TENNESSEE DEPARTMENT OF TRANSPORTATION
ASBESTOS SURVEY REPORT

Federal Bridge Number: 57SR1380013
SR-138 Bridge over Overflow LM 4.95
PIN: 134866.00, Project Number: 99109-0138-04
Madison County, Tennessee

PREPARED BY

ENSAFE

10 May 2024

Corey Coleman

Corey Coleman (Signature)
Tennessee Asbestos Inspector Accreditation No: A-I-48788-160686

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1.0 INTRODUCTION

This report presents the findings of a survey for asbestos-containing materials (ACM) completed on the bridge identified in Section 1.1. The inspection was completed by EnSafe Inc. in accordance with the State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements.

1.1 Bridge Identification

The bridge is identified in the Tennessee Department of Transportation (TDOT) Bridge Management System as:

Bridge Number: 57SR1380013
Route/Crossing: SR-138 Bridge over Overflow
County: Madison
TDOT Project Number: 99109-0138-04
TDOT PIN: 134866.00
Project Route/Termini: SR-138 Bridge over Overflow LM 4.95

1.2 General Description

Bridge Number 57SR1380013 SR-138 over Overflow at LM 4.95 (57-SR138-04.95) is located in Madison County, Tennessee. The bridge is a 34-foot, 2-lane, 2-span bridge constructed of concrete channel beams with a concrete deck and asphalt wearing surface. The bridge was constructed in 1949. The bridge location is shown on Figure 1. Photographs of the bridge are presented in Appendix A. The analytical results and chain-of-custody records are included in Appendix B.

2.0 SURVEY

The identification of ACM is performed by laboratory analysis of the bulk samples of suspect materials. ACM are those materials found to contain greater than 1% asbestos by calibrated visual area estimation by Polarized Light Microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas (HA) in a structure are identified and then sampled. A homogeneous sampling area is defined as an area that contains material of the same type (uniform in color and texture) and was applied during the same general time. Once the homogeneous sampling areas are identified, bulk samples of suspect materials were obtained from the homogeneous areas at the discretion of our inspectors, based on Site conditions and experience.

2.1 Personnel and Date(s) of Inspection

The sampling and field activities were performed on 28 March 2024 by Mr. Corey Coleman, Accredited State of Tennessee Asbestos Inspector. Copies of the inspector's and EnSafe's current accreditation from the State of Tennessee are included in Appendix C. Field activities were conducted under EnSafe's Programmatic Health and Safety Plan for Bridge Sampling with only the site-specific section included in Appendix D.

2.2 Visual Survey

The survey began with a walk-through and visual survey of the structure; procedures include the following:

- Sketching the structure and/or verifying the plans provided.
- Locating and identifying HA of suspect materials that may contain asbestos minerals.
- Determining applicable sampling locations.

Table 1 lists the homogeneous areas identified during EnSafe's visual survey.

2.3 Bridge Components

Bridge components identified and sampled as homogenous areas are detailed below. Photographs of each HA are provided in Appendix A.

2.3.1 Top of Bridge Deck (Homogeneous Area 01)

The bridge had a concrete deck covered with asphalt. The concrete top of the bridge deck was the same pour/homogeneous area as the underside of the bridge deck discussed below in Section 2.3.2. There was a concrete curb associated with the top deck. Samples HA01-01, HA01-02, and HA01-03 were taken using hammers and chisels.

2.3.2 Underside of Bridge Deck

The bridge had a concrete deck. The underside revealed concrete channel beams that made up the underside of the bridge as one continuous pour. The channel beams are discussed in Section 2.3.3.

2.3.3 Bridge Beams (Homogeneous Area 02)

The bridge had concrete channeled beams. These beams were sampled and labeled HA02-01, HA02-02, and HA02-03. Samples were obtained using hammers and chisels.

2.3.4 Bridge Piers/Bents and Support

The bridge piers were constructed of wood and were not sampled.

2.3.5 Bridge Rails (Homogeneous Areas 1 and 2)

The bridge had metal rails and were not sampled.

2.3.6 Abutments

The abutments were constructed of wood and were not sampled.

2.3.7 Bridge Drainage

There were no drain features associated with the bridge.

2.3.8 Utilities

No utilities were observed on the bridge.

