



ASBESTOS CONTAINING MATERIAL INVESTIGATION REPORT

SOUTHBOUND I-95 OVER LAKE MARION OVERFLOW BRIDGE
CLARENDON & ORANGEBURG COUNTIES, SOUTH CAROLINA

PREPARED FOR:

TRANSYSTEMS

C/O Mr. Peter Strub
Sr. Vice President/Principal
1859 Summerville Avenue, Suite 600
Charleston, SC 29405

PREPARED BY:

F&ME Consultants, Inc.
211 Business Park Blvd.
Columbia, South Carolina 29203

August 18, 2023

☐ Yes, asbestos was found.
☒ No, asbestos was not found.

F&ME Project No.: G6744.000

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1 EXECUTIVE SUMMARY

This executive summary is intended as an overview for the convenience of the reader. This report should be reviewed in its entirety prior to making any decisions regarding this project. This investigation report is one of seven (7) completed for the project. The investigations included the existing north and southbound I-95 bridge structures, the former US 301/15 Trail Bridges, and the older remnants of the US 301 bridge. The below Bridge numbering system utilized for the investigations and referenced in this report reflects the numbering system developed by F&ME Consultants, Inc. (FME) field personnel during the field investigation and does not reflect any Bridge numbering system used by The South Carolina Department of Transportation (SCDOT). This report is specifically for the southbound I-95 Overflow Bridge only. Refer to other reports prepared by FME for the other bridges.

FME has completed the Asbestos Containing Material (ACM) Investigations of the existing southbound I-95 Bridge over Lake Marion Overflow (Bridge #1) in Clarendon and Orangeburg Counties in South Carolina, at the request of Transystems (Client). The field investigations were performed between July 19, 2023 and July 21, 2023, in anticipation of the off-alignment replacement of the existing I-95 bridges. This investigation was conducted pursuant to South Carolina Department of Health and Environmental Control (SCDHEC), United States Environmental Protection Agency (USEPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Occupational Safety and Health Administration (OSHA) regulations requiring an ACM investigation prior to any demolition activities.

Per an agreed upon scope of work, FME performed this investigation to identify any ACM that might be encountered during the demolition of the existing Bridge, and to provide recommendations regarding proper handling and disposal of any ACM found. The investigation of the subject Bridge identified multiple suspect materials: expansion joint materials, bond break bearing pads, and expansion joint sealers. During the field investigation, FME collected samples of the suspect materials and assessed the physical condition of each material. **Laboratory results indicate that the materials sampled during this investigation were negative for asbestos.** During the demolition activities, previously concealed ACM may be discovered. If hidden suspect ACM is encountered not addressed in this report, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/FME for an appropriate response action.



We sincerely appreciate the opportunity to assist you with this project. Should you have any questions or require additional information concerning this Investigation, please do not hesitate to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS



Michael S. Mincey
Environmental Professional
Asbestos Consultant/Management Planner
SCDHEC License No: MP-00161
Expiration Date 01/23/2024



Glynn M. Ellen
Environmental Department Manager
Asbestos Consultant/Management Planner
SCDHEC License No: ASB-22641
Expiration Date 01/23/2024



2 INTRODUCTION

FME has completed an ACM investigation on the southbound I-95 over Lake Marion Overflow Bridge in Clarendon and Orangeburg Counties in South Carolina. The investigation was performed on July 19th through July 21st, 2023. This investigation was conducted pursuant to SCDHEC, USEPA, NESHAP, and OSHA regulations which require an ACM investigation prior to any demolition activities. Refer to Appendix A, Site Vicinity Map for the location of the Bridge.

It is our understanding that the existing Bridge will to be demolished, in anticipation of the off-alignment replacement of the existing I-95 Bridge. The scope of this investigation was to determine if asbestos was present on this Bridge by identifying and sampling suspect ACM, obtaining analytical results, quantifying any confirmed ACM, and assessing the physical condition of the ACM, where possible.

This report has been prepared exclusively for the Client and shall not be disseminated in whole or part to other parties without prior consent from the Client or FME. No other environmental issues were addressed as part of this report.

