

Asbestos & Lead Paint Survey Report

S-13-531 Bridge over Mangum Branch
Chesterfield County, South Carolina
Bridge Asset No. 04978



June 28, 2023

Terracon Project No. 7323P100_9

ASBESTOS DETECTED: NO

LEAD PAINT DETECTED: YES

Prepared for:

HNTB

Raleigh, North Carolina

Prepared by:

Terracon Consultants, Inc.

Columbia, South Carolina

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials



June 28, 2023

Mr. Spencer Franklin
HNTB North Carolina PC
343 E. Six Forks Road, Suite 200
Raleigh, NC 27609

Re: **Asbestos & Lead Paint Survey Report**
S-13-531 Bridge over Mangum Branch
Bridge Asset No. 04978
Chesterfield County, South Carolina
Terracon Project No. 7323P100_9

Dear Mr. Franklin:

Terracon Consultants, Inc. (Terracon) is pleased to present the results of the asbestos and lead paint survey performed on June 22, 2023, at the S-13-531 Bridge over Mangum Branch located in Chesterfield County, South Carolina. We understand that this survey was requested due to the planned replacement of the structure.

Terracon appreciates the opportunity to provide environmental consulting services for the HNTB and SCDOT. If you should have any questions regarding this report, please contact the undersigned at (803) 741-9000.

Sincerely,
Terracon Consultants, Inc.

Adam Chapiesky
Certified Operator
Asbestos Building Inspector No. BI-001971

Norman E. Partin, Jr., CHMM
Department Manager

Terracon Consultants, Inc. 521 Clemson Road Columbia, South Carolina 29229
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Environmental



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Geotechnical



Materials

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ASBESTOS & LEAD PAINT SURVEY REPORT
S-13-531 BRIDGE OVER MANGUM BRANCH
CHESTERFIELD COUNTY, SOUTH CAROLINA
Project No. 7323P100_9

1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) conducted an asbestos and lead paint survey of building materials at the S-13-531 Bridge (Asset No. 04978) over Mangum Branch located in Chesterfield County, South Carolina. The asbestos survey was conducted on June 22, 2023.

1.1. Project Objective

We understand the asbestos survey was requested due to the planned replacement of the bridge. EPA regulation 40 CFR 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP), prohibits the release of asbestos fibers to the atmosphere during renovation/demolition activities. NESHAP requires that potentially regulated ACM be identified, classified and quantified prior to planned disturbances or renovation activities.

The objective of the lead paint evaluation was to identify lead containing paint on the structure that may require special handling and disposal considerations. SCDHEC regulates solid waste disposal under Regulation 61-107.19. Testing was performed to meet specific State disposal requirements and does not comply with all parts of the Occupational Health and Safety Administrations (OSHA) lead regulations. Testing to comply with OSHA regulations are not covered in our scope of work since it is the responsibility of the contractor to protect its employees.

2.0 STRUCTURE DESCRIPTION

The bridge deck of the structure consists of concrete spans. The bridge structure has metal guardrails. The bridge deck is supported by concrete pier caps, which are located on wood piers. The bridge structure is approximately 45 feet long and 25 feet wide.

3.0 ASBESTOS SURVEY

The asbestos survey was conducted by SCDHEC licensed Asbestos Building Inspector Mr. Adam Chapiesky (License No. BI-001971, exp. 01/03/23). The survey was conducted on June 22, 2023, in general accordance with the sampling protocols established by EPA Regulation 40 CFR 763, AHERA and the SCDHEC R61-86.1. A summary of survey activities is provided below.

3.1 Regulatory Overview

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non friable ACM includes packing materials, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent (%) asbestos. Category II non-friable ACM are non-friable materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated demolition activities are considered regulated ACM (RACM). RACM must be removed prior to renovation or demolition activities.

In the state of South Carolina, asbestos activities are regulated by the SCDHEC under the SCDHEC Regulation 61-86.1 Standards of Performance for Asbestos. The SCDHEC require that any asbestos-related activity conducted in a public building be performed by personnel licensed by the SCDHEC. The owner or operator must provide the SCDHEC with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities. Asbestos abatement must be performed by SCDHEC-licensed asbestos abatement contractors in accordance with a Project Design prepared by a SCDHEC-licensed Asbestos Consultant. Third-party air monitoring must be conducted during the abatement activities.