2.3.9 Other Environmental Concerns

No other environmental concerns were observed.

3.0 ANALYTICAL PROCEDURES

The bulk samples are analyzed in the laboratory using polarized light microscopy (PLM) coupled with dispersion staining (United States Environmental Protection Agency [U.S. EPA] Method 600/R-93/116). PLM is an analytical method for asbestos identification, which identifies the specific asbestos minerals by their unique optical properties. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. PLM is the U.S. EPA recommended method of analysis for asbestos identification in bulk samples.

When samples similar in appearance have different results, it is beneficial to analyze the remainder of the samples to clarify the results and explore the possibility of different materials. In addition, samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples. Samples that are identified to contain 1% or less asbestos minerals are generally recommended to be point counted by the laboratory for confirmation.

The samples collected for this survey were analyzed by Scientific Analytics Inc. (SAI), National Institute of Standards and Technology under the National Voluntary Laboratory Accreditation Program (NVLAP Number 200644). This lab has received accreditation from the National Institute of Standards and Technology under the National Voluntary Laboratory Accreditation Program.

4.0 REGULATORY OVERVIEW

4.1 National Emission Standards for Hazardous Air Pollutants

The U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 Code of Federal Regulations [CFR] 61, Subpart M) requires that all regulated asbestos-containing materials (RACM) be properly removed prior to any renovation or demolition activities that will disturb them. These regulations define RACM as:

a. Friable asbestos material

b. Category I non-friable ACM that has become friable

c. Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading

d. Category II non-friable ACM that has a high probability of becoming, or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

4.2 Definitions

Significant definitions related to regulation of asbestos under NESHAPS regulations (40 CFR Part 61, Subpart M, Section 61.141) include:

Friable ACM means any material containing more than 1% asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.

Non-friable ACM means any material containing more than 1% asbestos as determined using the method specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. U.S. EPA also defines two categories of non-friable ACM, Category I and Category II non-friable ACM, which are described as follows:

> **Category I non-friable ACM** is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than 1% asbestos as determined using polarized light microscopy according to the method specified in Appendix E, Subpart E, 40 CFR Part 763.
>
> **Category II non-friable ACM** is any material, excluding Category I non-friable ACM, containing more than 1% asbestos as determined using polarized light microscopy according to the methods specified in Appendix E, Subpart E, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated Asbestos-Containing Material is (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations by this subpart.

5.0 RESULTS OF ASBESTOS BULK SAMPLE ANALYSIS

A total of six samples were obtained from the bridge. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on homogeneous areas of suspect materials, as described in Section 2.3.

A list of bridge components sampled is provided in Table 1. Laboratory results indicate that no asbestos was detected in samples collected from the bridge. Analytical results of all samples collected from the bridge, and the chain-of-custody records, are included in Appendix B.

6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the 28 March 2024 site visit and from previous experience. If additional information becomes available, which might impact EnSafe's conclusions or recommendations, EnSafe requests the opportunity to review the information, reassess the potential concerns, and modify opinions, if warranted.

This report has been prepared on behalf of the Tennessee Department of Transportation. This document is not a Bid Document or a Contract Document. Use of this report or reliance upon information contained in this report by any other party implies an agreement by that party to the same terms and conditions under which service was provided. Furthermore, any party, other than EnSafe's Client, relying on this document is cautioned that all conclusions made, or decisions arrived at based on their review of this document are those solely of the third party, without warranty, guarantee or promise by the author. These findings are relevant to the dates of EnSafe's services and should not be relied upon to represent conditions at substantially earlier or later dates.

Tables

Table 1
Bridge Component Descriptions

Homogeneous Area	Description	Sample Numbers
01	Concrete Curb	HA01-01, HA01-02, HA01-03
02	Concrete Channel Beams	HA02-01, HA02-02, HA02-03

