

PREDESIGN/PRESURVEY REPORT

County: Davidson

Project No.:

TIP No.:

Let Date:

WBS No.:

Bridge No.: 280086

Road No.: SR1158 Wilson Rd

Stream: First Potts Creek

Type of Request: TIP

Date: 10/21/2014

Name: SMQ

Assigned to:

Checked by:

Prior Survey Date (attach copy of prior survey): N/A

Study by Scour Section: Attached

Flood Zone: NO

Detail Study: N/A

Date: 03/16/09

Panel No.: 5783

BM Info:

Quad Map: Churchland (SE)

Drainage Area: 1.06 SQ MI

From: Strm Stat Region 1 RURAL

Q25: 556 CFS

Q50: 685 CFS

Q100: 803 CFS

Method: USGS SI Report 2009-5158

EXISTING BRIDGE INFORMATION

Location: 0.8 MI. N. JCT. NC150

Average Daily Traffic: 450 2011 Yr

Length: 31 Feet

Bed-to-Crown: 11 Feet

Water Depth: 1 Feet

Type of Structure: Precast prestressed concrete channels

Type of Span(s): 1@30'10"

Upstream Structure: N/A

Location:

Bed-to-Crown:

Prior Survey:

Downstream Structure: 280011

Location: 0.1 MI. S. JCT. SR1160

Bed-to-Crown: 11 Feet

Prior Survey: 3/71

SCS Watershed:

ENVIRONMENTAL

Trout Stream: No

Anadromous Fish:

Primary Nursery Area: No

High Quality Waters: No

Nutrient Sensitive Waters: No

Near Water Supply Intake: No

CAMA County: No

Stream Classification:

Notes: None

DENR River Basin Info: Yadkin/Pee-Dee

MAINTENANCE COORDINATION	
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Bridge Maintenance – Contact Superintendent and Supervisor.

High Water:

Relocation:

New Alignment Staked:

BM Information:

Road Maintenance – Contact District Engineer and County Maintenance Engineer.

High Water:

Road to be Paved:

Relocation of Vicinity of Bridge:

New Alignment Staked:

BM Information:

Initiated as:

Date Initiated:

Man-days Estimated:

Date Surveyed:

Date Completed:

Personnel

Hours

Pay Period**Comments:**

Disclaimer: The GIS Unit's goal is to

Customized
GIS map
checked by
Technology
PD&D
Data Comp.

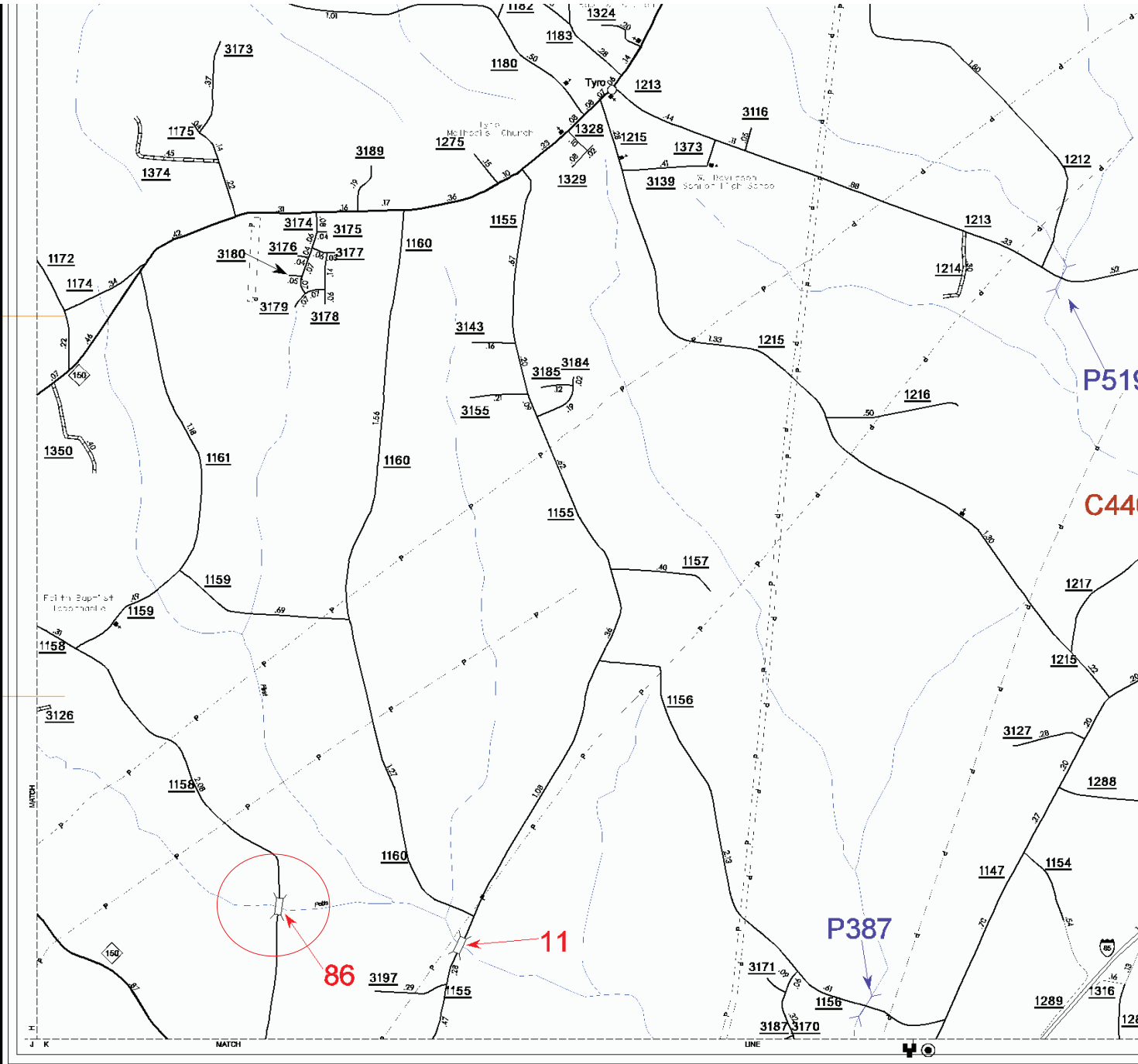
COPIES OF THIS MAP ARE AVAILABLE
TO THE PUBLIC AT A NOMINAL COST.
ADDRESS:

N.C. DEPARTMENT OF TRANSPORTATION
GEOGRAPHIC INFORMATION SYSTEMS
3401 CARL SANDBURG CT.
RALEIGH, N.C. 27610

REVISED
1/1/00 LM
1/2/02 YRT
6/13/02 YRT
1/2/03 YRT
7/15/04 YRT
2/10/05 YRT
5/31/05 YRT
6/15/06 JMB

SUP. 1

DAVIDSON



11

12

13



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

TEMPORARY REPAIRS

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY DAVIDSON BRIDGE NUMBER 280086 INSPECTION CYCLE 2 YRS
ROUTE SR1158 ACROSS FIRST POTTS CREEK M.P. 0

LOCATION 0.8 MI. N. JCT. NC150

SUPERSTRUCTURE PRECAST PRESTRESSED CONCRETE CHANNELS

SUBSTRUCTURE END BENTS:PPC CAP,TIMBER POSTS & CONCRETE SILLS,TIM.BULKHEAD

SPANS 1@30'10

LONGITUDE 80° 23' 39.19"

LATITUDE 35° 45' 51.95"

INSPECTION DATE 04/03/2013

PRESENT CONDITION FAIR

PRESENT POSTING SV 34 TTST 41 SV 34 TTST 41

PROPOSED POSTING

OTHER SIGNS PRESENT (4) DELINEATORS



LOOKING NORTH

Fracture Critical	<u>No</u>
Temporary Shoring	<u>No</u>
Scour Critical	<u>No</u>
Scour POA	<u>Yes</u>

SIGN NOTICE ISSUED FOR		NUMBERED REQUIRED
<u>No</u>	WEIGHT LIMIT	
<u>No</u>	DELINEATORS	
<u>No</u>	NARROW BRIDGE	
<u>No</u>	ONE LANE BRIDGE	
<u>No</u>	LOW CLEARANCE	

