NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION:

Structure Safety Report

Routine Element Inspection - Contract

STRUCTURE NUMBER: 330140 **SAP STRUCTURE NO:** 0340140 **FHWA STRUCTURE NO:** 000000000670140

DIVISION: 9 **COUNTY:** FORSYTH **INSPECTION DATE:** 08/28/2023 **FREQUENCY:** 24 MONTHS

FACILITY CARRIED: US158 **MILE POST:**

LOCATION: 0.1 MI. E. JCT. SR2396

FEATURE INTERSECTED: LOWERY MILL CREEK

LATITUDE: 36° 8' 29.45" **LONGITUDE:** 80° 9' 39.17"

SUPERSTRUCTURE: TRIPLE 7'X10' RCBC, 104'10 ALONG CENTERLINE OF CULVERT

SUBSTRUCTURE:

SPANS: 3 BARRELS. SEE CULVERT SKETCH FOR DETAILS.

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTION

GRADES: (Inspector/NBI Coding) **DECK** N / N **SUPERSTRUCTURE** N / N **SUBSTRUCTURE** N / N **CULVERT** 5 / 5

POSTED SV: Not Posted **POSTED TTST:** Not Posted

OTHER SIGNS PRESENT: NONE

WEST APPROACH

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

DIRECTION OF INSPECTION W-E

DIRECTION MATCHES PLANS NO PLANS

INSPECTED BY	SIGNATURE	ASSISTED BY
RICK POOLE		N. KING, K. LO

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

11/17/2023

IDENTIFICATION

(1) STATE NAME NORTH CAROLINA BRIDGE **330140**
(8) STRUCTURE NUMBER (FEDERAL) **0670140**
(5) INVENTORY ROUTE (ON/UNDER) ON **121001580**
(2) STATE HIGHWAY DEPARTMENT DISTRICT **9**
(3) COUNTY CODE (FEDERAL) **67** (4) PLACE CODE **70660**
(6) FEATURE INTERSECTED **LOWERY MILL CREEK**
(7) FACILITY CARRIED **US158**
(9) LOCATION **0.1 MI. E. JCT. SR2396**
(11) MILEPOINT **0.0**
(12) BASE HIGHWAY NETWORK **1**
(13) LRS INVENTORY ROUTE & SUBROUTE **20158**
(16) LATITUDE **36° 8' 29.45"** (17) LONGITUDE **80° 9' 39.17"**
(98) BORDER BRIDGE STATE CODE PERCENT SHARED
(99) BORDER BRIDGE STRUCTURE NUMBER

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN **Concrete Continuous**
TYPE **Culvert** CODE **219**
(44) STRUCTURE TYPE APPROACH
TYPE CODE
(45) NUMBER OF SPANS IN MAIN UNIT **3**
(46) NUMBER OF SPANS IN APPROACH **0**
(107) DECK STRUCTURE TYPE CODE **N**
(108)WEARING SURFACE/PROTECTIVE SYSTEM
(A) TYPE OF WEARING SURFACE CODE **N**
(B) TYPE OF MEMBRANE CODE **N**
(C) TYPE OF DECK PROTECTION CODE **N**

AGE AND SERVICE

(27) YEAR BUILT **1928**
(106) YEAR RECONSTRUCTED **1955**
(42) TYPE OF SERVICE ON - **Highway**
OFF - **Waterway** CODE **15**
(28) LANES ON STRUCTURE **2** LANES UNDER STRUCTURE **0**
(29) AVERAGE DAILY TRAFFIC **14000**
(30) YEAR OF ADT **2021** (109) TRUCK ADT PCT **12**
(19) BYPASS OR DETOUR LENGTH **3.0**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN **7.0**
(49) STRUCTURE LENGTH **26.0**
(50) CURB OR SIDEWALK: LEFT **0.0** RIGHT **0.0**
(51) BRIDGE ROADWAY WIDTH, CURB TO CURB **0.0**
(52) DECK WIDTH OUT TO OUT **0.0**
(32) APPROACH ROADWAY WITH (W/ SHOULDERS) **29.0**
(33) BRIDGE MEDIAN **No median** CODE **0**
(34) SKEW **30** (35) STRUCTURE FLARED **0**
(10) INVENTORY ROUTE MIN VERT CLEAR **999.9**
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR **28.5**
(53) MIN VERT CLEAR OVER BRIDGE RDWY **999.9**
(54) MIN VERT UNDERCLEAR: REFERENCE **0.0**
(55) MIN LAT UNDERCLEARANCE RT: REFERENCE **N** **0.0**
(56) MIN LAT UNDERCLEARANCE LT: **0.0**

NAVIGATION DATA

(38) NAVIGATION CONTROL - CODE **0**
(111) PIER PROTECTION CODE
(39) NAVIGATION VERTICAL CLEARANCE **0.0**
(116) VERT - LIFT BRIDGE NAV MIN VERT CLEAR **0.0**
(40) NAVIGATION HORIZONTAL CLEARANCE **0.0**

