TENNESSEE DEPARTMENT OF TRANSPORTATION

ASBESTOS INSPECTION REPORT

Bridge Number 24014580001
SR-193 over Alexander Creek LM 4.84
PIN: 134846.00; PE-D: 24S193-S1-003
Fayette County, Tennessee

PREPARED BY:

624 Grassmere Park, Suite 14
Nashville, Tennessee 37211

TTL Project No. 240800287.00
April 9, 2024

John Butkevicius (Signature)
Tennessee Asbestos Inspector
Accreditation A-I-195934-136891

David B. Carden, PG (Signature)
Environmental Regional Business Unit Leader

624 Grassmere Park, Ste. 14
Nashville, TN 37211
615.331.7770
www.TTLUSA.com

April 9, 2024

Mr. Kyle Kirschenmann
Statewide Technical Specialist
Tennessee Department of Transportation
Environmental Division
Hazardous Materials, Air Quality and Noise Studies Unit
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243

Re: Asbestos Inspection Report
Bridge No.: 24014580001
Termini: SR-193 Bridge over Alexander Creek, LM 4.84 (TMA)
PIN: 134846.00; PE-D: 24S193-S1-003
County: Fayette
TTL Project Number 240800287.00

Dear Mr. Kirschenmann:

TTL, Inc. (TTL) appreciates the opportunity to submit this asbestos inspection report that summarizes work conducted at the above-referenced bridge in Fayette County, Tennessee. Our services were authorized per Work Order Number 02 and were performed in accordance with TTL's Master Services Agreement with the Tennessee Department of Transportation (TDOT) under Contract Agreement Number E2482.

Nine samples were collected from the SR-193 over Alexander Creek LM 4.84 bridge. Asbestos minerals were not identified in the samples collected from the bridge.

We appreciate the opportunity to support TDOT on this project and look forward to working with you in the future. If you have any questions concerning this report or if you need additional information, please contact our office at your convenience.

Sincerely,

John Butkevicius
Tennessee Asbestos Inspector

David B. Carden, PG
Environmental Regional Business Unit Leader

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1.0 INTRODUCTION

This report presents the findings of an inspection for asbestos-containing materials (ACM) completed on the bridge identified in **Section 1.1**. The inspection was completed by TTL, Inc. (TTL) in accordance with the State of Tennessee, Department of Transportation (TDOT) Environmental Division, Hazardous Materials Section requirements.

1.1 TDOT Bridge Identification

The bridge is identified in the TDOT Project System / Bridge Management System as:

Bridge Number: 24014580001 / 24-SR193-04.86
Termini: SR-193 Bridge over Alexander Creek, LM 4.84 (TMA)
PIN: 134846.00
PE-D: 24S193-S1-003
County: Fayette

1.2 General Description

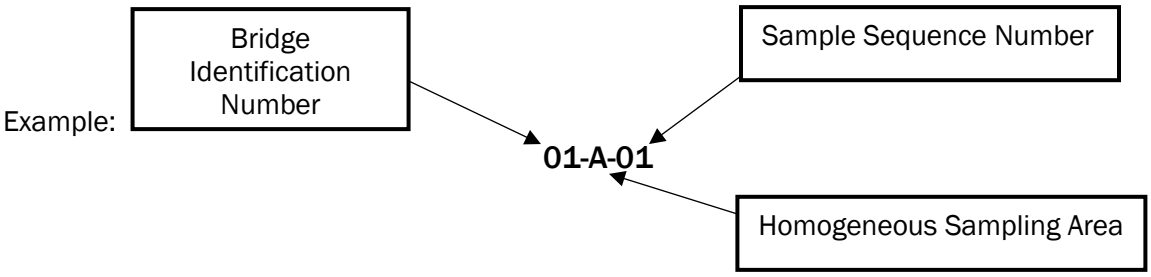
The SR-193 over Alexander Creek LM 4.84 bridge is a two-lane, 55-foot, three-span bridge constructed of concrete channel beams with a concrete deck and asphalt wearing surface. The bridge was constructed in 1965. The bridge location is shown in **Figure 1**, derived from a portion of the Oakland, Tennessee USGS 7.5-minute topographic quadrangle (2022). Select photographs of the bridge and sample locations are presented in **Appendix A** and **Figure 2**.

