



NC DEPARTMENT OF TRANSPORTATION ATTENTION
 DIVISION OF HIGHWAYS
 BRIDGE MANAGEMENT UNIT

BRIDGE INSPECTION REPORT

INSPECTION TYPE: 2 Year Complete Underwater and Topside

COUNTY GASTON BRIDGE NUMBER 350321 INSPECTION CYCLE 2 YRS
 ROUTE 185 ACROSS DUHART'S CREEK M.P. 19.70

LOCATION 0.1 MI. N. JCT. NC279

SUPERSTRUCTURE SINGLE 8'X9'RC BOX CULVERT, 822'9 ALONG CENTERLINE CULVERT

SUBSTRUCTURE EXTERIOR WALLS:8, TOP & BOTTOM SLABS:9

SPANS _____

LONGITUDE 81° 8' 49.41" LATITUDE 35° 16' 3.80"

INSPECTION DATE 08/28/2014 PRESENT CONDITION FAIR

PRESENT POSTING N **NOT POSTED** PROPOSED POSTING _____

OTHER SIGNS PRESENT NONE



LOOKING NORTH AT APPROACH ROADWAY

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	_____



UNDERWATER BRIDGE INSPECTION REPORT

INSPECTION TYPE: 2 Year Complete Underwater and Topside

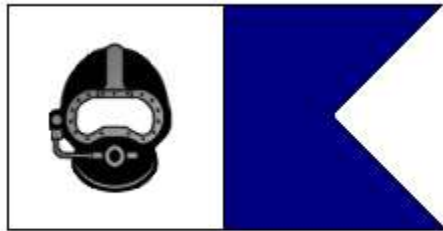
COUNTY GASTON BRIDGE NUMBER 350321 INSPECTION CYCLE 2 YRS

ROUTE 185 ACROSS DUHART'S CREEK

Inspection Date 08/28/2014 Inspected By JOHN HOUSTON

Type Work Performed

Man Hours (Spec. Work Only)



Fracture Critical No
 Temporary Shoring No
 Scour Critical No
 Scour POA No

EQUIPMENT USED COMPRESSOR WET SUIT COMMUNICATION - AMRON
 SCUBA DRY SUIT COMMUNICATION OTS
 LIGHTS ROPE UNDERWATER PHOTOS TAKEN
 BOAT CONSTRUCTION EQUIPMENT

DATE	DIVER	CURRENT	VISIBILITY	METEOROLOGY	DEPTH	DIVE TIME
8/28/2014	MEC	LIGHT	1'	CLEAR 90	2'	60 MIN.
8/28/2014	JCH	LIGHT	1'	CLEAR 90	2'	60 MIN.

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

Run Date: 10/10/2014

IDENTIFICATION

(1) STATE NAME -NORTH CAROLINA BRIDGE **350321**
 (8) STRUCTURE NUMBER(FEDERAL) 00000000710321
 (5) INVENTORY ROUTE (ON/UNDER) - ON 11000850
 (2) STATE HIGHWAY DEPARTMENT DISTRICT 1
 (3) COUNTY CODE 71 (4) PLACE CODE 25580
 (6) FEATURE INTERSECTED - DUHART'S CREEK
 (7) FACILITY CARRIED I85
 (9) LOCATION 0.1 MI. N. JCT. NC279
 (11) MILEPOINT 19.7
 (16) LAT 35° 16' 3.80" (17) LONG 81° 8' 49.41"
 (98) BORDER BRIDGE STATE CODE PCT SHARE
 (99) BORDER BRIDGE STRUCTURE NO

SUFFICIENCY RATING = 77.61
 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

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: Concrete
 TYPE - Culverts (includes frame culverts) CODE 119
 (44) STRUCTURE TYPE APPR :
 TYPE - CODE 000
 (45) NUMBER OF SPANS IN MAIN UNIT 1
 (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

