Project Manual:

NKU NORTHERN KENTUCKY UNIVERSITY

Pre-Renovation Removal Of Asbestos-Containing Materials For:
Residence Hall Renovation at Lakeside

3510 Alexandria Pike
Highland Heights Kentucky 41076

September, 2007

Project Architect:
GBBN Architects, Inc.
325 West Main Street,Suite 280
Lexington, Kentucky 40507
859-381-8787
859-381-8873 Fax

Environmental Consultant:
BHE Environmental, Inc.
11733 Chesterdale Road
Cincinnati, Ohio 45246-3405
513-326-1500
513-326-1550 Fax

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Steven L. Beshear
Governor

Department for Environmental Protection
Florence Regional Office
8020 Veterans Memorial Drive, Suite 110
Florence, Kentucky 41042

Robert D. Vance
Secretary

December 14, 2007

Marilyn Heflin
Facilities Management
Northern Kentucky University
Lucas Administrative Center 726
Nunn Drive
Highland Heights, KY 41099

Re: Lakeside Residence Hall
Asbt Log #070262FR-Incident #2267357

Dear Ms. Heflin:

On 11/14/07, the Division for Air Quality investigated a renovation project at Lakeside Residence Hall, 3510 Alexandria Pk., Highland Heights, KY. Enclosed is a copy of the inspection report. No violations were observed. All was satisfactory. Please thoroughly review the report.

If you have any questions concerning this determination, please contact me at the Florence Regional Office (859) 525-4923.

Sincerely,

Drew M. Vargo
Environmental Inspector III

Environmental and Public Protection Cabinet
Department for Environmental Protection
Compliance Evaluation Report

Lead Investigator: Vargo, Drew

Start Date: 11/14/2007

Program: Air

Inspection Date: 11/14/2007

Inspection Type: DAQ-Asbestos-NESHAPS

Start Time: 09:51 AM

End Time: 12:13 PM

Incident ID: 2267357

General Comments:

Asbt Log #070262FR--former nursing home (3510 Alexandria Pk., Highland Heights) being renovated & converted into NKU student residence hall, now called Lakeside Residence Hall, having a basement for HVAC & utilities, with 3 floors for living quarters. Aegis Environmental (Franklin, TN) was performing the ACBM abatement---21,115 s.f. NF VATS & window glazing, 27870 s.f. friable ceiling panels, 4000 s.f. friable TSI, & 200 l.f. friable pipe TSI. The abatement is scheduled for completion on/about 11/29/07.

DMV/Florence DAQ attended a meeting at the site & inspected the facility. Present were representatives from NKU, Aegis Environmental, BHE Environmental, & GBBN Architects. The work completed to date was reviewed & the balance of the abatement on the 3 residental floors was discussed. Of particular concern was the difficulty in achieving the OSHA standard of negative 0.02 inches water column pressure within containments. Subsequent to this meeting, in calls to OSHA it was discovered that the negative 0.02 inches figure was only required for OSHA Class I work, & was not necessary for OSHA Class II work, which is what the abatement of friable ceiling panels in full containment was. Negative pressure would still be required in all containments. After the meeting DMV walked thru the building, & also inspected a containment on the third floor with Shane Tywater of Aegis Environmental. All appeared to be satisfactory. The necessary notification had been submitted to DAQ. An acceptable alternative procedures request had been submitted to not use individual rigid containers for friable ACM waste. An additional request was also approved to shorten the drying time in containments, prior to taking the containments down & doing air sampling. There were no violations.

Requirement	Status	Results Or Comments
(a) Applicability. To determine which requirements of paragraphs (a), (b), and (c) of this section apply to the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. The requirements of paragraphs (b) and (c) of the section apply to each owner or operator of a demolition or renovation activity, including the removal of RACM as follows: [401 KAR 58:025 Section 2(1)((a))]	C	**Notice received. Alternative procedure requests received. Asbestos survey received. Project was a renovation with a greater than threshold friable removal.**

Investigator: [signature] **Title:** Environmental Inspector **Date:** 11/14/07

- [ ] N - Not Applicable
- [ ] E - Not Evaluated
- [ ] V - Out of Compliance-NOV
- [x] C - No Violations observed
- [ ] I - No Violations obs-but impending viol trends obs
- [ ] D - Out of Compliance-Violations Documented
- [ ] O - Out of Comp-LOW non-recurrent Adm. or O&M

Received By: **Title:** **Date:**

Delivery Method: 1st Class Mail - USPS

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DRAWINGS

END OF TABLE OF CONTENTS

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NORTHERN KENTUCKY UNIVERSITY

Procurement Services
Lucas Administrative Center 617
Nunn Drive
Highland Heights, KY 41099
(859) 572-5265
FAX (859) 572-6995

INVITATION FOR BID
(This is not an order)

FIRM NAME: _____

ADDRESS: _____

_____

PHONE: _____ FAX: _____

DATE: _____

NOTE: FILL IN ABOVE, PLEASE PRINT

Invitation No.	NS-18-08
Bid Opening Date:	October 2, 2007
	2:00 P.M., E.D.T.
Commodity/Service:	**Asbestos Abatement Lakeside Renovation**
Date Issued:	September 14, 2007

Instructions

1. Bids must be received in the Procurement Services Office, 617 Lucas Administrative Center, Northern Kentucky University, Highland Heights, Kentucky 41099, in a sealed envelope no later than the date and time stated above, at which time all bids received will be publicly opened and read.

2. Bid envelope shall be addressed as indicated below. No responsibility will attach to the Procurement Services Office for the premature opening of or the failure to open a bid not properly addressed or identified.

ADDRESS BID AS FOLLOWS:

Name and Address of Bidder

Northern Kentucky University
Procurement Services
617 Lucas Administrative Center
Highland Heights, KY 41099-8123

Invitation No.: **NS-18-08**
Opening Date: **October 2, 2007**
2:00 P.M., E.D.T.

3. No bidder may withdraw his bid for a period of thirty (30) days after the date set for the opening of bids. Clerical errors and omissions in the computation of the lump sum bid shall not be a cause for withdrawal of the bid without forfeit of bid bond. Bids may be withdrawn, in person only, prior to the closing date and time for the receipt of bids.

4. Bids, upon their receipt, are stamped showing the hour and date received. Bids received after the scheduled closing time will not be considered provided legal and acceptable bids have been received.

5. The right is reserved to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the University may be served.

6. Telegraphic or faxed bids or modifications of bids by telegram are not acceptable.

7. **BID MAY BE REJECTED UNLESS FILLED OUT IN INK OR TYPEWRITTEN AND SIGNED IN INK.**

8. For any clarification of this Invitation for Bid contact:

BUYER: **Don Johnson** **johnsondon@nku.edu** PHONE: **(859) 572-6449** FAX: **(859) 572-6995**

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NORTHERN KENTUCKY UNIVERSITY
INVITATION FOR BID, NS-18-08

ASBESTOS ABATEMENT LAKESIDE RENOVATION
NOTICE OF BID OPPORTUNITY

BRIEF SCOPE OF WORK:

This project consists of the pre-renovation removal of asbestos containing materials in an existing 3-story brick structure with basement that was a former 127,730 sf nursing home built in 1962. Adaptive re-use will convert the structure into residential housing for up to 460 students.

PROJECT TIMETABLE:

INVITATION TO BID Issued	Friday, September 14, 2007
Pre-Bid Meeting	Thursday, September 20, 2007
BIDS DUE	**Tuesday, October 2, 2007**
Substantial Completion	Tuesday, November 13, 2007
Final completion	**Tuesday, November 27, 2007**

Work can begin immediately, upon completion of bidding process and execution of contract.

PRE-BID MEETING:

Pre-bid Meeting will be at the jobsite, 3510 Alexandria Pike, Highland Heights, KY 41076 at 1:00 pm.
Note: The entrance to Lakeside is off Martha Layne Collins Blvd. at the first traffic light west of Rt. 27, Alexandria Pike, diagonal from the Cold Spring Taco Bell.

DRAWINGS AND SPECIFICATIONS:

Complete sets of drawings and specifications can be purchased from:

Queen City Reprographics, Inc.
2863 Sharon Road
Cincinnati, Ohio 45241
Phone: 513-326-2300 Toll-Free: 800-966-2260.

BONDS:

A 5% bid bond is required. Performance and payment bonds of 100% will be required of the successful bidder. More detailed information regarding bond requirements are included in the special instructions.

PREVAILING WAGE:

It is anticipated that this will **NOT** be a prevailing wage job.

ENGINEERS/ARCHITECTS:

Project Architect
GBBN Architects
325 W. Main St, Ste 280
Lexington, KY 40507
Contact: Janet Schwartz
859.381.8787

Abatement Consultant
BHE Environmental, Inc.
11733 Chesterdale Rd.
Cincinnati, OH 45246
Contact: Jason Holton
513.326.1500

SUBMITTAL OF PROPOSAL:

Submit the completed bid package, by the time and date specified to:

Genelle Antoine, Bid Specialist
Procurement Services
Northern Kentucky University
Lucas Administrative Center, Room 617
Highland Heights, KY 41099

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FORM OF PROPOSAL
NORTHERN KENTUCKY UNIVERSITY
INVITATION FOR BID, NS-18-08

ASBESTOS ABATEMENT LAKESIDE RENOVATION

The Bidder agrees to furnish all labor, materials, supplies, supervision and services required to complete the asbestos abatement at Lakeside for Northern Kentucky University. These services to be provided in accordance with Specifications and Contract Documents, and any duly issued Addenda for the LUMP SUM BASE BID set forth below:

THIS PROPOSAL SUBMITTED BY:

_____

_____

_____
(Name and Address of Bidder)

DATE: _____ TELEPHONE: _____ FAX: _____

LUMP SUM BASE BID AMOUNT:

_____ **DOLLARS**
(USE WORDS)

_____ **CENTS** **($_____)**
(USE WORDS) **(USE FIGURES)**

UNIIT PRICES:

1. **Asbestos-containing pipe insulation/linear foot** **$**_____
2. **Asbestos-containing boiler breeching insulation/square foot** **$**_____
3. **Asbestos-containing boiler insulation/square foot** **$**_____
4. **Asbestos-containing tank insulation/square foot** **$**_____
5. **Cementitious fitting on fiberglass insulated lines per fitting** **$**_____
6. **Asbestos-containing floor tile and mastic/square foot** **$**_____
7. **Asbestos-containing acoustical suspended ceiling tile/square foot** **$**_____
8. **Asbestos-containing coated sink/unit** **$**_____
9. **Asbestos-containing fire door/unit** **$**_____
10. **Asbestos-containing window glazing coumpound/window** **$**_____

The authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest, must be properly executed for the PROPOSAL to be valid.

The Bidder hereby acknowledges receipt of the following Addenda:

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATED

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATED

(IF NONE HAVE BEEN ISSUED AND RECEIVED, INSERT THE WORD NONE)

FORM OF PROPOSAL
NORTHERN KENTUCKY UNIVERSITY
INVITATION FOR BID, NS-18-08
REFERENCES

ASBESTOS ABATEMENT LAKESIDE RENOVATION

Bidder Qualifications: The bidder is required to submit a list of completed projects where he has performed similar work to that specified herein.

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

FORM OF PROPOSAL
NORTHERN KENTUCKY UNIVERSITY
INVITATION FOR BID, NS-18-08
SUBCONTRACTORS

ASBESTOS ABATEMENT LAKESIDE RENOVATION

Subcontractors: The following is a list of subcontractors proposed by the bidder to be used to complete the project. All subcontractors are subject to approval by Northern Kentucky University. Failure to submit this list completely filled out may invalidate bid.

BRANCH OF WORK	NAME, ADDRESS AND TELEPHONE OF SUBCONTRACTORS

NORTHERN KENTUCKY UNIVERSITY
BIDDER CERTIFICATIONS

By signing below the Contractor swears or affirms that he/she is in compliance with the following three sections.

1. Campaign Finance Laws Pursuant to KRS 45A.110 and KRS 45A.115 the undersigned hereby swears or affirms, under penalty prescribed by law for perjury, that neither he/she, individually, nor, to the best of his/her knowledge and belief, the corporation, partnership, or other business entity which he/she represents in connection with this procurement, has knowingly violated any provisions of the campaign finance laws of the Commonwealth of Kentucky, and that the award of a contract to him/her, individually, or the corporation, partnership or other business entity which he/she represents, will not violate any campaign finance laws of the Commonwealth.

2. Worker's Compensation and Unemployment Insurance Pursuant to KRS 45A.480, the undersigned hereby swears or affirms, under penalty of perjury, that all contractors and subcontractors employed, or that will be employed under the provisions of this contract shall be in compliance with the requirements for worker's compensation insurance under KRS Chapter 342 and unemployment insurance under established KRS Chapter 341.

3. Vendor Report of Prior Violations The Bidder/Owner shall reveal to the University, prior to this award of a contract, any final determination of a violation by the Contractor within the previous five (5) year period of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342. The Contractor is further notified this statute requires that for the duration of this contract, the Contractor shall be in continuous compliance and the Contractor's failure to reveal a final determination of a violation or failure to comply with the cited statutes for the duration of the contract, shall be grounds for the Contractor's disqualification by the University from eligibility to bid or submit proposals to the University for a period of two (2) years. Please list any final determination(s) of violation(s) including the date of determination and the state agency issuing the determination. If no violations have occurred, type **none** in the space below.

* KRS Chapter 136 - Corporation and Utility Taxes
* KRS Chapter 139 - Sales & Use Tax
* KRS Chapter 141 - Income Taxes
* KRS Chapter 337 - Wages & Hours
* KRS Chapter 338 - Occupational Safety & Health of Employees
* KRS Chapter 341 - Unemployment Compensation
* KRS Chapter 342 - Worker's Compensation

KRS VIOLATION	DATE	STATE AGENCY

(SIGNATURE)

(TITLE)

(NAME OF COMPANY)

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AUTHENTICATION OF BID or OFFER AND
STATEMENT OF NON-COLLUSION
AND NON-CONFLICT OF INTEREST

I, HEREBY CERTIFY:

1. That I am the Bidder (if the Bidder is an individual), a partner in the Bidder (if the Bidder is a partnership or an officer or employee of the bidding corporation having authority to sign on behalf (if the Bidder is a corporation).

2. That the submitted bid in response to this Invitation for Bid (or offer in response to Request for Proposals) has been arrived at by the Bidder independently and has been submitted without collusion with, and without any agreement, understanding planned common course of action with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation for Bid or RFP, designed to limit independent bidding or competition; as prohibited by the provisions of KRS 45A.325.

3. That the contents of the bid or offer have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder its surety on any bond furnished with the bid or offer and will not be communicated to any such person prior to the official opening of the bid offer.

4. That the Bidder is legally entitled to enter into the contract with Northern Kentucky University and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 16A.390 and 45A.330 to 45A.340 and 45A.455.

5. This offer is for, at minimum, thirty (30) calendar days from the date this offer is opened. In submitting the above it is expressly agreed that upon proper acceptance by Northern Kentucky University of any or all items offered, a contract shall thereby be created with respect to the items accepted.

6 That I have fully informed myself regarding and affirm the accuracy of all statements made in this Form of Proposal including Bid Amount.

7. Unless otherwise exempted by KRS 45.590, the Bidder intends to comply in full with all requirements of the Kentucky Civil Rights Act and to submit data required by the Kentucky Equal Employment Act upon being designated the successful bidder.

8. That the Bidder, if awarded a contract, would no be in violation of Executive Branch Code of Ethics established by KRS 11A.990.

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID or OFFER

AUTHORIZED SIGNATURE: _____ DATE: _____

NAME (Please Print Legibly): _____

FIRM: _____ FED ID. OR SSN#: _____

PERMANENT ADDRESS: _____ _____
STREET CITY

_____ _____ TELEPHONE NO: _____ FAX NO: _____
STATE ZIP CODE

E-MAIL: _____

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Revised December 20, 2002

Purchasing Department
Northern Kentucky University
Highland Heights, KY 41099

INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS

Please note these Instructions to Bidders and General Conditions are standard requirements for solicitations issued by Northern Kentucky University, which may be in the form of Invitations to Bid (ITB) or Requests for Proposals (RFP). If the solicitation is an Invitation to Bid, all terms contained herein apply as written. If the solicitation is in the form of a Request for Proposals, RFP terminology should be substituted. The following details the primary differences.

Invitation to Bid - The solicitation document issued by the university, typically containing concise established requirements and resulting in a formal sealed bid being submitted. The contract award is typically made to the qualified bidder submitting the lowest bid while meeting the requirements of the conditions and specifications. The offer is submitted on a university supplied, pre-printed bid document entitled a "form of proposal." Bids are opened and read publicly at the specified date and time.

Request for Proposal - The solicitation document issued by the university, typically containing certain established requirements but resulting in a written proposal being submitted, rather than a lump sum bid. The contract award is based on a set of evaluation criteria with pre-determined weighted values. Evaluation is performed and scored by committee. Price is only one factor in the evaluated award. The offer is submitted as a written proposal responding to various requirements described by the RFP. There is no public opening or reading of offers received.

ARTICLE 1 – DEFINITIONS

1.1 **Bidding/Contract Documents** include the Agreement between Owner and Contractor, the Form of Proposal, the Invitation for Bids, the Instructions to Bidders/General Conditions, the Payment and Performance Bond, the supplemental Conditions, the drawings, specifications, addenda issued prior to the execution of the contract, and modifications issued after execution of the contract. The Contract Documents incorporate by reference pertinent requirements of the Kentucky Revised Statutes.

1.2 The **Owner** is Northern Kentucky University.

1.3 The **Purchasing Agency** is the Purchasing Department, Northern Kentucky University, Highland Heights, KY 41099.

1.4 The **Purchasing Officer** or Contracting Officer is the Director, Purchasing Department, or an authorized representative of that individual.

1.5 The **Using Agency** is Northern Kentucky University.

1.6 **Addenda** are written or graphic instruments issued by the Purchasing Department prior to the execution of the contract, which modify or interpret the bidding documents by additions, deletions, clarifications, or corrections.

1.7 The **Prime Bidder** is one who submits a bid directly to the Owner for the work described in the bidding documents.

1.8 A **Sub-bidder** or **Subcontractor** is one who submits a bid to a prime bidder for materials or labor for a portion of the work.

1.9 An **Alternate** is an amount stated in the bid to be added to or deducted from the amount of the base bid if the corresponding change in project scope or materials or methods of construction described in the bidding documents is accepted.

1.10 The **Work** includes the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipments, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations.

1.11 The **Contract Sum** means the sum stated in the Agreement between Owner and Contractor including any authorized adjustments thereto; it is the total amount payable by the Owner to the Contractor for the performance of the work under the Contract Documents.

1.12 **Contractor** means the person, company or corporation with whom the Owner has executed the contract for construction.

1.13 **Work Order** means a written notice by the Owner to the Contractor, authorizing the Contractor to commence work under the contract and establishing the beginning date from which the time for completion shall be established.

1.14 The **Contract Completion Time** is the number of consecutive calendar days between the date of commencement for the work and the date of substantial completion of the work as established in the Agreement Between Owner and Contractor.

1.15 **Calendar Day** means a day of twenty-four hours measured from midnight to the next midnight.

1.16 **Change Order** means a written order to the Contractor signed by the Owner, issued after the execution of the contract, authorizing a change in the work or an adjustment in the Contract Sum or the Contract Time.

1.17 **Shop Drawings** means drawings, completion diagrams, schedules, and other data specially prepared for the work by the Contractor or any subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the work.

1.18 A **Field Order** is a written order issued by the Architect/Engineer, which clarifies or interprets the Contract Documents, or orders minor changes in the work which does not require a change order under Article 20.

1.19 A **unit price** is an amount stated in the bid as a price per unit of measurement for materials or services as described in the bidding documents.

1.20 The **Architect/Engineer** is the architectural or engineering firm that prepared the drawings and specifications.

1.21 A **bid proposal** is a complete and properly signed document, proposing to do the work or designated portion thereof for the sums stipulated therein supported by data called for by the bidding documents.

1.22 A **bid** is the sum stated in the bid proposal for which the bidder offers to perform the work described in the specifications and detailed on the drawings.

1.23 The **Contract Documents** are complementary, and what is required by one shall be as binding as if required by all. In case of conflicts between the various Contract Documents, the order of precedence will be as follows: (1) Addenda, (2) Division 1 – General Requirements of the Specifications, (3) Supplemental Conditions, (4) General Conditions, (5) Technical provisions of the Specifications, (6) Drawings.

ARTICLE 2 – BIDDER'S REPRESENTATIONS

2.1 Each Bidder by making his bid represents that:

2.1.1 He has read and understands the bidding documents and his bid is made in accordance therewith.

2.1.2 He has carefully examined the site of the proposed work and has familiarized himself with the local conditions under which the work is to be performed.

2.1.3 His bid is premised upon furnishing the work required by the bidding documents.

ARTICLE 3 – DISTRIBUTION, AND ADDENDA TO BIDDING DOCUMENTS

3.1 Copies

3.1.1 Bidders, sub-bidders/sub-contractors, and others may obtain from the Purchasing Officer bidding documents in the manner and for the charge, if any, stated in the Advertisement or Invitation to Bid.

3.1.2 Complete sets of bidding documents shall be used in preparing bids. The Purchasing Officer assumes no responsibility for misinterpretations resulting from the use of incomplete sets of bidding documents.

3.1.3 The Purchasing Officer, in making copies of the bidding documents available on the above terms, does so only for the purpose of obtaining bids on the work and does not confer a license or grant for any other use.

3.2 Interpretation or Correction of Bidding Documents

3.2.1 Bidders shall promptly notify the Purchasing Officer of an ambiguity, inconsistency or error which they may discover upon examination of the bidding documents or of the site and local conditions.

3.2.2 All questions regarding the meaning or interpretation of the bidding documents shall be directed in writing to the Purchasing Officer. Questions received less than ten (10) calendar days prior to the date for receipt of bids may not be answered.

3.2.3 Any interpretation, correction or change of the bidding documents shall be made by addendum, issue by the Purchasing Officer as provided in Article 3.4. Interpretations, corrections or changes of the bidding documents made in any other manner shall not be binding and Bidders shall not rely upon such interpretations, corrections and changes.

3.3 "Or Equal" Clause

3.3.1 Unless otherwise indicated in the bidding documents, the materials, products and equipment described or referenced by manufacturer's or vendors' names, trade names, catalogue numbers, etc., are intended to establish a standard of required function, dimension, appearance and quality. Unless otherwise stated, substitutes or "equal" items may be furnished or used If approved by the Purchasing Officer in consultation with the Architect/Engineer as provided in Article 7.2.2.

3.4 Addenda

3.4.1 Addenda will be mailed or delivered to all who are known by the Purchasing Officer to have requested and were furnished bidding documents.

