

ADDENDUM NUMBER THREE
LUPTON MILL SITE REMEDIATION
FOR THE CITY OF CHATTANOOGA, TENNESSEE
Contract Number E-20-012-201

- Documents hereby incorporated into the contract by this Addendum:
 - Environmental Abatement Specifications, Former Lupton Mills, *dated August 2020*
 - Demolition Completion & Site Stabilization, Summary of Work
 - Revised Soil Management Plan, Former Dixie Yarns Property, *dated May 22,2020*

August 26, 2020

/s/Justin C. Holland, Administrator
City Of Chattanooga
Department of Public Works

**Demolition Completion & Site Stabilization
Former Dixie Yarns Property
1210 Mercer Street
Chattanooga, Tennessee**

Summary of Work

This project is a combination asbestos abatement project, site clean-up and demolition. The site is approximately 12 acres in total size. By being in the Tennessee Voluntary Brownfield Program, certain exceptions to standard abatement can be made while still protecting the human health and that of the environment. In order for the exceptions however to be allowed, certain procedures will have to be followed. The Soil Management Plan is part of the project specifications and must be followed.

The site has multiple issues. The first is asbestos debris, friable and non-friable, being mixed into the demolition debris. Most of the asbestos to be encountered, by volume, is non friable. The area with the highest concentration of friable materials was abated last year. The work performed by that project is now allowing the project to move forward in a more traditional method. The other environmental issues have been tested and classified. The approved method for handling the known other environmental issues is with a clean soil cap and grass. The successful bidding contractor will need at least one 40-hour OSHA trained person at all times when ground disturbance is being performed. Lead Based Paint (LBP) was used on some of the painted components left at the site. While most have already been handled, the remaining painted components will be mixed with the other debris on the site and covered by the clean soil cap.

The General Contractor performing this project must be qualified for asbestos abatement and for demolition. The bidding firm will need to be accredited with the State of Tennessee Asbestos Program as per their regulations. Any worker or contractor on the site which has the potential for encountering asbestos materials must be properly trained as asbestos workers and accredited with the State of Tennessee Asbestos Program. An accredited asbestos supervisor must be on-site at all times that work is being conducted. The intent of the project is to be able to continue moving forward, as asbestos is encountered, without work stoppage, or moving to another area. It is the plan by the City of Chattanooga for all remaining debris at the site to be placed in one of two locations on site. The existing single story building will be altered to allow it to become a fill area for building debris, non friable asbestos debris and small amounts of friable asbestos, primarily that which cannot be readily segregated. The site has been approved for a site specific asbestos landfill. This landfill area is where the bulk of any friable materials encountered will be buried. For the remainder of the project, no asbestos will be removed from the site and disposed of at an alternate landfill.

The project will need to be performed in a specific order. In general categories, the project will proceed as follows:

- 1) Mobilization and site security. Secure the site. Bring in and locate storage containers and office trailer. Set up necessary utilities. (Electrical, water, sanitary). Workers will need a place to properly decon at times of breaks and end of shift. (Showers are not being required).

- 2) Prepare single story building for received demolition materials. This includes holes in slab for drainage, removal of roof (upper slab), columns, etc.. Removing walls as necessary for final slope.
- 3) Prepare area designated for asbestos landfill. This will require moving surface debris, digging out landfill area, perimeter berms, etc. as specified in the asbestos landfill specifications.
- 4) Once items 1, 2, and 3 are completed, begin cleaning and relocation of the surface materials. The project has been broken into Phases. Area 1 is the area known to have the greatest concentration of asbestos debris, friable and non friable.
- 5) Towards the end of clearing the Area 1, GC will establish clean utility corridors. This will be necessary for the modification and installation of a stormwater line and sewer line. The installation of the lines and covering the lines will be performed by others under a different contract. It is our job to give the utility contractor a clean area to work.
- 6) By the time you are completed with Area 1, 2 and 3, we anticipate being completed with the bulk of asbestos contaminated debris.

ENVIRONMENTAL ABATEMENT SPECIFICATIONS

FORMER LUPTON MILLS E-16-006



August 2020

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AAI-5561

ASBESTOS ABATEMENT

- 1.1 DESCRIPTION OF WORK
 - 1.1.1 Work Details
 - 1.1.2 Protection of Existing Areas to Remain
 - 1.1.3 Coordination with Other Work
- 1.2 REFERENCES
- 1.3 SUBMITTALS
- 1.4 QUALIFICATIONS
 - 1.4.1 Qualifications and Organization Report
 - 1.4.2 Personnel and Subcontractor Responsibilities and Qualifications
 - 1.4.2.1 Qualifications of Competent Person
- 1.5 CLEARANCE REQUIREMENTS
- 1.6 HYGIENE FACILITIES
 - 1.6.1 Hand Wash Stations
 - 1.6.2 Break/Change Area
- 1.7 CLEARANCE PROCEDURES
- 2.0 AIR MONITORING
 - 2.01 Description of Work
 - 2.02 Related Documents
 - 2.03 Air Monitoring
 - 2.04 Airborne Fiber Counts
 - 2.05 Analytical Methods
- 3.0 OTHER SAFETY REQUIREMENTS
 - A. Communications
 - B. Fire Protection
 - C. Safety Program
- 4.0 KEY SECTIONS FROM SOIL MANAGEMENT PLAN

ENVIRONMENTAL SPECIFICATIONS

Former Lupton Mills

1.1 DESCRIPTION OF WORK

1.1.1 The purpose of the project is to properly handle and dispose of the remaining asbestos containing building materials left in the demolition debris. Disposal will be made on-site. The project is a combination of asbestos abatement, site clean-up and demolition. Grading, capping and the application of sod or grass seed is a final step in each area. This project/site is participating in the Tennessee Voluntary Brownfield Program. As such, certain exceptions will apply that are slightly different than our typical asbestos abatement project.

The site is approximately 12 acres. It was developed and used as a knitting mill since 1923. The last owner purchased the non operational mill for salvage purposes. The majority of the salvageable metals, bricks and timbers were removed from the site. The last owner went bankrupt and left the site as you now see it with a few exceptions. The City of Chattanooga eventually ended up with the property for back taxes.

The site has a combination of friable and non friable asbestos debris mixed into the demolition debris piles. The friable asbestos materials are primarily thermal insulation in the form of block insulation and pipe insulation. For the non friable asbestos materials it is primarily built-up roofing and minor amounts of asbestos cement boards. Most of the roofing has a foam applied. The heaviest concentration is located on the Eastern 25% of the site. A project performed last year removed the greatest concentrations of asbestos from in and around the single story building located on the Eastern side of the property.

Being in the Brownfield program is allowing for the asbestos materials, as well as a few other contaminants to be buried at the site and capped with 2' of clean materials as a top cap. The site has been approved for disposal of both the non friable and friable asbestos building materials. The friable material, which can be reasonably segregated, will be placed in the on-site asbestos landfill. The asbestos landfill is site specific. Only materials from this site can be placed in the landfill area.

In a summary form, the successful General Contractor will secure the site, prep the single story building to be a fill receptacle, construct, maintain and eventually close the site specific asbestos landfill, move demolition debris into the primary fill area (as outlined in the primary City Specification and plans), apply clean cap materials and sod and or grass seed the area. In addition, the project includes completing the demolition. There are several building structures and a stack, which will need to be demolished and used as fill. Metal materials will be the exception. Metal items will be segregated and sent for recycling.

This work is to be performed by a General Contractor who has and maintains asbestos credentials and the capabilities to perform demolition and grading. The bidding and operating firm will need to be accredited with the State of Tennessee Asbestos Program. Any worker with the potential to encounter asbestos debris must be at least a State of Tennessee accredited worker. At least one asbestos supervisor per work area will be required in the area during any disturbance of the buildings, building debris or soil disturbance. Since a few other chemicals of concern have been confirmed to be in

certain areas, the successful contractor will need at least one 40-hour OSHA trained person during all work periods.

The General Contractor will be responsible to follow and adhere to the asbestos specification, the City of Chattanooga primary project specifications and the Soil Management Plan (SMP). The project is considered, an environmental project with the primary focus on asbestos. It is anticipated that once the project has proceeded through the completion of Areas 1, 2 & 3, the potential for encountering asbestos friable materials will become random. Encountering non friable asbestos materials, in the form of roofing materials, will be throughout most of the project. Due to the project being in the Voluntary Brownfield Program, strict adherence to the "Soil Management Plan" will have to be maintained and will be enforced.

The project has gained a certain amount of publicity. The surrounding neighbors and regulatory authorities will be observing all work, not just environmental work, at the site. Neighbors have raised many complaints, particularly to the potential for asbestos exposure. The neighboring properties have kids. The kids will walk, ride bikes and possibly play in the streets outside the fence. It is our responsibility to ensure that everyone is protected from potential exposure to asbestos fibers. The NESHAP visible emission rule will apply and be enforced. Periodic perimeter monitoring will be performed by Alternative Actions, Inc. during the work with the highest potential for fiber release. The air sampling will be used as a measuring tool to ensure work methods employed are working and fibers are not becoming airborne. Should air samples reflect any release of asbestos fibers, the work methods will be evaluated and changed as necessary. The successful abatement contractor will have to remain in EPA, TOSHA and other State and Local agencies compliance at all times. This scope of work has been discussed in detail with the Air Pollution Control Bureau and TDEC Division of Remediation.

The full site is secured by a fence with multiple gates. The gate closest to the building will be the point of access for the project. The contractor must keep the gate secured at all times to avoid entry by non authorized individuals.

The project has a specific order. In generalized categories, the project will proceed as follows:

- 1) Mobilization to the site. This will include setting up your jobsite office trailer and storage containers. Bringing in and setting up jobsite utilities. Setting up your decontamination areas for your workers. We are not expecting decon trailers. We are expecting you to set up decon areas where the workers can wash their hands and face and where equipment can be decontaminated. All water generated from the decon operations will be required to be filtered to 5 micron and discharged to sanitary sewer. The contractor will be responsible for ensuring that there are enough portable facilities for the number of workers at the site. Fencing will need to be added or repaired during the work phase. Eventually, the fence will be replaced, as part of the contract, with a new fence as per specifications. Site security will be the responsibility of the General Contractor. If gates are open, the General Contractor will have someone posted at the gate to prevent unauthorized entry. The project site is not open to the public or media without consent from City Engineering.

- 2) Prepare Single Story Building – Following the specifications, the single story building will be prepared for being a disposal receptacle. Surface wood will need to be removed and broken into 18” or smaller pieces. The concrete forming the current roof will need to be broken up into compactable debris as per specifications. The columns inside the building will be demolished. The slab in the basement (floor) of the building will be penetrated as per specification for proper drainage. Some walls will need to be removed to allow for the proper finished grade. These requirements are detailed in the City specifications and the SMP.
- 3) Establish the asbestos landfill as per drawing and details. This will require pushing or moving the current debris located on top of the landfill area out of the way. Most of this debris will end up inside the single story building. The clean soil from the creation of the landfill area will need to be stockpiled for use during the project.
- 4) With items 1, 2 and 3 completed, the primary project will be ready to move forward. Debris will be processed and placed whether in the single story building area or the asbestos landfill, depending on contents encountered. The friable materials which can be readily seen and accessible will be placed in the asbestos landfill. The non friable materials and other building debris, once processed to size, will be placed in the single story area. During these operations, a person trained to recognize the asbestos debris will need to be on the ground directing the other workers and equipment operators as to what materials go to which area. The contractor will need to perform personal air monitoring to determine the level of PPE required for workers and operators during handling of the non friable materials. Workers and equipment operators should be in the proper PPE at all times when handling friable asbestos. The ground supervisor will ensure proper engineering controls are in place to prevent visible emissions.
- 5) Towards the end of Area 1, the contractor will need to create two 20’ wide lanes for the indicated stormwater and sewer lines repair and extensions. The actual pipe work will be performed under a different contract. It is this project’s responsibility to ensure that the unprotected and untrained pipe contractor workers and equipment operators can safely do their job without exposure. The piping contractor will fill in around the piping with clean fill materials as per their specifications. It will be the responsibility of this contract to finish out bringing the ground back up to the specified elevations and finishing the cap and grass activities.
- 6) The project has been broken into 14 areas. It is the intention of the City for work to continue without stoppage. Bad weather days are the exception. This project is to be completed in one year or less. Less would be preferred.

Temporary Electrical/Water Supply

All utilities were disconnected at the site during the previous demolition activities years ago. Abatement Contractor will need to provide the necessary temporary electrical (generators or EPB service) necessary for the safe and proper work to be performed. The Abatement Contractor will need power for the office trailer, pumps, and misc. requirements. The Abatement Contractor will need to provide an adequate potable water supply to be used for wetting the asbestos material, worker decontamination and cleaning. Prior work at the site used meters attached to existing fire hydrants.

Waste Containers

Site debris will be disposed of at the site provided it is suitable and has been identified. Metal drums, poly drums, any container with chemicals of concern, etc. shall not be buried on the site. Clean, non fill materials will need to be sent off site for disposal as trash. This container will also need to be used for other wastes generated by packaging, plastic water bottles, empty cans, etc.

PPE generated by site personnel can be disposed of in the asbestos landfill only if the bags have been properly evacuated of air by HEPA vacuums. No air bags. If air bags are discovered, the contractor will be required to dig the air bags out.

Project Management & Controls

The Abatement Contractor will ensure the following are being performed and complied with during the abatement process.