CONDITION **CODE**

(58) DECK N
 (59) SUPERSTRUCTURE N
 (60) SUBSTRUCTURE N
 (61) CHANNEL & CHANNEL PROTECTION 7
 (62) CULVERTS 5

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-38 69
 (65) INVENTORY RATING METHOD - Load and Resistance Factor 3
 (66) INVENTORY RATING - HS-29 53
 (70) BRIDGE POSTING - No Posting Required 5
 (41) STRUCTURE OPEN, POSTED ,OR CLOSED A
 DESCRIPTION - Open, No Restriction

AGE AND SERVICE

(27) YEAR BUILT 1963
 (106) YEAR RECONSTRUCTED 1978
 (42) TYPE OF SERVICE : ON - Highway
 UNDER - Waterway CODE 15
 (28) LANES: ON STRUCTURE 6 UNDER STRUCTURE 0
 (29) AVERAGE DAILY TRAFFIC 109000
 (30) YEAR OF ADT 2012 (109) TRUCK ADT PCT 16%
 (19) BYPASS OR DETOUR LENGTH 1 MI

APPRAISAL **CODE**

(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 NNNN
 (113) SCOUR CRITICAL BRIDGES 8

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN 8 FT
 (49) STRUCTURE LENGTH 23 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) 106 FT
 (33) BRIDGE MEDIAN - No Median CODE 3
 (34) SKEW 69° (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

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 218000 (115) YEAR FUTURE ADT 2025

INSPECTIONS

(90) INSPECTION DATE 08/28/2014
 (92) CRITICAL FEATURE INSPECTION : (93) CFI DATE
 A) FRACTURE CRIT DETAIL - NO A)
 B) UNDERWATER INSP - YES 24Mo B) 08/28/2014
 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: 10/10/2014

COUNTY : GASTON DIVISION : 12 DISTRICT : 1 STRUCTURE NUMBER : 350321 LENGTH : 23 FEET

ROUTE CARRIED : I85 FEATURE INTERSECTED : DUHART'S CREEK

LOCATED : 0.1 MI. N. JCT. NC279 BRIDGE NAME : CITY : GASTONIA

FUNC. CLASS : 11 SYST.ON : FA SYST.UNDER : NFA ADT & YR : 109000 2012 RAIL TYPE : LT 0 RT 0

BUILT : 1963 BY : SHC PROJ : 8.16361 FED.AID PROJ : I-85-1(35)20 DESIGN LOAD : HS 20 + MOD

REHAB : 1978 BY : DOH PROJ : 8.1636701 ALIGNMENT : TAN SKEW : 159 LANES : ON 6 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 18 FT WATER DEPTH : 2 FT

SUPERSTRUCTURE : SINGLE 8'X9'RC BOX CULVERT, 822'-9 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-29 OPE.RTG. : HS-38 CONTR.MEMBER : POSTED : SV TTST DATE

SYSTEM : Primary Interstate GREEN LINE ROUTE : Y

UNDER ROUTES AND CLEARANCES

REMARKS :


BRIDGE INSPECTION RECORD AND SUMMARY (R. C. BOX CULVERTS)

 INSPECTION TYPE 2 Year Complete Underwater and Topside
 BRIDGE NO. 350321

 INSPECTION DATE 08/28/2014
 OVER

 ROUTE ORIENTATION S - N
 DUHART'S CREEK

EVALUATION CODES: CRITICAL (C, 0 - 3); POOR (P, 4); FAIR (F, 5, 6); GOOD (G, 7 - 9)

1. Top Slab		F
2. Bottom Slab		G
3. Ext. & Int. Walls		F
4. Wingwalls - Retaining Walls		G
5. Headwalls, Toewalls, Flumes		G
6. Structure Alignment - Settlement		G
7. Drainage Systems (On Structure)		G
8. Channel & Channel Protection	a. Waterway	G
	b. Alignment	G
	c. Scour	G
	d. Slope Prot. (Rip-Rap, Dikes, etc.)	
9. Approach Roadway Condition		G
10. Estimated Remaining Life		19
11. Channel & Channel Protection	Item 61	7
12. Culvert & Retaining Walls	Item 62	5
13. Waterway Adequacy	Item 71	7
14. Approach Roadway	Item 72	8
15. Field Scour Evaluation		G
16. Presently Posted		NO
17. Regulatory Sign Notice Issued		NO
18. Prompt Action Notice Issued		NO
19. Total Field Inspection Time		12
20. Inspected By		