SUFFICIENCY RATING **85.38**
STATUS =

CLASSIFICATION — CODE

(112) NBIS BRIDGE SYSTEM **YES**
(104) HIGHWAY SYSTEM **Inventory Route is on NHS** **1**
(26) FUNCTIONAL CLASS **Urban Other Principal Arterial** **14**
(100) STRAHNET HIGHWAY **Not a STRAHNET Route** **0**
(101) PARALLEL STRUCTURE **No parallel structure exists** **N**
(102) DIRECTION OF TRAFFIC **2-way traffic** **2**
(103) TEMPORARY STRUCTURE
(110) DESIGNATED NATIONAL NETWORK - **on natiional network for trucks** **1**
(20) TOLL **On Free Road** **3**
(21) MAINT - **01**
(22) OWNER - **01**
(37) HISTORICAL SIGNIFICANCE - **5**

CONDITION — CODE

(58) DECK **N**
(59) SUPERSTRUCTURE **N**
(60) SUBSTRUCTURE **N**
(61) CHANNEL & CHANNEL PROTECTION **6**
(62) CULVERTS **5**

LOAD RATING AND POSTING — CODE

(31) DESIGN LOAD **H 20 + Mod** **6**
(63) OPERATING RATING METHOD - **0**
(64) OPERATING RATING - **HS-26** **46**
(65) INVENTORY RATING METHOD - **0**
(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 — CODE

(67) STRUCTURAL EVALUATION **5**
(68) DECK GEOMETRY **N**
(69) UNDERCLEARANCES, VERT & 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 **28,000** YEAR OF FUTURE ADT **2040**

INSPECTION

(90) INSPECTION DATE **08/23** (91) FREQUENCY **24**
(92) CRITICAL FEATURE INSPECTION (93) CFI DATE
A) FRACTURE CRIT DETAIL A)
B) UNDERWATER INSP B)
C) OTHER SPECIAL INSP C)
SCOUR

Superstructure Build Details

Span Number 1 **Span Length** 7.000 **Skew** 120.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105 Feet		

Span Number 2 **Span Length** 7.000 **Skew** 120.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105 Feet		

Span Number 3 **Span Length** 7.000 **Skew** 120.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105 Feet		

Structure Element Scoring

Structure Number: **330140**

Inspection Date **8/28/2023**

Element Number	Parent Number	Element Name	Location	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity
241		Reinforced Concrete Culvert	Culverts and Pipes	315	0	0	294	21

Summary of Maintenance Needs

Maintenance By Defect

Structure Number: **330140** Inspection Date: **08/28/2023**

MMS Code	Element Name	Defect Name	Recommended Quantity
3370	Reinforced Concrete Culvert	Delamination/Spall	55 Feet
3370	Reinforced Concrete Culvert	Cracking (RC and Other)	319 Feet
3370	Reinforced Concrete Culvert	Scour	21 Feet

Element Structure Maintenance Quantities

Structure Number: **330140** Inspection Date **08/28/2023**

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	395	315	21.000	294.000	0.000	0.000

Priority Actions Request

Structure Number 330140

Span2

3370 **Culvert Section 1** Reinforced Concrete Box Culvert

Priority Level	Defect Type	Quantity	Defect Description
2	Scour	8	Span 2 Culvert Section 1: (PAR) 8 FEET LONG X 4 INCHES HIGH X FULL DEPTH UNDERMINING WITH WATER FLOW BENEATH THE EAST FOOTING BETWEEN BARREL 2 AND BARREL 3, 10 FEET FROM THE UPSTREAM END OF THE BARREL

Span3

3370 **Culvert Section 1** Reinforced Concrete Box Culvert

Priority Level	Defect Type	Quantity	Defect Description
2	Delamination/Spall	3	Span 3 Culvert Section 1: (PAR) 3 FEET LONG X 10 INCHES HIGH X 1 FEET WIDE SPALLED AREA WITH EXPOSED AND BROKEN REINFORCEMENT, 1 FEET DEEP UNDERMINING, AND EXPOSED FILL AT THE DOWNSTREAM END OF THE EAST WALL
2	Scour	5	Span 3 Culvert Section 1: (PAR) 5 FEET LONG X 5 INCHES HIGH X 9 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 9.5 FEET FROM THE UPSTREAM END OF THE BARREL
2	Scour	5	Span 3 Culvert Section 1: (PAR) 5 FEET LONG X 8 INCHES HIGH X 8 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 4 FEET FROM THE UPSTREAM END OF THE BARREL

Approach Guardrail and Barriers

3120 **Approach Guardrail and Barriers** Approach Guardrail and Barriers

Priority Level	Defect Type	Quantity	Defect Description
2		1	(PAR) IMPACT DAMAGE WITH SURFACE SCRAPES AT NORTHWEST GUARDRAIL TERMINAL END