3 EXISTING BRIDGE STRUCTURE

The existing Bridge is located along I-95 and crosses over Lake Marion in Clarendon and Orangeburg Counties in South Carolina. The date of construction for the existing southbound I-95 Overflow Bridge (Bridge #4) over Lake Marion were constructed in the late 1960's to early 1970's based on the original construction drawings.

The southbound I-95 Lake Marion Overflow (Bridge #4) (~350.0' L x 31.0'W inside curb to inside curb) is two (2) lane, concrete and steel bridge structure with poured-in-place concrete bridge decking, concrete curb/gutter, and concrete guardrails along with metal scuppers.

The Bridge is constructed with a pre-cast prestressed beams and poured-in-place (PIP) diaphragms. The bentcaps were PIP concrete supported by driven hexagonal concrete piles.

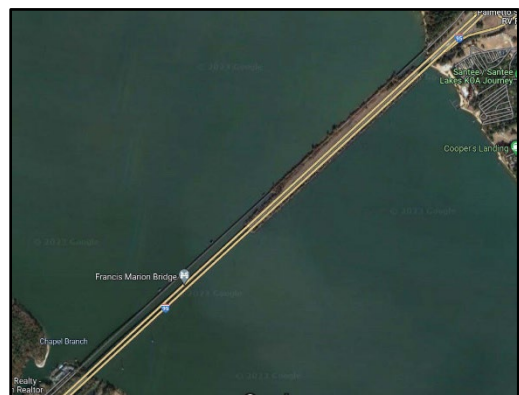


Photo 1 – Southbound I-95 over Lake Marion Overflow Bridge in Clarendon & Orangeburg Counties, SC.

4 FIELD ASSESSMENT

During the inspection, all bridge components (i.e., concrete bent caps, piers, scuppers, and expansion joints) were visually inspected for suspect ACM. Examples of possible suspect materials include bent cap bearing materials, expansion joint materials and scuppers. The bridge deck rested directly on concrete bent caps with bond break bearing pads between them. The PIP concrete bent caps were supported by driven hexagonal concrete pipes. Bent cap bearing pads, expansion joint materials, and expansion joint sealers were noted during the investigation as suspect materials. Refer to Appendix B, Sample Location Plan, for detailed sample locations. Also, see Appendix F, Site Photographs, for more details.

5 RECOMMENDATIONS

The results, conclusions, and recommendations of this Investigation are representative of the conditions observed at the site on the date of the field investigation. FME does not assume responsibility for any changes in conditions or circumstances that may have occurred after this investigation.

It is our understanding that the existing Bridge will to be demolished, in anticipation of the off-alignment replacement of the existing I-95 Bridge. **Laboratory results indicate that the materials sampled during this investigation were negative for asbestos.** Therefore, there are no foreseen special handling or disposal requirements, regarding asbestos, that will be required for the demolition of this bridge.

If any concealed and/or inaccessible suspect ACM are encountered during the demolition activities, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/Asbestos Consultant for an appropriate response action. The SCDHEC must be notified if any suspect ACM is discovered.

This report has been prepared exclusively for the Client and FME and shall not be disseminated in whole or in part to other parties without prior consent from the Client. Use of this document for bidding purposes is not recommended without prior consultation with FME.

We sincerely appreciate the opportunity to be of service to Transystems in this matter. If you have any questions regarding the information presented herein, please contact our office at (803) 254-4540.