NATIONAL BRIDGE INVENTORY----- STRUCTURE INVENTORY AND APPRAISAL

Run Date: 04/30/2013

IDENTIFICATION							
(1) STATE NAME -NORTH CAROLINA	BRIDGE	280086		SUFFICIENCY RATING =	26.63		
(8) STRUCTURE NUMBER(FEDERAL)		00000000570086		STATUS =	Functionally Obsolete		
(5) INVENTORY ROUTE (ON/UNDER) - ON		31011580					
(2) STATE HIGHWAY DEPARTMENT DISTRICT		1					
(3) COUNTY CODE	57	(4) PLACE CODE	0				
(6) FEATURE INTERSECTED - FIRST POTTS CREEK							
(7) FACILITY CARRIED SR1158							
(9) LOCATION	0.8 MI. N. JCT. NC150						
(11) MILEPOINT		0					
(16) LAT	35° 45' 51.95"	(17) LONG	80° 23' 39.19"				
(98) BORDER BRIDGE STATE CODE		PCT SHARE					
(99) BORDER BRIDGE STRUCTURE NO							
STRUCTURE TYPE AND MATERIAL				CLASSIFICATION			
(43) STRUCTURE TYPE MAIN: Prestressed Concrete				(112) NBIS BRIDGE SYSTEM -	YES		
TYPE - Channel Beam		CODE	522	(104) HIGHWAY SYSTEM	Is not on NHS	0	
(44) STRUCTURE TYPE APPR :				(26) FUNCTIONAL CLASS -	Local	09	
TYPE -		CODE	000	(100) STRAHNET HIGHWAY -	Not a STRAHNET Route	0	
(45) NUMBER OF SPANS IN MAIN UNIT		1		(101) PARALLEL STRUCTURE -	No Parallel Structure	N	
(46) NUMBER OF APPROACH SPANS				(102) DIRECTION OF TRAFFIC -	2-way Traffic	2	
(107) DECK STRUCTURE TYPE -	1	CODE		(103) TEMPORARY STRUCTURE -	Temporary Structure/Conditions	T	
(108) WEARING SURFACE / PROTECTIVE SYSTEM :				(110) DESIGNATED NATIONAL NETWORK -	Not on the National Network	0	
(A) TYPE OF WEARING SURFACE -		CODE		(20) TOLL	On Free Road	3	
(B) TYPE OF MEMBRANE -		CODE		(31) MAINTAIN -	State Highway Agency	01	
(C) TYPE OF DECK PROTECTION -		CODE		(22) OWNER -	State Highway Agency	01	
				(37) HISTORICAL SIGNIFICANCE -	Not Eligible	5	
				CONDITION			
				(58) DECK		7	
				(59) SUPERSTRUCTURE		7	
				(60) SUBSTRUCTURE		5	
				(61) CHANNEL & CHANNEL PROTECTION		7	
				(62) CULVERTS		N	
				LOAD RATING AND POSTING			
				(31) DESIGN LOAD	H 10	1	
				(63) OPERATING RATING METHOD -	Load Factor	1	
				(64) OPERATING RATING -	HS-1	1	
				(65) INVENTORY RATING METHOD -	Load Factor	1	
				(66) INVENTORY RATING -	HS-1	1	
				(70) BRIDGE POSTING -	Posting Required	4	
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED		P	
				DESCRIPTION -	Posted for Load		
				APPRAISAL			
				(67) STRUCTURAL EVALUATION		3	
				(68) DECK GEOMETRY		4	
				(69) UNDERCLEARANCES, VERTI & HORIZ		N	
				(71) WATERWAY ADEQUACY		7	
				(72) APPROACH ROADWAY ALIGNMENT		8	
				(36) TRAFFIC SAFETY FEATURES		0000	
				(113) SCOUR CRITICAL BRIDGES		U	
				PROPOSED IMPROVEMENTS			
				(75) TYPE OF WORK -		CODE	
				(76) LENGTH OF STRUCTURE IMPROVEMENT			
				(94) BRIDGE IMPROVEMENT COST			
				(95) ROADWAY IMPROVEMENT COST			
				(96) TOTAL PROJECT COST			
				(97) YEAR OF IMPROVEMENT COST ESTIMATE			
				(114) FUTURE ADT	900	(115) YEAR FUTURE ADT	2025
				INSPECTIONS			
				(90) INSPECTION DATE		04/03/2013	
				(92) CRITICAL FEATURE INSPECTION :		(93) CFI DATE	
				A) FRACTURE CRIT DETAIL -	NO	A)	
				B) UNDERWATER INSP -	NO	B)	
				C) OTHER SPECIAL INSP	NO	C)	
				SCOUR			
NAVIGATION DATA							
(38) NAVIGATION CONTROL - No Navigational Control		CODE	0				
(111) PIER PROTECTION -		CODE					
(39) NAVIGATION VERTICAL CLEARANCE			0				
(116) VERT - LIFT BRIDGE NAV MIN VERT CLEAR			FT				
(40) NAVIGATION HORIZONTAL CLEARANCE			0 FT				

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 04/30/2013

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
DAVIDSON	9	1	280086	31	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
SR1158	FIRST POTTS CREEK

LOCATED :	BRIDGE NAME :	CITY :
0.8 MI. N. JCT. NC150		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
09	NFA	NFA	450 2011	LT 233 RT 233