- A. Treat the site as a controlled area. Gate will need to be kept secured at all times. Do not leave the gate open except as needed for employees, equipment and materials.
- B. Abatement Contractor will maintain a log of everyone at the site, including visitors. Immediately notify the consultant, Alternative Actions, Inc., if any visits by a regulatory agency are made.
- C. Due to the lack of services at the site, portable bathroom units will need to be provided for workers. There must be enough for the size crew working at the site.
- D. The project could be an "attractive nuisance". Abatement contractor will need to keep area secured and controlled during the project. Access to the building by unauthorized individuals must not be allowed.
 - 1) Contractor will be responsible for all aspects of safety with respect to his/her employees and other occupants or visitors to the building. Contractor must comply with all State of Tennessee regulations, EPA and TOSHA.
 - 2) A NESHAP notification will not be required to the State of Tennessee Pollution Control Bureau as per Randle Harrison.

- E. Abatement contractor must be accredited with the State of Tennessee Asbestos Program. This will include the firm, supervisors and workers.

1.1.2 Protection of Existing Areas / Surfaces To Remain

All project work including, but not limited to, asbestos work, storage, transportation, and disposal shall be performed without causing any additional structural damage to the building.

1.1.3 Coordination with Other Work

The contractor shall have full access to the abatement areas and access to areas outside the containment. Coordination of schedule, visual inspections and clarifications will be required between the abatement contractor and AAI for environmental issues and City of Chattanooga Project Engineer for City specification questions (i.e. grade elevations, suitable fill, etc.)

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2 (1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems

ANSI Z88.2 (1992) Respiratory Protection

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701 (1999) Methods of Fire Tests for Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 84-100 (1984; Supple 1985, 1987, 1988 & 1990) NIOSH Manual of Analytical Methods

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

PURPLE BOOK (1985) Guidance for Controlling Asbestos-Containing Materials in Buildings

EPA 340/1-92-013 A Guide to Normal Demolition Practices Under the Asbestos NESHAP

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926.1101(h)	OSHA Asbestos Advisor
29 CFR 1910	Occupational Safety and Health Standards for Industry
29 CFR 1926	Occupational Safety and Health Standards for Construction
29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Records
29 CFR 1926.55	Gases, Vapors, Fumes, Dust, and Mists
29 CFR 1926.59	Hazard Communication
40 CFR 763.120, 121	USEPA Regulations Governing Asbestos Abatement Project (Worker Protection)
40 CFR 61	USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP - Integrated Version) Asbestos Regulations
29 CFR 1926.103	Respiratory Protection
40 CFR 763	USEPA ASHARA/AHERA Asbestos Model Accreditation Plan: Interim Final Rule (Preamble & Standard, February 3, 1994)

UNDERWRITERS LABORATORIES (UL)

UL 586	(1996; Rev thru Aug 1999) High-Efficiency, Particulate, Air Filter Units
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STATE OF TENNESSEE

TN Occupational Safety and Health Standards
(29 CFR 1910 for General Industry; 29 CFR 1926 for Construction)

State of Tennessee Asbestos Program (Chapter 1200-01-20)

1.3 **SUBMITTALS**

PRE-JOB

Contractor is required to provide the following pre-job submittals prior to mobilization to the project site. Contractor will not be allowed to begin until all submittals are approved by the Owner / Owner's Consultant.

1) Accident Prevention Plan

The accident prevention plan shall address occupational exposure issues and shall describe the procedures to be followed to protect employees from asbestos hazards while performing asbestos abatement activities. This is a narrative of exactly how the contractor plans to perform the project. Each of the following elements shall be addressed in the plan:

- a). The location and brief description of each work activity that will potentially release asbestos fibers into the atmosphere or cause exposure to site personnel. Procedures to be used to reduce potential exposures. (Engineering Controls)
- b). Description of the specific methods and procedures to protect workers and other onsite contractors from asbestos exposure. (Engineering Controls & PPE)
- c). Written employee decontamination procedure.
- d). Initial Exposure Assessment / Negative Exposure Assessment (1926.1101(f)(2) for each trade or type of task.
- e). Work Practices Program describing the protective clothing to be used to protect workers from asbestos exposure, house keeping procedures employed to minimize the spread of asbestos contamination in the asbestos control area and hygiene facilities.
- h). Medical Surveillance practices and procedures used to monitor worker exposure to asbestos and to assure fitness for wearing respiratory protection devices.
- i). Worker training meeting the requirements of definition of OSHA's Class I Supervisor and workers; EPA ASHARA MAP 40 CFR 763.
- j). Copies of State of Tennessee asbestos accreditations for the firm, supervisor and workers that will be on the site.
- k). Security: The access gate shall be secured and locked when work is not being performed using a combination lock. Code to combination lock will be given to consultant and designated City employees for emergency use only. A log book shall be used to document entry into and out of the asbestos hazard control area(s). Persons entering control areas shall be trained, medically evaluated, and equipped with personal protective equipment required for the specific control area to be entered.

- 2) Being that the project is in the Voluntary Brownfield Program, notification to the Chattanooga-Hamilton County Air Pollution Control Bureau will not be required. Randle Harrison was contacted to see what he would require. He is leaving it in the hands of TDEC Division of Remediation.

- 3) Copy of training certificates for workers and Supervisor.
- 4) Copy of Doctor's written opinion for respirator use (workers and Supervisor)
- 5) Copy of Tennessee contractor's license.
- 6) Chain of Authority giving names and phone numbers. Phone numbers shall include cellular, office and home numbers for contact after hours.
- 7) Copy of MDS for all materials and chemicals to be used on the project.
- 8) Certificate of Insurance naming the Owner as additional insured with the following minimum limits:

GENERAL LIABILITY INSURANCE

With a limit of \$1,000,000 for each occurrence and \$2,000,000 in general aggregate.

POLLUTION LIABILITY

With a limit of \$1,000,000 for each claim and aggregate.

AUTOMOBILE LIABILITY

With a limit of \$1,000,000 for each accident, combined single limit for bodily injury and property damage.

WORKERS COMPENSATION AND EMPLOYER'S LIABILITY

In accordance with statutory requirements with a limit of \$500,000 for each accident.

See City Specifications for additional insurance requirements.

During Job

Any new worker or Supervisor added to the job will need to have all of the above, as applicable, prior to being able to work. Any unlisted material or chemicals introduced to the project site must be accompanied by a MDS.

Post Job

- 1) Copy of Waste manifests (if any)
- 2) Copy of Sign In / Out Sheets
- 3) Copy of Visitor Logs
- 4) Copy of Daily Supervisor Log
- 5) Copy of OSHA Air Sampling Results

1.4. QUALIFICATIONS

1.4.1 Qualifications and Organization Report

The Contractor shall furnish a qualification and organization report. The report shall describe the qualifications of the Supervisor (Competent Person). The report shall include an organization chart showing the Contractor's personnel by name and title and project specific responsibilities and authorities, if more than one Supervisor assigned to the project. The report shall be signed by the Contractor to indicate that all personnel comply with certification and experience requirements of this section and that project personnel have been given the authority to complete the tasks assigned to them.

1.4.2 Personnel and Subcontractor Responsibilities and Qualifications

1.4.2.1 Qualifications of Competent Person

The Competent Person shall be on-site at all times when any work is being performed. Responsibilities include but are not limited to: be responsible for the development of project specific requirements in the Accident Prevention Plan (APP); supervise implementation of the APP requirements; verify effectiveness of the APP and to coordinate resolution of unknown situations that may develop as the work progresses; be able to provide consultation to the Owner or Owner's Designated Representative; review sampling and analytical results to evaluate occupational exposure levels, verify effectiveness of controls and determine if clearance requirements have been met.

1.5 CLEARANCE REQUIREMENTS

Exterior Containment

Visual Inspection Only

1.6 HYGIENE FACILITIES

The Contractor shall describe the personal hygiene facilities to be used by the workers in the Accident Prevention Plan. The Contractor shall provide hygiene facilities for asbestos workers. Hygiene facilities shall consist of the following:

1.6.1 Hand Wash Stations

The Contractor shall provide hand washing facilities for use by abatement workers that are available during the preparation and removal of the containment when a shower is not provided.

1.6.2 Break/Change Areas

The Contractor shall provide a an area for workers to safely take breaks. A small change area should be provided in case site conditions require workers to change either into PPE or out of PPE.

1.7 CLEARANCE PROCEDURES

Abatement Contractor is responsible for coordination with the “Environmental Consultant” for conducting visual inspections. While not clearance samples, periodic perimeter samples will be collected by AAI. The samples are expected to be ≤ 0.01 f/cm³. Perimeter samples above 0.01 f/cm³ will result in an evaluation of engineering controls being used and probable changes.

2.0 AIR MONITORING

2.01 DESCRIPTION OF THE WORK:

- A. This section describes air monitoring carried out by the Owner or Consultant to verify that the building remains uncontaminated. This section also describes the action required by the Contractor if an action level is met or exceeded.

2.02 RELATED DOCUMENTS:

- A. General provisions of Contract, including General and Special Conditions and other Division 00, 01 and 02 Specification sections, apply to work of this section.

2.03 AIR MONITORING:

- A. Work Area Isolation: The purpose of the air monitoring described in this section will be to detect faults in the work area such as:
 - Airborne asbestos fibers migrating from the work site;
 1. Should the above occur, the Contractor shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the Owner or Consultant.
 2. Prior to work beginning, the Consultant and Contractor shall review the air monitoring protocol as set forth by the contract documents.

2.04 AIRBORNE FIBER COUNTS:

- A. Personal Air Sampling: Contractor to install and maintain engineering controls to minimize potential elevated fiber levels. Contractor should try to maintain an average 8-hour TWA airborne count of less than 0.05 fibers per cubic centimeter of air (f/cm³). Sampling will be the responsibility of the General Contractor to ensure OSHA compliance during the work activities where friable and non friable asbestos is being disturbed. The results of the personal air monitoring shall be posted at the decon within 24 hours of the samples being collected. Contractor is not allowed to hold samples or change the frequency of the monitoring during periods where sampling is being performed to establish a Negative Exposure Assessment of periodic personal sampling to ensure OSHA compliance.

- B. Fibers Counted: The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts. "Airborne Fibers" referred to above include all fibers regardless of composition as counted per the NIOSH Method 7400 Procedures (most recent revision).
1. If work has been repeatedly stopped due to high airborne fiber counts (more than once), and at the Owner's discretion, air samples will be secured in the same area by the Consultant at the Contractor's expense for analysis by Transmission Electron Microscopy (TEM). "Airborne Fibers" counted in samples analyzed by Transmission Electron microscopy shall be only asbestos fibers, but of a diameter and length as specified by the AHERA TEM Analytical Method (40 CFR Part 763, Subpart E, Appendix A). The area or areas will be considered acceptable for entry without respiratory protection if the average sample concentration is less than 70 asbestos structures per square millimeter of filter area (70 s/mm²) or is statistically below the baseline established by the Consultant (as determined by the Z-Test).

2.05 ANALYTICAL METHODS:

- A. THE FOLLOWING METHODS WILL BE USED IN THE ANALYSIS OF AIR SAMPLES.
1. Personal samples will be collected on 25mm diameter 0.8 - 1.2 um pore size Mixed Cellulose Ester (MCE) filters and analyzed in accordance with the OSHA Reference Method (ORM, 29 CFR 1926.1101, Appendix A).
 2. All area samples not requiring analysis by TEM will be collected on 25mm diameter, 0.8 - 1.2 um diameter MCE filters and analyzed in accordance with the most recent revision of NIOSH Method 7400.
 3. Any samples requiring analysis by TEM will be collected on 25mm diameter, 0.45um MCE filters and analyzed in strict accordance with the AHERA TEM Analytical Method (40 CFR Part 763, Subpart E, Appendix A).
 4. The services of a testing laboratory will be employed by the Contractor to perform laboratory analysis of Contractor collected air samples. For PCM analysis, microscope(s) and technician(s) may be set up at the job site(s) in a manner to allow verbal reports on air samples within 24 hours. A complete record, certified by the testing laboratory, of all Contractor collected air monitoring tests and results will be furnished to the Consultant and the Owner. Likewise, records of all Owner or Consultant collected air monitoring tests and results will be furnished to the Contractor.
- B. Written Reports of all air monitoring tests will be posted at the job site, upon receipt from the respective laboratory.

3.0 OTHER SAFETY REQUIREMENTS

A. Communication:

1. Contractor's job supervisors, or designated safety persons, must carry at all times a cellular phone to facilitate communication between the job site, AAI and the Owner. The cellular phones must remain on the job site during regular working hours. Contractor(s) shall report to AAI any safety problem, code infraction, personal injury, or damage to the property. Report shall be made immediately after such occurrence.

B. Fire Protection:

1. Contractors shall provide a type "ABC" fire extinguisher(s) for each work crew. Total number needed should meet or exceed the OSHA requirement based on square footage.
2. Extinguishers are to be kept within easy reach of each work crew and never farther than 30 feet from any worker. Inspection tags on extinguishers shall indicate the date of last inspection.

