NC DEPARTMENT OF TRANSPORTATION ATTENTION:
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

Structure Safety Report

Routine Element Inspection

COUNTY: GASTON STRUCTURE NUMBER: 350316 FREQUENCY: 24 MONTHS

FACILITY CARRIED: I85 MILE POST:

LOCATION: 0.5 MI. S. JCT. US321

FEATURE INTERSECTED: CREEK

LATITUDE: 35° 17' 8.65" LONGITUDE: 81° 11' 45.1"

SUPERSTRUCTURE: TRIPLE 8"X9"RC BOX CULVERT,166"9 ALONG CENTERLINE CULVERT

SUBSTRUCTURE:

SPANS:

☐ 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
NO	WEIGHT LIMIT	0
NO	DELINEATORS	0
NO	NARROW BRIDGE	0
NO	ONE LANE BRIDGE	0
NO	LOW CLEARANCE	0

WEST APPROACH

INSPECTED BY	SIGNATURE	ASSISTED BY
DEREK RICKUS		ERIC PATTERSON

Span Element Report

Structure Number: 350316 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	181	181	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	181	181	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	181	181	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 Quantites

Structure Number: 350316

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
☑ Culverts and Pipes	1	241	Reinforced Concrete Culvert	181	181	0	0	0	0	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	181	181	0	0	0	0	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	181	181	0	0	0	0	3370	☐ Requested

Superstructure Element Defect Descriptions

Structure Number: 350316 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: 181 Lvl 2: 0 Lvl 3 0 Lvl 4 0 Maint. Qty 0

Defect Description:

4 Feet of Cracking (RC and Other): Width less than 0.012 in. or spacing greater than 3.0 ft. VERTICAL CRACKING

Span Number 2

Span 2	Culverts and Pipes	1	Component Name:	Reinforced Concrete Box Culvert

Element: 241 Name Reinforced Concrete Culvert Qty: 181 Lvl 2: 0 Lvl 3 0 Lvl 4 0 Maint. Qty 0

Defect Description:

4 Feet of Cracking (RC and Other): Width less than 0.012 in. or spacing greater than 3.0 ft. VERTICAL CRACKING

Span Number 3

Span 3	Culverts and Pipes	1	Component Name:	Reinforced Concrete Box Culvert

Element: 241 Name Reinforced Concrete Culvert Qty: 181 Lvl 2: 0 Lvl 3 0 Lvl 4 0 Maint. Qty 0

Defect Description:

4 Feet of Cracking (RC and Other): Width less than 0.012 in. or spacing greater than 3.0 ft. VERTICAL CRACKING

Substructure Detailed Element Quantites

Structure Number: 350316

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

Substructure Element Defect Descriptions

Structure Number: 350316 Inspection Date: 10/06/2014

National Bridge and NC Inspection Items

Structure Number: 350316 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			
Scour	G, F, P, or C	G		
Drift	G, F, P, or C	6	200	3366
Estimated Remaining Life	G, F, P, or C	20		

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	N

National Bridge and NC SMU Inspection Item Details

Structure Number: 350316 Inspection Date: 10/06/2014

Item	Approach Roadway Alignment - Item 72	Grade	8	Maint Code		Qty.	0
Details	LT. SHOULDER 8.25 RT. SHOULDER 8.58 SPEED LIMIT 65 MPH						

Item	Drift	Grade	6	Maint Code	3366	Qty.	200
Details	SEDIMENT IN BARREL 1 5' HIGH SEDIMENT IN BARREL 2- 2' HIGH DRIFT (TREES ALONG THE INLET OF BARREL 2.						

5' SEDIMENT IN BARREL 1

2' SEDIMENT IN BARREL 2

Barrel 3 Section 1: 4 Feet of Cracking (RC and Other): Width less than 0.012 in. or spacing greater than 3.0 ft.
VERTICAL CRACKING

TREES AT THE INLET OF BARREL 2.