Figures

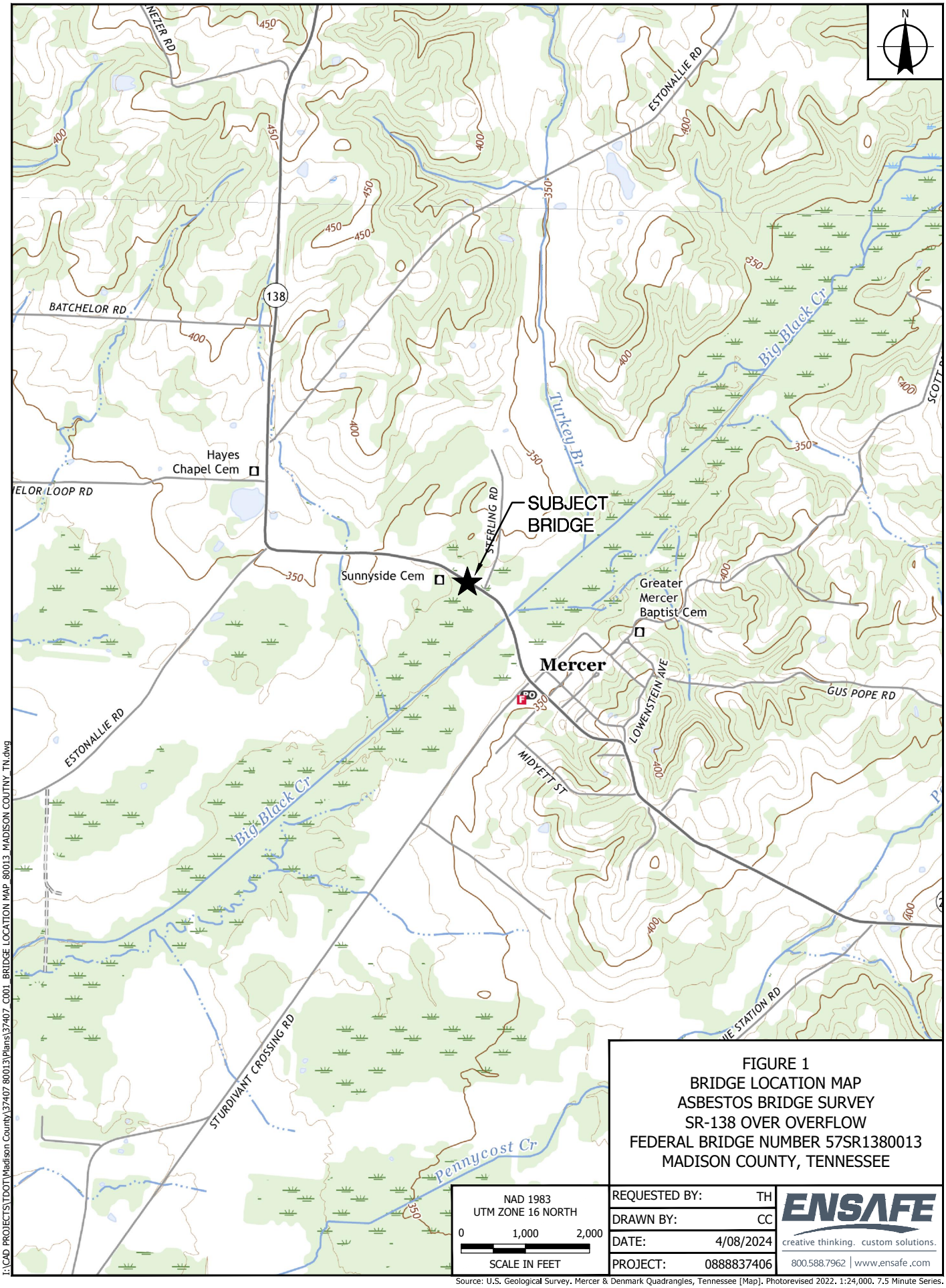

FIGURE 1
BRIDGE LOCATION MAP
ASBESTOS BRIDGE SURVEY
SR-138 OVER OVERFLOW
FEDERAL BRIDGE NUMBER 57SR1380013
MADISON COUNTY, TENNESSEE

NAD 1983
UTM ZONE 16 NORTH

0 1,000 2,000
SCALE IN FEET

REQUESTED BY:	TH
DRAWN BY:	CC
DATE:	4/08/2024
PROJECT:	0888837406

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800.588.7962 | www.ensafe.com

Source: U.S. Geological Survey. Mercer & Denmark Quadrangles, Tennessee [Map]. Photorevised 2022. 1:24,000. 7.5 Minute Series.