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1966	BMU	5.605		H 10

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :		
			TAN	90	ON 2	UNDER	0

NAVIGATION :			HT. CRN. TO BED :		WATER DEPTH :		
VC 0 FT	HC 0 FT		11 FT		1		FT

SUPERSTRUCTURE :	PRECAST PRESTRESSED CONCRETE CHANNELS
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SUBSTRUCTURE :	END BENTS:PPC CAP, TIMBER POSTS & CONCRETE SILLS, TIMBER BULKHEADS
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SPANS :	1@30'10"
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BEAMS OR GIRDERS :	10 SECTIONS PRECAST PRESTRESSED CONCRETE CHANNELS
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FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
PPC.CH, 3" AWS		25.833 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
24.25 FT	25.25 FT	LT .5 FT RT .5 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :				
HS-1	HS-1	Int Channel B	SV 38	TTST 44	DATE	04/29/2013	

SYSTEM :	GREEN LINE ROUTE :
Secondary S.R. Route	N

UNDER ROUTES AND CLEARANCES

REMARKS :



REPAIR TO ABUT 2 BULKHEAD BOARDS

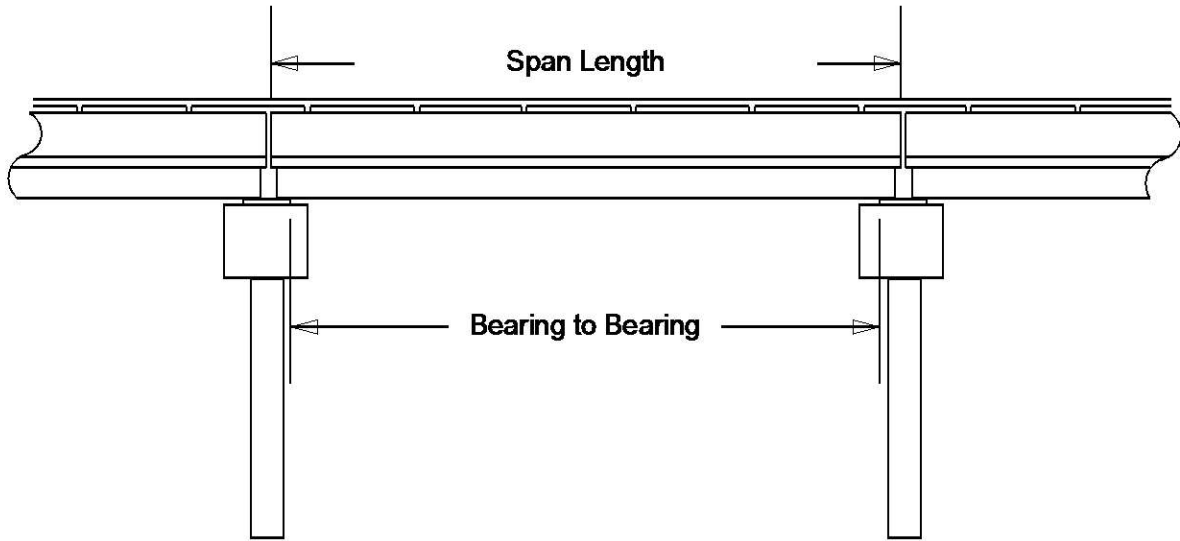


ABUT 1 TIMBER BULKHEAD BOARD BETWEEN POST 1 AND 2 DECAYED.

Structure Data Worksheet

Spans

County: DAVIDSON Structure No: 280086 Date: 04/03/2013 Inspected By: BTH



Span No	Span Length	Bearing to Bearing	Comments
1	30.833	29.417	NBIS BL : 28.166 FT

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 280086 County: DAVIDSON Date: 04/03/2013 By: BTH

