NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY MECKLENBURG BRIDGE NUMBER 590815 INSPECTION CYCLE 2 YRS

ROUTE I85 NBL RAMP ACROSS I85 NBL RAMP M.P. 29.10

LOCATION .4 MILE E. JCT.SR1625

SUPERSTRUCTURE RC DECK ON PLATE GIRDERS (CONT.), SIP FORMS, APPROACH SLABS

SUBSTRUCTURE EBTS:RC CAPS & STEEL PILES, INT.BTS:RC POST & BEAM, SPRFTG.

SPANS

LONGITUDE 80° 58' 32.45" LATITUDE 35° 15' 4.23"

INSPECTION DATE 09/09/2013 PRESENT CONDITION FAIR

PRESENT POSTING N NOT POSTED PROPOSED POSTING

OTHER SIGNS PRESENT NONE

LOOKING NORTH

Fracture Critical	No
Temporary Shoring	No
Scour Critical	No
Scour POA	No

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

IDENTIFICATION

(1) STATE NAME -NORTH CAROLINA BRIDGE 590815
(8) STRUCTURE NUMBER(FEDERAL) 000000001190815
(5) INVENTORY ROUTE (ON/UNDER) - ON 17000850
(2) STATE HIGHWAY DEPARTMENT DISTRICT 2
(3) COUNTY CODE 119 (4) PLACE CODE 12000
(6) FEATURE INTERSECTED - I85 NBL RAMP
(7) FACILITY CARRIED I85 NBL RAMP
(9) LOCATION 0.4 MI. E. JCT. SR1625
(11)MILEPOINT 29.1
(16)LAT 35° 15' 4.23" (17)LONG 80° 58' 32.45"
(98)BORDER BRIDGE STATE CODE PCT SHARE
(99)BORDER BRIDGE STRUCTURE NO

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: Steel Continuous
TYPE - Stringer Mutlibeam or Girder CODE 402
(44) STRUCTURE TYPE APPR :
TYPE - CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS
(107)DECK STRUCTURE TYPE - 1 CODE
(108)WEARING SURFACE / PROTECTIVE SYSTEM :
(A) TYPE OF WEARING SURFACE - CODE
(B) TYPE OF MEMBRANE - CODE
(C) TYPE OF DECK PROTECTION - CODE

AGE AND SERVICE

(27) YEAR BUILT 2005
(106)YEAR RECONSTRUCTED
(42) TYPE OF SERVICE : ON - Overpass - Interchange
UNDER - Highway CODE 61
(28) LANES: ON STRUCTURE 2 UNDER STRUCTURE 1
(29) AVERAGE DAILY TRAFFIC 8250
(30) YEAR OF ADT 2010 (109) TRUCK ADT PCT 16%
(19) BYPASS OR DETOUR LENGTH 0 MI

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 95 FT
(49) STRUCTURE LENGTH 232 FT
(50)CURB OR SIDEWALK: LEFT 0 FT RIGHT 0 FT
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 37.333 FT
(52) DECK WIDTH OUT TO OUT 40.417 FT
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 36 FT
(33) BRIDGE MEDIAN - No Median CODE 0
(34) SKEW 61° (35) STRUCTURE FLARED 0
(10) INVENTORY ROUTE MIN VERT CLEAR 999.9 FT
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 37.333 FT
(53) MIN VERT CLEAR OVER BRIDGE RDWY 999.9 FT
(54) MIN VERT UNDERCLEAR REF Highway 17.417 FT
(55) MIN LAT UNDERCLEAR RT REF Highway 12.667 FT
(56) MIN LAT UNDERCLEAR LT REF - 12 FT

NAVIGATION DATA

(38) NAVIGATION CONTROL - Not Applicable CODE N
(111)PIER PROTECTION - CODE
(39) NAVIGATION VERTICAL CLEARANCE 0
(116)VERT - LIFT BRIDGE NAV MIN VERT CLEAR FT
(40) NAVIGATION HORIZONTAL CLEARANCE 0 FT

