



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection - Municipal

COUNTY GASTON BRIDGE NUMBER 350174 INSPECTION CYCLE 0 YRS
ROUTE CALDWELL STREET ACROSS HIGHLAND CREEK M.P. 0

LOCATION 0.1 MI.JCT.CHESTER ST.

SUPERSTRUCTURE REINFORCED CONCRETE FLOOR ON I-BEAMS (S.I.P.METAL FORMS)

SUBSTRUCTURE MASONRY ABUTMENTS

SPANS 1 @ 24'-9

LONGITUDE 81° 11' 13.42"

LATITUDE 35° 16' 44.64"

INSPECTION DATE 04/22/2014

PRESENT CONDITION FAIR

PRESENT POSTING Not Posted

PROPOSED POSTING

OTHER SIGNS PRESENT NONE



LOOKING EAST

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></u>
<u>Yes</u>	DELINEATORS	<u>4</u>
<u>No</u>	NARROW BRIDGE	<u></u>
<u>No</u>	ONE LANE BRIDGE	<u></u>
<u>No</u>	LOW CLEARANCE	<u></u>

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

Run Date: 05/20/2014

IDENTIFICATION							
(1) STATE NAME -NORTH CAROLINA	BRIDGE	350174		SUFFICIENCY RATING =		93.49	
(8) STRUCTURE NUMBER(FEDERAL)		00000000710174		STATUS =	Not Deficient		
(5) INVENTORY ROUTE (ON/UNDER) - ON		50000000					
(2) STATE HIGHWAY DEPARTMENT DISTRICT		1		CLASSIFICATION		CODE	
(3) COUNTY CODE 71 (4) PLACE CODE		25580		(112)NBIS BRIDGE SYSTEM -		YES	
(6) FEATURE INTERSECTED - HIGHLAND CREEK				(104)HIGHWAY SYSTEM	Is not on NHS	0	
(7) FACILITY CARRIED CALDWELL STREET				(26) FUNCTIONAL CLASS -	Local	19	
(9) LOCATION 0.1 MI.JCT.CHESTER ST.				(100)STRAHNET HIGHWAY -	Not a STRAHNET Route	0	
(11)MILEPOINT		0		(101)PARALLEL STRUCTURE -	No Parallel Structure	N	
(16)LAT 35° 16' 44.64"	(17)LONG	81° 11' 13.42"		(102)DIRECTION OF TRAFFIC -	2-way Traffic	2	
(98)BORDER BRIDGE STATE CODE	PCT SHARE			(103)TEMPORARY STRUCTURE -			
(99)BORDER BRIDGE STRUCTURE NO				(110)DESIGNATED NATIONAL NETWORK -	Not on the National Network	0	
STRUCTURE TYPE AND MATERIAL				(20) TOLL	On Free Road	3	
(43) STRUCTURE TYPE MAIN: Steel				(31) MAINTAIN -	City Highway Agency	04	
TYPE - Stringer Multibeam or Girder	CODE	302		(22) OWNER -	City Highway Agency	04	
(44) STRUCTURE TYPE APPR :				(37) HISTORICAL SIGNIFICANCE -	Not Eligible	5	
TYPE -	CODE	0		CONDITION		CODE	
(45) NUMBER OF SPANS IN MAIN UNIT		1		(58) DECK		6	
(46) NUMBER OF APPROACH SPANS		0		(59) SUPERSTRUCTURE		7	
(107)DECK STRUCTURE TYPE - 1	CODE			(60) SUBSTRUCTURE		7	
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(61) CHANNEL & CHANNEL PROTECTION		7	
(A) TYPE OF WEARING SURFACE -	CODE			(62) CULVERTS		N	
(B) TYPE OF MEMBRANE -	CODE			LOAD RATING AND POSTING		CODE	
(C) TYPE OF DECK PROTECTION -	CODE			(31) DESIGN LOAD	Unknown	0	
AGE AND SERVICE				(63) OPERATING RATING METHOD -	Load Factor	1	
(27) YEAR BUILT		1965		(64) OPERATING RATING -	HS-55	99	
(106)YEAR RECONSTRUCTED				(65) INVENTORY RATING METHOD -	Load Factor	1	
(42) TYPE OF SERVICE : ON - Highway - Pedestrian				(66) INVENTORY RATING -	HS-43	77	
UNDER - Waterway	CODE	55		(70) BRIDGE POSTING -	No Posting Required	5	
(28) LANES: ON STRUCTURE 2 UNDER STRUCTURE		0		(41) STRUCTURE OPEN, POSTED ,OR CLOSED		A	
(29) AVERAGE DAILY TRAFFIC		1000		DESCRIPTION -	Open, No Restriction		
(30) YEAR OF ADT 1994 (109) TRUCK ADT PCT		7%		APPRAISAL		CODE	
(19) BYPASS OR DETOUR LENGTH		1 MI		(67) STRUCTURAL EVALUATION		7	
GEOMETRIC DATA				(68) DECK GEOMETRY		6	
(48) LENGTH OF MAXIMUM SPAN		23 FT		(69) UNDERCLEARANCES,VERTI & HORIZ		N	
(49) STRUCTURE LENGTH		25 FT		(71) WATERWAY ADEQUACY		6	
(50)CURB OR SIDEWALK: LEFT 3 FT RIGHT .8 FT				(72) APPROACH ROADWAY ALIGNMENT		6	
(51) BRIDGE ROADWAY WIDTH CURB TO CURB		30.17 FT		(36) TRAFFIC SAFETY FEATURES		0000	
(52) DECK WIDTH OUT TO OUT		36 FT		(113)SCOUR CRITICAL BRIDGES		U	
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)		27 FT		PROPOSED IMPROVEMENTS		CODE	
(33) BRIDGE MEDIAN - No Median	CODE	0		(75) TYPE OF WORK -			
(34) SKEW 40° (35) STRUCTURE FLARED		0		(76) LENGTH OF STRUCTURE IMPROVEMENT			
(10) INVENTORY ROUTE MIN VERT CLEAR		999.9 FT		(94) BRIDGE IMPROVEMENT COST			
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR		30.17 FT		(95) ROADWAY IMPROVEMENT COST			
(53) MIN VERT CLEAR OVER BRIDGE RDWY		999.9 FT		(96) TOTAL PROJECT COST			
(54) MIN VERT UNDERCLEAR REF Not a Highway or Railroad		0 FT		(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(55) MIN LAT UNDERCLEAR RT REF Not a Highway or Railroad		000 FT		(114)FUTURE ADT 2000 (115) YEAR FUTURE ADT		2025	
(56) MIN LAT UNDERCLEAR LT REF -		000 FT		INSPECTIONS			
NAVIGATION DATA				(90) INSPECTION DATE		04/22/2014	
(38) NAVIGATION CONTROL - No Navigational Control	CODE	0		(92) CRITICAL FEATURE INSPECTION :		(93) CFI DATE	
(111)PIER PROTECTION -	CODE			A) FRACTURE CRIT DETAIL -	NO	A)	
(39) NAVIGATION VERTICAL CLEARANCE		0		B) UNDERWATER INSP -	NO	B)	
(116)VERT - LIFT BRIDGE NAV MIN VERT CLEAR		FT		C) OTHER SPECIAL INSP	NO	C)	
(40) NAVIGATION HORIZONTAL CLEARANCE		0 FT		SCOUR			

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 05/20/2014

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
GASTON	12	1	350174	25	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
CALDWELL STREET	HIGHLAND CREEK

LOCATED :	BRIDGE NAME :	CITY :
0.1 MI.JCT.CHESTER ST.		GASTONIA

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
19	NFA	NFA	1000 1994	LT 281 RT 281

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1965				Unknown

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :		
			TAN.	50	ON 2	UNDER	0

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

SUPERSTRUCTURE : REINFORCED CONCRETE FLOOR ON I-BEAMS (S.I.P.METAL FORMS)

SUBSTRUCTURE : MASONRY ABUTMENTS

SPANS : 1 @ 24'-9

BEAMS OR GIRDERS : 11 LINES 24 I-BEAMS @ 3'-7 CENTERS

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
12 RC/4 AWS		36 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
30.17 FT	34 FT	LT 3 FT RT .8 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	TTST	DATE
HS-43	HS-55		SV		

SYSTEM :	GREEN LINE ROUTE :
Non-System Municipal roads or other non-system not in contact with State System	N

UNDER ROUTES AND CLEARANCES

REMARKS :

BRIDGE INSPECTION RECORD AND SUMMARY

INSPECTION TYPE Routine Inspection - Municipal
 BRIDGE NO. 350174 COUNTY GASTON ROUTE CALDWELL STREET OVER HIGHLAND CREEK
 STRUCTURE TYPE REINFORCED CONCRETE FLOOR ON I-BEAMS (S.I.P.METAL FORMS)
 ROUTE ORIENTATION W - E SPANS 1 @ 24'-9

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

INSPECTION ITEM				ITEM 61		
DECK ITEMS			GRADES			
1. WEARING SURFACE			F	45. CHANNEL & CHANNEL PROT.	a. WATERWAY	G
					b. ALIGNMENT	G
2. DECK NO. OF EA TYPE SPN GRADE RATES SI & A ITEM 58	a. CONCRETE	1	F		c. SCOUR	G
	b. TIMBER				d. SLOPE PROT., RIP-RAP, DIKES, ETC.	G
	c. STEEL PLANK			50. APPROACH ROADWAY CONDITION		
	d. OPEN GRID			51. APPROACH SLABS		
3. RAILING	a. CONCRETE		F	52. PAINT SYSTEM CODE		
	b. TIMBER			53. UTILITIES		
	c. ALUMINUM			54. RESPONSE TO LIVE LOAD		
	d. STEEL			55. ESTIMATED REMAINING LIFE		
4. CURBS, WHEELGUARDS, PARAPETS, MEDIANS			F			
5. WALKWAYS (ON OR ATTACHED TO STRUCTURE)			F	60. REGULATORY SIGN NOTICE ISSUED		
6. DECK EXP JTS. OR DEVICES. NO. OF EACH	a. STEEL PL OR FINGER			61. PROMPT-ACTION NOTICE ISSUED		
	b. MISC PREFAB			62. PRESENTLY POSTED		
	c. COMPRESSION SEAL			63. TOT. FIELD INSP TIME (INCLUDE WRITE UP)(MAN HR)		
	d. STANDARD JOINTS			64. TOTAL SNOOPER INSP. TIME (HRS)		
	e. OPEN JOINTS			65. TOTAL TRAFFIC CONTROL TIME (MAN HRS)		
7. DECK DEBRIS (INCLUDES EXCESS SAND/GRAVEL)			F			
				70. SI&A GENERAL CONDITION RATINGS		
SUPER STR. (FM. 1 (90)B TRUSS) ITEM 59				a. DECK	ITEM 58	6
10. LONGITUDINAL BEAMS OR GIRDERS			G	b. SUPERSTRUCTURE	ITEM 59	7
11. LONGITUDINAL JOIST OR STRINGERS				c. SUBSTRUCTURE	ITEM 60	7
12. INT. DIAP'S, X-FRAMES, BRACING & CONN'S			G	d. CHANNEL & CHANNEL PROT.	ITEM 61	7
13. END DIAP'S, CURTAIN WALLS, & CONN'S			G			
14. FLOOR BEAMS AND CONNECTIONS				71. SI&A FIELD APPRAISAL RATINGS		
15. BEARING ASSEMBLIES (INCLUDING MISALIGN)			G	a. WATERWAY ADAQUACY		6
16. DRAINAGE SYSTEM (ON STRUCTURE)			G	b. APPR. RDWY. ALIGNMENT		6
17. MOVABLE SPAN MACHINERY						
				72. FIELD SCOUR EVALUATION		
SUB STR. ITEMS. ITEM 60 (INCLUDE SCOUR)						
35. TIM SUB STR.	a. ABUT. & INT. BENT CAPS & RISERS			USE OF INSP. ACCESSIBILITY EQUIPMENT		
	b. PILES, POST, SILLS, & BRACING			SNOOPER (CODE S, 4, OR N)	HRS	NO
	c. BULKHEADS, WING'S, & TIE BACKS			LADDER		NO
36. CONC SUB STR.	a. ABUT. & INT. BENT CAPS		G	BUCKET TRUCK		
	b. ABUT. & BENT COL'S BREASTWALLS			BOAT		
	c. ABUT. & INT. BENT PILES			OTHER		
	d. BACKWALLS, WING'S, RETAIN. WALLS		G			
	e. ABUT. & BENT FOOTINGS & SILLS		G			
37. STEEL SUB STR.	a. ABUT. & INT. BENT CAPS & RISERS			SPECIAL INSPECTION REQUESTED FOR		
	b. PILES, BRACING, AND BULKHEADS					
38. FOUNDATION PILES TYPE MATERIAL				NOTE		
39. SLOPE PROT., RIP-RAP (INCLUDE DRAINAGE)						
40. FENDER SYSTEMS				80. INSPECTED BY:	<i>John A. Smith</i>	
41. DRIFT			G	81. REVIEWED BY:		

Bridge I&A Form 1(82)H State of North Carolina Dept. of Transportation Division of Highways		FIELD INSPECTION REPORT <u>Bridge Inspection & Analysis</u>	
Team Leader JONATHAN M SIMPSON			
Assisted By COC			
Item No.	Grade		
1	F	UP TO 1/4" TRANSVERSE CRACK IN ASPHALT WEARING SURFACE AT ABUTMENT 1 (ABUTMENT 2 SIMILAR).	
2a	F	PEELING PAINT AND FLAKING RUST ON STAY IN PLACE FORMS IN BAY 10 (OTHER LOCATIONS SIMILAR)	
3a	F	HAIRLINE VERTICAL CRACKS ON OUTSIDE FACE OF SOUTH BRIDGE RAIL.	
4	F	HAIRLINE TRANSVERSE CRACK IN SOUTH CURB (OTHER LOCATIONS SIMILAR).	
5	F	HAIRLINE TRANSVERSE CRACK IN NORTH SIDEWALK (OTHER LOCATIONS SIMILAR).	
7	F	DIRT AND DEBRIS ALONG SOUTH GUTTER.	
10	G	SURFACE RUST ON TOP FLANGE OF BEAM 11.	
10A	NO	NO CURVED BEAMS.	
12	G	DRIFT ON BAYS 5, 7, 8 AND 9 INTERMEDIATE DIAPHRAGM.	
13	G	9 1/2" X 3" X UP TO 3" DEEP SPALL IN SOUTH END OF ABUTMENT 2 CURTAIN WALL.	
36d	G	VEGETATION GROWTH ON SOUTHWEST WINGWALL (NORTHWEST AND SOUTHEAST WINGWALLS SIMILAR). 7" X 3" X 1" DEEP SPALL ON SOUTHWEST WINGWALL.	
50	F	UP TO 1/16" LONGITUDINAL AND TRANSVERSE CRACKS IN WEST APPROACH ASPHALT WEARING SURFACE (EAST APPROACH SIMILAR). 3" SETTLEMENT IN SIDEWALK AT NORTHWEST CORNER (NORTHEAST CORNER SIMILAR). 1.5" SETTLEMENT AT EAST APPROACH (SIMILAR AT WEST APPROACH). UP TO 1/8" ALLIGATOR CRACKING IN EAST APPROACH ASPHALT WEARING SURFACE.	

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 350174

County GASTON

Date: 04/22/2014

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

MMS Code	Description of Function	Unit	Quantity	Remarks	Est. Cost
2816	Asphalt Surface Repair or Replacement	SY	10	UP TO 1/4" TRANSVERSE CRACK IN ASPHALT WEARING SURFACE AT ABUTMENT 1 (ABUTMENT 2 SIMILAR). 1.5" SETTLEMENT AT EAST APPROACH (SIMILAR AT WEST APPROACH). UP TO 1/8" ALLIGATOR CRACKING IN EAST APPROACH ASPHALT WEARING SURFACE. UP TO 1/16" LONGITUDINAL AND TRANSVERSE CRACKS IN WEST APPROACH ASPHALT WEARING SURFACE (EAST APPROACH SIMILAR).	

Key



Priority Maintenance Item



Critical Finding Item



Priority Maintenance Level Not Determined



UP TO 1/16" LONGITUDINAL AND TRANSVERSE CRACKS IN WEST APPROACH ASPHALT WEARING SURFACE
(EAST APPROACH SIMILAR)



3" SETTLEMENT IN SIDEWALK AT NORTHWEST CORNER (NORTHEAST CORNER SIMILAR)



UP TO 1/4" TRANSVERSE CRACK IN ASPHALT WEARING SURFACE AT ABUTMENT 1 (ABUTMENT 2 SIMILAR)



DIRT AND DEBRIS ALONG SOUTH GUTTER



HAIRLINE TRANSVERSE CRACK IN SOUTH CURB (OTHER LOCATIONS SIMILAR)



HAIRLINE TRANSVERSE CRACK IN NORTH SIDEWALK (OTHER LOCATIONS SIMILAR)



1.5" SETTLEMENT AT EAST APPROACH (SIMILAR AT WEST APPROACH SIMILAR)



UP TO 1/8" ALLIGATOR CRACKING IN EAST APPROACH ASPHALT WEARING SURFACE



VEGETATION GROWTH ON SOUTHWEST WINGWALL (NORTHWEST AND SOUTHEAST WINGWALLS SIMILAR)



7" X 3" X 1" DEEP SPALL ON SOUTHWEST WINGWALL



HAIRLINE VERTICAL CRACKS ON OUTSIDE FACE OF SOUTH BRIDGE RAIL



SURFACE RUST ON TOP FLANGE OF BEAM 11



9 1/2" X 3" X UP TO 3" DEEP SPALL IN SOUTH END OF ABUTMENT 2 CURTAIN WALL



PEELING PAINT AND FLAKING RUST ON STAY IN PLACE FORMS IN BAY 10 (OTHER LOCATIONS SIMILAR)

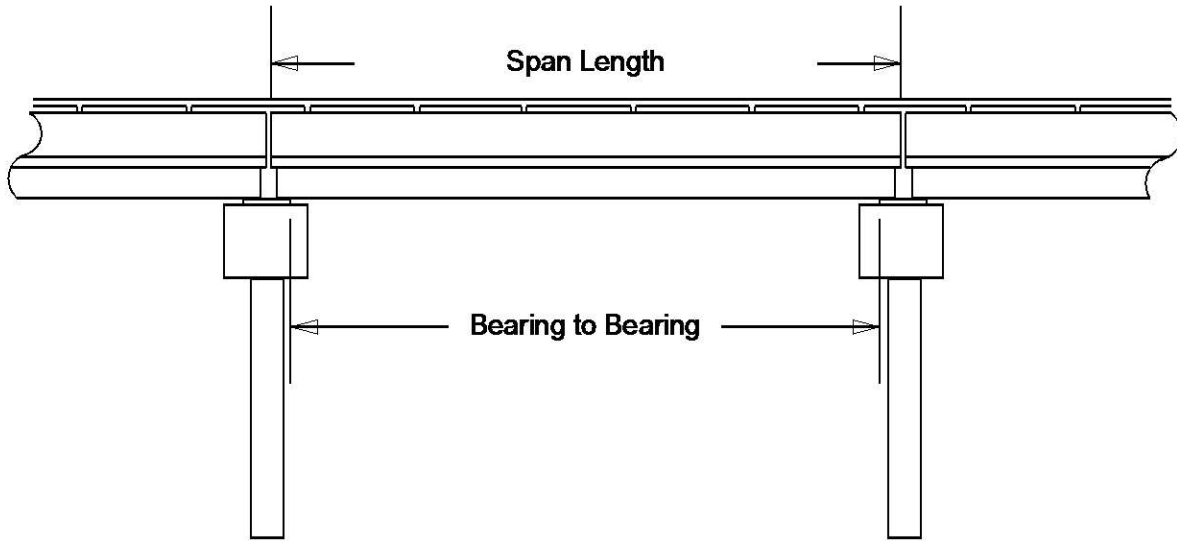


DRIFT ON BAY 8 INTERMEDIATE DIAPHRAGM (BAYS 5, 7 AND 8 SIMILAR)

Structure Data Worksheet

Spans

County: GASTON Structure No: 350174 Date: 04/22/2014 Inspected By: JMS



Span No	Span Length	Bearing to Bearing	Comments
1	24.75	22.67	NBIS LENGTH = 21.98'

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 350174 County: GASTON Date: 04/22/2014 By: JMS

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

Distance from Highwater Mark to top of rail: 4.417 Location of Highwater Mark: TOP OF INTERMEDIATE DIAPHRAGMS

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description
0	2.7	TOP OF WINGWALL			
1.583	2.7	TOP OF WINGWALL			
1.6	12.9	TOP OF SILL			
3	12.9	TOP OF SILL			
3.1	13.8	FACE OF SILL	3.1	10.7	FACE OF SILL
3.11	13.4	Water Surface (WS)			
13	13.1				
22.2	12.3	Water Surface (WS)			
23	12.4	FACE OF SILL			
23.1	11.7	TOP OF SILL			
23.6	11.7	TOP OF SILL	23.6	9.8	TOP OF SILL
23.8	3	TOP OF WINGWALL			
25	3	TOP OF WINGWALL			

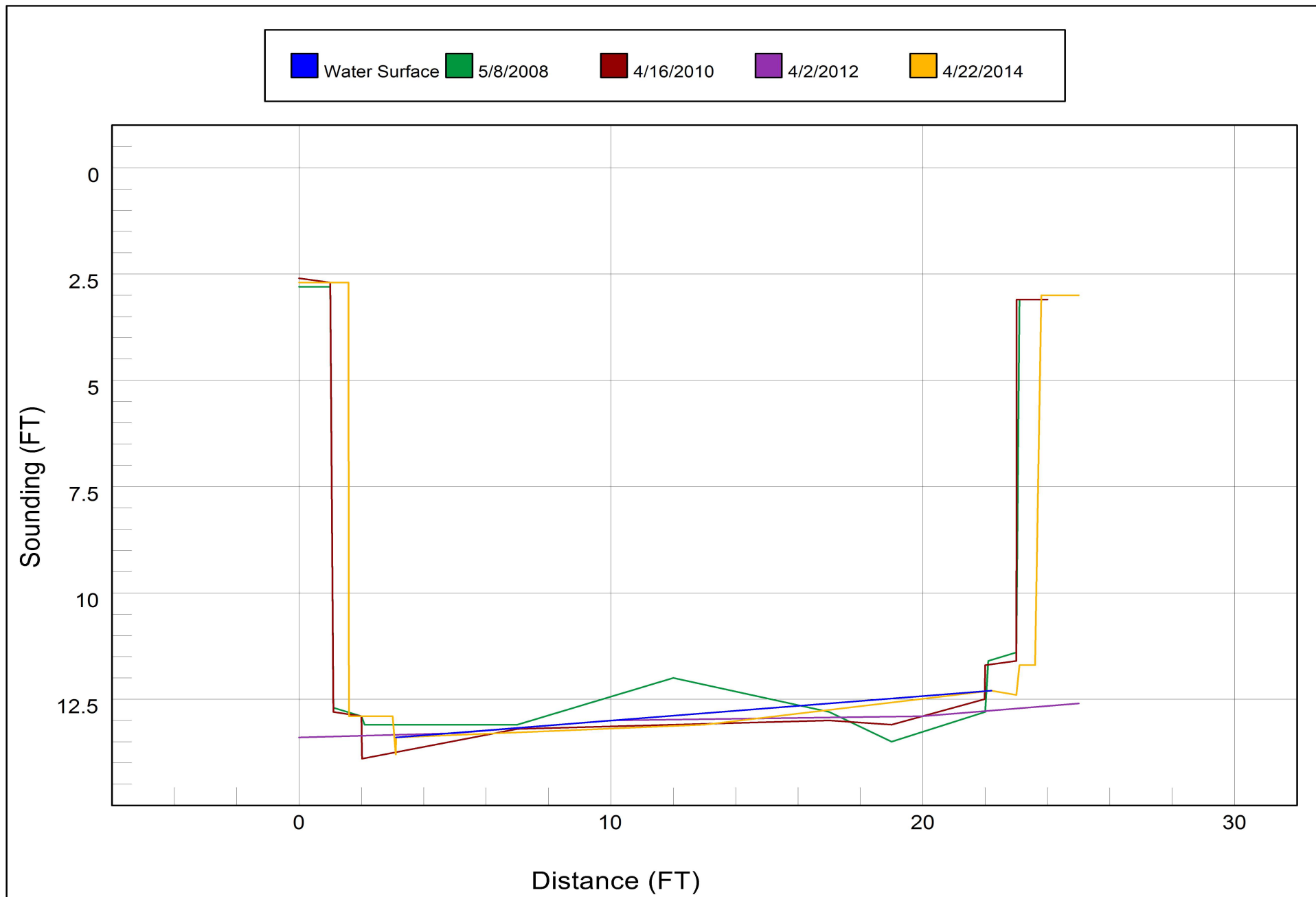
Bridge: 350174

County GASTON

Date: 04/22/2014

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



Bridge Inspection Field Sketch



Roadway	27.333ft Wide	2 Paved Lanes	Looking East
Right Shoulder	6ft Wide		6ft Unpaved
Left Shoulder	6ft Wide	2ft Grass	4ft Concrete Sidewalk
Left Guardrail			
Right Guardrail			

SKETCH MODIFIED 4/22/14 BY JMS

Title

Approach Roadway

Description

East Approach Looking West

Bridge No: 350174

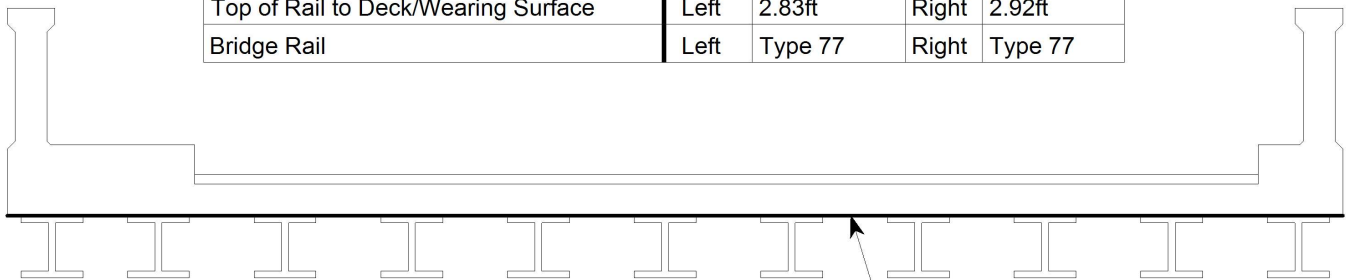
Drawn By: rjf

Date: 4/16/2010

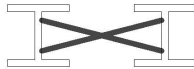
File Name: S0374000130

Bridge Inspection Field Sketch

Deck Width/Out to Out	36ft	Between Rails			34ft
Clear Roadway	30.17ft	Wearing Surface			0.3ft
Median Width		Median Height			
Curb Height		Left	0.67ft	Right	1ft
Sidewalk Width		Left	3ft	Right	0.83ft
Clear Roadway (Rail to Median)		Left		Right	
Guardrail Width		Left	1ft	Right	1ft
Top of Rail to Deck/Wearing Surface		Left	2.83ft	Right	2.92ft
Bridge Rail		Left	Type 77	Right	Type 77



Stay in place forms



2 lines of Cross bracing 3"X3"X5/16" in each bay

Measurements for Span #	1		
Deck Thickness	1ft	Left Overhang	0.42ft
Top of Rail to Bottom of Beam	6ft	Right Overhang	0.42ft

Beam Number	Beam Type	Spacing	Comments
1	Steel I Beam	ft	W24X68
2	Steel I Beam	3.01ft	W24X68
3	Steel I Beam	3.58ft	W24X68
4	Steel I Beam	3.58ft	W24X68
5	Steel I Beam	3.58ft	W24X68
6	Steel I Beam	3.58ft	W24X68
7	Steel I Beam	3.58ft	W24X68
8	Steel I Beam	3.58ft	W24X68
9	Steel I Beam	3.58ft	W24X68
10	Steel I Beam	3.58ft	W24X68
11	Steel I Beam	3.58ft	W24X68

SKETCH MODIFIED 4/22/14 BY JMS

Title

Typical Section

Description

Looking East

Bridge No: 350174

Drawn By: rjf

Date: 4/16/2010

File Name: S0374000131



LOOKING EAST



LOOKING WEST



UPSTREAM VIEW, LOOKING SOUTH



DOWNSTREAM VIEW, LOOKING NORTH



BRIDGE RAIL ON NORTH SIDE (SOUTH SIDE SIMILAR)



UPSTREAM PROFILE, LOOKING NORTH



DOWNSTREAM PROFILE, LOOKING SOUTH



UNDERSIDE OF SUPERSTRUCTURE



ABUTMENT 2 (ABUTMENT 1 SIMILAR)



NORTHEAST WINGWALL (OTHERS SIMILAR)



ABUTMENT BEARING (BEAM 6, ABUTMENT 1 SHOWN)



INTERMEDIATE DIAPHRAGM