



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

# Structure Safety Report

## Routine Element Inspection

INSPECTION DATE: 05/06/2019

DIVISION: 6      COUNTY: ROBESON      STRUCTURE NUMBER: 770150      FREQUENCY: 24 MONTHS

FACILITY CARRIED: I95,SR1791,SR1792      MILE POST: 20.2

LOCATION: 0.2 MI.N.JCT.NC211

FEATURE INTERSECTED: FIVEMILE BRANCH

LATITUDE: 34° 38' 57.24"      LONGITUDE: 79° 0' 45.11"

SUPERSTRUCTURE: DOUBLE 10'X8'RCBC;274'5ALONG CENTERLINE OF CULVERT

SUBSTRUCTURE: \_\_\_\_\_

SPANS: 2 BARRELS. SEE CULVERT SKETCH FOR DETAILS.

FRACTURE CRITICAL     TEMPORARY SHORING     SCOUR CRITICAL     SCOUR PLAN OF ACTION

NBI GRADES:      DECK N      SUPERSTRUCTURE N      SUBSTRUCTURE N      CULVERT 6

POSTED SV: Not Posted      POSTED TTST: Not Posted

OTHER SIGNS PRESENT: 4 DELINEATORS



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

DIRECTION OF INSPECTION      S-N

DIRECTION MATCHES PLANS      \_\_\_\_\_

LOOKING NORTH

INSPECTED BY Ray L. Kisner	SIGNATURE <i>Ray L. Kisner</i>	ASSISTED BY    Samuel F. Spillers
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# Structure Element Scoring

Structure Number: 770150

Inspection Date 5/6/2019

Element Number	Parent Number	Element Name	Location	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity
241	0	Reinforced Concrete Culvert	Culverts and Pipes	550	450	100	0	0

# Summary of Maintenance Needs

Maintenance By Defect

Structure Number: 770150

Inspection Date: 05/06/2019

MMS Code	Element Name	Defect Name	Recommended Quantity
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## Element Structure Maintenance Quantities

Structure Number: 770150

Inspection Date 05/06/2019

Location	MMS Code	Description	Maint Quantity	Total Quantity	Severe Quantity	Poor Quantity	Fair Quantity	Good Quantity
Culverts and Pipes	3370	Maintenance of NBI Culverts and Pipes	0	550	0	0	100	450

## Element Condition and Maintenance Data

Structure Number: 770150

Inspection Date: 05/06/2019

### Span 1 Culvert Section 1

#### Reinforced Concrete Box Culvert

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
241	Reinforced Concrete Culvert	275	255	20	0	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
241	Abrasion/Wear (PSC/RC)	SOUTH WALL EXPOSED AGGREGATE	2	10	Feet
241	Scour	SCOUR AT WEST OUTLET END 10 FT. WIDE X 1 FT. DEEP WITH NO UNDERMINING	2	10	Feet

**General Comments**

### Span 2 Culvert Section 1

#### Reinforced Concrete Box Culvert

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
241	Reinforced Concrete Culvert	275	195	80	0	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
241	Cracking (RC and Other)	HAIRLINE LONGITUDINAL CRACKS WITH EFFLO IN TOP SLAB 10' SPACING STARTING AT 30' FROM EAST END	2	70	Feet
241	Scour	SCOUR AT WEST OUTLET END 10 FT. WIDE X 1 FT. DEEP WITH NO UNDERMINING	2	10	Feet

**General Comments**

## Elements Verified

Location	Name	Component	Element Name	Amount
Span 1	Culvert Section 1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	275
Span 2	Culvert Section 1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	275

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# General Inspection Notes

# National Bridge and NC Inspection Items

Structure Number: 770150

Inspection Date: 05/06/2019

## National Bridge Inventory Items

Item	Grade Scale	Grade
Item 58: Deck	0 - 9 , N	<b>N</b>
Item 59: Superstructure	0 - 9 , N	<b>N</b>
Item 60: Substructure	0 - 9 , N	<b>N</b>
Item 61: Channel and Channel Protection	0 - 9 , N	<b>7</b>
Item 62: Culvert	0 - 9 , N	<b>6</b>
Item 71: Waterway Adequacy	0 - 9 , N	<b>7</b>
Item 72: Approach Roadway Alignment	0 - 9 , N	<b>8</b>

