requirements for the designated disposal/recycling facilities?
- V. List of haulers to be used for transporting materials (or specify that materials will be self-hauled if the GC will be hauling).

b) **Final Waste Management Plan:** The owner will review the draft Waste Management Plan within 10 (ten) working days and return it to the Contractor as approved or provide comments for changes and improvements in the Plan.

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Section 3, Annex B – Construction Waste Management

The Contractor will resubmit within 10 (ten) working days. Once the Plan is approved it becomes the Project Waste Management Plan.

c) Waste Management Plan Implementation

- I. The Contractor shall designate an on-site party responsible for instructing workers, overseeing and documenting results of the Waste Management Plan for the project. This contact will notify the Office of Waste Reduction & Recycling immediately should any deviance from the Waste Management plan be necessary.
- II. The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foremen, Sub-contractors, and the Owner.
- III. The Contractor shall provide on-site instruction regarding appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- IV. The Contractor shall designate and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
- V. Hazardous wastes shall be separated, stored, and disposed of according to Federal and State regulations.
- VI. Documentation: The Contractor shall submit a monthly waste management report (see Annex B Section 3.5). Failure to submit this information shall render the Application for Payment incomplete and shall delay payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:
 - i. The amount (in tons or cubic yards) of material landfilled from the project, the identity of the landfill, the total amount of tipping fees paid at the landfill, hauling costs and copies of weight tickets.
 - ii. For each material recycled, reused, or salvaged from the Project, the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material. Weight tickets must be attached.

Project Meetings:

Waste management goals and reporting will be discussed at:

- Pre Bid Meeting
- Pre Construction Meeting
- Monthly SCO Meetings

Resource Efficiency

The Contractor shall use resources as efficiently as possible, in completion of the project. Namely Owner shall require the Contractor to:

- Use techniques that minimize waste generation
- Reuse and renovation of existing structures in lieu of demolition
- Salvage of existing materials and items for reuse/resale
- Reuse materials on site where possible
- Recycling of waste generated during the demolition and construction process

Reuse and Recycling Standards

The following is a partial list of easily recycled materials from construction & demolition. Depending on the scope of work, other materials may also be deemed recyclable or reusable.

Material	Recyclable	Reusable	Legal Requirements (if any)
Aluminum cans	✓		Recycling required by law. (NC General Statute)
Asphalt	✓		Recycling required by the University.
Brick	✓	✓	Recycling required by the University.
Cardboard	✓		Recycling required by law. (Mecklenburg County ordinance)
Carpet/floor tiles	✓	✓	
Ceiling Tiles	✓	✓	
Concrete	✓	✓	Recycling required by the University.
Dirt		✓	Recycling required by the University.
Glass bottles	✓		

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Land clearing debris	✓		Recycling required by law. (NC General Statute)
Metal	✓	✓	White goods recycling required by law (NC General Statute)
Pallets	✓	✓	Recycling required by law. (NC General Statute)
Paper	✓		Recycling required by law. (Mecklenburg County ordinance)
Plastic Bottles	✓		Recycling required by law. (NC General Statute)
Sheetrock (unpainted)	✓		
Wood (untreated/unpainted)	✓	✓	
Trees/Shrubs	✓	✓	Recycling required by law. (NC General Statute)

In addition to recycling, the University encourages the following reuse/waste reduction practices:

- On-site grinding of wood clearing debris for use on campus.
- Stockpiling excess clean earth for use by UNCC or on other projects.
- Bricks and blocks may be reused by the contractor or by UNCC.
- Doors and windows may be donated to area non-profits or reused by contractor.
- Plumbing fixtures and pipes (provided they don't contain lead) may be reused on campus or by the contractor.
- Electrical fixtures and wiring may be kept for reuse on campus or by the contractor.

Removal of debris is included in the project bid, and the contractor is responsible for any costs and labor incurred.

The contractor will remove all debris generated, included trash and recycling, at their own expense. The contractor may not place this debris in University dumpsters. The Owner, acting through the Designer, shall retain the right to direct the disposal of salvageable and recyclable equipment (such as metals, cardboard, plastics, paper, glass, and blueprints).

For all demolition or renovation work which removes serviceable, repairable, or otherwise recoverable equipment or materials (such as metals, cardboard, plastics, paper, glass, and blueprints), the Contractor shall certify that he or she has exercised every practical means of recovery or salvage. (note: this is in addition to the required recyclables).

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Section 3, Annex B – Construction Waste Management**

Waste Removal Reporting Form

Project Name: _____
 Job Site: _____
 Contractor Name: _____
 Sub Contractor: _____

Date: _____

1 Project Wastes Land-filled

Landfill site	Quantity - tons/pounds	Tip fee/ton	Total cost of disposal including hauling container rental tip fees	Total Cost/ton

2 Alternatives to Landfilling

Type of material	Quantity (tons)	Material handling procedure*	Destination & means of transport	Cost of handling & transportation	Expected revenue & tip fee savings	Disposal Cost

3 Means of keeping recyclables free of contamination	4 Meetings to be held to address waste management
	1. Preconstruction Meeting 2. Monthly Construction or LEED meetings

*Material handling procedure: Was the material:

- Recycled
- Reused on site
- Returned to vendor for recycling or reuse

University of North Carolina at Charlotte Design and Construction Manual
Section 3, Annex B – Construction Waste Management

Other (please specify)

Please return completed sheet to Shannon Caveny-Cox, UNCC OWR&R
Email: sccaveny@uncc.edu

SECTION 01100 – SUMMARY-OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 INSTRUCTIONS TO BIDDERS

- A. "Form of Proposal" is provided herein.
- B. A form of Bid Bond is provided herein.
- C. Bidders must be licensed General Contractors for a minimum of five (5) years of the class required by North Carolina Statutes for executing the work being bid. Bidder's name, address, State license number, and the date of license must appear on the outside of the envelope containing Bidder's proposal.
- D. Prior to an award of contract, and upon request, submit to Engineer or Owner satisfactory evidence of current and appropriate license pursuant to the applicable provisions of that State's General Statutes governing the business of "General Contracting" and such other rules, regulations and/or ordinances as may be applicable to performance of the work specified herein. Failure to provide evidence of an appropriate license by any bidder as described herein shall result in that bid, quotation or proposals not being considered.
- E. All experience must have been acquired by bidding contractor named on the form of proposal. Firms using aliases, or who have changed names during the five (5) year period are subject to disqualification at the discretion of the Owner.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Owner intends to bid Friday Building and Reese Building as two separate projects. The project consists of: 1) Friday Building - roof membrane replacement and insulation upgrade and 2) Reese Building - roof coating.
- B. Project Location:
 - 1. Friday Building – 9209 Mary Alexander Rd., Charlotte, NC 28262
 - 2. Reese Building – 9035 University Rd., Charlotte, NC 28262
- C. Project Owner: UNC Charlotte
- D. The terms "Architect" and "Engineer" used in the contract documents are that individual, partnership, or corporation engaged by the Owner for the preparation of certain of the Contract Documents, and referred to in the Contract Documents. The "Architect" or "Engineer" may, however, be an Architect, Architect-Engineer, Engineer or other design

professional authorized by the Owner to perform such functions and the terms are interchangeable.

- E. Engineer Identification: The Owner has elected to designate Terracon Consultants, Inc., Charlotte, North Carolina as Engineer for this Project.
- F. Furnish all labor, materials, tools, equipment, devices, appliances, utilities, transportation, and other facilities and services necessary to accomplish the work described in these specifications.
- G. Work under the **Friday Building Base Bid** generally includes the following:
 - 1. Remove existing ballast, EPDM membrane, flashings and metal flashings and discard. Install new 2.6 inch polyisocyanurate insulation, 0.5 inch coverboard, and PVC membrane coping cap and all flashings and associated miscellaneous work as specified therein.
 - 2. Existing insulation shall remain in place except where wet/damaged, and replaced under unit price allowance.
- H. Work under the **Reese Building Base Bid** generally includes the following:
 - 1. Existing system to remain. Coat existing system with a reinforced coating system. Replace existing coping cap with new.
 - 2. Existing insulation shall remain in place except where wet/damaged, and replaced under unit price allowance.
 - 3. Installation of masonry sealer at walls above Area B.

1.4 START AND COMPLETION

- A. Refer to General Conditions, Article 23 – Time of Completion, Delays, Extension of Time.
- B. After Contracts are fully executed, a Notice to Proceed will follow within thirty (30) calendar days. Contract time in calendar days is based on the total of days for Base Bid and accepted alternates.
 - 1. Contract Time For Friday Building For Substantial Completion
 - Base Bid: 100 Calendar Days
 - Alternate No. 1 FB: 30 Calendar Days
 - Alternate No. 2 FB: 10 Calendar Days
 - 2. Contract Time For Reese Building For Substantial Completion
 - Base Bid: 45 Calendar Days
 - Alternate No. 1 RB: 30 Calendar Days
 - Alternate No. 2 RB: 30 Calendar Days
- C. Contractor's working hours are anticipated to be from 7:00 a.m. to 7:00 p.m. Monday to Friday.
- D. In the event the project extends beyond the contract period (including any extensions to contract, approved by Owner), Owner will back charge the contractor for fees and expenses attributable to additional services by Owner's consultants which are provided

solely as a result of the project being extended beyond the contract period. Owner may withhold monies attributable to these fees and expenses from contractor's requests for payment. Where liquidated damages are imposed as a result of the contract between the Owner and Contractor, these fees and expenses will be funded from the liquidated damage payments by the contractor. Owner may withhold monies attributable to these fees and expenses from contractor's request for payment.

- E. Liquidated damages will apply starting the first calendar day after the date established for final completion and will be assessed at a rate of **\$250.00** per day for each calendar day, until such time as all construction is complete and has been accepted by the Engineer.

1.5 OVERALL PROJECT COORDINATION

- A. The contractor shall coordinate all work of his contract to produce the required finished project in accordance with the contract documents. Special attention shall be given to the submission of shop drawings, product data, samples, color charts, and requests for substitution within the specified time; furnishing the proper shop drawings to subcontractors, products suppliers, and separate prime contractors for divided contracts, whose work and equipment is affected by and related thereto; and the furnishing of all information concerning locations, type, and size of built-in equipment and products and equipment utilities. This coordination is in addition to all other coordination requirements called for in the technical sections of the project manual and on the drawings.
- B. The General Contractor shall conduct all necessary coordination meetings with the Subcontractors to attain this coordination fully and effectively and to develop these coordination drawings.
- C. Coordination of Drawings shall be revised, to reflect as-build conditions, by the general contractor, and shall be provided electronically to the architect at the time of request for certificate of substantial completion.
- D. INSPECTION OF CONDITIONS: The Contractor shall require the installer of each component to inspect both the substrate to which it is to be installed and the conditions under which the work is to be performed. Do not proceed with the installation until unsatisfactory conditions have been corrected to meet the requirements of the component and its manufacturer.
- E. INSTALLATION INSTRUCTIONS: The Contractor shall perform the installation work in accordance with the Contract Documents and the manufacturer's installation instructions and recommendations, the more explicit or more stringent requirements governing.
- F. THE CONTRACTOR shall inspect materials and equipment immediately upon delivery and again prior to installation. Damaged and defective items shall be rejected and removed from the Project.
- G. THE CONTRACTOR shall provide attachment and connection devices and methods necessary for installing the work in a secure condition. Install work true to required line and levelness. Allow for expansion and building movement.
- H. VISUAL EFFECTS: The Contractor shall provide uniform joint widths in exposed work of the same material. Joints shall be arranged in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for a final decision.

- I. CONTRACTOR shall recheck measurements and dimensions before starting each installation.
- J. THE CONTRACTOR shall install each component during weather conditions and Project status that will insure the best possible results. Isolate each part of the completed construction from incompatible material to prevent deterioration.
- K. THE CONTRACTOR shall coordinate the installation of temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction work for inspection and testing.
- L. CLEANING AND PROTECTION: See supplementary general conditions. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply anon-damaging protective covering where required to insure protection of work from damage or deterioration until owner's acceptance of project.
- M. MAINTENANCE OF EXISTING SERVICES: Conduct construction operations so that heat, air conditioning, ventilation, electrical, telephone, gas, water, sanitary, storm sewer, and any other service required for the building operations, to the existing building are maintained at all times during normal working hours. Any shutdowns or interruptions shall be coordinated with and approved by the owner.

1.6 DESCRIPTION OF THE EXISTING SYSTEMS

- A. Information in this Section is provided only to establish general description and is not necessarily accurate. The Contractor is responsible for visiting the site and becoming satisfied as to the existing conditions, size of roof areas, etc. before preparation and submission of bid. Receipt of bid will be considered evidence Contractor has inspected roof or otherwise become satisfied on all details relating to the work.
- B. The existing roof systems are as follows:
 - 1. Reese:
 - a. Generally consists of a TPO membrane adhered on top of 3 inches of polyisocyanurate insulation adhered on top of a structurally sloped concrete deck.
 - 2. Friday:
 - a. On Roof Area A, the system generally consists of a ballasted EPDM membrane on top of 3 inches of extruded polystyrene rigid board insulation loose laid on 3/4 inch thick mineral perlite, a structurally sloped metal deck. There are locations of tapered insulation as indicated on the drawings.
 - b. On Roof Areas B, C, and D, the system generally consists of a ballasted EPDM membrane on tapered extruded polystyrene rigid board insulation loose laid on 3/4 inch thick mineral perlite on a concrete structural deck.
- C. Slope is as follows:
 - 1. Reese:
 - a. Approximately 1/8 inch per foot and is in the structural concrete deck.
 - 2. Friday:
 - a. On Roof Area A, slope is approximately 1/8 inch per foot and is in the metal deck.

- b. On Roof Areas B, C, and D, slope is approximately 1/8 inch per foot and is in the tapered insulation.
- D. Edge metal consists of aluminum coping on both buildings.
- E. Drainage is as follows:
 - 1. Reese:
 - a. Roof Area A consists of roof drains and overflow scuppers.
 - b. Roof Area B consists of a primary and overflow drain.
 - 2. Friday:
 - a. Roof Areas A, B, C, and D drain to primary and overflow drains.
- F. Flashings are as follow:
 - 1. Reese:
 - a. Flashings consist of TPO membrane.
 - 2. Friday:
 - a. Flashings consist of EPDM.
- G. Roof height above grade is as follows:
 - 1. Reese: Approximately 70 feet.
 - 2. Friday: Approximately 50 feet.
- H. Sizes of Roof Areas are as follows:
 - 1. Reese:
 - a. Roof Area A: 9,018 square feet
 - b. Roof Area B: 282 square feet
 - 2. Friday:
 - a. Roof Area A: 32,200 square feet
 - b. Roof Area B: 440 square feet
 - c. Roof Area C: 280 square feet
 - d. Roof Area D: 340 square feet

1.7 PROTECTION OF INSTALLED ROOFING MATERIALS

- A. ALL TRADES REQUIRING WORK to be done on installed roofing materials shall provide means for protecting the roofing materials and the General Contractor shall act as coordinator to ensure that the protection is provided. Protection for storage of materials, walking areas, and working areas shall be by sheets of 19 mm (3/4") thick plywood or an equal approved by the Architect. Protection from solvents, petroleum products, and other substances detrimental to the waterproofing membrane as listed by the membrane manufacturer shall be by drain buckets, properly wrapped unbroken containers, drop cloths, and plywood. Protection shall be afforded to all work areas and materials transportation and workmen access lanes to the work areas. In no case shall equipment, materials, and substances detrimental to the waterproofing membrane be stored on or allowed to come in contact with the installed waterproofing materials.

- B. This protection shall be provided for Roofing.
- C. To assure proper and accurate fit, all dimensions of existing facilities are to be considered approximate and installation dimensions shall be taken by the Contractor prior to ordering materials or initiating work.

1.8 PROTECTION OF EXISTING WORK

- A. SEE GENERAL CONDITIONS, ARTICLE 11.
- B. ALL CONTRACTORS are hereby reminded and cautioned that extreme care shall be exercised to protect the existing facilities from damage during the progress of the work. Any damage that occurs shall be repaired or damaged areas removed and replaced with new materials equal to the existing and to the owner's satisfaction without additional cost.
- C. The lawn in the material storage areas and elsewhere as affected by the contract shall be protected from unnecessary digging, trenching and rutting, and after completion of the work all holes, trenches, ruts, and other damage shall be filled in, graded, and made ready to receive new grassing. These areas shall be grassed to match existing as close as possible.

1.9 OTHER REQUIREMENTS

- A. The Designer shall conduct a preconstruction conference according to SCO requirements. A standard agenda (Word document) is provided at the NC State Construction Website: Preconstruction Conference Meeting Requirements & Agenda.
- B. The Designer shall conduct Monthly Progress Meetings as described in Section 111 of the NCDOA/SCO Blue Book. The meetings shall be conducted by the Designer's Project Manager. The agenda shall include the following elements (at a minimum):
 - 1. Distribution of a written agenda.
 - 2. Recognition of new personnel assigned to project.
 - 3. Confirm attendance by all contractors (circulate attendance sheet).
 - 4. Review minutes of previous meeting for corrections or omissions.
 - 5. Changes in Project personnel telephone numbers or pager numbers.
 - 6. Changes in Project personnel telephone numbers or pager numbers.
 - 7. Progress Report (percentage complete by each contractor).
 - 8. Report on HUB percentage participation on the project; calculated by dividing the contractor's HUB commitment (value) by the contractor's total contract.
 - 9. Long Term Schedule Projections (by each contractor).
 - 10. Review of weather-related delays for previous month.
 - 11. RFI's in progress.
 - 12. Review of Bulletin Drawing Log.
 - 13. Change Orders in Progress (Execution).
 - 14. Potential Change Orders.
 - 15. Accidents.
 - 16. UNC Charlotte Project Manager's Comments.
 - 17. State Construction Office Representative's Comments.
 - 18. Schedule Next Monthly Progress Meeting.
 - 19. Review of Diesel Equipment Logs.

- C. The Designer shall distribute written minutes of the monthly meetings within one week of the meeting. In general, the format of the minutes should include the topics listed in the agenda. Any revisions reported to the Designer, shall be entered and copies redistributed by the Designer no later than the following monthly meeting.
- D. Copies of the minutes will be made for all officials at the meetings. The Designer can deliver copies to each official's office or deliver a set to the University Project Manager who will then distribute them on campus. Minutes should be provided to the UPM for review within five working days after the meeting.
- E. Waste management goals and reporting will be discussed at:
 - 1. Pre-Bid Meeting
 - 2. Pre-Construction Meeting
 - 3. Regular Job Site Meetings
 - 4. See Section 3, Annex B for other supporting documentation in relation to the above.

1.10 PRODUCT SUBSTITUTIONS

- A. Products and systems specified are the absolute minimum quality standard and substitutions of lesser quality are not acceptable.
- B. REQUEST FOR SUBSTITUTION will not be considered verbally nor will approval be issued verbally. All requests for substitution shall be in written form as hereinafter stated and shall be transmitted through the bidding contractor with his concurrence.
- C. REQUESTS FOR SUBSTITUTION of products by, manufacturers other than those listed in or performance requirements specified in the sections of the specifications, addenda, and on the drawings, will be considered by the architect if received not later than 10 working days prior to the date for receipt of bids, not including any bid date extension, so as to allow a reasonable time for the evaluation of requests for substitution and the notification, by addendum, of all bidding contractors as to the approved and accepted substitutions.
- D. REQUEST FOR SUBSTITUTION:
 - 1. After Contract(s) is (are) signed, no substitutions will be evaluated by the Architect without compensation from the requesting Contractor to the Owner for cost of evaluation charged the Owner by the Architect/Engineer.
- E. ANY REQUEST FOR SUBSTITUTION which does not clearly show equality, to the architect's satisfaction, will be rejected. The burden of proof that the proposed substitution is equal to and meets the requirements specified and shown in the project documents including type, design, quality, operation, function, use, size, appearance, capability, electrical requirements, mechanical requirements, and manufacture shall be solely the responsibility of the bidding contractor through which the substitution was transmitted and thereby concurred with the substitution.
- F. REQUEST FOR SUBSTITUTION for a system and for each separate product item shall include: reason for substitution request; cost of both specified item and proposed substitution item; laboratory test reports; catalogs and drawings showing capacities, operations, functions, dimensions, construction details and methods of assembly;

connections; and installation to the work. If a proposed substitution of products, equipment, or systems have different dimensions or configuration than that which is specified and required, then the contractor proposing the substitution shall furnish full drawings and details verifying the suitability of the proposed substitution with respect to space provided, functional operation (including maintenance accessibility), and aesthetic values, as a condition precedent to acceptance of the substitution. If the proposed substitution is accepted by the owner, after architect's review, the contract sum will be adjusted by change order reflecting extras or credits involved. Should the request for a substitution be accepted, shop drawings and samples shall be submitted in accordance with the general conditions and supplements thereto. Substitutions of a minor nature not involving a change in the contract sum or the contract time may be approved by the architect, without referral to the owner, in accordance with general conditions of the contract, form oc-15, North Carolina Department of Administration; Article 21.