FIELD INSPECTION REPORT

**State of North Carolina
Dept. of Transportation
Division of Highways**

Bridge Inspection & Analysis

Team Leader **JOHN HOUSTON**

Assisted By **KSH; MEC**

Item No.	Grade	
8a	G	GOOD.
8b	G	GOOD.
8c	G	GOOD.
1	F	CONSTRUCTION JOINTS LEAKING WITH EFFLOR. SEEPAGE PRESENT.
2	G	GOOD.
3	F	RANDOM AREAS WITH SPALLS FROM REBAR BEING SET TOO CLOSE TO FORMS. SEE PHOTOS. H/L VERTICAL CRACKING THRUOUT THE EXTERIOR WALL AND ALONG THE TOP SLAB.
4	G	JOINT SHOW LEAKING WITH EFFLOR. PRESENT (EXTERIOR WALL 1.) SHOWN. GOOD. WEATHERED.
5	G	GOOD. WEATHERED.
6	G	GOOD.

BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS

Bridge: 350321

County GASTON

Date: 08/28/2014

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

MMS Code	Description of Function	Unit	Quantity	Remarks	Est. Cost
4675	Maintenance of reinforced Concrete Box Culverts	LF	20	RANDOM AREAS WITH SPALLS FROM REBAR BEING SET TOO CLOSE TO FORMS.	

Key



Priority Maintenance Item



Critical Finding Item



Priority Maintenance Level Not Determined



RANDOM CRACK



RANDOM CRACK WITH EFFLORESCENCE



RANDOM CRACK WITH EFFLORESCENCE AND RUST

Culvert Segment Details

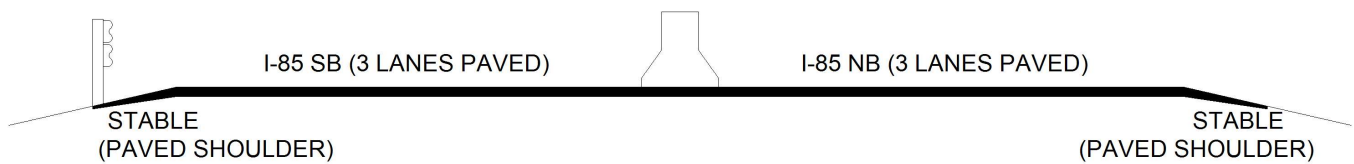
Barrel 1

Has Bands?: No

Distance From Upstream End to Edge of Pavement: 21ft

	Distance From Upstream End of Segment (ft)	Width (ft)	Height (ft)	Pipe Thickness (in)	Corrugation Pattern	Leg Length (ft)	Top Radius (ft)	Bolt Material	Bolt Diameter (in)	# of Long. Bolt Rows	Transverse Spacing b/w Bolt Rows (ft)	Longitudinal Bolt Spacing (ft)	Bolt Condition	Rib Length (ft)	Rib Spacing (ft)	Type	Material
Upstream End	1	8	9													RCBC	Concrete
Downstream End	821	8	9													RCBC	Concrete

Bridge Inspection Field Sketch



SECTION OVER APPROXIMATE CENTER OF CULVERT

Left Lanes			
Roadway	36ft Wide	3 Paved Lanes	South Bound
Left Shoulder	8ft Wide	8ft Paved	
Right Shoulder	8.5ft Wide	8.5ft Paved	
Left Guardrail			
Right Guardrail	8.5ft from road		
Median	3ft Wide	5ft High	
Right Lanes			
Roadway	36ft Wide	3 Paved Lanes	North Bound
Left Shoulder	8ft Wide	8ft Paved	
Right Shoulder	9ft Wide	9ft Paved	
Left Guardrail			
Right Guardrail			

