

Project Manual

University of North Carolina, Charlotte

Demolition of Sanford Hall

Charlotte, NC

SCO ID#: 24-27645-01A

Code: 42326

Item: 309

Owner: The University of North Carolina at Charlotte



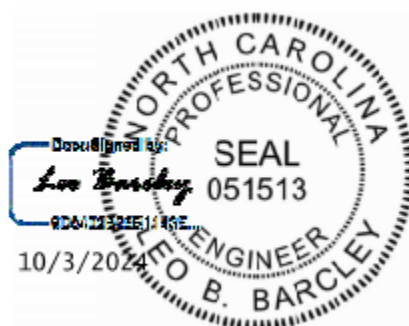
Charlotte, NC 28223

October 14, 2024

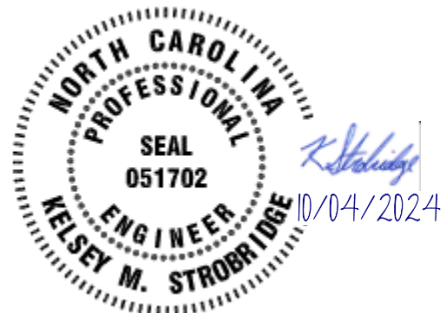
Prepared By:

Kimley»Horn

Terracon



Specification Responsibility:
Div. 01, 024116, 315000



Specification Responsibility:
311000, 312000, 312500, 329200,
SP-1

Russell Harrings, CIH
NC Asbestos Project Designer No. 40422
Specification Responsibility: 028200

ADVERTISEMENT FOR BIDS

Sealed proposals will be received until 2:00 PM on Tuesday, November 12, 2024, in Room 119 at the Facilities Management, Police & Public Safety Building (Building 55) on UNCC's campus at 9151 Cameron Blvd, Charlotte, NC 28262, for the Sanford Hall Demolition project at which time and place bids will be opened and read.

University of North Carolina at Charlotte
Project Name: Sanford Hall Demolition
SCO #: 24-27645-01A
Code: 42326
Item: 309

A non-mandatory Pre-Bid meeting will be held at the project site, Sanford Hall, Sanford Hall Lane, Charlotte, NC 28223 on Friday, November 1, 2024, at 9:00 am.

Complete plans and specifications for this project can be obtained in electronic format from Kimley-Horn and Associates, Inc. at 421 Fayetteville Street, Suite 600, Raleigh, NC 27601 during normal office hours after Friday, October 18, 2024. Email requests for the electronic documents may be sent to Leo.Barclay@kimley-horn.com.

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

Signed:

(Owner)

Doug Walters
Senior Project Manager
UNCC

NOTICE TO BIDDERS

Sealed proposals will be received by the University of North Carolina at Charlotte in Room 119 at the Facilities Management, Police & Public Safety Building (Building 55) at 9151 Cameron Blvd, Charlotte, NC 28262 on UNCC's campus up to 2:00 pm on November 12, 2024, and immediately thereafter publicly opened and read for the furnishing of labor, material, and equipment entering into the construction of

Sanford Hall Demolition
SCO #: 24-27645-01A, Code: 42326, Item: 309

Sanford Residence Hall, built in 1969 with 106,096 gross square feet, and houses 500 students. The facility is in South Village area of the UNC Charlotte Campus. It is eleven stories and has a ground floor. The project is to abate and demolish the building and landscape the area of the building footprint to create more open space for the South Village student community.

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

Pre-Bid Meeting

An open, non-mandatory, pre-bid meeting will be held for all interested bidders on Friday, November 1, 2024, at 9:00 am at Sanford Hall, located on Sanford Hall Lane on UNCC's campus, Charlotte, NC 28223. The meeting will address project specific questions, issues, bidding procedures and bid forms. The building will be open for contractor walk-through at this time.

Complete plans, specifications and contract documents will be open for inspection in the offices of Kimley-Horn and Associates (421 Fayetteville Street, Suite 600, Raleigh, NC, 27601) and UNCC.

Digital copies of the plans, specifications, and contract documents will be available through:

1. Emailing a request to the Designer at Leo.Barclay@kimley-horn.com.
2. Associated General Contractors (AGC) Carolinas Branch – ConstructConnect Online Plan Room, 877-889-5404
3. Hispanic Contractors Association of the Carolinas (HCAC) at 980-349-0032, 877-227-1680 or info@hccarolinas.org
4. North Carolina Offices of McGraw-Hill Dodge Corporation – 800-393-6343 or visit and subscribe to the following website to receive the construction documents: apps.construction.com.
5. Metrolina Minority Contractors Association, 3124 W. Trade Street, Unit A, Charlotte, NC 28202. Ph. 704-332-5746 Fax: 704-332-5990

Physical hard copies may be obtained by those qualified as prime bidders, upon deposit of three hundred and fifty dollars (\$350) in cash or certified check. The full plan deposit will be returned to those bidders provided all documents are returned in good, usable condition within ten (10) days after the bid date. Contact the Designer, Leo.Barclay@kimley-horn.com for instructions to obtain hard copies.

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 *Affidavit A*. 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 General Contractor.

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

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

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

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

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

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

Designer:
Leo Barclay, P.E.
Kimley-Horn and Associates, Inc.

421 Fayetteville Street, Suite 600
Raleigh, NC 27601

919 677 2214

Owner:
Doug Walters
Senior Project Manager

University of North Carolina, Charlotte
Capital Projects

704 687 0523

Table of Contents

Cover Sheet.....	1
Advertisement for Bids.....	2
Notice to Bidders.....	3
Table of Contents	5
Instructions to Bidders	7
General Conditions of the Contract.....	13
UNCC Supplementary General Conditions	52
Guidelines for MBE Participation.....	59
Hazardous Material Survey.....	67

Technical Specifications

011000 – Summary.....	242
012100 – Allowances.....	248
012200 – Unit Prices.....	252
012500 – Substitution Procedures	254
012600 – Contract Modification Procedures.....	258
012900 – Payment Procedures	261
013100 – Project Management and Coordination	266
013200 – Construction Progress Documentation	275
013233 – Photographic Documentation	280
013300 – Submittal Procedures	283
014000 – Quality Requirements	292
015000 – Temporary Facilities and Controls	300
015639 – Temporary Tree and Plant Protection	307
016000 – Product Requirements	315
017300 – Execution	321
017419 – Construction Waste Management and Disposal	327

017700 – Closeout Procedures	338
017839 – Project Record Documents	344
024116 – Structure Demolition	346
311000 – Site Clearing	355
312000 – Earth Moving	361
312500 – Erosion and Sedimentation Control	372
315000 – Excavation Support and Protection	376
329200 – Turf and Grasses	381
SP-1 - Planting Irrigation	389
Technical Specifications for Removal of Asbestos Containing Materials	406
Form of Proposal.....	459
MBE Contractor List and Affidavits A through D.....	462
Form of Bid Bond	469
Form of Construction Contract	470
Form of Performance Bond	473
Form of Payment Bond.....	475
Sheet for attaching Power of Attorney	477
Sheet for attaching Insurance Certificates	478
Approval of the Attorney General.....	479
Office of State Budget and Management	480

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

STANDARD FORM FOR CONSTRUCTION PROJECTS

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

Form OC-15

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

**Twenty Fourth Edition January 2013
Revision 1 - May 2024: Article 23.b**

INSTRUCTIONS TO BIDDERS

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

1. PROPOSALS

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

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

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

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

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

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

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

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

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

2. EXAMINATION OF CONDITIONS

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

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

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

3. BULLETINS AND ADDENDA

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

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

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

4. BID SECURITY

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, or a bid bond in an amount equal to not less than five percent (5%) of the proposal, said deposit to be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after the award or to give satisfactory surety as required by law (G.S. 143-129).

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

5. RECEIPT OF BIDS

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

6. OPENING OF BIDS

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

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

7. BID EVALUATION

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

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

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

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

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

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

8. PERFORMANCE BOND

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

9. PAYMENT BOND

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

10. PAYMENTS

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

11. PRE-BID CONFERENCE

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

12. SUBSTITUTIONS

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

Submittals for proposed substitutions shall include the following information:

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

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

GENERAL CONDITIONS OF THE CONTRACT

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

TABLE OF CONTENTS

ARTICLE	TITLE	PAGE
1	Definitions.....	9
2	Intent and Execution of Documents	11
3	Clarifications and Detail Drawings	12
4	Copies of Drawings and Specifications.....	12
5	Shop Drawings, Submittals, Samples, Data	13
6	Working Drawings and Specifications at the Job Site	13
7	Ownership of Drawings and Specifications	14
8	Materials, Equipment, Employees	14
9	Royalties, Licenses and Patent	15
10	Permits, Inspections, Fees, Regulations	15
11	Protection of Work, Property and the Public	16
12	Sedimentation Pollution Control Act of 1973	17
13	Inspection of the Work.....	17
14	Construction Supervision and Schedule	18
15	Separate Contracts and Contractor Relationships.....	22
16	Subcontracts and Subcontractors	23
17	Contractor and Subcontractor Relationships.....	23
18	Designer's Status	24
19	Changes in the Work	25
20	Claims for Extra Cost	27
21	Minor Changes in the Work	29
22	Uncorrected Faulty Work.....	29
23	Time of Completion, Delays, Extension of Time	29
24	Partial Utilization: Beneficial Occupancy	30
25	Final Inspection, Acceptance, and Project Closeout	31
26	Correction of Work Before Final Payment	31
27	Correction of Work After Final Payment	32
28	Owner's Right to Do Work	32
29	Annulment of Contract	32
30	Contractor's Right to Stop Work or Terminate the Contract	33
31	Requests for Payments	33
32	Certificates of Payment and Final Payment	34
33	Payments Withheld.....	36
34	Minimum Insurance Requirements.....	36
35	Performance Bond and Payment Bond.....	37
36	Contractor's Affidavit.....	38
37	Assignments	38
38	Use of Premises.....	38
39	Cutting, Patching and Digging.....	38
40	Utilities, Structures, Signs	38
41	Cleaning Up.....	40
42	Guarantee	41

43	Codes and Standards	41
44	Indemnification.....	41
45	Taxes	41
46	Equal Opportunity Clause.....	42
47	Employment of the Handicapped	42
48	Asbestos-Containing Materials (ACM)	43
49	Minority Business Participation.....	43
50	Contractor Evaluation	43
51	Gifts	43
52	Auditing Access to Persons and Records.....	44
53	North Carolina False Claims Act	44
54	Termination for Convenience	45

ARTICLE 1 - DEFINITIONS

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

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

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

ARTICLE 2 - INTENT AND EXECUTION OF DOCUMENTS

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

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

ARTICLE 3 - CLARIFICATIONS AND DETAIL DRAWINGS

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

ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS

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

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

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

ARTICLE 5 - SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

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

ARTICLE 6 - WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

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

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

ARTICLE 7 - OWNERSHIP OF DRAWINGS AND SPECIFICATIONS

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

ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES

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

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

ARTICLE 9 - ROYALTIES, LICENSES AND PATENTS

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

ARTICLE 10 - PERMITS, INSPECTIONS, FEES, REGULATIONS

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

ARTICLE 11 - PROTECTION OF WORK, PROPERTY AND THE PUBLIC

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

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

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

ARTICLE 12 - SEDIMENTATION POLLUTION CONTROL ACT OF 1973

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

ARTICLE 13 - INSPECTION OF THE WORK

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

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

ARTICLE 14 - CONSTRUCTION SUPERVISION AND SCHEDULE

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 15 - SEPARATE CONTRACTS AND CONTRACTOR RELATIONSHIPS

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

ARTICLE 16 - SUBCONTRACTS AND SUBCONTRACTORS

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

ARTICLE 17 - CONTRACTOR AND SUBCONTRACTOR RELATIONSHIPS

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

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

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

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

ARTICLE 18 - DESIGNER'S STATUS

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

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

ARTICLE 19 - CHANGES IN THE WORK

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

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

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

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

- d. Under Paragraph "b" and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors (1st tier subs), or their sub-subcontractors (2nd tier subs, 3rd tier subs, etc)) shall be allowed a maximum of 10% on work they each self-perform; the prime contractor shall be allowed a maximum of 5% on contracted work of his 1st tier sub; 1st tier, 2nd tier, 3rd tier, etc contractors shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the contractor shall include no less than five percent (5%) profit, but no allowances for overhead.
- e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the work;
 2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.
 3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;
 4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;
 5. The actual costs of premiums for bonds, insurance, permit fees, and sales or use taxes related to the work.
- Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the owner.
- f. Should concealed conditions be encountered in the performance of the work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing method of arriving at net cost as defined above.
- g. In all change orders, the procedure will be for the designer to request proposals for the change order work in writing. The contractor will provide such proposal and supporting data in suitable format. The designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the contractor's accepted proposal including all supporting documentation required by the designer, the designer shall prepare the change order and forward to the contractor for his signature or otherwise respond, in writing, to

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

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

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

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

ARTICLE 20 - CLAIMS FOR EXTRA COST

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

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

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

ARTICLE 21 - MINOR CHANGES IN THE WORK

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

ARTICLE 22 - UNCORRECTED FAULTY WORK

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

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

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

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

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

ARTICLE 24 - PARTIAL UTILIZATION/BENEFICIAL OCCUPANCY

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

ARTICLE 25 - FINAL INSPECTION, ACCEPTANCE, AND PROJECT CLOSEOUT

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

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

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

ARTICLE 26 - CORRECTION OF WORK BEFORE FINAL PAYMENT

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

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

ARTICLE 27 - CORRECTION OF WORK AFTER FINAL PAYMENT

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

ARTICLE 28 - OWNER'S RIGHT TO DO WORK

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

ARTICLE 29 - ANNULMENT OF CONTRACT

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

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

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

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

ARTICLE 31 - REQUEST FOR PAYMENT

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

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

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

ARTICLE 32 - CERTIFICATES OF PAYMENT AND FINAL PAYMENT

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

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

ARTICLE 33 - PAYMENTS WITHHELD

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

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

ARTICLE 34 - MINIMUM INSURANCE REQUIREMENTS

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

a. Worker's Compensation and Employer's Liability

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

b. Public Liability and Property Damage

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

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

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

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

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

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

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

d. Deductible

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

e. Other Insurance

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

f. Proof of Carriage

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

ARTICLE 35 - PERFORMANCE BOND AND PAYMENT BOND

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

ARTICLE 36 - CONTRACTOR'S AFFIDAVIT

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

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

ARTICLE 37 - ASSIGNMENTS

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

ARTICLE 38 - USE OF PREMISES

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

ARTICLE 39 - CUTTING, PATCHING AND DIGGING

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

ARTICLE 40 - UTILITIES, STRUCTURES, SIGNS

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

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

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

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

ARTICLE 41 - CLEANING UP

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

ARTICLE 42 - GUARANTEE

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

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

ARTICLE 43 - CODES AND STANDARDS

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

ARTICLE 44 - INDEMNIFICATION

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

ARTICLE 45 - TAXES

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

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

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

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

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

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

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

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

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

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

ARTICLE 46 - EQUAL OPPORTUNITY CLAUSE

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

ARTICLE 47 - EMPLOYMENT OF INDIVIDUALS WITH DISABILITIES

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

ARTICLE 48 - ASBESTOS-CONTAINING MATERIALS (ACM)

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

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

ARTICLE 49 - MINORITY BUSINESS PARTICIPATION

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

ARTICLE 50 – CONTRACTOR EVALUATION

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

ARTICLE 51 – GIFTS

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

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

ARTICLE 52 – AUDITING-ACCESS TO PERSONS AND RECORDS

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

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

ARTICLE 53 – NORTH CAROLINA FALSE CLAIMS ACT

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

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

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

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

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

ARTICLE 54 – TERMINATION FOR CONVENIENCE

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

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

Supplementary General Conditions

The following special requirements of the contract augment the University of North Carolina System Office, June 2021 Sixth Edition "Instructions to Bidders and General Conditions of the Contract". Where any article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplementary General Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

ARTICLE 1 – DEFINITIONS

Paragraph b., add the following:

The owner is the State of North Carolina, acting through The University of North Carolina at Charlotte.

Paragraph c., add the following:

The designer is: Kimley-Horn and Associates, Inc., 200 S Tryon St #200, Charlotte, NC 28202.

Paragraph h., add the following:

The project includes an environmental assessment, removal of any hazardous materials, demolition, removal and disposal of the building and associated utilities, selective foundations, slabs, as well as selective site demolition. Additionally, the project will include construction of a new landscaped area in the building footprint to create more open space for the South Village student community.

Add the following new paragraphs:

cc. “Provide” shall mean furnish and install complete, in place, and ready for use.

dd. “Indicated” and “Shown” shall mean as detailed, scheduled, or called for in the Contract Documents.

ee. “Latest Edition” shall mean the current printed document issued up to 30 calendar days prior to date of receipt of bids, unless specified otherwise.

ff. “Quality” shall mean the meticulous attention to the detail of installation and workmanship necessary to the assemblage of products in the highest grade of excellence by skilled craftsman of the trade.

gg. “Drawings” or “Plans” shall mean the drawings enumerated on the Title Sheet of the Contract Drawings.

hh. “Specifications” shall mean this Project Manual and Addenda.

ARTICLE 2 – INTENT AND EXECUTION OF DOCUMENTS

Paragraph a., add the following:

Prints do not reproduce to accurate scale. Dimensions are not to be taken from prints by scaling only, but all measurements thus taken are to be figured and checked with dimensions shown or field measurements.

All work shall be in accordance with the Contract Documents. No change therefrom shall be made without a review by the Designer. Where more detailed information is needed, or when an interpretation

of the Contract Documents is needed, the Contractor, before proceeding with the work, shall refer the matter to the Designer, who will furnish information or interpretation in the form of a Field Order or other written forms or drawings. If any errors, inconsistencies, or omissions in the Contract Documents are recognized by the Contractor or any member of his organization, the Contractor shall notify the Designer in writing of such error, inconsistency, or omission before proceeding with the work.

Should the specifications and drawings fail to particularly describe the material or kind of goods to be used in any place, then it shall be the duty of the Contractor to make inquiry of the Designer for what is best suited. The material that would normally be used in this place to produce first-quality finished work shall be considered a part of the Contract.

Site Visitation

The Contractor shall examine the site before bidding the project and shall familiarize himself or herself with all existing conditions. Failure of the Contractor to visit the site before submission of a bid shall not relieve him or her of any special problems which might have been avoided had the Contractor examined the existing site conditions.

Contract Drawings

The Contract drawings contain information to a degree of detail which is considered to be both consistent with their scales and adequate to accomplish their purpose. Beyond this point they are diagrammatic. The Contractor shall provide all miscellaneous materials required to completely install the work in accordance with the intent of the drawings and the specified functions. Any omissions from either the drawing or the specifications are unintentional, and it shall be the responsibility of the Contractor to call to the attention of the Designer any pertinent omissions prior to submission of a bid.

ARTICLE 3 – CLARIFICATIONS AND DETAIL DRAWINGS

Paragraph a., add the following:

1. If, in the opinion of the Contractor, work is indicated or is specified in such a manner as will make it impossible to produce a first-class piece of work, or should discrepancies appear within the Contract Documents, he shall refer same to the Designer for interpretation before proceeding with the work. If the Contractor fails to make such reference, no excuse will thereafter be entertained for failure to carry out work in a satisfactory manner. Where only part of the work is indicated, similar parts shall be considered repetition. Where any detail is shown and the components therefore are fully described, similar details shall be construed to require equal materials and construction.

ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS

Delete Paragraph A and replace with the following:

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

ARTICLE 5 - SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

Add Paragraph E:

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

All Shop Drawings, Samples and Submittals for approval shall be completed within ninety (30) days after award of the sub-contract agreement between the GC/CM and the specialty subcontractor.

Add Paragraph F:

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

ARTICLE 6 - WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

Modify Paragraph B as follows:

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

Add Paragraph D:

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

ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES

Modify Paragraph A as follows:

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

Add Paragraph G:

The GC/CM shall provide the Owner a complete list of addresses and emergency telephone numbers for the GC/CM, his key personnel, and all subcontractors. This list shall be provided to the Owner prior to beginning the Work and shall be updated regularly with the updated provided to the Owner.

Add Paragraph H:

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

Add Paragraph I:

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

Add Paragraph J:

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

Add Paragraph K:

Workmanship

All work shall be executed in a neat and workmanlike manner by skilled mechanics and shall have a neat appearance when complete. All contract and sub-contract work shall be done by personnel normally employed for such work.

Condition of Contiguous Work

If any part of the Contractor's work is dependent for its proper execution, or for its subsequent efficiency or appearance, on the character or condition of contiguous work not executed by him or her, then the Contractor shall examine and measure such contiguous work and report to the Designer in writing any imperfection therein, or any condition which renders it unsuitable for the reception of his or her work. In case the Contractor proceeds without making such written report, he or she shall be held to have accepted such work and the existing conditions. Consequently, the Contractor shall be responsible for any defects in his or her work thereon. The Contractor will not be relieved of the obligation of any guarantee because of any such imperfection or condition.

Equipment Manufacturers

In certain instances, the name of a particular manufacturer may be mentioned in connection with materials to be furnished and installed on this project. In every case this shall be construed to be for descriptive rather than restrictive purposes, unless otherwise noted. The Contractor shall submit to the Designer, within twenty (20) days following the award of the contract, a complete list of materials and manufacturers proposed for the project."

ARTICLE 10 - PERMITS, INSPECTIONS, FEES, REGULATIONS

Add Paragraph E:

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

Add Paragraph F:

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

Add Paragraph G:

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

ARTICLE 14 - CONSTRUCTION SUPERVISION AND SCHEDULE

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

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

Critical Path shall be defined as zero float.

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

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

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

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

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

The Contractor shall commence work to be performed under this Contract on a Notice to Proceed (NTP) date to be specified in written order from the Designer and Owner. The Notice to Proceed date will be set as early as possible based on execution of the construction contract. The Notice to Proceed date is expected, but not guaranteed, to occur on or before **January 6, 2025**. No extensions of time will be granted if the Contractor in whole or in part delays the Notice to Proceed date by failure to provide forms

and/or insurance certificates required to execute the Form of Construction Contract. The Contractor shall fully complete all work hereunder within **280 (Two-Hundred and Eighty)** consecutive calendar days from the Notice to Proceed for the contracted work. **Additionally, any demolition of structural elements must be completed between the dates of May 12, 2025, to August 1, 2025.** No change in contract time will be allotted for the addition of Bid Alternate work, except where such Alternate specifically modifies the duration of the project. If the Contractor should fail to complete the Work within the time specified (including approved Change Orders) and this failure directly prevents the Owner from utilizing and/or occupying the site, or results in other direct costs to the Owner, Liquidated damages in the amount of **\$500 (Five Hundred Dollars)** per day will be assessed for each day the schedule of the Work exceeds the contractual duration set forth in the contract or therefore extended by approved change order. Other reduction/restrictions to work hours, site use, and other construction general conditions may occur if the contract time extends beyond the contract time specified (including approved Change Orders). Refer to the plans and specifications for additional information.

ARTICLE 34 - MINIMUM INSURANCE REQUIREMENTS

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

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

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

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

ADD the following paragraphs to Article 34:

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

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

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

ARTICLE 41 - CLEANING UP

ADD the following paragraph to Article 41:

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

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

In accordance with G.S. 116-31.11 and G.S. 143-128.2 these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, design-build, public-private partnership, and alternative contracting methods, on University of North Carolina construction projects in the amount of \$100,000 to \$4,000,000. The legislation provides that the State, including the University of North Carolina System, shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State through The University of North Carolina, its constituent institutions, and/or affiliates (hereafter The University of North Carolina) as awarding authorities 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 business, minority person, and socially and economically disadvantaged individual - G.S. 143-128 (g) includes the following definitions. Any changes to G.S. 143-128 (g) are incorporated herein upon enactment:
 - (1) The term "minority business" means a business:
 - a. In which at least fifty-one percent (51%) is owned by one or more minority persons or socially and economically disadvantaged individuals, 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.
 - (2) The term "minority person" means 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, or the Pacific Islands;
 - d. American Indian, that is, a person having origins in any of the original Indian peoples of North America; or
 - e. Female.
 - (3) The term "socially and economically disadvantaged individual" means the same as defined in 15 U.S.C. 637.
2. Public Entity – The State of North Carolina and all public subdivisions and local governmental units.
3. Owner - The State of North Carolina, through the constituent institution named in the contract.

4. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.
5. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
6. 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.
7. 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.
8. Subcontractor - A firm under contract with the prime contractor, construction manager at risk, design-builder, or private developer under public-private partnerships for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office). The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

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

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

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

2. The University of North Carolina System Office: The University of North Carolina System Office will be responsible for the following:

- a. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal prior to award of construction contracts within their awarding authority. The State through The University of North Carolina, reserves the right to reject any or all bids and to waive informalities.
 - b. Assisting constituent institutions in monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
 - c. Consulting and advising institutions and affiliates regarding changes in HUB statutes, executive orders, or state procedures.
 - d. Resolving any protest and disputes arising on projects within The University of North Carolina System Office award authority.
3. Constituent Institutions and Affiliates of The University of North Carolina: Before awarding a contract, the constituent institution shall do the following:
- a. Implement The University of North Carolina HUB plan.
 - b. Attend the scheduled prebid conference.
 - c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 - 1. A description of the work for which the bid is being solicited.
 - 2. The date, time, and location where bids are to be submitted.
 - 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
 - 4. Where bid documents may be reviewed.
 - 5. Any special requirements that may exist.
 - d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
 - e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in its efforts to meet the goals.
 - f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the University of North Carolina.
 - g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to University of North Carolina.
 - h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
 - i. Document evidence of implementation of Owner's responsibilities.
4. Designer
Under the single-prime bidding, separate prime bidding, construction manager at risk, design-build, public-private partnership, 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), including the 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.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by The University of North Carolina System Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, Design-Builder, Public-Private Partnership developer and Its First-Tier Subcontractors: Under all construction delivery 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. 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. 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.
- 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 Subcontractor responsibilities available for review by the University of North Carolina System 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 B) indicating bidder’s 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) and has all material and supplies required for the project. Bidder may be asked to provide additional documentation in support of the claim of self-performance and regarding the Good Faith Effort to utilize minority suppliers where possible. (2) 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; (3) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal (Affidavit D). 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 for formal contracts (>\$500,000) as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) on formal contracts (>\$500,000) shall submit with each monthly pay request(s) and final payment(s), “MBE Documentation for Contract Payment” – (Appendix E), for designer’s review. This documentation is also required for contracts under informal bidding, but these projects, typically of shorter duration, may have a single payment request at project completion.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, The University of North Carolina System 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 that these requirements apply to all contractors and first tier subcontractor under any of the approved construction delivery methods permitted on state projects.

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

SECTION D: DISPUTE PROCEDURES

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

SECTION E: EFFECTIVE DATE

These guidelines shall apply upon promulgation on university construction projects. Copies of these guidelines may be obtained from The University of North Carolina System Office
website:<https://www.northcarolina.edu/offices-and-services/finance-and-administration/capital-design-and-construction/>.

SECTION F: FORMS

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

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in University of North Carolina Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from The University of North Carolina System Office website: <https://www.northcarolina.edu/offices-and-services/finance-and-administration/capital-design-and-construction/>

MINORITY BUSINESS SUBCONTRACT GOALS:

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

The bidder must identify on its bid (by using the "Identification of Minority Business Participation" form provided in the bid document), the minority businesses that will be utilized on the project with corresponding total dollar value of the bid. In addition, the bidder must submit with his/her bid an affidavit (**Affidavit A**) listing good faith efforts.

Failure to submit these documents is grounds for rejection of the bid. Bid amounts from rejected bids shall not be read aloud at public bid openings.

The lowest responsible, responsive bidder must also provide:

Affidavit B, if the bidder does not customarily subcontract work on this type project and has all material and supplies required for the project. Bidder may be asked to provide additional documentation in support of the claim of self-performance and regarding the Good Faith Effort to utilize minority suppliers where possible.

OR

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

OR

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

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

Summary of required submissions: Use check boxes to assist in ensuring that all appropriate forms are submitted.

ALL BIDDERS MUST SUBMIT BOTH FORMS WITH THEIR BID:

- ☐ “Identification of Minority Business Participation” form

AND

- ☐ Affidavit A – “Listing of Good Faith Efforts”

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

=====

**IN ADDITION, THE APPARENT LOWEST
RESPONSIVE, RESPONSIBLE BIDDER SUBMITS:**

- ☐ **Affidavit B** – “Intent to Perform Contract with Own Workforce”. This form is to be submitted within 72 calendar hours of notification of being low bidder. Bidder may be asked to provide additional documentation in support of the claim of self-performance and regarding the Good Faith Effort to utilize minority suppliers where possible.

OR

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

OR

- ☐ **Affidavit D** – “Good Faith Efforts” if the percentage of work to be performed by minority firms is less than 10%. This form is to be submitted within 72 calendar hours of notification of being low bidder.

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

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

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government, maintained lists at least 10 days before the bid or proposal date, and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals were 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.

Hazardous Materials Inspection Report

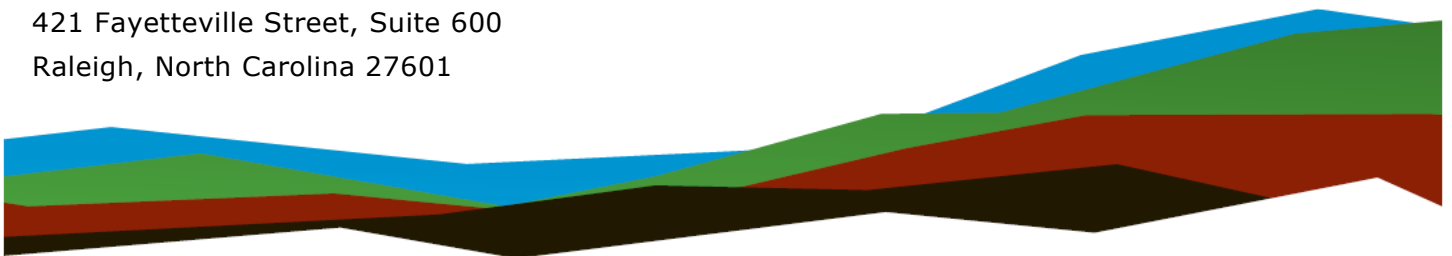
UNC – Charlotte Sanford Hall, 9029 Johnson
Alumni Way, Charlotte, North Carolina

July 8, 2024 | Project Number: 71247134



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July 8, 2024

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E: Leo.Barcley@kimley-horn.com

RE: Hazardous Materials Inspection Report
UNC – Charlotte Sanford Hall
9029 Johnson Alumni Way
Charlotte, North Carolina

Terracon Project No. 71247134

Dear Leo Barclay:

Terracon Consultants, Inc. (Terracon) is pleased to submit the attached report for the above referenced site to Kimley-Horn Associates, Inc. (Kimley-Horn). The purpose of this report is to present the results of a hazardous materials inspection performed between May 13, 2024, and May 21, 2024. This inspection was conducted in general accordance with our proposal number P71247134 dated March 20, 2024. We understand that this inspection was requested in preparation for the planned demolition of Sanford Hall at the above referenced site.

Asbestos and lead were identified in samples of materials collected at the subject site. Potential hazardous materials were identified at the subject site. Please refer to the attached report for details.

Terracon appreciates the opportunity to provide this service to Kimley-Horn.

If you have any questions regarding this report, please contact the undersigned at (704) 509-1777.

Sincerely,

Terracon

A handwritten signature in black ink, appearing to read 'Theresa Erickson'.

Theresa Erickson
NC Asbestos Inspector #13353

A handwritten signature in black ink, appearing to read 'Russell Harrings'.

Russell Harrings, CIH
Authorized Project Reviewer

Table of Contents

1.0	Introduction	1
2.0	Building Description	1
3.0	Field Activities	2
3.1	Asbestos	2
3.1.1	Visual Assessment	2
3.1.2	Physical Assessment.....	3
3.1.3	Sample Collection	3
3.1.4	Sample Analysis.....	3
3.2	Lead Paint	4
3.3	Other Hazardous Materials	4
3.3.1	Polychlorinated Biphenyls (PCBs)	4
3.3.2	Mercury	5
3.3.3	Tritium Light Fixtures	5
3.3.4	Freon	5
4.0	Regulatory Overview	5
4.1	Asbestos	5
4.2	Lead Paint	6
4.3	Other Hazardous Materials	7
4.3.1	Polychlorinated Biphenyls (PCBs)	8
4.3.2	Mercury	8
4.3.3	Tritium Light Fixtures	8
4.3.4	Freon	8
5.0	Findings	8
5.1	Asbestos	8
5.2	Lead Paint	12
5.3	Other Hazardous Materials	15
5.3.1	Polychlorinated Biphenyls (PCBs)	15

5.3.2	Mercury	15
5.3.3	Tritium Light Fixtures	15
5.3.4	Freon	15
6.0	Limitations/General Comments	16
Appendix A	Summary of Identified Materials Containing Asbestos	
Appendix B	Summary of Identified Lead Paint	
Appendix C	Phtographs from Site	
Appendix D	Asbestos Laboratory Analytical Data	
Appendix E	Lead Laboratory Analytical Data	

1.0 Introduction

Terracon Consultants, Inc. (Terracon) conducted hazardous materials inspection of Sanford Hall located on the campus of the University of North Carolina at Charlotte (UNC – Charlotte) at 9021 Johnson Alumni Way in Charlotte, North Carolina. The inspection was conducted between May 13, 2024, and May 21, 2024, by North Carolina accredited asbestos inspectors in general accordance with Terracon proposal number P71247134 dated March 20, 2024. Interior and exterior building components were inspected, and homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. Although reasonable effort was made to inspect accessible suspect asbestos-containing materials, additional suspect but un-sampled materials could be in walls, in voids, or in other concealed areas. Suspect ACM samples were collected in general accordance with the sampling protocols outlined in United States Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 763 Subpart E, known as the Asbestos Hazard Emergency Response Act (AHERA). Samples were delivered to an accredited laboratory for analysis by Polarized Light Microscopy (PLM).

We understand this inspection was requested in preparation for the planned demolition of the dormitory building located at the site to satisfy requirements of the USEPA 40 CFR Part 61, Subpart M, the National Emission Standards for Hazardous Air Pollutants (NESHAP).

2.0 Building Description

Sanford Hall is a twelve-story, concrete masonry unit (CMU) block and steel-framed dormitory building with a ground floor/basement and crawl space. Terracon understands that the building was constructed in 1969 and encompasses approximately 106,000 square feet. A concrete façade covers the exterior of the building, and a concrete texture material covers the ceiling of the exterior patio. Interior walls on the ground floor, 1st floor, and dorm floors consist of drywall and joint compound, painted CMU block, textured wall surfacing, and ceramic tile. The floors on the ground floor and 1st floor are finished with vinyl floor tile under carpet, vinyl floor tile, carpet squares, concrete, vinyl floor tile under wood-grain plank flooring, wood-grain plank flooring, grey rubber flooring, ceramic tile, and terrazzo. The dorm floors are finished with vinyl floor tile under carpet, carpet squares, rolled carpet, sheet flooring under carpet, leveling compound under carpet, ceramic tile, concrete, and leveling compound and black mastic under carpet. Ceilings on the ground floor and 1st floor are finished with lay-in ceiling tiles, drywall and joint compound, and a ceiling coating. The ceilings on the dorm floors

are finished with lay-in ceiling tiles, ceiling texture, soffit texture, and drywall and joint compound. The roof is flat and made up of thermoplastic polyolefin (TPO) membrane over built-up roofing. The ground floor mechanical room, mattress storage room, and crawl space and the dorm floors mechanical rooms are partly unfinished areas that house the HVAC and mechanical systems and are used as storage. Terracon understands the ground floor and 1st floor were partially renovated; however, no information was available regarding the date or the extent of the renovations.

3.0 Field Activities

3.1 Asbestos

The inspection was conducted by North Carolina accredited asbestos inspectors Theresa Erickson (Accreditation No. 13353), Tyler Corbitt (Accreditation No. 13345), Russell Harrings (Accreditation No. 12222), and Shaenaz Mirmohamed (Accreditation No. 13337). The inspection was conducted in general accordance with the sample collection protocols established in USEPA 40 CFR Part 763 Subpart E 763.86, AHERA. A summary of inspection activities is provided below.

3.1.1 Visual Assessment

Inspection activities were initiated with visual observation of the subject building to identify homogeneous areas (HAs) of suspect ACM. An HA consists of building materials that appear similar throughout in terms of color and texture with consideration given to the date of application. Assessment was conducted in visually accessible areas of the building proposed for demolition. The inspection included an assessment of the exterior and roof.

Building materials identified as concrete, glass, wood, masonry, metal, or rubber were not considered suspect ACM.

Terracon assessed multiple areas above the ceiling systems, where feasible, but did not observe additional suspect ACM, except where noted in this report. The potential exists for additional suspect ACM or quantities of ACM to be present above ceiling systems.

Terracon lifted floor coverings in several areas, where feasible, but did not observe additional floor coverings or layers, except where noted in this report. However, as Terracon could not assess beneath all floor coverings in all areas, there may be isolated areas of additional suspect asbestos-containing material present beneath existing covering.

Terracon did not sample fire door interior to avoid damaging them or affecting their fire ratings. Fire doors throughout the building should be assumed to contain asbestos insulation or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

Terracon did not sample brake components associated with the elevators to avoid damaging them. Elevator brake components in the elevator equipment room, on the elevators, and inside the elevator shafts should be assumed to contain asbestos insulation or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

Terracon was unable to access rooms 106, 227, 327, and 628 during our inspection. Suspect asbestos-containing materials in these rooms, if observed in these areas and not sampled elsewhere, must be assumed to be asbestos-containing or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

3.1.2 Physical Assessment

A physical assessment of each HA of suspect ACM observed was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect asbestos-containing materials.

3.1.3 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were collected in general accordance with USEPA AHERA sampling protocols. Samples of suspect asbestos-containing materials were collected from randomly selected locations in each homogeneous area. Samples were placed in sealable containers and labeled with unique sample numbers using indelible ink.

The selection of sample locations and frequency of sampling were based on Terracon's observations and the assumption that like materials in the same area are homogeneous in content. Terracon collected 371 bulk samples from 102 homogeneous areas of suspect ACM. A summary of suspect ACM samples collected during the inspection is included in Appendix C.

3.1.4 Sample Analysis

Bulk samples were submitted under chain of custody to Eurofins/CEI (CEI) in Fort Mill, South Carolina for analysis by Polarized Light Microscopy (PLM) with dispersion staining

techniques per EPA methodology (600/R-93/116). The asbestos content, where applicable, was determined by microscopical visual estimation. CEI is a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory (NVLAP No. 600323-0).

3.2 Lead Paint

Lead paint sampling was conducted by Tyler Corbitt of Terracon. A paint chip sample was collected from each homogenous painted surface identified to determine its lead content, measured in percent by weight. Suspect lead paint samples were collected in general accordance with the EPA's work practice standards for conducting lead paint activities (40 CFR 745.227). Currently, proposed renovation and demolition activities that disturb lead paint are subject to the OSHA regulations (29 CFR 1926.62 – Lead).

The lead paint sampling began with the Terracon's representative observing painted surfaces and selecting sample locations. After the sampling strategy was determined, Terracon collected 76 paint chip samples from homogeneous surfaces.

Paint chip samples were submitted under a chain of custody to CEI in Fort Mill, South Carolina. Paint chip samples were analyzed by Flame Atomic Absorption Spectrophotometry method SW846 7000B. CEI is accredited by the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP, Lab Code 290960), to perform Flame Atomic Absorption Spectrophotometry analysis.

3.3 Other Hazardous Materials

The inspection for other hazardous materials was conducted by Terracon representative Russell Harrings, CIH. The inspections were visual only and did not include collection or analysis of samples. A summary of inspection activities is provided below.

3.3.1 Polychlorinated Biphenyls (PCBs)

Terracon estimated the number of potential ballasts for contractor verification and proper disposal. Terracon also observe other potential PCB-containing equipment such as on-site transformers. The inspection did not include building materials such as caulks or asphaltic materials.

3.3.2 Mercury

Terracon conducted visual observations for potential mercury-containing thermostats, switches, and gauges, and estimated the number of mercury-containing lights and fluorescent light tubes.

3.3.3 Tritium Light Fixtures

Terracon conducted visual observations for potential tritium-containing exit light fixtures. Observations did not include dismantling of fixtures. Fixtures containing tritium required to have a label indicating that radioactive material is present.

3.3.4 Freon

In conjunction with the above services, Terracon conducted visual observations to quantify potential freon-containing devices such as air conditioners, coolers, and refrigeration units.

4.0 Regulatory Overview

4.1 Asbestos

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos-containing material (RACM).

The asbestos NESHAP regulation classifies ACM as either RACM, Category I non-friable ACM, or Category II non-friable ACM. RACM includes all friable ACM, along with Category I non-friable and Category II non-friable ACM that has become friable, will be or has been subjected to sanding, grinding, cutting, or abrading, or ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity. Category I non-friable ACM are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics, and asphalt roofing products that contain more than 1% asbestos. Category II non-friable ACM are all other non-friable materials, other than Category I non-friable ACM, that contain more than 1% asbestos. Category II non-friable ACM generally includes, but is not limited to, cementitious material such as cement pipes, cement siding, cement panels, glazing, mortar, and grouts.

The OSHA asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc). The OSHA standard classifies construction and maintenance activities which could disturb ACM and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. States which administer their own federally approved state OSHA programs may require additional precautions. The standard also specifies requirements for handling materials containing asbestos in concentrations less than or equal to one percent.

In the state of North Carolina, the Health Hazards Control Unit (HHCU) regulates asbestos activities. The NC HHCU requires that asbestos-related activities conducted in a public building be performed by personnel accredited by NC HHCU. RACM must be removed prior to renovation or demolition activities which will disturb the materials. The owner or operator must provide the NC HHCU with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities. Removal of RACM must be conducted by a State of North Carolina licensed asbestos abatement contractor. In addition, third party air monitoring will be required following the abatement.

4.2 Lead Paint

Lead is regulated by the EPA and OSHA. The EPA regulates lead use, removal, and disposal, and OSHA regulates lead exposure to workers. OSHA defines lead paint as a paint which contains lead, regardless of the concentration. A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

The OSHA Lead Standard for Construction (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions.

Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency clean-up

- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

Personnel performing renovation and demolition activities that may disturb painted components with concentrations of lead above the designated analytical detection limit should comply with all current OSHA regulations in order to minimize employee exposure. Currently, any proposed renovation/demolition is subject to the OSHA regulations (29 CFR 1926.62). The OSHA regulation defines specific training requirements, engineering controls and working practices for construction personnel subject to this standard. Occupational exposure to lead occurring in the course of construction work, including maintenance activities, painting, alteration, and repairs is subject to the OSHA Lead Exposure in Construction standard.

Construction work covered by 29 CFR 1926.62 includes any repair or renovation activities or other activities that disturb in-place lead-containing materials but does not include routine cleaning and repainting where there is insignificant damage, wear, or corrosion of existing lead-containing paints or substrates. Employers must assure that no employee will be exposed to lead at concentrations greater than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over an eight-hour period without adequate protection. The OSHA Standard also establishes an action level of 30 $\mu\text{g}/\text{m}^3$ which if exceeded triggers the requirement for medical monitoring.

In addition to above, the EPA Resource Conservation and Recovery Act (RCRA) characterization and disposal rules apply to lead renovation debris generated as part of this project. Lead renovation debris must be submitted to an accredited laboratory for analysis for lead by Toxicity Characteristic Leaching Procedure (TCLP) prior to disposal. Results that exceed 5 milligrams per liter (mg/L) are deemed hazardous and those materials must be disposed of as hazardous waste.

The above overview is not intended to be inclusive of all potentially pertinent regulatory information. The relevant EPA and OSHA standards should be consulted prior to undertaking activities involving the demolition, renovation, or maintenance of surfaces coated with lead-based or lead-containing paints.

4.3 Other Hazardous Materials

Contractors should be notified of the presence of regulated materials in areas where demolition activities might result in potential employee exposures to hazardous materials so that they can take the necessary actions to comply with OSHA requirements and disposal requirements. The Resource Conservation and Recovery Act (RCRA) provides the EPA with the authority to regulate the waste status of demolition debris, including PCB-containing materials, mercury, radioactive materials, refrigerants, and other hazardous materials.

Specific regulatory requirements, including State of North Carolina requirements, must be addressed prior to transporting, treating, storing, or disposing of regulated or hazardous wastes.

4.3.1 Polychlorinated Biphenyls (PCBs)

USEPA regulates transportation, disposal, and spill cleanup of PCB-containing ballasts under the Toxic Substances Control Act (TSCA), which can be found in 40 CFR 761. Fluorescent light ballasts manufactured prior to 1998 are assumed to contain PCBs unless clearly marked as containing “NO PCBs.” Electronic ballasts do not contain PCBs and are exempt from these regulations.

4.3.2 Mercury

USEPA regulates disposal of mercury-containing fluorescent lights tubes as universal waste under 40 CFR 273. Disposal of mercury from other sources is regulated under 40 CFR 260-262.

4.3.3 Tritium Light Fixtures

US Nuclear Radiation Commission (NRC) regulation 10 CFR 31.5 regulates the disposal of tritium exit light fixtures.

4.3.4 Freon

USEPA regulates the use, release, and disposal of chlorofluorocarbons (CFC) and hydrochlorofluorocarbons (HCFCs) under Section 608 of the Clean Air Act. Freon is a specific HCFC known as R22 (HCFC-22). Section 608 prohibits individuals from intentionally venting ozone-depleting refrigerants (including CFCs and HCFCs) and their substitutes (such as HFCs), while maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment.

USEPA regulation 40 CFR 82, Subpart F, Energy Conservation and Renewable Energy Reserve, regulates the disposal of refrigeration appliances and components which contain Freon.

5.0 Findings

5.1 Asbestos

Asbestos was identified in samples of the following materials collected at the site.

HA No.	Material Description	General Location
1	Texture Material (Ceilings)	Throughout Dorm Floors
3	Soffit Surfacing	3 rd -11 th Floor Dorm Rooms
4	Texture Material (Concrete Walls/Columns)	Throughout Building
5	CMU Block Surface Filler	Throughout Building
6	CMU Block Surface Filler (Interior Stairwell)	Throughout Interior Stairwell
11	Drywall and Joint Compound (1 st Floor)	Throughout 1 st Floor
25	9" x 9" Off-White Floor Tile with White Streaks and Black Mastic (Under Carpet)	Throughout Dorm Floors
26	9" x 9" Tan Floor Tile and Mastic (Under Carpet)	Throughout Dorm Floors and Ground Floor Storage Closet (not under carpet in closet)
27	12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	Throughout Dorm Floors
29	White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7 th Floor – Study Room 728
30	12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8 th Floor – Study Room 828
31	Black Mastic and Leveling Compound on Concrete Under Carpet	Throughout Dorm Floors

HA No.	Material Description	General Location
32	Texture Material (Concrete Interior Stairwell)	Throughout Interior Stairwell
34	Carpet Glue associated with Rolled Carpet (Dorm Floors)	Dorm Rooms †
38	Interior Window Caulk (Dorm Floors)	Throughout Dorm Floors
39	Interior Door Caulk (Dorm Floors)	Throughout Dorm Floors
40	Interior Window Glazing (Dorm Floors)	Throughout Dorm Floors
43	Ceiling Coating	Ground Floor – Housekeeping Closet
51	12" x 12" Beige Floor Tile with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Throughout the 1 st Floor and Ground Floor
54	Black Sink Mastic	Ground Floor and 1 st Floor
55	Brown Sink Underside Caulk	Ground Floor and 1 st Floor
56	Black Mastic on HVAC Ductwork	Ground Floor – Crawl Space and Mattress Storage Room
64	12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor – Activity Room
65	Interior Door Caulk (Ground Floor)	Throughout Ground Floor
66	Interior Window Caulk (Ground Floor)	Throughout Ground Floor

HA No.	Material Description	General Location
74	8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor – Crawl Space Back Room and Mattress Storage Room
75	8" Pipe Hard Mudded Elbow	Ground Floor – Crawl Space Back Room and Mattress Storage Room
76	8" Pipe White Wrap and Insulation	Ground Floor – Crawl Space Back Room
E1	Off-White Paint and Skim Coat	Exterior
E2	Tan Skim Coat (Under HA E1)	Exterior
E3	White/Grey Exterior Window Caulk	Exterior Windows
E4	White/Grey Exterior Window Glazing	Exterior Windows
E5	White Ceiling Paint – Fire Escape Vestibules	Fire Escape
E7	Grey Exterior Caulk (Below Windows)	Below Exterior Windows
E8	White Sidewalk Caulk	Exterior Patio
E15	White Wall Caulk (Bottom of Wall)	Exterior Patio
R5	Silver Coating	Roof
R8	Roof Flashing	Roof
NA	Fire Doors	Throughout the Building

HA No.	Material Description	General Location
NA	Elevator Brake Components	Elevator Penthouse, Elevators, and Elevator Shafts

† Asbestos portion of material is likely a residual asbestos mastic from previous flooring applications. Unable to determine accurate extent and quantity of material since the material is concealed by floor coverings and the asbestos component is likely present in spotty locations.

Terracon was unable to access rooms 106, 227, 327, and 628 during our inspection. Suspect asbestos-containing materials in these rooms, if observed in these areas and not sampled elsewhere, must be assumed to be asbestos-containing or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

A summary of the classification, condition, and approximate quantity of identified materials containing asbestos is presented in Appendix A. The laboratory analytical data is included in Appendix D.

Because the proposed demolition activities will crush or pulverize the identified ACM, they must be removed prior to demolition by a qualified asbestos abatement contractor. Qualified asbestos abatement contractors should be contacted to obtain competitive bids for abatement.

Prior to demolition activities, those homogenous areas identified as suspect ACM which were not sampled, must be assumed to be asbestos-containing or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

Materials that do not contain greater than 1% asbestos are not considered to be asbestos-containing materials under the EPA NESHAP regulations, but are regulated by the OSHA Construction Standard, 29 CFR 1926.1101. These materials must be removed by trained asbestos abatement workers in accordance with OSHA regulations prior to demolition of the building.

5.2 Lead Paint

Lead was identified in samples of the following paints collected at the site.

Color	Substrate / Component	General Location
Tan	Concrete Wall	Throughout Building
Tan	CMU Block Wall	Throughout Building
Green	CMU Block Wall	Murals on Dorm Floors
Light Gray	CMU Block Wall	Interior Stairwell
Blue	CMU Block Wall	Murals on Dorm Floors
Blue	Concrete Block Wall	Murals on Dorm Floors
Dark Blue	Concrete Wall	Murals on Dorm Floors
Light Tan	Concrete Wall	Interior Stairwell
Gray	Metal Railing	Interior Stairwell
White	Concrete Exterior Wall	Exterior
White	Concrete Ceiling	Fire Escape Vestibules
White	Concrete Wall	Throughout Building
White	CMU Block Wall	Throughout Building
White	Concrete Wall	Throughout Building
White	CMU Block Wall	Throughout Building
White	Concrete Wall	Throughout Building
White	CMU Block Wall	Throughout Building
White	Concrete Wall	Throughout Building
White	CMU Block Wall	Interior Stairwell

Color	Substrate / Component	General Location
White	Concrete Wall	Interior Stairwell
Black	Metal Railing	Fire Escape Exterior
Black	Metal Railing	Fire Escape Exterior
White	Concrete Ceiling	Fire Escape Vestibules
White	Metal Pipe	Dorm Floor Mechanical Rooms
Gray	Metal Door Frame	Dorm Floors
White	Concrete Exterior Wall	Fire Escape Exterior
White	Metal Pipe	Dorm Floor Mechanical Rooms
Gray	Metal Door Frame	Dorm Floors
White	Metal Pipe	Dorm Floor Mechanical Rooms
Black	Metal Door Frame	Fire Escape Exterior
Black	Metal Door Frame	Fire Escape Exterior
Beige	Metal Duct	Ground Floor
Green	Metal Window Frame	Loading Dock

The laboratory analytical results are included in Appendix E.