3.4.2 Copies of addenda will be made available for inspection wherever bidding documents are on file for that purpose.

3.4.3 No addenda of a material nature will be issued later than seven (7) calendar days prior to the date for receipt of bids, except for addenda postponing the date for receipt of bids or withdrawing the Invitation to Bid.

3.4.4 The Bidder shall ascertain, prior to submitting his bid, that he has received all addenda issued by the Purchasing Officer for the particular bid invitation. The Bidder shall acknowledge receipt of all addenda in the Form of Proposal, or by a separate letter to the Purchasing Officer which is received at or prior to the hour and date specified for receipt of bids.

ARTICLE 4 – BIDDING PROCEDURE

4.1 Form and Style of Bids

4.1.1 Bids will be submitted on the bid forms (Form of Proposal) provided by the Purchasing Officer.

4.1.2 All blanks on the Form of Proposal form shall be filled in and all required support data shall be furnished

4.1.3 Where so indicated by the makeup of the Form of Proposal, sums shall be expressed in both words and figures, and in the case of discrepancy between the two, the amount of words shall govern.

4.1.4 Any interlineation, alteration or erasure must be initialized in ink by the authorized representative of the Bidder who signed the bid.

4.1.5 All alternates specifically called for by the Owner shall be bid. Voluntary alternate proposals and/or an alternate to a lump sum proposal will not be considered unless specifically permitted by the conditions of the Advertisement for Bids or Invitation to Bid.

4.1.6 The Bidder shall make no additional stipulations on the bid proposal form nor qualify his bid in any other manner.

4.1.7 The Form of Proposal shall be signed by a person or persons legally authorized to bind the bidder to a contract. The bid proposal shall also include the legal name of the bidder and a statement indicating whether the bidder is a sole proprietorship, a partnership, a corporation, or any other legal entity. A bid by a corporation shall also identify the state of incorporation including federal ID number.

4.2 Bid Security

4.2.1 Bids shall be accompanied by a bid guarantee of not less than five percent (5%) of the amount of the base bid executed by a surety company authorized to do business in the Commonwealth of Kentucky.

This bid security secures the bidder's promise (1) to enter into a contract with the Owner on the terms stated in his bid proposal and (2) if required, to furnish bonds covering the faithful performance of the contract and the payment of all obligations thereunder. Should the Bidder refuse to enter into a contract or fail to furnish the required performance and payment bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

4.2.2 The Purchasing Officer shall retain the bid security of Bidders until either (a) the contract has been executed and performance bonds have been furnished, or (b) the specified time has elapsed so that bids may be withdrawn or (c) all bids have been rejected.

4.3 Submission of Bids

4.3.1 The completed bid, including Form of Proposal, bid security, and required support data, shall be enclosed in a sealed envelope. The envelope shall be addressed to the bid receipt clerk who receives the bids and shall be identified with the Bidder's name and address, the sealed bid invitation number, closing date and hour. If the bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof.

4.3.2 Bids shall be deposited at the designated location prior to the closing time and date for receipt of bids indicated in the Advertisement or Invitation to Bid, or any extension thereof made by addenda. Bids received after the closing time and date for receipt of bids may be considered for evaluation and award only (1) if no other bids were received within the legal advertisement period; (2) the readvertisement time delay would seriously affect the operations of the Using Agency; and (3) in the reasonable judgment of the Purchasing Officer, the bid was finalized prior to the official closing time and date for the receipt of bid.

4.3.3 Bidder shall assume full responsibility for timely delivery at the location designated for receipt of bids.

4.3.4 Oral, telephonic, or telegraphic bids or changes in bids by such methods are not permitted and will not receive consideration.

4.4 Modification or Withdrawal of Bid

4.4.1 Bids may be withdrawn prior to the closing time and date for receipt of bids (1) by a properly identified representative of the Bidder whose name appears on the bid envelope, or (2) by written request by an authorized representative of the Bidder, received by the receipt clerk prior to bid closing time.

4.4.2 Withdrawn bids may be resubmitted up to the closing time designated for the receipt of bids.

4.4.3 During the specified time period following closing time and date for receipt of bids during which bids remain open for the Owner's acceptance, a period of thirty (30) calendar days or the number of calendar days is stated in the Invitation to Bid, no Bidder may withdraw, modify or cancel its bid without the bid security being subject to forfeiture.

ARTICLE 5 – CONSIDERATION OF BIDS

5.1 Opening of Bids

Unless the Advertisement for Bids or Invitation to Bid indicates otherwise, all properly identified, timely bids will be publicly opened and read aloud. All such bids will be listed on the official bid tabulation, which will be made available to Bidders upon request.

5.2 Cancellation of Invitation to Bid, Rejection of Bids and Waiver of Technicalities or Informalities

5.2.1 The right to cancel the Invitation to Bid, to reject any and all bids, and to waive technicalities and minor irregularities in bids is maintained and preserved by the Purchasing Officer, when such action is determined to be in the best interest of Northern Kentucky University.

5.2.2 Grounds for the rejection of bids are stated in 200 K.A.R. 5:306. These grounds include, but are not limited to:

(a) Failure of a bid to conform to the essential requirements of the Advertisement for Bids or Invitation to Bid.

(b) Failure of a bid to conform to requirements of the Contract Documents.

(c) Failure of a bid to conform to the delivery or completion schedule established in the bidding documents.

(d) Inclusion of a bid provision limiting the Bidder's liability to the Owner in a manner inconsistent with the provisions of the bidding documents.

(e) Unreasonableness of bid price, as determined by the Purchasing Officer.

(f) Non-responsibility of the bidder.

(g) Failure of a bidder to furnish a bid security in accordance with the requirements of the Advertisement for Bids or Invitation to Bid.

5.2.3 Minor or technical deficiencies or irregularities in a bid may be waived by the Purchasing Officer on behalf of the Owner when all of the following circumstances are present:

(a) The Purchasing Officer determines that it will be in the Owner's best interest to do so; and

(b) The technicalities or irregularities are mere matters of form not affecting the material substance of a bid, represent an immaterial deviation from or variation in the precise requirements of the Advertisement for Bids or Invitation to Bid, and have no more than a trivial or negligible effect on price, quality, quantity or delivery of supplies or performance of services being procured; and

(c) The correction or waiver of the technicality or irregularity will not affect the relative standing of, or prejudice, other Bidders.

If the Owner does not waive the deficiency, the deficient bid shall be rejected.

5.3 Acceptance of Bid

5.3.1 It is the intent of the Purchasing Officer to award a contract in due course and after a reasonable bid evaluation period to the lowest responsive bid by a responsible Bidder provided the acceptable bid sum is within budgeted funds.

5.3.2 The Owner reserves the right to accept or reject any or all alternate bids if provided for in the bid documents. If alternates designated by the Owner are considered in the award, the alternate(s) will be accepted in the sequence in which they are listed on the bid proposal form and the lowest bid sum will be computed on the basis of the sum of the based bid plus and/or minus any alternates accepted.

ARTICLE 6 – QUALIFICATION OF CONTRACTORS

6.1 Statement of Bidder's Qualifications

6.1.1 The Bidder shall submit a statement of the Bidder's qualifications as part of the Form of Proposal. The Purchasing Officer shall have the right to make such inquiry as he deems necessary to determine the ability of the Bidder to perform the work in a prompt and efficient manner in accordance with the Contract Documents. The failure of a Bidder to promptly supply information in connection with the Purchasing Officer's inquiry may be grounds for a determination that such Bidder is nonresponsive.

6.1.2 In determining the qualifications and responsibilities of the Bidder, the Purchasing Officer shall take into consideration the Bidder's experience, facility, previous work standing, financial standing, skill, quality and efficiency of construction plant and equipment proposed to be utilized on the project.

6.1.3 The right is reserved to reject any bid where an investigation and evaluation of the Bidder's qualifications would give reasonable doubt that the Bidder could perform the work in a prompt and efficient manner in accordance with the Contract Documents.

ARTICLE 7 – SUBCONTRACTOR, MATERIAL AND EQUIPMENT LISTING

7.1 Subcontractors

7.1.1 The Bidder will list the names of subcontractors proposed for each of the principal portions of the work (including those persons or entities who are to furnish material or equipment fabricated to a special design) in the designated place of the Form of Proposal.

7.1.2 The Bidder will be responsible for establishing to the satisfaction of the Purchasing Officer, the reliability and responsibility of the listed subcontractors. The Bidder may be required by the Purchasing Officer to provide additional information regarding listed subcontractors.

7.1.3 If, after due investigation, there is a reasonable objection to the qualifications of a listed subcontractor, the Bidder shall, upon written direction of the Purchasing Officer, submit the name of an acceptable substitute subcontractor with no change in bid price. The failure of the Bidder to promptly comply with this requirement may be grounds for rejection of the bids.

7.1.4 Any listed subcontractor to whom the Purchasing Officer does not ma written objection prior to the giving of the Notice of Award shall be deemed acceptable to the Owner.

7.1.5 The Bidder shall make no other substitution for any listed subcontractor without first notifying the Purchasing Officer in writing of the intended substitution and the specific reason for the substitution. Such substitutions may be disapproved if the Purchasing Officer has reasonable objection.

7.1.6 Nothing contained in the bidding documents shall be deemed to create a contractual relationship between the Owner and any subcontractor.

7.2 List of Materials and Equipment

7.2.1 The Bidder shall submit a listing of major materials and equipment, including manufacturer's name, brand and/or catalog number in accordance with Article 13.1.2. The materials and equipment listing shall be that listing bound with the Form of Proposal.

7.2.2 Prior the acceptance of a bid, the Purchasing Officer will make a preliminary review of the Bidder's list of materials and equipment. The Purchasing Office will advise the Bidder of the tentative acceptability of such materials and equipment, subject to satisfactory completion and approval of shop drawings, or direct such other action as may be necessary in order to meet the requirements of the Contract Documents. If any of the listed material or equipment is determined not to meet the requirements of the Contract Documents, the Bidder will be required to furnish other material or equipment meeting those requirements at no change in bid price. Preliminary review and acceptance of the above list shall not relieve the Bidder, as the contractor, of the obligation of furnishing equipment and materials in accordance with the Contract Documents.

ARTICLE 8 – UNIT PRICES

8.1 Submission

8.1.1 The Bidder shall submit with the bid a list of unit prices as designated on Form of Proposal.

8.1.2 Unit prices are to be used for the pricing of changes in the quantity of work from that indicated by the contract drawings and specifications, where such changes have been authorized in writing by the Owner in accordance with Article 20.

8.1.3 The unit price shall include all necessary labor, materials, equipment, appliances, supplies, plus overhead and profit.

8.1.4 Only one unit price shall be quoted for each designated item of work. The unit price shall be used to calculate price adjustments based on deductive as well as additive changes.

8.1.5 Unit prices shall apply to all phases of the work whether the work is performed by the Bidder or by the Bidder's (contractor) subcontractor.

8.1.6 For unit prices of a lump sum bid contract, the Owner reserves the right, prior to an award of contract, to evaluate the unit prices and adjust and/or reject any unit price that is determined by the Purchasing Officer to be unreasonable in amount.

8.1.7 Where a total sum bid is made by line item, and unit prices are quoted for estimated quantities of units of work, such unit prices are not subject to change. However, the Purchasing Officer reserves the right to correct mathematical errors in extensions and additions by the Bidder. In the latter case, the Purchasing Officer's corrected bid sum total shall supersede the Bidder's incorrect computer bid sum total.

ARTICLE 9 – BID BOND, PERFORMANCE BOND, PAYMENT BOND

9.1 Owner's Right to Require Bond

9.1.1 For all contracts in excess of $25,000, Bidder ***shall*** furnish bid security in an amount equal to at least five percent (5%) of the amount of the bid. Security may be in the form of a bid bond, cashiers or certified check, irrevocable letter of credit or other form of security as approved by the Purchasing Officer. The successful contractor shall furnish a performance and payment bond in an amount equal to one hundred percent (100%) of the contract price as security for the faithful performance of this contract and for payment of all persons performing labor, including payment of all unemployment contributions which become due and payable under Kentucky Unemployment Insurance Law, and furnishing materials, equipment, supplies, taxes, and other proper charges and expenses incurred or to be incurred in the performance of the contract. All bonds shall be executed by a surety company authorized to do business in the Commonwealth of Kentucky and the contract instrument or bond must be countersigned by a duly licensed Kentucky resident agency representing the company. Bonds shall be good for two (2) years after the final payment has been on the contract. The premiums shall be paid by the Bidder.

9.1.2 For projects less than $25,000, Performance and Payment bonds ***may*** be required as determined by the Purchasing Officer. If the furnishing of such bonds is not provided for in the bid documents, but required by the Purchasing Officer subsequent to the award of contract, the successful Bidder shall then procure such bond and shall be reimbursed for the premium.

9.2 Time of Delivery and Form of Bonds

9.2.1 The Bid Bond shall be submitted with the bid. Successful Contractor shall deliver the required Performance and Payment bonds to the Purchasing Agency at the date of execution of the Agreement Between Owner and Contractor, or, with the approval of the Purchasing Officer, within ten (10) calendar days after that date. Otherwise, the Owner may at its option determine that the awardee has abandoned the contract, thereupon the proposal shall become null and void.

9.2.2 Unless otherwise specified in the bidding documents, or by the Purchasing Officer, bonds shall be submitted in duplicate and written on bonding company's own form.

9.2.3 The Bidder shall require the Attorney-in-Fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his Power of Attorney. The date of the Power of Attorney shall not precede the date of the bonds. The bonds must be signed or countersigned by a resident agent, licensed to do business in the State of Kentucky.

ARTICLE 10 – AWARD OF CONTRACT

10.1.1 The issuance of an award of the contract is contingent upon (1) securing an acceptable bid that is within the amount of budgeted funds and (2) determining that the award of contract will be in the best interest of the University.

10.1.2 Unless otherwise provided in the bidding documents, the Agreement Between Owner and Contractor will be evidenced by the issuance of a purchase order incorporating by reference all bidding documents and bidder's offer.

ARTICLE 11 – BASIC LEGAL REQUIREMENTS

11.1 Authenticaton of Bid and Statement of Noncollusion and Nonconflict of Interest

An Authentication of Bid and Statement of Non-collusion and Non-conflict of Interest Document is bound with and included as part of the bid proposal form. The Bidder is required to complete and sign that document and submit it as a part of the bid. Failure to comply with this requirement shall invalidate the bid.

11.2 Foreign Corporate Firm

11.2.1 Foreign corporations doing business within the Commonwealth of Kentucky are required to be registered with the Secretary of State, New Capitol Building, Frankfort, Kentucky, and must be in good standing.

11.2.2 The foreign corporate Bidder, if not registered with the Secretary of State at the time of the bid submittal, shall be required to become registered and be declared in good standing prior to the issuance or receipt of a contract.

11.3 Domestic Corporation

Domestic corporations are required to be in good standing in accordance with the requirements of the Office of the Secretary of State.

ARTICLE 12 – TAXES

12.1 Kentucky Sales and/or Use Tax

Bidders are informed that construction contracts for the Commonwealth of Kentucky are not exempt from the provisions of the Kentucky Sales and/or Use Tax. All adjustments and allowances for the current sales/or use tax shall be provided for in the bid amount and no later adjustments to the Contract Sum will be permitted and/or made on this basis. Each bidder is responsible for determining his own tax liability. Bidders may contact:

Kentucky Revenue Cabinet
Division of Compliance and Taxpayer Assistance
Sales and Use Tax Section
200 Fair Oaks Lane
Frankfort, KY 40602
(502) 564-5170

12.2 Federal Excise Tax

The Commonwealth of Kentucky is entitled to exemption from Federal Excise Tax. All Bidders or subcontractors shall take this into consideration in their bid price.

12.3 Taxes, Workmen's Compensation, etc.

The Bidder or contractor will be required to accept liability for payment of all payroll taxes or deductions required by local, state and federal law, including but not limited to old age pension, social security or annuities. Workmen's Compensation Insurance shall be carried to the full amount as required by Kentucky Statues. Bidder shall be in full compliance with KRS 341 and 342.

ARTICLE 13 – POST-BID REVIEW AND MATERIAL SUBMITTAL

13.1 Representative at Bid Opening

13.1.1 The Bidder may have an authorized representative at the bid opening for post-bid review of the apparent low bid or bids.

13.1.2 Unless otherwise provided in the bidding documents, the apparent low Bidder shall submit the material and equipment listing no later than one (1) hour after the close of the reading of the bids. The materials and equipment listing shall be that listing bound with the Form of Proposal.

13.1.3 The post-bid review should include representative of the Owner, the Architect/Engineer and the apparent low Bidder. Preliminary review shall be directed toward subcontractors, material listing, unit prices and qualifications of the Bidder.

13.1.4 The Bidder's representative should have the authority and ability to respond to questions that arise during the post-bid review.

ARTICLE 14 – EQUAL EMPLOYMENT AND NONDISCRIMINATION

14.1 General Policy

14.1.1 The Commonwealth of Kentucky is committed to a policy of providing equal job opportunities on public contracts and prohibiting discrimination based on race, creed, color, sex, age, religion, national origin, or disability in employment.

14.1.2 The utilization of minority vendors and subcontractors is encouraged, whenever possible, on public works contracts. The Bidder and contractor should make full efforts to locate minority business persons. For assistance in identifying vendors and subcontractors, Bidders may contact:

Kentucky Office for Minority Business Enterprises
2329 Capitol Plaza Tower
Frankfort, Kentucky 40601
Phone # (502) 564-2874

OR

Office of Equal Opportunity, Contract Compliance
New Capitol Annex Building
Frankfort, Kentucky 40601
Phone # (502) 564-2874

14.2 Kentucky Equal Employment Act – 1978

The provision of KRS 45.560 and 45.640, known as the Kentucky Equal Employment Act of 1978, hereinafter referred to as the Act, shall be binding upon the declared successful Bidder and any subsequent contract awarded to the Bidder, except that a contractor or subcontractor otherwise subject to the provisions of KRS 45.570 is exempt as to any affirmative action or reporting requirements if:

(a) The contract or subcontractor awarded is in the amount of $250,000 or less, and the amount of the contract is not a subterfuge to avoid compliance with the provisions of this Act.

(b) The contractor or subcontractor utilizes the services of fewer than eight (8) employees during the course of the contract.

(c) The contractor or subcontractor employs only family members or relatives.

(d) The contractor or subcontractor employs only persons having a direct ownership interest in the business, and such interest is not a subterfuge to avoid compliance with the provisions of this Act.

14.3 Reporting Compliance

14.3.1 Any Bidder not exempted from the affirmative action or reporting requirements of the Act shall, within five (5) calendar days after being declared the apparent low Bidder, submit to the Office of Equal Employment Opportunity, Contract Compliance, Finance and Administration Cabinet, the following:

(a) A statement of intent to comply in full with all requirements of the Kentucky equal Employment Act of 1978.

(b) A breakdown of the Bidder's existing work force, within the Commonwealth of Kentucky, indicating the race, sex, age, position held, county and state of residence and date of employment of each employee.

The above reporting shall be on forms provided by the Purchasing Agency, bound within the bid documents, and submitted in the manner prescribed on the forms.

14.3.2 Within ten (10) days after the receipt of this report, the Finance and Administration Cabinet, through its Office of Equal Employment Opportunity, Contract Compliance, will determine whether the Bidder's work force is reflective of the percentage of available minorities in the areas from which the Bidder's employees are drawn. If a determination is made that the Bidder's work force is reflective of the percentage of available minorities in this drawn area, the Bidder shall be "certified" and be thereby qualified for the contract and to bid on any contract covered by the Act without filing additional data for a period of six (6) months.

14.3.3 If it is determined by the cabinet that the Bidder's work force reflects an underutilization of minorities, the Bidder and the contracting agency shall be so notified and no certification be granted. The Bidder shall then have the option of filing with the cabinet an affirmative action project, indicating goals and timetables for recruiting and hiring minorities throughout the contractor's work force. The cabinet shall be available, upon request of any contractor, to furnish technical assistance in fulfilling the requirements of the Act.

14.3.4 If the Bidder is subsequently awarded the contract being sought, failure to comply with the goals and timetables set forth in the affirmative action plan shall be an unlawful practice under the Act and shall constitute a material breach of contract.

14.3.5 If the cabinet determines that the submitted affirmative action program does not fulfill the provision of the Act, the Bidder shall be so notified and no certification shall be granted.

14.3.6 If the Bidder's work force is not reflective of the percentage of minorities in the drawing area and he has complied with all other affirmative action requirements in the Act, he may certify by verified affidavit that he had made every reasonable effort to comply with said percentage requirements and he shall thereafter be entitled to all benefits of the Act.

ARTICLE 15 – SHOP DRAWING; SUBMITTALS

15.1 Submittals of Shop Drawings, Samples, etc.

15.1.1 The Contractor shall review, approve, and submit shop drawings, samples, and product data in accordance with the approved schedule as herein detailed. The Contractor's stamp of approval on any shop drawing or sample shall constitute a representation to Owner and Architect/Engineer that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or he assumes full responsibility for doing so, and that he has reviewed or coordinated each shop drawing or sample with the requirements of the work and the Contract Documents.

15.1.2 The Architect/Engineer will review and approve, with reasonable promptness, the shop drawings, etc., or return for corrections as required. The review and approval shall be for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. The approval of a separate item will not indicate approval of the assembly in which the item functions.

15.1.3 The Contractor shall make any corrections required by the Architect/Engineer for compliance to the contract and shall return the required number of corrected copies of shop drawings and resubmit new samples until approved. The Contractor shall direct specific attention, in writing, or on resubmitted shop drawings, to revisions other than the corrections called for by the Architect/Engineer on previous submission.

15.1.4 Where a shop drawing or sample submission is required by the specifications, no related work shall be commenced until the submission has been approved by the Architect/Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Architect/Engineer.

15.1.5 The Architect's/Engineer's approval of shop drawings or samples shall not relieve the Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless the Contractor has in writing called the Architect's/Engineer's attention to such deviation at the time of submission and the Architect/Engineer has given written approval to the specific deviations, nor shall any approval by the Architect/Engineer relieve Contractor from responsibility for errors or omissions in the shop drawings.

ARTICLE 16 – PROTECTION OF WORK, PROPERTY, EMPLOYEES AND PUBLIC

16.1 Safety Precautions and Programs

16.1.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the project.

16.1.2 The Contractor shall comply with all federal, state, municipal, and OSHA law, rules, regulations, and code requirements.

16.2 Safety of Persons and Property

16.2.1 The Contractor shall continuously maintain adequate protection of all work from damage and shall protect the Owner's property from injury or loss arising in connection with this contract. He shall make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents.

16.2.2 The Contractor shall take all necessary precautions for the safety of employees on the work, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed.

16.2.3 The Contractor shall designate a responsible member of his organization on the worksite as safety officer whose duty shall be to enforce safety regulations. The name and position of the person so designated shall be reported to the Architect/Engineer by the Contractor.

16.2.4 In an emergency affecting the safety of life, or of the work, or of adjoining property, the Contractor, without special instruction or authorization from the Architect/Engineer or Owner, is hereby permitted to act at his discretion to prevent such threatened loss or injury.

