Contract Documents and Specifications

Roane County, Tennessee

HARRIMAN BACK TAX PROPERTIES DEMOLITION
PROJECT NO. _____
Bid Number: 2015-40/101

Purchasing Department

Kingston, Tennessee

Prepared By:

S&ME, Inc.
1413 Topside Road
Louisville, TN 37777

William Barry
May 15 2015 2:33 PM

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ROANE COUNTY PURCHASING DEPARTMENT
INVITATION TO BID

Roane County is inviting sealed bids for the service(s) listed below, subject to the General Terms and Conditions of the Invitation to Bid, the accompanying Specifications, and the Roane County Purchasing Manual.

Roane County is inviting bids to perform the HARRIMAN BACK TAX PROPERTIES DEMOLITION at 519 and 523 North Roane Street per the enclosed specifications.

Contractors are to provide one original and one copy of the bid being submitted. Any costs associated with the preparation or delivery of the bid is at the Contractor's cost with no cost to Roane County.

Deliver Bids To:

ROANE COUNTY PURCHASING DEPARTMENT
200 EAST RACE STREET, SUITE #3
KINGSTON, TENNESSEE 37763

Bid Number: 2015-40/101
HARRIMAN BACK TAX PROPERTIES DEMOLITION

Mandatory Pre-Bid Meeting: May 22, 2015 at 10:00 a.m. (Eastern Time Zone)

Open Date & Time: June 4, 2015 at 2:00 p.m. (Eastern Time Zone)

The Bid Envelope must show the Bid Number, Name & Opening Date.

PURCHASING CONTACT INFORMATION

Lynn Farnham, CPPO, CPPB
Purchasing Agent
Phone: **865-376-4317**
Fax: **865-376-4318**
Email: **lfarnham@roanegov.org**

REQUIRED DOCUMENTS

Bidders must use the envelope cover sheet included herein.

The following documents must be returned in the bid envelope:

- Contractor Information Sheet
- Non-Collusion, Independent Price Determination, Non-Discrimination, Non-Debarment & Lobbying Affidavit
- Drug-Free Workplace Affidavit
- Statement of Compliance Certificate of Illegal Immigrants
- Business Tax & License Affidavit
- Certificate of Insurance issued by the Contractor's Insurance Company.
- C-430 Bid Bond

CONTRACT

Roane County's Purchase Order and the Terms & Conditions and the Specifications of this Invitation to Bid will serve as the Contractor's contract.

At the appointed time, bids will be publicly opened in the office of the Roane County Purchasing Agent at the above address. Bids arriving to the Purchasing Department past the appointed date and time will be considered late and will not be opened.

GENERAL TERMS & CONDITIONS

Attached are instructions and conditions for submitting a bid for Roane County Government. The objective of this bid is to select suppliers in such a manner as to provide for open and free competition and comparability.

BID PREPARATION & SUBMISSION

1. Bidders are expected to examine the Specifications, Terms and Conditions, General and Special Conditions, Schedules and all instructions for the purpose of this bid. Failure to do so will be at the bidder's risk.

2. All bids shall be in accordance with the Instructions to Bidders and Specifications included in this Invitation to Bid. Specifications are intended to be open and non-restrictive.

3. All pricing submitted in the bid document must be completed in ink or typewritten. The bottom line total must also be printed in ink or typewritten on the proposal form. No erasures shall be permitted. Errors may be crossed out and corrections printed in ink or typewritten and must be initialed in ink by the person signing the bid.

4. All bids must meet or exceed the enclosed Specifications.

5. It shall be the sole responsibility of the bidder to make certain that all bids in proper form are submitted to the Purchasing Department as described below.

6. All original Bid Forms must be signed by a person with authority to bind the bid. The bid must be sealed in an envelope that is labeled according to the directions stated below.

7. On the outside of the envelope/package mark the bid as follows:

   - Contractor Name & Address
   - Bid Number
   - Bid Date & Time

8. The bid must then be in a sealed envelope/package mailed or delivered to the following address:

   Roane County Purchasing Department
   200 East Race Street, Suite #3
   Kingston, Tennessee 37763

   Please note that Roane County does not receive a guaranteed delivery time for express mail and/or packages. Please mail accordingly.

9. Sealed written bids will be received at the time and place specified on the Invitation to Bid.

Postmark on the Bid by this date will not suffice. Bid must be received on or before the date and time stated. Faxed bid documents will not be accepted.

LATE RECEIPT OF THE BID

1. The Bid and modifications or withdrawals thereof received after the time set for opening will not be considered, unless they are received before the award is made and it is determined by Roane County that failure to arrive on time was due solely to a delay in delivery for which the bidder has no responsibility. Roane County does not receive a guaranteed delivery time for express mail and/or packages. Please mail accordingly.

2. Bids must be in the Purchasing Department prior to 2:00 p.m. on the appointed date. Time will be determined by the clock in the Roane County Purchasing Department and once Purchasing Agent/or their designee determines the time is 2:00 p.m., no other bids will be accepted.

RESTRICTIVE OR AMBIGUOUS SPECIFICATIONS

1. It is the responsibility of the bidder to review the entire Invitation to Bid document and to notify the Purchasing Agent if the Invitation to Bid is formulated in a manner that would unnecessarily restrict competition or if it is ambiguous in what is being requested.

2. Pursuant to TCA §12-4-126, questions regarding the specifications or bid procedures must be received by the Engineer no less than ninety-six (96) hours before the bid opening date. No addenda will be issued within less than forty-eight (48) hours of the bid opening day, excluding weekends and legal holidays designated in §15-1-101 unless the bid opening is extended for a reasonable time as determined by the Purchasing Agent, which shall not be less than forty-eight (48) hours excluding weekends and legal holidays designated in §15-1-101, to allow for any necessary changes to the Invitation to Bid documents and to allow responders to submit their responses accordingly.

3. Any questions concerning this Invitation to Bid are to be faxed or e-mailed to the Engineer at 865-970-2312 or kbarry@smeinc.com. Questions will be answered via addenda. Information obtained from any office other than the Purchasing Office is not to be considered binding.

BID OPENING & AWARD

1. Only the bottom line figure will be read at the bid opening. Bids will also be examined for compliance with the Specifications and Conditions outlined in the Invitation to Bid

2. Consideration will be given to all bids properly submitted. Bids will receive appropriate confidentiality before awarding. Upon award, bid documents and tabulations will be available for review. Errors discovered after public opening may not be corrected, and the bidder may be bound to honor bid as submitted. After investigation of the nature of the mistake, the Purchasing Agent may allow the bid to be withdrawn.

3. The contract will be awarded in writing to the most responsive bidder whose bid conforms best to the Invitation to Bid and will be most advantageous to Roane County. It is the intent of Roane County to involve and utilize the best product/services at the best prices and provide small and minority firms, women's business enterprises and labor surplus area firms with increased opportunity to do business with the County. However, currently there are no set asides for small or minority firms.

4. Roane County reserves the right to accept or reject any or all bids and to waive informalities and minor irregularities in the bids received.

5. Roane County reserves the right to award the bid in its entirety or to divide the award in any way that will be more advantageous to the County.

6. Bid results will be posted on the County's website along with the bid tabulation.

PROTEST PROCEDURE

1. If a prospective contractor does not agree with the bid award, they have the right to protest. Disputes arising from the award of this bid must be submitted in writing to the Roane County Purchasing Department no later than seven (7) days from date of bid award. The steps for dispute resolution may include:

    - A meeting with the Purchasing Agent, the requisitioning department's manager and representatives from the disputing party to discuss and resolve the complaint.
    - Information from the aforementioned meeting will be forwarded to the County Attorney for review.
    - A written decision letter stating the reasons for the decision will be prepared by the Purchasing Agent and submitted in writing to the protestor and all parties involved.
    - Purchases will not be allowed under this procurement until a final decision is rendered.
    - In the event that purchases must be made before a final decision is rendered, the emergency purchase procedures will be used.

APPROPRIATION

1. In the event no funds are appropriated by Roane County for the goods or services in any fiscal year or insufficient funds exist to purchase the goods or services, then the contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party.

INSURANCE

1. The Contractor will maintain at their expense adequate insurance coverage to protect them from claims arising under the Worker's Compensation Act, from claims for damages resulting from bodily injuries and damage to their property, for Bodily Injury and Property

Damage Liability in the amount of no less than $1,000,000, for Products and Completed Operations Liability of no less than $1,000,000 and from claims for damage to any Roane County property. Additional insurance requirements may be listed in the Special Terms & Conditions or in the Bid Specifications. This insurance company shall have a Best's rating of A or better. Any deviations from the above requirements must be disclosed in the bid submission.

2. The successful bidder shall furnish a Certificate of Insurance issued by their insurance company showing Roane County as an additional insured. Carrier will assume full common liability of all shipments.

COMPLIANCE WITH ALL LAWS

1. Contractor is assumed to be familiar with and agrees to observe and comply with all federal, state, and local laws, statutes, ordinances, and regulations in any manner affecting the provision of goods and/or services, and all instructions and prohibitive orders issued regarding this work and shall obtain all necessary permits.

GOVERNING LAW

1. This contract shall be governed by the laws of the State of Tennessee, and all obligations of the parties are performable in Roane County, Tennessee. The Courts in Roane County shall have exclusive and concurrent jurisdiction of any disputes which arise hereunder.

BUSINESS LICENSES

1. Bidders located in Tennessee are required to have a current business license issued by the State of Tennessee at the time the bids are submitted. Contractors located outside Tennessee are required to obtain a business license issued by the State of Tennessee.

2. A Roane County Business License is required if a contractor is doing more than $50,000 in business in the County.

3. A Business Tax & License Affidavit is required to be submitted with the bid.

INDEMNIFICATION/HOLD HARMLESS

1. Contractor shall indemnify, defend, save and hold harmless all departments of Roane County Government, its officers, agents and employees from all suits, claims, actions or damages of any nature brought because of, arising out of, or due to breach of the agreement by Contractor, its subcontractors, supplier, agents or employees or due to any negligent act or occurrence or any omission or commission of the Contractor, its subcontractors, suppliers, agents or employees until the contract terminates.

CONTRACTOR PERFORMANCE

1. If the Contractor fails in full or part to perform or comply with any provision of this Contract or the terms or conditions of any documents referenced and made a part hereof, Roane County may terminate this contract, in whole or in part, and may consider such failure or noncompliance a Breach of Contract. Contractors with poor performance will be notified at the time of such performance and be given opportunity to correct the problems. Documentation will be kept on file. Any Contractor with continued poor performance will be removed from the potential contractor list for one year.

2. Roane County expressly retains all its rights and remedies provided by law in case of such breach, and no action by Roane County shall constitute a waiver of any such rights or remedies. In the event of termination for default, Roane County reserves the right to purchase its requirements elsewhere, with or without competitive bid.

3. Failure to deliver within the time specified or within a reasonable amount of time, or failure to make replacements of a rejected item immediately will constitute authority to purchase on the open market so as to replace the item(s) rejected and/or not received. On all such purchases, the Contractor agrees to promptly reimburse the county for excess costs incurred by such a purchase.

BREACH OF CONTRACT

1. A party shall be deemed to have breached the contract if any of the following occurs:

- Failure to provide the services that conform to contract requirements.
- Failure to maintain/submit any report required hereunder.
- Failure to perform in full or in part any of the other conditions of the contract.

CONTRACT TERMINATION FOR CAUSE

1. If the Contractor fails to properly perform its obligations under this contract in a timely or proper manner, or if the Contractor violates any terms of this contract, the county shall have the right to terminate the contract and withhold payments in excess of fair compensation for completed services.

2. In the event the contract is terminated for due cause by the County, the County shall have the option of awarding the contact to the next lowest bidder or bidding again.

CONTRACT TERMINATION FOR CONVENIENCE

1. The County may, by written notice to the Contractor, terminate this contract without cause for any reason. Said termination shall not be deemed a Breach of Contract by the County. The County must give notice of termination to the Contractor at least thirty (30) days prior to the effective date of termination. The Contractor shall be entitled to receive compensation for satisfactory authorized service completed as of the termination date but in no event shall

the county be liable to the contractor for compensation for any service which has not been rendered. Upon such termination, the Contractor shall have no right to any actual, general, special, incidental, consequential, or any other damages whatsoever of any description or amount.

BOOKS AND RECORDS

1. The Contractor shall maintain all books, documents, accounting records and other evidence pertaining to the goods and services provided under this contract and make such materials available at its offices at all reasonable times during the contract period and for three (3) years from the date of the final payment under this agreement for inspection by the County or by any other governmental entity or agency participating in the funding of this agreement, or any authorized agents thereof; copies of said records to be furnished if requested.

INVOICES AND PAYMENTS

1. Payment will be made within 30 days after receipt of invoice and/or delivery of items included in this Invitation to Bid, whichever is later.

2. Roane County Government is not subject to taxation. A tax exemption certificate will be provided upon request.

NONDISCRIMINATION AND NON-CONFLICT STATEMENT

1. Contractor agrees that no person on the grounds of handicap, age, race, color, religion, sex or national origin, shall be excluded from participation in, or be denied benefits of, or be otherwise subjected to discrimination in the performance of this agreement, or in the employment practices of Contractor. Contractor shall upon request show proof of such nondiscrimination and shall post in conspicuous places available to all employees and applicants notices of non-discrimination. Contractor covenants that it complies with the Fair Wage and Hour Laws, the National Labor Relations Act, and other federal and state employment laws as applicable. Contractor covenants that it does not engage in any illegal employment practices.

2. Contractor covenants that it has no public or private interest, and shall not acquire directly or indirectly any interest that would conflict in any manner with the provision of its goods or performance of its services. The Contractor warrants that no part of the total contract amount provided herein shall be paid directly or indirectly to any officer or employee of Roane County as wages, compensation, or gifts in exchange for acting as officer, agent, employee, subcontractor or consultant to Contractor in connection with any goods provided or work contemplated or performed relative to the agreement.

3. No employee or member of the Roane County's governing bodies shall participate in the selection or award of a contract if a conflict of interest, real or apparent, would be involved.

4. Officers, employees or officials of the Roane County Government shall neither solicit nor accept gratuities, favors or anything of more than nominal monetary value from contractors or parties to subcontracts.

BID PROPOSAL

ROANE COUNTY, TENNESSEE
Harriman Back Tax Properties Demolition Bid No. 2015-40/101

TO THE PURCHASING AGENT ROANE COUNTY, TENNESSEE
_____ hereby propose(s) to furnish all material, labor, and equipment and do all work required to complete the Contract for the Miller-Brewer Building Demolition Project, Project No. ____-_____ located in the City of Harriman, Tennessee, in a workmanlike manner and in accordance with the Plans and Specifications herewith attached.
_____ further agrees that in case of failure on _____ part to sign this within ten (10) days, the certified check or bid bond accompanying this proposal and the proceeds thereof shall be the property of Roane County.
BID SCHEDULE

NO.	DESCRIPTION	UNITS	QUANTITY	PRICE PER UNIT	PRICE PER ITEM
1	Mobilization	LS	1	$	$
2	Asbestos Abatement/Disposal	LS	1	$	$
3	Other Hazardous Material Removal/Disposal	LS	1	$	$
4	Concrete Curb, Gutter, and Combined Curb and Gutter	LF	100	$	$
5	Concrete Sidewalk	SF	100	$	$
6	General Building Demolition	LS	1	$	$
7	Post-Demolition Site Stabilization	LS	1	$	$
TOTAL BID: $					
TOTAL BID (in words):					

In submitting this bid it is understood that the right is reserved by Roane County to reject any and all bids. If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within ninety (90) days after the opening thereof, or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish the required bonds within fifteen (15) days after the contract is presented to him for signature.

Security of the sum of _____ Dollars ($_____), in the form of _____, is submitted herewith in accordance with the Specifications.

The bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder certifies

further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The bidder agrees that a breach of this certification will be a violation of the NON–COLLUSION, INDEPENDENT PRICE DETERMINATION,NON-DISCRIMINATION, NON-DEBARMENT & LOBBYING AFFIDAVIT in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting room, work areas, rest rooms and wash rooms, restaurants and other eating areas, time-clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment area, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The bidder agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the NON – COLLUSION, INDEPENDENT PRICE DETERMINATION,NON-DISCRIMINATION, NON-DEBARMENT & LOBBYING AFFIDAVIT, and that he will retain such certifications in his files.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within seventy-five (75) calendar days thereafter. Bidder further agrees to pay liquidated damages in the sum of five hundred dollars ($500.00) per day for each consecutive calendar day thereafter.

FORM: HARRIMAN BACK TAX PROPERTIES DEMOLITION CONTRACTOR INFORMATION SHEET

(Please fill out completely)

By completing and signing this form you certify that you are an authorized representative of the company for which you are submitting a bid/proposal and that you have the authority to legally bind your company. Further, by completing and signing this form you certify that you agree to all the terms and conditions of this bid/proposal.

1. Contractor Name _____
2. Address: City_____ State _____ Zip Code _____
3. Contact Person (Please Print) _____
4. Telephone Number_____ Fax Number_____
5. Contractor's e-mail address _____
6. Authorizing Signature _____
7. Title of Person Signing Bid _____
8. If addenda were issued, please acknowledge the receipt of: (please write "yes" if you received one)
   Addendum 1_____Addendum 2_____Addendum 3_____
   Addendum 4_____Addendum 5_____Addendum 6_____
9. If applicable, please indicate below if discounts will be allowed for prompt payment or if there is not discount offered:
   _____% Net 10 Days; _____% Net 20 Days;
   _____% Net 30 Days; _____No Discount

COOPERATIVE PURCHASING - Contractors are to indicate if it is permissible for other governmental agencies in the State of Tennessee to purchase these items or services at the same price. Freight charges may be adjusted to reflect differences in delivery costs to other locations. Please indicate the approval of Cooperative Purchasing.

_____Yes _____No

SCHOOL CONTRACTS ONLY

CRIMINAL HISTORY RECORDS CHECK – Do you agree to comply with Public Chapter 587 of 2007 which requires all contractors to facilitate a criminal history check, including fingerprinting, conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation for each employee or subcontractor personnel before permitting the employee or subcontractor personnel to have contact with students or enter school grounds?

_____Yes _____No

FORM: HARRIMAN BACK TAX PROPERTIES DEMOLITION NON –COLLUSION, INDEPENDENT PRICE DETERMINATION, NON-DISCRIMINATION, NON-DEBARMENT & LOBBYING AFFIDAVIT

I do hereby certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same materials, supplies, or equipment, and is in all respects fair and without collusion or fraud.

I understand that collusive pricing is a violation of State and Federal law and can result in fines, prison sentences, and civil damage awards and that no collusion with another firm was used in preparation of this bid.

I also certify that this firm does not discriminate against any employee or applicant for employment on the grounds of race, color, national origin or sex; and does not and will not maintain or provide for his employees any segregated facilities at any of its establishments, and further, that the firm does not and will not permit their employees to perform their services at any location under this contract where segregated facilities are maintained.

By submission of this bid, the bidder certifies that neither it or its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal or State department or agency.

I further certify that during the Invitation to Bid solicitation and/or during the performance of this contract that neither it nor its principals will participate in lobbying activities in conjunction with this project.

I agree to abide by all terms and conditions of this Invitation to Bid and certify that I am authorized to sign this affidavit for the contractor.

Please indicate which of the following apply to your company. This information is requested for information purposes only. Roane County currently has no policy that allows for set asides or preferences for woman owned or minority owned businesses.

_____ African American Owned
_____ Caucasian Owned
_____ Native American Owned
_____ Other Owned
_____ Asian Owned
_____ Hispanic Owned
_____ Woman Owned

_____
Signature

_____
Title

FORM: HARRIMAN BACK TAX PROPERTIES DEMOLITION
DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF_____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with Roane County Government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.

2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated.*

3. The Company is in compliance with T.C.A. § 50-9-113.

Further affiant saith not.

_____
Principal Officer

STATE OF

COUNTY OF

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____day of _____, 20____.

Notary Public

My commission expires

FORM: HARRIMAN BACK TAX PROPERTIES DEMOLITION
STATEMENT OF COMPLIANCE CERTIFICATE
ILLEGAL IMMIGRANTS

EACH CONTRACTOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING
This is to certify that _____ have fully complied with all the requirements of Chapter No. 878 (House Bill No. 111 and Senate Bill No. 411) which serves to amend Tennessee Code Annotated Title 12, Chapter 4, Part I, attached herein for reference. All Bidders for construction services on this project shall be required to submit an affidavit (by executing this compliance document) as part of their bid that attests that such Bidder shall comply with requirements of Chapter no. 878.

Signed: _____

State of: _____

County of: _____

Personally appeared before me, _____ the undersigned Notary Public, _____, the within named bargain or, with whom I am personally acquainted, and known to me to be the President / Owner / Partner (as applicable) of the_____, Corporation, Partnership, Sole Proprietorship (as applicable) and acknowledged to me that he executed the foregoing document for the purposes recited therein.

Witness my hand, at office, this _____ day of _____, 20__.

Notary Public
My commission expires

FORM: HARRIMAN BACK TAX PROPERTIES DEMOLITION
BUSINESS TAX & LICENSE AFFIDAVIT

The undersigned, ("Affiant"), states that he/she has legal authority to swear this on behalf of _____ ("Contractor"); that Contractor is not in any manner in violation of *Tennessee Code Annotated, §5-14-108(l)* which provides that *"no purchase shall be made or purchase order or contract of purchase issued for tangible personal property or services by county officials or employees, acting in their official capacity, from any firm or individual whose business tax or license is delinquent"*.

Affiant affirms and warrants that Contractor's licenses are currently valid and all business taxes have been paid and are current as of the date of this affidavit. Contractor is licensed and pays business taxes in _____ County, Tennessee.

AFFIANT
By: _____
Title: _____
Date: _____

Witness: _____
Date: _____

SPECIAL CONDITIONS

Roane County, Tennessee

General

Where there appears to be a discrepancy between the Special Conditions and any other part of the Contract documents and Specifications these Special Conditions shall govern.

The Contractor's attention is called to the fact that where references are made to the Tennessee Department of Highway Standard Specifications for Road and Bridge Construction, these references, if made, are amended to refer to the Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction (TDOTSS) dated January 1, 2015, and any current revisions and special provision thereto.

Roane County reserves the right to increase or decrease quantities for the items listed in the Bid Proposal and also add or delete from the proposed construction.

Required Documents

The list of required documents outlined on the General Conditions, Initiation to Bid Specifications is amended with the following:

- Bid Bond
- Performance Bond
- Payment Bond

The forms for these documents are provided in Attachment 1.

Materials Testing and Sampling:

Materials for construction shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended. All testing, sampling, and inspection of materials, as described below, shall be provided and paid for by the Contractor. All materials testing shall utilize methods as detailed in the Technical Specifications, the TDOTSS, or as approved by the Engineer. Personnel performing materials testing shall be properly certified and approved by the Engineer. It is the Contractor's responsibility to take said samples to an approved independent laboratory and obtain test results. A minimum of three copies of all test results shall be provided to the Engineer to verify conformance to contract specifications.

Core Drilling

The Roane County reserves the right to core drill any pavement section and have the core evaluated for compliance with the appropriate specifications. The cost of such coring and testing shall be borne

by the Contractor. These costs to Roane County shall be deducted from monies earned or to be earned by the Contractor.

Measurement

The Contractor will reconcile each day with the Roane County Project Representative, materials incorporated into construction during that day, or materials shipped to the project and adequately stored and protected for which the Contractor requests payment.

The Contractor's attention is specifically directed to Tennessee Code Annotated 47-26-101 Et seq. governing certification and bond of scale operators. The provisions of this code as well as all other Federal, State and Roane County laws, ordinances, rules and regulations that are applicable to the construction of the project shall apply throughout the construction of the project. Roane County reserves the right to direct the contractors hauling units to a state, county or commercially owned scale to verify weights provided by the Contractor.

Tennessee One Call

Contractor shall notify Tennessee One Call prior to excavation according to Tennessee State Law (811).

Title VI Compliance

All bidders must comply with Title VI of the Civil Rights Act of 1964, as codified in 42 U.S.C. 2000d. The successful bidder must follow Title VI guidelines in all areas including hiring practices, open facilities, insurance, and wages. Roane County reserves the right to review all compliance records by a contract compliance officer designated by the County.

Asbestos Abatement, Other Hazardous Materials, and Demolition Technical Specifications

Technical Specifications regarding asbestos abatement, other hazardous materials, and demolition are included as Attachment 2 and are included as part of the Contract Documents.

Reports for Pre-Demolition Hazardous Materials Survey and Initial Structural Integrity Assessment

The following report regarding an asbestos and other hazardous materials survey performed at the site is known to the Owner and is included as Attachment 3 to the Contract Documents:

Report for Pre-Demolition Hazardous Materials Survey; S&ME, Inc; March 11, 2015

The following report regarding an initial site assessment of the structural integrity of remaining buiilding performed at the site is known to the Owner and is included as Attachment 4 to the

Contract Documents:

Letter Regarding 529 N. Roane St., Harriman, Tenn., Donan Engineering Co., Inc., January 13, 2015.

The Contractor may not rely upon or make any claim against Owner, Engineer, Asbestos Consultant, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of these reports for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. any Contractor interpretation of or conclusion drawn from these reports.

Drawings

The following drawings are included as part of this Project Manual:

1. Existing Conditions and Erosion & Sediment Control, Rev. 0, May 14, 2015
2. Demolition Plan, Rev. 0, May 14, 2015
3. Site Grading and Stabilization Plan, Rev. 0, May 14, 2015

TEMPORARY FACILITIES FOR CONSTRUCTION

Owner will not provide temporary facilities to facilitate construction.

ATTACHMENT 1:
BID FORMS

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

BID

Bid Due Date:

Description *(Project Name and Include Location)*:

BOND

Bond Number:

Date *(Not earlier than Bid due date)*:

Penal sum _____ $ _____

(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

BID

Bid Due Date:

Description *(Project Name and Include Location)*:

BOND

Bond Number:

Date (Not earlier than Bid due date):

Penal sum _____ $ _____

(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:

1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and
1.2 In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.
1.3 Recovery under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
3.2 All Bids are rejected by Owner, or
3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Notice of Award

Date: _____

Project:	
Owner:	Owner's Contract No.:
Contract:	Engineer's Project No.:
Bidder:	
Bidder's Address: *[send Notice of Award Certified Mail, Return Receipt Requested]*	

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for _____

[Indicate total Work, alternates, or sections of Work awarded.]

The Contract Price of your Contract is _____ Dollars ($_____).

[Insert appropriate data if unit prices are used. Change language for cost-plus contracts.]

_____ copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

_____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner [_____] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:

   _____

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

_____
Owner

By:_____
Authorized Signature

_____
Title

Copy to Engineer

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:
Amount:
Description (*Name and Location*):

BOND

Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL	**SURETY**
_____ (Seal)	_____ (Seal)
Contractor's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.

2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
   2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
   2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
   2.3 Owner has agreed to pay the Balance of the Contract Price to:
      1. Surety in accordance with the terms of the Contract; or
      2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.

3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:

   3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
   3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
   3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
   3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
      1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
      2. Deny liability in whole or in part and notify Owner citing reasons therefor.

4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

7. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

10. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

11. Definitions.

11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (*Name, Address and Telephone*) Surety Agency or Broker: Owner's Representative (*Engineer or other party*):

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:
Amount:
Description *(Name and Location)*:

BOND

Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL	**SURETY**
_____ (Seal)	_____ (Seal)
Contractor's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.

4. Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with Contractor:

1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:

6.1 Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.

8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (*Name, Address, and Telephone*) Surety Agency or Broker: Owner's Representative (*Engineer or other*):

Change Order

No. ____

Date of Issuance: 1-13-2012 Effective Date: 1-13-2012

Project: Roane Regional Business & Technology Park/Mitgation	Owner: Roane County	Owner's Contract No.:
Contract:		Date of Contract: 11-15-11
Contractor: Erosion Solutions, Inc.		Engineer's Project No.: 1434-02-072N

The Contract Documents are modified as follows upon execution of this Change Order:

Description:
Modifications to Special Conditions- Regarding comencement of contract times.

Attachments (list documents supporting change):
Change Order 01

CHANGE IN CONTRACT PRICE:	**CHANGE IN CONTRACT TIMES:**
Original Contract Price:	Original Contract Times: ☐ Working days ☐ Calendar days
$70,000.00	Substantial completion (days or date): 60 days Ready for final payment (days or date): 90 days
[Increase] [Decrease] from previously approved Change Orders No. NA to No. NA:	[Increase] [Decrease] from previously approved Change Orders No. NA to No. NA:
$0.00	Substantial completion (days): 0 days Ready for final payment (days): 0 days
Contract Price prior to this Change Order:	Contract Times prior to this Change Order:
$70,000.00	Substantial completion (days or date): 60 days Ready for final payment (days or date): 90 days
[Increase] [Decrease] of this Change Order:	[Increase] [Decrease] of this Change Order:
$0.00	Substantial completion (days or date): 0 days Ready for final payment (days or date): 0 days
Contract Price incorporating this Change Order:	Contract Times with all approved Change Orders:
$$70,000.00	Substantial completion (days or date): 60 days Ready for final payment (days or date): 90 days

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable):

_____ Date: _____

Change Order

Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

ATTACHMENT 2:
TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

Asbestos Abatement, Other Hazardous Materials, and Demolition Technical Specifications Included in Attachment 1:

Unless otherwise specified, the Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, January 1, 2015, apply to this project.

SUMMARY OF WORK

PART 1 - GENERAL

1.01 PROJECT SCOPE

A. The Work to be performed under this Contract consists of the following:

1. The CONTRACTOR is responsible for all applicable fees and permits associated with this Contract including, but not limited to tipping fees at waste disposal facilities.