C. Safety Program: Prior to starting any work the Contractor shall submit to Alternative Actions, Inc. proof of a written safety program for the project including but not limited to:

1. Occupational Health & Environmental Controls
 - a. Personal Protective Equipment
 - b. Fire Protection & Prevention
 - c. Hand & Power Tools
 - d. Ladders & Scaffolds
 - e. Motor Vehicles and Mechanized Equipment
 - f. Accident Prevention
 - g. Safety Inspections
 - h. OSHA Inspections
2. Instruct all of his personnel as to location of emergency telephone(s).
3. Instruct all personnel as to location on the job site of a copy of OSHA 29 CFR, Part 1926.
4. Instruct all of his personnel as to location of first aid supplies.

4.0 KEY SECTIONS FROM SOIL MANAGEMENT PLAN

Based on the materials encountered on the site and the results of testing during 2019 and 2020, it is the intention of this Revised Soil Management Plan to include additional requirements that would be necessary as small quantities of friable asbestos materials are encountered. Since all potential locations are unknown, the new approach will include a general contractor who is capable of performing demolition, grading and handling of known and unknown friable and non-friable asbestos materials. In addition, we propose construction of a site specific asbestos landfill for disposal of the any remaining friable asbestos materials which may be encountered. Figure 1 is a revised “Key Site Drawing”. It notes the location of the site specific asbestos landfill. Attachment 1 is the original Soil Management Plan prepared by S&ME, Inc. dated October 12, 2018. Attachment 2 adds the details for the site specific asbestos landfill.

This “Revised Soil Management Plan” has been prepared to combine the existing requirements of the current Soil Management Plan with the supplemental requirements for adding a site specific asbestos landfill. Between the two documents, the Revised Management Plan will allow the project to move forward in a safe progression which protects the environment, the workers on site and the surrounding community. The site, upon completion will have a two (2) caps on top of the site specific asbestos landfill. On top of the asbestos debris will be a hard cap that is two (2) foot thick. Then the site as a whole will have two (2) feet of clean soil covering the demolition debris. The clean soil covering will have grass or hardscape covering. The rerouting of the sanitary sewer and storm water lines will be performed inside clean utility corridors. With the addition of the site specific landfill and dual capabilities of the general contractor, the project will be able to progress without delay or the need to bring in a specialty contractor. Specific OSHA and EPA requirements pertaining to the workers, supervision, perimeter monitoring, etc. will be addressed in the project specification manual.

Most of the work to be performed as part of this project are subject to EPA National Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutants commonly referred to as the NESHAP Regulations. The EPA NESHAP Regulations can be found in 40 CFR Part 61, Subpart M. Two primary sections apply to the project Part 61.145

Standard for Demolition and Renovation and 61.154 Standard for Active Waste Disposal Sites.

Part 61.145 requires work practice standards to be used that control asbestos emissions. These are referred to as engineering controls. The primary engineering controls is to keep the asbestos materials adequately wet. Wet means damp. Federal EPA NESHAP requires a "No Visible Emission" approach. The generation of contaminated water creates an additional series of requirements. The contractor will maintain at least one onsite representative trained in the regulatory operation and means of compliance. Segregation of asbestos containing materials (wastes) will be performed as feasible. The friable regulated asbestos materials encountered will be separated as feasible. Friable materials which cannot be readily gathered by hand will remain with the non friable asbestos roofing which will be disposed of in certain areas of the site and covered by two feet of clean fill material. Any areas with friable materials present will be considered regulated until proper coverage can be made. It is the goal of this project to begin covering asbestos materials as quickly as feasible to reduce potential exposures.

Part 61.154 has requirements pertaining to perimeter protection of the asbestos landfill area, posting requirements and proper coverage within 24 of materials being placed in the landfill area. How the project will meet these requirements are outlined in Attachment 2 of this revised SMP.

Perimeter monitoring will be performed during periods when asbestos materials are being disturbed which may become airborne. This perimeter monitoring will ensure that the general public outside the active work areas are not being exposed to asbestos fibers by the work activities. Should the perimeter monitoring reflect a potential fiber release, current work practices will be reviewed and adjusted to ensure fibers do not leave the site. The frequency of the perimeter monitoring will vary. It will be performed more often at the beginning of the project as work procedures are refined. As the project moves from the heaviest concentrations of potential asbestos debris to the lightest, frequency will also be adjusted.

ATTACHMENT 2: Site Specific Asbestos Landfill

Site Specific Asbestos Landfill

1. Push and clear any debris from the area of the asbestos landfill. Remove any concrete or asphalt surfaces.
2. Rough dimensions for the fill area is 75' x 75' x 11' deep. A stock pile will need to be created outside the fill area from the native soils removed from the fill area. At least one stock pile containing 30% of the native soils removed will need to be in close proximity to the fill area for required covering of asbestos debris in the fill area by layer.
3. To support surrounding walls, the bank will be sloped at roughly a 1/2' ratio. The open finished area for the actual asbestos debris will be 55' x 55' x 11' deep.
4. The Southwest area will need to be ramped for access by front end loader, trucks and or other equipment used to move the asbestos debris into the fill area. The asbestos material will be placed, not dumped from the upper edge. The ramp can be the full width of the Southwest side or a portion thereof.
5. Create a 2' x 2' berm around the upper walls of the fill area. Berm shall be covered by geo fabric, rock, etc. that will prevent erosion. This will control surface water from entering the fill area and prevent equipment or workers from falling into the fill area.
6. Outside the berm, the fill area will need to be demarcated for worker protection and as a visual representation of the danger. Install metal posts at no more than 9' intervals. Posts will need to be installed to a finished elevation of 3' above ground level. Physically attach metal chains between the posts to create a continuous barrier and vertical site line. Paint chains red to represent danger beyond. Hang industry preprinted asbestos danger signs. Signs will need to be preprinted plastic signs. Signs will be installed on every other post. This creates a regulated area where Personal Protection Equipment (PPE) is required by all entering.
7. If necessary, compact interior of fill area prior to use to stabilize. Based on previous testing at the site and general area, it is anticipated that densely packed natural clays will be present. If soils inside fill are not suitable, a liner specification will be prepared and added to the project.
8. Anyone entering from the ramp into the fill area will need to be in PPE including disposable suit, disposable gloves and respiratory protection using P100 respirator filters. This includes equipment operators.
9. Federal regulations require any asbestos debris being deposited in the fill area to be covered by 6" of clean fill within 24 hours. If materials are being placed in the fill every day during the work week, the 6" of fill can be placed over the asbestos debris at the end of each work week. This is expected to be the case during the work in the Eastern half of the property. As the work proceeds to the West, it is

anticipated the amount of asbestos debris will be minor and may require daily coverage with 6" of clean fill. The clean fill will come from the native soils removed during the construction of the fill area.

10. Once it can be confirmed that the asbestos fill is no longer required, it will need to be properly closed. Any room between the asbestos debris in the fill area and 9' from the initial elevation of 11' below grade can be filled with other compactable fill materials. Wood materials will need to be avoided due to the permanent cap required. For the final top 3' to finished grade the following will need to be installed. A two (2) foot compact clay cap will need to be installed over the fill area containing asbestos. The final one (1) to two (2) foot will be completed with clean fill, top soil and grass. A geo grid or orange plastic fencing, will need to be laid on top of the hard clay cap as a visual warning not to disturb the clay cap.
11. Upon completion of fill, the location of the fill will need to be professionally surveyed and noted as an asbestos landfill on the permanent site plat. Permanent metal pins will need to be installed at the corners. The permanent pins will need to be held in place by concrete.
12. The required permanent marking will be determined by Tennessee Department of Environmental and Conservation (TDEC) and the City of Chattanooga. The permanent placard is not part of the contractor's scope of work. It will be created and installed under a separate City contract.

Reference to made to the following documents and drawings:

Top View Drawing

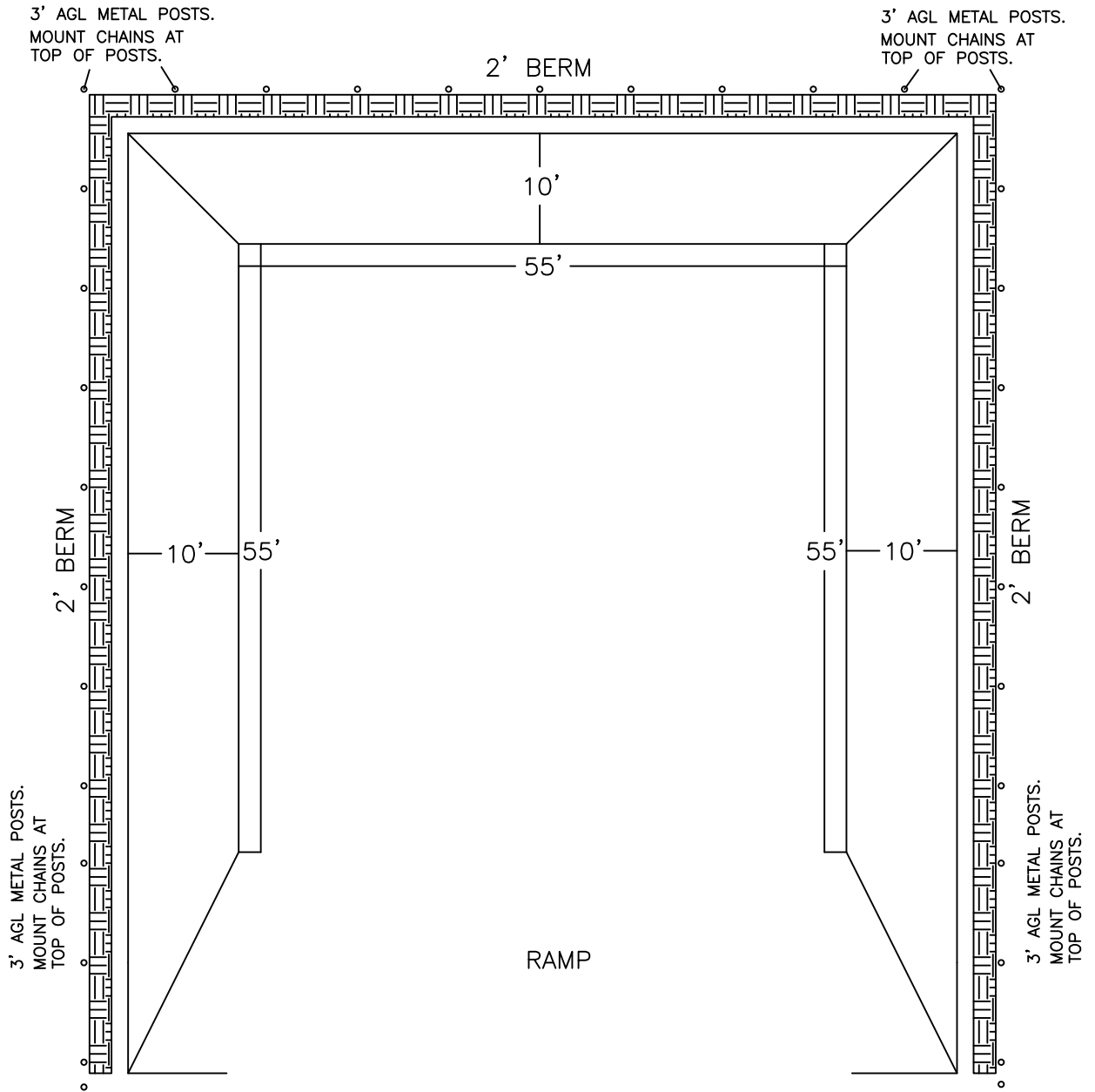
Cut View Drawing

Please Refer to the Following for Additional Requirements:

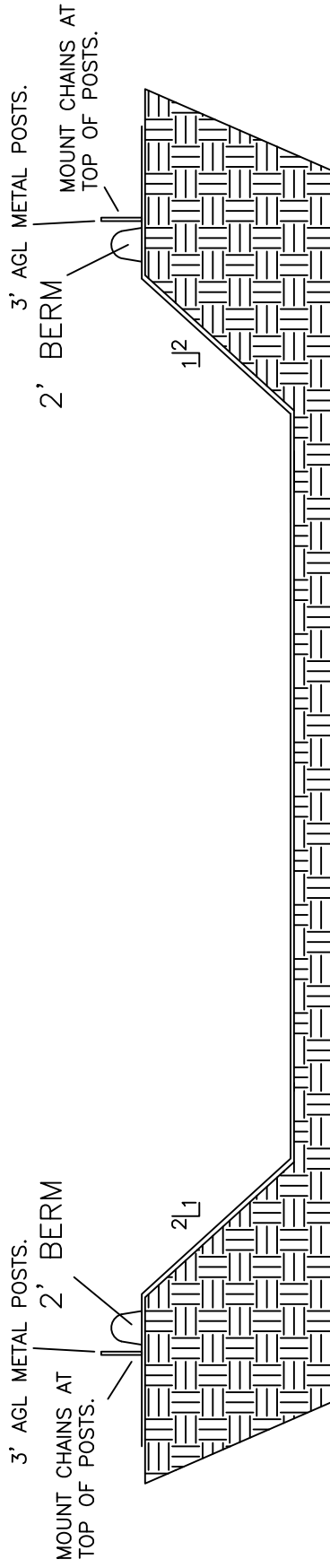
Site Soil Management Plan – Attachment 1 Revised Soil Management Plan

Locations drawing and detail drawing located in the project drawings.