- G. MANUFACTURER'S LITERATURE which is readily available to the architect will not be acceptable for establishing proof of equality. Laboratory test reports shall have been performed by a nationally recognized independent testing laboratory which is known for its testing expertise. The laboratory test shall include type of materials used in the product including their thickness and strength, and a direct comparison to that specified for capacities, capabilities, coating, functions, life cycle usage, and operations. Where products will be exposed, and where systems will be used, no change in the architect's design and engineering intent will be allowed.
- H. IF PROPOSED SUBSTITUTIONS are accepted by the Owner, after Architect's review, the bidding Contractor's price may include prices reflected by the substitutions so indicated by Addendum.
- I. AFTER THE TIME FOR REQUESTING SUBSTITUTIONS has expired, requests for substitutions will be reconsidered, after signing of Contract, should circumstances arise that will be detrimental to the Project with respect to the time of completion and quality of performance as required by the Contract Documents. These circumstances shall be limited to strikes and other conditions beyond the Contractor's control. Request for reconsideration will be judged on the merit of each individual request.
- J. PRODUCTS PROPOSED FOR USE IN PROJECT: Within 20 consecutive calendar days after the Notice to Proceed, the Contractor shall furnish to the Architect for review, a complete list of products with manufacturers and suppliers of each that the Contractor will provide in the Project. This list shall be broken down into the Sections of the Project Manual. If an item is to be substituted, it shall be so noted and the request for substitution shall be submitted as hereinbefore called for. If an item is not listed and a request for substitution is not offered, then the Architect for expedience will select colors and finishes when preparing the color schedule and the Contractor shall match these colors. All materials installed by the Contractor shall be new. All materials shall meet NC State Building Codes and should there be any discrepancies between design and code, the more stringent requirement shall apply. All materials shall be in compliance with standards (or approved products) of the NC State Construction Office. Unless specified otherwise, NO PRODUCT CONTAINING ANY AMOUNT OF ANY FORM OF ASBESTOS SHALL BE INSTALLED AT UNC CHARLOTTE. ASBESTOS MEANS ASBESTIFORM VARIETIES OF CHRYSOTILE, CROCIDOLITE, AMOSITE, ANTHOPHYLLITE, TREMOLITE OR ACTINOLITE. BY DEFINITION, INSTALLATION OF ASBESTOS MATERIALS WILL BE CONSIDERED CONTRACTOR'S NEGLIGENCE AND THE CONTRACTOR SHALL

PERFORM ALL NECESSARY WORK TO REMOVE THE ASBESTOS AND RESTORE THE SITE TO THE "POST-CONTRACT" CONDITION.

- K. ALL REVISIONS resulting directly or indirectly from equipment, products, and systems to be provided, which have different characteristics from that which the Project was designed for, shall be the financial responsibility of the Contractor or Subcontractor providing the equipment, products, and system which caused the revision. For example: Should a unit of equipment require a utility supply of larger capacity, such increase required in the supply system and its related components, back to a point where an increase will not be required, shall be paid for by the Contractor or Subcontractor providing that unit of equipment.

1.11 DELIVERABLES

- A. Carolina at Charlotte Design and Construction Manual; Section 3, Annex J – UNC Charlotte VDC/BIM Requirements Implementation Plan”:
<https://facilities.charlotte.edu/business-opportunities/design-and-construction-manual>

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01100

SECTION 01210 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes the administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Unit-cost lump sums.
- C. Related Sections include the following:
 - 1. Division 1 Section “Unit Prices” for procedures for using unit prices.

1.3 PROCEDURES

- A. **Prior to the conclusion of the project, credit the amount of unused unit price lump sums to Owner by Change Order.**
- B. **Deductive amounts of unit price work included in the Proposal will be calculated at 100% of the quoted unit price.**
- C. **All unit price allowance work must be approved by the Owner prior to work being performed.**

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ALLOWANCES – FRIDAY BUILDING

- A. Include the following unit price lump sums in the proposal:
 - 1. Allowance No. 1: Replace 1000 bd. Ft. of deteriorated wood blocking.
 - 2. Allowance No. 2: Wire brush, prime and paint 1000 sq. ft. of metal decking.
 - 3. Allowance No. 3: Wire brush, prime and plate 500 sq. ft. of metal decking.
 - 4. Allowance No. 4: Replace 100 sq. ft. of damaged/deteriorated metal decking.

5. Allowance No. 5: Secure metal deck side laps with 100 fasteners.
6. Allowance No. 6: Secure metal deck to framing members with 100 fasteners.
7. Allowance No. 7: Replace 160 sq. ft. of damaged or deteriorated plywood.
8. Allowance No. 8: Replace 1000 sq. ft. of wet/deteriorated insulation.

3.2 ALLOWANCES – REESE BUILDING

A. Include the following unit price lump sums in the proposal:

1. Allowance No. 1: Replace 1000 sq. ft. of wet/deteriorated insulation.
2. Allowance No. 2: Tuckpoint 300 lineal feet of mortar joint.

END OF SECTION 01210

SECTION 01230 – ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems or installation methods described in the Contract Documents.
- B. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. The Contractor shall review all addenda, drawings, and specifications to fully appraise the extent of each Alternate.
- B. Reese Building:
 - 1. Alternate No.1 RB: Installation of fall protection davits and safety lines along perimeter of Roof Area A and along inner edge above Roof Area B.
 - 2. Alternate No. 2 RB: Removal and installation of new through-wall flashing at locations identified in Roof Area B.

C. Friday Building:

1. Alternate No.1 FB: Installation of fall protection davits and safety lines along perimeter of Roof Areas A, B, C, and D of Roof Areas B, C, and D.
2. Alternate No. 2 FB: Installation of fixed access ladders at locations indicated in drawings.

END OF SECTION 01230

SECTION 01270 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Division 1 Section “Unit Price Lump Sums” for procedures for using unit prices to adjust quantity unit price lump sums.

1.3 DEFINITIONS

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

1.4 PROCEDURES

- A. Include in unit prices all necessary material, plus cost of delivery, installation, insurance, taxes, overhead and profit.
- B. Contractor shall maintain a daily log showing dates, location, and exact quantities of unit price work. Copies of log and appropriate change order forms shall be submitted with each application for payment unless no unit price work is accomplished during the period covered by the application. Do not proceed with unit price repair work without approval from Owner and/or Engineer.
 - 1. For Change Orders involving Unit Prices, the Contractor will take measurements in the presence of the Owner’s Representative. All measurements and calculations shall be approved by the Owner’s Representative.
- C. Owner reserves the right to reject Contractor’s measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner’s expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices if included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

- E. All unit price work to be performed must be approved by Owner prior to performing the work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES – FRIDAY BUILDING

- A. Unit Price No. 1 – Replace damaged wood blocking.
 - 1. Description: Replaced damaged or deteriorated wood blocking according to Division 6, Section 06100.
 - 2. Unit of Measurement: Per board foot.
- B. Unit Price No. 2 – Wire brush, prime and paint metal decking.
 - 1. Description: Wire brush, prime and paint metal decking according to Division 7, Section 07000.
 - 2. Unit of Measurement: Per square foot.
- C. Unit Price No. 3 – Wire brush, prime and plate metal decking.
 - 1. Description: Wire brush, prime and plate metal decking according to Division 7, Section 07000.
 - 2. Unit of Measurement: Per square foot.
- D. Unit Price No. 4 – Replace damaged/deteriorated metal deck.
 - 1. Description: Replace damaged/deteriorated metal deck according to Division 7, Section 07000.
 - 2. Unit of Measurement: Per square foot.
- E. Unit Price No. 5 – Secure metal deck side laps.
 - 1. Description: Secure metal deck side laps according to Division 7, Section 07000.
 - 2. Unit of Measurement: Per fastener.
- F. Unit Price No. 6 – Secure metal deck to framing members.
 - 1. Description: Secure metal deck to framing members according to Division 7, Section 07000.
 - 2. Unit of Measurement: Per fastener.
- G. Unit Price No. 7 – Replace damaged/deteriorated plywood according to Division 6, Section 06100.
 - 1. Description: Replace damaged or deteriorated plywood.
 - 2. Unit of Measurement: Per square foot.

H. Unit Price No. 8 – Replace wet/damaged insulation according to Division 7, Section 07540 Thermoplastic Membrane Roofing.

1. Description: Replace wet/damaged insulation
2. Unit of Measurement: Per square foot.

3.2 LIST OF UNIT PRICES – REESE BUILDING

A. Unit Price No. 1 – Replace wet/damaged insulation according to Division 7, Section 07540 Thermoplastic Membrane Roofing.

1. Description: Replace wet/damaged insulation.
2. Unit of Measurement: Per square foot.

B. Unit Price No. 2 – Tuckpoint mortar joints according to Division 4, Section 04010 Brick Masonry Repair.

1. Description: Tuckpoint open, missing, deteriorated mortar joints
2. Unit of Measurement: Per lineal feet.

END OF SECTION 01270

SECTION 01290 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 1 Section “Allowances” for procedural requirements governing handling and processing of allowances.
 - 2. Division 1 Section “Unit Prices” for administrative requirements governing use of unit prices.

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

- A. Format and Content:
 - 1. Submit Schedule of Values in draft on AIA Document G703, “Continuation Sheet.”
 - 2. Include separate labor and material line items for all material components with a material value of more than \$2,000.00 or 5% of the Contract Amount (whichever is least).
 - 3. Include line items for the following items separating labor and material line items where applicable.
 - a. Performance and Payment Bonds
 - b. Mobilization
 - c. Demolition
 - d. Roof Coating
 - e. Roof Membrane
 - f. Roof Insulation
 - g. Meta Flashings/Coping
 - h. Wood
 - i. Site Cleanup

- j. Warranties
- k. Alternates
- l. Unit Price Allowance

- B. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
- C. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
- B. Initial Application for Payment and final Application for Payment involve additional requirements.
- C. Payment Application Times: Submit progress payments to Engineer according to the schedule established in the pre-construction meeting.
- D. Payment Application Forms: Use form AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal document on behalf of Contractor. Engineer will return incomplete applications without action.
- F. Match entries to data on the approved Schedule of Values.
- G. Include amounts of fully-approved Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- H. Include a retainage amount of five percent (5%) for the value of materials stored at the site and work executed.
- I. Transmittal: Submit four (4) signed and notarized original copies of each Application for Payment to Engineer.
- J. Include Manufacturer's Certificates of Compliance with applications for payment of materials. Request certificates from material suppliers at time materials are ordered.
- K. A payment or payments made to Contractor for work performed shall not constitute acceptance or approval of the work and shall in no way relieve Contractor from the requirements of the Contract.
- L. All sums received by Contractor for any part or parts of the work furnished or performed by a Subcontractor shall be paid promptly to the latter by Contractor and while in the hands of Contractor shall constitute trust funds held for the use and benefit of Owner.

- M. If payments are to be made on account of materials or equipment not incorporated in the work but delivered and suitably stored at the site, or at such other location agreed upon in writing, submit bills of sale or other documents satisfactory to Owner establishing Owner's title to such materials or equipment or otherwise protecting Owner's interest therein including the prepayment of applicable insurance and transportation charges to the site.
- N. Contractor warrants and guarantees the title to all work, materials and equipment covered by an invoice, whether or not incorporated in the work, will pass to Owner upon Contractor's receipt of the payment covering such work, materials and equipment, free and clear of all liens or other similar or dissimilar encumbrances in any way affecting Owner's title thereto.
- O. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- P. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. List of Contractor's staff assignments.
 5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 6. Initial progress report.
 7. Report of preconstruction conference.
 8. Certificates of insurance and insurance policies.
- Q. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- R. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01290

SECTION 01330 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples and other miscellaneous submittals.
 - 1. Division 1 Section “Payment Procedures” for submitting Applications for Payment and the Schedule of Values.
 - 2. Division 1 Section “Closeout Procedures” for submitting warranties.
 - 3. Division 7 Section for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

- A. Shop Drawings: Drawings, diagrams, illustrations, schedules, performance charts, brochures and other data prepared by Contractor or any Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor which illustrate some portion of the work.
- B. Samples: Physical examples furnished by Contractor to illustrate materials, equipment or workmanship and establish standards of work.

1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate the schedule for submittal of shop drawings and samples with progress schedule and the requirements of the Contract. Failure to schedule and submit shop drawings and samples in ample time for checking, correction and rechecking will not justify any delay in the timely performance of the work.
- B. Processing Time: Allow sufficient time for an orderly review with reasonable time for checking, correction, and rechecking corrections, as well as returning the approved or rejected shop drawings and samples to Contractor and, in turn, any Subcontractor.
- C. Identification: Provide each submittal with the following information:
 - 1. Owner’s and Engineer’s respective project numbers.
 - 2. Date of submittal.
 - 3. Submittal number.
 - 4. Title of project.
 - 5. Name of Contractor and date of Contractor’s approval.

6. Name of Subcontractor or supplier and date of submittal to Contractor.
 7. Reference to Specification Section and Paragraph and/or Drawing Number.
 8. The specific location of that portion of the work covered by the submission.
 9. Any qualification, departure or deviation from the requirements of the Contract.
 10. Any additional information required by the Specifications for the particular material being furnished.
- D. Provide a space on each shop drawing for the approval stamps of Contractor, Engineer and Engineer's sub-consultants, if any.
- E. Transmittal Form: Use form of transmittal contained at the end of this Section, or a similar form containing the same information.
- F. Numbering: Number each submittal. Retain numbering system throughout all revisions.
- G. Submit all associated shop drawings relating to a complete assembly at the same time, where possible, so that each may be checked in relation to the entire proposed assembly.
- H. Prepare composite shop drawings and installation layouts, when required, to depict proposed solutions for tight field conditions. Coordinate composite shop drawings and field installation layouts in the field with Subcontractors for proper relationship to the work of all other trades involved in the work.
- I. Prior to submission, review, affix a stamp on, and indicate approval of all shop drawings and samples. Determine and verify field measurements and availability of the material, and coordinate each shop drawing and sample with requirements of the Contract.
- J. With respect to standard manufactured items, submit manufacturer's illustrated cuts of the items to be furnished showing details, sizes and dimensions and all other pertinent information. Furnish sufficient copies of cuts so that Engineer may retain a minimum of three (3) copies of such cuts and return to Contractor the number of copies required for Contractor's use and distribution.
- K. For all other shop drawings, submit a minimum of three (3) black and white prints of each drawing. The drawing will be returned to Contractor after review, comment and stamping by Engineer.
- L. Engineer will review Shop Drawings and Samples to determine conformance with the design concept of the Project and with the information given in the Contract. Engineer's approval of a separate item shall not be construed to mean approval of the assembly of which such item is a part.
- M. Engineer's approval of Shop Drawings or Samples shall not relieve Contractor of responsibility for any deviation from the requirements of the Contract unless Contractor has informed Engineer in writing of such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall Engineer's approval relieve Contractor from responsibility for errors or omissions in the shop drawings or samples.
- N. Make corrections required by Engineer and resubmit corrected copies of shop drawings or new samples until approved. Direct specific attention in writing, or on resubmitted shop drawings, to revisions other than the corrections required by Engineer. The number and distribution of copies shall be the same as in Contractor's first submission.

- O. In the event that Engineer shall mark shop drawings “approved” or “approved as noted,” make such corrections, if any, as may be noted. Correction shall be made on, and prints for final distribution shall be made from, the drawings bearing Engineer’s notations and impress stamps. Final distribution of prints shall be made by Contractor.
- P. Do not commence any portion of the work requiring a shop drawing or sample until the submission has been approved by the Engineer. All such portions of the work shall be in accordance with approved shop drawings and samples.
- Q. Do not commence any work which will result in structural changes in walls, steel, floors and masonry prior to Engineer’s written approval. Fully describe all details of methods, shoring and bracing in submission for such work.

1.5 LIST OF PROJECT SUBMITTALS

- A. Refer to attached Project Document Checklist for a list of submittals that will be required for submittal by contractor and approval by Engineer prior to start of work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

SUBMITTALS

- Materials List
- Materials Certificate of Compliance
- Manufacturer's Application Procedures
- Copies of Authorizations and Licenses from Authorities having jurisdiction
- AIA Document G703, Schedule of Values
- Material Safety Data Sheets
- Schedule for Removal and Installation
- Written Safety Procedures
- Documentation of Existing Conditions
- List of Subcontractors
- List of Contractor Staff Assignments and Qualifications

END OF SECTION 01330

SECTION 01400 – QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 CONTRACTOR EMPLOYEES

- A. None but skilled foremen and workmen shall be employed on work requiring special qualifications. Any person employed on the work who fails, refuses or neglects to obey the instructions in anything relating to this work, or who appear to be disorderly, insubordinate, unfaithful or incompetent, shall upon the order of the Owner be at once discharged and not again employed on any part of the work. Any interference with, or abusive or threatening conduct toward the Engineer or his assistants by the Contractor or his employees or agents, shall be authority for the Owner to annul the Contract and re-let the work.
- B. Fraternalization with staff and students is strictly prohibited. Contractor personnel engaging in such behavior will be removed from the project site immediately.
- C. All Contractor personnel shall use Contractor-provided restroom facilities within staging area. Use of Owner's facilities is strictly prohibited.

1.3 JOB SUPERINTENDENT

- A. For the purposes of these Specifications, the designation of "superintendent" is hereby defined as the individual present on the job site at all times work is being performed and whose primary responsibility is to supervise and direct the performance of the work.
- B. The superintendent shall not be changed except with the consent of the Owner and Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employment.
- C. The superintendent shall be in attendance at the project site at all times during the progress of the work and his duties as superintendent shall be limited to this project only. The superintendent shall supervise and instruct workmen without engaging in the work process. Should the superintendent be absent temporarily from the project at any time, he shall designate a competent foreman to assume his duties. During the superintendent's absence, the foreman shall not engage in the work process but shall supervise and instruct only. Likewise, any communications given to the foreman shall be as binding as if given to the Superintendent or Contractor.
- D. The superintendent shall have had a minimum of five (5) years' continuous experience as a job superintendent on projects of similar size and scope.

- E. Superintendent must be capable of communicating fluently and effectively with crew members. Owner and/or Engineer reserves the right to postpone work if deemed necessary. Superintendent must be accessible by cell phone at all times.
- F. Superintendent shall keep one set of the contract documents on the job site at all times.

1.4 INSPECTION

- A. Before work under this Specification is started, inspect the deck and surfaces. Make corrections necessary to make the deck and surfaces acceptable prior to start of work. Daily photographic documentation of the existing deck condition is required.
- B. Owner will provide inspection during the work. Such inspection may be periodic or daily.
- C. The words “supervise” and “inspect” wherever used herein in connection with the duties or activity of the Engineer shall in no way, expressed or implied, relieve the Contractor from his responsibilities for the safety of the workmen, the preservation of the work or proper performance under this Contract. The Engineer shall not be responsible for the safety of the workmen, the safeguarding of the work, or the proper performance of the Contractor.
- D. No Inspector shall have the power to waive the obligations resting upon the Contractor to furnish good material and do good work as herein prescribed. Any failure or omission on the part of any Inspector or the Engineer to condemn any defective material or work shall not release the Contractor from the obligation to at once tear out, remove, and properly replace or rebuild the same at any time upon discovery of the defect and upon notice from the Owner or Engineer to do so.
- E. Work found to be in violation of specifications or not in accordance with established workmanship practices and standards will be subject to complete removal and proper replacement with new materials at Contractor’s expense.
- F. Remove materials stored on site which are marked by the Inspector, Engineer or Owner as not meeting the requirements of the contract documents.
- G. Failure of Owner or Engineer to discover or reject defective work, or work not in accordance with the Contract, shall not be deemed an acceptance thereof, nor a waiver of Owner’s rights to Contractor’s compliance with the Contract or performance of the work, or any part thereof. No partial or final payment, or partial or entire occupancy, by Owner shall be deemed to be an acceptance or work or of material which is not strictly in accordance with the Contract, nor shall it be deemed to be a waiver by Owner of any of Owner’s rights pursuant to this Contract or otherwise.

1.5 SUBCONTRACTORS

- A. Use of Subcontractors to accomplish such miscellaneous or associated work as roof repairs, structural modifications, plumbing, relocation of conduit, service piping and/or HVAC equipment, etc. is permitted.

1.6 MANUFACTURER'S INSPECTIONS

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

1.7 QUALITY CONTROL PLAN

- A. The Contractor is responsible for quality control and shall establish and maintain an effective quality control system. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest-level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the owner, and shall be responsible for all construction and construction related activities at the site.
- B. The Contractor shall furnish for review by the designer, not later than 20 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The owner will consider an interim plan for the first 20 days of operation. The first application for payment will be processed only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. The second application for payment will not be processed until acceptance of the contractors CQC Plan.
- C. The Contractor shall have a Qualified and Competent Supervisor present whenever workers are performing work. The Supervisor shall notify the Designated Designer's Representative of the work schedule for each day prior to initiating work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01400

SECTION 01500 – TEMPORARY FACILITIES, CONTROLS AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

- 1. See Article 40 – Utilities, Structures, Signs of the General Conditions.