   CONTRACTOR shall install and maintain all EP&SC measures as per the current TDEC Sediment and Erosion Control Manual.

2. CONTRACTOR shall remove and properly dispose of all asbestos containing material (ACM) in an asbestos approved sanitary landfill as per Section TS 02050: "Asbestos Abatement" in the Project Manual. CONTRACTOR shall notify the Owner if additional ACM is encountered during the work. CONTRACTOR shall note that previous investigations of the building may not have identified all the asbestos containing material requiring removal in the building and it is CONTRACTOR'S responsibility to provide for such identification.

3. CONTRACTOR shall remove and dispose of as required by applicable laws other hazardous materials at the site. CONTRACTOR shall note that previous investigations of the building may not have identified all the hazardous material requiring removal in the building and it is CONTRACTOR'S responsibility to provide for such identification. CONTRACTOR shall demolish, remove and properly dispose in a permitted waste disposal facility all buildings and associated structures (building foundations, floor slabs, driveways, steps, walk-ways, ramps, etc.) except those required by the Contractor's Structural Engineer to be utilized in the stabilization of surrounding infrastructure and property. Salvaging of the site's contents will be allowed and recycling is encouraged.

   Once the building demolition is complete, CONTRACTOR shall provide measures to prevent soil at the site from becoming saturated with water both during the demolition and after completion of the demolition.

4. CONTRACTOR shall demolish all existing concrete and asphalt surfaces located on the property, except those measures prescribed by the CONTRACTOR"S Structural Engineer to maintain stability of the basement walls and surrounding infrastructure and property, to within one foot of the property boundary and properly dispose in a permitted waste disposal facility.

5. CONTRACTOR shall cap all existing utility laterals (i.e. sewer, gas, water, electric) exposed by the demolition of the building foundations back to within two feet of the edge of pavement of the existing road from which the laterals originate. CONTRACTOR shall terminate any existing overhead electric lines at closest on-site electrical pole that will not be affected by other demolition activities. CONTRACTOR shall be responsible for locating all the utilities on site prior to any demolition activities. All utilities shall be capped in accordance with the respective, local utility board(s).

6. CONTRACTOR shall remove all items located inside and out from the property and properly dispose of in a permitted waste disposal or recycling facility prior to any

demolition activities. Salvaging of the site's contents will be permitted.

7. CONTRACTOR shall remove and properly dispose of in a permitted waste disposal facility all existing trash and debris located on site.

8. CONTRACTOR shall remove and properly dispose all ozone depleting substances, mercury containing equipment, polychlorinated biphenyl (PCB) containing equipment, equipment coated with lead based paint and miscellaneous hazardous chemicals.

9. CONTRACTOR shall be responsible for any and all property damaged during the execution of this contract and shall repair or replace damaged property at no cost to the Owner. All off-site damaged roads or sidewalks or private drives shall be repaired or replaced by CONTRACTOR back to the asphalt's original state.

B. CONTRACTOR shall perform all Work in accordance with the Contract Documents of which the Specifications are a part. Contractor shall furnish all materials, equipment, and labor necessary for the proper completion of the Work.

C. CONTRACTOR shall control fugitive (airborne) dust by using water or chemicals during demolition or clearing activities.

D. CONTRACTOR shall repair, replace, or otherwise settle with the OWNER if damage occurs to property or existing facilities during the construction of the Work.

E. Unless specified otherwise, the Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction (TDOTSS), dated January 1, 2015, apply to work on this project.

1.02 CONTRACTOR'S USE OF PREMISES

A. Operations at the construction site shall be confined to areas permitted by law, ordinances, permits, contract, or ENGINEER.

B. The CONTRACTOR shall confer with the ENGINEER and OWNER at the Project and obtain full knowledge of all site rules and regulations affecting the Work. The CONTRACTOR shall conform to site rules and regulations while engaged in the project construction. Site rules and regulations take precedence over others that may exist outside the jurisdiction.

C. The CONTRACTOR shall rigidly enforce the following vehicle use rules:

a. Keep all vehicles, mechanized, or motorized equipment locked at all times, when parked or unattended on the OWNER's premises.

b. Do not, under any circumstances, leave any vehicle unattended with the motor or engine running or with the ignition in place.

c. Parking will be permitted only in areas designated by the OWNER during the mandatory pre-bid meeting.

d. Prior to construction, the CONTRACTOR shall coordinate all Work with the OWNER or the OWNER's Representative.

e. The Contractor shall prepare a Traffic Control Plan in conformance with the Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, and Owner

requirements.

1.03 REFERENCED STANDARDS

A. Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specifications or standards that are current on the date of advertisement for bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall apply.

B. In the event that a work item is not coved in the Technical Specifications in this Project Manual, the Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, latest revision and the State of Tennessee Department of Transportation Standard Design Drawings, latest revision, will apply. In the event of conflict with other documents, the more stringent requirements shall apply.

1.04 QUALITY ASSURANCE

A. CONTRACTOR shall comply with the laws, ordinances, and rules of the OWNER and the State of Tennessee in every way.

B. The Specifications are intended to include all requirements for completing abatement and demolition for the purposes specified; however, the CONTRACTOR shall be responsible for all details that may be necessary to properly abate, demolish and complete the project. The CONTRACTOR shall assume full responsibility for additional costs that may result from unauthorized deviations from Specifications.

C. All bidders must be licensed contractors and must have a Building Construction classification (BC-b(sm)) with the following Specialty Environmental licenses: Asbestos Material Handling / Removing (S-A or S-Asbestos), Lead-Based Paint Abatement (S-C or S-Lead), Hazardous Waste Removal (S-D or S-Hazardous).

D. All bidders shall be or have previously been actively engaged within the last year in similar work.

E. All bidders, at the request of the OWNER and/or ENGINEER, shall submit a list of construction experience associated with this type of construction.

1.05 FIELD VERIFICATION

A. The CONTRACTOR shall field verify all dimensions and elevations shown on the Drawings to the extent that such conditions may affect the Work.

1.06 ACCESS TO AND USE OF FACILITIES

A. The OWNER and ENGINEER shall be granted access to the work site at any time during the normal working hours. Any monitoring or testing equipment shall be open to inspection by the ENGINEER and OWNER during the Work.

B. All Work that requires interruption of existing operations shall be coordinated in advance with the OWNER.

1.07 SITE CONDITIONS AND REQUIREMENTS

A. CONTRACTOR shall coordinate with the OWNER prior to the start of construction.

PART 2 - PRODUCTS
(Not used)

PART 3 - EXECUTION
(Not used)

END OF SECTION TS 01010

ADMINISTRATIVE LOGS

PART 1: GENERAL

1.01 SUBMITTAL LOG

A. If shop drawings, product data, or sample submittals are required by the Contract Documents, maintain a submittals log to record the status of submittals made to the Engineer.

1. Clearly identify the Project.

2. Record activities with respect to shop drawings, product data, samples and such other submittals as desired.

3. Indicate for each submittal made to date:
   a. Title or name, and type of submittal.
   b. Date submitted to the Engineer.
   c. Date returned by the Engineer.
   d. General nature of the Engineer's response.

B. Submit three (3) copies with each application for payment.

1.02 VISITOR (SIGN-IN / SIGN-OUT) LOG

A. Maintain Sign-In/Out Log in the field office (or with the Project Superintendent when no field office is required) to record entry and exit of persons entering the work area. Allow no one to enter or exit work areas without making record in log.

1. Clearly identify the Project.

2. Indicate:

   a. Visitor name and affiliation.
   b. Date of visit.
   c. Time of arrival and departure.
   d. Company or agency represented and reason for presence.

B. Submit three (3) copies with each application for payment.

1.03 ASBESTOS WASTE LOG

A. Maintain Notarized asbestos waste log showing date, type of container removed from work area, signature of recorder, and time of day.

END OF SECTION TS 01020

REGULATORY REQUIREMENTS

PART 1: GENERAL

1.01 CODES AND REGULATIONS

A. All Work shall be in strict compliance with the current issues of federal, state and local regulations, codes and standards as listed below:

1. Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

a. 40 CFR 61, Subpart M - EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) - Standards for Asbestos;

b. 40 CFR 763, Subpart C, Appendix E - EPA Asbestos School Hazardous Abatement Reauthorization Act (ASHARA);

c. 40 CFR 762, CPTS 62044, FRL 2843-9 Federal Register, Vol. 50 No. 134, July 12, 1985 P28530-28540, Asbestos Abatement Projects Rule;

d. 40 CFR Part 61, Sub-part A Regulation for Asbestos;

e. 29 CFR 1910.1001- OSHA Occupational Exposure to Asbestos- General Industry Standard;

f. 29 CFR 1910.134- OSHA Respiratory Protection Standard;

g. 29 CFR 1910.1200- OSHA General Industry Hazard Communication Standard;

h. 29 CFR 1926.1101- OSHA Occupational Exposure to Asbestos- Construction Industry Standard;

i. 29 CFR 1910.146- OSHA General Industry Confined Space Standard;

j. 29 CFR 1910.145- OSHA General Industry Specifications for Accident Prevention Signs and Tags;

k. 29 CFR 1910.1020- OSHA General Industry Access to Employee Exposure and Medical Records Standard;

l. 49 CFR 171 and 172- DOT Hazardous Materials Regulations;

m. All other applicable DOT regulations;

n. Toxic Substance Control Act (TSCA) - Section 6;

o. Clean Water Act as amended by the Water Quality Act of 1987; and

p. Clean Air Act as amended in 1990.

2. State of Tennessee: Abide by all state rules, regulations, ordinances, etc. which govern the specified asbestos abatement work, licensing or hauling and disposal of asbestos waste material.

a. Rule 1200-3-11-.02- TDEC APC Asbestos Hazardous Air Contaminant Rule – State enforcement of federal NESHAP regulations;

b. TCA 68-201-101 et seq. - Tennessee Air Quality Act; and

c. Rule 400-11-01 - TDEC DSWM Solid Waste Processing and Disposal Rule.

3. Local: Abide by all Roane County rules, regulations, ordinances, etc. which govern the specified asbestos abatement work, licensing, or hauling and disposal of asbestos waste removal.

4. General

a. Comply with all relevant attachments, memorandums, records of decision and information sheets received from Federal, State and Local agencies.

b. Any variance from applicable regulations shall have the prior written consent of the regulatory agency and the Engineer. Any variance from the procedures and requirements of this specification shall have the prior written consent of S&ME.

PART 2 - PRODUCTS
(Not used)

PART 3 - EXECUTION
(Not used)

END OF SECTION TS 01030

ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 PROJECT DIRECTORY

Owner Representative:	Ms. Lynn Farnham, CPPO, CPPB, Roane County Purchasing Dept.
Telephone:	865-376-4317
Asbestos Abatement Consultant and Testing Laboratory:	S&ME, Inc. 1413 Topside Road Louisville, Tennessee 37777
Representative:	Mr. Aaron Reeves
Telephone:	865-970-0003
Project Designer#:	A-PD-43603-24529

1.02 PROJECT/WORK IDENTIFICATION

A. This work will include removal and disposal of asbestos-containing materials (ACMs) located within the Miller-Brewer Building located at 519 and 523 North Roane Street in Harriman, Roane County, Tennessee. The asbestos-containing materials (ACMs) that will be removed prior to general demolition are included in the attached drawings and are generally identified as green 9”x9” floor tile and black mastic, beige 9” x 9” floor tile and black mastic, and exterior window glazing. For the purposes of this job, the floor tile and mastic abatement should be considered non-friable removal. Care during abatement activities shall be taken to ensure the floor tile and mastic does not become friable. If during abatement, the floor tile and mastic materials become friable, continue removal following friable asbestos abatement procedures. The window glazing abatement should be considered friable removal.

1.03 SUMMARY OF WORK

A. The Work includes removal and disposal of asbestos containing materials that would be disturbed as a result of the demolition of the referenced building. A copy of the *Report for Pre-Demolition Hazardous Materials Survey* (S&ME, March 11, 2015) for the Miller-Brewer Building is available as Attachment 2 to the Project Manual. Its use by the Contractor is described in the Supplemental Conditions. The Work shall be conducted and techniques utilized as required by applicable regulations.

B. During friable and non-friable removal activities, wet methods shall be used and critical barriers shall be established.

C. The Contractor is responsible for verifying quantities and locations of asbestos-containing materials at this facility. All conditions, quantities and locations of applicable materials are accepted by the Contractor upon receipt of bid. "Complete" is defined as passing final visual, final clearance air sampling, and removal of contractor's equipment and waste from site.

1.04 POTENTIAL ASBESTOS HAZARD

A. The disturbance or dislocation of asbestos materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. All personnel involved in removal activities shall be licensed in the state of Tennessee.

B. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

C. Where in the performance of the Work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos-containing materials, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures will include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.05 ASBESTOS-CONTAINING MATERIALS

A. The known asbestos-containing materials to be removed are identified on the project drawings related to these specifications. The Contractor is responsible for verifying all existing conditions at the facility.

1.06 OWNER OCCUPANCY

A. Partial Owner Occupancy: The Owner reserves the right to place and install equipment as necessary in areas of the buildings in which all asbestos abatement and project decontamination procedures have been completed, after final clearance and approval and acceptance by the Design Team.

1.07 DESCRIPTION OF WORK FOR PROJECT COORDINATION

A. Minimum administrative and supervisory requirements necessary for coordination of Work on the project include but are not necessarily limited to the following:

Administrative and supervisory personnel
Special reports

1.08 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General Superintendent: Maintain a full-time General Superintendent who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos containing materials. This person must have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures, have had a minimum of two years on-the-job training and meet any additional requirements set forth in 29 CFR 1926 for a Competent Person.

B. Head Foreman: Maintain one Head Foreman experienced in supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person shall have not less than two years of full-time experience in responsible charge of asbestos removal operations similar in scope and magnitude to this project. Head Foreman must remain inside the Work Area at all times the Work is in progress.

C. Crew Leader: For every six asbestos removal workers (laborers) utilized on this project, provide one experienced AHERA accredited Supervisor having one year minimum experience in successful asbestos removal operations similar in scope and magnitude to this Project. Crew leader(s) will remain inside of Work Area(s) during all times Work is in progress.

1.09 SPECIAL REPORTS

A. General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to the Owner and Asbestos Abatement Consultant and others affected by occurrence.

B. Reporting Unusual Events and Inspections by Regulatory Officials: When an event of unusual and significant nature occurs or inspection by an outside party, etc. prepare and submit a special report listing chain of events, persons participating, response by Contractors' personnel, evaluation of results or effects, and similar pertinent information. When such events are predictable, advise Owner at earliest possible date.

C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else Work is in progress. Record and document data and action; comply

with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event poses a significant threat of loss or personal injury.

D. Contingency Plan: Prior to commencing work, prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, supplied air system failure, or any other event that may require modification or abridgement of decontamination or Work Area isolation procedures. Include in plan, specific procedures for decontamination or Work Area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

1.10 DEFINITIONS

Adequately Wet: To sufficiently mix or penetrate with liquid to prevent the potential release of particulates.

Aerosol: A system consisting of particles, solids or liquids, suspended in air.

Airlock: System for permitting ingress and egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways protected by two overlapping polyethylene sheets and separated by a sufficient distance such that one passes through one doorway into the chamber, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway. The airlock maintains a pressure differential between the contaminated and uncontaminated areas thereby further minimizing flow-through contamination.

Air Monitoring: The process of measuring the fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added.

Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthopyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

Asbestos-Abatement Consultant: Owner's representative during asbestos abatement activities. The asbestos-abatement consultant may provide such asbestos related services such as project monitoring, additional inspection services, project design services, and air clearance testing upon completion of asbestos abatement activities. The Asbestos-Abatement Consultant will be on site during active asbestos removal activities.

Asbestos-Containing Material (ACM): Any material containing more than 1 percent by weight of asbestos of any type or mixture of types.

Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a Work Area for disposal.

Authorized Visitor: The Owner, the Asbestos Abatement Consultant, or a representative of any federal, state and local regulatory or other agency having authority over the project.

Barrier: Any surface that seals off the Work Area to inhibit the movement of fibers.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 inches to 9 inches.

Certified Industrial Hygienist (CIH): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Clean Room: An uncontaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment. Also known as the "Change Room."

Clearance Monitoring: Area air sampling performed using aggressive clearance sampling techniques to determine the airborne concentrations of residual fibers upon conclusion of asbestos abatement.

Curtained Doorway: A device to allow ingress and 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 framed doorway and securing each along the top of the doorway, with the vertical edge of one along one vertical side of the doorway, and the vertical edge of the other along the opposite vertical side. Two curtained doorways spaced a minimum of three feet apart for an airlock.

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 airlocks.

Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operation.

Disposal Bag: 6 mil thick leak-tight plastic bags used for transporting asbestos waste from Work Area to disposal site. Each is labeled as follows:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

and

R.Q. Hazardous Substance
Solid, N.O.S. (asbestos)
ORM/E, NA-9188

and

Name of Waste Generator:
(Name of Contractor and Owner)

Location of Waste Generated:
(519 and 523 North Roane Street, Harriman, Roane County, Tennessee)

Encapsulation: A form of abatement involving the treatment of regulated asbestos-containing material (RACM) with a liquid which covers the surface with a protective coating (bridging) or embeds fibers in an adhesive matrix (penetrating) to prevent the release of asbestos fibers.

Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the 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, and an uncontaminated area.

Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.

Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

Friable Asbestos-containing Material: Any material that when dry can be or has been crumbled, pulverized, or reduced to powder, and contains more than 1 percent asbestos.

Grind: To reduce to powder or small fragments. Grinding includes mechanical chipping or drilling.

HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns in length.

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High Efficiency Particulate Absolute filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97 percent efficiency for retaining fibers of 0.3 microns or larger.

Holding Area: A chamber between the washroom and uncontaminated area in the equipment decontamination enclosure system. The holding area constitutes an airlock.

Local Exhaust Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a negative pressure inside the Work Area and a constant air flow from adjacent areas into the Work Area and exhausting that air outside the Work Area.

Lockdown: A procedure whereby the surface of the Work Area are coated with latex paint or other suitable sealant, using an airless sprayer, after final visual clearance from the Asbestos Abatement Consultant to fix in place and render non-friable, any traces of asbestos material that may remain.

Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (Work Area).

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Owner/Operator: Any person or contractor who owns, leases, operates, controls, or supervises a facility being demolished or renovated, or any person who operates, controls, or supervises the demolition or renovation operation, or both. For purposes of this Project, the Operator is defined as the General Contractor, Demolition Contractor and Hazardous Materials Contractor.

Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Regulated Asbestos-Containing Material (RACM): (a) Friable asbestos-containing material; (b) Category I non-friable ACM that has become friable; (c) Category I non-friable ACM that

will be or has been subjected to sanding, grinding, cutting, or abrading; or (d) Category II non-friable ACM that is likely to become 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.

Removal: The act of removing asbestos-containing or contaminated materials from a structure, containerizing these materials and depositing these materials in a suitable disposal site.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Shower Room: A room constituting an airlock, between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water suitably arranged for complete showering during decontamination.

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report results of those inspections or tests.

Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

Washroom: A room between the Work Area and the holding area in the equipment decontamination enclosure system. The washroom constitutes an airlock.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

Work Area: The area(s) where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work Area is a Regulated Area as defined by 29 CFR 1926.1101.

1.11 CODES, REGULATIONS, AND STANDARDS:

A. General Applicability of Codes, Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and

effect and are made a part of the contract documents by reference as if copied directly into the contract documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations. The Contractor shall hold harmless the Owner and Asbestos Abatement Consultant for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

1.12 SUBMITTALS

A. General: The required submittals are identified in this section and/or elsewhere in the Specification. Make submittals to the Owner and Asbestos Abatement Consultant in a timely manner and at appropriate times in the execution of the Work to allow for sufficient and prompt review by the Owner and the Asbestos Abatement Consultant. Removal work will not commence until submittals are received by the Owner and the Asbestos Abatement Consultant. Revise and resubmit as necessary.

1. Submit complete, bound, sets of the submittals as required in the Contract Documents. Submit separate sets, in two copies. Submit complete sets to the Owner and the Asbestos Abatement Consultant for their review, in the required number of copies, of "Pre-Job Submittals" on or before the date of the pre-construction meeting. The Work may not proceed until the complete pre-job submittal package has been reviewed and accepted “with exceptions taken” by the Owner and the Asbestos Abatement Consultant.

2. Submit complete sets to the Owner for his review, in the required number of copies, of "Post-Job Submittals" following the final completion of the Work. Once the Owner has logged these documents in, they will be passed onto the Asbestos Abatement Consultant for review. Request for final payment will not be approved until the post-job submittal package has been reviewed by the Owner and the Asbestos Abatement Consultant.

3. Identify individual submittals by name and include a table of contents in each submittal package.

4. Provide three complete, bound sets of each submittal package to the Owner and Abatement Consultant for review.

B. Pre-Job Submittals

1. Permits: Permits required for the removal, encapsulation, handling of asbestos containing materials, and general contracting will be obtained by the Contractor.

   a. The Contractor shall obtain all permits required by state and/or local regulatory agencies or jurisdictions for the transportation and disposal of asbestos containing waste.

   b. Post one copy of all permits at the Work site. Keep on file in the Contractor's office one copy of each and provide a current copy of each to the Owner.

2. Submit complete information relative to the following:

   a. Submit a copy of the completed Notification of Demolition and/or Asbestos Renovation Form.

   b. Employee List: Provide a list of supervisors and workers to be utilized on the project, along with their accreditation numbers, accreditation expiration dates, date of last fit test and date of last physician’s opinion supporting respirator use.

   c. Submit copies of valid EPA training certificates for all workers and supervisors participating on the project.

   d. Individually signed respiratory training form or equivalent for each and every worker to be utilized on the project.

   e. Contractor's affidavit that all Contractor's employees on this project have successfully completed medical surveillance as required by 29 CFR 1926 and the statement by a medical doctor.

   f. Hazardous Waste Management Plan.

3. For each Work Area, submit a plan of action: Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the abatement plan, a contingency emergency plan, the location and layout of the de-contamination areas, the sequencing of asbestos work, methods to be used to assure the safety of site visitors, disposal plan, including location of approved disposal site, and a detailed description of the methods to be used to control pollution and ensure site security. Expand upon the use of portable HEPA ventilation systems, closing out of the building's HVAC system, method of

removal to prevent visible emissions from the Work Area, and packaging of removed asbestos debris. Include sequencing and schedule for installation of architectural finishes/materials. The plan must be approved by the Asbestos Abatement Consultant prior to commencement of Work.

C. Submittals During the Work and Post Job Submittals

1. Submit to the Owner and Asbestos Abatement Consultant training certificates for all new or additional employees before their assignment to the project.

2. A copy of daily security, worker, and visitor log signed by the superintendent.

3. Submit a copy of employee air monitoring results relative to OSHA respiratory protection level compliance.

4. Transport manifests and landfill receipts.

D. All post job submittals must be turned over to the Owner no later than 45 working days after completion of Work and prior to the final request for payment. Requests for final payment will not be approved until the submittal package has been reviewed with no exceptions taken by the Owner and Asbestos Abatement Consultant.

1.13 MANUFACTURER'S LITERATURE

A. Where contents of submitted literature from manufacturers' include data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.

B. Submit a minimum of two copies to Owner and Asbestos Abatement Consultant for review and file.

1.14 QUALITY ASSURANCE

A. Coordination of Submittals

1. Carefully review all aspects of each item being submitted.

2. Verify that each item and its appropriate submittals conform in all respects with the specified requirements.

3. Certify, by affixing signature of Contractor's authorized representative to the corner of each submittal package, that this coordination has taken place.

1.15 IDENTIFICATION OF SUBMITTALS

A. Number consecutively and clearly identify all submittals. Show identification information on at least the first page of each submittal and elsewhere as necessary for positive identification of submittal.

B. Accompany each submittal package with a letter of transmittal showing all information required for identification and checking.

1.16 GROUPING OF SUBMITTALS

A. Group submittals into packages identified as "Pre-Job Submittals" and "Post-Job Submittals" as the title package to certify and account for submittal data.

B. Partial submittals may be rejected for noncompliance with the Contract Documents.

1.17 TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates for commencement, execution or installation to provide time required for review, for securing necessary approvals, for possible revisions and re-submittals and for placing orders and securing delivery.

B. The Owner and Asbestos Abatement Consultant will use their best efforts to review submittals within five business days of receipt of submittals.

C. Contractor will be held responsible for delays occasioned by incomplete submittals packages.

1.18 OWNER ASBESTOS ABATEMENT CONSULTANT REVIEW

A. Review by the Owner and Asbestos Abatement Consultant does not relieve the Contractor from responsibility for errors which may exist in the submitted data. The Contractor will be solely responsible for the means, methods, techniques, sequences, and procedures involved in the execution of the Work.

B. Make revisions as required by the Owner or Asbestos Abatement Consultant and resubmit for approval.

1.19 COORDINATION OF SCHEDULES, MEETINGS, REPORTS - ASBESTOS ABATEMENT

A. The Contractor shall be competently represented at all meetings and submit schedules and reports as required by provisions of this section to enable orderly review of the progress of the Work and to provide for a systematic discussion of problems that may be encountered.

1.20 SCHEDULES

A. The contractor shall provide a written schedule upon bid submittal. Contractor will provide detailed schedule including work dates, work hours, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates. Revised schedules shall be provided at each meeting high-lighting any changes since the previously submitted schedule.

1.21 PRE-CONSTRUCTION MEETING

A. Attend pre-construction meeting as scheduled prior to the start of the Work to clarify construction contract administration procedures and address potential problems and satisfy requirements of items below:

- -- Submittal of executed bonds and insurance certification.
- -- Execution of the Owner-Contractor Agreement.
- -- Submittal of Pre-Job Submittals.
- -- Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, material suppliers.
- -- Channels and procedures for communications.
- -- Construction schedule, including sequence of critical work.
- -- Distribution of the Contract Documents.
- -- Designation of responsible personnel.
- -- Processing of field decisions and change orders.
- -- Scheduling and coordination.
- -- Procedures for safety and first aid, security, quality control, housekeeping and related matters.
- -- Use of premises by Owner and Contractor.
- -- Owner's requirements.
- -- Construction facilities and controls provided by Owner.
- -- Temporary utilities provided by Owner.
- -- Site layout.
- -- Security and housekeeping procedures.
- -- Preliminary schedules.
- -- Procedures for air monitoring.
- -- Procedures for maintaining record documents.

1.22 REPORTS

A. Contractor will maintain, at each Work Area, a daily log documenting the dates and time of, but not limited to, the following items:

-- Visitations; authorized and unauthorized, company or agency represented.
-- Personnel, by name, times entering and leaving the Work Area.
-- Air monitoring test results and Manometer recordings.

B. Provide two copies of each daily log in the "Post Job" submittal package.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Contractor must furnish all labor, materials, equipment, and subcontractors necessary for removal and disposal of ACM in a manner consistent with these specifications. These materials include but are not limited to:

1. Polyethylene sheeting (6 mil minimum thicknesses).

2. Staples, nails, spray cement, and tape capable of sealing joints and securing polyethylene to all necessary surfaces.

3. Surfactant mixed in recommended proportions.

4. Containers to receive and retain ACM with appropriate labels.

5. Warning signs and labels.

6. Glove bags specifically designed for its application.

7. Encapsulants.

8. Other Materials: All necessary materials for removal and disposal of asbestos in compliance with all applicable codes and regulations, and these specifications.

B. Deliver all materials in the original packages or containers bearing the name of the manufacturer and the brand name.

C. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

D. Damaged or deteriorated materials shall not be used and must be removed from the job site. Materials that become contaminated with asbestos must be disposed of in accordance with the applicable regulations.

2.02 TOOLS AND EQUIPMENT

A. Provide suitable tools for asbestos removal, including but not limited to scrapers, brushes, razor knives, wrenches, tools for constructing containment and decontamination units, brooms, carts, and safety equipment.

B. Provide suitable air moving and exhaust equipment, including but not limited to:

HEPA-filtered vacuums.

C. No equipment shall cause suspension of ACM within work area or discharge of asbestos fibers outside of work area.

D. Transportation: As required for loading, temporary storage, transit, and unloading of contaminated waste without exposure to persons or property.

E. Disposal Bags and Impermeable Containers: Provide 6 mil thick leak-tight polyethylene bags for disposal of asbestos waste. Provide containers suitable to receive and retain asbestos containing or contaminated material until proper disposal. Use one of two types of impermeable containers: 1) 6 mil thick polyethylene disposal bags, or 2) metal or fiber reinforced drums with tightly fitting lids lined with 6 mil polyethylene disposal bags. Disposal bags and/or impermeable containers must be labeled with three labels, with text as follows:

First Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

Second Label: Provided in accordance with DOT regulations:

RQ HAZARDOUS SUBSTANCE SOLID,
N.O.S. (ASBESTOS) ORM/E,
NA - 2212

Third Label: Provided in accordance with 40 CFR Part 61 of NESHAP revision:

NAME OF WASTE GENERATOR:

(Name of Contractor and Owner)

LOCATION OF WASTE GENERATED:
(519 and 523 North Roane Street, Harriman, Roane County, Tennessee)

F. Disposal Containers: Provide locked and labeled leak tight containers for transportation and disposal of waste. Disposal containers must be labeled in the same manner as specified under "Disposal bags" (see above).

G. Transportation: As required for loading, temporary storage, transit, and unloading of contaminated waste without exposure to persons or property.