SUFFICIENCY RATING = 96
STATUS = Not Deficient

CLASSIFICATION CODE

(112)NBIS BRIDGE SYSTEM - YES
(104)HIGHWAY SYSTEM Is on the NHS 1
(26) FUNCTIONAL CLASS - Arterial - Interstate 11
(100)STRAHNET HIGHWAY - Interstate STRAHNET Route 1
(101)PARALLEL STRUCTURE - No Parallel Structure N
(102)DIRECTION OF TRAFFIC - 1-way Traffic 1
(103)TEMPORARY STRUCTURE -
(110)DESIGNATED NATIONAL NETWORK - On the National Network 1
(20) TOLL On Free Road 3
(31) MAINTAIN - State Highway Agency 01
(22) OWNER - State Highway Agency 01
(37) HISTORICAL SIGNIFICANCE - Not Eligible 5

CONDITION CODE

(58) DECK 5
(59) SUPERSTRUCTURE 8
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION N
(62) CULVERTS N

LOAD RATING AND POSTING CODE

(31) DESIGN LOAD HS 20 + MOD 6
(63) OPERATING RATING METHOD - Load Factor 1
(64) OPERATING RATING - HS-36 64
(65) INVENTORY RATING METHOD - Load Factor 1
(66) INVENTORY RATING - HS-21 37
(70) BRIDGE POSTING - No Posting Required 5
(41) STRUCTURE OPEN, POSTED ,OR CLOSED A
DESCRIPTION - Open, No Restriction

APPRAISAL CODE

(67) STRUCTURAL EVALUATION 7
(68) DECK GEOMETRY 5
(69) UNDERCLEARANCES,VERTI & HORIZ 6
(71) WATERWAY ADEQUACY N
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 1111
(113)SCOUR CRITICAL BRIDGES N

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 16500 (115) YEAR FUTURE ADT 2025

INSPECTIONS

(90) INSPECTION DATE 09/09/2013
(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

Structure No: 590815 County: MECKLENBURG Run Date:

Span Number	Feature Intersected	Inventory Route	Minimum Maximum Vertical Clearance	Milepoint	Base Highway Network	LRS Inventory Route	Toll	Functional Classification	Numer of Lanes	Average Daily Traffic	Year of Average Daily Traffic	Total Horizontal Clearance	See Note 1					STRAHNET Highway Designator	Direction of Traffic	Highway System of Route
													Reference Feature	Minimum Vertical Underclearance	Right Lateral Underclearance	Left Lateral Underclearance	Underclearance Appraisal Grade			
	6	5	10	11	12	13	20	26	28	29	30	47	54A	54	55	56	69	100	102	104
2	I85N	17000850	17.58	29.10	0			11	1	1030	2012	39.67	H	17.42	12.67	12	9	0	1	1

Note 1: Items 54, 55, and 56 are not reported FHWA under route data points but are collected for each under route to determine the minimum value for Underclearance Appraisal Item 69. The under route that generates the lowest Underclearance Appraisal value will be reported on the Facility Carried record.

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE Run Date: 12/02/2013

COUNTY :	DIVISION :	DISTRICT:	STRUCTURE NUMBER :	LENGTH :
MECKLENBURG	10	2	590815	232 FEET

ROUTE CARRIED : I85 NBL RAMP

FEATURE INTERSECTED : I85 NBL RAMP

LOCATED : 0.4 MI. E. JCT. SR1625

BRIDGE NAME :

CITY : *CHARLOTTE

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :		RAIL TYPE :	
11	FA	NFA	8250	2010	LT 41	RT 41

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
2005	DOH	8.U672209	STP-NHF-117-	HS 20 + MOD

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :	
			RT	149	ON 2	UNDER 1

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

SUPERSTRUCTURE : RC DECK ON PLATE GIRDERS (CONTINUOUS), SIP FORMS, APPROACH SLABS

SUBSTRUCTURE : EBTS:RC CAPS & STEEL PILES, INT.BTS:RC POST & BEAM, SPREAD FOOTINGS

SPANS : 1@77'7 1/8", 1@94'11 3/4", 1@59'8 9/16" CONTINUOUS, COMPOSITE

BEAMS OR GIRDERS : 4 LINES OF 1/2" X 44.5" CURVED PLATE GIRDERS (CONTINUOUS) @ 11' 0-5/16" CENTERS

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
9.25" RC SLAB		40.417 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :			
37.333 FT	37.333 FT	LT	0 FT	RT	0 FT

VERT.CL.OVER : 999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :		
HS-21	HS-36		SV	TTST	DATE

SYSTEM :	GREEN LINE ROUTE :
Primary Interstate	N

UNDER ROUTES AND CLEARANCES

		Vertical Clearances		Horizontal Clearances		
Span	Route Description	MMVC	MVC	Total	Left	Right
2	I85N	17.5830	17.4170	39.6670	12	12.6670

Note: All measurements are in feet.

