

LEAD-BASED PAINT (LBP) INVESTIGATION REPORT

**S-32-671 – (PINEY GROVE RD.) BRIDGE
OVER I-26 (EAST & WEST BOUND LANES)
SCDOT BRIDGE #327067100100
LEXINGTON COUNTY, SOUTH CAROLINA**

PREPARED FOR:



Mr. David Kinard, P.E.
Project Manager
3955 Faber Place Drive, Suite 300
North Charleston, South Carolina 29405

PREPARED BY:

F&ME Consultants
1825 Blanding Street
Columbia, South Carolina 29205

March 15, 2018

Yes, lead was found.
 No, lead was not found.

F&ME Project No.: G5662.010

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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.

F&ME Consultants has completed a Lead-Based Paint (LBP) Investigation on the S-32-671 (Piney Grove Rd.) Bridge Over I-26 in Lexington County, South Carolina, for HDR, Inc (David Kinard, P.E. - Project Manager), on March 2, 2018. Appendix A – Site Vicinity Map is provided to show the location of the bridge. Appendix B – Bridge Plan, is provided to show the bridge lay-out and locations of XRF scans taken on the bridge.

Per an agreed upon scope of work, this LBP Investigation was conducted to identify, analyze, and assess the condition of any LBP or coated bridge components which may be affected by the planned demolition activities. Additionally, F&ME agreed to make recommendations regarding proper handling and/or disposal methods if any LBP or coatings were identified. This investigation includes both a visual evaluation of the physical condition of painted materials as well as quantitative testing of random surfaces using a Thermo Scientific Niton X-Ray Fluorescence (XRF) Portable Analyzer. The XRF documents the concentration of lead, if any, in the overall paint or coating. Bridge components were scanned with a Niton XRF analyzer (Model #XLp 300A, Serial #18185) with a limit of detection (LOD) of 0.01 mg/cm².

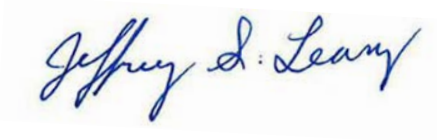
LBP is regulated by multiple government agencies, and each requires different response actions when the concentration of lead exceeds specified thresholds. The Occupational Safety and Health Administration (OSHA) regulates worker exposure to lead dust, and as a result considers materials with any lead content to be a potential hazard. Furthermore, the South Carolina Department of Health and Environmental Control (SCDHEC) requires some materials found to contain greater than or equal to (\geq) 0.7 mg/cm² lead to be disposed of at specialized waste facilities. Appendix C – XRF Data, is provided to present the data in a user-friendly format. The XRF results have been highlighted to show which threshold has been exceeded. Items in red text exceed the SCDHEC threshold, while items in blue text contain lead in concentrations between 0.01 to <0.7 mg/cm² and would therefore be subject to OSHA's regulations.

The results from the XRF quantitative testing indicate that no lead is present in paint and/or coatings on the bridge components scanned during this investigation of the subject bridge structure.

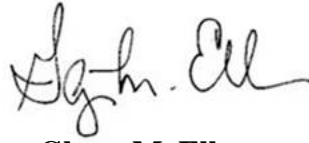
We appreciate the opportunity to assist you in this matter. If you have any questions or require additional information, please feel free to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS



Jeffrey S. Leary
S.C. Lead-Based Paint Inspector
EPA Certification No. SC-I-18721-3 (Exp. 07/29/18)



Glynn M. Ellen
Environmental Manager

2. LBP BACKGROUND INFORMATION

Housing and Urban Development (HUD) defines “LBP” as any coating that has a lead concentration of 1.0 milligrams of lead per square centimeter (1.0 mg/cm²) or greater, or if the lead concentration is greater than one half of a percent (> 0.5%) by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 90 ppm (0.009% by weight). In 1978, the CPSC banned the sale of LBP to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in the residential setting.

In contrast, the mission of OSHA with respect to lead-containing paint is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint having lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead (> 0.01 mg/cm²) may pose a substantial exposure hazard during construction work, depending upon the work performed. Therefore, in these situations, OSHA guidelines and safety procedures should be followed. By OSHA standards and regulations, the employer shall ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 ug/m³) averaged over an 8-hour period.