PART 3 - EXECUTION

3.01 AIR MONITORING

A. For this project, the Asbestos Abatement Consultant will serve as the Owner's air monitoring firm. This section describes air monitoring that will be performed to Asbestos Abatement Consultant and is not in the contract sum. This section also sets forth airborne fiber levels outside the Work Area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

B. Air monitoring required by OSHA is the responsibility of the Contractor and is not covered in this section.

C. The purpose of the Asbestos Abatement Consultant air monitoring will be to detect faults in the Work Area isolation such as:

1. Failure of filtration or rupture in the local exhaust system, and

2. Contamination of the exterior of the building with airborne asbestos fibers.

D. Should any of the above occur, the Contractor shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the Asbestos Abatement Consultant.

E. Work Area Airborne Fiber Count: The Testing Laboratory will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the ability of the Work Area isolation procedures to protect the outside of the building from contamination by airborne fibers.

F. Work Area Clearance: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Testing Laboratory will sample and analyze air.

G. The Testing Laboratory will be conducting air monitoring as necessary during the course of the project. Non-friable removal methods may not warrant air monitoring. The owner may elect for monitoring during non-friable removals.

3.02 ANALYTICAL METHODS

A. All area and personal air samples will be analyzed by Phase Contrast Microscopy (PCM) using NIOSH, 7400 Method.

3.03 SCHEDULE OF AIR SAMPLES

When RACM is removed, from start of Work through the project decontamination, the Asbestos-Abatement Consultant will conduct daily samples inside and outside the work area during those periods when active removal work is taking place as follows.

Location Sampled	Number of Samples	Analytical Method	Detection Limit (Fibers/cc)	Flow Rate (LPM)
Inside & Outside Each Work Area	2-5	NIOSH 7400	0.01	4.0-12.0
At Entrance to Decon	1	NIOSH 7400	0.01	4.0-12.0
Negative Air Exhaust	1	NIOSH 7400	0.01	4.0-12.0

If interior airborne fiber counts exceed 0.1 f/cc, additional samples will be taken as necessary to monitor fiber levels.

If any air samples taken outside of the Work Area exceeds the 0.01 f/cc then Contractor will be required to immediately and automatically stop all Work and take remedial action.

3.04 SCHEDULING

A. Testing by the Asbestos Abatement Consultant shall be performed in areas and at times during the Work as deemed necessary by the Owner or Asbestos Abatement Consultant or as specified in the Contract Documents.

B. Unless otherwise approved by the Owner or Asbestos Abatement Consultant, Contractor shall schedule final clearance air testing at least twenty-four hours prior to desired time of testing.

C. Unless otherwise approved by the Owner or Asbestos Abatement Consultant, Contractor shall notify the both parties 72 hours prior to variations in the originally scheduled work hours, in order to receive approval from the Owner and Asbestos Abatement Consultant to arrange proper testing services.

D. Coordinate other scheduling with Owner or Asbestos Abatement Consultant as necessary.

3.05 RESULTS

A. All testing and analysis will be performed promptly and results issued expeditiously in order to minimize any possible delay in the progress of the Work.

B. Test results will be available to Owner and Contractor as follows:

1. Air sample results by Phase Contrast Microscopy: 24 hours from sample extraction time.

2. Air sample clearance results by Transmission Electron Microscopy if deemed necessary: 2 business day turnaround time.

3. Results of other tests deemed necessary by Testing Laboratory: as quickly as possible but not later than three days following completion of test(s) and receipt of results.

3.06 PERSONNEL MONITORING

A. Contractor shall be responsible for OSHA air monitoring requirements to be performed by an independent laboratory. Owner will not be perform air monitoring to meet these requirements for the abatement contractor. The Contractor shall provide a copy of the results to the Owner.

3.07 TEMPORARY FACILITIES

A. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the Work. Currently, no electrical power is supplied to the subject building. The owner will provide access to existing or temporary electrical facilities as needed to complete the abatement. Parking areas for asbestos abatement contractors will be provided by the owner in the general vicinity of the building.

3.08 MATERIALS AND EQUIPMENT

A. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only material and equipment that is recognized as being suitable for the intended use, and is in compliance with appropriate standards.

3.09 WATER SERVICE

A. Provide temporary facilities as necessary to carry out the Work. Currently, no water is supplied to the subject building. The owner will provide access to existing or temporary water facilities as needed to complete abatement. If temporary water supply cannot be granted to the building, the asbestos abatement contractor will be responsible for providing water to complete abatement as needed.

3.10 ELECTRICAL SERVICE

A. General: Provide a weatherproof, grounded temporary power service and distribution system of sufficient size, capacity, and power characteristic to accommodate performance of Work during the construction period. An electrical ground fault circuit interrupter shall be utilized between the power source and the site of containment usage. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of Work.

B. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general, run wiring overhead and rise vertically where wiring will be least exposed to damage from construction operations. Provide additional power service and distribution service, consisting of individual dedicated 15 amp 120 volt circuits to electrical drops with receptacle outlets equipped with ground fault interrupt protection, color coded for the exclusive use of the industrial hygiene firm.

3.11 FIRE EXTINGUISHERS

A. Fire Extinguisher: Comply with the applicable recommendations of NFPA Standard 10 - "Standard for Portable Fire Extinguishers." Locate fire extinguisher(s) where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area.

3.12 WORKER PROTECTION

A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other work place hazards except for respiratory.

B. Contractor shall assume sole responsibility and provide worker protection as required by the most stringent OSHA standards applicable to the Work.

C. Each time the Work Area is entered, all workers shall wear a disposable whole body suit. The worker may wear this suit over their street cloths during non-friable floor tile removal.

3.13 WORKER TRAINING

A. Train, in accordance with 29 CFR 1926.1101 and 40 CFR 763, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:

1. Methods of recognizing asbestos.

2. Health effects associated with asbestos.

3. Relationship between smoking and asbestos in producing lung cancer.

4. Nature of operations that could result in exposure to asbestos.

5. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

-- Engineering controls
-- Work practices
-- Respirators
-- Housekeeping procedures
-- Hygiene facilities
-- Protective clothing
-- Decontamination procedures
-- Emergency procedures
-- Waste disposal procedures
-- Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
-- Appropriate work practices for the Work
-- Requirements of medical surveillance program
-- Review of 29 CFR 1926
-- Exhaust ventilation systems
-- Work practices including hands on or on-job training
-- Personal decontamination procedures
-- Air monitoring, personnel, and area

3.14 PROTECTIVE CLOTHING

A. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area.

B. Hard Hats: Provide head protection (hard hats) as required by OSHA for all workers. Require hard hats to be worn at all times that Work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the Work. Thoroughly clean, decontaminate and bag hats before removing them from the Work Area at the end of the Work.

C. Footwear: Provide foot covers and footwear with non-skid soles, and where required by OSHA, foot protection for all workers. Do not allow this footwear to be removed from the Work Area for any reason other than disposal of contaminated waste or transfer to another asbestos Work Area.

D. Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Goggles will not be worn with full face respirators.

E. Gloves: Provide work gloves.

3.15 ADDITIONAL PROTECTIVE EQUIPMENT

A. Disposable coveralls, head covers, and footwear covers, and Type C respiratory protection with backup supplied air, if utilized, shall be provided by the Contractor for the Owner, Asbestos Abatement Consultant, and other authorized representatives who may inspect the job site.

3.16 DECONTAMINATION PROCEDURES

A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area following non-friable asbestos abatement:

1. When exiting area, HEPA vacuum PPE and remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in a regulated area with polyethylene floor sheeting.

2. Place discarded protective clothing in an appropriately marked disposal container.

3. Provide an area where workers can wash their hands and face.

B. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area following friable asbestos abatement:

1. Before leaving the Work Area, require the worker to remove all gross contamination and debris from overalls and feet using HEPA vacuum. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment (or bathing suit). Extra work clothing may be stored in contaminated end of the Equipment Room. Disposable coveralls are placed in a bag for disposal with other material. Shower still wearing respirator.

2. The worker then dresses in his street clothes, properly cleans and stores his respirator and exits the equipment room. Decontamination procedures shall be followed by all individuals leaving the Work Area.

3.17 WITHIN WORK AREA

A. Workers MAY NOT eat, drink, smoke, apply cosmetics, chew gum or use tobacco products in the Work Area. To eat, chew, apply cosmetics, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.

3.18 RESPIRATORY PROTECTION

A. Instruct and train each worker involved in abatement in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place.

3.19 RESPIRATORY PROTECTION STANDARDS

A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1001 and Section 1910.134, 29 CFR 1926.

CGA	-	Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".
ANSI	-	American National Standard Practices for Respiratory Protection, ANSI Z88.2-1980.
NIOSH	-	National Institute for Occupational Safety and Health.

B. All respiratory protection systems and components thereof shall be approved by NIOSH. Provide at a minimum, HEPA type filters. Also, additional cartridge selections may be added, if required, for solvents, etc., in use.

C. Respirators: Select respirators approved by NIOSH, Department of Health and Human Services, for use in atmospheres containing asbestos fibers. Furnish personnel engaged in the removal and demolition of asbestos materials with appropriate respiratory protection.

3.20 FIT TESTING

A. The contractor shall perform fit testing in accordance with OSHA 29 CFR 1910.134 Respiratory Protection Standard.

3.21 TYPE OF RESPIRATORY PROTECTION REQUIRED

A. After reducing contaminant levels to the lowest feasible level with engineering controls and work practices, provide respiratory protection as necessary to ensure that workers are not exposed to airborne contaminants in excess of the OSHA Permissible Exposure Limits (PEL).

B. Determine the proper level of respiratory protection. Respirator selection shall be based on contaminant levels, filter selection, and respiratory protection factor.

RESPIRATOR	PROTECTION FACTOR
Half-mask air purifying respirator equipped with high-efficiency filters	10
Full face piece air-purifying respirator equipped with high-efficiency filters	50
Tight fitting powered air-purifying respirator (PAPR) equipped with high-efficiency filters,	1,000

or supplied-air respirator operated in continuous flow mode

3.22 DECONTAMINATION

A. Require that the Personnel Decontamination area be the only means of ingress and egress for the Work Area. Require that all materials exit the Work Area through the Equipment Decontamination area.

3.23 SUBMITTALS

A. Before Start of Work, submit written description and/or sketch of Personnel and Equipment Decontamination Units.

3.24 EQUIPMENT DECONTAMINATION

A. Equipment can be cleaned in the equipment room using soap and water or double bagged for transport to the next room to be abated.

B. Require these workers to wear full protective clothing and wear appropriate respiratory protection.

C. At no time is worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

3.25 SIGNS

A. Post an approximately 20 inch by 14 inch manufactured sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.1101.

Legend

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

B. Provide spacing between respective lines at least equal to the height of the respective upper line.

C. Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

Legend

No Food, Beverages, or Tobacco Permitted	3/4" Block
All Persons Shall Don Protective Clothing (Coverings) Before Entering the Work Area	3/4" Block
All Persons Shall Shower Immediately After Leaving Work Area and Before Entering the Changing Area	3/4" Block

3.26 REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS

A. General: The Contractor will perform removal and disposal of all asbestos-containing materials (ACMs) that may be encountered prior to demolition of the Miller-Brewer Building in Harriman, Tennessee.

3.27 PREPARATION

A. Work Area: Is the location where asbestos abatement work occurs. It is a variable of the extent of Work of the contract. For this project a "Work Area" is defined as the area in which asbestos removal is being performed. A "Work Area" is considered contaminated during the Work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-abatement work.

B. Completely isolate the Work Area from the outside so as to prevent asbestos containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos containing dust or debris as a consequence of the Work, immediately stop all abatement work and clean those areas. Perform all such required cleaning or decontamination at no additional cost to the Owner or Owner.

C. Completely separate the Work Area from the outside by sheet plastic barriers (critical barriers) at least 6 mil in thickness, or by sealing with duct tape.

D. Asbestos Abatement Work Will Not Commence Until:

1. Arrangements have been made for disposal of waste at an approved site.

2. Work Areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.

3. Tools, equipment and material waste receptors are on hand.

4. Proper notification has been made to the appropriate regulatory agency.

5. All other preparatory steps have been taken and applicable notices posted and permits obtained.

6. All worker training has been completed.

3.28 WORK AREA CONTAINMENT

A. Work Area Preparation for Non-friable Materials

1. Post Warning signs and barrier tape in and around work area as required by all applicable regulatory agencies, and restrict access to work area to personnel approved by Contractor or Consultant.

2. Contractor shall establish an equipment room or area that is adjacent to the work area for the decontamination of workers and equipment contaminated with asbestos. The decontamination area shall consist of an area covered by an impermeable drop cloth on the floor or horizontal working surface, and be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.

3. Seal off all openings with critical barriers. Critical barriers must be placed on penetrations that include but are not limited to; heating and ventilation ducts, doorways, corridors, windows, skylights, and lighting, with plastic sheeting taped securely in place. A polyethylene splash guard shall be placed on all walls or other surfaces adjacent to where floor tile mastic are being removed. The splash guard shall extend up the wall a minimum of three feet from the floor. Entrances and exits from the work area will have triple flap barriers of plastic sheeting.

4. All building ventilation air systems connected to the work area shall remain off and sealed during preparation and until the area has passed final visual inspection and final air sampling.

5. Clean and cover fixed surfaces in the proposed work area with polyethylene sheeting.

6. Install HEPA-filtered exhaust units in work area. A pressure differential of -0.02 mmHg is required to be maintained during abatement until final clearance air test results meet clearance criteria of 0.01 f/cc.

7. The Contractor shall implement an electrical practice protocol that includes, but is not limited to, lockout and GFCI shutdown as described in OSHA Construction Standard 29 CFR 1926.417. All electrical powered equipment utilized during the project shall have ground-fault protection as described in OSHA Construction Standards. All equipment and wiring shall be in compliance with National Fire Protection Association Standard 70, and the National Electrical Code.

8. Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to the fire code.

3.29 ASBESTOS REMOVAL

A. Method of Removal for Non-friable Materials

1. Prior to asbestos removal, the Contractor's equipment, work area will be inspected and approved by the Asbestos Abatement Consultant.

2. Wet non-friable material with amended water and remove with appropriate equipment. Spray the asbestos material during the removal to maintain a wet condition and minimize asbestos fiber dispersion.

3. Remove material in small sections. As it is removed place material in sealable 6 mil polyethylene bags and place in appropriately labeled container for transport. Dispose of as specified in Section 02 82 33, paragraph 1.73.

B. Method of Removal for Non-friable Floor Tile and Mastic

1. Prior to asbestos removal, the Contractor's equipment, work area will be assessed and deemed appropriate by the Asbestos Abatement Consultant.

2. Remove binding strips or other restrictive molding from doorways, walls, etc. Clean and dispose of as non-asbestos waste.

3. The asbestos floor tile shall be removed with an infrared heat machine or other approved methods. Torches or open flame devices are prohibited.

4. The asbestos material shall be removed intact by heating the floor tile until it becomes soft and releases from the substrate. Gently pry the tile up without breaking the tile. When the tile is cool, place material in approved containers. Bags and containers shall be marked with labels prescribed by the OSHA and NESHAP regulations referenced in these specifications.

5. All loose asbestos material removed in the work area shall be bagged, sealed, and labeled properly before personnel breaks or end of shift.

6. Remove mastic residue using mastic removal solvents. When removing flooring mastic from surfaces, the Contractor shall use a commercially-produced product, designed specifically for the removal of asbestos-containing flooring mastics. Solvents used to remove flooring mastics must meet the following criteria:
   - The product shall not be considered a hazardous waste upon disposal, nor shall it generate a hazardous waste as a byproduct,
   - The product shall be "low odor",
   - The product shall not contain any known or suspected carcinogenic compounds or chlorinated hydrocarbons, and
   - The product shall not be considered a flammable liquid. Flash point shall be at least 20^{o} F higher than the highest temperature to be encountered at the site.

   Use solvents in accordance with manufacturers' instructions. Provide worker protection as required by material safety data sheet (MSDS) for any material used.
7. Mop floor with removal solvent as required by manufacturer's directions as required to completely remove all residue of mastic. No buffing machines or other powered devices shall be used.

8. All plastic sheeting, tape, cleaning material, clothing, and all other disposable material or items used in the work area shall be packed into sealable plastic bags (6 mil minimum).

3.30 FINAL INSPECTIONS AND CLEARANCE TESTING

A. If the Asbestos Abatement Consultant finds visible accumulations of asbestos debris in the work area after the abatement, Contractor shall repeat wet-cleaning until work area is in compliance, at Contractor's expense. All repeat visual inspections and air monitoring will be conducted only after all surfaces are dry. This shall be at the Contractor's expense.

B. When an inspection by the Asbestos Abatement Consultant in the presence of Contractor determines that the area is free of accumulations of dust and visible debris, an encapsulant may be applied prior to final air testing.

C. Only critical barriers and negative air exhaust units shall remain in the work area prior to initiating final clearance. The Asbestos Abatement Consultant will, for this project, test final air quality clearance utilizing PCM analysis upon notice and confirmation from Contractor that Work Areas and all other decontaminated and cleaned areas are ready. Sampling shall not begin until no visible water remains in work area. Sufficient time shall be allowed by the contractor for surfaces to dry. A clearance criteria of 0.01 f/cc for is required for the average of the indoor air concentrations. TEM analysis will be performed if the PCM final air clearance testing is unsuccessful two times in the same area.

D. Re-clean at Contractor's expense all areas which do not comply with the standard of cleaning for final clearance. Continue cleaning until the specified final air quality clearance level is achieved. Contractor shall bear cost of all follow-up test necessitated by the failure of the air tests to meet the specified final clearance level. Owner will deduct the cost of such follow-up tests from whatever monies remain due to the Contractor.

E. Following acceptance of clearance level test results and after the Asbestos Abatement Consultant determines Work Area(s) to be visually decontaminated, the Contractor shall dismantle decontamination enclosure systems and thoroughly wet clean immediate areas. The Contractor shall dispose of debris, used cleaning materials, unsalvageable materials used for sturdy barriers, and any other remaining materials. Consider the materials as contaminated and dispose of.

3.31 SITE WORK COMPLETION

A. Asbestos abatement work is complete upon meeting the Work Area clearance criteria and fulfilling the following:

1. Remove all equipment, materials, debris from the Work site.

2. Remove all residue from adhesives used.

3. Properly dispose of all asbestos containing waste material.

3.32 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

A. Asbestos-containing waste material and debris which is packaged in accordance with the provisions of this specification may be disposed of at designated sanitary landfills when certain precautions are taken.

1. Notice to Appropriate Environmental Protection Agency regional office.

2. Notice and Permit from Appropriate State and/or Local Agencies.

B. Remove sealed and labeled containers of contaminated material and wastes and dispose of accordingly in approved landfill as follows:

1. Notify Asbestos Abatement Consultant not less than 48 hours, prior to the proposed time of removing and delivery of contaminated waste to the landfill. The Asbestos Abatement Consultant may elect to observe this operation and provide photo documentation.

2. All containers (bags, drums, wrapped components) are labeled so that labels have the appearance of or are designed in accordance with OSHA 29 CFR 1926.1101, August 10, 1994, as amended, and any subsequent amendments and editions, and EPA 40 CFR 61.150, November 20, 1990, as amended, and any subsequent amendments and editions.

3. Asbestos waste must be transported and disposed of in a manner that will not permit the release of asbestos fibers into the air.

4. The cargo area of the transport vehicle shall be free of debris and lined with 6 mil polyethylene sheeting. Floor sheeting shall be installed first and shall extend up the side walls at least 12 inches and shall be taped securely into place. Wall sheeting shall overlap by at least 6 inches and be taped into place. Ceiling sheeting shall extend down the side of the walls at least 6 inches and be taped into place.

5. If asbestos waste is transported exclusively in leak-tight clean drums, then polyethylene sheeting is not required.

6. Drums, bags and wrapped components that have been removed from the work area shall be loaded into an appropriate vehicle for transportation.

7. Any debris or residue observed on containers or surfaces outside of the work area resulting from abatement activities shall immediately be cleaned using wet methods and vacuum equipment with a HEPA filter.

8. Containers shall be carefully placed and not thrown into the truck cargo area. Drums shall be placed on a level surface in the cargo area and packed tightly or blocked and braced to prevent shifting and tipping. Large structural components shall be secured to prevent shifting.

9. Asbestos waste shall be transported directly to an approved landfill and shall not be stored at a location other than the abatement site.

10. Metal dumpsters or containers in which asbestos waste is temporarily stored at the abatement site shall be lined with 6 mil polyethylene sheeting to prevent contamination, and shall have doors and tops. The doors and tops shall be closed and locked except during loading or unloading asbestos waste.

11. Metal dumpsters or containers used for waste storage shall be labeled in accordance with OSHA 29 CFR 1926.1101, August 10. 1994 as amended, and any subsequent amendments and additions.

12. Bags shall be free of splits, rips and tears, and shall be carefully placed, not thrown, into the transport vehicle.

13. The vehicle used to transport asbestos wastes shall be labeled in accordance with 40 CFR 61.149(d)(1)(i, ii, and iii) as amended, and any subsequent amendments and editions.

14. Upon reaching the landfill, vehicles shall approach the dump location as closely as possible to unload asbestos waste.

15. Bags, drums and wrapped components shall be inspected when unloaded at the disposal site. Material in damaged containers shall be rewrapped, or shall be repacked in empty drums or bags.

16. Waste containers shall be place on the ground at the disposal site, not dropped or thrown out.

17. Following the removal of all containerized waste, polyethylene sheeting shall be removed and discarded in bags or drums along with contaminated cleaning materials and protective clothing.

18. After the asbestos waste has been unloaded, the truck cargo area, including the floor, walls and ceiling, shall be decontaminated using wet methods or a vacuum equipped with a HEPA filter until no visible residues remain.

19. A waste shipment record shall be used and shall include the names of the facility owner, contractor and disposal site, the estimated quantity of asbestos waste, and the type and number of containers used. Each time the material changes custody, the record shall be signed by the persons receiving the waste. If a separate hauler is used, the hauler's name, address, telephone number and the driver's signature shall also appear on the record.

20. Commercial rental vehicles shall not be used to transport any asbestos or asbestos-containing waste.

END OF SECTION TS 02050

ABATEMENT SUBMITTALS

PART 1: GENERAL

1.01 Description

Make submittals required by the Contract Documents in a timely manner and at appropriate times to allow for sufficient review by Owner and Asbestos Abatement Consultant. Revise and resubmit as necessary to established compliance with the specified requirements.

1.02 Work Included

A. Submit complete bound sets of the submittals. Submit separate sets entitled "Pre-Job Submittals" and "Post-Job Submittals."

B. Submit two (2) complete sets of "Pre-Job Submittals" to the Owner and Asbestos Abatement Consultant for review, at the pre-project meeting. The Work may not proceed until the complete pre-job submittal package has been reviewed and accepted by Owner and Asbestos Abatement Consultant.

C. Submit two (2) complete set of "Post-Job Submittals" to the Owner and Asbestos Abatement Consultant for review, following the final inspection of Work. Requests for final payment will not be approved until Post-Job Submittal package has been reviewed and accepted by Owner and Asbestos Abatement Consultant.

D. Identify individual submittals by name and include a table of contents in each submittal package.

E. Certify pre and post-job submittals by affixing signature of Contractor's authorized representative to the corner of each submittal package.

1.03 Quality Assurance

A. Carefully review and coordinate the various aspects of each item being submitted.

B. Verify that each submittal conforms with the specified requirements.

C. Certify, by affixing signature of Contractor's authorized representatives to the corner of each submittal package, that this review, coordination, and verification has taken place.

1.04 Pre-job Submittals

The Contractor shall provide the following minimum items in a pre-job submittal notebook to and for approval of the Owner and Asbestos Abatement Consultant's project manager before start of work.

A. Proposed schedule for Work in bar chart format showing calendar dates and timelines for major tasks/work activities.

B. Submit Asbestos Demolition/Renovation Ten-Day Notice Form to the Tennessee Department of Conservation (TDEC), Division of Air Pollution Control (APC). Refer to TDEC APC Website (http://www.tn.gov/environment/solid-waste/solid-waste_asbestos.shtml)

Prior to submittal of Notification form to APC, provide a draft version to Owner and Asbestos Abatement Consultant for review. Revise the notification form (as necessary) to incorporate comments/changes from Owner and Asbestos Abatement Consultant, and upon Owner and

Asbestos Abatement Consultant approval, promptly submit the Notification form to APC.

Comply with the notification requirements consistent with applicable notice procedures set forth in U. S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP); Asbestos NESHAP Revision; Final Rule dated November 20, 1990].

Include one copy of the notification form in each submittal package along with a copy of the Certified Mail Receipt (or equivalent) indicating the delivery of Notification to aforementioned agency. If the time from signing of the Contract to the scheduled start of Work is less than the applicable notice period, seek a waiver of the notice period. Without written approval from all of said agencies, do not shorten the applicable notice period.

C. All required permits, site location, and arrangements for transport and disposal of asbestos-containing or contaminated materials. Submit certification that the landfill site to be used meets all State (TDEC DSWM and APC), local and EPA regulatory standards.

D. Overall Work Plan: Written descriptions, sketches, and markups of floor plans shall be provided to demonstrate the plans for establishing regulated areas and decontamination units in compliance with these specification requirements. The type of regulated areas and decontamination units utilized should vary according to the size and scale of the removal/repair area or areas and the specific details of the buildings as shown on the scaled architectural drawings that are provided and referenced as attachments to these specifications. Plans for how removal/repair work in each regulated area will be conducted should be described and sketched on copies of building floor plans to demonstrate that the Contractor has thought out the work before mobilization of equipment and supplies.

Per OSHA 1926.1101, Appendix F, the Work Plan shall address the following at a minimum:

- A physical description of the individual work areas;
- A description of the approximate amount of material to be removed;
- A schedule for turning off and sealing existing ventilation systems;
- Personnel hygiene procedures;
- A description of personal protective equipment and clothing to be worn by employees;
- A description of the local exhaust ventilation systems to be used and how they are to be tested;
- A description of work practices to be observed by employees;
- An air monitoring plan;
- A description of the method to be used to transport waste material; and
- The location of the disposal site for the ACMs and associated debris generated during the work. Include owner/operator address and telephone number.

E. Information regarding the Contractor's Workforce for this project:

1. Supervisors and OSHA Competent Persons (for all Supervisors to be employed on project):

a. Supervisor(s) name;

b. Proof of experience in like projects;

c. Individually signed Certificate of Asbestos Worker's Acknowledgement Form, (Section 1.06 C: Form #3);

d. Copy of current Tennessee Asbestos Abatement Supervisor certificate issued upon completion of an EPA accredited training course;

e. Medical documentation certifying that the individual is able to wear respiratory protection; and

f. Proof of respirator fit test (within previous 12 months) for each type of respiratory protection intended for this project.

2. Workers (For all workers to be employed on project):

a. Workers' Name;

b. Individually signed Certificate of Asbestos Worker's Acknowledgement Form (Section 1.06 C: Form #3);

c. Copy of current Tennessee Asbestos Abatement Worker certificate issued upon completion of an EPA accredited training course;

d. Medical documentation certifying that the individual is able to wear respiratory protection; and

e. Proof of respirator fit test (within previous 12 months) for each type of respiratory protection intended for this project.

F. Written Work Plan for Abatement of Other Hazardous Materials, as described in Section 02 86 00 Other Hazardous Materials Abatement, Paragraph 1.04.

G. Product data and Material Safety Data Sheets (MSDS) for any materials to be used.

H. Site-specific Health and Safety Plan (HSP): Copies of the Contractor's site-specific Health and Safety Plan to address worker health and safety issues and requirements for the removal, repair, handling, and disposal of asbestos, and for compliance with OSHA/TOSHA regulations.

I. Manufacturer's specifications for air cleaning, vacuum equipment, air handling equipment, special tools, and safety equipment to be utilized in Work.

J. Manufacturer's specifications for negative air filtration systems including rated flow capacity and filtration certification.

K. Manufacturer's certification or independent test reports confirming that materials to be utilized in Work meet or exceed all performance criteria required by Specifications. Include MSDS for all aerosol adhesives, and provide certifications that replacement materials are one hundred percent (100%) asbestos-free.

L. Specimen copy of asbestos abatement worker Sign In/Out Log form to be used.

After the project has begun, if previously unregistered employees will perform work at the site, submit the information required in 1.04 for those employees prior to entry at the project.

1.05 POST-JOB SUBMITTALS

A. Completed and approved Notification Form.

B. Completed Notarized Certification of Asbestos Abatement Contract Compliance (Section 1.06 B: Form #2).

C. Certificate of Visual Inspection - OSHA Regulated Asbestos Work Areas (Section 1.06 C: Form #3) for each asbestos abatement work area.

D. Notification of completion of abatement work.

E. Alphabetical listing of each employee used in Work and exact dates on which present in asbestos abatement work areas, as recorded in completed daily Sign In/Out Logs.

F. A copy of differential pressure measurements from work area barriers, identifying date, time, instrumentation used for measurement (model/make/Serial No.), and individual making measurements.

G. Copy of employee personal air monitoring results relative to requirements of Subparagraph 3.01.B of Section 02 82 13, and OSHA respiratory protection compliance levels.

H. Copy of outside work area air monitoring results relative to requirements of Subparagraph 3.01.A of Section 02 82 13.

I. Copies of Sign In/Out Logs showing the following: date, name, entering and leaving time, company or agency represented and reason for entry for all persons entering regulated areas.

J. Asbestos waste log showing date, type of container(s) removed from regulated area(s), signature of recorder, and time of day.

K. Asbestos Disposal Documentation: complete documentation for the disposal of all ACM removed from the buildings including: waste manifests, disposal certificates, and any other information documenting the quantities, nature, and final disposition of the removed ACM. Include a map of landfill locating exact disposal areas within landfill where asbestos materials were disposed.

L. Final Documentation of Disposal Certificates or receipts for Other Hazardous Materials, as required by Section 02 86 00 Other Hazardous Materials Abatement, Paragraph 3.01.