REMARKS :

BRIDGE I & A FORM1 (90)A

BRIDGE INSPECTION RECORD AND SUMMARY

INSPECTION TYPE Routine Inspection
BRIDGE NO. 590815 COUNTY MECKLENBURG ROUTE I85 NBL RAMP OVER I85 NBL RAMP
STRUCTURE TYPE RC DECK ON PLATE GIRDERS (CONT.), SIP FORMS, APPROACH SLABS
ROUTE ORIENTATION N - S SPANS

EVALUATION CODES: CRITICAL (C, 0 - 3); POOR (P, 4); FAIR (F, 5, 6); GOOD (G, 7 - 9)

INSPECTION ITEM			
DECK ITEMS			GRADES
1. WEARING SURFACE			
2. DECK NO. OF EA TYPE SPN GRADE RATES SI & A ITEM 58	a. CONCRETE	3	F
	b. TIMBER		
	c. STEEL PLANK		
	d. OPEN GRID		
3. RAILING	a. CONCRETE		G
	b. TIMBER		
	c. ALUMINUM		
	d. STEEL		
4. CURBS, WHEELGUARDS, PARAPETS, MEDIANS			
5. WALKWAYS (ON OR ATTACHED TO STRUCTURE)			
6. DECK EXP JTS. OR DEVICES. NO. OF EACH	a. STEEL PL OR FINGER		
	b. MISC PREFAB		
	c. COMPRESSION SEAL	2	P
	d. STANDARD JOINTS		
	e. OPEN JOINTS		
7. DECK DEBRIS (INCLUDES EXCESS SAND/GRAVEL)			G
SUPER STR. (FM. 1 (90)B TRUSS) ITEM 59			
10. LONGITUDINAL BEAMS OR GIRDERS			G
11. LONGITUDINAL JOIST OR STRINGERS			
12. INT. DIAP'S, X-FRAMES, BRACING & CONN'S			G
13. END DIAP'S, CURTAIN WALLS, & CONN'S			G
14. FLOOR BEAMS AND CONNECTIONS			
15. BEARING ASSEMBLIES (INCLUDING MISALIGN)			G
16. DRAINAGE SYSTEM (ON STRUCTURE)			G
17. MOVABLE SPAN MACHINERY			
SUB STR. ITEMS. ITEM 60 (INCLUDE SCOUR)			
35. TIM SUB STR.	a. ABUT. & INT. BENT CAPS & RISERS		
	b. PILES, POST, SILLS, & BRACING		
	c. BULKHEADS, WING'S, & TIE BACKS		
36. CONC SUB STR.	a. ABUT. & INT. BENT CAPS		G
	b. ABUT. & BENT COL'S BREASTWALLS		G
	c. ABUT. & INT. BENT PILES		
	d. BACKWALLS, WING'S, RETAIN. WALLS		G
	e. ABUT. & BENT FOOTINGS & SILLS		
37. STEEL SUB STR.	a. ABUT. & INT. BENT CAPS & RISERS		
	b. PILES, BRACING, AND BULKHEADS		
38. FOUNDATION PILES TYPE MATERIAL			
39. SLOPE PROT., RIP-RAP (INCLUDE DRAINAGE)			G
40. FENDER SYSTEMS			
41. DRIFT			