2.0 INSPECTION

The identification of ACM is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. ACM are materials found to contain greater than one percent asbestos by calibrated visual area estimation using Polarized Light Microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas 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 period. Once the homogeneous sampling areas were identified, bulk samples of suspect materials were collected at the discretion of our inspectors based on site conditions and past experience.

For each asbestos sample collected during the survey, a unique identification is assigned that identifies the bridge location, homogeneous sampling area, and sampling sequence number.



Samples were collected by carefully removing small portions of the suspect material with a clean, sharp knife or other hand tool suitable for the material being sampled. Each sample was placed in a labeled plastic container immediately after collection. Sample containers were then placed in a large re-sealable plastic bag for transportation to the laboratory. The sampling instrument was wiped with a clean moist cloth to decontaminate the tool and minimize the potential release of asbestos fibers or cross-contamination of subsequent samples. Data pertinent to each sample (e.g., date, homogeneous sampling area, sample number, and material description) was recorded on a field survey sheet.

The survey was limited to an evaluation and confirmation of the presence of accessible ACM for the bridge. The survey did not include assessments for other regulated materials, such as lead paint, and did not include destructive sampling to identify the potential presence of concealed ACM.

2.1 Personnel and Date of Inspection

The sampling and field activities were performed on March 7, 2024, by John Butkevicius and Michael Andrews. Mr. Butkevicius and Mr. Andrews are asbestos inspectors accredited with the State of Tennessee. Current copies of TTL's company accreditation and the inspectors' accreditations from the State of Tennessee are included in **Appendix B.** A site-specific Health and Safety Plan, prepared prior to field mobilization, is included in **Appendix C**.

No assistance was needed from TDOT Bridge Maintenance Department for mobilization, traffic control, or access to this bridge.

2.2 Visual Survey

TTL's inspection began with a visual survey of the bridge. The visual survey consisted of:

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

A list of the HA identified during our visual survey is presented in **Table 1**.

2.3 Access to Bridge Components

Individual bridge components sampled during our survey are as described in the following subsections. Materials such as metal, wood, fiberglass, and foam (if present) were not considered suspect ACM and not sampled. Materials associated with the upper bridge wearing surfaces (i.e., reflector mastic, asphalt, pavement marker mastic, etc.) were not sampled per TDOT's request. TTL collected bulk samples of each identified HA in a representative manner, as determined by the inspector. The sample locations are depicted on **Figure 2**.

2.3.1 Bent Footings (Homogeneous Area A)

Three bulk samples of concrete were collected from the bent footings.

2.3.2 Bottom of Bridge Deck (Homogeneous Area B)

Three bulk samples of concrete were collected from the bottom of the bridge deck.

2.3.3 Felt Padding (Homogeneous Area C)

Three bulk samples of felt padding were collected between the bearings.

2.3.4 Bridge Drainage System

A drainage system for the bridge was not observed during the site visit.

2.3.5 Utility Conduits

Utility conduits along the bridge were not observed during the site visit.

2.3.6 Other Environmental Concerns

Other environmental concerns related to the bridge were not observed during the site visit.

3.0 ANALYTICAL PROCEDURES

3.1 Asbestos Analysis Procedures

The bulk samples were analyzed in the laboratory using PLM coupled with dispersion staining (Environmental Protection Agency [EPA] Method 600/R-93/116). PLM is an analytical method which identifies 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. This is the EPA recommended method of analysis for asbestos identification in bulk samples.

Samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples.

3.2 Laboratory Name and Accreditation

The bulk samples were analyzed by Frost Environmental Services, LLC (Laboratory ID Number: 102104-0) that has received accreditation from the American Industrial Hygiene Association's (AIHA) Laboratory Accreditation Program.

4.0 REGULATORY OVERVIEW

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 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:

- Friable asbestos material.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading.
- 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 during demolition or renovation operations regulated by this subpart.

DEFINITIONS

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

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

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

> **Category I non-friable ACM** is any asbestos-containing packing, gasket, resilient floor covering, or asphalt roofing products containing more than 1% asbestos as determined using methods specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, PLM.
>
> **Category II non-friable ACM** is any material, excluding Category I non-friable ACM, containing more than 1% asbestos as determined using PLM 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.