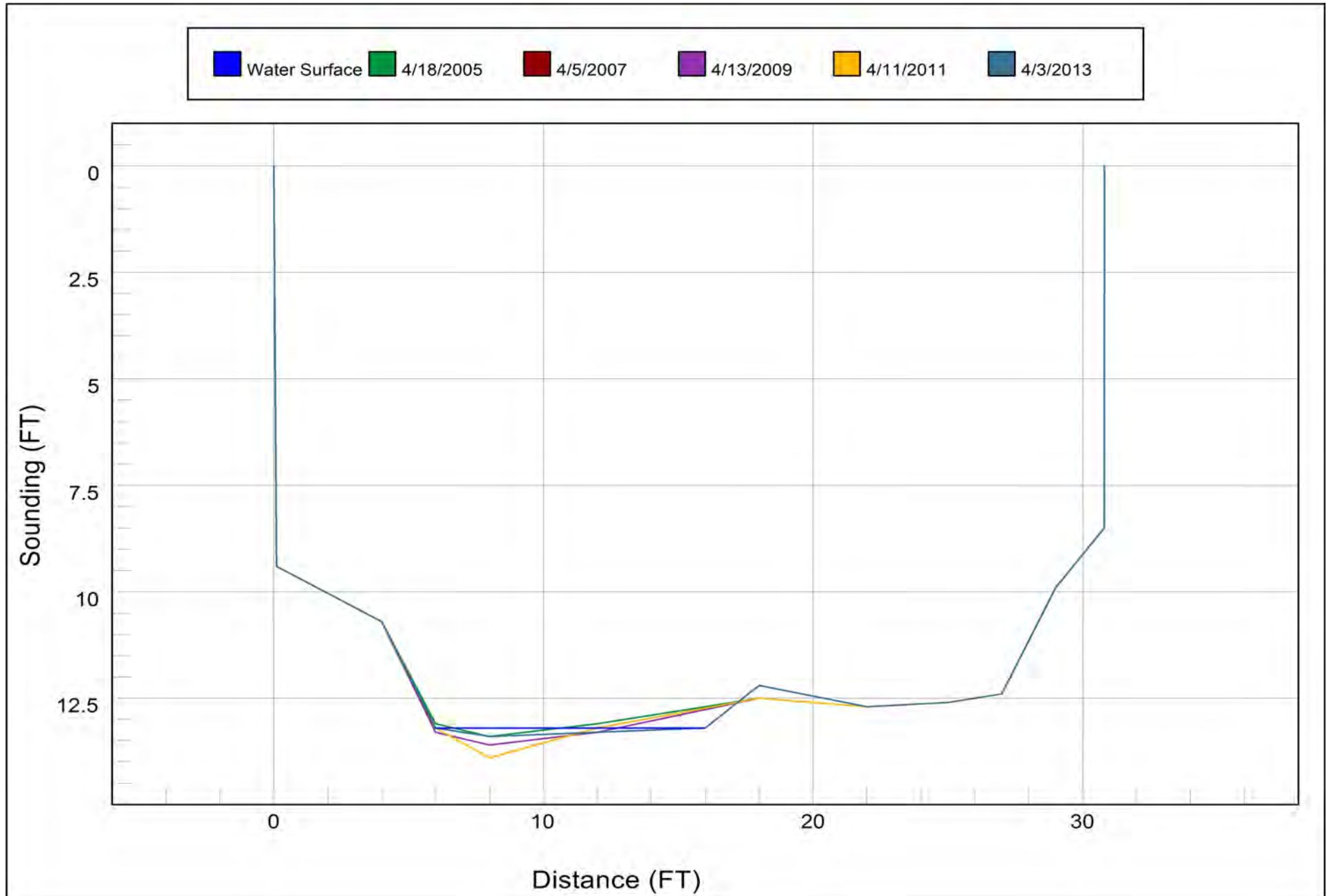
Record sounding from top of rail. Other location if needed: _____

Distance from Highwater Mark to top of rail: _____ Location of Highwater Mark: _____

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description
0	0	ABUT 1	0	0.0	ABUT 1
0.1	9.4		0.1	9.2	
4	10.7				
6	13.2	WS WE			
8	13.4				
16	13.2	WS WE			
18	12.2				
22	12.7				
25	12.6				
27	12.4				
29	9.9				
30.8	8.5		30.8	8.5	
30.81	0	ABUT 2	30.81	0.0	ABUT 2

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



Bridge Inspection Field Sketch

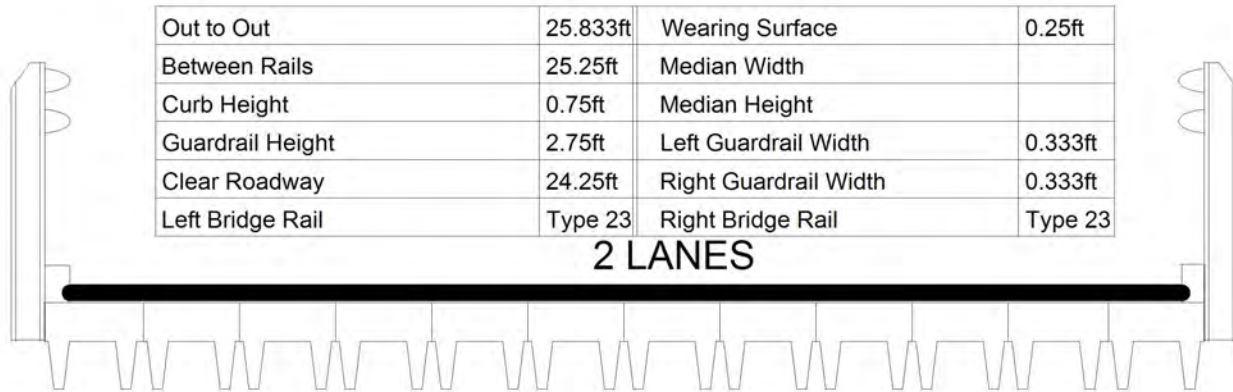


Roadway	20ft Wide	2 Paved Lanes	Looking North
Left Shoulder	6ft Wide		6ft Unpaved
Right Shoulder	6ft Wide		6ft Unpaved
Left Guardrail			
Right Guardrail			