If materials coating lead paint are disposed of with the paint generally intact, then the waste may be disposed of as construction debris. If lead paint is to be removed or large quantities of lead paint dust or chips are generated, then a representative sample for TCLP analysis must be collected to determine whether the waste stream is hazardous lead waste. If the TCLP sample is found to contain more than 5 mg/L of lead, then the waste stream representative of that sample must be disposed of as hazardous lead waste.

5.3 Other Hazardous Materials

5.3.1 Polychlorinated Biphenyls (PCBs)

Terracon observed that the electrical transformers located in the elevator equipment room were labeled as “dry type power transformers” and do not contain PCB-containing fluids.

The large transformer in the northeast ground floor electrical room was observed to have a label indicating that it “contains non-PCB silicone insulating fluid at time of manufacture”.

Terracon observed at least three light ballasts built in 1960 that should be assumed to contain PCBs. Terracon was unable to assess most light fixture ballasts without damaging the light fixtures. During demolition, the contractor must remove light ballasts and segregate the waste stream. The following light ballasts should be assumed to contain PCBs and disposed of as such:

- All ballasts built before 1979
- Ballasts built between 1979 and 1998 that do not have a label indicating “No PCBs”

The following light ballasts may be disposed of as construction debris:

- Ballasts built after 1998
- Ballasts built between 1979 and 1998 that have a label indicating “No PCBs”
- Electronic ballasts built after 1979

5.3.2 Mercury

Terracon did not observe mercury-containing switches during our inspection.

At least 500 mercury-containing fluorescent light bulbs were observed throughout the building, including installed and new replacement bulbs. These bulbs should be collected and disposed of in accordance with 40 CFR 273.

5.3.3 Tritium Light Fixtures

Terracon did not observe tritium-containing exit light fixtures during our inspection.

5.3.4 Freon

Terracon did not observe systems containing Freon (R22) refrigerant during our inspection. However, systems containing other refrigerants were observed. The refrigerants should be

collected and disposed of in accordance with applicable Federal and State of North Carolina regulations.

6.0 Limitations/General Comments

Terracon personnel were unable to access suite 601 located in the northeast corner on the 1st floor. Suspect ACM in this area, if observed, must be assumed to be asbestos-containing or sampled by a North Carolina accredited asbestos inspector to confirm or refute this assumption.

This hazardous materials inspection was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during our inspection of the building. The information contained in this report is relevant to the date on which this inspection was performed and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by Kimley-Horn for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information which may have been used in the preparation of this report. No warranties, express or implied, are made.

This report is for the exclusive use of Kimley-Horn for the project being discussed. Reliance by any other party on this report is prohibited without written authorization of Terracon and Kimley-Horn. Reliance on this report by Kimley-Horn and all authorized parties will be subject to the terms, conditions, and limitations stated in Terracon's proposal P71247134, this report, and Kimley-Horn Individual Project Order Number 015124016.1.800.

Appendix A

Summary of Identified Materials Containing Asbestos

Appendix A

Summary of Identified Materials Containing Asbestos

HA No.	Material Description	General Location	Condition / NESHA Classification	Percent / Type Asbestos *	Estimated Quantity **
1	Texture Material (Ceilings)	Throughout Dorm Floors	Good / Friable	2% Chrysotile	42,000 ft ²
3	Soffit Surfacing	3rd-11th Floor Dorm Rooms	Good / Friable	2% Chrysotile	9,000 ft ²
4	Texture Material (Concrete Walls/Columns)	Throughout Building	Good / Friable	Type 1: 2% Chrysotile Type 2: None Detected	15,000 ft ²
5	CMU Block Surface Filler	Throughout Building	Good / Category II Non-Friable	2% Chrysotile	100,000 ft ²
6	CMU Block Surface Filler (Interior Stairwell)	Throughout Interior Stairwell	Good / Category II Non-Friable	2% Chrysotile	8,000 ft ²
11	Drywall and Joint Compound (1st Floor)	Throughout 1st Floor	Good / Not Applicable	Drywall: None Detected Joint Compound: 0.75% Chrysotile Composite: 0.04% Chrysotile	7,000 ft ²
25	9" x 9" Off-White Floor Tile with White Streaks and Black Mastic (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile	48,200 ft ²

HA No.	Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
26	9" x 9" Tan Floor Tile and Mastic (Under Carpet)	Throughout Dorm Floors and Ground Floor Storage Closet (Not under carpet in closet)	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	2,250 ft ²
27	12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Clear Mastic: None Detected White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	3,650 ft ²
29	White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor – Study Room 728	Good / Category I Non-Friable	Sheet Flooring: None Detected Mastic: 2% Chrysotile	120 ft ²
30	12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor – Study Room 828	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	120 ft ²
31	Black Mastic and Leveling Compound on Concrete Under Carpet	Throughout Dorm Floors	Good / Category I Non-Friable	2% Chrysotile	1,200 ft ²
32	Texture Material (Concrete Interior Stairwell)	Throughout Interior Stairwell	Good / Friable	2% Chrysotile	3,000 ft ²
34	Carpet Glue associated with Rolled Carpet (Dorm Floors)	Dorm Rooms †	Good / Not Applicable	Carpet Glue/Leveling Compound Point Count Analysis: 0.12% Chrysotile	† Up to 40,000 ft ²

HA No.	Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
38	Interior Window Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	680 Windows
39	Interior Door Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	440 Doors
40	Interior Window Glazing (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	2% Chrysotile	680 Windows
43	Ceiling Coating	Ground Floor – Housekeeping Closet	Good / Friable	2% Chrysotile	200 ft²
51	12" x 12" Beige Floor Tile with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Throughout the 1st Floor and Ground Floor	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	2,150 ft²
54	Black Sink Mastic	Ground Floor and 1st Floor	Good / Category II Non-Friable	10% Chrysotile	4 Sinks
55	Brown Sink Underside Caulk	Ground Floor and 1st Floor	Good / Category II Non-Friable	2% Chrysotile	4 Sinks
56	Black Mastic on HVAC Ductwork	Ground Floor – Crawl Space and Mattress Storage Room	Good / Category II Non-Friable	Mastic: 2% Chrysotile Ductwork: 65% Chrysotile	125 ft
64	12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor – Activity Room	Good / Category I Non-Friable	Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile	625 ft²

HA No.	Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
65	Interior Door Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	16 Doors
66	Interior Window Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	4 Windows
74	8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Felt Paper/Tar: None Detected Insulation: 15% Chrysotile	10 ft
75	8" Pipe Hard Mudded Elbow	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Wrap: None Detected Mudded Elbow: 25% Chrysotile	4 Elbows
76	8" Pipe White Wrap and Insulation	Ground Floor – Crawl Space Back Room	Good / Friable	Wrap: None Detected Insulation: 15% Chrysotile	25 ft
E1	Off-White Paint and Skim Coat	Exterior	Good / Friable	2% Chrysotile	110,000 ft ²
E2	Tan Skim Coat (Under HA E1)	Exterior	Good / Friable	2% Chrysotile	110,000 ft ²
E3	White/Grey Exterior Window Caulk	Exterior Windows	Damaged / Category II Non-Friable	White Caulk: None Detected Clear Caulk: None Detected Grey Caulk: 5% Chrysotile	7,000 ft
E4	White/Grey Exterior Window Glazing	Exterior Windows	Damaged / Category II Non-Friable	2% Chrysotile	680 Windows

HA No.	Material Description	General Location	Condition / NESHA Classification	Percent / Type Asbestos *	Estimated Quantity **
E5	White Ceiling Paint – Fire Escape Vestibules	Fire Escape	Damaged / Friable	3% Chrysotile	500 ft²
E7	Grey Exterior Caulk (Below Windows)	Below Exterior Windows	Good / Category II Non-Friable	5% Chrysotile	7,000 ft
E8	White Sidewalk Caulk	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	100 ft
E15	White Wall Caulk (Bottom of Wall)	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	400 ft
R5	Silver Coating	Roof	Good / Category II Non-Friable	3% Chrysotile	100 ft²
R8	Roof Flashing	Roof	Good / Category I Non-Friable	5% Chrysotile	3,000 ft²
NA	Fire Doors	Throughout the Building	Good / Category II Non-Friable	Assumed ACM	600 Doors
NA	Elevator Brake Components	Elevator Penthouse, Elevators, and Elevator Shafts	Good / Category II Non-Friable	Assumed ACM	Unable to Determine

* **% and Type Asbestos** = this column contains both the analytical result of the sample with the highest concentration of asbestos detected in the samples that make up the HA and the types of asbestos identified.

** **Estimated quantities** are based on cursory field observations and actual quantities may vary significantly, especially if these materials are present in hidden and/or inaccessible areas not evaluated as part of this inspection.

† Asbestos portion of material is likely a residual asbestos mastic from previous flooring applications. Unable to determine accurate extent and quantity of material since the material is concealed by floor coverings and the asbestos component is likely present in spotty locations.

Appendix B

Summary of Identified Lead Paint

Appendix B

Summary of Identified Lead Paint

Sample No.	Color	Substrate / Component	General Location	Lead Content (% by weight)
L1	Tan	Concrete Wall	Throughout Building	0.00909 %
L2	Tan	CMU Block Wall	Throughout Building	0.0108 %
L3	Green	CMU Block Wall	Murals on Dorm Floors	0.0151 %
L6	Light Gray	CMU Block Wall	Interior Stairwell	0.0470 %
L9	Blue	CMU Block Wall	Murals on Dorm Floors	0.00750 %
L10	Blue	Concrete Block Wall	Murals on Dorm Floors	0.0191 %
L14	Dark Blue	Concrete Wall	Murals on Dorm Floors	0.0146 %
L19	Light Tan	Concrete Wall	Interior Stairwell	0.0691 %
L26	Gray	Metal Railing	Interior Stairwell	0.0118 %
L30	White	Concrete Exterior Wall	Exterior	0.00728 %
L31	White	Concrete Ceiling	Fire Escape Vestibules	0.0394 %
L33	White	Concrete Wall	Throughout Building	0.0108 %

Sample No.	Color	Substrate / Component	General Location	Lead Content (% by weight)
L34	White	CMU Block Wall	Throughout Building	0.0187 %
L35	White	Concrete Wall	Throughout Building	0.0142 %
L36	White	CMU Block Wall	Throughout Building	0.0287 %
L37	White	Concrete Wall	Throughout Building	0.0417 %
L38	White	CMU Block Wall	Throughout Building	0.0434 %
L39	White	Concrete Wall	Throughout Building	0.0331 %
L40	White	CMU Block Wall	Interior Stairwell	0.0841 %
L41	White	Concrete Wall	Interior Stairwell	0.0436 %
L42	Black	Metal Railing	Fire Escape Exterior	0.0181 %
L43	Black	Metal Railing	Fire Escape Exterior	0.0295 %
L44	White	Concrete Ceiling	Fire Escape Vestibules	0.0630 %
L46	White	Metal Pipe	Dorm Floor Mechanical Rooms	0.265 %
L47	Gray	Metal Door Frame	Dorm Floors	0.00973 %
L49	White	Concrete Exterior Wall	Fire Escape Exterior	0.0138 %

Sample No.	Color	Substrate / Component	General Location	Lead Content (% by weight)
L53	White	Metal Pipe	Dorm Floor Mechanical Rooms	0.100 %
L55	Gray	Metal Door Frame	Dorm Floors	0.0272 %
L57	White	Metal Pipe	Dorm Floor Mechanical Rooms	0.139 %
L62	Black	Metal Door Frame	Fire Escape Exterior	0.0654 %
L66	Black	Metal Door Frame	Fire Escape Exterior	0.194 %
L68	Beige	Metal Duct	Ground Floor	0.379 %
L70	Green	Metal Window Frame	Loading Dock	0.0481 %

Appendix C

Photographs from Site



Photo #1 Asbestos-Containing Texture Material (Ceilings) (HA 1)



Photo #2 Asbestos-Containing Soffit Surfacing (HA 3)



Photo #3 Asbestos-Containing Texture Material (Concrete Walls/Columns) (HA 4)



Photo #4 Asbestos-Containing CMU Block Surface Filler (HA 5)



Photo #5 Asbestos-Containing CMU Block Surface Filler (Interior Stairwell) (HA 6)



Photo #6 <1% Asbestos (Composite) Drywall and Joint Compound (1st Floor) (HA 11)



Photo #7 Asbestos-Containing 9"x9" Off-White Floor Tile with White Streaks and Black Mastic (Under Carpet) (HA 25)



Photo #8 Asbestos-Containing 9"x9" Tan Floor Tile and Mastic (Under Carpet) (HA 26)



Photo #9 12"x12" White Floor Tile and Mastic and Asbestos-Containing Flooring Below (Under Carpet) (HA 27)



Photo #10 White with Blue Speckles Sheet Flooring and Asbestos-Containing Mastic (Under Carpet) (HA 29)



Photo #11 12"x12" Blue Floor Tile and Asbestos-Containing Mastic (Under Carpet) (HA 30)



Photo #12 Asbestos-Containing Black Mastic and Leveling Compound on Concrete Under Carpet (HA 31)

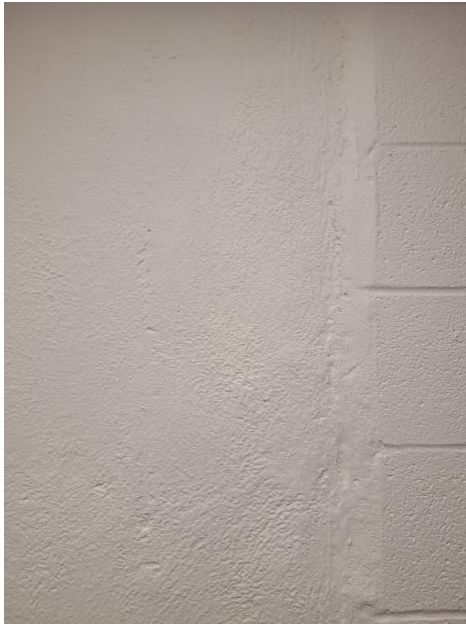


Photo #13 Asbestos-Containing Texture Material (Concrete Interior Stairwell (HA 32))



Photo #14 <1% Asbestos Carpet Glue associated with Rolled Carpet (Dorm Floors) (HA 34)



Photo #15 Asbestos-Containing Interior Window Caulk (Dorm Floors) (HA 38)



Photo #16 Asbestos-Containing Interior Door Caulk (Dorm Floors) (HA 39)



Photo #17 Asbestos-Containing Interior Window Glazing (Dorm Floors) (HA 40)



Photo #18 Asbestos-Containing Ceiling Coating (HA 43)



Photo #19 12"x12" Beige Floor Tile with Brown Streaks and Asbestos-Containing Black Mastic under Wood-Grain Plank Flooring (HA 51)



Photo #20 Asbestos-Containing Black Mastic on HVAC Ductwork (HA 56)



Photo #21 Asbestos-Containing 12"x12" White Floor Tile and Mastic (Under Carpet) (HA 64)



Photo #22 Asbestos-Containing Interior Door Caulk (Ground Floor) (HA 65)



Photo #23 Asbestos-Containing Interior Window Caulk (Ground Floor) (HA 66)



Photo #24 Asbestos-Containing 8" Pipe Black Felt Paper/Tar and Insulation (HA 74)



Photo #25 Asbestos-Containing 8" Pipe
Hard Mudded Elbow (HA 75)



Photo #26 Asbestos-Containing 8" Pipe
White Wrap and Insulation (HA 76)



Photo #27 Asbestos-Containing Off-White
Paint and Skim Coat (HA E1)



Photo #28 Asbestos-Containing Tan Skim
Coat (Under HA E1) (HA E2)



Photo #29 Asbestos-Containing
White/Grey Exterior Window
Caulk (HA E3)

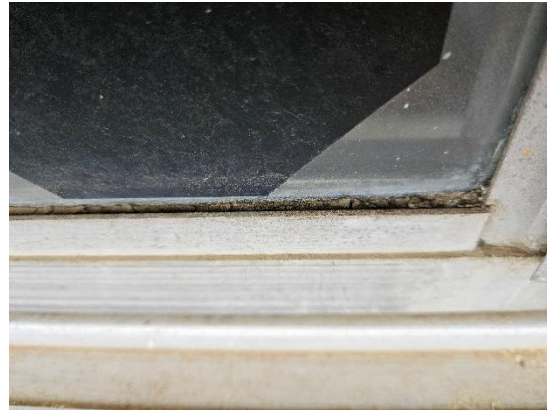


Photo #30 Asbestos-Containing
White/Grey Exterior Window
Glazing (HA E4)



Photo #31 Asbestos-Containing White
Ceiling Paint – Fire Escape
Vestibules (HA E5)



Photo #32 Asbestos-Containing Grey
Exterior Caulk (Below Windows)
(HA E7)

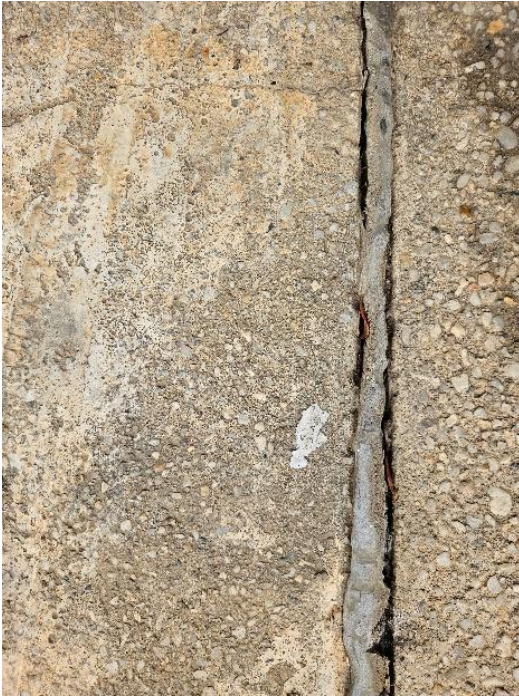


Photo #33 Asbestos-Containing White Sidewalk Caulk (HA E8)



Photo #34 Asbestos-Containing White Wall Caulk (Bottom of Wall) (E15)



Photo #35 Asbestos-Containing Silver Coating (Roof) (HA R5)



Photo #36 Asbestos-Containing Roof Flashing (HA R8)



Photo #37 Assumed Asbestos-Containing
Elevator Cable Brake Pad



Photo #38 Assumed Asbestos-Containing
Elevator Pulley Brake Pad

Appendix D

Asbestos Laboratory Analytical Data



Asbestos Inspection Form

Inspector: Theresa Erickson, Tyler Corbitt, Shaenaz Mirmohamed
License: 13353, 13345, 13337
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
1-1	Texture Material (Ceilings)	11th Floor - Common Room	11	Good	42,000 ft ²	Friable	2% Chrysotile
1-2	Texture Material (Ceilings)	10th Floor - Study Room	10				2% Chrysotile
1-3	Texture Material (Ceilings)	9th Floor - Seminar	9				2% Chrysotile
1-4	Texture Material (Ceilings)	8th Floor - Hallway	8				2% Chrysotile
1-5	Texture Material (Ceilings)	7th Floor - Common Room	7				2% Chrysotile
1-6	Texture Material (Ceilings)	6th Floor - Room 616	6				2% Chrysotile
1-7	Texture Material (Ceilings)	5th Floor - Study Room 527	5				2% Chrysotile
1-8	Texture Material (Ceilings)	4th Floor - Seminar	4				2% Chrysotile
1-9	Texture Material (Ceilings)	3rd Floor - Room 302	3				2% Chrysotile
1-10	Texture Material (Ceilings)	2nd Floor - Common Room	2				2% Chrysotile
2-1	Texture Material (Restroom Ceilings)	11th Floor - Restroom across Room 1117	11	Good	5,500 ft ²	Friable	None Detected
2-2	Texture Material (Restroom Ceilings)	10th Floor - Outside Room 1017	10				None Detected
2-3	Texture Material (Restroom Ceilings)	9th Floor - Restroom outside Room 904	9				None Detected
2-4	Texture Material (Restroom Ceilings)	8th Floor - Restroom outside Room 817	8				None Detected
2-5	Texture Material (Restroom Ceilings)	7th Floor - Restroom outside Room 704	7				None Detected
2-6	Texture Material (Restroom Ceilings)	6th Floor - Restroom outside Room 617	6				None Detected
2-7	Texture Material (Restroom Ceilings)	5th Floor - Restroom outside Room 504	5				None Detected
2-8	Texture Material (Restroom Ceilings)	4th Floor - Restroom outside Room 421	4				None Detected
2-9	Texture Material (Restroom Ceilings)	3rd Floor - Restroom outside Room 317	3				None Detected
2-10	Texture Material (Restroom Ceilings)	2nd Floor - Restroom outside Room 221	2				None Detected
3-1	Soffit Surfacing	11th Floor - Room 1113	11	Good	9,000 ft ²	Friable	2% Chrysotile
3-2	Soffit Surfacing	10th Floor - Room 1015	10				2% Chrysotile
3-3	Soffit Surfacing	9th Floor - Room 902	9				2% Chrysotile
3-4	Soffit Surfacing	8th Floor - Room 809	8				2% Chrysotile
3-5	Soffit Surfacing	7th Floor - Room 703	7				2% Chrysotile
3-6	Soffit Surfacing	6th Floor - Room 624	6				2% Chrysotile
3-7	Soffit Surfacing	5th Floor - Room 521	5				2% Chrysotile



Asbestos Inspection Form

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License: 13353, 13345, 13337
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
3-8	Soffit Surfacing	4th Floor - Room 423	4				2% Chrysotile
3-9	Soffit Surfacing	3rd Floor - Room 304	3				2% Chrysotile
4-1	Texture Material (Concrete Walls/Columns)	11th Floor - Elevator Lobby Wall	11	Good	15,000 ft ²	Friable	Type 1: 2% Chrysotile Type 2: None Detected
4-2	Texture Material (Concrete Walls/Columns)	10th Floor - Column next to Room 1014	10				2% Chrysotile
4-3	Texture Material (Concrete Walls/Columns)	9th Floor - Common Room Column	9				2% Chrysotile
4-4	Texture Material (Concrete Walls/Columns)	8th Floor - Column next to Room 809	8				2% Chrysotile
4-5	Texture Material (Concrete Walls/Columns)	7th Floor - Common Room Column	7				2% Chrysotile
4-6	Texture Material (Concrete Walls/Columns)	6th Floor - Seminar	6				2% Chrysotile
4-7	Texture Material (Concrete Walls/Columns)	5th Floor - Dorm Hallway Column	5				2% Chrysotile
4-8	Texture Material (Concrete Walls/Columns)	4th Floor - Common Room Hallway	4				2% Chrysotile
4-9	Texture Material (Concrete Walls/Columns)	3rd Floor - Common Room	3				2% Chrysotile
4-10	Texture Material (Concrete Walls/Columns)	2nd Floor - Hallway Wall	2				2% Chrysotile
4-11	Texture Material (Concrete Walls/Columns)	1st Floor - Community Room	1				2% Chrysotile
4-12	Texture Material (Concrete Walls/Columns)	Ground Floor - Lounge Wall	G				2% Chrysotile
5-1	CMU Block Surface Filler	11th Floor - Seminar	11	Good	100,000 ft ²	Non-Friable	2% Chrysotile
5-2	CMU Block Surface Filler	10th Floor Study Room	10				2% Chrysotile
5-3	CMU Block Surface Filler	9th Floor - Seminar	9				2% Chrysotile
5-4	CMU Block Surface Filler	8th Floor - Common Room	8				2% Chrysotile
5-5	CMU Block Surface Filler	7th Floor - Common Room Hallway	7				2% Chrysotile
5-6	CMU Block Surface Filler	6th Floor - Room 613	6				2% Chrysotile
5-7	CMU Block Surface Filler	5th Floor - Study Room 528	5				2% Chrysotile
5-8	CMU Block Surface Filler	4th Floor - Common Room	4				2% Chrysotile
5-9	CMU Block Surface Filler	3rd Floor - Dorm Hallway	3				2% Chrysotile



Asbestos Inspection Form

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License: 13353, 13345, 13337

Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall

Job Number: 71247134

Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
5-10	CMU Block Surface Filler	2nd Floor - Room 216	2				2% Chrysotile
5-11	CMU Block Surface Filler	1st Floor - Trash Room	1				2% Chrysotile
5-12	CMU Block Surface Filler	Ground Floor - Lounge	G				2% Chrysotile
6-1	CMU Block Surface Filler (Interior Stairwells)	Stairwell Landing between 10th and 11th Floor	10/11	Good	8,000 ft²	Non-Friable	2% Chrysotile
6-2	CMU Block Surface Filler (Interior Stairwells)	Stairwell Landing between 8th and 9th Floor	8/9				2% Chrysotile
6-3	CMU Block Surface Filler (Interior Stairwells)	5th Floor - Stairwell Landing	5				2% Chrysotile
6-4	CMU Block Surface Filler (Interior Stairwells)	Stairwell Landing between 6th and 7th Floor	6/7				2% Chrysotile
6-5	CMU Block Surface Filler (Interior Stairwells)	Stairwell Landing between 3rd and 4th Floor	3/4				2% Chrysotile
6-6	CMU Block Surface Filler (Interior Stairwells)	2nd Floor - Stairwell Landing	2				2% Chrysotile
6-7	CMU Block Surface Filler (Interior Stairwells)	1st Floor - Stairwell Landing	1				2% Chrysotile
7-1	White 2' x 2' Ceiling Tiles with Linear Fissures and Dense Pinholes	10th Floor - Dorm Hallway outside Room 1014	10	Good	2,750 ft²	Friable	None Detected
7-2	White 2' x 2' Ceiling Tiles with Linear Fissures and Dense Pinholes	4th Floor - Common Room Right Hallway	4				None Detected
7-3	White 2' x 2' Ceiling Tiles with Linear Fissures and Dense Pinholes	7th Floor - Dorm Hallway outside Fire Escape	7				None Detected
8-1	White 2 x 4' Ceiling Tiles with Linear Fissures and Dense Pinholes	Ground Floor - Activity Room	G	Good	625 ft²	Friable	None Detected
8-2	White 2 x 4' Ceiling Tiles with Linear Fissures and Dense Pinholes	Ground Floor - Activity Room	G				None Detected
8-3	White 2 x 4' Ceiling Tiles with Linear Fissures and Dense Pinholes	Ground Floor - Activity Room	G				None Detected
9-1	2' x 2' White Small Fissure Pinhole Ceiling Tiles	8th Floor - Outside Room 816	8	Good	200 ft²	Friable	None Detected
9-2	2' x 2' White Small Fissure Pinhole Ceiling Tiles	5th Floor - Outside Room 517	5				None Detected
9-3	2' x 2' White Small Fissure Pinhole Ceiling Tiles	3rd Floor - Outside Room 310	3				None Detected



Asbestos Inspection Form

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Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
10-1	Drywall and Joint Compound (Dorm Floors)	11th Floor - Common Room Right	11	Good	1,250 ft ²	Non-Friable	Drywall: None Detected Joint Compound: None Detected
10-2	Drywall and Joint Compound (Dorm Floors)	7th Floor - Common Room Left	7				Drywall: None Detected Joint Compound: None Detected
10-3	Drywall and Joint Compound (Dorm Floors)	3rd Floor - Common Room Left	3				Drywall: None Detected Joint Compound: None Detected
11-1	Drywall and Joint Compound (1st Floor)	Hallway Across GA Office	1	Good	7,000 ft ²	Non-Friable	Drywall: None Detected Joint Compound: None Detected
11-2	Drywall and Joint Compound (1st Floor)	GA Office	1				Drywall: None Detected Joint Compound: 0.75% Chrysotile Composite: 0.04% Chrysotile
11-3	Drywall and Joint Compound (1st Floor)	Community Room	1				Drywall: None Detected Joint Compound: None Detected
12-1	Drywall and Joint Compound (Ground Floor)	Lounge next to Vending Machines	G	Good	700 ft ²	Non-Friable	Drywall: None Detected Joint Compound: None Detected
12-2	Drywall and Joint Compound (Ground Floor)	Laundry Room	G				Drywall: None Detected Joint Compound: None Detected
12-3	Drywall and Joint Compound (Ground Floor)	Elevator Lobby	G				Drywall: None Detected Joint Compound: None Detected
13-1	Blue Covebase with Tan Adhesive	10th Floor - Common Room	10	Good	22,000 ft	Non-Friable	Covebase: None Detected Adhesive: None Detected
13-2	Blue Covebase with Tan Adhesive	1st Floor - Community Room	1				Covebase: None Detected Adhesive: None Detected
13-3	Blue Covebase with Tan Adhesive	4th Floor - Room 414	4				Covebase: None Detected Adhesive: None Detected
14-1	4" Grey Covebase and Mastic	10th Floor - Stairwell Landing	10	Good	350 ft	Non-Friable	Covebase: None Detected Mastic: None Detected
14-2	4" Grey Covebase and Mastic	6th Floor - Stairwell Landing	6				Covebase: None Detected Mastic: None Detected
14-3	4" Grey Covebase and Mastic	3rd Floor - Stairwell Landing	3				Covebase: None Detected Mastic: None Detected



Asbestos Inspection Form

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License: 13353, 13345, 13337
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
15-1	3" White Pipe Wrap (Dorm Floors)	10th Floor - Mechanical Room across Room 1025	10	Good	650 ft	Non-Friable	None Detected
15-2	3" White Pipe Wrap (Dorm Floors)	7th Floor - Mechanical Room across Room 715	7				None Detected
15-3	3" White Pipe Wrap (Dorm Floors)	3rd Floor - Mechanical Room across Room 315	3				None Detected
16-1	6" White Pipe Wrap (Dorm Floors)	8th Floor - Mechanical Room across Room 825	8	Good	175 ft	Non-Friable	None Detected
16-2	6" White Pipe Wrap (Dorm Floors)	5th Floor - Mechanical Room across Room 515	5				None Detected
16-3	6" White Pipe Wrap (Dorm Floors)	7th Floor - Mechanical Room across Room 725	7				None Detected
17-1	8" White Pipe Wrap (Dorm Floors)	11th Floor - Mechanical Room across Room 1115	11	Good	350 ft	Non-Friable	Pipe Wrap: None Detected
17-2	8" White Pipe Wrap (Dorm Floors)	7th Floor - Mechanical Room across Room 715	7				Pipe Wrap: None Detected Pipe Wrap Mastic: None Detected
17-3	8" White Pipe Wrap (Dorm Floors)	3rd Floor - Mechanical Room across Room 325	3				Pipe Wrap: None Detected
18-1	White Duct Mastic (Dorm Floors)	11th Floor - Mechanical Room across Room 1115	11	Good	125 ft	Non-Friable	None Detected
18-2	White Duct Mastic (Dorm Floors)	7th Floor - Mechanical Room across Room 725	7				None Detected
18-3	White Duct Mastic (Dorm Floors)	2nd Floor - Mechanical Room across Room 225	2				None Detected
19-1	Grey Mastic (Dorm Floors)	11th Floor - Mechanical Room across Room 1115	11	Good	100 ft	Non-Friable	None Detected
19-2	Grey Mastic (Dorm Floors)	8th Floor - Mechanical Room across Room 825	8				None Detected
19-3	Grey Mastic (Dorm Floors)	3rd Floor - Mechanical Room across Room 315	3				None Detected
20-1	Beige Mastic/Mud on Chill Water Risers (Dorm Floors)	11th Floor - Mechanical Room across Room 1115	11	Good	100 ft	Non-Friable	None Detected
20-2	Beige Mastic/Mud on Chill Water Risers (Dorm Floors)	7th Floor - Mechanical Room across Room 725	7				None Detected
20-3	Beige Mastic/Mud on Chill Water Risers (Dorm Floors)	3rd Floor - Mechanical Room across Room 325	3				None Detected

Inspector: Theresa Erickson, Tyler Corbitt, Shaenaz Mirmohamed
 License: 13353, 13345, 13337
 Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
 Job Number: 71247134
 Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
21-1	Black Sticky Wrap/Cold Water Supply (Armaflex - Dorm Floors)	10th Floor - Mechanical Room across Room 1025	10	Good	80 ft	Non-Friable	None Detected
21-2	Black Sticky Wrap/Cold Water Supply (Armaflex - Dorm Floors)	7th Floor - Mechanical Room across Room 725	7				None Detected
21-3	Black Sticky Wrap/Cold Water Supply (Armaflex - Dorm Floors)	2nd Floor - Mechanical Room across Room 225	2				None Detected
22-1	Red Penetration Mastic (Fire Stop - Dorm Floors)	10th Floor - Mechanical Room across Room 1025	10	Good	25 ft	Non-Friable	None Detected
22-2	Red Penetration Mastic (Fire Stop - Dorm Floors)	7th Floor - Water Closet	7				None Detected
22-3	Red Penetration Mastic (Fire Stop - Dorm Floors)	2nd Floor - Above Ceiling outside Room 216	2				None Detected
23-1	Stair Tread Mastic (Interior Stairwell)	Stairwell Landing between 10th and 11th Floor	10/11	Good	15,000 ft²	Non-Friable	None Detected
23-2	Stair Tread Mastic (Interior Stairwell)	5th Floor - Stairwell Landing	5				None Detected
23-3	Stair Tread Mastic (Interior Stairwell)	2nd Floor - Stairwell Landing	2				None Detected
24-1	4" Brown Covebase and Mastic	1st Floor - Outside Community Room	1	Good	345 ft	Non-Friable	Covebase: None Detected Mastic: None Detected
24-2	4" Brown Covebase and Mastic	1st Floor - Hallway	1				Covebase: None Detected Mastic: None Detected
24-3	4" Brown Covebase and Mastic	Ground Floor - Lounge	G				Covebase: None Detected Mastic: None Detected
25-1	Off White 9" x 9" Floor Tile with White Streaks and Black Mastic (Under Carpet)	10th Floor - Room 1003	10	Good	48,200 ft²	Non-Friable	Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile
25-2	Off White 9" x 9" Floor Tile with White Streaks and Black Mastic (Under Carpet)	4th Floor - Dorm Hallway outside Room 404	4				Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile
25-3	Off White 9" x 9" Floor Tile with White Streaks and Black Mastic (Under Carpet)	2nd Floor - Dorm Hallway outside Room 205	2				Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile
26-1	9" x 9" Tan Floor Tile and Mastic (Under Carpet)	9th Floor - Seminar	9	Good	2,250 ft²	Non-Friable	Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile
26-2	9" x 9" Tan Floor Tile and Mastic (Under Carpet)	3rd Floor - Study Room 327	3				Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile

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 Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
26-3	9" x 9" Tan Floor Tile and Mastic (Under Carpet)	7th Floor - Seminar	7				Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile
27-1	12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	11th Floor - Study Room 1128	11	Good	3,650 ft²	Non-Friable	White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile
27-2	12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	8th Floor - Dorm Hallway outside Room 822	8				Clear Mastic: None Detected White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile
27-3	12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	4th Floor - Elevator Lobby	4				Clear Mastic: None Detected White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile
28-1	White 12" x 12" Floor Tile with Black Specks and Mastic	11th Floor - Stairwell Landing	11	Good	675 ft²	Non-Friable	Floor Tile: None Detected Mastic: None Detected
28-2	White 12" x 12" Floor Tile with Black Specks and Mastic	5th Floor - Stairwell Landing	5				Floor Tile: None Detected Mastic: None Detected
28-3	White 12" x 12" Floor Tile with Black Specks and Mastic	Stairwell Landing between 2nd and 3rd Floor	1				Floor Tile: None Detected Mastic: None Detected
29-1	White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor - Study Room 728	7	Good	120 ft²	Non-Friable	Sheet Flooring: None Detected Mastic: 2% Chrysotile
29-2	White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor - Study Room 728	7				Sheet Flooring: None Detected Mastic: 2% Chrysotile
29-3	White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor - Study Room 728	7				Sheet Flooring: None Detected Mastic: 2% Chrysotile
30-1	12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor - Study Room 828	8	Good	120 ft²	Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile
30-2	12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor - Study Room 828	8				Floor Tile: None Detected Mastic: 2% Chrysotile
30-3	12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor - Study Room 828	8				Floor Tile: None Detected Mastic: 2% Chrysotile
31-1	Black Mastic and Leveling Compound on Concrete Under Carpet	6th Floor - Study Room 627	6	Good	1,200 ft²	Non-Friable	Mastic/Leveling Compound: 2% Chrysotile
31-2	Black Mastic and Leveling Compound on Concrete Under Carpet	11th Floor - Seminar	11				Mastic/Leveling Compound: 2% Chrysotile



Asbestos Inspection Form

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Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
31-3	Black Mastic and Leveling Compound on Concrete Under Carpet	2nd Floor - Seminar	2				Mastic: None Detected
32-1	Texture Material (Concrete Interior Stairwell)	9th Floor - Column at Stairwell Landing	9	Good	3,000 ft ²	Friable	2% Chrysotile
32-2	Texture Material (Concrete Interior Stairwell)	Stairwell Landing between 5th and 6th Floor	5/6				2% Chrysotile
32-3	Texture Material (Concrete Interior Stairwell)	Stairwell Landing between 6th and 7th Floor	6/7				2% Chrysotile
32-4	Texture Material (Concrete Interior Stairwell)	Stairwell Landing between 3rd and 4th Floor	3/4				Texture Material: 2% Chrysotile Concrete: None Detected
32-5	Texture Material (Concrete Interior Stairwell)	2nd Floor - Stairwell Landing	2				2% Chrysotile
33-1	Carpet Glue associated with Carpet Squares (Dorm Floors)	9th Floor - Dorm Hallway outside Room 904	9	Good	22,000 ft ²	Non-Friable	None Detected
33-2	Carpet Glue associated with Carpet Squares (Dorm Floors)	4th Floor - Seminar	4				None Detected
33-3	Carpet Glue associated with Carpet Squares (Dorm Floors)	3rd Floor - Study Room 327	3				None Detected
34-1	Carpet Glue associated with Rolled Carpet (Dorm Floors)	10th Floor - Room 1010	10	Good	40,000 ft ²	Non-Friable	0.12% Chrysotile
34-2	Carpet Glue associated with Rolled Carpet (Dorm Floors)	7th Floor - Room 724	7				None Detected
34-3	Carpet Glue associated with Rolled Carpet (Dorm Floors)	3rd Floor - Room 313	3				None Detected
35-1	Grey Leveling Compound (Dorm Floors)	10th Floor - Room 1010 Entry	10	Good	3,000 ft ²	Non-Friable	Yellow Mastic: None Detected Leveling Compound: None Detected
35-2	Grey Leveling Compound (Dorm Floors)	7th Floor - Common Room	7				Clear Mastic: None Detected Leveling Compound: None Detected Yellow Mastic: None Detected
35-3	Grey Leveling Compound (Dorm Floors)	4th Floor - Elevator Lobby	4				Clear Mastic: None Detected Leveling Compound: None Detected Yellow Mastic: None Detected
36-1	Small Square Ceramic - Grout (Dorm Floors)	7th Floor - Restroom across Room 721	7	Good	14,000 ft ²	Non-Friable	None Detected

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Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
36-2	Small Square Ceramic - Grout (Dorm Floors)	3rd Floor - Restroom across Room 317	3				None Detected
36-3	Small Square Ceramic - Grout (Dorm Floors)	11th Floor - Restroom across Room 1108	11				None Detected
37-1	Restroom Caulk (Dorm Floors)	7th Floor - Restroom across Room 721	7	Good	600 ft	Non-Friable	None Detected
37-2	Restroom Caulk (Dorm Floors)	3rd Floor - Restroom across Room 321	3				None Detected
37-3	Restroom Caulk (Dorm Floors)	10th Floor - Restroom across Room 1017	10				Caulk: None Detected Mud: None Detected
38-1	Interior Window Caulk (Dorm Floors)	7th Floor - Room 716	7	Good	680 Windows	Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile
38-2	Interior Window Caulk (Dorm Floors)	4th Floor - Room 402	4				White Caulk: None Detected Beige Caulk: 3% Chrysotile
38-3	Interior Window Caulk (Dorm Floors)	2nd Floor - Room 220	2				White Caulk: None Detected Beige Caulk: 3% Chrysotile
39-1	Interior Door Caulk (Dorm Floors)	8th Floor - Stairwell Door	8	Good	440 Doors	Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile
39-2	Interior Door Caulk (Dorm Floors)	5th Floor - Common Room Hallway Door	5				White Caulk: None Detected Beige Caulk: 3% Chrysotile
39-3	Interior Door Caulk (Dorm Floors)	3rd Floor - Room 318 Door	3				White Caulk: None Detected Beige Caulk: 3% Chrysotile
40-1	Interior Window Glazing (Dorm Floors)	7th Floor - Room 716	7	Good	680 windows	Non-Friable	2% Chrysotile
40-2	Interior Window Glazing (Dorm Floors)	4th Floor - Room 402	4				2% Chrysotile
40-3	Interior Window Glazing (Dorm Floors)	2nd Floor - Room 220	2				2% Chrysotile
41-1	Brown Duct Mastic	5th Floor - Mechanical Room across Room 515	5	Good	10 ft	Non-Friable	None Detected
41-2	Brown Duct Mastic	5th Floor - Mechanical Room across Room 515	5				None Detected
41-3	Brown Duct Mastic	5th Floor - Mechanical Room across Room 515	5				None Detected
42-1	2' x 2' Pinhole Fissure Panel Ceiling Tile	Ground Floor - Lounge	G	Good	3,000 ft²	Friable	None Detected
42-2	2' x 2' Pinhole Fissure Panel Ceiling Tile	Ground Floor - Laundry Room	G				None Detected



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Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
42-3	2' x 2' Pinhole Fissure Panel Ceiling Tile	1st Floor - Community Room	1				None Detected
43-1	Ceiling Coating	Ground Floor - Housekeeping Closet	G	Good	200 ft ²	Friable	2% Chrysotile
43-2	Ceiling Coating	Ground Floor - Housekeeping Closet	G				2% Chrysotile
43-3	Ceiling Coating	Ground Floor - Housekeeping Closet	G				2% Chrysotile
44-1	4" Black Covebase and Mastic	1st Floor - Housekeeping Room	1	Good	36 ft	Non-Friable	Covebase: None Detected Mastic: None Detected
44-2	4" Black Covebase and Mastic	1st Floor - Housekeeping Room	1				Covebase: None Detected Mastic: None Detected
44-3	4" Black Covebase and Mastic	1st Floor - Housekeeping Room	1				Covebase: None Detected Mastic: None Detected
45-1	6" Tan Covebase and Mastic	1st Floor - Room adjacent to Trash Room	1	Good	65 ft	Non-Friable	Covebase: None Detected Mastic: None Detected
45-2	6" Tan Covebase and Mastic	1st Floor - Room adjacent to Trash Room	1				Covebase: None Detected Mastic: None Detected
45-3	6" Tan Covebase and Mastic	1st Floor - Room adjacent to Trash Room	1				Covebase: None Detected Mastic: None Detected
46-1	Large Square Ceramic - Grout	Ground Floor - Kitchen	G	Good	550 ft ²	Non-Friable	None Detected
46-2	Large Square Ceramic - Grout	Ground Floor - Kitchen	G				None Detected
46-3	Large Square Ceramic - Grout	1st Floor - Restroom around the Corner	1				None Detected
47-1	Grey Rubber Flooring Mastic	1st Floor - Housekeeping Room	1	Good	75 ft ²	Non-Friable	None Detected
47-2	Grey Rubber Flooring Mastic	1st Floor - Housekeeping Room	1				None Detected
47-3	Grey Rubber Flooring Mastic	1st Floor - Housekeeping Room	1				None Detected
48-1	Carpet Mastic Yellow and Black	Ground Floor - Activity Room	G	Good	2,400 ft ²	Non-Friable	None Detected
48-2	Carpet Mastic Yellow and Black	1st Floor - Entrance Vestibule	1				None Detected
48-3	Carpet Mastic Yellow and Black	1st Floor - Conference Room	1				None Detected
49-1	Yellow and Green Carpet Mastic	1st Floor - Community Room	1	Good	685 ft ²	Non-Friable	None Detected
49-2	Yellow and Green Carpet Mastic	1st Floor - Community Room	1				None Detected
49-3	Yellow and Green Carpet Mastic	1st Floor - Community Room	1				None Detected

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Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
50-1	Multilayered White 12" x 12" Floor Tiles with Brown Streaks and Blue Flecks and Black Mastic	Ground Floor - Laundry Room	G	Good	500 ft²	Non-Friable	White Tile: None Detected Yellow Mastic: None Detected Tan Tile: None Detected Black Mastic: None Detected
50-2	Multilayered White 12" x 12" Floor Tiles with Brown Streaks and Blue Flecks and Black Mastic	Ground Floor - Laundry Room	G				White Tile: None Detected Yellow Mastic: None Detected Tan Tile: None Detected Black Mastic: None Detected
50-3	Multilayered White 12" x 12" Floor Tiles with Brown Streaks and Blue Flecks and Black Mastic	Ground Floor - Laundry Room	G				White Tile: None Detected Yellow Mastic: None Detected Tan Tile: None Detected Black Mastic: None Detected
51-1	Beige 12" x 12" Floor Tiles with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Ground Floor - Elevator Lobby	G	Good	2,150 ft²	Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile
51-2	Beige 12" x 12" Floor Tiles with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Ground Floor - Lounge	G				Floor Tile: None Detected Mastic: 2% Chrysotile
51-3	Beige 12" x 12" Floor Tiles with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	1st Floor - Behind Front Desk	1				Floor Tile: None Detected Mastic: None Detected
52-1	Green Ceramic Tile and Grout under Wood-Grain Plank Flooring	Left Elevator		Good	70 ft²	Non-Friable	Tile: None Detected Mastic: None Detected
52-2	Green Ceramic Tile and Grout under Wood-Grain Plank Flooring	Right Elevator					Tile: None Detected Grout: None Detected
52-3	Green Ceramic Tile and Grout under Wood-Grain Plank Flooring	Right Elevator					Tile: None Detected Caulk: None Detected
53-1	Wood- Grain Plank Flooring	Ground Floor - Elevator Lobby	G	Good	2,150 ft²	Non-Friable	None Detected
53-2	Wood- Grain Plank Flooring	Ground Floor - Lounge	G				None Detected
53-3	Wood- Grain Plank Flooring	1st Floor - Behind Front Desk	1				None Detected
54-1	Black Sink Mastic	Ground Floor - Kitchen	G	Good	4 Sinks	Non-Friable	2% Chrysotile
54-2	Black Sink Mastic	Ground Floor - Laundry Room	G				10% Chrysotile
54-3	Black Sink Mastic	1st Floor - Housekeeping Room	1				10% Chrysotile
55-1	Brown Sink Underside Caulk	Ground Floor - Laundry Room	G	Good	4 Sinks	Non-Friable	None Detected
55-2	Brown Sink Underside Caulk	Ground Floor - Laundry Room	G				None Detected



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55-3	Brown Sink Underside Caulk	1st Floor - Housekeeping Room	1				2% Chrysotile
56-1	Black Mastic on HVAC Ductwork	Ground Floor - Crawl Space	G	Good	125 ft	Non-Friable	Mastic: 2% Chrysotile Ductwork: 65% Chrysotile
56-2	Black Mastic on HVAC Ductwork	Ground Floor - Crawl Space	G				Mastic: 5% Chrysotile Ductwork: None Detected
56-3	Black Mastic on HVAC Ductwork	Ground Floor - Mattress Storage Room	G				Mastic: 2% Chrysotile Ductwork: 65% Chrysotile
57-1	Black Sticky Wrap/Cold Water Supply (Armaflex)	Ground Floor - Mechanical Room	G	Good	10 ft	Non-Friable	None Detected
57-2	Black Sticky Wrap/Cold Water Supply (Armaflex)	Ground Floor - Mechanical Room	G				None Detected
57-3	Black Sticky Wrap/Cold Water Supply (Armaflex)	Ground Floor - Mechanical Room	G				None Detected
58-1	Black Foam Insulation	Ground Floor - Mechanical Room	G	Good	45 ft ²	Non-Friable	None Detected
58-2	Black Foam Insulation	Ground Floor - Mechanical Room	G				None Detected
58-3	Black Foam Insulation	Ground Floor - Mechanical Room	G				None Detected
59-1	White TSI Wrap on Fiberglass	Ground Floor - Mattress Storage Room	G	Good	225 ft	Non-Friable	Wrap: None Detected Insulation: None Detected
59-2	White TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				Wrap: None Detected Insulation: None Detected
59-3	White TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				Wrap: None Detected Insulation: None Detected
60-1	White Penetration Mastic	Ground Floor - Mechanical Room	G	Good	10 ft	Non-Friable	None Detected
60-2	White Penetration Mastic	Ground Floor - Mechanical Room	G				None Detected
60-3	White Penetration Mastic	Ground Floor - Mechanical Room	G				None Detected
61-1	Red Penetration Mastic (Fire Stop)	Ground Floor - Mechanical Room	G	Good	35 ft	Non-Friable	None Detected
61-2	Red Penetration Mastic (Fire Stop)	Ground Floor - Mechanical Room	G				None Detected
61-3	Red Penetration Mastic (Fire Stop)	Ground Floor - Mechanical Room	G				None Detected
62-1	Grey Mastic	Ground Floor - Laundry Room	G	Good	15 ft	Non-Friable	None Detected
62-2	Grey Mastic	Ground Floor - Laundry Room	G				None Detected
62-3	Grey Mastic	Ground Floor - Laundry Room	G				None Detected
63-1	Black Mastic on TSI Wrapping and at Wall Penetrations	Ground Floor - Mattress Storage Room	G	Good	5 ft	Non-Friable	Black Coating: None Detected Cementitious Material: None Detected

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63-2	Black Mastic on TSI Wrapping and at Wall Penetrations	Ground Floor - Mattress Storage Room	G				Black Coating: None Detected Cementitious Material: None Detected
63-3	Black Mastic on TSI Wrapping and at Wall Penetrations	Ground Floor - Mattress Storage Room	G				Black Coating: None Detected Cementitious Material: None Detected
64-1	12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor - Activity Room	G	Good	625 ft²	Non-Friable	Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile
64-2	12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor - Activity Room	G				Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile
64-3	12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor - Activity Room	G				Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile
65-1	Interior Door Caulk (Ground Floor)	Ground Floor - Activity Room Back Door	G	Good	16 Doors	Non-Friable	5% Chrysotile
65-2	Interior Door Caulk (Ground Floor)	Ground Floor - Door between Lounge and Elevator Lobby	G				5% Chrysotile
65-3	Interior Door Caulk (Ground Floor)	Ground Floor - Laundry Room Door to Mattress Storage Room	G				5% Chrysotile
66-1	Interior Window Caulk (Ground Floor)	Ground Floor - Activity Room Back Window	G	Good	4 Windows	Non-Friable	5% Chrysotile
66-2	Interior Window Caulk (Ground Floor)	Ground Floor - Elevator Lobby Back Window	G				None Detected
66-3	Interior Window Caulk (Ground Floor)	Ground Floor - Elevator Lobby Back Window	G				None Detected
67-1	Interior Door Caulk (1st Floor)	1st Floor - Door outside Elevator	1	Good	25 Doors	Non-Friable	None Detected
67-2	Interior Door Caulk (1st Floor)	1st Floor - Restroom Door next to Mail Room	1				None Detected
67-3	Interior Door Caulk (1st Floor)	1st Floor - Community Room Door	1				None Detected
68-1	Interior Window Caulk (1st Floor)	1st Floor - Community Room Window	1	Good	500 ft	Non-Friable	None Detected
68-2	Interior Window Caulk (1st Floor)	1st Floor - Office between GA and RA Offices	1				None Detected
68-3	Interior Window Caulk (1st Floor)	1st Floor - Conference Room	1				None Detected



