



NC DEPARTMENT OF TRANSPORTATION

ATTENTION:

DIVISION OF HIGHWAYS

STRUCTURE MANAGEMENT UNIT

Structure Safety Report

2 Year Complete Topside and Underwater Element Inspection

COUNTY: CUMBERLAND STRUCTURE NUMBER: 250252 FREQUENCY: 24 MONTHS

FACILITY CARRIED: NC53 MILE POST:

LOCATION: 1.7 MI.E.JCT.SR2228

FEATURE INTERSECTED: BRANCH HARRISON'S

LATITUDE: 34° 51' 45.74" LONGITUDE: 78° 43' 48.06"

DOUBLE 10' X 7'RCBC; 50.5' ALONG CENTERLINE OF CULVERT

SUPERSTRUCTURE: DOUBLE 10'X7'RCBC;50.5'ALONG CENTERLINE CULVERT

SUBSTRUCTURE:

SPANS:

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTION

PRESENT CONDITION: Fair INSPECTION DATE: 12/14/2015

POSTED SV: Not Posted POSTED TTST: Not Posted

OTHER SIGNS PRESENT: WATERPOINT SIGN @ NE CORNER



LOOKING EAST

Sign noticed issued for		Number Required
NO	WEIGHT LIMIT	0
NO	DELINEATORS	0
NO	NARROW BRIDGE	0
NO	ONE LANE BRIDGE	0
NO	LOW CLEARANCE	0

INSPECTED BY
WILLIAM MUELLER

SIGNATURE

ASSISTED BY JAMES TALACEK

Span Element Report

Structure Number: 250252

Inspection Date: 12/14/2015

Span Number 1

Span Length 10 Feet

Number of Sections: 1

Element Number	Parent Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code
241		Reinforced Concrete Culvert	51	0	51	0	0	51	3370

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

Span Number 2

Span Length 10 Feet

Number of Sections: 1

Element Number	Parent Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code
241		Reinforced Concrete Culvert	51	0	51	0	0	51	3370

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

Superstructure Detailed Element Quantities

Structure Number: 250252

Inspection Date: 12/14/2015

Span Number 1

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☒ Culverts and Pipes	1	241	Reinforced Concrete Culvert	51	0	51	0	0	51	3370	☐ Requested

Span Number 2

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
☒ Culverts and Pipes	1	241	Reinforced Concrete Culvert	51	0	51	0	0	51	3370	☐ Requested

Superstructure Element Defect Descriptions

Structure Number: 250252

Inspection Date: 12/14/2015

Span Number 1

Span	1	Culverts and Pipes	1	Component Name: Reinforced Concrete Box Culvert									
Element:	241	Name	Reinforced Concrete Culvert	Qty:	51	Lvl 2:	51	Lvl 3	0	Lvl 4	0	Maint. Qty	51

Defect Description:

COARSE AGGREGATE EXPOSURE TO 1/2", BOTTOM SLAB UP 3'
NW CORNER - FILLET CRACKED H/L - 1/32" X 2' LONG

Span Number 2

Span	2	Culverts and Pipes	1	Component Name: Reinforced Concrete Box Culvert									
Element:	241	Name	Reinforced Concrete Culvert	Qty:	51	Lvl 2:	51	Lvl 3	0	Lvl 4	0	Maint. Qty	51

Defect Description:

COARSE AGGREGATE EXPOSURE TO 1/2", BOTTOM SLAB UP 3'
SOUTHERN HALF OF BARREL HAS SILT FROM BOTTOM SLAB TO W/L, RESULTING IN NO FLOW THROUGH BARREL
AT NORMAL WATER LEVELS

Substructure Detailed Element Quantities

Structure Number: 250252

Inspection Date: 12/14/2015

Element Location	Location Number	Element Number	Element Name	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity	Maint. Quantity	Maint. Code	Priority Maintenance
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Substructure Element Defect Descriptions

Structure Number: 250252

Inspection Date: 12/14/2015

National Bridge and NC Inspection Items

Structure Number: 250252

Inspection Date: 12/14/2015

National Bridge Inventory Items

Item	Grade Scale	Grade
Item 58: Deck	0 - 9 , N	
Item 59: Superstructure	0 - 9 , N	
Item 60: Substructure	0 - 9 , N	
Item 61: Channel and Channel Protection	0 - 9 , N	5
Item 62: Culvert	0 - 9 , N	5
Item 71: Waterway Adequacy	0 - 9 , N	7
Item 72: Approach Roadway Alignment	0 - 9 , N	8

Note: If NBI Inspection Item is not present, code NBI item with "N"