I:\CAD PROJECTS\TDOT\Madison County\37407 80013\Plans\37407_C001_BRIDGE LOCATION MAP_80013_MADISON COUTNY_TN.dwg

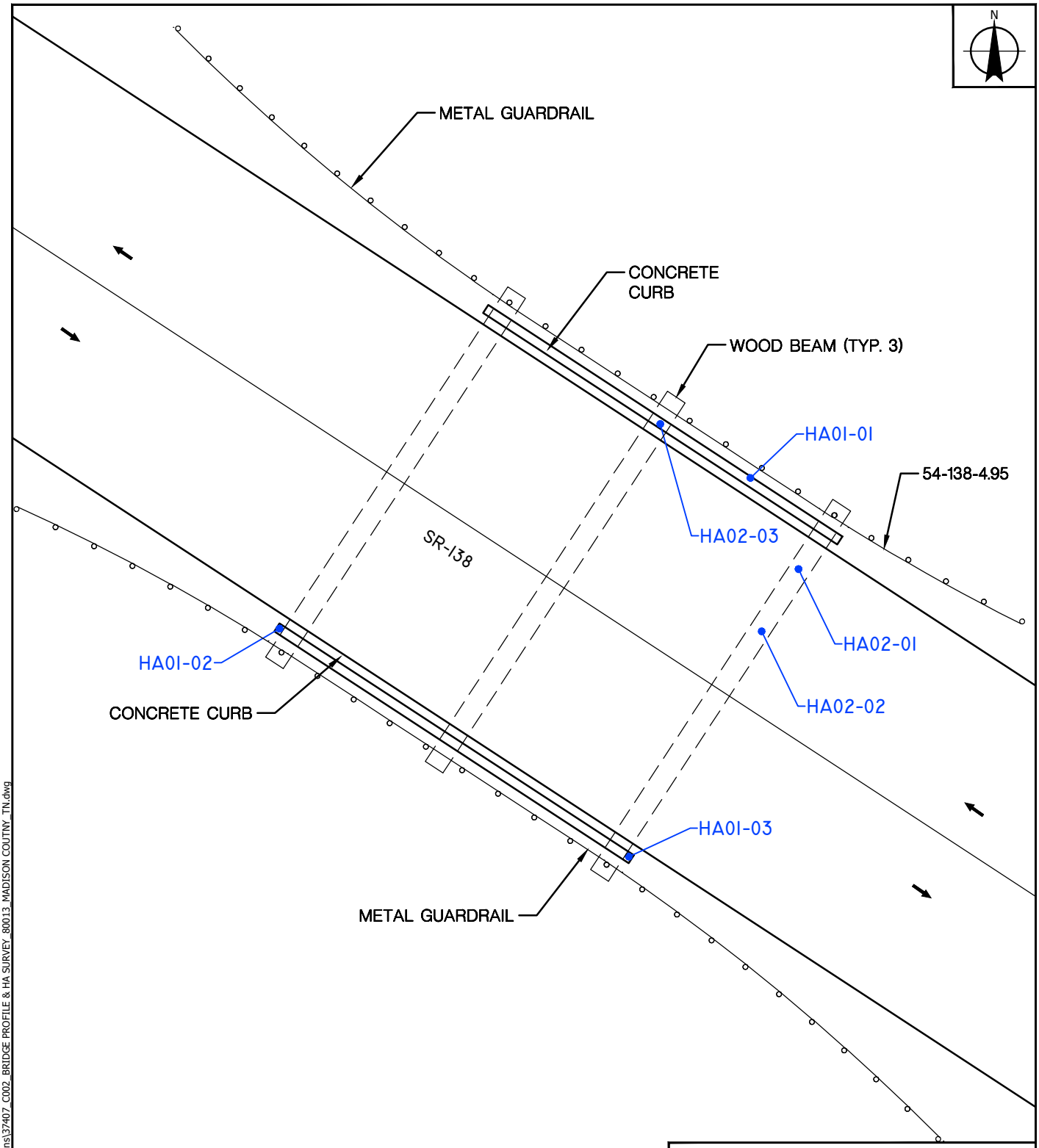

FIGURE 2
BRIDGE PROFILE & HA LOCATION MAP
ASBESTOS BRIDGE SURVEY
SR-138 OVER OVERFLOW
FEDERAL BRIDGE NUMBER 57SR1380013
MADISON COUNTY, TENNESSEE