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	<b>F</b>	<b>2</b>	<b>4675</b>
Wingwall	G, F, P, or C	<b>G</b>	<b>0</b>	<b>3350</b>
Scour	G, F, P, or C	<b>F</b>		
Drift	G, F, P, or C	<b>F</b>	<b>5</b>	<b>3366</b>
Estimated Remaining Life	G, F, P, or C			

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

## Inspection Information

Item	Grade Scale	Grade
Sign Noticed Issued	YES/NO	<b>N</b>
Priority Maintenance Request Submitted	YES/NO	<b>N</b>
Inspection Time	Hours	<b>2</b>
Traffic Control Time	Hours	
Snooper Time	Hours	
Ladder Used	YES/NO	<b>N</b>
Bucket Truck Used	YES/NO	<b>N</b>
Boat Used	YES/NO	<b>N</b>
Other Equipment Used	YES/NO	<b>Y</b>



# National Bridge and NC SMU Inspection Item Details

Structure Number: 770150

Inspection Date: 05/06/2019

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<b>Item</b>	Other Equipment Used	<b>Grade</b>	Y	<b>Maint Code</b>		<b>Qty.</b>	0
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**Details** BOOTS

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<b>Item</b>	Drift	<b>Grade</b>	F	<b>Maint Code</b>	3366	<b>Qty.</b>	5
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**Details** DRIFT / DEBRIS AT EAST INLET END 5 HRS.

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<b>Item</b>	Scour	<b>Grade</b>	F	<b>Maint Code</b>		<b>Qty.</b>	0
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**Details** 1 FT. DEEP X 10 FT. WIDE SCOUR AT OUTLET END OF BARRELS 1 AND 2 WEST END WITH NO UNDERMINING

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<b>Item</b>	Headwalls	<b>Grade</b>	F	<b>Maint Code</b>	4675	<b>Qty.</b>	2
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**Details** NORTHEAST CORNER , EAST HEADWALL SPALLED 18" WIDE X 5" HIGH X UP TO 4" DEEP



Barrel 1 Section 1: SCOUR AT WEST OUTLET END 10 FT. WIDE X 1 FT. DEEP WITH NO UNDERMINING



Barrel 2 Section 1: SCOUR AT WEST OUTLET END 10 FT. WIDE X 1 FT. DEEP WITH NO UNDERMINING



NORTHEAST CORNER , EAST HEADWALL SPALLED 18" WIDE X 5" HIGH X UP TO 4" DEEP



DRIFT / DEBRIS AT EAST INLET END 5 HRS.



