



NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 STRUCTURE MANAGEMENT UNIT

ATTENTION: **PRIORITY MAINT - DRIFT**

Structure Safety Report

Routine Element Inspection

COUNTY: GASTON STRUCTURE NUMBER: 350124 FREQUENCY: 24 MONTHS

FACILITY CARRIED: I85 MILE POST: _____

LOCATION: 0.1 MI. N. JCT. US321

FEATURE INTERSECTED: CREEK

LATITUDE: 35° 16' 59.53" LONGITUDE: 81° 11' 12.21"

SUPERSTRUCTURE: TRIPLE 8"X9"RC BOX CULVERT, 300'0 ALONG CENTERLINE CULVERT

SUBSTRUCTURE: EXTERIOR WALLS:8 1/2 TO 10 1/2, INTERIOR WALLS:7

SPANS: TOP SLAB:1"2 1/2 TO 1"7, BOTTOM SLAB:1"2 1/2 TO 1"8

FRACTURE CRITICAL TEMPORARY SHORING SCOUR CRITICAL SCOUR PLAN OF ACTION

PRESENT CONDITION: Good INSPECTION DATE: 10/06/2014

POSTED SV: Not Posted POSTED TTST: Not Posted

OTHER SIGNS PRESENT: NONE



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>

SOUTH APPROACH

INSPECTED BY DEREK RICKUS	SIGNATURE <i>Derek Rickus</i>	ASSISTED BY ERIC PATTERSON
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Span Element Report

Structure Number: 350124

Inspection Date: 10/06/2014

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	333	333	0	0	0	0	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	333	333	0	0	0	0	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	333	333	0	0	0	0	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: 350124

Inspection Date: 10/06/2014

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
<input checked="" type="checkbox"/> Culverts and Pipes	1	241	Reinforced Concrete Culvert	316	305	0	11	0	11	3370	<input type="checkbox"/> Requested
<input type="checkbox"/> Culverts and Pipes	2	241	Reinforced Concrete Culvert	17	17	0	0	0	0	3370	<input type="checkbox"/> 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
<input checked="" type="checkbox"/> Culverts and Pipes	1	241	Reinforced Concrete Culvert	316	304	0	12	0	12	3370	<input type="checkbox"/> Requested
<input type="checkbox"/> Culverts and Pipes	2	241	Reinforced Concrete Culvert	17	17	0	0	0	0	3370	<input type="checkbox"/> 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
<input checked="" type="checkbox"/> Culverts and Pipes	1	241	Reinforced Concrete Culvert	316	308	0	8	0	8	3370	<input type="checkbox"/> Requested
<input type="checkbox"/> Culverts and Pipes	2	241	Reinforced Concrete Culvert	17	17	0	0	0	0	3370	<input type="checkbox"/> Requested

Superstructure Element Defect Descriptions

Structure Number: 350124

Inspection Date: 10/06/2014

Span Number 1

Span	1	Culverts and Pipes	1	Component Name:	Reinforced Concrete Box Culvert							
Element: 241	Name	Reinforced Concrete Culvert	Qty:	316	Lvl 2:	0	Lvl 3:	11	Lvl 4:	0	Maint. Qty:	11

Defect Description:

1 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. ALONG BOTH WALLS AND TOP SLAB; RESTEEL EXPOSED IN TOP SLAB.

10 Feet of Cracking (RC and Other): Width greater than 0.05 in. or spacing of less than 1 ft.

Span Number 2

Span	2	Culverts and Pipes	1	Component Name:	Reinforced Concrete Box Culvert							
Element: 241	Name	Reinforced Concrete Culvert	Qty:	316	Lvl 2:	0	Lvl 3:	12	Lvl 4:	0	Maint. Qty:	12

Defect Description:

12 Feet of Cracking (RC and Other): Width greater than 0.05 in. or spacing of less than 1 ft.

Span Number 3

Span	3	Culverts and Pipes	1	Component Name:	Reinforced Concrete Box Culvert							
Element: 241	Name	Reinforced Concrete Culvert	Qty:	316	Lvl 2:	0	Lvl 3:	8	Lvl 4:	0	Maint. Qty:	8

Defect Description:

8 Feet of Cracking (RC and Other): Width greater than 0.05 in. or spacing of less than 1 ft.

Substructure Detailed Element Quantities

Structure Number: 350124

Inspection Date: 10/06/2014

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: 350124

Inspection Date: 10/06/2014

National Bridge and NC Inspection Items

Structure Number: 350124

Inspection Date: 10/06/2014

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	7
Item 62: Culvert	0 - 9 , N	7
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	G	0	3350
Scour	G, F, P, or C	G		
Drift	G, F, P, or C	FF	240	3366
Estimated Remaining Life	G, F, P, or C	40		

Note: If NC SMU Inspection 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	Y
Inspection Time	Hours	5
Traffic Control Time	Hours	0
Snooper Time	Hours	0
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: 350124

Inspection Date: 10/06/2014

Item	Approach Roadway Alignment - Item 72	Grade	8	Maint Code		Qty.	0
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Details LEFT SHOULDER = 8'
RIGHT SHOULDER = 10.75'
POSTED SPEED LIMIT = 60MPH

Item	Drift	Grade	<i>FF</i>	Maint Code	3366	Qty.	<i>640</i>
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Details DRIFT COLLECTED ACROSS UPSTREAM END OF BARRELS 2&3, APPROX 14'L X 3'H X 3'W.

SEDIMENT COLLECTED IN BARREL 3, FULL LENGTH, UP TO 5'D.

VEGETATION COLLECTED ALONG HEADWALLS AND WINGWALLS AT UPSTREAM AND DOWNSTREAM ENDS.

Item	Wingwalls	Grade	G	Maint Code	3350	Qty.	0
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Details WINGWALLS ARE IN GOOD CONDITION.