1.06 FORMS

A. Form #1: Notification of Demolition and/or Asbestos Renovation Form. Refer to TDEC APC Website (http://www.tn.gov/environment/solid-waste/solid-waste_asbestos.shtml)

ASBESTOS REQUIREMENTS

Ten-day notification forms for asbestos renovation and demolition projects are required under 40 CFR 61, Subpart M. Notifications must be submitted on TDEC, APC forms, available from their website. Incomplete or late forms will be reported to EPA as deficient.

All notifications should be forwarded to:
Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243-1531
(615) 532-0554

The packaging and disposal of asbestos containing material is permitted and regulated by the State of Tennessee, Division of Solid Waste Management. They should be contacted for permitting requirements and lists of certified landfills.

Mr. Revendra Awasthi
State of Tennessee Department of Health & Environment
Division of Solid Waste Management
2700 Middlebrook Pike
Knoxville, TN 37921
(865) 594-6035

Monitoring and worker safety is regulated by the State of Tennessee, Department of Labor (TOSHA).

Mr. John Gleason
State of Tennessee Department of Labor (TOSHA)
531 Henley Street
Knoxville, TN 37902
(865) 594-6180

B. Form #2: Notarized Certification of Asbestos Abatement Contract Compliance

Contractor's Letterhead

_____
_____
_____
_____

Attention: _____

Reference: _____
_____
_____

Project:

Subject: Notarized Certification of Asbestos Abatement Contract Compliance

Dear :

By this notarized letter, I certify that our company and its employees at all times have complied with all federal, state and local laws and regulations for the Asbestos Abatement Contract on the referenced project. Attached you will find a copy of the Certificate of Worker's Acknowledgment for each employee working at the facility and project referenced above.

I certify that all OSHA regulations for asbestos exposure: medical surveillance, worker training and exposure measurements records are being kept by our firm in conformance with 29 CFR 1926.1101 for all employees working on the referenced Project.

Sincerely,

_____

_____

President

Notary Public
Seal / Date / Signature

C. Form #3: CERTIFICATE OF ASBESTOS WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _____ DATE:_____

PROJECT ADDRESS: _____

CONTRACTOR'S NAME: _____

CONTRACTOR'S ADDRESS: _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF DISEASES. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP AN ASBESTOS RELATED DISEASE IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that you be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you. By signing this certificate, you are assuring the Owner that your employer has met these obligations to you.

RESPIRATOR PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above-referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped, at no cost, with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos fibers in proper work procedures, and personal and area protective measures. The topics covered in the course included the following:

- physical characteristics of asbestos
- health hazards associated with asbestos
- respiratory protection
- negative air systems
- work practices including hands-on or on-job training
- personal decontamination procedures
- air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months, which was paid for by my employer. This examination included health history, pulmonary function tests, and may have included an evaluation of chest X-ray. I have been notified of the results of my examination.

Worker's Signature:_____ Date: ____

Printed Name: _____SS#: _____

EPA / OSHA Worker Training (attach Tennessee certificate)_____ Expires on:

EPA / OSHA Asbestos Contractor - Supervisor Training (attach TN certificate)...Expires on:

OSHA Respirator Fit Test (attach certificate) _____ Expires on:

OSHA Medical Exam (attach certificate)..... Expires on:

Contractor's Authorized Signature: _____ Date: ____

Printed Name: Title:

PART 2: PRODUCTS - NOT USED

PART 3: EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. Number consecutively, and clearly identify submittals. Show identification on at least the first page of each submittal, and elsewhere as necessary for positive identification of submittal.

B. Accompany each submittal package with letter of transmittal showing information required for identification and checking.

3.02 TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates of commencement, execution, or installation to provide time required for reviews, securing necessary approvals, possible revisions and re-submittals, and placing orders and securing delivery.

B. Accept responsibility for delays resulting from incomplete submittal packages.

3.03 SUBMITTAL REVIEW BY OWNER AND ASBESTOS ABATEMENT CONSULTANT

A. Partial submittals may be rejected.

B. Review by Owner and Asbestos Abatement Consultant does not relieve Contractor from responsibility for errors which may exist in submitted data.

C. Contractor shall make revisions when required by Owner and Asbestos Abatement Consultant and resubmit for review.

D. 3.04 PAYMENT FOR REVIEW

A. Initial Services: Owner will pay for initial review and first subsequent review, if required, at no cost to Contractor.

B. Subsequent Reviews: Costs of Owner and Asbestos Abatement Consultant's additional services associated with reviews required beyond first subsequent review will be responsibility of Contractor, and Owner may deduct corresponding amounts from Contract Sum by appropriate Modification.

END OF SECTION TS 02055

WORK WITH OTHER HAZARDOUS MATERIALS

PART 1: GENERAL

1.01 WORK INCLUDED:

A. Furnishing of and paying for all labor, services, appliances, materials, equipment, insurance, permits, patents and decontamination facilities necessary to carry out the safe handling and/or removal of "other hazardous materials" throughout the Miller-Brewer Buildings located in Harriman, Tennessee . Remove these materials prior to demolition. For this project, "other hazardous materials" are as follows:

1. Chlorofluorocarbons (CFC) – Refrigeration and air conditioning units commonly contain chlorofluorocarbons (e.g. Freon).

2. Mercury-containing equipment – Fluorescent, High Intensity Discharge (HID), Sodium and Mercury Vapor light tubes, electrical/mechanical thermostats, switches and manometers commonly contain small amounts of mercury.

3. PCB-containing equipment – Transformers, fluorescent light ballasts, and other electrical devices commonly contain Polychlorinated Biphenyls (PCBs).

    a. Check all equipment (including fluorescent light ballasts) for a "No PCB" label and date stamp to determine if it is non-PCB containing or PCB Free equipment. Unmarked equipment without a "No PCB" or "PCB-Free" label should be considered PCB-containing.

4. Batteries - Emergency lighting, smoke detectors and rechargeable batteries for emergency lighting potentially operate on cells containing heavy toxic metals (e.g. Lithium, Nickel, Cadmium and/or Lead) and/or Acid-containing battery cells and may contain hazardous and/or regulated materials.

5. Smoke Detection Devices – Both photoelectric and ionization-type smoke alarms contain may contain batteries (alkaline or lithium). Ionization technology detectors also typically include a chamber containing radioactive materials (usually Americium-241).

B. It is the responsibility of the Contractor to identify, document the location and remove and properly dispose of PCB, CFC, Mercury, Lead/Acid, Lithium, Nickel/cadmium and Radioactive Materials containing equipment and fixtures prior to building demolition.

1.02 COORDINATION:

A. The Contractor shall confirm the hazardous materials identified in subparagraph 1.01 are properly removed prior to any demolition of the building that will disturb these materials.

B. A copy of the *Report for Pre-Demolition Hazardous Materials Survey* (S&ME, March 11, 2015 for the Miller-Brewer Buildings is available as Attachment 2 to the Project Manual. Its use by the Contractor is described in the Supplemental Conditions. The Work shall be conducted and techniques utilized as required by applicable regulations.

C. The Contractor is responsible for verifying quantities and locations of other hazardous materials at this facility. All conditions, quantities and locations of applicable materials are accepted by the Contractor upon receipt of bid.

1.03 MANAGEMENT PLANS:

A. Prepare and provide, as a pre-construction submittal, a written Standard Operating Procedure (SOP) that includes a description explaining how workers, visitors and employees will be protected from exposure should leaking PCB, CFC, Mercury, Lead/Acid and/or Radioactive Materials containing items be encountered; a layout showing the location of items and materials storage after removal; personal protective equipment, decontamination sequence and clean-up procedures to be used should PCB, CFC, Mercury, Lead/Acid and Radioactive Materials be encountered; removal methods to be used; and an emergency action plan in the event of a spill, cut, or contact with eyes or skin. This Management Plan should be available at the work site for referral and reviewed by workers, visitors and employees prior to entry into the Controlled Area.

1.04 SUBMITTALS DURING THE WORK:

A. Maintain Sign In/Out logs showing names of persons entering the work space, date and time of entry and exit, record of any accidents, emergency evacuation and other safety and/or health incidents.

Provide data to Designer on a daily basis or other agreed upon interval.

1.05 QUALIFICATIONS OF PERSONNEL:

A. All personnel of the entity involved with the work of this section must be trained in the hazards of PCBs, CFCs, Mercury, Lead/Acid, Radioactive Materials and the precautions to take to prevent exposure.

B. In the event that the entity involved with demolition or abatement work will respond to a spill, leak, or contact with PCB, CFC, Mercury, Lead/Acid, of Radioactive Materials, the personnel who clean up the spill, or remove the equipment, will possess a certificate of participation and successful completion of training in accordance with OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

1.06 APPLICABLE PUBLICATIONS:

A. General Publications:

1. OSHA 29 CFR 1926.59, Hazard Communication.

2. Department of Transportation, 49 CFR 172, 173, 178 and 179 Regulations for Labeling, Mailing and Transporting Hazardous Waste.

3. OSHA 29 CFR 1910.134 Respiratory Protection.

4. 29 CFR 1920.20, Subpart C, General Safety and Health Provisions.

5. 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

6. 29 CFR 1910.145, Accident Prevention Tags.

B. State of Tennessee Regulations:

1. Rule 400-11-01 – Solid Waste Processing and Disposal

2. Rule 400-12-01 – Solid and Hazardous Waste Management.

3. Tennessee Department of Environment & Conservation (TDEC), Division of Solid and Hazardous Waste Management (DSHWM) Policy Statement dated July 30, 1999 – *Mercury-Containing Batteries and PCB Containing Ballasts and Transformers.*

4. TDEC DSHWM Supplemental Policy for Subtitle D Landfilling of PCB Bulk Product Wastes Under the Toxic Substances Control Act (TSCA) – EPA 40 CFR Part 761 (SOP for Special Waste Approval – May 2002).

    a. TDEC DSHWM Policy Statement dated July 9, 1999 – *Mercury-Containing Lamps.*

    b. Rules of the Tennessee Department of Labor and Workforce Development Occupational Safety and Health, Rules and Regulations of the State of Tennessee (Rules) Chapter 0800-1-6, [the TOSHA has adopted the federal standards under 29 CFR 1926]. TDEC DSHWM policy for the management and disposal of LBP debris is addressed in a policy letter dated September 1, 2000.

C. PCB Publications

1. 40 CFR 761, Polychlorinated Biphenyl Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.

2. EPA 40 CFR 261.24, 264 and 273

D. CFC Publications

1. Refrigeration Recycling Regulation for Venting Prohibition under EPA regulation 40 CFR Part 82.

2. EPA 40 CFR Part 82, Subpart F

E. Mercury Publications

1. EPA 40 CFR 261.24, 264 and 273.

F. Lead Safety Publications

1. "Lead Safety and Health Regulations for Construction", Title 29, Part 1926, Section 62 of the Code of Federal Regulations.

G. Lead/Acid Publications

1. www.leadacidbatteryinfo.org/lead-acid-battery-recycling.html.

H. Smoke Detection Devices

1. http://m.usfa.fema.gov/downloads/pdf/techtalk/techtalk_v1n2_1209.pdf
2. http://www.epa.gov/radiation/sources/smoke_alarm.html
3. http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1717/nureg-_1717.pdf

1.07 STANDARD OPERATION PROCEDURE (SOP):

A. The SOP shall include:

1. Security procedures to prevent unauthorized entry into work spaces.

2. Appropriate protective clothing.

3. Methods for disconnecting and removing PCB, CFC, Mercury, Lead/Acid and Radioactive Materials containing equipment in ways that prevent release of the hazardous material.

4. Packaging of contaminated material in a way that minimizes exposure and contamination.

5. Emergency evacuation for medical or safety reasons (fire and smoke) such that exposure will be minimized.

6. Methods for preventing electrical shock hazards.

7. Methods for isolating and identifying suspect PCB, CFC, Mercury, and Lead/Acid containing equipment.

8. Effective supervision during the work.

1.08 PROTECTIVE EQUIPMENT:

A. Provide all workers, foremen, supervisors, authorized visitors and inspectors with protective, disposable clothing consisting of full body coveralls, head covers, gloves and 18-inch high type foot covers or reusable footwear. Clothing shall be adequate to remain intact under work conditions. Protective clothing shall not leave the Controlled Area during the performance or completion of work or if emergency spill or encounter issues exist.

B. Provide eye protection as required by job conditions and safety regulations.

C. Should leaks be detected during the removal of the equipment, the Contractor shall contain the spill and consult with a safety/health professional to determine the need to upgrade personal protective equipment (PPE) before stopping the leak and cleaning up the spill.

D. Follow standard OSHA Hazardous Waste Operations utilizing other OSHA standards such as the following website for use and disposal of personal protective equipment:

http://www.osha.gov/Publications/osha3151.html

PART 2: PRODUCTS

2.01 MATERIAL:

A. Impermeable Containers: Air and water-tight, suitable to receive and retain any hazardous material containing or contaminated equipment until disposal at an approved site, and labeled in accordance with OSHA Regulation 29 CFR 1910.62, as well as EPA regulation 40 CFR Part 61, 29 CFR 1910.145, and 49 CFR 172, 173, 178 and 179. Three types of impermeable containers shall be used:

1. UN specification metal or fiber drums with tight fitting lids.

B. Warning Labels and Signs: In conformance with DOT regulation 49 CFR 172, 173, 178 and 179 Regulations for Labeling, Mailing and Transporting Hazardous Waste, and EPA regulation 40 CFR 260, 261, 262, 263, 264 and 265 Hazardous Waste Regulations.

C. The contractor shall have a mercury spill kit, mercury vacuum or other appropriate equipment on-site in the immediate location of mercury work activities.

PART 3 – EXECUTION

3.01 WORK PROCEDURES:

A. Hazardous Materials work shall be performed in accordance with the contractor's accepted SOP. Procedures and equipment required to limit occupational and environmental exposures to PCB, CFC, Heavy or Toxic Metals and Lead/Acid encountered during related work shall be in accordance with federal, state, and local

regulations. Associated waste shall be disposed of in compliance with federal, state, and local regulations.

1. PCBs:

a. Carefully remove the cover to the fluorescent light ballasts from the fixture. Identify the potential PCB content using the criteria listed in subparagraph 1.01.A.

b. Removal:

1) Should the ballasts meet the criteria specified for PCB-containing ballasts, cut the wiring as close to the ballast as possible.

2) Remove the ballast and carefully lower the ballast to the ground and place it into a steel drum or UN specification shipping container.

c. Label manifest and package the container for transport in accordance with 40 CFR Part 761.

d. Should PCB leaks be detected during the ballast removal process:

1) While wearing PPE:

a) Place the leaking ballast in a double layer of 6 mil polyethylene sheeting or bags and seal with duct or fiber tape.

b) Place the wrapped ballast into a UN specification shipping container.

c) Upon completion of the clean-up, dispose of the ballasts in accordance with EPA 40 CFR Part 761 and TDEC DSHWM regulations.

d) Should PCB inadvertently contact the worker's skin or eyes, the worker should immediately refer to the Contractor's Management Plan for decontamination procedures.

2. CFCs:

a. Perform work in accordance with EPA 40 CFR Part 82, Refrigeration Recycling Regulation for Venting Prohibition.

b. This work shall be performed by individuals trained and certified in accordance with EPA 40 CFR Part 82.

3. Mercury:

a. Carefully remove fluorescent, high intensity discharge, mercury vapor, and sodium lamps and mercury-containing electrical/mechanical

equipment and place them in a secure area free of vehicle, falling object hazards, etc.

b. Should mercury leaks be detected during the equipment removal process see the following steps for guidance on work procedures:

1) While wearing PPE, isolate the mercury by applying Amalgam powder to the contaminated surface and remove the mercury from the subject surface using a HEPA-filtered mercury vacuum.

2) Upon completion of the clean-up, dispose of the contaminated debris and vacuum filter in accordance with EPA 40 CFR 261 and TDEC's DSHWM regulations.

c. Should mercury inadvertently contact the worker's skin or eyes, the worker should immediately refer to the Contractor's Management Plan for decontamination procedures (see subparagraph 1.03).

4. Lead/Acid batteries:

a. Segregate and dispose of at appropriate recycling facility.

3.02 WASTE DISPOSAL:

Disposal options shall be thoroughly investigated for these materials and may involve recycling, reuse, or disposal. Irresponsible discharges to the environment or improperly managing waste should be avoided. It is imperative that the use, handling, storage, transportation and disposal of hazardous and recyclable materials and waste from the facilities are consistently managed following the guidelines outlined in federal, state, and local regulations. Items contaminated with Hazardous material must be decontaminated and sampled to confirm the hazardous materials were removed or shall be disposed of as hazardous waste. Containers used to store hazardous waste must be approved by the United States Department of Transportation (DOT). The contractor shall supply necessary containers. The containers shall remain closed except when material is being placed into them. Each container shall be labeled with a properly completed hazardous waste label as soon as any quantity of waste is placed into it.

The contractor will comply with all regulations and conditions of permits and licenses applicable to the project. Included are wastewater discharge permits and satellite accumulation requirements for hazardous waste, etc.

The contractor assumes responsibility and liability for compliance with all applicable regulations especially those affecting the health and safety of contractor employees, subcontractors, and all others at the site during the performance of the work. This responsibility includes the protection of persons and visitors located near the worksite. Prevention of damage to the property, supplies, and equipment from accidents, improper storage or misuse of hazardous materials shall also be avoided.

Hazardous materials and waste may be accumulated and temporarily stored on the property per the regulatory provisions, but should not exceed 30 days, except for

extremely hazardous materials, for which arrangements should be made to remove the material for the premises as soon as is practicable. The following conditions should be met to ensure that hazardous substances are properly managed:

Hazardous waste containers should be in good condition, compatible with the material being stored in it, properly labeled at all times, and free of leaks. Adequate secondary containment should be provided for those wastes where accidental discharges or leaks could cause an environmental release.

Hazardous waste accumulation areas will be pre-approved by the owner and designer before wastes are stored there. The areas will be open for inspection by the owner or their consultant(s) upon request. Hazardous waste accumulation areas shall also be inspected at least daily by the contractor or its environmental oversight subcontractor and shall be locked when not in use. Wastes in containers that are leaking will be immediately transferred to a reliable container and any spilled material properly cleaned up.

A. PCBs:

1. TDEC's DSHWM regulates the disposal of PCB containing equipment. There are established limits for disposal of 50 parts per million (ppm) of bulk PCB per month. Fluorescent light ballasts frequently contain less than 1 ppm PCB per unit.

B. CFCs:

1. The Contractor will be responsible for compliance with the Refrigeration Recycling Regulation for Venting Prohibition under EPA regulation 40 CFR Part 82.

C. Mercury:

1. Effective July 19, 1999, mercury containing lamps are considered to be a hazardous waste in Tennessee under certain conditions. They are regulated under Rule 400-12-01-.02 Standards for Universal Waste Management. These lamps include, but are not limited to, fluorescent, high intensity discharge, neon, high pressure sodium, mercury vapor and metal halide lamps.

D. Lead/Acid:

1. Segregate and dispose of at appropriate recycling facility.

3.03 DOCUMENTATION:

A. Document the description, quantity and approximate weight of all PCBs, CFCs, Mercury, Heavy or Toxic Metals and Lead/Acid containing equipment that is removed and forward this inventory to the Owner.

END OF SECTION TS 02090

BUILDING DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:

1. Demolition and removal of buildings and associated features as noted herein, and on project Drawing. Capping or sealing, and removing site utilities and components.

2. The Contractor shall be responsible for compliance with Federal, State and local laws relative to demolition. Liability and products resulting from demolition shall become the responsibility of the Contractor.

1.02 SCHEDULES:

A. Schedule for project completion is 75 calendar days from the Notice to Proceed for the Miller Brewer Building

1.03 DEFINITIONS

A. Asbestos Consultant Removal: Remove and legally dispose of all materials and items.

B. Existing to Remain: Protect all materials designated by owner or Contractor's Structural Engineer to remain in place or undisturbed.

C. Infrastructure: All public or private water lines, sewer lines, storm sewers, communication lines, electrical lines, gas lines, roads, bridges, and sidewalks as well as any related structures necessary for their function.

D. Removal: Remove and legally dispose of all materials and items.

E. Structural Engineer: A Tennessee licensed Structural Engineer engaged by the Contractor.

1.04 MATERIALS OWNERSHIP

A. Except for building slab and basement walls supporting adjacent Roane Street and other surrounding property, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

1.05 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.

1. Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (APC) – Approved Permit

2. Schedule of demolition activities indicating the following:

    a. Detailed sequence of demolition and removal work, with starting and ending dates for each activity.

    b. Dates for capping and removal of abandoned utility services.

3. Document existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by demolition operations.

4. Identify and accurately locate abandoned utilities and other subsurface structural, electrical, or mechanical conditions.

5. Landfill records for record purposes indicating receipt and acceptance of wastes by a landfill facility licensed to accept demolition debris mixed with regulated non-hazardous wastes (lead based paint coated debris).

6. Applicable OSHA training and compliance for workers to include but not be limited to 29 CFR 1926, asbestos and lead awareness (29 CFR 1926.62 and 29CFR 1926.1101) and asbestos supervisors/competent person training (40 CFR 61 and 29 CFR 1926.1101).

7. Contractor to engage the services of a competent Structural Engineer licensed in Tennessee to evaluate post-demolition stability of basement walls along the sides of project. Contractor shall implement such measures as are prescribed by the Structural Engineer to maintain stability of the basement walls and surrounding infrastructure and property during and after demolition. The Structural Engineer's assessment plans for maintaining stability of the basement walls and surrounding infrastructure and property shall be submitted to the Engineer for approval prior to mobilization.

1.06 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing OSHA regulations governing administrative and worker protection issues. Complete and submit EPA and TDEC APC notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Pre-project Conference: Conduct a conference at the Project site and comply with requirements of "Engineer."

1.07 PROJECT CONDITIONS

A. Building to be demolished will be vacated and use discontinued before start of Work.

B. Owner assumes no responsibility for actual condition of building to be demolished.

C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

D. Asbestos: Asbestos containing materials are present and scheduled for removal prior to building demolition. Asbestos containing materials shall be removed by a contractor licensed by TDEC. SEE SECTION TS 02050 and S&ME's: *Report for Pre-Demolition Hazardous Materials Survey* (attached to the Project Manual).

E. Lead Based Paint: Lead was detected in paint samples collected from the exterior walls, portions of the buildings on the Roane Street level, and one stairwell. See S&ME's *Report for Pre-Demolition Hazardous Materials Survey*. The lead concentrations detected are less than 0.5% by weight. The United States Environmental Protection Agency (EPA) and United States Department of Housing and Urban Development (HUD) standard defined in Title X of the 1992 Housing and Community Development Act designates lead-based paint as 0.5% lead by weight. However, it is important to note that, unlike asbestos, the EPA and Occupational Safety and Health Administration (OSHA) does not publish a concentration that is considered "Lead-Based Paint." Lead-based paint is regulated to prevent occupational exposures in accordance with OSHA regulation 29 CFR 1926.62. OSHA does not define lead-based paint and requires worker protection controls for disturbance of coated materials that may contain **any** amount of lead. This facility is not considered a HUD regulated building. Unless observed to be loose or peeling from demolition debris, the identified lead paint may be disposed as general demolition debris waste in a MSW / Subtitle D landfill. Workers and contractor shall comply with 29 CFR 1926.62. Metal components coated with lead based paint may be recycled as opposed to disposal in a landfill.

F. Miscellaneous Hazardous Materials: Additional hazardous materials to include mercury, PCB and fuel sources are present in limited quantities. Workers handling these materials shall be apprised of the hazards and properly trained. SEE SECTION 028400 and S&ME's: *Report for Pre-Demolition Hazardous Materials Survey* (attached to this specification).

G. Storage or sale of removed items or materials on-site will not be permitted.

1.08 SCHEDULING

A. Arrange demolition schedule so as not to interfere with adjoining property operations. Submit schedule to the Engineer for approval prior to mobilization.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify with the Owner that utilities have been disconnected and abandoned. Verify location of any utility components to remain.

B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.

C. Perform inventory (check with Owner) and record the condition of items to be removed and salvaged or retained by the Owner.

D. Survey the conditions of the building to determine the extent of any damage to determine structural deficiency that might contribute to the unplanned collapse of any portion of the structure or adjacent structures during demolition.

E. Perform surveys as the Work progresses to detect occupational (OSHA) and environmental hazards (TDEC and EPA) resulting from demolition activities.

F. Examine site to prepare measures prescribed by the Structural Engineer to maintain stability of the basement walls and surrounding infrastructure and properties.

3.02 UTILITY SERVICES

A. Maintain existing utility poles as indicated on drawings and protect against damage during demolition operations.

B. Electricity and water is available on site and shall be provided by the Contractor and connected and distributed as necessary by Contractor.

C. Do not interrupt existing utilities serving adjacent occupied or operating facilities, except when authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to governing authorities.

D. Secure permission of adjacent owners if shutdown of service is required during any time of the project.

E. Utility Requirements: Seal or cap off any existing or abandoned utility services serving the structure to be demolished to local utility requirements. Contact the Owner for a site visit to ensure all utilities are disconnected.

F. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing by the Owner and project superintendent. Comply with local requirements and utility owner.

3.03 PREPARATION

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.

B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks and other adjacent occupied and used facilities.

C. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways. Verify acceptable haul routes with authorities and adjacent owners prior to beginning demolition. Ensure safe passage of people around the demolition area.

D. Conduct demolition operations to prevent injury to people and damage to adjacent buildings, landscaping, features, equipment and facilities to remain. Damages caused by the Contractor to unspecified features shall be replaced or repaired to original condition at the expense of the Contractor.

E. Provide and maintain interior and exterior shoring / bracing, or structural support to safely perform work as required herein and preserve stability and prevent movement damage to adjacent streets, parking lots, buildings or utilities.

3.04 EXPLOSIVES

A. Explosives: Use of explosives will not be permitted.

3.05 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable method to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not create hazardous or objectionable conditions, such as ice, flooding, and pollution, when using water.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Clean adjacent buildings and improvements of dust, dirt, and debris caused by demolition operations. Before recommencing demolition return adjacent areas to condition existing prior to need to clean dust, dirt, and debris.

3.06 DEMOLITION

A. Building Demolition: Demolish building, except for building slab and basement walls supporting adjacent Roane Street and other adjacent properties and infrastructure, or otherwise indicated to remain the Owner's property and completely remove from the site. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Locate demolition equipment throughout the building and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

2. Demolition work shall be completed systematically from top to bottom. Perform complete demolition in one area before disturbing supporting members in connecting and non-adjacent areas.

3. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.

4. Break up and remove concrete slabs on grade, unless otherwise shown to remain or if designated to remain by the CONTRACTOR'S Structural Engineer. Demolish concrete and masonry in deliberate controlled sections.

B. Below-Grade Construction: Demolish foundation and other below-grade construction, as follows:

1. All below grade construction except that designated to remain by the Structural Engineer to provide for the stability of surrounding streets, infrastructure and other property.

C. Filling below-Grade Areas: Completely fill below-grade areas and voids resulting from demolition of buildings and pavements with approved control fill materials per the Drawings.

D. Stabilize with topsoil, seed, and mulch as directed in the Drawings and per the Tennessee Department of Environment and Conservation Construction BMP Manual, latest edition.

E. Damages: Promptly repair or replace, to existing condition or better, for damages to adjacent facilities and features caused by demolition operations.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials on or off-site.

C. Disposal: Transport demolished materials off Owner's property and legally disposed.

Transportation of debris off-site shall be performed with minimum interference to adjacent occupied facilities and traffic in the vicinity.

Asbestos containing materials and lead-based paint or mixed asbestos debris shall be disposed with associated demolition debris as special waste in a Class 1 landfill permitted to receive these specific waste streams.

Waste manifests for all disposed or recycled products shall be submitted to the Engineer prior to project close-out and final payment.

END OF SECTION TS 02095

ATTACHMENT 3:

Report for Pre-Demolition Hazardous Materials Survey; S&ME, Inc; March 11, 2015

March 11, 2015

Roane County Purchasing
220 E. Race Street, Suite 3
Kingston, Tennessee 37763

Attention: Ms. Lynn Farnham

Reference: **Report of Pre-Demolition Hazardous Materials Survey**
519 and 523 North Roane Street Buildings
Harriman, Tennessee
S&ME Project No.4143-15-013

Dear Ms. Farnham:

S&ME, Inc. (S&ME) is pleased to submit this report of pre-demolition hazardous materials survey services at the 519 and 523 North Roane Street buildings in Harriman, Tennessee. The hazardous materials survey was conducted as outlined in S&ME Proposal No. 41-1500090 dated February 13, 2015.

S&ME, Inc. appreciates this opportunity to work with you on this project and we look forward to our continued association. Please contact us at (865) 970-0003 if you have questions concerning this report.

Sincerely,

S&ME, Inc.

Emily M. Buckingham by TBS
Asbestos Inspector
TN #A-I-68828-37059

Eric M. Solt, P.G.
Senior Project Manager

REPORT OF PRE-DEMOLITION HAZARDOUS MATERIALS SURVEY
519 AND 523 NORTH ROANE STREET PROPERTIES
HARRIMAN, TENNESSEE

S&ME Project No. 4143-15-013

Prepared For:
Roane County Purchasing
220 E. Race Street, Suite 3
Kingston, Tennessee 37763

Prepared By:

1413 Topside Road
Louisville, Tennessee 37777

March 11, 2015

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EXECUTIVE SUMMARY

S&ME, Inc. conducted a pre-demolition hazardous materials survey at the 519 and 523 North Roane Street buildings located in Harriman, Tennessee. The assessment was conducted on February 25, 2015. The purpose of the assessment was to identify asbestos-containing materials, lead based paint, EPA regulated Universal Wastes, mercury containing equipment, ozone depleting substances (Freon), Polychlorinated Biphenyl (PCB) containing equipment, and other biological hazards prior to planned demolition of the buildings. The buildings were unoccupied at the time of the assessment.