The Occupational Safety and Health Administration (OSHA) Asbestos Standard for Construction Industry (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc). The OSHA standard classifies construction and maintenance activities, which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work.

3.2 Visual Assessment

Our survey activities began with visual observation of the structure to identify apparent homogeneous areas of suspect ACM. A homogeneous area consists of building materials, which appear similar throughout in terms of color, texture and date of application. Building materials which were not identified as concrete, glass, wood, masonry, metal or rubber were considered suspect ACM.

3.3 Physical Assessment

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the EPA as a material, which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

3.4 Sample Collection

Based on the results of the visual sampling, bulk samples of suspect ACM were collected in general accordance with AHERA sample collection protocols. Random samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Six (6) bulk samples were collected from areas of suspect ACM on the bridge. The bulk samples were collected from the following materials:

- Thin Friction Barrier
- Thick Friction Barrier

A summary of the suspect ACM samples collected during the survey is presented in Table 1 in Appendix A.

3.5 Sample Analysis

Bulk samples were submitted under chain of custody to EMSL Analytical, Inc. (EMSL), of Pineville, North Carolina for analysis by (PLM) with dispersion staining techniques per EPA methodology (600/R-93/116). The percentage of asbestos, where applicable, was determined by microscopical visual estimation. EMSL is accredited under the National Voluntary Laboratory Accreditation Program NVLAP (#200841-0).

Per the SCDHEC Regulation 61-86.1 Standards of Performance for Asbestos Projects, negative results for non-friable organically bound (NOB) materials such as flooring and roofing shall be verified with at least one TEM analysis.

Both suspect materials are considered NOB materials. Both tested negative for asbestos by PLM analysis and thus one sample of each was submitted and analyzed by TEM analysis.

3.6 Finding and Recommendations

Based on the results of laboratory analyses, **asbestos was not detected** in the friction barrier samples collected from the bridge. These results were confirmed by TEM analysis. Asbestos laboratory analytical reports are included in Appendix B.

4.0 LEAD-CONTAINING XRF PAINT SURVEY

The objective of the XRF paint evaluation was to identify lead-containing paint systems on building components that may require special handling and disposal considerations during renovations to the structure. SCDHEC regulates solid waste disposal under Regulation 61-107.19 as noted below. Testing was performed to meet specific State disposal requirements and does not comply with all parts of the Occupational Health and Safety Administrations (OSHA) lead regulations. Testing to comply with OSHA regulations are not covered in our scope of work since it is the responsibility of the contractor to protect its employees.

4.1 Regulatory Overview

Lead is regulated by the EPA, SCDHEC and OSHA. The EPA and SCDHEC regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The EPA defines lead-based paint as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 mg/cm², 5,000 mg/kg, or 0.5% by dry weight as determined by laboratory analysis. The SCDHEC regulations 61-107.19 require that painted demolition debris with a lead concentration greater than 0.06% by weight be disposed in a permitted Class II landfill. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The complete OSHA standard for compliance can be found on OSHA's website (www.osha.gov). A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

The OSHA *Lead Standard for Construction* (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency clean-up
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

4.2 XRF Investigative Procedures

The lead-based paint assessment was conducted for compliance with the SCDHEC limit of 0.7 milligrams (mg) of lead per square centimeter (cm²) of painted surface for lead-based paint coated waste. SCDHEC, Health Division defines lead-based paint as a coating containing lead in quantities ≥ 0.7 mg/cm² (SCDHEC, Health Division definition #4-53-1320f). Any coated surfaces meeting or exceeding the SCDHEC limit of 0.7 mg/cm² were considered lead-based paint for the purpose of this assessment.

OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms of lead per cubic meter of air (30 $\mu\text{g}/\text{m}^3$) during an eight-hour day and a permissible exposure level of fifty micrograms per cubic meter (50 $\mu\text{g}/\text{m}^3$).

Representative covered building components and surfaces were analyzed utilizing a Niton XL2 980 X-Ray Fluorescence (XRF) spectrum analyzer (serial #94964). The suspect painted finishes were selected based on the color of the topcoat and the underlying paint layers and/or the substrate on which it was applied. The possibility exists that lead-based paint finishes are present in inaccessible areas not tested such as pipe chases, wall voids, etc.