LEGEND

HA01-1 SAMPLE LOCATION

NAD 1983 STATE PLANE
TENNESSEE FEET

0 5 10
SCALE IN FEET

REQUESTED BY:	TH
DRAWN BY:	CC
DATE:	5/09/2024
PROJECT:	0888837405

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Appendix A:
Photographs

Photographer: Frank O'Connell	
Date: 03/28/2024	
Description: Photograph 1 — Bridge identification number	

Photographer: Frank O'Connell	
Date: 03/28/2024	
Description: Photograph 2 — Homogeneous Area 01 — Concrete Curb Sample Locations HA01-01 HA01-02 HA01-03	

Photographer: Frank O'Connell	
Date: 03/28/2024	
Description: Photograph 3 — Homogeneous Area 02 — Concrete Channel Beams Sample Locations HA02-01 HA02-02 HA02-03	

Photographer: Frank O'Connell	
Date: 03/28/2024	
Description: Photograph 4 — Bridge approach	

Appendix B:
Asbestos Sample Laboratory Analysis Data

Bulk Asbestos Analysis

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

NVLAP LAB CODE 200664-0

Customer: EnSafe Inc.
5724 Summer Trees Drive
Memphis, TN 38134

Attn: Corey Coleman

Project: Madison Co. 57SR1380013 4.95/134866
0888837407

Lab Order ID: **10047344**
Analysis: PLM
Date Received: 03/29/2024
Date Reported: 04/02/2024

Sample ID / *Lab Sample ID*	Description / *Lab Notes*	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes / Treatment
HA01-01	Concrete curb	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0001					Dissolved, Crushed
HA01-02	Concrete curb	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0002					Dissolved, Crushed
HA01-03	Concrete curb	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0003					Dissolved, Crushed
HA02-01	Concrete channel beam	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0004					Dissolved, Crushed
HA02-02	Concrete channel beam	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0005					Dissolved, Crushed
HA02-03	Concrete channel beam	**None Detected**		**100% Other**	Gray Non-Fibrous Heterogeneous
10047344_0006					Dissolved, Crushed

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

Lachlan Krenz (6)
Analyst

Approved Signatory

Scientific Analytical Institute
4604 Dundas Dr. Greensboro, NC 27407
Phone: 336.292.3888 Fax: 336.292.3313
www.sailab.com lab@sailab.com

Lab Use Only
Lab Order ID: 10047344
Client Code: _____

Company Contact Information	
Company: ENSAFE	Contact: Corey Coleman
Address: 5924 Summertrees Drive	Phone ☒: 901-372-7962
Memphis TN 38134	Fax ☐:
	Email ☒: Coleman@ensafe.com

Billing/Invoice Information	Turn Around Times	
Company: ENSAFE	90 Min. ☐	48 Hours ☒
Contact: Accounts Payable	3 Hours ☐	72 Hours ☐
Address: 5924 Summertrees Drive	6 Hours ☐	96 Hours ☐
Memphis, TN 38134	12 Hours ☐	120 Hours ☐
	24 Hours ☐	144+Hours ☐

Asbestos Test Types	
PLM EPA 600/R-93/116 (PLM)	☒
Positive stop ☐	
PLM Point Count 400 (PT4)	☐
PLM Point Count 1000 (PTM)	☐
PCM NIOSH 7400-A Rules (PCM)	☐
B Rules (PCB) ☐ TWA (PTA)	☐
TEM AHERA (AHE)	☐
TEM Level II (LII)	☐
TEM NIOSH 7402 (TNI)	☐
TEM Bulk Qualitative (TBL)	☐
TEM Bulk Chatfield (TBS)	☐
TEM Bulk Quantitative (TBQ)	☐
TEM Wipe ASTM D6480-05	☐
TEM Microvac ASTM D5755-02	☐
TEM Water EPA 100.2 (TW1)	☐
Other: _____	☐

PO Number:

Project Name/Number: Madison Co. 57SR138 0013 / 134866
4.95 08888 37407

Sample ID #		Volume/Area	Comments
HA01-01	Concrete curb		
HA01-02	Concrete curb		
HA01-03	Concrete curb		
HA02-01	Concrete Channel beam		
HA02-02	Concrete Channel beam		
HA02-03	Concrete Channel beam		