The results of the evaluation indicated the following:

- Asbestos was detected in regulated amounts in the floor tile and window glazing present on the upper level of building 523. Asbestos was detected in non-regulated trace amounts in the floor tile mastic, ceiling tile coating, and joint compound present on the upper two levels of building 523.

- Lead-based paint was not identified in samples collected.

- Fluorescent lighting ballasts present on the upper floors of buildings 519 and 523 are assumed to contain PCBs.

- Compressors containing Freon were observed in refrigerators, HVAC units, and water fountains located in both buildings.

- Batteries present in Emergency "EXIT" signs and emergency lighting fixtures were located throughout the buildings.

- Thermostats with mercury bulb switches were observed in the basement and Roane Street level of building 519.

- Approximately 400 fluorescent light bulbs were observed throughout the buildings.

- Significant accumulation of bird droppings was observed in the upper floor of building 523.

- Approximately 90 computer monitors with cathode ray tubes were observed in the basement of building 519.

- Approximately 120 paint cans were observed in the basement of building 519 and in apartment 3 on the upper level of building 523.

- Assorted cleaning, pesticides, and other chemicals were observed throughout the buildings.

1. BACKGROUND

The subject facility includes two interconnected buildings with a cumulative footprint of approximately 48,000 square feet including a basement area. The adjacent building to the northeast was destroyed by a fire in January 2015. The northeast common wall was damaged by the fire. S&ME was requested to evaluate the presence and quantities of the referenced hazardous materials in the buildings. The building at 519 N. Roane Street, is a single-story with a basement and is constructed of brick and masonry. Interior wall surfaces consist of brick and drywall. The ceiling consists of a suspended grid with drop-in cellulose acoustical panels below. The building at 523 N. Roane Street, is two stories with a basement and is constructed of wood beams, brick and masonry. Interior wall surfaces consist of brick, drywall, and parge coating. The ceiling consists of a suspended grid with drop-in cellulose acoustical panels below or drywall. The roof was deemed to be unsafe and was not included in this sampling event. Since the building was constructed in the early 1900's, the roofing material is assumed to be asbestos containing material.

2. TASK I: ASBESTOS CONTAINING MATERIALS SURVEY

2.1 Scope of Services

S&ME provided Tennessee Department of Environment and Conservation (TDEC) and Environmental Protection Agency (EPA) accredited Asbestos Inspectors to conduct the asbestos survey and sample collection of the referenced buildings on February 25, 2015. Prior to sampling, the building interiors and exteriors were evaluated to identify homogeneous areas (HA) of suspect asbestos containing materials (ACM). Building materials were sampled in general accordance with the Asbestos Hazard Emergency Response Act (AHERA) protocol for sampling frequency and analysis. A total of 40 bulk samples were collected for analysis. Sampling of readily accessible materials was performed with the exception of roofing materials. Inaccessible areas or areas deemed unsafe (building 523 south central area of the basement where beams had collapsed, building 523 southeast area of the basement inaccessible due to stacked debris, and building 523 south central area of the second floor where the floor had collapsed) were not sampled. Destructive sampling (i.e., intrusive sampling behind interior walls, exterior walls, or other concealed locations) was performed. Additional sampling of areas not accessed during this survey may be warranted should demolition activities reveal materials not evaluated as part of this survey.

2.2 Methods

The limited asbestos survey was performed to comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 CFR 61 (M)) issued by the U.S. EPA as they pertain to requirements for an asbestos inspection prior to renovation projects. This evaluation also complies with the TDEC requirements for

asbestos abatement entities (Chapters 1200-01-20 and 1200-03-11-.02). TDEC regulations are equivalent to the NESHAP regulations regarding pre-demolition asbestos inspection requirements.

The asbestos survey services involved identifying and collecting bulk samples from suspect ACM in interior and exterior areas of the buildings. Inaccessible areas were encountered on the interior and exterior of the buildings during the assessment as noted in section 1.1. The samples were documented on a chain of custody and submitted for analysis to Environmental Hazards Services in Richmond, Virginia, a National Voluntary Laboratory Accreditation (NVLAP) accredited asbestos analytical laboratory[1].

The material sampled was analyzed by EPA Method 600/R-93/116, Polarized Light Microscopy (PLM) utilizing dispersion staining techniques. PLM identifies asbestos content in a sample by identifying and indexing optical and mineralogical characteristics that are unique to one of six legally recognized asbestos minerals. Asbestos content is visually estimated and is reported as a percentage of the area of the particular sample analyzed.

2.3 Results

The ACM survey included the bulk sampling and analysis of suspect ACM, which included vinyl floor tile and mastic, wallboard and joint compound, ceiling tiles, carpet mastic, window glazing and caulking. Of the bulk samples collected and analyzed from the subject building, asbestos in concentrations greater than one percent (>1%) was detected in the following materials:

Sample ID	Description of ACM	Location
523-007	Green 9" x 9" Floor Tile with Black Mastic	Building 523 Upper Floor
523-008	Beige 9" x 9" Floor Tile with Black Mastic	Building 523 Upper Floor
523-011	Hard, White Window Glazing	Building 523 Upper Floor Windows

Asbestos was detected in non-regulated, trace amounts (less than 1% asbestos) in the following materials:

[1] Accredited by the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program (NVLAP).

Sample ID	Description of ACM	Location
523-003	Yellow Mastic of Beige 9" x 9" Floor Tile	Building 523, Roane Street Level, Middle of Room
523-004	White Coating on 2' x 4' Solid Patterned Ceiling Tiles	Building 523, Roane Street Level Ceiling
523-010	Joint Compound on Drywall	Building 523, Upper Floor, Interior Walls

Comprehensive sample summary tables including Sample ID, location, asbestos type, ACM classification, and estimated quantities of identified ACM are provided on Table 1 in Appendix I. Representative photographs of the identified ACM are also included in Appendix I. The bulk sample laboratory analytical results are provided in Appendix II.

3. TASK II: LEAD-BASED PAINT SURVEY

3.1 Scope of Services

S&ME was also requested to conduct a limited lead paint survey of representative painted surfaces within the subject buildings. Paint-chip samples from differentiated surface colors and surface substrates of indoor and outdoor paint were collected during the assessment. The paint chip samples were analyzed for lead content and the results were reported as percent lead by weight. This evaluation was limited in nature: painted surfaces that were not visible, accessible, or unsafe were not sampled.

3.2 Methods

The paint samples were submitted to EHS in Richmond, Virginia, a National Lead Laboratory Accreditation Program (NLLAP) accredited lead analytical laboratory[2]. The paint samples were analyzed for lead in accordance with EPA Method SW846 7000B.

3.3 Results

The EPA and United States Department of Housing and Urban Development (HUD) standard defined in Title X of the 1992 Housing and Community Development Act designates lead-based paint as 0.5% lead by weight. However, it is important to note that, unlike asbestos, the EPA and Occupational Safety and Health Administration (OSHA) does not publish a concentration that is considered "Lead-Based Paint." Lead-based paint is regulated to prevent occupational exposures in accordance with OSHA regulation 29 CFR 1926.62. OSHA does not define lead-based paint and requires worker protection controls for disturbance of coated materials that may contain **any** amount of lead. This facility is not considered a HUD regulated building.

[2] Accredited by the National Institute of Standards and Technology's National Lead Laboratory Accreditation Program (NLLAP).

The paint chip samples collected during this survey were analyzed to contain low concentrations of lead, however not at levels enough to designate them as lead-based paint by EPA and HUD definitions. A sample summary table with sample numbers, location, and condition of samples is included on Table 2 in Appendix I. Laboratory analytical results are included in Appendix II.

4. TASK III: REGULATED MATERIALS, UNIVERSAL WASTES, AND RELATED BIOLOGICAL HAZARDS

4.1 Poly-Chlorinated Biphenyls (PCBs)

MagneTek fluorescent light ballasts were observed in the light fixtures present in the basement area of building 519. Two ballasts were observed per light fixture. This type of ballast was observed to be labeled "NO PCBs." Approximately 40 ballasts were observed in the basement of building 519.

The ballasts in the fluorescent lighting fixtures on the upper floors of buildings 519 and 523 could not be observed as they were too high to access. The lighting fixtures on the upper floors were observed to be older and are assumed to contain ballasts that contain PCBs. Approximately 160 light fixtures were observed in the remaining areas of the building. The ballasts in the additional light fixtures should be inspected for a "NO PCBs" indication on the label prior to disposal.

If additional fluorescent lighting ballasts are encountered during renovation activities that are not labeled "NO PCBs" then proper disposal should be completed.

Disposal of PCBs at 50 ppm or greater are regulated according to the Toxic Substances Control Act (TSCA), 15 U.S.C. 2601 and set forth in Part 761 of Title 40 of the Code of Federal Regulations (40 C.F.R Part 761). The Tennessee Solid Waste Program does not permit the disposal of PCBs of 50 ppm or greater in a Subtitle D Sanitary Landfill. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires notification when more than one pound (approximately 12 to 16 ballasts) of PCBs are to be disposed.

4.2 Freon

Compressors containing freon in equipment such as heating, ventilating, and air conditioning (HVAC) cooling units, water fountains, and refrigerators were observed at the building during this survey. Three HVAC units and four refrigerators were observed in the basement of the buildings. Two refrigerators were observed on the Roane Street level of building 519. Two water fountains were observed on the Roane Street level of building 523. Six refrigerators and approximately six window HVAC units were observed on the upper level of building 523.

4.3 Universal Waste

The federal universal waste regulations are set forth in Part 273 Title 40 of the Code of Federal Regulations (40 C.F.R. 273). Materials regulated under this rule include batteries, pesticides, mercury containing equipment, and bulbs (lamps).

4.3.1 Batteries

Quantities of batteries were not observed in the building during this survey. Lead-acid batteries are typically present in emergency "EXIT" signs and emergency lighting. Emergency "EXIT" signs and emergency lighting were observed throughout the buildings. Approximately 12 emergency "EXIT" signs and approximately 16 emergency lights were observed throughout the buildings.

4.3.2 Mercury Containing Equipment

Thermostats with mercury bulb switches were observed in the Honeywell and White-Rodgers thermostats in the 519 building. Two thermostats were observed, one in the basement and one on the Roane Street level. Each thermostat was observed to contain one mercury bulb switch.

4.3.3 Bulb (Lamps)

Management and disposal of fluorescent light bulbs are regulated under the Resource Conservation and Recovery Act (RCRA), the Universal Waste Rule (UWR), and Subtitle C Hazardous Waste regulations. A standard fluorescent bulb contains eight to 14 milligrams of mercury. Fluorescent light bulbs that are not marked with a green aluminum end cap are generally considered to be regulated universal waste after their useful life. Approximately 400 fluorescent light bulbs were observed throughout the buildings. Most of the fluorescent light bulbs observed did not have green aluminum end caps and are therefore suspected to contain mercury.

4.3.4 Pesticides

Small quantities of pesticides were observed in building 523 at the time of the site visit. Consumer quantities of rat poison was observed in apartment 1 of the upper level of building 523.

4.4 Related Biological Hazards

Evidence of bird and rodent habitation was observed in the second floor of building 523. Several areas of bird and rodent feces were observed in the buildings with the largest concentration observed in Apartment 1 on the second floor of building 523. Bird feces has been linked with the presence of the recognized human fungal pathogen Histoplasmosis. According to the Center for Disease Control, rats can be responsible for transmitting diseases to humans including: Hantavirus Pulmonary Syndrome, Hemorrhagic Fever with Renal Syndrome, Lassa Fever, Leptospirosis, Lymphocytic Chorio-meningitis, Omsk Hemorrhagic Fever, Plague, Rat-Bite Fever, Salmonellosis, South American Arenaviruses, and Tularemia.

Water intrusion due to roof damage, wall damage, and open or damaged windows was observed throughout the buildings. Moldy and musty odors were observed throughout the buildings. Drywall in the basement of building 519 was observed to contain large quantities of mold.

Some electronics such as Cathode Ray Tube (CRT) computer monitors, color CRT TV tubes, and cell phones test hazardous under EPA Federal law 40 CFR Part 261.2, Identification and Listing of Hazardous Waste. CRT funnel glass generally contains high enough concentrations of lead that the glass is regulated as hazardous waste when disposed. Televisions and color computer monitors contain an average of four pounds of lead, but the exact amount depends on the size and make of the electronic device. Other hazardous constituents sometimes present in CRT glass are mercury, cadmium, and arsenic. However, these constituents are usually found in very low concentrations. Approximately 90 computer monitors containing CRTs were observed in the basement of building 519.

Paint cans were stored in the basement of building 519 (approximately 40) and in the second floor of building 523 in apartment 3 (approximately 80). The paint cans were observed to be rusted and in poor condition. A five gallon container of Naphtha was observed on the main floor of building 523.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Asbestos

S&ME identified ACM in the form of floor tile and window glazing in the upper floor of building 523. Non-regulated ACM in trace amounts was identified in the form of floor tile mastic, ceiling tile coating, and joint compound in the upper floors of building 523. S&ME recommends contracting a licensed asbestos contractor for abatement of affected asbestos materials prior to beginning renovation or demolition activities.

As is the case with any asbestos inspection, materials that were not readily apparent or were located in concealed locations may not have been identified. If any material that is suspected to contain asbestos, and was not included in this report as a material identified and tested, is discovered, it should be evaluated for asbestos content before it is disturbed.

If non-sampled suspect materials are discovered during renovation that are similar to the sampled materials in appearance, age or use, they should be treated the same as the similar sampled materials.

5.2 Lead-Based Paint

No lead-based paint was observed in the samples collected in the six assessment areas of the building. However, the paint chip samples collected during this survey do contain low concentrations of lead, but not at levels high enough to designate them as lead-based paint by EPA and HUD definitions.

Since the samples collected for this assessment tested positive for lead content, the OHSA Lead Standard 29 CFR 1926.62 will apply and the demolition/renovation contractor should comply with the requirements of this Standard.

Current TDEC regulations and policy indicate that if lead paint is adhered to demolition debris surfaces and not loose or peeling, the debris can be disposed in a Class I, II, III, or IV disposal facility, and lead paint removal or testing is not required to determine hazardous leaching potential before disposal. However, if lead based paint removal is anticipated as part of any renovation activity, the removal should be conducted by a State licensed lead-based paint abatement contractor according to all local, state and federal laws and guidelines.

5.3 Regulated Materials, Universal Wastes, and Related Biological Hazards

It is recommended that the equipment containing freon, mercury containing thermostats, and fluorescent light bulbs be managed by qualified personnel and properly disposed in accordance with the applicable EPA regulations regarding universal wastes. Materials affected by mold and animal feces should be handled and disposed in accordance with applicable EPA guidelines. The electronics, paint cans, and assorted chemicals should be properly disposed of in accordance with EPA regulations regarding hazardous wastes.

6. LIMITATIONS

This report is provided for the sole use of Roane County Purchasing. Use of this report by any other parties will be at such party's sole risk, and S&ME, Inc. disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the sampling and of the specific areas referenced.

6.1 Asbestos Survey Limitations

Although PLM/Dispersion Staining (Method EPA 600/R-93/116) is the specified method for analysis of bulk material samples for asbestos under the EPA AHERA, there have been reports that this method may not identify asbestos when fiber sizes are extremely small or if they are bound in a resinous material. EPA recommends analyzing such materials (floor tiles, mastics, and asphaltic roofing) using Transmission Electron Microscopy (TEM) when PLM analysis does not detect asbestos in quantities greater than 1%. Current EPA regulations do not require this additional analysis and the decision to do so is left to the client.

This report is not intended for use as an asbestos removal specification. ***The quantities of ACM provided in this report are estimates for sample collection purposes and should not be used for asbestos abatement bidding purposes. The Asbestos Abatement Contractor is responsible for verifying the quantities of ACM for asbestos abatement purposes.*** It is not within the scope of this work to describe all appropriate precautions, safeguards and regulations relating to asbestos. Prior to removal of asbestos, we

recommend that an appropriately qualified and credentialed asbestos designer develop a removal plan.

6.2 Lead-Based Paint Survey Limitations

As is the case with lead paint inspections, surfaces that were not readily apparent or were located in concealed locations may not have been identified. If any additional coating that is suspected to be lead-containing paint is discovered, and was not included in this report as a tested surface, it should be evaluated before it is disturbed.

The limited lead paint sampling was intended to identify those surfaces that contain normally detectible levels of lead in paint. No method of analysis or testing of paint can verify that there is no lead in paint. Such testing or analysis is always subject to a minimum detection limit that is greater than zero; therefore, it is not possible to determine that OSHA regulations will not apply based upon paint testing and/or analysis alone.

The lead containing paint inspection was not intended to and did not evaluate employee exposure to lead-based paints. For that, lead air monitoring is required. This report is not intended for guidance in complying with OSHA regulations or standards pertaining to lead in paint. It is not within the scope of this work to describe precautions, safeguards, and regulations relating to lead-containing paint. These services are available but were not included within the scope of work.

The procedures used for the limited lead sampling does not meet the HUD criteria for determination of lead-based paint in residential or child occupied facilities. Further, the inspection was not intended to and did not identify lead-based paint hazards. For that, a lead-based paint risk assessment is required. These services are available but were not included within the basic services for this project.

This report is not intended for use as a lead abatement specification. Prior to lead-containing paint abatement, S&ME recommends that an appropriately trained professional develop a scope of work for such activities.

This report has been prepared in accordance with generally accepted practice for specific application to this project. The conclusions and/or recommendations contained in this report are based on our understanding of the applicable standards at the time this report was prepared. No other warranty, express or implied, is made.

The findings of the asbestos and lead paint evaluation are based largely on visual observations within the amount of time available. The findings do not warrant that all asbestos-containing materials and lead based paint have been identified; asbestos-containing materials and lead based paint could be present in areas not readily accessible to observation. In addition, the actual locations and quantities of materials determined to

contain asbestos will vary from those herein. Apparent homogeneous sampling areas may vary in actual asbestos content due to previous demolitions, maintenance, or related operations.

If additional suspect materials are found, our firm should be notified so that our findings can be reviewed for modification or verification.

APPENDIX I

TABLE 1: ASBESTOS SAMPLE SUMMARY TABLE
TABLE 2: LEAD-BASED PAINT SAMPLE SUMMARY TABLE
REPRESENTATIVE PHOTOGRAPHS

Table 1: Asbestos Sample Summary Table

519 North Roane Street
Harriman, Tennessee
S&ME Project No. 4143-15-013
Collected on February 25, 2015

Sample #'s	Material Description	Friable/ Non-Friable	Sample Location and Approximate Total Quantity	Sample Results (% Asbestos)
519-001 A/B	Beige 12" x 12" Speckled Floor Tile with Black Mastic	Non-Friable	Basement at West Entrance/ NA	ND
519-002 A/B	Green 12" x 12" Speckled Floor Tile with Black Mastic	Non-Friable	Basement at West Entrance/ NA	ND
519-003 A/B	White 2' x 4' Wormhole Patterned Ceiling Tile	Friable	Basement at West Entrance/ NA	ND
519-004 A/B	Drywall, Tape, Joint Compound	Friable	Basement at West Entrance/ NA	ND
519-005 A/B	Yellow Carpet Mastic	Non-Friable	Lobby at Roane Street Entrance/ NA	ND
519-006 A/B	Beige 12" x 12" Floor Tile with Yellow Mastic	Non-Friable	Northwest Bathrooms/ NA	ND
519-007 A/B	White 2' x 4' Wormhole Patterned Ceiling Tile	Friable	Throughout Street Level/ NA	ND
519-008 A/B	White 1' x 2' Solid Patterned Ceiling Tile Nailed to Beams	Non-Friable	Throughout Street Level Above Sample 007/ NA	ND
519-009 A/B	Drywall, Tape, Joint Compound	Friable	Throughout Street Level/ NA	ND

ND-None Detected NA-Not Applicable Table Compiled By: Emily M. Buckingham Data QC By: Eric M. Solt

Table 1: Asbestos Sample Summary Table

523 North Roane Street
Harriman, Tennessee
S&ME Project No. 4143-15-013
Collected on February 25, 2015

Sample #'s	Material Description	Friable/ Non-Friable	Sample Location and Approximate Total Quantity	Sample Results (% Asbestos)
523-001 A/B	Honeycomb Paper Insulation Inside Air Chiller	Friable	Basement at East Entrance/ NA	ND
523-002 A/B	Green 9" x 9" Floor Tile with Yellow Mastic	Non-Friable	Roane Street Level, Middle of Room/ NA	ND
523-003 A/B	Beige 9" x 9" Floor Tile with Yellow Mastic	Non-Friable	Roane Street Level, Middle of Room/ 50 ft^2	Tile: ND Mastic: Trace <1% Chrysotile
523-004 A/B	White 2' x 4' Solid Patterned Ceiling Tile	Non-Friable	Roane Street Level, Throughout/ 3,500 ft^2	Tile: ND White Coating: Trace <1% Chrysotile
523-005 A/B	White and Blue Flower Patterned Linoleum with Paper Backing	Non-Friable	At Roane Street Level Entrance/ NA	ND
523-006 A/B	Parge Coating over Brick	Friable	Exterior Walls Street Level and Upper Floor/ NA	ND
523-007 A/B	**Green 9" x 9" Floor Tile with Black Mastic**	**Non-Friable**	**Throughout Upper Floor/ 3,500 ft^2**	**Tile: 3% Chrysotile Mastic: 3% Chrysotile**
523-008 A/B	**Beige 9" x 9" Floor Tile with Black Mastic**	**Non-Friable**	**Throughout Upper Floor/ 3,500 ft^2**	**Tile: 4% Chrysotile Mastic: 5% Chrysotile**
523-009 A/B	Brown Floral Patterned Linoleum with White Paper Backing	Non-Friable	Upper Floor Apartment 5 Bathroom/ NA	ND
523-010 A/B	Drywall, Tape, Joint Compound	Friable	Upper Floor Interior Walls/ 8,000 ft^2	Joint Compound: Trace <1% Chrysotile
523-011 A/B	**Hard, White, Window Glazing**	**Friable**	**Windows on Upper Floor/ 30 Windows**	**2% Chrysotile**

ND-None Detected NA-Not Applicable

Table Compiled By: Emily M. Buckingham

Data QC By: Eric M. Solt

Table 2: Paint Sample Summary Table

S&ME Project No. 4143-15-013
Samples Collected on February 25, 2015

Sample #	Paint Color	Current Condition	Painted Surface Location	Concentration Lead (% by weight)
519 North Roane Street				
519-001L	Red	Good	Exterior Walls	0.40
519-002L	White	Good	Rear/Northwest Section of Roane Street Level	0.019
519-003L	Orange	Good	Lobby and Rear/Northwest Section of Roane Street Level	0.012
519-004L	Purple	Good	Hallways of Roane Street Level	<0.0062
523 North Roane Street				
523-001L	Green	Good	Roane Street Level Stairwell	0.12
523-002L	White	Good	Throughout Upstairs	<0.0045

NA – Not Applicable

Tables Compiled By: Emily M. Buckingham

Data QC By: Eric M. Solt

Pre-Demolition Hazardous Materials Survey
519 and 523 North Roane Street
Harriman, TN
Project #: 4143-15-013

S&ME
1413 Topside Road
Louisville, TN 37777

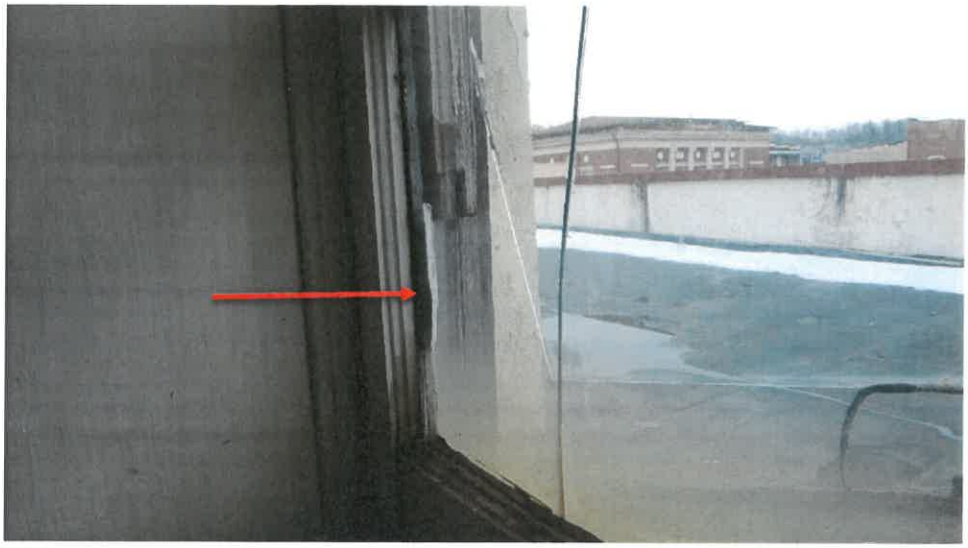
Photo 1

Date: 2/25/2015

Photographer: E. Buckingham

Location / Sample #	Building 523 Upper Floor/ 523-007 and 523-008
Remarks	Green and Beige 9" x 9" Floor Tile with Black Mastic Green Tile: 3% Chrysotile; Mastic: 3% Chrysotile Beige Tile: 4% Chrysotile; Mastic: 5% Chrysotile

Photo 2



Date: 2/25/2015

Photographer: E. Buckingham

Location / Sample #	Building 523 Upper Floor/ 523-011
Remarks	Hard, White Window Glazing, 2% Chrysotile

S&ME
1413 Topside Road
Louisville, TN 37777

Photo 3

Date: 2/25/2015

Photographer: E. Buckingham

Location / Sample #	Building 523 Roane Street Level, Middle of Room / 523-003
Remarks	Yellow Mastic of Beige 9" x 9" Floor Tile, Trace <1% Chrysotile

Photo 4

Date: 2/25/2015

Photographer: E. Buckingham

Location / Sample #	Building 523 Roane Street Level/ 523-004
Remarks	White Coating on Solid 2' x 4' Ceiling Tile, Trace <1% Chrysotile

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1413 Topside Road
Louisville, TN 37777

Photo 5

Date: 2/25/2015

Photographer: E. Buckingham

Location / Sample #	Building 523 Upper Floor/ 523-010
Remarks	Joint Compound in Drywall, Trace <1% Chrysotile

Photo 6

Date: 2/25/2015

Photographer: E. Buckingham

Location	Building 519 Basement
Remarks	MagneTek Light Ballasts, No PCBs

S&ME
1413 Topside Road
Louisville, TN 37777

Photo 7

Date: 2/25/2015

Photographer: E. Buckingham

Location	Throughout Buildings
Remarks	Equipment with compressors containing Freon. HVAC units, refrigerators, and water fountains.