Table 2 provides a summary of the paint readings analyzed by the XRF spectrum lead analyzer. The XRF summary provides the sample numbers, sample location, component, substrate, paint color, condition, and results.

4.3 XRF Findings and Results

Coated surfaces throughout the interior and exterior of the subject structure were tested for the presence of lead-based paint. Coated surfaces meeting or exceeding the SCDHEC limit of 0.7 mg/cm² were considered lead-based paint for the purpose of this assessment. The below tested surfaces **exceeded** the 0.7 mg/cm² threshold:

- Orange Metal Bracket – 2.88 mg/cm²

4.4 Recommendations

XRF analysis detected lead concentrations greater than 0.7 mg/cm². SCDHEC regulations require that lead painted demolition debris be disposed in a permitted Class II landfill. Landfills should be contacted to determine their specific disposal requirements. Metal components painted with lead-based paint may be recycled however the recycler should be contacted to determine their specific requirements. Additionally, the provisions in the OSHA Standard for Lead (29 CFR 1926.62) should be followed by contractor personnel conducting work activity during the demolition. A summary of the lead paint laboratory results is presented in Table 2 in Appendix A.

Asbestos & Lead Paint Survey Report

S-13-531 Bridge over Mangum Branch ■ Chesterfield County, SC

June 28, 2023 ■ Terracon Project No. 7323P100_9



It should be noted that on this bridge all metal brackets have rusted and decayed over time leaving behind little to no lead paint.

5.0 GENERAL COMMENTS

This survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our survey of the structure. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date.

This report has been prepared on behalf of and exclusively for use by HNTB North Carolina PC And the SCDOT for specific application to their project as discussed.

This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information, which may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A
TABLE

TABLE 1 - Asbestos Sample Summary
SCDOT Bridge S-13-531 over Mangum Branch
Chesterfield County, South Carolina
Project No. 7323P100_9

HA	Approx. Quantity (ft ²)	Samples Collected	Description	Sample Location	Lab Result	Category	Condition
1	20	3	Thin Friction Barrier	Between piers and pier caps	NAD	Misc	NF, Good
2	100	3	Thick Friction Barrier	Between pier caps and decking	NAD	Misc	NF, Good

Notes

Due to planned demolition all materials have a high potential for disturbance

Homogeneous Materials 1 and 2 are NOB materials. Negative PLM results were confirmed with TEM analyses.

- HA Homogeneous Area
- NAD No asbestos detected
- SM Surfacing Material
- Misc Miscellaneous Material
- F Friable
- NF Non-Friable

TABLE 2 - Lead Paint Sample Summary
SCDOT Bridge S-13-531 over Mangum Branch
Chesterfield County, South Carolina
Project No. 7323P100_9

Sample Number	Description	Location	Lab Result
LP-1	Orange Metal Bracket	Between decking joints	2.88 mg/cm ²

Note:

Results are above the SCDHEC regulatory limit 0.7 mg/cm²

APPENDIX B
LABORATORY REPORTS



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412306694
Customer ID: GAGE62
Customer PO: 7323P100
Project ID:

Attention: Owen Astwood Terracon Consultants, Inc. 521 Clemson Road Columbia, SC 29229	Phone: (803) 741-9000 Fax: (803) 741-9900 Received Date: 06/22/2023 9:40 AM Analysis Date: 06/23/2023 - 06/26/2023 Collected Date: 06/21/2023
Project: SCDOT Bridges/ 7323P100/ #04978	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
04978-1.1 <small>412306694-0001</small>	Thin Friction Barrier	Black Fibrous Homogeneous	50% Cellulose	5% Mica 45% Non-fibrous (Other)	None Detected
04978-1.2 <small>412306694-0002</small>	Thin Friction Barrier	Black Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
04978-2.1 <small>412306694-0004</small>	Thick Friction Barrier	Black Non-Fibrous Homogeneous	10% Cellulose	5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
04978-2.2 <small>412306694-0005</small>	Thick Friction Barrier	Black Non-Fibrous Homogeneous	10% Cellulose	5% Ca Carbonate 85% Non-fibrous (Other)	None Detected

Analyst(s) _____
 Kelsie Dwyer (2)
 Matthew Schaefer (2)



 Lee Plumley, Laboratory Manager
 or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 06/26/2023 16:11:29