Additionally, the SCDHEC requires the use of specialized waste disposal sites if materials contain lead concentrations greater than or equal to (\geq) 0.7 mg/cm². It is imperative that these regulations be considered if any present or future repairs and/or demolition activities will impact LBP-containing bridge components.

3. INTRODUCTION

F&ME Consultants has completed an LBP Investigation for HDR, Inc. on the S-32-671 (Piney Grove Rd.) Bridge over I-26 in Lexington County, South Carolina. This investigation was performed on March 2, 2018.

It is our understanding that the existing bridge structure is scheduled for demolition as part of the Carolina Crossroads project. Therefore, the scope of this LBP Investigation was to identify, analyze, and assess the condition of LBP or coated bridge components that may be affected by the demolition activities.

The results, conclusions and recommendations from this investigation are representative of the conditions observed at the site on the date of the field inspection. F&ME does not assume responsibility for any changes in conditions or circumstances that occur after the inspection. Use of this document for bidding purposes is not recommended without prior consultation with F&ME. No other environmental issues are addressed in this report.

4. INVESTIGATION RESULTS

The existing bridge structure (~274.0'L x 78.0'W, inside curb to inside curb), is located on S-32-671 (Piney Grove Rd.) and crosses over I-26 in Lexington County, South Carolina. The bridge (SCDOT bridge #327067100100) was constructed in 1995 according to the date stamped on the bridge's concrete guardrail. The bridge is a four-lane, four (4) span bridge constructed with poured-in-place concrete bridge deck spans, concrete curb and gutters and concrete guardrails. Each span is supported by ten (10) structural steel beams with steel diaphragms. The steel beams are supported by two (2) end bents and three (3) interior bents. According to the SCDOT bridge drawings provided, and through onsite observations made in the field, the beam supports for both the end bents and interior bents are constructed with a concrete bent caps that are supported by six (6) concrete columns on each bent. The end bents have soil and concrete covering the piles with only the top of the concrete bent cap exposed. Galvanized guardrails and posts are attached to both ends of the bridge. The bridge approaches on each end of the bridge consist of a four-lane asphalt paved roadway.



Photo 1 – View of the subject bridge, S-32-671 (Piney Grove Rd.) Bridge over I-26 looking up-station (Westward).

Our LBP Investigation sampling protocol consisted of randomly selecting bridge components on the subject bridge and scanning them with our Thermo Scientific Niton X-Ray Fluorescence (XRF) Portable Analyzer (Model XLp300A, Serial #18185, Isotope 1: Cd109, 40mCi, source date 09/01/2015) using the threshold of 0.7 mg/cm². The components that were tested with the XRF include the following: horizontal support beams, diaphragms, pipe bracket, column, beam plates, and barrier wall

The XRF results indicate that no LBP is present on the subject bridge components that were scanned during the LBP investigation. For more information regarding the specific descriptions and locations of the items that were scanned, refer to the Appendix C – XRF Data. Also, Appendix D – Site Photographs, shows top and underside views of the bridge. Appendix E - Personnel Certification, is included to show F&ME qualifications with regards to LBP Investigations.

5. RECOMMENDATIONS

The results of this LBP investigation determined that there are no lead-based paints or coatings associated with the subject bridge structure. During the bridge demolition activities, some painted surfaces may be exposed. If paint is exposed and it is determined to contain levels of lead ≥ 0.7 mg/cm², the coated/painted components will need to be handled and disposed of properly. Proper handling includes the avoidance of creating lead dust, as well as the creation of lead-contaminated soil hazards. Activities that would generate lead dust include abrasion, scraping, or sanding. As previously stated, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed. In these cases, OSHA regulations

and procedures should be followed to protect the personnel carrying out the work on a bridge component containing any amount of lead.

If any hidden and/or inaccessible materials suspected or known to contain lead-based paint are encountered during any bridge demolition activities, the persons involved are advised to stop work, follow proper regulatory precautions and procedures, and notify F&ME Consultants for an immediate response action. If you have any questions or require additional information concerning this report, please do not hesitate to contact our office at (803)254-4540. We appreciate the opportunity to be of service in this matter.