Barrel 1 Section 1: SOUTH WALL EXPOSED AGGREGATE



Barrel 2 Section 1: HAIRLINE LONGITUDINAL CRACKS WITH EFFLO IN TOP SLAB 10' SPACING STARTING AT 30' FROM EAST END



WEST PROFILE



UPSTREAM EAST



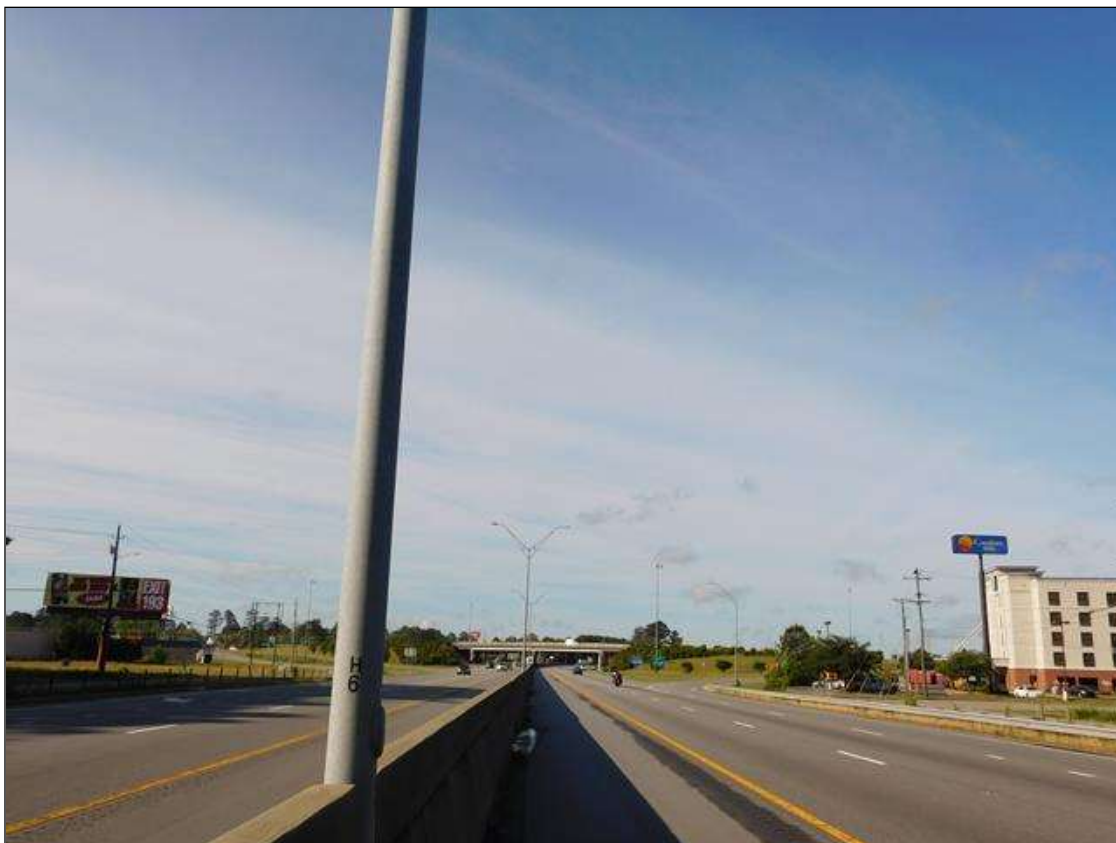
12" CAST UTILITY PIPE ALONG SOUTH WALL OF BARREL 1