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412306694
Customer ID: GAGE62
Customer PO: 7323P100
Project ID:

Attention: Owen Astwood Terracon Consultants, Inc. 521 Clemson Road Columbia, SC 29229	Phone: (803) 741-9000 Fax: (803) 741-9900 Received Date: 06/22/2023 9:40 AM Analysis Date: 06/23/2023 Collected Date: 06/21/2023
Project: SCDOT Bridges/ 7323P100/ #04978	

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
04978-1.3 412306694-0003	Thin Friction Barrier	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
04978-2.3 412306694-0006	Thick Friction Barrier	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Derrick Young (2)

Lee Plumley, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. EMSL recommends that samples reported as none detected or <1% undergo additional analysis via PLM to avoid the possibility of false negatives.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 06/26/2023 16:11:28



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

412306694

10801 Southern Loop Blvd

Pineville, NC 28134

PHONE: (704) 525-2205

FAX: (704) 525-2382

Company Name : Terracon Consultants, Inc.		EMSL Customer ID:	
Street: 521 Clemson Road		City: Columbia	State/Province: SC
Zip/Postal Code: 29229	Country: US	Telephone #: 803-212-0064	Fax #: 803-741-9900
Report To (Name): Owen Astwood		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: Owen.Astwood@Terracon.com		Purchase Order: 7323P100	
Project Name/Number: SCDOT Bridges/ 7323P100/04978		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** <i>Third Party Billing requires written authorization from third party</i>			

Turnaround Time (TAT) Options* - Please Check

3 Hour 6 Hour 24 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA	TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312	TEM- Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)
PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)	TEM - Bulk <input checked="" type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5	Soil/Rock/Vermiculite <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC)
TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		Other: <input type="checkbox"/>

Check For Positive Stop - Clearly Identify Homogenous Group

Filter Pore Size (Air Samples): 0.8µm 0.45µm

Samplers Name: Adam Chapiesky Samplers Signature: *[Signature]*

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
04978-1.1	Thin Friction Barrier		6/21/23
04978-1.2	↓		↓
04978-1.3	↓		↓
04978-2.1	Thick Friction Barrier		6/21/23
04978-2.2	↓		↓