ITEM 61		
45. CHANNEL & CHANNEL PROT.	a. WATERWAY	
	b. ALIGNMENT	
	c. SCOUR	
	d. SLOPE PROT., RIP-RAP, DIKES, ETC.	
50. APPROACH ROADWAY CONDITION		G
51. APPROACH SLABS		G
52. PAINT SYSTEM CODE T		G
53. UTILITIES		
54. RESPONSE TO LIVE LOAD		G
55. ESTIMATED REMAINING LIFE		44
60. REGULATORY SIGN NOTICE ISSUED		NO
61. PROMPT-ACTION NOTICE ISSUED		NO
62. PRESENTLY POSTED		NO
63. TOT. FIELD INSP TIME (INCLUDE WRITE UP)(MAN HR)		6
64. TOTAL SNOOPER INSP. TIME (HRS)		0
65. TOTAL TRAFFIC CONTROL TIME (MAN HRS)		0
70. SI&A GENERAL CONDITION RATINGS		
a. DECK	ITEM 58	5
b. SUPERSTRUCTURE	ITEM 59	8
c. SUBSTRUCTURE	ITEM 60	7
d. CHANNEL & CHANNEL PROT.	ITEM 61	
71. SI&A FIELD APPRAISAL RATINGS		
a. WATERWAY ADAQUACY		
b. APPR. RDWY. ALIGNMENT		8
72. FIELD SCOUR EVALUATION		
USE OF INSP. ACCESSIBILITY EQUIPMENT		
SNOOPER (CODE S, 4, OR N)	HRS	NO
LADDER		NO
BUCKET TRUCK		NO
BOAT		NO
OTHER		NO
SPECIAL INSPECTION REQUESTED FOR		
NOTE		
80. INSPECTED BY:	Ellen Kidder	
81. REVIEWED BY:		

Bridge I&A Form 1(82)H

State of North Carolina
Dept. of Transportation
Division of Highways

FIELD INSPECTION REPORT

Bridge Inspecion & Analysis

Team Leader GLEN KIKER

Assisted By ROBBIE JAMES

Item No.	Grade	
2a	F	MAP CRACKS IN ALL SPANS UP TO 1/8" WIDE DIAGONAL CRACK IN THE SPAN ENDS UP TO 1/16" WIDE TRANSVERSE CRACKS IN ALL SPANS UP TO 1/16" WIDE
3a	G	HL. CRACKS IN BOTH OVERHANGS WITH EFFLO. VERTICAL HL. CRACKS IN BOTH RAILS
6c	P	STAINS ON ABUT. 2 CAP DUE TO THE EXPANSION JOINT LEAKING, ABUT. 1 JOINT APPEARS GOOD
10A	NO	NO CURVED GIRDERS
36a	G	HL. DIAGONAL CRACKS IN ALL CAP STEPUPS
36d	G	VERTICAL CRACKS IN BOTH ABUTMENT BACKWALLS UP TO 1/16" WIDE

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 590815 County MECKLENBURG Date: 09/09/2013

These Repairs Should Be Made Within Twelve Months From Date Of This Inspection

MMS Code	Description of Function	Unit	Quantity	Remarks	Est. Cost
3312	Maint/Replace/Repair Modular Bridge Joints	LF	40	ABUT. 2 JOINT IS DAMAGED AND LEAKING	
3326	Maintain Concrete Deck	SF	1500	CRACKS IN TOP OF THE DECK	

Key

Priority Maintenance Item Critical Finding Item Priority Maintenance Level Not Determined