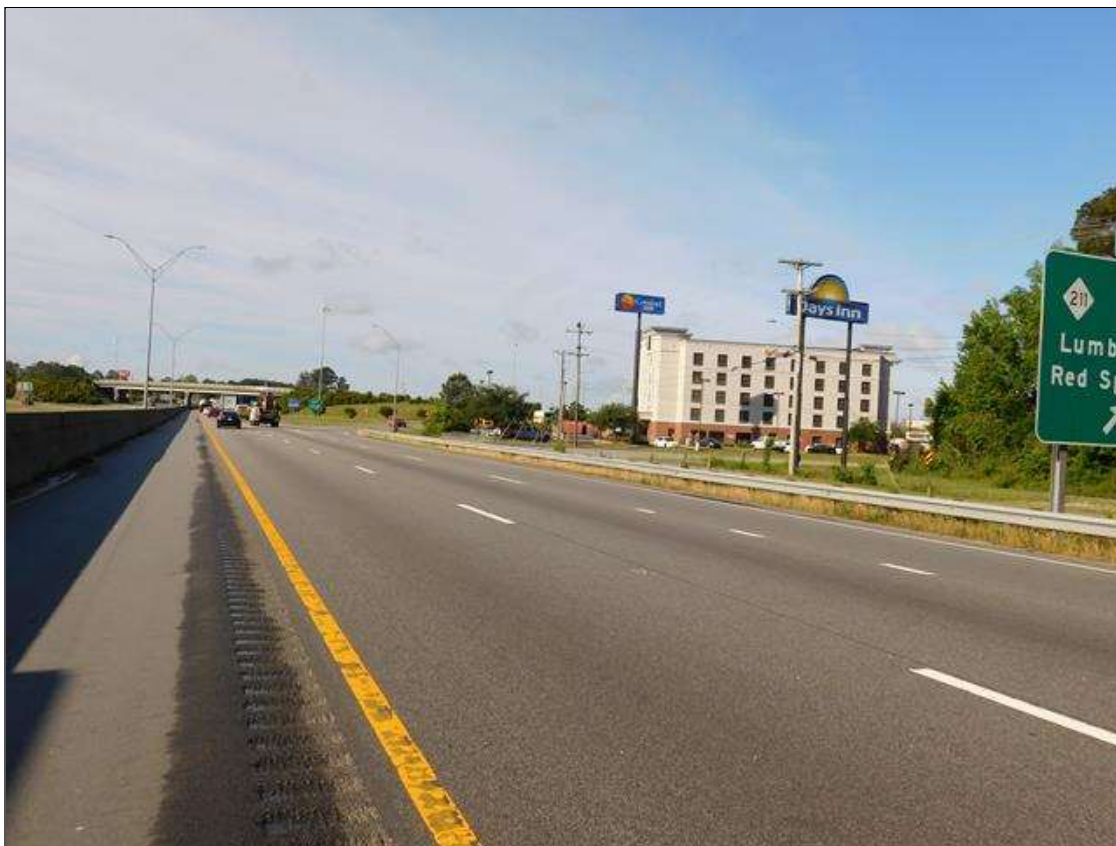
LOOKING SOUTH, SR 1791



DOWNSTREAM WEST



LOOKING SOUTH



LOOKING SOUTH, SOUTHBOUND LANE I-95



UPSTREAM EAST





EAST PROFILE



DOWNSTREAM WEST



LOOKING NORTH, NORTHBOUND LANE I-95



LOOKING NORTH



LOOKING NORTH, SR -1792

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

Run Date: 09/17/2019

**IDENTIFICATION**

(1) STATE NAME -NORTH CAROLINA BRIDGE **770150**  
 (8) STRUCTURE NUMBER(FEDERAL) 000000001550150  
 (5) INVENTORY ROUTE (ON/UNDER) - ON 11000950  
 (2) STATE HIGHWAY DEPARTMENT DISTRICT 1  
 (3) COUNTY CODE 155 (4) PLACE CODE 39700  
 (6) FEATURE INTERSECTED - FIVEMILE BRANCH  
 (7) FACILITY CARRIED I95,SR1791,SR1792  
 (9) LOCATION 0.2 MI.N.JCT.NC211  
 (11)MILEPOINT 20.2  
 (16)LAT 34° 38' 57.24" (17)LONG 79° 0' 45.11"  
 (98)BORDER BRIDGE STATE CODE PCT SHARE  
 (99)BORDER BRIDGE STRUCTURE NO

SUFFICIENCY RATING = 92.71  
 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 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 - Not Applicable CODE N  
 (B) TYPE OF MEMBRANE - Not Applicable CODE N  
 (C) TYPE OF DECK PROTECTION - Not Applicable CODE N

**CONDITION** **CODE**

(58) DECK N  
 (59) SUPERSTRUCTURE N  
 (60) SUBSTRUCTURE N  
 (61) CHANNEL & CHANNEL PROTECTION 7  
 (62) CULVERTS 6

**LOAD RATING AND POSTING** **CODE**

(31) DESIGN LOAD HS 20 5  
 (63) OPERATING RATING METHOD - Load and Resistance Factor 3  
 (64) OPERATING RATING - HS-23 41  
 (65) INVENTORY RATING METHOD - Load and Resistance Factor 3  
 (66) INVENTORY RATING - HS-17 31  
 (70) BRIDGE POSTING - No Posting Required 5  
 (41) STRUCTURE OPEN, POSTED ,OR CLOSED A  
 DESCRIPTION - Open, No Restriction

**AGE AND SERVICE**

(27) YEAR BUILT 1952  
 (106)YEAR RECONSTRUCTED  
 (42) TYPE OF SERVICE : ON - Highway  
 UNDER - Waterway CODE 15  
 (28) LANES: ON STRUCTURE 4 UNDER STRUCTURE 0  
 (29) AVERAGE DAILY TRAFFIC 28000  
 (30) YEAR OF ADT 2017 (109) TRUCK ADT PCT 16%  
 (19) BYPASS OR DETOUR LENGTH 1 MI

**APPRAISAL** **CODE**

(67) STRUCTURAL EVALUATION 6  
 (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

**GEOMETRIC DATA**

(48) LENGTH OF MAXIMUM SPAN 10 FT  
 (49) STRUCTURE LENGTH 24 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) 168 FT  
 (33) BRIDGE MEDIAN - No Median CODE 0  
 (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

**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 56000 (115) YEAR FUTURE ADT 2025

**INSPECTIONS**

(90) INSPECTION DATE 05/06/2019  
 (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: 09/17/2019