16.3 Hazardous Materials

In the event the Contractor unexpectedly encounters on the site material reasonable believed to be asbestos, polychlorinated biphenyl (PCB) or other classified hazardous substances/materials which have not been rendered harmless, the Contractor shall immediately stop work in the area affected and report the conditions to the Owner and Architect/Engineer in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos, polychlorinated biphenyl (PCB), or other classified hazardous substances/materials or when it or they have been rendered harmless, by written agreement of the Owner and Contractor.

ARTICLE 17 – SURVEYS, PERMITS, FEES, NOTICES, AND TESTS

17.1 Owned-Furnished Surveys

The Owner will furnish whatever surveys are specifically required by the Contract Documents. Approvals, assessments, easements for permanent structures or permanent changes in existing facilities, and utility tap-on fees shall be secured and paid for by the Owner, unless otherwise provided in the Contract Documents.

17.2 Permits

Building, sewer, and water permits and similar kinds of permits required by local ordinances shall be obtained by the Contractor, but no fee shall be charged to or paid by the Contractor as the University is exempt from such charges. The Contractor shall procure and pay for any necessary licenses to do business in the locale of the work.

17.3 Notices

The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on the performance of the work.

17.4 **Required Regulatory Tests and Inspections and Payment for Tests of Materials, Products, and Equipment**

17.4.1 Regulatory agencies of the government having jurisdiction may require any work to be inspected, tested or approved. The Contractor shall assume full responsibility therefor, including related costs, unless otherwise noted, and shall furnish the Architect/Engineer the required certificates of inspection, testing or approval.

17.4.2 Tests of materials, products and equipment in place, required by the Architect/Engineer or the Owner, to prove quality standards shall be paid by the Owner. Should results of testing indicate that construction is not in compliance with contract documents, the contractor shall bear the cost of any additional tests of the materials, products or equipment and bear the cost to correct the deficiencies.

17.4.3 The Contractor shall give the Architect/Engineer timely notice of readiness of the work for all inspections, tests or approvals.

ARTICLE 18 – INSPECTION OF WORK

18.1 The Owner, the Architect/Engineer, and their representatives shall at all times have access to the work whenever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. The Architect/Engineer shall be given timely notification in order to arrange for proper inspection of any work performed outside of the normal working days or week.

18.2 If the specifications, the Architect's/Engineer's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect/Engineer timely notice of its readiness and inspection. Inspections by the Architect/Engineer shall be made promptly.

18.3 If any portion of the work should be covered contrary to the request of the Architect/Engineer, or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect/Engineer, be uncovered for his observation and shall be replaced at the Contractor's expense.

18.4 If any other portion of the work has been covered, which the Architect/Engineer has not specifically requested to observe prior to being covered, the Architect/Engineer, with the Owner's approval, may request to see such work and it shall be uncovered by the Contractor. If such work be found in accordance with the Contract Documents, the cost of uncovering any replacement shall, by appropriate change order, be charged to the Owner. If such work be found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it be found that this condition was caused by the Owner, or a separate Contractor employed by the Owner, in which event the Owner shall be responsible for the payment of such costs.

ARTICLE 19 – INSURANCE

The Contractor shall provide and include in his Bid Price the cost of the following insurance:

The Contractor shall maintain the following minimum insurance:

(1)	Workmen's Compensation – Kentucky Statutes	
(2)	Public Liability	$5,000,000 combined single limit
(3)	Property Damage	$5,000,000 combined single limit

Generally

The Contractor shall not commence work under this contract until he has obtained all insurance required under the conditions of the contract, nor shall the Contractor allow any subcontractor to commence work until all similar insurance required of the subcontractor has been obtained. The Contractor shall furnish the Owner with satisfactory evidence that he has secured and is maintaining the required insurance coverage.

The Contractor shall furnish Builder's Risk Insurance, including the perils of fire, extended coverage, vandalism and malicious mischief in an amount of not less than one hundred percent (100%) of the insurable value of all the work, and the coverage, written on the Completed Value Form 17-C, latest edition, including extended coverage endorsement form #61, latest edition, and malicious mischief endorsement form # 205, latest edition, or on the "All Risk Completed Value Form." Such insurance shall be for the benefit of the Contractor, Owner and any subcontractor engaged on this project, as the Owner shall find their respective interest may appear. The Builder's Risk Insurance must be dated and in force prior to commencement of work. The insurance coverage required by the contract document shall be in compliance with the laws of the Commonwealth and shall be placed with a licensed resident local agent in Kentucky, who represents insurance companies authorized to do business in Kentucky. The contract amount shall be the insurable value unless otherwise noted in the Contract Documents.

There shall be an endorsement in each of the above policies reading as follows:

> "It is hereby agreed that in event of a claim arising under this policy, the company will not deny liability by reason of the insured being a state, county, municipal corporation or government agency."

All insurance certificates shall be submitted in duplicate to the Owner and carry the provision that a 30-day written notice shall be given prior to cancellation by the company. The University requires the original Builder's Risk policy.

ARTICLE 20 – CHANGES IN THE WORK

20.1 Change Orders

20.1.1 The Owner, without invalidating the contract, may as the need arises, unilaterally order changes in the work in the form of additions, deletions or other revisions. Such changes in the work shall be authorized by Change Order signed by the Owner and Architect/Engineer. The Contract Sum and the Contract Completion Time will be adjusted accordingly.

20.1.2 The value of any such change in the work shall be determined by one of the following methods:

(1) by mutual acceptance of a lump sum (which should be properly itemized and with sufficient supporting data to permit evaluation; to encompass/include not to exceed fifteen percent (15%) for overhead and profit of the actual cost of work), or

(2) by unit prices stated in the Contract Documents or subsequently agreed upon; or

(3) If none of the above methods are agreed upon; the Contractor, provided he received an order as above, shall proceed with the work for which he shall be paid the net cost of said work, plus fifteen (15%) percent of such cost.

20.1.3 It is agreed and understood that only one (1) fifteen percent (1 and 3 above) shall be added to the actual net cost of the work as defined herein, whether such work be done by the Prime General Contractor with his own forces or by his subcontractor, and any distribution thereof shall be worked out between the Contractor and his subcontractor.

20.1.4 In "1" and "3" above, the Contractor shall keep and present in such form as the Architect/Engineer may direct, a correct account of all items in such form comprising the net cost of such work together with vouchers. The determination of the Architect/Engineer shall be final upon all questions of the amount and cost of extra work and changes in the work, and it shall include in such cost, the cost to the Contractor of all materials, labor, supervision, supplies and equipment, rental charges, etc., necessary for the completion of the work detailed in the change order. If the extra work requires the use of machinery not already at the job site or scheduled to be at the job site, then the cost of transportation of such machinery to and from the work shall be added to the fair rental, but said transportation shall not cover a distance exceeding twenty-five (25) miles. The Architect/Engineer shall include in the cost of extra work the cost to the Contractor of all insurance applicable to such work, as required by these documents or by other Governmental authority having jurisdiction.

20.1.5 The Architect/Engineer shall not include in the net cost of Extra Work any cost or rental or small tools, or any portion of time of the Contractor or his Superintendent, or any allowance for the use of capital, or any additional bond premium, or any actual or anticipated profit, or any job or office overhead not previously mentioned, these items being considered as being covered by the added fifteen (15%) percent in Case "1" and "3".

20.1.6 In all cases where Extra Work or Changes are covered by unit prices set forth in the Contract, the value of such Extra Work or changes shall be determined only upon the basis of such unit prices.

20.1.7 Pending final determination of value, payments on accounts of extra work or changes shall be made only upon the estimate of the Architect/Engineer.

20.1.8 The Architect/Engineer may authorize minor changes in the work, not involving extra cost and time extension, and not inconsistent with the purpose of the work.

20.1.9 If the contractor claims that any instructions by the Architect/Engineer involve additional cost and/or time extension, he shall give the Architect/Engineer written notice thereof within a reasonable time after the receipt of such instructions and before proceeding to execute the change in work.

20.1.10 On all change orders that exceed $25,000 the Contractor shall submit the following certification:

> "I (the Contractor) certify to the best of my knowledge and belief, the cost of pricing data submitted Is accurate, complete and current as of the date of the proposed change."

20.1.11 If the Owner and Contractor cannot agree on the effect of an ordered change on the Contract Completion Time, this matter may also be referred to the Architect/Engineer for determination.

20.1.12 If the Owner and/or Contractor do not agree with the Architect/Engineer's determination regarding the valuation of a change, the related adjustment to the Contract Sum or to the Contract Completion Time, the matter shall be subject to the disputes procedure set out in Article 31.

20.2 Minor Changes

The Architect/Engineer may authorize minor changes in the work which do not involve additional cost or extension of the Contract Completion Time, and which are not inconsistent with the intent of the Contract Documents. Such changes shall be effected by a Field Order issued by the Architect/Engineer, which shall be binding on the Owner and Contract. The Contractor shall carry out such orders promptly. However, if the Contractor claims that a Field Order involves additional cost or a delay to completion of the work, he shall give the Architect/Engineer written notice thereof within a reasonable time after receipt of the Field Order. Otherwise, he shall be deemed to have waived any right to claim an adjustment to the Contract Sum or to the Contract Completion Time.

ARTICLE 21 – SUPERVISION AND CONSTRUCTION PROCEDURES

21.1 Supervision of the Work

The Contractor shall supervise and direct the work, using the Contractor's best skill and attention so as to ensure expeditious, workmanlike performance in accordance with the requirements of the Contract Documents. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures. He shall be responsible for the acts and omissions of persons directly employed by him, as he is for subcontractors. He shall be responsible for coordinating all portions of the work under the contract unless the Contract Documents give other specific instructions concerning these matters.

21.2 Obligation to Follow Contract Requirements

The Contractor shall not be relieved of obligations to perform the work in accordance with the Contract Documents either by the activities or duties of the Architect/Engineer in the Architect/Engineer's administration of the contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

ARTICLE 22 – LIENS

22.1 The filing and perfection of liens for labor, materials, supplies, and rental equipment supplied on the work are governed by KRS 376.195.seq.

22.2 The lien shall attach only to any unpaid balance due the contractor for the improvement from the time a copy of statement of lien, attested by the County Clerk, is delivered to the Owner, pursuant to the provisions of KRS 376.240.

22.3 Statements of lien shall be filed with the Campbell County Clerk and action to enforce the same must be instituted in the Campbell Circuit Court, Newport, Kentucky, pursuant to KRS 376.250(2).

ARTICLE 23 – TERMINATION

23.1 Termination of Contract for Convenience of Owner

23.1.1 The Owner may terminate the contract for its own convenience when it determines that such termination will be in the best interest of the University. When it has been determined that a contract should be terminated for the convenience of the University, the Owner shall give reasonable written notice and negotiate a fair and just settlement with the Contractor.

23.1.2 The Contractor shall have the burden of establishing the amount of compensation to which he believes himself to be entitled by the submission of complete and accurate cost data employed in submitting his bid or proposal for the contract, and evidence of expenses paid or incurred in performance of the contract from the date of award through the date of termination for convenience.

23.2 Termination of Contract for Cause

23.2.1 If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply sufficient skilled workmen, adequate equipment, or proper material, or if he should fail without proper cause to make prompt payment to subcontractors, or for material or labor, or persistently disregard laws, ordinances, or the instruction of the Architect/Engineer, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner, upon the certification by the Architect/Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor ten (10) days written notice by registered mail of declaration of default, take possession of the premises and all materials and building components thereon, and finish the work in accordance with the laws of the Commonwealth.

23.2.2 In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services, exceeds the unpaid balance of the contract price, the Contractor shall pay the difference to the Owner, along with other appropriate damages. The expenses incurred by the Owner, as herein provided, and the damages incurred through the Contractor's default shall be certified by the Architect/Engineer.

ARTICLE 24 – INDEMNIFICATION

24.1 To the fullest extend permitted by law, the Contractor shall indemnify and hold harmless the Owner, the Architect/Engineer and their agents and employees from and against all claims, damages, losses and expenses, including attorney's work, provided that any such claim, loss, damage or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (b) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not is caused in part by a party indemnified hereunder. This basic obligation to indemnify shall not be construed to nullify or reduce other indemnification rights which the Owner would otherwise have.

24.2 In any and all claims against the Owner or the Architect/Engineer or any of their agents or employees by any employee of the Contractor, any subcontractor, any one directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workmen's compensation acts, disability benefit acts or other employee acts.

24.3 The obligations of the Contractor under this paragraph shall not extend to the liability of employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Architect/Engineer, his agents or employees, provided such giving or failure to give is the primary cause of injury or damage.

ARTICLE 25 – LABOR, MATERIALS, ETC.

25.1 Contractor Provisions

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, temporary heat, hoist, supplies, appliances, transportation, and other facilities necessary for the execution and completion of the work. In the event the Owner elects to make available the electric power, at no cost, to the Contractor for construction purposes, it shall not be utilized as a means for temporary heat.

25.2 Contractor Warranties

The Contractor warrants to the Owner:

(1) that the materials and equipment furnished under the contract will be of good quality and new unless otherwise required or permitted by the Contract Documents. The contractor shall guarantee that labor, equipment and materials will be free of defects for a period of one (1) year from the date of substantial completion with the exception of the period of time specified in the roof guarantee. Expendable items and wear from ordinary use are excluded from this guarantee. Prior to the final payment of the work, the contractor shall assemble and present the Architect/Engineer all guarantees and warranties required by the contract documents.

(2) that the work will be free from defects not inherent in the quality required or permitted; and

(3) that the work will conform to the requirements of the Contract Documents.

Work not conforming to these requirements, including unauthorized or unapproved substitutions, may be treated as defective. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials and equipment. The Contractor shall at all times enforce strict discipline and good order among his employees and subcontractors and shall not employ on the work any person not skilled in the work assigned to him.

ARTICLE 26 – CONCEALED CONDITIONS

If conditions are encountered at the site which are:

(1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or

(2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exit and generally recognized as inherent in construction activities of the character provided for in the Contract Documents,

then notice by the observing party shall be given to the other party promptly before conditions are disturbed. If either party wishes to seek an equitable adjustment of the Contract Sum or the Contract completion Time, that party must notify the other party and Architect/Engineer of this fact prior to the conditions being disturbed, and in no event later than 20 calendar days after the conditions were first observed. Any resulting change in the Contract Sum or Contract Completion Time shall be incorporated in a change order.

ARTICLE 27 – CONSTRUCTION SCHEDULE

The Contractor shall prepare and submit for the Owner and Architect/Engineer's information and approval a construction schedule for the work. The schedule shall indicate the starting and completion dates of the various stages of the work, shall not exceed time limits established by the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the work, shall be related to the work of any other contractors on the project to the extent required by the circumstances, and shall provide for expeditious and practicable execution of the work.

ARTICLE 28 – CLEAN UP

The Contractor shall at all times keep the premises and surrounding area free from the accumulation of waste materials or rubbish caused by his operations in connection with the work. Upon completion of the work, and prior to final inspection and acceptance, the Contractor shall remove all remaining waste materials, rubbish, Contractor's construction equipment, tools, machinery, and surplus materials and leave the work (including but not limited to glass, hardware, fixtures, masonry, tile and marble) in a clean and useable condition satisfactory to the Architect/Engineer. Floors shall be cleaned and waxed in accordance with the requirements of the specifications. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may perform the cleaning tasks and charge the cost to the Contractor.

ARTICLE 29 – ASSIGNMENTS

Neither party to the contract shall assign the contract, or any portion thereof without the written consent of the other, nor shall the contractor assign any monies due or to become due to him hereunder without the previous written consent of the Owner.

ARTICLE 30 – PAYMENT

The Owner will make payments, less ten percent (10%) retainage, to the Contractor on the amount of the work performed or materials furnished for the work. Retainage can be reduced, where appropriate, by the Architect/Engineer. The Purchasing Officer or Architect/Engineer reserves the right to determine method of payment (amount/time).

ARTICLE 31 – DELAYS AND EXTENSIONS TO TIME

31.1 It is agreed that time is of essence for each and every portion of this contract and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence for this contract.

31.2 If after award of contract, the Contractor becomes aware of a possible problem that could result in a delay of the completion of the project, the Contractor shall promptly notify the Purchasing Officer and Architect/Engineer in writing detailing the cause and probable effect of the problem. The Contractor shall include recommendations, alternative solutions and/or actions needed to alleviate the problem.

31.3 Nothing in the above item will be interpreted as relieving the Contractor of his or her contractual responsibilities; however, failure to notify promptly will be basis for determining Contractor's negligence in an otherwise executable delay.

ARTICLE 32 – RESOLUTION OF CLAIMS AND DISPUTES

32.1 Should either party to the contractor suffer damage because of wrongful act or neglect of the other party, or of anyone employed by him or other controversy arising under the contract (including but not limited to determination by the Architect/Engineer), such claim or controversy shall be made in writing within a reasonable time after the first occurrence of the event. Prior to the institution of any action in court, the claim or controversy (together with support data) shall be presented in writing to the Vice President of Administration and Finance, who by University policy is authorized to settle, compromise, pay, or otherwise adjust the claim or controversy with the Contractor. The Vice President of Administration and Finance, or his designee, shall promptly issue a decision in writing. A copy of the decision shall be mailed or otherwise furnished to the Contractor. The decision shall be final and conclusive unless fraudulent, or unless the Contractor sues pursuant to KRS 45A.245. If the Vice President of Administration and Finance does not issue a written decision within the hundred and twenty (120) days after written request for a final decision, or within such longer period as might be established by the parties to the contract in writing, then the contractor may proceed as if an adverse decision has been received.

32.2 Any legal action entered against the Owner on the contract by the Contractor shall be brought in the Campbell Circuit Court and shall be tried by the court sitting without a jury. All defenses in law or equity, except the defense of government immunity, shall be preserved to the Owner.

ARTICLE 33 – FINAL INSPECTION, CERTIFICATION

33.1 The Architect/Engineer will conduct inspections to determine the dates of final completion. The Architect/Engineer will also receive and forward to the Owner, for the Owner's review, written warranties and related documents required by the contract and assembled by the Contractor.

33.2 The Contractor shall submit with the application for final payment an affidavit that all payrolls, bills for materials, supplies and equipment, and other indebtedness connected with the work have been paid or otherwise satisfied, along with such supporting evidence of payment as the Architect/Engineer requires. Final payment is conditioned on satisfactory compliance with this requirement.

33.3 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:

(1) unsettled liens;

(2) faulty or defective work appearing after substantial completion;

(3) failure of the work to comply with the requirements of the Contract Documents; or

(4) terms of any special warranties required by the Contract Documents

The acceptance of final payment by the Contractor shall constitute a waiver of all claims except those previously made in writing and identified by the Contractor as unsettled at the time of the final application for payment.

33.4 Prior to final payment for thee work, the Contractor shall assemble and present to the Architect/Engineer all guarantees and warranties required by the Contract Documents. Additionally the contractor will provide "As-Built" Drawings prior to final payment.

ARTICLE 34 – INTERPRETATION OF CONTRACT DOCUMENTS

The Architect/Engineer will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder by the Contractor, subject to the provisions of Article 32.

ARTICLE 35 – CONTRACT DOCUMENTS PROPERTY OF OWNER

All drawings, specifications and copies thereof remain the property of the Owner. They shall not be used on other work by any other party.

ARTICLE 36 – EMPLOYMENT PRACTICES

Any laborer, workman, or mechanic worked in excess of eight (8) hours per day or forty (40) hours per week, except in cases of emergency caused by fire, flood, or damage to life or property, shall be paid not less than one and one-half (1 ½) times the basic hourly rate of pay as fixed by law for all overtime worked. The determination of when an emergency exists shall be made by Northern Kentucky University, as the agency letting the contract as provided for by the law.

ARTICLE 37 – CONTRACTOR'S WARRANTY OF TITLE

The Contractor warrants and guarantees that title to all work, materials and equipment covered by any application for payment, whether incorporated in the project or not, will pass to Owner at the time of payment free and clear of all encumbrance.

ARTICLE 38 – SUBCONTRACTORS

38.1 The Contractor is fully responsible to the Owner for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them.

Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and a subcontractor.

38.2 Contractor's Payment to Subcontractors. The Contractor shall promptly pay each subcontractor upon receipt of payment from the Owner the amount to which said subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such subcontractor's work.

SECTION 01 1100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:

1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes:

1. Definitions.
2. Specification language.
3. Contract method.
4. Separate related work.
5. Owner furnished products.
6. Owner's Occupancy
7. Contractor use of Site.

1.2 WORK COVERED BY CONTRACT DOCUMENTS:

A. Material, equipment and tools and services for General; Plumbing; Fire Protection; Heating, Ventilating and Air Conditioning; and Electric Work for construction of:

Pre-Renovation Removal Of Asbestos-Containing Materials
for
Residence Hall Renovation at Lakeside
Northern Kentucky University
3510 Alexandria Pike
Highland Heights, Kentucky 41076

B. Division of the Work among Subcontractors and trades:

1. The Contract Documents are complementary and what is required by one shall be as binding as if required by all; performance by the contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.
2. Organization of the specifications into divisions and sections, and arrangement of Drawings shall not control the Contractor in Dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any Trade.

1.3 DEFINITIONS

A. Definitions listed immediately below augment those in the General Conditions in the Project Manual for the Work.

B. Owner: Northern Kentucky University

C. Contractor: Contractor designated for the Work defined herein. (Referred-to throughout Contract Documents as "Contractor" or "General Contractor".)

D. Subcontractor: Person having agreement with Contractor for portion of the Work.

E. Architect: GBBN Architects, Inc.

F. Work: As described under Work Covered by Contract Documents above.

G. Site: Site, whether or not capitalized, shall be defined as the area, or a portion thereof, within the Owner's property lines for the Project, and properties adjacent to Owner's Property Lines, affected by construction of the Project.

H. Contract Documents: Drawings and Specifications, prepared by the Architect, and any other documents listed in Contract between Owner and Contractor.

I. The term "provide" includes both furnishing and installation.

J. The terms "warranty" and "guaranty", or "guarantee", shall be interpreted interchangeably to describe the responsibility of a manufacturer, contractor, subcontractor or sub-subcontractor relative to the manufacture, furnishing or installation of a product or combination of products as described in each applicable section of the Specifications.

K. The term "Site", whether or not capitalized, shall be defined as the area, or a portion thereof, within the Owner's property lines for the Project, and properties adjacent to Owner's Property Lines, affected by construction of the Project.

L. The pronouns "he", "his" and "him" are used for brevity and shall apply to both the males and females.

M. Owner's Representative: Person designated by Owner to act on Owner's behalf.

N. Substantial Completion: Stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended purpose.

O. Final Completion: Completion of the Work, including all corrections made subsequent to Substantial Completion.

1.4 SPECIFICATION LANGUAGE

A. The imperative and streamlined language used in the Contract Documents is directed to the Contractor, unless specifically noted otherwise. The words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases.