MEASUREMENTS VERIFIED 4-03-13 BTH
MEASUREMENTS VERIFIED 4-11-11 BTH
MEASUREMENTS VERIFIED 4-13-09 BTH

Title APPROACH ROADWAY		Description SHEET 1	
Bridge No: 280086	Drawn By: BTH	Date: 04/04/07	File Name: S0090000078

Bridge Inspection Field Sketch



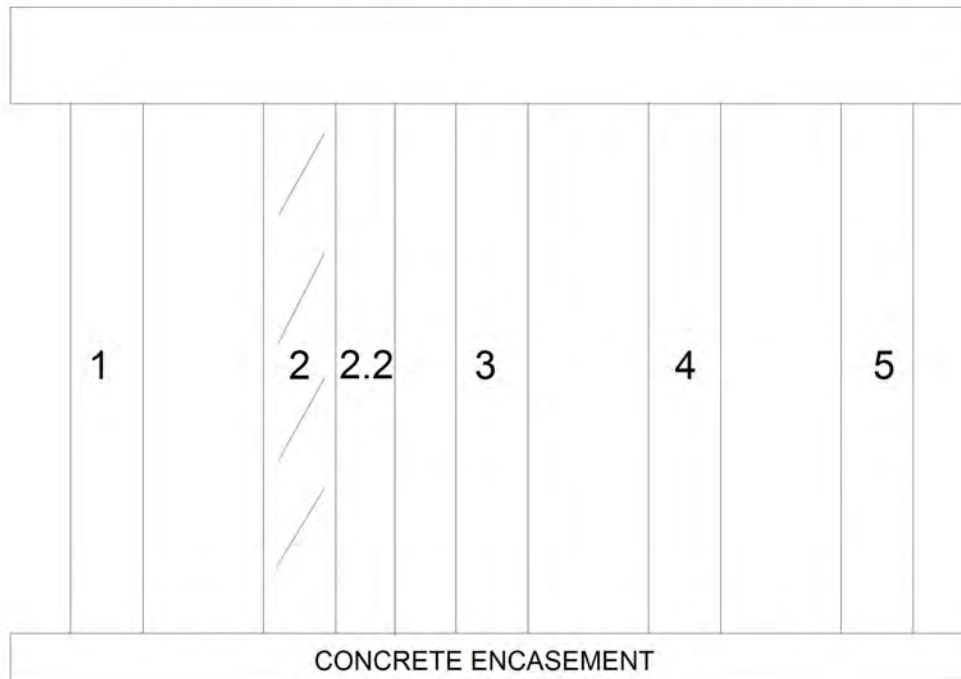
Measurements for Span #	1		
Deck Thickness	0.417	Left Overhang	
Top of Rail to Bottom of Beam	4.333	Right Overhang	

No. of Channels	10
Leg Width	.209ft
Leg Height	1.0ft
Leg to Leg (Centers)	2.0ft
Channel Width	2.542ft
Channel Height	1.42ft
Comments	

MEASUREMENTS VERIFIED 4-03-13 BTH
 MEASUREMENTS VERIFIED 4-11-11 BTH
 MEASUREMENTS VERIFIED 4-13-09 BTH

Title		Description	
SUPERSTRUCTURE		SHEET 2	
Bridge No:	280086	Drawn By:	BTH
		Date:	04/04/07
		File Name:	S0090000079

Bridge Inspection Field Sketch



Abutment #	2		
Cap - Pre-Cast			
Cap Size	26ft Long	1.333ft Wide	1ft High
Left Overhang	1.5ft	Lt Cap/Beam Overhang	.417ft
Right Overhang	1.5ft	Rt Cap/Beam Overhang	.417ft
Sill - Spread			
Sill Size			