5.0 RESULTS OF ASBESTOS BULK SAMPLE ANALYSIS

Nine samples were collected from the SR-193 over Alexander Creek LM 4.84 bridge. The samples were collected in accordance with TDOT Environmental Division, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. Sample locations were selected based on HA of suspect materials, as described in **Section 2.3**.

Asbestos was not identified in the samples collected from the bridge. The laboratory report for the samples collected from the bridge, along with the chain-of-custody records, are included in **Appendix D.**

6.0 QUALIFICATIONS

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

This report has been prepared on behalf of TDOT. 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 our 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 our 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
A	Bent Footings	01-A-01, 01-A-02, 01-A-03
B	Bottom of Bridge Deck	01-B-04, 01-B-05, 01-B-06
C	Felt Padding	01-C-07, 01-C-08, 01-C-09

FIGURES

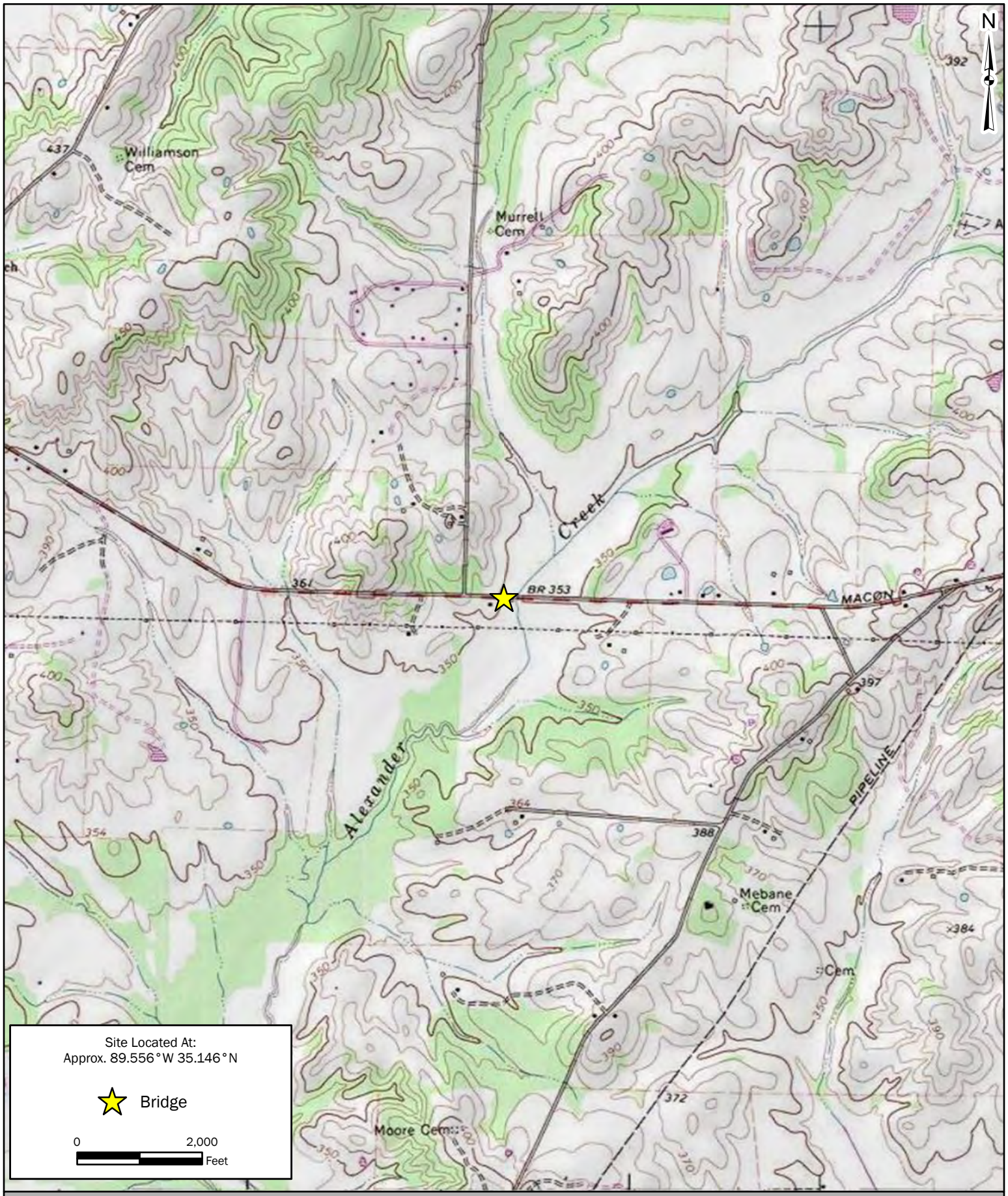


FIGURE 1: BRIDGE LOCATION MAP

TENNESSEE DEPARTMENT OF TRANSPORTATION

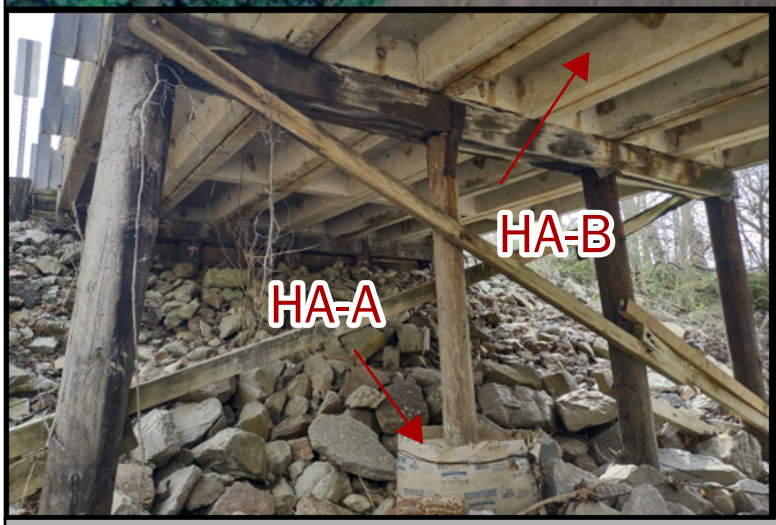
ASBESTOS INSPECTION REPORT

BRIDGE NO.: 24014580001; SR-193 OVER ALEXANDER CREEK LM 4.84 FAYETTE COUNTY, TENNESSEE

DRAWN BY: KT
CHECKED BY: TH
DRAWING DATE: 3/20/2024
REVISION DATE: 3/22/2024
TTL JOB NO.: 24-08-00287.00
APPROX. SCALE: 1 IN = 2000 FT

Source: USGS Topo Oakland, TN 2022 Accessed 3/24

HA	HA-A	HA-B	HA-C
Description	Bent Footings	Bottom of Bridge Deck	Felt Padding



TTL

FIGURE 2: SAMPLE LOCATION MAP

TENNESSEE DEPARTMENT OF TRANSPORTATION

ASBESTOS INSPECTION REPORT

BRIDGE NO.: 24014580001; SR-193 OVER ALEXANDER CREEK LM 4.84 FAYETTE COUNTY, TENNESSEE

DRAWN BY: KT
CHECKED BY: TH
DRAWING DATE: 3/20/2024
REVISION DATE: 3/22/2024
TTL JOB NO.: 24-08-00287.00
APPROX. SCALE: 1 IN = 215 FT

Source: Bing Maps Aerial 2023

APPENDIX A:
SELECTED PHOTOGRAPHS

Photo 1: View of the bridge number.

Photo 2: View of HA-A on the west end of the bridge, facing northeast.