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69-1	Interior Vent Caulk	1st Floor - Hallway outside Restrooms	1	Good	12 Vents	Non-Friable	None Detected
69-2	Interior Vent Caulk	1st Floor - Front Entrance Left Vent	1				None Detected
69-3	Interior Vent Caulk	1st Floor - Right Vent outside Community Room	1				None Detected
70-1	Interior Grey Non-Pliable Caulk	Ground Floor - Activity Room (Bottom of Window Frame)	G	Good	1 Window Frame	Non-Friable	None Detected
70-2	Interior Grey Non-Pliable Caulk	Ground Floor - Activity Room (Bottom of Window Frame)	G				None Detected
70-3	Interior Grey Non-Pliable Caulk	Ground Floor - Activity Room (Bottom of Window Frame)	G				None Detected
71-1	Blue TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G	Good	350 ft	Non-Friable	None Detected
71-2	Blue TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
71-3	Blue TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
72-1	Green TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G	Good	300 ft	Non-Friable	None Detected
72-2	Green TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
72-3	Green TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
73-1	Orange TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G	Good	175 ft	Non-Friable	None Detected
73-2	Orange TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
73-3	Orange TSI Wrap on Fiberglass	Ground Floor - Mechanical Room	G				None Detected
74-1	8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor - Crawl Space Back Room	G	Good	10 ft	Friable	Felt Paper/Tar: None Detected Insulation: 15% Chrysotile
74-2	8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor - Mattress Storage Room	G				Felt Paper/Tar: None Detected Insulation: 15% Chrysotile
74-3	8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor - Mattress Storage Room	G				Felt Paper/Tar: None Detected Insulation: 15% Chrysotile
75-1	8" Pipe Hard Mudded Elbow	Ground Floor - Mattress Storage Room	G	Good	4 Elbows	Friable	Wrap: None Detected Mudded Elbow: 25% Chrysotile
75-2	8" Pipe Hard Mudded Elbow	Ground Floor - Mattress Storage Room	G				Wrap: None Detected Mudded Elbow: 25% Chrysotile
75-3	8" Pipe Hard Mudded Elbow	Ground Floor - Mattress Storage Room	G				Wrap: None Detected Mudded Elbow: 25% Chrysotile



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Inspector: Theresa Erickson, Tyler Corbitt, Shaenaz Mirmohamed
License: 13353, 13345, 13337
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Interior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
76-1	8" Pipe White Wrap and Insulation	Ground Floor - Crawl Space Back Room	G	Good	25 ft	Friable	Wrap: None Detected Insulation: 15% Chrysotile
76-2	8" Pipe White Wrap and Insulation	Ground Floor - Crawl Space Back Room	G				Wrap: None Detected Insulation: 15% Chrysotile
76-3	8" Pipe White Wrap and Insulation	Ground Floor - Crawl Space Back Room	G				Wrap: None Detected Insulation: 15% Chrysotile
77-1	Black Flooring Mastic	Ground Floor - Mattress Storage Room	G	Good	15 ft ²	Non-Friable	None Detected
77-2	Black Flooring Mastic	Ground Floor - Mechanical Room	G				None Detected
77-3	Black Flooring Mastic	Ground Floor - Mechanical Room	G				None Detected
78-1	Green HVAC Ductwork Mastic	Ground Floor - Mechanical Room	G	Good	5 ft	Non-Friable	None Detected
78-2	Green HVAC Ductwork Mastic	Ground Floor - Mechanical Room	G				None Detected
78-3	Green HVAC Ductwork Mastic	Ground Floor - Mechanical Room	G				None Detected



Asbestos Inspection Form

Inspector: Russell Harrings
License: 12222
Date: 5/14/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Exterior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
E1-1	Off-White Paint and Skim Coat	1117	11	Good	110,000 ft ²	Friable	2% Chrysotile
E1-2	Off-White Paint and Skim Coat	1021	10				2% Chrysotile
E1-3	Off-White Paint and Skim Coat	9th Floor - Fire Escape	9				2% Chrysotile
E1-4	Off-White Paint and Skim Coat	803	8				2% Chrysotile
E1-5	Off-White Paint and Skim Coat	710	7				2% Chrysotile
E1-6	Off-White Paint and Skim Coat	6th Floor - Fire Escape	6				2% Chrysotile
E1-7	Off-White Paint and Skim Coat	515	5				2% Chrysotile
E1-8	Off-White Paint and Skim Coat	425	4				2% Chrysotile
E1-9	Off-White Paint and Skim Coat	3rd Floor - Fire Escape	3				2% Chrysotile
E1-10	Off-White Paint and Skim Coat	204	2				2% Chrysotile
E1-11	Off-White Paint and Skim Coat	Patio - Southeast Corner	1				2% Chrysotile
E1-12	Off-White Paint and Skim Coat	Loading Dock	G				2% Chrysotile
E2-1	Tan Skim Coat (Under HA 1)	1117	11	Good	110,000 ft ²	Friable	2% Chrysotile
E2-2	Tan Skim Coat (Under HA 1)	1021	10				2% Chrysotile
E2-3	Tan Skim Coat (Under HA 1)	9th Floor - Fire Escape	9				2% Chrysotile
E2-4	Tan Skim Coat (Under HA 1)	803	8				2% Chrysotile
E2-5	Tan Skim Coat (Under HA 1)	710	7				2% Chrysotile
E2-6	Tan Skim Coat (Under HA 1)	6th Floor - Fire Escape	6				2% Chrysotile
E2-7	Tan Skim Coat (Under HA 1)	515	5				2% Chrysotile
E2-8	Tan Skim Coat (Under HA 1)	425	4				2% Chrysotile
E2-9	Tan Skim Coat (Under HA 1)	3rd Floor - Fire Escape	3				2% Chrysotile
E2-10	Tan Skim Coat (Under HA 1)	204	2				2% Chrysotile
E2-11	Tan Skim Coat (Under HA 1)	Patio - Southeast Corner	1				2% Chrysotile
E2-12	Tan Skim Coat (Under HA 1)	Loading Dock	G				2% Chrysotile
E3-1	White/Grey Exterior Window Caulk	1117	11	Damaged	7,000 ft	Non-Friable	White Caulk: None Detected Clear Caulk: None Detected Grey Caulk: 5% Chrysotile
E3-2	White/Grey Exterior Window Caulk	610	6				Grey Caulk: 5% Chrysotile
E3-3	White/Grey Exterior Window Caulk	425	4				Clear Caulk: None Detected
E3-4	White/Grey Exterior Window Caulk	205	2				Clear Caulk: None Detected Grey Caulk: 5% Chrysotile
E4-1	White/Grey Exterior Window Glazing	1117	11	Damaged	680 windows	Non-Friable	2% Chrysotile
E4-2	White/Grey Exterior Window Glazing	710	7				2% Chrysotile
E4-3	White/Grey Exterior Window Glazing	425	4				2% Chrysotile
E4-4	White/Grey Exterior Window Glazing	205	2				2% Chrysotile



Asbestos Inspection Form

Inspector: Russell Harrings
License: 12222
Date: 5/14/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Exterior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
E5-1	White Ceiling Paint - Fire Escape Vestibules	9th Floor - Fire Escape	9	Damaged	500 ft ²	Friable	3% Chrysotile
E5-2	White Ceiling Paint - Fire Escape Vestibules	6th Floor - Fire Escape	6				3% Chrysotile
E5-3	White Ceiling Paint - Fire Escape Vestibules	3rd Floor - Fire Escape	3				3% Chrysotile
E6-1	White Paint - Fire Escape	9th Floor - Fire Escape	9	Damaged	5,500 ft ²	Friable	None Detected
E6-2	White Paint - Fire Escape	6th Floor - Fire Escape	6				None Detected
E6-3	White Paint - Fire Escape	3rd Floor - Fire Escape	3				None Detected
E7-1	Grey Exterior Caulk (Below Windows)	610	6	Good	7,000 ft	Non-Friable	5% Chrysotile
E7-2	Grey Exterior Caulk (Below Windows)	425	4				5% Chrysotile
E7-3	Grey Exterior Caulk (Below Windows)	1016	10				None Detected
E7-4	Grey Exterior Caulk (Below Windows)	205	2				5% Chrysotile
E8-1	White Sidewalk Caulk	Patio - Southeast Corner	1	Damaged	100 ft	Non-Friable	5% Chrysotile
E8-2	White Sidewalk Caulk	Patio - Southwest corner	1				5% Chrysotile
E8-3	White Sidewalk Caulk	Patio - Northwest corner	1				5% Chrysotile
E9-1	Black Sidewalk Tar	Patio - Southeast Corner	1	Damaged	50 ft	Non-Friable	None Detected
E9-2	Black Sidewalk Tar	Patio - Southwest corner	1				None Detected
E9-3	Black Sidewalk Tar	Patio - Northwest corner	1				None Detected
E10-1	Exterior Door Frame Caulk	Loading Dock - Door to Elevator Lobby	G	Good	1 Door	Non-Friable	None Detected
E10-2	Exterior Door Frame Caulk	Loading Dock - Door to Elevator Lobby	G				None Detected
E10-3	Exterior Door Frame Caulk	Loading Dock - Door to Elevator Lobby	G				None Detected
E11-1	CMU Block Surface Filler	Loading Dock - East Wall	G	Good	400 ft ²	Non-Friable	None Detected
E11-2	CMU Block Surface Filler	Loading Dock - West Wall	G				None Detected
E11-3	CMU Block Surface Filler	Wall near Mechanical Room	G				None Detected
E12-1	Clear Silicone Caulk	West Side Pipe	G	Good	5 ft	Non-Friable	None Detected
E12-2	Clear Silicone Caulk	West Side Pipe	G				None Detected
E12-3	Clear Silicone Caulk	West Side Pipe	G				None Detected



Asbestos Inspection Form

Inspector: Russell Harrings
License: 12222
Date: 5/14/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Exterior

Sample No.	Homogeneous Material Description	Sample Location	Floor	Condition	Quantity	Friable/ Non-Friable	Lab Results
E13-1	White Window / Door Frame Caulk	Front Entrance	1	Good	40 ft	Non-Friable	None Detected
E13-2	White Window / Door Frame Caulk	Front Entrance	1				None Detected
E13-3	White Window / Door Frame Caulk	Front Entrance	1				None Detected
E14-1	2' x 2' Smooth Ceiling Tile	Near Fire Escape Stairwell	1	Good	950 ft ²	Friable	None Detected
E14-2	2' x 2' Smooth Ceiling Tile	Patio - Southeast	1				None Detected
E14-3	2' x 2' Smooth Ceiling Tile	Patio - East	1				None Detected
E15-1	White Wall Caulk (Bottom of Wall)	Patio - Southwest	1	Damaged	400 ft	Non-Friable	5% Chrysotile
E15-2	White Wall Caulk (Bottom of Wall)	Patio - Southwest	1				5% Chrysotile
E15-3	White Wall Caulk (Bottom of Wall)	Patio - Southwest	1				5% Chrysotile
E16-1	Exterior Concrete Ceiling Texture Material	Patio - Northwest corner	1	Good	950 ft ²	Friable	None Detected
E16-2	Exterior Concrete Ceiling Texture Material	Patio - North	1				None Detected
E16-3	Exterior Concrete Ceiling Texture Material	Patio - West	1				None Detected



Asbestos Inspection Form

Inspector: Russell Harrings and Theresa Erickson
License: 12222 and 13353
Date: 5/21/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Roof

Sample No.	Homogeneous Material Description	Sample Location	Condition	Quantity	Friable/ Non-Friable	Lab Results
R1-1	Light Grey Caulk	Roof - Northwest Corner	Good	1,000 ft	Non-Friable	Grey Caulk: None Detected
R1-2	Light Grey Caulk	Roof - Northeast Corner				Grey Caulk: None Detected Black Caulk: None Detected
R1-3	Light Grey Caulk	Roof - Southwest Corner				Grey Caulk: None Detected Black Caulk: None Detected
R2-1	Grey Lightning Rod Caulk	Roof - Northwest Corner	Good	46 Rods	Non-Friable	None Detected
R2-2	Grey Lightning Rod Caulk	Roof - Northeast Corner				None Detected
R2-3	Grey Lightning Rod Caulk	Roof - Southwest Corner				None Detected
R3-1	Clear Silicone Caulk	Roof - Center West Side	Good	1,000 ft	Non-Friable	None Detected
R3-2	Clear Silicone Caulk	Roof - Center East Side				None Detected
R3-3	Clear Silicone Caulk	Roof - Center South Side				None Detected
R4-1	Black Tar	Roof - Center West Side	Good	100 ft ²	Non-Friable	None Detected
R4-2	Black Tar	Roof - Center East Side				None Detected
R4-3	Black Tar	Roof - Center South Side				None Detected
R5-1	Silver Coating	Roof - Southwest Corner	Good	100 ft ²	Non-Friable	3% Chrysotile
R5-2	Silver Coating	Roof - Southwest Corner				3% Chrysotile
R5-3	Silver Coating	Roof - East Side				3% Chrysotile
R6-1	White Roof Patch Sealant	Roof - South Side Left	Good	40 ft ²	Non-Friable	None Detected
R6-2	White Roof Patch Sealant	Roof - South Side Center				None Detected
R6-3	White Roof Patch Sealant	Roof - South Side Right				None Detected
R7-1	Roof Field TPO over Built-Up Roof	Roof - Northeast Corner	Good	9,000 ft ²	Non-Friable	Tar: None Detected Paper: None Detected Foam: None Detected
R7-2	Roof Field TPO over Built-Up Roof	Roof - West Side				Tar: None Detected Paper: None Detected Foam: None Detected
R7-3	Roof Field TPO over Built-Up Roof	Roof - Southeast Corner				Tar: None Detected Paper: None Detected Foam: None Detected
R8-1	Roof Flashing	Roof - Northeast Corner	Good	3,000 ft ²	Non-Friable	5% Chrysotile



Asbestos Inspection Form

Inspector: Russell Harrings and Theresa Erickson
License: 12222 and 13353
Date: 5/21/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area(s): Roof

Sample No.	Homogeneous Material Description	Sample Location	Condition	Quantity	Friable/ Non-Friable	Lab Results
R8-2	Roof Flashing	Roof - Southwest Corner				5% Chrysotile
R8-3	Roof Flashing	Roof - Southeast Corner				5% Chrysotile

June 5, 2024

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

CLIENT PROJECT: UNCC Sanford Hall, 71247134
CEI LAB CODE: SA241498

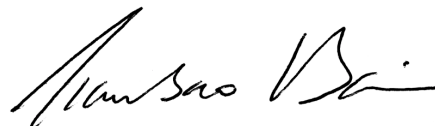
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on May 23, 2024. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

Terracon Consultants, Inc.

CLIENT PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 06/05/24

TOTAL SAMPLES ANALYZED: 371

SAMPLES >1% ASBESTOS: 172

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1-1		SA241498.001	White	Textured Material	Chrysotile 2%
1-2		SA241498.002	White	Textured Material	Chrysotile 2%
1-3		SA241498.003	White	Textured Material	Chrysotile 2%
1-4		SA241498.004	White	Textured Material	Chrysotile 2%
1-5		SA241498.005	White	Textured Material	Chrysotile 2%
1-6		SA241498.006	White	Textured Material	Chrysotile 2%
1-7		SA241498.007	White	Textured Material	Chrysotile 2%
1-8		SA241498.008	White	Textured Material	Chrysotile 2%
1-9		SA241498.009	White	Textured Material	Chrysotile 2%
1-10		SA241498.010	White	Textured Material	Chrysotile 2%
2-1		SA241498.011	White	Textured Material	None Detected
2-2		SA241498.012	White	Textured Material	None Detected
2-3		SA241498.013	White	Textured Material	None Detected
2-4		SA241498.014	White	Textured Material	None Detected
2-5		SA241498.015	White	Textured Material	None Detected
2-6		SA241498.016	White	Textured Material	None Detected
2-7		SA241498.017	White	Textured Material	None Detected
2-8		SA241498.018	White	Textured Material	None Detected
2-9		SA241498.019	White	Textured Material	None Detected
2-10		SA241498.020	White	Textured Material	None Detected
3-1		SA241498.021	White	Soffit Surfacing	Chrysotile 2%
3-2		SA241498.022	White	Soffit Surfacing	Chrysotile 2%
3-3		SA241498.023	White	Soffit Surfacing	Chrysotile 2%
3-4		SA241498.024	White	Soffit Surfacing	Chrysotile 2%
3-5		SA241498.025	White	Soffit Surfacing	Chrysotile 2%
3-6		SA241498.026	White	Soffit Surfacing	Chrysotile 2%
3-7		SA241498.027	White	Soffit Surfacing	Chrysotile 2%
3-8		SA241498.028	White	Soffit Surfacing	Chrysotile 2%
3-9		SA241498.029	White	Soffit Surfacing	Chrysotile 2%
4-1	Layer 1	SA241498.030	Beige,Off-white	Texture Material (Type 1)	Chrysotile 2%
4-1	Layer 2	SA241498.030	Beige,White	Texture Material (Type 2)	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
4-2		SA241498.031	White,Off-white	Texture Material	Chrysotile 2%
4-3		SA241498.032	Blue,Off-white	Texture Material	Chrysotile 2%
4-4		SA241498.033	Blue,Off-white	Texture Material	Chrysotile 2%
4-5		SA241498.034	Blue,Off-white	Texture Material	Chrysotile 2%
4-6		SA241498.035	Blue Orange, Off-white	Texture Material	Chrysotile 2%
4-7		SA241498.036	White,Off-white	Texture Material	Chrysotile 2%
4-8		SA241498.037	White,Off-white	Texture Material	Chrysotile 2%
4-9		SA241498.038	White,Off-white	Texture Material	Chrysotile 2%
4-10		SA241498.039	White,Off-white	Texture Material	Chrysotile 2%
4-11		SA241498.040	Blue,White Tan	Texture Material	Chrysotile 2%
4-12		SA241498.041	Blue,Off-white	Texture Material	Chrysotile 2%
5-1		SA241498.042	Green,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-2		SA241498.043	Green,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-3		SA241498.044	Green,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-4		SA241498.045	Green,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-5		SA241498.046	Green,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-6		SA241498.047	Light Blue,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-7		SA241498.048	Light Blue,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-8		SA241498.049	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-9		SA241498.050	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-10		SA241498.051	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-11		SA241498.052	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
5-12		SA241498.053	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-1		SA241498.054	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-2		SA241498.055	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-3		SA241498.056	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-4		SA241498.057	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-5		SA241498.058	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
6-6		SA241498.059	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
6-7		SA241498.060	White,Off-white	Cmu Block Surface Filler	Chrysotile 2%
7-1		SA241498.061	White,Gray	2' X 2' Ceiling Tile	None Detected
7-2		SA241498.062	White,Gray	2' X 2' Ceiling Tile	None Detected
7-3		SA241498.063	White,Gray	2' X 2' Ceiling Tile	None Detected
8-1		SA241498.064	White,Gray	2' X 4' Ceiling Tile	None Detected
8-2		SA241498.065	White,Gray	2' X 4' Ceiling Tile	None Detected
8-3		SA241498.066	White,Gray	2' X 4' Ceiling Tile	None Detected
9-1		SA241498.067	White,Gray	2' X 2' Ceiling Tile	None Detected
9-2		SA241498.068	White,Gray	2' X 2' Ceiling Tile	None Detected
9-3		SA241498.069	White,Gray	2' X 2' Ceiling Tile	None Detected
10-1	Layer 1	SA241498.070	White	Joint Compound	None Detected
10-1	Layer 2	SA241498.070	White,Brown	Drywall	None Detected
10-2	Layer 1	SA241498.071	White	Joint Compound	None Detected
10-2	Layer 2	SA241498.071	White,Brown	Drywall	None Detected
10-3	Layer 1	SA241498.072	White	Joint Compound	None Detected
10-3	Layer 2	SA241498.072	White,Brown	Drywall	None Detected
11-1	Layer 1	SA241498.073	White	Joint Compound	None Detected
11-1	Layer 2	SA241498.073	White,Brown	Drywall	None Detected
11-2	Layer 1	SA241498.074	White,Cream	Joint Compound	Chrysotile <1%
11-2	Layer 2	SA241498.074	White,Brown	Drywall	None Detected
11-2	Layer 2	SA241498.074	White,Brown	Drywall/ Joint Compound Composite	Chrysotile <1%
11-3	Layer 1	SA241498.075	White	Joint Compound	None Detected
11-3	Layer 2	SA241498.075	White,Brown	Drywall	None Detected
12-1	Layer 1	SA241498.076	White	Joint Compound	None Detected
12-1	Layer 2	SA241498.076	White,Brown	Drywall	None Detected
12-2	Layer 1	SA241498.077	White,Brown	Joint Compound	None Detected
12-2	Layer 2	SA241498.077	White,Brown	Drywall	None Detected
12-3	Layer 1	SA241498.078	White	Joint Compound	None Detected
12-3	Layer 2	SA241498.078	White,Tan	Drywall	None Detected
13-1		SA241498.079A	Blue	Covebase	None Detected



CEI

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
13-1		SA241498.079B	Tan	Adhesive	None Detected
13-2		SA241498.080A	Blue	Covebase	None Detected
13-2		SA241498.080B	Tan	Adhesive	None Detected
13-3		SA241498.081A	Blue	Covebase	None Detected
13-3		SA241498.081B	Tan	Adhesive	None Detected
14-1		SA241498.082A	Gray	Covebase	None Detected
14-1		SA241498.082B	Yellow	Mastic	None Detected
14-2		SA241498.083A	Gray	Covebase	None Detected
14-2		SA241498.083B	Yellow	Mastic	None Detected
14-3		SA241498.084A	Gray	Covebase	None Detected
14-3		SA241498.084B	Yellow	Mastic	None Detected
15-1		SA241498.085	White	Pipe Wrap	None Detected
15-2		SA241498.086	White	Pipe Wrap	None Detected
15-3		SA241498.087	White	Pipe Wrap	None Detected
16-1		SA241498.088	White	Pipe Wrap	None Detected
16-2		SA241498.089	White	Pipe Wrap	None Detected
16-3		SA241498.090	White	Pipe Wrap	None Detected
17-1		SA241498.091	White	Pipe Wrap	None Detected
17-2	Layer 1	SA241498.092	White	Pipe Wrap - Mastic	None Detected
17-2	Layer 2	SA241498.092	White	Pipe Wrap	None Detected
17-3		SA241498.093	White	Pipe Wrap	None Detected
18-1		SA241498.094	White	Duct Mastic	None Detected
18-2		SA241498.095	White	Duct Mastic	None Detected
18-3		SA241498.096	White	Duct Mastic	None Detected
19-1		SA241498.097	Gray	Mastic	None Detected
19-2		SA241498.098	Gray	Mastic	None Detected
19-3		SA241498.099	Gray	Mastic	None Detected
20-1		SA241498.100	White	Mastic/ Mud	None Detected
20-2		SA241498.101	White	Mastic/ Mud	None Detected
20-3		SA241498.102	White	Mastic/ Mud	None Detected
21-1		SA241498.103	Black	Sticky Wrap	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
21-2		SA241498.104	Black	Sticky Wrap	None Detected
21-3		SA241498.105	Black	Sticky Wrap	None Detected
22-1		SA241498.106	Red	Penetration Mastic	None Detected
22-2		SA241498.107	Red	Penetration Mastic	None Detected
22-3		SA241498.108	Red	Penetration Mastic	None Detected
23-1		SA241498.109	Cream	Stair Tread Mastic	None Detected
23-2		SA241498.110	Cream	Stair Tread Mastic	None Detected
23-3		SA241498.111	Cream	Stair Tread Mastic	None Detected
24-1		SA241498.112A	Brown	Covebase	None Detected
24-1		SA241498.112B	Cream	Mastic	None Detected
24-2		SA241498.113A	Brown	Covebase	None Detected
24-2		SA241498.113B	Cream	Mastic	None Detected
24-3		SA241498.114A	Brown	Covebase	None Detected
24-3	Layer 1	SA241498.114B	Cream	Mastic	None Detected
24-3	Layer 2	SA241498.114B	Brown	Mastic	None Detected
25-1	Layer 1	SA241498.115A	Yellow	Mastic	None Detected
25-1	Layer 2	SA241498.115A	Off-white,White	Floor Tile	Chrysotile 2%
25-1		SA241498.115B	Black	Mastic	Chrysotile 2%
25-2	Layer 1	SA241498.116A	Yellow	Mastic	None Detected
25-2	Layer 2	SA241498.116A	Off-white,White	Floor Tile	Chrysotile 2%
25-2		SA241498.116B	Black	Mastic	Chrysotile 2%
25-3	Layer 1	SA241498.117A	Yellow	Mastic	None Detected
25-3	Layer 2	SA241498.117A	Off-white,White	Floor Tile	Chrysotile 2%
25-3		SA241498.117B	Black	Mastic	Chrysotile 2%
26-1	Layer 1	SA241498.118A	Yellow,Gray	Mastic	None Detected
26-1	Layer 2	SA241498.118A	Tan	Floor Tile	Chrysotile 3%
26-1		SA241498.118B	Black	Mastic	Chrysotile 2%
26-2	Layer 1	SA241498.119A	Yellow	Mastic	None Detected
26-2	Layer 2	SA241498.119A	Tan	Floor Tile	Chrysotile 3%
26-2		SA241498.119B	Black	Mastic	Chrysotile 2%
26-3	Layer 1	SA241498.120A	Yellow	Mastic	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
26-3	Layer 2	SA241498.120A	Tan	Floor Tile	Chrysotile 3%
26-3		SA241498.120B	Black	Mastic	Chrysotile 2%
27-1		SA241498.121A	White	Floor Tile	None Detected
27-1		SA241498.121B	Yellow	Mastic	None Detected
27-1		SA241498.121C	Tan	Floor Tile	Chrysotile 3%
27-1		SA241498.121D	Black	Mastic	Chrysotile 2%
27-2	Layer 1	SA241498.122A	Clear	Mastic	None Detected
27-2	Layer 2	SA241498.122A	White	Floor Tile	None Detected
27-2		SA241498.122B	Yellow	Mastic	None Detected
27-2		SA241498.122C	Tan	Floor Tile	Chrysotile 3%
27-2		SA241498.122D	Black	Mastic	Chrysotile 2%
27-3	Layer 1	SA241498.123A	Clear	Mastic	None Detected
27-3	Layer 2	SA241498.123A	White	Floor Tile	None Detected
27-3		SA241498.123B	Yellow	Mastic	None Detected
27-3		SA241498.123C	Tan	Floor Tile	Chrysotile 3%
27-3		SA241498.123D	Black	Mastic	Chrysotile 2%
28-1		SA241498.124A	White,Black	Floor Tile	None Detected
28-1		SA241498.124B	Yellow	Mastic	None Detected
28-2		SA241498.125A	White,Black	Floor Tile	None Detected
28-2		SA241498.125B	Yellow	Mastic	None Detected
28-3		SA241498.126A	White,Black	Floor Tile	None Detected
28-3		SA241498.126B	Yellow	Mastic	None Detected
29-1		SA241498.127A	White,Blue	Sheet Flooring	None Detected
29-1		SA241498.127B	Yellow,Black	Mastic	Chrysotile 2%
29-2		SA241498.128A	White,Blue	Sheet Flooring	None Detected
29-2		SA241498.128B	Yellow,Black	Mastic	Chrysotile 2%
29-3		SA241498.129A	White,Blue	Sheet Flooring	None Detected
29-3		SA241498.129B	Yellow,Black	Mastic	Chrysotile 2%
30-1		SA241498.130A	Blue	Floor Tile	None Detected
30-1		SA241498.130B	Yellow,Black	Mastic	Chrysotile 2%
30-2		SA241498.131A	Blue	Floor Tile	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
30-2		SA241498.131B	Yellow,Black	Mastic	Chrysotile 2%
30-3		SA241498.132A	Blue	Floor Tile	None Detected
30-3		SA241498.132B	Yellow,Black	Mastic	Chrysotile 2%
31-1		SA241498.133	Black,Gray	Mastic/ Leveling Compound	Chrysotile 2%
31-2		SA241498.134	Black,Gray	Mastic/ Leveling Compound	Chrysotile 2%
31-3		SA241498.135	Yellow,Black	Mastic	None Detected
32-1		SA241498.136	White	Texture Material	Chrysotile 2%
32-2		SA241498.137	White	Texture Material	Chrysotile 2%
32-3		SA241498.138	White	Texture Material	Chrysotile 2%
32-4	Layer 1	SA241498.139	White	Texture Material	Chrysotile 2%
32-4	Layer 2	SA241498.139	Gray	Concrete	None Detected
32-5		SA241498.140	White	Texture Material	Chrysotile 2%
33-1		SA241498.141	Yellow,Blue	Carpet Glue	None Detected
33-2		SA241498.142	Yellow,Blue	Carpet Glue	None Detected
33-3		SA241498.143	Yellow,Blue	Carpet Glue	None Detected
34-1		SA241498.144	Yellow,Gray	Carpet Glue/ Leveling Compound	Chrysotile <1%
34-2		SA241498.145	Yellow	Carpet Glue	None Detected
34-3		SA241498.146	Yellow	Carpet Glue	None Detected
35-1	Layer 1	SA241498.147	Yellow	Mastic	None Detected
35-1	Layer 2	SA241498.147	Gray	Leveling Compound	None Detected
35-2	Layer 1	SA241498.148	Clear	Mastic	None Detected
35-2	Layer 2	SA241498.148	Gray	Leveling Compound	None Detected
35-2	Layer 3	SA241498.148	Yellow	Mastic	None Detected
35-3	Layer 1	SA241498.149	Clear	Mastic	None Detected
35-3	Layer 2	SA241498.149	Gray	Leveling Compound	None Detected
35-3	Layer 3	SA241498.149	Yellow	Mastic	None Detected
36-1		SA241498.150	White	Grout	None Detected
36-2		SA241498.151	White	Grout	None Detected
36-3		SA241498.152	White	Grout	None Detected
37-1		SA241498.153	White	Caulking	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
37-2		SA241498.154	White	Caulking	None Detected
37-3	Layer 1	SA241498.155	White	Caulking	None Detected
37-3	Layer 2	SA241498.155	White	Mud	None Detected
38-1		SA241498.156A	White	Window Caulking	None Detected
38-1		SA241498.156B	Beige	Window Caulking	Chrysotile 3%
38-2		SA241498.157A	White	Window Caulking	None Detected
38-2		SA241498.157B	Beige	Window Caulking	Chrysotile 3%
38-3		SA241498.158A	White	Window Caulking	None Detected
38-3		SA241498.158B	Beige	Window Caulking	Chrysotile 3%
39-1		SA241498.159A	White	Door Caulk	None Detected
39-1		SA241498.159B	Beige	Door Caulk	Chrysotile 3%
39-2		SA241498.160A	White	Door Caulk	None Detected
39-2		SA241498.160B	Beige	Door Caulk	Chrysotile 3%
39-3		SA241498.161A	White	Door Caulk	None Detected
39-3		SA241498.161B	Beige	Door Caulk	Chrysotile 3%
40-1		SA241498.162	Gray	Window Glazing	Chrysotile 2%
40-2		SA241498.163	Gray	Window Glazing	Chrysotile 2%
40-3		SA241498.164	Gray	Window Glazing	Chrysotile 2%
41-1		SA241498.165	Brown	Duct Mastic	None Detected
41-2		SA241498.166	Brown	Duct Mastic	None Detected
41-3		SA241498.167	Brown	Duct Mastic	None Detected
42-1		SA241498.168	White	Ceiling Tile	None Detected
42-2		SA241498.169	White	Ceiling Tile	None Detected
42-3		SA241498.170	White	Ceiling Tile	None Detected
43-1		SA241498.171	Tan	Ceiling Coating	Chrysotile 2%
43-2		SA241498.172	Tan	Ceiling Coating	Chrysotile 2%
43-3		SA241498.173	Tan	Ceiling Coating	Chrysotile 2%
44-1		SA241498.174A	Black	Covebase	None Detected
44-1		SA241498.174B	Beige	Mastic	None Detected
44-2		SA241498.175A	Black	Covebase	None Detected
44-2		SA241498.175B	Beige	Mastic	None Detected



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Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
44-3		SA241498.176A	Black	Covebase	None Detected
44-3		SA241498.176B	Beige	Mastic	None Detected
45-1		SA241498.177A	Tan	Covebase	None Detected
45-1		SA241498.177B	Beige	Mastic	None Detected
45-2		SA241498.178A	Tan	Covebase	None Detected
45-2		SA241498.178B	Beige	Mastic	None Detected
45-3		SA241498.179A	Tan	Covebase	None Detected
45-3		SA241498.179B	Beige	Mastic	None Detected
46-1		SA241498.180	Gray	Grout	None Detected
46-2		SA241498.181	Gray	Grout	None Detected
46-3		SA241498.182	Gray	Grout	None Detected
47-1		SA241498.183	Yellow	Mastic	None Detected
47-2		SA241498.184	Yellow	Mastic	None Detected
47-3		SA241498.185	Yellow	Mastic	None Detected
48-1		SA241498.186	Yellow,Black	Carpet Mastic	None Detected
48-2		SA241498.187	Yellow,Black	Carpet Mastic	None Detected
48-3		SA241498.188	Yellow,Black	Carpet Mastic	None Detected
49-1		SA241498.189	Yellow,Green	Carpet Mastic	None Detected
49-2		SA241498.190	Yellow,Green	Carpet Mastic	None Detected
49-3		SA241498.191	Yellow,Green	Carpet Mastic	None Detected
50-1		SA241498.192A	White	Floor Tile	None Detected
50-1		SA241498.192B	Yellow	Mastic	None Detected
50-1		SA241498.192C	Tan	Floor Tile	None Detected
50-1		SA241498.192D	Black	Mastic	None Detected
50-2		SA241498.193A	White	Floor Tile	None Detected
50-2		SA241498.193B	Yellow	Mastic	None Detected
50-2		SA241498.193C	Tan	Floor Tile	None Detected
50-2		SA241498.193D	Black	Mastic	None Detected
50-3		SA241498.194A	White	Floor Tile	None Detected
50-3		SA241498.194B	Yellow	Mastic	None Detected
50-3		SA241498.194C	Tan	Floor Tile	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
50-3		SA241498.194D	Black	Mastic	None Detected
51-1		SA241498.195A	Beige	Floor Tile	None Detected
51-1		SA241498.195B	Black	Mastic	Chrysotile 2%
51-2		SA241498.196A	Beige	Floor Tile	None Detected
51-2		SA241498.196B	Black	Mastic	Chrysotile 2%
51-3		SA241498.197A	Beige	Floor Tile	None Detected
51-3		SA241498.197B	Yellow	Mastic	None Detected
52-1		SA241498.198A	Green	Ceramic Tile	None Detected
52-1		SA241498.198B	Clear	Mastic	None Detected
52-2	Layer 1	SA241498.199	Green	Ceramic Tile	None Detected
52-2	Layer 2	SA241498.199	Gray	Grout	None Detected
52-3		SA241498.200A	Green	Ceramic Tile	None Detected
52-3		SA241498.200B	Yellow	Caulking	None Detected
53-1		SA241498.201	Brown,Gray	Plank Flooring	None Detected
53-2		SA241498.202	Brown,Gray	Plank Flooring	None Detected
53-3		SA241498.203	Brown,Gray	Plank Flooring	None Detected
54-1		SA241498.204	Black	Sink Mastic	Chrysotile 2%
54-2		SA241498.205	Black	Sink Mastic	Chrysotile 10%
54-3		SA241498.206	Black	Sink Mastic	Chrysotile 10%
55-1		SA241498.207	Brown	Sink Underside Caulk	None Detected
55-2		SA241498.208	Brown	Sink Underside Caulk	None Detected
55-3		SA241498.209	Brown	Sink Underside Caulk	Chrysotile 2%
56-1	Layer 1	SA241498.210	Black	Mastic	Chrysotile 2%
56-1	Layer 2	SA241498.210	Off-white	Hvac Ductwork	Chrysotile 65%
56-2	Layer 1	SA241498.211	Black	Mastic	Chrysotile 5%
56-2	Layer 2	SA241498.211	Silver,Gray	Hvac Ductwork	None Detected
56-3	Layer 1	SA241498.212	Black	Mastic	Chrysotile 2%
56-3	Layer 2	SA241498.212	Off-white	Hvac Ductwork	Chrysotile 65%
57-1		SA241498.213	Black	Sticky Wrap/cold Water Supply	None Detected
57-2		SA241498.214	Black	Sticky Wrap/cold Water Supply	None Detected
57-3		SA241498.215	Black	Sticky Wrap/cold Water Supply	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
58-1		SA241498.216	Black	Foam Insulation	None Detected
58-2		SA241498.217	Black	Foam Insulation	None Detected
58-3		SA241498.218	Black	Foam Insulation	None Detected
59-1	Layer 1	SA241498.219	White	TSI Wrap	None Detected
59-1	Layer 2	SA241498.219	Silver, Yellow	Insulation	None Detected
59-2	Layer 1	SA241498.220	White	TSI Wrap	None Detected
59-2	Layer 2	SA241498.220	Silver, Yellow	Insulation	None Detected
59-3	Layer 1	SA241498.221	White	TSI Wrap	None Detected
59-3	Layer 2	SA241498.221	Silver, Yellow	Insulation	None Detected
60-1		SA241498.222	White	Penetration Mastic	None Detected
60-2		SA241498.223	White	Penetration Mastic	None Detected
60-3		SA241498.224	White	Penetration Mastic	None Detected
61-1		SA241498.225	Red	Penetration Mastic	None Detected
61-2		SA241498.226	Red	Penetration Mastic	None Detected
61-3		SA241498.227	Red	Penetration Mastic	None Detected
62-1		SA241498.228	Gray	Mastic	None Detected
62-2		SA241498.229	Gray	Mastic	None Detected
62-3		SA241498.230	Gray	Mastic	None Detected
63-1	Layer 1	SA241498.231	Black	Coating	None Detected
63-1	Layer 2	SA241498.231	Gray	Cementitious Material	None Detected
63-2	Layer 1	SA241498.232	Black	Coating	None Detected
63-2	Layer 2	SA241498.232	Gray	Cementitious Material	None Detected
63-3	Layer 1	SA241498.233	Black	Coating	None Detected
63-3	Layer 2	SA241498.233	Gray	Cementitious Material	None Detected
64-1	Layer 1	SA241498.234A	Yellow	Mastic	None Detected
64-1	Layer 2	SA241498.234A	White	Floor Tile	Chrysotile 3%
64-1		SA241498.234B	Black	Mastic	Chrysotile 5%
64-2	Layer 1	SA241498.235A	Yellow	Mastic	None Detected
64-2	Layer 2	SA241498.235A	White	Floor Tile	Chrysotile 3%
64-2		SA241498.235B	Black	Mastic	Chrysotile 5%
64-3	Layer 1	SA241498.236A	Yellow	Mastic	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
64-3	Layer 2	SA241498.236A	White	Floor Tile	Chrysotile 3%
64-3		SA241498.236B	Black	Mastic	Chrysotile 5%
65-1		SA241498.237	White	Door Caulk	Chrysotile 5%
65-2		SA241498.238	White	Door Caulk	Chrysotile 5%
65-3		SA241498.239	White	Door Caulk	Chrysotile 5%
66-1		SA241498.240	White	Window Caulking	Chrysotile 5%
66-2		SA241498.241	White	Window Caulking	None Detected
66-3		SA241498.242	Tan	Window Caulking	None Detected
67-1		SA241498.243	White	Door Caulk	None Detected
67-2		SA241498.244	White	Door Caulk	None Detected
67-3		SA241498.245	White	Door Caulk	None Detected
68-1		SA241498.246	White	Window Caulking	None Detected
68-2		SA241498.247	White	Window Caulking	None Detected
68-3		SA241498.248	White	Window Caulking	None Detected
69-1		SA241498.249	White,Gray	Vent Caulk	None Detected
69-2		SA241498.250	White,Gray	Vent Caulk	None Detected
69-3		SA241498.251	White,Gray	Vent Caulk	None Detected
70-1		SA241498.252	Gray	Caulking	None Detected
70-2		SA241498.253	Gray	Caulking	None Detected
70-3		SA241498.254	Gray	Caulking	None Detected
71-1		SA241498.255	Blue,White	TSI Wrap	None Detected
71-2		SA241498.256	Blue,White	TSI Wrap	None Detected
71-3		SA241498.257	Blue,White	TSI Wrap	None Detected
72-1		SA241498.258	Green,White	TSI Wrap	None Detected
72-2		SA241498.259	Green,White	TSI Wrap	None Detected
72-3		SA241498.260	Green,White	TSI Wrap	None Detected
73-1		SA241498.261	Orange,White	TSI Wrap	None Detected
73-2		SA241498.262	Orange,White	TSI Wrap	None Detected
73-3		SA241498.263	Orange,White	TSI Wrap	None Detected
74-1	Layer 1	SA241498.264	Black	Felt Paper/tar	None Detected
74-1	Layer 2	SA241498.264	Off-white	Insulation	Chrysotile 15%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
74-2	Layer 1	SA241498.265	Black	Felt Paper/tar	None Detected
74-2	Layer 2	SA241498.265	Off-white	Insulation	Chrysotile 15%
74-3	Layer 1	SA241498.266	Black	Felt Paper/tar	None Detected
74-3	Layer 2	SA241498.266	Off-white	Insulation	Chrysotile 15%
75-1	Layer 1	SA241498.267	Off-white	Wrap	None Detected
75-1	Layer 2	SA241498.267	Off-white	Mudded Elbow	Chrysotile 25%
75-2	Layer 1	SA241498.268	Off-white	Wrap	None Detected
75-2	Layer 2	SA241498.268	Off-white	Mudded Elbow	Chrysotile 25%
75-3	Layer 1	SA241498.269	Off-white	Wrap	None Detected
75-3	Layer 2	SA241498.269	Off-white	Mudded Elbow	Chrysotile 25%
76-1	Layer 1	SA241498.270	Tan	Wrap	None Detected
76-1	Layer 2	SA241498.270	Off-white	Insulation	Chrysotile 15%
76-2	Layer 1	SA241498.271	Tan	Wrap	None Detected
76-2	Layer 2	SA241498.271	Off-white	Insulation	Chrysotile 15%
76-3	Layer 1	SA241498.272	Tan	Wrap	None Detected
76-3	Layer 2	SA241498.272	Off-white	Insulation	Chrysotile 15%
77-1		SA241498.273	Black	Flooring Mastic	None Detected
77-2		SA241498.274	Black	Flooring Mastic	None Detected
77-3		SA241498.275	Black	Flooring Mastic	None Detected
78-1		SA241498.276	Green	Hvac Ductwork Mastic	None Detected
78-2		SA241498.277	Green	Hvac Ductwork Mastic	None Detected
78-3		SA241498.278	Green	Hvac Ductwork Mastic	None Detected
E1-1		SA241498.279	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-2		SA241498.280	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-3		SA241498.281	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-4		SA241498.282	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-5		SA241498.283	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-6		SA241498.284	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-7		SA241498.285	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-8		SA241498.286	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-9		SA241498.287	Off-white	Paint And Skim Coat	Chrysotile 2%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
E1-10		SA241498.288	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-11		SA241498.289	Off-white	Paint And Skim Coat	Chrysotile 2%
E1-12		SA241498.290	Off-white	Paint And Skim Coat	Chrysotile 2%
E2-1		SA241498.291	Tan	Skim Coat	Chrysotile 2%
E2-2		SA241498.292	Tan	Skim Coat	Chrysotile 2%
E2-3		SA241498.293	Tan	Skim Coat	Chrysotile 2%
E2-4		SA241498.294	Tan	Skim Coat	Chrysotile 2%
E2-5		SA241498.295	Tan	Skim Coat	Chrysotile 2%
E2-6		SA241498.296	Tan	Skim Coat	Chrysotile 2%
E2-7		SA241498.297	Tan	Skim Coat	Chrysotile 2%
E2-8		SA241498.298	Tan	Skim Coat	Chrysotile 2%
E2-9		SA241498.299	Tan	Skim Coat	Chrysotile 2%
E2-10		SA241498.300	Tan	Skim Coat	Chrysotile 2%
E2-11		SA241498.301	Tan	Skim Coat	Chrysotile 2%
E2-12		SA241498.302	Tan	Skim Coat	Chrysotile 2%
E3-1		SA241498.303A	White	Window Caulk	None Detected
E3-1		SA241498.303B	Clear	Window Caulk	None Detected
E3-1		SA241498.303C	Gray	Window Caulk	Chrysotile 5%
E3-2		SA241498.304	Gray	Window Caulk	Chrysotile 5%
E3-3		SA241498.305	Clear	Window Caulk	None Detected
E3-4		SA241498.306A	Clear	Window Caulk	None Detected
E3-4		SA241498.306B	Gray	Window Caulk	Chrysotile 5%
E4-1		SA241498.307	White,Gray	Window Glazing	Chrysotile 2%
E4-2		SA241498.308	White,Gray	Window Glazing	Chrysotile 2%
E4-3		SA241498.309	White,Gray	Window Glazing	Chrysotile 2%
E4-4		SA241498.310	White,Gray	Window Glazing	Chrysotile 2%
E5-1		SA241498.311	White	Ceiling Paint	Chrysotile 3%
E5-2		SA241498.312	White	Ceiling Paint	Chrysotile 3%
E5-3		SA241498.313	White	Ceiling Paint	Chrysotile 3%
E6-1		SA241498.314	White	Paint	None Detected
E6-2		SA241498.315	White	Paint	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
E6-3		SA241498.316	White	Paint	None Detected
E7-1		SA241498.317	Gray	Exterior Caulk	Chrysotile 5%
E7-2		SA241498.318	Gray	Exterior Caulk	Chrysotile 5%
E7-3		SA241498.319	White	Exterior Caulk	None Detected
E7-4		SA241498.320	Gray	Exterior Caulk	Chrysotile 5%
E8-1		SA241498.321	White	Sidewalk Caulk	Chrysotile 5%
E8-2		SA241498.322	White	Sidewalk Caulk	Chrysotile 5%
E8-3		SA241498.323	White	Sidewalk Caulk	Chrysotile 5%
E9-1		SA241498.324	Black	Sidewalk Tar	None Detected
E9-2		SA241498.325	Black	Sidewalk Tar	None Detected
E9-3		SA241498.326	Black	Sidewalk Tar	None Detected
E10-1		SA241498.327	Gray,Tan	Door Frame Caulk	None Detected
E10-2		SA241498.328	Gray,Tan	Door Frame Caulk	None Detected
E10-3		SA241498.329	Gray,Tan	Door Frame Caulk	None Detected
E11-1		SA241498.330	White	Surface Filler	None Detected
E11-2		SA241498.331	White	Surface Filler	None Detected
E11-3		SA241498.332	White	Surface Filler	None Detected
E12-1		SA241498.333	Clear	Caulk	None Detected
E12-2		SA241498.334	Clear	Caulk	None Detected
E12-3		SA241498.335	Clear	Caulk	None Detected
E13-1		SA241498.336	White	Window / Door Fame Caulk	None Detected
E13-2		SA241498.337	White	Window / Door Fame Caulk	None Detected
E13-3		SA241498.338	White	Window / Door Fame Caulk	None Detected
E14-1		SA241498.339	White	Smooth Ceiling Tile	None Detected
E14-2		SA241498.340	White	Smooth Ceiling Tile	None Detected
E14-3		SA241498.341	White	Smooth Ceiling Tile	None Detected
E15-1		SA241498.342	White	Wall Caulk	Chrysotile 5%
E15-2		SA241498.343	White	Wall Caulk	Chrysotile 5%
E15-3		SA241498.344	White	Wall Caulk	Chrysotile 5%
E16-1		SA241498.345	White	Ceiling Texture	None Detected
E16-2		SA241498.346	White	Ceiling Texture	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
E16-3		SA241498.347	White	Ceiling Texture	None Detected
R1-1		SA241498.348	Light Gray	Caulk	None Detected
R1-2		SA241498.349A	Light Gray	Caulk	None Detected
R1-2		SA241498.349B	Black	Caulk	None Detected
R1-3		SA241498.350A	Light Gray	Caulk	None Detected
R1-3		SA241498.350B	Black	Caulk	None Detected
R2-1		SA241498.351	Gray	Lightning Rod Caulk	None Detected
R2-2		SA241498.352	Gray	Lightning Rod Caulk	None Detected
R2-3		SA241498.353	Gray	Lightning Rod Caulk	None Detected
R3-1		SA241498.354	Clear	Caulk	None Detected
R3-2		SA241498.355	Clear	Caulk	None Detected
R3-3		SA241498.356	Clear	Caulk	None Detected
R4-1		SA241498.357	Black	Tar	None Detected
R4-2		SA241498.358	Black	Tar	None Detected
R4-3		SA241498.359	Black	Tar	None Detected
R5-1		SA241498.360	Silver	Coating	Chrysotile 3%
R5-2		SA241498.361	Silver	Coating	Chrysotile 3%
R5-3		SA241498.362	Silver	Coating	Chrysotile 3%
R6-1		SA241498.363	White	Roof Patch Sealant	None Detected
R6-2		SA241498.364	White	Roof Patch Sealant	None Detected
R6-3		SA241498.365	White	Roof Patch Sealant	None Detected
R7-1	Layer 1	SA241498.366	Black	Roof Tar	None Detected
R7-1	Layer 2	SA241498.366	Dark Brown	Roof Paper	None Detected
R7-1	Layer 3	SA241498.366	White	Roof Foam	None Detected
R7-2	Layer 1	SA241498.367	Black	Roof Tar	None Detected
R7-2	Layer 2	SA241498.367	Dark Brown	Roof Paper	None Detected
R7-2	Layer 3	SA241498.367	White	Roof Foam	None Detected
R7-3	Layer 1	SA241498.368	Black	Roof Tar	None Detected
R7-3	Layer 2	SA241498.368	Dark Brown	Roof Paper	None Detected
R7-3	Layer 3	SA241498.368	White	Roof Foam	None Detected
R8-1		SA241498.369	Black	Roof Flashing	Chrysotile 5%

Asbestos Report Summary

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PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
R8-2		SA241498.370	Black	Roof Flashing	Chrysotile 5%
R8-3		SA241498.371	Black	Roof Flashing	Chrysotile 5%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
1-1 SA241498.001	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
Samples SA241498.001-.077 analyzed by N. Moore.					
1-2 SA241498.002	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
1-3 SA241498.003	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
1-4 SA241498.004	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
1-5 SA241498.005	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
1-6 SA241498.006	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile
1-7 SA241498.007	Textured Material	Heterogeneous White Non-fibrous Bound	83% 10% 5%	Binder Vermiculite Paint	2% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
2-5 SA241498.015	Textured Material	Heterogeneous		95% Paint	None Detected
		White		5% Binder	
		Non-fibrous			
		Bound			
2-6 SA241498.016	Textured Material	Heterogeneous		93% Paint	None Detected
		White		5% Binder	
		Non-fibrous		2% Silicates	
		Bound			
2-7 SA241498.017	Textured Material	Heterogeneous		93% Paint	None Detected
		White		5% Binder	
		Non-fibrous		2% Silicates	
		Bound			
2-8 SA241498.018	Textured Material	Heterogeneous		93% Paint	None Detected
		White		5% Binder	
		Non-fibrous		2% Silicates	
		Bound			
2-9 SA241498.019	Textured Material	Heterogeneous		93% Paint	None Detected
		White		5% Binder	
		Non-fibrous		2% Silicates	
		Bound			
2-10 SA241498.020	Textured Material	Heterogeneous		93% Paint	None Detected
		White		5% Binder	
		Non-fibrous		2% Silicates	
		Bound			
3-1 SA241498.021	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			