CRACKS IN THE SPAN ENDS

TRANSVERSE CRACKS IN ALL SPANS

CRACKS IN BOTH RAILS

MAP CRACKS IN ALL SPANS UP TO 1/8" WIDE

CRACKS IN BOTH ABUTMENT BACKWALLS

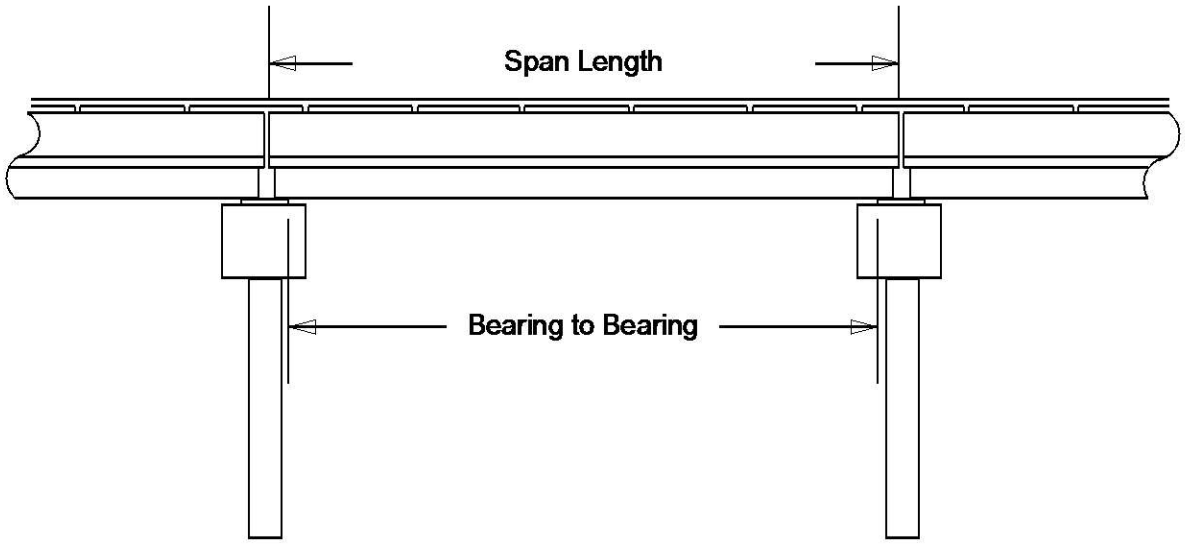
CRACKS IN BOTH OVERHANGS

HL. DIAGONAL CRACKS IN ALL CAP STEPUPS

STAINS ON ABUT. 2 CAP DUE TO DAMAGED JOINT

Structure Data Worksheet

County: MECKLENBURG Structure No: 590815 Date: 09/09/2013 Inspected By: RGK