This report has been prepared exclusively for HDR, Inc. by F&ME Consultants and shall not be disseminated in whole or part to other parties without prior consent from HDR, Inc. or F&ME Consultants, Inc. Use of this document for bidding purposes is not recommended without prior consultation with F&ME.

APPENDICES

Appendix A – Site Vicinity Map

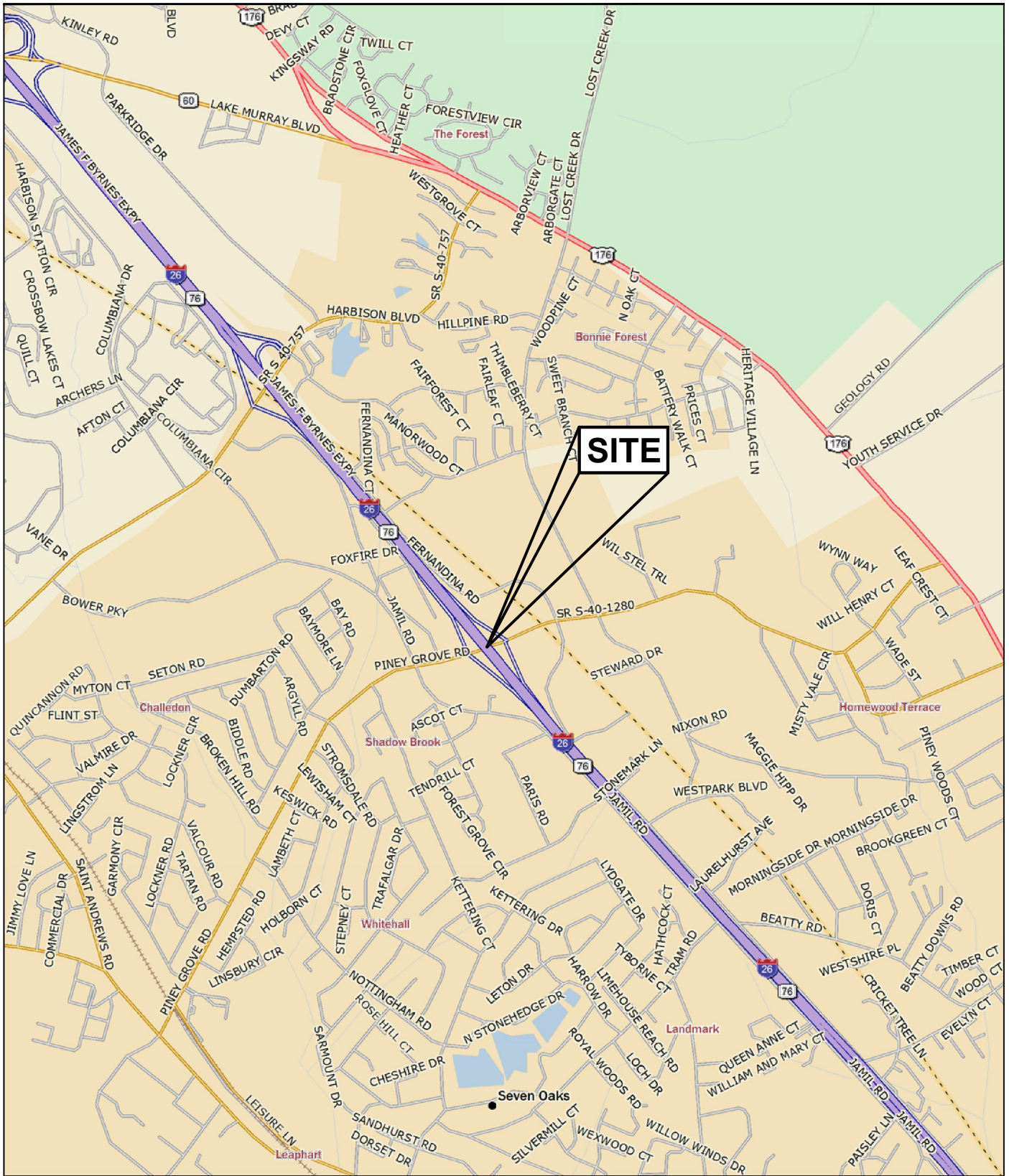
Appendix B – Bridge Plan

Appendix C – XRF Data

Appendix D – Site Photographs

Appendix E – Personnel Certification

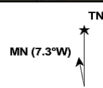
Appendix A
Site Vicinity Map



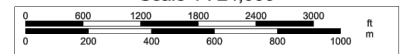
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Scale 1 : 24,000