ASBESTOS BULK ANALYSIS

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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
3-2 SA241498.022	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-3 SA241498.023	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-4 SA241498.024	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-5 SA241498.025	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-6 SA241498.026	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-7 SA241498.027	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
3-8 SA241498.028	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			

ASBESTOS BULK ANALYSIS

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

Lab Code: SA241498
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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
3-9 SA241498.029	Soffit Surfacing	Heterogeneous		83% Binder	2% Chrysotile
		White		10% Vermiculite	
		Non-fibrous		5% Paint	
		Bound			
4-1 Layer 1 SA241498.030	Texture Material (Type 1)	Heterogeneous		58% Binder	2% Chrysotile
		Beige, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
4-1 Layer 2 SA241498.030	Texture Material (Type 2)	Heterogeneous		90% Paint	None Detected
		Beige, White		10% Binder	
		Non-fibrous			
		Bound			
4-2 SA241498.031	Texture Material	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
4-3 SA241498.032	Texture Material	Heterogeneous		58% Binder	2% Chrysotile
		Blue, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
4-4 SA241498.033	Texture Material	Heterogeneous		58% Binder	2% Chrysotile
		Blue, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
4-5 SA241498.034	Texture Material	Heterogeneous		58% Binder	2% Chrysotile
		Blue, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
4-6 SA241498.035	Texture Material	Heterogeneous Blue Orange, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-7 SA241498.036	Texture Material	Heterogeneous White, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-8 SA241498.037	Texture Material	Heterogeneous White, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-9 SA241498.038	Texture Material	Heterogeneous White, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-10 SA241498.039	Texture Material	Heterogeneous White, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-11 SA241498.040	Texture Material	Heterogeneous Blue, White Tan Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
4-12 SA241498.041	Texture Material	Heterogeneous Blue, Off-white Non-fibrous Bound	58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile

ASBESTOS BULK ANALYSIS

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Client: Terracon Consultants, Inc.
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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
5-1 SA241498.042	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Green, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-2 SA241498.043	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Green, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-3 SA241498.044	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Green, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-4 SA241498.045	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Green, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-5 SA241498.046	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Green, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-6 SA241498.047	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Light Blue, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-7 SA241498.048	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		Light Blue, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
5-8 SA241498.049	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-9 SA241498.050	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-10 SA241498.051	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-11 SA241498.052	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
5-12 SA241498.053	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
6-1 SA241498.054	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			
6-2 SA241498.055	Cmu Block Surface Filler	Heterogeneous		58% Binder	2% Chrysotile
		White, Off-white		35% Calc Carb	
		Non-fibrous		5% Paint	
		Bound			

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Terracon Consultants, Inc.
2701 Westport Road
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Lab Code: SA241498
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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
6-3 SA241498.056	Cmu Block Surface Filler	Heterogeneous White,Off-white Non-fibrous Bound			58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
6-4 SA241498.057	Cmu Block Surface Filler	Heterogeneous White,Off-white Non-fibrous Bound			58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
6-5 SA241498.058	Cmu Block Surface Filler	Heterogeneous White,Off-white Non-fibrous Bound			58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
6-6 SA241498.059	Cmu Block Surface Filler	Heterogeneous White,Off-white Non-fibrous Bound			58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
6-7 SA241498.060	Cmu Block Surface Filler	Heterogeneous White,Off-white Non-fibrous Bound			58% 35% 5%	Binder Calc Carb Paint	2% Chrysotile
7-1 SA241498.061	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
7-2 SA241498.062	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
7-3 SA241498.063	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
8-1 SA241498.064	2' X 4' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
8-2 SA241498.065	2' X 4' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
8-3 SA241498.066	2' X 4' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
9-1 SA241498.067	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
9-2 SA241498.068	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected
9-3 SA241498.069	2' X 2' Ceiling Tile	Heterogeneous White,Gray Fibrous Loosely Bound	65% 15%	Cellulose Fiberglass	15% 5%	Perlite Paint	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
10-1 Layer 1 SA241498.070	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected
10-1 Layer 2 SA241498.070	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
10-2 Layer 1 SA241498.071	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected
10-2 Layer 2 SA241498.071	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
10-3 Layer 1 SA241498.072	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected
10-3 Layer 2 SA241498.072	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
11-1 Layer 1 SA241498.073	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
11-1 Layer 2 SA241498.073	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
11-2 Layer 1 SA241498.074	Joint Compound	Heterogeneous White,Cream Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	<1% Chrysotile
11-2 Layer 2 SA241498.074	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
11-2 Layer 2 SA241498.074	Drywall/ Joint Compound Composite	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	75% 5% <1%	Gypsum Calc Carb Paint	<1% Chrysotile
<1% Chrysotile found in joint compound only; <1% overall.							
11-3 Layer 1 SA241498.075	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected
11-3 Layer 2 SA241498.075	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
12-1 Layer 1 SA241498.076	Joint Compound	Heterogeneous White Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
12-1 Layer 2 SA241498.076	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
12-2 Layer 1 SA241498.077	Joint Compound	Heterogeneous White,Brown Non-fibrous Bound			60% 35% 5%	Binder Calc Carb Paint	None Detected
12-2 Layer 2 SA241498.077	Drywall	Heterogeneous White,Brown Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
12-3 Layer 1 SA241498.078	Joint Compound	Heterogeneous White Non-fibrous Bound			65% 30% 5%	Binder Calc Carb Paint	None Detected
Samples SA241498.078-.168 analyzed by M. Schmidt.							
12-3 Layer 2 SA241498.078	Drywall	Heterogeneous White,Tan Fibrous Bound	20%	Cellulose	80%	Gypsum	None Detected
13-1 SA241498.079 A	Covebase	Homogeneous Blue Non-fibrous Bound			100%	Vinyl	None Detected
13-1 SA241498.079 B	Adhesive	Homogeneous Tan Non-fibrous Bound			100%	Mastic	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
13-2 SA241498.080 A	Covebase	Homogeneous Blue Non-fibrous Bound		100% Vinyl	None Detected
13-2 SA241498.080 B	Adhesive	Homogeneous Tan Non-fibrous Bound		100% Mastic	None Detected
13-3 SA241498.081 A	Covebase	Homogeneous Blue Non-fibrous Bound		100% Vinyl	None Detected
13-3 SA241498.081 B	Adhesive	Homogeneous Tan Non-fibrous Bound		100% Mastic	None Detected
14-1 SA241498.082 A	Covebase	Homogeneous Gray Non-fibrous Bound		100% Vinyl	None Detected
14-1 SA241498.082 B	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
14-2 SA241498.083 A	Covebase	Homogeneous Gray Non-fibrous Bound		100% Vinyl	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
14-2 SA241498.083 B	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
14-3 SA241498.084 A	Covebase	Homogeneous Gray Non-fibrous Bound			100%	Vinyl	None Detected
14-3 SA241498.084 B	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
15-1 SA241498.085	Pipe Wrap	Heterogeneous White Fibrous Bound	60% 15%	Cellulose Fiberglass	20% 5%	Metal Foil Binder	None Detected
15-2 SA241498.086	Pipe Wrap	Heterogeneous White Fibrous Bound	60% 15%	Cellulose Fiberglass	20% 5%	Metal Foil Binder	None Detected
15-3 SA241498.087	Pipe Wrap	Heterogeneous White Fibrous Bound	60% 15%	Cellulose Fiberglass	20% 5%	Metal Foil Binder	None Detected
16-1 SA241498.088	Pipe Wrap	Heterogeneous White Fibrous Bound	60% 15%	Cellulose Fiberglass	20% 5%	Metal Foil Binder	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
16-2 SA241498.089	Pipe Wrap	Heterogeneous	60%	Cellulose	20%	Metal Foil	None Detected
		White	15%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
16-3 SA241498.090	Pipe Wrap	Heterogeneous	60%	Cellulose	20%	Metal Foil	None Detected
		White	15%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
17-1 SA241498.091	Pipe Wrap	Heterogeneous	60%	Cellulose	20%	Metal Foil	None Detected
		White	15%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
17-2 Layer 1 SA241498.092	Pipe Wrap - Mastic	Homogeneous	2%	Talc	98%	Mastic	None Detected
		White					
		Non-fibrous					
		Bound					
17-2 Layer 2 SA241498.092	Pipe Wrap	Heterogeneous	60%	Cellulose	20%	Metal Foil	None Detected
		White	15%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
17-3 SA241498.093	Pipe Wrap	Heterogeneous	60%	Cellulose	20%	Metal Foil	None Detected
		White	15%	Fiberglass	5%	Binder	
		Fibrous					
		Bound					
18-1 SA241498.094	Duct Mastic	Homogeneous	2%	Cellulose	98%	Mastic	None Detected
		White					
		Non-fibrous					
		Bound					

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
18-2 SA241498.095	Duct Mastic	Homogeneous White Non-fibrous Bound	2%	Talc	98%	Mastic	None Detected
18-3 SA241498.096	Duct Mastic	Homogeneous White Non-fibrous Bound	2%	Cellulose	98%	Mastic	None Detected
19-1 SA241498.097	Mastic	Homogeneous Gray Non-fibrous Bound	2%	Talc	98%	Mastic	None Detected
19-2 SA241498.098	Mastic	Homogeneous Gray Non-fibrous Bound	2%	Cellulose	98%	Mastic	None Detected
19-3 SA241498.099	Mastic	Homogeneous Gray Non-fibrous Bound	2%	Cellulose	98%	Mastic	None Detected
20-1 SA241498.100	Mastic/ Mud	Homogeneous White Non-fibrous Bound	2%	Talc	98%	Mastic	None Detected
20-2 SA241498.101	Mastic/ Mud	Homogeneous White Non-fibrous Bound	2%	Talc	98%	Mastic	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
20-3 SA241498.102	Mastic/ Mud	Homogeneous White Non-fibrous Bound	2%	Talc	98%	Mastic	None Detected
21-1 SA241498.103	Sticky Wrap	Homogeneous Black Non-fibrous Bound	3%	Cellulose	97%	Tar	None Detected
21-2 SA241498.104	Sticky Wrap	Homogeneous Black Non-fibrous Bound	3%	Cellulose	97%	Tar	None Detected
21-3 SA241498.105	Sticky Wrap	Homogeneous Black Non-fibrous Bound	3%	Cellulose	97%	Tar	None Detected
22-1 SA241498.106	Penetration Mastic	Homogeneous Red Non-fibrous Bound	5%	Fiberglass	95%	Binder	None Detected
22-2 SA241498.107	Penetration Mastic	Homogeneous Red Non-fibrous Bound	5%	Fiberglass	95%	Binder	None Detected
22-3 SA241498.108	Penetration Mastic	Homogeneous Red Non-fibrous Bound			100%	Binder	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
23-1 SA241498.109	Stair Tread Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected
23-2 SA241498.110	Stair Tread Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected
23-3 SA241498.111	Stair Tread Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected
24-1 SA241498.112 A	Covebase	Homogeneous Brown Non-fibrous Bound		100% Vinyl	None Detected
24-1 SA241498.112 B	Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected
24-2 SA241498.113 A	Covebase	Homogeneous Brown Non-fibrous Bound		100% Vinyl	None Detected
24-2 SA241498.113 B	Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
24-3 SA241498.114 A	Covebase	Homogeneous Brown Non-fibrous Bound		100% Vinyl	None Detected
24-3 Layer 1 SA241498.114 B	Mastic	Homogeneous Cream Non-fibrous Bound		100% Mastic	None Detected
24-3 Layer 2 SA241498.114 B	Mastic	Homogeneous Brown Non-fibrous Bound		100% Mastic	None Detected
25-1 Layer 1 SA241498.115 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
25-1 Layer 2 SA241498.115 A	Floor Tile	Homogeneous Off-white, White Non-fibrous Bound		98% Vinyl	2% Chrysotile
25-1 SA241498.115 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
25-2 Layer 1 SA241498.116 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
25-2 Layer 2 SA241498.116 A	Floor Tile	Homogeneous Off-white, White Non-fibrous Bound		98% Vinyl	2% Chrysotile
25-2 SA241498.116 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
25-3 Layer 1 SA241498.117 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
25-3 Layer 2 SA241498.117 A	Floor Tile	Homogeneous Off-white, White Non-fibrous Bound		98% Vinyl	2% Chrysotile
25-3 SA241498.117 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
26-1 Layer 1 SA241498.118 A	Mastic	Heterogeneous Yellow, Gray Non-fibrous Bound		90% Mastic 10% Binder	None Detected
26-1 Layer 2 SA241498.118 A	Floor Tile	Homogeneous Tan Non-fibrous Bound		97% Vinyl	3% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
26-1 SA241498.118 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
26-2 Layer 1 SA241498.119 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
26-2 Layer 2 SA241498.119 A	Floor Tile	Homogeneous Tan Non-fibrous Bound		97% Vinyl	3% Chrysotile
26-2 SA241498.119 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
26-3 Layer 1 SA241498.120 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
26-3 Layer 2 SA241498.120 A	Floor Tile	Homogeneous Tan Non-fibrous Bound		97% Vinyl	3% Chrysotile
26-3 SA241498.120 B	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
27-1 SA241498.121 A	Floor Tile	Homogeneous White Non-fibrous Bound		100% Vinyl	None Detected
27-1 SA241498.121 B	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
27-1 SA241498.121 C	Floor Tile	Homogeneous Tan Non-fibrous Bound		97% Vinyl	3% Chrysotile
27-1 SA241498.121 D	Mastic	Homogeneous Black Non-fibrous Bound		98% Tar	2% Chrysotile
27-2 Layer 1 SA241498.122 A	Mastic	Homogeneous Clear Non-fibrous Bound		100% Mastic	None Detected
27-2 Layer 2 SA241498.122 A	Floor Tile	Homogeneous White Non-fibrous Bound		100% Vinyl	None Detected
27-2 SA241498.122 B	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Page 24 of 73

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
28-1 SA241498.124 A	Floor Tile	Homogeneous White,Black Non-fibrous Bound			100%	Vinyl	None Detected
28-1 SA241498.124 B	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
28-2 SA241498.125 A	Floor Tile	Homogeneous White,Black Non-fibrous Bound			100%	Vinyl	None Detected
28-2 SA241498.125 B	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
28-3 SA241498.126 A	Floor Tile	Homogeneous White,Black Non-fibrous Bound			100%	Vinyl	None Detected
28-3 SA241498.126 B	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
29-1 SA241498.127 A	Sheet Flooring	Heterogeneous White,Blue Fibrous Bound	20% 10%	Cellulose Fiberglass	50% 20%	Vinyl Binder	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
29-1 SA241498.127 B	Mastic	Heterogeneous Yellow,Black Non-fibrous Bound	<1%	Cellulose	50% 48%	Mastic Tar	2% Chrysotile
Unable to separate for individual analysis.							
29-2 SA241498.128 A	Sheet Flooring	Heterogeneous White,Blue Fibrous Bound	20% 10%	Cellulose Fiberglass	50% 20%	Vinyl Binder	None Detected
29-2 SA241498.128 B	Mastic	Heterogeneous Yellow,Black Non-fibrous Bound	<1%	Cellulose	50% 48%	Mastic Tar	2% Chrysotile
Unable to separate for individual analysis.							
29-3 SA241498.129 A	Sheet Flooring	Heterogeneous White,Blue Fibrous Bound	20% 10%	Cellulose Fiberglass	50% 20%	Vinyl Binder	None Detected
29-3 SA241498.129 B	Mastic	Heterogeneous Yellow,Black Non-fibrous Bound	<1%	Cellulose	50% 48%	Mastic Tar	2% Chrysotile
Unable to separate for individual analysis.							
30-1 SA241498.130 A	Floor Tile	Homogeneous Blue Non-fibrous Bound			100%	Vinyl	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Page 27 of 73

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
31-2 SA241498.134	Mastic/ Leveling Compound	Heterogeneous	<1%	Cellulose	88%	Tar	2% Chrysotile
		Black,Gray			10%	Binder	
		Non-fibrous					
		Bound					
Unable to separate for individual analysis.							
31-3 SA241498.135	Mastic	Heterogeneous	<1%	Cellulose	50%	Mastic	None Detected
		Yellow,Black	<1%	Synthetic Fiber	50%	Tar	
		Non-fibrous					
		Bound					
No leveling compound present. Unable to separate for individual analysis.							
32-1 SA241498.136	Texture Material	Heterogeneous			63%	Binder	2% Chrysotile
		White			30%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
32-2 SA241498.137	Texture Material	Heterogeneous			63%	Binder	2% Chrysotile
		White			30%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
32-3 SA241498.138	Texture Material	Heterogeneous			63%	Binder	2% Chrysotile
		White			30%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
32-4 Layer 1 SA241498.139	Texture Material	Heterogeneous			63%	Binder	2% Chrysotile
		White			30%	Calc Carb	
		Non-fibrous			5%	Paint	
		Bound					
32-4 Layer 2 SA241498.139	Concrete	Homogeneous	<1%	Cellulose	65%	Silicates	None Detected
		Gray			35%	Binder	
		Non-fibrous					
		Bound					

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Non-Fibrous			
32-5 SA241498.140	Texture Material	Heterogeneous White Non-fibrous Bound		63% 30% 5%	Binder Calc Carb Paint	2% Chrysotile	
33-1 SA241498.141	Carpet Glue	Heterogeneous Yellow,Blue Non-fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
Unable to separate for individual analysis.							
33-2 SA241498.142	Carpet Glue	Heterogeneous Yellow,Blue Non-fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
Unable to separate for individual analysis.							
33-3 SA241498.143	Carpet Glue	Heterogeneous Yellow,Blue Non-fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
Unable to separate for individual analysis.							
34-1 SA241498.144	Carpet Glue/ Leveling Compound	Heterogeneous Yellow,Gray Non-fibrous Bound	<1%	Cellulose	85% 10% 5%	Mastic Binder Tar	<1% Chrysotile
Unable to separate for individual analysis.							
34-2 SA241498.145	Carpet Glue	Homogeneous Yellow Non-fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
34-3 SA241498.146	Carpet Glue	Homogeneous Yellow Non-fibrous Bound	<1%	Synthetic Fiber	100%	Mastic	None Detected
35-1 Layer 1 SA241498.147	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
35-1 Layer 2 SA241498.147	Leveling Compound	Homogeneous Gray Non-fibrous Bound	2%	Cellulose	80% 18%	Binder Calc Carb	None Detected
35-2 Layer 1 SA241498.148	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected
35-2 Layer 2 SA241498.148	Leveling Compound	Homogeneous Gray Non-fibrous Bound	2%	Cellulose	80% 18%	Binder Calc Carb	None Detected
35-2 Layer 3 SA241498.148	Mastic	Homogeneous Yellow Non-fibrous Bound			100%	Mastic	None Detected
35-3 Layer 1 SA241498.149	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
35-3 Layer 2 SA241498.149	Leveling Compound	Homogeneous	2%	Cellulose	80%	Binder	None Detected
		Gray			18%	Calc Carb	
		Non-fibrous					
		Bound					
35-3 Layer 3 SA241498.149	Mastic	Homogeneous			100%	Mastic	None Detected
		Yellow					
		Non-fibrous					
		Bound					
36-1 SA241498.150	Grout	Homogeneous			85%	Binder	None Detected
		White			15%	Silicates	
		Non-fibrous					
		Bound					
36-2 SA241498.151	Grout	Homogeneous			85%	Binder	None Detected
		White			15%	Silicates	
		Non-fibrous					
		Bound					
36-3 SA241498.152	Grout	Homogeneous			85%	Binder	None Detected
		White			15%	Silicates	
		Non-fibrous					
		Bound					
37-1 SA241498.153	Caulking	Heterogeneous			95%	Caulk	None Detected
		White			5%	Paint	
		Non-fibrous					
		Bound					
37-2 SA241498.154	Caulking	Heterogeneous			95%	Caulk	None Detected
		White			5%	Paint	
		Non-fibrous					
		Bound					

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
37-3 Layer 1 SA241498.155	Caulking	Heterogeneous		95% Caulk	None Detected
		White		5% Paint	
		Non-fibrous			
		Bound			
37-3 Layer 2 SA241498.155	Mud	Homogeneous		65% Binder	None Detected
		White		35% Calc Carb	
		Non-fibrous			
		Bound			
38-1 SA241498.156 A	Window Caulking	Heterogeneous		95% Caulk	None Detected
		White		5% Paint	
		Non-fibrous			
		Bound			
38-1 SA241498.156 B	Window Caulking	Heterogeneous		97% Binder	3% Chrysotile
		Beige		<1% Paint	
		Non-fibrous			
		Bound			
38-2 SA241498.157 A	Window Caulking	Heterogeneous		95% Caulk	None Detected
		White		5% Paint	
		Non-fibrous			
		Bound			
38-2 SA241498.157 B	Window Caulking	Heterogeneous		97% Binder	3% Chrysotile
		Beige		<1% Paint	
		Non-fibrous			
		Bound			
38-3 SA241498.158 A	Window Caulking	Heterogeneous		95% Caulk	None Detected
		White		5% Paint	
		Non-fibrous			
		Bound			

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
38-3 SA241498.158 B	Window Caulking	Heterogeneous Beige Non-fibrous Bound		97% Binder <1% Paint	3% Chrysotile
39-1 SA241498.159 A	Door Caulk	Heterogeneous White Non-fibrous Bound		95% Caulk 5% Paint	None Detected
39-1 SA241498.159 B	Door Caulk	Heterogeneous Beige Non-fibrous Bound		97% Binder <1% Paint	3% Chrysotile
39-2 SA241498.160 A	Door Caulk	Heterogeneous White Non-fibrous Bound		95% Caulk 5% Paint	None Detected
39-2 SA241498.160 B	Door Caulk	Heterogeneous Beige Non-fibrous Bound		97% Binder <1% Paint	3% Chrysotile
39-3 SA241498.161 A	Door Caulk	Heterogeneous White Non-fibrous Bound		95% Caulk 5% Paint	None Detected
39-3 SA241498.161 B	Door Caulk	Heterogeneous Beige Non-fibrous Bound		97% Binder <1% Paint	3% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
40-1 SA241498.162	Window Glazing	Homogeneous Gray Non-fibrous Bound			98%	Binder	2% Chrysotile
40-2 SA241498.163	Window Glazing	Homogeneous Gray Non-fibrous Bound			98%	Binder	2% Chrysotile
40-3 SA241498.164	Window Glazing	Homogeneous Gray Non-fibrous Bound			98%	Binder	2% Chrysotile
41-1 SA241498.165	Duct Mastic	Homogeneous Brown Non-fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
41-2 SA241498.166	Duct Mastic	Homogeneous Brown Non-fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
41-3 SA241498.167	Duct Mastic	Homogeneous Brown Non-fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
42-1 SA241498.168	Ceiling Tile	Homogeneous White Non-fibrous Bound			100%	Binder	None Detected

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

ASBESTOS BULK PLM, EPA 600 METHOD

Page 35 of 73

ASBESTOS BULK ANALYSIS

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2701 Westport Road
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Lab Code: SA241498
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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
44-2 SA241498.175 A	Covebase	Homogeneous Black Non-fibrous Bound		100% Vinyl	None Detected
44-2 SA241498.175 B	Mastic	Homogeneous Beige Non-fibrous Bound		100% Mastic	None Detected
44-3 SA241498.176 A	Covebase	Homogeneous Black Non-fibrous Bound		100% Vinyl	None Detected
44-3 SA241498.176 B	Mastic	Homogeneous Beige Non-fibrous Bound		100% Mastic	None Detected
45-1 SA241498.177 A	Covebase	Homogeneous Tan Non-fibrous Bound		100% Vinyl	None Detected
45-1 SA241498.177 B	Mastic	Homogeneous Beige Non-fibrous Bound		100% Mastic	None Detected
45-2 SA241498.178 A	Covebase	Homogeneous Tan Non-fibrous Bound		100% Vinyl	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
45-2 SA241498.178 B	Mastic	Homogeneous Beige Non-fibrous Bound		100% Mastic	None Detected
45-3 SA241498.179 A	Covebase	Homogeneous Tan Non-fibrous Bound		100% Vinyl	None Detected
45-3 SA241498.179 B	Mastic	Homogeneous Beige Non-fibrous Bound		100% Mastic	None Detected
46-1 SA241498.180	Grout	Homogeneous Gray Non-fibrous Bound	80% 20%	Binder Silicates	None Detected
46-2 SA241498.181	Grout	Homogeneous Gray Non-fibrous Bound	80% 20%	Binder Silicates	None Detected
46-3 SA241498.182	Grout	Homogeneous Gray Non-fibrous Bound	80% 20%	Binder Silicates	None Detected
47-1 SA241498.183	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
47-2 SA241498.184	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
47-3 SA241498.185	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
48-1 SA241498.186	Carpet Mastic	Homogeneous Yellow,Black Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					
48-2 SA241498.187	Carpet Mastic	Homogeneous Yellow,Black Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					
48-3 SA241498.188	Carpet Mastic	Homogeneous Yellow,Black Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					
49-1 SA241498.189	Carpet Mastic	Homogeneous Yellow,Green Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
49-2 SA241498.190	Carpet Mastic	Homogeneous Yellow, Green Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					
49-3 SA241498.191	Carpet Mastic	Homogeneous Yellow, Green Non-fibrous Bound		100% Mastic	None Detected
Unable to separate mastics.					
50-1 SA241498.192 A	Floor Tile	Homogeneous White Non-fibrous Bound		100% Vinyl	None Detected
50-1 SA241498.192 B	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
50-1 SA241498.192 C	Floor Tile	Homogeneous Tan Non-fibrous Bound		100% Vinyl	None Detected
50-1 SA241498.192 D	Mastic	Homogeneous Black Non-fibrous Bound		100% Mastic	None Detected
50-2 SA241498.193 A	Floor Tile	Homogeneous White Non-fibrous Bound		100% Vinyl	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
50-2 SA241498.193 B	Mastic	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
50-2 SA241498.193 C	Floor Tile	Homogeneous Tan Non-fibrous Bound	100%	Vinyl	None Detected
50-2 SA241498.193 D	Mastic	Homogeneous Black Non-fibrous Bound	100%	Mastic	None Detected
50-3 SA241498.194 A	Floor Tile	Homogeneous White Non-fibrous Bound	100%	Vinyl	None Detected
50-3 SA241498.194 B	Mastic	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
50-3 SA241498.194 C	Floor Tile	Homogeneous Tan Non-fibrous Bound	100%	Vinyl	None Detected
50-3 SA241498.194 D	Mastic	Homogeneous Black Non-fibrous Bound	100%	Mastic	None Detected

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

ASBESTOS BULK PLM, EPA 600 METHOD

Page 41 of 73

ASBESTOS BULK ANALYSIS

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Lab Code: SA241498
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Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
52-1 SA241498.198 B	Mastic	Homogeneous Clear Non-fibrous Bound		100% Mastic	None Detected
No grout present. Sample appears to be mastic.					
52-2 Layer 1 SA241498.199	Ceramic Tile	Homogeneous Green Non-fibrous Bound	80% 20%	Binder Silicates	None Detected
52-2 Layer 2 SA241498.199	Grout	Homogeneous Gray Non-fibrous Bound	65% 35%	Binder Silicates	None Detected
52-3 SA241498.200 A	Ceramic Tile	Homogeneous Green Non-fibrous Bound	80% 20%	Binder Silicates	None Detected
52-3 SA241498.200 B	Caulking	Homogeneous Yellow Non-fibrous Bound	100%	Caulk	None Detected
No grout present. Sample appears to be caulk.					
53-1 SA241498.201	Plank Flooring	Heterogeneous Brown, Gray Non-fibrous Bound	100%	Vinyl	None Detected
53-2 SA241498.202	Plank Flooring	Heterogeneous Brown, Gray Non-fibrous Bound	100%	Vinyl	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
53-3 SA241498.203	Plank Flooring	Heterogeneous Brown, Gray Non-fibrous Bound		100% Vinyl	None Detected
54-1 SA241498.204	Sink Mastic	Homogeneous Black Non-fibrous Bound	78% 20%	Tar Binder	2% Chrysotile
54-2 SA241498.205	Sink Mastic	Homogeneous Black Non-fibrous Bound	70% 20%	Tar Binder	10% Chrysotile
54-3 SA241498.206	Sink Mastic	Homogeneous Black Non-fibrous Bound	70% 20%	Tar Binder	10% Chrysotile
55-1 SA241498.207	Sink Underside Caulk	Homogeneous Brown Non-fibrous Bound	100%	Binder	None Detected
55-2 SA241498.208	Sink Underside Caulk	Homogeneous Brown Non-fibrous Bound	100%	Binder	None Detected
55-3 SA241498.209	Sink Underside Caulk	Homogeneous Brown Non-fibrous Bound	98%	Binder	2% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
56-1 Layer 1 SA241498.210	Mastic	Homogeneous Black Non-fibrous Bound			98% Mastic		2% Chrysotile
56-1 Layer 2 SA241498.210	Hvac Ductwork	Homogeneous Off-white Fibrous Loosely Bound	5%	Cellulose	30% Binder		65% Chrysotile
56-2 Layer 1 SA241498.211	Mastic	Homogeneous Black Non-fibrous Bound			95% Mastic		5% Chrysotile
56-2 Layer 2 SA241498.211	Hvac Ductwork	Homogeneous Silver, Gray Fibrous Bound	5%	Cellulose	75% Metal Foil 20% Binder		None Detected
56-3 Layer 1 SA241498.212	Mastic	Homogeneous Black Non-fibrous Bound			98% Mastic		2% Chrysotile
56-3 Layer 2 SA241498.212	Hvac Ductwork	Homogeneous Off-white Fibrous Loosely Bound	5%	Cellulose	30% Binder		65% Chrysotile
57-1 SA241498.213	Sticky Wrap/cold Water Supply	Homogeneous Black Fibrous Bound	5%	Cellulose	75% Tar 20% Binder		None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
57-2 SA241498.214	Sticky Wrap/cold Water Supply	Homogeneous Black Fibrous Bound	5%	Cellulose	75% 20%	Tar Binder	None Detected
57-3 SA241498.215	Sticky Wrap/cold Water Supply	Homogeneous Black Fibrous Bound	5%	Cellulose	75% 20%	Tar Binder	None Detected
58-1 SA241498.216	Foam Insulation	Homogeneous Black Non-fibrous Bound			100%	Foam	None Detected
58-2 SA241498.217	Foam Insulation	Homogeneous Black Non-fibrous Bound			100%	Foam	None Detected
58-3 SA241498.218	Foam Insulation	Homogeneous Black Non-fibrous Bound			100%	Foam	None Detected
59-1 Layer 1 SA241498.219	TSI Wrap	Homogeneous White Fibrous Bound	80%	Cellulose	20%	Binder	None Detected
59-1 Layer 2 SA241498.219	Insulation	Homogeneous Silver, Yellow Fibrous Loosely Bound	90%	Fiberglass	10%	Metal Foil	None Detected

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Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
59-2 Layer 1 SA241498.220	TSI Wrap	Homogeneous White Fibrous Bound	80%	Cellulose	20%	Binder	None Detected
59-2 Layer 2 SA241498.220	Insulation	Homogeneous Silver, Yellow Fibrous Loosely Bound	90%	Fiberglass	10%	Metal Foil	None Detected
59-3 Layer 1 SA241498.221	TSI Wrap	Homogeneous White Fibrous Bound	80%	Cellulose	20%	Binder	None Detected
59-3 Layer 2 SA241498.221	Insulation	Homogeneous Silver, Yellow Fibrous Loosely Bound	90%	Fiberglass	10%	Metal Foil	None Detected
60-1 SA241498.222	Penetration Mastic	Homogeneous White Non-fibrous Bound			100%	Mastic	None Detected
60-2 SA241498.223	Penetration Mastic	Homogeneous White Non-fibrous Bound			100%	Mastic	None Detected
60-3 SA241498.224	Penetration Mastic	Homogeneous White Non-fibrous Bound			100%	Mastic	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
61-1 SA241498.225	Penetration Mastic	Homogeneous Red Fibrous Bound	10%	Fiberglass	90%	Mastic	None Detected
61-2 SA241498.226	Penetration Mastic	Homogeneous Red Fibrous Bound	10%	Fiberglass	90%	Mastic	None Detected
61-3 SA241498.227	Penetration Mastic	Homogeneous Red Fibrous Bound	10%	Fiberglass	90%	Mastic	None Detected
62-1 SA241498.228	Mastic	Homogeneous Gray Fibrous Bound	5%	Synthetic Fiber	95%	Mastic	None Detected
62-2 SA241498.229	Mastic	Homogeneous Gray Fibrous Bound	5%	Synthetic Fiber	95%	Mastic	None Detected
62-3 SA241498.230	Mastic	Homogeneous Gray Fibrous Bound	5%	Synthetic Fiber	95%	Mastic	None Detected
63-1 Layer 1 SA241498.231	Coating	Homogeneous Black Non-fibrous Bound			100%	Binder	None Detected

No mastic present. Sample appears to be coating on cementitious material.

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
63-1 Layer 2 SA241498.231	Cementitious Material	Homogeneous Gray Non-fibrous Bound		65% Binder 35% Silicates	None Detected
63-2 Layer 1 SA241498.232	Coating	Homogeneous Black Non-fibrous Bound		100% Binder	None Detected
No mastic present. Sample appears to be coating on cementitious material.					
63-2 Layer 2 SA241498.232	Cementitious Material	Homogeneous Gray Non-fibrous Bound		65% Binder 35% Silicates	None Detected
63-3 Layer 1 SA241498.233	Coating	Homogeneous Black Non-fibrous Bound		100% Binder	None Detected
No mastic present. Sample appears to be coating on cementitious material.					
63-3 Layer 2 SA241498.233	Cementitious Material	Homogeneous Gray Non-fibrous Bound		65% Binder 35% Silicates	None Detected
64-1 Layer 1 SA241498.234 A	Mastic	Homogeneous Yellow Non-fibrous Bound		100% Mastic	None Detected
64-1 Layer 2 SA241498.234 A	Floor Tile	Homogeneous White Non-fibrous Bound		97% Vinyl	3% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
64-1 SA241498.234 B	Mastic	Homogeneous Black Non-fibrous Bound	95%	Mastic	5% Chrysotile
64-2 Layer 1 SA241498.235 A	Mastic	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
64-2 Layer 2 SA241498.235 A	Floor Tile	Homogeneous White Non-fibrous Bound	97%	Vinyl	3% Chrysotile
64-2 SA241498.235 B	Mastic	Homogeneous Black Non-fibrous Bound	95%	Mastic	5% Chrysotile
64-3 Layer 1 SA241498.236 A	Mastic	Homogeneous Yellow Non-fibrous Bound	100%	Mastic	None Detected
64-3 Layer 2 SA241498.236 A	Floor Tile	Homogeneous White Non-fibrous Bound	97%	Vinyl	3% Chrysotile
64-3 SA241498.236 B	Mastic	Homogeneous Black Non-fibrous Bound	95%	Mastic	5% Chrysotile

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
65-1 SA241498.237	Door Caulk	Heterogeneous		95% Caulk	5% Chrysotile
		White		<1% Paint	
		Non-fibrous			
		Bound			
65-2 SA241498.238	Door Caulk	Heterogeneous		95% Caulk	5% Chrysotile
		White		<1% Paint	
		Non-fibrous			
		Bound			
65-3 SA241498.239	Door Caulk	Heterogeneous		95% Caulk	5% Chrysotile
		White		<1% Paint	
		Non-fibrous			
		Bound			
66-1 SA241498.240	Window Caulking	Heterogeneous		95% Caulk	5% Chrysotile
		White		<1% Paint	
		Non-fibrous			
		Bound			
66-2 SA241498.241	Window Caulking	Heterogeneous		100% Caulk	None Detected
		White		<1% Paint	
		Non-fibrous			
		Bound			
66-3 SA241498.242	Window Caulking	Heterogeneous		100% Caulk	None Detected
		Tan		<1% Paint	
		Non-fibrous			
		Bound			
67-1 SA241498.243	Door Caulk	Heterogeneous		100% Caulk	None Detected
		White		<1% Paint	
		Non-fibrous			
		Bound			

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
67-2 SA241498.244	Door Caulk	Heterogeneous White Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
67-3 SA241498.245	Door Caulk	Heterogeneous White Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
68-1 SA241498.246	Window Caulking	Heterogeneous White Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
68-2 SA241498.247	Window Caulking	Heterogeneous White Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
68-3 SA241498.248	Window Caulking	Heterogeneous White Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
69-1 SA241498.249	Vent Caulk	Heterogeneous White, Gray Non-fibrous Bound	100% <1%	Caulk Paint	None Detected
69-2 SA241498.250	Vent Caulk	Heterogeneous White, Gray Non-fibrous Bound	100% <1%	Caulk Paint	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
69-3 SA241498.251	Vent Caulk	Heterogeneous White,Gray Non-fibrous Bound			100% <1%	Caulk Paint	None Detected
70-1 SA241498.252	Caulking	Heterogeneous Gray Non-fibrous Bound			100% <1%	Caulk Paint	None Detected
70-2 SA241498.253	Caulking	Heterogeneous Gray Non-fibrous Bound			100% <1%	Caulk Paint	None Detected
70-3 SA241498.254	Caulking	Heterogeneous Gray Non-fibrous Bound			100% <1%	Caulk Paint	None Detected
71-1 SA241498.255	TSI Wrap	Heterogeneous Blue,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
71-2 SA241498.256	TSI Wrap	Heterogeneous Blue,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
71-3 SA241498.257	TSI Wrap	Heterogeneous Blue,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
72-1 SA241498.258	TSI Wrap	Heterogeneous Green,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
72-2 SA241498.259	TSI Wrap	Heterogeneous Green,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
72-3 SA241498.260	TSI Wrap	Heterogeneous Green,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
73-1 SA241498.261	TSI Wrap	Heterogeneous Orange,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
73-2 SA241498.262	TSI Wrap	Heterogeneous Orange,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
73-3 SA241498.263	TSI Wrap	Heterogeneous Orange,White Fibrous Bound	25%	Cellulose	50% 15% 10%	Paint Binder Metal Foil	None Detected
74-1 Layer 1 SA241498.264	Felt Paper/tar	Heterogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
74-1 Layer 2 SA241498.264	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
74-2 Layer 1 SA241498.265	Felt Paper/tar	Heterogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected
74-2 Layer 2 SA241498.265	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
74-3 Layer 1 SA241498.266	Felt Paper/tar	Heterogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected
74-3 Layer 2 SA241498.266	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
75-1 Layer 1 SA241498.267	Wrap	Heterogeneous Off-white Fibrous Bound	70%	Cellulose	30%	Binder	None Detected
75-1 Layer 2 SA241498.267	Mudded Elbow	Homogeneous Off-white Fibrous Loosely Bound	10% 5%	Fiberglass Mineral Wool	60%	Binder	25% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
75-2 Layer 1 SA241498.268	Wrap	Heterogeneous Off-white Fibrous Bound	70%	Cellulose	30%	Binder	None Detected
75-2 Layer 2 SA241498.268	Mudded Elbow	Homogeneous Off-white Fibrous Loosely Bound	10% 5%	Fiberglass Mineral Wool	60%	Binder	25% Chrysotile
75-3 Layer 1 SA241498.269	Wrap	Heterogeneous Off-white Fibrous Bound	70%	Cellulose	30%	Binder	None Detected
75-3 Layer 2 SA241498.269	Mudded Elbow	Homogeneous Off-white Fibrous Loosely Bound	10% 5%	Fiberglass Mineral Wool	60%	Binder	25% Chrysotile
76-1 Layer 1 SA241498.270	Wrap	Heterogeneous Tan Fibrous Bound	70%	Cellulose	30%	Binder	None Detected
76-1 Layer 2 SA241498.270	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
76-2 Layer 1 SA241498.271	Wrap	Heterogeneous Tan Fibrous Bound	70%	Cellulose	30%	Binder	None Detected

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
76-2 Layer 2 SA241498.271	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
76-3 Layer 1 SA241498.272	Wrap	Heterogeneous Tan Fibrous Bound	70%	Cellulose	30%	Binder	None Detected
76-3 Layer 2 SA241498.272	Insulation	Homogeneous Off-white Fibrous Loosely Bound			85%	Binder	15% Chrysotile
77-1 SA241498.273	Flooring Mastic	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
77-2 SA241498.274	Flooring Mastic	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
77-3 SA241498.275	Flooring Mastic	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
78-1 SA241498.276	Hvac Ductwork Mastic	Homogeneous Green Non-fibrous Bound			100%	Mastic	None Detected

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
78-2 SA241498.277	Hvac Ductwork Mastic	Homogeneous Green Non-fibrous Bound		100% Mastic	None Detected
78-3 SA241498.278	Hvac Ductwork Mastic	Homogeneous Green Non-fibrous Bound		100% Mastic	None Detected
E1-1 SA241498.279	Paint And Skim Coat	Heterogeneous Off-white Fibrous Bound	20% 68% 10%	Paint Binder Silicates	2% Chrysotile
Samples SS241498.279 - SA241498.371 analyzed by G. Ruff.					
E1-2 SA241498.280	Paint And Skim Coat	Heterogeneous Off-white Fibrous Bound	20% 63% 15%	Paint Binder Perlite	2% Chrysotile
E1-3 SA241498.281	Paint And Skim Coat	Heterogeneous Off-white Fibrous Bound	20% 63% 15%	Paint Binder Perlite	2% Chrysotile
E1-4 SA241498.282	Paint And Skim Coat	Heterogeneous Off-white Fibrous Bound	20% 63% 15%	Paint Binder Perlite	2% Chrysotile
E1-5 SA241498.283	Paint And Skim Coat	Heterogeneous Off-white Fibrous Bound	20% 63% 15%	Paint Binder Perlite	2% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
E1-6 SA241498.284	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-7 SA241498.285	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-8 SA241498.286	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-9 SA241498.287	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-10 SA241498.288	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-11 SA241498.289	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			
E1-12 SA241498.290	Paint And Skim Coat	Heterogeneous		20% Paint	2% Chrysotile
		Off-white		63% Binder	
		Fibrous		15% Perlite	
		Bound			

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
E2-1 SA241498.291	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-2 SA241498.292	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-3 SA241498.293	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-4 SA241498.294	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-5 SA241498.295	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-6 SA241498.296	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-7 SA241498.297	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous	Non-Fibrous	
E2-8 SA241498.298	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-9 SA241498.299	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-10 SA241498.300	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-11 SA241498.301	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E2-12 SA241498.302	Skim Coat	Heterogeneous		53% Binder	2% Chrysotile
		Tan		25% Calc Carb	
		Fibrous		20% Perlite	
		Bound			
E3-1 SA241498.303 A	Window Caulk	Homogeneous		100% Caulk	None Detected
		White			
		Non-fibrous			
		Bound			
E3-1 SA241498.303 B	Window Caulk	Homogeneous		100% Caulk	None Detected
		Clear			
		Non-fibrous			
		Bound			

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
E4-2 SA241498.308	Window Glazing	Homogeneous	63%	Binder	2% Chrysotile
		White, Gray	35%	Calc Carb	
		Fibrous			
		Bound			
E4-3 SA241498.309	Window Glazing	Homogeneous	63%	Binder	2% Chrysotile
		White, Gray	35%	Calc Carb	
		Fibrous			
		Bound			
E4-4 SA241498.310	Window Glazing	Homogeneous	63%	Binder	2% Chrysotile
		White, Gray	35%	Calc Carb	
		Fibrous			
		Bound			
E5-1 SA241498.311	Ceiling Paint	Heterogeneous	10%	Paint	3% Chrysotile
		White	40%	Binder	
		Fibrous	47%	Calc Carb	
		Bound			
E5-2 SA241498.312	Ceiling Paint	Heterogeneous	10%	Paint	3% Chrysotile
		White	40%	Binder	
		Fibrous	47%	Calc Carb	
		Bound			
E5-3 SA241498.313	Ceiling Paint	Heterogeneous	10%	Paint	3% Chrysotile
		White	40%	Binder	
		Fibrous	47%	Calc Carb	
		Bound			
E6-1 SA241498.314	Paint	Heterogeneous	90%	Paint	None Detected
		White	10%	Binder	
		Non-fibrous			
		Bound			

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
E6-2 SA241498.315	Paint	Heterogeneous White Non-fibrous Bound	90% 10%	Paint Binder	None Detected
E6-3 SA241498.316	Paint	Heterogeneous White Non-fibrous Bound	90% 10%	Paint Binder	None Detected
E7-1 SA241498.317	Exterior Caulk	Heterogeneous Gray Fibrous Bound	93% 2%	Caulk Paint	5% Chrysotile
E7-2 SA241498.318	Exterior Caulk	Heterogeneous Gray Fibrous Bound	93% 2%	Caulk Paint	5% Chrysotile
E7-3 SA241498.319	Exterior Caulk	Heterogeneous White Non-fibrous Bound	98% 2%	Caulk Paint	None Detected
No gray caulk present					
E7-4 SA241498.320	Exterior Caulk	Heterogeneous Gray Fibrous Bound	93% 2%	Caulk Paint	5% Chrysotile
E8-1 SA241498.321	Sidewalk Caulk	Homogeneous White Fibrous Bound	95%	Caulk	5% Chrysotile

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ASBESTOS BULK PLM, EPA 600 METHOD

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			Fibrous		Non-Fibrous		
E8-2 SA241498.322	Sidewalk Caulk	Homogeneous White Fibrous Bound			95%	Caulk	5% Chrysotile
E8-3 SA241498.323	Sidewalk Caulk	Homogeneous White Fibrous Bound			95%	Caulk	5% Chrysotile
E9-1 SA241498.324	Sidewalk Tar	Homogeneous Black Fibrous Bound	20%	Cellulose	80%	Tar	None Detected
E9-2 SA241498.325	Sidewalk Tar	Homogeneous Black Fibrous Bound	20%	Cellulose	80%	Tar	None Detected
E9-3 SA241498.326	Sidewalk Tar	Homogeneous Black Fibrous Bound	20%	Cellulose	80%	Tar	None Detected
E10-1 SA241498.327	Door Frame Caulk	Heterogeneous Gray,Tan Non-fibrous Bound			90% 10%	Caulk Paint	None Detected
E10-2 SA241498.328	Door Frame Caulk	Heterogeneous Gray,Tan Non-fibrous Bound			90% 10%	Caulk Paint	None Detected

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

ASBESTOS BULK PLM, EPA 600 METHOD

Page 65 of 73

ASBESTOS BULK ANALYSIS

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
E13-1 SA241498.336	Window / Door Fame Caulk	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
E13-2 SA241498.337	Window / Door Fame Caulk	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
E13-3 SA241498.338	Window / Door Fame Caulk	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
E14-1 SA241498.339	Smooth Ceiling Tile	Heterogeneous White Fibrous Bound	10% <1%	Cellulose Fiberglass	5% <1% 85%	Vinyl Mica Gypsum	None Detected
E14-2 SA241498.340	Smooth Ceiling Tile	Heterogeneous White Fibrous Bound	10% <1%	Cellulose Fiberglass	5% <1% 85%	Vinyl Mica Gypsum	None Detected
E14-3 SA241498.341	Smooth Ceiling Tile	Heterogeneous White Fibrous Bound	10% <1%	Cellulose Fiberglass	5% <1% 85%	Vinyl Mica Gypsum	None Detected
E15-1 SA241498.342	Wall Caulk	Homogeneous White Fibrous Bound			95%	Caulk	5% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
E15-2 SA241498.343	Wall Caulk	Homogeneous White Fibrous Bound	95%	Caulk	5% Chrysotile
E15-3 SA241498.344	Wall Caulk	Homogeneous White Fibrous Bound	95%	Caulk	5% Chrysotile
E16-1 SA241498.345	Ceiling Texture	Homogeneous White Non-fibrous Bound	25% 75%	Binder Silicates	None Detected
E16-2 SA241498.346	Ceiling Texture	Homogeneous White Non-fibrous Bound	25% 75%	Binder Silicates	None Detected
E16-3 SA241498.347	Ceiling Texture	Homogeneous White Non-fibrous Bound	25% 75%	Binder Silicates	None Detected
R1-1 SA241498.348	Caulk	Homogeneous Light Gray Non-fibrous Bound	100%	Caulk	None Detected
R1-2 SA241498.349 A	Caulk	Homogeneous Light Gray Non-fibrous Bound	100%	Caulk	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
R1-2 SA241498.349 B	Caulk	Homogeneous Black Non-fibrous Bound	100%	Caulk	None Detected
R1-3 SA241498.350 A	Caulk	Homogeneous Light Gray Non-fibrous Bound	100%	Caulk	None Detected
R1-3 SA241498.350 B	Caulk	Homogeneous Black Non-fibrous Bound	100%	Caulk	None Detected
R2-1 SA241498.351	Lightning Rod Caulk	Homogeneous Gray Non-fibrous Bound	100%	Caulk	None Detected
R2-2 SA241498.352	Lightning Rod Caulk	Homogeneous Gray Non-fibrous Bound	100%	Caulk	None Detected
R2-3 SA241498.353	Lightning Rod Caulk	Homogeneous Gray Non-fibrous Bound	100%	Caulk	None Detected
R3-1 SA241498.354	Caulk	Homogeneous Clear Non-fibrous Bound	100%	Caulk	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
R3-2 SA241498.355	Caulk	Homogeneous Clear Non-fibrous Bound			100%	Caulk	None Detected
R3-3 SA241498.356	Caulk	Homogeneous Clear Non-fibrous Bound			100%	Caulk	None Detected
R4-1 SA241498.357	Tar	Homogeneous Black Fibrous Bound	5% <1%	Cellulose Talc	95%	Tar	None Detected
R4-2 SA241498.358	Tar	Homogeneous Black Fibrous Bound	5% <1%	Cellulose Talc	95%	Tar	None Detected
R4-3 SA241498.359	Tar	Homogeneous Black Fibrous Bound	5% <1%	Cellulose Talc	95%	Tar	None Detected
R5-1 SA241498.360	Coating	Homogeneous Silver Fibrous Bound			97%	Paint	3% Chrysotile
R5-2 SA241498.361	Coating	Homogeneous Silver Fibrous Bound			97%	Paint	3% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
R5-3 SA241498.362	Coating	Homogeneous Silver Fibrous Bound			97%	Paint	3% Chrysotile
R6-1 SA241498.363	Roof Patch Sealant	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
R6-2 SA241498.364	Roof Patch Sealant	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
R6-3 SA241498.365	Roof Patch Sealant	Homogeneous White Non-fibrous Bound			100%	Caulk	None Detected
R7-1 Layer 1 SA241498.366	Roof Tar	Heterogeneous Black Fibrous Bound	25%	Cellulose	75%	Tar	None Detected
R7-1 Layer 2 SA241498.366	Roof Paper	Homogeneous Dark Brown Fibrous Loosely Bound	80% 10%	Cellulose Fiberglass	10%	Binder	None Detected
R7-1 Layer 3 SA241498.366	Roof Foam	Homogeneous White Non-fibrous Bound			100%	Foam	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
R7-2 Layer 1 SA241498.367	Roof Tar	Heterogeneous Black Fibrous Bound	25%	Cellulose	75%	Tar	None Detected
R7-2 Layer 2 SA241498.367	Roof Paper	Homogeneous Dark Brown Fibrous Loosely Bound	80% 10%	Cellulose Fiberglass	10%	Binder	None Detected
R7-2 Layer 3 SA241498.367	Roof Foam	Homogeneous White Non-fibrous Bound			100%	Foam	None Detected
R7-3 Layer 1 SA241498.368	Roof Tar	Heterogeneous Black Fibrous Bound	25%	Cellulose	75%	Tar	None Detected
R7-3 Layer 2 SA241498.368	Roof Paper	Homogeneous Dark Brown Fibrous Loosely Bound	80% 10%	Cellulose Fiberglass	10%	Binder	None Detected
R7-3 Layer 3 SA241498.368	Roof Foam	Homogeneous White Non-fibrous Bound			100%	Foam	None Detected
R8-1 SA241498.369	Roof Flashing	Heterogeneous Black Fibrous Bound			75% 20%	Tar Binder	5% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498
Date Received: 05-23-24
Date Analyzed: 06-05-24
Date Reported: 06-05-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
R8-2 SA241498.370	Roof Flashing	Heterogeneous		75% Tar	5% Chrysotile
		Black		20% Binder	
		Fibrous			
		Bound			
R8-3 SA241498.371	Roof Flashing	Heterogeneous		75% Tar	5% Chrysotile
		Black		20% Binder	
		Fibrous			
		Bound			

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
Non-Trem = Non-Asbestiform Tremolite
Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

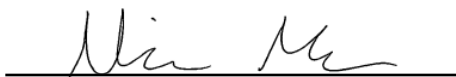
REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

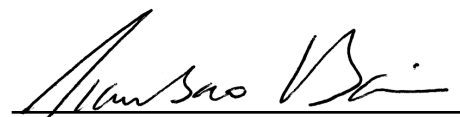
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Information provided by customer includes customer sample ID and sample description.