Span No	Span Length	Bearing to Bearing	Comments
1	77.593	75.426	NBIS BL = 228.285FT.
2	94.979	94.979	MEASURMENTS VERIFIED 09/9/13 GLEN KIKER
3	59.713	57.546	

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 590815 County: MECKLENBURG Date: 09/09/2013 By: RGK

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

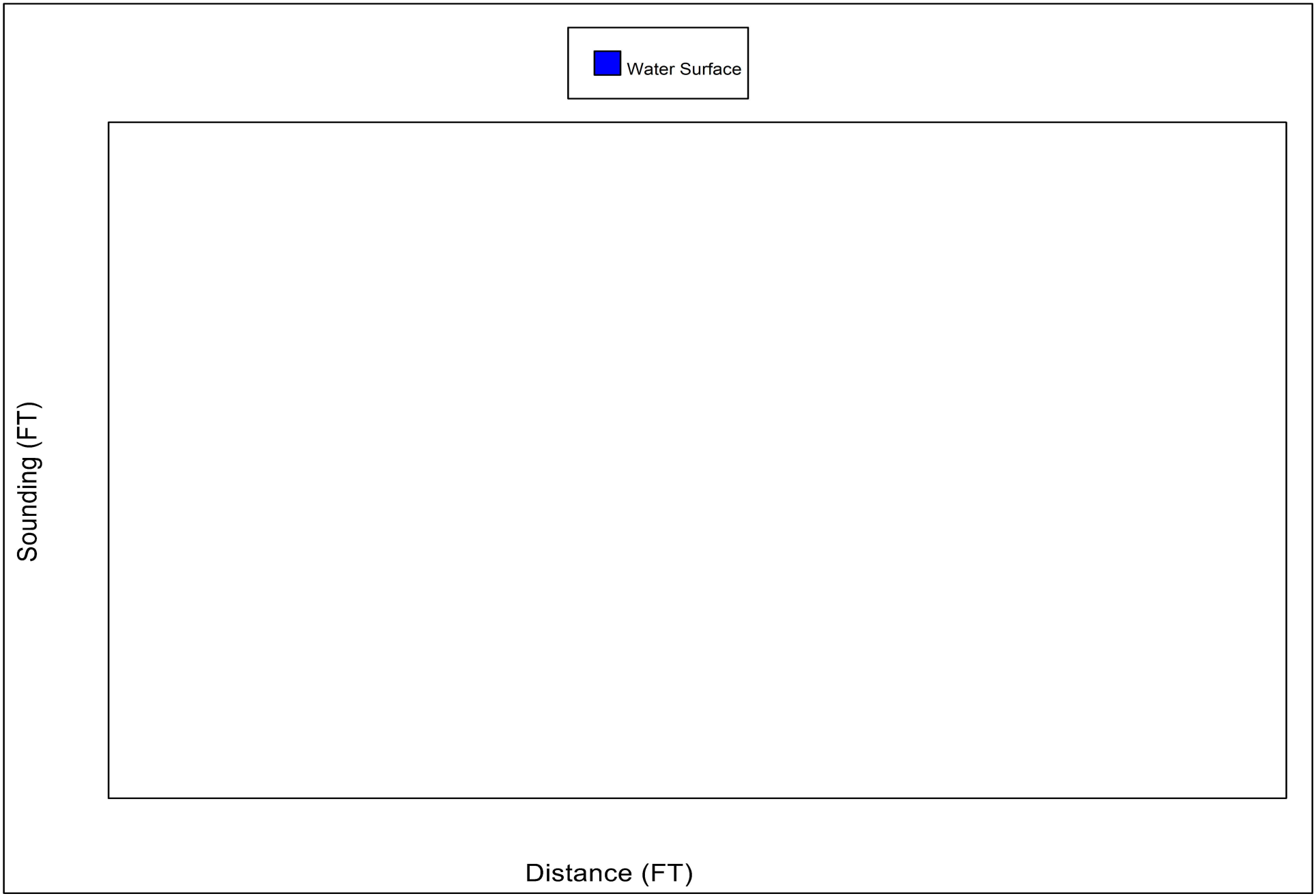
Distance from Highwater Mark to top of rail: Location of Highwater Mark:

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description

Bridge: 590815 County MECKLENBURG Date: 09/09/2013

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



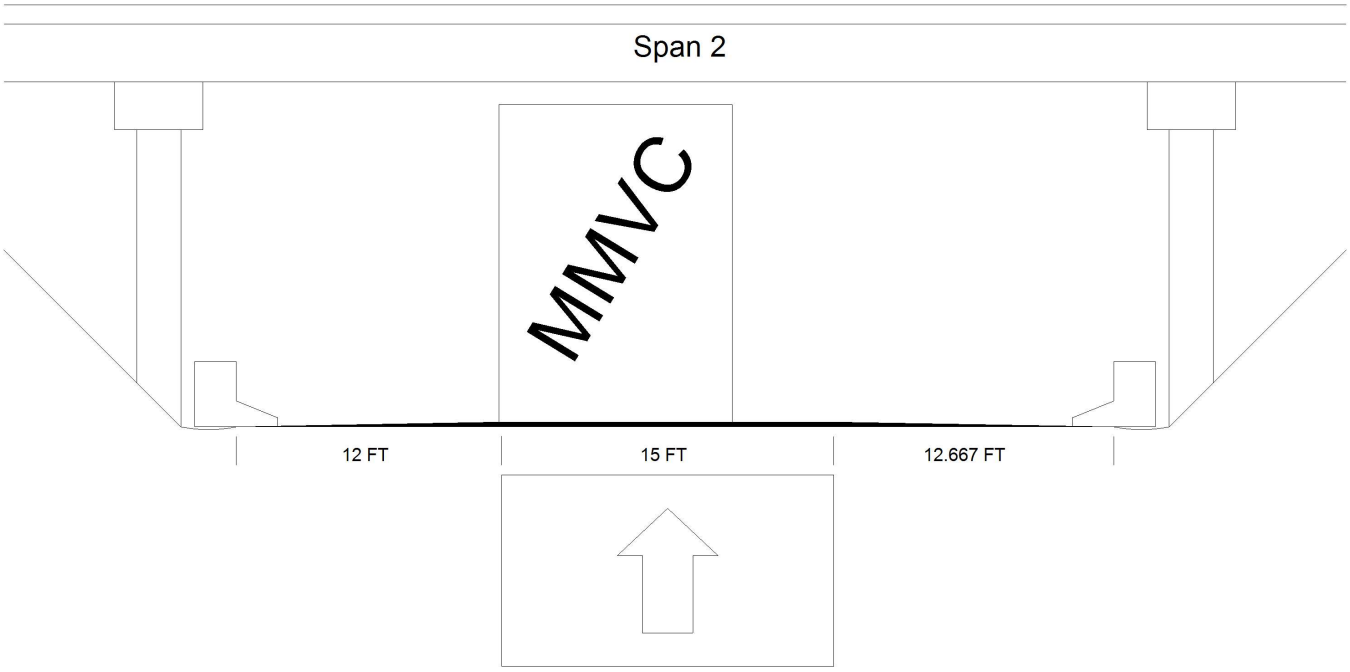
Bridge Inspection Field Sketch

Roadway	24ft Wide	2 Paved Lanes	Looking North
Left Shoulder	6ft Wide	6ft Paved	
Right Shoulder	6ft Wide	6ft Paved	
Left Guardrail			
Right Guardrail			

MEASURMENTS VERIFIED 09/9/13 GLEN KIKER

Title	**Description**		
APPROACH ROADWAY	SHEET 1		
Bridge No: 590815	**Drawn By:** STEVE AUSTIN	**Date:** 09/12/2011	**File Name:** S0082001937

Bridge Inspection Field Sketch



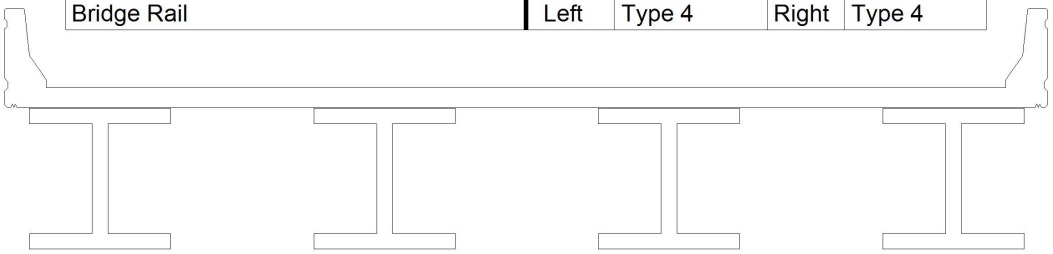
Roadway 1		Direction of Traffic	West
Distance to Left Rail	12FT	Distance to Right Rail	12.667FT
Distance to Left Toe of Slope	14.5FT	Distance to Left Bent	14.5FT
Distance to Right Toe of Slope	15.167FT	Distance to Right Bent	15.167FT
MMVC	17.583 Ft at Beam 1, 10 FT from LEFT EDGE OF RDWY.		
MVC	17.417 Ft at Beam 1, 0 FT from RIGHT EDGE OF RDWY.		

MEASURMENTS VERIFIED 09/9/13 GLEN KIKER

Title	**Description**		
UNDERCLEARANCE	SHEET 3		
Bridge No: 590815	**Drawn By:** STEVE AUSTIN	**Date:** 09/12/2011	**File Name:** S0082001939

Bridge Inspection Field Sketch

Deck Width/Out to Out	40.417ft	Between Rails			37.333ft
Clear Roadway	37.333ft	Wearing Surface			
Median Width		Median Height			
Curb Height		Left		Right	
Sidewalk Width		Left		Right	
Clear Roadway (Rail to Median)		Left	18.666ft	Right	18.666ft
Guardrail Width		Left	1.417ft	Right	1.417ft
Top of Rail to Deck/Wearing Surface		Left	2.667ft	Right	2.667ft
Bridge Rail		Left	Type 4	Right	Type 4



Measurements for Span #	3		
Deck Thickness	0.77	Left Overhang	3.711
Top of Rail to Bottom of Beam	47.167	Right Overhang	3.711

Beam Number	Beam Type	Spacing	Comments
1	Steel I Beam	11.026ft	ALL SPANS SIMILAR
2	Steel I Beam	11.026ft	
3	Steel I Beam	11.026ft	
4	Steel I Beam	ft	