APPENDICES

Appendix A – Site Vicinity Map

Appendix B – Sample Location Plan

Appendix C – Summary of Samples

Appendix D – Laboratory Analysis Reports

Appendix E – Chain-of-Custody Form

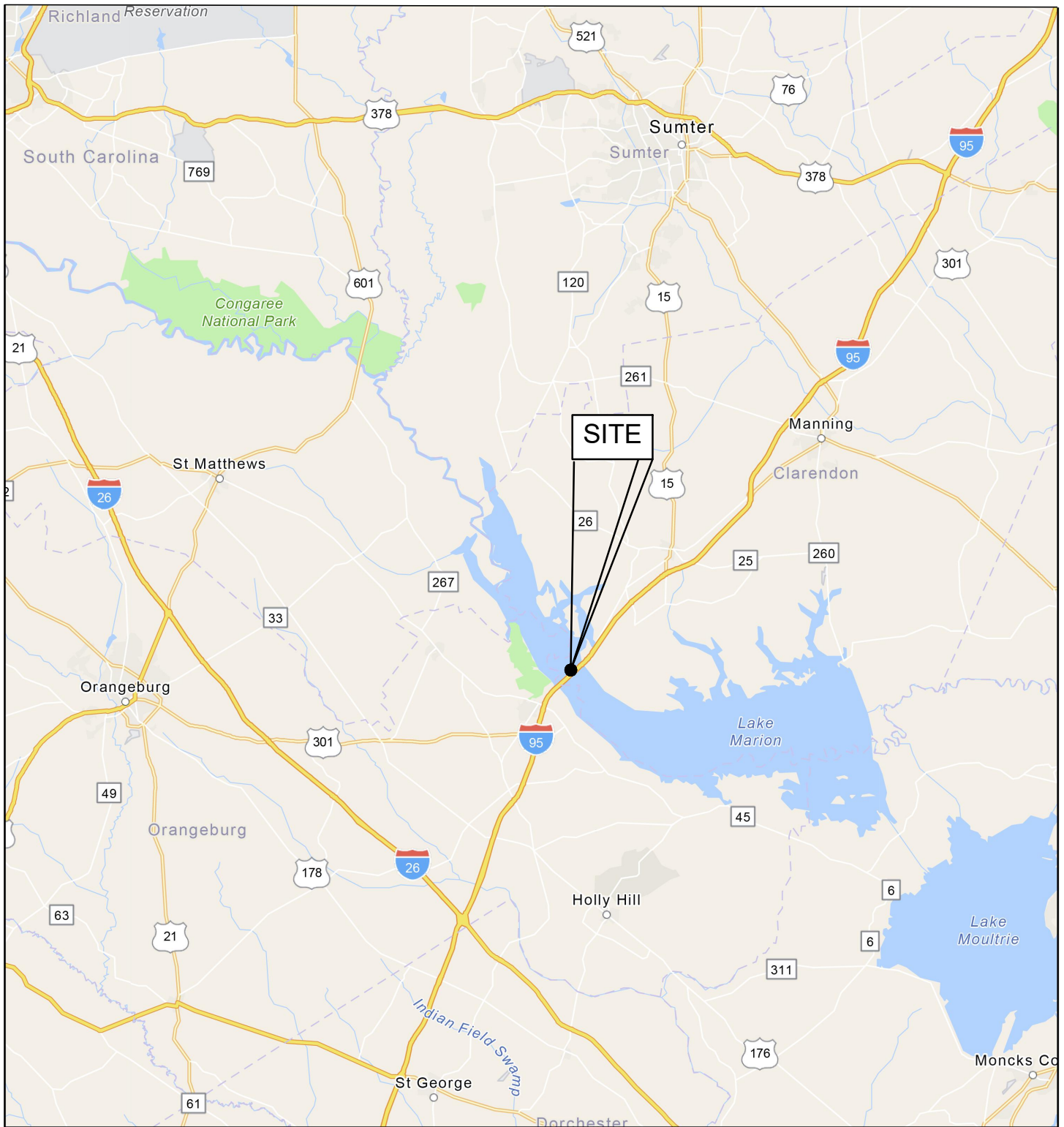
Appendix F – Site Photographs

Appendix G – Personnel Certifications



Appendix A

Site Vicinity Map



1:577,791

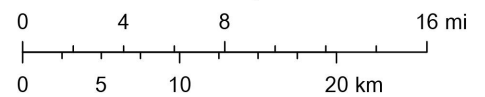


FIGURE
NUMBER:

1

F&ME CONSULTANTS
PROJECT NUMBER:

G6744.000

ASBESTOS CONTAINING MATERIALS INVESTIGATION
SB I-95 over Lake Marion Overflow Bridge Replacement
Clarendon & Orangeburg Counties, South Carolina