VERIFIED 8-28-2014 JCH

Title

APPROACH ROADWAY

Description

LOOKING NORTH

Bridge No: 350321

Drawn By: DJA

Date: 09/02/2008

File Name: S0146030596

Bridge Inspection Field Sketch

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Title

CULVERT DIMENSIONS

Description

PLAN & ELEVATION

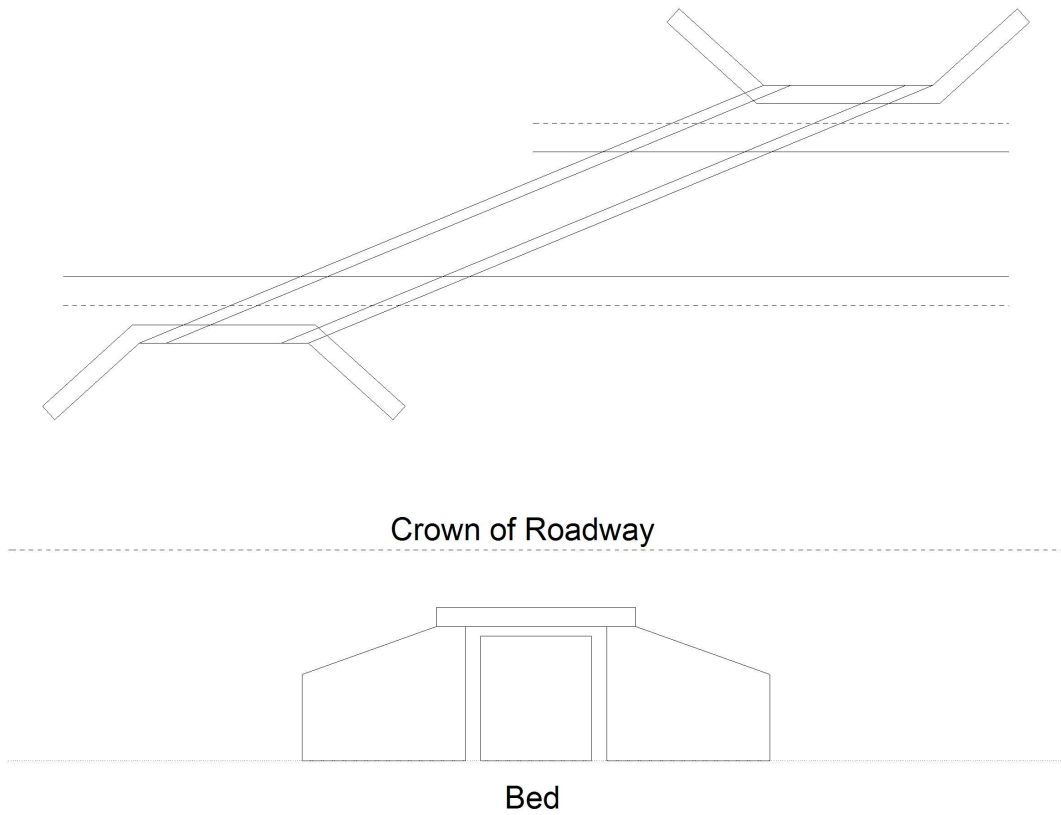
Bridge No: 350321

Drawn By: DJA

Date: 09/02/2008

File Name: S0146030597

Bridge Inspection Field Sketch



Looking Upstream

Number of Barrels	Skew	Distance From Crown to Bed	Fill Depth
1	159°	187ft	7ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway	
822.75ft		22.583ft	

Barrel #	Width	Height	Wall Thickness	Scour at Inlet	Scour at Outlet
1	8ft	9ft		0	0

SPEED LIMIT: 65
6 LANES
GUARDRAIL: YES
EOP EAST: 21'
EOP WEST: 23'

Title
CULVERT

Description
CULVERT

Bridge No: 350321

Drawn By: JOHN HOUSTON

Date: 8/28/2014

File Name: S0150000957



LOOKING SOUTH AT APPROACH ROADWAY



LOOKING SOUTH



LOOKING EAST



LOOKING WEST



LOOKING EAST AT OPENING



TOP SLAB NEAR EAST OPENING



LOOKING WEST AT OPENING



LOOKING NORTH AT APPROACH ROADWAY