1.2 SUMMARY

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

1.3 SUBMITTALS

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

1.4 TEMPORARY UTILITIES

- A. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
- B. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.
- C. Lunchroom Facilities: On-site facilities are not available to Contractor personnel.
- D. FIRE PROTECTION: The General Contractor and each Prime Contractor or Prime Subcontractor shall establish and maintain a Project fire protection program and procedure to be followed in the event of fire.
- E. TEMPORARY SANITARY FACILITIES: The General Contractor shall provide and maintain self-contained, chemically treated, temporary toilets adequate for the accommodation of all persons engaged on the work. Temporary toilets shall be enclosed and weatherproof and shall be kept in sanitary condition at all times. As soon as conditions of work will allow a temporary toilet within the building shall be provided. This toilet shall be equipped with a temporary water closet fixture and connections to sewer. All temporary toilets shall be in accordance with the regulations of the authorities having jurisdiction.
- F. BARRIERS: Shall be provided by the General Contractor.

1.5 PROTECTION OF BUILDINGS AND PROPERTY

- A. Note that building will remain partially occupied during work. Take all precautions necessary to protect building, contents and personnel from damage or injury from operations and from water entry into the building during construction. Keep dust and dirt to a minimum.
- B. At conclusion of each day's work, carefully inspect work including temporary daily tie-offs to ensure system is completely water-tight, all stored materials are suitably protected from the weather and all equipment is stored in such a manner as not to interfere with facility operations.
- C. On normal workdays when no work is accomplished due to inclement weather or other reasons, visit the site no later than normal start time and verify that the system is completely water-tight, all stored materials are suitably protected from the weather and all equipment is stored in such a manner as not to interfere with facility operations. Be prepared to implement emergency repairs as necessary to prevent leakage into the facility.
- D. Prior to starting work, obtain approval from Owner for locations of work operations at ground level, such as material storage, hoisting, dumping, etc. Restrict work to approved locations
- E. Prevent any work which could reasonable be deemed to be hazardous from taking place over or adjacent to occupied areas. Coordinate with the Owner the vacating of such affected areas of all occupants and give the Owner adequate notice to allow time to comply. Post a watchman inside the building in the affected area(s) at all times during the work to ensure no one enters or remains in the affected area(s).
 - 1. Ensure any solvents or materials that produce odors are stored away from intakes and ventilators.
- F. Remove debris and other material from the site in a timely manner to minimize accumulation.
- G. Owner reserves the right to judge whether or not debris is being removed in a timely manner. In the event debris is not removed from the site as required to maintain the site in a manner acceptable to the Owner, the Owner reserves the right to engage other contractor(s) or its own forces to clean the areas and deduct costs of such operations from this Contract.
- H. Protect grounds and landscaping from damage. In the event of damage, restore damaged property to a condition equivalent to that at time of start of operations.
- I. Document all existing damage to facility prior to beginning work and produce documentation acceptable to Engineer/Owner prior to starting work. Damage discovered during the project which was not documented and which is not clearly the responsibility of others may be presumed by the Engineer/Owner as the responsibility of the Contractor. Documentation may be in the form of written statements and/or drawings but must also be supported with photographs and/or video tape supplied by the Contractor.
- J. TEMPORARY CONSTRUCTION FENCE: A metal 2438 mm (8') high fence with locked vehicle gates and locked pedestrian gates shall be erected as indicated and maintained.

Vehicle gates shall be located as close as possible to any required permanent vehicle entry to the area. Before Project final review, this temporary fence and its foundations and appurtenances shall be removed from the site, and all resulting post holes and damage and disfiguration to the site repaired to the satisfaction of the Owner and any other parties involved.

1. Fencing shall be chain link fabric with posts and top rails of pipe sections and a bottom wire. Fabric shall contain a dark green mesh for screening.
- K. Implement related safety provisions imposed by local fire marshals, etc. Determine what procedures will be acceptable prior to submitting a bid or proposal.
- L. Initiate, maintain and supervise all safety precautions and programs in connection with the work. Take all necessary precautions for the safety of, and provide the necessary precaution to prevent damage, injury or loss to:
1. All employees on the work and other persons who may be affected thereby.
 2. All the work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
 4. Comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. Remedy all damage, injury or loss to any property caused, directly or indirectly in whole or in part, by the Contractor, and Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.
- M. TREE AND PLANT PROTECTION: Contractors are hereby reminded and cautioned that care shall be exercised to protect trees and plants which are to remain during the progress of the Project. Suitable barriers shall be provided around all trees and plants that are to remain and which are in the construction area and product handling area. All damage to such trees and plants shall be repaired; broken limbs properly and neatly pruned and painted with pruning paint; all trunk damage neatly dressed and painted with pruning paint. Any trees and plants which are excessively damaged shall be replaced in like, kind, size, and species by the Contractor at no additional cost. All work shall be by a recognized and approved nursery.
1. All grading around trees and plants to remain shall be such that the root system shall not be disturbed. Earth shall not be temporarily piled around trees and plants, nor shall earth be graded to the trees and plants above the natural root depth for that particular species.
 2. Established trees and plants, which are in the way of construction and which are in the material handling areas, shall be removed and stored for future replanting. The services of a recognized and approved nursery shall be employed to remove the trees and plants and prepare them for storage. Removed trees and plants shall be properly balled and burlapped in accordance with their size. During the time of storage, they shall be properly watered and cared for in accordance with the instructions from the nursery. After the construction work is completed, the stored trees and plants shall be replanted, and those trees and plants not replanted shall be disposed of as directed by the Owner.

- N. PROVIDE AND MAINTAIN SUITABLE TEMPORARY sidewalks, closed passageways, fences, or other structures required by law so as not to obstruct or interfere with traffic in public streets, alley ways, or private right-of-way. Leave an unobstructed way along public and private places for pedestrians and vehicles.
- O. PROVIDE WALKS over and around all obstructions in public places. Maintain from the beginning of twilight, through the whole of every night, sufficient light and guards to protect persons from injury.
- P. LEAVE ACCESS TO FIRE HYDRANTS. Should these hydrants be susceptible to damage caused by the operations of this Contract, they shall be protected by means approved by the governing authority.
- Q. TEMPORARY EGRESS: Provide emergency egress from existing occupied areas at all times as required by authorities having jurisdiction. Maintain egress path in compliance with requirements of North Carolina State Building Code requirements.

1.6 ACCESS ROADS AND PARKING AREAS

- A. THE GENERAL CONTRACTOR shall provide and maintain for the duration of the Contract, a graded and graveled site access road for the use of himself, his Subcontractors, his product suppliers, and Prime Contractors as the case may be. Additional access ways shall be furnished and maintained to the product storage areas and the work itself. All access roads and ways shall be properly maintained for passage during all weather conditions while work is being performed.
- B. ADDITIONAL ACCESS ROADS AND PARKING AREAS shall be furnished and maintained during all weather conditions for the use of the Owner, Owner's visitors, and other persons and services having proper business at the Project until permanent roads and parking areas are provided.
- C. SHOULD ACCESS ROADS not be located for permanent roads, they shall be removed, prepared for grassing, and grassed. Otherwise, they shall be prepared for permanent roads.

1.7 CONNECTIONS AND DISCONNECTIONS

- A. In the event it is necessary to disconnect any electrical wiring or connections, plumbing lines or other building services, notify the Owner. Do not disconnect or connect services unless authorized in writing by Owner.
- B. Include in Base Bid all costs required for modification of existing service piping, wiring and duct work required in connection with the lifting, removal or relocation of roof-mounted equipment.
 - 1. Refer to Drawings for locations included in scope of work.
 - 2. HVAC equipment on Friday Building will require drain and refill of refrigerant, which will be accomplished by University staff. Contractor will be required to coordinate roofing work with the University. Not more than one (1) unit can be taken offline at one time.

- C. All associated work is to be accomplished by appropriately licensed personnel in accordance with all applicable codes and regulations.
- D. Review roof-top equipment usage with Owner and facility user at beginning of project. Disable equipment determined to be essential to the operations of the facility only at those times prescribed by the Owner. This may require work to be done at other than normal operating hours.
- E. ALL ELECTRICAL WORK shall be in accordance with Division 16 and applicable codes.
- F. ALL HEATING, VENTILATING, AND AIR-CONDITIONING WORK shall be in accordance with the HVAC Sections of Division 15 and applicable codes.
- G. ALL PLUMBING WORK shall be in accordance with the Plumbing Sections of Division 22 and applicable codes.

1.8 CONTRACTOR SITE ACCESS AND USE OF PREMISES

- A. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
 - 2. Driveways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Use of Existing Building: Repair damage caused by construction operations. Protect building and its occupants during construction period.
- C. The Contractor shall use only the following roads on campus to the construction entrance:
 - a. Reese Building: Camerone Blvd. from Johnson Alumni Way or University City Blvd. to University Loop Road to the Construction Entrance.
 - b. Friday Building: Mary Alexander Road from Mallard Creek Church Road to the designated Construction Entrance.
 - 1) Each Contractor must coordinate materials deliveries to the project site without recourse to University staff assistance. Shipping documents must contain complete delivery instructions to include a site location, Contractor name, and telephone number for the delivery truck driver's use. In case of fire, medical, ambulance or safety concern dial 911.
 - a) Deliveries to the construction site or Reese or Friday Building shall be completed before 8:00 a.m. or started after 6:00 p.m. Monday through Friday. If special or weekend deliveries are needed, coordinate with the University Project Manager (UPM).
 - 2) Each Contractor using a yard hydrant, wall hydrant or hose bib must use the proper key or handle. A key or handle may be borrowed from Facilities Management. Damage from misuse or abuse will be billed to

- the offending Contractor. Fire hydrants will not be used for water supply (case-by-case exceptions may be made by Facilities Management if no other water is available).
- 3) The Contractor shall take reasonable effort to protect existing surfaces, roadways/haul routes, parking lots, finishes, and adjacent facilities from damage during construction. Prior to construction, the Contractor may initiate a Pre-Construction meeting with the Designated Representative to perform an inspection to record damaged existing conditions. Each Contractor will ensure that vehicles and equipment are not loaded beyond their rated Gross Vehicle Weight, or other load restrictions. Vehicles operating on the Campus must comply with all State weight and axle restrictions. Contractors will be held responsible for repair of damage caused by their vehicles. When hauling material consisting of any form of stone, rock, dirt, debris or concrete the material shall not be piled or placed any higher than the sides of the hauling vehicle without written authorization of the University Project Manager.
 - 4) If Contractor intends to install a physical security alarm system, prior to coordination must be accomplished with Public Safety via coordination with the University Project Manager.
 - 5) All equipment must be secured when Contractor staff is not on-site. Each contractor must accept responsibility for physical security of tools, equipment, materials and other property on-site. The construction fence must be maintained and signed to prevent casual entry into the site.
 - 6) Contractors can work 24 hours per day, 7 days per week, except on Saturday during spring and winter commencements, provided the general contractor's superintendent is on site. Other restrictions apply near housing areas.
 - 7) Each Contractor is responsible for employee conduct and behavior on Campus. Harassment, verbal abuse, and other such behavior toward students, faculty, staff, or the public will not be tolerated. Radios and other sound sources are not allowed on the project. All employees are required to wear shirts.
 - 8) Each Contractor (and all Contractor employees) must comply with University Traffic Regulations and Emergency Procedures Manual. All North Carolina motor vehicle laws apply on Campus, including registration and inspection requirements. The University reserves the right to direct the route of all hauling on University property. There shall be no additional payment related to the route being selected or modified by the University. Factors such as traffic disruption, soiling of street, and detriment of pavement will be considered.
 - 9) All materials, equipment, vehicles, and employee vehicles must be contained within the limits of construction. Parking is extremely limited on Campus. Vehicles shall be parked in assigned areas to be arranged with the UPM. Vehicles must display temporary parking permits which will be provided by the UPM. Vehicle operators shall comply with all traffic and parking signs. Parking on sidewalks or lawns for loading and unloading may be arranged on an individual basis, but only after coordination with the UPM or University Construction Manager.
 - 10) Weapons are prohibited on Campus.
 - 11) Prior to any excavation at any location by any Contractor, the Contractor must coordinate with Facilities Management to establish all utility locations. A University representative in company with the Contractor's

representative will locate and mark location of utilities on the ground. The Contractor remains responsible for protecting existing utilities from damage.

- 12) Contractors will maintain safe pedestrian ways around the project site. Walkways and roads will not be blocked.
- 13) To the extent herein described there is no charge to Contractors for University provided utilities. The University will provide power at no cost for office trailers and small tools. The University will identify utility sources and the contractor will be responsible for all costs associated with tie-in, metering, and distribution. Hot and cold water for HVAC equipment, if available, shall be metered by the contractor. Contractor will be invoiced monthly at the current rate.
- 14) Utilities outages must be coordinated with Facilities Management at least 30 days prior to the period of the outage. For some critical circuits, longer lead times may be necessary.
- 15) Contractors must provide all labor, materials, tools, and equipment to accomplish the work. The University will not furnish or loan anything except as contract documents indicate. No Contractor shall use any facility beyond the limits of construction.
- 16) Added items to be provided to the Contractors by the University:
 - a) Campus Telephone List
 - b) Facilities Management Telephone List
 - c) Campus Map
 - d) UNCC Emergency Procedures Manual
 - e) UNCC Traffic Regulations
- 17) The Contract Documents may specifically identify certain existing materials and items which are to be delivered to the Owner. For any other materials removed in the course of the Work, the Contractor shall first offer them to the Owner; if not accepted, the Contractor shall remove them from the Project. Any materials which are paid for under the Contract, but not incorporated into the Work due to Change Orders or for other reasons, shall be similarly offered to the Owner.

1.9 LOGISTICS PLAN

- A. PRIOR TO MOBILIZATION AND CONSTRUCTION: Contractor shall submit Logistics Plan to Designer and University Project Manager (UPM). Plan to include procedures, arrangements, maps, and diagrams as needed. Logistics Plan shall address and document the following:
 1. Site Access Route (roads entering campus, roads used to go through campus, and routes to work site).
 - a. Flagmen are required for any intersection of a pedestrian route with contractor's site access route to the construction site.
 2. Site Access Location(s) and Construction Entrance.
 3. Contractors must limit parking of company vehicles and storage of materials to within the limits of the construction site and laydown area, or in an area designated in consultation with UPM. Locations shall be shown on Logistics Plan.
 - a. Two vehicle parking passes will be provided to the General Contractor for their daily use for duration of project and must always be displayed. General Contractor logo must be visible on the vehicle while on campus.

- b. Exact parking location of these two vehicles shall be designated by the Designer & UPM and shown on Logistics Plan.
- c. All other construction and personal vehicles can park at the Starlight Cinema parking lot, located at 11240 US HWY 29, 11240 N Tryon Street, Charlotte, NC, 28262, or as otherwise coordinated with University Project Manager (UPM).
4. Laydown area boundaries must be defined within the construction site (limits of construction as identified on plans).
5. Storage of dumpster, contractor trailer, construction material & equipment storage, and storage unit shall be limited to the laydown area, or in an area designated in consultation with UPM.
 - a. The location of the dumpster shall be designated by Designer and UPM and shown on Logistics Plan.
 - b. A storage unit shall be placed with Reese or Friday Building for the duration of project. Exact location shall be designated by Designer and UPM and shown on Logistics Plan.
6. Temporary sanitary facility locations shall be shown on Logistics Plan. Refer below to Part 10.13 B of Construction Facilities and Temporary Controls.
7. Temporary Construction Fence locations shall be shown on Logistics Plan. Refer below to Part 10.13 D of Construction Facilities and Temporary Controls.
8. Traffic Movement and Interruptions, Detour Plans and Signage:
9. If pedestrian walkways are affected because of project construction, a proposed plan shall be submitted to re-route pedestrians around the site and shall include and maintain all ADA accesses as designated by the Designer. Logistics Plan shall be updated to show accepted re-routing. Signage and location of signs for the pedestrian walkways shall be designated by Designer, shown on Logistics Plan, and provided by contractor. All signage shall be submitted to the UPM for approval.
 - a. Road and sidewalk blockages shall be scheduled fourteen (14) days in advance to including appropriate detours to accommodate handicapped access and implemented only after Designer and University Project Manager (UPM) approval. No excavations shall take place prior to placing proper barricades, lighting, and other devices as required. Contractor shall install warning signs, barricades, and detour information signs to maintain traffic flow as directed by Designer and UPM. If required, flagmen shall direct traffic around the construction or detour areas. Contractor shall make requests for approval for any street, alley, driveway, or any access way to be closed at least ten (10) workdays prior to the date for desired closing. Contractor shall not close any street, alley, driveway or access-way without prior approval by UNC Charlotte Logistics Plan must be updated as changed occur.

1.10 CONTRACTOR'S SAFETY GUIDE

- A. General: It is University policy to provide a working, teaching, and learning environment as free as possible of recognized hazards to the safety and health of students, faculty, staff, and visitors. All Contractors are required to comply with that policy. All safety, health, and fire protection rules, regulations, policies, and procedures that apply to UNC Charlotte personnel shall also apply to Contractors and their employees. Prior to initiating any contractual operations, the Contractor's on-site supervisors shall become thoroughly familiar with UNC Charlotte safety rules, procedures, emergency and disaster instructions plus all applicable state and federal safety and health regulations. Contractor shall

establish and maintain a functioning safety program including safety meetings and site inspections for the purpose of controlling unsafe acts and conditions at the work site.

- B. Please refer to webpage for contract safety program: <http://safety.uncc.edu/contractors>.

1.11 UNIVERSITY SAFETY OFFICE REQUIREMENTS

- A. The following requirements have been established by the University Safety Officer:
1. In case of fire, medical, ambulance, or safety concern dial 911 (off campus line 704-687- 2200).
 2. Hazard Communication notifications will be made to extension 2200.
 3. Notify UNC Charlotte of any hazardous or unusual operation.
 4. Notify UNC Charlotte of any impairment of fire protection.
 5. Barricades must be erected at a safe distance (at least 6 feet) from the perimeter of construction areas.
 6. A chemical spill prevention plan must be in effect.
 7. Accomplish regular removal of scrap and debris.
 8. All welding, cutting, or hot work must comply with appropriate safety standards.
 9. No parking on sidewalks except as necessary during a specific task.
 10. Designate a safety and health coordinator for the project or assign that responsibility to the on-site superintendent.
 11. Comply with UNC Charlotte posted "No Smoking" rules.

1.12 FACILITIES MANAGEMENT DEPARTMENT SAFETY REQUIREMENTS

- A. Care shall be taken to protect all persons in the vicinity from injury and undue inconvenience. Contractor shall provide & maintain pedestrian and vehicular barricades as necessary for the situation.
- B. Pedestrian barricades shall be constructed of continuous temporary fencing completely containing the work area.
- C. Fencing shall be erected with sturdy bracing and shall extend from the ground to a minimum of 48" high and shall meet all ADA requirements for barricading for the visually impaired.
- D. Continuous, plastic mesh, orange safety fencing is acceptable. If the barricade blocks an existing pedestrian sidewalk, the contractor shall properly mark an alternate route by installing and maintaining neat legible signs. "Alternate Route" signs may be required at locations outside the Construction Limits.
- E. All workers and traffic control personnel shall wear "safety orange" vests or shirts while performing work in streets, parking lots, or other areas where there may be vehicular traffic.

1.13 SECURITY

- A. Each contractor shall be responsible for security and protection to his equipment and the site- stored and installed products under his jurisdiction, at all times whether paid for by the owner or not, until the owner accepts the project.

- B. CONDUCT CONSTRUCTION WORK so that the owner's existing building can be locked securely at all times when it is not normally opened. All temporary outside walls and barriers shall be constructed so they will be reasonably tamperproof.
- C. CONTRACTORS shall provide identification for their vehicles and all employees on this project. Identification methods shall be approved by the owner. The contractor shall be held responsible for each of his employees wearing the identification while on the project.
- D. Except for communication devices, no radios or other sound-emitting devices not directly associated with the work will be operated by the workers at the job site. All workers will behave in a polite manner and all workers will wear shirts and shoes when on campus. Workers are not to make any comments or gestures to any University personnel, students, or guests. Workers are permitted to smoke in designated smoking areas. Workers not complying with these requirements will not be allowed to work and may be instructed to vacate the work site. If workers are restricted from working, such restriction(s) shall not alter the terms of the contract.

1.14 FIRST AID KITS

- A. Each Prime Contractor and each Prime Subcontractor shall provide adequate provisioned first aid kits on the Project site for personnel employed by him and for the convenience of workmen employed by their Sub-subcontractors.

1.15 MATERIAL AND EQUIPMENT (SEE GENERAL CONDITIONS, ARTICLE 8).

- A. NEITHER THE OWNER NOR THE ARCHITECT WILL BE RESPONSIBLE FOR ANY ORAL INSTRUCTIONS BY OR ANY WRITTEN CONFIRMATIONS OF ANY ORAL INSTRUCTIONS FROM THE CONTRACTOR, SUBCONTRACTOR, PRODUCT SUPPLIERS, ETC.