SITE VICINITY MAP

Prepared for:
Transystems
1859 Summerville Ave., Suite 600
Charleston, SC 29405

F&ME
CONSULTANTS

211 BUSINESS PARK BLVD.
COLUMBIA, SC 29203

ORIGINAL:
August 11, 2023

REVISIONS:

1

2

3

SCALE:

Shown

DRWN. BY: MSM

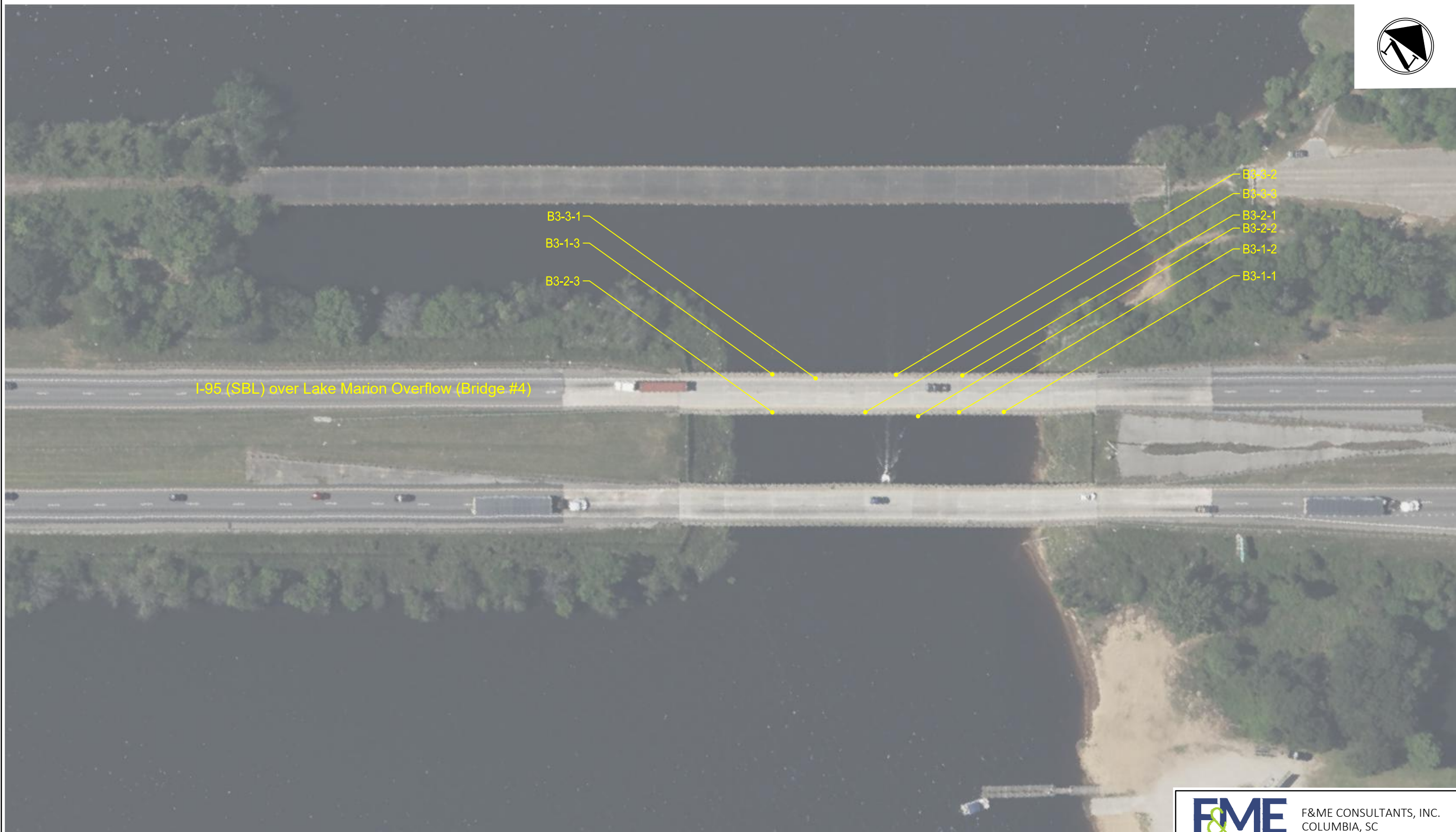
CHKD. BY: GME

APPR. BY: GME

NOTES:

Appendix B

Sample Location Plan



I-95 (SBL) over Lake Marion Overflow (Bridge #4)

B3-3-1

B3-1-3

B3-2-3

B3-3-2

B3-3-3

B3-2-1

B3-2-2

B3-1-2

B3-1-1



F&ME CONSULTANTS, INC.
COLUMBIA, SC

4			
3			
2			
1			
REV.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	MSM	DATE 08/11/2023	GROUP ____ - ____
R/W		DATE	

SB I-95 OVER LAKE MARION OVERFLOW BRIDGE REPLACEMENT
CLARENDON & ORANGEBURG COUNTIES, SOUTH CAROLINA

SAMPLE LOCATION PLAN

F&ME JOB NO. G6744.000

SCALE: N.T.S.

FIGURE 2

Appendix C

Summary of Samples

Appendix C: Summary of Samples

Sample ID	Description
Bridge #4 (I-95 SBL Overflow Bridge over Lake Marion)	
B4-1-1	Black Expansion Joint Material
B4-1-2	Black Expansion Joint Material
B4-1-3	Black Expansion Joint Material
B4-2-1	Bond Break Bearing Pad
B4-2-2	Bond Break Bearing Pad
B4-2-3	Bond Break Bearing Pad
B4-3-1	Expansion Joint Sealer
B4-3-2	Expansion Joint Sealer
B4-3-3	Expansion Joint Sealer



Appendix D

Laboratory Analysis Reports



EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

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

EMSL Order: 022304974

Customer ID: FMEC62

Customer PO: G6744.000

Project ID:

Attention: Glynn M. Ellen

F & ME Consultants

211 Business Park Blvd

Columbia, SC 29203

Phone: (803) 254-4540

Fax: (803) 254-4542

Received Date: 07/25/2023 10:15 AM

Analysis Date: 07/27/2023

Collected Date:

Project: 1-95 over Lake Marion (Bridge #4)

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 % Type
			% Fibrous	% Non-Fibrous	
B4 1-1 022304974-0001	Black Expansion Joint Material	Brown/Gray/Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
B4 1-2 022304974-0002	Black Expansion Joint Material	Gray/Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
B4 2-1 022304974-0003	Expansion Joint Sealer	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
B4 2-2 022304974-0004	Expansion Joint Sealer	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
B4 3-1 022304974-0005	Bond Break Pad	Gray/Tan/Black Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
B4 3-2 022304974-0006	Bond Break Pad	Gray/Black Non-Fibrous Homogeneous	2% Cellulose	10% Quartz 88% Non-fibrous (Other)	None Detected

Analyst(s)

Jurnee West (3)

Scott Combs (3)

Stephen Bennett, 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. Kernersville, NC NVLAP Lab Code 102104-0, Virginia 3333-000228, West Virginia LT000321

Initial report from: 07/28/2023 08:16:17



EMSL Analytical, Inc.

706 Gralin Street Kenersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

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

EMSL Order: 022304974

Customer ID: FMEC62

Customer PO: G6744.000

Project ID:

Attention: Glynn M. Ellen
F & ME Consultants
211 Business Park Blvd
Columbia, SC 29203

Phone: (803) 254-4540

Fax: (803) 254-4542

Received Date: 07/25/2023 10:15 AM

Analysis Date: 07/28/2023

Collected Date:

Project: 1-95 over Lake Marion (Bridge #4)

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
B4 1-3 022304974-0007	Black Expansion Joint Material	Gray/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
B4 2-3 022304974-0008	Expansion Joint Sealer	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
B4 3-3 022304974-0009	Bond Break Pad	Brown/Gray/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Stephen Bennett (3)

Stephen Bennett, 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. Kenersville, NC