Element Condition and Maintenance Data

Structure Number: **330140** Inspection Date: **08/28/2023**

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	105	0	0	105	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☑ 241	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK WITH EFFLORESCENCE AND SPALLED AND DELAMINATED AREAS UP TO 3 INCHES LONG X 4 INCHES HIGH X 1.5 INCHES DEEP IN THE WALLS AND TOP SLAB, 9.5 FEET FROM THE DOWNSTREAM END OF THE BARREL	3	1	1	Feet
☑ 241	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL	3	85	105	Feet
☑ 241	Delamination/Spall	4 FEET LONG X 4 INCHES HIGH X 2 INCHES DEEP SPALLED AREA IN THE EAST WALL AT THE FOOTING, AT THE UPSTREAM END OF THE BARREL	3		4	Feet
☑ 241	Delamination/Spall	8 INCHES LONG X 10 INCHES HIGH X UP TO 2 INCHES SPALLED AREA IN THE WEST WALL AT THE FOOTING, 9 FEET FROM THE DOWNSTREAM END OF THE BARREL	3	1	1	Feet
☑ 241	Delamination/Spall	8 INCHES LONG X 3 INCHES HIGH X 4 INCHES DEEP SPALLED AREA IN THE WEST WALL, 3 FEET FROM THE DOWNSTREAM END OF THE BARREL	3	1	1	Feet
☑ 241	Delamination/Spall	FULL WIDTH X 7 INCHES LONG X 3 INCHES DEEP SPALLED AREA WITH EXPOSED REINFORCEMENT AND EFFLORESCENCE IN THE TOP SLAB, 14 FEET FROM THE UPSTREAM END OF THE BARREL	3	1	1	Feet
☑ 241	Delamination/Spall	INTERMITTENT 14 FEET LONG X INTERMITTENT 10 INCHES HIGH X 3 INCHES DEEP SPALLED AREA IN THE WEST WALL AT THE FOOTING, AT THE UPSTREAM END OF THE BARREL	3	14	14	Feet
☑ 241	Delamination/Spall	INTERMITTENT FULL WIDTH X 1.167 FEET LONG X 1.5 INCHES DEEP SPALLED AND DELAMINATED AREA WITH EXPOSED REINFORCEMENT IN THE TOP SLAB, 45 FEET FROM THE UPSTREAM END OF THE BARREL	3	2	2	Feet
☑ 241	Scour	UP TO 3 FEET X 1 FEET X 2 INCHES SCOUR AT UPSTREAM END OF BARREL 1 (SCOUR WAS COVERED BY DRIFT DURING 2023 INSPECTION)	3		3	Feet
☑ 241	Abrasion/Wear (PSC/RC)	FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS	2			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	105	0	0	97	8	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☑ 241	Scour	(PAR) 8 FEET LONG X 4 INCHES HIGH X FULL DEPTH UNDERMINING WITH WATER FLOW BENEATH THE EAST FOOTING BETWEEN BARREL 2 AND BARREL 3, 10 FEET FROM THE UPSTREAM END OF THE BARREL	4	8	8	Feet
☑ 241	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK IN THE WALLS AND TOP SLAB WITH EFFLORESCENCE AND INTERMITTENT FULL WIDTH X 5 INCHES LONG DELAMINATION IN THE TOP SLAB AND UP TO 12 INCHES X 4 INCHES X 4 INCHES INTERMITTENT SPALLS, 9 FEET FROM THE DOWNSTREAM END OF THE BARREL	3		1	Feet
☑ 241	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACK IN THE WALLS AND TOP SLAB WITH EFFLORESCENCE AND INTERMITTENT SPALLED AND DELAMINATED AREAS UP TO 12 INCHES X 18 INCHES X 4 INCHES IN THE WALLS AND TOP SLAB, 13.75 FEET FROM THE UPSTREAM END OF THE BARREL	3	1	1	Feet
☑ 241	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL	3	95	105	Feet
☑ 241	Delamination/Spall	INTERIOR WALL 1 AT INLET, SPALL (15 INCHES X 7 INCHES X UP TO 3/4 INCH) (SCOUR WAS COVERED BY DRIFT DURING 2023 INSPECTION)	3	1	1	Feet
☑ 241	Abrasion/Wear (PSC/RC)	FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS.	2			Feet

General Comments

Span 3 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	105	0	0	92	13	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☑ 241	Delamination/Spall	(PAR) 3 FEET LONG X 10 INCHES HIGH X 1 FEET WIDE SPALLED AREA WITH EXPOSED AND BROKEN REINFORCEMENT, 1 FEET DEEP UNDERMINING, AND EXPOSED FILL AT THE DOWNSTREAM END OF THE EAST WALL	4	3	3	Feet
☑ 241	Scour	(PAR) 5 FEET LONG X 5 INCHES HIGH X 9 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 9.5 FEET FROM THE UPSTREAM END OF THE BARREL	4	5	5	Feet