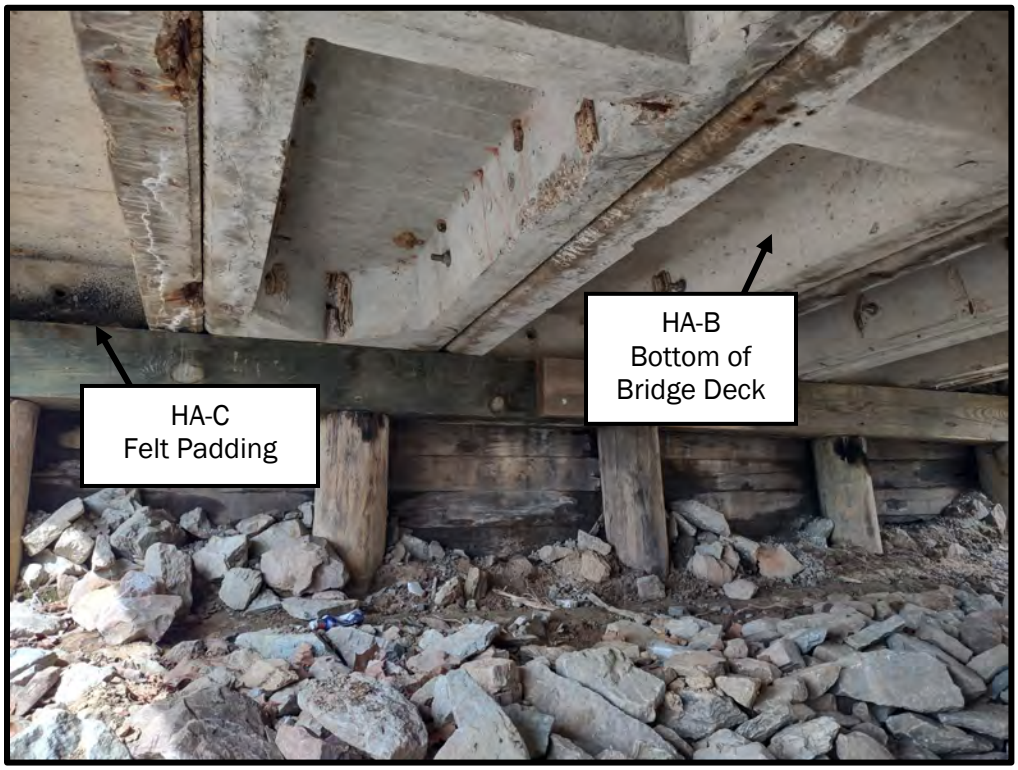


Photo 3: View of HA-B and HA-C on the east side of the bridge, facing east.

APPENDIX B:
ASBESTOS INSPECTION PERSONNEL ACCREDITATIONS

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

Re-Accreditation

John P Butkevicius

DOB	Sex	HGT	WGT
05-Jun-1995	M	6' 0"	185

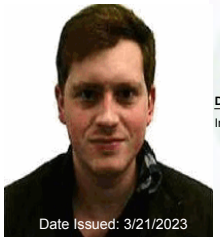
Discipline	Accreditation	Expiration
Inspector	A-I-195934-160321	Mar-31-2025

Asbestos Accreditation

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

132063-77552



Re-Accreditation

Michael T Andrews

DOB	Sex	HGT	WGT
23-Dec-1996	**M**	**6' 3"**	**240**

Discipline	Accreditation	Expiration
Inspector	A-I-181125-132522	Jan-31-2024

Asbestos Accreditation

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:

TTL, Inc.

624 Grassmere Park, Ste. 14 Nashville TN, 37211

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-1068-136142	June 01, 2023	June 30, 2024

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

This **31st** Day of **May 2023**

Division of Solid Waste Management
Toxic Substance Program

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

APPENDIX C:
HEALTH AND SAFETY PLAN

Health and Safety Plan

SR-193 over Alexander Creek LM 4.84
Fayette County, Tennessee
TTL Project Number: 240800287.00

2024

JOB NAME/LOCATION: SR-193 over Alexander Creek LM 4.84
Fayette County, Tennessee

REVIEW AND APPROVAL

Project Manager: David Carden (615) 727-1844

Project Coordinator: Katherine Clifton (931) 444-9748

Field Safety Coordinator: Jonathan Hopkins (615) 727-1823

Company Safety Officer: Jim Poland (205) 345-0816

DATE OF PLAN PREPARATION: 3/4/2024

PREPARED BY: Katherine Clifton

DATE OF PLANNED FIELD ACTIVITIES: 3/7/2024

PLANNED FIELD ACTIVITIES

- Perform an asbestos inspection on a single bridge.

CLOTHING AND PROTECTIVE GEAR REQUIRED

Standard work uniform with hard hat, gloves, Class III safety vest, safety glasses, and steel toe boots.

EMERGENCY PROCEDURES

In event of personnel injury:

- Administer basic first aid.
- Major Injuries: **CALL 911**
- Minor injuries - transport to nearest medical emergency facility.
- Notify Field Safety Coordinator (FSC): Mr. Jonathan Hopkins (615) 727-1823.