1.5 CONTRACT METHOD

A. Construct Work under single lump sum contract

1.6 SEPARATE RELATED WORK BY OWNER

A. Separate Contracts by Owner
   1. General Renovation Contract of the Residential Hall.
      a. Coordinate schedule with Owner to coordinate work by General Renovation Contractors if phasing of work is required.
   2. Additional Testing and inspection services by Owner as specified in
   3. Contractor shall coordinate with Owner to facilitate delivery, storage and installation of furnishings.

1.7 WORK SEQUENCE

A. Construct Work to accommodate Owner's occupancy requirements during construction period; Coordinate schedule and operations with Architect:

B. Prior to occupancy, execute Certificate of Substantial Completion for designated areas.

1.8 OWNER'S OCCUPANCY

A. Owner will occupy premises during entire period of construction for the conduct of his normal operations.
   1. Existing occupied area within the area of the Work will be vacated by Owner to permit the Work to be performed in that area.
   2. Construct Work in coordination with Owner's requirements to minimize conflict and to facilitate Owner's operations.

B. Do not reduce or diminish fire alarm, fire exiting, fire-fighting access, or fire protection for building occupants, at any stage of construction, to less than that existing at the start of construction.

C. Perform the Work with a minimum of disruption by noise, odors, dust or other disruptive causes to Owner's normal operations. Notify Owner 24 hours in advance, of any operations causing noise, odor or dust. Coordinate with Owner and provide barriers and separations as necessary to protect adjacent occupied areas from noise, dust or other disruptive activities.

D. Do not interrupt existing plumbing, fire protection, HVAC or electrical systems in existing building at any time unless authorized by Architect or Owner. Refer to Section 015000 for temporary plumbing, fire protection, HVAC and electric in areas of new construction. Do not interrupt electrical systems that power computers or other sensitive equipment unless authorized by Architect or Owner. Contractor shall be responsible for costs incurred by Owner for losses caused by Contractor's unauthorized interruptions to elevator and utilities.

E. Contractor shall control the whereabouts on Owner's premises of all personnel involved in the Work for security and safety purposes. Cooperate with Owner's personnel.

1.9 CONTRACTOR USE OF SITE

A. Perform Work at Site in areas permitted by law, permits, and Contract Documents.

B. Do not unreasonably encumber Site with materials or equipment, and do not load structure with weight that will endanger structure.

C. Assume full responsibility for protection and safekeeping of products stored on Site. Obtain and pay for use of additional storage or work areas needed for operations.

D. Limit use of Site for Work and storage:
   1. Do not block or interfere with vehicular or pedestrian access to any buildings or other portions of Site required for conducting Owner's normal operations.
   2. Perform the Work with a minimum of disruption by noise, odors, dust or other disruptive causes to Owner's normal operations.
   3. Provide access for utility work or, if notified by Owner, work of Owner's other Contractors.

E. Coordinate with Owner and Architect prior to storing materials and equipment within building, except at areas designated on Drawings.

F. Alcoholic beverages, illegal drugs, gambling, firearms and other weapons are prohibited on Site.

G. Two-way radios used for communication purposes for performance of the Work will be allowed on Site. All other personal radios and other communication devices are prohibited.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

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SECTION 01 2200

UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes:
   1. Administrative and procedural requirements for unit prices.

C. Related Sections:
   1. Division 02 Section "Asbestos Remediation".

1.2 DEFINITIONS

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

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, profit, and applicable taxes.

B. Measurement and Payment: Refer to 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. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.

D. Schedule: A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 UNIT PRICES

A. Unit Price #1 – Unit price per linear foot of asbestos-containing pipe insulation, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10

B. Unit Price #2 – Unit price per square foot of asbestos-containing boiler breeching insulation, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

C. Unit Price #3 – Unit price per square foot of asbestos-containing boiler insulation, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

D. Unit Price #4 – Unit price per square foot of asbestos-containing tank insulation, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

E. Unit Price #5 – Unit price per cementitious fitting on fiberglass insulated lines, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

F. Unit Price #6 – Unit price per square foot of asbestos-containing floor tile and mastic, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

G. Unit Price #7 – Unit price per square foot of asbestos-containing acoustical suspended ceiling tile, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

H. Unit Price #8– Unit price per sink with an asbestos-containing coating, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

I. Unit Price #9 – Unit price per asbestos-containing fire door, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

J. Unit Price #10 – Unit price per window with asbestos-containing window glazing compound, to include necessary demolition, removal, and disposal. Unit prices will be used to increase contract amount if actual quantities exceed estimated quantities by more than 10 percent. Unit prices will be used to reduce contract amount if estimated quantities are less than actual quantities by more than 10 percent.

END OF SECTION

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SECTION 01 3100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes: Administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. Administrative and supervisory personnel.
   2. Project meetings.

1.2 COORDINATION

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 with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
   4. Refer to Division 01 Section, Summary of Work, for coordination of separate work by Owner.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's Construction Schedule.
   2. Preparation of the Schedule of Values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.

5. Progress meetings.
6. Pre-Abatement conferences.
7. Project closeout activities.
8. Project closeout activities.

1.3 SUBMITTALS

A. Key Personnel Names: Within 10 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 telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.4 PROJECT MEETINGS

A. Refer to Division 01 Section, Temporary Facilities and Controls, for Project Meeting Locations

B. Preconstruction Meeting: Prior to commencement of the Work at place and time designated by the Architect or Owner, a preconstruction meeting shall be held with the Owner or his designated representative, the Architect, Environmental Consultant, the Contractor and his designated project superintendent.

1. All parties present at the preconstruction meeting shall state their authority and identify the parties with the authority to schedule and administer their branch of the Work throughout the construction period.
2. Suggested agenda of meeting:
   a. Discuss coordinative and administrative requirements of the Owner, Contractor and all Subcontractors.
   b. Review Construction Schedule.
   c. Ensure that Contractor and Subcontractors have complete Addenda and other Contract Documents.
   d. Priorities and sequencing of work.
   e. Procedures and processing of field decisions, proposal requests, submittals, change orders and applications for payment.
   f. Procedures for maintaining record documents.
   g. Temporary facilities, utilities and controls.
   h. Temporary use of elevators.
   i. Safety and first-aid procedures.
   j. Security procedures.
   k. Days and times of progress meetings.

C. Job Progress Meetings: Progress meetings shall be held regularly during construction as outlined in the pre-construction meeting and Supplemental Conditions to review the various phases and schedule of completion of the Work.

1. Suggested agenda for the meetings in addition to areas defined in Special conditions include:
   a. Review and approval of previous meeting.

b. Review of Work progress since previous meeting.
c. Field observations, problems and conflicts.
d. Problems which impede Construction Schedule.
e. Corrective measures and procedures to regain Construction Schedule if not being met.
f. Revisions to Construction Schedule.
g. Plan progress and schedule during succeeding period of Work.
h. Coordination of schedules.
i. Review submittal schedules and expedite and as required.
j. Maintenance of quality standards.
k. Review proposed changes for effect on Construction Schedule and completion date, and effect on all Contractors.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

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SECTION 01 3300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes:
   1. Schedule of values.
   2. Progress schedule.
   3. Applications for payment.
   4. Shop drawings and product data.
   5. Samples.
   6. Warranties.
   7. Project record drawings and specifications.
   8. Operation and maintenance.

C. Related Sections:
   1. Division 01 Section – Closeout Requirements: Closeout submittals.
   2. Mechanical and Electrical: Additional requirements specified therein for work specified therein.

1.2 SCHEDULE OF VALUES

A. Review with the Architect for approval proposed subdivisions of the Work to be included in the Schedule of Values/Critical Path Schedule

B. Submit schedule of values allocated to each of the various parts of the Work.

C. Indicate labor and material amounts for each line item; indicate any other necessary information for payment procedure.

D. The initial Application for Payment will not be approved unless the Schedule of Values has been submitted and approved prior to Application for Payment.

1.3 PROGRESS SCHEDULE

A. Submit a progress schedule in quadruplicate per General Conditions, except as herein modified.

B. Information required in Progress Schedule:
   1. All on-site operations in proper sequence.
   2. All lead time for shop fabrication drawings.
   3. Lead time for manufactured items.
   4. Normal days to be lost due to weather.

5. Date of Substantial Completion.
6. Date of Final Completion of the Project.

C. When requested by Architect, or as otherwise required, revise and resubmit progress schedule based on the current state of the Work

D. Should an extension of time due to an excusable delay be granted, revise and resubmit schedule showing all revised dates and information due to this extension.

1.4 APPLICATIONS FOR PAYMENT

A. Refer to General and Supplementary Conditions for requirements in addition to those specified below. Submit three copies of each application at time intervals stipulated in the Agreement.

B. Present required information in typewritten form or electronic media printout.

C. Execute certification by signature of authorized officer.

D. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and stored products approved for payment.

E. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

F. Submitted an updated construction schedule with each Application for Payment.

G. Prepare application for Final Payment as specified in Division 01 Section, Execution and Contract Closeout.

1.5 SHOP DRAWINGS AND PRODUCT DATA

A. Shop drawings:
1. Do not submit traced or reproduced Architect's drawings, with or without Architect's name, for shop drawings. Do not submit "standard information" that contains information not pertinent to the Work, or information not clearly indicated as pertinent to the Work.
2. Clearly indicate project name on each sheet.
3. Drawings not marked as reviewed for compliance with Contract Documents and bearing Contractor's stamp of approval will be returned without review.
4. Submit to Architect one (1) reproducible document and one (1) print of each drawing required. Submit additional prints if required by various sections of the Specifications. Type of reproducible documents shall be determined at Preconstruction Meeting.
5. Reproducible Document with Architect's stamp will be returned to Contractor.
6. If not in compliance as noted beyond "FURNISH AS CORRECTED", make corrections and resubmit corrected reproducible and one (1) print with corrections indicated. Submit additional prints if required by various sections of the Specifications. Reproducible document will again be returned to Contractor.
7. When in compliance and not required to be resubmitted, Architect will stamp and mark reproducible as "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED". Use this reproducible as stamped and marked to obtain and distribute prints of shop drawings required by all parties as required by General and Supplemental Conditions.

8. Do not submit further submittals beyond "FURNISH AS CORRECTED" unless specifically directed to by Architect. Such further submittals, when not directed by Architect, will be returned to Contractor without review.

B. Product data:
   1. Submit adequate number for Contractor, subcontractors and material suppliers, one copy for Architect and one copy for submittal to Owner as part of Record Documents specified later in this Section. Total number shall be as determined at preconstruction meeting.
   2. Retain three (3) additional copies for applicable products for preparation of Operation Manuals.

C. Processing: Allow sufficient time for submittal review, including time for resubmittals.
   1. Allow a minimum, of fifteen (15) calendar days for review.
      a. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
      b. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
   2. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
   3. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
   4. Shop Drawings: Fifteen (15) calendar working days will be required for the review of any shop drawings and other submittals requiring review by the Architect if received in quantity equal to or less than fifty (50) sheets during five (5) consecutive working days.
      a. For each sheet or other item in excess of over fifty (50) sheets received in seven (7) calendar days, additional time will be required for review time. The Architect will advise the Contractor of additional time required.
   5. No extension of Contract Time will be authorized because of:
      a. Failure to comply with approved Submittal Schedule.
      b. Failure to transmit submittals for Architect's review, sufficiently in advance of the Work to permit processing.
   6. Time as specified for Architect's review commences upon receipt of submittals by Architect.

D. The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and one (1) resubmittal. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional resubmittals.

1.6 SAMPLES

A. Unless otherwise noted submit samples in duplicate for approval. Architect will retain one approved sample from each submittal.

1.7 WARRANTIES

A. Provide duplicate notarized copies.

B. Execute and assemble documents from subcontractors, suppliers, and manufacturers.

C. Provide Table of Contents and assemble in three-ring binder with durable plastic cover.

D. Submit prior to final Application for Payment.

E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.8 PROJECT RECORD DRAWINGS, SPECIFICATIONS AND APPROVED SHOP DRAWINGS

A. Maintain one set of Record Documents for construction and one set for Project closeout Submittal.
   1. Clearly mark changes to the work upon Drawings and Specifications.
      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 understandable drawing technique.
      c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   2. Record information on the Work that is shown only schematically.
   3. Submit specifications and Drawings to Architect for review and final preparation of record Documents.
   4. If not approved, make corrections, clarifications, improvements to marking quality or other changes required by Architect and resubmit, or submit new set if necessary, to Architect.

B. Changes on copies of Drawings:
   1. Upon completion of the work submit to the Architect one set of clean prints of Drawings accurately indicating with red ink all variations indicated in Paragraph A above.

C. Changes on copies of Specifications portion of Project Manual:
   1. Upon completion of the Work, procure one complete set of properly reproduced Specifications made from Architect's original Specifications, and clearly mark on the Specifications all changes to the Work indicating all variations indicated in Paragraph A above.
   2. Also include in each section the actual product or products provided in the Work by binding in manufacturer's product data sheet for each selected and installed product.
   3. Marking shall be neat and easy to read; changes shall be clearly identified.

D. Include with submittal of Record Drawings and Specifications two complete sets of approved shop drawings of items not included below as part of Operation and Maintenance Manuals; refer to Shop Drawing requirements in this section.

1.9 CLOSEOUT SUBMITTALS – GENERAL

A. Assemble:
   1. Data in 8-1/2 inches by 11 inches loose-leaf binders, complete, clean and legible; submit to Architect for approval and editing. Furnish four final approved copies.

2. Comply with requirements of General and Supplemental Conditions in addition to the following requirements herein.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

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SECTION 01 4000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for quality assurance and quality control.

1.2 RESPONSIBILITIES

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide quality-control services required for his work as specified elsewhere in the Contract Documents and as required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.

B. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

1.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect
2. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products
3. Specified inspections, tests, and related actions do not limit Contractor's quality control procedures that facilitate compliance with Construction Documents
4. Requirements for Contractor to provide quality control services required by the Owner, Architect, or authorities having jurisdiction are not limited by provisions of this Section

1.4 SUBMITTALS

A. Copies of Regulations: Obtain copies of applicable regulations and retain at Project site to be available for reference by parties who have a reasonable need to examine them

B. Comply with requirements of Division 01 Section "Submittals"

C. All submittals required under provisions of this Section are informational

D. Submit certified written reports in duplicate for each inspection or test required by the Contract Documents

1. Submit additional copies directly to authorities having jurisdiction

E. Testing Agency Reports:
   1. Date of issue
   2. Project title and address
   3. Name, address, and telephone number of testing agency
   4. Dates and locations of samples and tests or inspections
   5. Ambient conditions at time of sample taking and testing
   6. Names of persons responsible for inspections, sampling, and tests
   7. Designation of the Work and test method
   8. Identification of products and Specification sections
   9. Complete inspection or test data
   10. Test results and interpretations of results
   11. Comments or professional opinion on whether inspected or tested Work conforms to Contract requirements
   12. Recommendations regarding re-testing
   13. Name and signature of laboratory inspector

F. Delegated-Design 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.

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

1.5 QUALITY ASSURANCE

A. 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.

B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. 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 to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities recognized as experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: Engage agencies that comply with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections or tests required.

1. Where testing or inspection is required to demonstrate compliance with codes, statutes, or other public regulations, employ agencies acceptable to authorities having jurisdiction for enforcing those regulations

H. Testing services by Contractor: Testing and Inspection Services as specified in the Kentucky Building Code, Special Inspections.

1.6 REGULATORY REQUIREMENTS

A. Applicable Codes and Regulatory Agencies

1. The "Kentucky Building Code" (latest edition) including all amendments as administered shall govern in addition to any other code authority indicated in the Specifications.
2. Specified requirements in excess of requirements of codes referenced herein shall take precedence over codes referenced herein.
3. The repetition of or reference to any portion of codes referenced herein shall not negate any unrepeated or unreferenced portions of codes referenced herein.
4. Requirements of The Occupational Safety and Health Administration (OSHA) and The Environmental Protection Agency (EPA) that apply to work places and to building construction shall govern the Work in addition to any other code authority referenced herein.
5. Requirements for persons with disabilities: Comply with building code referenced above and with The Americans with Disabilities Act Accessibility Guideline (ADAAG).

B. Permits:

1. Contractor shall apply for, obtain and pay all costs for plan examinations, permits, fees and inspections which may be required by state laws, ordinances, rules and regulations for various portions of the Work.
2. Expedite obtaining of permits for fire protection, fire detection and all other permits so as not to delay installation of or coordination with the Work.
3. File copies of permits and inspection certifications with Architect.
4. Comply with requirements of governing building authorities for procedures to be followed in preparation for obtaining occupancy permit.

1.7 REFERENCES

A. Applicable Standards:
   1. Code Listing: Any reference to standards of any society, institute, association, or governmental agency which is part of the referenced Building Code shall comply with the edition date published in the referenced Building Code.
   2. Non-Code Listings: Any reference to standards of any society, institute, association, or governmental agency which is not a part of the referenced Building Code shall be the edition in effect at the time of opening of Bids, except as otherwise specifically stated in this Project Manual.
   3. In case of conflict between the published standard and the Contract Documents, the latter shall govern. The repetition of or reference to any portion of a standard shall not negate unrepeated or unreferenced portions thereof.
   4. No claim for additional compensation will be permitted due to failure to be fully informed of requirements of referenced standards, or other published standards referenced in the Contract Documents.

B. Conflicting Requirements
   1. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
   2. 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 Architect for a decision before proceeding.

1.8 PROJECT CONDITIONS

A. Testing agencies are not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents, nor to approve or accept any portion of the Work.

B. Coordination: Coordinate sequence of activities to accommodate required services with minimum delay. Coordinate activities to avoid necessity of removing and replacing construction to accommodate inspections and tests.
   1. Contractor is responsible for scheduling times for inspections, tests, taking of samples, and similar activities.

1.9 MANUFACTURER'S FIELD SERVICES

A. Where required by specifications or needed for execution of warranty, arrange for manufacturers to provide authorized technical representatives to attend pre-installation conferences, and to observe field conditions, quality of workmanship, testing, and start-up of equipment, as applicable, and to make recommendations for quality control.

B. Submit copies of written reports by technical representatives to Architect as informational submittals

1.10 REPAIR AND PROTECTION

A. Upon completion of testing, inspection, sample taking, and similar activities, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.

B. Protect construction exposed by or for quality control service activities, and protect repaired construction.

C. Repair and protection is the Contractor's responsibility, regardless of assignment of responsibility for testing, inspection, or similar services.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

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SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes:
   1. Temporary utilities
   2. Construction facilities
   3. Construction aids
   4. Vehicular access and parking
   5. Temporary barriers and enclosures
   6. Temporary controls
   7. Repair

C. Clarification of Responsibilities:
   1. As described in Division 01 Section, Summary of Work, the Work is the full responsibility of the General Contractor under one lump sum contract. However, for clarification, certain items are specifically indicated herein to be provided, as part of the lump sum contract, by certain indicated subcontractors or by the General Contractor. Where not indicated either way, the Work shall be provided by the General Contractor.

1.2 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction.

B. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.3 TEMPORARY UTILITIES

A. Utility, Fuel and Water Costs:
   1. Owner will pay utility, fuel and water costs for amounts reasonably required for performance of the Work, except that Contractor shall pay fuel costs for temporary units not connected to the building's utility systems.
   2. If Owner's existing utilities are inadequate, provide facilities specified below.
   3. Do not waste utilities, fuel and water by unnecessary running of equipment, unnecessary opening of windows and doors and other unnecessary or wasteful actions.
   4. Use of permanent HVAC system for temporary heating, ventilating and air conditioning to maintain specified requirements for temperatures, humidity and ventilation prior to Substantial Completion:

a. Provide high efficiency throw-away type air filters in all units and maintain and replace them as required.
b. Protect hydronic systems from freezing; provide sufficient glycol in the system's water.
c. Provide temporary heating, ventilating and air conditioning and provide all necessary maintenance and operating personnel to maintain specified requirements for temperatures, humidity and ventilation for 24 hours a day, seven days a week.
d. Immediately prior to substantial completion, remove filters and replace with specified filters; drain hydronic systems, flush and refill, and thoroughly clean equipment.

5. Temporary Water:
   a. Obtain water from existing building or exterior hose bib. Provide service sink or other facility to allow use for construction purposes and prevent damage to any areas of building.

1.4 CONSTRUCTION FACILITIES

A. Temporary Sanitation Facilities:
   1. Provide adequate number of temporary chemical-type facilities where directed for use of all workmen at the site. Remove such facilities on completion and leave site in perfect sanitary condition. Do not use permanent sanitation facilities within building unless approved by Architect.

B. Temporary Portable Fire Protection Equipment
   1. Provide temporary portable fire protection equipment throughout Contract Time to meet the requirements of codes referenced in Division 1; keep equipment accessible at all times in compliance with said codes.

C. Smoking: Smoking is prohibited in all areas of building.

D. Field Office:
   1. Provide and maintain an office in building for use of Architect, Contractor and subcontractors. Locate where directed by Architect. Provide telephone and fax for duration of Contract; pay for local calls; party making long distance calls shall pay for same.

E. Containers for Waste Materials:
   1. Provide on-site containers for collection of waste materials, debris and rubbish; empty at regular intervals.

1.5 CONSTRUCTION AIDS

A. Construction Elevators and Hoists:
   1. Provide, operate and maintain portable lifts, hoists and other equipment as necessary to vertically transport workmen, tools, equipment and material required by all trades; comply with all codes referenced in the Contract Documents for such equipment.
   2. Use of permanent elevators for above requirements shall be subject to approval by the Owner and Architect.

1.6 VEHICULAR ACCESS AND PARKING

A. Existing paved areas on site may be used as specified herein for construction operations, such as trenching and similar work, and access and parking. Damages to said paved areas for construction operations shall be repaired by Contractor. Amount for repair of damages for construction operations shall be paid by the Contractor.

1. Coordinate with Owner to determine portions of existing paved areas that may be used for access and parking during construction. Also coordinate time of use for any purpose so as not to interfere with Owner's use of paved areas.
2. Prior to permitted use of existing paved areas request Owner to accompany Contractor in examining the paved areas for defects present. If defects are found, make note of same to avoid disputes that may arise after Contractor's use of paved areas commences.
3. Quality of repair to sub-grade and paving shall be equal to quality of existing.

1.7 TEMPORARY BARRIERS AND ENCLOSURES

A. Protection of Persons:

1. Provide temporary construction, such as protection of openings in floors and roof, barricades at open excavations, and protection of other hazardous conditions, to ensure compliance with requirements of General and Supplemental Conditions, and Applicable Codes and Regulatory Agencies specified in Division 01 Section, Quality Requirements for protection of persons throughout Contract Time.
2. Refer to other sections of Specifications for further requirements for protection of persons.