☑ **241**	Scour	(PAR) 5 FEET LONG X 8 INCHES HIGH X 8 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 4 FEET FROM THE UPSTREAM END OF THE BARREL	4	5	5	Feet
☑ **241**	Cracking (RC and Other)	FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL	3	76	105	Feet
☑ **241**	Cracking (RC and Other)	INTERMITTENT FULL WIDTH X 3 INCHES LONG DELAMINATED AREA WITH A FULL WIDTH X 1/4 INCHES WIDE TRANSVERSE CRACK IN THE TOP SLAB, 14.5 FEET FROM THE UPSTREAM END OF THE BARREL	3		1	Feet
☑ **241**	Delamination/Spall	(8) UP TO 6 FEET X 5 INCHES X 5 INCHES SPALLS AT RANDOM THROUGHOUT EAST AND WEST FOOTINGS.	3	9	8	Feet
☑ **241**	Delamination/Spall	1.25 FEET HIGH 3 INCHES LONG X 3/4 INCHES DEEP SPALLED AREA WITH A 6 FEET HIGH X 1/4 INCHES WIDE VERTICAL CRACK WITH EFFLORESCENCE AND HEAVY BUILDUP AND RUST STAINING ADJACENT TO 15 INCHES X 5 INCHES X 4 INCHES SPALL IN EAST FOOTING, 19 FEET FROM THE DOWNSTREAM END OF THE BARREL	3	1	1	Feet
☑ **241**	Delamination/Spall	8 INCHES HIGH X 4 INCHES LONG X 1 INCHES DEEP SPALLED AREA WITH EXPOSED REINFORCEMENT IN THE EAST WATERLINE, 4.5 FEET BELOW THE TOP SLAB, 13.5 FEET FROM THE UPSTREAM END OF THE BARREL	3		1	Feet
☑ **241**	Delamination/Spall	INTERMITTENT 14.5 FEET LONG X 7 INCHES HIGH X 5 INCHES DEEP SPALLED AREA 4 INCHES ABOVE THE FOOTING AT THE UPSTREAM END	3	5	15	Feet
☑ **241**	Delamination/Spall	INTERMITTENT FULL HEIGHT X 1 FEET LONG X 1. 5 INCHES DEEP SPALLED AND DELAMINATED AREA WITH A FULL HEIGHT X 1/8 INCHES WIDE VERTICAL CRACK IN THE EAST WALL, 14.5 FEET FROM THE UPSTREAM END OF THE BARREL	3	1	2	Feet
☑ **241**	Delamination/Spall	INTERMITTENT FULL HEIGHT X 9 INCHES LONG X 1.5 INCHES DEEP SPALLED AND DELAMINATED AREA WITH A FULL HEIGHT X 1/8 INCHES WIDE VERTICAL CRACK IN THE WEST WALL, 14.5 FEET FROM THE UPSTREAM END OF THE BARREL	3		1	Feet
☑ **241**	Abrasion/Wear (PSC/RC)	FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS	2			Feet

General Comments

Elements Verfied

Location	Name	Component	Element Name	Amount
Span 1	Culvert Section 1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105
Span 2	Culvert Section 1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105
Span 3	Culvert Section 1	Reinforced Concrete Box Culvert	Reinforced Concrete Culvert	105

General Inspection Notes

National Bridge and NC Inspection Items

Structure Number: 330140 **Inspection Date:** 08/28/2023

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	**6**
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:

Items 58,59,60,62 reflect this inspection only.

For overall NBI coding grade, see cover sheet.

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**	**24**	**3350**
Scour	G, F, P, or C	**P**		
Drift	G, F, P, or C	**P**	**24**	**3366**
Estimated Remaining Life	G, F, P, or C			

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

Inspection Information

Item	Grade Scale	Grade
Sign Noticed Issued	YES/NO	**N**
Priority Maintenance Request Submitted	YES/NO	**Y**
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**
Portion of Structure in > 3' of water	YES/NO	**N**

National Bridge and NC SMU Inspection Item Details

Structure Number: 330140 **Inspection Date:** 08/28/2023

Item	Drift	**Grade**	P	**Maint Code**	3366	**Qty.**	24
Details	LARGE DRIFT ACCUMULATION AT INLET IN FRONT OF BARRELS 1 THROUGH 3						

Item	Scour	**Grade**	P	**Maint Code**		**Qty.**	0
Details	INTERMITTENT AREAS OF SCOUR BENEATH FOOTINGS AT RANDOM.						

Item	Wingwalls	**Grade**	F	**Maint Code**	3350	**Qty.**	24
Details	14 FEET X 10 FEET X UP TO 1/32 INCHES MAP CRACKING WITH RUST STAINING IN SOUTHWEST WINGWALL						

Item	Field Scour Evaluation	**Grade**	B	**Maint Code**		**Qty.**	0
Details	SCOUR HAS OCCURED BENEATH BARREL FOOTINGS AT RANDOM. STRUCTURE IS STABLE AT THIS TIME.						

Item	General Comments and Misc Items	**Grade**		**Maint Code**		**Qty.**	0
Details	(PAR) IMPACT DAMAGE WITH SURFACE SCRAPES AT NORTHWEST GUARDRAIL TERMINAL END						

Span 2 Culvert Section 1: (PAR) 8 FEET LONG X 4 INCHES HIGH X FULL DEPTH UNDERMINING WITH WATER FLOW BENEATH THE EAST FOOTING BETWEEN BARREL 2 AND BARREL 3, 10 FEET FROM THE UPSTREAM END OF THE BARREL

Span 3 Culvert Section 1: (PAR) 3 FEET LONG X 10 INCHES HIGH X 1 FEET WIDE SPALLED AREA WITH EXPOSED AND BROKEN REINFORCEMENT, 1 FEET DEEP UNDERMINING, AND EXPOSED FILL AT THE DOWNSTREAM END OF THE EAST WALL

Span 3 Culvert Section 1: (PAR) 5 FEET LONG X 5 INCHES HIGH X 9 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 9.5 FEET FROM THE UPSTREAM END OF THE BARREL

Span 3 Culvert Section 1: (PAR) 5 FEET LONG X 8 INCHES HIGH X 8 INCHES DEEP UNDERMINING OF THE EAST FOOTING, 4 FEET FROM THE UPSTREAM END OF THE BARREL