NC SMU Inspection Items

Item	Grade Scale	Grade	Maint. Qty.	Maint. Code
Headwall	G, F, P, or C	G	0	4675
Wingwall	G, F, P, or C	F	80	3350
Scour	G, F, P, or C	F		
Drift	G, F, P, or C	F	100	3366
Estimated Remaining Life	G, F, P, or C	16		

Note: If NC SMU Insepction Item is not present, leave NC SMU item blank

Inspection Information

Item	Grade Scale	Grade
Regulatory Sign Noticed Issued	YES/NO	N
Priority Maintenance Request Submitted	YES/NO	N
Inspection Time	Hours	6
Traffic Control Time	Hours	
Snooper Time	Hours	
Ladder Used	YES/NO	N
Bucket Truck Used	YES/NO	N
Boat Used	YES/NO	N
Other Equipment Used	YES/NO	N

National Bridge and NC SMU Inspection Item Details

Structure Number: 250252

Inspection Date: 12/14/2015

Item	Drainage System	Grade	F	Maint Code	3332	Qty.	16
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Details DRAINS CLOGGED WITH MUD

Item	Drift	Grade	F	Maint Code	3366	Qty.	100
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Details BARREL 2 BLOCKED BY SILT, RESULTING IN NO FLOW AT NORMAL WATER LEVELS

Item	Scour	Grade	F	Maint Code		Qty.	0
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Details BARREL 1 - 1.1' CURTAINWALL EXPOSURE
BARREL 2 - 0.8' CURTAINWALL EXPOSURE
NW WING - 1.1' FOOTING EXPOSURE AT JUNCTION, TAPERING TO 0' AT TOE
NE WING - 0.8' FOOTING EXPOSURE AT JUNCTION, 1' AT C/L TAPERING TO 0' AT TOE

Item	Headwalls	Grade	G	Maint Code	4675	Qty.	0
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Details COARSE AGGREGATE EXPOSED TO 1/8"

Item	Wingwalls	Grade	F	Maint Code	3350	Qty.	80
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Details COARSE AGGREGATE EXPOSED TO 1/2"



EAST APPROACH - TRANSVERSE CRACK TO 1/8"



C/L - LONGITUDINAL CRACK TO 1/16"



PIECE OF CONCRETE PIPE DOWNSTREAM



WINGWALL - COARSE AGGREGATE EXPOSURE TO 1/8"



INTERIOR WALL - COARSE AGRGEGATE EXPOSURE TO 1/8"