B. Temporary Enclosure of Exterior Openings:

1. Provide temporary weathertight enclosures for all exterior openings of building as required to protect existing building and new work from weather and to meet the Progress Schedule. Equip exterior doors with self-closing hardware, padlocks.
2. Temporary enclosures shall be as secure at all times during construction as the openings in the existing building at the start of construction. At no time shall construction work cause the building to be less secure than it was at the start of construction.
   a. Coordinate with General Renovation Contract Work for replacement of openings at areas of Work removed by Work of this Contract.
3. Refer to other sections of Specifications for further requirements for protection of persons.

C. Protection of Surfaces: Provide temporary protection work specified below.

1. Protect items, exposed unfinished surfaces and finish surfaces as specified below. If items, exposed unfinished surfaces or finish surfaces are stained, discolored, damaged, or otherwise rendered in unacceptable or unusable condition, as determined by Architect, restore to new condition or replace with new, to satisfaction of Architect, with materials approved by Architect and manufacturer of items, exposed unfinished surfaces and finish surfaces being restored.
2. Cover jambs of door frames in finished masonry openings to 72-inch height above floor.
3. Provide box protection for non-ferrous metal work wherever exposed to possible damage.
4. Protect unfinished surfaces that are to be left exposed in the finished work from oil or any other substances which could cause staining, discoloration or other damage to appearance of surface.

5. Protect surfaces that are to be finished with transparent materials from oil or any other substances which could cause staining, discoloration or other damage to appearance of surface after application of transparent materials.
6. Protect surfaces that are to be finished with other materials from oil or any other substances which could inhibit adherence of finish materials.
7. Protect flooring surfaces with heavy Kraft paper walkways or other suitable means for the use of workmen. Limit construction traffic over such surfaces to that necessary to complete the Work.

D. Temporary Fence:
1. Provide temporary fence around areas of construction including material storage areas; comply with OSHA and other applicable regulations for exclusion of unauthorized persons.
2. Chainlink; 6'-0" high.

E. Repair of Temporary Barriers and Enclosures:
1. Other Contractors removing or damaging protection shall reinstall same in a timely fashion.
2. Contractor shall provide all necessary labor, material and equipment to repair or reconstruct Barricades and fencing damaged as a result of his work.

F. Removal of Temporary Facilities:
1. When temporary facilities are no longer required, remove same from site. Unless otherwise specified herein, all such facilities shall be removed before Substantial Completion.

1.8 TEMPORARY CONTROLS

A. Cleaning During Construction:
1. Keep entire Project area clean, orderly and in conformance with the requirements below, and in conformance with construction requirements of Applicable Codes and Regulatory Agencies specified in Division 01 Section, Quality Requirements.
2. Cleaning materials and methods shall be as recommended by manufacturer of material being cleaned, and in compliance with EPA and applicable regulations for maintaining indoor air quality.
3. Execute cleaning to insure that building, grounds, and adjacent private and public properties are maintained free from accumulations of waste materials and rubbish caused by the Work.
4. Except within building, wet down dry materials and rubbish to lay dust and prevent blowing dust.
5. Handle materials in a controlled manner; do not drop or throw materials from heights.
6. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
7. Conduct cleaning and disposal operations to comply with ordinances and laws which apply to the place of the Work, plus the following:
   a. Store volatile wastes in covered metal containers, and remove from site daily.
   b. Prevent accumulation of wastes which create hazardous conditions.
   c. Do not burn or bury rubbish and waste materials on site.
      1) Remove rubbish and waste from concealed spaces prior to enclosing.
   d. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains, or plumbing fixtures.

e. Do not dispose of wastes into streams or waterways.

f. Clean with cleaning materials and methods recommended by manufacturer of material being cleaned, and in compliance with EPA and other applicable regulations for maintaining indoor air quality.

8. If any vehicle for a Contractor or any of his sub-contractors or suppliers carries mud/dirt on any roadways/pavements, it shall be cleaned off immediately.
9. At reasonable intervals during progress of the Work, clean site and adjacent private and public properties, and legally dispose of waste materials, debris and rubbish caused by the Work.
10. Refer to Division 01 Section, Contract Closeout and Division 02 Section, Abatement Remediation specifications for final cleaning.

PART 2 - PRODUCTS

A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Lumber and Plywood: Comply with requirements in Division 06 Section, Miscellaneous Rough Carpentry.

1. For job-built temporary offices, shops and sheds within construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing, and siding.
2. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.

C. Paint: Comply with requirements of Division 09 Section, Painting.

1. For sign panels and applied graphics, provide exterior grade alkyd gloss enamel over exterior primer.

D. Tarpaulins: Provide waterproof, fire-resistant,UL labeled tarapaulind with flame spread rating of 15 or less. For temporary enclosures, provide transluscent, nylon reinforced, laminated polyethylene of polyvinyl chloride fire retardant tarpaulins.

E. Water: Provide potable water approved by local health authorities.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

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SECTION 01 7300

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes; general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Examination and Preparation
   2. Progress cleaning.
   3. Protection of installed construction.
   4. Correction of the Work.

1.2 SUBMITTALS

A. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

C. Certified Surveys: Submit two copies signed by professional engineer.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

3.2 PREPARATION

A. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 SEPARATE WORK BY OWNER

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Requirements specified herein for cleaning during construction apply new building, and to portions of existing building included in the Work indicated in Contract Documents.
2. Requirements specified herein for cleaning during construction, plus those listed in Items a. through c. immediately below, also apply to portions of existing building that are not included in the Work, but are affected by prosecution of the Work.
    a. Cooperate with Owner to clean to condition satisfactory to Owner when directed by Owner or Architect.
    b. Repair, patch or touch up marred surfaces to match adjacent surfaces.

B. Cleaning During Construction:

1. Coordinate with requirements of Division 02 Section, Abatement Remediation specifications.
2. Keep entire Project area clean, orderly and in conformance with the requirements below, and in conformance with construction requirements of Applicable Codes and Regulatory Agencies specified in Division 01 Section, Quality Requirements. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
3. Except within building, wet down dry materials and rubbish to lay dust and prevent blowing dust.
4. Handle materials in a controlled manner; do not drop or throw materials from heights.
5. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
6. Conduct cleaning and disposal operations to comply with ordinances and laws which apply to the place of the Work, plus the following:
    a. Store volatile wastes in covered metal containers, and remove from site daily.
    b. Prevent accumulation of wastes that create hazardous conditions.
    c. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
7. Refer to Division 01 Section, Contract Closeout for final cleaning.

C. Site: Maintain Project site in order and free of waste materials and debris.

D. 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.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Waste Disposal: Dispose material removed or used in Work of of this Contract in accordance with applicable regulations.

G. During handling and installation, clean and protect construction in progress and adjoining existing materials indicated to remain during Work of General Renovation Contract. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period.

I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide protection and maintain conditions that ensure installed Work and Existing Work indicated to remain as part on General Renovation contract Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

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SECTION 01 7320

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult with Owner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section Includes:
   1. Administrative and procedural requirements for cutting and patching.

C. Related Sections:
   1. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
      a. Requirements of this Section apply to mechanical, electrical, and communication installations. Refer to Plumbing, HVAC, and Electrical Sections for other requirements and limitations applicable to cutting and patching mechanical, and electrical installations.

1.2 DEFINITIONS

A. Cutting: Removal of in-place or existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
   2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
   3. Products: List products to be used and firms or entities that will perform the Work.
   4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

A. Cutting and patching of structural members and work affecting structural members or the structural integrity of any portion of the building: Notify Architect of necessity for cutting structural members and work affecting structural members or the structural integrity of any portion of the building; do not proceed until approved by Architect.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety

D. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.
   1. If possible retain the original Installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original Installer or fabricator, engage another recognized experienced and specialized firm.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

A. In-place Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or in-place.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
   2. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
   1. Coordinate with General Construction Contractor for work to be removed or remain as part of the General Renovation Contract Work.
   2. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
   3. Execute cutting (including excavating), fitting or patching of Work required to:
      a. Make several parts fit properly.
      b. Uncover work as necessary to provide for correction of ill-timed work.
      c. Remove and replace defective work.
      d. Remove and replace work not conforming to requirements of Contract Documents.
      e. Remove samples of installed work as specified for testing.
      f. Install overlooked specified work in completed new construction.
   4. Do not endanger any work by cutting or altering work or any part of it.
   5. Materials and installation for patching:
      a. Meet all requirements of applicable sections of Specifications.
      b. Where cut surfaces are of unspecified products, provide material to match adjacent.
      c. Refinish entire surfaces as necessary to provide an even finish:
         1) Continuous Surfaces: To nearest intersections.
         2) Assembly: Entire refinishing.

B. Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 02 Sections where required by cutting and patching operations.
5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Additional costs:

1. Cost caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Architect or Engineer: Contractor.
2. Work done on instructions of Architect, other than ill-timed, defective or nonconforming Work: Owner.

E. Responsibility for cutting and patching:

1. Contractor, shall perform cutting and patching, for work normally associated with their portions of the Work, in compliance with requirements specified above.
2. Contractor shall coordinate cutting and patching for all branches of the Work in compliance with requirements specified above.

3.4 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials.

END OF SECTION

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SECTION 01 770

CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Application and Conflict:
   1. This section applies to all portions of the Work. In the event of conflict between provisions herein and those otherwise required by the Owner for the Contractor, consult withOwner for resolution.
   2. References herein to, or repetition of, any portions of Project Manual preceding Division 01 shall not nullify any un-referenced or un-repeated portions thereof.

B. Section includes:
   1. Related requirements.
   2. Final cleaning.
   3. Substantial completion procedures.
   4. Final completion procedures.
   5. Project closeout submittals.
   6. Instructions to Owner.

C. Related Sections:
   1. Division 01 Section, Temporary Facilities and Controls: Cleaning during Construction and Removal of Temporary Facilities.
   2. Division 02 Section, Asbestos Remediation; Technical Specifications for the Pre-Renovation Removal of Asbestos-Containing Materials from the Northern Kentucky University's Student Residence Hall at Lakeside: Requirements for closeout submittals.

1.2 FINAL CLEANING

A. Comply with requirements for final cleaning as specified in Division 02 Section, Asbestos Remediation specifications.

B. Requirements specified herein for final cleaning, plus those listed in Items 1 through 4 immediately below, apply to portions of existing building not indicated in Contract Documents as part of the Work but are affected by prosecution of the Work.
   1. Cooperate with Owner to clean to condition satisfactory to Owner when directed by Owner or Architect.
   2. Repair, patch or touch up damaged surfaces to match adjacent surfaces at areas indicated to remain as part of the General Renovation Contract.

C. Materials: Only as recommended by manufacturer for each type of surface. Ensure that materials comply with requirements of EPA and other applicable standards for indoor air quality.

D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.

E. Replace air-handling filters if units were operated during construction. (Refer to Section 01 5000.)

F. Clean ducts, blowers and coils, if air-handling units were operated without filters during construction. (Refer to Section 01 5000.)

G. Maintain cleaning until project, or portion thereof, is occupied by Owner.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

A. Submit to Architect a list of items to be completed or corrected.
   1. Coordinate with inspection requirements specified in Division 02 Section, Asbestos Remediation specifications

B. Architect will determine whether or not Project is ready for Substantial Completion inspection:
   1. If not ready, Architect will state general areas, which require completion or correction prior to inspection.
   2. If ready, Architect will commence inspection within seven days of receipt of lists as noted above.

C. Should Architect consider Work not substantially complete:
   1. He will immediately notify Contractor stating reasons.
   2. Contractor shall complete work and submit a second list of items to be corrected or completed.

D. Should Architect consider Work substantially complete:
   1. Architect will amend list of items to be completed or corrected as determined by inspection.
   2. Architect will prepare Certificate of Substantial Completion for signatures by Contractor and Owner.

1.4 FINAL COMPLETION PROCEDURES

A. Contractor shall submit written certification that:
   1. Contract Documents have been reviewed.
   2. Project has been inspected for compliance with Contract Documents.
   3. All items to be completed or corrected on list following Substantial Completion have been completed.
   4. Work has been completed in accordance with Contract Documents.
   5. Equipment and systems have been tested in presence of Owner's representative and are operational.
   6. Project is completed, and ready for final inspection.

B. Architect will make final inspection within seven days after receipt of certification.

C. Should Architect consider that Work is not finally complete:
   1. He will notify Contractor, in writing, stating reasons.
   2. Contractor shall immediately remedy the stated deficiencies and shall send second written notice to Architect certifying that Work is complete.
   3. Architect will reinspect Work.

D. Should Architect consider that Work is finally complete in accordance with requirements of Contract Documents, he will request Contractor to submit Project Closeout submittals.

1.5 PROJECT CLOSEOUT SUBMITTALS

A. Contractor shall submit the following in accordance with all requirements of the Contract Documents:

1. Project record documents.
2. Guarantees, warranties and bonds required.
3. Affidavits.
4. Evidence of compliance with requirements of governing authorities as applicable.
5. Release of liens and other related project closeout data, if required by Owner.

1.6 INSTRUCTIONS TO OWNER

A. After final acceptance Contractor shall provide verbal instructions to Owner or Owner's designated personnel for all items specified to require same.

B. Refer to Division 02 Section, Asbestos Remediation, for additional requirements.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

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PN 1275.004

September 2007

TECHNICAL SPECIFICATIONS FOR THE PRE-RENOVATION REMOVAL OF ASBESTOS-CONTAINING MATERIALS FROM THE NORTHERN KENTUCKY UNIVERSITY'S STUDENT RESIDENCE HALL AT LAKESIDE

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1.0 WORK TO BE PERFORMED

1.1 SCOPE OF WORK

1.1.1 Summary

This project involves the proper removal and disposal of asbestos-containing materials (ACM) identified in the Northern Kentucky University's (NKU) Student Residence Hall located at 3510 Alexandria Pike in Highland Heights, Kentucky.

The scope of work involves "Class I Asbestos Work" including the removal of friable asbestos-containing acoustical suspended ceiling panels, thermal system insulation (e.g., cementitious fittings, layered-paper and preformed-block pipe insulation, and boiler insulation), and "Class II Asbestos Work," in which windows with asbestos-containing window glazing compound, nonfriable resilient floor coverings, and mastics will be removed from within regulated work areas.

Asbestos abatement shall be executed in full compliance with all applicable provisions of the Kentucky OSHA asbestos standard for construction (1926.1101) and Chapter 58 of the Kentucky Administrative Record (KAR). All Class I asbestos work shall be done wet, and inside negatively-pressurized enclosures or negatively-pressurized glovebags. The Contractor is solely responsible for compliance with all federal, state, and local regulations, for the safety and health of his employees and subcontractor employees, and for compliance with all applicable environmental regulations.

For informational and bidding purposes, detailed inventories and confirmatory PLM analytical results of the ACM are presented in Tables 1 and 2, respectively. Project drawings of floor plans, presented as Figures 1 through 4, indicate the types and locations of ACM to be removed in each room or area of the building. Bidders are responsible for confirming actual quantities of specified materials present and for removing all types of ACM specified. Should the actual quantities removed fall within plus or minus 10 percent of the total estimated quantities, no adjustment to the Contract Sum shall be made. In the event that the total quantities removed are less than or greater than 10 percent of the estimated quantities (regardless of whether the materials are identified in this specification or subsequently discovered during the course of the abatement activities), GBBN may consider an adjustment to the fixed-price contract sum via a written and substantiated change order. An adjustment to the contract sum shall only be considered for those quantities less than or greater than 10 percent of the total estimated quantities.

1.1.2 ACM Removal

All specified ACM at the NKU Student Residence Hall shall be completely and properly removed by the Contractor in accordance with these specifications and all applicable local, state, and federal regulations to the satisfaction of the Owner, and any regulatory agency or department having jurisdiction for this project. An inventory of the locations and estimated quantities of ACM to be removed are presented in Table 1 and on Figures 1 through 4.

All asbestos abatement work shall be supervised by and is the responsibility of the Contractor's competent person who, by virtue of his education, credentials, and experience, is capable of supervising an asbestos hazard abatement project in accordance with all current regulations, standard work practices, and guidance established for asbestos removal. The competent person is an employee of the abatement contractor and is defined as one capable of identifying existing asbestos hazards in the workplace, and who has the authority to take prompt corrective measures to eliminate them. In addition, for Class I and Class II asbestos work, one who is specially trained in a training course which meets the criteria of Kentucky's Asbestos Accreditation Plan (KAAP) for project designer or supervisor, or its equivalent. The competent person shall conduct all required and additional inspections and shall perform or supervise all duties pursuant to Section O of the Kentucky OSHA Asbestos standard for construction (1926.1101). Upon completion of work, all exposed surfaces in the abatement work area shall be made free of all visible dust and debris via the use and application of the engineering and work practice controls and procedures specified. The absence of fibers in each work area will be verified and documented by visual inspection and by use of an aggressive air sampling method and phase-contrast microscopy (PCM). The Contractor's failure to meet the specified clearance criteria will require him to reclean the work area at his own expense and pay for repeated final clearance inspections and air monitoring by the Owner's consultant.

1.1.3 Work Involving Lead-Containing Paint

GBBN has assumed that all painted surfaces contain lead within the NKU Student Residence Hall. Any planned interior demolition work during the course of this project must be conducted in accordance with all applicable requirements of the OSHA lead standard and applicable U.S. and Kentucky EPA environmental regulations. The OSHA lead standard has specific training requirements and work practices for demolition activities involving the disturbance of lead paint, and requires that the contractor(s) that disturb lead-containing materials conduct exposure assessments of their employees during disturbance and/or manual demolition of lead-containing materials to determine worker exposures to lead.

The applicability of specific sections of the standard and the need to comply with specific requirements depend on the actual levels of exposure that employees experience when performing renovation activities in or on buildings where lead-containing materials are present. Therefore, OSHA requires that the Contractor performing operations covered by this standard conduct exposure assessments to determine if their employees are exposed to lead above the action level (AL, 30 $\mu g/m^3$) or the permissible exposure limit (PEL, 50 $\mu g/m^3$). Worker exposures above the AL and PEL trigger specific actions that the Contractor must take to control and limit exposures to lead and to comply with OSHA requirements.

Until lead exposure assessments have been conducted and the results evaluated, the standard requires the Contractor to treat their employees as though they are being exposed to lead in excess of the PEL, and to provide [per 29 CFR 1926.62(d)(2)(v)(A-F)]:

- Respiratory protection
- Protective work clothing and equipment
- Change areas and hand washing facilities
- Biological monitoring
- Training

If the exposure assessments indicate that no employee is exposed above the AL, the Contractor may discontinue monitoring. Further exposure testing is not required unless there is a change in processes or controls that may result in additional employees being exposed to lead at or above the AL, or may result in employees already exposed at or above the AL being exposed above the PEL. The Contractor must keep a written record of the determination, including the date, location within the work site, and the name and social security number of each monitored employee.

The presence of lead-containing paint has been mentioned in these Specifications to alert bidders, the abatement contractor, and/or other trades engaged in renovation work so that they may properly execute their interior demolition activities in accordance with applicable provisions of the OSHA lead standard for construction and any other applicable lead regulations. No lead-containing paint is specifically designated for removal (i.e., stripping, by the abatement contractor).

1.2 OWNER REPRESENTATIVES

Northern Kentucky University is the Building Owner; the Owner's representative for this project is Ms. Marilyn Heflin. Contractual issues related to this project should be referred to Ms. Marcene Kinney, Project Manager with GBBN Architects, Inc. (513.241.8700). BHE Environmental, Inc. (BHE) is the environmental consultant for the project, and will conduct on-site surveillance, air monitoring, and periodic inspections on behalf of the Owner during the abatement of ACM. Technical issues relating to the Scope of Work for the removal of ACM are to be referred to BHE (513.326.1500, Attn: Mark Karaffa or Jasen Holton).

1.3 PROJECT SCHEDULE

The Contractor must comply with the project schedule described in the Bid documents. For each day the Contractor exceeds the Completion Date, liquidated damages shall be assessed by GBBN at actual cost, which shall include the fees of the Owner's consultant per workday plus expenses, and the cost to collect and analyze the number of air samples (plus markup) required to monitor this project.

Abatement work may commence approximately 10 days after the Contractor is notified to proceed unless otherwise instructed by the Owner. The 10 days is necessary for Kentucky Division for Air Quality pre-abatement notifications. The Contractor is responsible for

completing the notification forms, submitting forms to the appropriate regulatory agencies, and for submitting all changes to these forms. The Contractor is also responsible for paying all associated fees and obtaining any required permits.

After award of contract and prior to start of work, the abatement Contractor shall prepare and submit a detailed Project Work Plan describing how the Contractor will execute the scope of work in accordance with these specifications and applicable regulations. The work plan shall address the project schedule and include the anticipated duration and phasing of abatement activities and the size of the abatement work crew (number of workers/supervisors assigned each day).

All abatement work including ACM removal, cleanup, and satisfactory clearance testing for all phases of this project shall be completed within the determined schedule. All site work will be performed Monday through Friday (excluding legal holidays) on the day shift, 7 A.M to 4 P.M., which will not exceed nine hours (including rest and lunch breaks). The Owner and/or the Owner's designated representative must approve any modifications to the project schedule.

2.0 DESCRIPTION OF WORK

2.1 WORK SPECIFIED

This Specification covers the removal of all specified asbestos-containing suspended ceiling panels, thermal system insulation, window units with window glazing compound, resilient floor coverings and mastics, as indicated in Table 1 and in the project plans (Figures 1 through 4), prior to planned renovation activities.

The Contractor will furnish all labor, materials, employee training, services, insurance, licenses, and equipment in accordance with requirements of the Kentucky Occupational Safety and Health Administration (OSHA), Kentucky Division for Air Quality, and all local ordinances and other applicable regulations, to complete the removal and cleanup (as specified) of all specified ACM. All removal work for this project will proceed in accordance with the Project Schedule.

In addition to the removal of ACM and as part of the scope of work during preparation, the Contractor shall thoroughly clean (by HEPA-vacuuming and/or wet wiping) all previously contaminated surfaces, objects, stored items, equipment, and supplies in each work area as instructed by the Owner or it's Consultant.

Demolition of walls, ceilings, soffits, bulkheads, and other enclosures or barriers to access the ACM for removal, and the cleanup and disposal of all demolition debris is to be performed by the Contractor only after approval from the building Owner, the Owner's Consultant, or the Owner's Architect. Non-asbestos demolition debris may be disposed as conventional solid waste and will be cleaned up and removed from the work area by the abatement contractor before asbestos removal is begun.

2.2 WORK NOT SPECIFIED

The cost to remove any additional quantities of ACM in excess of 10% of those estimated in Table 1 that will be revealed as interior demolition proceeds, will be established in advance (based on the unit prices submitted with the Contractor's bid), reviewed and approved in writing by the Owner or his representative before proceeding. Removal of other hazardous materials, such as fluorescent lamps, PCB ballasts, CFC refrigerant gas, mercury thermostats, batteries, abandoned chemical materials, pressurized containers, etc., will be performed by others and will occur sometime after ACM removal.