DRIFT COLLECTED ACROSS BARRELS 2&3, UPSTREAM END



VEGETATION ALONG HEADWALL AND WINGWALLS AT UPSTREAM END



SEDIMENT COLLECTED IN BARREL 3, FULL LENGTH, UP TO 4'D



VEGETATION GROWING ALONG HEADWALL AND WINGWALLS, DOWNSTREAM END



UPSTREAM



LOOKING UPSTREAM



LOOKING DOWNSTREAM



DOWNSTREAM



SOUTH APPROACH



NORTH APPROACH

IDENTIFICATION				CLASSIFICATION			
(1) STATE NAME -NORTH CAROLINA	BRIDGE	350124		SUFFICIENCY RATING =			91.78
(8) STRUCTURE NUMBER(FEDERAL)		00000000710124		STATUS =	Not Deficient		
(5) INVENTORY ROUTE (ON/UNDER) - ON		11000850					
(2) STATE HIGHWAY DEPARTMENT DISTRICT		1					
(3) COUNTY CODE	71	(4) PLACE CODE	25580	(112)NBIS BRIDGE SYSTEM -			YES
(6) FEATURE INTERSECTED -	UT TO LONG CREEK			(104)HIGHWAY SYSTEM	Is on the NHS		1
(7) FACILITY CARRIED	I85			(26) FUNCTIONAL CLASS -	Arterial - Interstate		11
(9) LOCATION	0.1 MI. N. JCT. US321			(100)STRAHNET HIGHWAY -	Interstate STRAHNET Route		1
(11)MILEPOINT		17.1		(101)PARALLEL STRUCTURE -	No Parallel Structure		N
(16)LAT	35° 16' 59.53"	(17)LONG	81° 11' 12.21"	(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 -	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
STRUCTURE TYPE AND MATERIAL				CONDITION			
(43) STRUCTURE TYPE MAIN:	Concrete continuous			(58) DECK			N
TYPE -	Culverts (includes frame culverts)	CODE	219	(59) SUPERSTRUCTURE			N
(44) STRUCTURE TYPE APPR :				(60) SUBSTRUCTURE			N
TYPE -		CODE	000	(61) CHANNEL & CHANNEL PROTECTION			7
(45) NUMBER OF SPANS IN MAIN UNIT			3	(62) CULVERTS			7
(46) NUMBER OF APPROACH SPANS				LOAD RATING AND POSTING			
(107)DECK STRUCTURE TYPE -	N	CODE		(31) DESIGN LOAD	HS 20 + MOD		6
(108)WEARING SURFACE / PROTECTIVE SYSTEM :				(63) OPERATING RATING METHOD -	No Rating Analysis or Evaluatic		5
(A) TYPE OF WEARING SURFACE -		CODE		(64) OPERATING RATING -	HS-26		46
(B) TYPE OF MEMBRANE -		CODE		(65) INVENTORY RATING METHOD -	No Rating Analysis or Evaluatic		5
(C) TYPE OF DECK PROTECTION -		CODE		(66) INVENTORY RATING -	HS-20		36
				(70) BRIDGE POSTING -	No Posting Required		5
				(41) STRUCTURE OPEN, POSTED ,OR CLOSED			A
				DESCRIPTION -	Open, No Restriction		
AGE AND SERVICE				APPRAISAL			
(27) YEAR BUILT			1962	(67) STRUCTURAL EVALUATION			7
(106)YEAR RECONSTRUCTED			1995	(68) DECK GEOMETRY			N
(42) TYPE OF SERVICE : ON -	Highway			(69) UNDERCLEARANCES,VERTI & HORIZ			N
UNDER -	Waterway	CODE	15	(71) WATERWAY ADEQUACY			7
(28) LANES: ON STRUCTURE	7	UNDER STRUCTURE	0	(72) APPROACH ROADWAY ALIGNMENT			8
(29) AVERAGE DAILY TRAFFIC			83000	(36) TRAFFIC SAFETY FEATURES			NNNN
(30) YEAR OF ADT	2013	(109) TRUCK ADT PCT	16%	(113)SCOUR CRITICAL BRIDGES			8
(19) BYPASS OR DETOUR LENGTH			1 MI	PROPOSED IMPROVEMENTS			
GEOMETRIC DATA				(75) TYPE OF WORK -		CODE	
(48) LENGTH OF MAXIMUM SPAN			8 FT	(76) LENGTH OF STRUCTURE IMPROVEMENT			
(49) STRUCTURE LENGTH			27 FT	(94) BRIDGE IMPROVEMENT COST			
(50)CURB OR SIDEWALK: LEFT	0 FT	RIGHT	0 FT	(95) ROADWAY IMPROVEMENT COST			
(51) BRIDGE ROADWAY WIDTH CURB TO CURB			0 FT	(96) TOTAL PROJECT COST			
(52) DECK WIDTH OUT TO OUT			0 FT	(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)			123 FT	(114)FUTURE ADT	166000	(115) YEAR FUTURE ADT	2025
(33) BRIDGE MEDIAN -	No Median	CODE	2	INSPECTIONS			
(34) SKEW	20°	(35) STRUCTURE FLARED	0	(90) INSPECTION DATE			10/06/2014
(10) INVENTORY ROUTE MIN VERT CLEAR			999.9 FT	(92) CRITICAL FEATURE INSPECTION :		(93) CFI DATE	
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			99.9 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	(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: 02/04/2015

COUNTY : GASTON DIVISION : 12 DISTRICT : 1 STRUCTURE NUMBER : 350124 LENGTH : 27 FEET

ROUTE CARRIED : I85 FEATURE INTERSECTED : UT TO LONG CREEK

LOCATED : 0.1 MI. N. JCT. US321 BRIDGE NAME : CITY : GASTONIA

FUNC. CLASS : 11 SYST.ON : FA SYST.UNDER : NFA ADT & YR : 83000 2013 RAIL TYPE : LT 0 RT 0

BUILT : 1962 BY : SHC PROJ : 8.16316 FED.AID PROJ : IM-NHF-85-1(DESIGN LOAD : HS 20 + MOD

REHAB : 1995 BY : DOH PROJ : 8.T810703 ALIGNMENT : TAN SKEW : 70 LANES : ON 7 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 60 FT WATER DEPTH : 1 FT

SUPERSTRUCTURE : TRIPLE 8'X9'RC BOX CULVERT; 300' ALONG CENTERLINE CULVERT

SUBSTRUCTURE :

SPANS :

BEAMS OR GIRDERS :

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

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

VERT.CL.OVER : 999.9 FT

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

SYSTEM : Primary Interstate GREEN LINE ROUTE : Y

UNDER ROUTES AND CLEARANCES

REMARKS :

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 350124

County GASTON

Date:

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

MMS Code	Description of Function	Unit	Quantity	Remarks	Est. Cost
3366	Drift and Debris Removal	HR	24 TSC 2/2/15	DRIFT ACROSS BARRELS 2&3, APPROX 14'L X 3'H X 3'W	