ANALYST:


Nicholas Moore

APPROVED BY:


Tianbao Bai, Ph.D., CIH
Laboratory Director


Zane Heinz

June 12, 2024

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

CLIENT PROJECT: UNCC Sanford Hall, 71247134
CEI LAB CODE: SA241498A

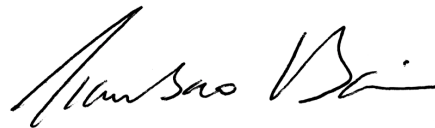
Dear Customer:

Enclosed are asbestos analysis results for PLM bulk samples received at our laboratory on June 11, 2024. The samples were analyzed for asbestos using polarized light microscopy (PLM) point count per the EPA 600 Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the EPA 600 method is 0.25% for 400 point counts, or 0.1% for 1,000 point counts.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director



ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Terracon Consultants, Inc.

CLIENT PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498A

TEST METHOD: PLM Point Count
EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 06/12/24

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498A
Date Received: 06-11-24
Date Analyzed: 06-12-24
Date Reported: 06-12-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS POINT COUNT PLM, EPA 600 METHOD

Client ID	Lab ID	Material Description	POINTS		ASBESTOS	
			Total	Asbestos	%	
11-2	SA241498.074	Joint Compound	400	3	0.75%	Chrysotile

SA241498.074 Drywall/Joint Compound (Composite
Result from Point Count)

0.04% Chrysotile

Joint compound is 5% of overall sample.

LEGEND: None

METHOD: EPA 600 / M4 / 82 / 020 (40 CFR Part 763, Sub. E, App. E)

REPORTING LIMIT: 0.25% by 400 points or 0.1% by 1,000 points

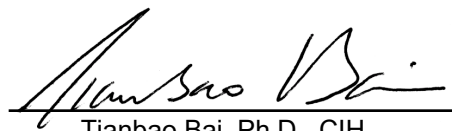
REGULATORY LIMIT: >1% by weight

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. *Estimated measurement of uncertainty is available on request.* This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

ANALYST:

Nicholas Moore

APPROVED BY:Tianbao Bai, Ph.D., CIH
Laboratory Director

June 12, 2024

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

CLIENT PROJECT: UNCC Sanford Hall, 71247134
CEI LAB CODE: SA241498B

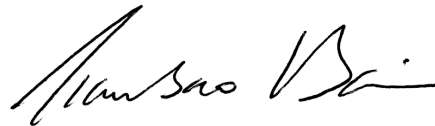
Dear Customer:

Enclosed are asbestos analysis results for PLM bulk samples received at our laboratory on June 12, 2024. The samples were analyzed for asbestos using polarized light microscopy (PLM) gravimetric point count per the EPA 600 Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the EPA 600 method is < 0.25% for gravimetric point count depending on the processed sample weight and points counted.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Terracon Consultants, Inc.

CLIENT PROJECT: UNCC Sanford Hall, 71247134

LAB CODE: SA241498B

TEST METHOD: PLM Gravimetric Point Count
EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 06/12/24

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

Lab Code: SA241498B
Date Received: 06-12-24
Date Analyzed: 06-12-24
Date Reported: 06-12-24

Project: UNCC Sanford Hall, 71247134

ASBESTOS GRAVIMETRIC POINT COUNT PLM, EPA 600 METHOD

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material (%)	Acid Soluble Material (%)	Acid Insoluble Material (%)	ASBESTOS %	
34-1 SA241498.14 4	Carpet Glue/ Leveling Compound	0.437	43	10	47	0.12%	Chrysotile

LEGEND: None

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

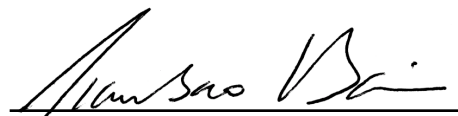
REPORTING LIMIT: Varies with the weight and constituents of the sample (<0.25%)

REGULATORY LIMIT: >1% by weight

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Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

ANALYST:

Madelyn Schmidt**APPROVED BY:**

Tianbao Bai, Ph.D., CIH
Laboratory Director

Appendix E

Lead Laboratory Analytical Data



Lead in Paint Inspection Form

Inspector: Tyler Corbitt
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area: Interior and Exterior

Sample No.	Color	Substrate	Component	Sample Location	Condition	Lab Results (% Pb by Weight)
L1	Tan	Concrete	Wall	11th Floor - Near Stairwell	I	0.00909 %
L2	Tan	CMU Block	Wall	11th Floor - Near Stairwell	I	0.0108 %
L3	Green	CMU Block	Wall	11th Floor - Seminar	I	0.0151 %
L4	Green	Ceramic	Wall	10th Floor - Elevator Lobby	I	<0.00594 %
L5	Green	Concrete	Wall	10th Floor - Elevator Lobby	I	<0.00588 %
L6	Light Gray	CMU Block	Wall	9th Floor - Stairwell	I	0.0470 %
L7	Light Blue	CMU Block	Wall	9th Floor - Near Stairwell	I	<0.00611 %
L8	Ligth Blue	Concrete	Wall	9th Floor - Near Stairwell	I	<0.00594 %
L9	Blue	CMU Block	Wall	9th Floor - Common Room	I	0.00750 %
L10	Blue	Concrete	Wall	9th Floor - Common Room	I	0.0191 %
L11	Blue	Wallboard	Wall	9th Floor - Common Room	I	<0.00802 %
L12	Dark Blue	Ceramic	Wall	8th Floor - Elevator Lobby	I	<0.00615 %
L13	Dark Blue	CMU Block	Wall	8th Floor - Common Room	I	<0.00598 %
L14	Dark Blue	Concrete	Wall	8th Floor - Common Room	I	0.0146 %
L15	Green	Wallboard	Wall	7th Floor - Common Room	I	<0.00623 %
L16	Tan	Ceramic	Wall	6th floor - Elevator Lobby	I	<0.00602 %
L17	Dark Blue	Wallboard	Wall	5th Floor - Common Room	I	<0.00680 %
L18	Tan	Wallboard	Wall	3rd Floor - Common Room	I	<0.00591 %
L19	Light Tan	Concrete	Wall	1st Floor - Stairwell	I	0.0691 %
L20	Gray	Metal	Banister	11th Floor - Common Room	I	<0.00588 %
L21	Gray	Metal	Banister	9th Floor - Common Room	I	<0.00846 %
L22	Gray	Metal	Banister	7th Floor - Common Room	I	<0.00883 %
L23	Gray	Metal	Banister	5th Floor - Common Room	I	<0.00609 %
L24	Gray	Metal	Banister	3rd Floor - Common Room	I	<0.00598 %
L25	Gray	Metal	Railing	10th Floor - Stairwell	I	<0.00582 %
L26	Gray	Metal	Railing	4th Floor - Stairwell	I	0.0118 %
L27	Gray	Metal	Elevator Entry Frame	5th Floor - Elevator Lobby	I	<0.00598 %
L28	Black	CMU Block	Wall	10th Floor - Stairwell	I	<0.00832 %
L29	White	Metal	Fire Hose Cabinet	10th Floor - Stairwell	I	<0.00844 %
L30	White	Concrete	Exterior Wall	9th Floor - Exterior	I	0.00728 %
L31	White	Concrete	Ceiling	9th Floor - Fire Escape Vestibule	T	0.0394 %
L32	White	CMU Block	Wall	10th Floor - Common Room	I	<0.00597 %

Conditions:

(I)ntact (T)op Layer Fail (M)ultiple Layer Fail (S)ubstrate Fail



Lead in Paint Inspection Form

Inspector: Tyler Corbitt
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area: Interior and Exterior

Sample No.	Color	Substrate	Component	Sample Location	Condition	Lab Results (% Pb by Weight)
L33	White	Concrete	Wall	10th Floor - Common Room	I	0.0108 %
L34	White	CMU Block	Wall	8th Floor - Common Room	I	0.0187 %
L35	White	Concrete	Wall	8th Floor - Common Room	I	0.0142 %
L36	White	CMU Block	Wall	6th Floor - Common Room	I	0.0287 %
L37	White	Concrete	Wall	6th Floor - Common Room	I	0.0417 %
L38	White	CMU Block	Wall	4th Floor - Common Room	I	0.0434 %
L39	White	Concrete	Wall	4th Floor - Common Room	I	0.0331 %
L40	White	CMU Block	Wall	3rd Floor - Stairwell	I	0.0841 %
L41	White	Concrete	Wall	3rd Floor - Stairwell	I	0.0436 %
L42	Black	Metal	Railing	2nd Floor - Fire Escape	I	0.0181 %
L43	Black	Metal	Railing	5th Floor - Fire Escape	I	0.0295 %
L44	White	Concrete	Ceiling	2nd Floor - Fire Escape Vestibule	T	0.0630 %
L45	Gray	Concrete	Floor	10th Floor - Trash Closet	I	<0.00612 %
L46	White	Metal	Pipe	10th Floor - Mechanical Room	T	0.265 %
L47	Gray	Metal	Door Frame	10th Floor - Seminar	I	0.00973 %
L48	Gray	Wood	Door	10th Floor - Stairwell	T	<0.00590 %
L49	White	Concrete	Exterior Wall	6th Floor - Fire Escape Exterior	I	0.0138 %
L50	Gray	Metal	Door Frame	6th Floor - Room 627	I	<0.00708 %
L51	Gray	Wood	Door	6th Floor - Room 627	I	<0.00614 %
L52	Gray	Concrete	Floor	6th Floor - Trash Closet	I	<0.00625 %
L53	White	Metal	Pipe	6th Floor - Mechanical Room	T	0.100 %
L54	Gray	Wood	Door	2nd Floor - Seminar	I	<0.0103 %
L55	Gray	Metal	Door Frame	2nd Floor - Seminar	I	0.0272 %
L56	White	Wallboard	Wall	10th Floor - Common Room	I	<0.0129 %
L57	White	Metal	Pipe	2nd Floor - Mechanical Room	I	0.139 %
L58	Pink	Wallboard	Wall	1st Floor - Offices	I	<0.00612 %
L59	White	Wallboard	Wall	1st Floor - Near Restrooms	I	<0.00601 %
L60	White	Wallboard	Wall	1st Floor - Community Room	I	<0.00597 %
L61	White	Wallboard	Wall	Ground Floor - Lounge	I	<0.00603 %
L62	Black	Metal	Door Frame	Ground Floor - Fire Escape Exterior	I	0.0654 %
L63	Black	Metal	Door	Ground Floor - Fire Escape Exterior	I	<0.00571
L64	White	Concrete	Exterior Wall	Ground Floor - Exterior Wall	I	<0.00600 %

Conditions:

(I)ntact (T)op Layer Fail (M)ultiple Layer Fail (S)ubstrate Fail



Lead in Paint Inspection Form

Inspector: Tyler Corbitt
Date: 5/13/2024-5/17/2024

Job Name: UNCC Sanford Hall
Job Number: 71247134
Area: Interior and Exterior

Sample No.	Color	Substrate	Component	Sample Location	Condition	Lab Results (% Pb by Weight)
L65	White	Wallboard	Wall	6th Floor - Common Room	I	<0.00872 %
L66	Black	Metal	Door Frame	4th Floor - Fire Escape	I	0.194 %
L67	Gray	Wood	Molding	Ground Floor - Lounge	I	<0.00618 %
L68	Beige	Metal	Duct	Ground Floor - Housekeeping Closet	T	0.379 %
L69	Green	Metal	Door Frame	Loading Dock	I	<0.00599 %
L70	Green	Metal	Window Frame	Loading Dock	I	0.0481 %
L71	Green	Metal	Roll-Up Door	Loading Dock	I	<0.0164 %
L72	Yellow	Concrete	Sidewalk	Loading Dock	I	<0.00588 %
L73	Green	Metal	Door	Loading Dock	I	<0.00594 %
L74	White	CMU Block	Wall	Loading Dock	I	<0.00602 %
L75	Yellow	CMU Block	Wall	Ground Floor - Electrical Room	I	<0.0158 %
L76	Light Yellow	CMU Block	Wall	Ground Floor - Electrical Room	I	<0.00769 %

LABORATORY REPORT

LEAD IN PAINT

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

Lab Code: SL240197
Received: 05-22-24
Analyzed: 05-28-24
Reported: 05-30-24

Project: UNCC Sanford Hall, 71247134

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L1	SL02337	90.9	0.00909
L2	SL02338	108	0.0108
L3	SL02339	151	0.0151
L4	SL02340	<59.4	<0.00594
L5	SL02341	<58.8	<0.00588
L6	SL02342	470	0.0470
L7	SL02343	<61.1	<0.00611
L8	SL02344	<59.4	<0.00594
L9	SL02345	75.0	0.00750
L10	SL02346	191	0.0191

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L11 Sample weight below protocol guidelines	SL02347	<80.2	<0.00802
L12	SL02348	<61.5	<0.00615
L13	SL02349	<59.8	<0.00598
L14	SL02350	146	0.0146
L15	SL02351	<62.3	<0.00623
L16	SL02352	<60.2	<0.00602
L17 Sample weight below protocol guidelines	SL02353	<68.0	<0.00680
L18	SL02354	<59.1	<0.00591
L19	SL02355	691	0.0691
L20	SL02356	<58.8	<0.00588
L21 Sample weight below protocol guidelines	SL02357	<84.6	<0.00846
L22 Sample weight below protocol guidelines	SL02358	<88.3	<0.00883
L23	SL02359	<60.9	<0.00609

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L24	SL02360	<59.8	<0.00598
L25	SL02361	<58.2	<0.00582
L26	SL02362	118	0.0118
L27	SL02363	<59.8	<0.00598
L28 Sample weight below protocol guidelines	SL02364	<83.2	<0.00832
L29 Sample weight below protocol guidelines	SL02365	<84.4	<0.00844
L30	SL02366	72.8	0.00728
L31	SL02367	394	0.0394
L32	SL02368	<59.7	<0.00597
L33	SL02369	108	0.0108
L34	SL02370	187	0.0187
L35	SL02371	142	0.0142
L36	SL02372	287	0.0287

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L37	SL02373	417	0.0417
L38	SL02374	434	0.0434
L39	SL02375	331	0.0331
L40	SL02376	841	0.0841
L41	SL02377	436	0.0436
L42 Sample weight below protocol guidelines	SL02378	181	0.0181
L43 Sample weight below protocol guidelines	SL02379	295	0.0295
L44	SL02380	630	0.0630
L45	SL02381	<61.2	<0.00612
L46	SL02382	2650	0.265
L47	SL02383	97.3	0.00973
L48	SL02384	<59.0	<0.00590
L49	SL02385	138	0.0138

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L50 Sample weight below protocol guidelines	SL02386	<70.8	<0.00708
L51	SL02387	<61.4	<0.00614
L52	SL02388	<62.5	<0.00625
L53	SL02389	1000	0.100
L54 Sample weight below protocol guidelines	SL02390	<103	<0.0103
L55 Sample weight below protocol guidelines	SL02391	272	0.0272
L56 Sample weight below protocol guidelines	SL02392	<129	<0.0129
L57	SL02393	1390	0.139
L58	SL02394	<61.2	<0.00612
L59	SL02395	<60.1	<0.00601
L60	SL02396	<59.7	<0.00597
L61	SL02397	<60.3	<0.00603
L62	SL02398	654	0.0654

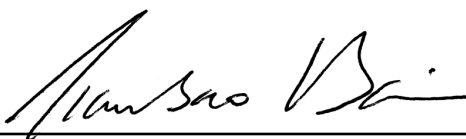
METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L63*	SL02399	<57.1	<0.00571
L64	SL02400	<60.0	<0.00600
L65 Sample weight below protocol guidelines	SL02401	<87.2	<0.00872
L66	SL02402	1940	0.194
L67 Sample contains substrate, potentially affecting results	SL02403	<61.8	<0.00618
L68	SL02404	3790	0.379
L69	SL02405	<59.9	<0.00599
L70	SL02406	481	0.0481
L71 Sample weight below protocol guidelines	SL02407	<164	<0.0164
L72	SL02408	<58.8	<0.00588
L73	SL02409	<59.4	<0.00594
L74	SL02410	<60.2	<0.00602
L75 Sample weight below protocol guidelines	SL02411	<158	<0.0158

METHOD: EPA SW846 7000B

CLIENT ID	LAB ID	PPM (µg/g)	CONCENTRATION % BY WEIGHT
L76 Sample weight below protocol guidelines	SL02412	<76.9	<0.00769

Reviewed By:



Tianbao Bai, Ph.D.

Laboratory Director

This method has been validated for sample weights of 0.25g or greater. When samples with a weight of less than that are analyzed those results fall outside of the scope of accreditations.

* The analysis of composite wipe samples as a single samples is not included under AIHA LAP, LLC accreditation.

Minimum reporting limit is 13.7 µg total lead. Sample results denoted with a "less than" (<) sign contain less than 13.7 µg total lead, based on a 50ml sample volume.

Lead samples are analyzed by Eurofins CEI, an AIHA LAP, LLC ELLAP accredited laboratory (AIHA Lab ID: LAP-290960) for lead analysis of air, soil, wipes, and paint samples.

Laboratory results represent the analysis of samples as submitted by the client. Information regarding sample location, description, area, volume, etc., was provided by the client. Unless notified in writing to return samples, Eurofins CEI discards client samples after 30 days. This report shall not be reproduced, except in full, without the written consent of Eurofins CEI.

Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

**REGULATORY
LIMITS**

OSHA Standard: No safe limit.

Consumer Products Safety Standard: Greater than 0.009% lead by weight.

Federal Lead Standard / HUD: 0.5% lead by weight.

LEGENDµg = microgram
ml = milliliterppm = parts per million
Pb = leadg = grams
wt = weight**End of Report**

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Work by Owner.
 - 4. Access to site.
 - 5. Coordination with occupants.
 - 6. Work restrictions.
 - 7. Specification and Drawing conventions.
 - 8. Miscellaneous provisions.

1.3 PROJECT INFORMATION

- A. Project Identification: Sanford Hall Demolition.
 - 1. Project Location: Sanford Hall Drive in the South Village area of the UNC Charlotte Campus.
- B. Owner: State of North Carolina through University of North Carolina at Charlotte, 9201 University City Blvd, Charlotte, NC 28223
 - 1. Owner's Representative: Doug Walters, (704) 687-0523, dwalte22@charlotte.edu
- C. Designer: Kimley-Horn and Associates, Inc., Leo Barclay, P.E., (919) 677-2214, leo.barclay@kimley-horn.com
- D. Other Owner Consultants: Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:
 - 1. Hazardous Materials Abatement Consultant: Terracon Consultants, Inc., Russell Harrings, (704) 264-9989, Russell.Harrings@terracon.com
 - 2. Civil Engineer: Kimley-Horn and Associates, Inc., Kelsey Torres, PE, (704) 319-5684, Kelsey.Strobridge@kimley-horn.com

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Abatement of hazardous materials, including, but not limited to asbestos-containing materials. Demolition of Sanford Hall, an eleven-story plus basement, concrete framed residence hall on UNCC's South Village campus. Processing and removal of all demolition debris from the site and below-grade elements as identified on the contract drawings. Backfill and grading on the project site to create a new landscaped area. Installation of sod and irrigation and modification to impacted site elements.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

B. Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this Contract begins.

1. Salvage of general materials that are desired for re-use, including, but not limited to, interior furniture, electrical and telecom equipment, generators, signage, fire alarm equipment, etc.
2. Contractor to coordinate with Owner to determine if additional items are to be salvaged prior to hazardous material abatement and demolition commences.

1.6 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

1. Limits: Confine construction operations to the limits Sanford Hall Lane on the north, the Levine Hall parking area and access stairs on the east, the existing landscaped area to the south, and Wilson Hall on the west as shown on the contract drawings.
2. Driveways, Walkways and Entrances: Keep Sanford Hall Lane clear and available to Owner, Owner's employees, and emergency vehicles always. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of on-campus roads, driveways, and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- c. The Contractor and each sub-contractor must coordinate materials deliveries to the project site without recourse to Owner staff assistance. Shipping documents must contain complete delivery instructions to include a site location, Contractor name, and telephone number for the delivery driver's use.
 3. The following roads are permitted for construction use and to the project site construction entrance:
 - a. Cameron Boulevard to Johnson Alumni Way to Sanford Hall Lane.
 4. Do not overload construction vehicles with material.
 5. Comply with University's Diesel Emissions Reduction and Idling Requirements.
- B. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
 2. The structural demolition (elevated structure and foundation) of Sanford Hall must not begin until May 12, 2025, and must be completed by July 31, 2025.
- C. On-Site Work Hours: No limitations are provided to Contractor working hours. All working hours and activities outside of 7AM – 9PM, Monday-Friday from May 12, 2025, to August 10, 2025, and 9AM – 5PM during the UNCC Spring and Fall semesters, shall be approved by the Owner prior to beginning. The Owner reserves the right to restrict construction activities during specific periods of campus activity, such as sporting events, move-in dates, or exam periods. Coordinate with Owner to determine these dates and specific restrictions on site activity. See additional requirements in General and Supplementary General Conditions.
- D. Condition of Existing Site / Buildings: The Contractor shall protect from damage the adjacent structures, curbs to remain, vehicles, storm drain lines, underground utilities to remain, equipment, etc. during demolition and construction activities. Repair of damage caused by demolition and construction operations is Contractor's responsibility and should be repaired to a condition equal to or superior to the existing condition at the Contractor's expense.
- E. Coordination with Occupants: Owner and Owner's tenants will occupy the adjacent building(s) during the entire construction period. The Contractor, therefore, must provide adequate protection to ensure public safety. Contractor to coordinate with the Owner during demolition and construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations.
- F. Parking: Contractor parking shall occur within the site perimeter. If additional parking is required, the Contractor shall provide for their own parking off campus and shall minimize the occupation of parking spaces in areas that are otherwise open to the students, faculty, staff or public for parking during the demolition and construction.
- G. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Owner not less than three weeks in advance of proposed utility interruptions.

2. Obtain Owner's written permission before proceeding with utility interruptions.
 3. If shutdowns will disable the fire alarm system's ability to detect and report on fire emergencies, a fire watch must be provided for adjacent buildings.
- H. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, dust, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than three days in advance of proposed disruptive operations.
- I. Restricted Substances: Use of tobacco products and other controlled substances on Project Site is not permitted.
- J. University Policies:
1. Comply with University Traffic Regulations and Emergency Procedures Manual
 2. Comply with University's Code of conduct. Radios and other sound sources are prohibited on projects.
 3. Indicate existing materials to be removed and delivered to the University.
 4. Comply with University's Safety Program.
- K. Use of Premises:
1. 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 responsible contractor.
 2. Each Contractor will ensure vehicles and equipment do not exceed their rated Gross Vehicle Weight, or other load restrictions. Vehicles operating on campus must comply with all State weight and axle restrictions. Contractors will be held responsible for repair of damage caused by their vehicles.
 3. All equipment must be secured when staff is not on-site. Each sub-contractor must accept responsibility for 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.
 4. The Contractor and each sub-contractor are responsible for employee conduct and behavior on campus. Harassment, verbal abuse, and other such behavior towards students, faculty, staff, or other general public will not be tolerated. All employees are required to wear shirts and long pants.
 5. All materials, equipment, vehicles, and employee vehicles must be contained within the site fence as indicated on the drawings. If parking outside the project site becomes necessary, the Contractor must coordinate with the Owner to provide parking arrangements.
 6. Prior to the initial occupation of the site, coordinate with Owner's Construction Manager.
 7. Prior to any excavation by any sub-contractor, the Contractor must coordinate with Owner's Construction Manager one week prior to digging to establish utility's locations. Owner's 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 to remain from damage. The Owner shall perform one set of locates. The Contractor shall be responsible for maintaining utility locates for coordination of their work. Any costs for additional locate services will be charged to the Contractor. The Contractor shall also be responsible for providing non-University utility locates via 811 services.

8. Contractor will maintain safe pedestrian ways around the project site. Walkways and roads will not be blocked.
9. To the extent herein described there is no charge to Contractor for Owner provided utilities. The Owner will provide power at no cost for office trailer (if required) and small tools. The Owner will identify utility sources and the contractor will be responsible for all costs associated with tie-in and distribution.
10. Utilities outages must be coordinated with Owner's Construction Manager at least 30 days prior to the period of the outage. For some critical circuits, longer lead times may be necessary.
11. The Contractor shall ensure all sub-contractors provide all labor, materials, tools, and equipment required to accomplish the work. The Owner will not furnish or loan anything except where contract documents so indicate. The Contractor is responsible to ensure that all suppliers, Prime Subcontractors, their agents, employees, and lower tier subs, adhere to the Contract documents and that they provide all products on time.
12. No sub-contractor shall use any facility beyond the limits of disturbance.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and/or scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.8 PERMITS

- A. Contractor to obtain all required permits to complete the work as described herein, including, but not limited to asbestos abatement, existing utility modification, and building demolition.

University of North Carolina at Charlotte
Charlotte, NC
Sanford Hall Demolition

Kimley-Horn and Associates, Inc.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Unit-cost allowances.
 - 2. Quantity allowances.
- C. Related Requirements:
 - 1. Section 012200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.
 - 2. Section 012300 "Alternates".
 - 3. Section 014000 "Quality Requirements" for procedures governing the use of allowances for field testing by an independent testing agency.
 - 4. Divisions 02 through 33 for items of Work covered by allowances.

1.3 DEFINITIONS

- A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Designer of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.
- B. At Designer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Designer from the designated supplier.

1.5 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.6 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Designer under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Designer under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Designer, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 UNIT-COST ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Designer under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Designer, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.9 QUANTITY ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Designer under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Designer under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 1. If requested by Designer, retain, and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.10 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Quantity Allowance: Include fifty (50) cubic yards of below grade concrete or rock removal, processing, and disposal from site and replacement with satisfactory soil material (as specified in Section 312000 "Earth Moving") to account for additional below grade concrete or rock elements encountered less than 2'-0" below finished grade and not indicated in these drawings to be removed. Cost to be based on the unit price provided in the proposal.
 - 1. This allowance includes material cost, receiving, handling, and removal, and Contractor overhead and profit.
 - 2. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices".
- B. Allowance No. 2: Quantity Allowance: Include 50 of unsatisfactory soil excavation and disposal off-site and replacement with satisfactory soil material from off-site, as specified in Section 312000 "Earth Moving."
 - 1. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.
 - 2. Section 012300 "Alternates".
 - 3. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- 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 schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Removal of unsatisfactory soil and replacement with satisfactory soil material.
1. Description: Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, according to Section 312000 "Earth Moving."
 2. Unit of Measurement: Cubic yard of soil excavated, based on in-place surveys of volume before and after removal.
 3. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 012100 "Allowances."
- B. Unit Price No. 2: Additional foundation concrete demolition and removal.
1. Description: Removal of additional foundation concrete elements to the scope indicated on the construction documents, disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, according to Section 312000 "Earth Moving."
 2. Unit of Measurement: Cubic yard of foundation concrete excavated, based on survey of in-place surveys volume of before and after removal.
 3. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 012100 "Allowances."

END OF SECTION 012200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 012300 "Alternates" for products selected under an alternate.
 - 2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
 - 3. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

- a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of designers and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Designer's Action: If necessary, Designer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Designer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: Change Order, Construction Change Directive, or Designer's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Designer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Designer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Designer will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Designer will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Designer.
 - 1. Conditions: Designer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Designer will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Designer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

- b. Requested substitution does not require extensive revisions to the Contract Documents.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
 - 2. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 MINOR CHANGES IN THE WORK

- A. Designer will issue through Contractor supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Contractor will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Contractor are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

- c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use forms acceptable to Designer.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Owner and Designer.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - 7. Proposal Request Form: Use form acceptable to Designer.

1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Contractor will issue a Change Order for signatures of Owner and Designer on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Designer may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.8 WORK CHANGE DIRECTIVE

- A. Work Change Directive: Contractor may issue a Work Change Directive on EJCDC Document C-940. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
 - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

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. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Designer at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Sub-schedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide sub-schedules showing values coordinated with each element.

- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Designer.
 - c. Designer's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 5. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 6. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.
 7. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
 8. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.

9. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
10. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Designer and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
 1. Other Application for Payment forms proposed by the Contractor may be acceptable to Designer and Owner. Submit forms for approval with initial submittal of schedule of values.
 2. Designer and Owner may require additional information to be submitted along with Application for Payment including, but not limited to, subcontractor invoices, sales tax information, construction and demolition waste identification forms, landfill tickets including indication that the facility is licensed to accept hazardous wastes, and minority business utilization.
 3. No application for payment will be approved until the Contractor's construction schedule has been received and accepted by Designer and Owner.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Designer will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Designer by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities 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 conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. 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. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Products list (preliminary if not final).
 6. Sustainable design action plans, including preliminary project materials cost data.
 7. Schedule of unit prices.
 8. Submittal schedule (preliminary if not final).
 9. List of Contractor's staff assignments.
 10. List of Contractor's principal consultants.

11. Copies of building permits.
 12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 13. Initial progress report.
 14. Report of preconstruction conference.
 15. Certificates of insurance and insurance policies.
 16. Performance and payment bonds.
 17. Data needed to acquire Owner's insurance.
- I. Application for Payment at Substantial Completion: After Designer issues 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 Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 3. A written warranty showing date of completion and period of warranty shall be supplied upon completion of each segment of the project and submitted with Application for Payment.
- J. Final Payment Application: After completing Project closeout requirements, 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. AIA Document G706.
 5. AIA Document G706A.
 6. AIA Document G707.
 7. Evidence that claims have been settled.
 8. A written warranty showing date of completion and period of warranty shall be supplied upon completion of each segment of the project and submitted with Application for Payment.
 9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 10. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.
 - 4. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Designer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities, list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Always keep list current.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and direction of Owner to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Designer will return without response those RFIs submitted to Designer by other entities controlled by Contractor.
 - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Designer.
 - 6. RFI number, numbered sequentially.
 - 7. RFI subject.
 - 8. Specification Section number and title and related paragraphs, as appropriate.
 - 9. Drawing number and detail references, as appropriate.
 - 10. Field dimensions and conditions, as appropriate.
 - 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 12. Contractor's signature.
 - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Designer.
 - 1. Attachments shall be electronic files in PDF format.
- D. Designer's Action: Designer will review each RFI, determine action required, and respond. Allow seven working days for Designer's response for each RFI. RFIs received by Designer after 1:00 p.m. eastern time will be considered as received the following working day.
 - 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.

- e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Designer's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Designer's action may include a request for additional information, in which case Designer's time for response will date from time of receipt by Designer of additional information.
 3. Designer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to the General Conditions of the Contract.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Designer in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Contractor to prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Include the following:
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Designer.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Designer's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Designer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Designer within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Designer's Digital Data Files: Digital data files of Designer's CAD drawings may be provided by Designer for Contractor's use during construction.
 1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Designer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 - a. The electronic files ("Files") furnished by Designer to the intended receiver of the Files ("Receiving Party") are provided only for the convenience of Receiving Party and only for its sole use. Receiving Party agrees that it shall be bound by and subject to the terms of this notice. For any signed and sealed plans or final deliverables, if

there are discrepancies between the Files and the hardcopy of the Files prepared by Designer, the hardcopy shall govern. Only printed copies of such documents conveyed by Kimley-Horn may be relied upon. Any use of these electronic Files will be at the Receiving Party's sole risk. Receiving Party accepts the Files on an "as is" basis with all faults.

3. Digital Drawing Software Program: Contract Drawings are available in AutoCAD.
 4. Contractor shall execute a data licensing agreement provided by the Designer before use.
 - a. Subcontractors, and other parties granted access by Contractor to Designer's digital data files shall execute a data licensing.
- B. PDF Document Preparation: Where PDFs are required to be submitted to Designer, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

- A. General: Contractor will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Designer of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Designer, and SCO Project Monitor (if applicable), within three days of the meeting.
- B. Preconstruction Conference: Contractor will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner, Designer, and SCO Project Monitor (if applicable), but no later than 15 days after execution of the Contract.
1. Attendees: Authorized representatives of Owner, Designer, SCO Project Monitor (if applicable), and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.

- b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - f. Lines of communications.
 - g. Use of web-based Project software.
 - h. Procedures for processing field decisions and Change Orders.
 - i. Procedures for RFIs.
 - j. Procedures for testing and inspecting.
 - k. Procedures for processing Applications for Payment.
 - l. Distribution of the Contract Documents.
 - m. Submittal procedures.
 - n. Preparation of Record Documents.
 - o. Use of the premises and existing building.
 - p. Work restrictions.
 - q. Working hours.
 - r. Owner's occupancy requirements.
 - s. Responsibility for temporary facilities and controls.
 - t. Procedures for moisture and mold control.
 - u. Procedures for disruptions and shutdowns.
 - v. Construction waste management and recycling.
 - w. Parking availability.
 - x. Office, work, and storage areas.
 - y. Equipment deliveries and priorities.
 - z. First aid.
 - aa. Security.
 - bb. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Designer, Contractor, and Owner of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.

- h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Contractor will schedule and conduct a project closeout conference, at a time convenient to Owner, Designer, and SCO Project Monitor (if applicable), but no later than 90 days prior to the scheduled date of Substantial Completion.
- 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 - 2. Attendees: Authorized representatives of Owner, Designer, and SCO Project Monitor (if applicable), and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Procedures for completing and archiving web-based Project software site data files.
 - d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.

- h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Contractor will schedule and conduct progress meetings at monthly intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner, Designer, and SCO Project Monitor (if applicable), each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Review previous minutes of the meeting and resolve any corrections.
 - b. Review work performed in the last 30 days and work to be performed in the next 30 days.
 - c. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - 2) Review percentages complete to be reported by the Contractor(s) – (Actual Work Completed)
 - d. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals and/or shop drawing review.
 - 5) Status of sustainable design documentation.
 - 6) Deliveries.
 - 7) Off-site fabrication.
 - 8) Access.
 - 9) Site use.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.

- 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of Proposal Requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
 - 21) Construction/Coordination Issues.
 - 22) Designer Weekly Inspection Reports – Non-Conforming Work
 - 23) Special Inspection Reports – Deficiency Notices
 - 24) Comments from Owner, State Construction Office, Contractor(s), and Designers.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Startup construction schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Construction schedule updating reports.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Site condition reports.
 - 7. Unusual event reports.
- B. Related Requirements:
 - 1. Section 014000 "Quality Requirements" for submittal a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.
- B. Construction Schedule Updating Reports: Submit with Applications for Payment.
- C. Weekly Construction Reports: Submit at monthly intervals. To be reviewed during the monthly progress meetings.
- D. Site Condition Reports: Submit at time of discovery of differing conditions.
- E. Unusual Event Reports: Submit at time of unusual event.

1.5 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than five days, unless specifically allowed by Designer.
 - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
 - 4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Designer's administrative procedures necessary for certification of Substantial Completion.
 - 5. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, hazardous material abatement, structural demolition, site re-development, substantial completion, and final acceptance.
- D. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.
 - 1. See Section 012900 "Payment Procedures" for cost reporting and payment procedures.
- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and the Contract Time.
- F. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.
- H. Distribution: Distribute copies of approved schedule to Designer, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 REPORTS

- A. Weekly Construction Reports: Prepare weekly construction reports recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Testing and inspection.
 8. Accidents.
 9. Meetings and significant decisions.
 10. Unusual events.
 11. Stoppages, delays, shortages, and losses.
 12. Meter readings and similar recordings.
 13. Emergency procedures.
 14. Orders and requests of authorities having jurisdiction.
 15. Change Orders received and implemented.
 16. Change Directives received and implemented.
 17. Services connected and disconnected.
 18. Equipment or system tests and startups.
 19. Partial completions and occupancies.
 20. Substantial Completions authorized.

- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- C. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
 - 1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Final completion construction photographs.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
 - 2. Section 024116 "Structure Demolition" for photographic documentation before building demolition operations commence.
 - 3. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within five days of taking photographs.
 - 1. Submit photos by uploading to web-based project software site or email. Include copy of key plan indicating each photograph's location and direction.
 - 2. Identification: Provide the following information with each image description:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Designer.
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of location, vantage point, and direction.
 - g. Unique sequential identifier keyed to accompanying key plan.

1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.5 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels, and with vibration-reduction technology. Use flash in low light levels or backlit conditions.
- B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- C. Metadata: Record accurate date and time from camera.
- D. File Names: Name media files with date, Project area, and sequential numbering suffix.

1.6 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs with maximum depth of field and in focus.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site, existing building, and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Designer.
 - 1. Flag limits of disturbance before taking construction photographs.
 - 2. Take a sufficient number (20 minimum) of photos to show the existing conditions adjacent to property before starting the Work.
 - 3. Take a sufficient number (20 minimum) photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements. Contractor's option to use settlement monitoring devices on each structure throughout the project.
- D. Final Completion Construction Photographs: Take a sufficient number (20 minimum) photographs after date of Substantial Completion for submission as Project Record Documents. Designer will inform photographer of desired vantage points.

University of North Carolina at Charlotte
Charlotte, NC
Sanford Hall Demolition

Kimley-Horn and Associates, Inc.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Submittal schedule requirements.
 - 2. Administrative and procedural requirements for submittals.

- B. Related Requirements:

- 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
 - 3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and final completion construction photographs.
 - 5. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
 - 6. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
 - 7. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Designer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Designer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Designer and additional time for handling and reviewing submittals required by those corrections.
1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Designer's final release or approval.
 - g. Scheduled dates for purchasing.
 - h. Scheduled date of fabrication.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
1. Project name.
 2. Date.
 3. Name of Designer.
 4. Name of Contractor.
 5. Name of firm or entity that prepared submittal.
 6. Names of subcontractor, manufacturer, and supplier.
 7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier, and alphanumeric suffix for resubmittals.
 8. Category and type of submittal.
 9. Submittal purpose and description.
 10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.

11. Drawing number and detail references, as appropriate.
 12. Indication of full or partial submittal.
 13. Location(s) where product is to be installed, as appropriate.
 14. Other necessary identification.
 15. Remarks.
 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Designer.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Designer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
1. Action Submittals: Submit one electronic copy of each submittal unless otherwise indicated.
 2. Informational Submittals: Submit one electronic copy of each submittal unless otherwise indicated. Designer
 3. Additional Copies: Unless additional copies are required for final submittal, and unless Designer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 4. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810 transmittal form.
- D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.6 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Email: Prepare submittals as PDF package and transmit to Designer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Designer.
 - a. Designer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Designer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Designer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Designer will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 10 business days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Designer's consultants, Owner, or other parties is indicated, allow 15 business days for initial review of each submittal.
 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Designer and to Designer's consultants, allow 10 business days for review of each submittal. Submittal will be returned to Construction Manager, through Designer, before being returned to Contractor.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Designer.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Designer's action stamp.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Designer's action stamp.

1.7 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Designer's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.

- d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
5. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Designer and Construction Manager will retain two Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.

- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of designers and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
 - 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 - 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 - 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 - 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - 6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:
 - 1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 - 2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 - 3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 - 4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 - 5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Designer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.9 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Designer.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with indication in web-based Project software. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Designer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 DESIGNER AND CONSTRUCTION MANAGER'S REVIEW

- A. Action Submittals: Designer will review each submittal, indicate corrections or revisions required, and return it.
 - 1. PDF Submittals: Designer will indicate, via markup on each submittal, the appropriate action.
- B. Informational Submittals: Designer will review each submittal and will not return it or will return it if it does not comply with requirements. Designer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Designer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Designer will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Designer without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Designer, Owner, North Carolina State Construction Office, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

- D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Designer or Construction Manager.

1.4 DELEGATED-DESIGN SERVICES

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

1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent

requirement. Refer conflicting requirements that are different, but apparently equal, to Designer for direction before proceeding.

- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Designer for a decision before proceeding.

1.6 ACTION SUBMITTALS

- A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.7 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- E. Reports: Prepare and submit certified written reports and documents as specified.
- F. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.8 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 business days of Notice to Proceed, and not less than five business days prior to preconstruction conference. Submit in format acceptable to Designer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
 - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Designer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.9 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, telephone number, and email address of testing agency.
 - 4. Dates and locations of samples and tests or inspections.

5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

1.10 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- E. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329 and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1.11 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
 2. Payment for these services will be made from testing and inspection allowances, as authorized by Change Orders.
 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Engage a qualified testing agency to perform quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspection will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction when they so direct.
- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Designer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Designer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- E. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services

as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspection equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Designer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.12 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

3.2 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Designer.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Designer's and Construction Manager's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.3 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
 - 2. Section 312000 "Earth Moving" for disposal of ground water at Project site.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner testing agencies and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use. Provide connections and extensions of services as required for construction operations. All connections, backflow preventers, etc., required for connection must be submitted to Owner and Designer for approval.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Prior to mobilization, contractor to submit logistics plan. Logistics plan to include:
 - 1. Site access route.
 - 2. Site access locations, construction entrances, traffic movement, detour plans, and signage.
 - 3. Parking and material storage locations. Primary and overflow.
 - 4. Layout area boundaries to be within the project construction site.
 - 5. Location of dumpsters, storage, storage units, and materials. Coordinate locations with design team and Owner's project manager.

6. Walkway impact and re-routing of pedestrian traffic. Maintain ADA compliance.
 7. Location of protected natural resources and protective barriers for trees, sediment control, and vehicle exclusion.
 8. Temporary facilities, temporary utility lines and connections, and staging areas.
- B. Implementation and Termination Schedule: Within 14 calendar days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- C. Temporary Utility Connections: Submit product data for all connection devices, including, but not limited to backflow preventers, etc., for approval prior to installation.
- D. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- E. Fire-Safety Program: Show compliance with requirements of NFPA 241, Section 3308 of the NC Fire Prevention Code, and authorities having jurisdiction. Contractor to coordinate with Owner's Project Manager and/or Fire Marshall to identify personnel responsible for management of fire-prevention program.
- F. Dust-Control Plan: Submit coordination drawing and narrative that indicates the dust-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
1. Locations of dust-control partitions at each phase of work.
 2. Waste-handling procedures.
 3. Other dust-control measures.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 8 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts. Contractor responsible to ensure fence bases are secure at all times. Provide gates as required. No barbed wire will be permitted.

- B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Designer or Owner from manufacturer's standard colors.
- C. Keep gates closed at all times and locked during non-working hours. Owner shall be given a copy of key to gate.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified on plans and in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Coordinate utility interruptions a minimum of 30 days prior to scheduled outage. Establish utility locations with Facilities Management prior to starting work. Contractor is responsible for protecting existing utilities from damage.

- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to private system indicated as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
 - 1. Connect temporary service to Owner's existing power source, as directed by Owner.
 - 2. Owner will provide power at no cost for office trailers and small tools. Owner will identify utility sources, tie-ins, metering, and distribution costs are part of the construction budget. Monthly invoices will be provided to Contractor for hot and cold water for HVAC equipment.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, pedestrian coverings, observations, inspections, and traffic conditions as required.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Parking: Contractor parking shall occur within the site perimeter. If additional parking is required, the Contractor shall provide for their own parking and shall minimize the occupation of parking spaces in areas that are otherwise open to the students, faculty, staff or public for parking during the construction. Coordinate project parking locations with Owner's project manager.
- B. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water. Protect adjacent areas and properties from damage. Do not divert water onto adjacent areas and properties at points other than that which would be considered the natural flow, prior to construction, without the expressed consent of the Owner.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- C. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as needed, similar to those attached at the back of this specification.

2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
3. Maintain and touch up signs so they are legible at all times.
- D. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal." Provide waste removal facilities and services as required to maintain the site in clean and orderly condition. Remove trash from the site periodically.
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Temporary Elevator Use: The Owner takes no exception to the Contractor using the elevators as required. However, the Owner plans to remove or disconnect life safety devices following execution of the construction contract. If the Contractor desires to use the elevators during abatement and/or demolition, the Contractor is responsible for obtaining all required temporary use permits through the elevator vendor and/or North Carolina Department of Labor at their own expense. Temporary use of the elevator with no building life safety devices in use will require a full-time elevator operator with radio communication.
- G. Existing Stair Usage: Use of existing stairs is permitted, as required.
- H. Existing Fire Protection: Existing standpipes shall be maintained in an operable condition to be available for use by the fire department. Such standpipe shall be demolished with the building but shall not be demolished more than one floor below the floor being demolished. The contractor shall provide fire watch as required and notify the proper authorities if any construction or demolition activities are expected to result in any impairment to the existing fire prevention systems.
- I. First Aid: General contractor and each subcontractor shall provide adequate first aid kits on the site for personnel employed by them and for the convenience of workers employed by their sub-contractors.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities caused by demolition or construction activities at Contractor's expense.
 1. Where access to adjacent properties is required to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent, and requirements specified in Section 311000 "Site Clearing."
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
 - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
 - 1. If water is used during the abatement or demolition by hydro-jetting or a similar process, the Contractor must provide sufficient erosion control and filtering devices before the water is discharged from site.
- F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion. Refer to construction documents for fencing details.
- G. Site Enclosure Fence: Before construction operations begin, furnish, and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
 - 1. Extent of Fence: As indicated on Drawings.
- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday. Coordinate construction security measures including signage and security systems with Owner's Project Manager.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

- J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
- B. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

3.7 ATTACHMENTS

- A. Project identification signs



1.

END OF SECTION 015000

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for temporary site fencing.
 - 2. Section 311000 "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches above the ground for trees up to and including 4-inch size at this height and as measured at a height of 12 inches above the ground for trees larger than 4-inch size.
- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction as indicated on Drawings and defined by a circle concentric with each tree with a radius 12 times the tree's caliper size and with a minimum radius of 96 inches unless otherwise indicated.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
 - a. Tree-service firm's personnel, and equipment needed to make progress and avoid delays.
 - b. Arborist's responsibilities.

- c. Quality-control program.
- d. Coordination of Work and equipment movement with the locations of protection zones.
- e. Trenching by hand or with air spade within protection zones.
- f. Field quality control.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.
 - 2. Detail fabrication and assembly of protection-zone fencing and signage.
 - 3. Indicate extent of trenching by hand or with air spade within protection zones.
- C. Samples: For each type of the following:
 - 1. Organic Mulch: 1-quart volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
 - 2. Protection-Zone Fencing: Assembled Samples of manufacturer's standard size made from full-size components.
 - 3. Protection-Zone Signage: Full-size Samples of each size and text, ready for installation.
- D. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.
 - 1. Species and size of tree.
 - 2. Location on site plan. Include unique identifier for each.
 - 3. Reason for pruning.
 - 4. Description of pruning to be performed.
 - 5. Description of maintenance following pruning.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For arborist and tree service firm.
- B. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- C. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

- D. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed photographs or video recordings.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- E. Quality-control program.

1.7 QUALITY ASSURANCE

- A. Arborist Qualifications: Licensed arborist in jurisdiction where Project is located.
- B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.
- C. Quality-Control Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work without damaging trees and plantings. Include dimensioned diagrams for placement of protection zone fencing and signage, the arborist's and tree-service firm's responsibilities, instructions given to workers on the use and care of protection zones, and enforcement of requirements for protection zones.

1.8 FIELD CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Moving or parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:
 - 1. Type: Shredded hardwood
 - 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 - 3. Color: Natural.
- B. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements:
 - 1. Polyethylene Laminar - Protection-Zone Fencing
 - a. Height: 48 inches minimum
 - b. Type: UV Resistant High Tensile Strength
 - c. Post Spacing: 4 feet minimum

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Flag or tie a 1-inch blue vinyl tape around each tree trunk at 54 inches above the ground.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.
 - 1. Apply 4-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
 - 1. Polyethylene Fencing: Install to comply with manufacturer's written instructions.
 - 2. Posts: Set or drive posts into ground 2 feet minimum depth without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Designer.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Designer. Install one sign spaced approximately every 20 feet on protection-zone fencing, but no fewer than two signs with each facing a different direction.
- C. Maintain protection zones free of weeds and trash.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to Designer and remove when construction operations are complete, and equipment has been removed from the site.
 - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving" unless otherwise indicated.
- B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.
- C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches (75 mm) back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition.

Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

- A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows:
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 2. Cut Ends: Coat cut ends of roots more than 1-1/2 inches (38 mm) in diameter with an emulsified asphalt or other coating formulated for use on damaged plant tissues and that is acceptable to arborist.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving."
- B. Root Pruning at Edge of Protection Zone: Prune tree roots 12 inches outside of the protection zone by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as directed by arborist.
 - 1. Prune to remove only injured, broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
 - 2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
 - 3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
- B. Unless otherwise directed by arborist and acceptable to Designer, do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.
- F. Chip removed branches and dispose of off-site.

3.7 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.8 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Designer.
 - 1. Submit details of proposed pruning and repairs.
 - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
 - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Designer.
- B. Trees: Remove and replace trees indicated to remain that are more than 50 percent dead or in an unhealthy condition or are damaged during construction operations that Designer determines are incapable of restoring to normal growth pattern.
 - 1. Large Trees: Provide one new tree(s) of 6-inch caliper size for each tree being replaced that measures more than 4 inches in caliper size.
 - a. Species: As selected by Designer
 - 2. Plant and maintain new trees as specified in Section 329300 "Plants."
- C. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 4-inch uniform thickness to remain.

- D. Soil Aeration: Where directed by Designer, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch-diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augered soil and sand.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 012500 "Substitution Procedures" for requests for substitutions.
 - 4. University of North Carolina at Charlotte Standards and Guidelines.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved by Designer through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

1.4 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Designer's Action: If necessary, Designer will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Designer will notify Contractor of approval or rejection of proposed comparable product request within 14 calendar days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Designer's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Designer does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Designer will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.

2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
3. See individual identification sections in Divisions 21, 22, 23, and 26 for additional identification requirements.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 6. Protect stored products from damage and liquids from freezing.
 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 - 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Designer will make selection.
 - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 - 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Designer in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Designer, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience **will** be considered.
 - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
 - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
 - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or

indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require "match Designer's sample," provide a product that complies with requirements and matches Designer's sample. Designer's decision will be final on whether a proposed product matches.
 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Designer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Designer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Designer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Designer may return requests without action, except to record noncompliance with these requirements:
 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 2. Evidence that proposed product provides specified warranty.
 3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 4. Samples, if requested.
- B. Submittal Requirements: Approval by the Designer of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 013300 "Submittal Procedures" for submitting surveys.
 - 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
 - 4. Section 024116 "Structural Demolition" for demolition of the building.
 - 5. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Certified Surveys: Submit two copies signed by land surveyor.
- D. Final Property Survey: Submit five copies showing the Work performed and record survey data.