(PAR) IMPACT DAMAGE WITH SURFACE SCRAPES AT NORTHWEST GUARDRAIL TERMINAL END

Span 1 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK WITH EFFLORESCENCE AND SPALLED AND DELAMINATED AREAS UP TO 3 INCHES LONG X 4 INCHES HIGH X 1.5 INCHES DEEP IN THE WALLS AND TOP SLAB, 9.5 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 1 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK WITH EFFLORESCENCE AND SPALLED AND DELAMINATED AREAS UP TO 3 INCHES LONG X 4 INCHES HIGH X 1.5 INCHES DEEP IN THE WALLS AND TOP SLAB, 9.5 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 1 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL

Span 1 Culvert Section 1: 4 FEET LONG X 4 INCHES HIGH X 2 INCHES DEEP SPALLED AREA IN THE EAST WALL AT THE FOOTING, AT THE UPSTREAM END OF THE BARREL

Span 1 Culvert Section 1: INTERMITTENT 14 FEET LONG X INTERMITTENT 10 INCHES HIGH X 3 INCHES DEEP SPALLED AREA IN THE WEST WALL AT THE FOOTING, AT THE UPSTREAM END OF THE BARREL

Span 1 Culvert Section 1: FULL WIDTH X 7 INCHES LONG X 3 INCHES DEEP SPALLED AREA WITH EXPOSED REINFORCEMENT AND EFFLORESCENCE IN THE TOP SLAB, 14 FEET FROM THE UPSTREAM END OF THE BARREL

Span 1 Culvert Section 1: UP TO 3 FEET X 1 FEET X 2 INCHES SCOUR AT UPSTREAM END OF BARREL 1 (SCOUR WAS COVERED BY DRIFT DURING 2023 INSPECTION)

Span 1 Culvert Section 1: INTERMITTENT FULL WIDTH X 1.167 FEET LONG X 1.5 INCHES DEEP SPALLED AND DELAMINATED AREA WITH EXPOSED REINFORCEMENT IN THE TOP SLAB, 45 FEET FROM THE UPSTREAM END OF THE BARREL

Span 1 Culvert Section 1: FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS

Span 1 Culvert Section 1: 8 INCHES LONG X 3 INCHES HIGH X 4 INCHES DEEP SPALLED AREA IN THE WEST WALL, 3 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 1 Culvert Section 1: 8 INCHES LONG X 10 INCHES HIGH X UP TO 2 INCHES SPALLED AREA IN THE WEST WALL AT THE FOOTING, 9 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 2 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL

Span 2 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACK IN THE WALLS AND TOP SLAB WITH EFFLORESCENCE AND INTERMITTENT SPALLED AND DELAMINATED AREAS UP TO 12 INCHES X 18 INCHES X 4 INCHES IN THE WALLS AND TOP SLAB, 13.75 FEET FROM THE UPSTREAM END OF THE BARREL

Span 2 Culvert Section 1: INTERIOR WALL 1 AT INLET, SPALL (15 INCHES X 7 INCHES X UP TO 3/4 INCH) (SCOUR WAS COVERED BY DRIFT DURING 2023 INSPECTION)

Span 2 Culvert Section 1: FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS.

Span 2 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK IN THE WALLS AND TOP SLAB WITH EFFLORESCENCE AND INTERMITTENT FULL WIDTH X 5 INCHES LONG DELAMINATION IN THE TOP SLAB AND UP TO 12 INCHES X 4 INCHES X 4 INCHES INTERMITTENT SPALLS, 9 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 2 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/4 INCHES WIDE VERTICAL WRAP AROUND CRACK IN THE WALLS AND TOP SLAB WITH EFFLORESCENCE AND INTERMITTENT FULL WIDTH X 5 INCHES LONG DELAMINATION IN THE TOP SLAB AND UP TO 12 INCHES X 4 INCHES X 4 INCHES INTERMITTENT SPALLS, 9 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 3 Culvert Section 1: FULL HEIGHT X FULL WIDTH X UP TO 1/8 INCHES WIDE VERTICAL WRAP AROUND CRACKS WITH EFFLORESCENCE IN THE WALLS AND TOP SLAB AT GREATER THAN 3 FEET SPACING ALONG THE FULL LENGTH OF THE BARREL

Span 3 Culvert Section 1: INTERMITTENT FULL WIDTH X 3 INCHES LONG DELAMINATED AREA WITH A FULL WIDTH X 1/4 INCHES WIDE TRANSVERSE CRACK IN THE TOP SLAB, 14.5 FEET FROM THE UPSTREAM END OF THE BARREL

Span 3 Culvert Section 1: (8) UP TO 6 FEET X 5 INCHES X 5 INCHES SPALLS AT RANDOM THROUGHOUT EAST AND WEST FOOTINGS.