BARREL 2 - SILT BUILD-UP IN SOUTHERN HALF



NW CORNER - H/L - 1/32" CRACK AT FILLET X 2' LONG



LOOKING EAST



SOUTH PROFILE



LOOKING SOUTH



LOOKING NORTH



NORTH PROFILE



LOOKING WEST



ROADWAY OVERVIEW

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

Run Date: 05/23/2016

IDENTIFICATION			
(1) STATE NAME -NORTH CAROLINA	BRIDGE	250252	SUFFICIENCY RATING = 88.31
(8) STRUCTURE NUMBER(FEDERAL)	000000000510252		STATUS = Not Deficient
(5) INVENTORY ROUTE (ON/UNDER) - ON	31000530		
(2) STATE HIGHWAY DEPARTMENT DISTRICT	2		
(3) COUNTY CODE 51 (4) PLACE CODE	0		
(6) FEATURE INTERSECTED - BRANCH OF INDIAN CREEK			
(7) FACILITY CARRIED NC53			
(9) LOCATION 1.7 MI. E. JCT. SR2228			
(11)MILEPOINT	0		
(16)LAT 34° 51' 45.74" (17)LONG 78° 43' 48.06"			
(98)BORDER BRIDGE STATE CODE	PCT SHARE		
(99)BORDER BRIDGE STRUCTURE NO			
STRUCTURE TYPE AND MATERIAL			
(43) STRUCTURE TYPE MAIN: Concrete continuous			
TYPE - Culverts (includes frame culverts)	CODE	219	
(44) STRUCTURE TYPE APPR :			
TYPE -	CODE	000	
(45) NUMBER OF SPANS IN MAIN UNIT		2	
(46) NUMBER OF APPROACH SPANS			
(107)DECK STRUCTURE TYPE - N	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		1955	
(106)YEAR RECONSTRUCTED			
(42) TYPE OF SERVICE : ON - Highway			
UNDER - Waterway	CODE	15	
(28) LANES: ON STRUCTURE 2 UNDER STRUCTURE		0	
(29) AVERAGE DAILY TRAFFIC		1000	
(30) YEAR OF ADT 2013 (109) TRUCK ADT PCT		7%	
(19) BYPASS OR DETOUR LENGTH		8 MI	
GEOMETRIC DATA			
(48) LENGTH OF MAXIMUM SPAN		10 FT	
(49) STRUCTURE LENGTH		21 FT	
(50)CURB OR SIDEWALK: LEFT 0 FT RIGHT		0 FT	
(51) BRIDGE ROADWAY WIDTH CURB TO CURB		0 FT	
(52) DECK WIDTH OUT TO OUT		0 FT	
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)		25 FT	
(33) BRIDGE MEDIAN - No Median	CODE	0	
(34) SKEW 0° (35) STRUCTURE FLARED		0	
(10) INVENTORY ROUTE MIN VERT CLEAR		999.9 FT	
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR		25 FT	
(53) MIN VERT CLEAR OVER BRIDGE RDWY		999.9 FT	
(54) MIN VERT UNDERCLEAR REF Not a Highway or Railroad		0 FT	
(55) MIN LAT UNDERCLEAR RT REF Not a Highway or Railroad		000 FT	
(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	
CLASSIFICATION			
(112)NBIS BRIDGE SYSTEM -			YES
(104)HIGHWAY SYSTEM Is not on NHS			0
(26) FUNCTIONAL CLASS - Major Collector			07
(100)STRAHNET HIGHWAY - Not a STRAHNET Route			0
(101)PARALLEL STRUCTURE - No Parallel Structure			N
(102)DIRECTION OF TRAFFIC - 2-way Traffic			2
(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			
(58) DECK			N
(59) SUPERSTRUCTURE			N
(60) SUBSTRUCTURE			N
(61) CHANNEL & CHANNEL PROTECTION			5
(62) CULVERTS			5
LOAD RATING AND POSTING			
(31) DESIGN LOAD HS 20 + MOD			6
(63) OPERATING RATING METHOD - Field Evaluation and Document			0
(64) OPERATING RATING - HS-26			46
(65) INVENTORY RATING METHOD - Field Evaluation and Document			0
(66) INVENTORY RATING - HS-20			36
(70) BRIDGE POSTING - No Posting Required			5
(41) STRUCTURE OPEN, POSTED ,OR CLOSED DESCRIPTION - Open, No Restriction			A
APPRAISAL			
(67) STRUCTURAL EVALUATION			5
(68) DECK GEOMETRY			N
(69) UNDERCLEARANCES,VERTI & HORIZ			N
(71) WATERWAY ADEQUACY			7
(72) APPROACH ROADWAY ALIGNMENT			8
(36) TRAFFIC SAFETY FEATURES			ONNN
(113)SCOUR CRITICAL BRIDGES			8
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 2000 (115) YEAR FUTURE ADT 2025			
INSPECTIONS			
(90) INSPECTION DATE			12/14/2015
(92) CRITICAL FEATURE INSPECTION :			(93) CFI DATE
A) FRACTURE CRIT DETAIL - NO			A)
B) UNDERWATER INSP - YES 24Mo			B) 12/14/2015
C) OTHER SPECIAL INSP NO			C)
SCOUR			

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 05/23/2016

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
CUMBERLAND	6	2	250252	21	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
NC53	BRANCH OF INDIAN CREEK

LOCATED :	BRIDGE NAME :	CITY :
1.7 MI. E. JCT. SR2228		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
07	FA	NFA	1000 2013	LT 0 RT 0

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1955	SHPWC			HS 20 + MOD

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		13 FT		4		FT

SUPERSTRUCTURE : DOUBLE 10'X7' RCBC; 50.5' ALONG CENTERLINE OF CULVERT

SUBSTRUCTURE :

SPANS :

BEAMS OR GIRDERS :

FLOOR :	ENCROACHMENT :	DECK (OUT TO OUT) :
		0 FT

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

VERT.CL.OVER :
999.9 FT

INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :		DATE
HS-20	HS-26	RCBC	SV	TTST	

SYSTEM :	GREEN LINE ROUTE :
Primary N.C. Route	N

UNDER ROUTES AND CLEARANCES

REMARKS :

Culvert Segment Details

Barrel 1

Has Bands?: No

Distance From Upstream End to Edge of Pavement: 13.5ft

[illegible]

Barrel 2

Has Bands?: No

Distance From Upstream End to Edge of Pavement: 13.5ft

[illegible]

Bridge Inspection Field Sketch



Roadway	22.3ft Wide	2 Paved Lanes	Looking East
Left Shoulder	6.7ft Wide	1.2ft Paved	5.5ft Unpaved
Right Shoulder	6.5ft Wide	1.5ft Paved	5ft Unpaved
Left Guardrail			
Right Guardrail			