WEST APPROACH

EAST APPROACH

DOWNSTREAM

LOOKING DOWNSTREAM

LOOKING UPSTREAM

UPSTREAM

IDENTIFICATION

(1) STATE NAME -NORTH CAROLINA BRIDGE 350316
(8) STRUCTURE NUMBER(FEDERAL) 000000000710316
(5) INVENTORY ROUTE (ON/UNDER) - ON 11000850
(2) STATE HIGHWAY DEPARTMENT DISTRICT 1
(3) COUNTY CODE 71 (4) PLACE CODE 25580
(6) FEATURE INTERSECTED - KAGLOR BRANCH
(7) FACILITY CARRIED I85
(9) LOCATION 0.5 MI. S. JCT. US321
(11)MILEPOINT 16.7
(16)LAT 35° 17' 8.65" (17)LONG 81° 11' 45.10"
(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 3
(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 1962
(106)YEAR RECONSTRUCTED 1996
(42) TYPE OF SERVICE : ON - Highway
UNDER - Waterway CODE 15
(28) LANES: ON STRUCTURE 6 UNDER STRUCTURE 0
(29) AVERAGE DAILY TRAFFIC 83000
(30) YEAR OF ADT 2013 (109) TRUCK ADT PCT 16%
(19) BYPASS OR DETOUR LENGTH 2 MI

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 8 FT
(49) STRUCTURE LENGTH 29 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) 107 FT
(33) BRIDGE MEDIAN - No Median CODE 3
(34) SKEW 30° (35) STRUCTURE FLARED 0
(10) INVENTORY ROUTE MIN VERT CLEAR 999.9 FT
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 99.9 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

SUFFICIENCY RATING = 85.55
STATUS = Not Deficient

CLASSIFICATION CODE

(112)NBIS BRIDGE SYSTEM - YES
(104)HIGHWAY SYSTEM Is on the NHS 1
(26) FUNCTIONAL CLASS - Arterial - Interstate 11
(100)STRAHNET HIGHWAY - Interstate STRAHNET Route 1
(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 CODE

(58) DECK N
(59) SUPERSTRUCTURE N
(60) SUBSTRUCTURE N
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS 7

LOAD RATING AND POSTING CODE

(31) DESIGN LOAD HS 20 + MOD 6
(63) OPERATING RATING METHOD - Load and Resistance Factor 3
(64) OPERATING RATING - HS-47 85
(65) INVENTORY RATING METHOD - Load and Resistance Factor 3
(66) INVENTORY RATING - HS-36 65
(70) BRIDGE POSTING - No Posting Required 5
(41) STRUCTURE OPEN, POSTED ,OR CLOSED A
DESCRIPTION - Open, No Restriction

APPRAISAL CODE

(67) STRUCTURAL EVALUATION 7
(68) DECK GEOMETRY N
(69) UNDERCLEARANCES,VERTI & HORIZ N
(71) WATERWAY ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 1NNN
(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 166000 (115) YEAR FUTURE ADT 2025

INSPECTIONS

(90) INSPECTION DATE 10/06/2014
(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

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE Run Date: 01/07/2015

COUNTY :	DIVISION :	DISTRICT:	STRUCTURE NUMBER :	LENGTH :
GASTON	12	1	350316	29 FEET

ROUTE CARRIED : I85

FEATURE INTERSECTED : KAGLOR BRANCH

LOCATED : 0.5 MI. S. JCT. US321

BRIDGE NAME :

CITY : GASTONIA

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

BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :
1962	SHC	8.16316	I-85-1(13)10	HS 20 + MOD

REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :
1996	DOH	6.819001T	TAN	120	ON 6 UNDER 0

NAVIGATION :					HT. CRN. TO BED :		WATER DEPTH :	
VC	0	FT	HC	0	FT	20 FT	1	FT

SUPERSTRUCTURE : TRIPLE 8'X9'RC BOX CULVERT; 166'-9 ALONG CENTERLINE 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 :		
HS-36	HS-47		SV	TTST	DATE