COUNTY : ROBESON DIVISION : 6 DISTRICT : 1 STRUCTURE NUMBER : 770150 LENGTH : 24 FEET

ROUTE CARRIED : I95,SR1791,SR1792 FEATURE INTERSECTED : FIVEMILE BRANCH

LOCATED : 0.2 MI.N.JCT.NC211 BRIDGE NAME : CITY : LUMBERTON

FUNC. CLASS : 11 SYST.ON : FA SYST.UNDER : NFA ADT & YR : 28000 2017 RAIL TYPE : LT 0 RT 0

BUILT : 1952 BY : SHPWC PROJ : 3971 FED.AID PROJ : DESIGN LOAD : HS 20

REHAB : BY : DOH PROJ : 8.1461602 ALIGNMENT : TAN. SKEW : 60 LANES : ON 4 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 13 FT WATER DEPTH : 1 FT

SUPERSTRUCTURE : DOUBLE 10'X8'RCBC;274'5"ALONG CENTERLINE OF 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-17 OPE.RTG. : HS-23 CONTR.MEMBER : RCBC POSTED : SV TTST DATE

SYSTEM : Primary Interstate GREEN LINE ROUTE : Y

UNDER ROUTES AND CLEARANCES

REMARKS :

# Bridge Inspection Field Sketch

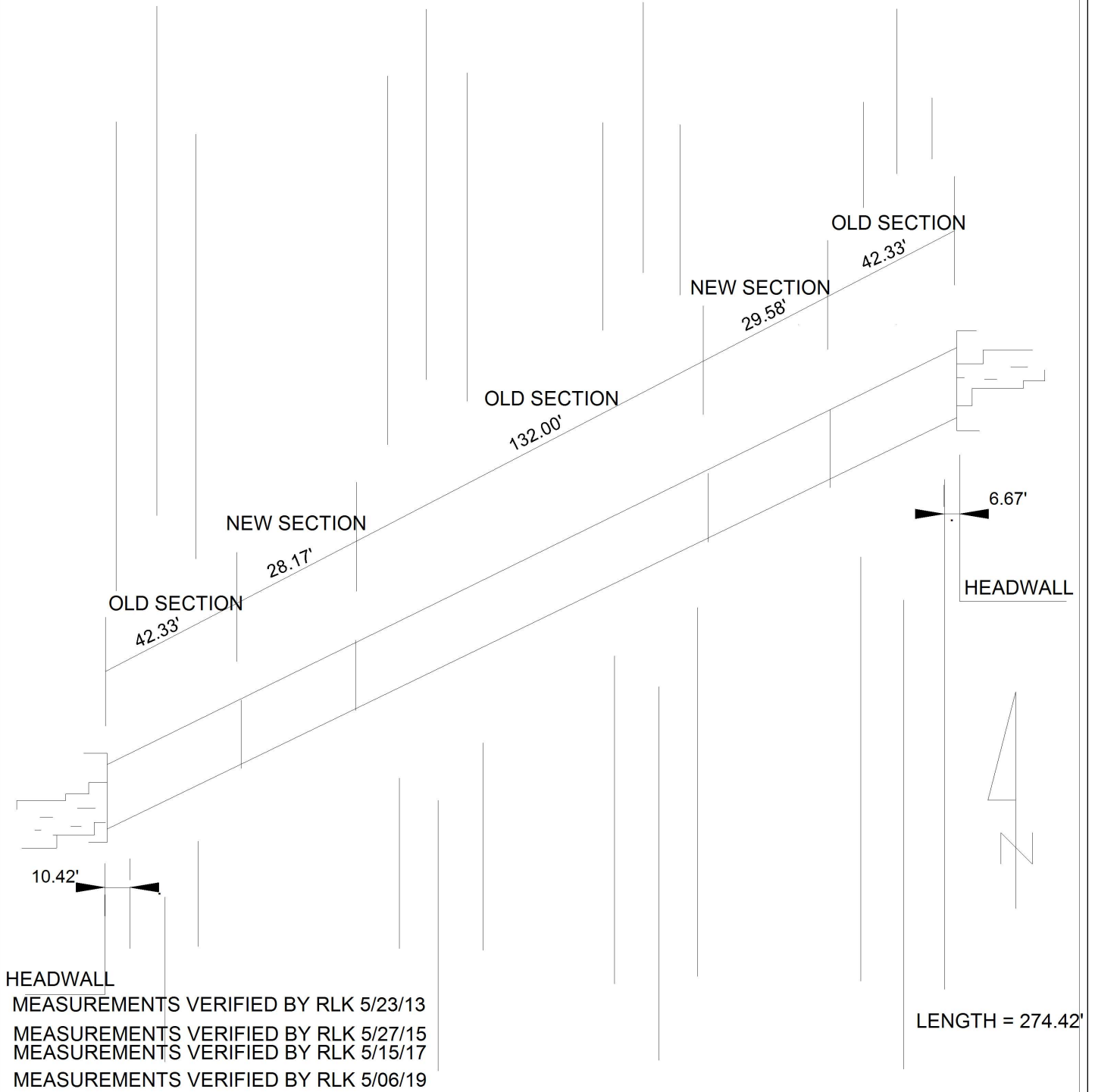
MEASUREMENTS VERIFIED BY RLK 9/27/11

SR 1791

SLB I-95

NLB I-95

SR 1792



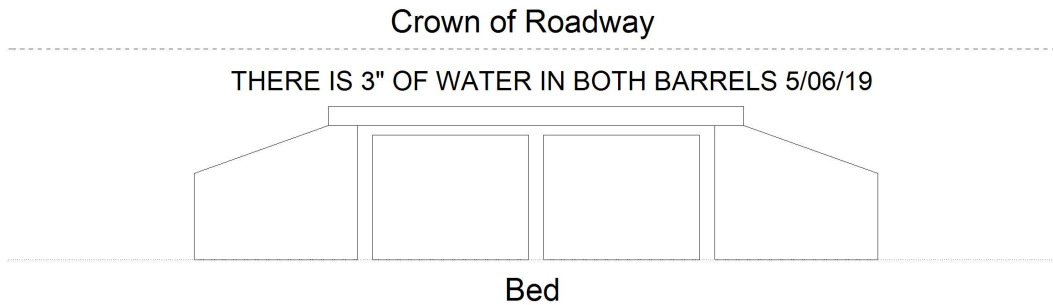
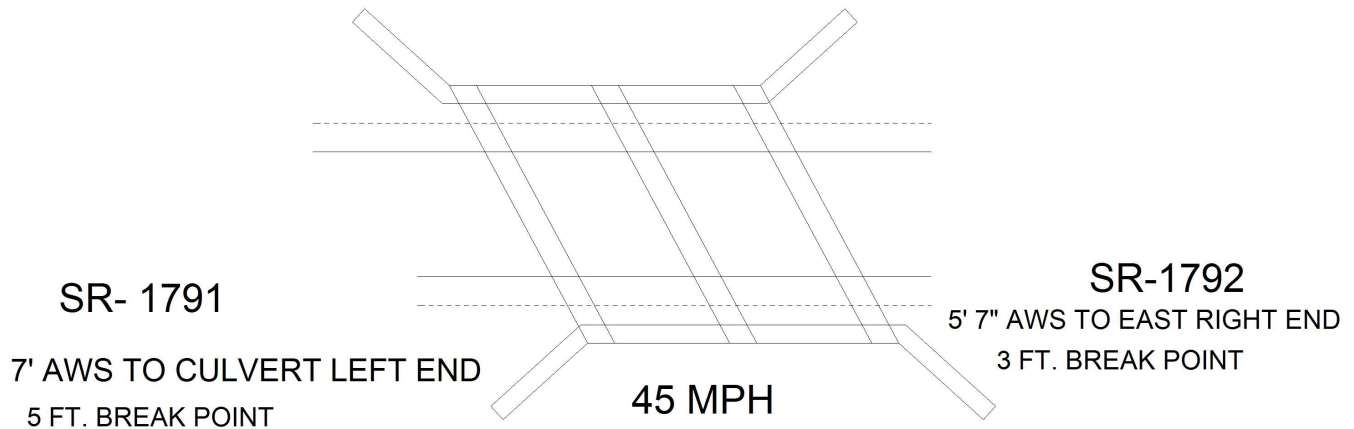
HEADWALL

