



NC DEPARTMENT OF TRANSPORTATION

ATTENTION:

DIVISION OF HIGHWAYS

STRUCTURE MANAGEMENT UNIT

Structure Safety Report

Routine Element Inspection

COUNTY: COLUMBUS STRUCTURE NUMBER: 230389 FREQUENCY: 24 MONTHSFACILITY CARRIED: US701 MILE POST: _____LOCATION: 500"N.JCT.SR1005FEATURE INTERSECTED: PRONG CREEKLATITUDE: 34° 26' 0.59" LONGITUDE: 78° 43' 52.72"SUPERSTRUCTURE: TRIPLE 8"X9"RCBC;50"ALONG CENTERLINE CULVERT

SUBSTRUCTURE: _____

SPANS: _____

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTIONPRESENT CONDITION: Fair INSPECTION DATE: 06/23/2015POSTED SV: Not Posted POSTED TTST: Not PostedOTHER SIGNS PRESENT: 4 DELINEATORS

LOOKING NORTH

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

INSPECTED BY Ray L. Kisner	SIGNATURE <i>Ray L. Kisner</i>	ASSISTED BY R.D.Heath
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Span Element Report

Structure Number: 230389

Inspection Date: 06/23/2015

Span Number 1

Span Length 8 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	50	0	48	2	0	50	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 8 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	50	0	50	0	0	50	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 3

Span Length 8 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	50	0	50	0	0	50	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: 230389

Inspection Date: 06/23/2015

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	50	0	48	2	0	50	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	50	0	50	0	0	50	3370	☐ Requested

Span Number 3

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	50	0	50	0	0	50	3370	☐ Requested

Superstructure Element Defect Descriptions

Structure Number: 230389

Inspection Date: 06/23/2015

Span Number 1

Span	1	Culverts and Pipes	1	Component Name:		Reinforced Concrete Box Culvert							
Element:	241	Name	Reinforced Concrete Culvert	Qty:	50	Lvl 2:	48	Lvl 3	2	Lvl 4	0	Maint. Qty	50

Defect Description:

2 Feet of Delamination/Spall/Patched Area: Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review. SPALL 14" LONG X 6" HIGH X 2" DEEP IN SOUTH WALL AT 5' FROM EAST END

2 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND PATCH IN TOP SLAB AT 10' FROM EAST END

46 Feet of Abrasion/Wear (PSC/RC): Abrasion or wearing has exposed coarse aggregate but the aggregate remains secure in the concrete. EXPOSED AGGREGATE IN WALLS 3' HIGH

Span Number 2

Span	2	Culverts and Pipes	1	Component Name:		Reinforced Concrete Box Culvert							
Element:	241	Name	Reinforced Concrete Culvert	Qty:	50	Lvl 2:	50	Lvl 3	0	Lvl 4	0	Maint. Qty	50

Defect Description:

10 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND REPAIRS IN TOP SLAB AT 15' FROM EAST END

40 Feet of Abrasion/Wear (PSC/RC): Abrasion or wearing has exposed coarse aggregate but the aggregate remains secure in the concrete. EXPOSED AGGREGATE IN WALLS 3' HIGH

Span Number 3

Span	3	Culverts and Pipes	1	Component Name:		Reinforced Concrete Box Culvert							
Element:	241	Name	Reinforced Concrete Culvert	Qty:	50	Lvl 2:	50	Lvl 3	0	Lvl 4	0	Maint. Qty	50

Defect Description:

3 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND REPAIRS IN TOP SLAB AT EAST END

47 Feet of Abrasion/Wear (PSC/RC): Abrasion or wearing has exposed coarse aggregate but the aggregate remains secure in the concrete. EXPOSED AGGREGATE IN WALLS 3' HIGH

Substructure Detailed Element Quantities

Structure Number: 230389

Inspection Date: 06/23/2015

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: 230389

Inspection Date: 06/23/2015

National Bridge and NC Inspection Items

Structure Number: 230389

Inspection Date: 06/23/2015

National Bridge Inventory Items

Item	Grade Scale	Grade
Item 58: Deck	0 - 9 , N	N
Item 59: Superstructure	0 - 9 , N	N
Item 60: Substructure	0 - 9 , N	N
Item 61: Channel and Channel Protection	0 - 9 , N	7
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	320	3350
Scour	G, F, P, or C	G		
Drift	G, F, P, or C	F	20	3366
Estimated Remaining Life	G, F, P, or C	10		