Client Sample # (s): 04978 - 1.1 - 04978 - 2.3 Total # of Samples: 6

Relinquished (Client): *[Signature]* Date: 6/21/23 Time: 1700

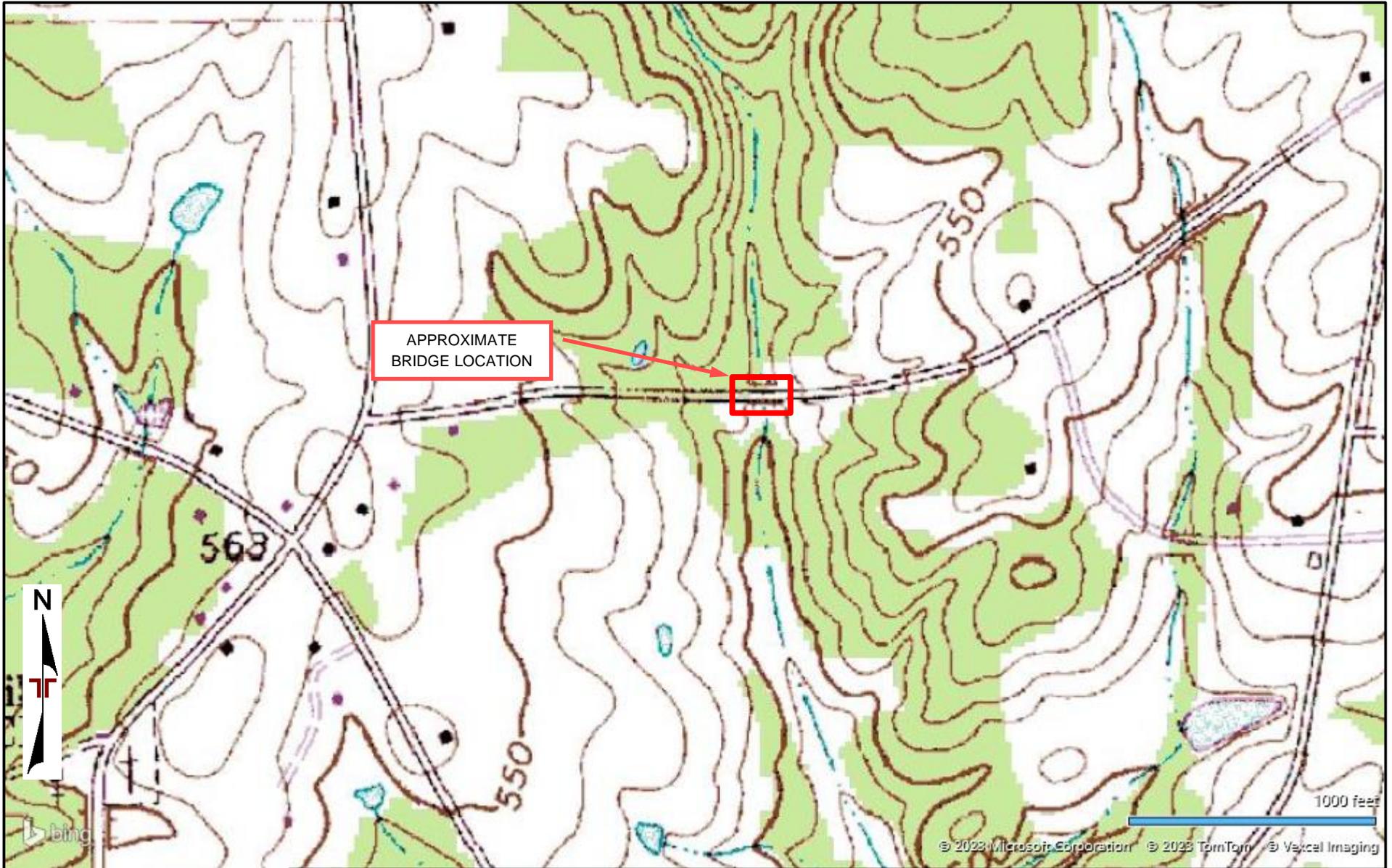
Received (Lab): *[Signature]* Date: 6/22/23 Time: 940AM Fx

Comments/Special Instructions: * - Run TEM Concurrently 7966 5677 3519

APPENDIX C

Figure 1 – Site Location Map

Figure 2 – Sample Location Plan



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
 QUADRANGLES INCLUDE: PAGELAND, SC (1/1/1988).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: ADC
 Drawn by: PTK
 Checked by: ADC
 Approved by: NEP