1.16 DIESEL EMISSIONS REDUCTION STANDARDS

- A. Applicability: This guideline applies to any person or business that owns or operates any diesel fueled compression ignition vehicle engine, 25 horsepower or greater, that is used to provide motive power at any UNC Charlotte construction site or project location.
- B. No vehicle or engine subject to this standard shall idle for more than five consecutive minutes, except as allowed below. The idling limit does not apply to:
 - 1. Idling necessary to ensure the safe operation of equipment, including idling to ensure the equipment is in safe operating condition and equipped as required by provisions of law, either as part of daily equipment inspection or as is otherwise needed.
 - 2. Idling required to bring the machine system to operating temperature.
 - 3. Idling when queuing if said queuing requires intermittent movement forward to perform work or a service, when shutting the engine off would impede the progress of the work or would otherwise be impractical to the queuing. This does not include the time an operator may wait motionless in line before the start of the workday or prior to the opening of a location where work or service will be performed; or
 - 4. Idling of any vehicle being used in an emergency or public safety capacity.

- C. Idling of a vehicle or engine that is owned by a rental company or third party is the responsibility of the renter, lessee, or other responsible operator.
- D. Equipment subject to this standard must be located away from sensitive receptors (building fresh air intakes, entrances to facilities, enclosed occupied areas, etc.).
- E. Equipment subject to this standard is required to meet or be modified to meet Tier 4 Emission Requirements as set forth by the EPA.
- F. Enforcement: It shall be incumbent upon the General Contractor to keep appropriate logs and data to validate the enforcement of this standard. For the purpose of inspecting and reporting equipment or to question compliance with these regulations, any individual has the right to observe, inquire and report any perceived violation of this standard.
- G. UNC Charlotte reserves the right to discharge without prejudice any tier contractor that willfully and knowingly violates the provisions of this guideline, with no additional payment for termination being due to the offending party.
- H. Nothing in this standard is intended to allow idling in excess of any applicable law, including but not limited to any local ordinance or requirement as or more stringent than this standard.
- I. The General Contractor shall be responsible to maintain a log of all equipment meeting the intent of this standard as soon as it is on the project site. Minimal documentation required shall be make, model and serial number of the equipment (and or engine) along with the rated horsepower.

1.17 OWNER'S OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01500

SECTION 01732 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Removals
- B. Related Sections include the following:
 - 1. Division 1 Section "Allowances."
 - 2. Division 1 Section "Unit Prices."
 - 3. Division 7 Section "Roofing Preparation."

1.3 CONSTRUCTION CLEANING

- A. This requirement shall be strictly enforced. The site in general and all areas in and around the Project construction shall be clear of waste at all times in order to present a clean and orderly appearance and prevent hazards to safety and health.

1.4 WASTE MANAGEMENT

- A. The general contractor shall be responsible for the collection and removal of waste on a daily basis and in a lawful manner. Burying and burning of waste on the property shall not be permitted. Washing waste down sewers or into waterways shall not be permitted. Waste shall not be allowed to accumulate and shall not be allowed to become hazards to safety and health.
- B. The General Contractor shall furnish rodent proof containers in each construction area for the workmen to deposit their garbage and similar waste. This waste shall be kept separate from all other waste and shall be so identified in order that it can be disposed of as required by local regulations. Upon evidence of pest infestation, the General Contractor shall provide extermination services as a part of the work.
- C. Hazardous and dangerous waste, as listed by the EPA, shall be kept separate from all other waste. The trade responsible for this waste shall be solely responsible for the handling, removal, and disposing, in accordance with the regulations pertaining to such waste, on a daily basis.

- D. The General Contractor shall be responsible for furnishing means and methods for preventing mud being brought into the building or onto the construction by workmen.

1.5 PUBLIC STREETS AND PRIVATE WAYS

- A. All public streets adjacent to the site and all private ways at the site shall be kept clear of waste, spilled materials and products, and wet and dry earth at all times and shall be cleaned at the end of each working day. When wet earth is encountered, it shall be cleaned from the vehicles before they leave the site and enter the streets and private ways. All by the general contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REMOVALS

- A. Friday Building:
 - 1. Remove all ballast, membrane, flashings and metal flashings and discard.
 - 2. Remove existing coping cap and discard.
- B. Reese Building:
 - 1. Remove existing coping cap and discard.
 - 2. Remove roof access door threshold on Area B and store for reinstallation.
- C. Lift or remove all existing equipment so that existing flashings and sheet metal flashings can be totally removed and new flashings and sheet metal flashings installed.
- D. Remove or correct any obstruction which might interfere with the proper application of new materials.
- E. Remove all existing roof drain strainers and clamping rings and store for re-use if in good condition.
 - 1. Replace missing or damaged strainers, clamping rings or drain bolts with components of like manufacture. Replace those damaged during removals and construction at no additional expense to the Owner.
 - 2. Clean and paint all strainers. Wire brush and prime as required.
- F. Contractor shall comply with UNC Charlotte Design and Construction Manual Section 3, Annex B – Construction Waste Management.

3.2 CUTTING, PATCHING, AND FINISHING

- A. See General Conditions, Article 39. The repair of all damages made by cutting shall include restoring those surfaces to a state of finish equal to that when construction began, including such things as surface texture, design, and color, unless in remodeled work new finishes

are called for. All such repairs shall be performed by persons trained and proficient in the particular trades involved; for example, plaster repairs by plasterers, masonry repairs by masons, tile repairs by tile setters, painting by painters, and the like. It is the intent of the Contract Documents that all areas requiring repairs shall be restored to a completely finished condition acceptable to the Architect and the Owner.

3.3 CUTTING AND PATCHING

- A. All cutting required to perform the work, and install the products specified under a particular Contract or Subcontract, shall be performed under that particular Contract or Subcontract, and all patching work resulting from this cutting shall be performed under that particular Contract or Subcontract unless completely new products have been scheduled or called for. All patching work shall be by craftsmen skilled in the required work and who may already be engaged on the Project. Cutting shall be held to the minimum.

3.4 PAINTING FOR PATCHING

- A. All patching work within previously painted areas shall be painted by that Contract or Subcontract, which caused the need for this painting, unless completely new finish or finishes have been scheduled or called for. All painting shall be by skilled painters who may already be engaged on the Project.

3.5 CUTTING FOR STRUCTURAL MEMBERS

- A. Shall not be performed without review by the Architect/Engineer.

END OF SECTION 01732

SECTION 01733 – ASBESTOS PRODUCTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements relating to asbestos-containing materials.
- B. Related Sections include the following:
 - 1. Section 01732 "Selective Demolition."
 - 2. Forms.

1.3 PROCEDURES

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

1.4 WARRANTY

- A. Upon completion of the work, and before final payment and/or release of retainage, submit, and obtain from each subcontractor, material supplier and equipment manufacturer and submit, a properly executed Asbestos Free Warranty. Provide Warranty in the form included in these specifications. Ensure forms are signed by a responsible officer of the Contractor, subcontractor, material supplier and equipment manufacturer and are notarized.
- B. An asbestos survey has been performed on the subject roof. A copy of the asbestos survey is attached.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01733

SECTION 01770 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Complete final cleaning requirements, including touchup painting.
 - 3. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Owner, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
 2. Submit certified copy of Owner's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

1.7 PROJECT COMPLETION DOCUMENTS

- A. Upon completion of the work, and before final payment and/or release of retainage, submit completion documents. Refer to Closeout Document Checklist at the end of this Section for all documents to be submitted and approved by Engineer.

- B. PROJECT RECORD DRAWINGS: Shall be furnished to the Architect with each application for payment and at time of closeout. Project record drawings shall meet North Carolina Department of Administration Standards of the most current North Carolina Construction Manual.
- C. THE GENERAL CONTRACTOR shall file one (1) complete set of Contract Drawings in his field office. Each Prime Contractor and each Prime Subcontractor, as the case may be, shall fully and accurately note in red on this set any and all changes and deviations in the Project from that originally indicated on the drawings, as required by change orders, bulletin drawings, addenda, alternates, products, equipment, and methods of construction. All utility services and other concealed work which are built into walls, floor slabs, roof slabs, below slabs on grade, and in general unexposed shall be accurately located to avoid damage to them in case a change or renovation takes place at some future date. All changes in dimensions, elevations, location of building components and equipment, and the location of any existing work which are different from that originally shown shall be indicated on these drawings. A copy of these, showing the work for which payment is requested shall be provided with each application for payment.
- D. AT THE CONCLUSION OF THE PROJECT, the Contractors shall turn over to the University all equipment, files, logs, drawings, or submittals, etc., belonging to the Owner.
- E. AT THE CONCLUSION OF THE PROJECT each Contractor shall provide a comprehensive listing of subcontractors and suppliers showing the generic name of materials, work or equipment provided, trade or brand name, name, address, telephone number and contract person, and a reference to the drawings or specification.
- F. AT THE CONCLUSION OF THE PROJECT Shop Drawings shall be sent in AutoCAD and PDF formats. Other General shop drawings, not specific to UNC Charlotte may be sent in PDF format.
- G. AT THE CONCLUSION OF THE PROJECT Design manuals, warranty information, and paper documentation provided to the owner be in a digital format to facilitate storage. Acceptable file types are pdf, doc, xls, tiff, jpg, and dwg.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING UP

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

1. SEE GENERAL CONDITIONS, ARTICLE 41.
2. BEFORE THE DATE OF THE PRELIMINARY REVIEW, the Work and the site shall be cleaned of all debris, boxes, cartons, crates, wrappings, etc. Only such cleaning materials and equipment absolutely required shall be allowed on the Project at this time. If approved beforehand by the Architect, other materials may be stored on the Site in designated areas in a neat and orderly manner. Clean up shall include removal of all dirt and construction debris from the roof structure.
3. BEFORE THE DATE THE FINAL REVIEW is made to determine completion of the Project, in accordance with the Contract Documents, all of the Contractor's products and equipment shall be removed from the site, the Project given a thorough cleaning, such as: Glass cleaning, carpets vacuumed, building surfaces and equipment washed as required, resilient tile waxed and buffed as required, paint splatter removed, general dusting, debris removed, resilient wall bases buffed, etc., and the Project made 100 percent complete and ready for the Owner's occupancy and use as intended. All other cleaning and preparation shall be in accordance with the specification sections.
4. PERMANENT BUILDING POWER AND UTILITIES: These services shall remain the responsibility of the Contractors during all reviews up to and including the day of Project acceptance.
5. **ASBESTOS AND POLYCHLORINATED BIPHENYL (PCB) REQUIREMENTS** (See GENERAL CONDITIONS, Article 48.)
6. DURING THE WORK PROCESS, should the Contractor encounter any material identified as asbestos and/or PCB, or be suspect of containing asbestos and/or PCB, he shall immediately initiate the required procedures of the Environmental Protection Agency (EPA), and/or state or local agencies having jurisdiction, which include, but are not necessarily limited to, the following:
 - a. INITIATE PROCEDURES for the protection of any and all persons exposed to the affected areas or adjacent areas affected thereby.
 - b. ON BEHALF OF THE OWNER the Contractor shall: Secure quotations for the Owner's approval to engage the services of a licensed industrial hygienist to perform an asbestos and PCB identification survey, the purpose of which is to:
 - 1) Verify presence of asbestos and PCB
 - 2) Determine the type of asbestos and PCB.
 - 3) Make asbestos and PCB exposure assessments.
 - 4) Make any other tests required to comply with EPA requirements not specifically noted herein.
 - 5) Determine the scope of the Project required to be corrected.
 - 6) Make recommendations with respect to possible corrective actions which the Owner may take, i.e., encapsulation and/or removal and disposal, as may be required.
 - c. Upon consultation with the Owner and the Architect, and upon determination of corrective actions to be taken, instruct the hygienist to prepare a specification in sufficient detail to outline the procedures required by EPA, for encapsulation, and/or removal and disposal, as the case may be, so as to furnish the Contractor with sufficient information to bid competitively the remedial work by specialty Contractors engaged in the encapsulation or elimination of asbestos and PCB material, based on an identified scope of work.
 - d. During the corrective process, require the hygienist to review the Contractor's procedures for compliance with EPA, state and local requirements, make such test as may be required and, at the conclusion of the work, certify that

- the area is free and clear of asbestos and/or PCB materials and particles in the air.
- e. Secure quotations, for approval by the Owner, from specialty Contractors to perform the corrective work determined by the hygienist. The quotations shall include both time required and cost. In addition to the above, the Contractor shall submit itemized quotations for the replacement of any insulation or other asbestos and/or PCB containing materials removed, with insulation or other materials selected by the Architect, together with any other associated cost for replacement of materials and finishes necessarily removed to accommodate removal of asbestos and/or PCB materials, and time extensions allowed by the specifications.
7. OWNER-APPROVED QUOTATIONS for the hygienist and for corrective work to be performed will be incorporated into the Contract by Change Order.
 8. NORTH CAROLINA AND FEDERAL ASBESTOS REGULATIONS INFORMATION:
 - a. The Environmental Protection Agency's (EPA's) National Emission Standards for Hazardous Air Pollutants (NESHAP) require an asbestos inspection and a ten (10) working day notification prior to demolition and renovation of all commercial, institutional, or industrial facilities. This excludes residential buildings with four (4) or fewer dwelling units. NESHAP also applies to the demolition of all residences which are being demolished for commercial, institutional, or industrial purposes. Notification of all demolitions is required whether or not the structures are found to contain asbestos.
 - b. If an inspection, conducted by a North Carolina accredited asbestos inspector, confirms that a facility contains at least 160 square feet, 260 linear feet, or 35 cubic feet, of Regulated Asbestos Containing Materials (RACM), then these materials are to be removed prior to starting the renovation or demolition activity. When removal of RACM is required, a notification and a removal fee shall be submitted as part of the notification process. The notification and the removal fee, when applicable, shall be submitted to the Asbestos Hazard Management Branch. The removal of RACM shall be conducted by North Carolina asbestos accredited individuals.
 - c. Please note that Forsyth, Buncombe/Haywood, and Mecklenburg Counties have local NESHAP programs and should be contacted directly for local requirements.
- B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

CLOSEOUT DOCUMENTS CHECKLIST

- Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
- Contractor's Affidavit of Payment of Debts and Claims.
- Contractor's Affidavit of Release of Liens.
- Consent of Surety to Final Payment.
- Contractor's Warranty (on form provided and on Contractor's standard letterhead)
- Asbestos Free Warranty (on form provided and on Contractor's standard letterhead)
- Copy of Final Inspection (signed off by contractor as completed)
- Certificate of Substantial Completion
- Record Drawings
- Manufacturer's Inspection Reports
- Certificate of Completion
- Builder's Risk Insurance Cancellation Certificate
- Manufacturer's Roofing System Warranty

END OF SECTION 01770

SECTION 04010 – BRICK MASONRY REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Repairing brick masonry, including replacing units.
 - 2. Repointing masonry mortar joints.
 - 3. Applying a penetrating masonry sealer.
 - 4. Through-Wall Flashings.
 - 5. Weeps/Mortar Net.

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 01270 "Unit Prices."
 - 1. Unit prices apply to authorized work covered by estimated quantities.
 - 2. Unit prices apply to additions to and deletions from Work as authorized by Change Orders.

1.4 ALLOWANCES

- A. Allowances for brick replacement as specified in Section 01210 "Allowances."

1.5 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
- B. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of masonry units to freezing and thawing.

1.6 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to brick masonry repair including, but not limited to, the following:

- a. Verify brick masonry repair specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
- b. Materials, material application, sequencing, tolerances, and required clearances.
- c. Quality-control program.
- d. Coordination with building occupants.

1.7 SEQUENCING AND SCHEDULING

- A. Order sand and gray portland cement for colored mortar immediately after approval of Samples. Take delivery of and store at Project site enough quantity to complete Project.
- B. Work Sequence: Perform brick masonry repair work in the following sequence, which includes work specified in this and other Sections:
 1. Inspect masonry for open mortar joints and point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
 2. Clean masonry.
 3. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
 4. Repair masonry, including replacing existing masonry with new masonry materials.
 5. Rake out mortar from joints to be repointed.
 6. Point mortar.
 7. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
 8. Where water repellents are to be used on or near masonry work, delay application of these chemicals until after pointing and cleaning.
- C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units and joints per specifications.

1.8 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 2. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.
- B. Shop Drawings:
 1. Include plans, elevations, sections, and locations of replacement masonry units on the structure, showing relation of existing and new or relocated units.
 2. Show provisions for expansion joints or other sealant joints.
 3. Show provisions for flashing, lighting fixtures, conduits, and weep holes as required.
 4. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

- C. Samples for Initial Selection: For the following:
1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches long by 1/2 inch wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and source of colored sands from which each Sample was made.
 2. Sand Types Used for Mortar: Minimum 8 oz. of each in plastic screw-top jars.
 3. Include similar Samples of accessories involving color selection.
- D. Samples for Verification: For the following:
1. Each type of brick unit to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.
 2. Each type of patching compound in the form of briquettes, at least 3 inches long by 1-1/2 inches wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
 3. Accessories: Each type of accessory and miscellaneous support.

1.9 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For brick masonry repair specialist, including field supervisors and workers.
- B. Quality-Control Program.

1.10 QUALITY ASSURANCE

- A. Brick and Cast Stone Masonry Repair Specialist Qualifications: Engage an experienced brick masonry and cast stone repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.
 1. Field Supervision: Brick masonry and cast stone repair specialist firm shall maintain experienced full-time supervisors on Project site during times that brick masonry repair work is in progress.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

- C. Mockups: Prepare mockups of brick masonry and cast stone repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
1. Masonry Repair: Prepare sample areas for each type of masonry repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls where directed by Engineer or Owner unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- D. Mockups: Prepare mockup of brick masonry and cast stone repointing and penetrating masonry sealer to demonstrate aesthetic effects and to set up quality standards for materials and execution.
1. Repointing: Rake out joints in a 48" x 48" area and repoint this area with mortar selections.
 2. Once area has cured and mortar color has been approved, install penetrating masonry sealer and allow to cure.
 3. Approval of mockups does not constitute approval of deviations from the contract documents contained in mockups unless Engineer specifically approves such deviation in writing.
 4. Subject to compliance with requirements, approved mockup may become part of the complete work if undisturbed at time of substantial completion.

1.11 WARRANTIES

- A. Materials List: Give written notifications of the brand name and manufacturer of each material purposed for use and include a statement that all purposed materials meet the specifications requirements.
- B. Installers Warranty: Installers Warranty, on form at the end of this section, shall be signed by penetrating masonry sealer installer, properly executed and printed on installer's standard letterhead form.
1. Warranty Period: Five (5) years from date of substantial completion.
- C. Manufacturer's Warranty:
1. Warranty Period: Ten (10) years from date of substantial completion.

1.12 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

- B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.
- F. Handle masonry units to prevent overstressing, chipping, defacement, and other damage.

1.13 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit brick masonry repair work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits, General: Repair masonry units only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Source Limitations: Obtain each type of material for repairing brick masonry (brick, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MASONRY MATERIALS

- A. Face Brick: ASTM C 62, as required to complete brick masonry repair work.
 - 1. Brick Matching Owner's Sample: Units with colors, color variation within units, surface texture that match Owner's sample. Match existing units in size and shape.

- a. For Owner's sample that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range rather than brick that matches an individual color within that range.
- B. Building Brick: ASTM C 62, of same vertical dimension as face brick, for masonry work concealed from view.
1. Grade SW where in contact with earth.
 2. Grade SW, MW, or NW for concealed backup.

2.3 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.
1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Masonry Cement: ASTM C 91/C 91M.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cemex S.A.B. de C.V.; Brikset Type N Citadel Type S Dixie Type S Kosmortar Type N Richcolor Type N Richmortar Type M.
 - b. Essroc Italcementi Group; Brick-Lok Brixment or Velvet.
 - c. Holcim (US) Inc.; Rainbow Mortamix Custom Buff Cement Rainbow Mortamix Custom Color Masonry Cement Rainbow Mortamix Masonry Cement Rainbow Mortamix White Cement.
 - d. Lafarge North America Inc.; Lafarge Masonry Cement Magnolia Buff, Dark & Ultra Dark Masonry Cement Magnolia Mason's Mix Masonry Cement Trinity White Masonry Cement.
 - e. Lehigh Hanson, Inc.; Lehigh Masonry Cement Lehigh White Masonry Cement.
 - f. Quikrete Companies, Inc. (The); Quikrete Masonry Cement.
- D. Mortar Cement: ASTM C 1329/C 1329M.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Lafarge North America Inc.; Lafarge Mortar Cement or Magnolia Superbond Mortar Cement.
 - b. Or equal.

- E. Mortar Sand: ASTM C 144.
 - 1. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
- F. Mortar Pigments: ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Davis Colors, Inc.; True Tone Mortar Colors.
 - b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
 - c. Solomon Colors, Inc.; SGS Mortar Colors.
- G. Water: Potable.
- H. Weep/Vent Products: Free draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer width; in color selected from manufacturers standard; Mortar Net Weep Vents or approved equal.
- I. Cavity Drainage Material: Free draining mesh, made from polymer strands that will not degrade within the wall cavity. Provide strips full depth of cavity and 10 inches wide with dovetail shaped notches 7 inches deep.
- J. Wall Ties: Meeting ACI 530-1/ASCE 6/TME 602. Provide minimum 2 inch embedment into mortar. POS-I-Tie® Triangle Wire Tie as manufactured by Heckman Building Products, Inc. or approved equal.
 - 1. Wire 3/16 inch diameter.
 - 2. Hot dipped galvanized.
- K. Veneer Anchor: Single screw veneer tie for metal stud construction such as 2-seal thermal wing nut anchor by Hohmann & Barnard.
- L. Corrosion Inhibitor: Sherwin Williams Krom Kromik.
- M. Self-adhered Air and Vapor Barrier Membrane: 24-mil sheet consisting of 20-mil of high-performs butyl laminated to 4 mils of metalized high-density polypropylene film and a release liner such as ExoAir III by Tremco or equal.