Key

 Priority Maintenance Item

 Critical Finding Item

 Priority Maintenance Level Not Determined

BRIDGE INSPECTOR'S RECOMMENDATION FOR PRIORITY MAINTENANCE REPAIRS

Bridge: 350124 County GASTON

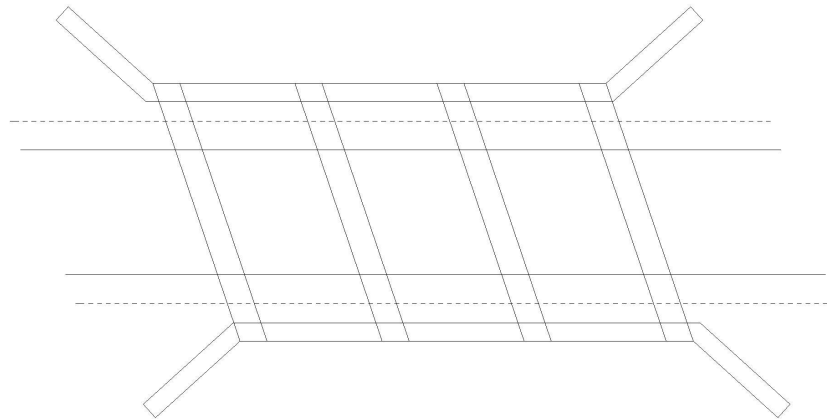
THE FOLLOWING MAINTENANCE ITEMS HAVE BEEN SUBMITTED IN CONJUNCTION WITH A PRIORITY MAINTENANCE REQUEST

MMS Code	MMS Description	Quantity
3366	Drift and Debris Removal	24 HR
Location:		
RCBC Culvert	Bent/Span No. 2	DRIFT ACROSS BARRELS 2&3, UPSTREAM END
Priority Level	Status	
Priority Maintenance	SIA Updates in Process	
Submitted Date:	Submitted By:	Assisted By:
10/07/2014	DEREK RICKUS	ERIC PATTERSON
Details		
DRIFT ACROSS BARRELS 2&3, APPROX 14'L X 3'H X 3'W		



DRIFT ACROSS BARRELS 2&3, APPROX 14'L X 3'H X 3'W

Bridge Inspection Field Sketch



Crown of Roadway



Bed

Number of Barrels	Skew	Distance From Crown to Bed
3	70°	60ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway
300ft		27.167ft

Barrel #	Width	Height	Wall Thickness	Scour at Inlet	Scour at Outlet	Distance From Previous Pipe
1	8.0'	9.0'	0.625	No	No	
2	8.0'	9.0	0.625	No	No	
3	8.0'	9.0		No	No	

VERIFIED BY DEREK RICKUS ON 10/6/2014

Title

Culvert dimensions

Description

Plan and profile

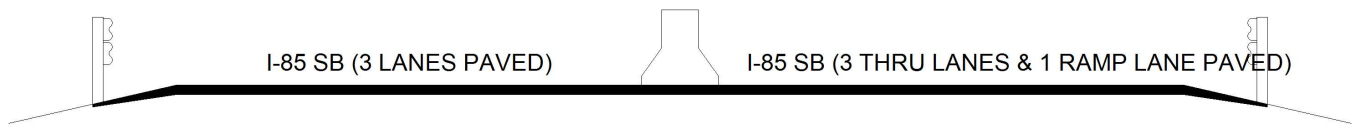
Bridge No: 350124

Drawn By: DCR

Date: 9/2/08

File Name: S0146030628

Bridge Inspection Field Sketch



SECTION OVER CULVERT

Left Lanes			
Roadway	36ft Wide	3 Paved Lanes	South Bound
Left Shoulder	10.333ft Wide	10.333ft Paved	
Right Shoulder	10.75ft Wide	10.75ft Paved	
Left Guardrail			
Right Guardrail	10.75ft from road		
Median	3ft Wide	5ft High	
Right Lanes			
Roadway	48ft Wide	4 Paved Lanes	North Bound
Left Shoulder	10.333ft Wide	10.333ft Paved	
Right Shoulder	8ft Wide	8ft Paved	
Left Guardrail			
Right Guardrail	8ft from road		

SPEED LIMIT = POSTED 60MPH

VERIFIED BY DEREK RICKUS ON 10/6/2014

Title

APPROACH ROADWAY

Description

LOOKING NORTH

Bridge No: 350124

Drawn By: DCR

Date: 9/2/08

File Name: S0146030638