Written Project Specifications



TOP VIEW ASBESTOS FILL



CUT VIEW ASBESTOS FILL

Revised Soil Management Plan

Demolition Completion & Site Stabilization

Former Dixie Yarns Property
Old Lupton Mill
DoR Site ID: 33-764
1210 Mercer Street
Chattanooga, Tennessee

City of Chattanooga
Department of Public Works
1250 Market Street, Ste 2100
Chattanooga, TN 37402

Project NO. AAI-5523

May 22, 2020



Alternative Actions, Inc.
7505 Middle Valley Road, Suite 113
Hixson, Tennessee 37343

ALTERNATIVE ACTIONS, INC.

7505 Middle Valley Road, Suite 113, Hixson, Tennessee 37343

Ms. Elizabeth Goss
Engineering Coordinator
City of Chattanooga
Department of Public Works
1250 Market Street, Suite 2100
Chattanooga, TN 37402

May 22, 2020

RE: Revised Soil Management Plan
Former Dixie Yarns Property
Old Lupton Mill
DoR Site ID: 33-764
1210 Mercer Street
Chattanooga TN

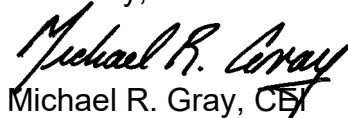
Ms. Goss,

Attached please find the Revised Soil Management Plan for the former Dixie Yarns Property – Old Lupton Mill, 1210 Mercer Street, Chattanooga, Tennessee. As previously discussed, the revision is intended to add additional information to the previously approved Soil Management Plan prepared by S&ME, Inc. dated October 12, 2018. Besides giving some additional background and history, Attachment 2 adds additional language pertaining to the site specific asbestos landfill we would like to install at the site.

This new approach will allow the general contractor to continue cleaning the site without delays while still protecting the environment, workers and surrounding properties. This is the same approach previously discussed with you and your team, TDEC Division of Remediation, Division of Solid Waste and Air Pollution Control Bureau.

Alternative Actions, Inc. appreciates Should you have any questions or would like to schedule this work, please contact me at my office 423-843-0773 or my cell phone 423-595-1135.

Sincerely,



Michael R. Gray, CE
President

Table of Contents

- 1.0 INTRODUCTION
- 2.0 PROPERTY DESCRIPTION
- 3.0 PROPERTY HISTORY
- 4.0 CONTAMINANTS OF CONCERN
- 5.0 SITE MANAGEMENT PRACTICES

Figures

- 1 Key Site Drawing (Revised May 2020)

Attachments

- 1 Soil Management Plan S&ME – October 12, 2018
- 2 Additional Work Plan – Site Specific Asbestos Landfill

1.0 INTRODUCTION

This Revised Soil Management Plan (SMP) has been prepared by Alternative Actions, Inc. (AAI) on behalf of the City of Chattanooga, Department of Public Works to AMEND the previously approved SMP prepared by S&ME, Inc., dated October 12, 2018. Additional discoveries and asbestos abatement work has caused portions of the work to be redefined and some additional scope of work to be added to the site management practices designed to abate the risk of exposure to asbestos and other contaminants of concern (COCs) present at the property located at 1210 Mercer Street, Chattanooga, Tennessee (subject property). The development is known as the Former Dixie Yarns Property – Old Lupton Mill. The site has entered into the Brownfield Voluntary Agreement (BVA) with the Tennessee Department of Environment and Conservation (the Department) for the purpose of addressing the former Dixie Yarns and the environmental conditions left by The Dockery Group. The Department’s Division of Remediation assigned site number 33-764 to the site.

The SMP is intended to dictate and guide the redevelopment planned by the current owner, City of Chattanooga. This revision is intended to update and supplement the current SMP due to site conditions found after the current SMP was submitted and approved by TDEC in 2018.

The subject property is being redeveloped for use as a park (green space) with possible redevelopment at a future date of the West half. The future redevelopment however will depend upon conditions encountered during the project and if any portion of the site is suitable for other purposes. This will be determined at a later date.

2.0 PROPERTY DESCRIPTION

The subject property is located at 1210 Mercer Street, Chattanooga, Hamilton County, Tennessee. The subject property encompasses approximately 12 acres of land. The legal description is presented in “Metes & Bound” format, recorded in Deed Book 10784, Page 935 , in the Register’s Office, Hamilton County, Tennessee.” The property has a Tax Parcel ID of 118E E 006.03. The property previously contained a large textile mill that once contained over 400,000 square feet.

3.0 PROPERTY HISTORY

The bulk of the buildings have been razed and are currently lying on the ground at the site. It was originally constructed in 1923 as a textile mill. Multiple additions were added during the 1930's. Operations ceased at the site in 2009. The property was purchased by the Dockery Group in 2012. The Dockery Group had plans to perform demolition and salvaging operations at the site. Upon completion the site would be redeveloped by the Dockery Group or put up for sale. Most buildings were razed to the ground and materials salvaged. Prior to 2016, Dockery Group vacated the site. The site was obtained by the City of Chattanooga due to delinquent taxes in 2016.

Recognizing the potential risk to public health and the environment due to the condition the Dockery Group left the site in, the City of Chattanooga created a task group to determine what could be done with the site. Tennessee Department of Environment and Conservation (TDEC) Remediation Program was asked for guidance. Prior testing reports were studied. Site visits were made. Additional testing was performed to include borings, soil-gas testing, targeted asbestos and targeted Lead Based Paint (LBP). A Soil Management Plan was prepared, submitted, and approved October 2018. City Engineering prepared work specifications for the remaining demolition, site work and relocation of sewer line. The successful general contractor, Wright Brothers Construction Company, Inc. was awarded the project. The work included consolidation of the demolition debris and covering the site with two (2) feet of clean soil. It was already known that non friable asbestos roofing would be included in the debris piles and would remain on the site under the two (2) foot clean soil cap. Prior to the physical start of the work, suspect friable asbestos materials were noticed in some of the debris piles located on the East side of the site. Testing confirmed the suspect materials did contain asbestos and would be considered asbestos. Additional meetings were held at the site to include the City of Chattanooga, TDEC, Chattanooga-Hamilton County Air Pollution Control Bureau, S&ME, Inc. and Alternative Actions, Inc. The purpose of the meeting was to determine what would be required to properly handle the friable asbestos containing materials. It was agreed that the concentrated friable asbestos containing materials would need to be removed from the site. Alternative Actions, Inc. prepared two work specifications. The first work specification was for the "Environmental Abatement" of the concentrated asbestos containing building materials. The second specification "Demolition Environmental Specification" were prepared for Wright Brothers Construction Company for OSHA compliance as they encounter the non-friable asbestos roofing materials. The identified and scoped friable asbestos materials were removed by Tradebe Environmental Services. The work was concentrated to the East portion of the property

where the greatest visible friable asbestos materials were identified. From October 24, 2019 to December 16, 2019, approximately 1,160 cubic yards of mixed asbestos and demolition debris was disposed of in bulk at the Santek Environmental Landfill in Bradley County, Tennessee as asbestos waste. This represents the removal of the concentrated friable asbestos materials known to be at the site.

A visual inspection was made of the remaining building debris piles. Small quantities of friable asbestos were noticed, mostly in crumb size, in some locations. Since this was an unknown condition at the time of the original scope of work, it was decided to prepare a new scope of work that could safely and properly handle the mixed friable and non-friable asbestos that still remains on the site.

4.0 CONTAMINANTS OF CONCERN

The original Soil Management Plan (SMP) prepared by S&ME, Inc., October 2018, was based upon conversations with the Owner, City of Chattanooga, Tennessee Department of Environment and Conservation, and the reports listed below which were available at that time. It was intended to cover the site demolition cleanup for conversion into a park initially and possibly redevelopment on the West half of the property. References below represent those reports which contain environmental information pertaining to the site. Reference, review and details were included from the following:

Type of Assessment	Date	Environmental Engineering Consultant
Site Investigation Report	April 2000	Consolidated Technologies, Inc. (CTi)
Ground Water Contamination Report	January 2002	Consolidated Technologies, Inc. (CTi)
Asbestos Inspection Report	December 2011	HGS Engineering, Inc.
Phase I ESA Report	April 2012	S&ME, Inc.
Limited Phase II ESA Report	April 2014	GEO Services, LLC
Annual Ground Water Report	April 2015	Consolidated Technologies, Inc. (CTi)
Removal Assessment Letter Report (PCBs, VOCs, SVOCs, Asbestos, PAHs, RCRA Metals) For Region 4 EPA	March 2016	Oneida Total Integrated Enterprise (OTIE)
Annual Ground Water Report	May 2016	Consolidated Technologies, Inc. (CTi)
Limited Soil-Gas Assessment	August 2017	S&ME, Inc.
Soil Management Plan	October 2018	S&ME, Inc.
Demolition Resolution & Contract	January 2019	City of Chattanooga & Wright Brothers Construction
Report of Hazardous Materials Observations and Sampling	April 2019	S&ME, Inc.

Demolition Asbestos Specifications	May 2019	Alternative Actions, Inc.
Environmental Abatement Specifications	May 2019	Alternative Actions, Inc.
Targeted Asbestos Abatement Contract	September 2019	City of Chattanooga & Tradebe Environmental Services, LLC
Limited Environmental Sampling Report	January 2020	S&ME, Inc.

Based on the materials encountered on the site and the results of testing during 2019 and 2020, it is the intention of this Revised Soil Management Plan to include additional requirements that would be necessary as small quantities of friable asbestos materials are encountered. Since all potential locations are unknown, the new approach will include a general contractor who is capable of performing demolition, grading and handling of known and unknown friable and non-friable asbestos materials. In addition, we propose construction of a site specific asbestos landfill for disposal of the any remaining friable asbestos materials which may be encountered. Figure 1 is a revised “Key Site Drawing”. It notes the location of the site specific asbestos landfill. Attachment 1 is the original Soil Management Plan prepared by S&ME, Inc. dated October 12, 2018. Attachment 2 adds the details for the site specific asbestos landfill.

5.0 SITE MANAGEMENT PRACTICES

This “Revised Soil Management Plan” has been prepared to combine the existing requirements of the current Soil Management Plan with the supplemental requirements for adding a site specific asbestos landfill. Between the two documents, the Revised Management Plan will allow the project to move forward in a safe progression which protects the environment, the workers on site and the surrounding community. The site, upon completion will have a two (2) caps on top of the site specific asbestos landfill. On top of the asbestos debris will be a hard cap that is two (2) foot thick. Then the site as a whole will have two (2) feet of clean soil covering the demolition debris. The clean soil covering will have grass or hardscape covering. The rerouting of the sanitary sewer and storm water lines will be performed inside clean utility corridors. With the addition of the site specific landfill and dual capabilities of the general contractor, the project will be able to progress without delay or the need to bring in a specialty contractor. Specific OSHA and EPA requirements pertaining to the workers, supervision, perimeter monitoring, etc. will be addressed in the project specification manual.

Most of the work to be performed as part of this project are subject to EPA National Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutants commonly referred to as the NESHAP Regulations. The EPA NESHAP Regulations can be found in 40 CFR Part 61, Subpart M. Two primary sections apply to the project Part 61.145 Standard for Demolition and Renovation and 61.154 Standard for Active Waste Disposal Sites.

Part 61.145 requires work practice standards to be used that control asbestos emissions. These are referred to as engineering controls. The primary engineering controls is to keep the asbestos materials adequately wet. Wet means damp. Federal EPA NESHAP requires a “No Visible Emission” approach. The generation of contaminated water creates an additional series of requirements. The contractor will maintain at least one onsite representative trained in the regulatory operation and means of compliance. Segregation of asbestos containing materials (wastes) will be performed as feasible. The friable regulated asbestos materials encountered will be separated as feasible. Friable materials which cannot be readily gathered by hand will remain with the non friable asbestos roofing which will be disposed of in certain areas of the site and covered by two feet of clean fill material. Any areas with friable materials present will be considered regulated until proper coverage can be made. It is the goal of this project to begin covering asbestos materials as quickly as feasible to reduce potential exposures.

Part 61.154 has requirements pertaining to perimeter protection of the asbestos landfill area, posting requirements and proper coverage within 24 of materials being placed in the landfill area. How the project will meet these requirements are outlined in Attachment 2 of this revised SMP.

Perimeter monitoring will be performed during periods when asbestos materials are being disturbed which may become airborne. This perimeter monitoring will ensure that the general public outside the active work areas are not being exposed to asbestos fibers by the work activities. Should the perimeter monitoring reflect a potential fiber release, current work practices will be reviewed and adjusted to ensure fibers do not leave the site. The frequency of the perimeter monitoring will vary. It will be performed more often at the beginning of the project as work procedures are refined. As the project moves from the heaviest concentrations of potential asbestos debris to the lightest, frequency will also be adjusted.

Please refer to Attachments 1 and 2 for other site management practices.

FIGURES

Figure 1

Key Site Drawing



CITY OF CHATTANOOGA
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

ADMINISTRATOR:
JUSTIN C. HOLLAND
CITY ENGINEER:
WILLIAM C. PAYNE, P.E.