2.4 ACCESSORY MATERIALS

- A. Setting Buttons and Shims: Resilient plastic, non-staining to masonry, sized to suit joint thicknesses and bed depths of masonry units, less the required depth of pointing materials unless removed before pointing.
- B. Masking Tape: Non-staining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.

- C. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 - 1. Previous effectiveness in performing the work involved.
 - 2. Minimal possibility of damaging exposed surfaces.
 - 3. Consistency of each application.
 - 4. Uniformity of the resulting overall appearance.
 - 5. Do not use products or tools that could leave residue on surfaces.
- D. Through-wall Flashing Accessories for Unified System: End dams, outside/inside corners, safety, etc.

2.5 THROUGH-WALL FLASHING MEMBRANE

- A. 40 mil thick, non-asphalt composite membrane with a proprietary clear adhesive factory laminated to polyethylene sheeting, meeting:
 - 1. ASTM D412C, 6242 psi
 - 2. ASTM D412C, 16% elongation
 - 3. ASTM E154, 331.8 lbs. puncture resistance
 - 4. ASTM D570, .77% water absorption
 - 5. ASTM D903, 1506 N/m peel strength
 - 6. ASTM E96, .0152 perms Moisture Vapor Permeation

2.6 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Engineer's approval.
 - 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 - 1. Rebuilding (Setting) Mortar by Property: ASTM C 270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to Portland cement and lime.
 - 2. Pigmented, Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.
- E. Mixes: Mix mortar materials in the following proportions:
 - 1. Pointing Mortar: Mortar shall be Type N.

2. Pointing Mortar by Volume: ASTM C 270, Proportion Specification, Type N unless otherwise indicated, with cementitious material limited to Portland cement and lime. Add mortar to pigments to produce mortar colors required.
3. Mortar Mix: To be mixed in accordance with the pre-construction testing, Brick Masonry Repointing, Section 1.11.

2.7 PENETRATING MASONRY SEALER

- A. A clear, penetrating, breathable water repellent for use on exterior above-grade brick masonry and cast stone.
- B. Products: Subject to compliance with requirements, available products that may be incorporated into the work include, but are not limited to, the following:
 1. Prosoco-Sure Klean® Weatherseal Siloxane WB Concentrate.
 2. Protectosil ®Chem-Trete BSM 40
 3. EaCo Chem, Inc.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
 2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Provide temporary rain drainage during work to direct water away from building.

3.2 BRICK REMOVAL AND REPLACEMENT

- A. Remove bricks that are damaged, spalled, or deteriorated. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
 1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition
- D. Notify Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.

- E. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- F. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
 - 1. Maintain joint width for replacement units to match existing joints.
 - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- G. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
 - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 - 2. Rake out mortar used for laying brick before mortar sets according to specifications. Point at same time as repointing of surrounding area.
 - 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- H. Curing: Cure mortar by periodically spraying a fine mist to repointed area and adjacent brick masonry.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.3 MASONRY REPOINTING, GENERAL

- A. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed by Engineer from 20 feet away.

3.4 BRICK POINTING

- A. Rake out and repoint joints to the following extent:
 - 1. Joints at locations of the following defects:
 - a. Holes and missing mortar.
 - b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
 - c. Cracks 1/8 inch or more in width and of any depth.
 - d. Hollow-sounding joints when tapped by metal object.
 - e. Eroded surfaces 1/4 inch or more deep.
 - f. Deterioration to point that mortar can be easily removed by hand, without tools.
 - g. Joints filled with substances other than mortar.

- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
 - 1. Remove mortar from joints to depth of 2 times joint width, but not less than 1/2 inch or not less than that required to expose sound, un-weathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Engineer for direction.
 - 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 - 3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Engineer.
- D. Notify Engineer of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. Pointing with Mortar:
 - 1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces is damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
 - 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.
 - 3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers at a minimum of 1/4 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
 - 4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
 - 5. Cure mortar by periodically spraying a fine mist to repointed area and adjacent brick masonry.
 - 6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.5 THROUGH-WALL FLASHING INSTALLATION

- A. Furnish and install new through-wall flashings at masonry walls as specified herein. Refer to Drawings.
- B. Repair building wrap within cavity using self-adhering membrane.
- C. Masonry:
 - 1. Contractor is to provide any and all means necessary to protect and flashings from puncture or any other damage. Contractor will be responsible for all damage caused by this project at no additional expense to the owner.

2. Begin removing brick masonry in 4' long sections. Alternate 4' long work sections so that at no time are any two sections closer than 3' apart. Do not remove brick masonry in one section around corners.
 3. Remove a minimum of four (4) courses of brick in each work section. Additional courses of brick may require removal depending on location of block wall joints behind cavity. Contractor shall provide shoring of brick masonry and cast stone as necessary at open sections.
- D. All brick work for this project shall be performed by a qualified mason and under the supervision of a licensed general contractor.
- E. Prior to installation of through-wall flashing, install new self-adhering membrane and metal drip edge as specified in Section 07620 – Sheet Metal Flashing and Trim and through-wall accessories such as end dams, inside/outside corners, etc.
1. Prime all metal surfaces
- F. Provide end dams at flashing terminations at walls for control of drainage.
- G. Ensure that the flashing is installed so as to provide positive slope to the exterior of the brick cladding. Do not allow through-wall flashing material to sag below the level of the weeps. Install three (3) rows of sealant at through-wall flashing side laps and lap 6 inches. Install termination bar and seal top of bar with sealant.
- H. Seal between through-wall flashing and metal receiver.
- I. At rake walls, install new through-wall flashing at height above metal roof as required to accommodate new roof flashings with face width of 4 to 8 inches. Step through-wall flashing along rake wall to conform to roof slope.
- J. Furnish and install new brick units to match existing as specified herein.
- K. Install new mortar nets. Provide vented weeps spaced at every other brick head joint.

3.6 MASONRY SEALER INSTALLATION

- A. Protect people, vehicles, plants, and windows and all other surfaces from product.
- B. When applying to occupied buildings, ensure all windows, exterior intakes and air conditioning vents are covered and air handling equipment is shut down prior to installation.
- C. Repointed surfaces should be clean, dry and cured before application. Sealant should be in place and cured.
- D. Refer to manufacturer's printed instructions for cold weather installation.
- E. Store in a cool dry place away from ignition sources.
- F. If dilution is required, refer to manufacturer's printed instructions for dilution proportions.
- G. Refer to manufacturer's instructions for application of sealer to brick masonry and drying time.

- H. Protect surface from rain following application for a minimum of four (4) hours.
- I. Refer to manufacturer's instructions for drying time of brick masonry after a rain storm or pressure washing prior to installation of the masonry sealer.

3.7 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.
- B. Clean adjacent non-masonry surfaces. Use detergent and soft brushes or cloths.
- C. Remove masking materials, leaving no residues that could trap dirt.

3.8 MANUFACTURER'S INSPECTIONS

- A. A technical representative of the masonry penetrating sealer system manufacturer shall conduct periodic inspections throughout the course of the work. The representative shall prepare a written report for each inspection and shall promptly provide a copy of each report to the Owner, Contractor and Engineer. Each report shall note any deficiencies the representative observes which require correction. A minimum of three (3) inspections is required for this project including a final inspection where manufacturer will test the installation of the masonry penetrating sealant via Rilem Tube Test after Contractor has completed installation of all masonry penetrating sealer system components.
- B. Upon completion of through-wall flashing work, Contractor shall provide water testing for a minimum of 30 minutes at four (4) locations to be designated by Engineer. Contractor shall coordinate and perform water testing in the presence of Engineer. Allow seven (7) days for Engineer to schedule.

3.9 FIELD QUALITY CONTROL

- A. Engineer's Project Representatives: Engineer will assign Project representatives to help carry out Engineer's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Engineer's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Engineer's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Engineer's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.10 MASONRY WASTE DISPOSAL

- A. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION 04010

SECTION 04011 – MASONRY CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Repointing masonry
 - 2. Applying a penetrating masonry sealer
 - 3. Through wall flashing replacement

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 01270 "Unit Prices."
 - 1. Unit prices apply to authorized work covered by estimated quantities.
 - 2. Unit prices apply to additions to and deletions from Work as authorized by Change Orders.

1.4 ALLOWANCES

- A. Allowances for brick replacement as specified in Section 01210 "Allowances."

1.5 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
- B. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of masonry units to freezing and thawing.

1.6 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to brick masonry repair including, but not limited to, the following:

- a. Verify brick masonry repair specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
- b. Materials, material application, sequencing, tolerances, and required clearances.
- c. Quality-control program.
- d. Coordination with building occupants.

1.7 SEQUENCING AND SCHEDULING

- A. Order sand and gray Portland cement for colored mortar immediately after approval of Samples. Take delivery of and store at Project site enough quantity to complete Project.
- B. Work Sequence: Perform brick masonry repair work in the following sequence, which includes work specified in this and other Sections:
 1. Inspect masonry for open mortar joints and point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
 2. Clean masonry.
 3. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
 4. Repair masonry, including replacing existing masonry with new masonry materials.
 5. Rake out mortar from joints to be repointed.
 6. Point mortar.
 7. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
 8. Where water repellents are to be used on or near masonry work, delay application of these chemicals until after pointing and cleaning.
- C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units and joints per specifications.

1.8 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 2. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.
- B. Shop Drawings:
 1. Include plans, elevations, sections, and locations of replacement masonry units on the structure, showing relation of existing and new or relocated units.
 2. Show provisions for expansion joints or other sealant joints.
 3. Show provisions for flashing, lighting fixtures, conduits, and weep holes as required.
 4. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

- C. Samples for Initial Selection: For the following:
1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches long by 1/2-inch-wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least three Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and source of colored sands from which each Sample was made.
 2. Sand Types Used for Mortar: Minimum 8 oz. of each in plastic screw-top jars.
 3. Include similar Samples of accessories involving color selection.
- D. Samples for Verification: For the following:
1. Each type of brick unit to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.
 2. Each type of patching compound in the form of briquettes, at least 3 inches long by 1-1/2 inches wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
 3. Accessories: Each type of accessory and miscellaneous support.

1.9 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For brick masonry repair specialist, including field supervisors and workers.
- B. Quality-Control Program.

1.10 QUALITY ASSURANCE

- A. Brick and Cast Stone Masonry Repair Specialist Qualifications: Engage an experienced brick masonry and cast stone repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.
 1. Field Supervision: Brick masonry and cast stone repair specialist firm shall maintain experienced full-time supervisors on Project site during times that brick masonry repair work is in progress.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

- C. Mockups: Prepare mockups of brick masonry and cast stone repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
1. Masonry Repair: Prepare sample areas for each type of masonry repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls where directed by Engineer or Owner unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- D. Mockups: Prepare mockup of brick masonry and cast stone repointing and penetrating masonry sealer to demonstrate aesthetic effects and to set up quality standards for materials and execution.
1. Repointing: Rake out joints in a 48" x 48" area and repoint this area with mortar selections.
 2. Once area has cured and mortar color has been approved, install penetrating masonry sealer and allow to cure.
 3. Approval of mockups does not constitute approval of deviations from the contract documents contained in mockups unless Engineer specifically approves such deviation in writing.
 4. Subject to compliance with requirements, approved mockup may become part of the complete work if undisturbed at time of substantial completion.

1.11 WARRANTIES

- A. Materials List: Give written notifications of the brand name and manufacturer of each material purposed for use and include a statement that all purposed materials meet the specifications requirements.
- B. Installers Warranty: Installers Warranty, on form at the end of this section, shall be signed by penetrating masonry sealer installer, properly executed and printed on installer's standard letterhead form.
1. Warranty Period: Five (5) years from date of substantial completion.
- C. Manufacturer's Warranty:
1. Warranty Period: Ten (10) years from date of substantial completion.

1.12 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

- B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store sand where grading and other required characteristics can be maintained, and contamination avoided.
- F. Handle masonry units to prevent overstressing, chipping, defacement, and other damage.

1.13 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit brick masonry repair work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits, General: Repair masonry units only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Source Limitations: Obtain each type of material for repairing brick masonry (brick, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MASONRY MATERIALS

- A. Face Brick: ASTM C 62, as required to complete brick masonry repair work.
 - 1. Brick Matching Owner's Sample: Units with colors, color variation within units, surface texture that match Owner's sample. Match existing units in size and shape.

- a. For Owner's sample that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range rather than brick that matches an individual color within that range.
- B. Building Brick: ASTM C 62, of same vertical dimension as face brick, for masonry work concealed from view.
1. Grade SW where in contact with earth.
 2. Grade SW, MW, or NW for concealed backup.

2.3 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.
1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Masonry Cement: ASTM C 91/C 91M.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cemex S.A.B. de C.V.; Brikset Type N Citadel Type S Dixie Type S Kosmortar Type N Richcolor Type N Richmortar Type M.
 - b. Essroc Italcementi Group; Brick-Lok Brixment or Velvet.
 - c. Holcim (US) Inc.; Rainbow Mortamix Custom Buff Cement Rainbow Mortamix Custom Color Masonry Cement Rainbow Mortamix Masonry Cement Rainbow Mortamix White Cement.
 - d. Lafarge North America Inc.; Lafarge Masonry Cement Magnolia Buff, Dark & Ultra Dark Masonry Cement Magnolia Mason's Mix Masonry Cement Trinity White Masonry Cement.
 - e. Lehigh Hanson, Inc.; Lehigh Masonry Cement Lehigh White Masonry Cement.
 - f. Quikrete Companies, Inc. (The); Quikrete Masonry Cement.
- D. Mortar Cement: ASTM C 1329/C 1329M.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Lafarge North America Inc.; Lafarge Mortar Cement or Magnolia Superbond Mortar Cement.
 - b. Or equal.

- E. Mortar Sand: ASTM C 144.
 - 1. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
- F. Mortar Pigments: ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Davis Colors, Inc.; True Tone Mortar Colors.
 - b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
 - c. Solomon Colors, Inc.; SGS Mortar Colors.
- G. Water: Potable.

2.4 ACCESSORY MATERIALS

- A. Setting Buttons and Shims: Resilient plastic, non-staining to masonry, sized to suit joint thicknesses and bed depths of masonry units, less the required depth of pointing materials unless removed before pointing.
- B. Masking Tape: Non-staining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.
- C. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 - 1. Previous effectiveness in performing the work involved.
 - 2. Minimal possibility of damaging exposed surfaces.
 - 3. Consistency of each application.
 - 4. Uniformity of the resulting overall appearance.
 - 5. Do not use products or tools that could leave residue on surfaces.

2.5 THROUGH-WALL FLASHING MEMBRANE

- A. Mortar: ASTM C 270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to Portland cement and lime.
- B. Weeps: Quadra-Vent by Hohmann and Barnard, 3.5" height, Polypropylene tested in conformance with ASTM D2240, ASTM D790B, ASTM D638, and ASTM D1238B.
- C. Mortar Trap: Mortar web by Hohmann and Barnard.
- D. Drip edge: 24-gauge stainless-steel.
- E. Stainless Steel Dry-Edge Flashing: 304 stainless steel, 24-gauge.

- F. End Dams: 24-gauge stainless steel soldered pre-formed end dams.
- G. Sealant: ASTM C920, single-component silicone, Type S
- H. Termination Bar: Extruded aluminum bar, 1 inch by 1/8 inch, with pre-punched holes at 6 inches on center.
- I. ASTM 1970 Self Adhering Membrane: 40-mil Rubberized asphalt core with cross laminated polyethylene film.
- J. Insulation: Owens Corning Foamular 150 Extruded Polystyrene Rigid Foam Insulation.
- K. Primer: as recommended by manufacturer.

2.6 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Engineer's approval.
 - 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 - 1. Rebuilding (Setting) Mortar by Property: ASTM C 270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to Portland cement and lime.
 - 2. Pigmented, Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.
- E. Mixes: Mix mortar materials in the following proportions:
 - 1. Pointing Mortar: Mortar shall by Type N.
 - 2. Pointing Mortar by Volume: ASTM C 270, Proportion Specification, Type N unless otherwise indicated, with cementitious material limited to Portland cement and lime. Add mortar to pigments to produce mortar colors required.
 - 3. Mortar Mix: To be mixed in accordance with the pre-construction testing, Brick Masonry Repointing, Section 1.11.

2.7 PENETRATING MASONRY SEALER

- A. A clear, penetrating, breathable water repellant for use on exterior above-grade brick masonry and cast stone.

- B. Products: Subject to compliance with requirements, available products that may be incorporated into the work include, but are not limited to, the following:
 - 1. Prosoco-Sure Klean® Weatherseal Siloxane WB Concentrate.
 - 2. Protectosil ®Chem-Trete BSM 40
 - 3. EaCo Chem, Inc.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
 - 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
 - 2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
 - 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Provide temporary rain drainage during work to direct water away from building.

3.2 BRICK REMOVAL AND REPLACEMENT

- A. Remove bricks that are damaged, spalled, or deteriorated. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
 - 1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition
- D. Notify Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- F. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
 - 1. Maintain joint width for replacement units to match existing joints.
 - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.

- G. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated, but surface is dry when laid.
 - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 - 2. Rake out mortar used for laying brick before mortar sets according to specifications. Point at same time as repointing of surrounding area.
 - 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

- H. Curing: Cure mortar by periodically spraying a fine mist to repointed area and adjacent brick masonry.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.3 MASONRY REPOINTING, GENERAL

- A. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed by Engineer from 20 feet away.

3.4 THROUGH-WALL FLASHING INSTALLATION

- A. Furnish and install new through-wall flashings at masonry walls as specified herein. Refer to Drawings.

- B. Masonry and Cast Stone:
 - 1. Contractor is to provide any and all means necessary to protect and flashings from puncture or any other damage. Contractor will be responsible for all damage caused by this project at no additional expense to the owner.
 - 2. Begin removing brick masonry in 4' long sections. Alternate 4' long work sections so that at no time are any two sections closer than 3' apart. Do not remove brick masonry in one section around corners.
 - 3. Remove a minimum of four (4) courses of brick in each work section. Additional courses of brick may require removal depending on location of block wall joints behind cavity. Contractor shall provide shoring of brick masonry and cast stone as necessary at open sections.

- C. All brick work for this project shall be performed by a qualified mason and under the supervision of a licensed general contractor.

- D. Prior to installation of through-wall flashing, install new self-adhering membrane and metal drip edge as specified in Section 07620 – Sheet Metal Flashing and Trim and through-wall accessories such as end dams, inside/outside corners, etc.

- E. Provide end dams at flashing terminations at walls for control of drainage.

- F. Ensure that the flashing is installed so as to provide positive slope to the exterior of the brick cladding. Do not allow through-wall flashing material to sag below the level of the weeps. Install three (3) rows of sealant at through-wall flashing side laps and lap 6 inches. Install termination bar and seal top of bar with sealant.
- G. Seal between through-wall flashing and drip edge.
- H. At rake walls, install new through-wall flashing at height above metal roof as required to accommodate new roof flashings with face width of 4 to 8 inches. Step through-wall flashing along rake wall to conform to roof slope.
- I. Furnish and install new brick units to match existing as specified herein.

3.5 MASONRY SEALER INSTALLATION

- A. Protect people, vehicles, plants, and windows and all other surfaces from product.
- B. When applying to occupied buildings, ensure all windows, exterior intakes and air conditioning vents are covered and air handling equipment is shut down prior to installation.
- C. Repointed surfaces should be clean, dry and cured before application. Sealant should be in place and cured.
- D. Refer to manufacturer's printed instructions for cold weather installation.
- E. Store in a cool dry place away from ignition sources.
- F. If dilution is required, refer to manufacturer's printed instructions for dilution proportions.
- G. Refer to manufacturer's instructions for application of sealer to brick masonry and drying time.
- H. Protect surface from rain following application for a minimum of four (4) hours.
- I. Refer to manufacturer's instructions for drying time of brick masonry after a rain storm or pressure washing prior to installation of the masonry sealer.

3.6 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.
- B. Clean adjacent non-masonry surfaces. Use detergent and soft brushes or cloths.
- C. Remove masking materials, leaving no residues that could trap dirt.