MEASUREMENTS VERIFIED BY RLK 5/23/13  
 MEASUREMENTS VERIFIED BY RLK 5/27/15  
 MEASUREMENTS VERIFIED BY RLK 5/15/17  
 MEASUREMENTS VERIFIED BY RLK 5/06/19

LENGTH = 274.42'

<b>Title</b>		<b>Description</b>	
CULVERT OUTLINE		CULVERT OUTLINE	
Bridge No: 770150	Drawn By: MSB	Date: 07/31/2006	File Name: S0286000069

# Bridge Inspection Field Sketch



Number of Barrels	Skew	Distance From Crown to Bed
2	60 °	12.5ft
Length Along Center Line of Culvert	Length Along Center Line of Roadway	
274.42 ft	23.864ft	

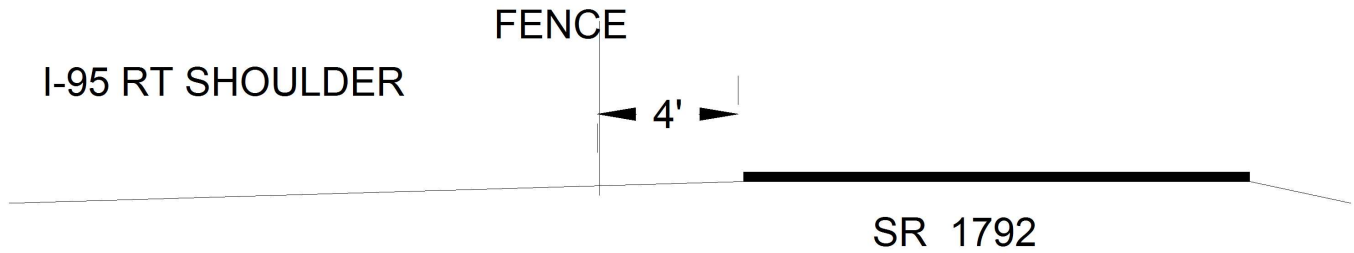
Barrel #	Width	Height	Wall Thickness	Scour at Inlet	Scour at Outlet
1	10ft	8ft		0	2 FT.
2	10ft	8ft	0.67ft	0	2 FT.

MEASUREMENTS VERIFIED BY RLK 9/22/09  
 MEASUREMENTS VERIFIED BY RLK 9/27/11  
 MEASUREMENTS VERIFIED BY RLK 5/23/13  
 MEASUREMENTS VERIFIED BY RLK 5/27/15  
 MEASUREMENTS VERIFIED BY RLK 5/15/17  
 MEASUREMENTS VERIFIED BY SFS 5/06/19

<b>Title</b> CULVERT FIELD SKETCH	<b>Description</b> RCBC CULVERT
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Bridge No: 770150	Drawn By: RJF	Date: 10/13/2008	File Name: S0382000138
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# Bridge Inspection Field Sketch



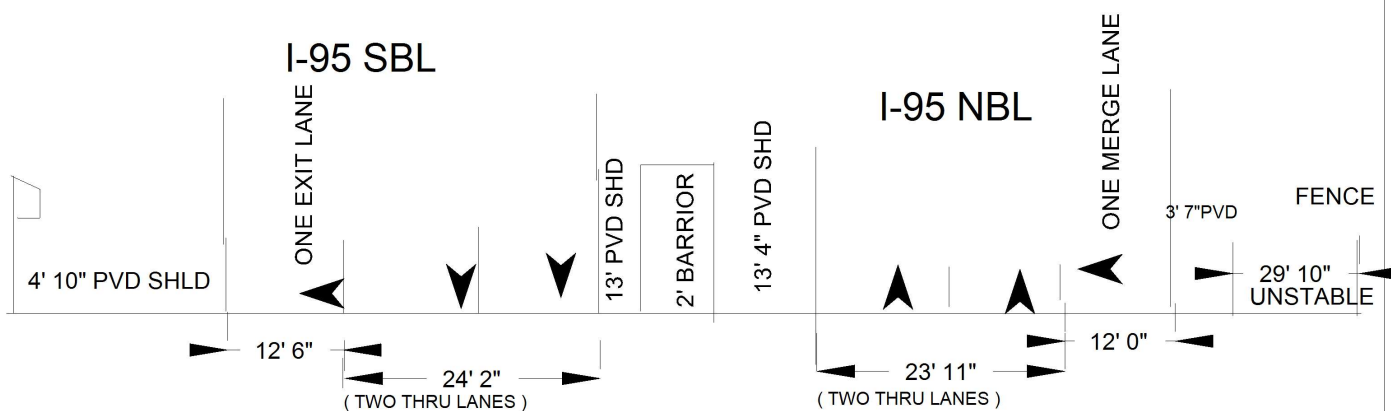
Roadway	23.333ft Wide	2 Paved Lanes	Looking North
Left Shoulder	33.833ft Wide		33.833ft Unpaved
Right Shoulder	4.667ft Wide		4.667ft Unpaved
Left Guardrail			
Right Guardrail			