Total # of Samples 6

Relinquished by	Date/Time	Received by	Date/Time
Frank Oliver	3/28/24/1650	CS	3/29
			10:30AM

Accepted ☑
Rejected ☐

Page ____ of ____
A-F-017 EXP: 12-1-13

Appendix C:
Asbestos Survey Personnel Credentials

THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management
Toxic Substances Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

By virtue of the authority vested by the Division of Solid Waste Management, the Company named below is hereby accreditted to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:

EnSafe

5724 Summer Trees Dr. Memphis TN, 38134

to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee. This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-214-139096	August 01, 2023	August 31, 2024

Given under the Seal of the State of Tennessee in Nashville.

This **8th** Day of **September 2023**

Division of Solid Waste Management
Toxic Substance Program

CN-1324 **(Rev 6/13)** **RDA-3020**

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management

55301-84736

Toxic Substances Program

Re-Accreditation

Corey A. Coleman

DOB	Sex	HGT	WGT
30-Nov-1976	M	5' 11"	275

Discipline	Accreditation	Expiration
Inspector	A-I-48788-160686	May-31-2025

Asbestos Accreditation

Appendix D:
Health and Safety Plan

HEALTH AND SAFETY PLAN

Appendix D — Site Specific Information

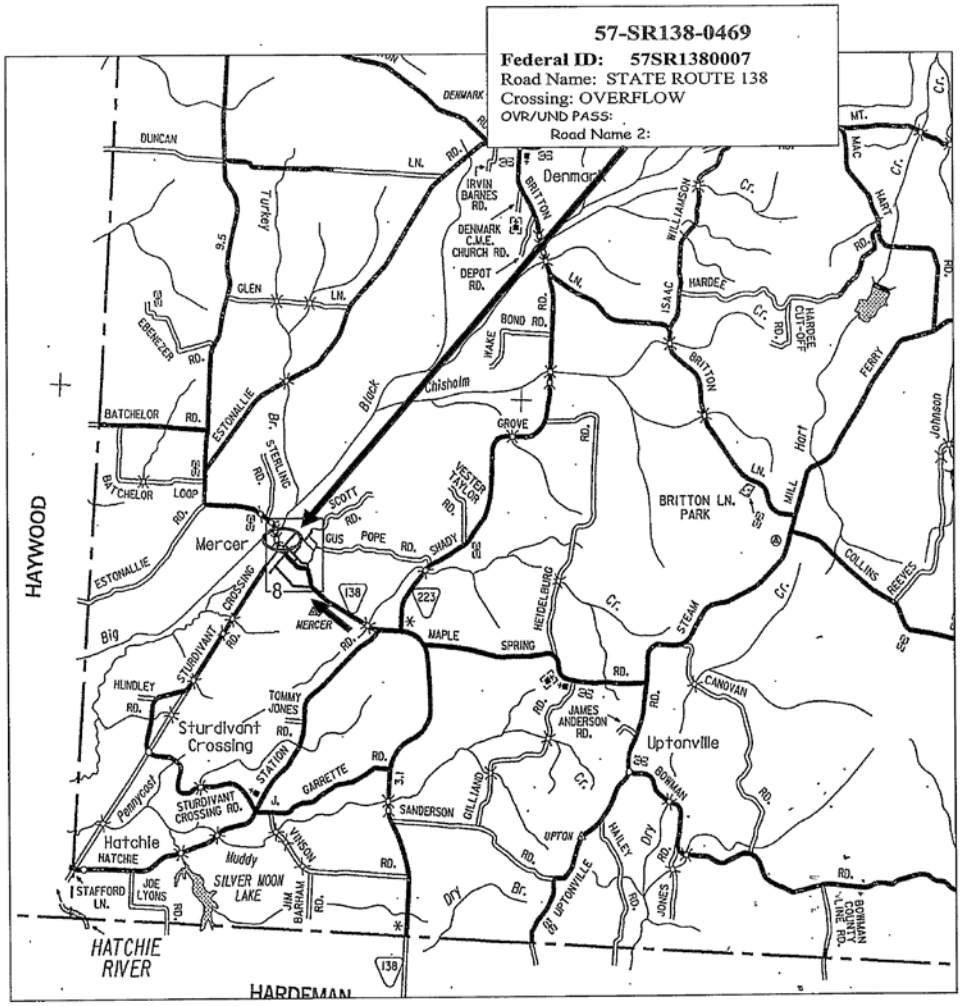
Refer to the main body of the Health and Safety Plan for general biological and chemical hazards, forms, reporting, and responses to injuries.