Photo 8

Date: 2/25/2015

Photographer: E. Buckingham

Location	Throughout Buildings
Remarks	Batteries present in emergency lighting and emergency "EXIT" signs

S&ME
1413 Topside Road
Louisville, TN 37777

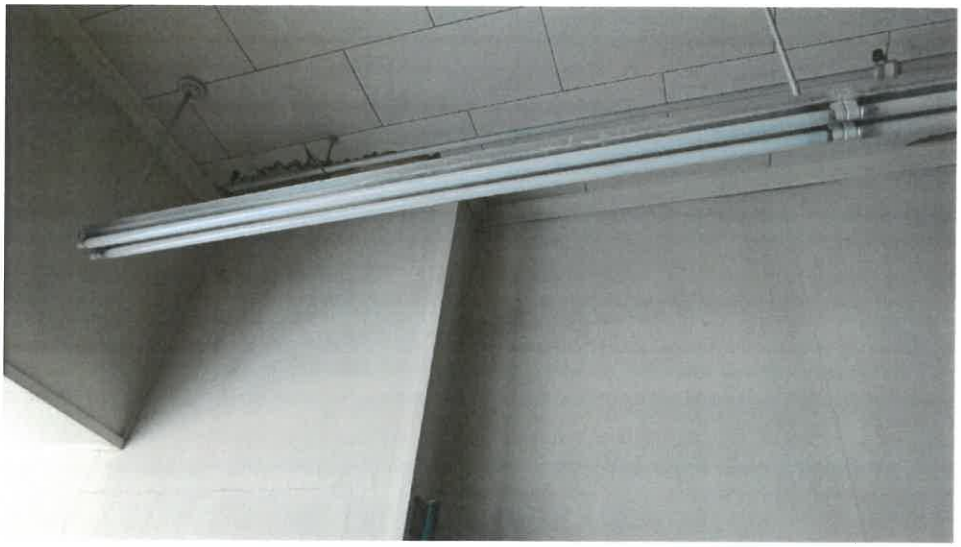
Photo 9

Date: 2/25/2015

Photographer E. Buckingham

Location	Basement and Street Level of Building 519
Remarks	Mercury bulb switches in thermostats

Photo 10



Date: 2/25/2015

Photographer: E. Buckingham

Location	Throughout Buildings
Remarks	Fluorescent light bulbs with no green aluminum end caps

S&ME
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Louisville, TN 37777

Photo 11

Date: 2/25/2015

Photographer: E. Buckingham

Location	Building 523, Upper Floor, Apartment 1
Remarks	Evidence of past animal activity

Photo 12

Date: 2/25/2015

Photographer: E. Buckingham

Location	Basement of Building 519 and Throughout Buildings
Remarks	Mold on drywall

S&ME
1413 Topside Road
Louisville, TN 37777

Photo 13

Date: 2/25/2015

Photographer E. Buckingham

Location	Basement of Building 519
Remarks	Computer monitors containing cathode ray tubes

Photo 14

Date: 2/25/2015

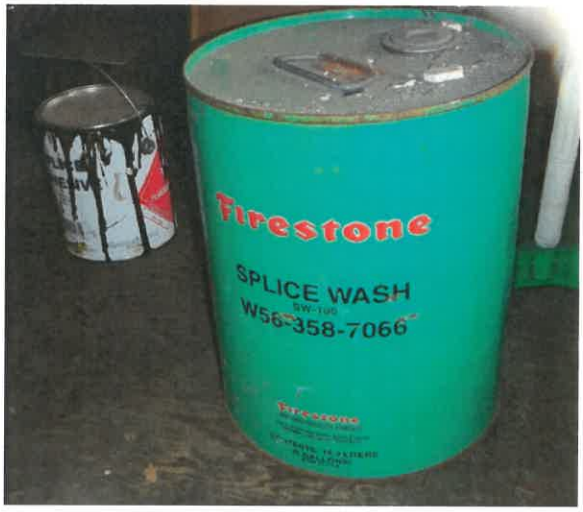
Photographer E. Buckingham

Location	Basement of Building 519 and Upper Floor Apt. 3 of Building 523
Remarks	Paint cans

Pre-Demolition Hazardous Materials Survey
519 and 523 North Roane Street
Harriman, TN
Project #: 4143-15-013
Sheet 8 of 8

S&ME
1413 Topside Road
Louisville, TN 37777

Photo 15



Date: 2/25/2015

Photographer: E. Buckingham

Location	Building 523, Roane Street Level
Remarks	Naphtha and pesticides

APPENDIX II

LABORATORY ANALYTICAL RESULTS

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-02-02974

Client: S&ME Inc. - Louisville
1413 Topside Road
Louisville, TN 37777

Received Date: 02/27/2015
Analyzed Date: 02/27/2015, 03/02/2015
Reported Date: 03/03/2015

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Client Number: 44-3087

Fax Number: 865-970-2312

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-001A	519-001A	Tile	Beige Granular; Homogeneous	NAD	100% Non-Fibrous
15-02-02974-001B	519-001A	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-002A	519-001B	Tile	White Granular; Homogeneous	NAD	100% Non-Fibrous
15-02-02974-002B	519-001B	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-003A	519-002A	Tile	Green Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-003B	519-002A	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-004A	519-002B	Tile	Green Granular; Homogeneous	NAD	100% Non-Fibrous
15-02-02974-004B	519-002B	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-005	519-003A		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous
15-02-02974-006	519-003B		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous
15-02-02974-007	519-004A		White Chalky; Brown Fibrous; White Granular; White Paint-Like; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
15-02-02974-008	519-004B		White Chalky; Brown Fibrous; White Granular; White Paint-Like; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-009	519-005A		Brown Adhesive; Homogeneous	NAD	2% Cellulose 3% Hair 95% Non-Fibrous
15-02-02974-010	519-005B		Brown Adhesive; Homogeneous	NAD	2% Cellulose 3% Hair 95% Non-Fibrous
15-02-02974-011A	519-006A	Tile	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-02-02974-011B	519-006A	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-012A	519-006B	Tile	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-02-02974-012B	519-006B	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-013	519-007A		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-014	519-007B		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous
15-02-02974-015	519-008A		Brown Fibrous; White Paint-Like; Inhomogeneous	NAD	90% Cellulose 10% Non-Fibrous
15-02-02974-016	519-008B		Brown Fibrous; White Paint-Like; Inhomogeneous	NAD	90% Cellulose 10% Non-Fibrous
15-02-02974-017	519-009A		White Chalky; Brown Fibrous; White Granular; Beige Paint-Like; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
15-02-02974-018	519-009B		White Chalky; Brown Fibrous; White Granular; Beige Paint-Like; Inhomogeneous	NAD	15% Cellulose 85% Non-Fibrous
15-02-02974-019	523-001A		Brown Fibrous; Black Brittle; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
15-02-02974-020	523-001A		Brown Fibrous; Black Brittle; Inhomogeneous	NAD	85% Cellulose 15% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-021A	523-002A	Tile	Green Vinyl; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-021B	523-002A	Mastic	Yellow/Black Adhesive; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-022A	523-002B	Tile	Green Vinyl; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-022B	523-002B	Mastic	Yellow/Black Adhesive; Inhomogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-02-02974-023A	523-003A	Tile	Brown Vinyl; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-023B	523-003A	Mastic	Yellow/Black Adhesive; Inhomogeneous	Trace <1% Chrysotile	1% Cellulose 99% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
Very small amount of black mastic present. Unable to separate the two mastics.					
15-02-02974-024A	523-003B	Tile	Brown Vinyl; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-024B	523-003B	Mastic	Yellow/Black Adhesive; Inhomogeneous	Trace <1% Chrysotile	1% Cellulose 99% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
Very small amount of black mastic present. Unable to separate the two mastics.					

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-025	523-004A		Brown Fibrous; White Paint-Like; Inhomogeneous	Trace <1% Chrysotile	98% Cellulose 2% Non-Fibrous
				Total Asbestos: Trace <1%	
Chrysotile present in paint-like material. This material alone contains <1% Chrysotile					
15-02-02974-026	523-004B		Brown Fibrous; White Paint-Like; Inhomogeneous	Trace <1% Chrysotile	98% Cellulose 2% Non-Fibrous
				Total Asbestos: Trace <1%	
Chrysotile present in paint-like material. This material alone contains <1% Chrysotile					
15-02-02974-027	523-005A		Brown Vinyl; White Fibrous; Inhomogeneous	NAD	30% Cellulose 2% Fibrous Glass 68% Non-Fibrous
15-02-02974-028	523-005B		Brown Vinyl; White Fibrous; Inhomogeneous	NAD	25% Cellulose 2% Fibrous Glass 73% Non-Fibrous
15-02-02974-029	532-006A		White/Beige Granular; Inhomogeneous	NAD	4% Cellulose 1% Hair 95% Non-Fibrous
15-02-02974-030	523-006B		White/Beige Granular; Inhomogeneous	NAD	4% Cellulose 1% Hair 95% Non-Fibrous
15-02-02974-031A	523-007A	Tile	Green Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
				Total Asbestos: 3%	

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-031B	523-007A	Mastic	Black Adhesive; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
15-02-02974-032A	523-007B	Tile		Did Not Analyze (Positive Stop)	
15-02-02974-032B	523-007B	Mastic		Did Not Analyze (Positive Stop)	
15-02-02974-033A	523-008A	Tile	Gray Vinyl; Homogeneous	4% Chrysotile	96% Non-Fibrous
			Total Asbestos:	**4%**	
15-02-02974-033B	523-008A	Mastic	Black Adhesive; Homogeneous	5% Chrysotile	95% Non-Fibrous
			Total Asbestos:	**5%**	
15-02-02974-034A	523-008B	Tile		Did Not Analyze (Positive Stop)	
15-02-02974-034B	523-008B	Mastic		Did Not Analyze (Positive Stop)	
15-02-02974-035A	523-009A	Linoleum	Brown Vinyl; Tan Fibrous; Inhomogeneous	NAD	15% Cellulose 10% Fibrous Glass 75% Non-Fibrous
15-02-02974-035B	523-009A	Mastic	Brown Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-035C	523-009A	Linoleum	Brown/Green Vinyl; Brown Fibrous; Inhomogeneous	NAD	55% Cellulose 15% Synthetic 30% Non-Fibrous
15-02-02974-035D	523-009A	Mastic	Brown Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-036A	523-009B	Linoleum	Brown Vinyl; Tan Fibrous; Inhomogeneous	NAD	15% Cellulose 10% Fibrous Glass 75% Non-Fibrous
15-02-02974-036B	523-009B	Mastic	Brown Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-02-02974-036C	523-009B	Linoleum	Brown/Green Vinyl; Brown Fibrous; Inhomogeneous	NAD	55% Cellulose 10% Synthetic 35% Non-Fibrous
15-02-02974-036D	523-009B	Mastic	Brown Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-02-02974-037	523-010A		White Chalky; Brown Fibrous; Inhomogeneous	Trace <1% Chrysotile	10% Cellulose 90% Non-Fibrous
				Total Asbestos: Trace <1%	
Chrysotile present in joint compound material. This material alone contains <1% Chrysotile					
15-02-02974-038	523-010B		White Chalky; Brown Fibrous; Inhomogeneous	Trace <1% Chrysotile	10% Cellulose 90% Non-Fibrous
				Total Asbestos: Trace <1%	
Chrysotile present in joint compound material. This material alone contains <1% Chrysotile					

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-02974

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-02-02974-039	523-011A		Tan Granular; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-02-02974-040	523-011B			Did Not Analyze (Positive Stop)	

QC Sample: 74-M22011-2, 76-M22013-1

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Timothy Harris, Kathy Fletcher

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

40 PLM

Asbestos Chain-of-Custody

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Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

15-02-02974

Due Date:
03/04/2015
(Wednesday)
AE M Inv

Company Name: S&ME, Inc. Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emily Buckingham Purchase Order Number: 4143-15-013

Turn Around Times : *If no TAT is specified, sample(s) will be processed and charged as 3-day TAT.*

_____ 1 - Day _____ 2 - Day ✓ 3 - Day _____ Same Day (Must Call Ahead) _____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	ASBESTOS							AIR					COMMENTS
			PLM	PLM Point Count 400	PLM Point Count 1000	PLM NY Protocol	PCM	TEM Chatfield (Bulk)	TEM AHERA (Air)	Time On	Time Off	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	519-001A	2/25/15	✓												Positive Stop
2	519-001B	2/25/15	✓												
3	519-002A	2/25/15	✓												Positive Stop
4	519-002B	2/25/15	✓												
5	519-003A	2/25/15	✓												Positive Stop
6	519-003B	2/25/15	✓												
7	519-004A	2/25/15	✓												Positive Stop
8	519-004B	2/25/15	✓												
9	519-005A	2/25/15	✓												Positive Stop
10	519-005B	2/25/15	✓												

Released by: Timothy S. Schalk Signature: Timothy S. Schalk Date/Time: 2/26/15 16:00

Received by: TStone Signature: TStone Date/Time: 2/27/15

EHS Laboratories™

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

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Richmond, VA
23237

Asbestos Chain-of-Custody

2974

~ For Lab Use Only ~

Company Name: S&ME, Inc. Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emily Buckingham Purchase Order Number: 4143-15-013

Turn Around Times : *If no TAT is specified, sample(s) will be processed and charged as 3-day TAT.*

_____ 1 - Day _____ 2 - Day ✓ 3 - Day _____ Same Day (Must Call Ahead) _____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	ASBESTOS							AIR					COMMENTS
			PLM	PLM Point Count 400	PLM Point Count 1000	PLM NY Protocol	PCM	TEM Chatfield (Bulk)	TEM AHERA (Air)	Time On	Time Off	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	519-006A	2/25/15	✓												Positive Stop
2	519-006B	2/25/15	✓												
3	519-007A	2/25/15	✓												Positive Stop
4	519-007B	2/25/15	✓												
5	519-008A	2/25/15	✓												Positive Stop
6	519-008B	2/25/15	✓												
7	519-009A	2/25/15	✓												Positive Stop
8	519-009B	2/25/15	✓												
9	523-001A	2/25/15	✓												Positive Stop ☆ Received two
☆ 10	523-001B	2/25/15	✓												☆ I did not receive sample labeled 523-001B. Samples labeled 523-001A.

Released by: Timothy S. Schalk Signature: Timothy S. Schalk Date/Time: 2/26/15 16:00

Received by: TStone Signature: TStone Date/Time: 2/27/15

TAT 2/27/15

EHS Laboratories™

Environmental Hazards Services, LLC

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(800)347-4010
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23237

Asbestos Chain-of-Custody

2974

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Company Name: S&ME, Inc. Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emily Buckingham Purchase Order Number: 4143-15-013

Turn Around Times : *If no TAT is specified, sample(s) will be processed and charged as 3-day TAT.*

_____ 1 - Day _____ 2 - Day ✓ 3 - Day _____ Same Day (Must Call Ahead) _____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	ASBESTOS							AIR					COMMENTS
			PLM	PLM Point Count 400	PLM Point Count 1000	PLM NY Protocol	PCM	TEM Chatfield (Bulk)	TEM AHERA (Air)	Time On	Time Off	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	523-002A	2/25/15	✓												Positive Stop
2	523-002B	2/25/15	✓												
3	523-003A	2/25/15	✓												Positive Stop
4	523-003B	2/25/15	✓												
5	523-004A	2/25/15	✓												Positive Stop
6	523-004B	2/25/15	✓												
7	523-005A	2/25/15	✓												Positive Stop
8	523-005B	2/25/15	✓												
9	523-006A	2/25/15	✓												Positive Stop
10	523-006B	2/25/15	✓												

Released by: Timothy S. Schalk Signature: Timothy S. Schalk Date/Time: 2/26/15 16:00

Received by: TStone Signature: TStone Date/Time: 2/27/15

EHS Laboratories™

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
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7469 Whitepine Rd
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23237

Asbestos Chain-of-Custody

2974

~ For Lab Use Only ~

Company Name: S&ME, Inc. Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emily Buckingham Purchase Order Number: 4143-15-013

Turn Around Times : *If no TAT is specified, sample(s) will be processed and charged as 3-day TAT.*

_____ 1 - Day _____ 2 - Day ✓ 3 - Day _____ Same Day (Must Call Ahead) _____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	ASBESTOS							AIR					COMMENTS
			PLM	PLM Point Count 400	PLM Point Count 1000	PLM NY Protocol	PCM	TEM Chatfield (Bulk)	TEM AHERA (Air)	Time On	Time Off	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	523-007A	2/25/15	✓												Positive Stop
2	523-007B	2/25/15	✓												
3	523-008A	2/25/15	✓												Positive Stop
4	523-008B	2/25/15	✓												
5	523-009A	2/25/15	✓												Positive Stop
6	523-009B	2/25/15	✓												
7	523-010A	2/25/15	✓												Positive Stop
8	523-010B	2/25/15	✓												
9	523-011A	2/25/15	✓												Positive Stop
10	523-011B	2/25/15	✓												

Released by: Timothy S. Schalk Signature: Timothy S. Schalk Date/Time: 2/26/15 16:00

Received by: TStone Signature: TStone Date/Time: 2/27/15

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 15-02-03001

Client: S&ME Inc. - Louisville
1413 Topside Road
Louisville, TN 37777

Received Date: 02/27/2015
Analyzed Date: 03/04/2015
Reported Date: 03/04/2015

Project/Test Address: 519 & 523 Roane Street; Harriman, TN
Collection Date: 02/25/2015

Client Number: 44-3087

Fax Number: 865-970-2312

Laboratory Results

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
15-02-03001-001	523-001L	1	1200	0.12	
15-02-03001-002	523-002L	2	<45	<0.0045	

Method: EPA SW846 7000B

Reviewed By Authorized Signatory: Deborah Britt

Deborah Britt
QA/QC Clerk

The HUD lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limit (RL) is 10.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm3 are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

Lead Chain-of-Custody

EHS Laboratories™

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

15-02-03001

Due Date:
03/04/2015
(Wednesday)
CW AE M Inv

Company Name: S&ME, Inc Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emmily Buckingham Certification Number: Purchase Order Number: 4143-15-013

* Do wipe samples submitted meet ASTM E1792 requirements? Yes ☐ No ☐

Turn Around Time (TAT)
☐ 1-Day ☑ 3-Day
☐ Same Day (Must Call Ahead)
☐ Weekend (Must Call Ahead)
If no TAT is specified, sample(s) will be processed and charged as 3-Day TAT.

Sample Type
Single Dust Wipe = DW Soil = S
Paint Chip = PC Air = A
Composite Soil = CS

Abbreviations

FR	= Family Room	F	= Front	0	= Basement
LR	= Living Room	R	= Rear	KT	= Kitchen
DN	= Den	LT	= Left	BA	= Bath
DR	= Dining Room	RT	= Right	BR	= Bedroom
1	= 1st Fl	2	= 2nd Fl		

Surface Type for Dust Wipe
FL = Floor
CP = Carpet
SL = Window Sill
WW = Window Well

No.	Sample Type	Date Collected	Client Sample ID	Collection Location (LR, KT, LTFBR, RTRBR, etc.)	Surface Type	Area: Length X Width in inches (Provide paint chip area only if requesting mg/cm2)	Paint Chip: mg/cm²	Paint Chip: PPM	Paint Chip: %	Air: Flow Rate (L/min)	Air: Total Time (minutes)	Air: Volume (Total Liters)	Comments
1	PC	2/25/15	523-001L	1		X			X				
2	PC	2/25/15	523-002L	2		X			X				
3						X							
4						X							
5						X							
6						X							
7						X							
8						X							
9						X							
10						X							

1
2
12

Released by: Timothy S. Schalk	Signature: Timothy S. Schalk	Date/Time: 2/26/15 16:00	
Received by: TStone	Signature: TStone	Date/Time: 2/27/15	

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 15-02-03002

Client: S&ME Inc. - Louisville
1413 Topside Road
Louisville, TN 37777

Received Date: 02/27/2015
Analyzed Date: 03/04/2015
Reported Date: 03/04/2015

Project/Test Address: 519 & 523 Roane Street; Harriman, TN
Collection Date: 02/25/2015

Client Number: 44-3087

Fax Number: 865-970-2312

Laboratory Results

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
15-02-03002-001	519-001L	E	4000	0.40	
15-02-03002-002	519-002L	1	190	0.019	
15-02-03002-003	519-003L	1	120	0.012	
15-02-03002-004	519-004L	1	<62	<0.0062	

Environmental Hazards Services, L.L.C

Client Number: 44-3087 **Report Number:** 15-02-03002

Project/Test Address: 519 & 523 Roane Street; Harriman, TN

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID

Method: EPA SW846 7000B

Reviewed By Authorized Signatory: Deborah Britt

Deborah Britt
QA/QC Clerk

The HUD lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limit (RL) is 10.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm3 are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

Lead Chain-of-Custody

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Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

15-02-03002

Due Date:
03/04/2015
(Wednesday)
AE M Inv

Company Name: S&ME, Inc Address: 1413 Topside Road City/State/Zip: Louisville, TN 37777

Phone: (865) 970-0003 Fax: (865) 970-2312 E-mail: tschalk@smeinc.com Acct. Number: 44-3087A

Project Name / Testing Address: 519 & 523 Roane Street City/State (Required): Harriman, TN

Collected by: Timothy S. Schalk/Emmily Buckingham Certification Number: Purchase Order Number: 4143-15-013

* Do wipe samples submitted meet ASTM E1792 requirements? Yes ☐ No ☐

Turn Around Time (TAT)
☐ 1-Day ☑ 3-Day
☐ Same Day (Must Call Ahead)
☐ Weekend (Must Call Ahead)
If no TAT is specified, sample(s) will be processed and charged as 3-Day TAT.

Sample Type
Single Dust Wipe = DW Soil = S
Paint Chip = PC Air = A
Composite Soil = CS

Abbreviations
FR = Family Room F = Front 0 = Basement
LR = Living Room R = Rear KT = Kitchen
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DR = Dining Room RT = Right BR = Bedroom
1 = 1st Fl 2 = 2nd Fl

Surface Type for Dust Wipe
FL = Floor
CP = Carpet
SL = Window Sill
WW = Window Well

No.	Sample Type	Date Collected	Client Sample ID	Collection Location (LR, KT, LTFBR, RTRBR, etc.)	Surface Type	Area: Length X Width in inches (Provide paint chip area only if requesting mg/cm2)	Paint Chip: mg/cm²	Paint Chip: PPM	Paint Chip: %	Air: Flow Rate (L/ min)	Air: Total Time (minutes)	Air: Volume (Total Liters)	Comments
1	PC	2/25/15	519-001L	E		X			X				
2	PC	2/25/15	519-002L	1		X			X				
3	PC	2/25/15	519-003L	1		X			X				
4	PC	2/25/15	519-004L	1		X			X				
5						X							
6						X							
7						X							
8						X							
9						X							
10						X							

Released by: Timothy S. Schalk Signature: Timothy S. Schalk Date/Time: 2/26/15 16:00

Received by: TStone Signature: TStone Date/Time: 2/27/15

ATTACHMENT 4:

Report of Initial Site Assessment of Structural Integrity, Donan Engineering Co., Inc., January 13, 2015

City of Harriman

Certified Mail # 7009 1410 0002 3374 1992

January 16, 2015

RECEIVED
JAN 22 2015
BY:_____

Fikret Gencay
4909 Tazwell Pike
Knoxville, TN 37918

Dear Mr. Gencay,

I have recently met with Randall Harrison of the Tennessee Department of Environment and Conservation and with a representative of Waste Management who operates the nearest Class I landfill to your property that recently burned. Both have indicated that while there is no confirmation that asbestos material is present onsite, the debris should be treated as if it were present.

Therefore, the material must be kept wet while it is being moved. Additionally, in its current condition the landfill can accept it as standard waste. If it is allowed to dry, it will then have to be treated as material with asbestos present, unless it can be tested and proved to have no asbestos content. The landfill tipping fees for the asbestos type material are more than double that of standard material. Therefore, it is to your benefit to move this while it is wet. Finally this also limits your liability to potential health claims from those who come in contact with the dried material, which could become airborne and leave the site.

Please contact me as soon as possible to inform me of when and how you would like to take over this cleanup effort. In the event that you do not contact me, the City may continue the cleanup effort and if this is the case you will be responsible for the costs. You will also need to provide me with billing information for the costs incurred to date.

A copy of the structural engineer's report regarding the condition of the adjoining building has been enclosed with this letter for your review. Your attention to this situation is also required.

Sincerely,

Kevin L. Helms
City Manager

Cc. Ron Woody, County Executive

609 N. Roane Street Harriman, TN 37748 PH: 865-882-9414 FAX: 865-882-7031 P.O. Box 433 Harriman, TN 37748

John G. Donan, Jr., P.E.
Chairman of the Board

J. Lyle Donan, P.E.
President, CEO

DONAN®

CORRESPOND TO:
Donan Engineering Co., Inc.
11321 Plantside Drive
Louisville, Kentucky 40299
800-482-5611
502-267-6976 fax

January 13, 2015

Ms. Maria Nelson
The City of Harriman
Attn: Kevin Helms
P.O. Box 433
Harriman, Tennessee 37748

RE: **The City of Harriman**
529 North Roane Street
Harriman, Tennessee 37748
Claim Number: N/A
Donan Project Number: 12-15010008-0

Dear Mrs. Nelson:

At your request, on January 9, 2015, a study was made on the building at the above-referenced address. The purpose of the study was to provide an initial site assessment of the structural integrity of the adjacent buildings following a structure fire of the subject property. Ms. Maria Nelson, the building official; and Mr. Kevin Helms, city manager, were present to point out areas of concern, provide firsthand information, and to provide access to the buildings. This letter, with the attached photographs, is the report of my findings and conclusions.

Description of Property

For purposes of this report, the subject property is considered to face east toward North Roane Street (Photographs 1 through 5). The building is a three-story, multi-wythe brick structure over a multi-wythe brick foundation and a basement along the rear. The exterior walls are exposed brick. The building was constructed in about 1900, and Mr. Gencay Fikret has owned the building approximately 11 years. Two buildings are attached to the subject property that are also owned by Mr. Fikret. The building connected to the south wall of 529 is 523, which is a two-story building with multi-wythe brick walls; and the south-end

building is 519, which is a single-story building with brick and concrete masonry unit walls.

Background

WBIR Channel 10 News reported that on Thursday, January 9, 2015, a fire broke out in the building around lunchtime. It was reported that the responding firefighters were aware that the buildings were vacant and doused it with water until it collapsed. Upon arrival to perform this study, the fire was still burning, and a large track hoe was in the process of demolishing the remaining portion of the subject property. Ms. Nelson and Mr. Helms reported that bricks and glass have fallen from the adjacent buildings for several years, and they are concerned about public safety due to the poor condition of these buildings.

Observations

The bricks are spalled on all sides of the three buildings, most severely along the west elevation where the gutters are damaged (Photograph 6). Some bricks have completely fallen out from the wall, and whole portions of walls are separating from the building (Photograph 7). The top edge of the southwest corner of building 523 is leaning outward to the west (Photograph 8). The south wall of building 523 has cracked parge coating that is separating from the brick (Photograph 9). Some bricks are spalled on the east elevation as well. Soot stains are present on the bricks on the east elevation between buildings 529 and 523 (Photographs 10 and 11).

The first floor of building 523 is filled with boxes and random items. Large areas of ice are present on the floor where water has penetrated the ceiling (Photograph 12). Soot stains are present along the north wall (Photograph 13). The north wall of the second floor has a plaster parge coat over the brick wall. The parge coating is cracked, and soot emanates from the cracks (Photographs 14 through 16). The ceilings are typically wet or frozen and have damaged or missing ceiling finishes and saturated insulation (Photograph 17). Water and ice are also covering several floors, many of which are warped and deteriorated (Photograph 18). One room at the northwest corner of the building has a water-saturated frozen floor with a large hole in it (Photograph 19). The ceiling above the damaged floor is missing drywall, and the insulation is wet and frozen (Photograph 20). At the rear exit stairwell, the ceiling finish has fallen, icicles are extending down from the insulation, and ice has bound the attic access hatch (Photograph 21). An elevator shaft was discovered behind an interior door on the second floor. The wood framing is burned away or charred at the floor and

beneath the concrete lintels (Photographs 22 and 23). Between the concrete lintels, the exposed mortar is cracked (Photograph 24). Looking out to the west from the burnt elevator shaft, the north wall of the building contains charred and cracked brick and mortar (Photograph 25).

Building 519 was not entered for inspection, as it would not have been affected by the fire or fire suppression efforts. Although this building is not considered to be part of the fire damage, the rear door was noted to be displaced from the frame, and the building appeared to be in a similar condition to the connected buildings (Photograph 26).

Analysis and Conclusions

As previously reported by Mr. Helms, glass and brick have been falling from these buildings for several years. The deterioration of the roof and floor structures place these buildings at an increased risk of collapse. The potential of collapse exists from additional loading due to ice and snow accumulation on structural framing with reduced capacity. Collapse of the roof could result in a progressive failure collapse of the remaining floors. As the exterior walls are unreinforced multi-wythe brick, the only lateral stability is provided by the interior floor structure. Progressive failure collapse of the floors could result in failure of the exterior walls, which could impose a significant risk to public safety and nearby structures.

Fire damage to concrete or masonry generally occurs as a result of rapid differential thermal expansion of the concrete, also known as "thermal shock." Fire can cause rapid heating of the exterior surface of the concrete or masonry, which causes it to expand. Since the interior of the concrete is heated at a slower rate, this creates differential expansion of the concrete, which causes internal stress to develop in the concrete. If the stress is significant enough, damage can occur to the concrete. Conversely, a concrete surface that has been heated significantly by fire can also experience thermal shock damage from rapid cooling associated with fire suppression activities. Such damage can manifest as cracks or spalled areas of the concrete or masonry surface.

The cracked plaster parge coat on the interior of the north wall of building 523 is consistent with thermal shock from fire damage. The thermal shock is considered to be a reduction in load-bearing capacity of the brick wall. Had the remainder of the building components been in fair condition or better, structural repair may have been a viable option; however, due to the significant damage from long-term water intrusion to the ceiling and floor structure as well as the spalled

brick walls, it is recommended that building 523 should be razed. Although building 519 was not affected by the fire or fire suppression activities, it is recommended that this building also be razed, as it is in a deteriorated condition and shares a wall with building 523, which is recommended for demolition.

Due to the risk of falling debris, it is recommended that the two closest lanes to the building be closed until the buildings are razed or structurally repaired.

Summary of Conclusions

In summary, based on what is known at this time, I am of the opinion that:

- The north wall of building 523 has been damaged by thermal shock of the fire and fire suppression.
- The roof and floor structures of building 523 are compromised by long-term water intrusion.
- Due to long-term water-related deterioration of the roof and floor structure, the potential of collapse exists from additional loading with ice and snow.
- Collapse of the roof and top floor could result in a progressive collapse and failure of the exterior walls, which could impose a significant risk to public safety and nearby structures.
- Due to the presence of significant deterioration of the roof and floor structure, structural repair is not considered to be a viable option. It is recommended that this building be razed.
- Although building 519 was not affected by the fire or fire suppression activities, it is recommended that this building also be razed, as it is in a deteriorated condition and shares a wall with building 523.
- Due to concerns of public safety, the two lanes closest to the building should be closed until the buildings are demolished or structurally repaired.

This report is based on presently known and available facts, data, and information. To the extent that additional or different facts, data, or information is developed or discovered after the issuance of this report, Donan reserves the right

to amend, alter, or change the report as needed to reflect consideration of the additional or different facts, data, or information.

We appreciate your confidence in our professional services.

Sincerely,

DONAN ENGINEERING CO., INC.