3.7 MANUFACTURER'S INSPECTIONS

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

3.8 FIELD QUALITY CONTROL

- A. Engineer's Project Representatives: Engineer will assign Project representatives to help carry out Engineer's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Engineer's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Engineer's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Engineer's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.9 MASONRY WASTE DISPOSAL

- A. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION 04011

SECTION 06100 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Rooftop equipment bases and support curbs.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Supply and keep all materials dry at all times prior to application.
- B. Store all lumber/plywood in dry, covered storage, or on platforms, and with weatherproof coverings. Coverings shall be waterproof breathable type material such as heavy canvas. Materials which are not stored under specified covers are subject to removal from the site at Engineer's or Owner's discretion.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS

- A. Fire-Retardant Lumber: No. 2 grade (or better) pressure treated southern yellow pine or douglas fir unless specifically noted otherwise. Each piece of lumber shall bear the inspection stamp of the Southern Pine Inspection Bureau (SPIB) or the Western Wood Products Association (WWPA) indicating the grade, type of lumber and treatment.
 - 1. Comply with ASTM D2898 and ASTM E84.
 - 2. FRX Fire Retardant Wood by LONZO Group Ltd. or equal.
- B. Fire Retardant Plywood: APA Rated Sheathing (CDX) pressure treated with waterproof glue for exterior applications in thicknesses specified. All plywood shall comply with the requirements of U.S. Product Standard PS1-09 and each sheet shall clearly bear the APA trademark of the American Plywood Association. Minimum span rating for 3/4 inch plywood shall be 48/24 and shall be so marked on each sheet.
- C. Wood Preservative: Alkaline Copper Quaternary (ACQ) pressure-treatment conforming to AWWPA Standard C-2 (above ground). Retention of preservative shall be 0.25 pcf. All material shall be kiln dried after treatment to 19 percent or less moisture content. Field cuts

and holes shall be treated at job site during construction in accordance with AWPA Standard M-4 when lumber thickness exceeds 2 inches.

2.2 FASTENERS

- A. Provide stainless steel fasteners at all locations where fastener will come in contact with pressure-treated lumber.
- B. Fasteners: For securing lumber to lumber or plywood/OSB to lumber, stainless steel screws of sufficient length to penetrate a minimum of 1-1/2 inches into the underlying member but not smaller than 8d nails. Where circumstances warrant shorter fasteners, consult Engineer or Owner.
- C. For securing wood-to-concrete, secure using Tapcon masonry fasteners at 12 inches on center, staggered.
- D. For securing wood-to-steel, secure using self-drilling/self-tapping fasteners.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Secure wood nailers over existing nailers in two (2) rows staggered and spaced not over 12 inches in each row.
- B. Stagger fasteners when securing nominal 6 inch wide lumber or wider.
- C. All wood shall be staggered. No through-joints shall be accepted, including corner conditions. Corner wood shall be laced.

3.2 ROOF EQUIPMENT

- A. Install new wood blocking at all roof-mounted equipment as required to provide a minimum flashing height of 8 inches above finished roof level.
- B. Install blocking under integral equipment curbs as required to maintain full cant face above roof level and/or to allow installation of new cant strips.

END OF SECTION 06100

SECTION 07000 – ROOFING PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Preparation
 - 2. Deck Repairs
 - 3. Ladder

PART 2 - PRODUCTS

2.1 METAL DECK REPAIR MATERIALS

- A. Metal Deck Primer: Sherwin Williams Kem Kromik Universal Metal Primer or approved equal.
- B. Steel Deck: ASTM A 653, galvanized G-90 deck, manufactured in accordance with the requirements of the Steel Deck Institute, Inc. for wide rib (Type B). Minimum section properties:
 - 1. Yield strength = 33 ksi.
 - 2. Section Modulus: 0.181 in³
 - 3. Moment of Inertia: 0.157 in⁴
 - 4. Thickness: 20 gauge

PART 3 - EXECUTION

3.1 PREPARATION, GENERAL

- A. Prior to commencement of any work, inspect and thoroughly water test all existing roof drains for free flow operation with Owner's maintenance personnel present. Report drain restrictions to the Owner. Owner's maintenance personnel shall perform repairs to remove any restrictions found. Should drains become clogged at any time after the start of work, correct the condition at no additional expense to the Owner.
- B. Prior to the installation of any new roofing, flashings, and metal flashings, clean surfaces of all dust, dirt, and other foreign matter.

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

3.2 METAL DECK REPAIR

- A. Where steel deck is rusted but remains structurally sound, thoroughly clean deck units of rust and foreign matter with a wire brush. Paint with specified metal primer.
- B. Where steel deck is damaged or rusted through in small areas, clean deck units of rust with a wire brush. Paint with specified metal primer. Install over the damaged area a steel plate secured to the existing steel deck with sheet metal screws around the perimeter of the plate at 6 inches on center. Extend the new steel plate a minimum of 6 inches onto the surface of the existing steel deck beyond the damaged area. At valleys, bend plate to match slope.
- C. Where steel deck units are severely damaged or have deteriorated over large areas, remove the entire existing deck unit, and install new decking of the same type and gauge as the existing. Lap new deck units over the existing the same manner as originally installed but not less than 6 inches. Lap ends only over structural framing. Secure to structural framing with specified fasteners at 6 inches on center at each framing member. Secure deck side laps at not more than 36 inches on center.
- D. Secure all existing loose steel deck to roof framing members using specified fasteners placed 12 inches on center at each available framing member.
- E. Secure metal deck side laps with specified fasteners at spacings not exceeding 36 inches from each other or nearest deck support. For deck supports (framing members) spaced greater than 36 inches on center and less than 72 inches on center, install a single side lap fastener at midspan between framing members.

3.3 ROOF ACCESS LADDER

- A. Manufacturers:
 - 1. Acceptable Manufacturer: Precision Ladders, LLC.
 - 2. Submit substitution requests under requirements listed in this Section.
- B. Aluminum Fixed Vertical Ladder:
 - 1. Aluminum Fixed Vertical Ladder and Components: Ladder, floor mounting brackets, and walk through.
 - a. Aluminum Fixed Vertical Ladder as manufactured by Precision Ladders LLC.
 - b. Capacity: Unit shall support a 1000 lb. (454 kg) loading without failure.
 - c. Performance Standard: Units designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.27.
 - 2. Components:
 - a. Ladder Stringer: 2-1/2 inch by 1-1/16 inch by 1/8 inch (64 mm by 27 mm by 3 mm) extruded 6005-T5 aluminum channel. Pitch: 90 degrees.
 - b. Ladder Tread: 2-1/4 inch by 3/4 inch by 1/4 inch (57 mm by 19 mm by 6 mm) extruded 6005-T5 aluminum with deeply serrated top surface.

- c. Ladder Mounting Bracket: 8-1/2 inch by 2 inch by 3 inch by 1/4 inch thick (216 mm by 51 mm by 76 mm by 6 mm) aluminum angle.
- d. Walk Through:
 - 1) Hand Rails: 1-1/4 inch (32 mm) aluminum square tube with rounded edges.
 - 2) Mounting Brackets: 4 inch by 4 inch by 1/4 inch (102 mm by 102 mm by 6 mm) aluminum.
 - 3) Side Rails: 42 inch (1067 mm) side rail extension for through ladder exits.
- e. Finishes:
 - 1) Standard: Mill finish on aluminum ladder components.
 - 2) Optional Finishes:
 - a) Powder Coated
 - b) Anodized.

C. Fabrication:

- 1. Submit shop drawings for review prior to ordering materials.
- 2. Completely fabricate ladder ready for installation before shipment to the site.
- 3. Completely fabricate handrail components and ship to site ready for field assembly and attachment to ladder.

END OF SECTION 07000

SECTION 07540 – THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Thermoplastic membrane roofing.
- B. Related Sections include the following:
 - 1. Division 7 Section “Roofing Preparation.”
 - 2. Division 7 Section “Sheet Metal Flashing and Trim.”

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Roof systems to meet wind uplift pressures as shown on drawings.
- C. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- D. Provide a roofing system that complies with the requirements of Underwriters’ Laboratories, Inc. for a Class A roof covering. Provide a UL Class A certificate, generated by Roofing System Manufacturer, to Owner at project close-out.

1.4 SUBMITTALS

- A. Materials List: Give written notification of the brand name and manufacturer of each material proposed for use and include a statement that all proposed materials meet the specification requirements. Obtain approval prior to placing orders.
 - 1. Submittal of catalog cut sheets, etc. in lieu of the materials list required above is not acceptable. Do not submit cut sheets unless specifically requested.
- B. Manufacturers’ Installation Instructions:

1. Instructions for membrane and flashing installation.

C. Manufacturer Certificates:

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

D. Warranties: Special warranties specified in this Section.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials to site in original containers bearing manufacturer's name and type of material. All materials used in roof membrane must have appropriate Underwriters' Laboratories, Inc. labels on all materials.
- B. Supply and keep all materials dry at all times prior to application.
- C. Store all insulation, insulating board cants, tapered edge strips and lumber/plywood in dry, covered storage, or on platforms, and with weatherproof coverings. Coverings shall be waterproof breathable type material such as heavy canvas. Insulation wrappers are not sufficient. Materials which are not stored under specified covers are subject to removal from the site at Owner's discretion.
- D. Store all roll goods on end on clean floors or platforms. Do not use flattened rolls or rolls with ends damaged.
- E. Materials which, in the opinion of the Owner, have been prematurely exposed to the weather are subject to immediate removal by the contractor and replaced with new materials at contractor's expense. Owner may, at Owner's option, mark such materials with paint or other indelible materials while they remain on-site.
- F. Store solvent bearing materials in dry, cool storage and keep lids tight on partially used containers to prevent escape of solvents.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.7 WARRANTIES

- A. Installer's Warranty: Installer's warranty, on form included in these specifications, signed by roofing Installer, properly executed and printed on Installer's letterhead form.
 1. Warranty Period: Five (5) years from date of Final Completion.

2. The roofing contractor shall guarantee its materials and workmanship associated with the roofing, flashings and sheet metal work incidental to the work required under the contract, against defect due to faulty materials or workmanship for a period of five (5) years from the date of completion of such work. It is understood and agreed by all parties hereto that the responsibility of the roofing contractor under this guarantee (in the form provided in these specifications) or any contract documents shall be limited to the limited guarantee herein expressed by said roofing contractor.
- B. Special Warranty: Manufacturer's weathertight warranty without monetary limitation, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Listed in this section are specifications for materials required generally for use in accomplishing the work specified. Materials not listed may also be required.
- B. Except as specifically noted herein, all reference standards included herein are to be presumed to be the latest published editions of such standards available as of the issue date of these specifications.
- C. Brand or manufacturer names are used as standards of quality where no other appropriate reference is available. The Engineer (or Owner) will consider substitution of materials of equal quality and properties provided a written request accompanied by substantiating data is received by him at least 10 days prior to bid date.
- D. Where a generic product or a general manufacturer's product is specified and more than one such product is offered by the manufacturer, provide the manufacturer's premium materials.
- E. All roofing system components used on this project shall be compatible and approved for use by the roofing system manufacturer and shall qualify for the specified roofing system guarantee.

2.2 MANUFACTURERS

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

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

2.3 FLEXIBLE SHEET MEMBRANE MATERIALS

- A. Membrane: Thermoplastic membrane, white color, minimum thickness to be 60 mil or as required for 20 year roofing system warranty.
 - 1. SENTINEL® G150 by Soprema
 - 2. Sure-Flex by Carlisle
 - 3. G 410-90 by Sarnafil
- B. Bonding Adhesive: Manufacturer's standard solvent-based bonding adhesive for membrane, and solvent-based bonding adhesive for base flashings.
- C. Wall Flashing: Same as membrane.
- D. Pre-fabricated Flashing Components: Provide other pre-fabricated components as required, such as corner flashing, vent stacks, etc.
- E. Miscellaneous Products: Sealants, primers and cleaners supplied by the membrane manufacturer.
- F. Walkpads: Vinyl slip resistant pad, heat-welded to membrane.

2.4 FASTENING DEVICES

- A. Termination Bar: Extruded aluminum bar, 1 inch by 1/8 inch, with pre-punched holes at 6 inches on center.
- B. Insulation Fastener and Plates: Plated steel fastener and 3 inch diameter round or 1 inch square steel plate as manufactured by or specifically recommended by the roof system manufacturer. Fasteners and plates must be factory mutual approved for the specified wind uplift pressures with the specified insulation.

2.5 PIPING SUPPORTS

- A. Condensate Supports: Pillow block pipestand for 1.5 – 1.9 inch diameter as manufactured by Miro Industries, Inc. or equal.

2.6 INSULATION/BOARD GOODS

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B. Tapered Edge Strips: ASTM C 728, mineral perlite 1-1/2 inches at edges.

- C. Polyisocyanurate Roof Insulation: ASTM C 1289, Type II, with felt or glass-fiber mat on both major surfaces, manufactured to meet the following requirements:
 - 1. Nominal Compressive Strength: 20 psi.
 - 2. Dimensional Stability: 2% maximum linear change when conditioned at 158°F and 97% relative humidity.
 - 3. Minimum Curing Time: 24 hrs. plus 24 hrs. for each inch of thickness at a minimum of 60°F before shipment from manufacturer.
 - 4. Maximum Board Thickness: 2 inches.
 - 5. Maximum Board Size: 4' x 8' (mechanically attached).
 - 6. Maximum Board Size: 4' x 4' (adhered).

- D. Gypsum Cover: ASTM C 1177, Type X, glass mat, water-resistant substrate, to be used as cover board.
 - 1.
 - 2. Product: Subject to compliance with requirements. Provide "Dens-Deck Prime" by Georgia Pacific Corporation.
 - 3. Cover board: 1/2" thick, max board size 4' x 4'
 - 4. Alternative coverboards are acceptable if approved by roofing system manufacturer in their respective approved roof systems.

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

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

PART 3 - EXECUTION

3.1 ROOF SYSTEM SCHEDULE

- A. Refer to Table 3-1 for a general schedule of the primary roof components (described from the bottom up) for each roof area. Methods of installation and related materials are in other sections of these specifications. Refer to Roof Plan.

Table 3-1

Friday Building - Areas A, B, C and D
Existing metal and concrete deck
Existing loose laid .75" mineral perlite and 1.5" XPS
Existing 1/8" per foot tapered insulation on Areas B, C, D, and part of A where shown.
New 2.6" polyisocyanurate insulation (mechanically attached)
New coverboard (adhered)
Membrane (fully adhered)

3.2 EXAMINATION

- A. Inspect all surfaces to receive work specified herein. Application of materials constitutes approval of the substrate as being satisfactory.
- B. Do not proceed with roofing until all vents, drains, curbs, cants, blocking, nailing strips, and projections through the roof deck have been installed.

3.3 INSTALLATION, GENERAL

- A. Do not apply materials on wet or damp surfaces, over dust, dirt, or other foreign matter.
- B. Accomplish application of roofing materials so that each area will be complete at the end of each workday.
- C. Protect edges and incomplete flashings against water entry at all times. Remove cut-offs and temporary protection prior to resumption of work.
- D. Provide fastener and adhesive patterns as required by roofing system manufacturer to meet the specified wind uplift pressures.

3.4 INSULATION INSTALLATION

- A. Apply insulation and cover board layers as specified herein.
 - 1. Fastening pattern to meet specified wind uplift pressures or minimum FM 1-90.
 - 2. Bottom layer of insulation to be mechanically attached with fasteners through the existing insulation to the metal and concrete decks.
 - 3. Succeeding insulation and cover board to be adhered in insulation ribbon adhesives.
- B. Where insulation is to be mechanically attached, fasten with specified fasteners through steel plates into deck:
 - 1. Provide insulation fasteners of lengths sized to penetrate metal deck a minimum of 1-1/2-inches.
 - 2. Provide insulation fasteners of lengths sized for 1 inch embedment minimum into concrete deck.
- C. Ensure full adhesion of all layers of insulation and cover board take whatever steps necessary to achieve full adhesion including, if necessary, temporary ballasting of insulation and cover board until adhesive sets.
- D. Where insulation and cover board are to be adhered, clean surfaces of all dirt, dust and other foreign matter.
- E. Install insulation and cover board using 3/4-inch-wide ribbons of adhesive. Apply adhesive in ribbons at spacings to meet specified wind uplift pressures or minimum FM 1-90.
 - 1. Contractor shall employ all additional methods and procedures as necessary to ensure insulation units and cover board units are fully adhered to the substrate including applying additional adhesive along edges, ballasting insulation units,

installing mechanical fasteners at insulation and cover board corners, etc. Walk boards into the adhesive and roll using 30-inch wide, 100-150-pound weighted steel roller.

- F. Stagger all joints off those of preceding layer.
- G. Apply insulation and cover board with end joints staggered approximately one-half the length of units.
- H. Fit all insulation and cover board units snugly to each other and to all vertical surfaces.
- I. Remove and replace all damaged units with new insulation and cover board or repair to provide a smooth surface and uniform insulation thickness.
- J. Place insulation and cover board into adhesive shortly after it has reached its maximum rise and walk into place.
 - 1. Walking insulation board in immediately after placement into adhesive may cause slippage/movement until adhesive starts to set.
- K. Install insulation crickets as follows:
 - 1. Form crickets along the upslope side of all curb mounted equipment with base widths exceeding 12 inches using factory tapered polyisocyanurate insulation and fill units and tapered edge strips.
 - 2. Form crickets between drains using factory tapered polyisocyanurate insulation units, polyisocyanurate insulation fill units and tapered edge strips.
 - 3. Install crickets of sufficient size and slope as required to ensure complete drainage and prevent standing water. Fabricate full crickets between drains with a minimum width-to-length ratio of 0.5. Fabricate partial crickets with dimensions which would result in a minimum width-to-length ratio of 0.5 if they were extended to full size.
 - 4. Fabricate crickets to be sufficiently wide to result in valleys with positive slopes of not less than 1/16:12.
 - 5. At a minimum, fabricate crickets to provide an installed slope matching that of adjacent roof slope.
 - a. Unless noted otherwise, fabricate all crickets from tapered stock as required to provide an installed slope matching that of the adjacent roof area. For example, where the roof slope is 3/8-inch per foot, fabricate crickets from tapered stock to provide an installed slope of 3/8-inch per foot.
 - 6. Start cricket construction by striking chalk lines for outer edges of tapered edge strips. Install edge strips along chalk lines, mitering and fitting at the points where lines break.
 - 7. Provide a minimum tapered polyisocyanurate thickness of 1/2 inch along edges of crickets. Taper edges of crickets down to base insulation using continuous wood fiber board tapered edge strips. Secure tapered edge strips with two (2) rows of insulation adhesive.
 - 8. Complete cricket assembly using factory tapered polyisocyanurate insulation.
 - 9. Secure cricket insulation in ribbons of insulation adhesive.
 - 10. Installed tapered edge strips along edges of cricket valleys to ensure smooth transition.

- L. Taper insulation down to drains using tapered edge beginning at a point approximately 24 inches from drain. Provide larger sumps where drains are outside the drain valley. Secure sump insulation using insulation adhesive.
 - 1. A minimum thickness of 2" insulation is required to be extended into the drain sump area.
- M. Install cover board over all insulation and crickets. Set in adhesive as described previously.

3.5 MEMBRANE INSTALLATION

- A. Install membrane in strict accordance with manufacturer's recommendations.
- B. Unroll membrane and allow to relax before installing.
- C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer.
- D. Apply bonding adhesive to substrate and underside of roofing membrane at rate(s) required by roofing manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
 - 1. Contractor shall use new/clean rollers.
- E. Mechanically or adhesively fasten roofing membrane securely at terminations, penetrations and perimeter of roofing.
- F. Apply membrane with side laps shingled with slope of roof where possible.
- G. Seams: Clean seam areas, overlap roofing membrane and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity.
 - 2. Perform pull tests daily of seams. Contractor is to date and maintain on site samples for Engineer's review.
- H. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.
- I. Repair tears, voids and lapped seams in roofing that do not meet requirements.

3.6 FLASHING APPLICATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate(s) and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Weld side and end laps to ensure a watertight seam installation.
- E. At vertical terminations, terminate and seal top of sheet flashings and mechanically anchor to substrate with specified fasteners through specified termination bar approximately 1 inch below top edge and spaced not over 6 inches on center.
- F. Unless specifically stated otherwise in these specifications or on drawings all base flashings are to extend a minimum of 8 inches above finished roof level. Costs for modifications to parapets, equipment curbs, expansion joint curbs, etc. are to be included in the contractor's bid.

3.7 WALKPAD INSTALLATION

- A. Install new walkpads at locations specified on drawings.
- B. Adhere flexible walkway products to membrane with compatible adhesive according to roofing system manufacturer's written instructions.
- C. Weld walkpad tabs to roof membrane according to manufacturer's instructions.

3.8 PIPE SUPPORT PROTECTION

- A. Adhere new PVC membrane strips under new pipe supports approximately 6 inches wider and longer than new pipe supports using materials consistent with roof membrane installation.

3.9 CONDENSATE LINE INSTALLATION

- A. At air conditioning units, provide new PVC condensate drains with integral P-trap as specified herein.
- B. Route condensate drain line to the nearest roof drain.
- C. Provide pre-manufactured stands and underlying walkpad at new and existing condensate drain line locations. Space pre-manufactured stands at 4 feet on center maximum.
- D. Cut strips of walkway units for installation under pre-manufactured stands from new full-size walkway units. Cut strips a minimum of 6 inches wider and longer than pre-manufactured stands to be supported.
- E. Adhere walkpad to membrane.
- F. Set pre-manufactured stands on walkpads without securing.
- G. Provide metal brackets to secure line to pre-manufactured stands.