1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before

fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Designer according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Designer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Designer when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Designer.

3.4 FIELD ENGINEERING

- A. Identification: Contractor to coordinate with Owner to identify existing benchmarks, control points, and property corners.

- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Designer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Designer before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by a land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Designer.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Repair or remove and replace damaged, defective, or nonconforming Work.
 - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 PROGRESS CLEANING

- A. Site: Maintain Project site free of waste materials and debris.
- B. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- C. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials

specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- D. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- E. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- F. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls" and Section 017419 "Construction Waste Management and Disposal."
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- H. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Section 024116 "Structure Demolition" for disposition of materials from building demolition.
 - 2. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition and construction waste become the property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Demolition and Construction Waste Management and Disposal Plan is required. Comply with requirements provided by the Owner and Designer. Refer to Waste Reduction and Recycling Guidelines Appendix. Submit plan within 30 days of date established for commencement of the Work.

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Forms CWM-1, CWM-2, CWM-3, and/or CWM-4 or approved equivalent. Include the following information:
 - 1. Material category.
 - 2. Generation points of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Final Acceptance, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Qualification Data: For waste management coordinator and refrigerant recovery technician.
- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- I. Refrigerant Recovery: Comply with requirements in Section 024116 "Structure Demolition" and Section 024119 "Selective Demolition" for refrigerant recovery submittals.

1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements. Superintendent may serve as Waste Management Coordinator.
- B. Refrigerant Recovery Technician Qualifications: Comply with requirements in Section 024116 "Structure Demolition."
- C. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference(s): Conduct conference(s) at Project site. Waste management goals and reporting will be discussed at the following:
 - Pre-bid meeting
 - Pre-construction meeting
 - Monthly SCO meetings

Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of each contractor and waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume but use same units of measure throughout waste management plan.
- B. Owner Guidelines: The goal of the Owner is to increase recycling and decrease waste hauling and disposal impacts. 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 site and will determine the best way for materials to be disposed of based on the scope of the project.
- C. Draft Waste Management Plan: Contractor shall submit to the Designer and Office of Waste Reduction & Recycling a draft waste management plan containing the following.
 - 1. 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.
 - 2. List of landfills to be used for waste disposal.
 - 3. List of recycling or reuse facilities expected to be used.
 - 4. A description of how any waste materials to be reused or recycled will be protected from contamination (example: stored in separate location; a separate bin for materials). How will materials be handled to meet requirements for the designated disposal/recycling facilities?
 - 5. List of haulers to be used for transporting materials (or specify that materials will be self-hauled if the Contractor will be hauling).
- D. Final Waste Management Plan: The Designer and Owner will review the draft Waste Management Plan per the submittal procedure specified in that specification. The Contractor will resubmit, if required. Once the Plan is approved it becomes the Project Waste Management Plan.
- E. Waste Management Plan Implementation
 - 1. 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.
 - 2. The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foremen, Subcontractors, and the Owner.
 - 3. 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.
 - 4. 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.
 - 5. Hazardous wastes shall be separated, stored, and disposed of according to hazardous material abatement specification and Federal and State regulations.

6. Documentation: The Contractor shall submit a monthly waste management report (see Waste Removal Reporting Form at the end of this document). 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:
 - a. The amount (in tons) of material landfilled from the project, the identity of the landfill, and copies of weight tickets.
 - b. For each material recycled, reused, or salvaged from the Project, the amount (in tons), the date removed from the jobsite, and the receiving party must be provided. Weight tickets (or alternate weight estimate documentation) must be attached.
- F. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.
- G. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work in compliance with Section 024116 "Structure Demolition."
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.
 7. Contractor to leverage manufacturer's material take back programs.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total nonhazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Final payment is contingent on completion of waste reporting requirements.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 - 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged or recycled, remove waste materials, and legally dispose of at designated spoil areas on Owner's property.
- B. Burning: Do not burn waste materials.

END OF SECTION 017419

FORM CWM-1: CONSTRUCTION WASTE IDENTIFICATION							
MATERIAL CATEGORY	GENERATION POINT	EST. QUANTITY OF MATERIALS RECEIVED* (A)	EST. WASTE - % (B)	TOTAL EST. QUANTITY OF WASTE* (C = A x B)	EST. VOLUME CY (CM)	EST. WEIGHT TONS (TONNES)	REMARKS AND ASSUMPTIONS
Packaging: Cardboard							
Packaging: Boxes							
Packaging: Plastic Sheet or Film							
Packaging: Polystyrene							
Packaging: Pallets or Skids							
Packaging: Crates							
Packaging: Paint Cans							
Packaging: Plastic Pails							
Site-Clearing Waste							
Masonry or CMU							
Lumber: Cut-Offs							
Lumber: Warped Pieces							
Plywood or OSB (scraps)							
Wood Forms							
Wood Waste Chutes							
Wood Trim (cut-offs)							
Metals							
Insulation							
Roofing							
Joint Sealant Tubes							
Gypsum Board (scraps)							
Carpet and Pad (scraps)							
Piping							
Electrical Conduit							
Other:							

* Insert units of measure.

FORM CWM-2: DEMOLITION WASTE IDENTIFICATION

MATERIAL DESCRIPTION	EST. QUANTITY	EST. VOLUME CY (CM)	EST. WEIGHT TONS (TONNES)	REMARKS AND ASSUMPTIONS
Asphaltic Concrete Paving				
Concrete				
Brick				
CMU				
Lumber				
Plywood and OSB				
Wood Paneling				
Wood Trim				
Miscellaneous Metals				
Structural Steel				
Rough Hardware				
Insulation				
Roofing				
Doors and Frames				
Door Hardware				
Windows				
Glazing				
Acoustical Tile				
Carpet				
Carpet Pad				
Demountable Partitions				
Equipment				
Cabinets				
Plumbing Fixtures				
Piping				
Piping Supports and Hangers				
Valves				
Sprinklers				
Mechanical Equipment				
Electrical Conduit				
Copper Wiring				
Light Fixtures				
Lamps				
Lighting Ballasts				
Electrical Devices				
Switchgear and Panelboards				
Transformers				
Other:				

FORM CWM-3: CONSTRUCTION WASTE REDUCTION WORK PLAN						
MATERIAL CATEGORY	GENERATION POINT	TOTAL EST. QUANTITY OF WASTE TONS (TONNES)	DISPOSAL METHOD AND QUANTITY			HANDLING AND TRANSPORTION PROCEDURES
			EST. AMOUNT SALVAGED TONS (TONNES)	EST. AMOUNT RECYCLED TONS (TONNES)	EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES)	
Packaging: Cardboard						
Packaging: Boxes						
Packaging: Plastic Sheet or Film						
Packaging: Polystyrene						
Packaging: Pallets or Skids						
Packaging: Crates						
Packaging: Paint Cans						
Packaging: Plastic Pails						
Site-Clearing Waste						
Masonry or CMU						
Lumber: Cut-Offs						
Lumber: Warped Pieces						
Plywood or OSB (scraps)						
Wood Forms						
Wood Waste Chutes						
Wood Trim (cut-offs)						
Metals						
Insulation						
Roofing						
Joint Sealant Tubes						
Gypsum Board (scraps)						
Carpet and Pad (scraps)						
Piping						
Electrical Conduit						
Other:						

FORM CWM-4: DEMOLITION WASTE REDUCTION WORK PLAN

MATERIAL CATEGORY	GENERATION POINT	TOTAL EST. QUANTITY OF WASTE TONS (TONNES)	DISPOSAL METHOD AND QUANTITY			HANDLING AND TRANSPORTION PROCEDURES
			EST. AMOUNT SALVAGED TONS (TONNES)	EST. AMOUNT RECYCLED TONS (TONNES)	EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES)	
Asphaltic Concrete Paving						
Concrete						
Brick						
CMU						
Lumber						
Plywood and OSB						
Wood Paneling						
Wood Trim						
Miscellaneous Metals						
Structural Steel						
Rough Hardware						
Insulation						
Roofing						
Doors and Frames						
Door Hardware						
Windows						
Glazing						
Acoustical Tile						
Carpet						
Carpet Pad						
Demountable Partitions						
Equipment						
Cabinets						
Plumbing Fixtures						
Piping						
Supports and Hangers						
Valves						
Sprinklers						
Mechanical Equipment						
Electrical Conduit						
Copper Wiring						
Light Fixtures						
Lamps						
Lighting Ballasts						
Electrical Devices						
Switchgear and Panelboards						
Transformers						
Other:						

Waste Removal Reporting Form

Project Name:

Job Site:

Contractor Name:

Sub-Contractor:

Date:

1 Project Wastes Sent to Landfill

Landfill Site:	Quantity - LS: (tons)	Materials Being Landfilled
Landfill Site - 1 - Example Only	1.00	
Landfill Site - 2 - Example Only	3.25	
Landfill Site - 3 - Example Only	2.75	
A		7.00 A

Explain Presence of Divertible Materials

2 Project Wastes Diverted from Landfill

Material Type:	Quantity - MT: (tons)	Material handling Procedure *	Destination & Means of Transport:
Brush Recycled - Example	0.25		
Trees Recycled - Example	1.50		
Brick Reused - Example	1.95		
Metal Recycled - Example	2.25		
Ceiling Tile Recycled - Example	1.00		
Soil Reused - Example	2.05		
B		9.00 B	

3 Meetings 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
Other - Please Specify

4 Progress to Date on Exceeding 50% Diversion

A Total Project Waste to Landfill (tons):	7.00 A
B Total Project Waste Diverted (tons):	9.00 B
C Diversion Rate Percentage: **	56.25% C

** The calculation for "Diversion Rate Percentage" line C above is an example only.

** The calculation can be made by the formula: $B / (A + B) = \text{Diversion Rate}$.

Return Completed Sheet to: Shannon Caveny-Cox	UNC Charlotte Recycling
Email: sccaveny@uncc.edu	

Link to Waste Removal Reporting Form:

https://docs.google.com/spreadsheets/d/1UoBF0gm8t43kO0aBO719j_L1GPCC5UhaPoHP68Sat4s/edit#gid=0

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion / Final Acceptance procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
 - 2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 ACTION SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. As-Built Drawings. See 017839 – Project Record Documents.
- D. Final Pay Application, including:

1. Minority business enterprise final documentation.
2. Consent of surety and final payment.
3. Contractor's affidavit of release of liens.
4. Contractor's affidavit of payments of debts and claims.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 14 calendar days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.
 5. Submit testing, adjusting, and balancing records.
 6. Submit sustainable design submittals not previously submitted.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 14 calendar days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Advise Owner of changeover in utility services.
6. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
8. Complete final cleaning requirements.
9. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 14 calendar days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Designer will either proceed with inspection or notify Contractor of unfulfilled requirements. Designer 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 Designer, that must be completed or corrected before certificate will be issued.

1. 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.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Designer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Designer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Designer 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. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization 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.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Designer.
 - d. Name of Contractor.
 - e. Page number.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Designer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit by email to Designer.
- C. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

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.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Remove labels that are not permanent.
- B. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for final property survey.
 - 2. Section 017700 "Closeout Procedures" for general closeout procedures.
 - 3. State Construction Manual for the State of North Carolina State Construction Office (SCO). In case of conflicts between the requirements of the specifications and the SCO State Construction Manual, the more stringent requirement applies.

1.3 CLOSEOUT SUBMITTALS

- A. Contractor As-Built Drawings: The Contractor shall provide marked-up drawings, specifications and other material that reflect actual final conditions of the project in compliance with the Article 32 (d) of the General Conditions of the Contract. The Contractor should forward the marked-up drawings and material to the Designer for editing of the record documents, and the original marked-up plans should be given to the Owner to document details of the actual conditions that may not be completely shown on the electronic Record Drawing files.
 - 1. Designer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - 2. Print each drawing, whether or not changes and additional information were recorded.
 - 3. Preparation: Mark as-built drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.

- c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
- 4. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Change Directive.
 - k. Details not on the original Contract Drawings.
 - l. Field records for variable and concealed conditions.
 - m. Record information on the Work that is shown only schematically.
- 5. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up as-built prints.

1.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.
 - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017839

SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Demolition and removal of buildings and site improvements.
2. Abandoning in-place below-grade construction.
3. Disconnecting, capping or sealing, and abandoning in-place site utilities.
4. Salvaging items for reuse by Owner.

- B. Related Requirements:

1. Section 011000 "Summary" for use of the premises and phasing requirements.
2. Section 013200 "Construction Progress Documentation" for required construction progress reports.
3. Section 013233 "Photographic Documentation" for preconstruction photographs taken before building demolition.
4. Section 028200 "Asbestos Abatement" for required asbestos abatement to be completed before building demolition.
5. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade site improvements not part of building demolition.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse or store, as indicated on contract drawings. Include fasteners or brackets needed for reattachment elsewhere.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

- 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site with Contractor, Designer, Owner, and SCO Project Monitor (if applicable).

- 1. Inspect and discuss condition of construction to be demolished.
 - 2. Review structural load limitations of existing structures.
 - 3. Review and finalize hazardous material abatement and building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 5. Review and finalize protection requirements.
 - 6. Review procedures for noise control and dust control.
 - 7. Review procedures for protection of adjacent buildings.
 - 8. Review items to be salvaged and returned to Owner.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician. See Section 1.7.
- B. Qualification Data: For qualified demolition contractor. See Section 1.7. **This information must be submitted with the Contractor's proposal.**
- C. Engineering Survey: Submit engineering survey of condition of building per OSHA 1926 Subpart T (1926.850).
- D. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, for noise control, and for monitoring vibration. Indicate proposed locations and construction of barriers.
 - 1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain including maintenance of means of egress from those buildings.
- E. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of hazardous material abatement.
 - 2. Detailed sequence of demolition work, with starting and ending dates for each activity, specifically addressing any overlap with hazardous material abatement.
 - 3. Temporary interruption(s) of utility services.
 - 4. Shutoff and capping or re-routing of utility services.

5. All campus activities and dates in which work cannot take place.
 6. Clearly indicate the critical path activities for the full duration of work.
- F. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner at least 10 business days prior to start of demolition.
- G. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before the Work begins.
1. Immediately following de-mobilization, the same documentation should be completed as was prepared for the pre-demolition documentation. This documentation must be from the same vantage point. Submit this with all discrepancies identified to the Designer and Owner.
- H. Demolition and Removal Plan: The Contractor must submit a plan (hereby referred to as the "demolition plan") to the Designer and Owner for review **as a part of their proposal**. The plan must describe the proposed means and methods, locations and sequences, equipment specifications, construction of temporary shoring and/or temporary bracing, temporary barricades, pedestrian coverings and protection, site fence, protection for adjacent structures and roadways, methods for staging, on-site processing, and removal of demolition waste. All procedures must be in compliance with local, state, and federal regulations and must be conducted in a safe manner. The demolition plan must also include the following at a minimum:
1. An assessment of the existing conditions, within the structures and around the full perimeter along the limits of demolition. The Contractor shall explicitly note any locations where the existing conditions conflict with the information provided in the Contract Drawings or within the existing/as-built plans provided by the Owner.
 2. Construction drawings for any new temporary foundations or temporary shoring. A letter and supporting calculations prepared by a professional engineer licensed in the State of North Carolina that clearly illustrates the temporary loading conditions (including the existing dead load and the portion of live load considered) and assumptions regarding the existing construction.
- I. Vibration Monitoring Plan: Submit working drawings, equipment specifications and an outline of the procedures to be utilized for monitoring ground vibrations induced by demolition activities. The vibration monitoring plan shall be prepared by a competent professional experienced in vibration monitoring. The vibration monitoring plan shall specifically identify each location that a monitoring device will be placed. The Subcontractor responsible for the vibration monitoring plan shall observe each proposed location prior to submittal of the plan for review to identify any discrepancies or hazards at each monitoring location. The monitoring equipment shall be seismographs/geophones (equivalent to the Instanetel Minimate Pro6) capable of continuously recording ground vibration data, providing real-time access to data collection and immediate notification in the case that a preset threshold is exceeded. The Contractor should install vibration monitors a minimum of four weeks prior to initiation of structural demolition or mobilization of heavy equipment to collect data regarding the ambient or existing conditions on site. This shall be coordinated with Owner and any other parties who may be impacted by the monitoring activities.

- J. Vibration Monitoring Report: At the completion of the vibration monitoring, provide a report prepared by the competent professional responsible for the vibration monitoring plan, summarizing the data collection, interpretation of the results and description of any impacts recorded to surrounding structures.
- K. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous waste. Landfill records must be submitted along with each application for payment and at the completion of the work. See "017419 - Construction Waste Management and Disposal" for additional information.
- L. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Demolition Contractor Qualifications: Able to illustrate successful past performance on a minimum of five projects of similar scale using similar means and methods in a similar environment. Contractor shall submit a minimum of three contact names for use as references to illustrate successful past performance.

1.8 FIELD CONDITIONS

- A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.
- B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction and Owner.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before building demolition, Owner will remove the following items:
 - a. Furniture
 - b. Network equipment

- c. Any other items identified on the contract drawings as such.
- D. Identify the natural resources on site that will require conservation or protection during construction, based on government regulations or the Owner's stated preference. Specific entities to document include trees, topsoil, waterways, and natural ecosystems (forest, meadow, wetland).
- E. Identify existing and proposed underground and overhead utilities, and address how the project will protect or replace assets and improve future maintenance of utility infrastructure.
- F. Hazardous Materials: Asbestos and other hazardous materials are present in the buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present and must be abated.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 3. Owner will provide material safety data sheets for materials that are known to be present in buildings and structures to be demolished because of building operations or processes performed there.
- G. On-site storage or sale of removed items or materials is not permitted.

1.9 COORDINATION

- A. Arrange demolition schedule so as not to interfere with Owner calendar milestones. Owner may choose to limit all activities or noise-generating activities during special events, such as exams, graduation, move-in, convocation, or other special events.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities to building to be demolished have been disconnected and capped before starting demolition operations.

- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner and/or Designer. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.
- D. Inventory and record the condition of items to be removed and salvaged.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.
- B. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Utilities to be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.
 - 1. Owner will arrange to shut off utilities when requested by Contractor.
 - 2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 3. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
 - 4. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.

- B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- C. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations.
 - 1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
 - 2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 - a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 015000 "Temporary Facilities and Controls."
 - 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 - 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 - 6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 - 7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
- E. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION, GENERAL

- A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 - 2. Maintain fire watch during and for at least two hours after flame-cutting operations.
 - 3. Maintain adequate ventilation when using cutting torches.
 - 4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

- B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
 - 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- C. Explosives: Use of explosives is not permitted.

3.6 DEMOLITION BY MECHANICAL MEANS

- A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
- C. Salvage: Items to be removed and salvaged are indicated on Drawings.
- D. Below-Grade Construction: Demolish foundations, foundation walls, and other below-grade construction as indicated on Contract Drawings. Abandon-in-place below-grade construction outside this area.
- E. Existing Utilities: Demolish and remove existing utilities and below grade utility structures within the excavation of the building demolition and as indicated on the Contract Drawings. For utilities outside this area, abandon in place or modify per Contract Drawings.
- F. Elevator Systems: Demolish and remove elevator system, including cylinder, plunger, well assembly, steel well casing and liner, oil supply lines, and tanks.

3.7 SITE RESTORATION

- A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Section 312000 "Earth Moving."

3.8 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Material Reuse: A minimum of 50 percent of demolition and construction waste shall be diverted from landfills and incinerators through reuse, recycling, repurposing, and composting methods. Refer to Waste Reduction and Recycling Guidelines Appendix.
- C. Do not burn demolished materials.

3.10 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.
 - 1. Clean roadways of debris caused by debris transport.

END OF SECTION 024116

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, removing or abandoning site utilities.

- B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for temporary erosion- and sedimentation-control measures.
2. Section 013233 "Photographic Documentation" for preconstruction photographs taken before site clearing.
3. UNCC Design Standards and Requirements. In case of conflicts between the requirements of the specifications and the UNCC Design Standards, the more stringent requirement applies.

1.3 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.
- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Discuss site clearing during pre-construction meeting, or during the monthly progress meeting prior to commencement of site clearing.

1.5 MATERIAL OWNERSHIP

- A. Cleared materials shall be utilized onsite to the greatest extent possible unless directed otherwise by the Owner's Project Manager. Clearing material not used onsite shall become the Contractor's property and shall be removed from the project site. To the greatest extent possible, this material should be sent to reclaim facility for screening and reuse.

1.6 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed photographs or video recordings. See section 013233 "Photographic Documentation" for additional requirements for photographs.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- B. Topsoil stripping and stockpiling program.
- C. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.7 QUALITY ASSURANCE

- A. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.
- B. Rock Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.

1.8 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.
 - 3. Closing of streets or walkways to be coordinated for access to emergency responders at all times.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
 - 1. Do not proceed with work on adjoining property until directed by Designer.
- C. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- D. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- F. Tree- and Plant-Protection Zones: Protect according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- G. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site. If import material is necessary, it shall be generated from a site within 20 miles of the University

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.
 - 2. Do not undermine the integrity of adjacent structures, paving, or utilities. Prior written approval for blasting must be obtained from the Owner and authorities having jurisdiction.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection." Identify trees to remain and those to be removed.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Temporary Tree and Plant Protection." Damaged trees shall be removed at contractor's expense.

3.4 EXISTING UTILITIES

- A. Contractor to coordinate with Owner regarding protecting in place, removal, or capping of existing utilities before site clearing, when requested by Contractor.
 - 1. Verify that utilities have been disconnected and capped before proceeding with site clearing.

- B. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
- C. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- D. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than 72 hours days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
- E. Removal of underground utilities is included in earthwork sections; in applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security, and utilities sections; and in Section 024116 "Structure Demolition".

3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 - 2. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18-inches below exposed subgrade.
 - 3. Use only hand methods or air spade for grubbing within protection zones.
 - 4. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth indicated on Drawings in a manner to prevent intermingling with underlying subsoil or other waste materials.
 - 1. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for resspreading deeper topsoil.

3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for sidewalks, pavements, turf and grasses, and plants.
3. Subbase course for concrete walks.
4. Subbase course and base course for asphalt paving.
5. Excavating and backfilling trenches for utilities and pits for buried utility structures.

- B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" and Section 013233 "Photographic Documentation" for recording pre-excavation and earth-moving progress.
2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
3. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.
4. UNCC Design Standards and Requirements. In case of conflicts between the requirements of the specifications and the UNCC Design Standards, the more stringent requirement applies.

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices for earth moving specified in Section 012200 "Unit Prices."
- B. Quantity allowances for earth moving are included in Section 012100 "Allowances."

1.4 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site, from a site within 20 miles of the University, for use as fill or backfill.
- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Designer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Designer. Unauthorized excavation, as well as remedial work directed by Designer, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material $\frac{3}{4}$ cu. yd. or more in volume that exceed a standard penetration resistance of [100 blows / 2 inches when tested by a geotechnical testing agency, according to ASTM D1586.
- I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Discuss earth moving during pre-construction meeting, or during the monthly progress meeting prior to commencement of earth moving.
 - 1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

- a. Personnel and equipment needed to make progress and avoid delays.
- b. Coordination of Work with utility locator service.
- c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
- d. Extent of trenching by hand or with air spade.
- e. Field quality control.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of the following manufactured products required:

1. Geotextiles.
2. Controlled low-strength material, including design mixture.
3. Geofoam.
4. Warning tapes.

B. Samples for Verification: For the following products, in sizes indicated below:

1. Geotextile: 12 by 12 inches.
2. Warning Tape: 12 inches long; of each color.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D698.

C. Pre-excavation Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.8 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.9 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
1. Do not proceed with work on adjoining property until directed by Designer.
- C. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.
- D. The following practices are prohibited within protection zones:
1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- E. Do not direct vehicle or equipment exhaust towards protection zones.
- F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of crushed stone or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C33/C33M; fine aggregate.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.
- B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

- A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
- D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Designer. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

- C. Unsatisfactory Soils: Volume of unsatisfactory soils and/or unsuitable debris actually removed below the subgrade/bearing elevation, measured in original position, and replaced with satisfactory subgrade/foundation material that meets the allowable design bearing pressure, compaction requirements, and settlement limitations specified in the geotechnical report and construction documents for the site and structure. Changes in the Contract Sum or the Contract Time will be in accordance with Allowances and Unit Prices provisions for removal and replacement of unsuitable soils.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.6 SUBGRADE INSPECTION

- A. Notify Testing Agency when excavations have reached required subgrade.
- B. If Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Testing Agency, without additional compensation.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpiles borrow soil materials and excavate satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Testing and inspecting underground utilities.
 - 4. Removing concrete formwork.
 - 5. Removing trash and debris.
 - 6. Removing temporary shoring, bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
 - 3. Under steps and ramps, use engineered fill.
 - 4. Under building slabs, use engineered fill.
 - 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.10 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

- B. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698:
 - 1. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - 2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
- C. Backfill: Material free of debris.
 - 1. Foundation Backfill Under Plantings and Lawns: Upper 24 inches of soil below finished grade; 90 percent maximum. Remainder of backfill, 95 percent of depth if less than 10 feet; 100 percent if depth exceeds 10 feet.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.

3.13 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
 - 1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 - 2. Place base course material over subbase course under hot-mix asphalt pavement.
 - 3. Shape subbase course and base course to required crown elevations and cross-slope grades.
 - 4. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
 - 5. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D698.

3.14 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 2. Determine that fill material classification and maximum lift thickness comply with requirements.
 3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:
 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area but in no case fewer than three tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify, and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace soil material to depth as directed by Designer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Designer.
 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 312500 – EROSION AND SEDIMENTATION CONTROL

PART 1 -- GENERAL

1.1 THE REQUIREMENTS

- A. It is the intent of this Specification that the Contractor conduct the construction activities in such a manner that erosion of disturbed areas and off-site sedimentation be prevented.
- B. Self-inspection and rainfall reports shall be kept at the project site.
- C. All work under this Contract shall be done as a minimum in conformance with and subject to the limitations of the North Carolina Rules and Regulations for Erosion and Sedimentation Control as adopted by the North Carolina Sedimentation Control Commission (15 NCAC, Chapter 4). The following excerpts from the regulations are particularly important:
 - 1. ...slopes left exposed will, within 15 working days of completion of any phase of grading, be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion...(Section 6b)
 - 2. ...a ground cover sufficient to restrain erosion must be planted or otherwise provided within 15 working days on that portion of the tract (disturbed area) upon which further active construction is not being undertaken...(Section 6c)
- D. The Contractor must review the requirements in the UNCC Design Standards and Requirements. In case of conflicts between the requirements of the specifications and the UNCC Design Standards, the more stringent requirement applies.
- E. The Contractor shall develop and implement additional techniques and/or more stringent criteria as may be required to minimize erosion and off-site sedimentation and as directed by NCDENR and University staff. The location and extent of erosion and sedimentation control devices shall be revised at each phase of demolition and construction that results in a change in either the quantity or direction of surface runoff from constructed areas. Such changes and any additional measures to prevent off-site sedimentation shall be at no cost to the owner. All deviations from the erosion and sedimentation control provisions shown on the Drawings shall have the prior acceptance of the Designer.
- F. All excavations shall be in conformity with the lines, grades, and cross sections shown on the Drawings or established by the Designer. Any excavation or disturbance beyond the limits of this project is strictly prohibited without the approval of the Designer, installation of additional erosion control measures as necessary, and modification of the Erosion and Sedimentation Control Permit.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of other requirements of these specifications, all work hereunder shall conform to the applicable requirements of the referenced portions of the following documents, to the extent that the requirements therein are not in conflict with the provisions of this Section.
 - 1. 15A NCAC, Chapter 4 (NC Sedimentation Pollution Control Act of 1973)

2. NPDES General Stormwater Permit NCG 010000

1.3 EROSION AND SEDIMENTATION CONTROL DEVICES

- A. Erosion and sedimentation control devices shall be incorporated into the work and be constructed at the locations shown on the Drawings. Dimensions shall be as shown on the Drawings. Other devices, as necessary and acceptable to the Designer shall be installed as required.

1.4 GENERAL

- A. Materials for use in erosion and sedimentation control devices shall be in accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual.

1.5 SILT FENCE

- A. Silt Fence shall be a woven geotextile filter fabric made specifically for sediment control. Filter fabric shall not rot when buried and shall resist attack from soil chemicals, alkalies and acids in the pH range from 2 to 13, and shall resist damage due to prolonged ultraviolet exposure. Filter fabric shall be Type FX-11, as manufactured by Carthage Mills, Type GTF-180, as manufactured by LINQ Industrial Fabrics, Amoco 2130 as manufactured by Amoco Fabrics & Fibers Co.

- B. Filter fabric for the silt fence shall have the following minimum properties:

	<u>Value</u>	<u>Test Method</u>
Grab Tensile Strength	110 lbs	ASTM D 4632
Grab Elongation	15%	ASTM D 4632
Trapezoid Tear Strength	50 lbs	ASTM D 4533
Mullen Burst Strength	270 lbs	ASTM D 3786
Puncture Strength	60 lbs	ASTM D 4833
Retained Strength (500 hrs. accelerated UV exposure)	80%	ASTM D 4355
Filtration Efficiency	75%	VTM-51
Flow Rate	.30 gal/ft ² /min	VTM-51
Height	36 inches	

- C. Posts for silt fence shall be steel and shall have the following properties:

ASTM Designation:	ASTM A702
Length:	5-Feet Long (T-Type)

Weight: 1.25#/Foot (min.)

Area of Anchor Plate: 14 Sq. In.

Note: Five (T) Fasteners shall be furnished with each post.

D. Wire Fabric for the silt fence shall have the following properties:

Wire Fabric Designation: 832-12-10-12.5 Class 1 Designation: ASTM A116

Width: 32"

Number of Line Wires: 8

Stay Wire Spacing: 12"

Line and Stay Wires: 12.5 Ga.

Top and Bottom Wires: 10 Ga.

Wire Coating: ASTM Class 1 Zinc Coating

1.6 STONE FOR EROSION CONTROL

- A. The Contractor shall place Stone for Erosion Control as shown on the Drawings, as specified herein and as specified in Section 1042-1 of the NCDOT Standard Specifications. The Stone for Erosion Control shall be Class (A) or Class (B), as shown on the Drawings.

1.7 SYNTHETIC GEOTEXTILE FILTER FABRIC (Correlates with Type II – Geotextile on Drawings)

The filter fabric shall have the following mechanical properties:

Geotextile Construction	Woven
Mass per Unit Area (Unit Weight), ASTM D52611 (oz/yd ²)	5.6
Ultraviolet Resistance, (500 hrs.)	90
Grab Tensile Strength (lbs.)	390 ⁽¹⁾ X250 ⁽²⁾
ASTM D4632	370X250
Grab Tensile Elongation (%)	20 MAX
Wide Width Tensile Strength, (lbs./in.)	N/A
Burst Strength, ASTM D3786, Diaphragm Method (psi)	480
Apparent Opening Size (AOS), (mm), ASTM D4751	0.21
Permittivity at 50 mm constant head (sec ⁻¹), ASTM D4491	N/A

Puncture Resistance, ASTM D4833 (lb)

135

* MINIMUM AVERAGE ROLL VALUE (MARV)

(1) Warp Direction

(2) Fill Direction

Each roll of fabric will be visually inspected by the Designer or his representative. The Designer reserves the right to sample and test at any time and reject, if necessary, any material based on visual inspection or verification tests.

END OF SECTION 312500

SECTION 315000 - EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes temporary excavation support and protection systems.
- B. Related Requirements:
 - 1. Section 013233 "Photographic Documentation" for recording preexisting conditions and excavation support and protection system progress.
 - 2. Section 312000 "Earth Moving" for excavating and backfilling, for controlling surface-water runoff and ponding, and for dewatering excavations.
 - 3. UNCC Design Standards and Requirements. In case of conflicts between the requirements of the specifications and the UNCC Design Standards, the more stringent requirement applies.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Discuss excavation during pre-construction meeting, or during the monthly progress meeting prior to commencement of excavation.
 - 1. Review existing utilities and subsurface conditions.
 - 2. Review coordination for interruption, shutoff, capping, and continuation of utility services.
 - 3. Review proposed excavations.
 - 4. Review proposed equipment.
 - 5. Review monitoring of excavation support and protection system.
 - 6. Review coordination with waterproofing.
 - 7. Review abandonment or removal of excavation support and protection system.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, performance properties, and dimensions of individual components and profiles, and calculations for excavation support and protection system.

- B. Shop Drawings: For excavation support and protection system, prepared by or under the supervision of a qualified professional engineer.
 - 1. Include plans, elevations, sections, and details.
 - 2. Show arrangement, locations, and details of soldier piles, piling, lagging, tiebacks, bracing, and other components of excavation support and protection system according to engineering design.
 - 3. Indicate type and location of waterproofing.
 - 4. Include a written plan for excavation support and protection, including sequence of construction of support and protection coordinated with progress of excavation.
- C. Delegated-Design Submittal: For excavation support and protection systems, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For the following:
 - 1. Land surveyor.
 - 2. Professional Engineer: Experience with providing delegated-design engineering services of the type indicated, including documentation that engineer is licensed in the state in which Project is located.
- B. Existing Conditions: Using photographs, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by inadequate performance of excavation support and protection systems. Submit before Work begins.

1.6 CLOSEOUT SUBMITTALS

- A. Record Drawings: Identify locations and depths of capped utilities, abandoned-in-place support and protection systems, and other subsurface structural, electrical, or mechanical conditions.

1.7 FIELD CONDITIONS

- A. Interruption of Existing Utilities: Do not interrupt any utility-serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:
 - 1. Notify Owner no fewer than 72 hours in advance of proposed interruption of utility.
 - 2. Do not proceed with interruption of utility without Owner's written permission.
- B. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 MATERIALS

- A. Provide materials that are either new or in serviceable condition.
- B. Structural Steel: ASTM A36/A36M, ASTM A690/A690M, or ASTM A992/A992M.
- C. Steel Sheet Piling: ASTM A328/A328M, ASTM A572/A572M, or ASTM A690/A690M; with continuous interlocks.
 - 1. Corners: Roll-formed corner shape with continuous interlock.
- D. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of size and strength required for application.
- E. Shotcrete: Comply with Section 033713 "Shotcrete" for shotcrete materials and mixes, reinforcement, and shotcrete application.
- F. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.
- G. Reinforcing Bars: ASTM A615/A615M, Grade 60, deformed.
- H. Tiebacks: Steel bars, ASTM A722/A722M.
- I. Tiebacks: Steel strand, ASTM A416/A416M.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
 - 1. Shore, support, and protect utilities encountered.

3.2 INSTALLATION - GENERAL

- A. Locate excavation support and protection systems clear of permanent construction, so that construction and finishing of other work is not impeded.
- B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.

3.3 MAINTENANCE

- A. Monitor and maintain excavation support and protection system.
- B. Prevent surface water from entering excavations by grading, dikes, or other means.
- C. Continuously monitor vibrations, settlements, and movements to ensure stability of excavations and constructed slopes and to ensure that damage to permanent structures is prevented.

3.4 FIELD QUALITY CONTROL

- A. Survey-Work Benchmarks: Resurvey benchmarks regularly during installation of excavation support and protection systems, excavation progress, and for as long as excavation remains open.
1. Maintain an accurate log of surveyed elevations and positions for comparison with original elevations and positions.
 2. Promptly notify Designer if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.
- B. Promptly correct detected bulges, breakage, or other evidence of movement to ensure that excavation support and protection system remains stable.
- C. Promptly repair damages to adjacent facilities caused by installation or faulty performance of excavation support and protection systems.

3.5 REMOVAL AND REPAIRS

- A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and earth and hydrostatic pressures.
1. Remove in stages to avoid disturbing underlying soils and rock or damaging structures, pavements, facilities, and utilities.
 2. Remove excavation support and protection systems to a minimum depth of 48 inches below overlying construction, and abandon remainder.
 3. Fill voids immediately with approved backfill compacted to density specified in Section 312000 "Earth Moving."
 4. Repair or replace, as approved by Designer, adjacent work damaged or displaced by removing excavation support and protection systems.

- B. Leave excavation support and protection systems permanently in place.

END OF SECTION 315000

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Sodding.
 - 2. Turf maintenance
 - 3. Erosion-control material(s).
- B. Related Requirements:
 - 1. SP-1 Planting Irrigation for irrigation requirements.
 - 2. UNCC Design Standards and Requirements. In case of conflicts between the requirements of the specifications and the UNCC Design Standards, the more stringent requirement applies.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See drawing designations for planting soils.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Certification of Grass Sod: From sod vendor for each grass-seed monostand or mixture, stating the botanical and common name. Include the year of production and date of packaging. Include identification of source and name and telephone number of supplier.
- C. Product Certificates: For fertilizers, from manufacturer.
- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
 - 1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
 - 2. Experience: Three years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professionals:
 - a. Landscape Industry Certified Technician - Exterior.
 - b. Landscape Industry Certified Lawn Care Manager.
 - c. Landscape Industry Certified Lawn Care Technician.
 - 5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Final Acceptance.
 - 1. Spring Planting: April 1 – May 15.
 - 2. Fall Planting: September 15 – November 1.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

- A. Turfgrass Sod: Approved, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.
- B. Basis of Design Product: Turf type tall fine fescue grass or other varieties approved by Grounds Superintendent and/or designee and as specified on plans with a 95 percent minimum purity and 85 percent minimum germination, and be free of noxious weed seeds, as certified by the North Carolina Co-op Improvement Association or its approved equivalent by the Grounds or designee.

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
1. Organic Matter Content: 50 to 60 percent of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.5 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.

- B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.
- C. Erosion-Control Mats: Cellular, nonbiodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface, of 3-inch minimum nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to the Design Documents.
- B. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade

- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Engineer's and Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Turf Area Preparation" Article.
- B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.
- C. Fill cells of erosion-control mat with planting soil and compact before planting.
- D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than two pegs per sod strip to prevent slippage.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.6 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll,

regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
1. Mow bermudagrass to a height of 1/2 to 1 inch.
- D. Turf Postfertilization: Apply commercial fertilizer after initial mowing and when grass is dry.
1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft to turf area.

3.7 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Landscape Architect:
1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.8 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations.

Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

3.10 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
 - 1. Seeded Turf: 12 months from date of Final Acceptance.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

END OF SECTION 329200

SP-1 PLANTING IRRIGATION

SUMMARY

Provide labor, material, irrigation design, equipment, related services, and supervision required to complete and provide a fully operational, automatic landscape irrigation system for the grass and plantings shown within the Drawings.

GENERAL REQUIREMENTS

1. Coordinate work of this Section with other underground utilities and with trades responsible for their installation. Refer to respective Drawings pertaining to other work. Coordinate with the Owner for location to tie into the existing irrigation system water supply line.
2. Refer to the UNCC Design Standards and Requirements. In case of conflicts between the requirements of this special provision and the UNCC Design Standards, the more stringent requirement applies.
3. The system shall automatically irrigate, all areas with new turf and grass indicated on the Site Plan found in the Drawings.
 - a. Contractor shall locate the irrigation main, point of connection, and meter size for the irrigation system as directed by the Owner's Representative in the field. The irrigation supply shall provide a minimum of 65-psi dynamic pressure at a 55-gpm flow rate.
 - b. The automatic irrigation controller shall be wall mounted at the location directed by the Owner's Representative. The irrigation controllers will require a dedicated 120-volt, 20-amp circuit. The contractor is responsible for providing this. The automatic controller must be connected to a rain sensor and a soil moisture sensor. If the new system cannot tie into an existing sensor, new sensors must be provided at the Contractor's expense.
 - c. Trench excavation, back filling and bedding materials, together with the testing and proper scheduling of the completed installation shall be included as part of this scope of work.
 - d. The work shall be constructed and finished in every respect in a good, workmanlike and substantial manner, to the full intent and meaning of this special provision. All parts necessary for the proper and complete execution of the work, whether the same may have been specifically mentioned or not, shall be done or furnished in a manner corresponding with the rest of the work as if the same were specifically herein described.
 - i. Record Drawing as well as Operating & Maintenance Manual generation shall also be included in this work.
4. The irrigation system described within this Special Provision represents an automatically controlled irrigation system supplied from municipal water. The system shall be designed for 55 gallons per minute maximum and 65 pounds per square inch minimum dynamic pressure at the base of the sprinkler.
5. The irrigation system to be installed shall conform to up-to-date design standards and common practices of the irrigation industry, as pre-approved prior to installation by the Owner's

Representative. Minimum standards shall include a system that waters new landscaped areas illustrated on the Site Plan.

6. Water usage for sprinkler system must be sub-metered. Coordinated with the Owner's representative for location and additional requirements for submetering.

PERMITS & INSPECTIONS

1. The Work under this special provision shall comply with all ordinances and regulations of authorities having jurisdiction.
2. Obtain and pay for all permits required for the execution of Work under this Section.
3. Furnish copies of Permits and Approval Notices to the Owner's Representative before requesting final payment.
4. The Contractor shall include in their bid any charges by the Water Department, Utility Company, or other authorities for work done by them and charged to the Contractor.

SUBMITTALS

1. The Contractor shall provide digital submittals in PDF format of product specification sheets on all proposed equipment to be installed to the Designer for approval. Work on the irrigation system may not commence until product sheets are submitted and approved. Equipment to be included:
 - a. In Line Drip Tubing and Fittings
 - b. Disk Filter
 - c. Pressure Regulators
 - d. Valves: Manual and Automatic
 - e. Controllers/ Enclosures
 - f. Valve Boxes
 - g. Pipe and Fittings
 - h. Wire and Connectors
 - i. Quick Coupling Valves
 - j. Reduced Pressure Zone Backflow Prevention Device
 - k. Miscellaneous Materials
2. The contractor shall submit for review and approval, prior to the start of work, a complete, scaled irrigation design plan. Design plan shall include all the necessary information to clearly show the intent of the system to be installed. Information which must appear on the plan shall include as a minimum:
 - a. Drip irrigation tubing location
 - b. Main line and lateral pipe locations with all sizing information
 - c. Valve locations with clear information as to valve id number, size and flow
 - d. Legend identifying all symbols on the drawing
 - e. Sleeve piping locations and sizes
 - f. Controller location and size
 - g. Quick coupling valve locations

PRODUCT DELIVERY, STORAGE AND HANDLING

1. Deliver materials to project site in undamaged condition.
2. Store and handle materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, or other causes.
3. Store and handle all materials in compliance with manufacturer instructions and recommendations. Protect from all possible damage. Minimize on-site storage.

QUALITY ASSURANCE

1. Installer: A firm which has at least five (5) years experience in work of the type (conventional) and size (commercial) required by this Section and which is acceptable to the Owner's Representative.
2. References: The Contractor must supply three (3) references for work of this type and size with their bid including names and current contactor information, including phone number and e-mail address.
3. Applicable requirements of accepted Standards and Codes shall apply to the Work of this Section and shall be so labeled or listed:
 - a. American Society for Testing & Materials (ASTM)
 - b. National Plumbing Code (NPC)
 - c. National Electric Code (NEC)
 - d. National Sanitary Foundation (NSF)
 - e. American Society of Agricultural Engineers (ASAE)
 - f. Underwriters Laboratories, Inc. (UL)
 - g. Occupational Safety and Health Regulations (OSHA)
 - h. American Society of Irrigation Consultants (ASIC)

TESTS

1. Pressure: Contractor shall field verify static and dynamic pressure before commencement of work. Any deviation from calculated requirements shall be reported to Owner's Representative before start of work.
2. Observation: The Owner's Representative will be on site at various times to insure the system is being installed according to the Project Special Provisions and Drawings.
3. Coverage Test: After completion of the system, test the operation of entire system and adjust sprinklers as directed by the Owner's Representative. Demonstrate to the Owner's Representative that all irrigated areas are being adequately covered. Furnish and install materials required to correct inadequacies of coverage due to deviations from the Drawings or where the system has been willfully installed when it is obviously inadequate or inappropriate without bringing it to the attention of the Owner.

4. The Owner's Representative shall be notified 72 hours in advance for observations.
5. During final observation, the contractor shall be responsible for having two-way communication and sufficient personnel to provide instantaneous communication between the observation area and the controller for the system.

COORDINATION

1. The Contractor shall at all times coordinate his work closely with the Owner's Representative to avoid misunderstandings and to efficiently bring the project to completion. The Irrigation Contractor shall also coordinate their work with that of the electrical contractor, general contractor, plumbing contractor and landscape contractor. The Owner's Representative shall be notified as to the start of work, progression and completion, as well as any changes to the drawings before the change is made. The Contractor shall also coordinate his work with that of his sub-contractors.
2. The Contractor shall be held responsible for and shall pay for all damage to other work caused by his work, workmen or sub-contractors. Repairing of such damage shall be done by the Contractor who installed the work, as directed by the Owner's Representative.

MAINTENANCE AND OPERATING INSTRUCTIONS

1. Contractor shall include in their Bid an allowance for four (4) hours of instruction of Owner and/or Owner's personnel upon completion of check/test/start-up/adjust operations by a competent operator (The Owner's Representative's office shall be notified at least one (1) week in advance of check/test/start-up/adjust operations).
2. Upon completion of work and prior to application for acceptance and final payment, a minimum of three (3) three ring, hard cover binders and (1) digital file in PDF format titled MAINTENANCE AND OPERATING INSTRUCTIONS FOR THE IRRIGATION SYSTEM, shall be submitted to the Owner's Representative's office. After review and approval, the copies will be forwarded to the Owner. Included in the Maintenance and Operating binders shall be:
 - a. Table of Contents
 - b. Written description of Irrigation System
 - c. System drawings:
 - i. One (1) copy of the approved irrigation plan;
 - ii. One (1) copy of the Record Drawing;
 - iii. One (1) reproducible of the Record Drawing;
 - iv. One (1) copy of the controller valve system wiring diagram
 - d. A complete set of "APPROVED" submittals of all irrigation equipment;

- e. A copy of the suggested "System Operating Schedule" which shall call out the controller program required (zone run time in minutes per day and days per week) in order to provide the desired amount of water to each area under "no-rain" conditions.
- f. One (1) copy of the controller/valve/rain sensor system wiring diagram.

EXAMINATION OF CONDITIONS

The Contractor shall fully inform himself of existing conditions on the site before submitting his bid, and shall be fully responsible for carrying out all work required to fully and properly execute the work of the Contract, regardless of the conditions encountered in the actual Work. No claim for extra compensation or extension of time will be allowed on account of actual conditions inconsistent with those assumed, except those conditions described in the GENERAL REQUIREMENTS.

PROCEDURE

1. Notify the Owner and/or public utility owners concerned, of the time and location of any work that may affect them. Cooperate and coordinate with them in the protection and/or repairs of any utilities.
2. Provide and install temporary support, adequate protection and maintenance of all structures, drains, sewers, and other obstructions encountered. Where grade or alignment is obstructed, the obstruction shall be permanently supported, relocated, removed or reconstructed as directed by the Owner's Representative.

PRODUCTS

1. GENERAL
 - a. All materials to be incorporated in this system shall be new and without flaws or defects and of quality and performance as specified and meeting the requirements of the system. All material overages at the completion of the installation are the property of the Contractor and shall be removed from the site.
 - b. No material substitutions from the irrigation products described in these specifications and shown on the drawings shall be made without prior approval and acceptance from the Owner's Representative.
2. PVC IRRIGATION PIPE
 - a. All pipes shall bear the following markings: Manufacturer's name, nominal pipe size, schedule or class, pressure rating in psi, and date of extrusion.
 - b. All pipe in sizes 2-1/2 inches and smaller shall be PVC, Class 200, Type 1120, SDR 21, Solvent- Weld PVC, conforming to ASTM No. D2241.
 - c. All pipe in sizes 3 inches and larger shall be PVC, Class 200, Type 1120, SDR 21, Gasket-Joint PVC, conforming to ASTM No. D2241.
 - d. The pipe insertion mark shall be visible to show the proper depth into spigot.
3. PVC IRRIGATION FITTINGS
 - a. Fittings for solvent weld PVC pipe, 2-1/2 inch and smaller in size, shall be Schedule 40 solvent weld PVC fittings.
 - b. Fittings shall bear manufacturer's name or trademark, material designation, size, and applicable I.P.S. schedule.
 - c. All PVC threaded connections in and out of valves shall be made using Schedule 80 toe nipples and Schedule 40 couplers or socket fittings. Schedule 40 threads will not be approved for installation.

- d. PVC solvent shall be NSF approved, for Type I and Type II PVC pipe, and Schedule 40 and 80 fittings. Cement is to meet ASTM D2564 and FF493 for potable water pipes. Primer shall be NSF approved, and formulated for PVC and CPVC pipe applications. Primer is to meet ASTM F 656.
- e. Fittings for PVC main line pipe, for all directional changes, pipe reductions and plugs 3-inch and larger in size shall be deep bell push-on gasket joint ductile iron fittings for PVC pipe. Fittings shall be manufactured of ductile iron, grade 70-55-05 in accord with ASTM A536 and gaskets shall meet ASTM F477. For main line pipe to zone valve / lateral pipe connections, push-on gasket joint ductile iron service tees shall be used. Saddles, (strap, bolt down or snap) will not be approved for installation.
- f. All nipples to be schedule 80 PVC.
- 4. PVC PIPE SLEEVES
 - a. All pipe sleeves beneath non-soil areas shall be PVC, Class 160 water pipe. Minimum sleeve size to be 3-inch.
 - b. Sleeves shall be minimum 2 sizes larger than the total outside diameter of all the piping contained within the sleeve.
- 5. WIRE CONDUIT
 - a. Conduit for wiring beneath non-soil areas shall be PVC, SCH-80 conduit with solvent-weld joints.
 - b. Sweep ells shall be standard electrical type PVC schedule 40 long sweep elbows. Cap sweep ell with tri-plug with the ring for securing nylon pull rope.
 - c. Conduit for above ground wiring to rain sensors or controllers shall be galvanized, rigid metallic conduit.
- 6. IN LINE DRIP TUBING
 - a. In-line emitters in drip tubing to be .92 gallon per hour on pre-installed 12-inch spacing within tube for all planting beds. Start pressure shall be a minimum of 45 PSI.
- 7. IN LINE DRIP TUBE FITTINGS
 - a. Fittings for in-line drip tubing shall be constructed of molded brown plastic having a (I.D) of .57 inches. Female and male threaded ends shall be capable of mating to standard pipe threads with tapered threads.
 - b. Stainless steel clamps shall be used to secure in-line drip tubing to insert barbed fittings. Nominal size shall be 13/16 inches, Part No. 210. Clamps shall be constructed of 304-grade stainless steel. Interior clamp wall shall be smooth to prevent crimping or pinching of tubing. Wall thickness of clamps shall be 0.236 inches with an overall bandwidth of 1/4-inch. Properly secured clamps shall be capable of withstanding a maximum operating pressure of 441 psi. Clamps shall be one "ear" type.
 - c. Tubing stakes shall be plastic coated steel, or other non-corrosive strong material to secure tubing
- 8. DISK FILTER
 - a. The filters at each drip zone valve shall be a plastic filter consisting of a two piece threaded housing with o-ring seal. The filter screen shall be 140-mesh size. Filters shall be sized to mid- range flow and not exceed 2.5-PSI pressure loss.
- 9. PRESSURE REGULATORS
 - a. Pressure regulators shall assure an incoming pressure of 45-PSI into drip tubing. Discharge pressure shall not be less than 45-PSI. Manifold regulators to match flow rate to mid-range flow.
- 10. AUTOMATIC FLUSHING VALVE
 - a. Flush valves shall produce 1-gallon flush and be constructed of black molded plastic with insert barbed fitting end configuration. The top of the flush valves shall have six

openings from which debris or sediment can pass through from the system to the atmosphere or valve box.