LUPTON DRIVE MILL PROPERTY
Flooring/Surface Materials Exhibit
showing areas suitable for Rubble Fill
and Preference of Placement

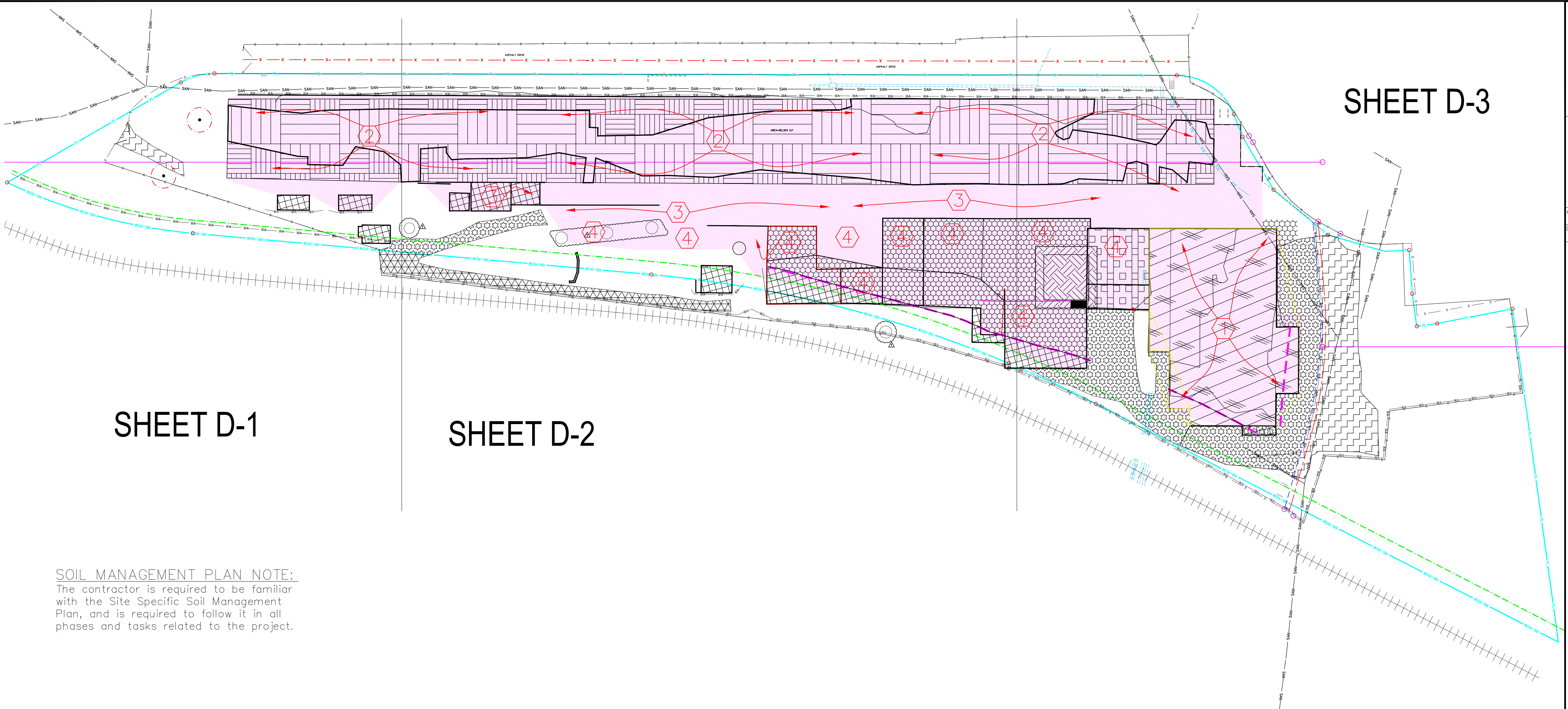
NO.	DATE	REVISION	SIG.
0	05/08/20	ORIGINAL	AWO

CONTRACT#	Y-16-004
SCALE:	1"=60'
DRAWN:	JAH
DESIGN:	AWO
CHECKED:	AWO

**PRELIMINARY
(SUBJECT TO
CHANGE)**

SHEET: KEY

SHEET D-3

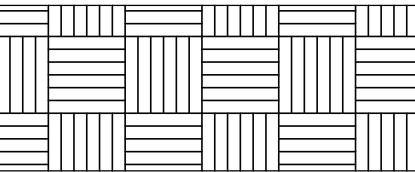
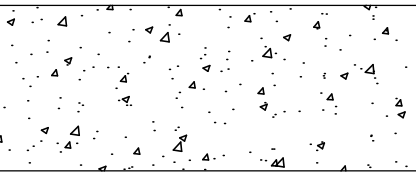
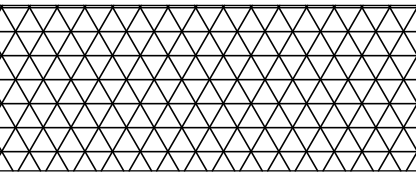
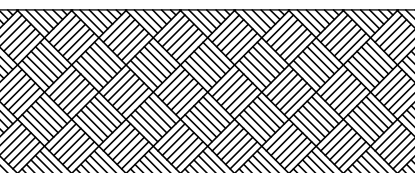
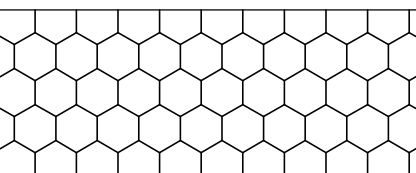
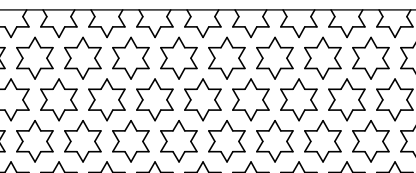
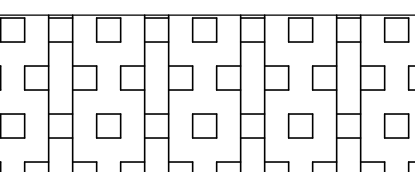
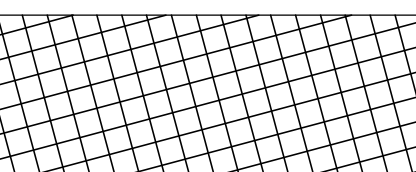
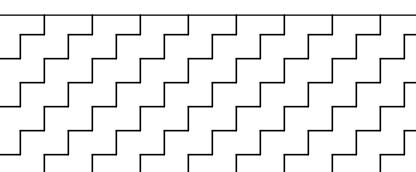
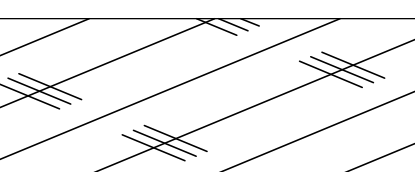
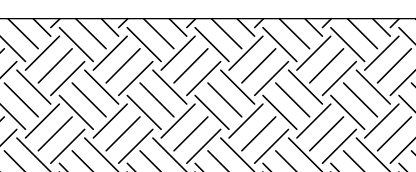
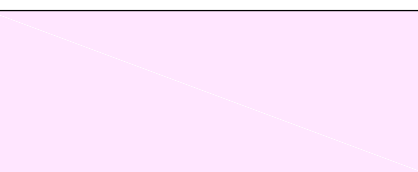


SHEET D-1

SHEET D-2

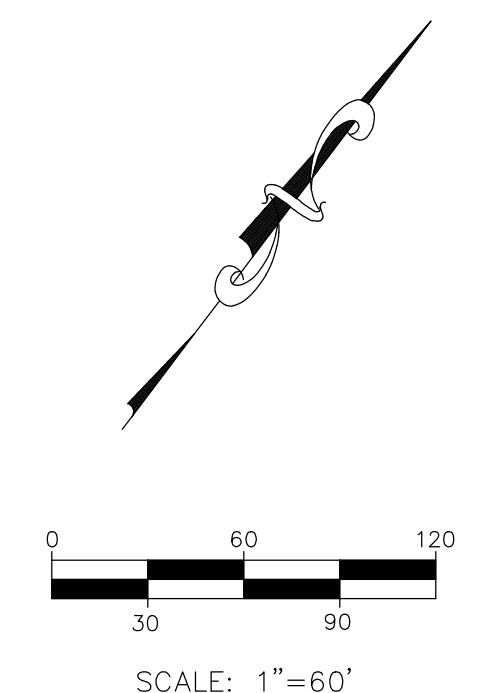
SOIL MANAGEMENT PLAN NOTE:
The contractor is required to be familiar with the Site Specific Soil Management Plan, and is required to follow it in all phases and tasks related to the project.

LEGEND:

 62,302 S.F. Surveyed area of old wooden flooring – Remove all material from the flooring, leave floor intact, cover with fill per specifications.	 0 S.F. Area of old concrete flooring – Remove all material from the flooring, leave floor intact, cover with fill per specifications.	 5,854 S.F. Area of asphalt driveway to be removed – Remove all material from the driveway, remove asphalt. Rubblize per specifications, and mix with debris being placed on site as fill.
 40,712 S.F. Assumed area of old wooden flooring, currently covered with debris – Remove all material from the flooring, leave floor intact, cover with fill per specifications.	 20,929 S.F. Area of old concrete flooring – Remove all material from the flooring, rubblize floor in-place, cover with fill per specifications.	 50,627 S.F. Area of asphalt driveway to be rubblized in place.
 7,417 S.F. Area of old wooden flooring on piers – Remove flooring, rubblize, and place on site per specifications.	 31,634 S.F. Area of old concrete flooring – Remove all material from the flooring, remove floor to allow for grading, grade subgrade per plans, cover with fill per specifications.	 50,627 S.F. Area of asphalt driveway to be rubblized in place.
 36,744 S.F. Area of old wooden flooring on second story of two story building. Remove wood flooring and sand beneath, rubblize, and place on site per specifications. Rubblize floor below per specifications, then collapse and rubblize building in place, fill to subgrade per subgrade with materials from remainder of site, cover with suitable fill per specifications.	 Site Specific Asbestos Landfill – See Sheet L-1 for details	 275,053 S.F. Total area of demolition available for placement of debris.

Areas of rubble placement by preference:

1. Basement of existing building, after walls, ceiling, and supports have been removed and flooring has been demolished per specifications.
2. Entire area of old wooden flooring. Placed rubble should be slightly higher to the north, to facilitate placement of soil cover over rubble. Soil should be placed with a slope of approximately 2% toward the south.
3. Areas south of the wooden flooring between wooden flooring and concrete slabs.
4. Remaining concrete structure areas designated for rubble placement. Fill from north to south.



RAILROAD R.O.W. NOTE: PORTIONS OF THE MILL SITE AREA ACTUALLY ON THE RAILROAD R.O.W. RAILROAD R.O.W. IS SHOWN ON THE PLANS, AND WILL BE MARKED IN THE FIELD BY THE CITY SURVEY CREWS. THERE IS A SIXTEEN FOOT OFFSET OF THE RAILROAD R.O.W. LINE LABELLED "TOTAL DEMOLITION LINE". EVERYTHING ON THE MILL SITE SOUTH OF THE TOTAL DEMOLITION LINE IS TO BE REMOVED DOWN TO A MINIMUM OF 6" BELOW EXISTING GROUND ELEVATION, THEN THE SOIL IS TO BE BROUGHT BACK UP TO GRADE USING CLEAN FILL SOIL, COMPACTED BY BOBCAT OR SIMILAR WEIGHT VEHICLE. APPLY SEED AND STRAW PER PLANS. ON-SITE FILL OF CLEAN SOIL COVER OVER RUBBLE OR REMAINING STRUCTURES IS TO START NORTH OF THE TOTAL DEMOLITION LINE. THE AREA BETWEEN THE TOTAL DEMOLITION LINE AND THE RAILROAD R.O.W. IS TO BE FILLED WITH CLEAN SOIL AT A 3:1 SLOPE STARTING TO THE NORTH, LEAVING A 10' TRAVERSIBLE PATH NEXT TO THE NEW FENCE TO BE INSTALLED ON THE RAILROAD R.O.W. LINE.

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ATTACHMENTS

ATTACHMENT 1

Soil Management Plan

S&ME, Inc.

October 12, 2018



October 12, 2018

City of Chattanooga
Department of Public Works- Engineering Division
274 East 10th Street
Chattanooga, Tennessee 37402

Attention: Mr. Dennis Malone

Reference: **Soil Management Plan**
Former Dixie Yarns Property-Old Lupton Mill (DOR 33-764)
Chattanooga, Tennessee
S&ME Project No. 4181-17-043

Dear Mr. Malone:

This Soil Management Plan provides site specific management practices established in order to reduce risk associated with expected environmental contaminants associated with petroleum-impacted soils and historical site operations identified during prior investigations. Our services in conjunction with development of this document were conducted at your request, in accordance with the services outlined under Task 1: Preparation of a Soil Management Plan, in S&ME Proposal No. 41-1700317CO2 dated July 27, 2018.

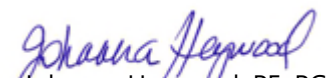
This document has been prepared in accordance with generally accepted practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.

S&ME should be provided the opportunity to review modifications to plans and specifications in order that recommendations are properly interpreted and implemented. The recommendations in this report are contingent on S&ME's observation and monitoring of site redevelopment activities. This Plan addresses soil management practices during site redevelopment relative to environmental conditions as described in supporting documentation and is not intended to address geotechnical considerations. S&ME appreciates the opportunity to provide environmental services. Should you have any questions after reviewing this letter, please do not hesitate to contact us.

Sincerely,

S&ME, Inc.


Paul Hubbard
Staff Professional


Johanna Heywood, PE, PG
Senior Project Manager



◆ Site Location and Description

The subject property is commonly known as the former Lupton City Mill which was operated by Dixie Yarns and located at 1210 Mercer Street in Chattanooga, Tennessee. The property occupies about 12 acres and is referenced as Parcel 118E E 006.03 on the Hamilton County GIS website. Figure 1, attached, depicts the approximate boundaries of the property. The property is currently vacant and contains remnants of former structures that are standing and areas where concrete slabs and flooring or subfloors from past structures remain. Numerous piles of building debris are located across the site. Surrounding properties include residential properties to the north, undeveloped wooded property to the east, and recreational land (golf course) to the south. Property to the west includes both recreational (a municipal park) and residential properties.