Span 3 Culvert Section 1: INTERMITTENT 14.5 FEET LONG X 7 INCHES HIGH X 5 INCHES DEEP SPALLED AREA 4 INCHES ABOVE THE FOOTING AT THE UPSTREAM END

Span 3 Culvert Section 1: 8 INCHES HIGH X 4 INCHES LONG X 1 INCHES DEEP SPALLED AREA WITH EXPOSED REINFORCEMENT IN THE EAST WATERLINE, 4.5 FEET BELOW THE TOP SLAB, 13.5 FEET FROM THE UPSTREAM END OF THE BARREL

Span 3 Culvert Section 1: INTERMITTENT FULL HEIGHT X 1 FEET LONG X 1.5 INCHES DEEP SPALLED AND DELAMINATED AREA WITH A FULL HEIGHT X 1/8 INCHES WIDE VERTICAL CRACK IN THE EAST WALL, 14.5 FEET FROM THE UPSTREAM END OF THE BARREL

Span 3 Culvert Section 1: 1.25 FEET HIGH 3 INCHES LONG X 3/4 INCHES DEEP SPALLED AREA WITH A 6 FEET HIGH X 1/4 INCHES WIDE VERTICAL CRACK WITH EFFLORESCENCE AND HEAVY BUILDUP AND RUST STAINING ADJACENT TO 15 INCHES X 5 INCHES X 4 INCHES SPALL IN EAST FOOTING, 19 FEET FROM THE DOWNSTREAM END OF THE BARREL

Span 3 Culvert Section 1: FULL LENGTH X FULL WIDTH X FULL HEIGHT SCALING THROUGHOUT THE EAST AND WEST FOOTINGS

14 FEET X 10 FEET X UP TO 1/32 INCHES MAP CRACKING WITH RUST STAINING IN SOUTHWEST WINGWALL

LARGE DRIFT ACCUMULATION AT INLET IN FRONT OF BARRELS 1 THROUGH 3

Culvert Streambed Soundings

(Profile diagram on following sheet)

County : **FORSYTH** Structure Number: **330140** Inspection Date : **08/30/2023**

Soundings from Top of Barrel * Water depth in Barrel (ft) : **0.5**

Measured by:

Upstream

Barrel #	Left Edge Sounding ft	Center Sounding ft	Right Edge Sounding ft	Comment
1	8.000	8.000	8.000	
2	6.000	6.000	6.000	
3	6.000	10.000	10.500	

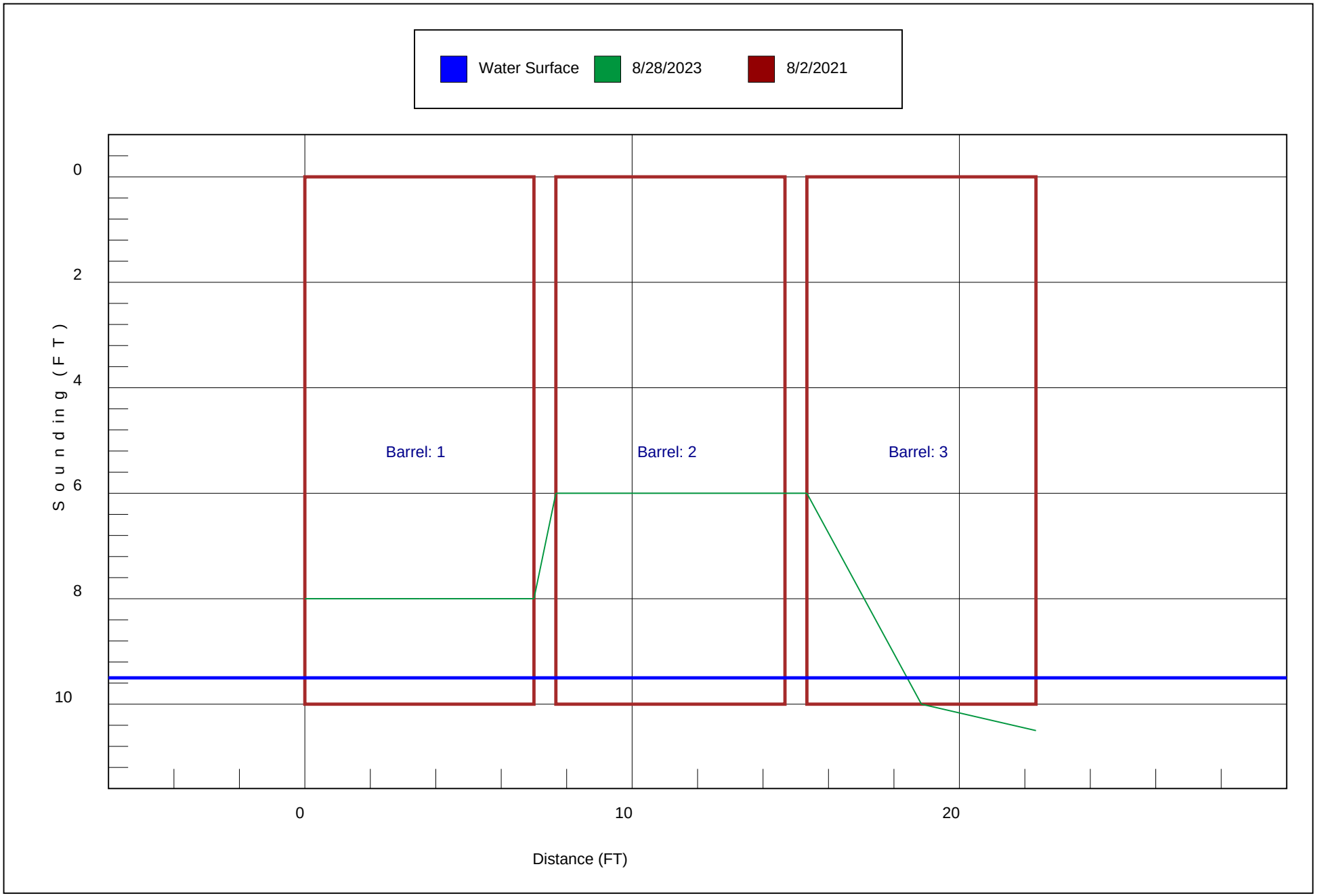
Downstream

Barrel #	Left Edge Sounding ft	Center Sounding ft	Right Edge Sounding ft	Comment
1	10.000	10.000	10.000	
2	10.000	10.000	10.500	
3	10.500	10.500	10.500	