11. AIR VACUUM / REILEF VALVES

- a. The air vacuum / relief valves shall be constructed of black plastic with 1/2-inch male pipe thread capable of mating with a threaded PVC reduction bushing.

12. ELECTRIC CONTROL VALVES

- a. Electric control valves shall be remote control diaphragm type glass-filled nylon body valves with flow control. Valve shall have globe or globe/angle configuration, 24 volt electric.
- b. Valves with flow from 0 to 25 gpm shall be 1 inch, flows of 26 to 45 gpm shall be 1-1/2 inch and flows per zone over 45 gpm shall be controlled by 2-inch valves.

13. VALVE BOXES

- a. All valve boxes shall be manufactured from unformed resin with a tensile strength of 3,100-5,500 psi conforming to ASTM D638. All boxes and covers shall be green in color.
- b. Valve boxes for single electric valves, isolation valves and quick coupling valves shall be 10-inch round valve boxes with metal detection and bolt down covers.
- c. Valve boxes for dual electric valves shall be 12-inch standard valve boxes with metal detection and bolt down covers.
- d. Valve boxes for wire splices shall be 10-inch round valve boxes with metal detection and bolt down covers. All splices shall be in separate valve boxes and not included with isolation valves.
- e. Valve box extensions shall be provided and installed as required for proper box depth. Valve box extensions shall be made by the same manufacturer.

14. AUTOMATIC CONTROLLER

- a. Manufacturers:
 - i. Rain Bird Sprinkler Mfg. Corp.
 - ii. Hunter Industries
 - iii. The Toro Company

15. QUICK COUPLING VALVES

- a. The valve body shall be of cast brass construction with a working pressure of 125 psi. The valve seat disc plunger body shall be spring loaded so that the valve is normally closed under all conditions when the key is not inserted.
- b. The top of the valve body receiving the key shall be equipped with ACME threads and smooth face to allow the key to open and close the valve slowly. The quick coupling valve shall be equipped with a vinyl cover.
- c. The valve body construction shall be such that the coupler seal washer may be removed from the top for cleaning or replacement without disassembling any other parts of the valve.
- d. Keys shall be ACME with 1-inch male thread and 3/4-inch female thread at the top.
- e. Contractor shall provide two (2) keys for quick couplers and two (2) 1-inch x 3/4-inch swivel hose ends.

16. WIRE

- a. All valve control wire shall be minimum #14-awg, common #12-awg, single strand, solid copper, UL- approved direct burial AWG-U.F. 600V and shall meet all state and local codes for this service. Individual wires must be used for each zone valve. Common wire shall be white in color, control wire shall be red in color and spare wires, installed where indicated on the drawings shall be blue. White color shall be used for common wire only. No multi-strand #18 AWG wire shall be approved for installation.

- b. Contractor shall install a minimum of one spare wire for every six stations on the irrigation controller.
- c. In ground wire connections shall be UL listed. All wire splices shall be made in valve boxes, at controller, or at valves.
- d. Wire type and method of installation shall be in accordance with local codes for NEC Class II circuits of 30-volt A.C. or less.

17. ISOLATION VALVES

- a. Isolation valves 2-1/2 inches and smaller in size shall be gate type, of bronze construction, US Manufacture, 200 WOG with steel cross handle and 200 psi rating.
- b. Isolation valves 3 inches and larger in size shall be cast iron epoxy coated inside and outside, long bell length ring-tite valves, 200 psi rated, ductile iron gland flange, bronze stem-seal box, o- ring stem seal replaceable under pressure, stainless steel stem, 2 inch operating nut and replaceable disc conforming to AWWA C-509.

18. BACKFLOW PREVENTION DEVICE

- a. Back flow prevention device shall be minimum a Reduced Pressure Assembly as per local Fire Department Connection requirements. Back flow prevention device shall have maximum 12-psi pressure loss at system flow. Device shall be sized as not to exceed a velocity of 7-1/2 feet per second at full system flow.
- b. Back flow prevention device shall be approved by the Owner.

19. CRUSHED STONE

- a. Crushed stone shall be used under valve boxes.

20. SAND

- a. Sand used for backfilling of trenches; under, around and over PVC lines.

21. PRESSURE REDUCING VALVE

- a. Pressure reducing valve, if required for excessively high static pressure at the water source, shall be of bronze construction, stainless steel integral strainer, with renewable stainless-steel seat. Valve shall be capable of 25 - 75 psi downstream pressure setting.
- b. Pressure reducing valve shall be sized as required for full system flow according to manufacturer's recommendations.

22. CONCRETE BASES AND THRUST BLOCKS

- a. Standard concrete mix shall be in accordance with ASTM C150, ASTM C-33, and ASTM C-94 with a compressive strength (28 days) of 3,000 psi.
- b. All bell and gasket mainline pipe and fittings shall have thrust blocks sized and placed in accordance with pipe manufacturer's recommendations for standard concrete mix. Thrust blocks shall be installed at all tees, elbows, crosses, reducers, plugs, caps and valves. Contractor shall be responsible to insure the stability of all thrust blocks.
- c. All concrete bases shall be standard concrete mix. Sizes shall be as indicated on the Drawings and sited in the Specifications.

23. GROUNDING EQUIPMENT

- a. Each exterior field controller installed outside of a building shall include factory-installed and factory-recommended lightning protection and shall be connected to a 5/8-inch diameter x 10-foot long copper clad grounding rods with minimum #6 AWG, solid, bare copper wire and 4-inch x 96- inch x 0.0625-inch copper grounding plates as outlined below. Minimum 20-foot separation between rod and plate. Minimum 12-foot separation between controller and ground rod. All connections to rods shall be with Cadweld connectors as specified. All connections to plates shall be performed by the plate manufacturer (Paige #182199L) with 25-feet of bare copper wire already attached. Each grounding rod is to be covered by a 4-inch round, grated top, plastic valve cover with metal detection and six inches of 4-inch ADS drainage pipe. Plates shall be installed in ground

enhancement material. Plates shall be covered with 4-inch plastic grated cover with detection and minimum 36 inches of 4 inch ADS drainage pipe. Ground rods and plates shall be UL listed.

- b. Each controller shall be grounded to one rod and one plate. The 10-foot rod shall be installed penetrating into the soil to its full length. Plate shall be installed at a 36-inch depth with 50 lbs of Power Set ground enhancement material spread evenly below the plate and 50 lbs spread evenly above the plate in accordance with manufacturer's requirements. The grounding electrodes shall be installed at least 10 feet from wires connected to the field controllers. Each field controller shall have a separate grounding system.

24. SPARE PARTS

- a. Contractor shall supply the following tools and equipment to the Owner's Representative before final observation:
 - i. Two (2) wrenches for disassembling and adjusting each type of sprinkler head provided.
 - ii. One (1) quick coupler key assembly for every five or fraction thereof of each type of quick coupling valve provided.
 - iii. One (1) of each type of gate valve used in the project.
 - iv. Two (2) of each type sprinkler head and pattern (PC & FC) used in the project.
 - v. Two (2) of each type nozzle used in the project.
- b. Before final observation can occur, written evidence that the Owner's Representative has received the tools and equipment must be shown to the Owner.

EXECUTION

1. GENERAL

- a. Before work is commenced, hold a conference with the Owner's Representative to discuss general details of the work.
- b. Examine all contract documents applying to this special provision noting any discrepancies and bringing the same to the attention of the Owner's Representative for timely resolution.
- c. Verify dimensions and grades at job site before work is commenced. Do not proceed with installation of the landscape irrigation system when it is apparent that obstructions or grade differences exist or if conflicts in construction details, legends or specific notes are discovered. All such obstructions, conflicts, or discrepancies shall be brought to the attention of the Owner's Representative.
- d. Make all field measurements necessary for the work noting the relationship of the irrigation work to the other trades. Coordinate with other trades (landscaping and other site work trades). Project shall be laid out essentially as indicated on the Irrigation Plans, making minor adjustments for variations in the planting arrangement. Major changes shall be reviewed with the Owner's Representative prior to proceeding.
- e. Coordinate installation of all in line drip tubing, sprinkler materials, including pipe, to avoid conflict with the trees, shrubs, or other plantings.
- f. During progress of work, a competent superintendent and all assistants necessary shall be on site. All shall be satisfactory to the Owner's Representative. The superintendent shall not be changed, except with the consent of the Owner's Representative, unless that person

proves unsatisfactory and ceases to be employed. The superintendent shall represent the Contractor in his absence and all directions given to the superintendent shall be as binding as if given to the Contractor.

- g. At all times, protect existing irrigation, landscaping, paving, structures, walls, footings, etc. from damage. Any inadvertent damage to the work of another trade shall be reported at once.
- h. Replace, or repair to the satisfaction of the Owner, all existing paving disturbed during course of work. New paving shall be the same type, strength, texture, finish, and be equal in every way to removed paving.

2. PIPE AND FITTINGS INSTALLATION

- a. Using proper width trencher chain, excavate a straight (vertical) and true trench to a depth of 2- inch of pipe invert elevation.
- b. Loam or topsoil encountered within the limits of trench excavation for irrigation mains and branch lines shall be carefully removed to the lines and depths as shown on the Drawings and stockpiled for subsequent replacement in the upper 6 inches of the trench from which it is excavated. Such removal and replacement of the quantities of loam shall be considered incidental to the irrigation system and no additional compensation will be allowed therefore.
- c. Pipe shall be laid on undisturbed trench bottom provided suitable base is available - no rock larger than 1-inch or sharp edges; if not, excavate to 2-inch below pipe invert and provide and install sand base or crushed stone upon which to lay pipe.
- d. Back filling shall be accomplished as follows: the first 10-inch of backfill material shall contain no foreign matter and no rock larger than 1-inch in diameter. Carefully place material around pipe and wire and tamp in place. Remainder of backfill shall be laid-up in 6-inch (maximum) lifts and tamped to compaction with mechanical equipment. Compact backfill in trenches to dry density equal to the adjacent undisturbed soil, and conform to adjacent grades without dips, sunken area, humps, or other irregularities. Frozen material shall not be used for backfill.
- e. Do backfilling when pipe is cool. During hot weather cool pipe by operating the system for a short period, or by backfilling in the early part of the morning before the heat of the day.
- f. Do not, under any circumstances, use truck wheels for compacting soil.
- g. Restore grades and repair damage where settling occurs.
- h. Clean bell and spigot ends and make all gasketed joints in strict accordance with manufacturer's recommendations, making certain not to apply an excess of lubricant, and wiping off any excess lubricant from each connection. Maximum deflection per joint shall not exceed manufacturer's recommendations.
- i. Make all solvent-weld joints in strict accordance with manufacturer's recommendations,

making certain not to apply an excess of primer or solvent, and wiping off excess solvent from each connection. Allow welded joints at least 15 minutes set-up/curing time before moving or handling. When the temperature is above 80° F, allow connections to set minimum 24 hours before pulling or pressure is applied to the system. When temperature is below 80° F, follow manufacturer's recommendations. Provide and install for expansion and contraction as recommended. Wire shall be laid in same trench as mainline and at pipe invert (see Wire Installation).

- j. Mainline pipe shall have minimum 22 inches of COVER (excavate to invert as required by pipe size). Lateral pipe shall have minimum 16 inches of COVER for PVC and 12 inches of cover for Polyethylene (excavate to invert as required by pipe size).
- k. Cut plastic pipe with handsaw or pipe-cutting tool, removing all burrs at cut ends. All pipe cuts are to be square and true. Bevel cut end as required to conform to Manufacturer's Specifications.
- l. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the trench. At times, when installation of the piping is not in progress, the open end(s) of the pipe shall be closed by a watertight plug or other means. All piping, which cannot temporarily be joined, shall be sealed to make as watertight as possible. This provision shall apply during the lunch hour as well as overnight. Pipe not to be installed that day shall not be laid out. Should water enter the trench during or after installation of the piping, no additional piping may be installed or back filled until all water is removed from the trench. Pipe shall not be installed when water is in the trench, when precipitation is occurring, or when the ambient temperature is at 40° F or below. Pipe installed at temperatures below 40° F shall be removed and replaced at no cost to the Owner. PVC pipe shall be snaked in the trench to accommodate for expansion and contraction due to changes in temperature.
- m. In installing irrigation pipe the Contractor shall route the pipe as necessary to prevent damage to tree roots. Where trenching must occur near trees, the Contractor shall provide proper root pruning and sealing methods to all roots 1-inch and larger.
- n. Maintain 6-inch minimum clearance between sprinkler lines and lines of other trades. Do not install sprinkler lines directly above another line of any kind.
- o. Maintain 1-inch minimum between lines which cross at angles of 45 to 90 degrees.
- p. Exercise care when excavating, trenching and working near existing utilities.
- q. Throughout the guarantee period it will be the responsibility of the Contractor to refill any trenches that have settled due to incomplete compaction.
- r. Pulling of pipe will be allowed provided soil is suitable and specified depth of bury can be maintained.

3. THRUST BLOCKING

- a. All ringtite bell-end fittings shall be blocked with an adequately sized thrust block as per ASAE Standard S376.1 and as depicted in the details. Blocking shall be in accordance with

pipe and fitting manufacturer's recommendations. Thrust blocks shall be required at all changes in size and direction of bends, reducers, plugs and tees. Thrust blocks shall be installed against undisturbed soil in all cases. Concrete thrust blocks shall utilize 3,000-psi standard concrete mixture. Bricks, stones, boulders, etc. will not be accepted as thrust blocks or thrust block material. Sackcrete will not be permitted as a thrust blocking material. Contractor to supply all material needed for thrust blocking.

- b. Size of thrust block shall be determined by working pressure, size and type of fitting, and soil conditions. Calculate area required for concrete thrust block in contact with soil. Refer to fittings manufacturer's thrust block sizing table to determine size of thrust block for each condition.
- c. Ensure stability of thrust blocks.
- d. Under no circumstances will concrete block be approved for thrust blocks including for 2-inch fittings.

4. ELECTRICAL WIRE CONDUIT INSTALLATION

- a. Electrical conduit shall be installed in all non-soil areas, as well as for all above ground wiring where wire passes under or through walls, walks and paving to controllers and rain sensor.
- b. Conduit shall extend 18 inches beyond edges of walls and pavement.

5. PIPE SLEEVING INSTALLATION

- a. Sleeving shall be installed wherever piping is going under a non-soil area, generally where indicated on the Drawings. Minimum cover over all sleeving pipe shall be 24 inches as shown on the detail.
- b. Sleeving shall extend 18 inches beyond edges of walls and pavement.
- c. If finished pavement is in place, the Contractor shall bore under the pavement for sleeving installation using personnel experienced in the procedure. Contractor shall be responsible for all damage to finished paving due to improper boring

6. ISOLATION VALVE INSTALLATION

- a. Install an isolation valve in a 10-inch round valve box on the PVC mainline, downstream of the point of connection for complete system isolation. Also install isolation valves as required to isolate main line pipe from beneath pavement crossings over 12 feet in width including driveways and roads.
- b. Install all isolation valves on a level crushed stone base so that they can be easily opened or closed with the appropriate valve wrench.
- c. Check and tighten valve bonnet packing before valve box and backfill installation.
- d. Provide and install thrust blocks for ring-tite valves.

7. VALVE BOX INSTALLATION

- a. Furnish and install a valve access box for each electric valve, quick coupling valve, isolation valve, wire splice, etc.
- b. All valve access boxes shall be installed on a minimum 4-inch crushed stone base. Finish elevation of all boxes shall be at grade. All crushed stone to be supplied by the Contractor and installed before valve box. Crushed stone shall not be poured into previously installed valve boxes.

8. 24 VOLT CONTROL VALVE INSTALLATION

- a. Control valves shall be installed on a level crushed stone base. Grade of bases shall be consistent throughout the project so that finish grades fall within the limits of work. Valves shall be set plumb with adjusting handle and all bolts, screws and wiring accessible through the valve box opening. Valves shall be set in a plumb position with 24-inch minimum maintenance clearance from other equipment.
- b. Install at sufficient depth to provide more than 6-inch, nor less than 4-inch cover from top of valve to finish grade.
- c. Adjust zone valve operation after installation using flow control device on valve.

9. WIRING INSTALLATION

- a. Wiring shall be installed along with the main line. Multiple wire bundles shall be cinched together at maximum 12-foot centers using plastic cable cinches and shall be laid beside, and at the same invert as, the irrigation lines. Sufficient slack for expansion and contraction shall be maintained and wiring shall at no point be installed tightly. Provide and install an additional 8 inches to 12 inches slack at all changes of direction. Wiring in valve boxes shall be a sufficient length to allow the valve solenoid, splice, and all connections to be brought above grade for servicing. This additional slack shall be coiled for neatness in the valve box. Each valve shall have a separate wire back to the controller.
- b. All wire shall be laid in trenches and shall be carefully back-filled to avoid any damage to the wire insulation or wire conductors themselves. In areas of unsuitable material, the trench shall have a 2 inches layer of sand or stone dust on the bottom before the wires are laid into the trench and back-filled. The wires shall have a minimum of 12 inches of cover. Wire not to be installed that day shall not be laid out.
- c. An expansion curl shall be provided and installed within 6 inches of each wire connection to a solenoid and at least every 100 feet of wire length on runs more than 100 feet in length. Expansion curls can be formed by wrapping five (5) turns of wire around a 1-inch diameter or larger pipe and then withdrawing the pipe.
- d. Provide and install a common ground wire of white color. No white color shall be used for power wire. Control wire shall be red, and spare wiring shall be blue in color.
- e. Service wiring in connection with Drawings and local codes for 24-volt service. All in-ground wire connections shall be waterproofed with 3M DBY-6 splice kits. All splices

shall be made in valve boxes (wire runs requiring splices between valve locations shall be provided and installed in splice box-valve box shall be used). Splice locations shall be shown on the Record Drawings.

- f. Contractor shall provide a complete wiring diagram showing wire routing for the connections between the controller and valves. See section one for the inclusion of wiring diagram in operation and maintenance manuals.

10. QUICK COUPLING VALVE INSTALLATION

- a. Provide quick coupling valves at all planted areas at 200-foot minimum intervals. Final locations and total quantities of quick coupling valves shall be pre-approved by the Owner's Representative.
- b. Quick coupling valves to be mounted on 1-inch PVC swing joint with brass insert and stabilizer.

11. IN LINE DRIP TUBE INSTALLATION

- a. In-line drip tubing shall be installed in areas designated by hand under the mulch, and shall have an average depth of 4 inches unless otherwise indicated on the drawings. Tubing should not be visible through the mulch. All in-line drip tubing shall be installed on the high side of the plant material being watered to help insure dispersion of the water.
- b. In-line drip tubing is to be installed 4 inches from all planter edges, curbs and walls. Spacing of in-line emitter tube is to be 18 inches center-to-center in all irrigated areas.
- c. All in-line tubing shall have a minimum incoming pressure of not less than 5-PSI of the pressure regulator, 45-PSI, to assure a maximum linear length of 280 feet at zero elevation lift.

12. DRIP PRESSURE REGULATOR

- a. Pressure regulator shall assure a 45-PSI downstream pressure entering drip supply header.
- b. Pressure shall be verified by contractor to assure proper operating pressure for the in-line emitter tubing at maximum linear run of 280 feet. Contractor may need to manifold pressure regulators to reach the mid-range flow of the regulator.

13. TUBING STAKE INSTALLATION

- a. In-line drip tubing shall be secured with stakes. Stakes shall be spaced to ensure that tubing does not shift location in presence of foot traffic, operations, gravity on slope installations, or environmental effects. Stake in-line drip tubing at minimum 5-foot intervals to prevent movement.

14. AIR RELIEF VALVE INSTALLATION

- a. Flush lines shall be installed on end of PVC exhaust header where indicated on the drawings.

15. BACKFLOW PREVENTER INSTALLATION

- a. Install reduced pressure back flow prevention assembly where directed by Owner's Representative. Back flow installation shall be in accordance with local Cross Connection Department.

16. CHECK / TEST / START-UP / ADJUST

- a. Flushing: After all piping, valves, sprinkler bodies, pipe lines and risers are in place and connected, but prior to installation of sprinkler internals, open the control valves and flush out the system under a full head of water.
- b. Sprinkler internals, flush caps and riser nozzles shall be installed only after flushing of the system has been accomplished to the full satisfaction of the Owner's Representative.
- c. Contractor shall be responsible for flushing the entire system after installation is complete and will be responsible for any clogged nozzles for thirty (30) days after substantial completion of this portion of the landscape irrigation system.
- d. Testing:
 - i. Leakage test: test all lines for leaks under operating pressure. Repair all leaks and re-test.
 - ii. Coverage test: perform a coverage test in the presence of the Owner's Representative (notify at least seven (7) days in advance of scheduled coverage test). Representative will determine if the water coverage is complete and adequate. Readjust heads and/or head locations as necessary or directed to achieve proper coverage.
 - iii. All testing shall be at the expense of the Contractor.
- e. Owner's Representative will determine if the water dispersion is complete and adequate.

17. CLEANING AND ADJUSTING

- a. At the completion of the work, all parts of the installation shall be thoroughly cleaned. All equipment, pipe, valves and fittings shall be cleaned of grease, metal cuttings and sludge which may have accumulated by the operation of the system for testing.
- b. Adjust sprinkler heads, valve boxes, and quick coupling valves to grade as required, so that they will not be damaged by mowing operations.
- c. Continue sprinkler coverage adjustment as required by settlement, etc., throughout the guarantee period.
- d. Each control zone shall be operated for a minimum of 5 minutes and all heads checked for consistency of delivering water. Adjustments shall be made to sprinklers that are not consistent to the point that they match the manufacturer's standards. All drip, valves, timing devices or other mechanical or electrical components, which fail to meet these standards, shall be rejected, re- placed and tested until they meet the manufacturer's standards.

18. ACCEPTANCE AND OPERATION BY OWNER

- a. Upon completion of the work and acceptance by the Owner, the Contractor shall be responsible for the training of the Owner's Representative in the operation of the system (provide minimum 72 hours written notice in advance of test). The Contractor shall furnish, in addition to the Record Drawings and operational manuals, copies of all available specification sheets and catalog sheets to the Owner's personnel responsible for the operation of the irrigation system. The Contractor shall guarantee all parts and labor for a minimum period of one (1) year from date of acceptance.
- b. Conditions for acceptability of work for start of maintenance by Owner issued by Owner or Owner's Representative shall include but not be limited to:
 - i. Punch list items complete and approved by Owner or Owner's Representative.
 - ii. Landscape irrigation system complete and in place.
 - iii. Record drawings complete.
 - iv. Maintain installation and watering schedules until all conditions noted above have been completed.

19. CLEAN UP

- a. Upon completion of all installation work, Contractor shall remove all leftover materials and equipment from the site in a safe and legal manner.
- b. Contractor shall remove all debris resulting from work of this section.
- c. Contractor shall regrade, lightly compact, and replant around sprinkler heads where necessary to maintain proper vertical positioning in relation to established grade.
- d. Contractor shall fill all depressions and eroded channels with sufficient soil mix to adjust grade to ensure proper drainage. Compact lightly, and replant filled areas in accord with Owner's Representative's requirements.

WARRANTY

1. The Contractor shall obtain in the Owner's name the standard written manufacturer's guarantee of all materials furnished under this special provision where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities that the Contractor may have by law.
2. In addition to the manufacturers guarantees the Contractor shall warrant the entire irrigation system, both parts and labor for a period of one (1) year from the date of acceptance by the Owner.
3. As part of the one-year warranty the Contractor shall perform the first year-end winterization and spring start-up for the irrigation system.
4. Should any problems develop within the warranty period because of inferior or faulty materials or workmanship, they shall be corrected to the satisfaction of the Owner's Representative at no

additional expense to the Owner within two (2) weeks of written notification received by the contractor.

5. A written warranty showing date of completion and period of warranty shall be supplied upon completion of each segment of the project.

TECHNICAL SPECIFICATIONS FOR
REMOVAL OF ASBESTOS-CONTAINING MATERIALS
UNIVERSITY OF NORTH CAROLINA - CHARLOTTE
SANFORD HALL DEMOLITION



Prepared for:
KIMLEY-HORN AND ASSOCIATES, INC
RALEIGH, NORTH CAROLINA



A handwritten signature in black ink, appearing to read 'Russell Harrings'.

2701 Westport Road
Charlotte, North Carolina 28208
Russell Harrings
NC Asbestos Project Designer No. 40422

July 2024

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS	Section Number
General Requirements	
Scope of Work	01000
Project Coordination	01043
Codes and Regulations	01092
Air Monitoring.....	01410
Temporary Facilities.....	01503
Negative Pressure System	01513
Work Area Preparation	01526
Worker Protection	01560
Respiratory Protection	01562
Decontamination Units	01563
Project Decontamination.....	01711
Work Area Clearance	01714
Asbestos Removal	02080
Disposal of Asbestos-Containing Waste Material	02084
Appendices	
Pework Asbestos Inspection Checklist	Appendix A
Asbestos Abatement Air Monitoring Plan	Appendix B
Drawings	
Ground Floor, Ceilings and Walls Plan.....	AA-G.1
Ground Floor, Floors and Other Materials Plan	AA-G.2
First Floor, Ceilings and Walls Plan.....	AA-1.1
First Floor, Floors and Other Materials Plan.....	AA-1.2
Second Floor, Ceilings and Walls Plan	AA-2.1
Second Floor, Floors and Other Materials Plan	AA-2.2
Third Floor, Ceilings and Walls Plan.....	AA-3.1
Third Floor, Floors and Other Materials Plan	AA-3.1
Fourth Floor, Ceilings and Walls Plan	AA-4.1
Fourth Floor, Floors and Other Materials Plan	AA-4.2
Fifth Floor, Ceilings and Walls Plan.....	AA-5.1
Fifth Floor, Floors and Other Materials Plan.....	AA-5.2
Sixth Floor, Ceilings and Walls Plan.....	AA-6.1
Sixth Floor, Floors and Other Materials Plan	AA-6.2
Seventh Floor, Ceilings and Walls Plan.....	AA-7.1
Seventh Floor, Floors and Other Materials Plan.....	AA-7.2
Eighth Floor, Ceilings and Walls Plan	AA-8.1
Eighth Floor, Floors and Other Materials Plan	AA-8.2
Ninth Floor, Ceilings and Walls Plan	AA-9.1
Ninth Floor, Floors and Other Materials Plan.....	AA-9.2
Tenth Floor, Ceilings and Walls Plan	AA-10.1
Tenth Floor, Floors and Other Materials Plan	AA-10.2
Eleventh Floor, Ceilings and Walls Plan	AA-11.1
Eleventh Floor, Floors and Other Materials Plan	AA-11.2
Roof Level Plan	AA-R

SECTION 01000

SCOPE OF WORK

1.01 GENERAL

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other specifications in the bid package also apply to the asbestos abatement technical specifications.
- B. The scope of work for this project shall consist of removal of the following asbestos-containing materials identified on the attached drawings at Sanford Hall located on the campus of the University of North Carolina – Charlotte (UNC-Charlotte).

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
Texture Material (Ceilings)	Throughout Dorm Floors	Good / Friable	2% Chrysotile	42,000 ft ²
Soffit Surfacing	3rd-11th Floor Dorm Rooms	Good / Friable	2% Chrysotile	9,000 ft ²
Texture Material (Concrete Walls/Columns)	Throughout Building	Good / Friable	Type 1: 2% Chrysotile Type 2: None Detected	15,000 ft ²
CMU Block Surface Filler	Throughout Building	Good / Category II Non-Friable	2% Chrysotile	100,000 ft ²
CMU Block Surface Filler (Interior Stairwell)	Throughout Interior Stairwell	Good / Category II Non-Friable	2% Chrysotile	8,000 ft ²
Drywall and Joint Compound (1st Floor)	Throughout 1st Floor	Good / Not Applicable	Drywall: None Detected Joint Compound: 0.75% Chrysotile Composite: 0.04% Chrysotile	7,000 ft ²

Material Description	General Location	Condition / NESHA Classification	Percent / Type Asbestos *	Estimated Quantity **
9" x 9" Off-White Floor Tile with White Streaks and Black Mastic (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile	48,200 ft ²
9" x 9" Tan Floor Tile and Mastic (Under Carpet)	Throughout Dorm Floors and Ground Floor Storage Closet (Not under carpet in closet)	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	2,250 ft ²
12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Clear Mastic: None Detected White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	3,650 ft ²
White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor – Study Room 728	Good / Category I Non-Friable	Sheet Flooring: None Detected Mastic: 2% Chrysotile	120 ft ²
12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor – Study Room 828	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	120 ft ²

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
Black Mastic and Leveling Compound on Concrete Under Carpet	Throughout Dorm Floors	Good / Category I Non-Friable	2% Chrysotile	1,200 ft ²
Texture Material (Concrete Interior Stairwell)	Throughout Interior Stairwell	Good / Friable	2% Chrysotile	3,000 ft ²
Carpet Glue associated with Rolled Carpet (Dorm Floors)	Dorm Rooms †	Good / Not Applicable	Carpet Glue/Leveling Compound Point Count Analysis: 0.12% Chrysotile	† Up to 40,000 ft ²
Interior Window Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	680 Windows
Interior Door Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	440 Doors
Interior Window Glazing (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	2% Chrysotile	680 Windows
Ceiling Coating	Ground Floor – Housekeeping Closet	Good / Friable	2% Chrysotile	200 ft ²
12" x 12" Beige Floor Tile with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Throughout the 1st Floor and Ground Floor	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	2,150 ft ²
Black Sink Mastic	Ground Floor and 1st Floor	Good / Category II Non-Friable	10% Chrysotile	4 Sinks
Brown Sink Underside Caulk	Ground Floor and 1st Floor	Good / Category II Non-Friable	2% Chrysotile	4 Sinks

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
Black Mastic on HVAC Ductwork	Ground Floor – Crawl Space and Mattress Storage Room	Good / Category II Non-Friable	Mastic: 2% Chrysotile Ductwork: 65% Chrysotile	125 ft
12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor – Activity Room	Good / Category I Non-Friable	Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile	625 ft²
Interior Door Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	16 Doors
Interior Window Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	4 Windows
8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Felt Paper/Tar: None Detected Insulation: 15% Chrysotile	10 ft
8" Pipe Hard Mudded Elbow	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Wrap: None Detected Mudded Elbow: 25% Chrysotile	4 Elbows
8" Pipe White Wrap and Insulation	Ground Floor – Crawl Space Back Room	Good / Friable	Wrap: None Detected Insulation: 15% Chrysotile	25 ft
Off-White Paint and Skim Coat	Exterior	Good / Friable	2% Chrysotile	110,000 ft²
Tan Skim Coat (Under HA E1)	Exterior	Good / Friable	2% Chrysotile	110,000 ft²

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
White/Grey Exterior Window Caulk	Exterior Windows	Damaged / Category II Non-Friable	White Caulk: None Detected Clear Caulk: None Detected Grey Caulk: 5% Chrysotile	7,000 ft
White/Grey Exterior Window Glazing	Exterior Windows	Damaged / Category II Non-Friable	2% Chrysotile	680 Windows
White Ceiling Paint – Fire Escape Vestibules	Fire Escape	Damaged / Friable	3% Chrysotile	500 ft ²
Grey Exterior Caulk (Below Windows)	Below Exterior Windows	Good / Category II Non-Friable	5% Chrysotile	7,000 ft
White Sidewalk Caulk	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	100 ft
White Wall Caulk (Bottom of Wall)	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	400 ft
Silver Coating	Roof	Good / Category II Non-Friable	3% Chrysotile	100 ft ²
Roof Flashing	Roof	Good / Category I Non-Friable	5% Chrysotile	3,000 ft ²
Fire Doors	Throughout Building	Good / Category II Non-Friable	Assumed ACM	600 Doors
Elevator Brake Components	Elevator Penthouse, Elevators, and Elevator Shafts	Good / Category II Non-Friable	Assumed ACM	Unable to Determine

* Asbestos Content is the highest concentration for each reported asbestos type based on laboratory analysis.

** Estimated Quantities are based on a cursory field evaluation and actual quantities may vary significantly, especially if asbestos-containing materials are present in hidden and/or inaccessible areas not evaluated as part of the inspection.

† Asbestos portion of material is likely a residual asbestos mastic from previous flooring applications. Unable to determine accurate extent and quantity of material since the material is concealed by floor coverings and the asbestos component is likely present in spotty locations.

- C. Asbestos-containing materials shall be removed using friable and/or non-friable removal techniques in accordance with Section 02080. Decontamination of work areas shall be in accordance with Section 01711. Contractor is responsible for obtaining an asbestos removal permit from the North Carolina Health Hazard Control Unit (HHCU) as described in Section 01092.
- D. Work area preparation shall be in accordance with Section 01526 and consist of the following:
 - 1. Polyethylene sheeting requirements (interior):
 - a. Floors: Where applicable, apply one layer of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely.
 - b. Walls: Not required.
 - c. Ceilings: Not required.
 - d. Critical Barriers: Required.
 - 2. Polyethylene sheeting requirements (non-friable exterior removal):
 - a. Floors / Ground: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely. Sheeting shall extend from the edge of the building to a minimum of 10 feet, or further if necessary to contain asbestos-containing debris.
 - b. Critical Barriers: Required.
 - c. Additional precautions may be warranted depending on the means used to access asbestos-containing materials, including polyethylene sheeting wind-breaks. Additional precautions shall be used to prevent asbestos-containing materials from falling more than 10 feet.
 - 3. Polyethylene sheeting requirements (friable exterior removal):
 - a. Framing: Containment shall have sufficient structural support to be weather resistant and withstand the negative pressure inside the containment.
 - b. Floors / Ground: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend up the sheeting on the walls a minimum of two feet. Apply one additional layer of 6-mil (minimum) polyethylene sheeting as a drop cloth.
 - c. Walls: Apply two layers of 6-mil (minimum) polyethylene sheeting around scaffolding or framing of exterior containment. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend over the sheeting on the floor / ground and ceilings a minimum of two feet.

- d. Ceilings: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend down the sheeting on the walls a minimum of two feet.
 - e. Critical Barriers: Required.
- E. Clearance air testing shall be by Phase Contrast Microscopy (PCM) in accordance with Section 01714.
- F. Contractor shall comply with applicable federal, state, and local regulations including NESHAP and OSHA. See Section 01092.
- G. Contractor is responsible for protection of workers in accordance with Section 01560 and Section 01562. Contractor shall comply with 29 CFR 1926.1101.
- H. Waste disposal shall be in accordance with Section 02084.
- I. Owner shall be responsible of contracting third party air monitoring services. Owner's third party Air Monitor will not be responsible for Contractor's OSHA compliance monitoring.
- J. Contractor shall be responsible for inspecting the site prior to commencing work to confirm the scope of the work. Any quantities listed by the Designer in the plans, specifications, or inspection are done so as approximations. The calculation and verification of actual quantities of materials to be abated is the responsibility of the Contractor.

SECTION 01043

PROJECT COORDINATION

1.01 GENERAL

- A. The Contractor's company shall be a licensed General Contractor in the State of North Carolina. Each employee inside the asbestos work areas must be accredited by the State of North Carolina for asbestos removal.
- B. The Contractor shall be responsible for inspecting the site prior to commencing work to confirm the scope of the work. Any quantities listed by the Designer in the plans, specifications, or inspection are done so as approximations. The calculation and verification of actual quantities of materials to be abated is the responsibility of the Contractor.
- C. The Contractor shall furnish and is responsible for all costs including, but not limited to, permit fees, labor, materials, services, insurance, and equipment necessary to carry out the requirements of this contract in accordance with the plans and specifications, the EPA and OSHA regulations, and any applicable state and local government regulations.
- D. The Contractor/Employer has and assumes the responsibility of proceeding in such a manner that they offer their employees a workplace free of recognized hazards causing or likely to cause death or serious injury.
- E. The Contractor will be responsible for all costs associated with employee monitoring to meet the OSHA requirements.
- F. The Contractor is responsible for all costs, including additional visits, should the Designer and/or the Owner determine that the Contractor failed a final inspection. Notification and scheduling of the final inspection during the project is the responsibility of the Contractor. The Contractor will allow a minimum notice of 24 hours unless a different time frame is agreed upon by the Air Monitor and the Contractor.

1.02 PERSONNEL

- A. Supervisor
 - 1. All supervisors shall be accredited by the North Carolina Health Hazards Control Unit (NC HHCU).
 - 2. At least one supervisor on the project shall have a minimum of five years of experience in the administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc.
 - 3. The Contractor shall have at least one employee on the job site in either a foreman or supervisor's position that is bilingual in the appropriate languages when employing workers who do not speak fluent English.
- B. Worker
 - 1. All workers shall be accredited by the NC HHCU.

C. Competent Person

1. A competent person, as defined in the OSHA asbestos standard 29 CFR 1926.1101, employed by the Contractor must be outside the work area at all times to monitor activity, ensure containment security, provide information to visitors, and provide access to the work area.

D. Employees

1. The Contractor is responsible for the behavior of workers within their employment. If at any time during the contracted work, any of the Contractor's employees are judged to exhibit behavior unfitting for the area or judged to be a nuisance by the Owner or Designer, the Contractor shall remove them immediately from the project.
2. The Contractor shall be responsible for compliance with the following concerning employee behavior:
 - a. Under no circumstances shall alcohol, tobacco, drugs, or any other type of controlled substances permitted on the property.
 - b. Under no circumstances shall firearms be permitted on the property.
 - c. All workers are restricted to the project site only.
 - d. All vehicles must be parked in areas prearranged with the Owner.
 - e. All workers must conform to the following basic dress code when in public areas of the project confines: long pants, shirts, no tank tops, no shorts, no bare backs.
 - f. The Contractor is responsible for disposal of all trash brought on the property by their employees, including drink cans, bottles, or other food containers and wrappers. Owner's dumpsters are not to be used by Contractor.
3. Failure to adhere to these rules could result in criminal prosecution and/or removal from the site.

1.03 PRE-JOB SUBMITTALS

- A. Submit two complete sets of pre-job submittals to the Designer at least one month prior to start of work. Submittals may be submitted electronically instead of hardcopies. Work is prohibited until submittal package has been reviewed and approved by Designer. A copy of the approved submittals shall be kept in a three-ring binder (project log) by the Contractor at the project site at the clean room or in the on-site office of the Contractor.
1. Notifications: Provide copies of Asbestos Permit Application and Notification for Demolition/Renovation (DHHS 3768), which provides written notice to all required agencies, including North Carolina HHCUC.
 2. Employee List: Provide copies of lists of supervisors and workers, along with their accreditation numbers, to be utilized on the project.
 3. Permits: Provide copies of approval of a waste disposal site in compliance with 40 CFR 61.154.

4. Project Schedule: Time schedule for the project, outlining the proposed start, setup, clearances, working hours, etc. for the project.
5. Initial Exposure Assessment: As required by the OSHA construction asbestos standard 29 CFR 1926.1101.
6. Safety Data Sheets: Provide SDS's for chemicals materials to be used during the project, including, but not limited to, solvents, cleaners, and encapsulants.
7. General Work Plan: The Contractor shall develop a written work plan to define work areas, anticipated decontamination and loadout unit locations, and waste container location. Special attention shall be made to the use of elevators and their effect on the differential pressure of the containment(s). The work plan shall also address the exterior containment construction, maintenance of the containment, and safety measures used during the abatement of exterior materials. Submit work plan to the Designer for review and comment at least 10 working days prior to mobilization to the site.
8. Any other programs or training as outlined by the OSHA and EPA standards.

1.04 POST-JOB SUBMITTALS

- A. Submit two complete hardcopy sets of post-job submittals to the Designer following the final completion of the work. Submittals may be submitted electronically instead of hardcopies. Requests for final payment will not be approved until the submittal package has been reviewed and approved by the Designer.
 1. Affidavits: Contractor's affidavit of payment of debts and claims, affidavit of release of liens, and consent of surety company to final payment.
 2. Manifest: North Carolina Asbestos Waste Shipment Record (DHHS 3787) receipt from landfill operator which acknowledges the Contractor's delivery(s) of waste material. Include date, quantity of material delivered, and signature of authorized representative of landfill. Also, include name of waste transporter.
 3. Daily Logs: A copy of all daily logs showing the following: name, date, entering and leaving time, company or agency represented, any new workers added to the job, reason for entry for all persons entering the work area, employee's daily air monitoring data as required by the OSHA standard, and written comments by inspectors, industrial hygienists, designers, and visitors.
 4. Special Reports: All documents generated under Section 01043.1.05.

1.05 SPECIAL REPORTS

- A. General: Except as otherwise indicated, submit special reports to Designer within one day of occurrence requiring special report, with copies to others affected by occurrence. Also keep a copy in the project log book.
- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report to the Designer immediately, listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Designer in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document date and actions; comply with

industry standards for reporting accidents. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.06 CONTINGENCY PLAN

- A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative pressure system failure, supplied air system failure (if applicable), evacuation of injured persons for both life threatening and non-life threatening, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. Keep these plans in the on-site office.
- B. Post outside/inside clean room of Personnel Decontamination Unit:
 - 1. Telephone numbers and locations of emergency services including (but not limited to) fire, ambulance, hospital, police, utility companies, and the NC HHCU.
 - 2. A copy of Safety Data Sheets (SDS) for any chemicals used during the asbestos project.
 - 3. The Contractor shall post asbestos signs in each appropriate language as per the OSHA 29 CFR 1926.1101 standard.

SECTION 01092

CODES AND REGULATIONS

1.01 REFERENCE SPECIFICATIONS

The Contractor shall assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

Unless modified by these project specifications, all specifications for stripping, removal, repair, and disposal work shall conform to the following specifications and standards, as applicable, as if completely reproduced herein.

A. The following regulations published by the Environmental Protection Agency (EPA):

1. "Asbestos Hazards Emergency Response Act" (AHERA), 40 CFR Part 763, Appendix A, to Subpart E, Section III.
2. "National Emission Standards for Hazardous Air Pollutants" (NESHAP), 40 CFR Part 61, Subpart M (Asbestos).
3. "General Provisions," 40 CFR Part 61, Subpart A.

B. The following regulations published by the U.S. Department of Labor, OSHA:

1. "Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules," Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations.
2. "Respiratory Protection," Title 29, Part 1910, Section 134 of the Code of Federal Regulations.
3. Occupational Safety and Health Standard for the Construction Industry Title 29 CFR Part 1926.
4. "Access to Employee Exposure and Medical Records," Title 29, Part 1910, Section 20 of the Code of Federal Regulations.
5. "Hazard Communication," Title 29, Part 1926, Section 59 of the Code of Federal Regulations.
6. "Specifications for Accident Prevention Signs and Tags," Title 29, Part 1910, Section 145 of the Code of Federal Regulations.

C. The following regulations published by North Carolina state agencies:

1. North Carolina Asbestos Hazard Management Program Rules as adopted by 10A NCAC 41C .0600.
2. "North Carolina Occupational Safety and Health Standards for the Construction Industry," 29 CFR Part 1926 as adopted by T13 NCAC 07F .0201.

D. The following documents published by the American National Standards Institute:

1. "Fundamentals Governing the Design and Operation of Local Exhaust Systems," Z9.2-2018.
2. "American National Standard for Respiratory Protection - Respirator Use, Physical Qualifications for Personnel," Z88.6-2006.
3. " American National Standard Practices for Respiratory Protection," Z88.2-2015.

E. The following publication by the Environmental Information Association:

1. "Managing Asbestos in Buildings: A Guide for Owners and Managers" – A revision to the United States Environmental Protection Agency's 1985 Document "Guidance for Controlling Asbestos-Containing Materials in Buildings (EPA560.5-85-024)", known as the Purple Book".

1.02 NOTICES

A. The Contractor shall notify the following offices in writing within the time frame specified by the NESHAP regulations prior to beginning any asbestos removal operations.

1. State Agencies

Health Hazards Control Unit
Division of Public Health
N.C. Department of Health & Human Services

(Regular Mail)
1912 Mail Service Center
Raleigh, NC 27699-1912
Telephone: (919) 707-5950
Fax: (919) 870-4808

(UPS, Fed Ex, etc.)
2nd Floor, Room D-1
5505 Six Forks Road
Raleigh, NC 27609

2. Local Agency

Mecklenburg County
Land Use and Environmental Services Agency

2145 Suttle Avenue
Charlotte, NC 28208

Telephone: (704) 336-5430

3. Licenses

Maintain current licenses for Contractor and accreditation for workers and supervisors as required by applicable State or local jurisdictions for the removal, transporting, disposal, or other regulated activity relative to the work of this contract. Worker and Supervisor accreditation cards must be kept on site at all times the Contractor is on the site.

SECTION 01410

AIR MONITORING

1.01 GENERAL

- A. Air monitoring services will be contracted by the Owner.
- B. Air monitoring will be performed by a North Carolina accredited Air Monitor under the direct supervision of a North Carolina accredited Supervising Air Monitor (SAM), except for sampling performed by the Contractor to satisfy OSHA requirements. SAM and Air Monitor shall be accredited per the Asbestos Hazard Management Program rules.

1.02 DESCRIPTION OF WORK

- A. At the job site, the Air Monitor shall observe and be aware and comment on general work site conditions and activities as they relate to the specifications and profession of industrial hygiene, and communicate these observations and comments to the Owner, Contractor and Designer on a regular basis. At any time during the course of the project any of the above discrepancies is observed, the Air Monitor shall contact Designer immediately.
- B. Copies of air monitoring field notes and reports of observations shall be kept in an on-site project logbook. Air sample results shall be available to the Owner, Contractor, and Designer within 24 hours after collection of samples.
- C. The Air Monitor is to generally conform to the Contractor's schedule and shall respond to necessary changes; provided an advance notice is given as outlined in Section 01043 and that the overall contractual scheduling requirements are met. Air Monitor shall be on-site full-time during asbestos abatement activities.
- D. The Air Monitor shall submit four hardcopies or one electronic copy of the following pre-job submittals to the Designer at least one month before the project begins:
 - 1. Company's air sampling quality control program. Program must at least meet the minimum requirements of NIOSH 7400.
 - 2. Copy(s) of current North Carolina license for Air Monitor(s) and Supervising Air Monitor(s) to be utilized on the project.
 - 3. Most recent report for air monitoring firm's participation in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) program for asbestos.
 - 4. Most recent report for Air Monitor's participation in the AIHA Asbestos Analysts Testing (AAT) proficiency program, if PCM samples are to be analyzed on site.
- E. The Air Monitor shall submit air monitoring data to the Designer on a weekly basis. Air Monitor shall submit four hardcopies or one electronic copy of the report to the Designer.
- F. At the completion of the project, the Air Monitor shall prepare a report describing the assessment of the project, all air monitoring data, acceptance letters, calibration records and a description of the project as it proceeded to completion. Air Monitor shall submit four hardcopies or one electronic copy of the report to the Designer.

1.03 AIR MONITORING

- A. Ambient Air Monitoring: The purpose of ambient air monitoring will be to detect discrepancies in the work area isolation such as:
 - 1. Contamination of the building outside of the work area with airborne asbestos fibers.
 - 2. Failure of filtration or rupture in the negative pressure system.
 - 3. Confirm the work practices established by the Contractor are adequate.
- B. Work Area Airborne Fiber Levels: The Air Monitor may monitor airborne fiber levels in the work area. The purpose of this air monitoring will be to detect airborne fiber levels which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.
- C. Work Area Clearance: To determine if the elevated airborne fiber levels encountered during abatement operations have been reduced to an acceptable level, Air Monitor will collect and analyze air samples per Section 01714.
- D. In accordance with AHM Program Rules, the Air Monitoring firm's SAM shall develop an Abatement Project Monitoring Plan which complies with EPA and OSHA analytical criteria and will provide a valid representation of airborne fiber concentrations both inside and outside the work area. This program is not intended to satisfy the Contractor's requirement for sampling under the OSHA regulation. All personnel and area sampling conducted by the air monitoring firm shall be personally observed. Air sampling pumps shall not be left unattended for extended periods of time.
 - 1. The SAM shall submit a written project monitoring plan to the Designer with a copy to the Contractor. The following information shall be required for the submittal.
 - a. The name, address, and telephone number of the air monitoring firm.
 - b. The name, address, telephone number, and AIHA PAT designation and proficiency data for the laboratory analyzing the air samples. Analysis of all samples collected shall be by a laboratory currently proficient in NIOSH's "Proficiency Analytical Testing Program for Laboratory Quality Control" for asbestos. The acceptable sampling and analysis method is NIOSH 7400, latest revision.
 - c. A proposed air sampling strategy which shall include: a projected number of air samples, locations, the types of air samples to be collected (personal, area, ambient), how the air samples are to be collected (TWA, ceiling, other), the equipment to be used (pumps, calibration equipment, filters, other), and how the samples will be transported to the laboratory.

SECTION 01503

TEMPORARY FACILITIES

1.01 GENERAL

- A. Provide temporary facilities as required herein or as necessary to carry out the work.
- B. Use qualified tradesmen for installation of temporary services and facilities. Locate, modify, and extend temporary services and facilities where they will serve the project adequately and result in minimum interference with the performance of the work.
- C. The Owner shall lock and tag out all electrical and HVAC equipment in the asbestos abatement area, as feasible. The Contractor shall verify that the power and HVAC have been locked and tagged out prior to beginning work.

1.02 WATER SERVICE

- A. Owner shall supply a source of water. Contractor bears all expense of heating and getting water to the work and decontamination areas.
- B. Supply hot and cold water to the decontamination unit in accordance with Section 01563. Hot water shall be supplied at a minimum temperature of 100 degrees Fahrenheit.
- C. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment.

1.03 ELECTRICAL SERVICE

- A. General: Owner shall supply all electricity required for execution of the Project. Contractor shall comply with applicable NEMA, NEC, and UL standards and governing state and local regulations for materials and layout of temporary electric service.
- B. Ground Fault Protection: Provide receptacle outlets equipped with ground fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.
- C. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work.
- D. Where necessary install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

1.04 FIRST AID

- A. A minimum of one first aid kit shall be located in the clean room. Additional first aid kits as the Contractor feels are adequate or is required by law shall be located throughout the work area.

1.05 FIRE EXTINGUISHERS

- A. Comply with the applicable recommendations of NFPA Standard 10 - "Standard for Portable Fire Extinguishers." Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in

each work area equipment room and one in the clean room of the personnel decontamination unit.

1.06 TOILET FACILITIES

- A. Contractor shall provide a sufficient number of temporary toilet facilities to accommodate their employees. Toilet facilities shall be located as directed by the Owner.

1.07 PARKING

- A. Park only in areas designated by the Owner.

1.08 BUILDING SECURITY

- A. Maintain personnel on-site at all times any portion of the work areas are open or not properly secured. Secure work areas completely at the end of each day.

1.09 STORAGE

- A. Supply temporary storage required for storage of equipment and materials for duration of project. Trailer and storage dumpsters will be maintained in areas designated by the Owner.