2.3 CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for effectively isolating all ACM removal work areas from adjacent areas (which may be vacant or occupied periodically by other construction trades personnel) and for removing the specified ACM in accordance with this specification, and federal, state, and local asbestos and health and safety regulations and guidelines, and also for restoring all work areas and all auxiliary areas used during abatement activities to a clean and acceptable condition. The Contractor is responsible for obtaining and complying with all permits, notifications, revised notifications, licenses, fees, and all other requirements related to this work. These responsibilities include obtaining any licenses required by any patent covering the methods or devices used in the performance of this contract. The Contractor shall take special care as necessary to ensure that the remaining building components not specified for removal or interior demolition are protected from damage and contamination during abatement activities. Any unauthorized damages caused by the Contractor during the performance of abatement activities shall be repaired or corrected by the Contractor to the Owner's satisfaction and at no additional expense to the Owner. Piping, ductwork, and other nonstructural elements shall not be used to support workers during the removal effort. Pipes without an adequate number of hangers for additional weight could break and result in serious injury to abatement workers, and damage to the building and building systems. The Contractor shall be held liable for injuries and/or damages that result from accidents or violations of applicable laws or this specification.

2.4 WORK PERFORMANCE

The performance and execution of the work will be closely monitored by a third-party Consultant and his technicians or other designated representatives of the Owner. The surveillance will be inside each work area and its surroundings to help oversee/monitor the Contractor's compliance with these specifications and all applicable regulations. Full cooperation and support shall be provided to the Owner, the third-party Consultant and his technicians, and other Owner representatives throughout the abatement process. The continuous monitoring and checking could include review of data from workspace area air samples, daily personal samples (collected by the Contractor) from the breathing zone of a representative number of workers, air samples in the area surrounding the work area and outside the building, and the checking of standard operating procedures, engineering control systems, respiratory protection devices, transportation and disposal of asbestos materials, decontamination facilities and procedures, and any other aspects of the abatement process

that may impact the health and safety of building occupants and the quality of the environment.

The Contractor is entirely responsible for the means and methods for completing this work and for complying with all applicable safety and health and environmental regulations. The abatement contractor, the contractor's supervisors, and the asbestos workers under their control are responsible for the proper removal and clean-up of specified ACM, for all notifications to regulatory agencies, for compliance with project plans and specifications, all applicable federal, state, and local regulations, and for executing all work in a timely and professional manner. The Owner's Consultant does not direct, supervise, manage, or otherwise control those charged with properly abating ACM.

2.5 TERMINOLOGY AND DEFINITIONS

Asbestos - The generic term for naturally-occurring inorganic hydrated silicates, occurring in layered structures composed of chains of silicon/oxygen tetrahedral, which can subdivide into flexible fibers. Asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthrophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered. In accordance with 1926.1101 (b), "asbestos" includes presumed asbestos-containing material (PACM), as defined below.

Asbestos-Containing Material (ACM) - Any material containing more than one percent asbestos.

Abatement - Procedures to control fiber release from asbestos-containing material, (i.e., removal, encapsulation, or enclosure).

Adequately Wetted - To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then the material has not been adequately wetted.

Air Lock - A system of enclosures within the containment area consisting of two doorways, curtained with polyethylene sheeting, at least three feet apart.

Air Monitoring - The process of measuring the fiber content of a specific volume of air in a stated period of time. Phase-contrast microscopy in accordance with NIOSH Method No. 7400 is the prescribed method of sampling and analysis.

Air Sampling Technician - A person trained and experienced in air sampling techniques and schemes who performs air sampling under the direction of the Asbestos Project Manager.

Amended Water - Water to which a surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate the ACM.

Asbestos Project Manager - An individual qualified by virtue of experience and education, designated by the Owner's Representative, responsible for supervising the air sampling technician and helping to ensure compliance with the job specifications.

Authorized Owner's Representative - Architect, Project Engineer, Construction Manager, Supervising Engineer, Consultant, or other personnel designated by the Owner. Authorized representatives of the Owner shall have the authority to stop work of the Contractor if methods used, safety precautions, or personnel protection are not being carried out in accordance with the specifications and regulations cited herein.

Authorized Visitor - Any person authorized by the employer and required by work duties to be present in regulated areas; the Owner's Representatives, Air Sampling Technician, Asbestos Project Manager, Consultant, or a representative of any regulatory or other agency having jurisdiction over the project.

Bridging Encapsulant - A liquid designed to form a tough membrane over the surface of asbestos-containing materials.

Breathing Zone - The area near the collar or lapel, forward of the shoulders.

Category I Nonfriable Asbestos-Containing Material - Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized-Light Microscopy.

Category II Nonfriable Asbestos-Containing Material - Any ACM, excluding Category I Nonfriable Asbestos-Containing Material, containing more than one percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized-Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Certified Industrial Hygienist (CIH) - One who is certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

Class I Asbestos Work - Activities involving the removal of thermal system insulation (TSI) and surfacing ACM and presumed ACM (PACM).

Class II Asbestos Work - Activities involving the removal of ACM that are not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III Asbestos Work - Repair and maintenance operations, where ACM and PACM, including TSI and surfacing material, may be disturbed.

Class IV Asbestos Work - Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities.

Clean Room - An uncontaminated room (part of the workers' decontamination enclosure system) having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

Closely Resembles - The major workplace conditions that have contributed to the levels of historic asbestos exposure are no more protective than conditions of the current workplace.

Competent Person - A Contractor's employee (typically the foreman or superintendent) certified by the State of Kentucky as an asbestos abatement project Contractor Supervisor, by virtue of his education and experience, who is capable of operating an asbestos hazard abatement project in accordance with current Kentucky Division for Air Quality, Kentucky OSHA, and standard work practices and guidance established for asbestos removal. Duties of the competent person are as defined in Kentucky OSHA Regulations 1926.1101(b). One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate them. In addition, for Class I and Class II work, one who is specially trained in a training course which meets the criteria of Kentucky Asbestos Accreditation Plan (KAAP) for project designer or supervisor, or its equivalent; and, for Class III and Class IV work, one who is trained in an operations and maintenance (O&M) course developed by EPA.

Consultant - The Asbestos Project Manager, an Industrial Hygienist, or technician designated by the Owner's Representative.

Contaminated - Containing or coated with asbestos.

Containment Barrier - Plastic sheeting and/or other materials used along with the floors, ceilings, and walls of a structure to form an isolated work environment that separates the contaminated work area from the uncontaminated area.

Critical Barrier - One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Curtained Doorway - A device to allow ingress or egress from one room to another while minimizing air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily formed doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. Two curtained doorways spaced a minimum of six feet (two meters) apart form an air lock.

Decontamination Area - An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Decontamination Enclosure System - A series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. A decontamination enclosure system always contains at least two air locks.

Disposal - All herein specified procedures necessary to transport and deposit the ACM removed from the building(s) in an approved active waste disposal site in compliance with

Section 61.154 of the EPA Regulations (40 CFR Part 61) and DOT Regulations (49 CFR Parts 171 and 172).

Disturbance - Any activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount that can be contained in one standard sized glovebag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glovebag or waste bag, which shall not exceed 60 inches in length and width.

Employee Exposure - The exposure to asbestos that would occur if employees were not using respiratory protective equipment.

Encapsulant - A liquid material that can be applied to ACM or cleaned substrates following the removal of ACM to control the possible release of residual asbestos fibers from the material by creating a membrane over the surface.

Encapsulation - All herein specified procedures necessary to coat ACM with a penetrating or bridging encapsulant to control the possible release of asbestos fibers into the ambient air.

Equipment Decontamination Enclosure System - A decontamination enclosure system for materials and equipment, typically consisting of a designated area of the work area, a washroom, a holding area, and an uncontaminated area.

Equipment Room (Change Room) - A contaminated area or room located within the decontamination area that is supplied with impermeable bags or containers for the disposal of contaminated protective clothing and equipment.

Excursion Limit (EL) - The employer shall ensure that no employee is exposed to airborne concentrations of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of 30 minutes as determined by the method prescribed by Appendix A of 29 CFR 1926.1101(NIOSH Method 7400) or an equivalent method.

Facility Component - Any pipe, duct, boiler, tank, fan, engine, or furnace at or in a facility, or any structural member of a facility.

Fiber - A particulate form of asbestos, five micrometers or longer, with a length-to-diameter ratio of at least three to one.

Friable Asbestos Material - Any material containing more than one percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized-Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized-light microscopy (PLM), verify the asbestos content by point counting using PLM.

Fixed Object - A piece of equipment or furniture in the work area that cannot be removed from the work area.

Glovebag Technique - A method with limited applications for removing small amounts of ACM from HVAC ducts, piping runs, valves, joints, elbows, and other non-planar surfaces in an uncontaminated (plasticized) work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6-mil transparent plastic), two inward-projecting, long-sleeve rubber gloves, one inward-projecting water and sleeve, an internal tool pouch, and an attached-labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process. All workers who are permitted to use the glovebag technique must be highly trained, experienced, and skilled in this method.

HEPA Filter - A high-efficiency particulate air (absolute) filter capable of trapping and retaining 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

HEPA Vacuum - High-efficiency particulate air (absolute) filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be 99.97 percent efficient for retaining 0.3-micrometer particles or larger.

Holding Area - A chamber between the washroom and an uncontaminated area in the equipment decontamination enclosure system. The holding area comprises an air lock.

Intact - The ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Leak Tight - A condition in which solids or liquids cannot escape or spill out. It also means dust-tight.

Negative Initial Exposure Assessment - A demonstration by the employer, which complies with the criteria in 1926.1101 paragraph (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the OSHA permissible exposure levels (PELs).

Negative-Pressure Ventilation System - A local exhaust system capable of maintaining a detectable pressure differential across containment barriers relative to adjacent unsealed areas.

NESHAPS - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

NIOSH - The National Institute for Occupational Safety and Health.

OSHA - Occupational Safety and Health Administration.

Owner - Northern Kentucky University or its Designated Representative

Penetrating Encapsulant - A liquid designed to saturate the material, thereby binding asbestos fibers to one another and to other substances in the material.

Permissible Exposure Limit (PEL) - The employer shall ensure that no employee is exposed to airborne concentrations of asbestos in excess of 0.1 fiber per cubic centimeter of air as an eight-hour time-weighted average (TWA), as determined by the method prescribed in Appendix A of 29 CFR 1926.1101 (NIOSH Method 7400) or by an equivalent method.

Plasticize - To cover floors, walls, etc., with plastic sheets as herein specified.

Presumed Asbestos-Containing Material (PACM) - Thermal system insulation and surfacing material found in buildings constructed no later than 1980.

Project Designer - A person who has successfully completed the training requirements for an Abatement Project Designer, as established by 40 CFR 763.90(g).

Regulated Asbestos-Containing Material - (EPA-NESHAP; Kentucky Division for Air Quality). Any friable asbestos material, Category I nonfriable ACM that has become friable, Category I nonfriable ACM that has been subjected to sanding, grinding, cutting, or abrading, or Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Regulated Area - An area established by the employer (abatement contractor) to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

Removal - All herein specified procedures necessary to strip or clean up asbestos-containing materials from designated areas, and to dispose of these materials at an acceptable disposal site.

Shower Room - A room between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water, and suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.

Staging Area - Either the holding area or an area near the waste-transfer air lock where containerized asbestos waste has been placed prior to removal from the work area.

Stripping - All herein specified procedures necessary to remove ACM or asbestos-contaminated materials from their substrate or from any component of the facility.

Surfacing Material (SM) - Material that is sprayed or troweled on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Substrate - The underlying surface or material (piping, duct, boilers, tanks, chase floors, etc.) to which asbestos-containing material has been applied.

Surfactant - A chemical wetting agent added to water to improve penetration.

Thermal System Insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or heat gain.

Visible Emissions - Any emissions that are visually detectable without the aid of instruments, coming from regulated asbestos-containing material or asbestos-containing waste material.

Washroom - A room between the work area and the holding area in the equipment decontamination enclosure system. A washroom comprises an air lock.

Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing material.

Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water, and then disposing of these cleaning tools as asbestos-contaminated waste.

Work Area - Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken, or which may be contaminated as a result of such abatement actions. A contained work area is one that has been sealed, plasticized, and equipped with a decontamination enclosure system. An isolated work area is a controlled-access work area that has been isolated by plastic curtains and in which the openings to the outside are sealed with plastic sheeting. An isolated work area is not an airtight containment area and is not equipped with a decontamination enclosure system.

Worker Decontamination Enclosure System - A decontamination enclosure system for workers, typically consisting of a clean room, a shower room, two airlocks, and an equipment room.

2.6 APPLICABLE REFERENCE DOCUMENTS

The current issue of each document shall govern. If there is a conflict among requirements or with these specifications, the more stringent requirement shall apply.

2.6.1 Laws and Regulations

Compliance is required in strict accordance with all current applicable federal, state, municipal, and local regulations.

2.6.1.1 Title 29, Code of Federal Regulations, Section 1910.1001. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.2 Title 29, Code of Federal Regulations Section 1926.1101. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.3 Title 29, Code of Federal Regulations Section 1910.134. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.4 Title 29, Code of Federal Regulations, Section 1910, Subpart D: Walking-Working Surfaces. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.5 Title 29, Code of Federal Regulations Section 1910.1200. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.6 Title 29, Code of Federal Regulations Section 1910.145. Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

2.6.1.7 Title 40, Code of Federal Regulations, Part 61, Subparts A and M, National Emissions Standards for Hazardous Air Pollutants, U.S. Environmental Protection Agency (EPA).

2.6.1.8 Title 40, Code of Federal Regulations, Sections 763.117 and 763.302, U.S. Environmental Protection Agency (EPA).

2.6.1.9 Title 40, Code of Federal Regulations, Part 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, U.S. Environmental Protection Agency (EPA). TEM Analysis Criteria for Completion of Abatement Actions.

2.6.1.10 Title 49, Code of Federal Regulations, Sections 171-173, Hazardous Materials Transportation Regulations, U.S. Department of Transportation (DOT).

2.6.1.11 Title 401 Kentucky Administrative Regulations Chapters 57:011 Asbestos Standards, Kentucky Department of Natural Resources and Environmental Protection.

2.6.1.12 Title 401 Kentucky Administrative Regulations Chapters 58:040 Requirements for Asbestos Abatement Entities, Kentucky Department of Natural Resources and Environmental Protection.

2.6.1.13 Title 40 Code of Federal Regulations, Section 268, RCRA Section 3004

2.6.2 Guidance Documents

2.6.2.1 Guidance for Controlling Asbestos-Containing Materials in Buildings: Washington, D.C. Office of Pesticides and Toxic Substances, U.S. EPA. 1985.

2.6.2.2 Measuring Airborne Asbestos Following an Abatement Action: Washington, D.C. Office of Pesticides and Toxic Substances, U.S. EPA. 1985.

2.6.2.3 Managing Asbestos in Place, A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials: Washington, D.C. Office of Pesticides and Toxic Substances, U.S. EPA. 1990.

2.6.2.4 Asbestos Waste Management/Guidance: Generation, Transport, and Disposal: Washington, D.C. Office of Solid Waste, U.S. EPA. 1985.

2.6.3 Codes and Standards - Regulatory Requirements

2.6.3.1 Adherence to Codes and Regulations: Before proceeding with the work, review the Drawings and Specifications to assure the design is in accordance with applicable laws, ordinances, rules and regulations. Assume responsibility for compliance with the applicable laws, ordinances, rules and regulations unless notice is given to the Owner in writing of the discrepancy before proceeding with the work.

2.6.3.2 Inspections by Governing Agencies: Before covering up work required to be inspected, arrange for the inspection and test of the installation as required by the Governing Authority and by the Specifications. Provide the necessary tools, equipment and personnel to conduct the required tests, and notify the Owner at least three days in advance of scheduled inspections and tests. Submit approved certificate of inspection from the Governing Authority before request for final payment.

2.6.3.3 ANSI - American National Standards Institute, ANSI Z 9.2, Fundamentals Governing the Design and Operation of Local Exhaust Systems.

2.6.3.4 NEC - National Electric Code. Any work involving electrical equipment in a facility shall be performed in strict accordance with the National Electric Code.

2.7 EXPOSURE ASSESSMENTS AND AIR MONITORING

2.7.1 General

2.7.1.1 The Contractor's competent person or other qualified representative shall conduct personal, time-weighted average (TWA) and excursion monitoring (as required by Kentucky OSHA in 1926.1101 and this section) in each designated work area throughout the preparation, removal, and decontamination phases of this project. The number of personal TWA and excursion air samples to be collected daily shall be determined by the OSHA Competent person and by any applicable OSHA regulations or interpretations, or based on the number of workers on site in each distinct work area, and the activities they are involved in each day. Air monitoring shall be conducted for compliance with Kentucky OSHA regulations and to evaluate the adequacy of 1) the type of respiratory protection used by workers, 2) work practices and engineering controls, and 3) containment barriers and decontamination procedures. The Owner's Consultant shall collect and analyze the final air samples and any other air samples from outside the work area. As a measure of quality control, the

Owner also reserves the right to have its Consultant perform inside area, personal, and excursion monitoring on selected individuals inside the work area to compare results with those of the abatement Contractor.

2.7.1.2 The Contractor is responsible for monitoring only personnel and areas inside the work area and not areas immediately outside the work area. The Contractor's competent person or other qualified representative responsible for the collection of air samples shall be technically competent to perform the work, appropriately trained and certified, and experienced in the prescribed procedures for collecting representative air samples.

2.7.2 Exposure Assessment

2.7.2.1 The Contractor's competent person or other qualified representative shall conduct an initial exposure assessment [per 1926.1101(f)(2)(i) and (ii)] immediately before or at the start of the asbestos abatement operation. The initial exposure assessment must be completed (i.e., analyzed and reported) in time to comply with requirements triggered by exposure data or lack of a negative exposure assessment.

2.7.2.2 The initial exposure assessment shall be based on the evaluation of personal air monitoring data of employees and can include previous monitoring data of operations that indicate exposure levels likely to be encountered during specific work tasks on the project.

2.7.2.3 Worker exposures shall be assumed to be more than the OSHA PEL and EL until personal monitoring is conducted and/or a negative exposure assessment is established.

2.7.2.4 Negative exposure assessments (NEA) are required [per 1926.1101(f)(2)(iii)] to show that exposures on specific abatement activities are less than the OSHA PEL. NEA criteria are as follows:

- Objective data showing that the product or material cannot release airborne fibers more than the OSHA PEL or EL under worst-case conditions.
- Prior monitoring data (collected within the last 12 months) from operations "closely resembling" the processes, type of material, work practices, and environmental conditions used in current operations; training and experience of previously monitored employees were not more extensive than those performing the current job; and under prevailing conditions, there is a high degree of certainty that exposures will not exceed the OSHA PEL or EL.
- Initial exposure data representative of eight-hour TWA and 30-minute exposures of each employee and each operation most likely to be encountered during the entire job are <PEL and EL.

2.7.2.5 The contractor shall conduct daily monitoring that is representative of the exposure of each employee who is assigned to work within a regulated area who is performing Class I or II work, unless the Contractor pursuant to 29 CFR 1926.1101 (f)(2)(iii), has made a negative exposure assessment for the entire operation.

2.7.3 Air Monitoring Schedule and Sampling Strategy

As a minimum, the Contractor's air monitoring schedule and sampling strategy for each distinct work area per building shall be as follows.(Note: Kentucky OSHA regulations, directives, or local area office requirements shall dictate the exact number of air samples to be collected daily based on the number of employees on site performing different abatement activities):

Phase of Abatement Project	When to Sample	Type of Sample	Minimum No. of Employees	Location
Preparation During pre-cleaning and preparation of work area if there is evidence of contamination from previous ACM disturbance.	Each day of operation	Personal Excursion	1 or 25% 1 or 25% *	Per work area Per work area
Removal	Each day of operation	Personal Excursion	1 or 25% 1 or 25% *	Per work area Per work area
Decontamination	Each day of operation	Personal Excursion	1 or 25% 1or 25% *	Per work area Per work area

NOTE*: Short-term excursion samples shall be also be collected in addition to TWA samples.

2.7.4 Methods of Collection and Analysis

2.7.4.1 All air monitoring shall be conducted by the Contractor in accordance with NIOSH Method No. 7400. The recommended sampling period shall be seven to eight hours, except on abbreviated work shifts. The flow rate for the sampling pump shall be 0.5 to 2.0 liters/minute. Sampling pumps shall be checked daily for proper flow-rate calibration. The Contractor shall supply his own air sampling pumps and equipment, air monitoring cassettes, and calibration device.

2.7.4.2 All samples collected by the Contractor's competent person or designee shall be submitted daily for analysis to a laboratory accredited by the American Industrial Hygiene Association or participating in the NIOSH Proficiency Analytical Testing (PAT) program for PCM analyses. Completed data sheets or other data record forms approved by the Consultant must be submitted to the laboratory along with each day's filter samples. A copy of the Contractor's

sample results must be submitted to the Consultant in writing within 24 hours of their collection.

2.7.4.3 The minimum number of employees to monitor indicated on the previous table should not be interpreted as the total number of samples to be collected and analyzed each day. Multiple personal samples may have to be collected during the seven- to eight-hour work shift to accurately characterize a worker's exposure level. The number of samples taken will depend on the degree of fiber contamination in the work area and the effectiveness of work practices and engineering controls. Overloaded filter samples with "fibers too numerous to count" or filter holder cassettes containing loose particulate matter are unacceptable. The air samples must be properly collected and be representative of actual fiber concentrations in the work area. Both TWA and excursion samples shall be taken. If multiple shifts are required to perform the work specified, samples will be collected by the Contractor on each shift to comply with Kentucky OSHA regulations and these specifications.

2.8 SUBMITTALS AND NOTICES

2.8.1 Submittals required at time of bid

2.8.1.1 Bid Form (in duplicate), properly signed and completed. Show amount in both words and figures. In the case of a discrepancy, the amount in words shall govern.

2.8.1.2 Substitution Sheet - Bidders shall include on a substitution sheet all materials and/or equipment that the bidder wishes to have considered in lieu of the materials and/or methods specified or approved by addenda.

2.8.1.3 Submit with bid proof that the Contractor is certified and licensed in the State of Kentucky as an Asbestos Abatement Contractor. Bids shall not be accepted from Contractors who are not licensed to perform asbestos-abatement work in the State of Kentucky.

2.8.1.4 Submit to the Owner a completed statement of Bidder's Qualifications and reference list of prior projects completed. Contractors bidding on this project must have successfully completed at least three similar asbestos hazard abatement projects in which the total cost of the abatement portion of the work was in excess of $75,000.00. Names, addresses, phone numbers, and a brief description of the project shall be provided.

2.8.1.5 Submit descriptions of any asbestos hazard abatement activities conducted that have been prematurely terminated, including the circumstances surrounding the termination.