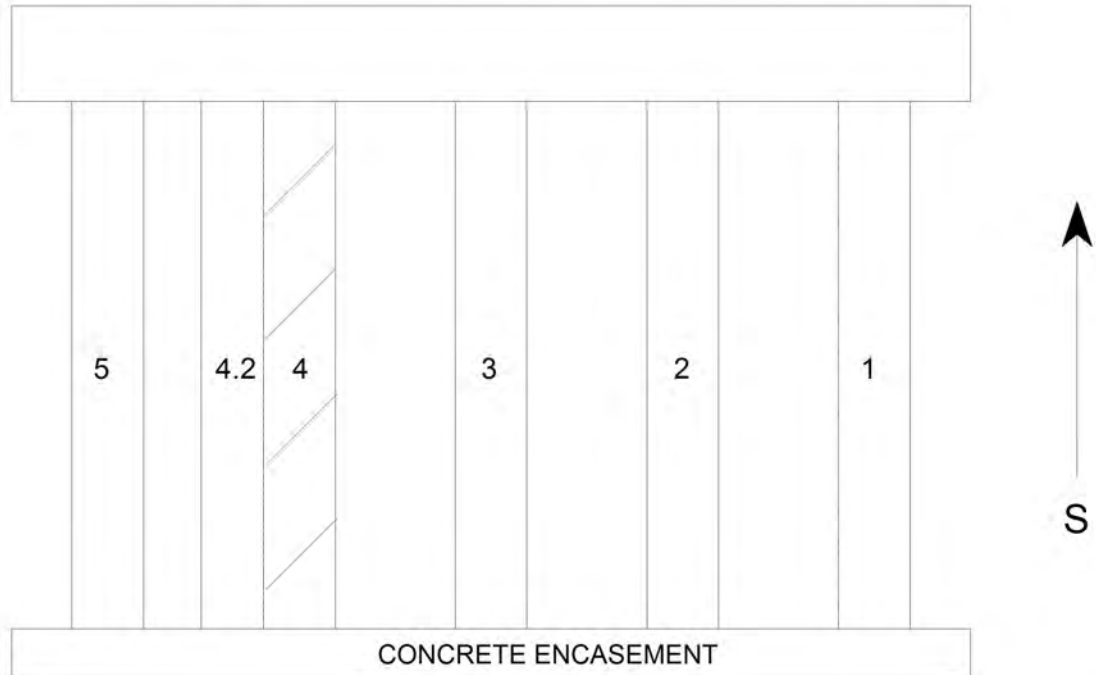
Pile #	Material	Pile Type	Spacing	Length	Width/Diam.	Height	Orientation
1	Wood or Timber	Pile Bent	6.583		.833X.833FT		Vertical
2	Wood or Timber	Pile Bent	4.917		.833X.833FT		Vertical
3	Wood or Timber	Pile Bent	5.75		.833X.833FT		Vertical
4	Wood or Timber	Pile Bent	5.75		.833X.833FT		Vertical
5	Wood or Timber	Pile Bent			.833X.833FT		Vertical

ABUT CAP HAVE .123 FT CROWN @ CENTER LINE
 POST # 2 IN ABUT # 2 HAS A .833 FT x .833 FT POST ADDED .833 FT TO RT.

MEASUREMENTS VERIFIED 4-03-13 BTH
 MEASUREMENTS VERIFIED 4-11-11 BTH
 MEASUREMENTS VERIFIED 4-13-09 BTH

Title		Description	
SUBSTRUCTURE		SHEET 3	
Bridge No: 280086	Drawn By: BTH	Date: 04/04/07	File Name: S0090000080

Bridge Inspection Field Sketch



Abutment #	1		
Cap - Pre-Cast			
Cap Size	26ft Long	1.333ft Wide	1ft High
Left Overhang	1.5ft	Lt Cap/Beam Overhang	.417ft
Right Overhang	1.5ft	Rt Cap/Beam Overhang	.417ft
Sill - Spread			
Sill Size			

Pile #	Material	Pile Type	Spacing	Length	Width/Diam.	Height	Orientation
1	Wood or Timber	Pile Bent	4.917		.833X.833FT		Vertical
2	Wood or Timber	Pile Bent	6.583		.833X.833FT		Vertical
3	Wood or Timber	Pile Bent	5.75		.833X.833FT		Vertical
4	Wood or Timber	Pile Bent	5.75		.833X.833FT		Vertical
5	Wood or Timber	Pile Bent			.833X.833FT		Vertical

ABUT CAP HAVE .123 FT CROWN @ CENTER LINE

POST # 4 IN ABUT # 1 HAS A .833 FT x .833 FT POST ADDED .833 FT TO RT.

MEASUREMENTS VERIFIED 4-03-13 BTH

MEASUREMENTS VERIFIED 4-11-11 BTH

MEASUREMENTS VERIFIED 4-13-09 BTH

Title		Description	
SUBSTRUCTURE		SHEET 4	
Bridge No: 280086	Drawn By: BTH	Date: 04/04/07	File Name: S0090000081



LOOKING NORTH



SOUTH POSTING



LOOKING WEST



DOWNSTREAM



NORTH POSTING



LOOKING EAST



ABUT 1 WITH TEMPORARY REPAIR



UPSTREAM



ABUT 2 WITH TEMPORARY REPAIR



SUPERSTRUCTURE SPAN



DOWNSTREAM



North Carolina StreamStats

Streamstats Ungaged Site Report

Date: Tue Nov 4 2014 06:00:34 Mountain Standard Time

Site Location: North Carolina

NAD27 Latitude: 35.7643 (35 45 51)