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	4
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	Y

National Bridge and NC SMU Inspection Item Details

Structure Number: 230389

Inspection Date: 06/23/2015

Item	Other Equipment Used	Grade	Y	Maint Code		Qty.	0
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Details BOOTS

Item	Drift	Grade	F	Maint Code	3366	Qty.	20
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Details DRIFT AT WEST END 20 HOURS

Item	Wingwalls	Grade	F	Maint Code	3350	Qty.	320
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Details EXPOSED AGGREGATE 20' LONG X 4' HIGH IN WINGWALL AT SOUTHWEST CORNER, SIMILAR AT ALL CORNERS
TOTAL 320 SQ. FT.



DRIFT AT WEST END 20 HOURS



EXPOSED AGGREGATE 20' LONG X 4' HIGH IN WINGWALL AT SOUTHWEST CORNER, SIMILAR AT ALL CORNERS TOTAL 320 SQ. FT.



Barrel 3 Section 1: 3 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND REPAIRS IN TOP SLAB AT EAST END



Barrel 2 Section 1: 10 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND REPAIRS IN TOP SLAB AT 15' FROM EAST END



EXPOSED AGGREGATE IN WALLS 3' HIGH



Barrel 1 Section 1: 2 Feet of Delamination/Spall/Patched Area: Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review. SPALL 14" LONG X 6" HIGH X 2" DEEP IN SOUTH WALL AT 5' FROM EAST END



Barrel 1 Section 1: 2 Feet of Delamination/Spall/Patched Area: Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound. SOUND PATCH IN TOP SLAB AT 10' FROM EAST END



LOOKING NORTH



UPSTREAM WEST



DOWNSTREAM EAST



LOOKING SOUTH



WEST PROFILE , INLET END



EAST PROFILE , OUTLET END

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

Run Date: 12/03/2015

IDENTIFICATION					
(1) STATE NAME -NORTH CAROLINA	BRIDGE	230389		SUFFICIENCY RATING =	88.12
(8) STRUCTURE NUMBER(FEDERAL)		00000000470389		STATUS =	Not Deficient
(5) INVENTORY ROUTE (ON/UNDER) - ON		21007010			
(2) STATE HIGHWAY DEPARTMENT DISTRICT		3			
(3) COUNTY CODE	47	(4) PLACE CODE	0		
(6) FEATURE INTERSECTED -	WESTERN PRONG CREEK				
(7) FACILITY CARRIED	US701				
(9) LOCATION	500'N.JCT.SR1005				
(11)MILEPOINT		0			
(16)LAT	34° 26' 0.59"	(17)LONG	78° 43' 52.72"		
(98)BORDER BRIDGE STATE CODE		PCT SHARE			
(99)BORDER BRIDGE STRUCTURE NO					
STRUCTURE TYPE AND MATERIAL				CLASSIFICATION	
(43) STRUCTURE TYPE MAIN:	Concrete continuous			(112)NBIS BRIDGE SYSTEM -	YES
TYPE -	Culverts (includes frame culverts)	CODE	219	(104)HIGHWAY SYSTEM	Is not on NHS 0
(44) STRUCTURE TYPE APPR :				(26) FUNCTIONAL CLASS -	Minor Arterial 06
TYPE -		CODE	000	(100)STRAHNET HIGHWAY -	Not a STRAHNET Route 0
(45) NUMBER OF SPANS IN MAIN UNIT			3	(101)PARALLEL STRUCTURE -	No Parallel Structure N
(46) NUMBER OF APPROACH SPANS				(102)DIRECTION OF TRAFFIC -	2-way Traffic 2
(107)DECK STRUCTURE TYPE -	N	CODE		(103)TEMPORARY STRUCTURE -	
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(110)DESIGNATED NATIONAL NETWORK -	On the National Network 1
(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	N
				(59) SUPERSTRUCTURE	N
				(60) SUBSTRUCTURE	N
				(61) CHANNEL & CHANNEL PROTECTION	7
				(62) CULVERTS	5
				LOAD RATING AND POSTING	
				(31) DESIGN LOAD	HS 20 5
				(63) OPERATING RATING METHOD -	Load Factor 1
				(64) OPERATING RATING -	HS-26 46
				(65) INVENTORY RATING METHOD -	Load Factor 1
				(66) INVENTORY RATING -	HS-20 36
				(70) BRIDGE POSTING -	No Posting Required 5
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED	A
				DESCRIPTION -	Open, No Restriction
				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	6800
				(115) YEAR FUTURE ADT	2025
				INSPECTIONS	
				(90) INSPECTION DATE	06/23/2015
				(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: 12/03/2015