3.10 PIPING SUPPORTS

- A. At existing electrical conduit lines, furnish and install new piping supports as specified herein.
 - 1. Provide manufacturer's latest printed installation instructions prior to start of work.
 - 2. Provide for each pipe support block a load distribution plate.
 - 3. Each pipe shall have its own separate run of supports.
 - 4. Contractor shall use the existing strap and fasten to top strut of new roof support using specified anchoring system and fasteners. Provide new straps where required.
- B. For larger chiller lines, provide 16-Base Strut-12. Follow manufacturer's installation requirements.
- C. Spacing: Spacing is not to exceed 6-foot centers. Do not exceed 125 lbs. load weight and make certain each pipestand is adjusted in height to even load.

WARRANTY

Owner: _____

Installer: _____

Location of Building: _____ UNC Charlotte

Name of Building: _____ Friday Building

Roof Areas: _____

Date of Substantial Completion: _____

Know all men by these presents, that we, Installer as defined above, having installed insulation, roofing, flashings and sheet metal work, and having accomplished certain other work on the roof areas identified above under contract between Owner and Contractor, warrant to Owner, with respect to said work that for a period of five (5) years from date of Substantial Completion of said work, the roofing including insulation, roofing membrane, flashings, coatings, expansion joints and sheet metal work, shall be absolutely watertight and free from all leaks, provided however that the following are excluded from this warranty:

Defects or failures resulting from abuse by the Owner.

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

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

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

We, Installer, further agree that for a period of five (5) years from date of Substantial Completion referred to above, we will make repairs at no expense to the Owner, to any defects which may develop in the work including but not limited to open seams, blisters, wrinkles, ridges, splits, warped insulation, and loose flashings in a manner compatible to the system and acceptable under industry standards and general practice.

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

(Installer)

WITNESS:

by _____
President

Notary Public

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

Owner _____ Date _____

END OF SECTION 07540

SECTION 07560 -- FLUID-APPLIED ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Provide a cold-fluid-applied polyurethane roofing/waterproofing system on structural concrete, plywood sheathing, cover board, metal or other substrates.
 - 1. Work includes substrate preparation.
 - 2. Work includes bridging and sealing air leakage and water intrusion pathways and gaps including connections of the walls to the roof air barrier, and penetrations of the building envelope including piping, conduit, ducts and similar items.

1.3 PERFORMANCE REQUIREMENTS

- A. Cold fluid applied polyurethane roofing/waterproofing system is intended to perform as a continuous barrier against liquid water and to flash or discharge to the exterior incidental water. Membrane system is expected to remain exposed and shall accommodate movements of building materials as required with accessory sealant materials at such locations such as, changes in substrate, perimeter conditions and penetrations.
- B. Installed roofing/waterproofing membrane system shall not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
- C. Manufacturer shall provide all primary roofing/waterproofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.4 SUBMITTALS

- A. Submittals: Comply with project requirements for submittals as specified herein.
- B. Product Data: For each product.
- C. Shop Drawings: Manufacturer's standard details and shop drawings for the specified system.
- D. Installer's Authorization: Installer shall provide written documentation from the manufacturer of their authorization to install the system, and eligibility to obtain the warranty specified in this section.
- E. Manufacturer' Certification: Certification showing full time quality control of production facilities and that each batch of material is tested to ensure conformance with the manufacturer's published physical properties.

- F. FM Global Compliance: Certification that the roofing/waterproofing membrane meets FM Global Approval Standard 4470 for Class I roof covers, on non-combustible substrates, with a Class 1 documented wind uplift rating meeting the design requirements for the project, a hail rating of SH and an ASTM E-108-00 Class A approval at a slope of 1 in 12.
- G. VOC Certification: Manufacturer's certification that all roofing/waterproofing system products meet current Volatile Organic Compound (VOC) regulations as established by the State in which they are being installed; and stating total VOC content, in grams per liter, for all system components (i.e. primers, adhesives, coatings, etc.).

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer shall demonstrate qualifications to supply materials of this section by certifying the following:
 - 1. Membrane Manufacturer shall show evidence that the specified membrane has been manufactured by the same organization or direct affiliate for fifteen years.
 - 2. Membrane Manufacturer shall have available an in-house technical staff to assist the contractor when necessary in the application of the products and site review of the assembly.
- B. Installer's Qualifications: The Contractor shall demonstrate qualifications to perform the Work of this Section by submitting certification or license by the roofing/waterproofing membrane manufacturer as a trained and authorized applicator of the product the installer intends to use.
- C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing/waterproofing manufacturer.
- D. Materials Compatibility: All materials included in the roofing/waterproofing assembly, as well as associated materials adhered to/applied beneath the roofing/waterproofing membrane shall have been tested and verified to be compatible. Include written testing documentation and test reports if requested by Architect.
- E. Final Inspection: Manufacturer's representative shall provide to the Architect a comprehensive site visit report after the completion of the roofing/waterproofing system
- F. Applicable Regulations: Comply with local code and requirements of authorities having jurisdiction. Do not exceed VOC regulations as established by the State in which they are being installed; including total VOC content, in grams per liter, for all system components (i.e. primers, adhesives, coatings, and similar items).
- G. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.6 PRE-INSTALLATION CONFERENCE

- A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect/consultant, owner, manufacturer's representative and any other persons directly involved with the performance of the Work. The Installer shall record conference discussions and to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending

party. The main purpose of this meeting is to review foreseeable methods and procedures related to the Work.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all roofing/waterproofing materials to the site in original containers, with factory seals intact.
- B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.
- C. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
- D. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.
- E. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application

1.8 PROJECT CONDITIONS

- A. Weather: Proceed with roofing/waterproofing only when existing and forecasted weather conditions permit. Membrane application can proceed when precipitation is imminent. Sikalastic RoofPro is capable of curing in immersion immediately after application. Visual marks in the form of pock marks may occur if uncured membrane is exposed to heavy rainfall, but is not considered a limiting factor in the performance of the roofing membrane. Ambient temperatures shall be above 36°F (2°C) when applying the roofing/waterproofing system.
- B. All surfaces to receive the roofing/waterproofing membrane shall be free from visible water, dew, frost, snow and ice. Application of roofing/waterproofing membrane shall be conducted in well ventilated areas.
- C. Roofing Membrane:
 - 1. Roofing/waterproofing membrane is not intended to be exposed or in contact with a constant temperature below -22°F (-30°C) or in excess of 176°F (80°C). See technical data sheets for limitations, i.e., hot pipes and vents or direct steam venting.
 - 2. Specified roofing/waterproofing membrane is non-flammable and VOC compliant. Consult container, packaging labels and Material Safety Data Sheets (MSDS) for specific safety information.
 - 3. Specified roofing/waterproofing membrane is resistant to gasoline, paraffin, fuel oil, mineral spirits, and moderate solutions of acids and alkalis, acid rain and detergents. Some low molecular weight alcohols can soften. Any exposure to foreign materials or chemical discharges shall be presented to membrane manufacturer for evaluation to determine any impact on the waterproof membrane assembly performance prior to warranty issuance.
- D. Contractor shall ensure adequate protection during installation of the roofing/waterproofing system.

- E. Specified roofing/waterproofing membrane may be used as a temporary roofing/waterproofing barrier when applied at a wet film thickness of 15-20 mils to a properly prepared deck. When the specified roofing/waterproofing membrane is used as a temporary roofing/waterproofing barrier the roofing/waterproofing membrane does not need to be removed prior to installation of the finished roofing/waterproofing system

1.9 WARRANTY

- A. Warranty: Provide manufacturer's standard warranty. Materials warranty shall be for a minimum of one year starting at the date of Substantial Completion. System warranty shall be for the following duration in accordance with specified system.
 - 1. Warranty Length: 20 years.
 - 2. Contractor's Warranty: Contractor's Five(5) year warranty for labor and materials in form provided herein.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Manufacturer: Sika Corporation, 201 Polito Avenue, Lyndhurst NJ 07071. Toll Free 800-933-SIKA (7452), www.sikausa.com. No substitutions without prior written approval by the Architect.

2.2 ROOFING SYSTEM

- A. Fluid-Applied Membrane System, 20 Year Warranty: Sikalastic RoofPro 20, Sika Reemat Premium:
 - 1. Base Layer: Sikalastic 641 Lo-VOC, 50 mils wet film thickness, 32 sf/gal coverage rate approx.
 - 2. Top Layer: Sikalastic 641 Lo-VOC, 30 mils wet film thickness; 53 sf/gal coverage rate approx.

2.3 MEMBRANES AND COATINGS

- A. Base embedment coat with Reemat reinforcement shall be Sikalastic 641 Lo-VOC by Sika Corp, a single component, cold, fluid applied, moisture triggered, aliphatic, polyurethane base coat membrane.
- B. Base embedment coat with Fleece reinforcement shall be Sikalastic 641 Lo-VOC by Sika Corp, a single component, cold, fluid applied, moisture triggered, aliphatic, polyurethane base coat membrane.
- C. Top coat with both Reemat and Fleece reinforcement shall be Sikalastic 641 Lo-VOC by Sika Corp, a single component, cold, fluid applied, moisture triggered, aliphatic, polyurethane top coat membrane.
- D. Base coat and top coat membranes shall be low in VOC's, and be a one component elastomeric polyurethane membrane that may be brush or roller applied. Membrane shall have the following physical properties and conforms to ASTM D7311-07: Standard

Specification for Liquid Applied, Single Component, Moisture-Triggered, Aliphatic Polyurethanes used in Roofing.

E. Liquid Property Requirements:

1. Sikalastic 641 Lo-VOC:

- a. VOC Content, ASTM D-2369-81: < 50 g/l
- b. Volume Solids, ASTM D2697: 89% minimum.
- c. Weight Solids: ASTM D1644: 92% minimum.
- d. Sag Resistance, ASTM D4400: No sag at 700 micrometers (0.028 in. / 28 mil)

F. Film Physical Property Requirements:

1. Tensile Strength (Tension): ASTM D412: Minimum 1.86 MPa (270lb/in²)
2. Elongation: ASTM D412 : MIN 200%.
3. Accelerated Weathering FL/UV – 5000 Hours, ASTM G 154, No cracking or checking.
4. Water Vapor Transmission, Permeability / Permeance: ASTM E96: Maximum 8.5 gms/m²/ day (0.033 perm-inches).
5. Flexibility – Mandrel Bend, ASTM D522: Pass, no cracking or flaking.
6. Tear Resistance, ASTM D625: Minimum 5.8 kN/m (33 lbf/in)
7. Indentation Hardness, ASTM D2240: 82 Durometer Units (+/- 5 units)
8. Dynamic Puncture Resistance, ASTM D5635: Minimum 15 joules (357 ft.poundals)
9. Static Puncture Resistance, ASTM D5602: Minimum 20.7 kg. (45.5 lbs.)

2.4 MEMBRANE REINFORCEMENT - FIBERGLASS

- A. Reinforcement for the roofing/waterproofing membrane system shall be Sika Reemat by Sika Corp, a conformable, random strand fiberglass mat specifically designed to provide greater impact resistance and greater resistance to excessive thermal and structural movement while maintaining elasticity and membrane film integrity.
- B. Supplemental reinforcement of the roofing/waterproofing membrane system shall be Sika Flexitape Heavy by Sika Corp, a nylon mesh specifically designed for local reinforcement of the roofing/waterproofing membrane at structural cracks, expansion joints and transitions between dissimilar materials.

2.5 MEMBRANE REINFORCEMENT - POLYESTER

- A. Reinforcement for the roofing/waterproofing membrane system shall be Sika Fleece by Sika Corp., a non-woven, needle-punched polyester fleece specifically designed to provide greater impact resistance and greater resistance to excessive thermal and structural movement while maintaining elasticity and membrane film integrity.
- B. Supplemental reinforcement of the roofing/waterproofing membrane system shall be Sika Flexitape Heavy by Sika Corp, a nylon mesh specifically designed for local reinforcement of the roofing/waterproofing membrane at structural cracks, expansion joints and transitions between dissimilar materials.

2.6 FILLET BEAD AND PENETRATION SEALANT

- A. Sealant for fillet bead applications and membrane penetrations shall be Sikaflex® 11FC by Sika Corp., a one part polyurethane sealant suitable for fillet bead transition compound to

be applied prior to the installation of the membrane system at changes in substrate direction, sealing reglet terminations, cracks in the substrate and penetrations of the roof /waterproofing system.

- B. Exposed finish sealant shall be Sikaflex Hyflex 150 LM by Sika Corp., a one part low modulus hybrid sealant suitable for finishing terminations at saw cuts and all UV exposed sealant terminations. Also suitable for fillet bead transition, changes in substrate direction, cracks in the substrate and penetrations of the roof before installation of the RoofPro membrane system.

2.7 PRIMERS

- A. Primer for concrete and roof cover boards shall be Sika Concrete Primer by Sika Corp., a two component, rapid curing, high solids, solvent based polyurea primer designed for sealing cementitious and gypsum based substrates or Sika Concrete Primer Lo-VOC by Sika Corp., a single component, rapid curing, high solids, moisture cured primer designed for sealing cementitious and gypsum based substrates.
- B. Water based primer for roof cover boards shall be Sika Bonding Primer by Sika Corp., a fast-drying, two-component, water-based, adducted polyamide epoxy primer.
- C. Epoxy primer for green concrete shall be Sikalastic DTE Primer by Sika Corp., a two-component, solvent free, epoxy primer specifically designed to be applied to damp or new concrete susceptible to high moisture drive prior to the application of roofing/waterproofing systems.
- D. Metal primer shall be Sikalastic EP Primer/Sealer by Sika Corp., a two-component, cyclo-aliphatic, amine cured material with a high level of corrosion resistance for metal, modified bitumen surfaces, and chemically treated wood.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify Architect in writing of any discrepancies. Commencement of the Work in an area shall mean Installer's acceptance of the substrate.
- B. Surfaces shall be sound, dry, clean and free of oil, grease, dirt, excess mortar or other contaminants. Fill voids, gaps and spalled areas in substrate to provide an even plane. Strike masonry joints full flush.

3.2 SURFACE PREPARATION

- A. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters. Verify that all roof openings or penetrations through the roof are secured back to solid blocking. Ensure all preparatory Work is complete prior to applying membrane.
- B. All surfaces shall be blown clean using an air compressor to remove any remaining loose debris.

- C. At all inside corners, gaps or voids at the juncture of the deck and penetrations apply a minimum 3/4 inch fillet bead of polyurethane sealant and allow to cure per roof /waterproofing membrane manufacturer's technical data sheets prior to installing the roof /waterproofing membrane system.
- D. At all moving cracks, moving joints between dissimilar materials, and similar conditions, create a minimum 1 inch wide bond break utilizing bond breaker tape, centered over the crack or joint.
- E. Membrane terminations shall be established prior to project start-up and documented in shop drawings. Terminations shall occur in raked-out mortar joints, saw cut terminations or under installed counter-flashing materials.
- F. Use tape lines to achieve a straight edge detail.

3.3 SUBSTRATE PREPARATION

- A. Acceptable substrates include concrete, concrete block, solid wood and plywood sheathing, cover boards and metal.
- B. Existing Membrane:
 - 1. Ensure that there is no trapped moisture via an infrared scan.
 - 2. Pressure wash the roof to remove all dust, dirt and debris from the surface.

3.4 PRIMING

- A. Existing Membrane Tie-In:
 - 1. Apply specified reactivation primer to existing roof/waterproofing membrane greater than seven (7) days old by roller at a maximum coverage rate of 250 sf/gallon. Allow to cure in accordance with manufacturer's technical data sheets prior to application of subsequent roof/waterproofing membrane system.

3.5 MEMBRANE REINFORCEMENT

- A. Reinforcement of Cracks, Plywood and Cover Board Joints, and Base/Curb Flashing Transitions:
 - 1. For all locations where the specified membrane system is to be applied directly to the substrate surface, provide reinforcement of cracks and joints prior to applying the specified membrane system
 - 2. For all moving cracks and joints, create a minimum 1 inch wide bond break centered over the crack or joint by applying bond break tape centered over each crack or joint.
 - 3. For all non-moving cracks and joints, rout and seal with Sikaflex polyurethane sealant.
 - 4. For all horizontal-to-vertical transitions, provide a 3/4" x 3/4" Sikaflex polyurethane sealant cant.
 - 5. Apply a minimum of a 3 inch wide strip of Sika Joint Tape SA directly or alternatively Flexitape Heavy membrane reinforcement of into a bed of liquid roofing/waterproofing membrane. Back roll reinforcement to fully embed reinforcement into the wet liquid polyurethane membrane. Add more liquid membrane as needed to fully embed the reinforcement.

6. Ensure reinforcement is not in tension during embedment.

3.6 COLD FLUID APPLIED FIELD MEMBRANE APPLICATION

- A. Install roofing/waterproofing membrane system in accordance with current technical data sheets.
 1. Take precautions as required to protect property and staff from overspray.
- B. Apply base embedment coat to horizontal deck and vertical wall surfaces by brush or with 1/2 inch – 3/4 inch nap roller to achieve a continuous and uniform minimum wet film thicknesses as required by coating manufacturer. For fleece application, approximately 2/3 of the total resin shall be applied as the base embedment coat.
- C. Immediately lay specified conformable membrane reinforcement into the wet base embedment coat. Reemat reinforcement is typically precut before application; Fleece reinforcement is typically precut at flashings only before application.
- D. Apply pressure to the membrane reinforcement with a roller as appropriate to fully embed and saturate the membrane reinforcement into liquid roofing/waterproofing material. Remove air pockets from under the membrane by rolling them out.
- E. Apply additional liquid material as required to ensure the membrane reinforcement is fully embedded and has conformed to the substrate without tenting or visible pinholes.
- F. Overlap sheets of Reemat membrane reinforcement a minimum of 2 inches in all directions. Overlap sheets of Fleece membrane reinforcement a minimum of 3 inches at side laps and 6 inches at end laps.
- G. Extend membrane reinforcement vertically at adjacent wall surfaces in accordance with project details and specifications.
- H. When using fiberglass mat reinforcement, allow the base embedment coat to fully cure dry prior to the placement of top coat or other applications of the specified roofing/waterproofing material.
- I. When using polyester fleece reinforcement, immediately apply the resin top coat wet-on-wet.
- J. Apply top coat by nap roller or brush to achieve a continuous and uniform minimum wet film thickness as specified by coating manufacturer.
- K. Install all flashings in accordance with manufacturer's construction details.

3.7 PARAPET AND WALL FLASHINGS

- A. Clean, prepare and prime flashing substrate surfaces ready to receive membrane flashing applications.
- B. All parapet, wall, and curb flashings shall be provided with a sealant cant with Flexitape reinforcement prior to flashing application.

- C. Terminate roofing/waterproofing membrane system, termination under installed counterflashing materials and coping caps.
- D. Install metal counter flashings in accordance with details.

3.8 DRIP EDGES AND OTHER METAL FLANGED FLASHING

- A. Clean, prepare and prime metal flange surfaces ready to receive membrane flashing applications.
- B. Metal flanges are typically encapsulated between two membrane layers, usually by providing membrane flashing as a stripping ply over the metal flange, with the field or flashing membrane extending beneath the metal flange. It is also acceptable to install the stripping ply under the metal flange, and extend the field or flashing membrane over the metal flange.
- C. For insulated roof assemblies, metal flanges shall be mechanically fastened through the first membrane layer to wood nailers. For direct to substrate membrane applications where the roof / waterproofing membrane is applied directly to the structural deck, metal flanges shall be mechanically fastened through the first membrane layer to the structural deck.

3.9 ROOF DRAINS

- A. Clean, prepare and prime surfaces ready to receive membrane applications. Block drain bowl opening to avoid roofing/waterproofing material from entering the drainage system.
- B. Remove strainer baskets and clamping rings from the drain bowl assembly. Temporarily replace the bolts back into assembly to avoid miss-alignment of connections after membrane applications are completed.
- C. Extend the liquid roofing/ waterproofing material and membrane reinforcement directly into the throat of the prepared drain.
- D. Remove drain blocks and allow the roofing/waterproofing system to fully cure dry prior to re-connecting the drain bowl assembly.

3.10 ROOF PENETRATIONS

- A. Clean, prepare and prime surfaces ready to receive membrane flashing applications. Ensure that penetrations are secured to prevent movement.
- B. Penetration flashings typically consist of two components. A vertical flashing component extends up the penetration and is torn (if Reemat reinforcement) or finger cut (if fleece reinforcement) at the bottom so that it can be extended horizontally onto the deck/substrate. A horizontal flashing component covers all of the tears/finger cuts and extends vertically up the penetration. The intent is to achieve a 2-3 inch overlap of the two flashing components.

3.11 APPLICATION OF PENETRATION SEALANT

- A. Seal reglet-based membrane terminations, heads of exposed mechanical fasteners, around penetrations, duct work, electrical and other apparatus extending through the roofing/waterproofing membrane with specified penetration sealant.

3.12 ROOF PROTECTION

- A. Protect roofing/waterproofing Work from other trades until completion.
- B. Stage materials in such a manner that avoids foot traffic over completed roof areas.
- C. Provide temporary walkways and platforms to protect completed Work from traffic and point loading during the application process.
- D. Provide temporary membrane tie-ins and water-stops at the end of each workday and remove prior to commencement of Work the following day.