In event of potential or actual fire or explosion:

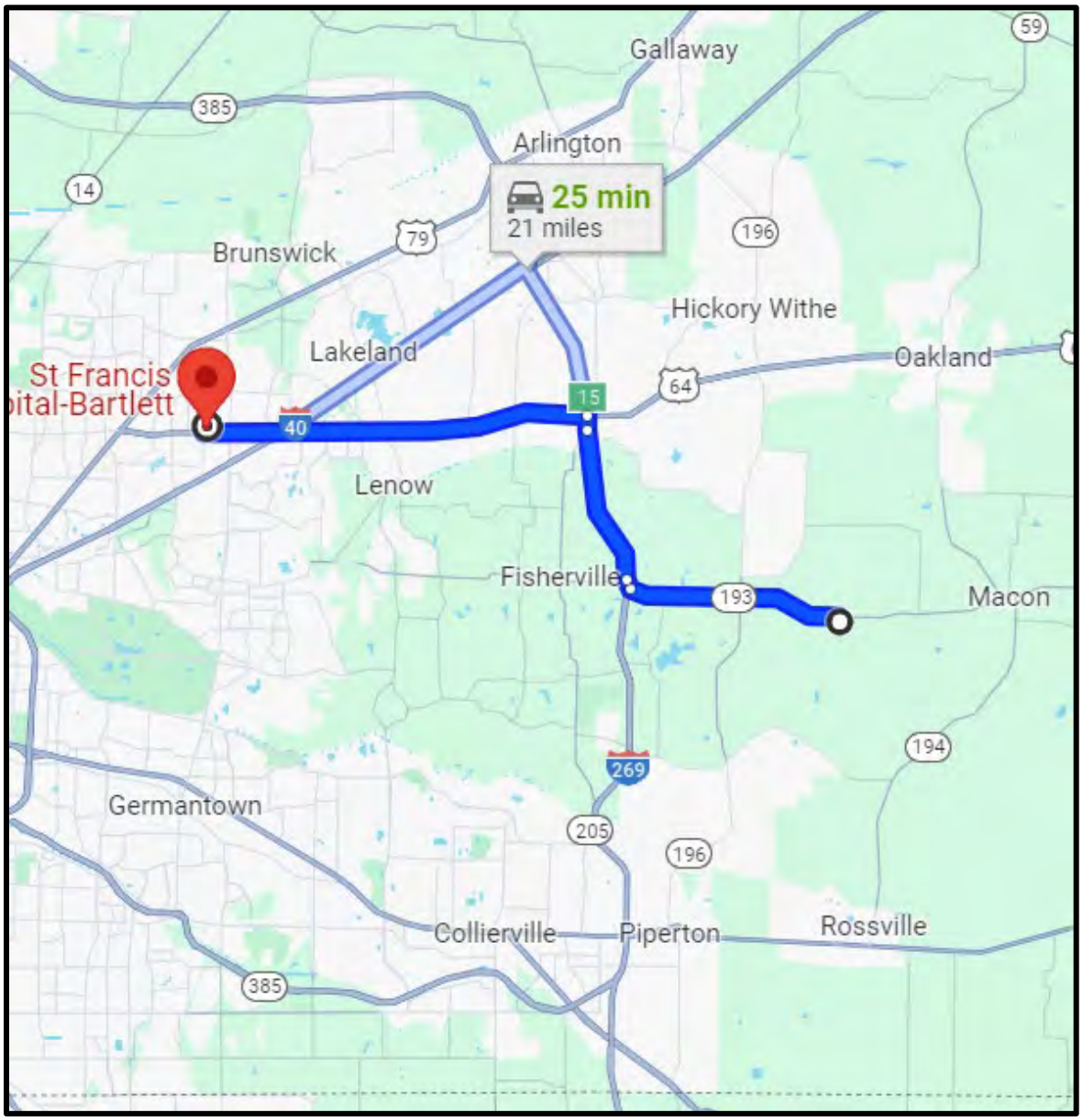
- Evacuate area immediately.
- Assemble in pre-designated area.
- **Notify fire department - Dial 911**
- Do not attempt to fight the fire.

MAP TO NEAREST 24-HOUR EMERGENCY CARE CENTER

SITE: SR-193 over Alexander Creek LM 4.84
Fayette County, Tennessee

DIRECTIONS TO: St Francis Hospital - Bartlett
2986 Kate Bond Rd, Bartlett, TN 38133
(901) 765-1000

1. Get on I-269 N/TN-385 N Follow TN-385 W for approximately 13 miles to Ridgeway Rd in Memphis.
2. Take US-64 W to Kate Bond Rd in Bartlett
3. St Francis Hospital - Bartlett is on the right.