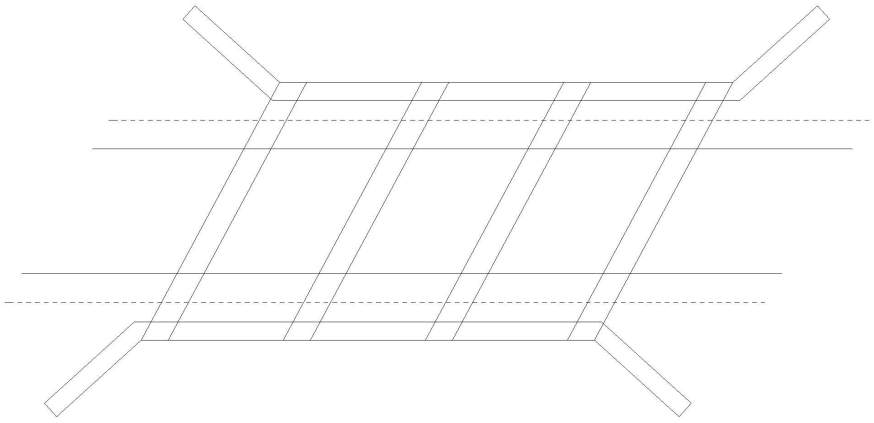
SYSTEM : Primary Interstate

GREEN LINE ROUTE : Y

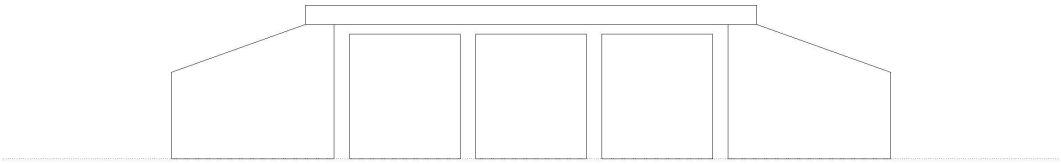
UNDER ROUTES AND CLEARANCES

REMARKS :

Bridge Inspection Field Sketch



Crown of Roadway



Bed

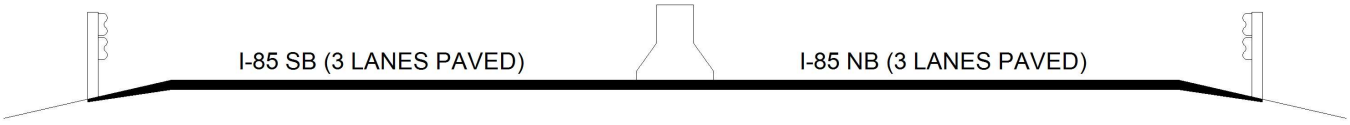
Number of Barrels	Skew	Distance From Crown to Bed
3	120°	20ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway
166.75ft		29ft

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 ERIC PATTERSON ON 10-6-2014

Title	**Description**		
Culvert dimensions	plan and view details		
Bridge No: 350316	**Drawn By:** DJA	**Date:** 9/2/2008	**File Name:** S0146030630

Bridge Inspection Field Sketch



SECTION OVER CULVERT

Left Lanes			
Roadway	36ft Wide	3 Paved Lanes	South Bound
Left Shoulder	8.25ft Wide	8.25ft Paved	
Right Shoulder	10ft Wide	10ft Paved	
Left Guardrail			
Right Guardrail	10ft from road		
Median	3ft Wide	5ft High	
Right Lanes			
Roadway	36ft Wide	3 Paved Lanes	North Bound
Left Shoulder	8.583ft Wide	8.583ft Paved	
Right Shoulder	8.583ft Wide	8.583ft Paved	
Left Guardrail			
Right Guardrail	8.583ft from road		

POSTED SPEED LIMIT = 65MPH

VERIFIED BY ERIC PATTERSON ON 10-6-2014

Title	**Description**		
APPROACH ROADWAY	LOOKING NORTH		
Bridge No: 350316	**Drawn By:** DJA	**Date:** 9/2/2008	**File Name:** S0146030636