VERIFIED 12/14/15

Title

APPROACH ROADWAY

Description

LOOKING NORTH

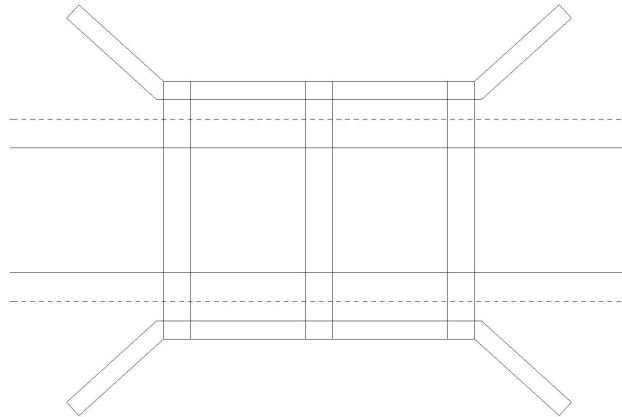
Bridge No: 250252

Drawn By: BC

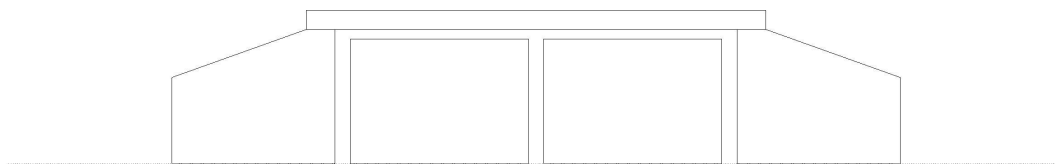
Date: 09/15/2008

File Name: S0038000323

Bridge Inspection Field Sketch



Crown of Roadway



Bed

Looking Downstream

Number of Barrels	Skew	Distance From Crown to Bed	Fill Depth
2	90°	13ft	6ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway	
50.5ft		20.7ft	

Barrel #	Width	Height	Wall Thickness	Scour at Inlet	Scour at Outlet
1	10ft	7ft	0.5ft	1.1' C.W. EXPOSED	0
2	10ft	7ft	0.5ft	0.8' C.W. EXPOSED	0

EOP LEFT - 13.5'

EOP RIGHT - 13'

SL - 55MPH

NO GUARDRAILS

Title
DOUBLE RCBC

Description
RCBC Culvert Diagram

Bridge No: 250252

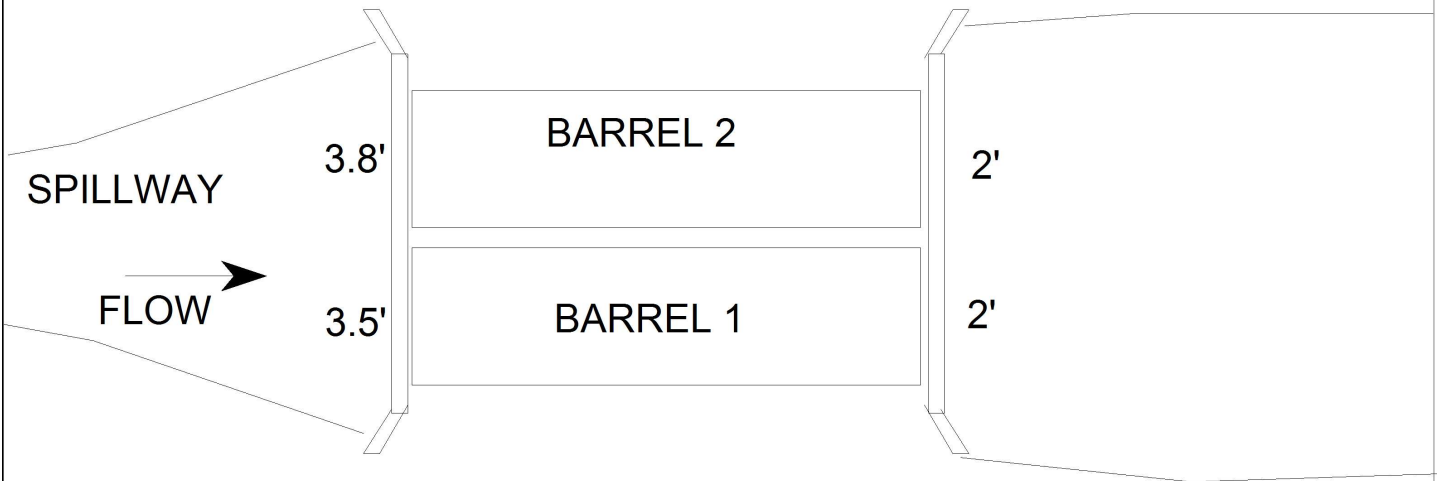
Drawn By: CAM

Date: 9/15/2008

File Name: S0430000058

Bridge Inspection Field Sketch

NORTH
←



W/S TO TOP OF NORTH HEADWALL - 6.2'

Title

PLAN VIEW

Description

CHANNEL OVERVIEW

Bridge No: 250252

Drawn By: WRM

Date: 12/14/2015

File Name: S0174013153