Initial report from: 07/28/2023 16:41:47

Appendix E

Chain-of-Custody Forms



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

022304974

X
706 GRALIN ST.
KERNERSVILLE, NC 27284
PHONE (336) 992-1025
FAX (336) 992-4175

Company Name : F&ME Consultants		EMSL Customer ID: FMEC62	
Street: 211 Business Park Boulevard		City: Columbia	State/Province: SC
Zip/Postal Code: 29203	Country: USA	Telephone #: 803-254-4540	Fax #: 803-254-4542
Report To (Name): Glynn Ellen		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: gellen@fmeconsultants.com, and mmincey@fmeconsultants.com,		Purchase Order: G6744.000	
Project Name/Number: I-95 over Lake Marion (Bridge #4)		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input checked="" 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** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour <input checked="" type="checkbox"/> 72 Hour <input checked="" type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 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 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 - 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 - 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 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	
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) 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 only) Other: <input type="checkbox"/>			
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name: Glynn M. Ellen		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
*B4-1-1 thru B4-1-3	Black Expansion Joint Material		
*B4-2-1 thru B4-2-3	Expansion Joint Sealer		
*B4-3-1 thru B4-3-3	Bond Break Pad		
Client Sample # (s): B4-1-1 - B4-3-3		Total # of Samples: 9	
Relinquished (Client):		Date: 07/24/2023	Time: 1700
Received (Lab): JS		Date: 7-25-23	Time: 10:15
Comments/Special Instructions: *TEM 3rd NOB.			

Appendix F

Site Photographs

APPENDIX F - SITE PHOTOGRAPHS

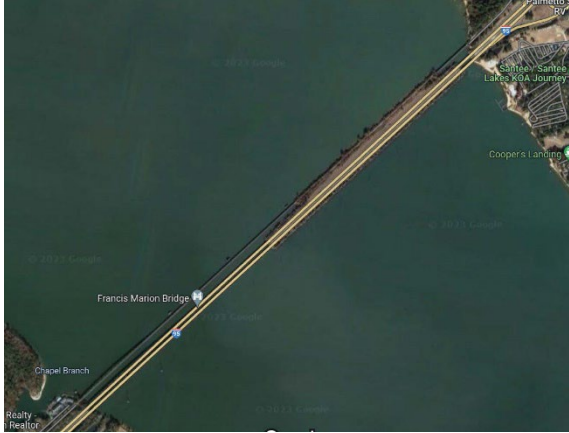


Photo 1. Top Side View of Bridges.



Photo 2. Southwest Corner View of SB I-95 Overflow Bridge #4.



Photo 3. Underside View of SB I-95 NBL Overflow Bridge #4.



Photo 4. View of South End Bent.



Photo 5. Non-ACM Expansion Joint Material.



Photo 6. Non-ACM Bond Break Bearing Pad.



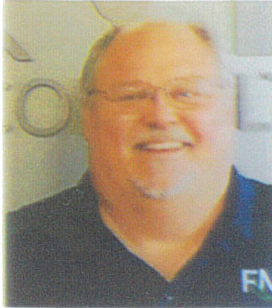
Appendix G

Personnel Certifications

SCDHEC ISSUED

Asbestos ID Card

Glynn M Ellen



**AIRSAMPLER
CONSULTMP
CONSULTPD
SUPERAHERA**

**AS-00079
ASB-22641
PD-00098
SA-00455**

Expiration Date:

**01/22/24
01/23/24
07/12/23
01/22/24**

This card is nontransferable and considered invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

YOU MUST HAVE THIS IDENTIFICATION CARD WITH YOU ON THE JOB.

For information of corrections contact: SCDHEC - Asbestos Section
2600 Bull Street
Columbia, SC 29201
(803) 898-4289

SCDHEC ISSUED

Asbestos ID Card

Michael Mincey



**AIRSAMPLER
CONSULTMP
SUPERAHERA**

**AS-00272
MP-00161
SA-01424**

Expiration Date:

01/22/24

01/23/24

01/22/24

This card is nontransferable and considered invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

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Columbia, SC 29201
(803) 898-4289