◆ Project Background

The property initially was developed in the early-1920s as a textile mill and operated as a mill until the mill closed in 2009. The Dockery Group (property owner prior to the City of Chattanooga) acquired the facility, entered the property into the VOAP based on the findings of a Limited Phase II ESA (GEOS, dated April 2014). The Dockery Group reportedly proceeded to selectively deconstruct the facility for the purpose of salvaging and selling recovered wood and brick, then abandoned the site. The City of Chattanooga has since assumed ownership of the property and entered the property into the Tennessee Department of Environment and Conservation (TDEC) Voluntary Oversight and Assistance Program (VOAP).

S&ME understands that the City and TDEC discussed the findings of the April 2014 Limited Phase II ESA in the context of an acceptable clean up approach. The outcome of the discussion was a proposed clean-up approach that generally consisted of relocating the rubble to the eastern approximately 4.6 acres of the property as fill, then capping with 2 feet of clean soil or hardscape for future use as a park. The western approximately 7.3 acres of the property would be released as a future development parcel by the City. Based on the detected concentrations of EPH and PAHs and PCBs at the former boring location B-14 identified in the 2014 Phase Limited Phase II ESA, TDEC requested additional sampling limited to the western 7.3-acre portion of the property. The requested sampling included the collection of shallow soil below the flooring on the western portion of the property to evaluate if soil underlying the flooring and sampled intervals corresponding with elevated concentrations of PAHs and EPH met unrestricted use criteria. The requested sampling also included the collection of additional samples in the vicinity of the former B-14 to better understand the vertical and lateral extent of the elevated PCB concentrations.

S&ME proposed and was authorized to conduct limited environmental sampling, specific to the objectives of the client and TDEC. The scope of the assessment included installation of fifteen soil borings across the western two-thirds of the property and collection of soil samples for laboratory analysis by extractable petroleum hydrocarbons (EPH), polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). Additionally, S&ME collected samples of stockpiled soils generated by clearing of debris in the vicinity of the former B-14 for analysis of PCBs. The results of the assessment, submitted to the City of Chattanooga in draft format on November 13, 2017, identified concentrations of EPH and PAHs exceeding the corresponding Regional Screening Levels (RSLs) in the western third of the project site at boring locations B1, B3, B4, B6 and B7. The observed impact was present at depths of at least five feet; however, the vertical extent has not been defined. PCBs were identified in excess of the corresponding RSLs for residential land use in the stockpile sample B8 COMP EAST (representing the top foot



of soil in the area of the former B-14), but below the TSCA self-implementing cleanup goal of 1 milligram per kilogram. Additionally, the lateral extent of impact is not well defined due to the presence of debris piles across the southern portion of the site. As such, there is potential that higher concentrations are present in other areas.

◆ **Redevelopment Plan**

In subsequent correspondence between the City of Chattanooga and S&ME on February 6, 2018, the City indicated their objective was to consolidate and spread onsite debris and to install an engineered clean soil cap across the property. Based on our recent correspondence on July 24, 2018, we understand at this time that the intended future use for the site is public greenspace. A pre-fabricated restroom structure may also be incorporated, but no occupied structures are planned. At this time, the location of a future utility trench has not been established.

As requested by the City of Chattanooga, S&ME also prepared a *Report of Limited Geotechnical Engineering Services*, dated August 14, 2018. The purpose of the report was to provide recommendations for site preparations and placement of the construction fill that are applicable to the property having the end uses as a green space. A summary of S&ME's recommendations are provided below. This summary is for convenience only and should not be relied upon without reading the full contents of the attached report.

- Demolition of existing structures including the removal of dock retaining walls, basements, crawl spaces, and elevated floor slabs over crawl spaces;
- Demolishing the basement on the east end by disassembling the walls, columns, and elevated slab individually, and breaking the material down to smaller pieces prior to placing as fill on the site;
- Rubblizing of on-site construction debris, including concrete, brick, wood, insulation, and roofing material, to a maximum particle size of 18 inches or smaller using crushing equipment;
- At-grade asphalt paving, wood flooring, and concrete slabs may be left in place provided they are broken up into approximately 3 foot square pieces to allow for drainage;
- Placement and compaction of building debris in maximum 2-foot thick lifts;
- Placement of a minimum two-foot thick soil cap comprising silt or clay with no rock fragments larger than 4 inches in diameter; and
- Installation of a 12 oz., non-woven, needle punch filter fabric over the first 6 inches of soil fill, then placing the rest of the soil cap over the filter fabric to reduce the potential for migration of the soil cap into void spaces within the rubble fill.

A copy of the Lupton Drive Mill Property Flooring / Surface Materials Exhibit drawing prepared by the City of Chattanooga Department of Public Works, Engineering Division and dated June 1, 2018 is attached.

Environmental Soil Management Practices

The Environmental Soil Management Practices were developed to establish soil handling procedures during construction. Given results of prior assessment and site history, it is expected that impacted soil will be encountered. If encountered and intended to be disturbed, impacted soils shall be handled with appropriate soil management practices and, if disposed off-site, impacted soils or soil commingled with other wastes (including suspected foundry sand) shall be characterized and disposed appropriately.



The presence of impacted soils and/or building materials on a construction site corresponds with potential risks for the ingestion and dermal contact exposure pathway. At this time, site development activities present a potential exposure pathway to site workers during construction. Additionally, exposure of the impacted soil presents a potential off-site "migration" issue if proper storm water best management practices are not implemented. Because of these potential exposure pathways, certain site management practices must be implemented to be protective of potential receptors. Provided that petroleum impacted soils are placed below a minimum of 24 inches of clean fill or a sufficient impervious layer, then direct exposure to potential future receptors should be significantly reduced. Given the site history, presence of residual buildings and slabs, and that assessment activities were limited in nature, it is presumed that there are areas of the entire site will be capped with at least 2 feet of clean soil.

Within the boundaries of the planned development, it is not anticipated that soils will be excavated for offsite disposal. However, it is contemplated that soils will be relocated in the process of site grading activities to achieve desired grades and placement below sufficient soil cap thickness.

If impacted soil or building materials must be disposed offsite to meet the grading requirements, prior to transporting offsite, the media will be characterized appropriately for appropriate disposal determination. Additionally, written approval by TDEC and/or the landfill, as applicable must be received prior to transporting offsite.

In the absence of additional site characterization data, at a minimum, the following soil management practices will be implemented by the property owner/developer. Proper implementation of these management practices should reduce unnecessary exposure to potential constituents of concern associated with foundry sand at the site. The site management practices consist of the following:

- Notification to TDEC-DoR prior to beginning any construction or demolition work at the site which are intrusive in nature and would potentially disturb or expose the subsurface impacted soils or building materials.
- Site workers who are reasonably expected to be exposed to impacted soil during construction or demolition activities shall be alerted to the potential constituents of concern at the site and be familiar with these site management practices prior to implementing the work.
- These workers shall be informed of the risk associated with ingestion or inhalation of soil and dust particles and shall be instructed to limit physical contact with the impacted soils. If an aspect of the work requires extensive contact with impacted soils, a task-specific safety plan shall be required which would provide additional information on associated risks, personal protective equipment, and decontamination practices. Contractor shall be responsible for ensuring site workers have met any necessary training requirements related to handling impacted soil.
- An Environmental Professional or Environmental Technician qualified to identify impacted materials will be on site during intrusive activities.
- Given the site history, it should be anticipated that areas of petroleum and chlorinated solvent-impacted soils and/or water may be encountered. If encountered, the contractor should stop work in that immediate area, and notify the site superintendent who will notify the environmental professional. The environmental



professional will review area of impact relative to existing historical assessment data and following discussion with the site superintendent and owner make recommendations for handling or containing environmental media– either to continue work, to segregate and sample, or relocate. It should be expected that segregated soils will be covered with heavy poly sheeting until characterized or determined allowable to remain onsite.

- If discolored or stained soils are observed, or unusual odors encountered, the contractor should stop work, notify the superintendent and the Environmental Professional. No soil shall leave the site prior to characterization.
- Proper sediment and erosion controls must be established prior to construction and/or demolition activities to prevent the inadvertent offsite transport of impacted soil from the site. The controls will be established in accordance with the TDEC erosion and sediment control handbook.

These controls must be periodically inspected and adequately maintained throughout the duration of the construction and/or demolition activities to prevent the offsite transport of soils from the site. Only after the site is adequately stabilized, can the sediment and erosion controls be removed.

- Sufficient dust control practices will be implemented to prevent the air-borne mobilization of soil from the site. This will generally consist of keeping exposed soils and building materials damp.

Where the site redevelopment plan will accommodate fill soil, impacted soils at the site may be relocated to any area (other than utility trench backfill) of the site, provided the location of placement also was demonstrated to have had like soils (existing impacted soil) and/or will be placed under pavement or 24 inches of clean soil cap in accordance with S&ME's geotechnical recommendations.

- Utility trenches will be backfilled with clean fill material (i.e. gravel, or soil). These "clean" utility trenches will reduce the potential that future utility workers will encounter impacted soil. The impacted soil excavated from these utility trenches may be permitted and disposed offsite as a Special Waste or relocated onsite in building debris consolidation areas such that these areas will receive a clean soil cap of adequate thickness.
- Final site conditions must provide a sufficient impervious layer (asphalt, concrete, or pavement) or a minimum 24-inch layer of amended top soil, plus sod, over areas where indications of impact are present. This may require undercutting of landscaped areas to accommodate 24 inches of "cap". The permanent soil cover must be stabilized within 15 days of being placed. All cover material, permanent soil cover or impervious layer must be permanently maintained to ensure that impacted soils and building materials are not exposed.
- An as-built drawing and close-out report shall be submitted following completion of the project to document final conditions to TDEC.

S&ME proposes to provide an environmental professional who is familiar with the findings of the previous environmental investigations, site conditions, and Soil Management Plan to provide onsite observation, consulting and support documentation during site redevelopment. S&ME environmental personnel assigned to field support for this project will have completed OSHA 1910.120 40-hour HAZWOPER training and will have experience with similar projects.



Special Considerations Stipulated by TDEC

Based on our experience with another City-owned Brownfield site (North St. Elmo Drainage System Improvements, DoR Site: 33-613A), we understand that approximately 500 to 600 cubic yards of clayey fill soils with minor impact (generated during sewer line excavation activities) were authorized by TDEC to be relocated to the Old Lupton Mill project site in 2017 for use as fill. This measure was negotiated on behalf of the City of Chattanooga in an effort to conserve limited available space for temporary storage of impacted soils.

In an email, dated March 7, 2017, Mr. Troy Keith with TDEC-DOR indicated the following: *"The results indicate concentrations from the St. Elmo soils are within naturally occurring or urban background ranges. The arsenic hit of 22.9 mg/kg is at the upper limit of acceptability, but given the constraints to be imposed on the Lupton City site, the stockpiled soils evaluated under this effort are acceptable for use at Lupton City. The constraints are as follows: Lupton City (LC) is a City owned property under DoR oversight; the LC site is already impacted with similar constituents and concentrations (or higher); the LC site will receive a Land Use Restriction; and **the material from the St. Elmo stockpiles will be used to form the bottom lift** of the two plus feet of the LC cover, with a minimum of an additional 18" of imported clean soil placed above the St. Elmo soil."*

Groundwater Management

Past operations at the site and in the vicinity have resulted in impacts to the groundwater on the subject property. Groundwater is not anticipated to be encountered during grading and excavation activities. In the event that groundwater or perched water is encountered in a previously-identified areas of impact and if indications of impact such as sheens or odors are identified, site work in the area should be halted by the site superintendent and the water sampled and appropriately characterized by the onsite environmental professional. Impacted water removed from excavations must be properly disposed of in accordance with applicable regulations.

◆ Health and Safety

S&ME will generate a Site Specific Health and Safety Plan for use by S&ME employees while on site. Please note that the Contractor and any subcontractors will be responsible for developing and implementing their own health and safety plans.

S&ME will not supervise, direct, control or have authority over or be responsible for Contractor's means, methods, techniques, sequences or procedures. As such, S&ME will not issue any "stop-work" notifications to the Contractor as S&ME is not in a position to direct or control the work of the Contractor. S&ME is not responsible for supervision of truck loading operations performed by the Contractor. The Contractor remains responsible for handling excavated material in accordance with applicable local, state, and federal regulations.

◆ Limitations

This document has been prepared in accordance with generally accepted practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.



Soil Management Plan
Former Dixie Yarns Property-Old Lupton Mill (DOR 33-764)
Chattanooga, Tennessee
S&ME Project No. 4181-17-043

S&ME should be provided the opportunity to review the final plans and specifications in order that recommendations are properly interpreted and implemented. The recommendations in this report are contingent on S&ME's observation and monitoring of site redevelopment activities.

This Plan addresses soil management practices during site redevelopment relative to environmental conditions as described in the brownfield voluntary agreement and supporting documentation and is not intended to address geotechnical considerations. Independent geotechnical evaluation should be performed to determine the suitability of in situ or placed fill material for any planned construction.