MEASURMENTS VERIFIED 09/9/13 GLEN KIKER

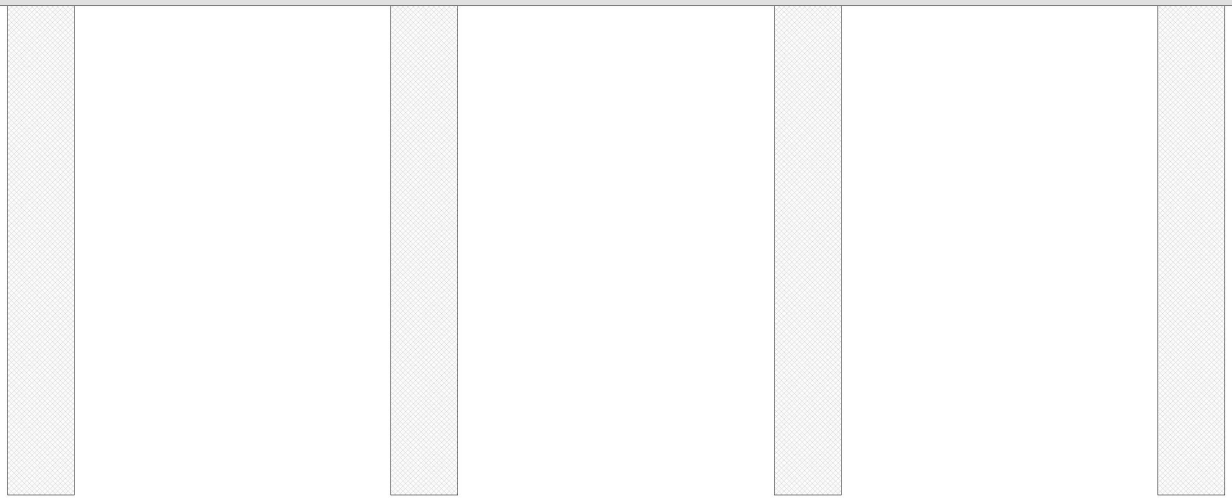
EBTS:RC CAPS/STEEL PILES

GIRDER DETAIL = 1/2 X 44.5 CURVED PL GIRDERS (CONT.)

Title	**Description**		
TYPICAL SECTION	SHEET 2		
Bridge No: 590815	**Drawn By:** STEVE AUSTIN	**Date:** 09/12/2011	**File Name:** S0082001938

Bridge Inspection Field Sketch

MEASURMENTS VERIFIED 09/9/13 GLEN KIKER



Cap Information			Material Cast-in-Place Concrete			
Length	Width	Height	Left Overhang	Right Overhang	Left Beam to End of Cap.	Right Beam to End of Cap.
70.000 ft.	4.000 ft.	3.500 ft.	5.000 ft.	5.000 ft.	2.000 ft.	2.000 ft.

Subcap Information			Material		
Length	Width	Height	Left Overhang	Right Overhang	Left Pile to Splice.

Sill Information			Material
Length	Width	Height	

Pile #	Material	Spacing	Width/Dia.	Height	Length	Orientation	Driven?	Replacement?	Removed?	Collar?
1	Concrete	20 ft.	3.5 ft.			Vertical	No	No	No	No
2	Concrete	20 ft.	3.5 ft.			Vertical	No	No	No	No
3	Concrete	20 ft.	3.5 ft.			Vertical	No	No	No	No
4	Concrete		3.5 ft.			Vertical	No	No	No	No

Bent/Abutment #: 1 Similar Bents: 2

Title	**Description**
PIERS	SHEET 4

Bridge No: 590815	**Drawn By:** STEVE AUSTIN	**Date:** 9/12/2011	**File Name:** S0082002564

GUARD RAIIL TERMINAL END AT THE SE END SW AND NW SIMILAR

LOOKING NORTH

GUARD RAIL LOOKING NORTH

EXPANSION JOINTS AT BOTH ABUTMENTS

GUARD RAIL LOOKING SOUTH

GUARD RAIL CONNECTION SE CORNER SW AND NW SIMILAR

GUARD RAIL POST SPACING AT THE SE CORNER SW AND NW SIMILAR

GUARD RAIL POST SPACING IN THE MIDDLE

BEARINGS

PIER 1 LOOKING NORTH

ABUTMENT 1 ABUTMENT 2 SIMILAR

SUPERSTRUCTURE

LOOKING WEST

WEST OPENING, SPAN 2

LOOKING EAST

EAST OPENING