* Soundings are adjusted if measured from the bottom of the barrel.

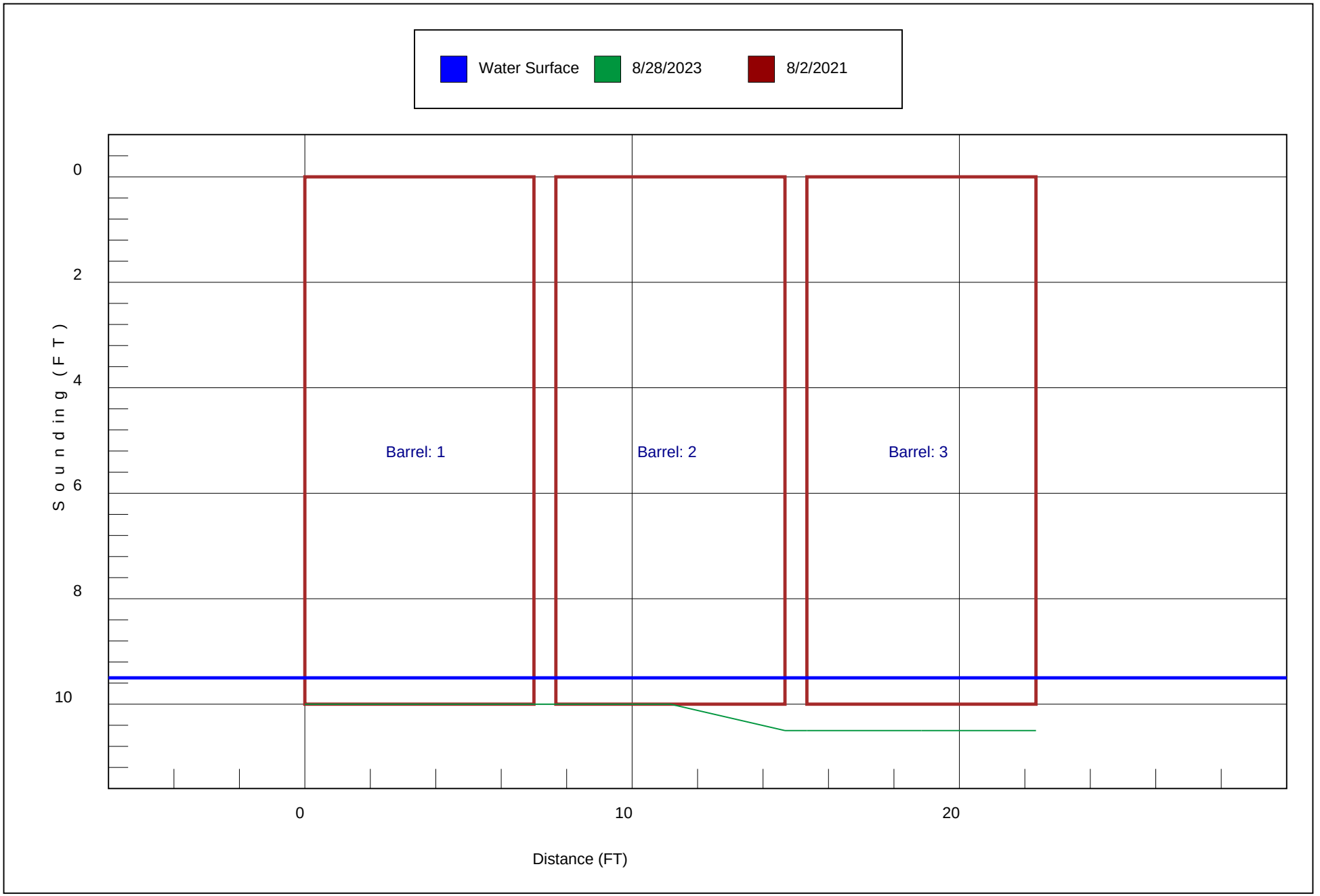
Bridge: 330140 County: FORSYTH Date: 08/28/2023

STREAMBED PROFILE (Upstream)



Bridge: 330140 County: FORSYTH Date: 08/28/2023

STREAMBED PROFILE (Downstream)



Structure Number: **330140** Inspection Date **08/28/2023**

Barrel Number 1

Skew 120 ° Length along centerline (ft) 104.833 Height Crown to Bed (ft) 28.083 Fill Depth (ft) 17.083

Section 1 Details Barrel Height (ft) 10.0 Barrel Width (ft) 7.0

Section Type RCBC Material Concrete

Barrel Number 2

Skew 120 ° Length along centerline (ft) 104.833 Height Crown to Bed (ft) 28.083 Fill Depth (ft) 17.083