MEASUREMENTS VERIFIED BY RLK 9/27/11  
 MEASUREMENTS VERIFIED BY RLK 5/23/13  
 MEASUREMENTS VERIFIED BY RLK 5/27/15  
 MEASUREMENTS VERIFIED BY RLK 5/15/17  
 MEASUREMENTS VERIFIED BY SFS 5/06/19

<b>Title</b> APPROACH ROADWAY SR-1792		<b>Description</b> LOOKING NORTH	
<b>Bridge No:</b> 770150	<b>Drawn By:</b> RLK	<b>Date:</b> 9/22/2009	<b>File Name:</b> S0098000881



# Bridge Inspection Field Sketch



MEASUREMENTS VERIFIED BY RLK 9/27/11  
 MEASUREMENTS VERIFIED BY RLK 5/23/13  
 MEASUREMENTS VERIFIED BY RLK 5/27/15  
 MEASUREMENTS VERIFIED BY RLK 5/15/17  
 MEASUREMENTS VERIFIED BY RLK 5/06/19

**Title**

APPROACH ROADWAY I-95

**Description**

LOOKING NORTH NBL & SBL

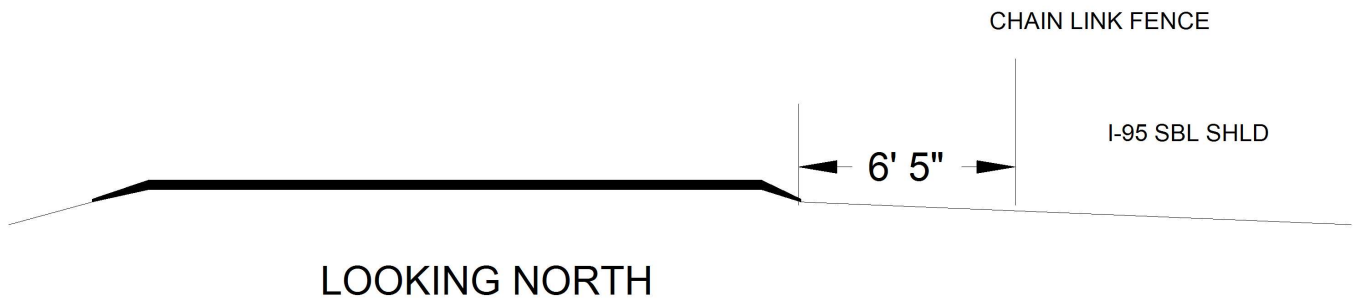
Bridge No: 770150

Drawn By: RLK

Date: 9/22/2009

File Name: S0098000882

# Bridge Inspection Field Sketch



Roadway	27ft Wide	2 Paved Lanes	Looking North
Left Shoulder	6.167ft Wide	2.5ft Paved	3.667ft Unpaved
Right Shoulder	26ft Wide	1.75ft Paved	24.25ft Unpaved
Left Guardrail			
Right Guardrail			

MEASUREMENTS VERIFIED BY RLK 9/27/11  
 MEASUREMENTS VERIFIED BY RLK 5/23/13  
 MEASUREMENTS VERIFIED BY RLK 5/27/15  
 MEASUREMENTS VERIFIED BY RLK 5/15/17  
 MEASUREMENTS VERIFIED BY SFS 5/06/19

**Title**  
 APPROACH ROADWAY SR-1791

**Description**  
 LOOKING NORTH

**Bridge No:** 770150

**Drawn By:** RLK

**Date:** 9/22/2009

**File Name:** S0098000883