1" = 2,000.0 ft

Data Zoom 13-1

FIGURE NUMBER:	F&ME CONSULTANTS PROJECT NUMBER:
1	G5662.010

**LEAD-BASED PAINT INVESTIGATION
S-32-671 (PINEY GROVE RD.) OVER I-26**
Lexington County, SC

Site Vicinity Map
Prepared for: HDR, Inc.
3955 Faber Place Drive, Suite 300
North Charleston, SC 29405

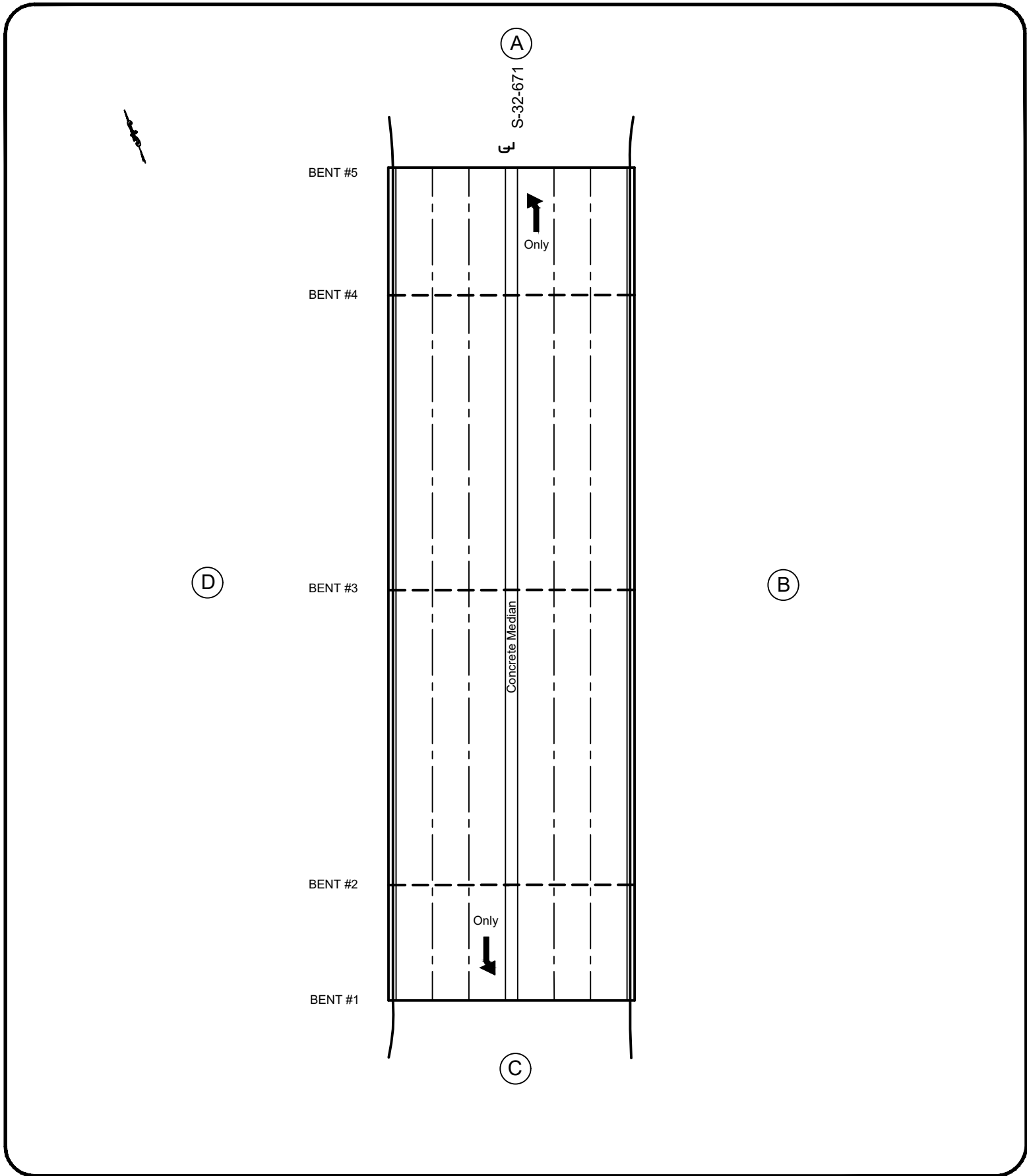
**F&ME
CONSULTANTS**

1825 Blanding Street
Columbia, SC 29201

ORIGINAL:	DRWN. BY: CTC
April 10, 2018	CHKD. BY: JSL
REVISIONS:	APPR. BY: GME
1	NOTES:
2	
3	
SCALE:	
AS SHOWN	

Appendix B

Bridge Plan



<p>FIGURE NUMBER: 2</p>	<p>F&ME CONSULTANTS PROJECT NUMBER: G5662.010</p>	<p>LEAD-BASED PAINT INVESTIGATION S-32-671 (PINEY GROVE RD.) OVER I-26 Lexington County, SC</p> <p>General Site Plan Prepared for: HDR, Inc. 3955 Faber Place Drive, Suite 300 North Charleston, SC 29405</p>	<p>F&ME CONSULTANTS</p> <p>1825 Blanding Street Columbia, SC 29201</p>	<p>ORIGINAL: April 13, 2018</p> <p>REVISIONS: 1 _____ 2 _____ 3 _____</p> <p>SCALE: N.T.S.</p>	<p>DRWN. BY: MSM CHKD. BY: JSL APPR. BY: GME</p> <p>NOTES: _____ _____ _____</p>
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Appendix C

XRF Data

Appendix C – XRF Data

Date Scanned: 03/02/2018

Scan No.	Component	Substrate	Side	Condition	Color	Pbc (mg/cm ²)
1	Shutter Calibrate					NA
2	Calibrate					0.70
3	Calibrate					1.00
4	Calibrate					1.00
5	Calibrate					0.70
6	Beam	Metal	B	Intact	Grey	< LOD
7	Beam	Metal	Center	Intact	Grey	< LOD
8	Beam	Metal	D	Intact	Grey	< LOD
9	Diaphragm	Metal	D	Intact	Grey	< LOD
10	Diaphragm	Metal	Center	Intact	Grey	< LOD
11	Diaphragm	Metal	B	Intact	Grey	< LOD
12	Beam Plate	Metal	C	Peeling	Grey	< LOD