3.13 CLEAN-UP

- A. Work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, and/or debris to collect on the roof deck area. Trash, waste, and/or debris shall be removed from the roof on a daily basis.
- C. All tools and unused materials shall be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition

WARRANTY

Owner: _____

Installer: _____

Location of Building: _____ UNC Charlotte

Name of Building: _____ Reese Building

Roof Areas: _____

Date of Substantial Completion: _____

Know all men by these presents, that we, Installer as defined above, having installed insulation, roofing, flashings and sheet metal work, and having accomplished certain other work on the roof areas identified above under contract between Owner and Contractor, warrant to Owner, with respect to said work that for a period of five (5) years from date of Substantial Completion of said work, the roofing including insulation, roofing membrane, flashings, coatings, expansion joints and sheet metal work, shall be absolutely watertight and free from all leaks, provided however that the following are excluded from this warranty:

Defects or failures resulting from abuse by the Owner.

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

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

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

We, Installer, further agree that for a period of five (5) years from date of Substantial Completion referred to above, we will make repairs at no expense to the Owner, to any defects which may develop in the work including but not limited to open seams, blisters, wrinkles, ridges, splits, warped insulation, and loose flashings in a manner compatible to the system and acceptable under industry standards and general practice.

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

(Installer)

WITNESS:

by _____
President

Notary Public

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

Owner _____ Date _____

END OF SECTION 07560

SECTION 07620 – SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Sheet metal flashing and trim.
- B. Related Sections include the following:
 - 1. Division 7 Section “Thermoplastic Membrane Roofing.”

1.3 SUBMITTALS

- A. Materials List: Give written notification of the brand name and manufacturer of each material proposed for use and include a statement that all proposed materials meet the specification requirements. Obtain approval prior to placing orders.
 - 1. Submittal of catalog cut sheets, etc. in lieu of the materials list required above is not acceptable.
- B. Submit shop drawings of all specified types of metal shapes, showing details of proposed installation where appropriate.
- C. Submit two 6-inch long samples of each metal shape.
- D. Manufacturer Certificates: Original document signed by a responsible officer of the manufacturing firm, notarized, on manufacturer’s standard letterhead, certifying materials furnished for project comply with the referenced standard. Certificate shall specifically reference the project and applicable compliance standard.
- E. Obtain approval of shop drawings, samples and certifications prior to fabrication and installation.
- F. No sheet metal item is to be purchased, fabricated, or installed until all required shop drawings and related submittals for each item are approved. Items purchased, fabricated and/or installed which are not in compliance with approved shop drawings are subject to immediate removal from the project at contractor’s expense.
- G. Color Chart: Manufacturer’s standard range of colors for prefinished metals, including available gauges.

- H. Provide written approval indicating the shop formed metal or premanufactured edge metal/coping meets ES-1 certifications.

1.4 STORAGE

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

1.5 WARRANTIES

- A. Upon completion of the work, furnish from manufacturer a standard twenty (20) year finish warranty.
- B. Finish: Deterioration includes, but is not limited to, the following:
 - 1. Color fading more than 5 Hunter Units when tested according to ASTM D 2244.
 - 2. Chalking in excess of a No. 8 Rating when tested according to ASTM D 4214.
 - 3. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

PART 2 - PRODUCTS

2.1 SHEET METAL MATERIALS

- A. Aluminum-Zinc (Galvalume) Alloy-Coated Steel Sheet: ASTM A 792/A792M, Class AZ50 coating designation, Grade 40 (Class AZM150 coating designation, Grade 275); structural quality.
- B. Exposed Finish: Kynar® 500 based fluoropolymer coating, containing not less than 70% polyvinylidene fluoride resin by weight. Mask metal with protective plastic film.
 - 1. Color: As selected by Owner from manufacturer's full range of colors.

2.2 AUXILIARY MATERIALS

- A. Sealant: ASTM C920, Type S, Grade NS, Class 25, one-part urethane sealant.

2.3 SHEET METAL SCHEDULE

- A. Counterflashing: 24 ga. prefinished galvalume
- B. Receiver: 24 ga. prefinished galvalume
- C. Coping Caps: 24 ga. prefinished galvalume
- D. Cleat: 22 ga. Prefinished galvalume
- E. Bonnet Flashings: 24 ga. Stainless steel

- F. Hot Stack Flashing: 24 ga. Stainless steel

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Inspect all surfaces to which metal is to be applied. Do not install metal unless surfaces are even, sound, clean, dry and free from defects that might affect the application.
- B. Follow recommendations of Sheet Metal and Air Conditioning Contractors National Association Architectural Sheet Metal Manual (Seventh Edition) for fabricating in-shop and on-site, and for installation, unless otherwise specified herein or on Drawings.
- C. Follow published instructions of the product manufacturer for installation of extruded or proprietary metal products, unless otherwise specified herein or on Drawings.
- D. Use nails, screws, bolts, cleats or other fasteners of the same material or, if approved by Engineer, of material chemically compatible with the contacted metal.
1. Use stainless steel fasteners at all locations in contact with pressure-treated lumber.
- E. Fabricate cleats to be a minimum one gauge heavier than metal to be secured by cleat unless otherwise noted.
1. Secure cleats to substrate with fasteners specifically manufactured for the purpose at spacings of 6 inches, on center. Fasteners are to be manufactured of metal chemically compatible with the contacted metal. Fasteners to be used in wood substrates are to be ring shank. Fasteners are to be located as close to hem of cleat as practical but no more than 2 inches from hem unless specifically indicated otherwise herein or on drawings.
- F. Solder metal, where required, using standard industry techniques in accordance with the requirements of the metal manufacturer and the SMACNA Architectural Sheet Metal Manual for the types of metal to be soldered. Joints shall be thoroughly sweated to ensure full penetration of solder in the joint and to ensure a secure connection. Riveted joints shall be fully soldered to eliminate rivet holes or potential for corrosion.
- G. Install metal to be water and weathertight with lines, arises and angles sharp and true and with plane surfaces free of waves or buckles. All raw edges of exposed or finish sheet metal shall be hemmed.
- H. Install shop-formed flashings in 10-foot lengths maximum and with minimum number of pieces in each straight run.
- I. Do not place dissimilar metals in direct contact or in positions where water sheds across both metals.
- J. Where aluminum is in contact with masonry or concrete, coat the contacting surface with bituminous paint.

- K. Miter and seal all inside and outside corners of coping caps. Shop fabricated corner pieces are preferable.
- L. Shop form all metal shapes, which are to be formed of prefinished metal, with protective plastic film in place. Do not remove plastic film until just prior to (or, if possible, after) installation.
- M. At all corners, shop form corner pieces of coping caps with 18-inch legs (joints no more than 18 inches from corner).
- N. Form faces of coping caps and gravel stop with vertical faces of sufficient width to extend a minimum of 1-1/2 inches below wood blocking.
- O. All edge metal and coping shall comply with ES-1.

3.2 COUNTERFLASHING/RECEIVER INSTALLATION

- A. Install new counterflashings and receiver as specified herein. Refer to SMACNA Architectural Sheet Metal Manual Figure 4-6 and Drawings.
- B. Secure counterflashing or receiver to vertical surface with appropriate fasteners spaced 9-inches on center.
 - 1. Secure counterflashing to receiver using compatible gasketed screws spaced at 9 inches on center.
- C. Refer to sheet metal schedule for gauge and metal type.
- D. Install butyl tape behind counterflashing or receiver.
- E. Notch and lap joints and inside corners. Notch and seam outside corners. Do not rivet or otherwise secure joints and corners.
- F. Lap ends of counterflashing 4 inches. Crimp hem of overlapping section around hem of underlapping section.
- G. Fill sealant cove to full depth with permanent, non-shrinking sealant.

3.3 COPING CAP INSTALLATION

- A. Install new coping cap at parapet walls and area divider curbs as specified herein. Refer to SMACNA Architectural Sheet Metal Manual Figure 3-4A.
- B. Refer to sheet metal schedule for gauge and metal type.
- C. Prior to installation of coping cap, extend roof membrane flashings across the top of the blocking and extending down the outside and inside face approximately the width of the vertical sections of the coping cap.
- D. Secure both vertical sections with a continuous cleat nailed to wood blocking. Use drive pins for securement into masonry or concrete.

- E. Refer to SMACNA Architectural Sheet Metal Manual Figure 2-1, Detail 1 for cleat and coping hem dimensions.
- F. Join sections with standing seam and caulk with approved sealant. Refer to SMACNA Architectural Sheet Metal Manual Figure 3-1, Detail 1.
- G. At coping cap terminations at higher walls, turn coping cap up vertical 4", seal, and fasten. Provide surface-mounted counterflashing.

3.4 MISCELLANEOUS FLANGED FLASHING INSTALLATION

- A. Set flange on top of roofing membrane in solid bed of mastic.
- B. Install bonnet flashing extending below and beyond edges of flashing riser and secure mechanically to roof penetration so that connection is watertight. Securement by sealant is not acceptable.

3.5 HOT STACK FLASHING INSTALLATION

- A. Furnish and install new stack flashings at existing stack as specified herein.
- B. Form new stack cap flashing from 24 gauge stainless steel. Form new metal base flashing from 22 gauge stainless steel. Refer to Drawings.
- C. Extend flange of metal base flashing onto wood blocking at least 4 inches. Secure flange to wood blocking using stainless steel fasteners spaced 4 inches on center. Extend metal base flashing above finished roof level at least 8 inches.
- D. Vertical flange of cap flashing is to be at least 3 inches. Secure flange of cap flashing to base flashing using stainless steel screws (through EPDM washers) spaced 8 inches on center.
- E. Secure cap flashing to existing stack with stainless steel draw band. Fill sealant cove with permanent, non-shrink sealant.
- F. Provide membrane flashings at flange in accordance with manufacturer's instructions. Refer to Details.

END OF SECTION 07620

FORMS

FORM OF PROPOSAL

Friday Building Roof Project _____

Contract: _____

UNC Charlotte _____

Bidder: _____

SCO ID No. 22-24654-01 _____

Date: _____

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

The Bidder proposes and agrees if this proposal is accepted to contract with the State of North Carolina through UNC Charlotte 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

Friday Building Roof Project

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

UNC Charlotte

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

SINGLE PRIME CONTRACT: _____

BASE BID: Roof Replacement

_____ Dollars(\$)

ALTERNATE NO. 1 FB: Fall Protection

_____ Dollars \$

ALTERNATE NO. 2 FB: Ladders

_____ Dollars \$

General Subcontractor:

Plumbing Subcontractor:

_____ Lic _____

_____ Lic _____

Mechanical Subcontractor:

Electrical Subcontractor:

_____ 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.

UNIT PRICES

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

Description	Unit of Measurement	Quantity	Price
1. Replace damaged/deteriorated wood blocking	Bd. Ft.	1000	
2. Wire brush, prime, and paint metal decking	Sq. Ft.	1000	
3. Wire brush, prime, and paint plate metal decking	Sq. Ft.	500	
4. Replace metal decking	Sq. Ft.	100	
5. Secure metal deck side laps	Fastener	100	
6. Secure metal deck to framing	Fastener	100	
7. Replace damaged/deteriorated plywood	Sq. Ft.	160	
8. Replace wet or damaged insulation	Sq. Ft.	1000	

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.

<p>Note: Bidders must always submit <u>with their bid</u> the Identification of Minority Business Participation Form listing all MB contractors, <u>vendors and suppliers</u> 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.</p>

Proposal Signature Page

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

Respectfully submitted this day of _____

(Name of firm or corporation making bid)

WITNESS:

(Proprietorship or Partnership)

By: _____
Signature

Name: _____
Print or type

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

Address _____

ATTEST:

By: _____

License No. _____

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

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

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

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

Identification of HUB Certified/ Minority Business Participation

I, _____,
 (Name of Bidder)

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

Firm Name, Address and Phone #

Work Type

*Minority
 Category Certified
 (Y/N) **HUB

*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.

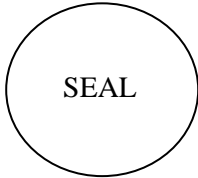
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

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

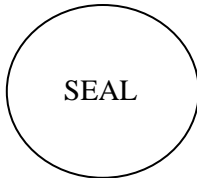
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

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 _____

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

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 _____

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 ID# _____ Amount of Bid \$ _____

 (Project Name)

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

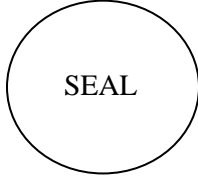
The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

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 _____

FORM OF PROPOSAL

Reese Building Roof Project _____
UNC Charlotte _____
SCO ID No. 22-24654-01 _____

Contract: _____
Bidder: _____
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 UNC Charlotte 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

Reese Building Roof Project

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

UNC Charlotte

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

SINGLE PRIME CONTRACT: _____

BASE BID: Roof Coating
_____ Dollars(\$)

ALTERNATE NO. 1 RB: Fall Protection
_____ Dollars \$

ALTERNATE NO. 2 RB: Through Wall Flashing
_____ Dollars \$

_____ Dollars \$

General Subcontractor:

Plumbing Subcontractor:

_____ Lic _____

_____ Lic _____

Mechanical Subcontractor:

Electrical Subcontractor:

_____ 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.

UNIT PRICES

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

Description	Unit of Measurement	Quantity	Price
1. Replace wet/damaged insulation	Sq. Ft.	1000	
2. Tuck point mortar joints	Linear Ft.	300	

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

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

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

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

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

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

* **OR** *

If less than the 10% goal, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

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

Proposal Signature Page

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

Respectfully submitted this _____ day of _____, 20_____.

(Name of firm or corporation making bid)

WITNESS:

By: _____
Signature

(Proprietorship or Partnership)

Name: _____
Print or type

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

Address _____

ATTEST:

By: _____

License No. _____

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

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

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

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

Identification of HUB Certified/ Minority Business Participation

I, _____,
 (Name of Bidder)

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

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

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

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.
The total value of minority business contracting will be (\$) _____ .**

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

County of _____

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.

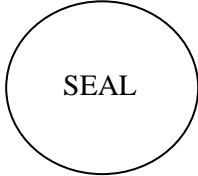
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

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: _____

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

County of _____

Affidavit of _____
(Name of Bidder)

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

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

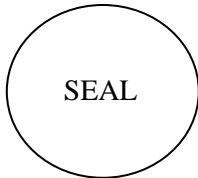
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



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

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.**

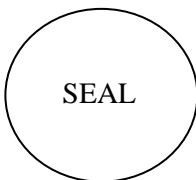
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

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 _____

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 ID# _____ Amount of Bid \$ _____

 (Project Name)

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

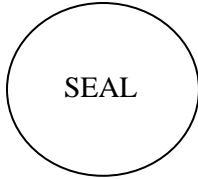
The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

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 _____

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
UNC Charlotte 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 obli-
gation 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 2022 by and between_____. hereinafter called the Party of the First Part and the **State of North Carolina, through UNC Charlotte** 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:

Reese and Friday Roofs – SCO ID #22-22654-01

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:

Base Bid
Alt. No. 1
Alt. No. 2
TOTAL

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

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

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

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

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

Witness:

Contractor: (Trade or Corporate Name)

(Proprietorship or Partnership)

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)

UNC Charlotte
(Agency, Department or Institution)

Witness:

By: _____

Title: _____

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____
Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project: _____

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body, identified as shown above and hereto attached:

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

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

Executed in _____ counterparts.

Witness:

Contractor:(Trade or Corporate Name)

(Proprietorship or Partnership)

By: _____

Attest: (Corporation)

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

By: _____

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

(CORPORATE SEAL)

(Surety Company)

Witness:

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

(Surety Corporate Seal)

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____
Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project: _____

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body identified as shown above and hereto attached:

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

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

Executed in _____ counterparts.

Witness:

Contractor: (Trade or Corporate Name)

(Proprietorship or Partnership)

By: _____

Attest: (Corporation)

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

By: _____

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

(CORPORATE SEAL)

(Surety Company)

Witness:

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

(Surety Corporate Seal)

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

Approval of the Attorney General

CERTIFICATION BY THE OFFICE OF STATE
BUDGET AND MANAGEMENT

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

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

This _____ day of _____, 20_____.

Signed: _____
Budget Office

WARRANTY

Owner: UNC Charlotte

Installer: _____

Location of Building: Charlotte, North Carolina

Name of Building: Reese Building

Roof Areas: _____

Date of Substantial Completion: _____

Know all men by these presents, that we, Installer as defined above, having installed insulation, roofing, flashings and sheet metal work, and having accomplished certain other work on the roof areas identified above under contract between Owner and Contractor, warrant to Owner, with respect to said work that for a period of five (5) years from date of Substantial Completion of said work, the roofing including insulation, roofing membrane, flashings, coatings, expansion joints and sheet metal work, shall be absolutely watertight and free from all leaks, provided however that the following are excluded from this warranty:

Defects or failures resulting from abuse by the Owner.

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

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

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

We, Installer, further agree that for a period of five (5) years from date of Substantial Completion referred to above, we will make repairs at no expense to the Owner, to any defects which may develop in the work including but not limited to open seams, blisters, wrinkles, ridges, splits, warped insulation, and loose flashings in a manner compatible to the system and acceptable under industry standards and general practice.

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

(Installer)

WITNESS:

by _____
President

Notary Public

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

Owner Date

WARRANTY

Owner: UNC Charlotte

Installer: _____

Location of Building: Charlotte, North Carolina

Name of Building: Friday Building

Roof Areas: _____

Date of Substantial Completion: _____

Know all men by these presents, that we, Installer as defined above, having installed insulation, roofing, flashings and sheet metal work, and having accomplished certain other work on the roof areas identified above under contract between Owner and Contractor, warrant to Owner, with respect to said work that for a period of five (5) years from date of Substantial Completion of said work, the roofing including insulation, roofing membrane, flashings, coatings, expansion joints and sheet metal work, shall be absolutely watertight and free from all leaks, provided however that the following are excluded from this warranty:

Defects or failures resulting from abuse by the Owner.

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

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

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

We, Installer, further agree that for a period of five (5) years from date of Substantial Completion referred to above, we will make repairs at no expense to the Owner, to any defects which may develop in the work including but not limited to open seams, blisters, wrinkles, ridges, splits, warped insulation, and loose flashings in a manner compatible to the system and acceptable under industry standards and general practice.

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

(Installer)

WITNESS:

by _____
President

Notary Public

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

Owner _____ Date _____

ASBESTOS FREE WARRANTY
(On Contractor's Standard Letterhead)

Owner: UNC Charlotte
Location of Building: Charlotte, North Carolina
Name of Building: Friday Building

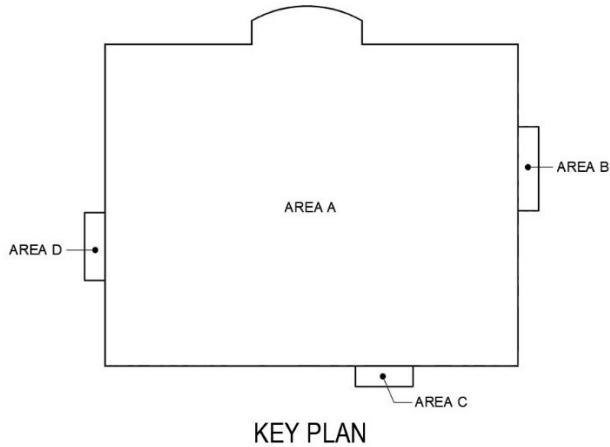
Know all men by these presents that we, _____
(Contractor, Subcontractor, Material Supplier or Equipment Manufacturer)

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

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

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

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



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

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

WITNESS:

Company

By

Notary Public

ASBESTOS FREE WARRANTY
(On Contractor's Standard Letterhead)

Owner: UNC Charlotte
Location of Building: Charlotte, North Carolina
Name of Building: Reese Building

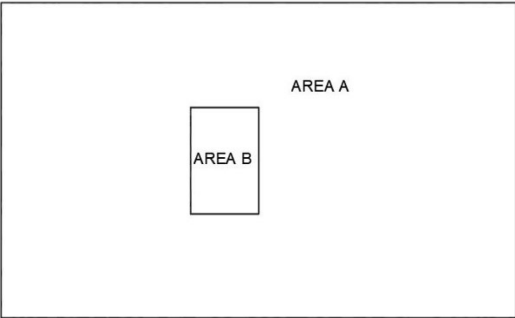
Know all men by these presents that we, _____
(Contractor, Subcontractor, Material Supplier or Equipment Manufacturer)

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

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

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

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



KEY PLAN

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

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

WITNESS: _____

Company

By

Notary Public

SUBMITTAL TRANSMITTAL

Date: _____

From: _____

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

Project Name: Reese and Friday Roofs

Owner: UNC Charlotte

Owner's Project Number: _____

Engineers Project Number: FH226151

Submittal Number: _____ No. of Copies: _____

Specification Section and Paragraph Reference(s): _____

Drawing/Detail Reference(s): _____

Location of Work: _____

Product Manufacturer: _____

Supplier/Subcontractor: _____

Date submitted to Contractor: _____

Qualifications/Deviations From Specifications: _____

CONTRACTOR'S APPROVAL

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

SIGNED: _____

DATE: _____

NAME: _____

ENGINEER'S APPROVAL

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

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

SIGNED: _____
TERRACON CONSULTANTS, INC.

DATE: _____

END OF FORMS SECTION