2.8.1.6 Submit a list of any contractual penalties that the applicant has paid for breach of or noncompliance with contract specifications for asbestos hazard

abatement activities, such as overruns of completion time or liquidated damages.

2.8.1.7 Identify any citations or Notices of Violation, settlement agreements, Public Health Emergency Orders, or revoked certifications levied against the Contractor within the last three years by any federal, State, or local government agencies for violations related to asbestos hazard abatement, including the name and location of the project, the date(s), and how the allegations were resolved.

2.8.1.8 List the names of two or more people qualified to carry out the functions of competent person per Kentucky OSHA Regulation 1926.1101(b), and who have been trained in the complete understanding of EPA Regulation 40 CFR Part 6. Submit documentation demonstrating certification and satisfactory completion of a NESHAPS regulation training course, and State of Kentucky-approved training course in the removal and abatement of asbestos hazards. Indicate who will be the on-site Competent person/project supervisor for this project.

2.8.1.9 Submit proof that the bidder's insurance carriers are licensed/certified to do business in the State of Kentucky. For this project, bidders must document that their insurance carriers are rated A or higher by AM Best.

2.8.2 Prior to Commencement of Work (after contract award and but no later than at the pre-construction conference)

2.8.2.1 Submit a written worker protection program for asbestos abatement. Include documentation to the Building Owner indicating that all employees have had medical examinations [per 1926.1101(m)] and instructions on the hazards of asbestos exposure, on use and fitting of respirators and protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures. .

2.8.2.2 Submit a written Respiratory Protection Program (per Kentucky OSHA Safety and Health Standard 1910.134). NOTE: Notification of compliance with this standard alone will be considered insufficient. The Contractor must provide a complete written Respiratory Protection Program.

2.8.2.3 Supply written notification of proposed asbestos work an all revised notifications to all appropriate regulatory agencies with copies to the Building Owner, the Asbestos Consultant, the EPA office, and the appropriate state and local offices with jurisdiction over this project, not fewer than 10 days before work commences on this project. Names and addresses of those receiving copies of the notification are as follows:

A. **Building Owner Representative:**
Ms. Marilyn Heflin
Project Manager
Northern Kentucky University
Architecture & Construction
Lucas Administrative Center 726
Highland Heights, Kentucky 41099
859.572.1369

B. **Project Architect**
Ms. Marcene Kinney
Project Manager
GBBN Architects, Inc.
332 E. 8th Street
Cincinnati, OH 45202
513.241.8700

C. **Kentucky Division for Air Quality**
Mr. Drew Vargo
Environmental Inspector
Department For Environmental Protection
Division for Air Quality
Florence Regional Office
8020 Veterans Memorial Drive
Suite 110
Florence, Kentucky 41042
(859) 525-4923

D. **Asbestos Consultant:**
Mr. Jasen Holton and Mr. Mark Karaffa
BHE Environmental, Inc.
11733 Chesterdale
Cincinnati, Ohio 45246 3405
513-326-1500

2.8.2.4 Submit satisfactory proof to the Building Owner that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or contaminated materials, supplies, and the like have been obtained.

2.8.2.5 Submit to the Building Owner a description of construction plans for decontamination enclosure systems and for isolation of the work areas in compliance with this specification and applicable regulations. (This information may be submitted at the pre-construction conference.)

2.8.2.6 Submit prior to the start of work a detailed Project Work Plan describing the project schedule (including duration of abatement activities from date of commencement to date of completion) and how the Contractor will execute

the Scope of Work in accordance with these specifications and applicable regulations. Include descriptions of abatement methods that will be used (indicate where acceptable alternative methods could be used), any special procedures, engineering controls, work practices, special equipment, and management/staffing techniques or strategies that could favorably impact and improve the quality and efficiency of the abatement process.

2.8.2.7 Submit a Site Safety Plan (per 1910.120) and Fire Protection Plan which will be reviewed by the Owner and/or Consultant before work begins.

2.8.2.8 Submit the name of the supervisor qualified to carry out the functions of competent person per 1926.1101, along with resume showing a minimum of two years experience supervising asbestos hazard abatement projects. Submit documentation demonstrating Kentucky Division for Air Quality licensing and satisfactory completion of an EPA-approved Contractor/Supervisor Asbestos Abatement Practices training course for the foreman/competent persons assigned to this project. A valid Contractor/Supervisor training certificate, along with a valid refresher certificate (if applicable), shall be required for all competent persons supervising this project. The Contractor shall provide the original Contractor/Supervisor training certificate if requested by the Consultant or Owner.

2.8.2.9 All asbestos abatement workers on this project must have completed an EPA-approved Asbestos Worker training course and shall provide copies of the initial and valid refresher course (if applicable) training certificates and Kentucky Division for Air Quality license before engaging in any abatement activity (i.e., work area preparation, removal, or decontamination). The Contractor shall provide original and current certification cards and course training certificates upon request by the Consultant or Owner

2.8.3 Manufacturer's Certification

A manufacturer's certification shall be submitted stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers are equipped with HEPA filters and are intended for use on asbestos abatement projects.

2.9 PERSONNEL PROTECTION

2.9.1 Worker Instruction

Prior to commencement of work, the workers shall be instructed and shall be made knowledgeable in the topics described in Sections 2.8.2.1, 2.8.2.2, and 2.8.2.7.

2.9.2 Respiratory Equipment

Workers shall be provided with personally issued and marked respiratory equipment approved by NIOSH and suitable for the asbestos exposure level in the work area according to Kentucky OSHA Standard 1926.1101(h). The Contractor must still conduct initial and periodic personal

air monitoring throughout all phases of this project and base the selection of respirators on such monitoring data and anticipated conditions.

At a minimum, full-face powered-air purifying respirators (PAPRs) are required for all Class I asbestos work performed without a negative exposure assessment. If the contractor provides documentation that demonstrates a negative exposure assessment in accordance with 1926.1101(f)(2)(iii), then PAPRs will not be required for Class I work using the glovebag method. At a minimum, after conclusive demonstration of a negative exposure assessment, all workers performing Class I asbestos abatement activities within the work area shall wear properly fitted, full face air-purifying respirators equipped with high-efficiency filter cartridges provided that representative personal exposure levels are maintained below one fiber/cubic centimeter (10 x PEL). Single-use or reusable disposable respirators are not acceptable and shall not be used on this project. Sufficient HEPA filter cartridges for replacement shall be provided as required by the worker, applicable regulations, or as bound into this specification. Prevalent airborne fiber concentrations in the work area shall govern the type of respiratory protection selected by the employer and worn by workers [per 1926.1101 (h)(2)]. An upgrade in respiratory protection (e.g., to a powered-air-purifying or an airline respirator) is permissible.

2.9.3 Protective Clothing

Workers shall be provided with sufficient sets of protective full-body clothing per Kentucky OSHA Standard 1926.1101(i). Such clothing shall consist of full-body coveralls and headgear. Hard hats shall be provided as required by applicable safety regulations. Non-disposable protective clothing and footwear shall be left in the contaminated equipment room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste, or shall be thoroughly cleaned of all asbestos or asbestos-containing material. Disposable protective clothing, headgear, and footwear shall be provided by the Contractor.

2.9.4 Visitor Protection

Whenever requested, authorized visitors shall be provided with suitable clean and disinfected respirators with new filters or cartridges and protective clothing, headgear, and footwear as described in Article 2.9.3, whenever they are required to enter the work area, to a maximum of three sets per day.

2.9.5 Protection Procedures

The Contractor shall provide and post, in the equipment room and the clean room, the decontamination and work procedures to be followed by workers as described in Article 2.9.6 of these specifications.

2.9.6 Worker Protection Procedures - (All Removal Procedures)

2.9.6.1 Each worker and authorized visitor (except as noted herein) shall, upon entering the job site: remove street clothes in the clean change room and put on a respirator with new filters and clean protective clothing before entering the equipment room or the work area; except workers that intend to rewear

contaminated protective clothing stored in the equipment room shall enter the equipment room wearing only respirators.

2.9.6.2 Each worker and authorized visitor shall, each time he leaves the work area: remove gross contamination from clothing before leaving the work area; proceed to the equipment room and remove all clothing except respirators; still wearing the respirator, proceed naked to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash himself. If the filters require replacement, remove filters, wet them, and dispose of them in the container provided for the purpose; and wash and rinse the inside the respirator.

2.9.6.3 Exception: Authorized visitors and representatives of the Consultant who enter a work area for brief periods to observe Contractor employees, to check monitoring equipment, or to perform other short-duration tasks that do not result in significant exposures or contamination of protective clothing, shall be permitted to wear respirators and protective clothing over street clothes and are not required to shower before exiting the work area. All other procedures and personal protective equipment required by this section, however, will apply to visitors.

2.9.6.4 Following showering and drying off, each worker and authorized visitor shall proceed directly to the clean change room and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before reentering the work area from the clean change room, each worker and authorized visitor shall put on a clean respirator with filters and shall dress in clean protective clothing; except workers that intend to re-wear contaminated protective clothing stored in the equipment room shall enter the equipment room wearing only respirators.

2.9.6.5 Contaminated work footwear shall be stored in the equipment room when not in use in the work area. After the asbestos abatement process is completed, footwear shall be disposed of as contaminated waste, or cleaned thoroughly inside and out with soap and water before being removed from the work area or from the equipment and access area. Contaminated protective clothing shall be stored in the equipment room for reuse or placed in receptacles for disposal with other ACM.

2.9.6.6 Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean coveralls. No worker shall use this system as a means to leave or enter the washroom or the work area.

2.9.6.7 Workers shall not eat, drink, smoke, or chew gum or tobacco at the work site except in the established clean room, designated lunch/break area, or outside the building.

2.9.6.8 Workers shall be fully protected with respirators and protective clothing immediately prior to the first disturbance of asbestos-containing or contaminated material, and until final cleanup is completed and approved.

2.10 EQUIPMENT REMOVAL PROCEDURES

Cleaning

Clean external surfaces of contaminated containers and equipment thoroughly by wet wiping with cloths, sponges, or brushes, wet mopping, or using a HEPA-filtered vacuum before moving such items into the equipment decontamination enclosure system washroom for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave work areas through the equipment decontamination enclosure system.

2.11 EMERGENCY PRECAUTIONS

- The Contractor shall establish emergency and fire exits from the work area in accordance with all applicable regulations and the site-specific Fire Protection Plan. Emergency procedures shall be in written form and prominently posted in the clean room of the worker decontamination enclosure system. Emergency exits shall be checked daily for exterior blockage or impediments to exiting.

- Phone numbers for local medical emergency personnel should be obtained prior to commencement of abatement activities and posted to facilitate emergency notifications.

- Employees shall be trained in evacuation procedures in the event of work-area emergencies.

  - For non-life threatening situations, employees injured or otherwise incapacitated shall decontaminate themselves following normal procedures with assistance from fellow workers, if necessary, before exiting the work area to obtain proper medical treatment.

  - For life-threatening or serious injuries, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him from the work area, and secure proper medical treatment.

- Before the Contractor starts abatement activities, the Owner's designated site manager, building contact, or other designated building occupants should be informed of the danger of entering a contaminated work area. The Contractor shall make every effort to help security and other agencies (i.e., local Police and Fire Departments, local hospitals, etc.) form plans of action should their personnel need to enter contaminated work areas, and to assist during emergencies.

- Telephone numbers of all emergency response personnel shall be prominently posted in the clean room of the worker decontamination enclosure system, along with the location of the nearest telephone.

2.12 SITE SECURITY

The Contractor shall post adequate warning signs at designated entrances to the work area and at the waste disposal receptacle or vehicle (during loading and unloading) as required by Kentucky Division for Air Quality and Kentucky OSHA. Warning signs shall be of a vertical format measuring twenty inches in length and fourteen inches in width, and shall contain the following information which shall be printed in letters of sufficient size and contrast as to be readily visible and legible:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

The Contractor shall maintain a daily sign-in sheet for all asbestos workers and supervisors employed or subcontracted by the Contractor, and a separate sign-in sheet for all authorized visitors at each asbestos hazard abatement work area. The Contractor shall report entry into the work area by any unauthorized individuals immediately to the Owner's representative or Consultant.

The Contractor shall be responsible for site security in each regulated work area during all asbestos hazard abatement activities in order to protect work efforts, equipment, and control systems. The Owner shall maintain security of the facility after work hours.

2.13 PARKING

Parking will be the responsibility of the Contractor and his employees. The Owner will not provide any special facilities or spaces for employee parking. Arrangements for dumpsters, vehicle load out and off-loading shall be made with the Owner's project manager or designee. The Contractor is responsible for renting or leasing parking spaces, should none be available on site.

3.0 MATERIALS AND EQUIPMENT

3.1 MATERIALS

3.1.1 Material Delivery

All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

All materials subject to damage shall be stored off the ground, away from wet or damp surfaces, and under sufficient cover to prevent damage or contamination.

Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with applicable regulations.

3.1.2 Plastic Sheeting

Plastic sheeting for covering walls and stationary objects shall be a minimum of 4-mil thick. For floors and all other uses, sheeting of at least 6-mil thickness shall be used. All plastic sheeting shall be sized in appropriate lengths and widths to minimize the frequency of joints.

Plastic sheeting used for worker decontamination enclosure systems shall be opaque or black in color.

3.1.3 Tape

Tape must be capable of sealing joints of adjacent plastic sheets, capable of attaching plastic sheets to finished or unfinished surfaces of dissimilar materials, and capable of adhering under dry and wet conditions, including use of amended water. **NOTE:** Paper-type masking tape is not allowed on this project.

3.1.4 Surfactant

A commercially available asbestos wetting agent/surfactant or a surfactant consisting of 50 percent polyoxyethylene ether and 50 percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one ounce surfactant to five gallons of water, or according to manufacturer's specifications.

3.1.5 Impermeable Containers

Impermeable containers must be suitable for receiving and retaining any asbestos-containing or contaminated materials. Wet asbestos-containing waste shall be double bagged in polyethylene bags placed in rigid containers (i.e., steel drums, fiber drums, or heavy cardboard boxes) and sealed for transport to the approved landfill. Large facility components may be wrapped in two layers of polyethylene sheeting which are secured with waterproof tape for disposal. All packaged wastes (i.e., boxes, drums, and wrapped components) shall be labeled according to the provisions of 40 CFR 61.152, filed by reference in 401 KAR 58:025.

3.1.6 Encapsulants

Encapsulating sealants (applied to exposed ends/edges of remaining ACM or to inaccessible ACM that will be removed at a later time) shall be the bridging or penetrating type capable of adhering permanently to the substrate and not interfering with the adhesion of new applied materials.

3.1.6.1 Encapsulants selected for use by the Contractor shall be one of those demonstrating effective performance under the tests conducted by Battelle Laboratories for EPA.

3.1.6.2 The encapsulant should not add any toxic substances to the ACM and should not break down under direct flame impingement to release any toxic gases or an undue amount of smoke.

3.1.6.2 The encapsulant should be capable of adhering to all substrate surfaces.

3.1.6.4 The encapsulant should be applied with minimum effort and skill.

3.1.6.5 The encapsulant should have impact resistance, flexibility, and resistance to penetration to withstand physical contact.

3.1.6.6 The encapsulant should be water insoluble when cured.

3.1.6.7 The encapsulant should be nontoxic and free of toxic fumes during application.

3.1.6.8 The encapsulant should have sufficient aging characteristics to withstand normal atmospheric changes for a minimum of six years and still have sufficient surface integrity to allow recoating.

3.1.7 Warning Labels and Signs

As required by Kentucky OSHA Regulation 1926.1101(k)(2)(iii) and 1910.1001 (j)(2), U.S. EPA Regulation 40 CFR 61.150 (a)(1)(v), and Kentucky Division for Air Quality Regulation 410 KAR 58:040.

3.1.8 Glovebags

Commercially available polyethylene glovebags shall be used on this project. These special prefabricated devices are designed for the controlled removal of ACM from pipes and other nonplanar structures and consist of a minimum 6-mil, clear, polyethylene plastic bag (approximately 50 in. wide by 64 in. long) with integral impermeable arms and latex gloves. Each bag shall be equipped with internal attached tool pouch and entry port for insertion of wetting tube and/or HEPA-vacuum hose nozzle.

3.1.9 Plexiglas

The Contractor shall install Plexiglas partitions or windows in doorways or containment barriers around abatement areas (where feasible or as directed by the Owner or Consultant). This is so abatement activities can be observed by the building management and other visitors without actually having to go into the work area.

3.1.10 Other Materials

The Contractor shall provide all other materials, such as lumber, nails, and hardware, that may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

3.2 TOOLS AND EQUIPMENT

3.2.1 Tools

The Contractor shall provide suitable tools for asbestos removal and application of encapsulant.

3.2.1.1 Air-movement equipment - Commercially available high-efficiency particulate air (HEPA) filtration equipment specially designed for asbestos abatement projects shall be used to establish a negative-pressure system. No air movement system or air equipment shall discharge asbestos fibers outside the work area into the building. The exhaust air from HEPA-filtered exhaust units shall be discharged to the outside air and not into other building areas.

3.2.1.2 A negative air pressure shall be established in the work area by means of mechanical exhaust equipment in order to keep airborne fibers confined to the work area, decrease humidity and temperature, reduce fiber levels in the work area, and achieve acceptable final air monitoring results. The mechanical equipment shall exhaust through a HEPA filter to the outside of the building. Negative pressure ventilation units with HEPA filtration and in sufficient number to provide one workplace air change every fifteen minutes shall be in operation continuously, 24 hours a day, seven days per week, until decontamination of the work area and final air sampling and analysis is completed. The duration of the project for this requirement shall be considered to be from the time that a containment area is established and wall and floor sheeting are installed through the time that acceptable final clearance air monitoring results are obtained. Negative-air-pressure systems will be required in all asbestos abatement work areas where conventional or mini-containment methods are used for the removal of ACM.

3.2.1.3 Negative-air-pressure containment systems shall be established in accordance with Appendix F of CFR 1926, 1101: Work Practices and Engineering Controls for Class I Asbestos Operations.

3.2.2 Airless Sprayer

An airless sprayer shall be used for the application of amended water and encapsulants.

3.2.3 Scaffolding and Ladders

Scaffolding and ladders shall be used as required to accomplish work specified in Section 1 and shall meet or exceed all applicable safety regulations.

3.2.4 Vacuums

All vacuums utilized to clean up asbestos-containing materials inside or outside of work areas shall be equipped with HEPA-filters.

3.2.5 Miscellaneous Tools and Equipment

The Contractor shall provide all other tools suitable for the stripping, removal, and encapsulation of thermal insulating materials. These tools include, but are not limited to, scrapers, wire cutters, brushes, sprayers, sponges, utility knives, flexible wire saws, shovels, and brooms.

3.2.6 Digital Pressure Differential Meter

The Contractor shall install and use a digital pressure differential meter with a strip chart recorder to continuously measure and display the pressure differential between the clean area and work area except in mini-containment enclosures where the pressure differential may be measured with a magnehelic gauge, manometer, or other pressure-measuring device.

3.2.7 Use of Owner's Tools and Equipment

No tools or equipment of the Owner shall be used by the Contractor, unless permission in writing is granted by the Owner's representatives.

3.2.8 Lines of Communication

The superintendent/foreman of the abatement Contractor shall be equipped with voice or digital pagers or cellular telephone so that lines of communications can remain open and unimpeded.

4.0 EXECUTION

4.1 CLASS I ASBESTOS OPERATIONS—GENERAL REQUIREMENTS AND SEQUENCE OF EXECUTION

4.1.1 Class I Asbestos Work - General Requirements

4.1.1.1 Class I asbestos work must be supervised by a competent person, as defined in Section 2.5. The competent person shall provide on-site project supervision and remain on site for the duration of asbestos abatement activities from project start to finish.

4.1.1.2 The Contractor must conduct asbestos removal and work area decontamination for all Class I Asbestos Work within a negatively-pressurized enclosure (NPE), mini-enclosure, or glovebag methods consistent with work practices and procedures specified in Kentucky OSHA 1926.1101(g) and all other applicable requirements for Class I asbestos work. A contiguous five-chambered decontamination enclosure system for entry and egress will be required for enclosures in which the quantities of ACM specified for removal are greater then 25 linear feet or 10 square feet.

4.1.1.3 Total conventional containment or NPE shall be used for the removal of any regulated friable ACM including, but not limited to the following, surfacing material, thermal systems insulation, and miscellaneous ACM.

4.1.1.4 The glovebag method is intended to be used for the removal of designated or small sections of pipe or fitting insulation where conventional total containment is not feasible or practical, and where sections of pipe insulation are accessible for the proper installation and use of glovebags. (Longer lengths of TSI on pipes could also be removed by the conventional total containment method.)

4.1.1.5 Other appropriate methods (i.e., negative pressure glovebag, mini-enclosure, etc.) will be permitted where feasible and only with prior approval from the Owner.

4.1.1.6 Applicable sections of Kentucky OSHA 1926.1101 outlining specific control methods for Class I asbestos work are listed as follows:

- 1926.1101(g)(5)(i)
  Negative-Pressure Enclosure (NPE) Systems
- 1926.1101(g)(5)(iii)
  Glovebag Systems
- 1926.1101(g)(5)(iii)
  Negative Pressure Glovebag Systems

- 1926.1101(g)(5)(vi)
  Small walk-in enclosure (mini-enclosure, no more than two people inside)

4.1.1.7 All friable asbestos-containing materials shall be thoroughly wetted through to the substrate prior to removal.

4.1.1.8 At no time shall friable asbestos-containing materials removed be allowed to accumulate on the floor or become dry.

4.1.2 Sequence of Execution for Class I Asbestos Work

Conventional Total Containment - Removal of ACM by the conventional (total) containment method shall be executed in the following sequence:

4.1.2.1 Prepare all work areas per Article 4.3, as applicable.

4.1.2.2 Strip and remove asbestos-containing materials in designated areas per Article 4.4, as applicable.

4.1.2.3 Remove and discard asbestos-containing waste generated from abatement activities per Article 4.5. Removal and disposal of asbestos-containing materials shall be performed concurrently with the stripping.

4.1.2.4 Decontaminate work area and clean work site per Article 4.6.

4.1.2.5 Encapsulate building surfaces as specified with an approved lockdown sealant per Article 4.7.

4.1.2.6 Reestablish building systems in proper working order, or as originally found per Article 4.8.

4.1.3 Sequence of Execution for Class I Asbestos Work - Glovebag Method

Removal of ACM by the glovebag method shall be executed in the following sequence:

4.1.3.1 Prepare work area per Article 4.3, as applicable.

4.1.3.2 Install glovebags around pipes in specified areas as designated in these specifications. PVC or polyethylene glovebags shall be connected to sections of pipe insulation that will fit into one glovebag. Glovebags shall not be reused, loosened at the shoulders, moved along a pipe, and reinstalled to remove another section of pipe insulation. No glovebags shall be connected to one another shoulder-to-shoulder or connected to one another with plastic extension sleeves unless continuous negative air pressure is provided to the glovebags throughout the abatement procedure.