13	Beam Plate	Metal	C	Peeling	Grey	< LOD
14	Pipe Bracket	Metal	C	Intact	Grey	< LOD
15	Pipe Bracket	Metal	C	Intact	Grey	< LOD
16	Column	Concrete	B	Peeling	White Coating	< LOD
17	Barrier Wall	Concrete	D	Peeling	White Coating	< LOD
18	Beam Plate	Metal	Center	Intact	Grey	< LOD
19	Shutter Calibrate					NA
20	Calibrate					1.10
21	Calibrate					0.70
22	Calibrate					1.00
23	Calibrate					0.70

LOD (Limit of Detection) = 0.01 mg/cm²

Blue text indicates any concentrations of LBP which OSHA considers a potential exposure risk when removed.

Red text indicates concentrations of LBP that have specific disposal requirements regulated by SCDHEC.

Appendix D

Site Photographs

Photograph 1



Side view of existing bridge looking north.

Photograph 2



View of the top deck of the existing bridge looking north.

Photograph 3



View of the underside of the bridge looking north.

Photograph 4



View of bent #2 and the concrete columns and bent cap on the south end of the bridge.

Photograph 5



Underside view of support beams, diaphragms and concrete slope protector.

Photograph 6



View of south end bent drainage piping and location of past fire.

Appendix E

Personnel Certification

United States Environmental Protection Agency

This is to certify that



Jeffrey S Leary

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Inspector

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires July 29, 2021

LBP-I-18721-1

Certification #

April 17, 2018

Issued On

A handwritten signature in black ink, appearing to read "Adrienne Priselac".

Adrienne Priselac, Manager, Toxics Office
Land Division