Section 1 Details Barrel Height (ft) 10.0 Barrel Width (ft) 7.0

Section Type RCBC Material Concrete

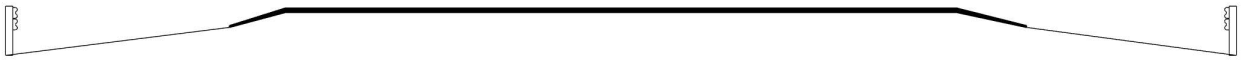
Barrel Number 3

Skew 120 ° Length along centerline (ft) 104.833 Height Crown to Bed (ft) 28.083 Fill Depth (ft) 17.083

Section 1 Details Barrel Height (ft) 10.0 Barrel Width (ft) 7.0

Section Type RCBC Material Concrete

Bridge Inspection Field Sketch



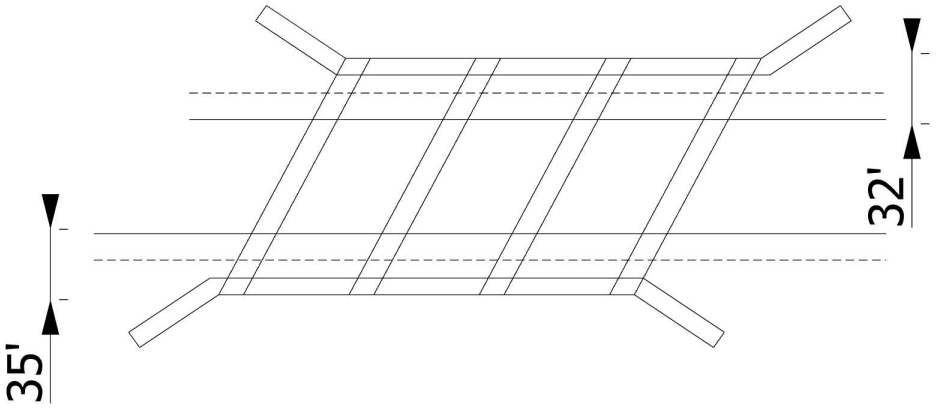
Roadway	24ft Wide	2 Paved Lanes	Looking East
Left Shoulder	10ft Wide	2ft Paved	8ft Unpaved
Right Shoulder	10ft Wide	2.5ft Paved	7.5ft Unpaved
Left Guardrail	10ft from road		
Right Guardrail	10ft from road		

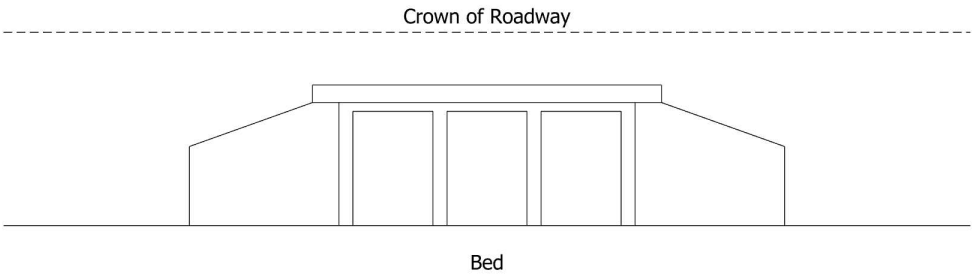
MEASUREMENTS TAKEN APPROXIMATELY 25' WEST OF BARREL 1

Title	Description
APPROACH ROADWAY	LOOKING EAST

Structure No:	Drawn By:	Date:	Filename:
330140	SRL	8/30/2023	S001314000064.wes

Bridge Inspection Field Sketch





Number of Barrels	Skew	Distance From Crown to Bed	Fill Depth
3	120°	28.083ft	17.083ft
Length Along Center Line of Culvert		Length Along Center Line of Roadway	
104.833ft		25.789ft	
Left Edge of Road to Culvert		Right Edge of Road to Culvert	
32ft		35ft	

Barrel #	Width	Height	Wall Thickness	Type
1	7ft	10ft		Reinforced Concrete Box Culvert
2	7ft	10ft	0.67ft	Reinforced Concrete Box Culvert
3	7ft	10ft	0.67ft	Reinforced Concrete Box Culvert

SPEED LIMIT 55MPH

Title	Description
CULVERT PLANS	CULVERT PLANS

Structure No: 330140	Drawn By: SRL	Date: 8/30/2023	Filename: S001314000065.wes

WEST APPROACH

ASPHALT WEARING SURFACE

GUARDRAIL

GUARDRAIL SPACING

GUARDRAIL TERMINAL END

EAST APPROACH

LOOKING UPSTREAM NORTH

NORTH ELEVATION

LOOKING DOWNSTREAM BARREL 3

LOOKING DOWNSTREAM BARREL 2

LOOKING DOWNSTREAM BARREL 1

LOOKING UPSTREAM THROUGH BARREL 1

LOOKING UPSTREAM THROUGH BARREL 2

LOOKING UPSTREAM THROUGH BARREL 3

LOOKING DOWNSTREAM SOUTH

SOUTH ELEVATION

TYPICAL WINGWALL