Michael E. Nocton, P.E.
Forensic Engineer I
Tennessee PE: 110837
Expires: June 30, 2015

Attachment

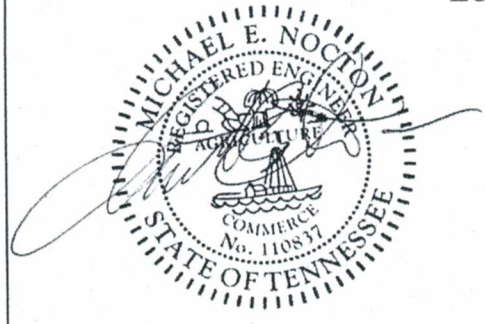
DONAN®

PREPARED FOR:

MRS. MARIA NELSON
THE CITY OF HARRIMAN
ATTN: KEVIN HELMS
P.O. BOX 433
HARRIMAN, TENNESSEE 37748

THE CITY OF HARRIMAN
529 NORTH ROANE STREET
HARRIMAN, TENNESSEE 37748
CLAIM NUMBER: N/A
DONAN PROJECT NUMBER: 12-15010008-0

PREPARED BY:
DONAN ENGINEERING CO., INC.
11321 PLANTSIDE DRIVE
LOUISVILLE, KENTUCKY 40299
800-482-5611



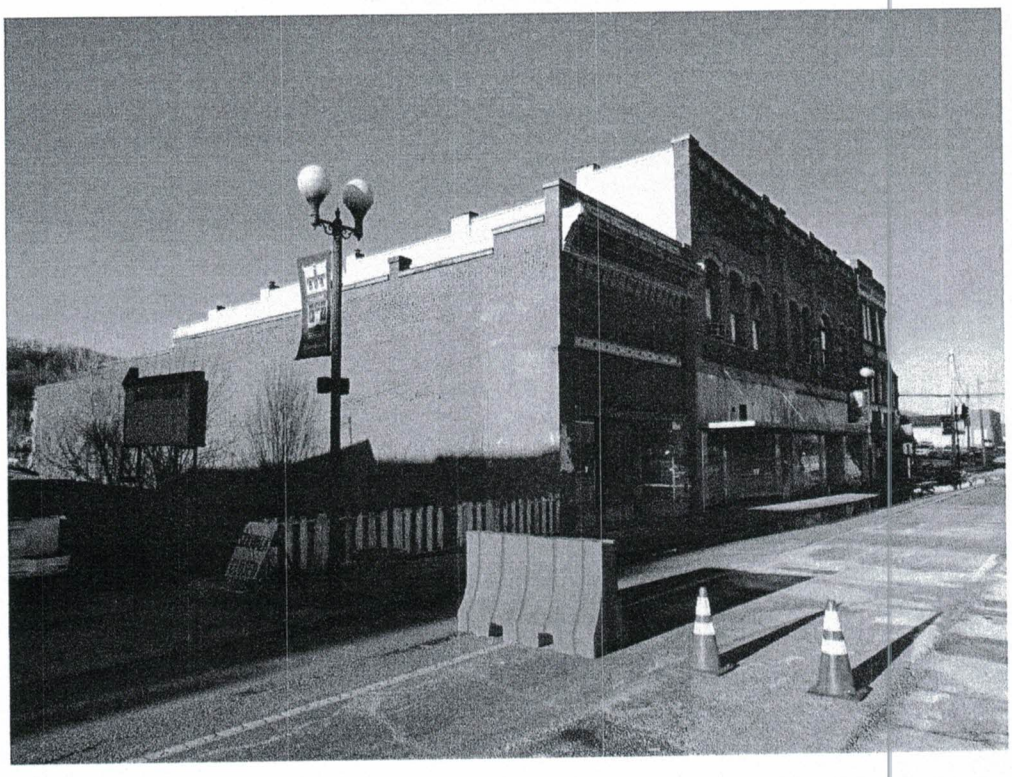
MICHAEL E. NOCTON, P.E.
FORENSIC ENGINEER I
TENNESSEE PE: 110837
EXPIRES: JUNE 30, 2015

Signed by: Michael Nocton
Date: 2015.01.13 15:37:46 --5

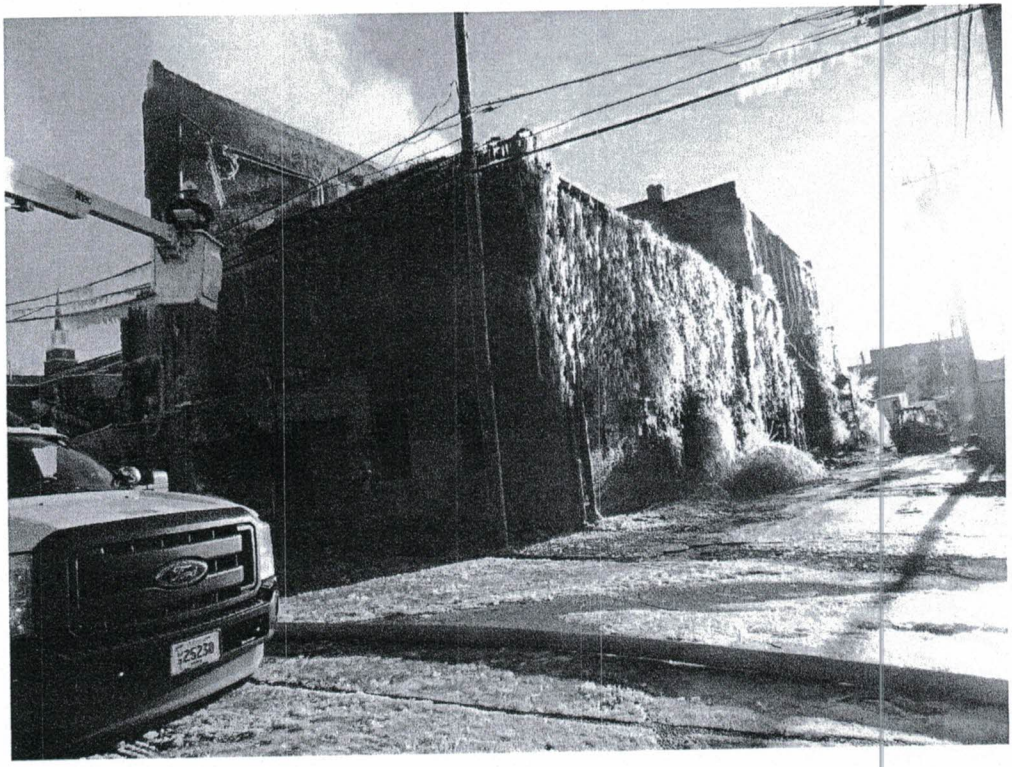
JANUARY 13, 2015

Photograph 1: The northeast corner building has burned and collapsed.

Photograph 2: Remaining portion of the building at 529 North Roane Street.



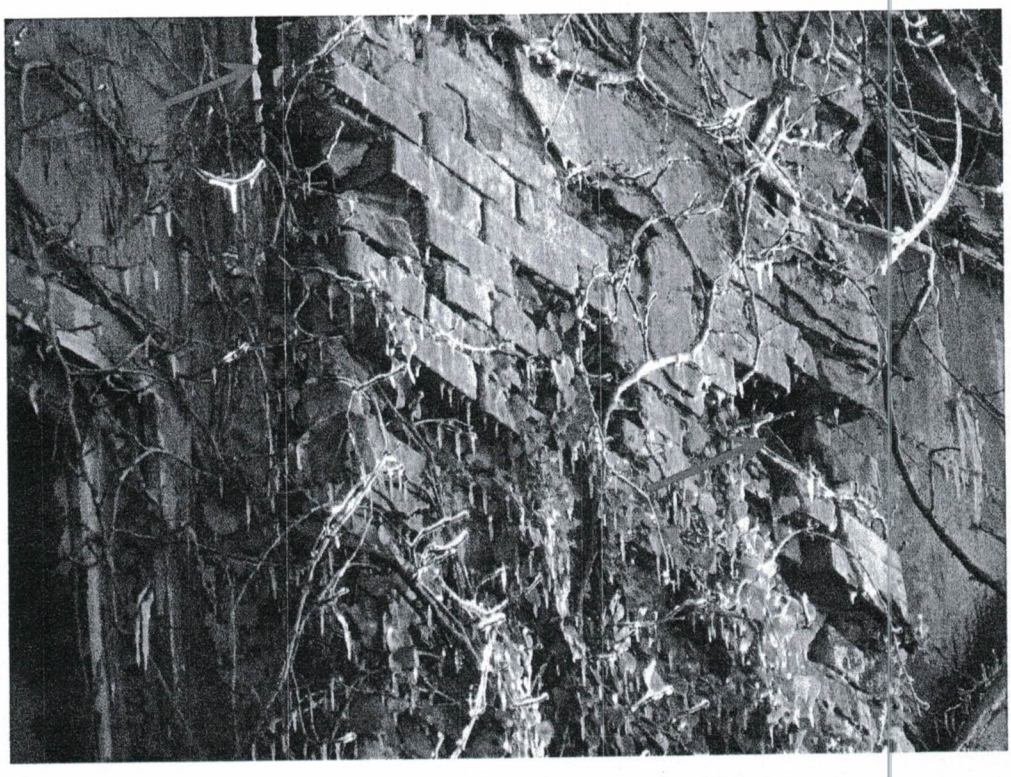
Photograph 3: Southeast corner of the connected buildings.



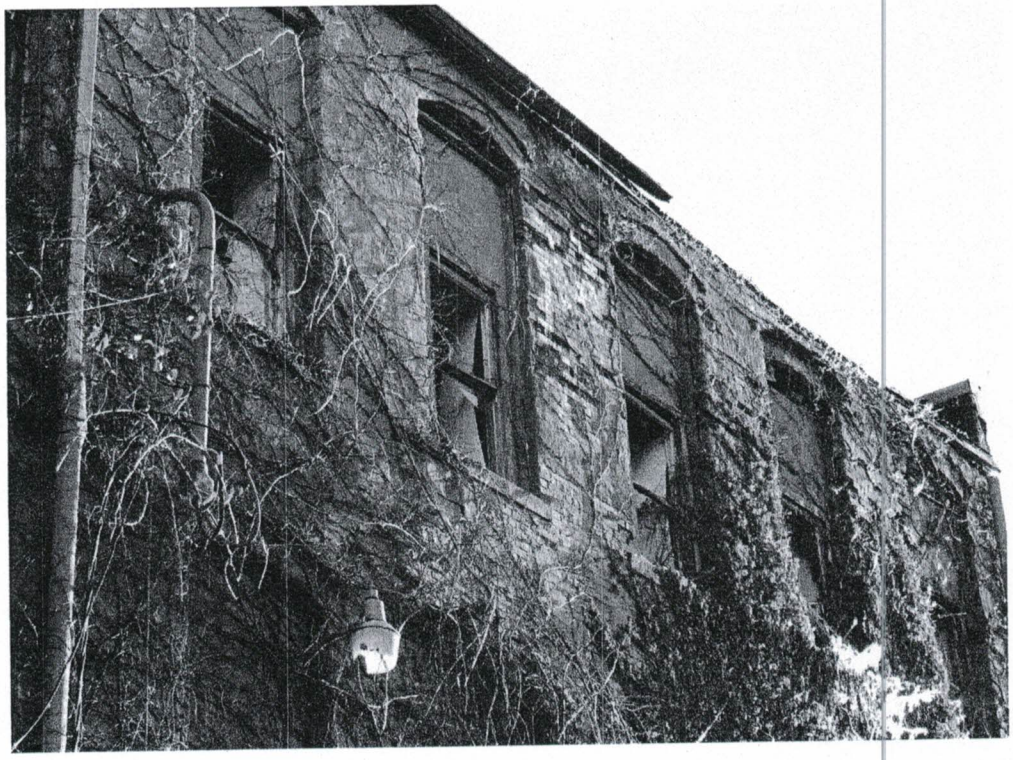
Photograph 4: Northwest corner of the buildings.

Photograph 5: Southwest corner of the buildings.

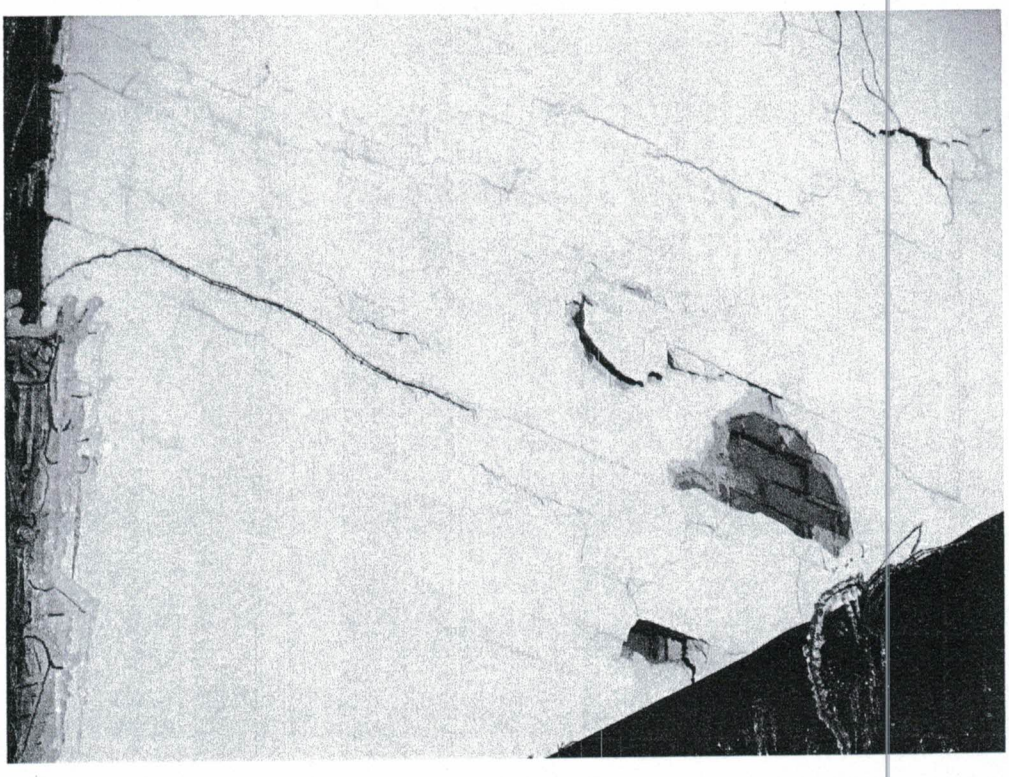
Photograph 6: The brick on the rear of the building has spalled.



Photograph 7: The bricks are deteriorated and are separating from the building.



Photograph 8: The top of the southwest corner is leaning outward from the building.

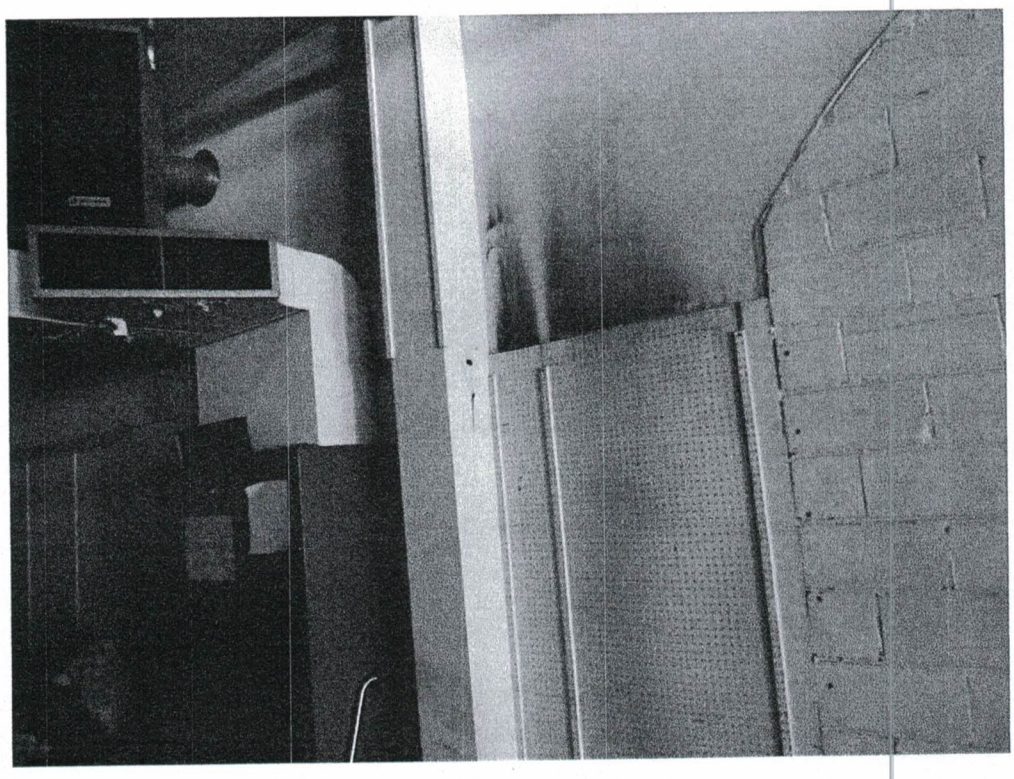


Photograph 9: Parge coating is cracked and separating from the brick on the south elevation.

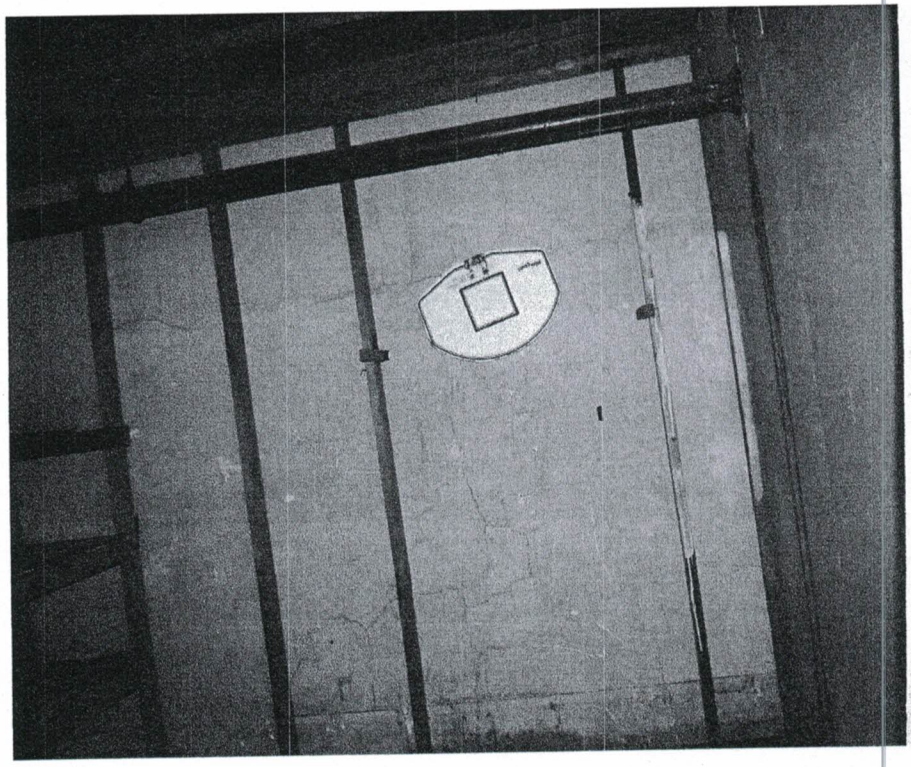
Photograph 10: Soot is on the front elevation along the common wall of buildings 529 and 523.

Photograph 11: Close-up of soot on the brick.

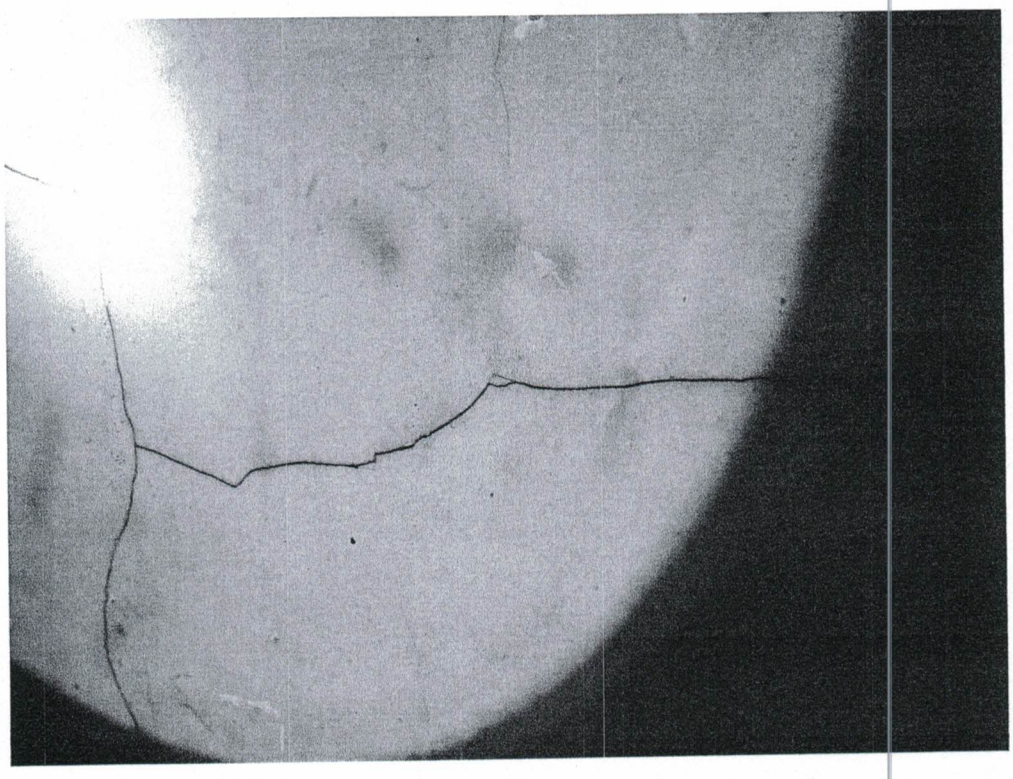
Photograph 12: First floor of building 523 facing west along the north wall.



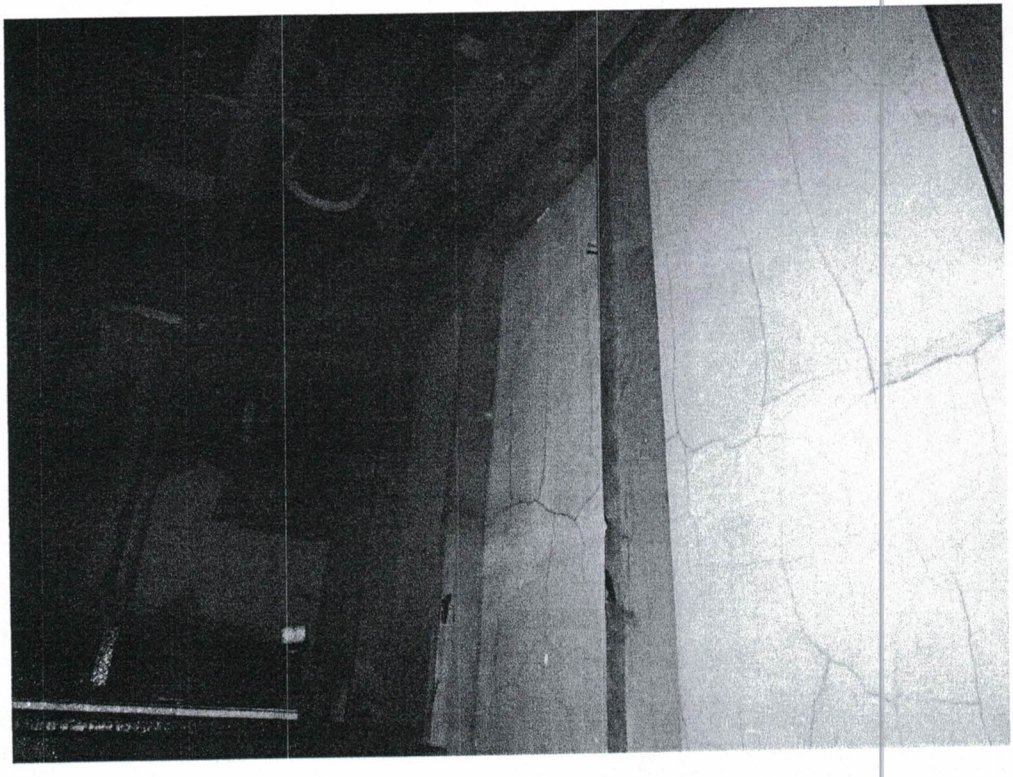
Photograph 13: Soot is along the north wall.



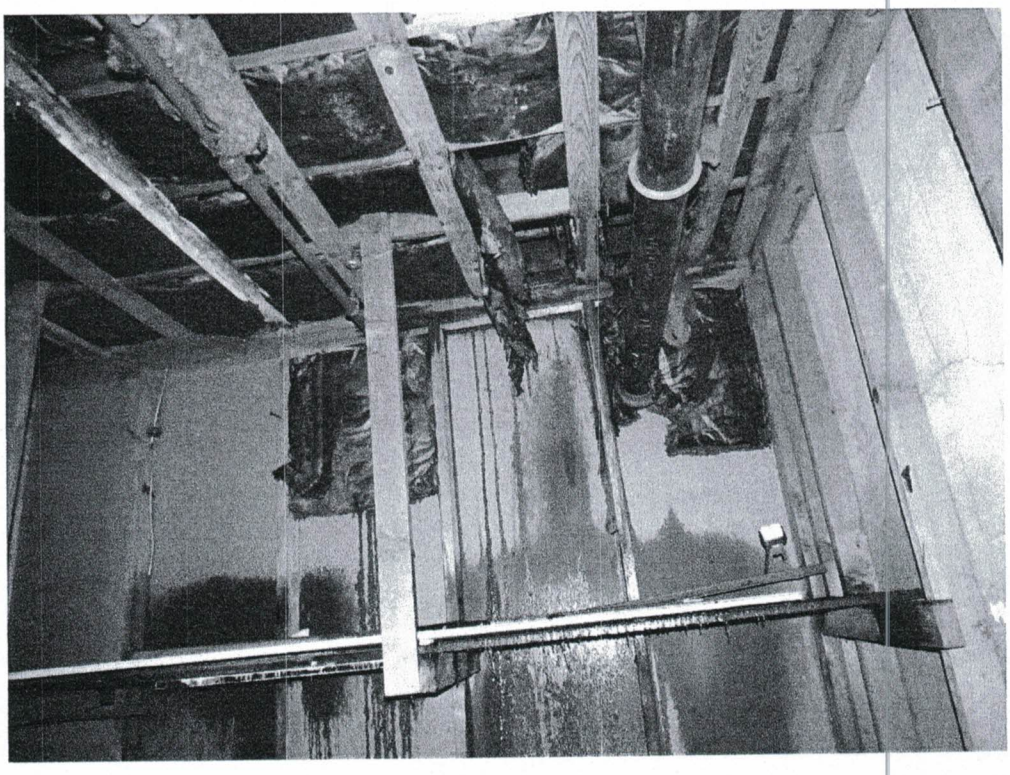
Photograph 14: The north wall of the second floor has widespread cracking in the brick parge coating.



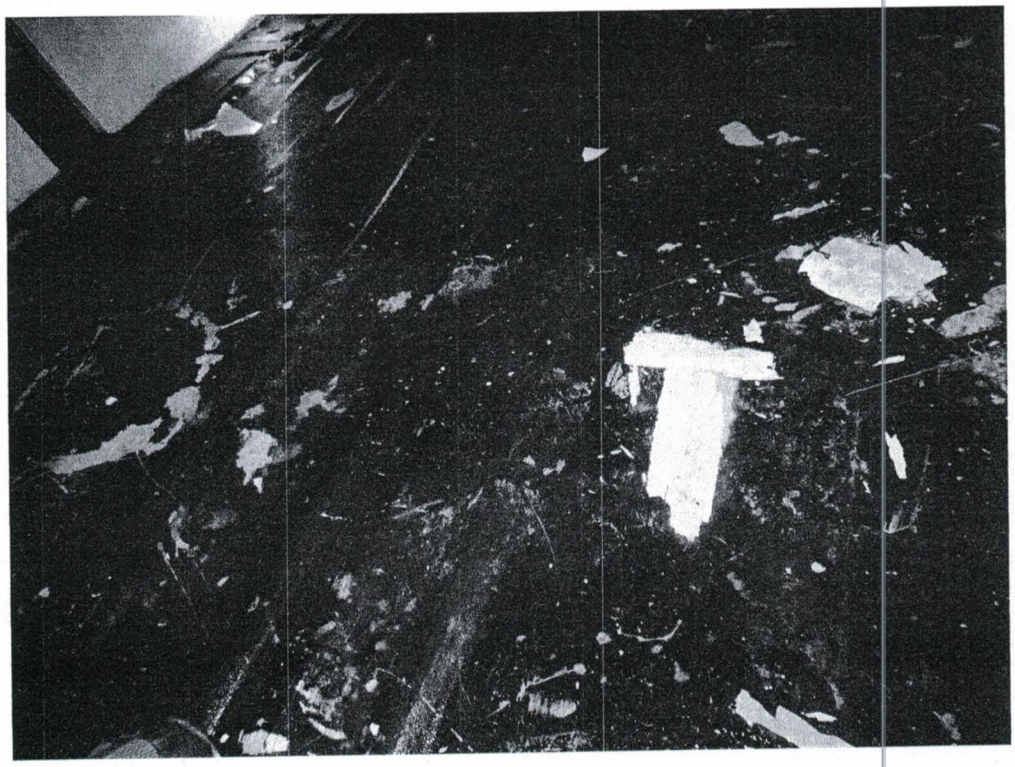
Photograph 15: Soot stains emanate from the cracks.



Photograph 16: Additional picture of cracks in the parge coat.



Photograph 17: Water/ice on the interior of the second floor.



Photograph 18: Water/ice on the warped and deteriorated wood floors.