NAD27 Longitude: -80.3944 (-80 23 40)

NAD83 Latitude: 35.7644 (35 45 52)

NAD83 Longitude: -80.3942 (-80 23 39)

Drainage Area: 1.06 mi²

Percent Urban: 5.8 %

Percent Impervious: 1.0 %

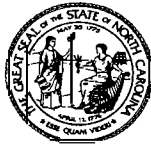
Peak Flows Region Grid Basin Characteristics			
100% Peak Southeast US 2009 5158 (1.06 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	1.06	1	9000
Percent Area in Region 1 (percent)	100.000	0	100
Percent Area in Region 2 (percent)	0.000	0	100
Percent Area in Region 3 (percent)	0.000	0	100
Percent Area in Region 4 (percent)	0.000	0	100
Percent Area in Region 5 (percent)	0.000	0	100

Urban Flows Region Grid Basin Characteristics			
100% Peak urban Blue Ridge-Piedmont FS007-00 (1.06 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	1.06	0.04	41
Area of Impervious Surfaces (percent)	1.04 (below min value 2)	2	54.6

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak Flows Region Grid Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	165	35		94.5	287
PK5	306	34		177	530
PK10	413	35		235	726
PK25	556	38		305	1010
PK50	684	40		363	1290
PK100	804	42		413	1560
PK200	922	44		457	1860
PK500	1110	48		523	2350

Urban Flows Region Grid Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Standard Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2U	35.7				
PK5U	84				
PK10U	129				
PK25U	240				
PK50U	311				
PK100U	393				



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 20, 2010

MEMORANDUM TO: Mr. Don Idol
Assistant Bridge Inspection Engineer

FROM: Jerry Beard, P.E.
Scour Engineer
Hydraulic Design Unit

SUBJECT: Transmittal of Bridge Scour Assessments

The scour committee recommends, based on the Geotechnical Units low risk screening using NCHRP 24-25 "Guidelines for Risk-Based Management of Bridges with Unknown Foundations", that the code for Item 113 be changed to Z for the following bridges:

County Name	Bridge #	Item 113 Code
DAVIDSON	280007	Z
DAVIDSON	280045	Z
DAVIDSON	280052	Z
DAVIDSON	280069	Z
DAVIDSON	280077	Z
DAVIDSON	280079	Z
DAVIDSON	280086	Z
DAVIDSON	280090	Z
DAVIDSON	280095	Z
DAVIDSON	280117	Z
DAVIDSON	280134	Z
DAVIDSON	280148	Z
DAVIDSON	280195	Z
DAVIDSON	280220	Z
DAVIDSON	280235	Z
DAVIDSON	280237	Z
DAVIDSON	280240	Z
DAVIDSON	280242	Z
DAVIDSON	280271	Z
DAVIDSON	280277	Z
DAVIDSON	280282	Z
DAVIDSON	280286	Z
DAVIDSON	280295	Z

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
HYDRAULICS UNIT
1590 MAIL SERVICE CENTER
RALEIGH NC 27699-1590

TELEPHONE 919-250-4100
FAX. 919-250-4108

WEBSITE:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/HYDRO/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/HYDRO/)

LOCATION:
CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

County Name	Bridge #	Item 113 Code
DAVIDSON	280297	Z
DAVIDSON	280303	Z
DAVIDSON	280305	Z
DAVIDSON	280310	Z
DAVIDSON	280349	Z
DAVIDSON	280361	Z
DAVIDSON	280407	Z
DAVIDSON	280408	Z
DAVIDSON	280447	Z

Code Z:

Bridge with "Unknown Foundation" that has not been evaluated for scour. Average Daily Traffic (ADT) is less than 1500. Bridge is considered low risk using NCHRP 24-25 "Guidelines for Risk-Based Management of Bridges with Unknown Foundations". A Plan of Action (POA) has been implemented.

POA

Monitor bridge foundation during biennial inspection cycle for case 1 or 2.

- 1) If mud line at any end bent or interior bent scours more than 4 feet from the established baseline contact the Hydraulics Unit. Establish a baseline using the 2008-2009 inspection soundings.
- 2) If footings have greater than 10% of the bearing undermined, contact the Hydraulics Unit.

If you have any questions or comments concerning the above please feel free to contact me at 250-4100.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
HYDRAULICS UNIT
1590 MAIL SERVICE CENTER
RALEIGH NC 27699-1590

TELEPHONE 919-250-4100
FAX 919-250-4108

WEBSITE
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/HYDRO/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/HYDRO/)

LOCATION:
CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC