



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY ORANGE BRIDGE NUMBER 670173 INSPECTION CYCLE 2 YRS
ROUTE SR1353 ACROSS PRONG ENO RIVER M.P. 0

LOCATION 0.6 MI. W. JCT. NC86

SUPERSTRUCTURE TIMBER DECK ON I-BEAMS

SUBSTRUCTURE END BENTS:TIMBER CAPS & PILES,TIMBER BULKHEADS

SPANS 1@40'7

LONGITUDE 79° 9' 17.38"

LATITUDE 36° 11' 29.08"

INSPECTION DATE 08/13/2013

PRESENT CONDITION FAIR

PRESENT POSTING SV 14 TTST 17

SV 14 TTST 17

PROPOSED POSTING

OTHER SIGNS PRESENT 4 DELINEATORS, 2 NARROW BRIDGE



LOOKING NORTH

Fracture Critical	<u>No</u>
Temporary Shoring	<u>No</u>
Scour Critical	<u>No</u>
Scour POA	<u>No</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: 08/27/2013

IDENTIFICATION				CLASSIFICATION			
(1) STATE NAME -NORTH CAROLINA	BRIDGE	670173		SUFFICIENCY RATING =		55.34	
(8) STRUCTURE NUMBER(FEDERAL)		000000001350173		STATUS =	Structurally Deficient		
(5) INVENTORY ROUTE (ON/UNDER) - ON		31013530					
(2) STATE HIGHWAY DEPARTMENT DISTRICT		1					
(3) COUNTY CODE 135	(4) PLACE CODE	0		(112)NBIS BRIDGE SYSTEM -		YES	
(6) FEATURE INTERSECTED - PRONG ENO RIVER				(104)HIGHWAY SYSTEM	Is not on NHS	0	
(7) FACILITY CARRIED SR1353				(26) FUNCTIONAL CLASS -	Local	09	
(9) LOCATION 0.6 MI. W. JCT. NC86				(100)STRAHNET HIGHWAY -	Not a STRAHNET Route	0	
(11)MILEPOINT		0		(101)PARALLEL STRUCTURE -	No Parallel Structure	N	
(16)LAT 36° 11' 29.08"	(17)LONG 79° 9' 17.38"			(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	
				(20) TOLL	On Free Road	3	
				(31) MAINTAIN -	State Highway Agency	01	
				(22) OWNER -	State Highway Agency	01	
				(37) HISTORICAL SIGNIFICANCE -	Not Eligible	5	
STRUCTURE TYPE AND MATERIAL				CONDITION			
(43) STRUCTURE TYPE MAIN: Steel				(58) DECK		4	
TYPE - Stringer Mutlibeam or Girder	CODE	302		(59) SUPERSTRUCTURE		6	
(44) STRUCTURE TYPE APPR :				(60) SUBSTRUCTURE		6	
TYPE -	CODE	000		(61) CHANNEL & CHANNEL PROTECTION		7	
(45) NUMBER OF SPANS IN MAIN UNIT		1		(62) CULVERTS		N	
(46) NUMBER OF APPROACH SPANS							
(107)DECK STRUCTURE TYPE - 8	CODE			LOAD RATING AND POSTING			
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(31) DESIGN LOAD	Unknown	0	
(A) TYPE OF WEARING SURFACE -	CODE			(63) OPERATING RATING METHOD -	Load Factor	1	
(B) TYPE OF MEMBRANE -	CODE			(64) OPERATING RATING -	HS-11	20	
(C) TYPE OF DECK PROTECTION -	CODE			(65) INVENTORY RATING METHOD -	Load Factor	1	
				(66) INVENTORY RATING -	HS-7	12	
				(70) BRIDGE POSTING -	Posting Required	0	
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED		P	
				DESCRIPTION -	Posted for Load		
AGE AND SERVICE				APPRAISAL			
(27) YEAR BUILT		1962		(67) STRUCTURAL EVALUATION		4	
(106)YEAR RECONSTRUCTED				(68) DECK GEOMETRY		4	
(42) TYPE OF SERVICE : ON - Highway				(69) UNDERCLEARANCES,VERTI & HORIZ		N	
UNDER - Waterway	CODE	15		(71) WATERWAY ADEQUACY		4	
(28) LANES: ON STRUCTURE 2 UNDER STRUCTURE		0		(72) APPROACH ROADWAY ALIGNMENT		8	
(29) AVERAGE DAILY TRAFFIC		60		(36) TRAFFIC SAFETY FEATURES		0000	
(30) YEAR OF ADT 2000	(109) TRUCK ADT PCT	%		(113)SCOUR CRITICAL BRIDGES		U	
(19) BYPASS OR DETOUR LENGTH		0 MI		PROPOSED IMPROVEMENTS			
GEOMETRIC DATA				(75) TYPE OF WORK -		CODE	
(48) LENGTH OF MAXIMUM SPAN		40 FT		(76) LENGTH OF STRUCTURE IMPROVEMENT			
(49) STRUCTURE LENGTH		41 FT		(94) BRIDGE IMPROVEMENT COST			
(50)CURB OR SIDEWALK: LEFT .4165 FT RIGHT .4165 FT				(95) ROADWAY IMPROVEMENT COST			
(51) BRIDGE ROADWAY WIDTH CURB TO CURB		19 FT		(96) TOTAL PROJECT COST			
(52) DECK WIDTH OUT TO OUT		20 FT		(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)		20 FT		(114)FUTURE ADT 120	(115) YEAR FUTURE ADT	2025	
(33) BRIDGE MEDIAN - No Median	CODE	0		INSPECTIONS			
(34) SKEW 0°	(35) STRUCTURE FLARED	0		(90) INSPECTION DATE		08/13/2013	
(10) INVENTORY ROUTE MIN VERT CLEAR		999.9 FT		(92) CRITICAL FEATURE INSPECTION :		(93) CFI DATE	
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR		19 FT		A) FRACTURE CRIT DETAIL -	NO	A)	
(53) MIN VERT CLEAR OVER BRIDGE RDWY		999.9 FT		B) UNDERWATER INSP -	NO	B)	
(54) MIN VERT UNDERCLEAR REF Not a Highway or Railroad		0 FT		C) OTHER SPECIAL INSP	NO	C)	
(55) MIN LAT UNDERCLEAR RT REF Not a Highway or Railroad		000 FT		SCOUR			
(56) MIN LAT UNDERCLEAR LT REF -		000 FT					
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: 08/27/2013

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
ORANGE	7	1	670173	41	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
SR1353	PRONG ENO RIVER

LOCATED :	BRIDGE NAME :	CITY :
0.6 MI. W. JCT. NC86		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
09	NFA	NFA	60 2000	LT 227 RT 227

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1962	BMU			Unknown

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :		
	BMU	5.5051	TAN	90	ON 2	UNDER	0

NAVIGATION :			HT. CRN. TO BED :		WATER DEPTH :		
VC 0 FT	HC 0 FT		9 FT		1		FT

SUPERSTRUCTURE :	TIMBER DECK ON I-BEAMS
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SUBSTRUCTURE :	END BENTS:TIMBER CAPS & PILES,TIMBER BULKHEADS
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SPANS :	1@40'7
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BEAMS OR GIRDERS :	8 LINES OF W16X40 I-BEAMS @ 2'7 CENTERS
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FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
4X8 TIM,3.0"AWS		20 FT

CLEAR ROADWAY :	BETWEEN RAILS :	SIDEWALK OR CURB :
19 FT	19.833 FT	LT .4165 FT RT .4165 FT

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	TTST	DATE
HS-7	HS-11	int.bm	SV 14	17	10/13/1983

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

UNDER ROUTES AND CLEARANCES

REMARKS :

BRIDGE INSPECTION RECORD AND SUMMARY

INSPECTION TYPE Routine Inspection
 BRIDGE NO. 670173 COUNTY ORANGE ROUTE SR1353 OVER PRONG ENO RIVER
 STRUCTURE TYPE TIMBER DECK ON I-BEAMS
 ROUTE ORIENTATION S - N SPANS 1@40'7

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	
					c. SCOUR	G	
					d. SLOPE PROT., RIP-RAP, DIKES, ETC.	F	
2. DECK NO. OF EA TYPE SPN GRADE RATES SI & A ITEM 58	a. CONCRETE			50. APPROACH ROADWAY CONDITION			G
	b. TIMBER	1	P	51. APPROACH SLABS			
	c. STEEL PLANK			52. PAINT SYSTEM			CODE A F
	d. OPEN GRID			53. UTILITIES			
3. RAILING	a. CONCRETE			54. RESPONSE TO LIVE LOAD			F
	b. TIMBER		F	55. ESTIMATED REMAINING LIFE			8
	c. ALUMINUM						
	d. STEEL						
4. CURBS, WHEELGUARDS, PARAPETS, MEDIANS			F	60. REGULATORY SIGN NOTICE ISSUED			NO
5. WALKWAYS (ON OR ATTACHED TO STRUCTURE)				61. PROMPT-ACTION NOTICE ISSUED			NO
6. DECK EXP JTS. OR DEVICES. NO. OF EACH	a. STEEL PL OR FINGER			62. PRESENTLY POSTED			YES
	b. MISC PREFAB			63. TOT. FIELD INSP TIME (INCLUDE WRITE UP)(MAN HR)			4
	c. COMPRESSION SEAL			64. TOTAL SNOOPER INSP. TIME (HRS)			
	d. STANDARD JOINTS			65. TOTAL TRAFFIC CONTROL TIME (MAN HRS)			
	e. OPEN JOINTS						
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	4	
10. LONGITUDINAL BEAMS OR GIRDERS			F	b. SUPERSTRUCTURE	ITEM 59	6	
11. LONGITUDINAL JOIST OR STRINGERS				c. SUBSTRUCTURE	ITEM 60	6	
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				71. SI&A FIELD APPRAISAL RATINGS			
14. FLOOR BEAMS AND CONNECTIONS				a. WATERWAY ADAQUACY		4	
15. BEARING ASSEMBLIES (INCLUDING MISALIGN)			G	b. APPR. RDWY. ALIGNMENT		8	
16. DRAINAGE SYSTEM (ON STRUCTURE)			F	72. FIELD SCOUR EVALUATION			O
17. MOVABLE SPAN MACHINERY							
SUB STR. ITEMS. ITEM 60 (INCLUDE SCOUR)				USE OF INSP. ACCESSIBILITY EQUIPMENT			
35. TIM SUB STR.	a. ABUT. & INT. BENT CAPS & RISERS		F	SNOOPER (CODE S, 4, OR N)			HRS NO
	b. PILES, POST, SILLS, & BRACING		F	LADDER			NO
	c. BULKHEADS, WING'S, & TIE BACKS		F	BUCKET TRUCK			NO
36. CONC SUB STR.	a. ABUT. & INT. BENT CAPS			BOAT			NO
	b. ABUT. & BENT COL'S BREASTWALLS			OTHER			NO
	c. ABUT. & INT. BENT PILES						
	d. BACKWALLS, WING'S, RETAIN. WALLS						
	e. ABUT. & BENT FOOTINGS & SILLS						
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:	Tom Melt		
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 Inspeccion & Analysis</u>	
Team Leader TERRY MELTON			
Assisted By D.HACKNEY			
Item No.	Grade		
1	F	AWS CRACKED ALONG TIMBER DECKING EDGES THROUGH OUT SURFACE. AWS CRACKING AND STARTING TO BUST UP OVER END BENTS.	
2b	P	DECKING TIMBERS HAVE DECAY ALONG ENDS UP TO 4" DEEP ALONG BOTH SIDES. TIMBERS WEATHERED AND DISCOLORED ALONG UNDERSIDE DUE TO DRAINAGE THROUGH DECK. NAILERS MOISTURE SOAKED AND CHECKED. DECKING LOOSE AND REBOUNDED UNDER SMALL LOADS.	
3b	F	TIMBERS WEATHERED AND CHECKED, TOP BOARDS WARPING AND PULLING NAILS OUT. RAIL SUPPORT BLOCKS CHECKED AND SPLIT.	
4	F	SECTION OF CURB ON RIGHT SIDE HAS DECAY ALONG TOP, UP TO 3" DEEP, SECTION IS 7' LONG. OTHER TIMBERS WEATHERED AND CHECKED.	
7	F	VEGETATION GROWING ALONG CURBS	
10	F	BEAMS SHOWING RUST SCALE ALONG TOP AND BOTTOM FLANGES, AND UP 4"ALONG LOWER WEB SECTIONS. BEAMS HAVE UP TO 1/32"SECTION LOSS TO FLANGE EDGES IN SPOTS.	
10A	NO	NO CURVED GIRDERS	
16	F	DRAINAGE THROUGH DECK.	
52	F	PAINT PEELING AND FLAKING OFF.	
35a	F	CAPS WEATHERED AND CHECKED, SOFTNESS ALONG CAP ENDS.	
35b	F	PILES WEATHERED AND CHECKED WITH DELAM AROUND CHECK CRACKS.	
35c	F	BULKHEAD TIMBERS WEATHERED AND SOFT WITH SCATTERED DECAY AREAS.	
45d	F	VEGETATION HEAVY AROUND OPENINGS.	

Bridge I&A Form 1(82)H State of North Carolina Dept. of Transportation Division of Highways		FIELD INSPECTION REPORT <u>Bridge Inspeccion & Analysis</u>	
Team Leader TERRY MELTON			
Assisted By D.HACKNEY			
Item No.	Grade		
62	YES	SV- 14; TTST- 17	

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 670173

County ORANGE

Date: 08/13/2013

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

MMS Code	Description of Function	Unit	Quantity	Remarks	Est. Cost
2910	Manual Brush and Tree Control	LF	100	VEGETATION HEAVY AROUND OPENINGS	
3316	Maint to Timber Handrail	LF	7	WHEEL GUARD HAS DECAY	
3324	Maint / Repair / Replace Timber Deck Components	SF	840	DECKING TIMBER SHOWING DECAY ALONG ENDS	
3346	Repair / Maintain Timber Wings & Blkhds	SF	500	BULK HEAD TIMBERS HAVE SCATTERED DECAY	
5603	Partial Cleaning and Painting of Structural Steel	SF	300	BEAMS SHOWING RUST SCALE ALONG TOP AND BOTTOM FLANGES	

Key



Priority Maintenance Item



Critical Finding Item



Priority Maintenance Level Not Determined



WEAR SURFACE CRACKING AT TIMBER DECKING BOARD JOINTS



VEGETATION GROWING ON BOTH SIDES OF DECK



WEAR SURFACE CRACKING AT END BENT 1



WHEEL GUARD DECAYED ON EAST SIDE OF DECK



DECAY ON END OF TIMBER DECKING BOARDS THROUGHOUT



DECAY ON END OF TIMBER DECKING BOARDS THROUGHOUT



RUST SCALE ON BOTTOM FLANGE OF BEAM 1 WITH NO SECTION LOSS



RUST SCALE ON BEAMS THROUGHOUT



RUST SCALE ON BEAMS THROUGHOUT



DISCOLORATION ON UNDERSIDE OF DECK

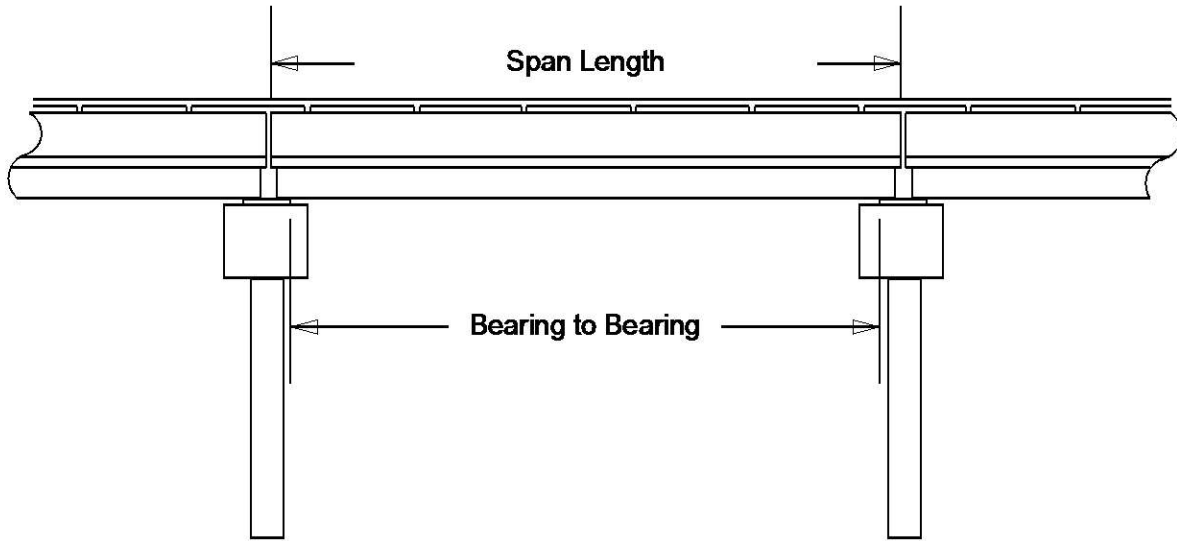


DECAY ON RAIL SUPPORT POST ON EAST SIDE

Structure Data Worksheet

Spans

County: ORANGE Structure No: 670173 Date: 08/13/2013 Inspected By: TFM



Span No	Span Length	Bearing to Bearing	Comments
1	40.5	39.833	NBIS BRIDGE LENGTH = 38.333'
	1.0000		

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 670173 County: ORANGE Date: 08/13/2013 By: TFM

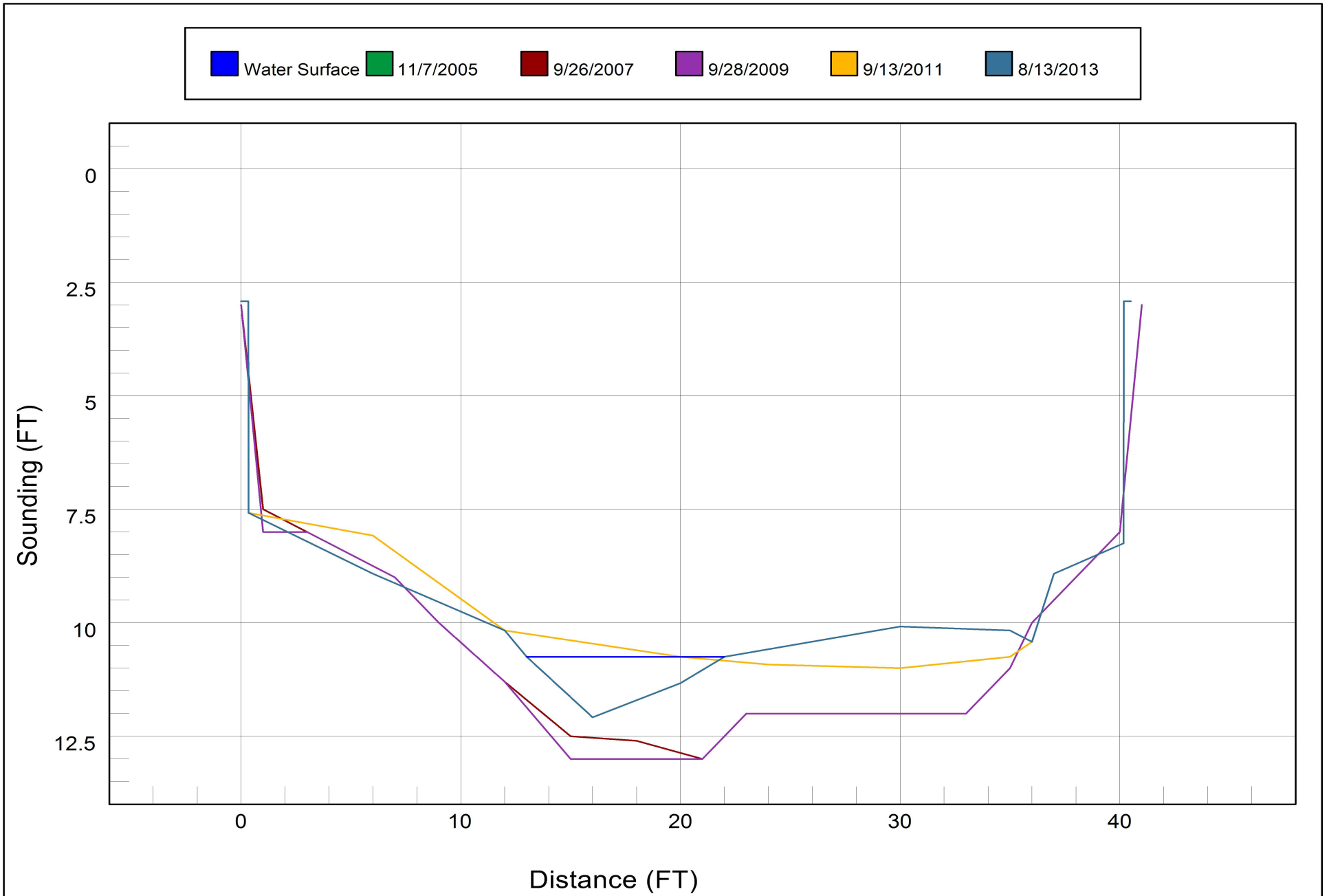
Record sounding from top of rail. Other location if needed: _____

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	2.92	F/F			
0.33	2.92				
0.34	7.58		0.34	8.75	
6	8.92				
12	10.17				
13	10.75	Water Surface/Water Edge (WSWE)			
16	12.083				
20	11.33				
22	10.75	Water Surface/Water Edge (WSWE)			
30	10.083				
35	10.17				
36	10.42				
37	8.92				
40.17	8.25		40.17	9.25	
40.18	2.92				
40.5	2.92	F/F			

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)



Bridge Inspection Field Sketch



Roadway	20ft Wide	2 Paved Lanes	Looking North
Left Shoulder	4ft Wide		4ft Unpaved
Right Shoulder	4ft Wide		4ft Unpaved
Left Guardrail			
Right Guardrail			

MEASUREMENTS VERIFIED BY DH 8/13/13

Title

APPROACH ROADWAY

Description

SOUTH APPROACH, LOOKING NORTH

Bridge No: 670173

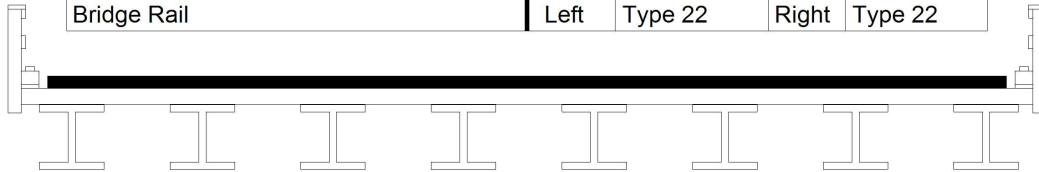
Drawn By: DMR

Date: 09/21/2011

File Name: S0066000687

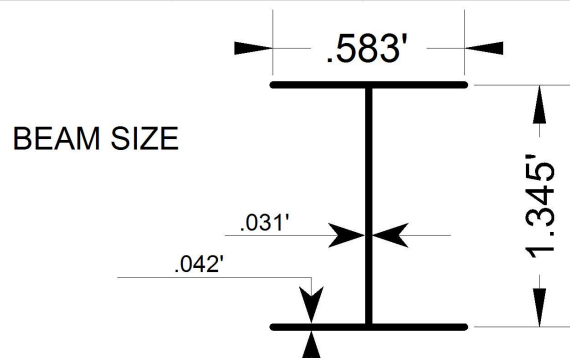
Bridge Inspection Field Sketch

Deck Width/Out to Out	20ft	Between Rails			19.833ft
Clear Roadway	19ft	Wearing Surface			0.25ft
Median Width		Median Height			
Curb Height		Left	0.58ft	Right	0.58ft
Sidewalk Width		Left		Right	
Clear Roadway (Rail to Median)		Left		Right	
Guardrail Width		Left	0.5ft	Right	0.5ft
Top of Rail to Deck/Wearing Surface		Left	2.67ft	Right	2.67ft
Bridge Rail		Left	Type 22	Right	Type 22



Measurements for Span #	1		
Deck Thickness	0.313	Left Overhang	1
Top of Rail to Bottom of Beam	4.83	Right Overhang	1

Beam Number	Beam Type	Spacing	Comments
1	Steel I Beam	2.583ft	
2	Steel I Beam	2.583ft	
3	Steel I Beam	2.583ft	
4	Steel I Beam	2.583ft	
5	Steel I Beam	2.583ft	
6	Steel I Beam	2.583ft	
7	Steel I Beam	2.583ft	
8	Steel I Beam		



.333' X .667' NAILER ON TOP OF BEAMS
DIAPHRAMS: INTERIOR DIAPHRAMS @ 1/3 POINTS

MEASUREMENTS VERIFIED BY DH 8/13/13

Title

TYPICAL SECTION

Description

SPAN 1, LOOKING NORTH

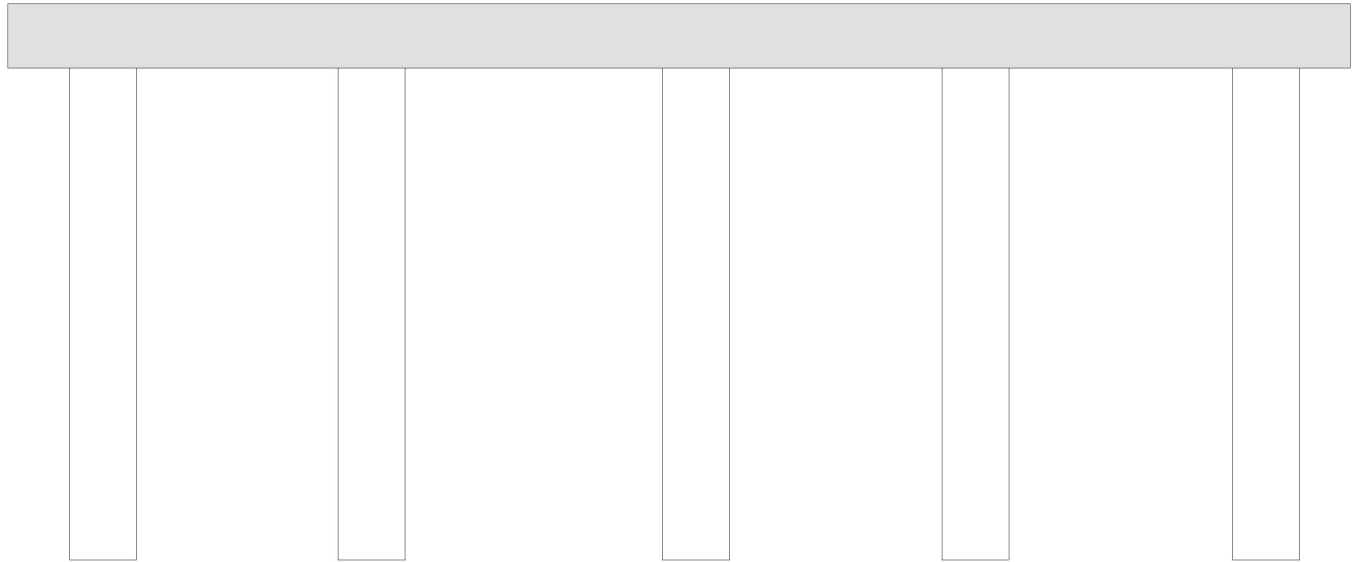
Bridge No: 670173

Drawn By: DMR

Date: 09/21/2011

File Name: S0066000688

Bridge Inspection Field Sketch



Cap Information			Material Timber							
Length	Width	Height	Left Overhang	Right Overhang	Left Beam to End of Cap.	Right Beam to End of Cap.				
20.000 ft.	.833 ft.	.959 ft.	1.417 ft.	1.750 ft.	1.000 ft.	.917 ft.				
Subcap Information			Material							
Length	Width	Height	Left Overhang	Right Overhang	Left Pile to Splice.					
Sill Information			Material							
Length	Width	Height	MEASUREMENTS VERIFIED BY DH 8/13/13							
Pile #	Material	Spacing	Width/Dia.	Height	Length	Orientation	Driven?	Replacement?	Removed?	Collar?
1	Timber	4 ft.	1 ft.			Vertical	No	No	No	No
2	Timber	4.833 ft.	1 ft.			Vertical	No	No	No	No
3	Timber	4.167 ft.	1 ft.			Vertical	No	No	No	No
4	Timber	4.333 ft.	1 ft.			Vertical	No	No	No	No
5	Timber		1 ft.			Vertical	No	No	No	No
Bent/Abutment #: 1			Similar Bents: 2							

Title		Description	
SUBSTRUCTURE ELEVATION		END BENT 1, LOOKING NORTH	
Bridge No: 670173	Drawn By: DMR	Date: 09/21/2011	File Name: S0066000689

Bridge Inspection Field Sketch



SR 1353

END BENT 2

FLOW



END BENT 1



Title
PLAN SKETCH

Description
PLAN VIEW

Bridge No: 670173

Drawn By: DMR

Date: 9/22/2011

File Name: S0342000151



NARROW BRIDGE SIGN



LOOKING NORTH



WEIGHT LIMIT SIGN



LOOKING SOUTH



NORTH END APPROACH



LOOKING SOUTH FROM DECK



LOOKING NORTH FROM DECK



WEAR SURFACE AT END BENT 2



LOOKING UPSTREAM



LOOKING DOWNSTREAM



WEAR SURFACE AT END BENT 1



SOUTH END APPROACH



END BENT 2



LOOKING DOWNSTREAM



LOOKING UPSTREAM



UNDERSIDE OF DECK



END BENT 1



BEARING ON BEAMS



WEST PROFILE



EAST PROFILE