TASK HAZARD ANALYSIS (THA) SHEET
ASBESTOS INSPECTION FIELD WORK

ACTIVITY / PHASE	POTENTIAL HAZARDS	RECOMMENDED ACTIONS / CONTROLS
Driving	1. Accidents 2. Backing	1. All passengers must wear seatbelts while in a moving vehicle. Do not exceed posted speed limits. Use caution when driving on uneven ground, grassy areas, and wet areas. Driver should not use cell phone while vehicle is moving. 2. Use mirrors and drive slowly while backing. If necessary, use a ground guide to assist.
Site set-up	1. Slips, Trips, Falls 2. Traffic	1. Wear appropriate foot protection to prevent slips and trips. Use caution when walking on uneven and wet ground surfaces. 2. As appropriate, utilize "Men Working" signs, flashing lights on top of vehicle, and safety cones. Ensure worker safety by walking on the side of roads against traffic, if necessary. Always keep an eye on incoming traffic.
Prior to commencing work	1. Muscle Strain 2. Biohazards 3. Weather	1. Stretch all major muscle groups for at least 5 minutes 2. Wear snake chaps and mosquito repellant as applicable 3. Check weather forecast to ensure worker safety.
Environmental and Other Field Concerns	1. Heat/cold 2. General Safety	1. Drink ample water during field activities. Wear sunscreen as applicable. Take breaks as needed during hot weather. 2. Always wear proper PPE. At least two people on site should have first aid and CPR training. All personnel are required to have at least the 10-hour OSHA training. A first aid kit should be kept in the vehicle.

By signing below, I acknowledge that I understand and will follow all components of the THA Sheet for asbestos inspection field work.

NAME (PRINTED)	SIGNATURE	DATE
Mike Andrews	[illegible]	3/7/24
John Butkevicius	[illegible]	3/7/24

APPENDIX D:
ASBESTOS LABORATORY REPORT

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: TTL

PROJECT: TDOT Bridge#240145800001

LOCATION: Fayette County

Date Received: 3/12/2024

Date Analyzed: 3/18/2024

Date Reported: 3/18/2024

ANALYST: Codi Maddox

Codi Maddox

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
01-A-01	Pier Footings	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-A-02	Pier Footings	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-A-03	Pier Footings	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-B-04	Bottom of Bridge Deck	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-B-05	Bottom of Bridge Deck	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-B-06	Bottom of Bridge Deck	Tan & Grey Cementitious Material	100	None Detected	None Detected
01-C-07	Felt Padding	Black & Brown Tar Padding	95	5 Cellulose	None Detected
01-C-08	Felt Padding	Black & Brown Tar Padding	95	5 Cellulose	None Detected
01-C-09	Felt Padding	Black & Brown Tar Padding	95	5 Cellulose	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 Rockland Road Suite E, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email info@frostenvironmental.com

CHAIN OF CUSTODY

PROJECT: TTL Project # 240800287.00

TDOT Bridge # 2401458000 1

PROJECT LOCATION: Fayette County

Report To: Mike Andrews
Company: TTL, Inc.
Address: 624 Grassmere Park, Suite 14
Nashville, TN 37211
Phone: (931) 308-6528
Email: mike.andrews@ttlusa.com

Turnaround Time Requested: ____ 2-3 Hour ____ Same Day ____ 24 Hour X 2-3 Day

Sample Number	Date Collected	Location	Analysis Requested	Volume
01-A-01	3/7/24	Pier Footings	PLM	N/A
01-A-02	↓	↓	↓	↓
01-A-03	↓	↓	↓	↓
01-B-04	↓	Bottom of Bridge Deck	↓	↓
01-B-05	↓	↓	↓	↓
01-B-06	↓	↓	↓	↓
01-C-07	↓	Felt Padding	↓	↓
01-C-08	↓	↓	↓	↓
01-C-09	↓	↓	↓	↓

RELINQUISHED BY Mike Andrews
DATE: 3/12/2024

RECEIVED AT LAB BY: Cody Madden
DATE: 3-12-24