Site Specific Information

Client/Business Name: TDOT Environmental Division

Site Address: SR-138 Bridge over Overflow, Log mile 4.95/ Madison County

MADISON COUNTY



Emergency and Contact Information:

Site Telephone Number (business hours): Work is performed outside at statewide bridge locations and no site telephone number is available. Employee mobile phones will be utilized for each project.

In the event of a **medical emergency**:

1. Call 911 to report the medical emergency.

2. Depending on the nature of the medical emergency, follow the instructions of the 911 dispatcher.

3. Monitor the condition of the victim until emergency medical services arrive.

Emergency Contacts		
IN CASE OF EMERGENCY DIAL 911		
Event	**Contact**	**Phone**
Medical	Haywood County Community Hospital Ambulance Non-Emergency Contact and address: 2545 N Washington Ave, Brownsville, Tennessee 38012	731-307-3777
Police	Police Non-Emergency Contact	911
Fire	Fire Non- Emergency Contact	911
Threatened release of a hazardous contaminant offsite	EnSafe Project Manager — Troy Estes	615-483-5117
Release of a hazardous contaminant offsite	Tennessee Department of Environment and Conservation – Release Reporting	833-247-7745
Petroleum spill to waterway or drain		
Hazardous substance spill exceeding reportable quantity	EPA National Response Center — https://www.epa.gov/emergency-response/national-response-center	1-800-424-8802
US Poison Control Center	https://www.poison.org/	1-800-222-1222
Utility Company — Electric	Jackson Energy Authority	731-422-7500
Utility Company — Water	Jackson Energy Authority	731-422-7500
Utility Company — Gas	Jackson Energy Authority	731-422-7500
Underground Utility Information	https://call811.com/ https://call811.com/811-In-Your-State	811