Project No. 7323P100
 Scale: AS SHOWN
 File Name: S-13-531
 Date: June 2023

Terracon

521 Clemson Rd
 Columbia, SC 29229-4307

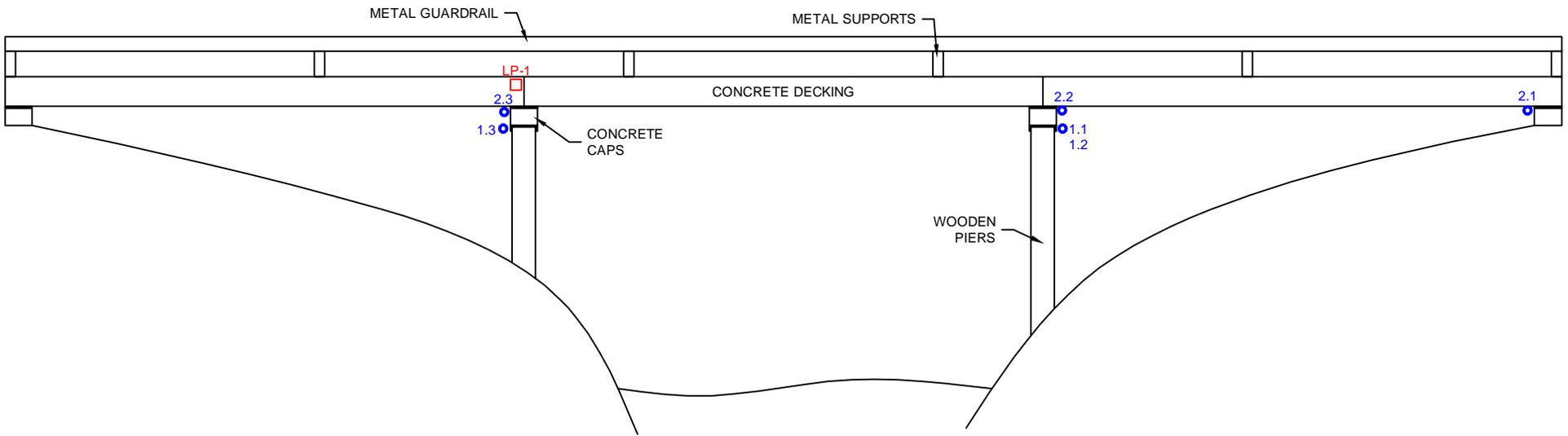
TOPOGRAPHIC MAP

S-13-531 over Mangum Branch
 Henry Funderbuck Road
 Chesterfield County, South Carolina
 Bridge #04978

Exhibit

1

PLAN VIEW



PROFILE VIEW

EXPLANATION

- POSITIVE ACM SAMPLE LOCATION
- NEGATIVE ACM SAMPLE LOCATION
- POSITIVE LEAD PAINT SAMPLE LOCATION
- NEGATIVE LEAD PAINT SAMPLE LOCATION

Project Mngr: ADC Drawn By: PTK Checked By: ADC Approved By: NEP	Project No. 7323P100 Scale: NOT TO SCALE File No. S-13-531 Date: JUNE 2023	 Consulting Engineers and Scientists 521 CLEMSON ROAD COLUMBIA, SOUTH CAROLINA PH. (803) 741-9000 FAX. (803) 741-9900	SAMPLE LOCATION PLAN S-13-531 OVER MANGUM BRANCH HENRY FUNDERBURK ROAD CHESTERFIELD COUNTY, SOUTH CAROLINA BRIDGE #04978	Exhibit <div style="font-size: 2em; font-weight: bold;">2</div>
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DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

APPENDIX D
PHOTOGRAPHS



Photo 1 View of the bridge facing east.



Photo 2 View of the bridge asset number.

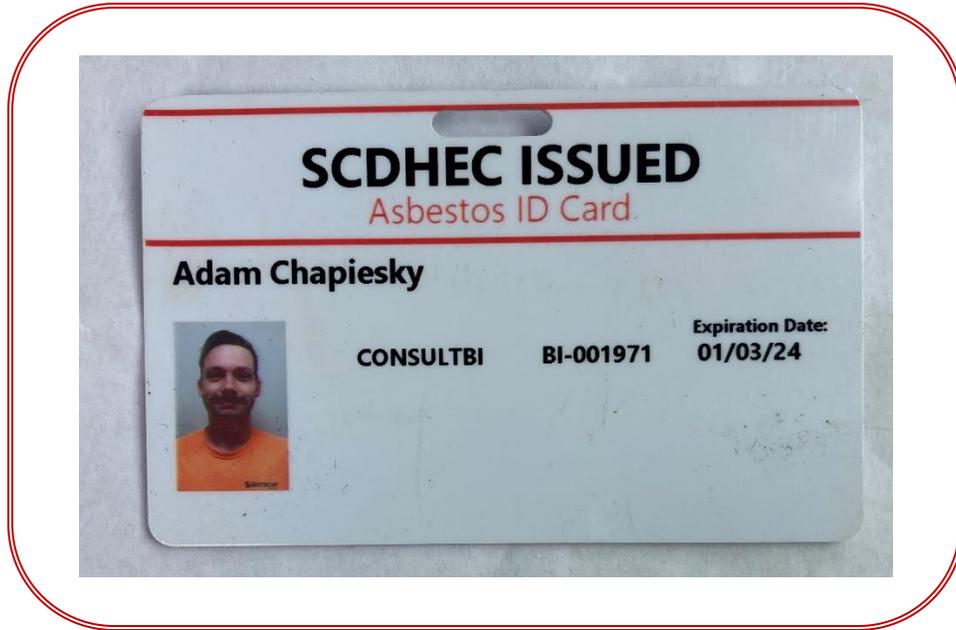


Photo 3 View of thin friction barrier between pier and pier cap.



Photo 4 View of thick friction barrier between pier cap and decking and orange metal bracket.

APPENDIX E
INSPECTOR CREDENTIALS



Adam Chapiesky

Asbestos Building Inspector BI-001971