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
COLUMBUS	6	3	230389	25	FEET

ROUTE CARRIED :	FEATURE INTERSECTED :
US701	WESTERN PRONG CREEK

LOCATED :	BRIDGE NAME :	CITY :
500'N.JCT.SR1005		

FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :
06	FA	NFA	3400 2013	LT 0 RT 0

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1931	SHPWC			HS 20

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

NAVIGATION :			HT. CRN. TO BED :		WATER DEPTH :		
VC 0 FT	HC 0 FT		12 FT		1		FT

SUPERSTRUCTURE : TRIPLE 8'X9'RCBC;50'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 U.S. Route	N

UNDER ROUTES AND CLEARANCES

REMARKS :

Bridge Inspection Field Sketch

(HIGHWAY US 701 NORTH)



Roadway	22.687ft Wide	2 Paved Lanes	Looking North
Left Shoulder	5.917ft Wide	2.917ft Paved	3ft Unpaved
Right Shoulder	10.667ft Wide	2.667ft Paved	8ft Unpaved
Left Guardrail			
Right Guardrail			

Title
APPROACH ROADWAY

Description
LOOKING NORTH

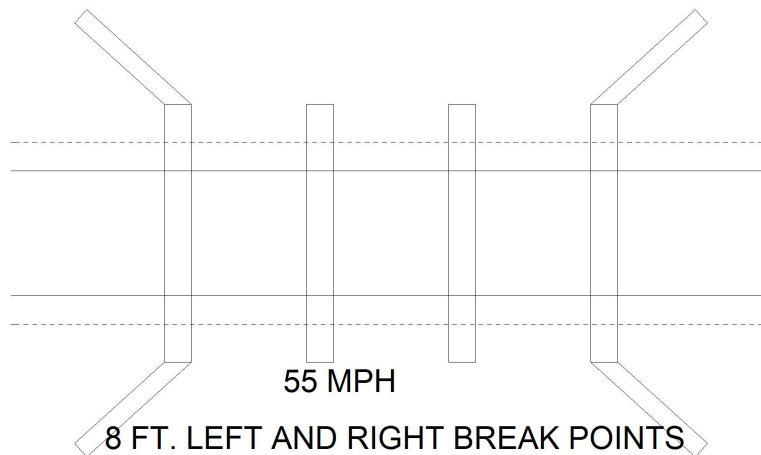
Bridge No: 230389

Drawn By: RLK

Date: 6/23/2015

File Name: S0222000732

Bridge Inspection Field Sketch



Crown of Roadway

11 FT. LEFT AWS TO CULVERT

11 FT. RIGHT AWS TO CULVERT



Bed

Number of Barrels	Skew	Distance From Crown to Bed
3	90°	12ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway
50ft		25ft

Barrel #	Width	Height	Wall Thickness	Scour at Inlet	Scour at Outlet	Distance From Previous Pipe
1	8'	9'	6"	0	0	
2	8'	9'	6"	0	0	
3	8'	9'		9"	0	

MEASUREMENTS VERIFIED BY RLK 6/21/11
 MEASUREMENTS VERIFIED BY RLK 6/24/13
 MEASUREMENTS VERIFIED BY RLK 6/23/15

THERE IS 6" OF WATER IN ALL BARRELS (6/23/15)

Title		Description	
RCBC		TRIPLE BARREL CULVERT	
Bridge No:	230389	Drawn By:	VWW
Date:	05/09/2008	File Name:	S0278000362