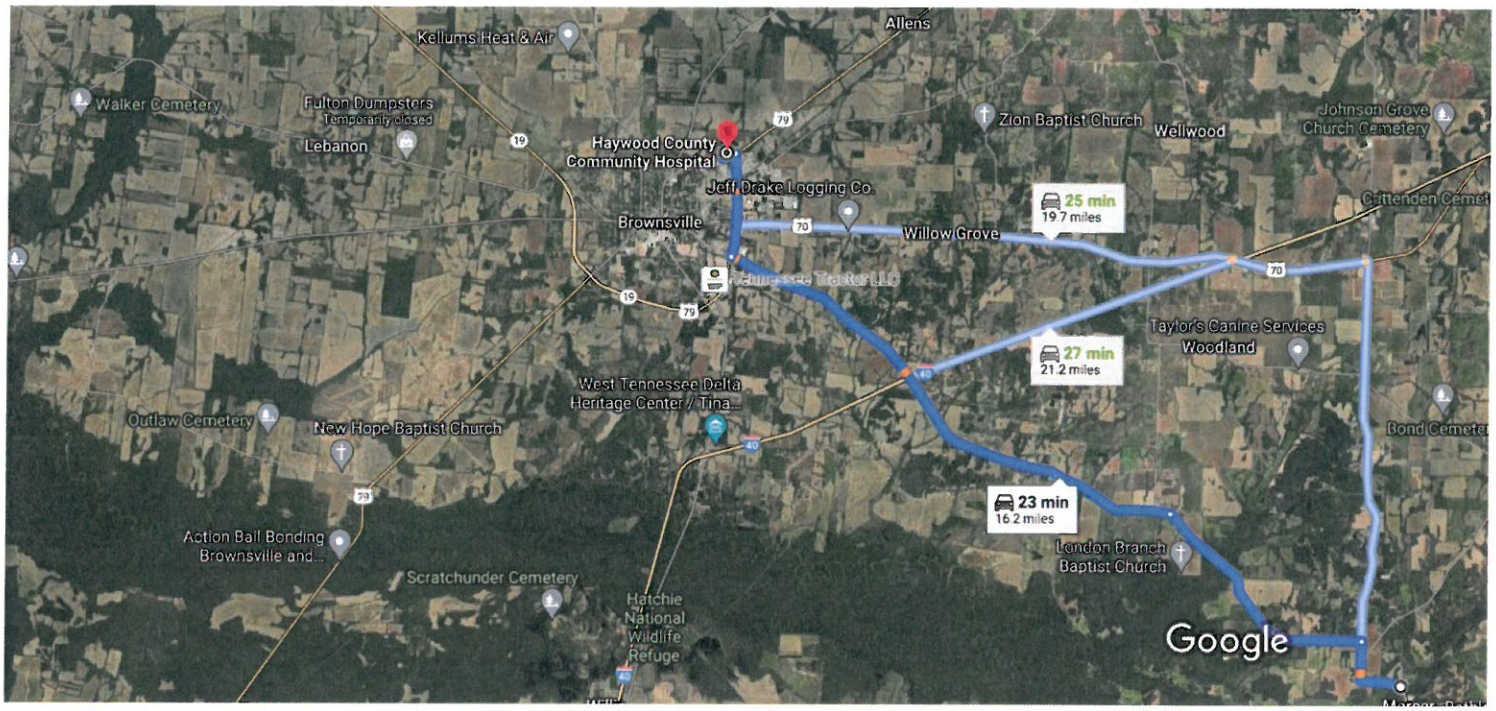
Key Personnel/Site Contacts Telephone Numbers		
Title	**Category**	**Data**
EnSafe Site Supervisor/H&S/Field Team Leader	Name	Corey Coleman ccoleman@ensafe.com
	Work	901-372-7962
	Mobile	901-482-3742
EnSafe Project Manager	Name	Troy Estes testes@ensafe.com
	Work	615-483-5117
	Mobile	615-252-2813
EnSafe Corporate Health and Safety Manager	Name	John Knopf jknopf@ensafe.com
	Work	901-372-7962
	Mobile	901-451-1464
TDOT Environmental Division Contract Manager	Name	Kyle Kirschenmann kyle.kirschenmann@tn.gov
	Work / Mobile	615-598-1522

Google Maps

FXM4+G2H, Mercer, TN 38392 to Haywood County Community Hospital, 2545 N Washington Ave, Brownsville, TN 38012

Drive 16.2 miles, 23 min

LM4.88



Imagery ©2024 TerraMetrics, Map data ©2024 2 mi

FXM4+G2H, Mercer, TN 38392

1. Head south on Sterling Rd toward TN-138 W

3 sec (108 ft)

Drive from Mercer Rd to Brownsville

23 min (16.1 mi)

2. Turn right onto TN-138 W

1.3 mi

3. Turn left onto Batchelor Rd

1.5 mi

4. Continue onto Batchelor Levee Rd

2.7 mi

5. Turn left onto Mercer Rd

8.7 mi

6. Turn right onto S Dupree St

1.7 mi

7. Turn left onto N Washington Ave

0.2 mi

8. Turn right

Destination will be on the left

36 sec (0.1 mi)

Haywood County Community Hospital

Traffic Hazards and Considerations

Based on a review of the TDOT-supplied road information, review of google maps, it is anticipated that the sampling activities can be accomplished outside of the roadway or with less than a minute at a time on top of the bridge when no traffic is visible. Lane closures are not anticipated. The survey crew signs should be utilized as a caution.

Safety Audits

Audits of work sites are conducted for the purpose of health, safety, and hazard identification. During these surveys, assessments are made for compliance to applicable procedures, systems, work practices and the detection of unsafe hazards. Jobsite safety Audits will be conducted on an as needed basis by the Corporate Health and Safety Manager, or designee, depending on the length, duration, or complexity of the project.

For this project, the designated jobsite inspections will be conducted by personnel listed in the following table:

Jobsite Inspections/Audits		
Name	**Inspections Performed**	**Frequency**
Jobsite Safety Inspection	Corey Coleman	Daily
Ladders	Frank O'Connell	Daily
Snoop Truck Manlift	N/A	N/A
Manlift	N/A	N/A