4.1.3.3 Strip and remove asbestos-containing materials per Article 4.4, as applicable.

4.1.3.4 Remove and discard asbestos waste generated from abatement activities per Article 4.5.

4.1.3.5 Decontaminate work area and clean work site per Article 4.6.

4.1.3.6 Encapsulate building surfaces where applicable per Article 4.7.

4.1.3.7 Reestablish building systems in proper working order, or as originally found per Article 4.8.

4.1.4 Class I Asbestos Work - Wrap-and-Cut Method

As an alternative to glovebag removal of all specified pipe insulation and with prior approval from the Owner, the Contractor can elect to utilize a wrap-and-cut method in conjunction with glovebag methods to remove and dispose of piping with the insulation intact sections (no longer than eight linear feet). Removal of ACM by the wrap-and-cut method shall be executed in the following sequence:

4.1.4.1 Prepare work area per Article 4.3, as applicable.

4.1.4.2 Prior to cutting the line, the Contractor shall utilize glovebag methods in accordance with Section 4.1 and Article 4.1.3 to remove a minimum of one linear feet of insulation from each location where the line is to be cut. Exposed ends of asbestos-containing pipe insulation shall be wrapped in plastic, encapsulated, and/or sealed with duct tape prior to cutting.

4.1.4.3 Wrap sections of insulated piping (no longer than eight linear feet) in two layers of 6-mill plastic sheeting and seal with duct tape prior to cutting of line.

4.1.4.4 Remove and discard asbestos waste generated from abatement activities per Article 4.5.

4.1.4.5 Decontaminate work area and clean work site per Articles 4.6.

4.1.4.6 Leave work areas and other affected building areas per clearance criteria, or as originally found per Article 4.8.

4.2 CLASS II ASBESTOS OPERATIONS

4.2.1 Class II Asbestos Operations - General Requirements

4.2.1.1 Class II asbestos work must be supervised by a Competent Person, as defined in Section 2.5. The Competent Person shall provide on-site project supervision and remain on site for the duration of asbestos abatement activities from project start to finish.

4.3.1.8 Remove and wet wipe and/or HEPA vacuum ceiling mounted objects (such as lights, speakers, and other items not previously removed or sealed off) that could interfere with asbestos-abatement activities. If items shall remain in the work area, enclose them with 4-mil (minimum) plastic sheeting sealed with tape.

4.3.1.9 For Class I Asbestos Work cover the floor with at least two layers of 6-mil plastic sheeting sealed with tape. Cover floors so that the plastic extends at least 12 inches up the walls and sized to minimize seams. Cover all walls from the floor to the ceiling barrier or roof deck with two layers of 4 mil to 6 mil plastic sheeting and overlap floor sheeting by at least two feet. Seal all joints with tape, caulking, and/or spray adhesive. No seams shall be located at wall-to floor joints.

Floor drains shall be blocked and covered during ACM removal and cleanup to prevent discharge of asbestos to the sewer system. The floor drains may be re-opened after all ACM and visible debris is removed, cleanup is complete, and when authorized by the Consultant to facilitate final cleaning.

4.3.1.10 Build air locks at entrances to and exits from the work area, where necessary.

4.3.2 Decontamination Enclosure Systems for Class I Asbestos Work

4.3.2.1 General - Build suitable framing and/or use existing rooms connected with framed-in tunnels, if necessary, and line with plastic sealed with tape at all lap joints for all enclosures and decontamination enclosure systems rooms. Either existing rooms out-side of the work area, specially framed and sealed temporary areas, or commercially available portable or disposable decontamination units/ components may be used for the decontamination enclosure system. Convenience and proximity to the work area shall be the determining factors. In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock, as defined in Section 2.5.

4.3.2.2 Worker Decontamination Enclosure System - Construct a worker decontamination enclosure system contiguous to the work area that consists of five totally enclosed chambers as follows:

- An air lock with two curtained doorways (no less than six feet apart): one to the work area and one to the equipment room.
- A shower room with two curtained doorways: one to the equipment room and one to the clean room. The shower shall contain an adequate number of showerheads to accommodate the timely and efficient decontamination of the abatement workers. Hot water for showers shall be generated by portable, electric water heaters (provided by the Contractor) wherever hot water is not available in the buildings. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind. Ensure soap is available at all times in the

shower room. The shower waste water shall be drained, collected, and filtered through a system with at least 5- to 10-micron particle size collection capability. (Note: A system containing a series of several filters with progressively smaller pore sizes is recommended to avoid rapid clogging of filtration system by large particles.) All expended filters shall be discarded as contaminated waste. Filtered water may be discharged to a sanitary or storm sewer drain.

- An air lock with two curtained doorways (no less than six feet apart): one to the shower room and one to the clean room.
- A clean room with one curtained doorway into the shower and one entrance or exit to uncontaminated areas of the building. The clean room shall have sufficient space for storage of workers' street clothes, towels, and other uncontaminated items.
- Shower and clean rooms shall be heated with temporary heating units or by heat from existing building systems (if available) to ensure the health and comfort of workers and visitors taking showers and drying off.
- Use black or opaque plastic for the walls of the worker decontamination enclosure system to ensure the privacy of the workers.

4.3.2.3 Equipment Decontamination Enclosure System - The purpose of this area is to provide a means of decontaminating drums, scaffolding, material containers, vacuum and spray equipment, and other tools and equipment for which the worker decontamination system is not suitable. The Contractor shall provide or construct an equipment decontamination enclosure system contiguous to the work area that consists of two totally enclosed chambers as follows:

- A washroom, constituting an airlock, with a curtained doorway to a designated area of the work area and a curtained doorway to the holding area. This area will be the same as the equipment room in the worker decontamination enclosure system. The washroom waste water shall be drained, collected, and filtered through a system with at least 5- to 10-micron particle size collection capability. (Note: A system containing a series of several filters with progressively smaller pore sizes is recommended to avoid rapid clogging of filtration system by large particles.) All expended filters shall be discarded as contaminated waste. Filtered water may be discharged to a sanitary or storm sewer drain.
- A holding area, constituting an airlock, with a curtained doorway to an uncontaminated area. This area will be the same area as the shower room in the worker decontamination enclosure system.

The equipment decontamination area will be located so as to facilitate movement of asbestos waste to a loading area.

insulation material shall be lowered carefully, placed into a plastic bag or other appropriate container, and not allowed to drop to the floor. The material shall be kept thoroughly wet until it is placed inside appropriate sealable containers. All pipe and boiler component surfaces (including elbows, support rods, valves, ductwork, steam drums, etc.) shall be cleaned thoroughly with damp sponges, brushes, or cloths until they are visibly clean. The next section of insulation shall be removed following the same procedures. Containers that become full shall be sealed and readied for transportation to an approved disposal site.

4.4.3 Pipe Insulation Removal - Negative Pressure Glovebag Technique

Glovebag removal shall be conducted in accordance with the following specifications and work practices [per Kentucky OSHA 1926.1101(5)(iii)]:

- Glovebags shall be 6-mils thick and have a seamless bottom. Class I glovebag removal shall be performed by at least two people and shall be conducted only when pipe temperatures are <150°F.
- Glovebags shall be used only once and shall not be moved along the pipe or reused.
- Wrap/seal adjacent loose/friable material in two layers of 6-mil plastic or render intact prior to installation of glovebags (as required by ACM conditions).
- Install glovebags to completely cover circumference of pipe in accordance with the manufacturer's instructions and these specifications (Section 4.1.3). Smoke test glovebags and seal any leaks prior to use.
- A HEPA vacuum cleaner or other device shall be installed and in operation until the removal of the pipe insulation is completed.
- Wet the ACM before and during removal. Cut and open the cloth cover on the pipe insulation to allow thorough wetting of the insulation with amended water. After the insulation has been opened and thoroughly wetted, the cloth cover shall be cut around the circumference of the section being removed.
- Contain all removed ACM in the lower compartment of the bag and thoroughly saturate with amended water.
- Wash the inside of the glovebag, plastic extensions, and pipe with amended water by inserting the nozzle of the portable sprayer into the bag and then collapse bag with HEPA vacuum.
- Cut the glovebag along the top and sides to then remove the bag from the pipe. All tools shall be washed thoroughly before they are removed from the bag. The glovebag and other asbestos-contaminated waste shall be placed in a properly labeled, leak-proof waste container.

4.4.4 Pipe Insulation Removal - Wrap and Cut Method for Abandoned Lines

Alternatively and **only with prior approval of the Owner**, abandoned runs of pipe and asbestos-containing pipe insulation can be removed by cutting and removing entire sections of insulated line (no longer than eight linear feet). Prior to cutting the line, the Contractor shall utilize glovebag methods in accordance with Sections 4.1 and 4.4.3 to remove a minimum of

two linear feet of pipe insulation from each location where the pipe is to be cut. Exposed ends of asbestos-containing pipe insulation shall be wrapped in plastic and sealed with duct tape prior to cutting.

4.4.5 Resilient Floor Coverings and Mastic

After preparation of the work area is completed as specified, saturate the floor tile with amended water using equipment capable of providing a mist application. Once the floor tile has been thoroughly saturated, apply pressure to the underside of the tile with care taken remove it intact and prevent unnecessary breakage. The floor tile shall remain wetted until placed into covered disposal containers. Once the tiles have been removed and placed in appropriate disposal containers, the Contractor shall use low-odor non-petroleum based solvent to dissolve the mastic with a flashpoint no greater than one hundred fifty degrees Fahrenheit (150°F). If the solvent used requires extra ventilation, protective equipment and/or respiratory protection, according to the solvents MSDS, the Contractor shall furnish the necessary ventilation devices (i.e., additional air filtration devices), personal protective equipment (PPE), and/or NIOSH-approved cartridges. All residue/debris from using the solvent to dissolve the mastic shall be HEPA vacuumed and wet cleaned to remove all visible traces of mastic inside the work area. NOTE: Use of alternate mastic removal methods shall be approved by the Consultant in advance.

4.4.6 Fire Doors

Remove designated asbestos-containing fire doors in accordance with these specifications (Article 4.2) and in accordance with all applicable requirements of the OSHA asbestos standard (29 CFR 1926.1101) for Class II work.

4.4.7 Window Glazing Compound

All windows specified for removal have exterior asbestos-containing window glazing compound around panes of glass. Poly or other resilient drop cloths or tarps shall be placed on the surfaces inside and outside the base of each window prior to the start of window removal. The dimensions of each drop cloth shall be large enough to catch any pieces of glazing compound or caulking that may fall or be dislodged from the window during removal and handling.

Some of the exterior glazing compound is friable, damaged, cracked, and/or delaminating. Any loose pieces of glazing compound shall be removed via wet methods and/or HEPA vacuuming. It is permissible to remove the entire window assembly with intact glazing compound left in place so long as the window assemblies are handled carefully, all glazing compound is adequately wetted with amended water, and the contractor employs effective and compliant control methods to prevent further breakage and releases of glazing compound during removal of the window assemblies. Any loose pieces of asbestos glazing compound that are disturbed during window removal and fall to the drop cloths, floors, sills, other building surfaces, or the ground shall be wetted and placed in sealed containers as ACM waste or removed by HEPA vacuuming.

Once a window assembly is removed, it shall be wrapped tightly/sealed with at least two layers of 6-mil poly sheeting held in place with duct tape. Each wrapped window assembly shall be labeled appropriately as asbestos-containing waste and placed in a poly-lined dumpster, roll-off box, or other suitable container for transport to the approved landfill for disposal.

Each window opening shall be framed and covered with exterior-grade, weather-resistant plywood or other suitable sheathing. Window coverings shall be adequately constructed so as to prevent water intrusion, displacement by wind, and to prevent access by insects, birds, and other pests for a minimum period of one year. The exterior interface between the sheathing and window opening shall be caulked with a non-asbestos caulking compound and the seams between the sheathing shall be leak tight. The Contractor shall paint the exterior of each covering with a minimum of two coats of exterior paint colored as directed by GBBN. Paint type and color shall be approved by GBBN and purchased by the Contractor.

4.5 REMOVAL AND DISPOSAL OF CONTAMINATED WASTE

4.5.1 Fill disposal containers to a level that workers can handle safely and with ease so that the containers remain air- and water-tight.

4.5.2 As disposal containers are filled with wet material, or larger pieces of ACM are double-wrapped with plastic sheeting, seal and move them to the staging area for decontamination through the equipment decontamination enclosure.

4.5.3 If conventional removal practices are used, clean external surfaces of containers thoroughly by wet sponging/wiping or HEPA-vacuuming in the designated areas of the work area that is part of the equipment decontamination enclosure system. Move containers to the washroom, wet-clean each container thoroughly, and move them to the holding areas pending removal to uncontaminated areas. Place decontaminated sealed plastic bags containing asbestos material into a second clean disposal bag, twist the bag opening tightly, bend the twisted end downward, and seal with tape. After wet asbestos-containing waste has been double bagged, it shall be placed in rigid containers (i.e., steel drums, fiber drums, or heavy cardboard boxes), sealed, and moved to the holding area to await disposal at an approved landfill. If glovebag techniques are used, place the glovebag into a clean bag, twist the bag opening tightly, bend the twisted end downward, seal with tape, place in a rigid container, and then move it to the holding area. Place caution labels on containers in accordance with Kentucky OSHA Regulation 1926.1101(k)(2)(iii) and 1910.1001 (j)(2). In accordance with EPA Regulation 40 CFR 61.150 (a)(1)(v), the waste containers or wrapped materials shall also be marked with the name of the waste generator (i.e., the asbestos abatement Contractor), and the location (i.e., name and address of the site) at which the waste was generated. Ensure that containers are removed from the holding area by workers dressed in clean coveralls, who have entered from uncontaminated areas. Ensure that workers do not enter from uncontaminated areas into the washroom of the work area; ensure that contaminated workers do not exit the work area through the equipment decontamination enclosure system.

4.5.4 To prevent exceeding available storage capacity on site as the work progresses, remove sealed and labeled containers of asbestos waste periodically or as directed by the Owner, and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority. Submit to the Owner, a completed waste shipment record that accounts for each load of waste removed and disposed of by the abatement Contractor in accordance with 40 CFR 61.150 (d)(1) through (d)(5). This documentation shall be submitted to the Owner within 25 days after the waste was moved from the work site and was accepted by the initial transporter. The Contractor shall keep an accounting of the quantity of asbestos removed from the site. This accounting, including the number of containers and loads of ACM shipped, shall be kept on site and made available for review upon request of the Owner.

4.5.5 After the waste containers are decontaminated, the Contractor may transport the ACM material to the disposal site himself or make arrangements for a hauler or truck driver from the waste disposal site to transport the asbestos waste and contaminated material to the disposal site. Transportation of all materials from the work site shall be in accordance with all applicable DOT and EPA regulations. The vehicles used to transport asbestos-containing waste material shall be marked during the loading and unloading of waste so that the signs are visible as to the handling of asbestos waste. These markings shall be in accordance with the requirements set forth in 40 CFR 61.149 (d)(1)(i)(ii) and (iii).

4.5.6 All asbestos-containing waste inside the work area shall be removed and items decontaminated before any cleanup work is started and before the isolation structures are dismantled.

4.5.7 If the Contractor plans to dispose of asbestos waste material in the State of Kentucky, appropriate notifications and provisions shall be made with the agency having jurisdiction over asbestos waste disposal and with the operator of the disposal facility.

4.5.8 The Contractor shall be responsible for determining current waste handling and disposal regulations and must comply with these regulations. The original waste shipment record documenting proper waste disposal shall be completed and submitted to the Owner immediately upon project completion.

4.5.9 The Contractor shall ensure that all employees discarding or handling waste shall wear approved respiratory protection and other appropriate personal protective equipment.

4.5.10 In certain instances, plastic bags concealed inside fiber or metal drums may not be adequate or suitable to hold some asbestos-containing materials. As an alternative, the Contractor may remove asbestos-containing material such as firedoors/Transite panels that are bulky or cumbersome in two layers of 6-mil plastic sheeting that are sealed tightly at all joints with tape and/or spray adhesive. The waste shall be properly labeled before transportation to the approved disposal site. All metal waste shall be deposited and disposed of in air- and water-tight drums. The drums shall be properly labeled before transportation to the appointed disposal site.

4.6 DETERMINING ABATEMENT COMPLETION — (CLEANUP AND DECONTAMINATION)

4.6.1 Asbestos Cleanup

Remove visible accumulations of asbestos material and debris. Wet-clean all surfaces within the work area.

4.6.1.1 The Owner's Consultant and/or the Owner, and the Abatement Contractor shall conduct a thorough first visual inspection of each work area after the Contractor has indicated that all asbestos-containing material has been completely removed. The first inspection will be conducted before the plastic sheets or exposed surfaces have been cleaned with damp mops and cloths, but after all gross debris has been cleaned up and prior to the spray application of sealant to exposed surfaces.

4.6.1.2 Items to be checked during the first visual inspection include, but are not limited to, the following:

- The adequacy of the removal of ACM from the substrates.
- The presence of adhering material or accumulated material on exposed surfaces.

Only after the work area has passed the first visual inspection will the Contractor be permitted to apply sealant materials.

4.6.1.3 After the work area has passed the first visual inspection, the Contractor will apply a lockdown sealant to exposed surfaces and clean all surfaces in the work area and any other contaminated areas with water and/or with HEPA-filtered vacuum equipment. The plastic sheets on the walls (and floor if covered) shall be sprayed with the sealant provided that all loose asbestos debris has been removed from the plastic prior to spraying and that the plastic sheets are sufficiently clean (in the judgment of the Consultant) to allow the sealant to effectively bond any residual material to the plastic. The Contractor will wait 24 hours to allow the sealant to dry.

4.6.1.4 The Owner's Consultant and/or the Owner, and the Abatement Contractors Competent Person will conduct a second visual inspection of the work area after application of the sealant. Items to be checked during the second visual inspection include, but are not limited to, the following:

- Cleanliness of the work area and decontamination areas; accumulations of loose dust or debris on plastic sheets covering surfaces, walls, and floors.
- Complete coverage of the exposed surfaces by the sealant.

If any accumulation of dust or debris is observed, the Contractor will be required to wet-clean and/or HEPA vacuum the work area again and pass another inspection.

4.6.1.5 After the work area has passed the second visual inspection, the Contractor will (where applicable) remove the plastic coverings from walls and floors only. The critical barriers will remain and the windows, doors, and HVAC vents will remain sealed. All HEPA-filtered negative-air-pressure systems, air filtration, and decontamination enclosure systems will remain in service. The Contractor will wet-clean or HEPA vacuum all objects and surfaces in the work area. **All polyethylene sheeting that is used in an asbestos abatement project shall be treated as asbestos-containing waste.**

4.6.1.6 Sealed containers and all equipment used in the work area shall be included in the cleanup and shall be removed from work areas, via the equipment decontamination enclosure system, at an appropriate time in the cleaning sequence. Sealed and labeled containers of asbestos waste shall be removed and disposed of as specified in Section 4.4.

4.6.1.7 The Owner's Consultant and/or the Owner, and the Abatement Contractor shall conduct a third thorough visual inspection of the work site to ensure that it is free of visible dust after completion of the final cleaning operation. After the work site has passed the third visual inspection and the walls, floors, and all exposed surfaces are dust free, final air monitoring will be performed as described in Section 4.6.2.

4.6.1.8 If the Owner's Consultant and/or the Owner, and the Abatement Contractor finds visible accumulations of dust or debris in the work area after cleaning, the Contractor shall repeat the wet-cleaning (at his own expense) until the work area is in compliance.

4.6.2 Final Air Monitoring

Final air tests will be performed, in accordance with Kentucky 401 KAR 58:040, to determine and document air quality upon completion of abatement activities inside negatively pressurized containments and in regulated work areas. The Owner's Consultant shall perform the final air tests after the work site has passed the final visual inspection. Fans and/or blowers will be used to circulate air in the work area during the final air tests to simulate building use conditions (aggressive sampling). Samples will be collected by use of high-volume electric sampling pumps calibrated to a maximum flow rate of 10 liters/minute. Filter samples will be analyzed by PCM.

4.6.2.1 Acceptable final air concentrations by PCM - Final air samples will be collected from several locations in the work area and in the adjacent equipment and worker decontamination areas. A representative number of area samples will be analyzed by PCM using NIOSH Method No. 7400. Total airborne fiber levels at all sampling locations in the work area (as determined by PCM) must be less than 0.01 fiber (greater than five micrometers in length)/cubic centimeter of air. If any air sample concentration in the work area is greater than 0.01 fiber/cubic centimeter, then the Contractor shall reclean the work site with HEPA-filtered vacuum equipment and damp cloths and mops. A new set of air samples for the entire work site will be collected and analyzed by the Owner's

Consultant at the Contractor's expense. If the fiber levels in the work area still exceed 0.01 fiber/cubic centimeter, then the Contractor shall be required to wet-clean again and pay for the additional air monitoring.

4.6.2.2 DELETED.

4.6.2.3 When a final inspection and air monitoring determine that the area is free of accumulations of visible asbestos debris and airborne fibers, the decontamination enclosure systems shall be removed, these areas shall be thoroughly wet-cleaned and/or HEPA vacuumed and materials from the equipment room and shower shall be disposed of as contaminated waste. A final check shall be carried out by the Owner to ensure that no dust or debris remains on surfaces as a result of dismantling operations.

4.7 SEALANT APPLICATION FOR LOCKDOWN

4.7.1 In all areas from where asbestos-containing materials were removed, an approved sealant shall be used to lock down any residual asbestos fibers to the substrates and exposed surfaces to prevent subsequent dispersion or re-entrainment.

4.7.2 The sealant shall be applied to unfinished walls, floor deck, roof deck, plastic sheeting, and other applicable areas. No sealant shall be applied to dirt floors, mechanical and electrical equipment that will be reused unless approved in advance by the Owner.

4.7.3 The sealant shall be applied with low-pressure airless spray equipment.

4.7.4 The sealant shall be used and applied in strict accordance to manufacturer's specifications.

4.7.5 The Contractor shall apply a thin, visible, contiguous film of sealant to all areas specified. Additional applications shall be required if the first application does not adequately cover the substrates or lockdown residual airborne asbestos fibers.

4.7.6 The lockdown sealant used on hot pipes, breaching, tanks, ducts, or other equipment must be capable of withstanding heat and maintaining its desired function at normal operating temperatures. It must not melt, ignite, degrade, off gas, or generate toxic vapors or hazardous conditions when heated to the normal operating temperatures for the equipment.

4.8 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

4.8.1 Wherever applicable, the Contractor will ensure that all HVAC and remaining electrical systems, equipment, and fixed objects are returned to their original condition and in working order upon completion of the project.

4.8.2 The Contractor shall not be responsible for returning equipment previously moved by the Owner back to its original location.

TABLE 1.
Inventory of Asbestos-Containing Materials Specified for Removal