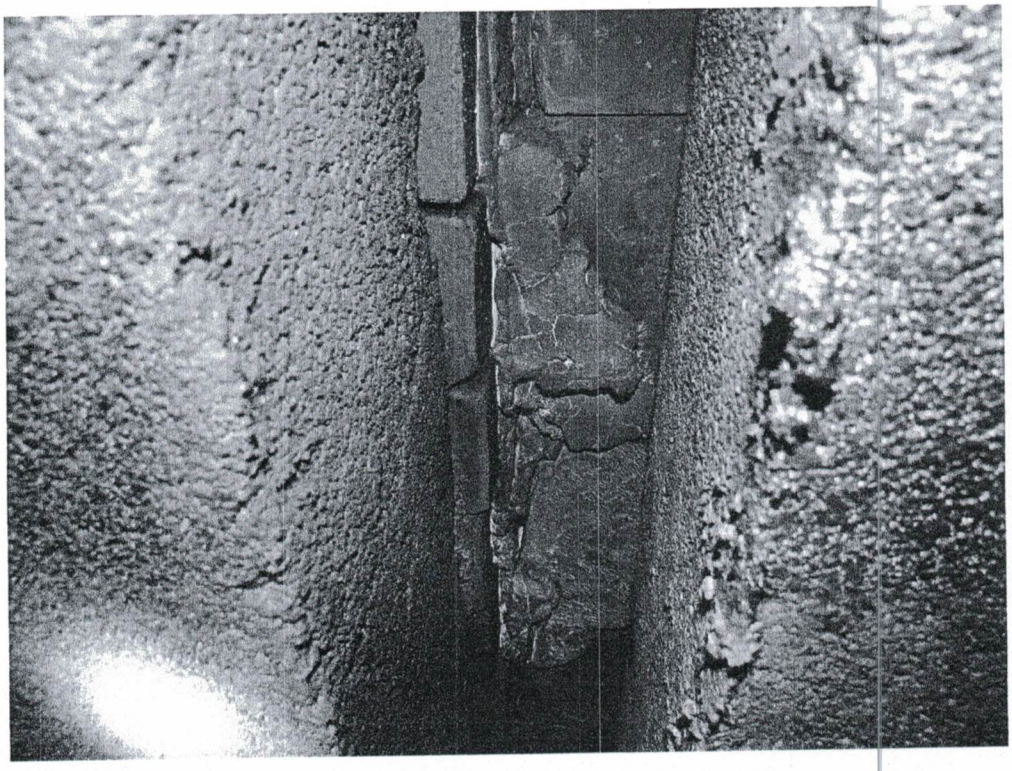
Photograph 19: Saturated and frozen floor with a large hole in it.

Photograph 20: The ceiling above the damaged floor is missing drywall, and the insulation is wet and frozen.

Photograph 21: Damaged drywall along the rear exit from the second floor. Icicles are present coming down from the attic and around the attic access hatch.

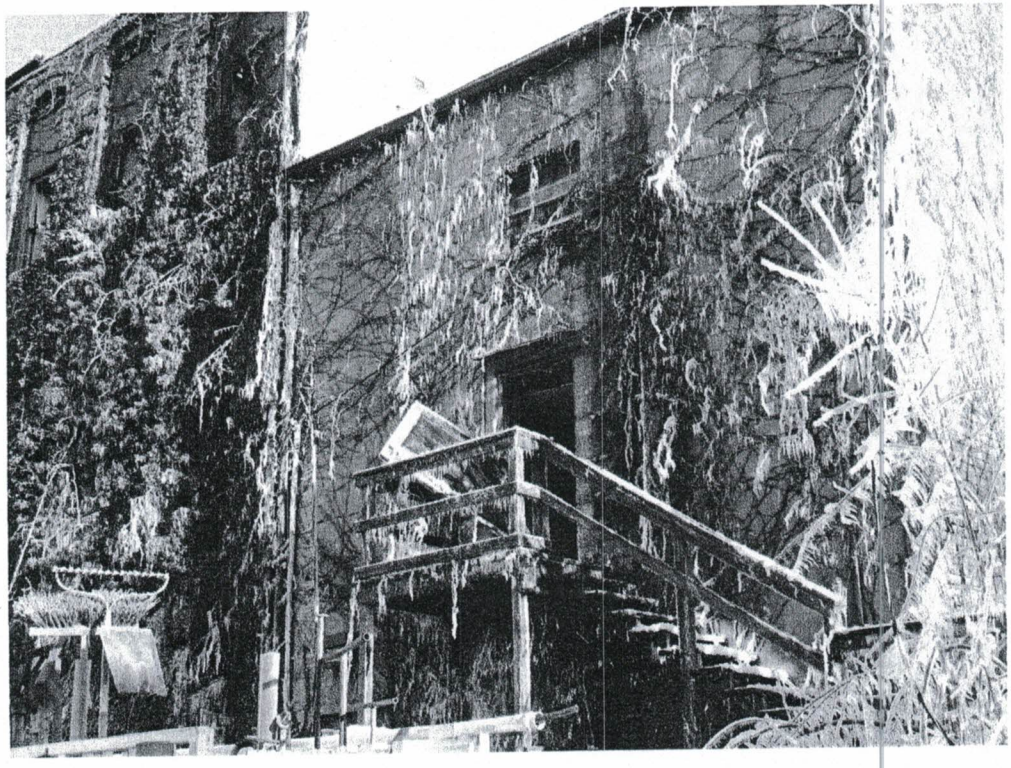
Photograph 22: The framing around the elevator is charred or completely burned away.

Photograph 23: The wood framing above the elevator access doorway is burned.



Photograph 24: The exposed mortar above the concrete lintels is cracked.

Photograph 25: The bricks on the north side of building 523 are charred, and the faces are cracked.



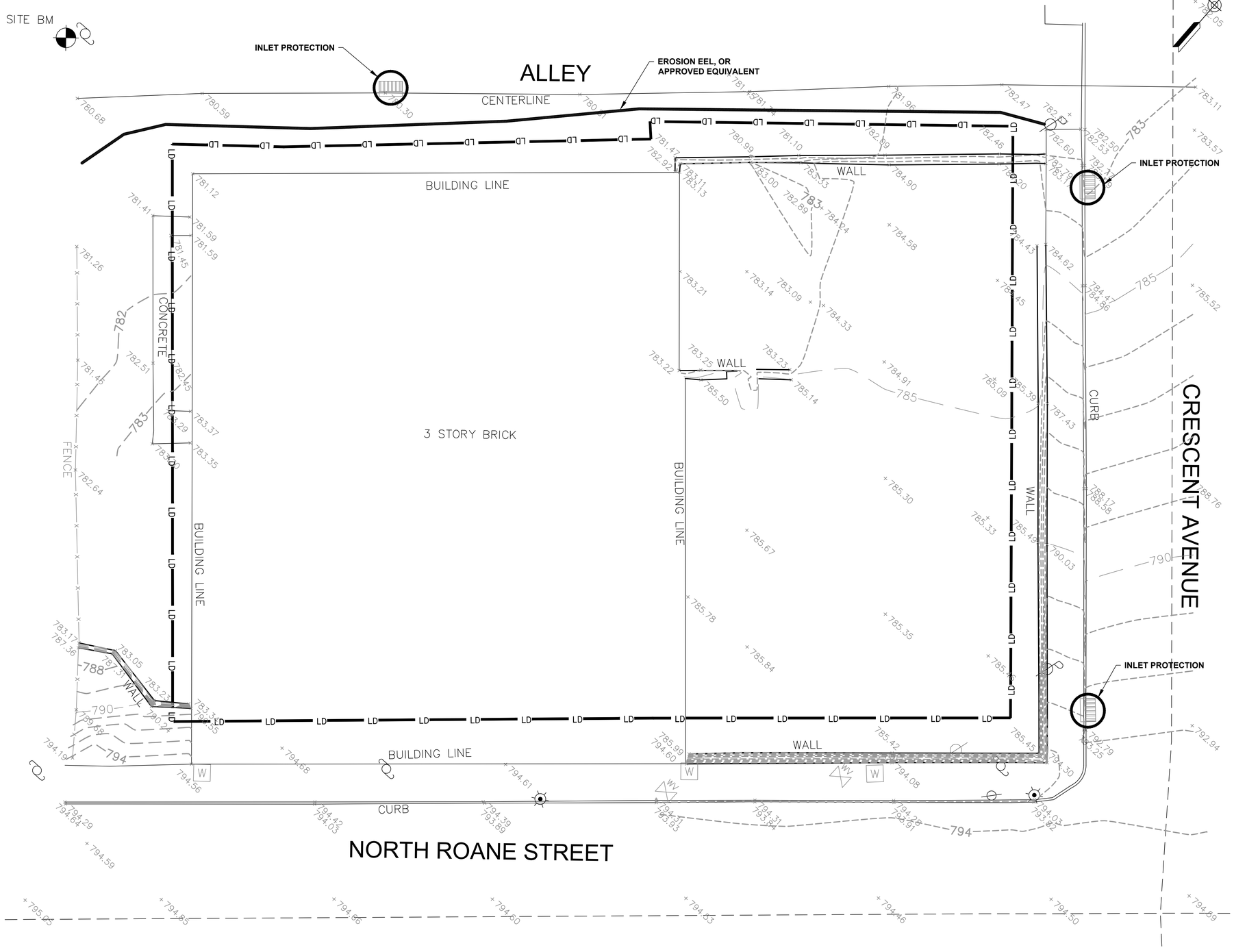
Photograph 26: The end building was not entered for this study. The door is displaced from the frame and is expected to be in a similar poor condition to the remainder of the connected buildings.

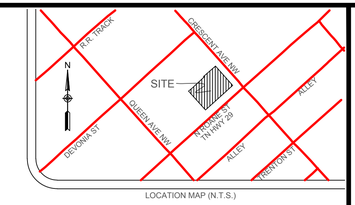
ATTACHMENT 5:

Drawings, S&ME, Inc., May 14, 2014

1. Existing Conditions and Erosion & Sediment Control, Rev. 0, May 14, 2015
2. Demolition Plan, Rev. 0, May 14, 2015
3. Site Grading and Stabilization Plan, Rev. 0, May 14, 2015

ISSUE FOR BID





GENERAL NOTES:

1. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND NOT ALL UTILITIES MAY BE INDICATED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WITHIN THE PROJECT LIMITS AND COORDINATE EXCAVATION AND/OR RELOCATION REQUIRED AROUND THESE UTILITIES WITH THE RESPECTIVE OWNERS. THE CONTRACTOR MUST GIVE ADEQUATE NOTICE TO ALL UTILITIES OWNERS PRIOR TO EXCAVATION (AS DEFINED BY THE UTILITY OWNER), THROUGH TENNESSEE ONE-CALL (811).
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LEGEND

- FENCE
- TRAFFIC SIGNAL POST
- UTILITY POLE
- LIGHT POST
- STORM DRAINAGE MANHOLE
- CURB INLET
- WATER METER
- WATER VALVE

Know what's **below.** **Call** before you dig.

GRAPHIC SCALE (IN FEET): 0, 10, 20, 30

REFERENCE:

1. THIS IS NOT INTENDED TO REPRESENT A FULL BOUNDARY SURVEY AND WAS DONE UNDER THE AUTHORITY OF TCA 62-18-126.
2. THIS SURVEY IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-07.
3. SURVEY PREFORMED BY LITTLEJOHN ENGINEERING ASSOCIATES, AN S&ME COMPANY, ON APRIL 21, 2015.
4. SITE BENCHMARK : NAIL IN POWER POLE NORTHWESTERN CORNER OF SITE, ELEV: 781.56

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WWW.SMEINC.COM
1413 TOPSIDE ROAD
LOUDON, TN 37777
(865) 970-0003

WILLIAM K. BARRY, REGISTERED ENGINEER, AGRICULTURE, No. 082334, STATE OF TENNESSEE

William Barry
May 15 2015 2:35 PM

NO.	DESCRIPTION	DATE	BY	CHK	APV
0	ISSUE FOR BID	5-14-15	CLD	WKB	WKB

EXISTING CONDITIONS AND EROSION & SEDIMENT CONTROL

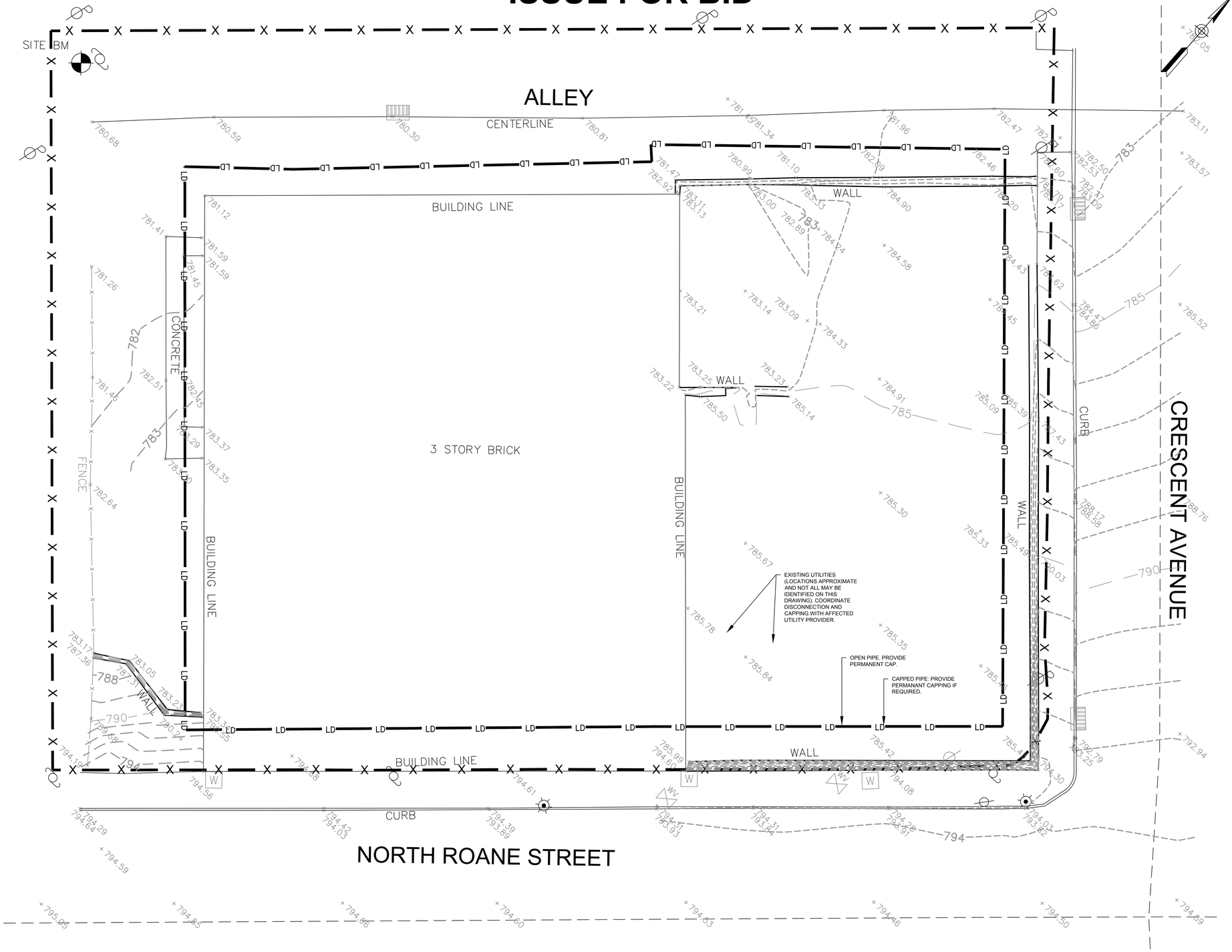
MILLER BREWER BUILDING
ABATEMENT AND DEMOLITION
HARRIMAN, TENNESSEE

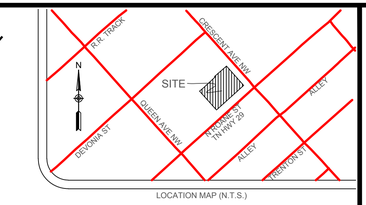
PROJECT NUMBER: 4143-15-013A

DRAWING: 1 OF: 3

DRAWING PATH: Q:\temp\KEN BARRY\DEMO PLAN_052715.dwg

ISSUE FOR BID





LOCATION MAP (N.T.S.)

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LEGEND

- X — TEMPORARY FENCING
- LD — APPROXIMATE LATERAL LIMITS OF DISTURBANCE
- POWER POLE TO REMAIN - APPROXIMATE LOCATION
- LIGHT POLE TO REMAIN - APPROXIMATE LOCATION
- TRAFFIC SIGNAL POLE TO REMAIN - APPROXIMATE LOCATION

REFERENCE:

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2. THIS SURVEY IS NOT A GENERAL PROPERTY SURVEY AS DEFINED UNDER RULE 0820-3-07.
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4. SITE BENCHMARK : NAIL IN POWER POLE NORTHWESTERN CORNER OF SITE, ELEV: 781.56

Know what's **below.** **Call** before you dig.

0 10 20 30
GRAPHIC SCALE (IN FEET)

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LOUISVILLE, TN 37777
(865) 970-0003

WILLIAM K. BARRY — REGISTERED ENGINEER — AGRICULTURE — NO. 092334 — STATE OF TENNESSEE

William Barry
May 15 2015 2:34 PM

NO.	DATE	DESCRIPTION	BY	CHK	APV
0	5-14-15	ISSUE FOR BID	CLD	WKB	WKB

DEMOLITION PLAN

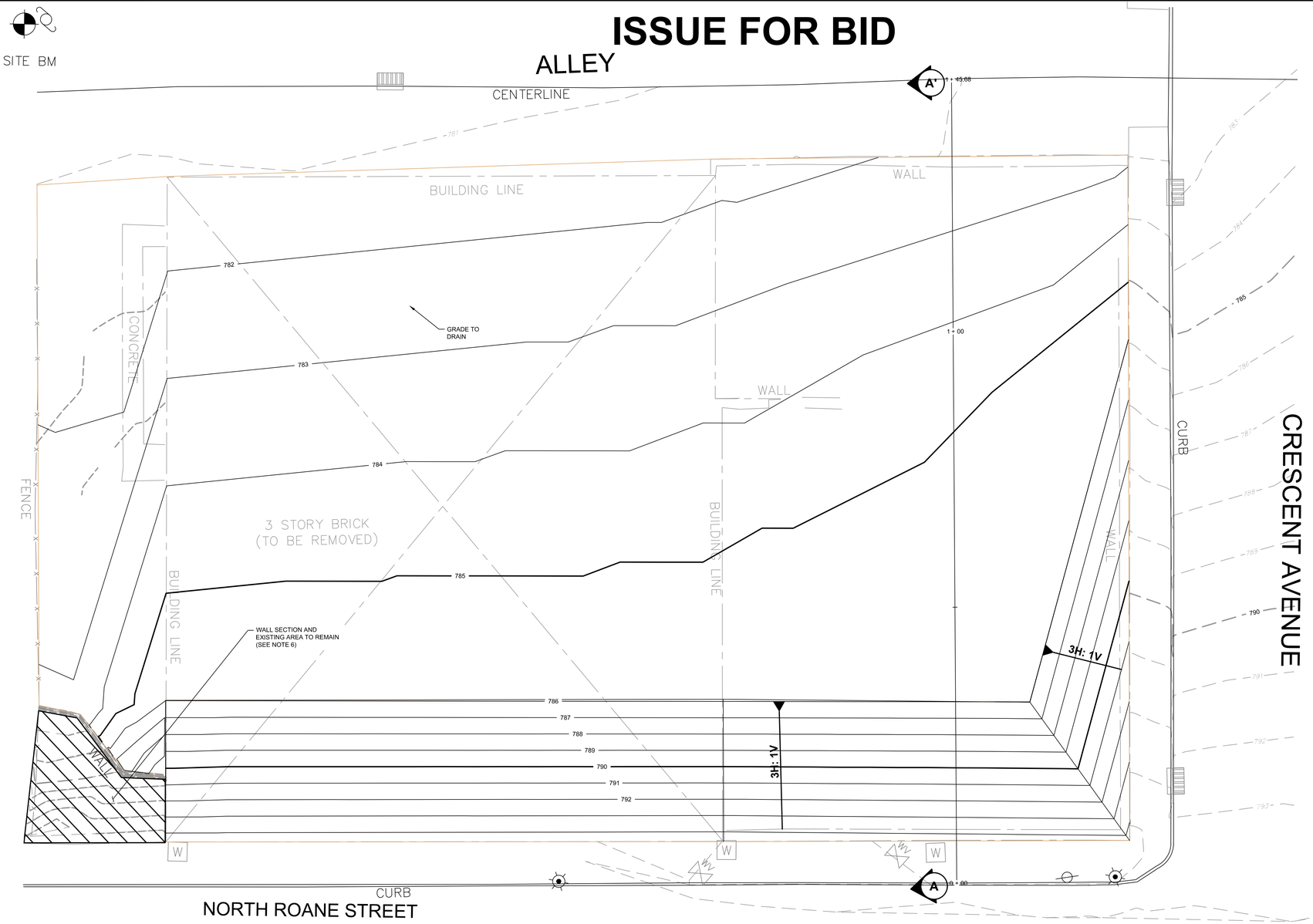
MILLER BREWER BUILDING
ABATEMENT AND DEMOLITION
HARRIMAN, TENNESSEE

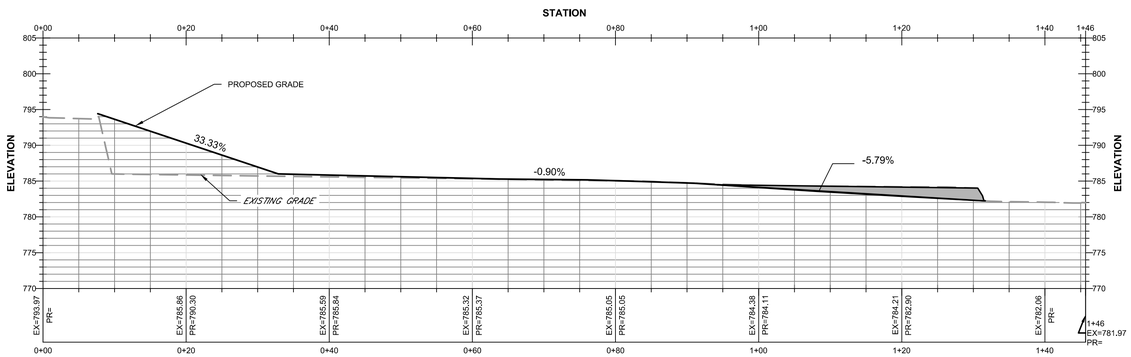
PROJECT NUMBER
4143-15-013A

DRAWING: 2 OF: 3

DRAWING PATH: Q:\temp\KEN BARRY\DEMO PLAN_052715.dwg

ISSUE FOR BID





SECTION A - A'

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GENERAL NOTES:

SITE PREPARATION

1. THE ENTIRE DEMOLITION AREA SHOULD BE STRIPPED OF NEAR SURFACE SOILS, UNSUITABLE EXISTING FILL, DEBRIS, TRASH, SURFACE DEBRIS, AND ORGANIC MATERIALS. THIS WILL INCLUDE REMNANTS OF PAST CONSTRUCTION (POSSIBLY INCLUDING FOUNDATIONS, SLABS, AND ASSOCIATED UTILITIES). EXISTING ROOF DRAINS SHALL BE CAPPED OUT PRIOR TO GRADING OPERATIONS. ABANDONED UTILITIES SHOULD EITHER BE REMOVED AND THE RESULTANT EXCAVATION FILLED WITH PROPERLY COMPACTED BACKFILL OR THE PIPES/CONDUITS GROUTED IN PLACE. UTILITY ABANDONMENT SHALL BE COORDINATED WITH UTILITY OWNERS.

2. AFTER COMPLETION OF STRIPPING, GRUBBING AND ANY REQUIRED EXCAVATIONS TO REACH SUBGRADE ELEVATIONS, THE SUBGRADE SHALL BE OBSERVED BY AN S&ME GEOTECHNICAL ENGINEER, OR QUALIFIED REPRESENTATIVE, TO EVALUATE THE STABILITY OF THE NEAR SURFACE SOILS FOR FILL PLACEMENT. AREAS JUDGED TO PERFORM UNSATISFACTORILY SHOULD BE REMEDIATED AT THE GEOTECHNICAL ENGINEER'S DIRECTION.

STRUCTURAL SOIL FILL

3. MATERIAL CONSIDERED SUITABLE FOR USE AS STRUCTURAL SOIL FILL SHOULD BE CLEAN SOIL, FREE OF ORGANICS, TRASH, AND OTHER DELETERIOUS MATERIAL, AND CONTAINING NO ROCK FRAGMENTS GREATER THAN 6 INCHES IN ANY ONE DIMENSION. PREFERABLY STRUCTURAL SOIL FILL SHOULD HAVE A MAXIMUM DRY DENSITY OF 90 POUNDS PER CUBIC FOOT (PCF) OR GREATER, A PI OF 30 PERCENT OR LESS, AND AN ORGANIC CONTENT OF LESS THAN 5 PERCENT. ALL MATERIAL TO BE USED AS STRUCTURAL SOIL FILL SHOULD BE TESTED AND OBSERVED BY S&ME PERSONNEL PRIOR TO PLACEMENT.

4. STRUCTURAL SOIL FILL SHOULD BE PLACED IN LOOSE, HORIZONTAL LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS. SUBSEQUENT LIFTS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THE SOIL'S MAXIMUM DRY DENSITY PER ASTM D698 (STANDARD METHOD) AND WITHIN THE RANGE OF MINUS 3 PERCENT TO PLUS 3 PERCENT OF ITS OPTIMUM MOISTURE CONTENT. EACH LIFT SHOULD BE TESTED AND OBSERVED BY S&ME GEOTECHNICAL PERSONNEL BEFORE PLACING ADDITIONAL LIFTS TO CONFIRM THE CONTRACTOR'S METHOD IS CAPABLE OF ACHIEVING THE SPECIFIED COMPACTION AND STABILITY. IN ADDITION, ANY AREAS WHICH HAVE BECOME SOFT OR FROZEN SHOULD BE REMOVED OR REMEDIATED BEFORE ADDITIONAL STRUCTURAL SOIL FILL IS PLACED.

DEWATERING

5. IF GROUND WATER IS ENCOUNTERED DURING SITE GRADING, TEMPORARY DEWATERING MEASURES MAY NEED TO BE IMPLEMENTED. A TEMPORARY DEWATERING SYSTEM THAT HAS PERFORMED ADEQUATELY ON PREVIOUS PROJECTS WITH SIMILAR CONDITIONS CONSISTS OF TEMPORARY EXCAVATIONS AND SUMP PUMPS. PUMPING FROM THE SUMPS SHOULD BE CONTINUED WITHOUT INTERRUPTION UNTIL FILL PLACEMENT IS COMPLETE. OTHER MEANS OF IMPROVING DRAINAGE AT THE SITE MAY BE ACCOMPLISHED WITH DRAINAGE SWALES LOCATED AT SELECT AREAS.DISPOSAL OF DEWATERING SHALL BE COORDINATED WITH THE CITY OF HARRIMAN. AT A MINIMUM, DEWATERING WATER SHALL BE TREATED UNTIL IT DOES NOT PRESENT AN UNACCEPTABLE COLOR CONTRAST WITH THE RECEIVING WATERS (I.E., IN THE RECEIVING DITCH, STORM SEWER, ETC.)

CONSTRUCTION ADJACENT TO EXISTING STRUCTURES

6. THERE IS AN EXISTING TIMBER RETAINING WALL IN THE SOUTHWESTERN CORNER OF THE SITE WHICH IS CURRENTLY RETAINING SOILS SUPPORTING NORTH ROANE STREET AND PREVENTING ENCROACHMENT ON THE ADJACENT PROPERTY OWNER (TO THE SOUTHWEST). USE OF LARGE VIBRATORY COMPACTION EQUIPMENT MAY CAUSE VIBRATIONS AND/OR DISRUPTION WHICH MAY ADVERSELY AFFECT THIS WALL. COMPACTION OF SOIL AND/OR AGGREGATE WITHIN CLOSE PROXIMITY OF THE WALL MAY REQUIRE PLACING SOIL IN THINNER LIFTS, USING COMPACTION EQUIPMENT IN THE STATIC (NON-VIBRATORY) MODE, USE OF SMALLER COMPACTION EQUIPMENT (SUCH AS SMALLER ROLLERS, OR HAND OPERATED COMPACTION DEVICES), OR OTHER MEASURES.

STABILIZATION

7. APPLY 4" OF TOPSOIL TO ALL DISTURBED AREAS AND STABILIZE WITH MULCH AND SEASONALLY APPROPRIATE PERMANENT SEED MIXTURE ACCORDING SECTION 7.9 OF THE TDEC EROSION AND SEDIMENT CONTROL HANDBOOK, 4TH EDITION, AUGUST 2012.

EXISTING FEATURES

- EXISTING GRADE CONTOUR 5 FT INTERVAL
- EXISTING GRADE CONTOUR 1 FT INTERVAL
- EXISTING FENCE
- EXISTING CURB

PROPOSED FEATURES

- PROPOSED GRADE CONTOUR 5 FT INTERVAL
- PROPOSED GRADE CONTOUR 1 FT INTERVAL

Know what's below. Call before you dig.

GRAPHIC SCALE 0 10 20 30 (IN FEET)

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William Barry
May 15 2015 2:34 PM

NO.	DATE	DESCRIPTION	BY	CHK	APV
0	5-14-15	ISSUE FOR BID	CLD	WKB	WKB

SITE GRADING PLAN

MILLER BREWER BUILDING
ABATEMENT AND DEMOLITION
HARRIMAN, TENNESSEE

PROJECT NUMBER 4143-15-013A

DRAWING: 3 OF: 3

DRAWING PATH: O:\temp\KEN BARRY\4143-15-013A_CIVIL_recover.dwg