SECTION 01513

NEGATIVE PRESSURE SYSTEM

1.01 GENERAL

- A. High efficiency particulate air (HEPA) filter exhaust systems equipped with new HEPA filters for each project shall be used. Exhaust equipment and systems shall comply with ANSI Z9.2-2018 and used according to manufacturer's recommendations.
- B. A system of HEPA-equipped air filtration devices shall be configured so that a pressure differential is established between the work area and the surrounding area (no less than -0.02 inches of water). A continuous reading manometer shall be used to confirm this condition. The inlet tube for the manometer shall not be within 10 feet of an air filtration device, decontamination unit, or load out unit.
- C. Additional air filtration devices shall be provided inside the work area for emergency standby as well as for circulation of dead air spaces.
- D. The pressure differential is maintained at all times after preparation is complete and until the final visual inspection and air tests confirm the area is clean and acceptable for occupancy and the Designer confirms to discontinue the use of the negative pressure system.
- E. Air shall be exhausted outside the building. Any variations must be approved by the Designer.
- F. The Contractor shall check daily for leaks and log their checks in the bound log book. This includes checks internal to air-moving devices.
- G. There shall be a minimum of four air changes per hour in any containment.
- H. Containment shall be constructed in such a way that negative pressure is maintained during use of elevators. A manometer shall be used to confirm this condition while elevators are in use and while elevators are stationary.

SECTION 01526

WORK AREA PREPARATION

1.01 GENERAL

- A. Before work begins in an area, a decontamination unit must be in operation as outlined in Section 01563.
- B. Completely isolate the work area from other parts of the building so as to prevent contamination beyond the isolated area.
- C. Temporary facilities shall be addressed as outlined in Section 01503.
- D. The Contractor shall set up a work area, load out, and decontamination unit as shown in the plans and specifications. Any variations must be approved by the Designer. The decontamination facility outside of the work area shall consist of a change room, shower room, and equipment room as described in Section 01563.
- E. Place work area under negative air pressure using High Efficiency Particulate Air (HEPA) filter exhaust system as required by Section 01513.
- F. The Contractor shall wet clean and/or HEPA vacuum all items and equipment in the work area suspected of being contaminated with asbestos, but not in direct contact with the asbestos material, and either secure these items in place with polyethylene sheeting or have them removed from the work area.
- G. Critical Barriers: The Contractor shall thoroughly seal the work area for the duration of the work by completely sealing off all individual openings and fixtures in the work area, including, but not limited to, heating and ventilation ducts, doorways, corridors, windows, skylights, and lighting, with polyethylene sheeting taped securely in place. If the Contractor is using sealant materials to fill in small holes or cracks, the material shall have appropriate fire ratings. All critical barriers must be at least two independent layers of 6-mil polyethylene plastic sheeting.
- H. Entrances and exits from the work area will have triple barriers of polyethylene plastic sheeting so that the work area is always closed off by one barrier when workers enter or exit.
- I. No water may be left standing on the floor at the end of the work day.
- J. Polyethylene sheeting requirements:
 - 1. Polyethylene sheeting requirements (interior):
 - a. Floors: Where applicable, apply one layer of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely.
 - b. Walls: Not required.
 - c. Ceilings: Not required.
 - d. Critical Barriers: Required.

2. Polyethylene sheeting requirements (non-friable exterior removal):
 - a. Floors / Ground: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely. Sheeting shall extend from the edge of the building to a minimum of 10 feet, or further if necessary to contain asbestos-containing debris.
 - b. Critical Barriers: Required.
 - c. Additional precautions may be warranted depending on the means used to access asbestos-containing materials, including polyethylene sheeting wind-breaks. Additional precautions shall be used to prevent asbestos-containing materials from falling more than 10 feet.
3. Polyethylene sheeting requirements (friable exterior removal):
 - a. Framing: Containment shall have sufficient structural support to be weather resistant and withstand the negative pressure inside the containment.
 - b. Floors / Ground: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend up the sheeting on the walls a minimum of two feet. Apply one additional layer of 6-mil (minimum) polyethylene sheeting as a drop cloth.
 - c. Walls: Apply two layers of 6-mil (minimum) polyethylene sheeting around scaffolding or framing of exterior containment. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend over the sheeting on the floor / ground and ceilings a minimum of two feet.
 - d. Ceilings: Apply two layers of 6-mil (minimum) polyethylene sheeting. Joints shall be overlapped a minimum of 12 inches and taped securely (if required). Sheeting shall extend down the sheeting on the walls a minimum of two feet.
 - e. Critical Barriers: Required.
- K. The Contractor shall establish and mark emergency and fire exits from the work area. Emergency procedures shall have priority over established decontamination entry and exit procedures.
- L. Integrity of seals and critical barriers shall be regularly checked and maintained by the Contractor.
- M. After work area preparation, the Contractor shall notify the Designer verbally with written follow-up that they are ready for a pre-work inspection. Asbestos removal shall commence only after satisfactory pre-work inspection has been completed by the Designer and/or Air Monitor.

SECTION 01560

WORKER PROTECTION

1.01 GENERAL

- A. Provide worker protection as required by OSHA, state, and local standards applicable to the work. Contractor is solely responsible for enforcing worker protection requirements at least equal to those specified in this Section.
- B. Each time the work area is entered, the Contractor shall require all persons to remove all street clothes in the changing room of the personnel decontamination unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.
- C. Workers shall not eat, drink, smoke, chew gum, or chew tobacco in the work area, the decontamination unit, or the load out area.

1.02 WORKER TRAINING

- A. Train all workers in accordance with 29 CFR 1926 and North Carolina state regulations regarding the dangers inherent in handling asbestos, breathing asbestos dust, proper work procedures, and personal and area protective measures.

1.03 MEDICAL EXAMINATIONS

- A. Provide medical examinations for all workers. Examination shall, as a minimum, meet OSHA requirements as set forth in 29 CFR 1926.

1.04 PROTECTIVE CLOTHING

- A. Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the work area. Provide a sufficient number for all required changes, for all workers in the work area.
- B. Boots: Provide work boots with non-skid soles and, where required by OSHA, foot protection for all workers.
- C. Gloves: Provide work gloves to all workers and require that they be worn at the appropriate times. Do not remove gloves from work area. Dispose of work gloves as asbestos-contaminated waste, as appropriate, at the completion of the project.

1.05 ADDITIONAL PROTECTIVE EQUIPMENT

- A. Disposable coveralls, head covers, and footwear covers shall be made available by the Contractor for the Owner, Air Monitor, Designer, and other authorized representatives who may inspect the job site. Contractor shall not be responsible for providing respiratory protection to those individuals that are not employed by the Contractor.

1.06 DECONTAMINATION PROCEDURES

- A. Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area:
 - 1. Remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

2. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - a. Thoroughly wet body including hair and face.
 - b. With respirator still in place thoroughly wash body, hair, respirator face piece, and all exterior parts of the respirator.
 - c. Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breathe.
 - d. Carefully wash face piece of respirator inside and out.
 - e. Shower completely with soap and water; rinse thoroughly.
 - f. Rinse shower room walls and floor prior to exit.
 - g. Proceed from shower to changing (clean) room and change into street clothes or new disposable work items.
3. After showering, each employee shall inspect, clean, and repair their respirator as needed. The respirator shall be dried, placed in a suitable storage bag, and properly stored.

SECTION 01562

RESPIRATORY PROTECTION

1.01 DESCRIPTION OF WORK

- A. Instruct and train each worker involved in asbestos abatement in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the work area from the start of any operation which may cause airborne asbestos fibers until the work area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered.

1.02 GENERAL

- A. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and suitable for the asbestos exposure level in the work areas according to OSHA Standard 29 CFR 1926.1101 and other possible contaminants employees might be exposed to during the project.
- B. Provide respiratory protection from the time the first operation involved in the project requires contact with asbestos-containing materials (including construction of decontamination units, construction of airtight barriers/barricades, and placing of plastic sheeting on walls) until acceptance of final air clearance test results by the air monitoring firm.
- C. The minimum respiratory protection for the project during gross removal of friable ACM shall be powered air purifying respirators (PAPR). The minimum respiratory protection for the project during non-friable removal of asbestos-containing material shall be half-face negative pressure air purifying respirators.
- D. Respirator fit testing shall be performed as a minimum at the beginning of the project, at any change in respiratory protection equipment, and at any time during the project if requested by the employee or Designer. Fit testing is to be performed by one of the methods listed in the 29 CFR 1910.134 (f).

SECTION 01563

DECONTAMINATION UNITS

1.01 DESCRIPTION OF WORK

- A. Provide separate personnel and equipment/loadout decontamination facilities when practical. Require that the personnel decontamination unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the equipment/loadout decontamination unit. Contractor shall comply with 29 CFR 1926.1101, specifically paragraph (j); "Hygiene facilities and practices for employees".

1.02 GENERAL

- A. Personnel Decontamination Unit
1. Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces; changing room, shower room, equipment room. Each shall be separated by a minimum of three curtain doorways. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit if an Equipment Decontamination Unit has been constructed for the work area.
 2. Provide temporary lighting within decontamination units as necessary to reach an adequate lighting level.
 3. Maintain floor of changing room dry and clean at all times. Do not allow the overflow water from the shower to escape the shower room.
 4. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
 5. Provide hot and cold water, drainage, and standard fixtures including an elevated shower head as necessary for a complete and operable shower. A water hose and bucket are not an acceptable shower.
 6. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.
 7. Pump shower waste water to sanitary sewer. Provide 20-micron and 5-micron waste water filters in line to drain. Change filters daily or more often if necessary.
 8. If the decontamination area is located within an area with overhead work, provide the area with a minimum 3/8-inch plywood "ceiling" with two layers of polyethylene sheeting covering the top of the "ceiling". Ceiling shall be sufficient to protect those inside the decontamination unit from falling tools and/or equipment from areas above.
 9. Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque plastic sheeting so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the

sheeting to protect the sheeting. Construct barrier with wood or metal studs, maximum 16 inches on center, covered with minimum 3/8-inch plywood.

B. Equipment Decontamination Units:

1. Provide an equipment decontamination unit consisting of a serial arrangement of rooms, clean room, holding area, and washroom, each room separated by a minimum of three curtain doorways, for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through equipment decontamination unit.
2. Washroom: Provide washroom for cleaning of bagged or drummed asbestos-containing waste materials passed from the work area.
3. Holding Area: Provide holding area as a drop location for sealed drums and bagged asbestos-containing materials waste passed from the washroom.
4. Clean Room: Provide clean room to isolate the holding area from the building exterior or occupied areas.
5. Equipment or Material: Obtain all equipment or material from the work area through the equipment decontamination unit according to the following procedure:
 - a. When passing contaminated equipment, sealed plastic bags, drums, or containers into the washroom, close all doorways of the equipment decontamination unit, other than the doorway between the work area and the washroom. Keep all outside personnel clear of the equipment decontamination unit.
 - b. Once inside the washroom, wet-clean the bags and/or equipment.
 - c. When cleaning is complete, insert bagged material into a clean bag/drum during the pass between the washroom and holding area. Close all doorways except the doorway between the washroom and holding area.
 - d. Workers from the building exterior enter the clean room then the holding area to remove decontaminated equipment and/or containers for disposal. Require these workers to wear full protective clothing and respiratory protection as described in Section 01562.

C. Decontamination Unit Contamination:

1. If the air quality in the decontamination unit exceeds 0.01 fibers per cubic centimeters of air (f/cc) as analyzed by PCM or 70 structures per squared millimeter (s/mm²) as analyzed by TEM or its integrity is diminished through use as determined by the Designer, no employee shall use the unit until corrective steps are taken and approved by the Designer and air monitoring firm.

SECTION 01711

PROJECT DECONTAMINATION

1.01 GENERAL

- A. Carry out a first cleaning of all surfaces of the work area including plastic sheeting, tools, scaffolding, and/or staging by use of damp-cleaning and mopping and/or a high efficiency particulate air (HEPA) filter vacuum until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces. Do not perform dry-dusting or dry-sweeping.
- B. Equipment shall be cleaned and all contaminated materials removed before removing polyethylene from the walls.
- C. The Contractor shall replace all pre-filters and clean the inside and outside of the HEPA exhaust units.
- D. After polyethylene sheets have been removed from walls, but are still remaining on all windows, doors, and the critical components, the Contractor shall clean all surfaces in the work area, including ducts, electrical conduits, steel beams, roof deck, etc., with amended water and/or HEPA-filtered vacuum.
- E. After cleaning the work area, the Contractor shall allow the area to thoroughly dry and then wet-clean and/or HEPA vacuum all surfaces in work area again.
- F. At the completion of the cleaning operation, the Contractor's supervisor shall perform a complete visual inspection of the work area to ensure that the work area is dust and fiber free. If the supervisor believes they are ready for a final project decontamination inspection, they shall notify the Designer.
- G. Final project decontamination inspection includes the visual inspection and air monitoring clearance.
- H. Visual inspection for acceptance shall be performed after all areas are dry.
- I. The air monitoring firm shall perform the final visual inspection and conduct the final air clearance. Any discrepancies found shall be documented in the form of a punch list.
- J. Final air sampling shall not commence until the visual inspection is completed and passed.
- K. If the air monitoring firm finds that the work area has not been adequately decontaminated, cleaning, and/or air monitoring shall be repeated at the Contractor's expense, including additional air monitoring firm's fees, until the work area is in compliance.
- L. After the work area is found to be in compliance, all entrances and exits shall be unsealed and the plastic sheeting, tape and any other trash and debris shall be disposed of in sealable plastic bags (6-mil minimum) and disposed of as outlined in Section 02084.
- M. All HEPA unit intakes and exhausts shall be wrapped with six mil polyethylene before leaving the work area.

- N. After the air monitoring firm has approved the final project decontamination and the Contractor has completed the tear down for occupancy by others, the Designer shall perform the project final inspection as outlined in the general conditions.
- O. Any residual asbestos that may be present after removing critical barriers, which in the Designer's judgment should have been cleaned during the pre-cleaning phase prior to installing critical barriers, shall be cleaned and cleared at the Contractor's expense.
- P. There shall be appropriate seals totally enclosing the inspection area to keep it separate from clean areas or other areas where abatement is or will be in progress. Once an area has been accepted and passed air tests, loss of the critical barrier integrity or escape of asbestos into an already clean area shall void previous acceptance and tests. Additional visual and final air clearance sampling shall be required at the Contractor's expense.

SECTION 01714

WORK AREA CLEARANCE

1.01 GENERAL

- A. Notification and scheduling of the final inspection during the project is the responsibility of the Contractor.

1.02 FINAL CLEARANCE TESTING

- A. After the second cleaning operation and after the area is completely dry, the following procedure test shall be performed for the work area:
 - 1. A final visual inspection shall be conducted by the Air Monitor. The inspection shall be conducted following the guidelines set forth in the American Society for Testing and Materials, Standard Practices for Visual Inspection of Asbestos Abatement Projects, Designation: E1368.90. If the work area is found visibly clean, air samples will be collected by the Air Monitor. No air samples shall be collected for clearance of exterior areas without an enclosure.
 - 2. During the air testing, the accredited Air Monitor shall cause disruptive air currents as described in the EPA/AHERA regulations (40 CFR Part 763, Subpart E, Appendix A).
 - 3. Final clearance air samples shall be analyzed by Phase Contrast Microscopy (PCM) in accordance with NIOSH Method 7400. Final clearance criteria shall be all samples collected inside the work area shall be less than 0.01 fibers per cubic centimeter (f/cc) of air.
 - 4. The use of the negative pressure system may be discontinued after the air monitoring firm instructs the Contractor that they have successfully completed the final project decontamination inspection.

SECTION 02080
ASBESTOS REMOVAL

1.01 GENERAL

- A. Prior to starting asbestos removal, the Contractor's equipment, work area, and decontamination units will be inspected and approved by the Designer or Air Monitor.
- B. All loose asbestos material removed in the work area shall be adequately wet, bagged, sealed, and labeled properly before personnel breaks or end of shift.
- C. All plastic sheeting, tape, cleaning material, clothing, and all other disposable material or items used in the work area shall be packed into sealable plastic bags (6-mil minimum) and treated as asbestos-contaminated material.
- D. All material shall be double-bagged.
- E. All excess water (except shower water) shall be combined with removed material or other absorptive material and properly disposed of per EPA regulations. Contractor shall not place water in storm drains, onto lawns, or into ditches, creeks, streams, rivers, or oceans.

1.02 SCOPE OF WORK

- A. The scope of work for this project is defined in Section 01000.
- B. The work as defined herein shall be performed using means and methods to minimize fiber release during ACM removal. Material may be removed utilizing friable or non-friable methods.

1.03 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

- A. Removal of asbestos-containing texture material (ceiling plaster and paint on concrete), ceiling coating, and exterior paint and associated skim coat:
 - 1. Prepare work area as set forth in Section 01526.
 - 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 - 3. Contractor shall carefully remove manageable sections of ACM from the associated substrate and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor.
 - 4. Contractor shall use chisels, scrapers, and straight blade knives to remove ACM from substrate. Do not use serrated blades or power tools.
 - 5. Contractor may use water blasting to remove ACM from the substrates. If so, Contractor shall control water to minimize water escaping the containment.
 - 6. Clean work area as required by Section 01711.

- B. Removal and disposal of asbestos-containing plaster soffits and asbestos-containing joint compound and non-asbestos wallboard:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor shall carefully remove manageable sections of asbestos-containing materials and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor.
 4. Contractor may use a combination of straight blade knives and hammers to remove materials. Do not use serrated blades or power tools.
 4. Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the floor.
 5. Clean work area as specified in Section 01711.
- C. Removal and disposal of asbestos-containing CMU block surface filler (intact block removal):
1. Prepare work area as set forth in Section 01526.
 2. Contractor shall verify with a qualified structural engineer that the blocks are not load bearing and can be removed without risk to the structural integrity of the building.
 3. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 4. Contractor shall carefully remove CMU blocks with asbestos-containing surface filler substantially intact. Care shall be taken to minimize damage to asbestos-containing surface filler. Do not allow asbestos debris to accumulate on floor.
 5. Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the floor. Asbestos-containing materials may not free fall more than ten feet.
 6. Clean work area as specified in Section 01711.
- D. Removal of asbestos-containing CMU block surface filler (surface removal):
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor shall use media blasting or brushes to remove CMU block surface filler from the substrate CMU blocks. Acceptable media includes water, baking soda, glass, and dry ice.

- a. If Contractor elects to use water, Contractor shall control water to minimize water escaping the containment.
 4. Contractor may propose alternate removal method to Designer for approval prior to bid due date. Alternate removal method must be approved by Designer before acceptance of bid and award of project. Contractor must have prior experience using removal method selected by Contractor.
 5. Clean work area as specified in Section 01711.
- E. Non-friable removal and disposal of asbestos-containing floor tile and mastic:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor may remove carpet and/or upper layers of flooring from the flooring substrate, provided that asbestos-containing mastics or floor tile and mastic below these materials are not disturbed.
 - a. If carpet or flooring can be removed without damaging associated ACM, then the carpet and flooring may be disposed of as construction debris.
 - b. If asbestos-containing mastic is damaged or the carpet or flooring have asbestos-containing mastic adhered to them, carpet and flooring shall be disposed of as asbestos-contaminated waste.
 4. Contractor shall remove floor tile in a substantially intact manner using trowels, heat, or other method approved by the Designer. Do not remove using mechanical means.
 5. In areas where flooring and/or mastic are present beneath permanently-fixed items, demolish the item to access and remove the flooring / mastic.
 6. Saturate mastic with a low-odor solvent and clean up with mops, rags, or cellulose. Do not remove using mechanical means.
 7. Clean work area as specified in Section 01711.
- F. Friable removal and disposal of asbestos-containing floor tile, sheet flooring, and mastic:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor may remove carpet and/or upper layers of flooring from the flooring substrate, provided that asbestos-containing mastics or floor tile and mastic below these materials are not disturbed.

- a. If carpet or flooring can be removed without damaging associated ACM, then the carpet and flooring may be disposed of as construction debris.
 - b. If asbestos-containing mastic is damaged or the carpet or flooring have asbestos-containing mastic adhered to them, carpet and flooring shall be disposed of as asbestos-contaminated waste.
 4. Contractor shall remove floor tile from the substrate using "spud bars" or other mechanical means.
 5. In areas where flooring and/or mastic are present beneath permanently-fixed items, demolish the item to access and remove the flooring / mastic.
 6. Saturate mastic with a low-odor solvent and clean up with mops, rags, or cellulose. Mechanical means may be used.
 7. Clean work area as specified in Section 01711.
- G. Non-friable removal and disposal of asbestos-containing floor mastic and carpet glue:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor shall remove carpet from the flooring substrate using knives, straight edged blades, or carpet pullers. Do not remove using serrated blades. Carpet shall be disposed of as asbestos-contaminated waste.
 4. In areas where mastic or glue are present beneath permanently-fixed items, demolish the item to access and remove the mastic or glue.
 5. Saturate mastic / glue with a low-odor solvent and clean up with mops, rags, or cellulose. Do not remove using mechanical means.
 6. Clean work area as specified in Section 01711.
- H. Removal of asbestos-containing window frame caulk and window glazing:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
 3. Carefully remove screws, bolts, or other mounting hardware to remove window sashes and frames intact. Minimize breakage or damage to caulk or glazing.
 4. Wrap window sashes and frames in two layers of 6-mil (minimum) polyethylene sheeting.
 - a. Contractor may elect to remove asbestos-containing caulk from window frames. If so, window frames may be decontaminated and disposed of as construction debris.

5. Contractor shall use chisels, scrapers, and straight blade knives to remove remaining caulk from wall surfaces. Do not use serrated blades or power tools.
 6. Contractor shall take all precautions necessary not to allow asbestos-containing material or windows to free fall to the ground. Asbestos-containing materials may not free fall more than ten feet.
 7. Clean work area as specified in Section 01711.
- I. Removal and disposal of sinks with asbestos-containing mastic and caulk:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor shall carefully remove sinks with asbestos-containing mastic intact and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor.
 4. Remove caulk from remaining substrates using chisels, scrapers, and straight blade knives. Do not use serrated blades or power tools.
 5. Clean work area as specified in Section 01711.
- J. Removal and disposal of asbestos-containing mastic on duct insulation:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 3. Carefully remove asbestos-containing materials from the underlying substrates. Use scrapers, hatchets, or other manual means. Do not use mechanical means or serrated edged tools.
 - a. Alternately, Contractor may cut and remove insulation with asbestos-containing mastic intact.
 4. Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the ground. Asbestos-containing materials may not free fall more than ten feet.
 5. Clean work area as specified in Section 01711.

- K. Removal of asbestos-containing door frame caulk and asbestos-containing fire doors:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
 3. Carefully remove screws, bolts, or other mounting hardware to remove doors. If doors are asbestos containing-fire doors, wrap doors in two layers of two layers of 6-mil (minimum) polyethylene sheeting.
 4. Carefully remove screws, bolts, or other mounting hardware to remove frames intact, as feasible. Frames may be cut into manageable pieces, provided that Contractor minimizes damage to caulk.
 - a. Contractor may elect to remove asbestos-containing caulk from door frames. If so, door frames may be decontaminated and disposed of as construction debris.
 5. Contractor shall use chisels, scrapers, and straight blade knives to remove remaining caulk from wall surfaces. Do not use serrated blades or power tools.
 6. Clean work area as specified in Section 01711.
- L. Removal and disposal of asbestos-containing pipe insulation and mudded elbows:
1. Prepare work area as set forth in Section 01526.
 2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
 3. Contractor shall carefully remove manageable sections of asbestos-containing materials and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor.
 4. Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the floor. Asbestos-containing materials may not free fall more than ten feet.
 5. Clean work area as specified in Section 01711.
- M. Glovebag removal and disposal of asbestos-containing asbestos-containing pipe insulation and mudded elbows (optional):
1. Coordinate shut down of lines that exceed 150 degrees Fahrenheit (150 °F) to be abated with Owner.
 2. The Contractor shall not conduct asbestos removal on any pipe that exceeds 150 °F or which exceeds the manufacturer's requirements of heat-resistant polyethylene glovebags.
 3. Seal any exposed end of a section of pipe insulation which is to be removed, using duct tape and poly, prior to abatement of the pipe insulation section.

4. Use a specifically constructed glovebag to completely enclose the area to be removed, and isolate the removal area from the insulation which is to remain. All openings, as well as the bottom seam of the glovebag should be sealed with duct tape. The glovebag should be such that all removed material can be collected and placed in a section of the bag which can be sealed off from the top section of the glovebag.
5. Before sealing the bag, the following tools should be placed in the glovebag.
 - a. Cloth rags
 - b. Hose from an airless sprayer (for amended water and penetrating encapsulant)
 - c. Bridging encapsulant and canvas cloth strips (if applicable)
 - d. Razor knives, brushes, and any other necessary tools
 - e. The hose from a HEPA-filtered vacuum cleaner
6. When the tools are inside the bag and the bag has been properly sealed, the Air Monitor may smoke-test the glovebag. Should any smoke leak out of the glovebag, or any other visible leaks should be noted, those leaks should be immediately corrected, until smoke-testing indicates no visible leaks and all seals are intact.
7. Once smoke testing clears the glovebags, workers who will perform glovebag removal should dress out in appropriate personal protective equipment.
8. Thoroughly wet the insulation to be removed, using amended water.
9. Carefully remove the insulation from the pipe by placing the removed material in the bottom section of the glovebag.
10. Once the insulation is removed, thoroughly clean the exposed pipe, using brush and/or rags, with amended water.
11. Spray the entire inside of the bag, as well as the exposed pipe, with penetrating encapsulant.
12. Encapsulate the exposed edges of insulation using bridging encapsulant and canvas cloth strips, if applicable.
13. Seal off the bottom section of the bag (with the removed insulation inside) using negative pressure and duct tape. "Collapse" the glovebag using negative pressure from the HEPA-filtered vacuum cleaner.
14. Carefully remove the bottom section of the glovebag, using a knife to cut in the middle of the duct tape seal and double bag the waste. Use negative pressure to collapse the bags in which the waste is being placed.
15. Carefully remove the top section of the glovebag by cutting it from the pipe. Double bag all waste.
16. Tools may be removed from the glovebag by cleaning the tools inside the bag, inverting the sleeves of the glovebag, placing the tools at the end of the

sleeves, sealing off that section of the sleeve with duct tape, and cutting free the section of the sleeve which contains the tools.

17. Thoroughly wash all hoses which come out of the glovebag.
18. If in the event that glovebag integrity is compromised during removal activities (i.e., openings of the glovebag and/or its seal), the Contractor shall immediately stop work and construct a negative pressure enclosure.

N. Removal of exterior caulk:

1. Prepare work area as set forth in Section 01526.
2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
3. Contractor shall use chisels, scrapers, and straight blade knives to remove caulk from surfaces. Do not use serrated blades or power tools.
4. Clean work area as specified in Section 01711.

O. Removal of asbestos-containing silver coating (roof vents):

1. Prepare work area as set forth in Section 01526.
2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
3. Carefully remove screws, bolts, or other mounting hardware to remove metal vent components with asbestos-containing silver coating intact.
4. Wrap metal components in two layers of two layers of 6-mil (minimum) polyethylene sheeting.
5. Clean work area as specified in Section 01711.

P. Removal and disposal of asbestos-containing roof flashing:

1. Prepare work area as set forth in Section 01526.
2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess pooling. Mist asbestos-containing materials continuously during the removal process.
3. Contractor shall cut membrane roof covering asbestos-containing flashing.
 - a. If membrane is removed without disturbing asbestos-containing flashing and flashing is not attached to the membrane, then the membrane may be disposed of as construction debris.
 - b. If membrane has asbestos-containing flashing adhered to it, then membrane shall be disposed of as asbestos-contaminated waste

4. Carefully remove asbestos-containing materials from the underlying substrates. Use scrapers, hatchets, or other manual means. Do not use mechanical means or serrated edged tools.
5. Clean work area as specified in Section 01711.

Q. Removal and disposal of asbestos-containing elevator brake components:

1. Prepare work area as set forth in Section 01526.
2. Spray asbestos-containing materials with a fine mist of amended water prior to removal procedures. Do not over saturate to cause excess dripping. Mist asbestos-containing materials continuously during the removal process.
3. Contractor shall carefully remove asbestos-containing brake components intact and place it directly into bags for disposal. Do not allow asbestos debris to accumulate on floor.
4. Contractor shall take all precautions necessary not to allow asbestos-containing material to free fall to the bottom of the elevator shaft. Asbestos-containing materials may not free fall more than ten feet.
5. Clean work area as specified in Section 01711. Cleaning shall include all surfaces in contact with or adjacent to asbestos-containing elevator components, including elevator cables running through brake pads.

SECTION 02084

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

1.01 GENERAL

- A. All asbestos materials and miscellaneous contaminated debris shall be properly sealed and protected, and the loadout vehicle/dumpster shall be locked, while located on the project site and then transported to a pre-designated disposal site in accordance with 40 CFR 61.150 and DOT 49 CFR Parts 100-399.
- B. An enclosed vehicle will be used to haul waste material to the disposal site. No rental vehicles or trailers shall be used. Vehicle selection, vehicle covers, and work practices shall assure that no asbestos becomes airborne during the loading, transport, and unloading activity, and that material is placed in the waste site without breaking any seals.
- C. Waste disposal polyethylene bags (6-mil minimum) and containers, non-porous (steel/plastic) drums or equivalent, with labels, appropriate for storing asbestos waste during transportation to the disposal site shall be used. In addition to the OSHA labeling requirements, all containers shall be labeled with the name of the waste generator and the location at which the waste was generated.
- D. The Contractor shall transport the containers and bags of waste material to the approved waste disposal site. The sealed plastic bags shall be placed into the burial site unless the bags have been broken or damaged. Upon the landfill's approval damaged bags shall be left in the non-porous containers and the entire contaminated package shall be buried. Uncontaminated containers may be reused.
- E. Workers loading and unloading the asbestos will wear respirators and disposable clothing when handling material. Asbestos warning signs shall be posted during loading and unloading of asbestos waste.
- F. The Contractor shall use the NC HHCU's Waste Shipment Record (DHHS 3787) for disposal records as per 40 CFR 61.150 and distribute a copy of all waste shipment records to the NC HHCU and the Designer after the completion of the project.

APPENDIX A

PREWORK ASBESTOS INSPECTION CHECKLIST

Name of Facility: Sanford Hall_____

Date of Inspection: _____ Pass: _____ Fail: _____

		YES	NO
A.	DOCUMENTS		
1)	Asbestos Removal Permit/NESHAP Notification	_____	_____
2)	Accreditation Documents for Workers & Supervisors	_____	_____
3)	Asbestos Plans and Specifications	_____	_____
4)	Air Monitoring Data	_____	_____
5)	Waste Shipment Records	_____	_____
6)	Sign-in Sheets and Bound Book for Comments	_____	_____
7)	Calibration Record for Grade "D" Air	_____	_____
8)	Items listed in Section 01043 of Specification	_____	_____
 B.	 PPE SUPPLIES		
1)	Tyvek Clothing	_____	_____
2)	Rubber Boots	_____	_____
3)	Respirators with HEPA Filters	_____	_____
 C.	 CLEAN ROOM		
1)	Entry Curtains	_____	_____
2)	Emergency Phone Numbers Posted	_____	_____
3)	First Aid Kit	_____	_____
4)	Asbestos Signs	_____	_____
5)	Decontamination Procedures Posted	_____	_____
6)	Fire Extinguisher	_____	_____
 D.	 SHOWER ROOM		
1)	Polyethylene Curtains	_____	_____
2)	Hot/Cold Water & Operational	_____	_____
3)	Soap & Towels	_____	_____
4)	Waste Water Filter Pump Operational	_____	_____
5)	Extra Five Micron Size Filters	_____	_____
6)	Filtered Waste Water to Sanitary Sewer	_____	_____

E.	WORK AREA	YES	NO
1)	Removable Items Out of Area	_____	_____
2)	Non-removable Items Protected	_____	_____
3)	Critical Barriers Installed	_____	_____
4)	Polyethylene Curtains	_____	_____
5)	Polyethylene on Walls/Floors as Specified	_____	_____
6)	HVAC off	_____	_____
7)	Air Filtration Devices in Place and Operational	_____	_____
8)	Air Exhausted to Outside	_____	_____
9)	Electricity Locked and Tagged Out	_____	_____
10)	Temporary Power Installed with GFCI	_____	_____
11)	Fire Extinguishers	_____	_____
12)	Emergency and Fire Exits Marked	_____	_____
13)	Audible Alarms Operational	_____	_____
14)	Toilet Available	_____	_____
F.	EQUIPMENT		
1)	HEPA Vacuums	_____	_____
2)	Waste Disposal Bags	_____	_____
3)	Airless Sprayer with Water Source	_____	_____
4)	Glove Bags	_____	_____
5)	Emergency Power Generator (if required)	_____	_____
6)	Temporary Lighting	_____	_____
G.	OTHER		
1)	_____	_____	_____
2)	_____	_____	_____
3)	_____	_____	_____
4)	_____	_____	_____

Asbestos Design Consultant

Date

Asbestos Contractor's Representative

Date

ASBESTOS ABATEMENT AIR MONITORING PLAN
FOR
UNC-CHARLOTTE, SANFORD HALL DEMOLITION
9029 JOHNSON ALUMNI WAY
CHARLOTTE, NORTH CAROLINA
TERRACON PROJECT NO. 71247134

Prepared for:

KIMLEY-HORN AND ASSOCIATES, INC.
RALEIGH, NORTH CAROLINA

Prepared by:



2701 Westport Road
Charlotte, North Carolina 28208
Phone: 704-509-1777
Fax: 704-509-1888

A handwritten signature in black ink, appearing to read "Russ Harrings".

Russell Harrings, CIH
North Carolina Supervising Air Monitor No. 90161

July 2024



ASBESTOS ABATEMENT AIR MONITORING PLAN
UNC-CHARLOTTE, SANFORD HALL DEMOLITION
9029 JOHNSON ALUMNI WAY
CHARLOTTE, NORTH CAROLINA
TERRACON PROJECT NO. 71247134

SCOPE OF ASBESTOS ABATEMENT WORK

The scope of abatement work consists of the removal and disposal of asbestos-containing materials (ACM) from Sanford Hall located on the campus of the University of North Carolina – Charlotte (UNC-Charlotte) at 9209 Johnson Alumni Way in Charlotte, North Carolina. The following identified asbestos-containing materials are scheduled to be abated prior to demolition of the subject building.

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
Texture Material (Ceilings)	Throughout Dorm Floors	Good / Friable	2% Chrysotile	42,000 ft ²
Soffit Surfacing	3rd-11th Floor Dorm Rooms	Good / Friable	2% Chrysotile	9,000 ft ²
Texture Material (Concrete Walls/Columns)	Throughout Building	Good / Friable	Type 1: 2% Chrysotile Type 2: None Detected	15,000 ft ²
CMU Block Surface Filler	Throughout Building	Good / Category II Non-Friable	2% Chrysotile	100,000 ft ²
CMU Block Surface Filler (Interior Stairwell)	Throughout Interior Stairwell	Good / Category II Non-Friable	2% Chrysotile	8,000 ft ²
Drywall and Joint Compound (1st Floor)	Throughout 1st Floor	Good / Not Applicable	Drywall: None Detected Joint Compound: 0.75% Chrysotile Composite: 0.04% Chrysotile	7,000 ft ²

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

Material Description	General Location	Condition / NESHA Classification	Percent / Type Asbestos *	Estimated Quantity **
9" x 9" Off-White Floor Tile with White Streaks and Black Mastic (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 2% Chrysotile Black Mastic: 2% Chrysotile	48,200 ft ²
9" x 9" Tan Floor Tile and Mastic (Under Carpet)	Throughout Dorm Floors and Ground Floor Storage Closet (Not under carpet in closet)	Good / Category I Non-Friable	Yellow Mastic: None Detected Floor Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	2,250 ft ²
12" x 12" White Floor Tile and Mastic and Flooring Below (Under Carpet)	Throughout Dorm Floors	Good / Category I Non-Friable	Clear Mastic: None Detected White Tile: None Detected Yellow Mastic: None Detected Tan Tile: 3% Chrysotile Black Mastic: 2% Chrysotile	3,650 ft ²
White with Blue Speckles Sheet Flooring and Mastic (Under Carpet)	7th Floor – Study Room 728	Good / Category I Non-Friable	Sheet Flooring: None Detected Mastic: 2% Chrysotile	120 ft ²

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
12" x 12" Blue Floor Tile and Mastic (Under Carpet)	8th Floor – Study Room 828	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	120 ft ²
Black Mastic and Leveling Compound on Concrete Under Carpet	Throughout Dorm Floors	Good / Category I Non-Friable	2% Chrysotile	1,200 ft ²
Texture Material (Concrete Interior Stairwell)	Throughout Interior Stairwell	Good / Friable	2% Chrysotile	3,000 ft ²
Carpet Glue associated with Rolled Carpet (Dorm Floors)	Dorm Rooms †	Good / Not Applicable	Carpet Glue/Leveling Compound Point Count Analysis: 0.12% Chrysotile	† Up to 40,000 ft ²
Interior Window Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	680 Windows
Interior Door Caulk (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	White Caulk: None Detected Beige Caulk: 3% Chrysotile	440 Doors
Interior Window Glazing (Dorm Floors)	Throughout Dorm Floors	Good / Category II Non-Friable	2% Chrysotile	680 Windows
Ceiling Coating	Ground Floor – Housekeeping Closet	Good / Friable	2% Chrysotile	200 ft ²

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
12" x 12" Beige Floor Tile with Brown Streaks and Black Mastic under Wood-Grain Plank Flooring	Throughout the 1st Floor and Ground Floor	Good / Category I Non-Friable	Floor Tile: None Detected Mastic: 2% Chrysotile	2,150 ft ²
Black Sink Mastic	Ground Floor and 1st Floor	Good / Category II Non-Friable	10% Chrysotile	4 Sinks
Brown Sink Underside Caulk	Ground Floor and 1st Floor	Good / Category II Non-Friable	2% Chrysotile	4 Sinks
Black Mastic on HVAC Ductwork	Ground Floor – Crawl Space and Mattress Storage Room	Good / Category II Non-Friable	Mastic: 2% Chrysotile Ductwork: 65% Chrysotile	125 ft
12" x 12" White Floor Tile and Mastic (Under Carpet)	Ground Floor – Activity Room	Good / Category I Non-Friable	Yellow Mastic: None Detected Tile: 3% Chrysotile Black Mastic: 5% Chrysotile	625 ft ²
Interior Door Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	16 Doors
Interior Window Caulk (Ground Floor)	Throughout Ground Floor	Good / Category II Non-Friable	5% Chrysotile	4 Windows
8" Pipe Black Felt Paper/Tar and Insulation	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Felt Paper/Tar: None Detected Insulation: 15% Chrysotile	10 ft

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
8" Pipe Hard Mudded Elbow	Ground Floor – Crawl Space Back Room and Mattress Storage Room	Good / Friable	Wrap: None Detected Mudded Elbow: 25% Chrysotile	4 Elbows
8" Pipe White Wrap and Insulation	Ground Floor – Crawl Space Back Room	Good / Friable	Wrap: None Detected Insulation: 15% Chrysotile	25 ft
Off-White Paint and Skim Coat	Exterior	Good / Friable	2% Chrysotile	110,000 ft ²
Tan Skim Coat (Under HA E1)	Exterior	Good / Friable	2% Chrysotile	110,000 ft ²
White/Grey Exterior Window Caulk	Exterior Windows	Damaged / Category II Non-Friable	White Caulk: None Detected Clear Caulk: None Detected Grey Caulk: 5% Chrysotile	7,000 ft
White/Grey Exterior Window Glazing	Exterior Windows	Damaged / Category II Non-Friable	2% Chrysotile	680 Windows
White Ceiling Paint – Fire Escape Vestibules	Fire Escape	Damaged / Friable	3% Chrysotile	500 ft ²
Grey Exterior Caulk (Below Windows)	Below Exterior Windows	Good / Category II Non-Friable	5% Chrysotile	7,000 ft
White Sidewalk Caulk	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	100 ft
White Wall Caulk (Bottom of Wall)	Exterior Patio	Damaged / Category II Non-Friable	5% Chrysotile	400 ft

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

Material Description	General Location	Condition / NESHAP Classification	Percent / Type Asbestos *	Estimated Quantity **
Silver Coating	Roof	Good / Category II Non-Friable	3% Chrysotile	100 ft ²
Roof Flashing	Roof	Good / Category I Non-Friable	5% Chrysotile	3,000 ft ²
Fire Doors	Throughout Building	Good / Category II Non-Friable	Assumed ACM	600 Doors
Elevator Brake Components	Elevator Penthouse, Elevators, and Elevator Shafts	Good / Category II Non-Friable	Assumed ACM	Unable to Determine

* Asbestos Content is the highest concentration for each reported asbestos type based on laboratory analysis.

** Estimated Quantities are based on a cursory field evaluation and actual quantities may vary significantly, especially if asbestos-containing materials are present in hidden and/or inaccessible areas not evaluated as part of the inspection.

† Asbestos portion of material is likely a residual asbestos mastic from previous flooring applications. Unable to determine accurate extent and quantity of material since the material is concealed by floor coverings and the asbestos component is likely present in spotty locations.

For more information regarding the locations and quantities of the materials to be abated, please refer to the *Technical Specifications for Removal of Asbestos-Containing Materials, University of North Carolina-Charlotte, Sanford Hall Demolition* dated July 2024, prepared by Terracon Consultants, Inc.

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

GENERAL

1. The Air Monitor (AM) shall be responsible for: monitoring and evaluating the asbestos abatement project; implementing the Air Monitoring Plan, collecting ambient samples during abatement activities, and performing final visual inspections and clearance air monitoring.
2. The AM will work under the direct supervision of the Supervising Air Monitor (SAM). The SAM is responsible for the preparation of this plan, the approval of any changes or modifications thereof, site inspections as required under North Carolina Department of Health and Human Services asbestos regulations, and the preparation of a final report documenting inspections and air monitoring.
3. The AM shall be broadly responsible for protection of the environment from contamination, protection of persons in adjacent areas, and documentation that the work area is acceptable for occupancy following completion of the project, in accordance with current applicable regulations.
4. The AM will not be responsible for conducting OSHA personal air monitoring for the Abatement Contractor's employees.
5. The AM shall ensure that air sampling results are available onsite within 24 hours of sample collection.
6. The onsite AM will be in regular contact with the SAM and will immediately report any unusual conditions to the SAM.

PCM SAMPLING AND ANALYTICAL METHODS

1. PCM sampling will be conducted using 25-mm mixed cellulose ester (MCE) filters, 0.8-micron pore size, mounted in electrically-conductive cassettes equipped with 50-mm extension cowls.
2. The NIOSH Method 7400, latest edition, for PCM will be used for monitoring during abatement activities. All fibers, regardless of composition, greater than five microns in length, with a length to width ratio of 3 to 1, are counted in the NIOSH Method 7400.
3. Field blanks will be collected at a rate of 2 per day or 10%, whichever is greater.

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

PCM AMBIENT AIR MONITORING DURING ABATEMENT ACTIVITIES

1. Precise PCM sample location selection will be at the discretion of the AM. During asbestos abatement and cleanup activities, the AM will collect daily air samples in the following locations, as a minimum:
 - Outside the entrance to the clean room of the worker decontamination unit system,
 - Outside the work area in adjacent, uncontaminated areas of the building;
 - At the negative pressure differential equipment exhaust, between five to eight feet from the airflow when feasible. When multiple machines are in operation, the AM may rotate the sampling.
 - Optional: Inside the work area. The purpose of this air monitoring is to detect airborne fiber counts that may significantly challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.
2. Samples during abatement activities will be collected at flow rates between approximately 2.0 and 10.0 LPM, with minimum sample volumes of 400 liters per sample and a goal of 1,200 liters per sample.
3. If levels outside the work area exceed 0.01 fibers per cubic centimeter of air (f/cc), whichever is greater, the AM shall notify the SAM. The AM shall then direct the Contractor to stop all asbestos-disturbing activities immediately, correct the cause of elevated fiber counts and clean the adjacent area to a minimum distance of 10 feet with a HEPA vacuum followed by wet cleaning. PCM sampling will be repeated following corrective actions and re-cleaning. Abatement activities may recommence when the results of repeat PCM sampling are less than 0.01 f/cc of air.

FINAL VISUAL OBSERVATIONS

1. The AM will conduct final visual observations of each work area following the final cleanup to determine that abatement has been completed and surfaces are free of visible residue, dust, debris and asbestos contaminated equipment and wastes. Surfaces in the work area shall be dry prior to the AM performing final visual observations. Findings will be documented by the AM in their daily observations log.
2. Work area enclosures, critical barriers, negative air pressure systems, barrier tape, asbestos warning signs, and decontamination units shall remain in place and operating until the successful completion of the clearance monitoring.

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

3. If the final visual observations fail to meet the above listed criteria, the Abatement Contractor shall re-clean all surfaces in the work area by HEPA vacuuming and wet cleaning methods. Repeat final visual observations until satisfactory results are obtained.

PCM CLEARANCE AIR SAMPLING

1. PCM clearance air sampling shall be used for all negative pressure enclosure abatement work areas, at a minimum. Clearance sampling will not be required for exterior, non-friable abatement.
2. Following a successful final visual inspection, the AM shall perform PCM clearance monitoring in general accordance with NIOSH Method 7400. Work area enclosures, critical barriers, HEPA-filtered negative air pressure devices, barrier tape, asbestos warning signs, and decontamination units shall remain in place and operating until the successful completion of the clearance monitoring.
3. PCM clearance air samples will be taken using sampling techniques as follows:
 - Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors, or vents.
 - A minimum of five clearance samples will be collected inside each work area. A minimum of 1,200 liters of air will be collected for each clearance sample. The number of samples collected for each respective clearance will be at the discretion of the SAM.
4. The PCM clearance criteria for each work area shall be that the results of each air sample collected inside the work area shall be below less than 0.01 f/cc of air.

WORK AREA RELEASE CRITERIA

1. The visual observations clearance criteria of each work area shall be that surfaces are free of visible residue, dust, debris, and asbestos contaminated equipment and wastes.
2. The PCM clearance criteria for each work area shall be that the results of each air sample collected inside the work area shall be below less than 0.01 f/cc of air.
3. If, for any reason, the final visual observations or air clearance samples do not meet the required work area release criteria, re-cleaning and re-sampling must be accomplished. The AM and/or SAM will determine the method for repeat clearance monitoring. The AM shall then repeat appropriate clearance steps above until satisfactory results are obtained.

Asbestos Abatement Air Monitoring Plan

UNC-Charlotte, Sanford Hall ■ Charlotte, North Carolina

July 2024 ■ Terracon Project No. 71247134

4. The Abatement Contractor will be responsible for the additional fees associated with onsite AM time for to repeat the visual observations and clearance sampling and the fee for sample analysis.
5. Following the successful completion of final visual assessment and clearance sampling, the AM will document the findings.

FORM OF PROPOSAL

Sanford Hall Demolition
University of North Carolina at Charlotte
SCO # 24-27645-01A

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 the University of North Carolina at Charlotte – State Construction Office

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

Sanford Hall Demolition and Site Improvements

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 the

University of North Carolina at Charlotte, North Carolina State Construction Office, and Kimley-Horn and Associates, Inc.

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: _____ Dollars(\$)

Abatement Subcontractor:

_____ Lic _____

Utility Subcontractor:

_____ Lic _____

Site Work Subcontractor:

_____ Lic _____

Electrical Subcontractor:

_____ Lic _____

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

ALTERNATES:

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

UNIT PRICES

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

GENERAL CONTRACT:

No. 1: Removal of unsatisfactory soil CY Unit Price (\$)_____

No. 2: Additional foundation removal CY Unit Price (\$)_____

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

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

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

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

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

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

*** OR ***

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

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

Proposal Signature Page

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

Respectfully submitted this day of _____

(Name of firm or corporation making bid)

WITNESS:

(Proprietorship or Partnership)

By: _____
Signature

Name: _____
Print or type

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

Address _____

ATTEST:

By: _____

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

License No. _____

Federal I.D. No. _____

Email Address: _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 _____ Addendum No. 3 _____ Addendum No. 5 _____ Addendum No. 6 _____

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

Identification of HUB Certified/ Minority Business Participation

I, _____, do hereby certify that on
(Name of Bidder)
 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 Number	Work Type	*Minority Category	**HUB Certified
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N
			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 (\$)_____.

Attach to bid

Attach to bid

Attach to bid

Attach to bid

Attach to bid

AFFIDAVIT A
Listing of Good Faith Efforts
(The University of North Carolina)

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.

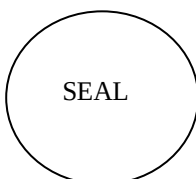
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

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 _____

Do not submit with bid

Do not submit with bid

Do not submit with bid

Do not submit with bid

AFFIDAVIT B
Intent to Perform Contract with Own Workforce
(The University of North Carolina)

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

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.

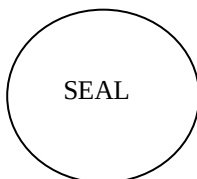
The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

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

AFFIDAVIT C

Portion of the Work to be Performed by HUB Certified/Minority Businesses
(The University of North Carolina)

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 bidder's 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.

County of _____

Affidavit of _____ I do hereby certify that on the

(Name of Bidder)

_____ contract.

(Name of Project)

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	Work Description	Dollar Value
		Y / N		
		Y / N		
		Y / N		
		Y / N		
		Y / N		
		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 is 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.

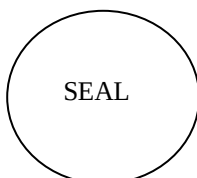
The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

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 _____

AFFIDAVIT D

Good Faith Efforts

(The University of North Carolina)

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low 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:

County of _____

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

(Project Name)

Project ID# _____ Amount of Bid \$ _____

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

(Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified	Work Description	Dollar Value
		Y / N		
		Y / N		
		Y / N		
		Y / N		
		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.

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

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

- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

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

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

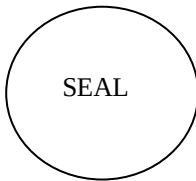
The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____

Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

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

APPENDIX E
MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

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

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

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

Date: _____

Approved/Certified By: _____

Name

Title

Signature

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

FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS THAT _____

_____ as
principal, and _____, as surety, who is
duly licensed to act as surety in North Carolina, are held and firmly bound unto the State of
North Carolina* through _____ as
obligee, in the penal sum of _____ DOLLARS, lawful money of
the United States of America, for the payment of which, well and truly to be made, we bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and
severally, firmly by these presents.

Signed, sealed and dated this ____ day of ____ 20__

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

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

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

*(Community college projects: Delete State of North Carolina as owner and replace with
community college name.)

FORM OF CONSTRUCTION CONTRACT

(ALL PRIME CONTRACTS)

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

hereinafter called the Party of the First Part and the State of North Carolina, through the University of North Carolina at 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; and drawings, titled:

Consisting of the following sheets: _____

Dated: _____ and the following addenda:

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

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

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

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

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

the various divisions or part of the work and by calendar days as outlined in Article 14 of the General Conditions of the Contract.

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

(\$ _____).

Summary of Contract Award:

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

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

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

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

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

Witness:

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)

(Agency, Department or Institution)

Witness:

By: _____

Title: _____

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project _____

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

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

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

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

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

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

(Corporate Seal)

Witness:

Countersigned:

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

Contractor: (Trade or Corporate Name)

By: _____

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

(Surety Company)

By: _____

Title: _____
(Attorney in Fact)

(Surety Corporate Seal)

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project _____

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

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

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

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

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

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

(Corporate Seal)

Witness:

Countersigned:

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

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

Contractor: (Trade or Corporate Name)

By: _____

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

(Surety Company)

By: _____

Title: _____
(Attorney in Fact)

(Surety Corporate Seal)

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

APPROVAL OF THE ATTORNEY GENERAL

**CERTIFICATION BY THE OFFICE OF STATE
BUDGET AND MANAGEMENT**

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

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

This _____ day of _____ 20____.

Signed _____
Budget Officer