Attachments

Attachment I –Figures



© 2018 Google

LEGEND:

Approximate subject property boundary

Image Source: Google Earth; 2016 Aerial

SITE MAP

City of Chattanooga-Former Lupton Mill, 1210 Mercer Street
Chattanooga, Hamilton County, Tennessee

SCALE:
AS SHOWN
DATE:
10-12-2018
PROJECT NUMBER
4181-17-043

FIGURE NO.

1

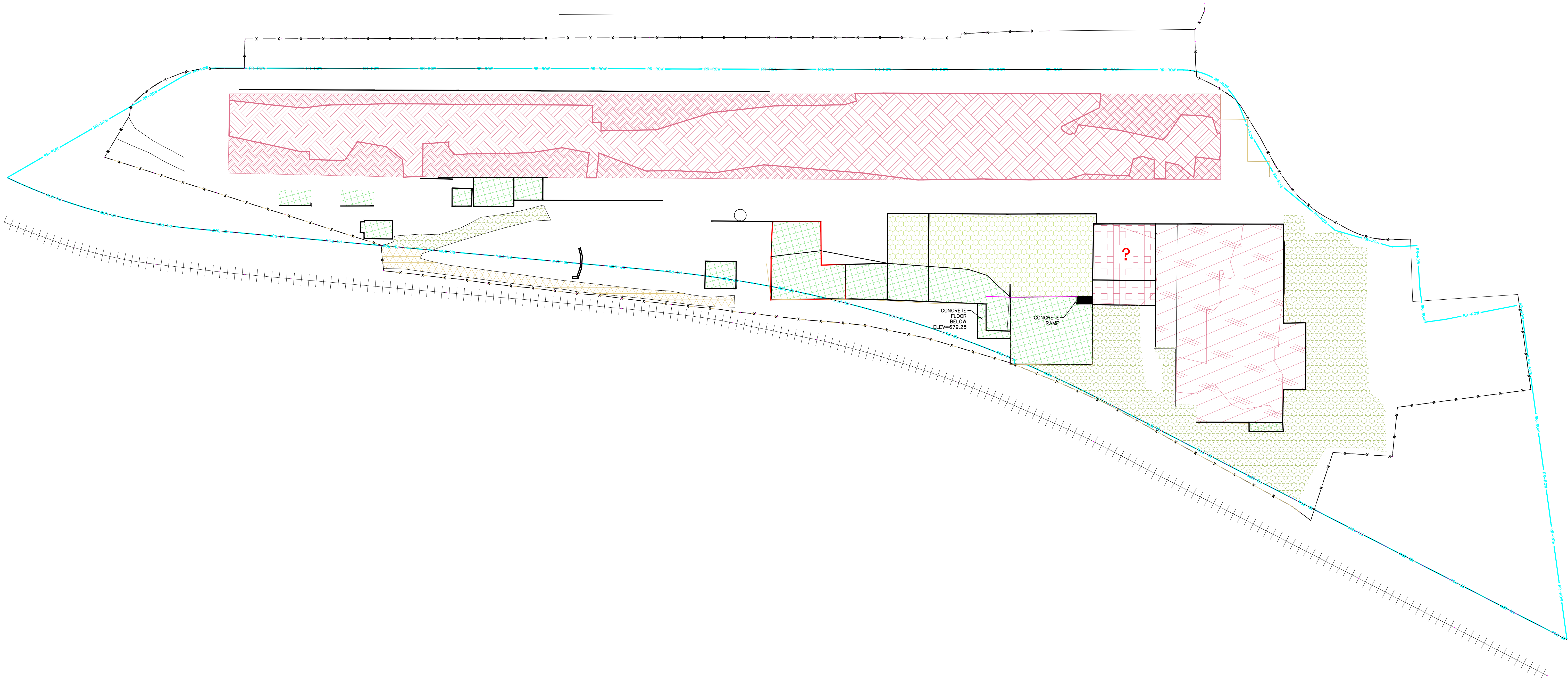




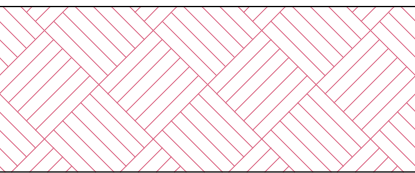
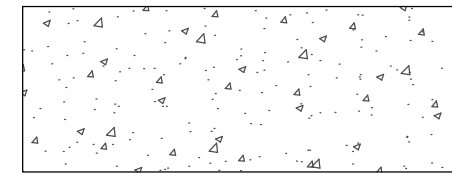
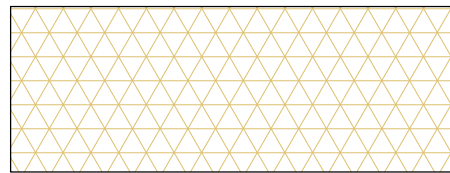
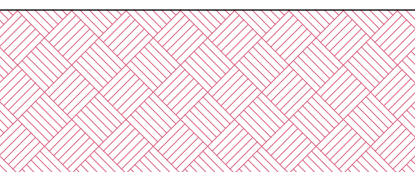
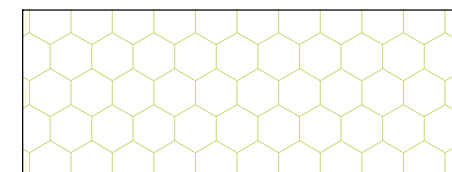

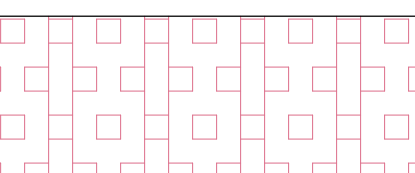
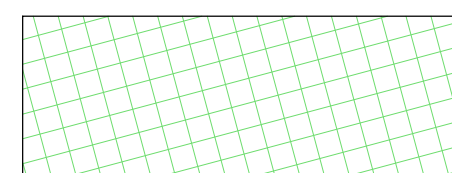
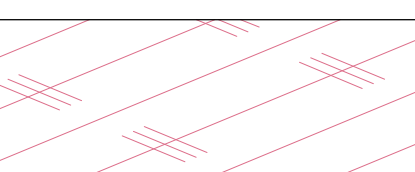
CITY OF CHATTANOOGA
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION

ADMINISTRATOR: JUSTIN C. HOLLAND
 CITY ENGINEER: WILLIAM C. PAYNE, P.E.

LUPTON DRIVE MILL PROPERTY
 Flooring/Surface Materials Exhibit

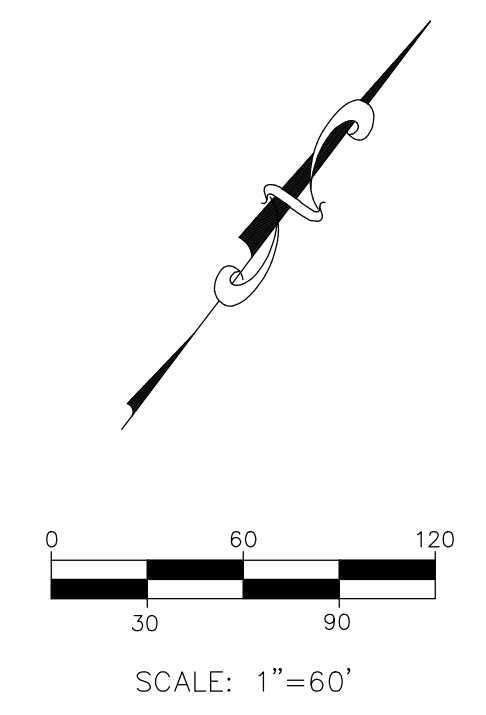


LEGEND:

- | | | |
|--|---|---|
| 
82,302 S.F.
Surveyed area of old wooden flooring – Remove all material from the flooring, leave floor intact, cover with fill per specifications. | 
0 S.F.
Area of old concrete flooring – Remove all material from the flooring, leave floor intact, cover with fill per specifications. | 
5,854 S.F.
Area of asphalt driveway to be removed – Remove all material from the driveway, remove asphalt. Rubblize per specifications, and mix with debris being placed on site as fill. |
| 
40,712 S.F.
Assumed area of old wooden flooring, currently covered with debris – Remove all material from the flooring, leave floor intact, cover with fill per specifications. | 
20,929 S.F.
Area of old concrete flooring – Remove all material from the flooring, rubblize floor in-place, cover with fill per specifications. | 
50,627 S.F.
Area of asphalt driveway to be rubblized in place. |
| 
7,417 S.F.
Area of old wooden flooring on piers – Remove flooring, rubblize, and place on site per specifications. | 
31,634 S.F.
Area of old concrete flooring – Remove all material from the flooring, remove floor to allow for grading, grade subgrade per plans, cover with fill per specifications. | |
| 
36,744 S.F.
Area of old wooden flooring on second story of two story building. Remove wood flooring and send beneath, bubble, and place on site per specifications. Rubblize floor below per specifications, then collapse and rubblize building in place, fill to subgrade per subgrade with materials from remainder of site, cover with suitable fill per specifications. | | |

AERIAL IMAGERY NOTE

AERIAL IMAGERY IS GEOREFERENCED, BUT EXACT ALIGNMENT WITH OBJECTS ON THE GROUND IS NOT PRECISE, DUE TO ANGLE OF PHOTOGRAPHY.



NO.	DATE	REVISION	SIG.
0	06/01/18	ORIGINAL	

CONTRACT#	Y-16-004
SCALE:	1"=60'
DRAWN:	JAH
DESIGN:	AWO
CHECKED:	AWO

Attachment II – Report of Limited Geotechnical Engineering Services



August 14, 2018

City of Chattanooga
Department of Public Works – Engineering Division
274 East 10th Street
Chattanooga, Tennessee 37402

Attention: Ms. Elizabeth Goss
Engineering Coordinator

Reference: **Report of Limited Geotechnical Engineering Services
Former Dixie Yarns Property – Old Lupton Mill**
Chattanooga, Tennessee
S&ME Project No. 4181-17-043A

Dear Ms. Goss:

S&ME, Inc. has completed the limited geotechnical services for the Former Dixie Yarns Property in Chattanooga, Tennessee. Our work was performed in general accordance with S&ME Proposal Number 411700317CO1 dated June 28, 2018. Our services were authorized by Mr. Dennis Malone of the City of Chattanooga on July 30, 2018.

The purpose of our work was to provide recommendations for site preparation and placement of the construction debris fill that are applicable to the property having an end use as a green space. This letter describes our understanding of the project, presents our observations, and provides our recommendations relative to the above considerations.

◆ Project Information

Project information was provided to us by Ms. Goss in the form of Lupton Drive Mill Property Flooring / Surface Materials Exhibit drawing prepared by the City of Chattanooga Department of Public Works, Engineering Division and dated June 1, 2018. We have also discussed the project with Ms. Goss and Mr. Alan Ogle of the City of Chattanooga Department of Public Works Engineering Division.

The project site is commonly known as the former Lupton City Mill which was operated by Dixie Yarns and located at 1210 Mercer Street in Chattanooga, Tennessee. Surrounding properties include residential properties to the north, undeveloped wooded property to the east, and both recreational (City-run park) and residential properties to the west. A rail line borders the property to the south. Lupton City Golf Course is located south of the rail line.

The site occupies about 12-acres and is referenced as Parcel 118E E 006.03 on the Hamilton County GIS website. A prior owner demolished the majority of the facility but abandoned much of the rubble onsite. Based on the provided project information, we understand that the city intends to leave the existing wood and concrete flooring in place, spread the piles of rubble across the site, and cap the site with clean soil. The site will then become an unlined, closed landfill converted into a green space.



◆ Observations

We visited the site to observe the site conditions to prepare our recommendations for placement of the rubble fill. Piles of construction debris / rubble were observed across the site, particularly along the northwest side. The rubble was generally a mixture concrete, brick, block, wood, insulation, roofing material, and metal (See Photos 1 & 2). Some soil had been dumped on site along the northwest edge and off of the northeast end of the site. Wood flooring still covers much of the middle portion of the site (Photo 3). Portions of the mostly demolished building were still standing along the sites southeast side (see Photos 4 & 5). There is a walkout basement on the northeast end of the building (see Photo 6). The southeast edge of the site is about 20 feet lower in elevation than the road elevation along the northwest edge of the site. To the west of the basement, is a crawlspace that the building was constructed over. A wet weather conveyance travels from northwest to southeast across the site through the crawl space. Storm water from the Lupton City residential area enters the wet weather conveyance at the north end, travels below the floor slab of the demolished building, and exits to the south at the golf course. We understand that the city plans to install a storm sewer pipe to re-route the storm water around the site.

◆ Recommendations

We recommend the remainder of the existing structures be demolished prior to placement of the rubble fill. This work should include the removal of dock retaining walls, basements, crawl spaces, and elevated floor slabs over crawl spaces. Further, we recommend demolishing the basement on the east end by disassembling the walls, columns, and elevated slab individually, and breaking the material down to smaller pieces prior to placing as fill on the site. We recommend that the existing basement on the east end not be imploded in on itself as that would likely create large void spaces within the rubble. Void spaces within the fill could provide an avenue for loss of material over the rubble, resulting in dropouts at the ground surface.

For placement as rubble fill, we recommend the on-site construction debris, including concrete, brick, wood, insulation, and roofing material, be broken down to a maximum particle size of 18 inches or smaller. The contractor may use whatever means they deem appropriate to break down the larger pieces of construction debris. However we expect that it will require the use of large excavators, hoe rams, and concrete crushing equipment. The at grade asphalt paving, wood flooring, and concrete slabs can be left in place provided they are broken up into approximately 3 foot square pieces to allow for drainage.

Once broken down, the fill material should be spread in lifts a maximum of 2 feet thick. The differing constituent fill material does not need to be segregated prior to placement. The fill should be compacted by making multiple passes with a Caterpillar D9 bull dozer or equivalent. The number of passes should be sufficient to demonstrate the material is densified and stable. We recommend fill slopes be constructed at 3 Horizontal to 1 Vertical (3H:1V) or flatter.

To comply with the TDEC requirements and the soil management plan, we understand a two foot thick cap of soil will be placed over the rubble fill. The fill soil should consist of silt or clay with no organic matter or debris and contain no rock fragments larger than 4 inches in any dimension.



Based on our observations, we expect there is adequate fine material mixed in the rubble fill to effectively "choke" the larger rubble pieces by filling the voids or open spaces within most of the rubble fill during the placement process. However, we also expect that some of this material will wash out of the void spaces as rainfall percolates through the rubble fill. Therefore, to prevent raveling of the soil cap into void spaces in the rubble fill, we recommend placing a 12 oz., non-woven, needle punch filter fabric over the first 6 inches of soil fill, then placing the rest of the soil cap over the filter fabric.

Soil fill should be placed in thin lifts with a maximum loose thickness of 8 inches, then compacted to a minimum of 90 percent of the standard Proctor maximum dry density, with a moisture content within 3 percent of the optimum moisture content, depending on the shape of the Proctor curve. A representative of S&ME should test the density and moisture content of each lift before placing additional lifts. Sloped areas should be sodded or seeded as soon as possible to control erosion and help prevent sloughing slope failures.

We recommend S&ME be provided the opportunity to review the final design plans and specifications in order that earthwork and other recommendations are properly interpreted and implemented. The recommendations in this report are contingent on S&ME, Inc.'s observation and monitoring of grading and construction activities.

◆ **Limitations**

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based on applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.


The analyses and recommendations submitted herein are based on the site being used as an undeveloped green space. If the site is to be developed for buildings or roads, additional site remediation will be required in the future.

◆ **Closure**


S&ME appreciates this opportunity to be of service to you. Please call if you have questions concerning this report or any of our services.

Sincerely,

S&ME, Inc.


 Jonathan M. Smolen, PE
 Project Engineer




 James P. McGirl, PE
 Principal Engineer

Attachment: Photographs

Limited Geotechnical Engineering Services
Former Dixie Yarns Property – Old Lupton Mill (SR-764)

Chattanooga, Tennessee

S&ME Project No. 4181-17-043A



1	Location / Orientation	Northwest side, middle / facing southwest
	Remarks	Rubble Pile



Date: 7/26/2018

Photographer: Jonathan Smolen

2	Location / Orientation	Northeast end / facing southwest
	Remarks	Rubble pile – note roofing and insulation material



Date: 7/26/2018

Photographer: Jonathan Smolen



3		Location / Orientation		Middle, near northeast end / facing northeast
		Remarks		Wood flooring, note crawlspace and basement in background



Date: 7/26/2018

Photographer: Jonathan Smolen

4		Location / Orientation		North side, near west end / facing south
		Remarks		Remaining undemolished building



Date: 7/26/2018

Photographer: Jonathan Smolen

Limited Geotechnical Engineering Services
Former Dixie Yarns Property – Old Lupton Mill (SR-764)

Chattanooga, Tennessee

S&ME Project No. 4181-17-043A




5	Location / Orientation	Northwest Side, middle / facing southeast
	Remarks	Remaining undemolished building and smokestack



Date: 7/26/2018

Photographer: Jonathan Smolen

6	Location / Orientation	Southeast corner / facing northwest
	Remarks	Basement on northeast end



Date: 7/26/2018

Photographer: Jonathan Smolen

ATTACHMENT 2

Site Specific Asbestos Landfill

Alternative Actions, Inc.

May 1, 2020

ATTACHMENT 2
Site Specific Asbestos Landfill



Prepared By
Alternative Actions, Inc.
7505 Middle Valley Road, Ste 113
Hixson, Tennessee 37343

May 2020

Site Specific Asbestos Landfill

1. Push and clear any debris from the area of the asbestos landfill. Remove any concrete or asphalt surfaces.
2. Rough dimensions for the fill area is 75' x 75' x 11' deep. A stock pile will need to be created outside the fill area from the native soils removed from the fill area. At least one stock pile containing 30% of the native soils removed will need to be in close proximity to the fill area for required covering of asbestos debris in the fill area by layer.
3. To support surrounding walls, the bank will be sloped at roughly a 1'/2' ratio. The open finished area for the actual asbestos debris will be 55' x 55' x 11' deep.
4. The Southwest area will need to be ramped for access by front end loader, trucks and or other equipment used to move the asbestos debris into the fill area. The asbestos material will be placed, not dumped from the upper edge. The ramp can be the full width of the Southwest side or a portion thereof.
5. Create a 2' x 2' berm around the upper walls of the fill area. Berm shall be covered by geo fabric, rock, etc. that will prevent erosion. This will control surface water from entering the fill area and prevent equipment or workers from falling into the fill area.
6. Outside the berm, the fill area will need to be demarcated for worker protection and as a visual representation of the danger. Install metal posts at no more than 9' intervals. Posts will need to be installed to a finished elevation of 3' above ground level. Physically attach metal chains between the posts to create a continuous barrier and vertical site line. Paint chains red to represent danger beyond. Hang industry preprinted asbestos danger signs. Signs will need to be preprinted plastic signs. Signs will be installed on every other post. This creates a regulated area where Personal Protection Equipment (PPE) is required by all entering.
7. If necessary, compact interior of fill area prior to use to stabilize. Based on previous testing at the site and general area, it is anticipated that densely packed natural clays will be present. If soils inside fill are not suitable, a liner specification will be prepared and added to the project.
8. Anyone entering from the ramp into the fill area will need to be in PPE including disposable suit, disposable gloves and respiratory protection using P100 respirator filters. This includes equipment operators.
9. Federal regulations require any asbestos debris being deposited in the fill area to be covered by 6" of clean fill within 24 hours. If materials are being placed in the fill every day during the work week, the 6" of fill can be placed over the asbestos debris at the end of each work week. This is expected to be the case during the work in the Eastern half of the property. As the work proceeds to the West, it is anticipated the amount of asbestos debris will be minor and may require daily coverage with 6" of clean fill. The clean fill will come from the native soils removed during the construction of the fill area.
10. Once it can be confirmed that the asbestos fill is no longer required, it will need to be properly closed. Any room between the asbestos debris in the fill area and 9' from the initial elevation of 11' below grade can be filled with other compactable fill materials. Wood materials will need to

be avoided due to the permanent cap required. For the final top 3' to finished grade the following will need to be installed. A two (2) foot compact clay cap will need to be installed over the fill area containing asbestos. The final one (1) to two (2) foot will be completed with clean fill, top soil and grass. A geo grid or orange plastic fencing, will need to be laid on top of the hard clay cap as a visual warning not to disturb the clay cap.

11. Upon completion of fill, the location of the fill will need to be professionally surveyed and noted as an asbestos landfill on the permanent site plat. Permanent metal pins will need to be installed at the corners. The permanent pins will need to be held in place by concrete.
12. The required permanent marking will be determined by Tennessee Department of Environmental and Conservation (TDEC) and the City of Chattanooga. The permanent placard is not part of the contractor's scope of work. It will be created and installed under a separate City contract.

Reference to made to the following documents and drawings:

Top View Drawing

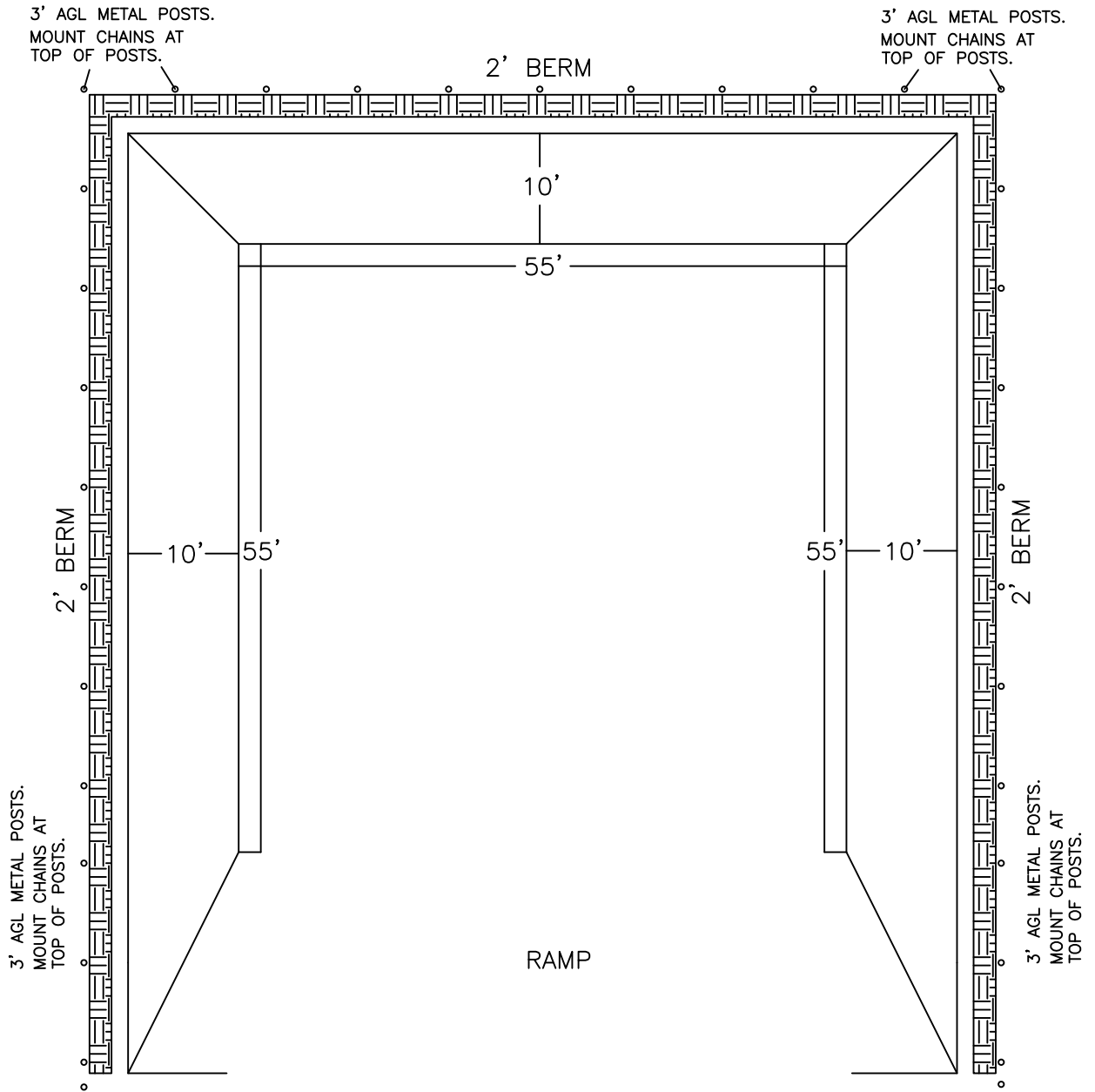
Cut View Drawing

Please Refer to the Following for Additional Requirements:

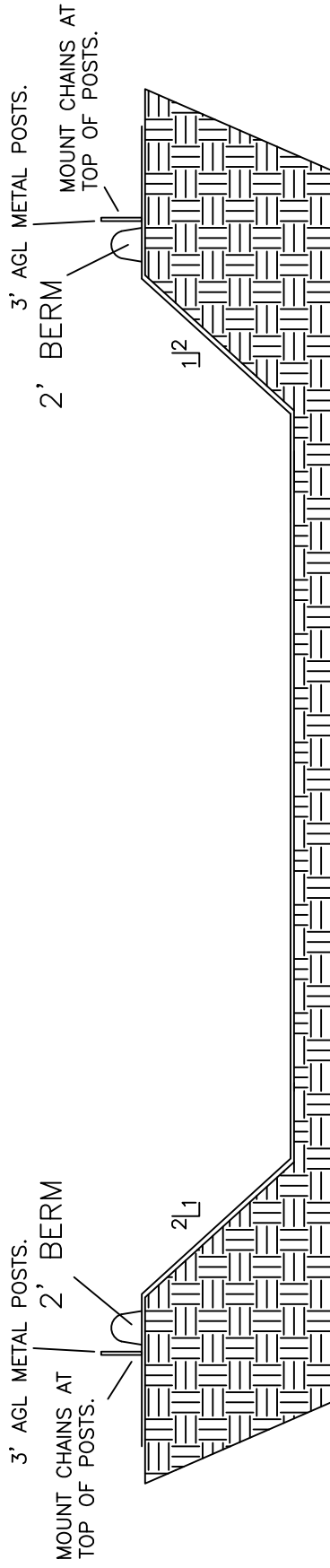
Site Soil Management Plan – Attachment 1 Revised Soil Management Plan

Locations drawing and detail drawing located in the project drawings.

Written Project Specifications



TOP VIEW ASBESTOS FILL



CUT VIEW ASBESTOS FILL